



Satisfying a variety of needs for food processing



Equipment for Food Manufacturing Processes FP Series



CKD Corporation

CC-1271A 3



A wide selection of air filters to actuators which can be used safely and securely in food manufacturing processes are available as standard products



FP3 Series

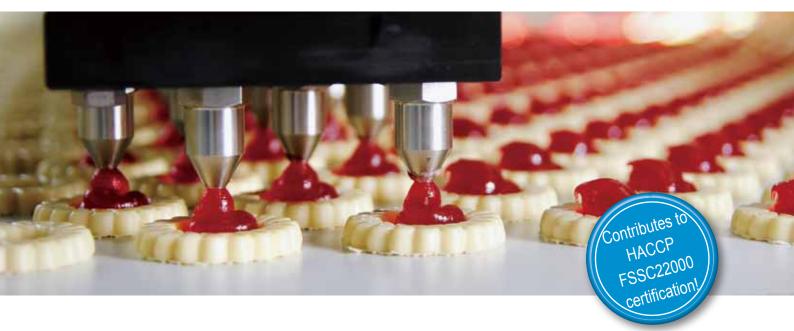
Enhances further safety!





Structure

Environment

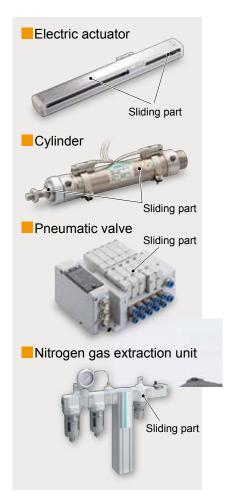


We provide total support for your food manufacturing processes with our comprehensive engineering capability in packing, pneumatics, fluid control and motors

FP1 Series

Food grade lubricant (NSF H1) is used for flow paths and sliding parts.

* Materials and dimensions are the same as standard products.



FP2 Series

In addition to the features of FP1, materials conforming to the Food Sanitation Act (resin/rubber) are used for the flow path.

* Materials (except for the flow path part) and dimensions are the same as standard products.



FP3 Series

In addition to the features of FP2, the lubricants, materials, shapes, etc., are even more suitable for food manufacturing processes.



Reliable anti-bacterial and bacteria removing power with a triple block module design

Anti-bacterial pre-filter High-performance anti-bacterial filter Bacteria removing filter













Maintenance

Push ring employed in SUS Risk of contamination is reduced, allowing for install near the point of use.



Replaceable elements

Elements are easy to replace.



Equipped with maintenance seal

* Supplied with the product.

The replacement period is clearly indicated.



^{*} The bactericidal activity value and bacterial trapping performance value are actual values based on predetermined conditions set by CKD.

Antibacterial

Proprietary anti-bacterial filter



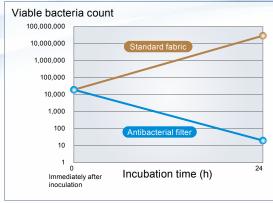
Non-woven fabric filter element that uses silver-based anti-bacterial agent

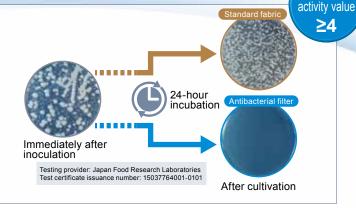
Non-woven fabric uses silver-based anti-bacterial agent

The silver ions included in the antibacterial filter are absorbed into the bacteria cells, the bacteria enzyme's actions are obstructed, and they die out.



Anti-bacterial performance





Verification data from tests based on JIS L 1902

Bacteria Removal

Proprietary bacteria removing filter



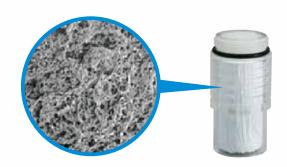
Antibacterial

Removal rate 99.99999% hollow fiber membrane

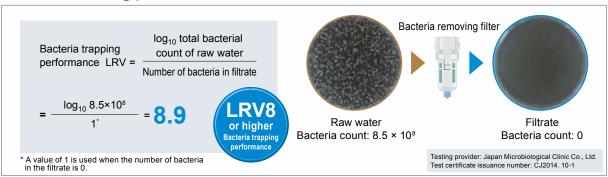
Hollow string membrane

The bacteria removing filter consists of a straw-shaped fiber membrane with a countless number of special slit-shaped ultrafine pores.

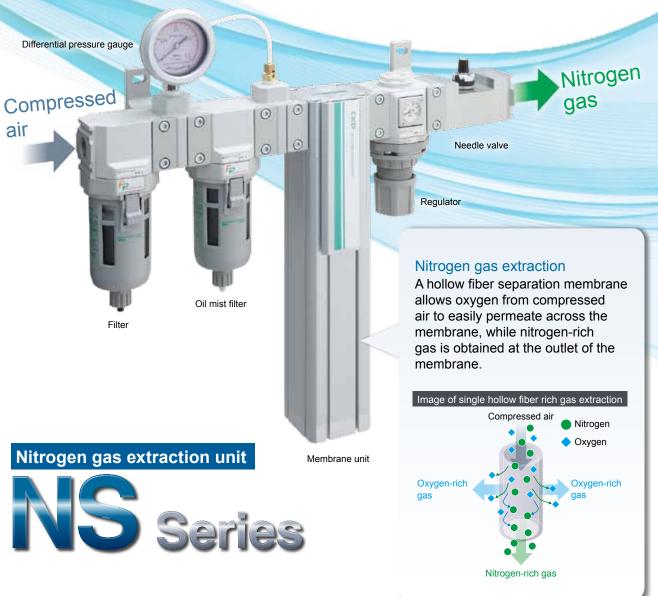
These pores trap bacteria when the compressed air passes through.



Bacteria removing performance



Easily extract nitrogen gas from compressed air.



NS Series configuration

Custom	Ur	nit
System	Single cylinder	Double cylinder
NSU	N	S

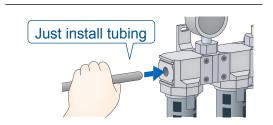
Installation for all places

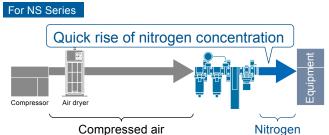
Reduced workload, piping, and space

- Providing system equipment makes design and piping easy.
- The optimum system can be selected for the required flow rate.
- Can be installed near the equipment, so nitrogen-dedicated long piping is not required.

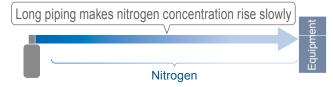
Power supply not required

- Usable even in explosion-proof atmospheres and areas with different voltages.
- No misoperations caused by noise.
- Silent and no heating due to driveless system.





For conventional methods



Lowered costs

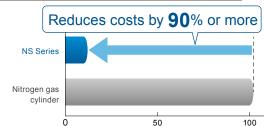
Reduced operation costs

- The electricity costs for the air compressor are the only maintenance fees.
- Continuous costs, such as the cost of cylinder replacement, are not applied.

Reduced expenses

Troublesome maintenance of remaining cylinders and replacement operations not required.

Comparison of gas units in nitrogen gas cylinder



*Comparison when nitrogen concentration is 99% and the nitrogen gas cylinder is in units of 100.

Easy maintenance

Duration of reliability

- No movable parts, enabling stable performance.
- > Parts can be replaced while piped.

y Act

Not subject to High Pressure Gas Safety Act

Providing applications and qualified persons is not required.

Secure support for food manufacturing processes FP Series

Safe and secure for food manufacturing processes.



Materials compliant with the Food Sanitation Act Fluid passage section resin/rubber



This logo represents CKD's stance to provide you with safe components for supporting your food manufacturing processes.

System

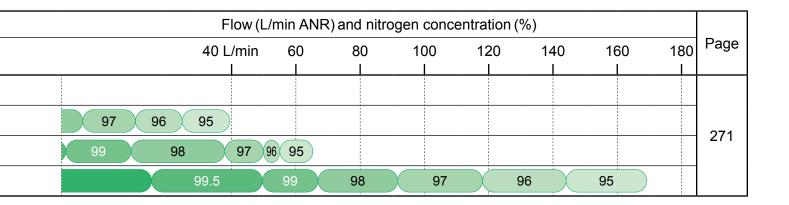
		Flow (L/min ANR) and nitrogen concentration (%)	
Model No.	Appearance	10 L/min 20	
NSU-3S		99.9 99.5 99 98 97 96 95	
NSU-3L		99.9 99.5 99 98	
NSU-4S	4 4	99.9 99.5	
NSU-4L		99.9	

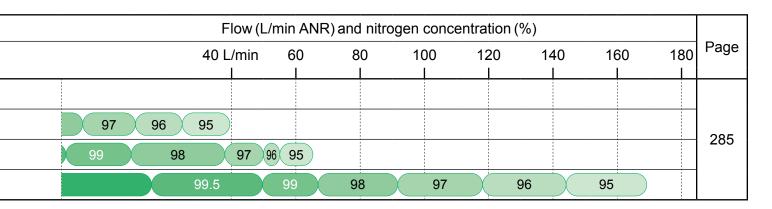
Unit

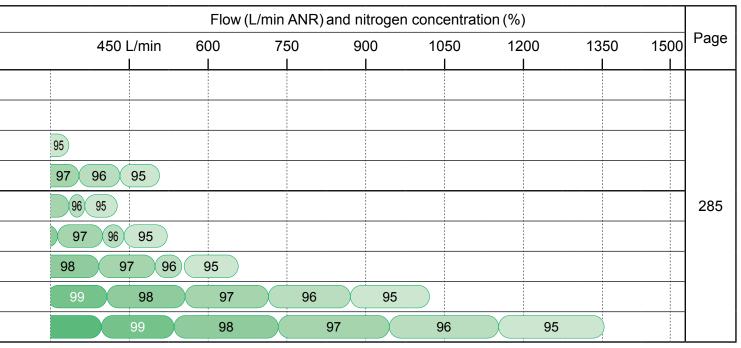
		Flow (L/min ANR) and nitrog	gen concentration (%)	
Model No.	Appearance	10 L/mir	n 20	
NS-3S1	(111)	99.9 99.5 99 98 97 96	95	
NS-3L1	(111)	99.9 99.5	99 98	
NS-4S1	W	99.9	99.5	
NS-4L1		99.9		

	Number		Flow (L/min ANR)	and nit	rogen conce	entration (%)	
Model No.	of pcs.	Appearance	50 L/min	100 I	1	50 300	1
NS-4S2	2	1011	99.9 99.5 99 98	97 96	95		
NS-4S3	3	1.00	99.9 99.5 99	98	97	96 95	
NS-4L2	2		99.9	9.5	99 98	8 97 96	
NS-4L3	3		99.9		99.5	99 98	
NS-4S6	6		99.9	99.5	99	98 97	
NS-4S8	8		99.9		99.5	99 98	
NS-4SA	10		99.9		99.5	99	
NS-4L6	6		99	9.9		99.5	
NS-4L8	8			99.9		99.5	

^{*} The above shows the outlet nitrogen gas flow rate when inlet air pressure is 0.7 MPa and inlet air temperature is 25°C.







Supplement:

The nitrogen concentration display of nitrogen obtained from the nitrogen gas extraction unit actually shows the total concentration of elements other than oxygen (O2). The raw air contains nitrogen, oxygen, argon, carbon dioxide, and water vapor. Therefore, the product's nitrogen gas contains approximately 1% argon, which has as much difficulty permeating the membrane as nitrogen, whereas the easy permeating carbon dioxide lowers to a concentration of 10 to 50 ppm, and water vapor reduces to -40°C through atmospheric dew point conversion.



Avoid contamination from lubricant. Food grade lubricant (NSF H1) is used.



















































Filter/regulator combination C*020/ C*030/ C*060/ Series P211









Reed switch compact pressure switch P1100 to P8100











Series P231









Speed controller elbow with push-in fitting SC3W Series P249

































Air operated 2-port valve SAB Series

P281







Material compatible with Food Sanitation Law is used.











Compact pilot operated solenoid valve for water **FWD** Series P309









Diaphragm cylinder valve LAD Series P327









Pilot kick 2-port solenoid valve for steam SPK Series P337





Grease for pneumatic cylinder maintenanceP75 Standard model supports. P341 Contact CKD for details. P342 Related products P351

Pneumatic cylinders

FRL/Auxiliary components | Pneumatic valves |

Vacuum components

removing filter

components



Electric actuator Slider ETS-FP1 Series

● Applicable motor capacity: 100 W, 200 W, 400 W, 750 W





Specifications

						Ар	plicable	e moto	r capac	ity: 100	W				
Descript	tions							Мо	del						
			ETS-05			ETS-06		ETS-10				ETS-12			
Ball screw dian	neter mm		12			12			1	6		16			
Ball screw accu	racy grade							C	7						
Screw lead	mm	2	5	10	2	5	10	5	10	16	20	5	10	16	20
Repeatability	mm		±0.02												
Max. load	Horizontal kg	10	10	5	30	30	15	50	30	22	18	50	30	22	18
capacity *1	Vertical kg	7	3	1.5	15	10	5	12	8	5	3	12	8	5	3
Max. speed *1	mm/s	100	250	500	100	250	500	250	500	800	1000	250	500	800	1000
Stroke *2 mm 100 to 800			0	1	100 to 800		100 to 1050					100 to	1050		
Thrust	N	854	341	170	854	341	170	341	170	106	85	341	170	106	85

^{*1:} Acceleration and deceleration time is the value at 0.2 sec.

^{*2:} Stroke length is 50 pitch.

							Appl	icable	moto	r capa	city: 2	00 W					
Descrip	tions								Мо	del							
			ETS	S-10			ETS	5-12			ETS-13				ETS-14		
Ball screw diar	neter mm		1	6			1	6			1	6			1	6	
Ball screw accu	racy grade								С	7							
Screw lead	mm	5	10	16	20	5	10	16	20	5	10	16	20	5	10	16	20
Repeatability	mm								±0	.02							
Max. load	Horizontal kg	50	30	22	18	50	30	22	18	70	47	30	24	95	75	44	35
capacity *1	Vertical kg	12	8	5	3	12	8	5	3	17	12	6	4	27	18	7	6
Max. speed *1	mm/s	250	500	800	1000	250	500	800	1000	250	500	800	1000	250	500	800	1000
Stroke *2	mm		50 to	1050			50 to	1050			50 to	1050			50 to	1050	
Thrust	N	683	341	213	174	683	341	213	174	683	341	213	174	683	341	213	174

^{*1:} Acceleration and deceleration time is the value at 0.2 sec.

^{*2:} Stroke length is 50 pitch.

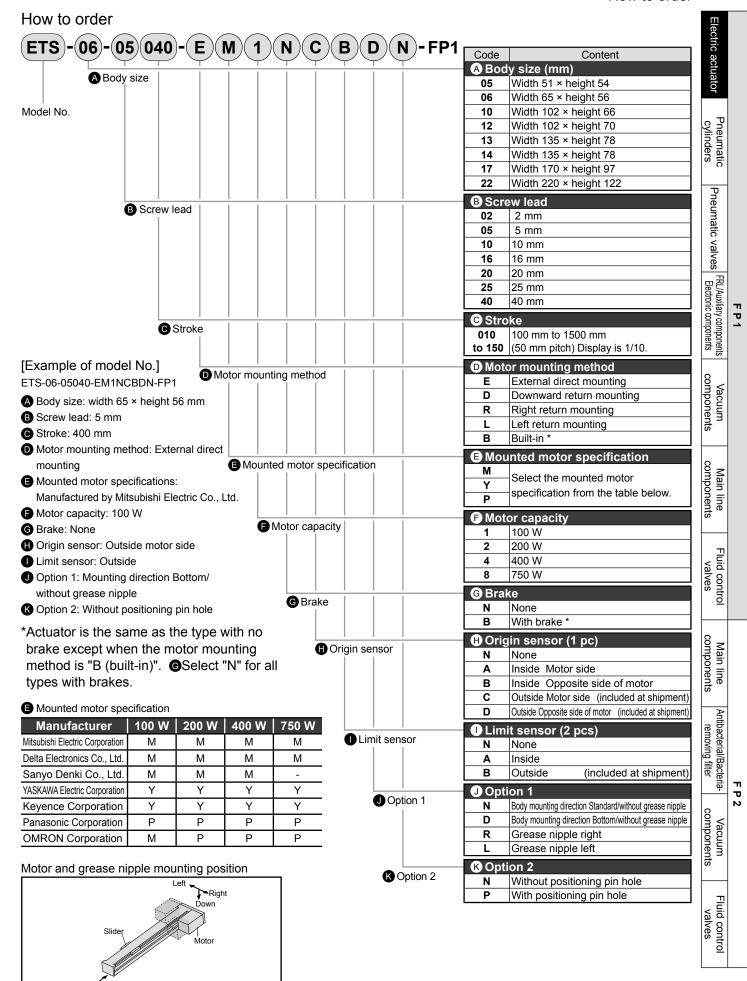
				Αp	plica	able r	noto	r cap	acity	: 400	W			Ap	plica	ıble r	noto	r cap	acity	: 750	W
Descrip	tions										Мо	del									
			ETS	3-13			ETS	5-14			ETS	S-17		ETS-17				ETS-22			
Ball screw diar	neter mm	16					1	6			2	0			2	0			25		20
Ball screw accu	racy grade						С	7									С	7			
Screw lead	mm	5	10	16	20	5	10	16	20	5	10	20	40	5	10	20	40	5	10	25	40
Repeatability	mm						±0	.02									±0	.02			
Max. load	Horizontal kg	70	47	30	24	110	88	48	40	120	110	75	35	120	120	83	50	150	150	120	60
capacity *1	Vertical kg	17	12	6	4	33	22	10	8	40	30	14	7	50	40	25	10	55	45	20	10
Max. speed *1	mm/s	250	500	800	1000	250	500	800	1000	250	500	1000	2000	250	500	1000	2000	250	500	1250	2000
Stroke *2	mm		50 to	1050			100 to	1050			100 tc	1250)		100 to	1250)		100 to	1500	
Thrust	N	1388	694	483	347	1388	694	433	347	1388	694	347	174	2100	1050	525	260	2100	1050	420	260

^{*1:} Acceleration and deceleration time is the value at 0.2 sec.

^{*2:} Stroke length is 50 pitch.

ETS-FP1 Series

How to order



Pneumatic cylinders

FRL/Auxiliary components | Pneumatic valves |

Vacuum components

Main line components



Electric actuator Belt **ETV-FP1** Series

● Applicable motor capacity: 100 W, 200 W, 400 W, 750 W





Specifications

		Appl	icable motor capacity: 1	00 W	Applicable motor capacity: 200 W
Descrip	tions		Мо	del	
		ETV-05	ETV-06	ETV-10	ETV-14
Belt width	mm	9	12	15	22
Lead	mm	40	40	32	40
Repeatability	mm	±0	.08	±0.04	±0.04
Max. load capacity	Horizontal kg	3	3	10	25
*1	Vertical kg		-	-	-
Max. speed *1	mm/s	2000	2000	1600	2000
Stroke *2	mm	100 to 800	100 to 800	100 to 2550	100 to 3050
Thrust	N	42	42	61	100

^{*1:} Acceleration and deceleration time is the value at 0.4 sec.

^{*2:} Stroke length is 50 pitch.

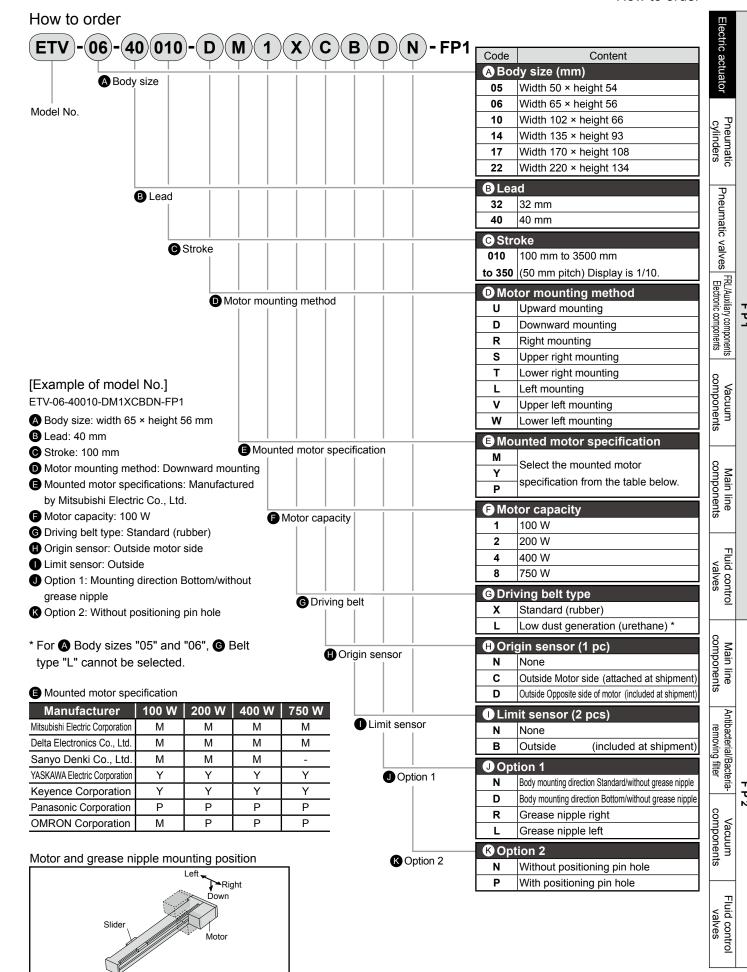
		Applicable motor capacity: 400 W	Applicable motor capacity: 750 W
Descript	tions	Мо	del
		ETV-17	ETV-22
Belt width	mm	30	50
Lead	mm	40	40
Repeatability	mm	±0.04	±0.04
Max. load capacity	Horizontal kg	45	85
*1	Vertical kg	-	-
Max. speed *1	mm/s	2000	2000
Stroke *2	mm	100 to 3500	100 to 3500
Thrust	N	204	367

^{*1:} Acceleration and deceleration time is the value at 0.4 sec.

^{*2:} Stroke length is 50 pitch.

ETV-FP1 Series

How to order





Electric actuator Low dust generation

ECS-FP1 Series

● Applicable motor capacity: 100 W, 200 W, 400 W, 750 W





Specifications

			Applicable motor capacity: 100 W									Applical	ble motor	r capacit	y: 200 W				
Descript	tions									Мо	del								
		E	CS-0	5	E	CS-0	6		ECS	S-10			ECS	S-12			ECS	S-14	
Ball screw diam	neter mm		12			12			1	6			1	6			1	6	
Ball screw accur	racy grade							С	7								С	7	
Screw lead	mm	2	5	10	2	5	10	5	10	16	20	5	10	16	20	5	10	16	20
Repeatability	mm							±0.	.02								±0.	.02	
Max. load capacity	Horizontal kg	10	10	5	30	30	15	50	30	22	18	50	30	22	18	95	75	44	35
*1	Vertical kg	7	3	1.5	15	10	5	12	8	5	3	12	8	5	3	27	18	7	6
Max. speed *1	mm/s	100	250	500	100	250	500	250	500	800	1000	250	500	800	1000	250	500	800	1000
Stroke *2	mm	10	00 to 80	00	10	00 to 80	00		100 to	1050			100 to	1050			100 to	1050	
Thrust	N	825	330	165	854	341	170	341	170	106	85	341	170	106	85	683	341	213	174

^{*1:} Acceleration and deceleration time is the value at 0.2 sec.

^{*2:} Stroke length is 50 pitch.

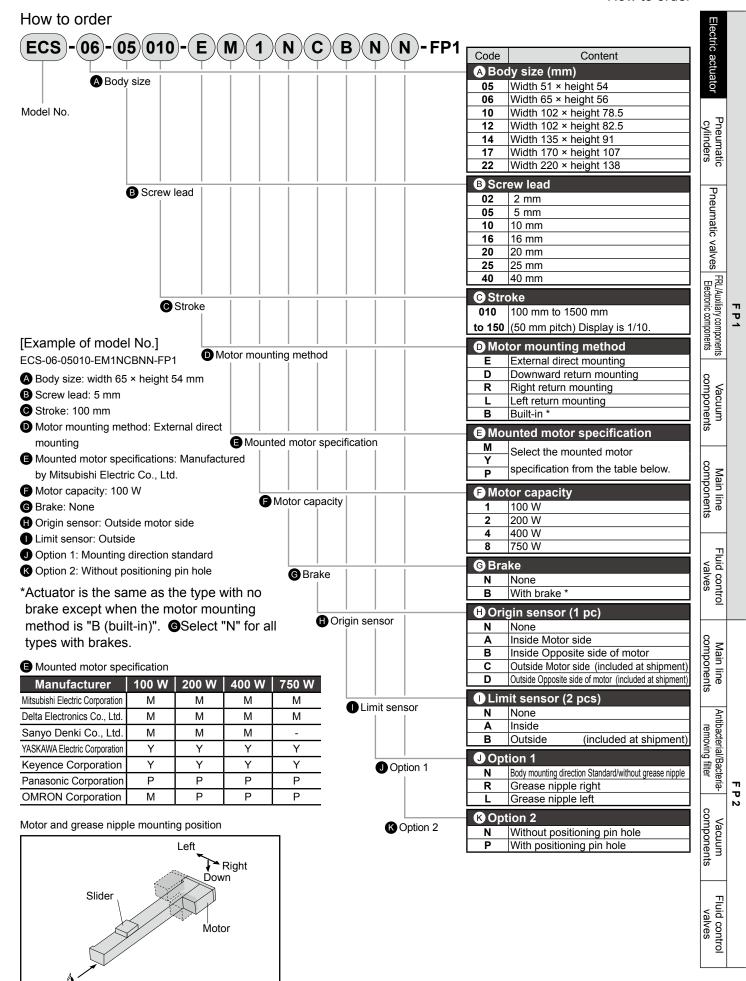
			Appl	icable	moto	capa	city: 4	00 W			Appl	icable	moto	r capa	city: 7	50 W	
Descrip	tions								Мо	del							
			ECS	S-14			ECS	S-17			ECS	S-17		ECS-22			
Ball screw diar	meter mm		1	6			2	0			2	0			25		20
Ball screw accu	ıracy grade				С	7							С	7			
Screw lead	mm	5	10	16	20	5	10	20	40	5	10	20	40	5	10	25	40
Repeatability	mm				±0.	.02							±0	.02			
Max. load capacity	Horizontal kg	110	88	48	40	120	110	75	35	120	120	83	50	150	150	120	60
*1	Vertical kg	33	22	10	8	40	30	14	5	50	40	25	10	55	45	20	10
Max. speed *1	mm/s	250	500	800	1000	250	500	1000	2000	250	500	1000	2000	250	500	1250	2000
Stroke *2	mm	100 to 1050				100 to 1250			100 to 1250				100 to 1500				
Thrust	N	1388 694 433 347			347	1388	694	347	174	2100 1050 525 260			260	2100	1050	420	260

^{*1:} Acceleration and deceleration time is the value at 0.2 sec.

^{*2:} Stroke length is 50 pitch.

ECS-FP1 Series

How to order



Pneumatic cylinders

FRL/Auxiliary components | Pneumatic valves |

Main line components



ECV-FP1 Series

Electric actuator Low dust generation belt type

● Applicable motor capacity: 100 W, 200 W, 400 W, 750 W





Specifications

		Appl	icable motor capacity: 1	00 W	Applicable motor capacity: 200 W
Descript	ions		Mo	del	
		ETV-05	ETV-06	ETV-10	ETV-14
Belt width	mm	9	12	15	22
Lead	mm	40	40	32	40
Repeatability	mm	±0	.08	±0.04	±0.04
Max. load capacity	Horizontal kg	3	3	10	25
	Vertical kg	-	-	-	-
Max. speed *1	mm/s	2000	2000	1600	2000
Stroke *2	mm	100 to 800	100 to 800	100 to 2550	100 to 3050
Thrust	N	42	42	61	100

^{*1:} Acceleration and deceleration time is the value at 0.4 sec.

^{*2:} Stroke length is 50 pitch.

		Applicable motor capacity: 400 W	Applicable motor capacity: 750 W				
Descriptions		Model					
		ETV-17	ETV-22				
Belt width	mm	30	50				
Lead	mm	40	40				
Repeatability	mm	±0.04	±0.04				
Max. load capacity	Horizontal kg	45	85				
*1	Vertical kg	-	-				
Max. speed *1	mm/s	2000	2000				
Stroke *2	mm	100 to 3500	100 to 3400				
Thrust	N	204	367				

^{*1:} Acceleration and deceleration time is the value at 0.4 sec.

^{*2:} Stroke length is 50 pitch.

ECV-FP1 Series

How to order

Pneumatic cylinders

Pneumatic valves

FRL/Auxiliary components Electronic components

Vacuum components

Main line components

Fluid control

Main line components

Antibacterial/Bacteria-

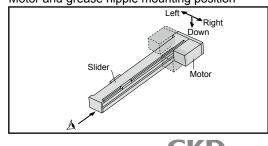
removing filter

Vacuum components

Fluid control valves

How to order (06)-(40)(010)-(D M X C В N N)-FP1 Code Content A Body size (mm) A Body size Width 50 × height 54 05 06 Width 65 × height 56 Model No. 10 Width 108 × height 78.5 14 Width 135 × height 91 17 Width 170 × height 107 22 Width 220 × height 138 B Lead (refer to table 1 on the next page) B Lead 32 32 mm 40 mm C Stroke (refer to table 1 on the next page) Stroke 100 mm to 3500 mm to 350 (50 mm pitch) Display is 1/10. D Motor mounting method (refer to table 2 on the next page) Motor mounting method Upward mounting D Downward mounting R Right mounting s Upper right mounting Т Lower right mounting L Left mounting ٧ Upper left mounting Lower left mounting W **■** Mounted motor specification Mounted motor specification M Select the mounted motor Υ specification from the table below. P [Example of model No.] ECV-06-40010-DM1XCBNN-FP1 Motor capacity (refer to table 2 on the next page) Motor capacity 100 W A Body size: width 65 × height 56 mm 2 200 W B Lead: 40 mm 4 400 W 8 750 W C Stroke: 100 mm G Belt type Motor mounting method: Downward mounting **G** Belt type Standard (rubber) Mounted motor specifications: Manufactured Low dust generation (urethane) * by Mitsubishi Electric Co., Ltd. H Origin sensor (1 pc) (refer to table 4 on the next page) Origin sensor Motor capacity: 100 W None С Outside Motor side (included at shipment) G Belt type: Standard (rubber) Outside Opposite side of motor (included at shipment) H Origin sensor: Outside motor side Limit sensor (2 pcs) (refer to table 4 on the next page) Limit sensor Limit sensor: Outside N None В Outside (included at shipment) Option 1: Mounting direction standard J Option 1 (refer to table 5 on the next page) **K** Option 2: Without positioning pin hole Option 1 Body mounting direction Standard/without grease nipple R Grease nipple right * For A Body sizes "05" and "06", G Belt L Grease nipple left type "L" cannot be selected. © Option 2 C Option 2 Without positioning pin hole With positioning pin hole Mounted motor specification Motor and grease nipple mounting position

_				
Manufacturer	100 W	200 W	400 W	750 W
Mitsubishi Electric Corporation	М	М	М	М
Delta Electronics Co., Ltd.	М	М	М	М
Sanyo Denki Co., Ltd.	М	М	М	-
YASKAWA Electric Corporation	Υ	Υ	Y	Υ
Keyence Corporation	Υ	Y	Υ	Υ
Panasonic Corporation	Р	Р	Р	Р
OMRON Corporation	М	Р	Р	Р



components



Pencil shaped cylinder

SCPD3-FP1 Series

● Bore size: ø6, ø10, ø16





Specifications

Descriptions			SCPD3 SCPD3-L				
Bore size	mm	ø6	ø6 ø10 ø16				
Actuation			Double acting				
Working fluid			Compressed air				
Max. working pressure	MPa		1.0				
Min. working pressure	MPa	0.15	0.15				
Proof pressure	MPa		1.6				
Ambient temperature	°C		-10 to 60 (no freezing)				
Port size			M5				
Stroke tolerance	mm		+1.0 0				
Working piston speed	mm/s		50 to 750				
Cushion			Rubber cushion				
Lubrication			Not required				
Allowable absorbed energy	J	0.012	0.041	0.162			

^{*1:} The specifications above are for double acting/single rod.

Each item differs depending on variation. For details, refer to Pneumatic Cylinders I (CB-029SA).

Stroke (variation: blank, L, Z, ZL, M, ML, K, KL)

Bore size (mm)	Standard stroke (mm)	Max. stroke (mm)	Available stroke (mm)	Min. stroke (mm)
ø6		100	105	
ø10	15, 30, 45, 60	200	210	5
ø16		260	270	

^{*1:} Made-to-order stroke length is available in 1 mm increments.

Stroke (variation: D, DL)

Bore size (mm)	Standard stroke (mm)	Max. stroke (mm)	Min. stroke (mm)
ø6		60	
ø10	15, 30, 45, 60	120	5
ø16		120	

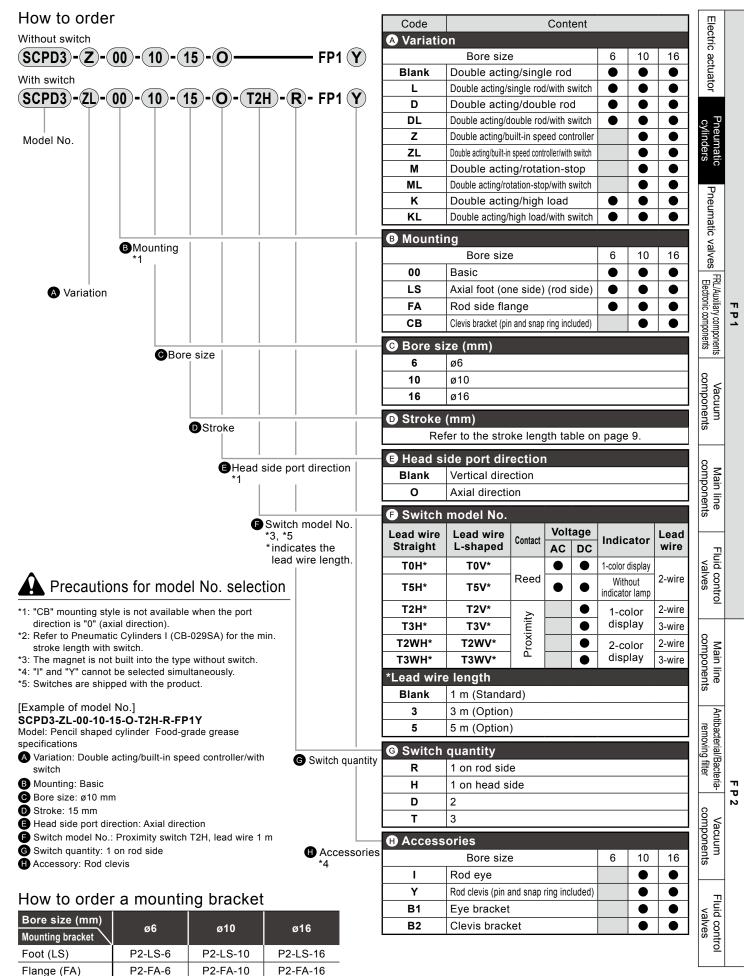
^{*1:} Made-to-order stroke length is available in 1 mm increments.

Fluid control valves

^{*2:} Variation Z, ZL, M, and ML with bore size 6 are not available.

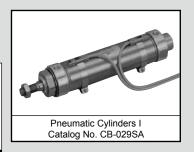
SCPD3-FP1 Series

How to order



Note: The foot (LS) type mounting bracket is provided as 1 pc./set.

Pneumatic valves



Small bore size cylinder

CMK2-FP1 Series

Bore size: ø20, ø25, ø32, ø40





Specifications

Specifications								
Descriptions		CMK2						
Bore size mm	ø20	ø25	ø32	ø40				
Actuation		Double	acting					
Working fluid		Compre	ssed air					
Max. working pressure MPa		1.	0					
Min. working pressure MPa	^o a 0.1							
Proof pressure MPa		1.	6					
Ambient temperature °C		-10 to 60 (r	no freezing)					
Port size		Rc						
Stroke tolerance mm		^{+2.0} ₀ (Up to 200), ⁺² ₀	4 (More than 200))				
Working piston speed mm/s	3	50 to 500						
Cushion	Rubber cushion							
Lubrication	Not required							
Allowable absorbed energy	0.166	0.308	0.424	0.639				

^{*1:} The specifications above are for double acting/single rod.

Each item differs depending on variation. For details, refer to Pneumatic Cylinders I (CB-029SA).

Stroke

● Variation: blank, R, C, B, M, Z, G2, G3, with air cushion: *C

	Standard stroke	Max. stro	oke (mm)	Min. stroke (mm)	
Bore size (mm)	(mm)	without	With bellows	Without bellows Bellows "L"	Bellows "J"
ø20	25, 50, 75, 100,				
ø25	150, 200, 250,	750	650	5	25
ø32	300	750	050	5	25
ø40	300				

- *1: Made-to-order stroke length is available in 1 mm increments.
- *2: Single foot (LS) has a max. stroke length of 50 mm.
- *3: Contact CKD when the stroke length shorter than 25 mm is necessary for "J" bellows.
- *4: With bellows are not available for variations G2 and G3.

Variation: S, SR

	Standard stroke	Max. stro	oke (mm)	Min. stroke (mm)	
Bore size (mm)	(mama)	Without bellows		Without bellows Bellows "L"	Bellows "J"
ø20	25, 50, 75, 100, 150	300	300	5	25
ø25	25, 50, 75, 100, 150				
ø32	25, 50, 75, 100,				23
ø40	150, 200				

- *1: Made-to-order stroke length is available in 1 mm increments.
- *2: Single foot (LS) has a max. stroke length of 50 mm.
- *3: Contact CKD when a stroke length shorter than 25 mm is necessary for "J" bellows.

Variation: P

•					
Bore size (mm)				Min. stroke (mm)	
Bore Size (IIIII)	(mm)	Without bellows	With bellows	Without bellows	With bellows
ø 20	25 50 75 100				
ø 25	25, 50, 75, 100, 150, 200, 250,	430	350	25	25
ø 32	300				
ø 40	300	400]		

- *1: Made-to-order stroke length is available in 1 mm increments.
- *2: Single foot (LS) has a max. stroke length of 50 mm.
 *3: Contact CKD when the stroke length is shorter than 25 mm.

Variation: D

				Min. stroke (mm)	
Bore size (mm)	(mm)	Without bellows		Without bellows Bellows "L"	Bellows "J"
ø20	25, 50, 75, 100,	480	300	5	25
ø25	150, 200, 250,				
ø32	300				
ø40	300	450			

- *1: Made-to-order stroke length is available in 1 mm increments.
- *2: Single foot (LS) has a max. stroke length of 50 mm.
- *3: Contact CKD whenever a stroke length shorter than 25 mm is necessary for "J" bellows.

Electric actuator Without switch (CMK2)-(M)-(00)-(20) -(100) With switch (CMK2)-(M)-(00)-(20) -(100)-(T0H)-(R)-(V) FP1 (Y) Content Code **A** Variation Double acting/single rod Blank Single acting/push SR Single acting/pull Stroke **A** Variation C Double acting/air cushioned D Double acting/double rod Double acting/rotation-stop Pneumatic valves М Z Double acting/built-in speed controller Switch model No. G2 Double acting/coolant proof (packing NBR) G3 Double acting/coolant proof (packing FKM) **B** Mounting B Mounting 00 Basic LB Axial foot (both sides) FRL/Auxiliary components Electronic components Axial foot (one side) LS FΑ Rod side flange FB Head side flange Eye bracket CA CC Eye bracket integrated CC1 Eye bracket, bush pressfit CB Clevis bracket (pin and split washer pin included) TΑ Rod side trunnion components TΒ Head side trunnion © Bore size (mm) Bore size 20 ø20 *8 ø25 25 *8 32 ø32 40 ø40 Main line components Port thread Port thread Blank Rc thread NPT thread (Made-to-order) NN G thread (Made-to-order) Stroke (mm) Refer to the stroke length table on page 11 A Precautions for model No. selection Switch model No. *1: Single foot (LS) has a max. stroke length of 50 mm. Refer to the switch model numbers on page 16 *2: Refer to Pneumatic Cylinders I (CB-029SA) for the min. **G** Switch quantity stroke length with switch. **G** Switch quantity *3: The instantaneous max. temperature is that at which sparks, R 1 on rod side swarf, etc., instantaneously contact bellows. н 1 on head side *4: "I" and "Y" cannot be selected simultaneously. D *5: Refer to Pneumatic Cylinders I (CB-029SA) for made-to-order components specifications of rod end form. **H** Option *6: Refer to Pneumatic Cylinders I (CB-029SA) for combinations Option Max. ambient : Instantaneous of variations and options. temperature | max. temperature *7: Up to three switches can be installed. If four or more switches Bellows are required, switch mounting brackets for the extra switches J 100°C 200°C must be prepared separately. Bellows 250°C 400°C *8: For 20 or 25 bore size, the rod material is stainless steel as М Piston rod material (stainless steel) *8, removing filter standard and the rod nut is zinc chromate. If a stainless steel Boss cutoff rod nut is necessary select the "M" option code. Accessories *9: For variations G2 and G3, the option M is unavailable. Accessories Rod eye *4 Rod clevis (pin and split washer pin included) B2 Clevis bracket (pin and snap ring included) Vacuum components

[Example of model No.]

CMK2-M-00-20-100-T0H-R-VFP1Y

Model: Small bore cylinder Food-grade grease specifications

How to order (Variation: blank, S, SR, C, D, M, Z, G2, G3)

A Variation: Double acting/rotation-stop

B Mounting: Basic @ Bore size: ø20 mm Port thread: Rc thread Stroke: 100 mm

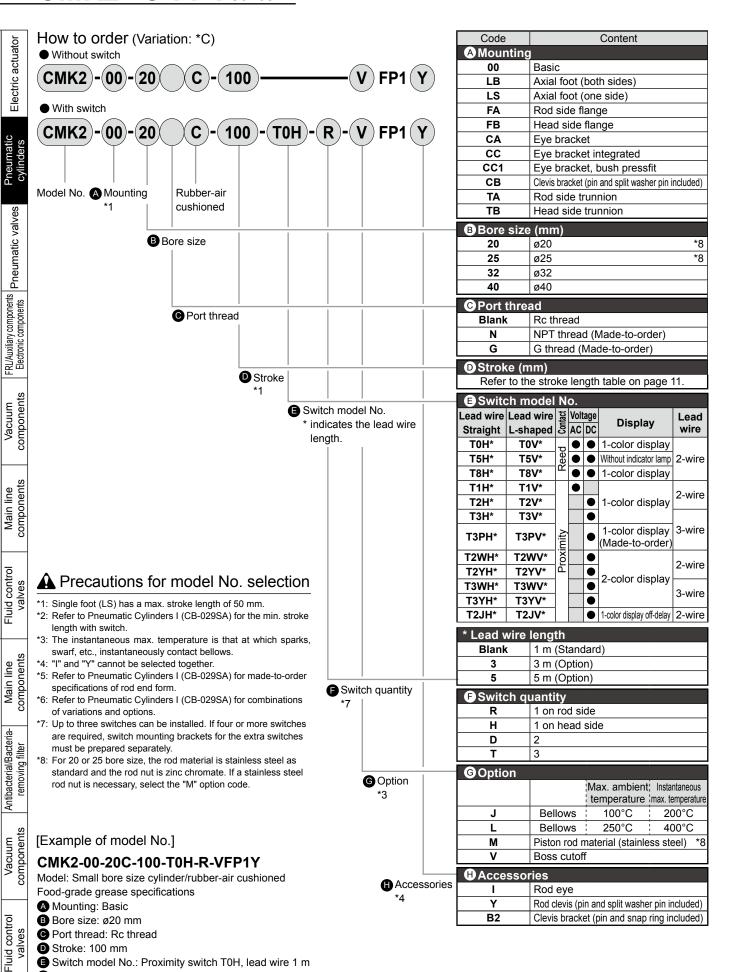
Switch model No.: T0H reed switch, 1 m lead wire

G Switch quantity: 1 on rod side

(H) Option: Boss cutoff Accessory: Rod clevis Fluid control

Fluid control

Antibacterial/Bacteria-



G Option: Boss cutoffH Accessory: Rod clevis

Switch quantity: 1 on rod side

Electric actuator Without switch -(100)-(25) -(M) FP1 (I) CMK2 -(P)-(00) -(32 With switch (100)-(25)-(T0H)-(D)-(M) FP1 (I) CMK2 32 Accessories *5 Content Code **A** Variation **A** Variation P Double acting/stroke adjustable (push) R Double acting/stroke adjustable (pull) Pneumatic valves **B** Mounting **B** Mounting 00 Basic LB Axial foot (both sides) LS Axial foot (one side) FΑ Rod side flange FB Head side flange FRL/Auxiliary components Electronic components TΑ Rod side trunnion TB Head side trunnion Bore size (mm) **©** Bore size *8 20 ø20 *8 ø25 25 32 ø32 components 40 ø40 D Port thread Port thread Blank Rc thread NN NPT thread (Made-to-order) GN G thread (Made-to-order) Stroke (mm) Main line components Stroke Refer to the stroke length table on page 11. Adjustable stroke range (mm) Precautions for model No. selection • Adjustable stroke range 25 25 1: Single foot (LS) has a max. stroke length of 50 50 50 mm G Switch model No. *2: Refer to Pneumatic Cylinders I (CB-029SA) for the G Switch model No. min. stroke length with switch. Refer to the switch model numbers on page 16. *3: The instantaneous max. temperature is that at **H** Switch quantity which sparks, swarf, etc., instantaneously contact Switch quantity 1 on rod side bellows *7 *4: "I" and "Y" cannot be selected together. Н 1 on head side *5: Refer to Pneumatic Cylinders I (CB-029SA) for D 2 made-to-order specifications of rod end form. Т 3 *6: Refer to Pneumatic Cylinders I (CB-029SA) for components Option combinations of variations and options. Option *7: Up to three switches can be installed. If four or more Max. ambient ; Instantaneous switches are required, switch mounting brackets for *3 temperature max. temperature the extra switches must be prepared separately. Bellows 100°C 200°C J *8: For 20 or 25 bore size, the rod material is stainless L Bellows 250°C 400°C steel as standard and the rod nut is zinc chromate. M If a stainless steel rod nut is necessary, select the Piston rod material (stainless steel) *8 "M" option code. J Accessories Rod eye ≣ter Rod clevis (pin and split washer pin included) B2 Clevis bracket (pin and snap ring included) [Example of model No.] Vacuum components CMK2-P-00-32-100-25-T0H-D-MFP1I Model: Small bore cylinder Food-grade grease specifications A Variation: Double acting/stroke adjustable (push)

B Mounting: Basic C Bore size: ø32 mm Port thread: Rc thread

Stroke: 100 mm

Adjustable stroke range : 25 mm

How to order (Variation: P, R)

G Switch model No.: Reed T0H switch, lead wire 1 m

H Switch quantity: 2 pcs. included

Option: Piston rod material (stainless steel)

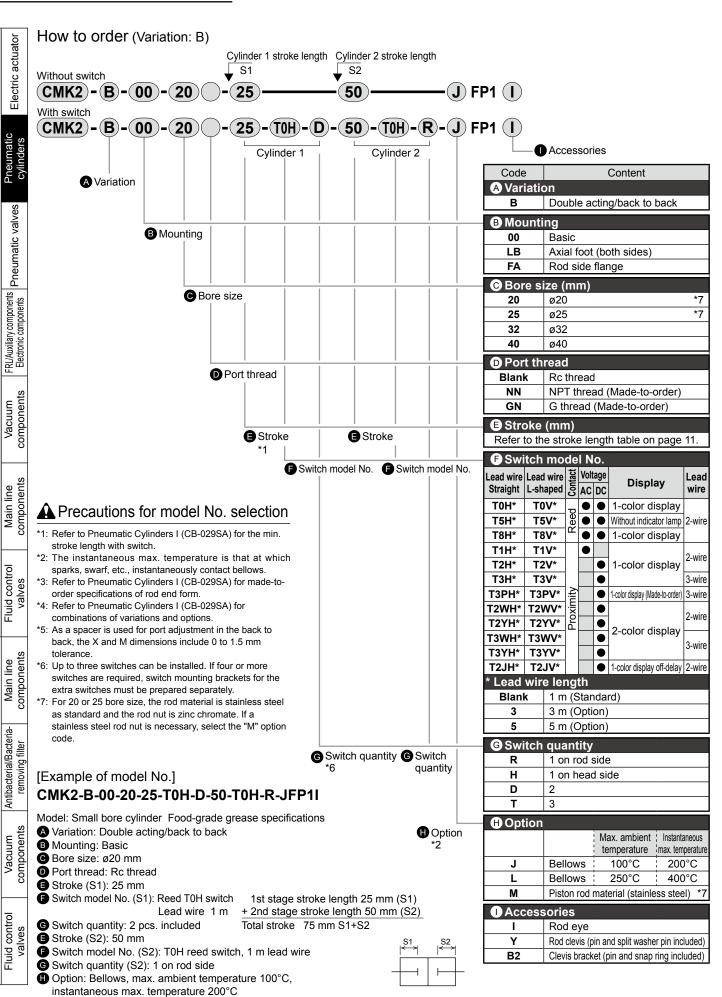
Accessory: Rod eye

Fluid control

/acuum

Fluid control

Antibacterial/Bacteria-



Electric actuator

Pneumatic valves | FRL/Auxiliary components | Electronic components

Switch model No.

● Variation: blank, S, SR, C, D, M, Z

Switch model N	lo.					
Lead wire	Lead wire	Contact	Volt	age	Display	Lead wire
Straight	L-shaped	Son	AC	DC	Display	Leau wire
T0H*	T0V*		•	•	1-color display	
T5H*	T5V*	Reed	•	•	Without indicator lamp	2-wire
T8H*	T8V*		•	•	1-color display	
T1H*	T1V*		•			2-wire
T2H*	T2V*			•	1-color display	2-WIIE
T3H*	T3V*			•		3-wire
Т3РН*	T3PV*			•	1-color display (Made-to-order)	3-wire
T2WH*	T2WV*	Proximity		•		2-wire
T2YH*	T2YV*			•	2-color display	
T3WH*	T3WV*			•	z-color display	3-wire
T3YH*	T3YV*			•		3-WIIE
T2JH*	T2JV*			•	1-color display off-delay	2-wire
* Lead wire len	gth					
Blank	1 m (Standard)					
3	3 m (Option)					
5	5 m (Option)					

Variation: G2, G3

Switch model No.								
Lead wire	Lead wire	Contact	Volt	age	Display	Lead wire		
Straight	L-shaped		AC	DC	ызріау	Leau wire		
T2YLH*	T2YLV*	Proximity		•	2 color diaplay	2-wire		
T3YLH*	T3YLV*	Prox		•	2-color display	3-wire		
* Lead wire leng	jth							
Blank	1 m (Standard)							
3	3 m (Option)							
5	5 m (Option)							

How to order a mounting bracket

Bore size (mm) Mounting bracket	ø20	ø 2 5	ø32	ø40
Basic (00) *3	M1-00-20	M1-00-30	M1-00-30	M1-00-30
Axial foot (LB/LS)	M1-LB-20	M1-LB-30	M1-LB-30	M1-LB-30
Flange (FA/FB)	M1-FA-20	M1-FA-30	M1-FA-30	M1-FA-30
Trunnion (TA/TB)	M1-TA-20	M1-TA-30	M1-TA-30	M1-TA-40
Eye bracket (CA)	M1-CA-20	M1-CA-30	M1-CA-30	M1-CA-30
Clevis bracket (CB)	M1-CB-20	M1-CB-30	M1-CB-30	M1-CB-30

^{*1:} As for mounting brackets, mounting nuts and toothed washers are supplied with the axial foot and flange. The trunnion includes mounting nuts.

^{*2:} For axial foot types (both sides), 2 sets of the "M1-LB-*1" above are required.

^{*3:} Mounting nut, toothed washer only. As the basic (00) of the product is supplied with one set of it, please use it when needed for an addition.

Pneumatic valves

components

Fluid control valves



Small bore size cylinder CMK2 Series Catalog No. CC-1298A

Double-acting small bore size cylinder/All stainless steel appearance/Waterproof

CMK2-JG2/JG3-FP1 Series

■ Bore size: ø20, ø25, ø32, ø40

JIS symbol







Specifications

Descriptions			CMK2-JG2/JG3						
Bore size	mm	ø20	ø25	ø32	ø40				
Actuation			Double acting/waterproof						
Working fluid			Compressed air						
Max. working pres	sure MPa		1.0						
Min. working pres	sure MPa		0.15						
Proof pressure	MPa		1.6						
Ambient tempe	rature °C		-10 to 60 (no freezing)						
Port size			Ro	: 1/8					
Stroke tolerance	e mm		^{+2.0} ₀ (0 to 200) ^{+2.4} ₀ ((More than 200)					
Working piston sp	eed mm/s		50 to 500						
Cushion			Rubber cushion						
Lubrication			Not required						
Allowable absorbed	energy J	0.166 0.308 0.424 0.6							

Stroke

Bore size (mm)	Standard stroke (mm)	Max. stroke (mm)	Min. stroke (mm)	With switch Min. stroke (mm)
ø20, ø25, ø32, ø40	25, 50, 75, 100, 150, 200, 250, 300	750	5	25

^{*1:} Made-to-order stroke length is available in 1 mm increments.

^{*2:} Single foot (LS) has a max. stroke length of 50 mm.

CMK2-JG2/JG3 Series

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Pneumatic valves FRL/Auxiliary components Electronic components

Main line components

Switch specifications

Type/model No.	Proximity switch specifications					
Descriptions	T2YLH/T2YLV	T3YLH/T3YLV				
Applications	Dedicated for programmable controller	Programmable controller, relay				
Output method	-	NPN Output				
Power supply voltage	-	10 to 28 VDC				
Load voltage/current	10 to 30 VDC, 5 to 20 mA *1	30 VDC or less, 50 mA or less				
Indicator lamp	Red/green LED	(Lit when ON)				
Leakage current	1 mA or less	10 μA or less				
Shock resistance	980 m/S ²					
Weight g	1 m: 33 3 m: 87 5 m: 142					

^{*1:} Max. load current of 20 mA as above is applied at 25°C.

Cylinder weight

(Unit: kg)

Description/	Pro	duct weight v	vhen stroke l	ength (S) = 0	mm	Switch	Switch rail	Per S = 10 mm
Bore size (mm)	Basic (00)	Axial foot (LB)	Axial foot (LS)	Flange (FA, FB)	Eye bracket (CC)	weight (per 1 pc)		Additional weight per
ø20	0.31	0.57	0.44	0.46	0.37	Refer to the weight	0.005	0.01
ø25	0.32	0.58	0.45	0.47	0.39	in the switch	0.005	0.01
ø32	0.43	0.69	0.56	0.58	0.55		0.009	0.02
ø40	0.65	0.91	0.78	0.80	0.90	specifications.	0.009	0.02

(Example) Product weight of CMK2-JG2-FA-32-50-T2YL-D	Product weight when S = 0 mm
CIVINZ-JG2-FA-32-30-121L-D	Additional weight when S = 50 mm Additional weight when S = 10 mm $0.02 \times \frac{\text{Product stroke length (50)}}{10} = 0.10 \text{ kg}$
	Weight of 2 switches 0.062 kg
	Weight of switch rail + 2 bands 0.018 kg
	Product weight 0.56 kg + 0.1 kg + 0.062 kg + 0.018 kg = 0.74 kg

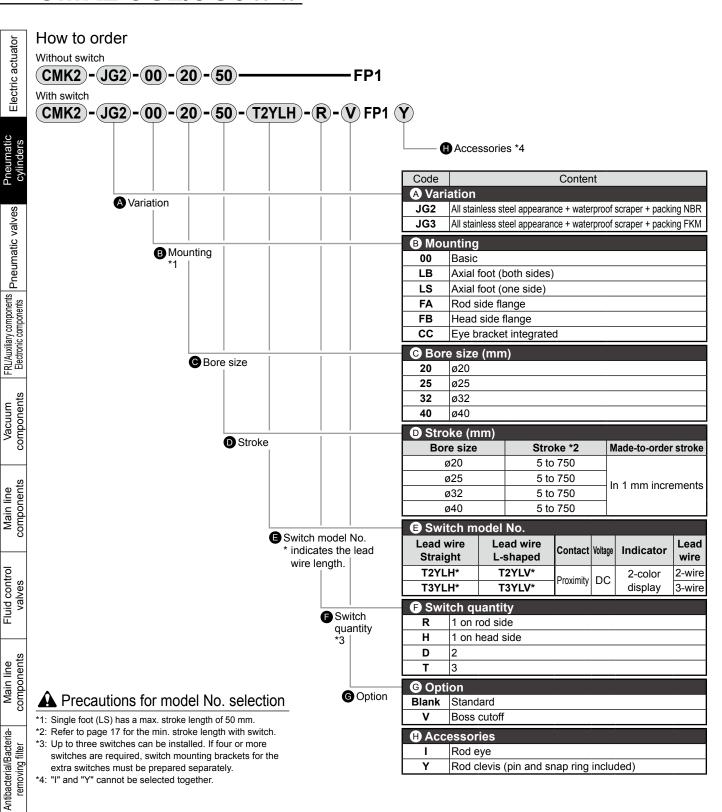
Theoretical thrust table

(Unit: N)

Bore size	Operating	Working pressure MPa									
(mm)	direction	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
ø20	Push	47.1	62.8	94.2	1.26 × 10 ²	1.57 × 10 ²	1.88 × 10 ²	2.20 × 10 ²	2.51 × 10 ²	2.83 × 10 ²	3.14×10^{2}
020	Pull	35.3	47.1	70.7	94.2	1.18 × 10 ²	1.41 × 10 ²	1.65 × 10 ²	1.88 × 10 ²	2.12 × 10 ²	2.36×10^{2}
ø25	Push	73.6	98.2	1.47 × 10 ²	1.96 × 10 ²	2.45×10^{2}	2.95 × 10 ²	3.44×10^{2}	3.93 × 10 ²	4.42 × 10 ²	4.91×10^{2}
Ø25 F	Pull	56.7	75.6	1.13 × 10 ²	1.51 × 10 ²	1.89 × 10 ²	2.27 × 10 ²	2.64×10^{2}	3.02×10^{2}	3.40×10^{2}	3.78×10^{2}
ø32	Push	1.21 × 10 ²	1.61 × 10 ²	2.41 × 10 ²	3.22×10^{2}	4.02×10^{2}	4.83 × 10 ²	5.63×10^{2}	6.43 × 10 ²	7.24×10^{2}	8.04×10^{2}
Ø32	Pull	1.04 × 10 ²	1.38 × 10 ²	2.07×10^{2}	2.76 × 10 ²	3.46×10^{2}	4.15 × 10 ²	4.84×10^{2}	5.53 × 10 ²	6.22 × 10 ²	6.91×10^{2}
a40	Push	1.88 × 10 ²	2.51×10^{2}	3.77×10^{2}	5.03 × 10 ²	6.28×10^{2}	7.54 × 10 ²	8.80×10^{2}	1.01 × 10 ³	1.13×10^3	1.26×10^3
ø40	Pull	1.65 × 10 ²	2.21 × 10 ²	3.31×10^{2}	4.41 × 10 ²	5.51 × 10 ²	6.62 × 10 ²	7.72×10^{2}	8.82 × 10 ²	9.92 × 10 ²	1.10×10^3

The current is lower than 20 mA if the operating ambient temperature around the switch is higher than 25°C. (5 to 10 mA at 60°C)

CMK2-JG2/JG3 Series



[Example of model No.]

CMK2-JG2-00-32-50-T2YLH-D-VFP1Y

Model: Small bore cylinder Food-grade grease specifications

A Variation: All stainless steel appearance + waterproof scraper + packing NBR

B Mounting: Basic

C Bore size: ø32

D Stroke: 50 mm

Switch model No.: Proximity T2YLH switch, lead wire 1 m

F Switch quantity: 2 pcs. included

G Option: Boss cutoff

H Accessory: Rod clevis

Fluid control

Electric actuator Pneumatic valves FRL/Auxiliary components Electronic components FP1 Vacuum components Main line components Fluid control valves Main line components Antibacterial/Bacteria-removing filter Vacuum components Fluid control valves

Pneumatic valves

components Vacuum

Main line components



Round shaped cylinder

SCM-FP1 Series

■ Bore size: ø20, ø25, ø32, ø40 ø50, ø63, ø80, ø100





Specifications

10								
				sc	М			
mm	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
				Double	acting			
				Compre	ssed air			
sure MPa				1.	.0			
sure MPa		0	.1			0.	05	
MPa				1.	.6			
ure °C				-10 to 60 (r	no freezing)		
Vith rubber cushion	Rc1/8				Rc	1/4	Rc3/8	Rc1/2
Nith air cushion	N	M5 Ro		1/8	Rc1/4		Rc3/8	Rc1/2
With rubber cushion	+1.4 0 (to 1000) +1.4 0			+1.4 0 (to 1500)	+2.3 (to 1000), +2.7 (to 1500)			1500)
With air cushion	+1.4 0 (to 1000)		00)	+1.4 0 (to 1500)	+1.4 0 (to 1000), +1.8 0 (to 150			1500)
eed mm/s	30 to 1000 (Use this cushion within allowable energy absorption.)							
	Either rubber cushion or air cushion can be selected.							
length mm	8.1	8.1	8.6	8.6	13.4	13.4	15.4	15.4
Lubrication		Not required						
Vith rubber cushion	0.1	0.2	0.5	0.9	1.6	1.6	3.3	5.8
With air cushion	0.8	1.2	2.5	3.7	8.0	14.4	25.4	45.6
Without cushion	-	-	-	-	0.057	0.057	0.112	0.153
	mm Soure MPa Soure MPa MPa Ure °C With rubber cushion With air cushion With rubber cushion With rubber cushion	mm ø20 sure MPa sure MPa MPa ure °C Vith rubber cushion Vith air cushion Vith air cushion O With air cushion O O O O O O O O O O O O O O O O O O O	mm ø20 ø25 sure MPa sure MPa MPa ure °C With rubber cushion M5 With air cushion 0 With air cushion 0 With air cushion 0 With air sushion 0 With air sushion 0 With air sushion 0 With air sushion 0 Eithe length mm 8.1 8.1	Material Material	Marco	Mathematics Mathematics	Mathematics Mathematics	Mathematics Mathematics

- *1: The specifications on the left are for double acting/single rod. Each item differs depending on variation. For details, refer to Pneumatic Cylinders I (CB-029SA).
- *2: The values of allowable absorbed energy for "No cushion" are the allowable absorbed energy on the non-specified side when an air Head side, "H" \rightarrow Rod side).
- *3: Without a cushion, this product cannot absorb large energy generated by an external load. We recommend using an external shock absorber.

Stroke

Variation: blank, R

Bore size (mm)	Standard stroke (mm)	Max. stroke (mm)	Min. stroke (mm)
ø20			
ø25		1000	
ø32			
ø40	25, 50, 75, 100, 125, 150,		10
ø50	200, 250, 300		10
ø63		1500	
ø80			
ø100			

*1: Made-to-order stroke length is available in 1 mm increments.

Variation: X, Y

Bore size (mm)	Standard stroke (mm)	Max. stroke (mm)	Min. stroke (mm)
ø20	25, 50, 75		
ø25	100. 125	200	E
ø32	,	200	5
ø40	150, 200		

*1: Made-to-order stroke length is available in 1 mm increments.

Variation: P, D, W, W4, M

Bore size (mm)	Standard stroke (mm)	Max. stroke (mm)	Min. stroke (mm)
ø20			
ø25	25, 50, 75		
ø32	100, 125, 150	600	10
ø40	l ' '	000	10
ø50	200, 250, 300		
ø63			

- *1: Made-to-order stroke length is available in 1 mm increments.
- *2: Stroke length of more than 600 mm will be made-to-order order. Contact CKD for details.

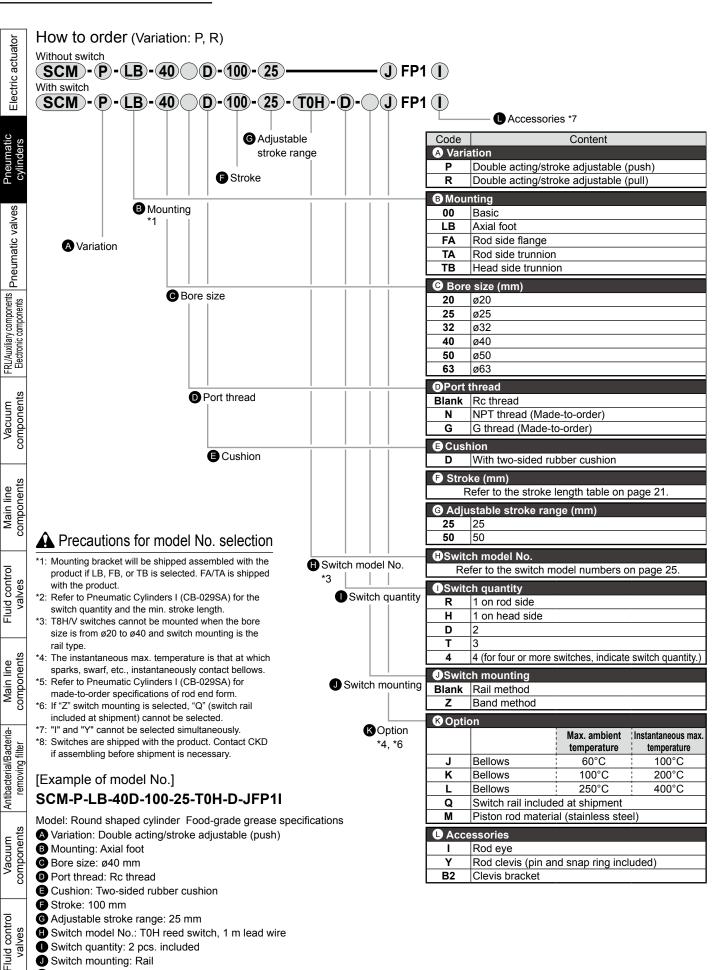
Variation: B

Bore size (mm)	Standard stroke (mm)	Max. stroke (mm)	Min. stroke (mm)		
ø20					
ø25	25, 50, 75	500	10		
ø32	100, 125, 150				
ø40	, ,		10		
ø50	200, 250, 300	750			
ø63					

^{*1:} Made-to-order stroke length is available in 1 mm increments.

How to order

How to order (Variation: blank, X, Y, D, W4, M)	Code	Content	ш	
Without switch	A Variat	ion Bore size 20 25 32 40 50 63 80 100	Electric actuator	
SCM)-(M)-(LB)-(40) (B)-(100)———(J) FP1 (I)	Blank	Double acting/single rod ● ● ● ● ● ● ●	ic	
With switch	X	Single acting/push Single acting/pull	tua	
SCM-M-(LB)-(40) (B)-(100)-(T2H)-(D)-(J) FP1 (I)	D	Double acting/double rod Double acting/double	ğ	
	W4	Double acting/tandem ● ● ● ● ●		
	M	Double acting/rotation-stop ● ● ● ● ●	cyl	
B Mounting	B Mount	Bore size 20 25 32 40 50 63 80 100	Pneumatic cylinders	
*1, *2	00	Basic	atic ers	
_	LB FA	Axial foot • • • • • • • • Rod side flange • • • • • • • • •		ı
A Variation	FB	Head side flange	Pneumatic valves	
*1	CA	Eye bracket	l m	
	CB TA	Clevis bracket (pin and snap ring included) Rod side trunnion	atic	
	TB	Head side trunnion	\ <u>a</u>	
		size (mm)		
©Bore size	20 25	ø20 ø25	FRL/Auxiliary components Electronic components	!
	32	ø32	ctroni	۱.,
	40	ø40	ary co	Ū
	50 63	ø50 ø63	npone	_
	80	Ø80	nts nents	
	100	ø100		1
DPort thread	●Port th		Vacuum components	:
of thead	Blank N	Rc thread NPT thread (Made-to-order) With air cushion: ø32 and over	Vacuum mponer	
	G	G thread (Made-to-order) With air cushion: ø32 and over	lent Im	
	Cushi		S	
E Cushion *4	В	With two-sided air cushion Rod side air cushioned		1
·	R H	Head side air cushioned	l S ≤	:
G Switch model No.	D	With two-sided rubber cushion	lpo por	-
*5	Stroke		Main line components	
		Refer to the stroke length table on page 21.	S	
A Precautions for model No. selection		n model No. Refer to the switch model numbers on page 25.		
*1: Mounting bracket will be shipped with the product.		n quantity	Fluid contro valves	!
*2: If the product is supplied with bellows and the mounting bracket is LB or FA, it will be shipped assembled with	R	1 on rod side	valves	
the product.	H	1 on head side)s ntro	-
*3: Refer to Pneumatic Cylinders I (CB-029SA) for the switch quantity and the min. stroke length.	T	3	=	
*4: For the variation X or Y, models with an air cushion	4	4 (for four or more switches, indicate switch quantity.)		
cannot be selected. *5: T8H/V switches cannot be mounted when the bore size Switch mounting		n mounting	Main line components	:
is from \$20 to \$40 and switch mounting is the rail type.	Blank Z	Rail method Band method	Main line omponen	-
*6: The instantaneous max. temperature is that at which sparks, swarf, etc., instantaneously contact bellows.	J Option		lent	
*7: Refer to Pneumatic Cylinders I (CB-029SA) for made-to-		Max. ambient temperature Instantaneous max. temperature	0,	
order specifications of rod end form. *8: If "Z" switch mounting is selected, "Q" (switch rail *6	J K	Bellows 60°C 100°C Bellows 100°C 200°C	Ant	-
included at shipment) cannot be selected. *9: "I" and "Y" cannot be selected simultaneously.	L	Bellows 250°C 400°C	remo	
*10:Switches are shipped with the product. Contact CKD if	Q	Switch rail included at shipment	erial	-
assembling before shipment is necessary.	M	Piston rod material stainless steel	Bact filte	<u>'</u>
[Example of model No.] & Accessories	® Acces	ssories Bore size 20 25 32 40 50 63 80 100	Antibacterial/Bacteria- removing filter	·
SCM-M-LB-40B-100-T2H-D-JFP1I *9	I	Rod eye ● ● ● ● ● ●		P 2
Model: Round shaped cylinder Food-grade grease specifications	Y B1	Rod clevis (pin and snap ring included)	Vacuum components	:
Variation: Double acting/rotation-stop	B2	Eye bracket Clevis bracket • • • • • •	Vacuum omponen	
Mounting: Axial foot			lent m	
Bore size: ø40 mm Bort through Do through			S	
Port thread: Rc thread Cushion: Two-sided air cushion				1
Stroke: 100 mm			Fu.	!
Switch model No.: Proximity T2H switch, lead wire 1 m			valves	1
Switch quantity: 2 pcs. included Switch mounting: Rail			Fluid control valves	
Option: Bellows, max. ambient temperature 60°C, instantaneous max.			º	-
temperature 100°C				
Accessory: Rod eye				
		CVD		



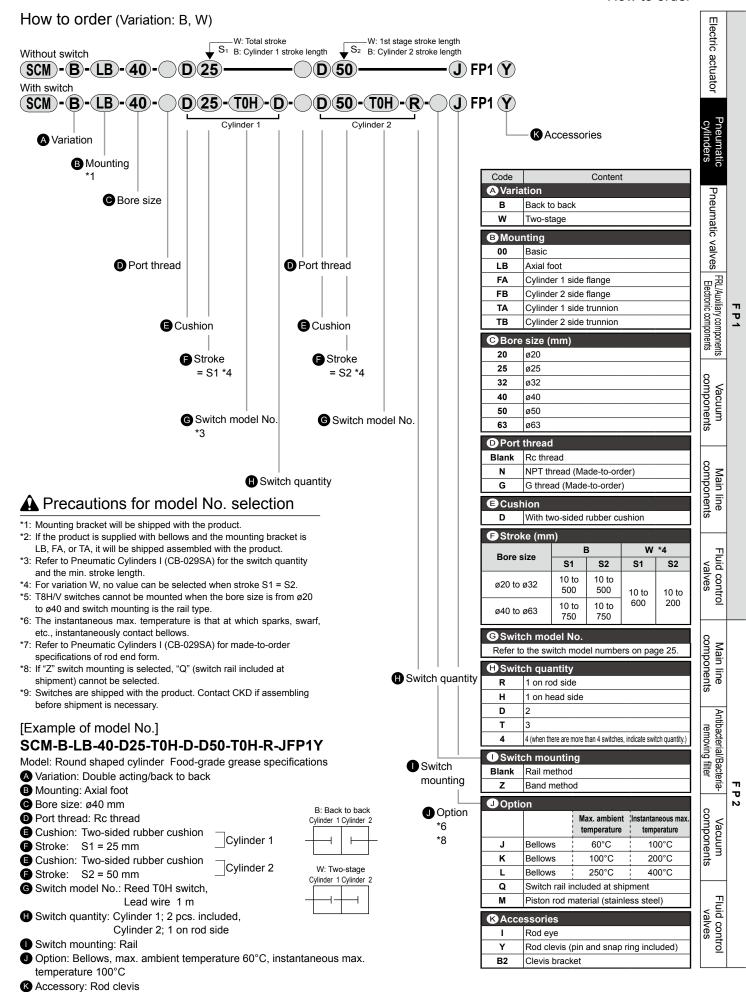
temperature 100°C Accessory: Rod eye

Switch quantity: 2 pcs. included Switch mounting: Rail

H Switch model No.: T0H reed switch, 1 m lead wire

Option: Bellows, max. ambient temperature 60°C, instantaneous max.

How to order



Electric actuator

FRL/Auxiliary components | Pneumatic valves

Vacuum components

Main line components Fluid control valves

Main line components Antibacterial/Bacteriaremoving filter

Vacuum components Fluid control valves

Switch model No.

Switch model No.							
Lead wire	Lead wire	Contact	Voltage		Diamlau	Lead wire	
Straight	L-shaped	ြပ္ပ	AC	DC	Display	Lead wire	
T0H*	T0V*	-	•	•	1-color display		
T5H*	T5V*	Reed	•	•	Without indicator lamp	2-wire	
T8H*	T8V*	1 "	•	•	1-color display		
T1H*	T1V*		•			2-wire	
T2H*	T2V*			•	1-color display		
T3H*	T3V*			•		3-wire	
T3PH*	T3PV*			•	1-color display (Made-to-order)		
T2WH*	T2WV*] jį		•		2-wire	
T2YH*	T2YV*	Proximity		•	2-color display		
T3WH*	T3WV*	Pre		•	2-color display	3-wire	
T3YH*	T3YV*			•			
T2YD*	-			•	2-color display	2-wire	
T2YDT*	-			•	AC magnetic field		
T2JH*	T2JV*			•	1-color display off-delay	2-wire	
* Lead wire lengt	h						
Blank	1 m (Standard)						
3	3 m (Option)						
5	5 m (Option)						

How to order a mounting bracket

Bore size (mm) Mounting bracket	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Foot (LB)	SCM-LB-20	SCM-LB-25	SCM-LB-32	SCM-LB-40	SCM-LB-50	SCM-LB-63	SCM-LB-80	SCM-LB-100
Flange (FA/FB)	SCM-FA-20	SCM-FA-25	SCM-FA-32	SCM-FA-40	SCM-FA-50	SCM-FA-63	SCM-FA-80	SCM-FA-100
Eye bracket (CA)	SCM-CA-20	SCM-CA-25	SCM-CA-32	SCM-CA-40	SCM-CA-50	SCM-CA-63	-	-
Clevis bracket (CB)	-	-	-	-	-	-	SCM-CB-80-FP1	SCM-CB-100-FP1
Trunnion (TA/TB)	SCM-TA-20-FP1	SCM-TA-25-FP1	SCM-TA-32-FP1	SCM-TA-40-FP1	SCM-TA-50-FP1	SCM-TA-63-FP1	-	-

^{*1:} All mounting brackets are supplied with mounting bolts.
*2: Foot mounting bracket is provided as 2 pcs./set.

Electric actuator Pneumatic valves FRL/Auxiliary components Electronic components FP1 Vacuum components Main line components Fluid control valves Main line components Antibacterial/Bacteria-removing filter Vacuum components Fluid control valves

Pneumatic valves

removing filter





Tie rod cylinder

SCG-FP1 Series

■ Bore size: ø32, ø40, ø50, ø63, ø80, ø100





oifications

Specification	ons						
Descriptions		SCG					
Bore size	mm	ø32	ø40	ø50	ø63	ø80	ø100
Actuation				Double	e acting		
Working fluid				Compre	essed air		
Max. working pr	essure MPa			1	.0		
Min. working pre	essure MPa			0.	05		
Proof pressure	MPa		1.6				
Ambient temper	ature °C			-10 to 60 (no freezing)		
Port size		Rc1/8	Ro	1/4	Rc3/8 Rc1/2		
Stroke	With rubber cushion			^{+1.4} ₀ (to 1000), ^{+1.8} ₀	(1001 to 1500)		
tolerance mm	With air cushion		^{+1.0} ₀ (to	360), +1.4 (361 to 10	000), ^{+1.8} (1001 to 15	500)	
Working piston :	speed mm/s		30 to 1000	(Operate within th	e allowable absorb	ed energy.)	
Cushion			Either a	air cushion or rubb	er cushion can be	selected	
Effective air cushi	on length mm	8.6	8.6	13.4	13.4	15.4	15.4
Lubrication		Not required					
Allowable	With rubber cushion	0.5	0.9	1.6	1.6	3.3	5.8
absorbed energy J	With air cushion	2.5	3.7	8.0	14.4	25.4	45.6

^{*1:} The specifications above are for double acting/single rod.

Each item differs depending on variation. For details, refer to Pneumatic Cylinders I (CB-029SA).

Stroke

◆ Variation: blank, G, G2, G3

Bore size (mm)	Standard stroke (mm)	Max. stroke (mm)	Available stroke (mm)	Min. stroke (mm)
ø32			700	
ø40	25, 50, 75, 100, 150, 200, 250, 300, 350, 400, 450, 500	600	800	
ø50			1200	4
ø63			1200	ı
ø80		700	1400	
ø100		800	1500	

- *1: Made-to-order stroke length is available in 1 mm increments.
- *2: If the max. stroke length is exceeded, product specifications may not be met, depending on operating conditions. Contact CKD in this case.
- *3: For the type with bellows, the available stroke length is 500 mm for ø32 to ø40 bore size, 600 mm for ø50 to ø63, and 800 mm for ø80 to ø100.
- *4: Variation G2 and G3 with bore size ø32 are not available.

Variation: M

Bore size (mm)	Standard stroke (mm)	Max. stroke (mm)	Min. stroke (mm)
ø32	25, 50, 75, 100,		
ø40	150, 200, 250,	600	4
ø50	300, 350, 400,	600	'
ø63	450, 500		

- *1: Made-to-order stroke length is available in 1 mm increments.
- *2: If the max. stroke length is exceeded, product specifications may not be met, depending on operating conditions. Contact CKD in this case.

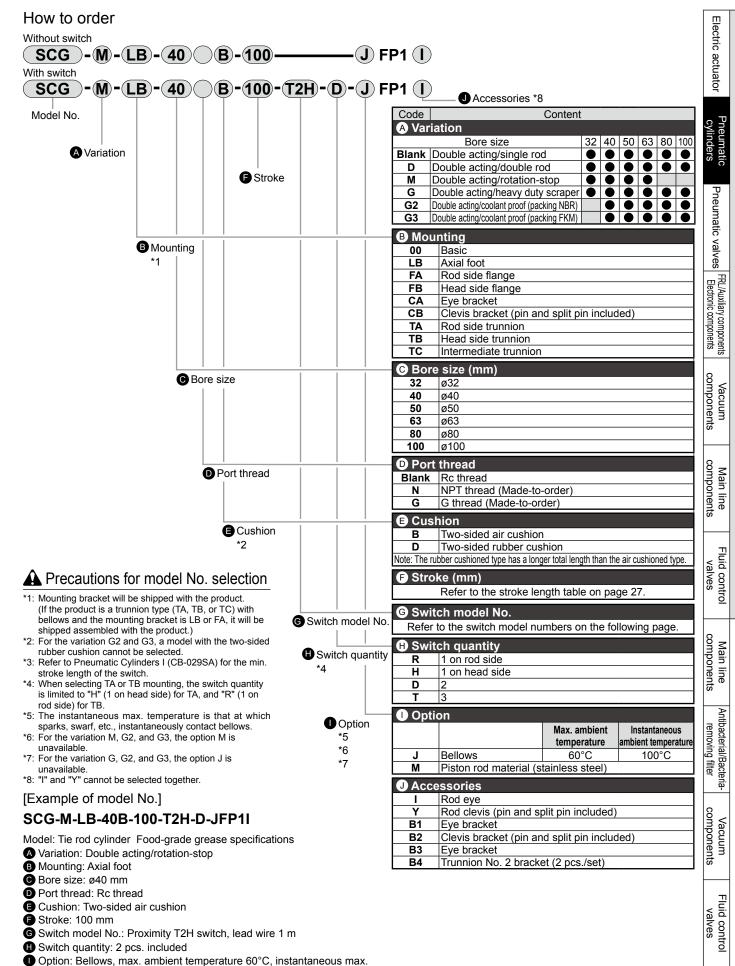
Variation: D

Bore size (mm)	Standard stroke (mm)	Max. stroke (mm)	Min. stroke (mm)
ø32			
ø40	25, 50, 75, 100,	600	
ø50	150, 200, 250,	000	1
ø63	300, 350, 400,		
ø80	450, 500	700	
ø100		800	

- *1: Made-to-order stroke length is available in 1 mm increments.
- *2: If the max. stroke length is exceeded, product specifications may not be met, depending on operating conditions. Contact CKD in this case.
- *3: As for the type with bellows, the available stroke length is 500 mm for ø32 to ø40 bore size, 600 mm for ø50 to ø63, and 800 mm for ø80 to ø100.

SCG-FP1 Series

How to order



temperature 100°C

Accessory: Rod eye

SCG-FP1 Series

Electric actuator

Pneumatic valves FRL/Auxiliary components
Electronic components

Vacuum components

Main line components Fluid control valves

Main line components Antibacterial/Bacteria-removing filter

components

Fluid control valves

Switch model No.

● Variation: blank, D, M, G

Switch model N	lo.					
Lead wire	Lead wire	Contact	Volt	age	Dioplay	Lead wire
Straight	L-shaped	Con	AC	DC	Display	Leau wire
T0H*	T0V*		•	•	1-color display	
T5H*	T5V*	Reed	•	•	Without indicator lamp	2-wire
T8H*	T8V*	L L	•	•	1-color display	
T1H*	T1V*		•			2-wire
T2H*	T2V*			•	1-color display	2-WITE
T3H*	T3V*			•		3-wire
T3PH*	T3PV*			•	1-color display (Made-to-order)	
T2WH*	T2WV*	if		•		2-wire
T2YH*	T2YV*	Proximity		•	2-color display	
T3WH*	T3WV*	Pro		•	2-color display	3-wire
T3YH*	T3YV*			•		J-WIIE
T2YD*	-			•	2-color display	2-wire
T2YDT*	-			•	AC magnetic field	Z-WIIG
T2JH*	T2JV*			•	1-color display off-delay	2-wire
* Lead wire len	gth					
Blank	1 m (Standard)					
3	3 m (Option)					
5	5 m (Option)					

● Variation: G2, G3

Switch model No.								
Lead wire	Lead wire	Contact	Volt	age	Display	Lead wire		
Straight	L-shaped	Con	AC	DC	Display	Leau wire		
T2YLH*	T2YLV*	Proximity		•	2 color diaplay	2-wire		
T3YLH*	T3YLV*	Prox		•	2-color display	3-wire		
* Lead wire leng	gth							
Blank	1 m (Standard)							
3	3 m (Option)							
5	5 m (Option)							

How to order a mounting bracket

Bore size (mm) Mounting bracket	ø32	ø40	ø50	ø63	ø80	ø100
Foot (LB)	SCG-LB-32	SCG-LB-40	SCG-LB-50	SCG-LB-63	SCG-LB-80	SCG-LB-100
Flange (FA) (FB) *1	SCG-FA-32	SCG-FA-40	SCG-FA-50	SCG-FA-63	SCG-FA-80	SCG-FA-100
Eye bracket (CA)	SCG-CA-32-FP1	SCG-CA-40-FP1	SCG-CA-50-FP1	SCG-CA-63-FP1	SCG-CA-80-FP1	SCG-CA-100-FP1
Clevis bracket (CB)	SCG-CB-32-FP1	SCG-CB-40-FP1	SCG-CB-50-FP1	SCG-CB-63-FP1	SCG-CB-80-FP1	SCG-CB-100-FP1

^{*1:} Specify the flange (FA) with bellows as "SCG-FA-(bore size)-J".
*2: The foot mounting bracket (LB) is provided as 2 pcs./set.
*3: All mounting brackets are supplied with mounting bolts.

Electric actuator Pneumatic valves FRL/Auxiliary components Electronic components FP1 Vacuum components Main line components Fluid control valves Main line components Antibacterial/Bacteria-removing filter Vacuum components Fluid control valves

Pneumatic valves

components Main line

Antibacterial/Bacteria-

removing filter

Fluid control

SCA2-FP1 Series

Bore size: ø40, ø50, ø63, ø80, ø100





Min. stroke (mm)

1

1600

1900

0---:6:--4:---

Pneumatic Cylinders I Catalog No. CB-029SA

Specificati	ons					
Descriptions	;		SCA2			
Bore size	mm	ø40	ø50	ø63	ø80	ø100
Actuation				Double acting		
Working fluid			C	compressed a	ir	
Max. working pr	ressure MPa			1.0		
Min. working pr	essure MPa			0.05		
Proof pressure	MPa			1.6		
Ambient tempe	rature °C	-10 to 60 (no freezing)				
Port size		Rc1/4 Rc3/8 Rc1/2			1/2	
Stroke tolerand	e mm	^{+0.9} ₀ (to 360) , ^{+1.4} ₀ (to 800)				
Working piston s	speed mm/s	50 to 1000 (Use this cushion within allowable energy absorption.)				
Cushion		Air cushion				
Effective air cushic	on length mm	14.6	16.6	16.6	20.6	23.6
Lubrication		Not required				
Allowable	Cushioned	4.29	8.37	15.8	27.9	49.8
absorbed	Without	0.067	0.079	0.079	0.201	0.301
energy J	cushion	Without a cushion, this product cannot absorb large energy generated by an external load. We recommend using an external shock absorber.				

*1: The specifications above are for double acting/single rod. Each item differs depending on variation. For details, refer to Pneumatic Cylinders I (CB-029SA).

Stroke

Variation: blank, G, G2, G3

Bore size (mm)	Standard stroke (mm)	Max. stroke (mm)	Available stroke (mm)	Min. stroke (mr
ø40	25, 50, 75, 100, 150, 200, 250, 300, 350, 400, 450, 500		1600	
ø50		600	2000	
ø63				1
ø80		700	2500	
ø100	100, 000	800	*3	

- *1: Made-to-order stroke length is available in 1 mm increments.
- *2: If the max. stroke length is exceeded, product specifications may not be met, depending on operating conditions. Refer to Pneumatic Cylinders I (CB-029SA).
- *3: The max. stroke length available for ø63 to ø100 bore size models with bellows is 2000 mm.

Variation: P, R

Bore size (mm)	Standard stroke (mm)	Max. stroke (mm)	Min. stroke (mm)
ø40			
ø50	25, 50, 75, 100,	600	
ø63	150, 200, 250, 300, 350, 400,		25
ø80	450, 500	700	
ø100	1.00, 000	800	

Variation: W

Variation: K

25, 50, 75, 100,

150, 200, 250,

300, 350, 400,

450, 500

Bore size (mm)

ø40

ø50

ø63

ø80

ø100

Bore size (mm)	Standard stroke (mm)	Max. stroke (mm)	Min. stroke (mm)	
ø40				
ø50	25, 50, 75, 100,	600	2	
ø63	150, 200, 250, 300, 350, 400, 450, 500			
ø80		700	(Total stroke)	
ø100	1.00, 000	800		

Standard stroke (mm) | Max. stroke (mm) | Available stroke (mm)

600

700

800

*1: Made-to-order stroke length is available in 1 mm increments. Variation: D

Bore size (mm)	Standard stroke (mm)	Max. stroke (mm)	Available stroke (mm)	Min. stroke (mm)
ø40				
ø50	25, 50, 75, 100,	600		
ø63	150, 200, 250, 300, 350, 400,		800	1
ø80	450, 500	700		
ø100	,	800		

- *1: Made-to-order stroke length is available in 1 mm increments.
- *2: If the max. stroke length is exceeded, product specifications may not be met, depending on operating conditions. Refer to Pneumatic Cylinders I (CB-029SA).

Variation: B

Bore size (mm)	Standard stroke (mm)	Max. stroke (mm)	Min. stroke (mm)
ø40			
ø50	25, 50, 75, 100,	600	1
ø63	150, 200, 250, 300, 350, 400,		(Cylinder 1,
ø80	450, 500	700	and Cylinder 2)
ø100	.00, 000	800	

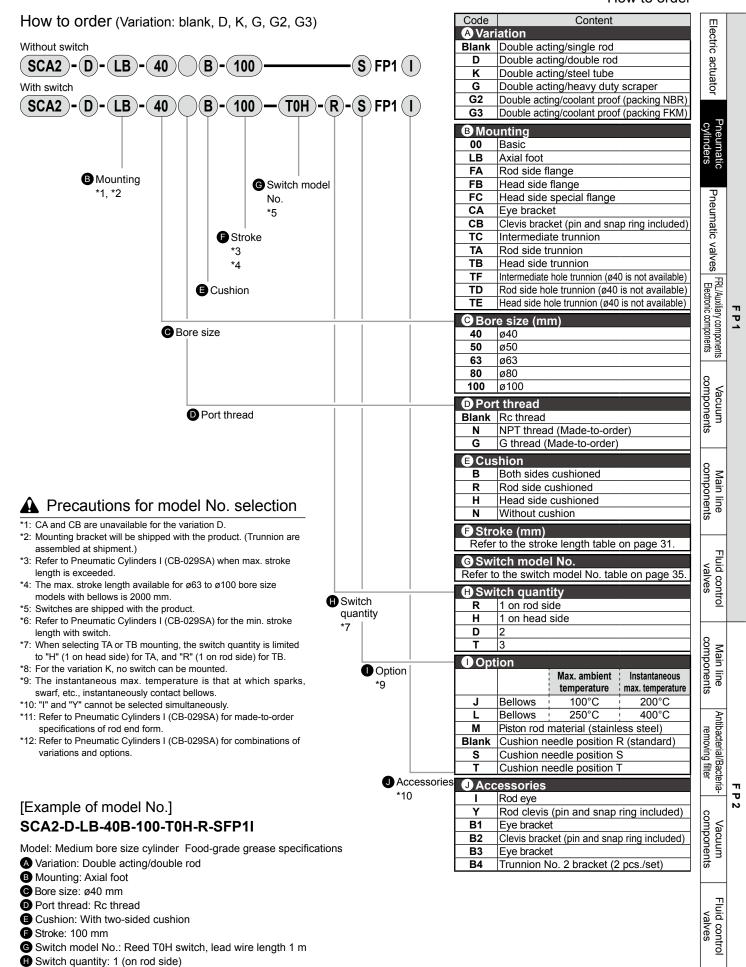
^{*1:} Made-to-order stroke length is available in 1 mm increments.

^{*1:} Made-to-order stroke length is available in 1 mm increments.

^{*1:} Made-to-order stroke length is available in 1 mm increments.

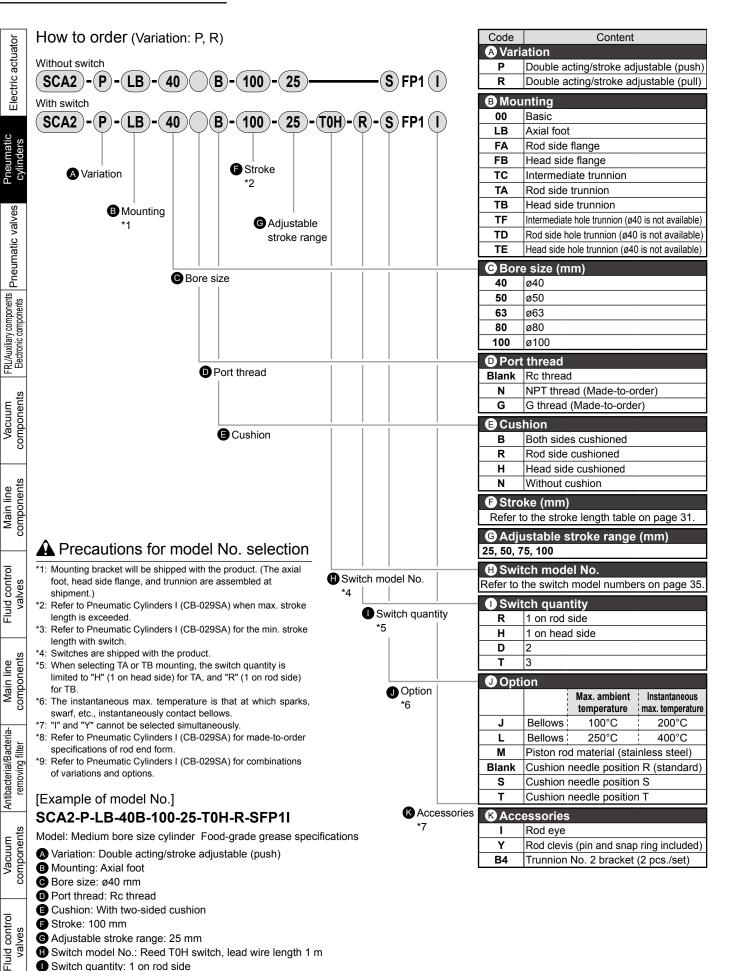
^{*2:} If the max. stroke length is exceeded, product specifications may not be met, depending on operating conditions. Refer to Pneumatic Cylinders I (CB-029SA).

How to order



Option: Cushion needle position S

Accessory: Rod eye



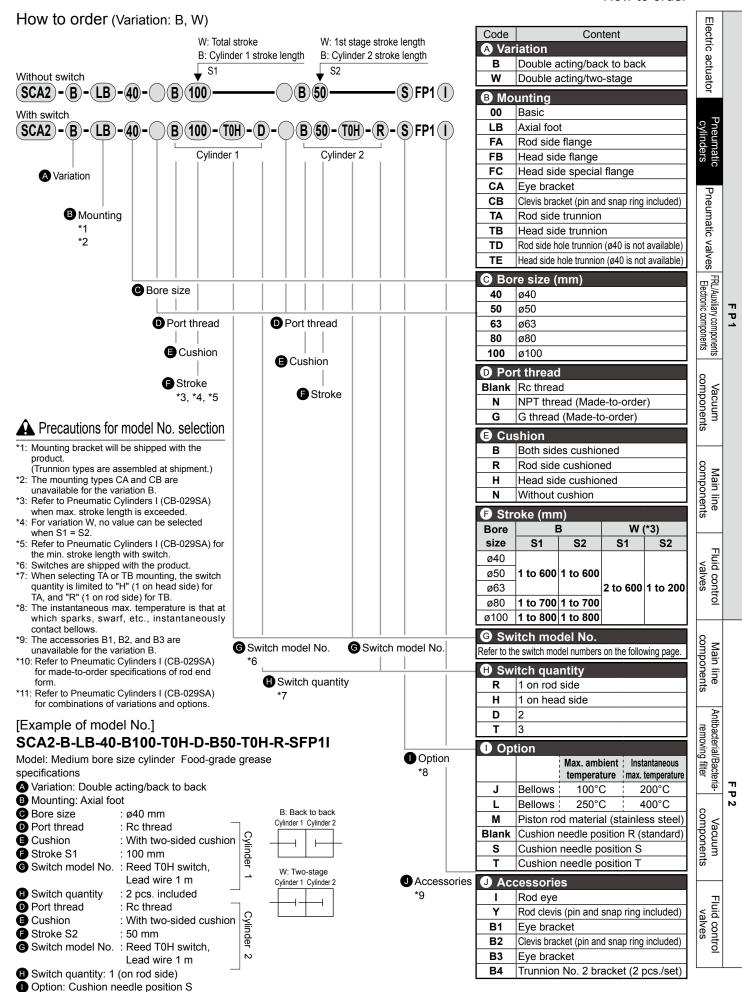
Accessory: Rod eye

G Adjustable stroke range: 25 mm

Switch quantity: 1 on rod side Option: Cushion needle position S

H Switch model No.: Reed T0H switch, lead wire length 1 m

How to order



Accessory: Rod eye

Electric actuator

natic Electric

valves Pneumati

FRU/Auxiliary components Electronic components

Vacuum

Fluid control Main line valves components

Fluid control Vacuum Alvas components

Switch model No.

● Variation: blank, D, G, P, R, B, W

Variation. Diank, D, G, F, K, B, W								
Switch model N	Switch model No.							
Lead wire	Lead wire	tact	Vol	tage	Diomley	Lead wire		
Straight	L-shaped	Contact	AC	DC	Display	Leau wire		
T0H*	T0V*	-	•	•	1-color display			
T5H*	T5V*	Reed	•	•	Without indicator lamp	2-wire		
T8H*	T8V*] "	•	•	1-color display			
T1H*	T1V*		•			2-wire		
T2H*	T2V*			•	1-color display	Z-WII E		
Т3Н*	T3V*			•		3-wire		
T2WH*	T2WV*			•		2-wire		
T2YH*	T2YV*	if		•	2-color display	2-WIIE		
T3WH*	T3WV*	Proximity		•	2-color display	3-wire		
T3YH*	T3YV*	Pro		•				
T3PH*	T3PV*			•	1-color display (Made-to-order)	3-wire		
T2YD*	-			•	2-color display	2-wire		
T2YDT*	-			•	AC magnetic field	2-WIIE		
T2JH*	T2JV*			•	1-color display off-delay	2-wire		
* Lead wire len	gth							
Blank	1 m (Standard)							
3	3 m (Option)							
5	5 m (Option)							

● Variation: G2, G3

Switch model No.								
Lead wire	Lead wire	Contact	Volt	tage	Display	Lead wire		
Straight	L-shaped	S	AC	DC	Display	Leau Wile		
T2YLH*	T2YLV*	Proximity		•	2 color dioplay	2-wire		
T3YLH*	T3YLV*	Prox		•	2-color display	3-wire		
* Lead wire leng	gth							
Blank	1 m (Standard)							
3	3 m (Option)							
5	5 m (Option)							

How to order a mounting bracket

Bore size (mm) Mounting bracket	ø40	ø50	ø63	ø80	ø100
Foot (LB) *2	S1-LB-40	S1-LB-50	S1-LB-63	S1-LB-80	S1-LB-100
Flange (FA/FB)	S1-FA-40	S1-FA-50	S1-FA-63	S1-FA-80	S1-FA-100
Eye bracket (CA)	S1-CA-40-FP1	S1-CA-50-FP1	S1-CA-63-FP1	S1-CA-80-FP1	S1-CA-100-FP1
Clevis bracket (CB)	S1-CB-40-FP1	S1-CB-50-FP1	S1-CB-63-FP1	S1-CB-80-FP1	S1-CB-100-FP1

^{*1:} For materials of the mounting bracket, refer to Pneumatic Cylinders I (CB-029SA).

^{*2:} Foot mounting bracket is provided as 2 pcs./set.

^{*3:} All mounting brackets are supplied with mounting bolts.

^{*4:} The dimensions of the eye bracket (CA) and clevis bracket (CB) are the same as the standard products.

Electric actuator Pneumatic valves FRL/Auxiliary components Electronic components FP1 Vacuum components Main line components Fluid control valves Main line components Antibacterial/Bacteria-removing filter Vacuum components Fluid control valves

components

removing filter

components

Fluid control



Medium bore size cylinder

SCS2-N-FP1 Series

■ Bore size: ø125, ø140, ø160, ø180, ø200, ø250





Specificatio	Specifications							
Descriptions			SCS2- N					
Bore size	mm	ø125	ø140	ø160	ø180	ø200	ø250	
Actuation				Double	acting			
Working fluid				Compre	ssed air			
Max. working pres	sure MPa			1.	.0			
Min. working pres	sure MPa			0.0	05			
Proof pressure	Proof pressure MPa 1.6							
Ambient tempera	ature °C	-5 to 60 (no freezing)						
Port size		Rc1/2	Rc1/2 Rc3/4 Rc1					
Stroke tolerance	mm		^{+1.0} ₀ (to 300	0), ^{+1.4} (to 10	000), ^{+1.8} (to	1200)		
Working piston spe	eed mm/s	20 to 1000 (Operate within the absorbed energy.)						
Cushion				Air cu	shion			
Effective air cushion	length mm	21.6	21.6	21.6	21.6	26.6	26.6	
Lubrication		Not required						
Allowable	Cushioned	63.5	91.5	116	152	233	362	
absorbed	Without	0.371	0.386	0.386	0.958	1.08	2.32	
	cushion					arge energy (kternal shock	•	
		, , , , , , ,						

*1: The specifications on the left are for double acting/single rod. Each item differs depending on variation. For details, refer to Pneumatic Cylinders I (CB-029SA).

Stroke

Variation: blank, G

Bore size (mm)	Standard stroke (mm)	Max. stroke (mm)	Available stroke (mm)	Min. stroke (mm)	Trunnion min. stroke (mm)
ø125	50, 75, 100 150, 200 250, 300				23
ø140		800	2000	1	25
ø160					27
ø180		900			28
ø200		1,000			28
ø250		1,200			28

^{*1:} Made-to-order stroke length is available in 1 mm increments.

Variation: D

Bore size (mm)	Standard stroke (mm)	Max. stroke (mm)	Min. stroke (mm)	Trunnion min. stroke (mm)
ø125	50, 75, 100			23
ø140		800	4	25
ø160				27
ø180	150, 200 250, 300	900	I	28
ø200	230, 300	1,000		28
ø250		1,200		28

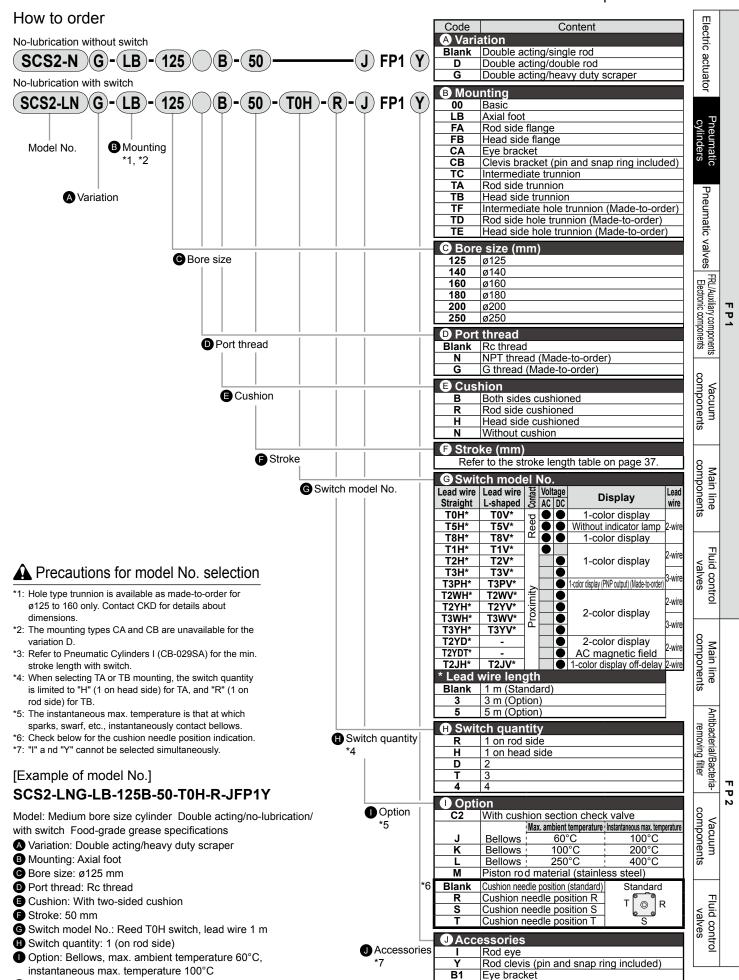
^{*1:} Made-to-order stroke length is available in 1 mm increments.

^{*2:} If the max. stroke length is exceeded, product specifications may not be met, depending on operating conditions. Contact CKD in this case.

^{*2:} If the max. stroke length is exceeded, product specifications may not be met, depending on operating conditions. Contact CKD in this case.

SCS2-N-FP1 Series

Specifications



Accessory: Rod clevis

Clevis bracket (pin and snap ring included)

B2

Pneumatic valves

Antibacterial/Bacteria-

removing filter

Fluid control



SSD2-FP1 Series

Compact cylinder

■ Bore size: ø12, ø16, ø20, ø25, ø32, ø40, ø50, ø63, ø80, ø100





Specifica	ations										
Descr	iptions				SS	D2					
Bore size	mm	ø12	ø16	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Actuation						Double	acting				
Working flui	d					Compre	ssed air				
Max. working	pressure MPa					1	.0				
Min. working	pressure MPa				0.1					0.05	
Proof pressi	ure MPa		1.6								
Ambient ten	nperature °C					-10 to 60 (ı	no freezing)				
Port size			N	15		Rc1	/8 *1	Ro	1/4	Ro	3/8
Stroke tolerance	With rubber cushion					+2	2.0 D				
mm	Without cushion						1.0 O				
Working pisto	n speed mm/s				50 to 500					50 to 300	
Cushion			With or without cushion can be selected								
Lubrication		Not required									
Allowable absorbed	With rubber cushion	0.03	0.05	0.10	0.16	0.16	0.44	0.75	0.78	2.51	3.92
Energy J	Without cushion	0.004	0.01	0.016	0.021	0.025	0.092	0.1	0.12	0.27	0.56

^{*1:} The ø32 bore size with a 5 mm stroke and without a switch has a port size of M5.

Stroke

Variation: blank, L, K, KL

Bore size (mm)	Standard stroke (mm)	Max. stroke (mm)	Min. stroke (mm)
ø12	5, 10, 15, 20	30	
ø16	25, 30	30	
ø20	5, 10, 15, 20, 25	50	
ø25	30, 35, 40, 45, 50	30	
ø32	5, 10, 15, 20, 25, 30,		1
ø40	35, 40, 45, 50, 75, 100		'
ø50	10 15 20 25	100	
ø63	10, 15, 20, 25 30, 35, 40, 45, 50	100	
ø80	75. 100		
ø100	. 5, 100		

^{*1:} When using the type with a switch, refer to the table of the min. stroke

variation: X, XL, Y, YL								
Bore size (mm)	Standard stroke (mm)	Max. stroke (mm)	Min. stroke (mm)					
ø12								
ø16								
ø20	5. 10	10	5					
ø25	5, 10	10	5					
ø32								
ø40								
ø50	10, 20	20	10					

Note: When using the type with a switch, refer to the table on the right.

Variation: G, GL, G5, G5L

Bore size (mm)	Standard stroke (mm)	Max. stroke (mm)	Min. stroke (mm)	
ø20	5, 10, 15, 20, 25	50		
ø25	30, 35, 40, 45, 50	50		
ø32	5, 10, 15, 20, 25, 30,			
ø40	35, 40, 45, 50, 75, 100		1	
ø50	40.45.00.05	100	!	
ø63	10, 15, 20, 25 30, 35, 40, 45, 50	100		
ø80	75. 100			
ø100	75, 100			

^{*1:} When using the type with a switch, refer to the table of the min. stroke length with switch in Pneumatic Cylinders I (CB-029SA).

Variation: D, DL

•	,			
Bore size (mm)	Standard stroke (mm)	Max. stroke (mm)	Min. stroke (mm)	
ø12	5, 10, 15, 20	30		
ø16	25, 30	30		
ø20	5, 10, 15, 20, 25	50	5	
ø25	30, 35, 40, 45, 50	30	3	
ø32	5, 10, 15, 20, 25, 30,			
ø40	35, 40, 45, 50, 75, 100			
ø50	40 45 00 05	100		
ø63	10, 15, 20, 25 30, 35, 40, 45, 50	100	10	
ø80	75, 100		10	
ø100	75, 100			

Variation: M. MI

Varia	Variation: W, WE											
Bore size (n	nm)	Standard stroke (mm)	Max. stroke (mm)	Min. stroke (mm)								
ø12		5, 10, 15, 20	30									
ø16		25, 30	30									
ø20		5, 10, 15, 20, 25	50									
ø25		30, 35, 40, 45, 50	30	1								
ø32		5, 10, 15, 20, 25, 30,		'								
ø40		35, 40, 45, 50, 75, 100	100									
ø50		5, 10, 15, 20, 25, 30,	100									
ø63		35, 40, 45, 50, 75, 100										

^{*1:} When using the type with a switch, refer to the table of the min. stroke length with switch in Pneumatic Cylinders I (CB-029SA).

Variation: G2, G2L, G3, G3L

Bore size (mm)	Standard stroke (mm)	Max. stroke (mm)	Min. stroke (mm)
ø16	5, 10, 15, 20, 25, 30	30	
ø20	5, 10, 15, 20, 25	50	
ø25	30, 35, 40, 45, 50	50	1 (10)
ø32	5, 10, 15, 20, 25, 30,	100	The value in ()
ø40	35, 40, 45, 50, 75, 100	100	is for types with
ø50	40.45.00.05		one or two
ø63	10, 15, 20, 25 30, 35, 40, 45, 50	100	switches.
ø80	75. 100	100	
ø100	73, 100		

^{*2:} The specifications above are for double acting/single rod.

Each item differs depending on variation. For details, refer to Pneumatic Cylinders I (CB-029SA).

length with switch in Pneumatic Cylinders I (CB-029SA). *2: When max. stroke length is exceeded, refer to the Long stroke length in Pneumatic Cylinders I (CB-029SA).

SSD2-FP1 Series

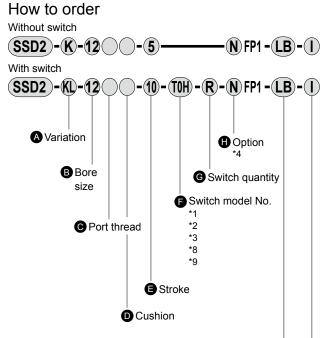
How to order

Electric actuator

Pneumatic valves | FRL/Auxiliary components |

Fluid control

Main line components



A Precautions for model No. selection

- *1: The T2YD* switch cannot be mounted on the ø12 and ø16 bore sizes.
- *2: The T8* switch cannot be mounted on the ø12 to ø32 bore sizes.
- *3: The F switch can only be mounted on the piping port surface of bore sizes ø20 and ø25.
- *4: Piston rod of ø12 to ø25 is stainless steel as standard. C snap ring is stainless steel instead of steel. The rod end male thread nut is stainless steel.
- *5: The mounting bracket is included at shipment.
- *6: The projection dimension of piston rod WF when LB or FA is selected is different from that of the standard. Refer to Pneumatic Cylinders I (CB-029SA) for dimensions. The number of the specified protruding dimension will be added at the end of the model No. printed on the metal plate on the body.
- *7: "I" and "Y" cannot be selected simultaneously.
- *8: The F switch with L lead wire on ø20 models cannot be selected on stroke lengths of 15 mm or under.
- *9: Switches are shipped with the product. Contact CKD if assembling before shipment is necessary.
- *10: Refer to Pneumatic Cylinders I (CB-029SA) for combinations of variations and options.

[Example of model No.]

SSD2-KL-12-10-T0H-R-NFP1-LB-I

Model: Compact cylinder

Food-grade grease specifications

A Variation: Double acting/high load/with switch

B Bore size: ø12 mmPort thread: Rc threadCushion: No cushionStroke: 10 mm

Switch model No.: Reed T0H switch, lead wire

length 1 m

❸ Switch quantity: 1 on rod side✦ Option: Rod end male thread✦ Mounting bracket: Axial foot

Accessory: Rod eye

Co	de			Со	nte	nt						
AVs	riatio	n				В	ore	siz	e			
W V	li latio	"	12	16	20	25	32	40	50	63	80	100
Blank	Double	e acting/single rod	•	•		•	•	•		•	•	•
L	Double a	cting/single rod/with switch	•		•	•	•	•	•	•	•	•
K	Double	e acting/high load	•			•	•	•	•	•	•	•
KL	Double a	cting/high load/with switch	•	•	•	•	•	•	•	•	•	•
Х	Double	e acting/push	•	•	•	•	•	•	•			
XL	Double	acting/push/with switch	•	•	•	•	•	•	•			
Υ	Double	e acting/pull	•	•	•	•	•		•			
YL	Double	acting/pull/with switch	•	•	•	•	•	•	•			
D	Double	acting/double rod	•	•	•	•	•	•	•	•	•	•
DL	Double a	cting/double rod/with switch	•		•	•	•	•	•	•	•	•
М	Double	acting/rotation-stop	•	•	•	•	•	•	•	•		
ML	Double a	cting/rotation-stop/with switch	•	•	•	•	•	•	•	•		
G	Double a	acting/heavy duty scraper			•	•	•	•	•	•	•	•
GL	Double acti	ing/heavy duty scraper/with switch			•	•	•	•	•	•	•	•
G2	Double actin	g/coolant proof scraper (packing NBR)		•	•	•	•	•	•	•	•	•
G2L		acting/coolant proof (packing NBR)/with switch		•	•	•	•	•	•	•	•	•
G3	Double actin	g/coolant proof scraper (packing FKM)		•	•	•	•	•	•	•	•	•
G3L	Double a (packing	cting/coolant proof scraper FKM)/with switch		•	•	•	•	•	•	•	•	•
G5		ing/environment-resistant scraper			•	•	•	•	•	•	•	•
G5L	Double a scraper/v	cting/environment-resistant vith switch			•	•	•	•	•	•	•	•

				_		_	
B Bore size	ze (mm)						
12	ø12						
16	ø16						
20	ø20						
25	ø25						
32	ø32						
40	ø40						
50	ø50						
63	ø63						
80	ø80						
100	ø100						

© Port th	read
Blank	Rc thread
NN	NPT thread (ø32 or more) (Made-to-order)
GN	G thread (ø32 or more) (Made-to-order)

O Cushion	1
Blank	Without cushion
D	With rubber cushion

■ Stroke (mm)

Mountir

*5

*6

bracket

Refer to the stroke length table on page 39.

Switch model No.

Refer to the switch model numbers on the following page.

G Switch	quantity
R	1 on rod side
Н	1 on head side
D	2

⊕ Option												
Bore	12	16	20	25	32	40	50	63	80	100		
Blank	Rod end female thread	•	•	•	•	•	•	•	•	•		
N	N Rod end male thread					•	•	•	•	•		
M *4	*4 Piston rod material (stainless steel)				•	•	•	•	•	•		
S	Dedicated unit for made-to-order stroke	•	•	•		•	•	•	•	•		

	I Mountir	ng bracket					
ng	Blank Without mounting bracket						
Ţ	LB	Axial foot					
	CB Clevis bracket (pin and snap ring included)						
	FA	Rod side flange					
	FB	Head side flange					
	,						

	J Accessor	ries (available when rod end male thread "N" is selected)
Accessorie	es ı	Rod eye
-7	Υ	Rod clevis (pin and snap ring included)

components

Fluid control

SSD2-FP1 Series

Electric actuator

Pneumatic cylinders

FRL/Auxiliary components | Pneumatic valves | Electronic components

Main line Vacuum FRUAuxilar components components Eectronic

Antibacterial/Bacteria Main line Fluid control removing filter components valves

F P 2 Vacuum An

components

Fluid control valves

Switch model No.

● Variation: L, KL, XL, YL, DL, ML, GL, G5L

Switch	model No	ο.														
Lead wire	Lead wire	Contact	Vol	tage	Dioplay	Lead					Bore	size	!			
Straight	L-shaped	ខ្ល	AC	DC	Display	wire	12	16	20	25	32	40	50	63	80	100
F2	S*					2-wire				• •						
F3	S*			•	1-color display	3-wire										
F2H*	F2V*	Proximity		•	1-color display	2-wire										
F3H*	F3V*	Ϋ́				3-wire										
F3PH*	F3PV*	Pr			1-color display (PNP output) (Made-to-order)	3-wire										
F2YH*	F2YV*			•	2-color display											
F3YH*	F3YV*				2-color display	3-wire										
T0H*	T0V*	٦			1-color display		•					•		•	•	
T5H*	T5V*	Reed			Without indicator lamp 2-w		•	•				•		•	•	
T8H*	T8V*	<u> </u>			1-color display							•		•	•	
T1H*	T1V*					2-wire								•	•	
T2H*	T2V*			•	1-color display	Z-WIIE	•									
T3H*	T3V*					3-wire	•	•		•	•	•	•	•	•	
T3PH*	T3PV*				1-color display (PNP output) (Made-to-order)	3-WITE	•	•		•	•	•	•	•	•	
T2WH*	T2WV*	Proximity				2-wire	•	•	•	•	•	•	•	•	•	
T2YH*	T2YV*	Ä			2-color display	Z-WIIE			•	•	•	•	•	•	•	
T3WH*	T3WV*	Pro			2-color display	3-wire	•	•		•	•	•	•	•	•	
T3YH*	T3YV*					3-WILE				•		•	•	•	•	
T2YD*	-				2-color display	2-wire				•		•	•	•	•	
T2YDT*	-				AC magnetic field	Z-WITE						•	•	•		
T2JH*	T2JV*			•	1-color display off-delay	2-wire			•				•			
* Lead wi	re length															
Bla	ınk	1 m	(Sta	ndarc	<u> </u>											
3			(Opt	ion)												

Note: 5 m lead wire for the F switch is a made-to-order product.

5 m (Option)

Variation: G2L, G3L

5

Switch model N	lo.				
Lead wire Straight	Lead wire L-shaped	Contact	Voltage	Display	Lead wire
T2YLH*	T2YLV*	Proximity	DC	2-color display	2-wire
T3YLH*	T3YLV*	Prox	DC	2-color display	3-wire
* Lead wire leng	gth				
Blank	1 m (Standard)				
3	3 m (Option)			-	
5	5 m (Option)				

			FP1					FP	2	
Electric actuator	Pneumatic Pneumatic	, Jahvas FRL	L/Auxiliary components	Vacuum	Main line	Fluid control	Main line	Antibacterial/Bacteria-	Vacuum	Fluid control
בופטווט מטוממוטו	cylinders	E	lectronic components	components	components	valves	components	removing filter	components	valves

components



Compact cylinder (Large bore size)

SSD2-FP1 Series

● Bore size: ø125, ø140, ø160, ø180, ø200





Specifications

Specification	IIIS						
Description	ons		S	SD2 (Large bore siz	e)		
Bore size	mm	ø125	ø140	ø160	ø180	ø200	
Actuation				Double acting			
Working fluid				Compressed air			
Max. working press	sure MPa		1.0		0.	7	
Min. working press	sure MPa			0.05			
Proof pressure	MPa		1.6		1.0)5	
Ambient tempera	ture °C			-10 to 60 (no freezing)			
Port size			Rc3/8		Rc ⁻	1/2	
Stroke tolerance	mm			+2.0 0			
Working piston spe	ed mm/s		50 to 300		20 to 300		
Cushion			With	n rubber cushion (stand	ard)		
Lubrication				Not required			
Allowable absorbed With r	ubber cushion	6.52	6.52	7.78	12	.4	
Energy J Witho	out cushion			-			

^{*1:} The specifications above are for double acting/single rod.

Each item differs depending on variation. For details, refer to Pneumatic Cylinders I (CB-029SA).

Stroke

Bore size (mm)	Standard stroke (mm)	Max. stroke (mm)	Min. stroke (mm)
ø125			
ø140	10, 20, 30, 40, 50		
ø160	75, 100, 125, 150	300	1
ø180	175, 200, 250, 300		
ø200			

^{*1:} For the type with a switch, refer to the table of switch mounting quantity and minimum stroke length.

Fluid control valves

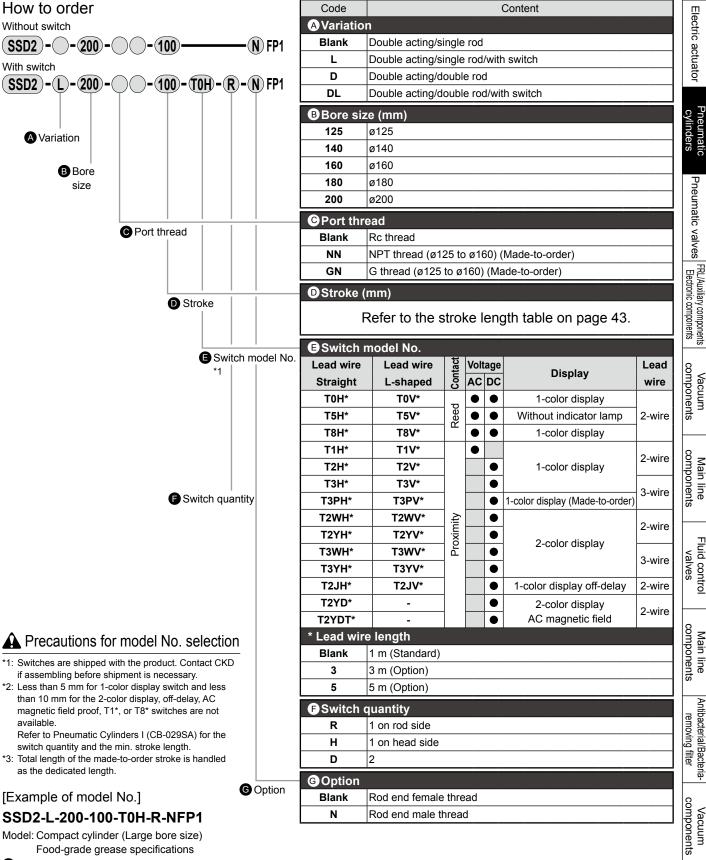
SSD2-FP1 (Large bore size) Series

Electric actuator

/acuum

Fluid control

Antibacterial/Bacteria-



SSD2-L-200-100-T0H-R-NFP1

Model: Compact cylinder (Large bore size) Food-grade grease specifications

A Variation: Double acting/single rod/with switch

B Bore size: ø200 mm Port thread: Rc thread

D Stroke: 100 mm

Switch model No.: Reed T0H switch

Lead wire length 1 m

Switch quantity: 1 on rod side G Option: Rod end male thread

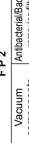
Fluid control

Auxiliary components FRL/Auxiliary component Electronic components

components







Fluid control



components removing filter components



Guided cylinder

STG-M-FP1 Series

Bore size: ø12, ø16, ø20, ø25, ø32, ø40 ø50, ø63, ø80, ø100

JIS symbol







Specifications

opodinodione	•										
Descriptions						STO	3-M				
Bore size	mm	ø12	ø16	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Actuation						Double	acting				
Working fluid						Compre	ssed air				
Max. working pressure	MPa					1.	.0				
Min. working pressure	MPa		0.	15				0	.1		
Proof pressure	MPa			1.6							
Ambient temperatur	e °C					-10 to 60 (r	no freezing)				
Port size		M	5		Rc	1/8		Rc	1/4	Rc	3/8
Stroke tolerance	mm					+2	2.0				
Stroke tolerance	1111111					()				
Working piston speed	mm/s				50 to 500					50 to 300	
Cushion						With rubbe	er cushion				
Lubrication						Not re	quired				
Allowable absorbed ener	gy J	0.056	0.088	0.157	0.157	0.401	0.627	0.980	1.560	2.510	3.92

^{*1:} The specifications above are for double acting/single rod. Each item differs depending on variation. For details, refer to Pneumatic Cylinders I (CB-029SA).

Stroke

Variation: blank

Bore size	Standard stroke (mm)	Max. stroke (mm)	Min. stroke (mm)	Min. stroke with switch (mm)	
ø12	10, 20, 30, 40, 50, 75, 100	250			
ø16	125, 150, 175, 200, 250	230			
ø20	20, 30, 40, 50, 75, 100, 125, 150,				
ø25	175, 200, 250, 300, 350, 400				
ø32			5	5 (10)	
ø40	25, 50, 75, 100	25 50 75 100	25, 50, 75, 100 ₄₀₀	5	*2
ø50	125, 150, 175	400			
ø63	200, 250, 300				
ø80	350, 400				
ø100					

*1: The made-to-order stroke length is available in 5 mm increments. However, the total dimensions are the same as the longer standard stroke length. A dedicated body with dimensions matched to the stroke length is available. Contact CKD for details.

*2: For types with one or two switches. The value in () is the min. stroke length for switches of the 2-color display and AC magnetic field proof.

Rubber-air cushioned (*C)

Bore size	Standard stroke (mm)	Max. stroke (mm)	Min. stroke (mm)	Min. stroke with switch (mm)
ø32	25, 50, 75, 100			5 (10)
ø40	125, 150, 175	400	5	5 (10)
ø50	200, 250, 300	400		2
ø63	350, 400		10	10

- *1: The made-to-order stroke length is available in 5 mm increments. However, the total dimensions are the same as the longer standard stroke length.

 *2: For types with one or two switches. The value in () is the min. stroke length for switches of the 2-color display and AC magnetic field proof.

Variation: C

Bore size	Standard stroke (mm)	Max. stroke (mm)	Min. stroke (mm)	Min. stroke with switch (mm)
ø16	25, 50, 75, 100, 125, 150, 175, 200, 250	250		
ø20				
ø25	25, 50, 75, 100		15	
ø32	125, 150, 175	400	*2	15
ø40	200, 250, 300	400		
ø50	350, 400			
ø63				

The made-to-order stroke length is available in 1 mm increments. However, the total dimensions are the same as the longer standard stroke length. (Made-to-order) For min. stroke length and below, select the basic type since there is no cushion effect.

Variation: G

E	Bore size	Standard stroke (mm)	Max. stroke (mm)	Min. stroke (mm)	Min. stroke with switch (mm)
	ø20	20, 30, 40, 50, 75, 100, 125, 150,			
	ø25	175, 200, 250, 300, 350, 400			
_	ø32	25, 50, 75, 100	400	5	5 (10)
	ø40	125, 150, 175	400	5	*2
-	ø50	200, 250, 300			
	ø63	350, 400			

- *1: The made-to-order stroke length is available in 5 mm increments. However, the total
- length is the same as that of the next longer standard stroke length.

 *2: For types with one or two switches. The value in () is the min. stroke length for switches of the 2-color display and AC magnetic field proof.

Variation: G2, G3

Bore size	Standard stroke (mm)	Max. stroke (mm)	Min. stroke (mm)	Min. stroke with switch (mm)
ø20	20, 30, 40, 50, 75, 100, 125, 150,			
ø25	175, 200, 250, 300, 350, 400			
ø32	25, 50, 75, 100	400	5	10
ø40	125, 150, 175	400	5	*2
ø50	200, 250, 300			
ø63	350, 400			

*1: The made-to-order stroke length is available in 5 mm increments. However, the total length is the same as that of the next longer standard stroke length.

*2: For types with one or two switches.

Variation: G5

Bore size	Standard stroke (mm)	Max. stroke (mm)	Min. stroke (mm)	Min. stroke with switch (mm)
ø20	20, 30, 40, 50, 75, 100, 125, 150,			
ø25	175, 200, 250, 300, 350, 400			
ø32				
ø40	25, 50, 75, 100	400	5	5 (10)
ø50	125, 150, 175	400	5	*2
ø63	200, 250, 300			
ø80	350, 400			
ø100				

^{*1:} The made-to-order stroke length is available in 5 mm increments. However, the total dimensions are the same as the longer standard stroke length.

^{*2:} For types with one or two switches. The value in () is the min. stroke length for switches of the 2-color display and AC magnetic field proof.

STG-M-FP1 Series

Electric actuator

How to order (Variation: blank, C, G, G2, G3, G5) Without switch STG)-(M)(C)-(32)(**-**(25)-With switch MC-32 -25-T2H-R-FP1 STG Model No. Code Content **A** Bearing **A** Bearing Metal bush bearing **B** Variation Pneumatic valves | FRL/Auxiliary components | Electronic components **B** Variation Blank | Double acting/single rod С Double acting/air cushioned Double acting/heavy duty scraper G Double acting/coolant proof (packing NBR) G2 G3 Double acting/coolant proof (packing FKM) G5 Double acting/environment-resistant scraper © Bore size (mm) © Bore size 12 ø12 ø16 ø20 25 ø25 32 ø32 Vacuum components 40 ø40 50 ø50 63 ø63 80 ø80 100 ø100 DPort thread Main line components Port thread M5 (ø12 to ø16) Blank Rc thread (ø20 to ø100) NPT thread (ø20 and over) (Made-to-order) G thread (ø20 or more) (Made-to-order) GN Stroke (mm) Stroke Refer to the stroke length table on page 45. F Switch model No. Switch model No. Refer to the switch model numbers on page 48. **G** Switch quantity **G** Switch 1 on rod side quantity [Example of model No.] Н 1 on head side Main line components STG-MC-40-75-T0H-D-FP1 D Т 3 Model: Guided cylinder Food-grade grease specifications A Bearing: Metal bush bearing B Variation: With air cushion @ Bore size: ø40 mm Port thread: Rc thread removing filter E Stroke: 75 mm Switch model No.: Reed T0H switch, lead wire length 1 m G Switch quantity: 2 pcs. included Vacuum components

Fluid control

Antibacterial/Bacteria-

Fluid control

STG-M-FP1 Series

Electric actuator

Pneumatic valves

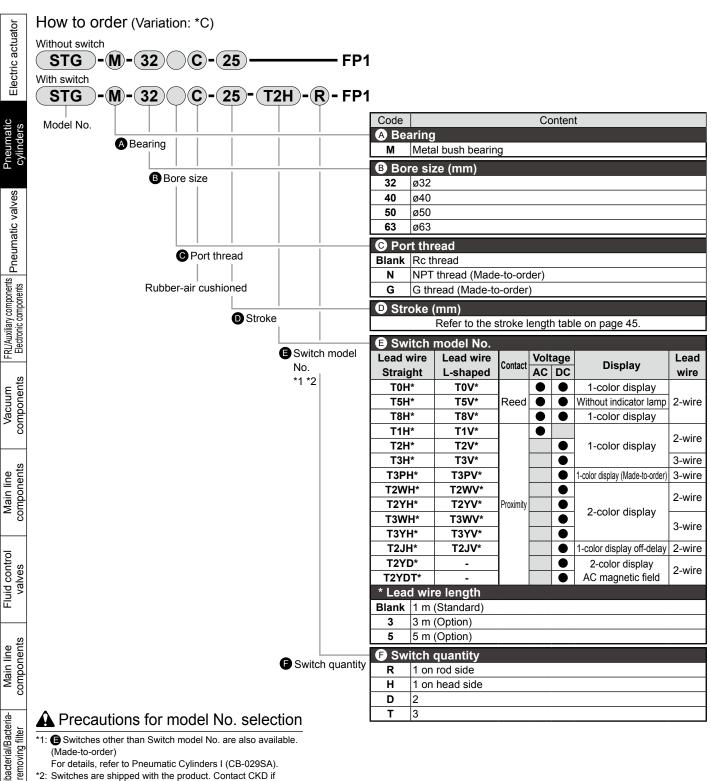
Vacuum

Fluid control

Antibacterial/Bacteria-

components Vacuum

Fluid control



 Switches other than Switch model No. are also available. (Made-to-order)

For details, refer to Pneumatic Cylinders I (CB-029SA).

[Example of model No.]

STG-M-32C-50-T0H-R-FP1

Model: Guided cylinder/rubber-air cushioned Food-grade grease specifications

- A Bearing: Metal bush bearing
- B Bore size: ø32 mm
- O Port thread: Rc thread
- Stroke: 50 mm
- Switch model No.: Reed T0H switch, lead wire length 1 m
- Switch quantity: 1 on rod side

^{*2:} Switches are shipped with the product. Contact CKD if assembling before shipment is necessary.

STG-M-FP1 Series

Electric actuator

Pneumatic valves RL/Auxiliary components Electronic components

Main line components

Fluid control valves

Main line components

Antibacterial/Bacteria-removing filter

Vacuum components Fluid control valves

Switch model No.

Variation: blank, C, G, G5

Switch model N	lo.					
Lead wire	Lead wire	Contact	Volt	tage	Display	Lead wire
Straight	L-shaped	ပ္ပ	AC	DC	ызріау	Leau wire
T0H*	T0V*		•	•	1-color display	
T5H*	T5V*	Reed	•	•	Without indicator lamp	2-wire
T8H*	T8V*] "	•	•	1-color display	
T1H*	T1V*		•			2-wire
T2H*	T2V*			•	● 1-color display	2-wire
T3H*	T3V*			•		3-wire
T2WH*	T2WV*			•		2-wire
T2YH*	T2YV*	imit		•	2-color display	Z-WIIE
T3WH*	T3WV*	Proximity		•	2-color display	3-wire
T3YH*	T3YV*] "		•		3-wire
T3PH*	T3PV*			•	1-color display (Made-to-order)	3-wire
T2YD*	-			•	2-color display	2-wire
T2YDT*	-			•	AC magnetic field	2-wile
* Lead wire leng	gth					
Blank	1 m (Standard)					
3	3 m (Option)					
5	5 m (Option)					

Note: Switches are shipped with the product. Contact CKD if assembling before shipment is necessary.

Variation: G2, G3

Switch model N	lo.					
Lead wire	Lead wire	Contact	Volt	age	Dianloy	Lead wire
Straight	L-shaped	ြပ္ပ	AC	DC	Display	Lead wire
T2YLH*	T2YLV*	imity		•	2 color diaplay	2-wire
T3YLH*	T3YLV*	Proximity		•	2-color display	3-wire
* Lead wire len	gth					
Blank	1 m (Standard)					
3	3 m (Option)					
5	5 m (Option)					-

components

Vacuum

F F 2
F P 2
F P 2
F P 2
F P 2
F P 3
F P 4
F P 3
F P 4
F P 3
F P 4
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Rodless cylinder

SRL3-FP1 Series

Bore size: ø12, ø16, ø20, ø25, ø32 ø40, ø50, ø63, ø80, ø100 equiv.

JIS symbol







Specifications

Specifications											
Descriptions		SRL3									
Bore size	mm	ø12	ø16	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Actuation			Double acting								
Working fluid			Compressed air								
Max. working pressure	MPa		0.7								
Min. working pressure	MPa	0.2	2 (0.25)	*2		0.1 (0.	15) *2	0.05 (0.1) *2			
Proof pressure	MPa		1.05								
Ambient temperatu	re °C	5 to 60									
Port size		M	15	Rc	1/8	Rc	1/4	Rc	3/8	Ro	1/2
Stroke tolerance	mm			+2.0	to 1000)), +2.5 (tc	3000),	+3.0 (to	5000)		
Working piston speed	mm/s		50 to 2000 (standard piping) (*1)								
Cushion		Air cushion									
Lubrication			Not required								

- *1: For common port piping, the working piston speed varies depending on stroke length. Contact CKD.
- *2: Values in () are for the resin guide.
- *3: The specifications above are for double acting basic.

Each item differs depending on variation. For details, refer to Pneumatic Cylinders I (CB-029SA).

Allowable absorbed energy

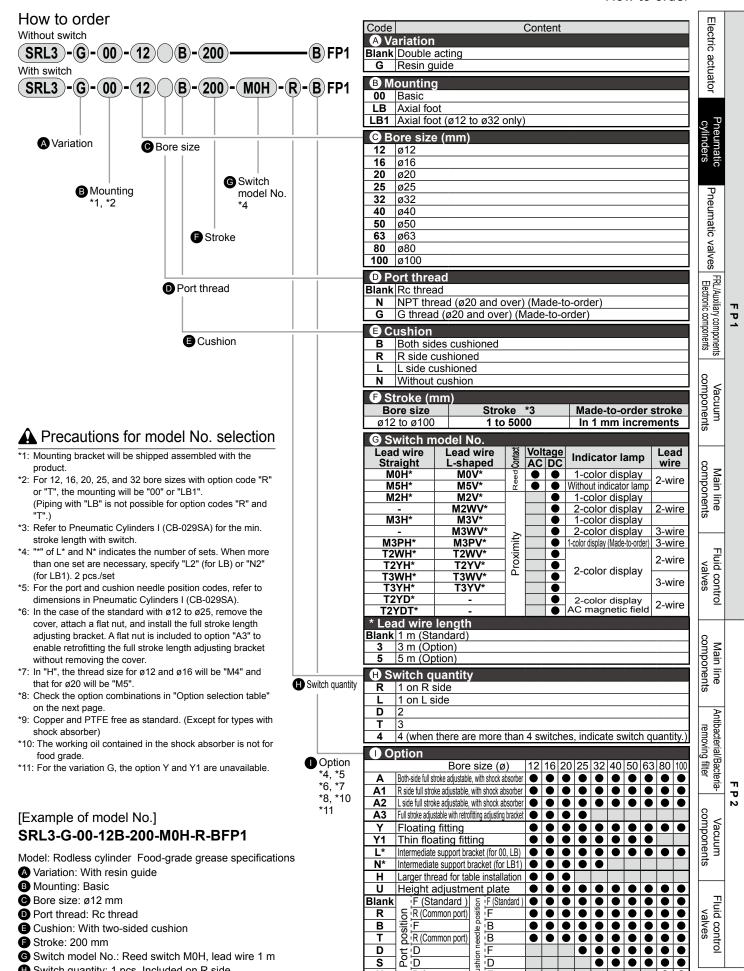
Bore size	Cush	ioned	Without cushion	With shock absorb	er (initial set point)
(mm)	Allowable absorbed	Cushion stroke	Allowable absorbed	Absorbed	Effective
(,	energy (J)	(mm)	energy (J)	energy (J)	stroke (mm)
ø12 or equiv.	0.03	14.5	0.003	2.4	5.5
ø16 or equiv.	0.22	19.2	0.007	2.4	5.5
ø20 or equiv.	0.59	22.2	0.010	5.7	7
ø25 or equiv.	1.40	20.9	0.015	10	9
ø32 or equiv.	2.57	23.5	0.030	18	13
ø40 or equiv.	4.27	23.9	0.050	50	16.5
ø50 or equiv.	9.13	24.9	0.072	86	21
ø63 or equiv.	17.4	29.6	0.138	86	21
ø80 or equiv.	40	45.8	0.393	143	25
ø100 or equiv.	67	45.8	0.622	143	25

Stroke

Bore size (mm)	Standard stroke (mm)	Max. stroke (mm)	Min. stroke (mm)
ø12 or equiv. ø16 or equiv. ø20 or equiv. ø25 or equiv. ø32 or equiv. ø40 or equiv. ø50 or equiv.	200, 300 400, 500 600, 700 800, 900	5000	1
ø63 or equiv. ø80 or equiv. ø100 or equiv.	1000		

^{*} The made-to-order stroke is available in 1 mm increments.

SRL3-FP1 Series



S

Switch quantity: 1 pcs. Included on R side

Option: Port position F, cushion needle position B

D

F (Common port)

•

SRL3-FP1 Series

	٥٢	Or	otion	se	led	etic	n	tal	nle											
	stuato			_										lable	=		: 1	Not a	avail	able
	c ac										0	ptic	on_							
	Pneumatic valves cylinders Electric actuator			Both-side full stroke length adjustable, with shock absorber	R side full stroke length adjustable, with shock absorber	L side full stroke length adjustable, with shock absorber	$ \mathcal{E} $ Full stroke length adjustable with retrofitting adjusting bracket	6	fitting	T Intermediate support bracket (for 00, LB)	Z Intermediate support bracket (for LB1)	т Larger thread for table installation		Port position F, cushion needle position F (standard)	Dort position R, cushion needle position F (common port)	Port position F, cushion needle position B	→ Port position R, cushion needle position B (common port)	□ Port position D, cushion needle position F	ω Port position D, cushion needle position D	× Port position F, cushion needle position F (common port)
F P 1	FRL/Auxiliary components Electronic components		Code	➤ Both-side full s	₹ R side full stro	S L side full stro	문 Full stroke leng	✓ Floating fitting	≾ Thin floating fitting	* Intermediate	Z Intermediate	⊥ Larger thread	□ Height adjustment plate	翼 Port position	Dort position R	→ Port position	→ Port position R	☐ Port position	n Port position	× Port position F
			A			-														
	n nts		A1	$\overline{}$																
	Vacuum				\vdash															
	Vac mp		A2 A3 Y Y1 L* N*			\vdash														
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	Main line components	o												•	•	•	•	•		
	M	Option	Н																	
	,	0	U																	
	_		Blank																	
	control Ives		R																	
			В																	
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	Main line components	1	Some co the Option	on ite	em ii	n 🕕	"Ho	ow to	oro	ler"	on th	ne pi	revio	ous p			ze. I	3e s	ure t	to ch
	acterial/Bacteria- moving filter																			

check

Vacuum components

Fluid control valves

Electric actuator Pneumatic valves FRL/Auxiliary components Electronic components FP1 Vacuum components Main line components Fluid control valves Main line components Antibacterial/Bacteria-removing filter Vacuum components Fluid control valves

C	K	D
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FRL/Auxiliary components | Pneumatic valves |

components

Main line components

Fluid control valves

Main line components

Antibacterial/Bacteriaremoving filter

components

Fluid control valves

Floating fitting

FJ-FP1 Series

● Compatible cylinder diameter: ø20 to ø200





Specifications

Descriptions	Nominal port size	Max. working to	ension and comp	ression (kN) *1	Allowable	Oscillating	Ambient
Model No.	of thread × pitch	Basic	Flange	Foot	eccentricity (mm)	angle	temperature
FJ-*- 3	M3 × 0.5	0.019			0.5		
4	M4 × 0.7	0.053			0.5		
5	M5 × 0.8	0.121			0.5		
6	M6 × 1.0	1.08			0.75		
8	M8 × 1.0	1.08	1.08	1.08	0.75		
8-1.25	M8 × 1.25	1.08	1.08	1.08	0.75		
10	M10 × 1.25	2.45	2.45	2.45	0.75		
12-1.25	M12 × 1.25	2.45	2.45	2.45	0.75		
12	M12 × 1.5	2.45	2.45	2.45	0.75	±5°	−10 to 60°C
14	M14 × 1.5	5.88	5.88	5.88	1.0	13	-10 to 00 C
16	M16 × 1.5	10.8	10.8	10.8	1.5		
18	M18 × 1.5	10.8	10.8	10.8	1.5		
22	M22 × 1.5	17.6	17.6	17.6	2.0		
_ 26	M26 × 1.5	27.5	27.5	27.5	3.0		
30	M30 × 1.5	60.8	60.8	60.8	3.0		
36	M36 × 1.5	87.3	87.3	87.3	4.0		
40	M40 × 1.5	87.3	87.3	87.3	4.0		
45	M45 × 1.5	108	108	108	4.0		

^{*1:} Max. working tension and compression shows static load.

How to order



I	Code	Content					
-	A Mounting						
	0	Basic					
ı	L	Foot					
	F	Flange					
i							

₿ NON	nınaı port sıze o	r tnrea	ıa × pı	tcn
	Mounting	0	L	F
3	M3 × 0.5	•		
4	M4 × 0.7	•		
5	M5 × 0.8	•		
6	M6 × 1.0	•		
8	M8 × 1.0	•	•	•
8-1.25	M8 × 1.25	•	•	•
10	M10 × 1.25	•	•	•
12-1.25	M12 × 1.25	•	•	•
12	M12 × 1.5	•	•	•
14	M14 × 1.5	•	•	•
16	M16 × 1.5	•	•	•
18	M18 × 1.5	•	•	•
22	M22 × 1.5	•	•	•
26	M26 × 1.5	•	•	•
30	M30 × 1.5	•	•	•
36	M36 × 1.5	•	•	•
40	M40 × 1.5	•	•	•
45	M45 × 1.5	•	•	•

[Example of model No.]

FJ-0-3-FP1

Model: Floating fitting Food-grade grease specifications

- A Mounting: Basic
- B Nominal port size of thread × pitch : M3 × 0.5



Feather hand (mini-parallel hand) Double acting/single acting FH100-FP1 Series

Operating stroke length: 8, 11, 14, 18, 20 mm

Single acting (normally open) Double acting





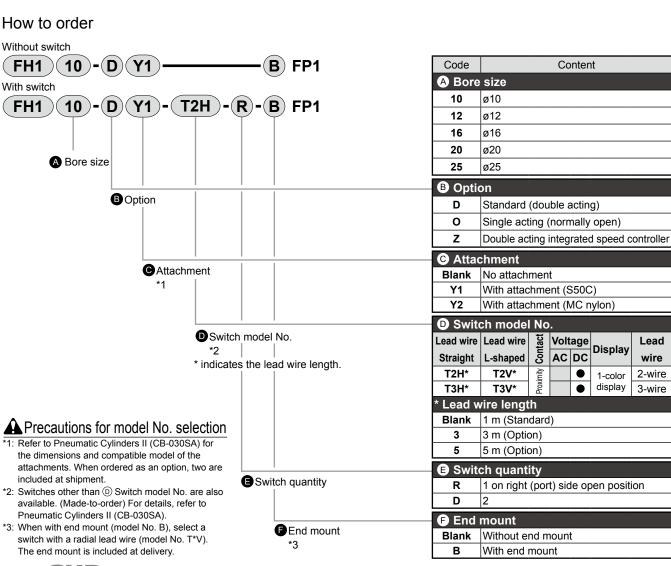




Specifications

Specifications													
Descriptions						FH	100						
Descriptions		FH110-D	FH112-D	FH116-D	FH120-D	FH125-D	FH110-0	FH112-0	FH116-0	FH120-0	FH125-0		
Actuation			Double acting Single a					Single actin	g				
Working fluid			Compr				ssed air	ssed air					
Max. working pressure	MPa					0	.7						
Min. working pressure	MPa		0.15						0.25				
Proof pressure	MPa		1.05										
Ambient temperature	°C		5 to 60						-				
Port size		M3 >	M3 × 0.5 M5 × 0.8				M3 :	× 0.5		M5 × 0.8			
Operating stroke length	mm	8	11	15	18	20	8	11	15	18	20		
Body weight	g	51	71	124	176	284	51	71	124	177	286		
Repeatability (initial value)	mm	±0.03											
Max. operating frequency cyc	le/sec.					;	3						
Cushion					0	pen side ru	bber cushi	on					
Lubrication			Not required										
Onting		Proximity switch (2-wire/3-wire)											
Option					* Clos	ed side spe	ed controll	er					
*	:		باللم من ما أمان بما أم										

^{*} Integrated speed controller is available only for double acting.



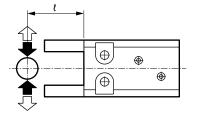
FH100-FP1 Series

Gripping power performance data

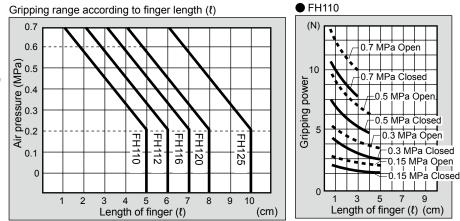
Gripping power performance data

The gripping power in the opening/closing directions with a finger length ℓ of the hand with a supply pressure of 0.15 to 0.7 MPa is shown

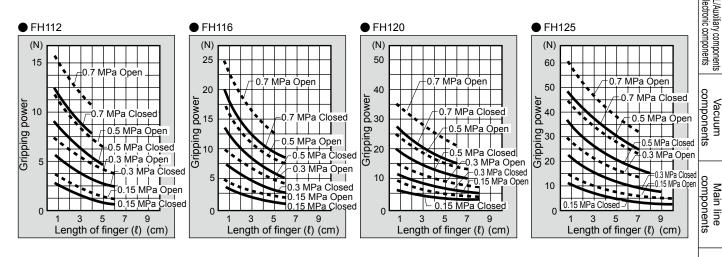
- Open direction (☼) ···· (shown with broken line)
- Closed direction (➡) (shown with continuous line)



(Note) Single acting closed side gripping power is decreased by 25 to 30% compared to the double acting.



When making a selection, read the precautions for design and selection in Pneumatic Cylinders II (CB-030SA).



Fluid control

Main line components

Antibacterial/Bacteriaremoving filter

Vacuum components

Fluid control

Electric actuator

Pneumatic valves

components Vacuum

components

Fluid control valves

switches other than those listed here.

BHA-FP1 Series

Operating stroke length: 5, 9, 11, 15 mm











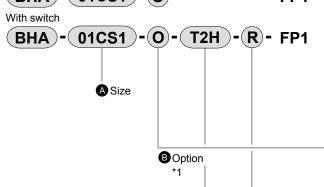
Specifications

Pneumatic Cylinders II Catalog No. CB-030SA

Specifications									
Descriptions			ВН	Α					
Size		01CS1	03CS1	04CS1	05CS1				
Bore size	mm	ø12	ø16	ø20	ø25				
Actuation		Double acting/single acting							
Working fluid			Compres	ssed air					
Max. working pressure	MPa		0.7	7					
Min. working procesure	ting	0.1							
Min. working pressure Normally of	pen		0.3						
Normally o	closed	0.0							
Ambient temperature	°C	5 to 60							
Port size		M3 M5							
Operating stroke length	mm	5	9	11	15				
Rod diameter	mm	ø6	ø8	ø10	ø12				
Capacity of reciprocation	cm ³	0.32	1.58	2.89	6.32				
Repeatability	mm		±0.0	01					
Product weight	kg	0.100	0.145	0.253	0.420				
Lubrication			Not red	quired					

How to order





Code	Content
A Size	
01CS1	
03CS1	
04CS1	
05CS1	
6 041	

B Option						
Blank	Standard (double acting)					
0	Single acting (normally open)					
С	Single acting (normally closed)					
Y1	With attachment (S50C)					
Y2	With attachment(MC nylon)					

Switch model No.											
Lead wire	Lead wire	Contact	Voltage		Display	Lead					
Straight	L-shaped	ខ្ញ	AC	DC	Display	wire					
T2H*	T2V*	Proximity		•	1-color	2-wire					
T3H*	T3V*	Prox		•	display	3-wire					
* Lead wire length											
Blank	1 m (Standard)										
3	3 m (Option)										
5	5 m (Optio	on)									

Switch quantity							
R	1 on open side						
Н	1 on closed side						
D	2						

Switch model No.

* indicates the lead wire length.

Switch quantity

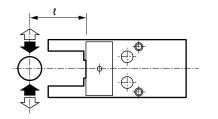
BHA-FP1 Series

Gripping power performance data

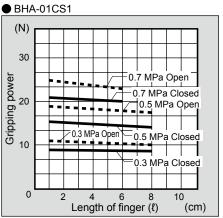
Gripping power performance data

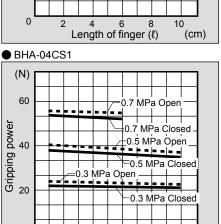
The gripping power in the opening/closing directions with a finger length ℓ of the hand with a supply pressure of 0.3, 0.5, and 0.7 MPa is shown.

- Open direction (⇐) ---- (shown with broken line)
- Closed direction (➡) (shown with continuous line)



(Note) O type gripping power decreases approximately 20 to 30% in the closed direction compared to the double acting. C type gripping power decreases approximately 10 to 20% in the open direction compared to the double acting. When making a selection, read the precautions for design and selection in Pneumatic Cylinders II (CB-030SA).



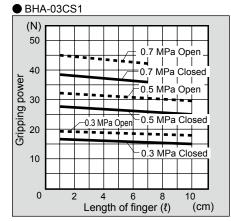


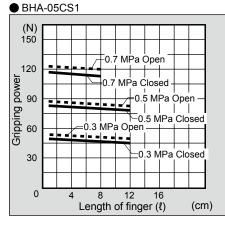
Length of finger (1)

10

(cm)

0





Electric actuator

Pneumatic valves FRL/Auxiliary components Electronic components

Vacuum components

Main line components

Fluid control

Main line components

Antibacterial/Bacteriaremoving filter

Vacuum components

Fluid control

Vacuum

components

Fluid control



Compact cross roller parallel hand with rubber cover Double acting/single acting

BHG-FP1 Series

Operating stroke length: 5, 9, 11, 15 mm

Double acting Single acting (normally open) Single acting (normally closed)







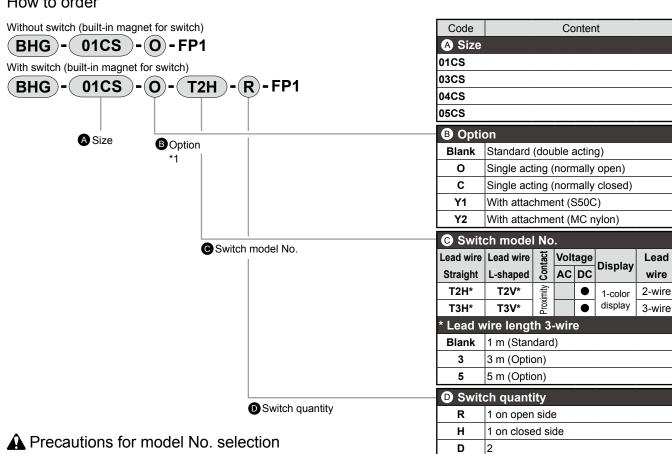




Specifications

Opcomodions											
Descript	ions	BHG									
Size		01CS	03CS	04CS	05CS						
Bore size	mm	ø12	ø16	ø20	ø25						
Actuation		Double acting/single acting									
Working fluid		Compressed air									
Max. working pressure	MPa	0.7									
Min. working pressure	Double acting	0.15									
	Normally open	0.2									
	Normally closed	0.3									
Ambient temperature	°C	5 to 60									
Port size		M3 M5									
Operating stroke length mm		5	9 11		15						
Rod diameter mm		ø6	ø8	ø10	ø12						
Volumetric capacity (reciprocating) cm ³		0.32	1.58 2.89		6.32						
Repeatability	mm	±0.01									
Weight	Weight kg		0.118 0.165 0.238 0.455								
Lubrication		Not required									
Rubber cover		Materials compliant with the Food Sanitation Act (silicone rubber)/blue									

How to order



- *1: For the attachment of option Y1 and Y2, two are included at shipment.
- *2: Refer to Pneumatic Cylinders II (CB-030SA) for switches other than those listed here.

BHG-FP1 Series

Gripping power performance data

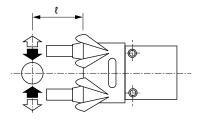
Rubber cover part model No.

Part model No.	Size
BHG-01K-FP1	01CS
BHG-03K-FP1	03CS
BHG-04K-FP1	04CS
BHG-05K-FP1	05CS

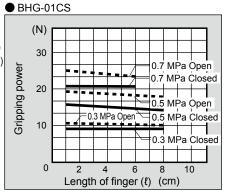
Gripping power performance data

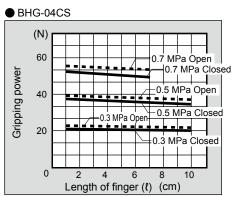
The gripping power in the opening/closing directions with a finger length ℓ of the hand with a supply pressure of 0.3, 0.5, and 0.7 MPa is shown.

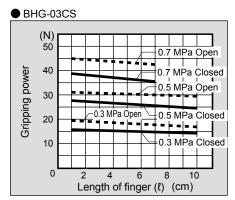
- Open direction (☼) ···· (shown with broken line)
- Closed direction (➡) (shown with continuous line)

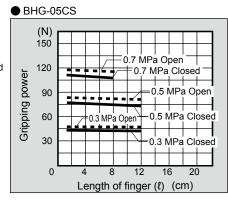


(Note) O type gripping power decreases approximately 20 to 30% in the closed direction compared to the double acting. C type gripping power decreases approximately 10 to 20% in the open direction compared to the double acting. When making a selection, read the precautions for design and selection in Pneumatic Cylinders II (CB-030SA).









Pneumatic valves

components Vacuum

removing filter

components

Fluid control valves



HMF-FP1 Series

Compact wide parallel hand (standard/long stroke)

Operational stroke length:

Standard 30, 40, 50, 70, 100 mm 60, 80, 100, 120, 160, 200 mm Long stroke length

switches other than those listed here.

Double acting



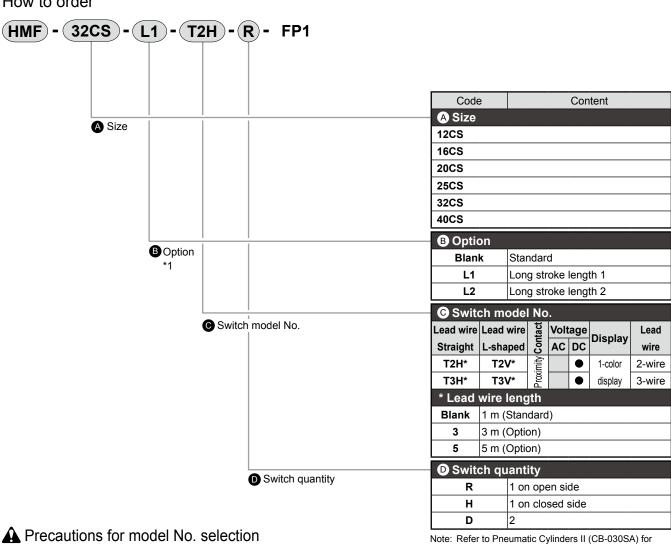




Specifications

Descriptions	HMF-12CS	HMF-16CS		HMF-20CS		HMF-25CS			HMF-32CS			HMF-40CS				
Descriptions	HWF-1203	Standard	L1	L2	Standard	L1	L2	Standard	L1	L2	Standard	L1	L2	Standard	L1	L2
Bore size mm	ø12 × 2	ø16 × 2			ø20 × 2		ø25 × 2		ø32 × 2			ø40 × 2				
Working fluid	Compressed air															
Max. working pressure MPa	0.7															
Min. working pressure MPa		0.3														
Ambient temperature °C		5 to 60														
Port size		M5								Rc1/8						
Operating stroke length mm	20	30	60	80	40	80	100	50	100	120	70	120	160	100	160	200
Rod diameter mm	ø6	ø8			ø10			ø12		ø16			ø20			
Capacity of reciprocation cm ³	3.4	9.1	18.1	24.1	18.8	37.6	47.0	37.7	75.4	90.5	84.4	145	193	226	301	377
Repeatability mm	±0.1															
Product weight kg	0.31	0.54	0.95	1.12	0.90	1.58	1.77	1.7	2.16	2.3	2.8	3.8	4.8	5.7	7.8	8.8
Lubrication	Not required															

How to order



*1: 12CS is not available for long stroke "L1", "L2".

HMF-FP1 Series

Electric actuator

Vacuum

Main line

Antibacterial/Bacteria-

Vacuum components

Fluid control valves

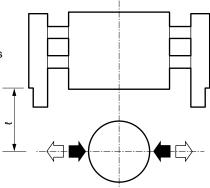
Gripping power performance data

Gripping power performance data

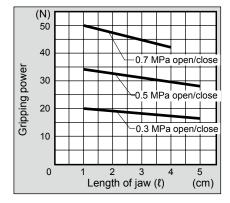
The gripping power with a jaw length ℓ of the hand and a supply pressure of 0.3, 0.5, and 0.7 MPa is shown.

■ Both open direction (\$\(\phi\)) closed direction (\$\(\phi\)) (shown with continuous line)

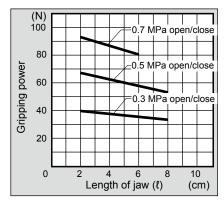
(Note) When making a selection, read the precautions for design and selection in Pneumatic Cylinders II (CB-030SA).



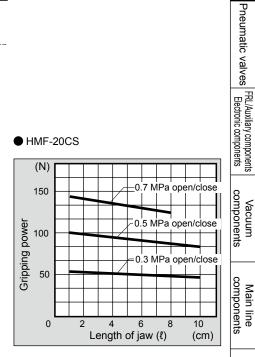
HMF-12CS



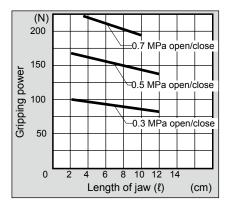
● HMF-16CS



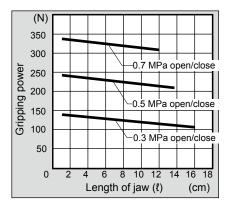
● HMF-20CS



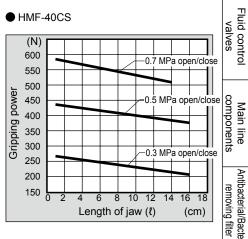
● HMF-25CS



● HMF-32CS



● HMF-40CS



Pneumatic valves

FRL/Auxiliary components Electronic components

components

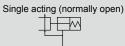
Fluid control

Antibacterial/Bacteria-

FH500-FP1 Series

Open/close angle: 20° when open, −5° when closed

Double acting



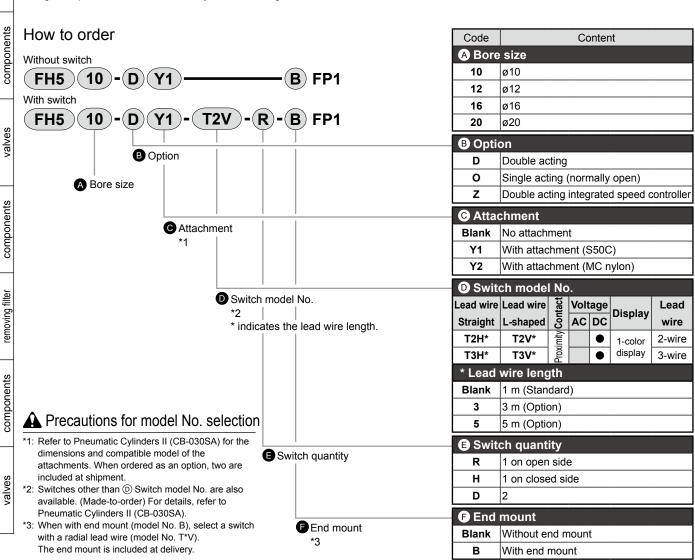




Specifications

<u>Opecinications</u>											
Descriptions		FH500									
Descriptions	FH510-D	FH512-D	FH516-D	FH520-D	FH510-O	FH512-O	FH516-O	FH520-O			
Actuation		Double	acting			Single	acting				
Working fluid		Compre			ssed air						
Max. working pressure MPa				0	.7						
Min. working pressure MPa		0.15				0.	25				
Proof pressure MPa		1.05									
Ambient temperature °C		5 to 60									
Port size	N	M3 M5 M3				M	M5				
Open/close angle Degree		20° when open -5° when closed									
Body weight	43	53	92	135	43	53	92	136			
Repeatability (initial value) mm				±0	.03						
Max. operating frequency cycle/sec		3									
Cushion		Open side rubber cushion									
Lubrication	Not required										
Option		Proximity switch (2-wire/3-wire) * Closed side speed controller/end mount									

^{*} Integrated speed controller is available only for double acting.



Fluid control

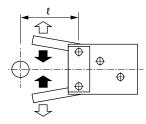
FH500-FP1 Series

Gripping power performance data

Gripping power performance data

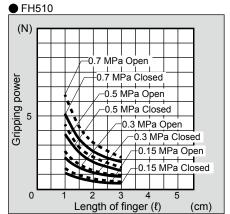
The gripping power in the opening/closing directions with a finger length ℓ of the hand with a supply pressure of 0.15 to 0.7 MPa is shown.

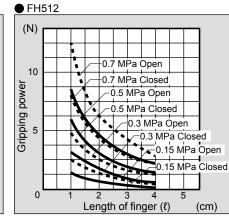
- Open direction (⟨□) ···· (shown with broken line)
- Closed direction (►)— (shown with continuous line)

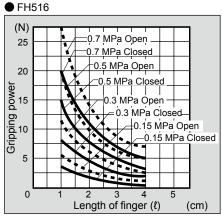


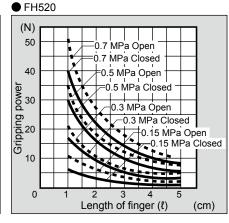
(Note) Single acting closed side gripping power is decreased by 25 to 30% compared to the double acting.

When making a selection, read the precautions for design and selection in Pneumatic Cylinders II (CB-030SA).









removing filter

Pneumatic valves

removing filter



CKG-FP1 Series

Operating stroke length: 6, 8, 11, 16 mm

Double acting Single acting (normally open) Single acting (normally closed)











Specifications

Specifications									
Descriptions	CKG								
Size	16CS	25CS	32CS	40CS	50CS				
Bore size mm	ø16	ø25	ø32	ø40	ø50				
Actuation		Do	uble acting/single act	ing					
Working fluid			Compressed air						
Max. working pressure MPa			0.7						
Min. working pressure* Double acting			0.1						
Normally open I	0.3								
MPa Normally closed	0.3								
Ambient temperature °C			5 to 60						
Port size			M5						
Operating stroke length mm	(3	8	11	16				
Rod diameter mm	ø9	ø10	ø14	ø18	ø20				
Volumetric capacity (reciprocating) cm ³	1.0	2.2	5.1	10.1	36.1				
Repeatability mm	±0.01								
Weight kg	0.24	0.47	0.80	1.4	2.3				
Lubrication Not required									
Rubber cover	Materials compliant with the Food Sanitation Act (silicone rubber)/blue								

^{*:} When a rubber cover (option) is attached, the min. working pressure is 0.2 MPa for 16CS and 0.15 MPa for 25CS to 50CS.

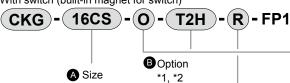
Switch quantity

How to order

Without switch (built-in magnet for switch)

(CKG)-(16CS)-(0)-FP1

With switch (built-in magnet for switch)



*1 For models with the silicone rubber guard, select G for the option B

Code	Content
A Size	
16CS	
25CS	
32CS	
40CS	
50CS	

B Option	on
Blank	Standard (double acting)
0	Single acting (normally open)
С	Single acting (normally closed)
G	Rubber cover (silicon-based) *1
Y11	With attachment (S50C) External chuck (attachment No.: 540 to 710)
Y12	With attachment (S50C) Internal chuck (attachment No.: 610 to 630)
Y21	With attachment (MC nylon) External chuck (attachment No.: 510 to 540, 710)
Y22	With attachment (MC nylon) Internal chuck (attachment No.: 610 to 630)

© Switc	h model N	0.						
Lead wire	Lead wire	Contact	Voltage		Display	Lead		
Straight	L-shaped	Con	AC	DC	Display	wire		
T2H*	T2V*	Proximity		•	1-color	2-wire		
T3H*	T3V*	Prox		•	display	3-wire		
* Lead w	ire length							
Blank 1	1 m (Standard)							

Blank	1 m (Standard)
3	3 m (Option)
5	5 m (Option)

D Switch quantity						
R	1 on open side					
Н	1 on closed side					
D	2					

Switch	model No.
*3	

A Precautions for model No. selection

- *1: Ordering is available as follows: Y11 and Y21 for CKG-16CS; Y11, Y12, Y21, and Y22 for CKG-25CS to 40CS; Y11 and Y21 for CKG-50CS.
- *2: Refer to Pneumatic Cylinders II (CB-030SA) for the dimensions and compatible model of the attachments. When ordered as an option, three are included at shipment.
- *3: © Switches other than Switch model No. are also available. (Made-to-order) For details, refer to Pneumatic Cylinders II (CB-030SA).

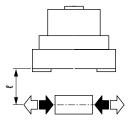
CKG-FP1 Series

Gripping power performance data

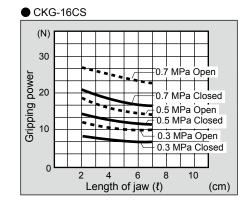
Gripping power performance data

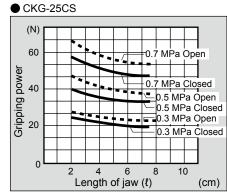
The gripping power in the opening/closing directions with a jaw length ℓ of the hand with a supply pressure of 0.3, 0.5, and 0.7 MPa is shown.

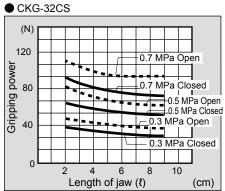
- Open direction (♦) ---- (shown with broken line)
- Closed direction (→) (shown with continuous line)

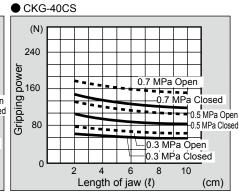


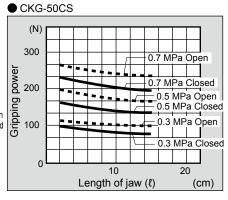
(Note) O type gripping power decreases approximately 20 to 30% in the closed direction compared to the double acting. C type gripping power decreases approximately 10 to 20% in the open direction compared to the double acting. When making a selection, read the precautions for design and selection in Pneumatic Cylinders II (CB-030SA).











FRL/Auxiliary components Electronic components

Pneumatic Cylinders II Catalog No. CB-030SA

Powerful chuck

CKL2-FP1 Series

Operating stroke length: 5, 6, 8, 10, 12, 16, 20, 23 mm

Double acting Single acting (normally open) Single acting (normally closed)

Code

R

Н D

2

1 on open side 1 on closed side









Content

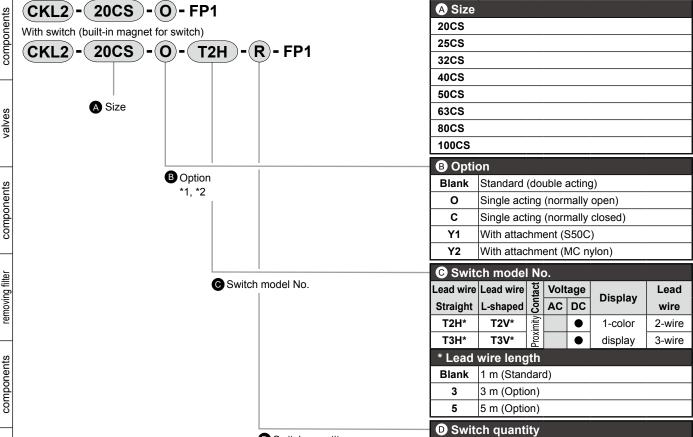


Specifications

Specifications									
Descriptions		CKL2							
Size		20CS	25CS	32CS	40CS	50CS	63CS	80CS	100CS
Bore size	mm	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Working fluid					Compre	ssed air			
Max. working pressure	MPa		0.7						
Min. working pressure	MPa		0.3						
Ambient temperature	°C		5 to 60						
Port size			M5 Rc1/8						1/8
Operating stroke length	mm	5	6	8	10	12	16	20	23
Rod diameter	mm	ø6 ø8 ø10 ø12 ø14 ø16 ø20						ø20	
Volumetric capacity (reciprocating	ng) cm ³	1.8	3.3	7.7	15.6	28.3	60.3	118.2	215.5
Repeatability	mm	±0.01							
Weight	kg	0.12	0.19	0.26	0.38	0.59	1.02	2.02	3.45
Lubrication	·				Not re	quired			

How to order

Without switch (built-in magnet for switch)



Switch quantity

Precautions for model No. selection

Fluid control valves

^{*1:} The attachment is commonly used for internal and external chuck.

^{*2:} Refer to Pneumatic Cylinders II (CB-030SA) for the dimensions and compatible model of the attachments. When ordered as an option, three are included at shipment.

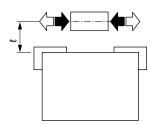
Gripping power performance data

The gripping power in the opening/closing directions with a jaw length ℓ of the hand with a supply pressure of 0.3, 0.5, and 0.7 MPa is shown.

● Open direction (▷) ···· (shown with broken line)

Gripping power performance data

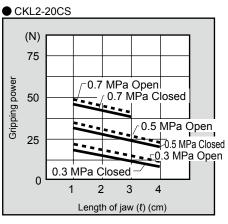
Closed direction (→) — (shown with continuous line)

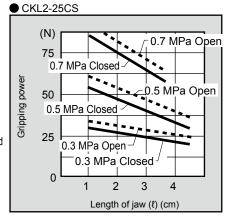


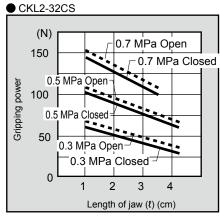
(Note) O type gripping power decreases approximately 20 to 30% in the closed direction compared to the double acting.

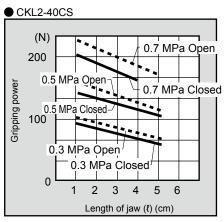
C type gripping power decreases approximately 10 to 20% in the open direction compared to the double acting.

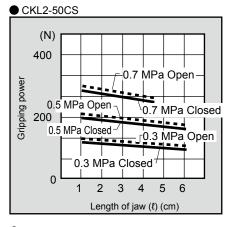
When making a selection, read the precautions for design and selection in Pneumatic Cylinders II (CB-030SA).

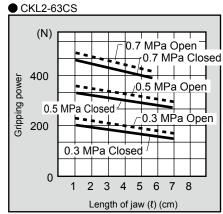


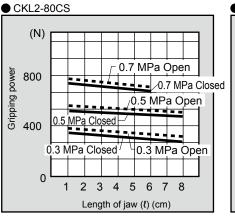


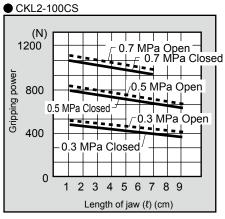












removing filter

components

components



Powerful chuck with rubber cover

CKLG2-FP1 Series

Operating stroke length: 5, 6, 8, 10, 12, 16, 20, 23 mm

Double acting Single acting (normally open) Single acting (normally closed)











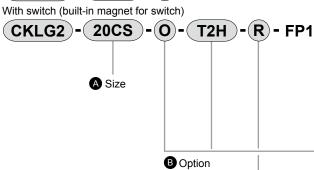
Specifications

Specifications									
Descriptions					CK	LG2			
Size		20CS	25CS	32CS	40CS	50CS	63CS	80CS	100CS
Bore size	mm	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
Working fluid					Compre	essed air			
Max. working pressure	MPa				0	.7			
Min. working pressure	MPa		0.3						
Ambient temperature	°C		5 to 60						
Port size				N	15			Ro	:1/8
Operating stroke length	mm	5	6	8	10	12	16	20	23
Rod diameter	mm	ø6	ø8	ø10	ø12	ø14	Ø	16	ø20
Volumetric capacity (reciprocating	ng) cm³	1.8	3.3	7.7	15.6	28.3	60.3	118.2	215.5
Repeatability	mm	±0.01							
Weight	kg	0.12	0.19	0.26	0.38	0.59	1.02	2.02	3.45
Lubrication		Not required							

How to order

Without switch (built-in magnet for switch)





*1, *2

Code	Content
A Size	
20CS	
25CS	
32CS	
40CS	
50CS	
63CS	
80CS	
100CS	

B Option					
Blank	Standard (double acting)				
0	Single acting (normally open)				
С	Single acting (normally closed)				
Y1	With attachment (S50C)				
Y2	With attachment (MC nylon)				

			(-		,,				
C Swite	Lead wire L-shaped	No) .						
Lead wire	Lead wire	tact	Volt	age	Display	Lead			
Straight	L-shaped	Con	AC	DC	Display	wire			
T2H*	T2V*	Proximity		•	1-color	2-wire			
T3H*	T3V*	Prox		•	display	3-wire			
* Lead	wire lenç	jth							
Blank	1 m (Stan	dar	d)						
3	3 m (Optio	tion)							
5	5 m (Optio	on)							

D Swite	ch quantity
R	1 on open side
Н	1 on closed side
D	2

C Switch model No.

Switch quantity

A Precautions for model No. selection

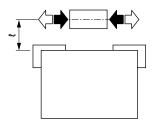
- *1: The attachment is commonly used for internal and external chuck.
- *2: Refer to CKL2 in Pneumatic Cylinders II (CB-030SA) for the dimensions and compatible model of the attachments. When ordered as an option, three are included at shipment.

Gripping power performance data

The gripping power in the opening/closing directions with a jaw length \ell of the hand with a supply pressure of 0.3, 0.5, and 0.7 MPa is shown.

Gripping power performance data

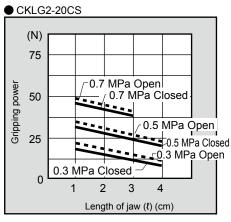
- Open direction (Φ) ···· (shown with broken line)
- Closed direction (➡) (shown with continuous line)

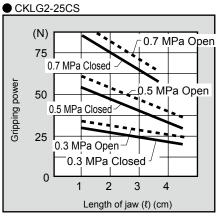


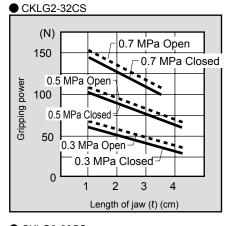
(Note) O type gripping power decreases approximately 20 to 30% in the closed direction compared to the double acting.

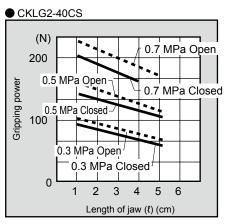
C type gripping power decreases approximately 10 to 20% in the open direction compared to the double acting.

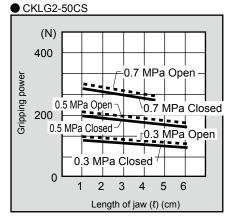
When making a selection, read the precautions for design and selection of chuck in Pneumatic Cylinders II (CB-030SA).

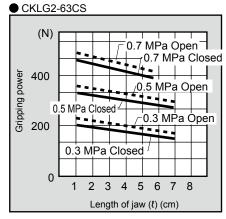


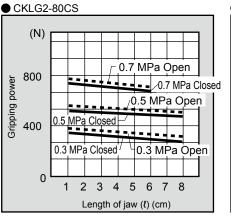


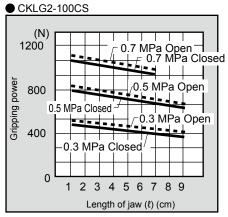












components

CKLG2-FP1 Series

Electric actuator

umatic E

Pneumatic valves

F P 1
FRL/Auxiliary components
Electronic components

Main line Vacuum components

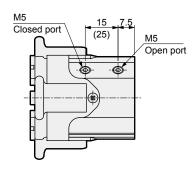
Fluid control valves

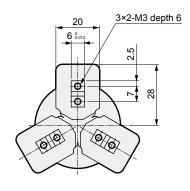
removing filter

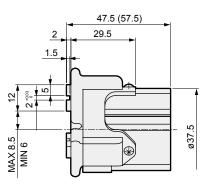
Dimensions

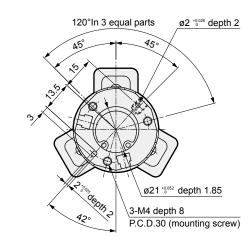
● CKLG2-20CS

Dimensions in () are for the single acting.



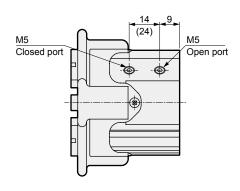


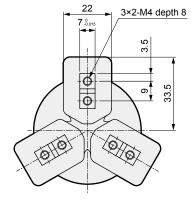


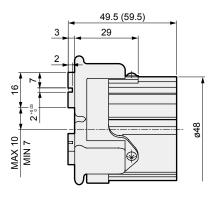


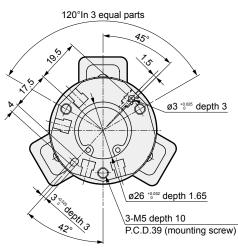
● CKLG2-25CS

Dimensions in () are for the single acting.









Fluid control valves

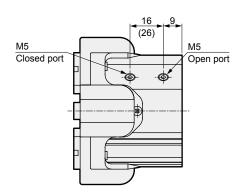
Dimensions

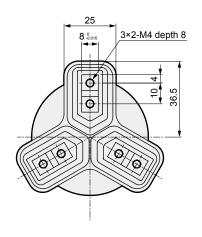
Electric actuator

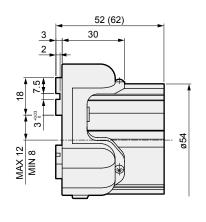
● CKLG2-32CS

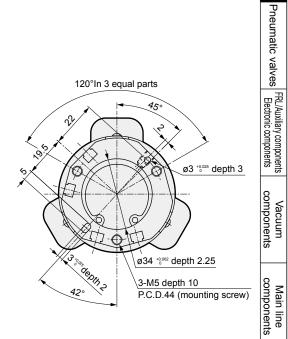
Dimensions

Dimensions in () are for the single acting.



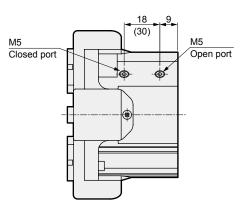


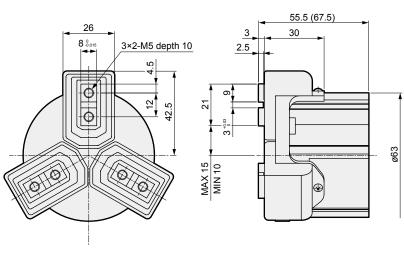


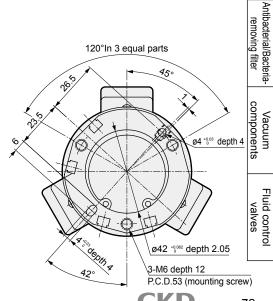


● CKLG2-40CS

Dimensions in () are for the single acting.







CKD

Fluid control valves

Main line components

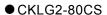
CKLG2-FP1 Series

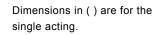
Dimensions Electric actuator ● CKLG2-50CS 19 Dimensions in () are for the М5 (31) Closed port Open port single acting. Pneumatic valves 63.5 (75.5) 29 120°In 3 equal parts 41.5 3×2-M6 depth 12 FRL/Auxiliary components Electronic components 10 -0.015 2.5 45 F P 1 4 ø4 *0.03 depth 4 components Vacuum ø72 MAX 17.5 MIN 11.5 ZO, ZØ ø52 +0.074 depth 2.3 Main line components 3-M6 depth 12 P.C.D.63 (mounting screw) ● CKLG2-63CS Dimensions in () are for the (44)M5 Fluid control valves single acting. Closed port Open port Main line components Antibacterial/Bacteriaremoving filter 76.5 (96.5) 120°In 3 equal parts 2.5 49.5 3×2-M6 depth 12 450 9 5 003 57.5 components Vacuum MAX 24 MIN 16 ø<u>5 👸 depth 5</u> ø85 Fluid control valves ø65 ^{+0.074} depth 2.8 3-M6 depth 12 P.C.D.76 (mounting screw)

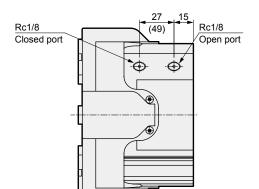
Vacuum components

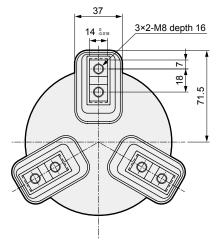
Fluid control valves

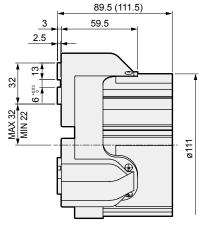
Dimensions

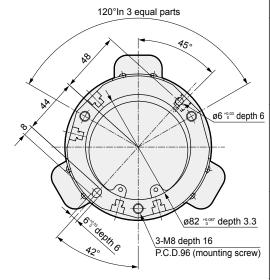






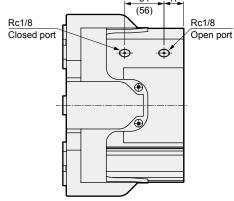


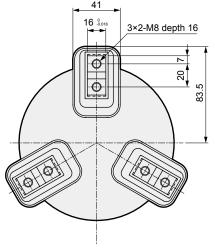


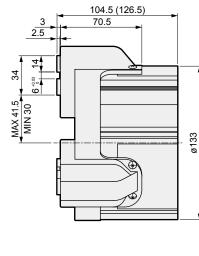


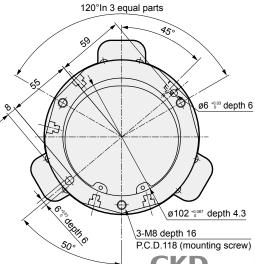
● CKLG2-100CS

Dimensions in () are for the single acting.









Main line components



GRS-FP1 Series

Cylinder grease for food manufacturing processes

Specifications

Base oil	Thickener	Color
Composite	Aluminum compley coop	Poigo
hydrocarbon oil	Aluminum complex soap	Beige

How to order

GRS - (015) - FP1

Size	
015	15 g
080	80 g
120	120 g
220	220 g
500	500 g

Standard amount of required grease

Unit: g

Otarida	ilu alliouli	t OI I	cquii	cu y	icas															Unit: g
Stroke [mm]	Bore size [mm]		ø10	ø12	ø16	ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100	ø125	ø140	ø160	ø180	ø200	ø250	Stroke [mm]
	100	1	1	1	1	1	1	2	3	4	4	5	7	8	8	10	10	11	15	100
	200		1	1	1	1	1	2	3	4	5	6	8	10	10	12	13	14	18	200
	300			1	1	1	2	2	4	5	5	7	9	11	12	14	15	16	22	300
	400					2	2	3	4	5	6	7	10	13	14	16	18	19	25	400
	500					2	2	3	5	6	6	8	11	15	16	18	20	22	29	500
	600					2	3	3	5	6	7	9	12	16	18	21	23	25	32	600
	700					2	3	4	5	7	8	10	13	18	20	23	25	27	36	700
	800					3	3	4	6	7	8	11	14	20	21	25	28	30	39	800
	900					3	3	4	6	8	9	11	15	21	23	27	30	33	43	900
	1000					3	4	5	7	8	9	12	16	23	25	29	33	36	46	1000
	1100								7	9	10	13	17	25	27	32	35	39	50	1100
	1200								7	9	11	14	18	26	29	34	38	41	53	1200
	1300								8	10	11	14	19	28	31	36	40	44	57	1300
	1400								8	10	12	15	20	30	33	38	43	47	60	1400
	1500								9	11	12	16	21	31	35	40	45	50	64	1500
	1600								9	11	13	17	22	33	36	43	48	52	67	1600
	1700									12	14	17	23	35	38	45	50	55	71	1700
	1800									12	14	18	24	36	40	47	53	58	74	1800
	1900									13	15	19	25	38	42	49	55	61	78	1900
	2000									13	15	20	26	39	44	51	57	63	81	2000

Note: The amount of grease required varies greatly depending on the operator, coating method, etc. Consider this as a guide.

■ Use the standard packing set for maintenance. (Pneumatic Cylinders I/II Catalog No. CB-029SA/CB-030SA)

Precautions for use

- This grease is for use in the maintenance of CKD food manufacturing process cylinders (FP1 specifications). Do not use for different applications.
- The shelf life of this grease is three months after delivery. Use up as much grease as possible in a single maintenance. However, if properly stored, grease may be usable even after the expiration date.
- Store indoors in an ordinary environment (room temperature 10 to 40°C, humidity 80% or less, atmosphere that does not impair human living) not subject to direct sunlight.

After opening, confirm that no foreign matter (water, dust, other oils, etc.) has entered before closing the lid and storing.

		FP1					FP	2	
Electric actuator	Pneumatic Pneumatic valve	FRL/Auxiliary components	Vacuum	Main line	Fluid control	Main line	Antibacterial/Bacteria-	Vacuum	
בופטווט מטוממוטו	cylinders	Electronic components	components	components	valves	components	removing filter	components	_

Series variation

4GA1 to 3/4GB1 to 3-FP1 Series *Refe

* Refer to page 161 for the master valve.

Electric actuator Pneumatic cylinders FRL/Auxiliary components Electronic components Vacuum components Main line components Fluid control valves Main line components Antibacterial/Bacteriaremoving filter Vacuum components Fluid control valves

	Series external	арр	earar	nce	Model No.	N sole J
	3GA110R-E* 4GA120R-E*	oiping		3-port	3GA1 3GA2 3GA3	● 3- 2-p
Single unit		Body piping		5-port	4GA1 4GA2 4GA3	₽ 2-p
Sing	4GB310R-B	Base side piping		3-port	3GB1 3GB2 4GB1	Ē
-	000	Base sic		5-port	4GB2 4GB3	● 5- 2-p
Individual wiring manifold	M4GA280R-E*D	Body piping	DIN	Direct mount rail mount (-D)	M4GA1 M4GA2 M4GA3	2-
Individual wi	M4GB280R-E*	Base side piping	DIN	Direct mount rail mount (-D)	M4GB1 M4GB2 M4GB3	≝ 3- po
	M4GA280R-T10		эс	Terminal block (-T1) Connector (-T30, -T5)	M4GA1 M4GA2 M4GA3	å 3-p
		ping	Mount tyl Direct	Serial transmission (-T8□)	M4GA1 M4GA2 M4GA3	å 3-p
р	MACAGOOD TOD	Body piping		Terminal block (-T1 D)	M4GA1 M4GA2	型 型 Tw
manifol	M4GA280R-T8D		Mount type DIN rail	(-T30D, -T5□D) Serial transmission (-T6□D)	M4GA3 M4GA1 M4GA2	int NO
Reduced wiring manifold				(-T8 D) Terminal block (-T1 D) Connector	M4GA3 M4GB1 M4GB2	N
Reduc	M4GB210R-T8D	oiping	Mount type Direct	(-T30, -T5□) Serial transmission	M4GB3 M4GB1 M4GB2	N
		Base side piping		Terminal block (-T1 D) Connector	M4GB3 M4GB1 M4GB2	
		Ba	Mount type DIN rail	(-T30D, -T5□D) Serial transmission (-T6□D)	M4GB3 M4GB1 M4GB2	N
	CVD		Mou	(-T8□D)	M4GB3	

	Valve per	formance		
Position Number of solenoid valves JIS symbol	Flow characteristics C [dm³/(s·bar)]	Applicable Cylinder diameter (ø)	Voltage (v)	
	0.66 to 0.70	20 to 40		
3-port valve	2.2 to 2.7	40 to 80		
2-position single NC	3.9	63 to 100		
	0.66 to 0.70	20 to 40	AC100	
5 1 3 (R ₁) (P) (R ₂)	2.4 to 2.7	40 to 80	AC200	
2-position single NO	3.2 to 4.0	63 to 100	DC24	
a (É)	1.0	20 to 40	DC12	
5 1 3 (R ₁) (P) (R ₂)	2.1	40 to 80	(*2)	
5-port valve	1.1 to 1.3	20 to 40		
2-position single	2.2 to 2.5	40 to 80		
a (A) (B)	3.2 to 4.2	63 to 100		
5 1 3 (R ₁) (P) (R ₂)	0.66 to 1.0	20 to 40		
2-position double	1.7 to 2.5	40 to 80	AC100	
a (A) (B) b	2.5 to 3.3	63 to 100	AC200 DC24	
	0.67 to 1.0	20 to 40	DC12	
3-position all	1.6 to 2.4	40 to 80	(*2)	
ports closed	2.6 to 3.3	63 to 100		
	0.66 to 1.0	20 to 40	DC24	
3-position A/B/R connection	1.7 to 2.5	40 to 80	DC12	
4 2 (A) (B)	2.0 10 0.0	63 to 100		
	0.66 to 1.0	20 to 40	D004	
3-position P/A/B connection	1.7 to 2.5	40 to 80	DC24	
4 2 (A) (B)	2.0 10 0.0	63 to 100		
	0.66 to 1.0 1.7 to 2.5	20 to 40 40 to 80	DC24	
Two 3-port valves	2.5 to 3.3	63 to 100	DC12	
integrated	0.66 to 1.0	20 to 40		
NC/NC	1.7 to 2.5	40 to 80	DC24	
3 (R2)	2.5 to 3.3	63 to 100	DOZ	
B (R1)	0.67 to 1.0	20 to 40		
NC/NO 1(P)	1.6 to 2.4	40 to 80	DC24	
2 (B) 3 (R2)	2.6 to 3.3	63 to 100	DC12	
a 4 (A) ; as (D)	0.66 to 1.0	20 to 40		
1 (P)	1.7 to 2.5	40 to 80	DC24	
NO/NC	2.5 to 3.3	63 to 100		
3 (R2)	0.67 to 1.0	20 to 40		
a 4 (A) 5 (R1)	1.6 to 2.4	40 to 80	DC24	
NO/NO	2.6 to 3.3	63 to 100	DC12	
2 (B) 3 (R2)	0.67 to 1.0	20 to 40		
a 4 (A) ;	1.6 to 2.4	40 to 80	DC24	
5 (R1) 1 (P)	2.6 to 3.3	63 to 100		

4GA1 to 3/4GB1 to 3-FP1 series

Series variation

- *1: Effective cross-sectional area S and sonic conductance C are converted as S ≈ 5.0 × C.
 *2: The grommet lead wire specifications are for DC voltages only.
 *3: The two 3-port valves integrated is available for 3GA1/2 and 3GB1/2.
 *4: P/R piping port is either M5 or Rc thread.

- *5: Specification for reduced wiring manifold equipped. Only 12/24 VDC is supported.*6: "O" indicates a made-to-order product.

Paul			Sw	itch	ina	nosi	tion				^	/R n	inin		rt (*	·//							al con							
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Day		2-po	sition	1	3-	posit	ion	ated (*3)		Pı	ush-i	n fitti	ng	Fe	male	thre	ad						lock		supply termina	r supply termina			page	oneumatic cylinders
Main line Main	mally closed	rmally open	gle	nble	ports closed	R connection	B connection	o 3-port valves integr							Rc1/8				i e	1									Selection	Pneumatic valves
All Main line Puld control Components Component	_	_	Sin	ă	₹	AB	<u>A</u>		ž	C4	C6	C8	C10	M5	06	08	10	Blank	E	E□J	В	A2N	T1[T30	T50	T5 <u></u>	T6 <u></u>	T8_		Electri
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Electric actuator

4GA1 to 3/4GB1 to 3-FP1 series

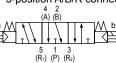
Т	_						
	ctuato		Electrical c	onnections		Manual override	Other options
	Electric actuator	Single valve/in man	dividual wiring ifold	Reduced wir	ring manifold	Mariual Override	Other options
		Grommet lead wire		side) M3 thread specifications/	T51 Flat cable without T52 power supply T53 terminal (left side)	Non-locking/locking common	With exhaust check valve
	Pneumatic cylinders	• Lead wire length 300 mm		ciamping specifications	terrimar (tert side)	(Standard equipment)	4
	Cy.						
	valves					_	
	Pneumatic valves		A-connector	T10R Common terminal block (right	T51R Flat cable without		Standard for pilot exhaust
I		E-connector Lead wire length		TAAD SILLE) IVIS LITIEAU SPECIFICALIOTIS/	T52R power supply T53R terminal (right side)		P Mounting plate
	FRL/Auxiliary components Electronic components	300 mm 500 mm 1000 mm					
•	L/Auxiliary	2000 mm 3000 mm					000
Ī							Single unit (only body piping)
	Vacuum components	E-connector without socket	● For AC voltages, the (a) dimension is 3.5	T30 D-sub-connector (left)	T6 ^{*0} Serial transmission	(1)For non-locking, push	K External pilot
	> no		mm longer than for DC voltages.			to turn ON, release to turn OFF	
	ine ents					(2)For locking, push and turn 90° clockwise to hold the ON state.	
	Main line components		a		THE STATE OF THE S	Turn counterclockwise to	a 4 2 (A) (B)
ŀ		E-connector with	DIN terminal box (BN: Without	D-sub-connector	Tox1 Serial transmission	unlock OFF M Non-locking	Port A/B filter
	uid control valves	socket/terminal	terminal box)	(right)	(thin)	IN NOTHOCKING	integrated
	Fluid						
	e nts					Protective	
	Main line components					Manual button	
		E2 E-connector () L\S	E0*J EJ-connector ①	Flat cable with power T50 supply terminal (left side)			
	Antibacterial/Bacteria- removing filter	Lead wire length 300 mm 500 mm	\sim		With lead wire With indicator lamp S: With surge suppressor	r	
	ibacterial removin	1000 mm 2000 mm			(5): With surge suppresso	ır	
-		3000 mm					
	Vacuum components	E-connector	E2*J EJ-connector	Flat cable with power T50R supply terminal (right			
	Comp	without socket LS	ULS	side)			
	lo l						
	Fluid control valves						
	Ē		-				

4GA1 to 3/4GB1 to 3-FP1 Series

	Ele	ctrical	connection circuit dia							Ele
Other options		E	Electrical connections	Without lead wire	With lead wire	With indicator lamp	With surge suppressor	Without socket	Circuit diagram	Electric actuator
Z1 Air supply spacer Z3 Exhaust spacer		Blank	Grommet lead wire		•				(±) O	Pneumatic Pn cylinders
		E0	E-connector		•				(±) O————————————————————————————————————	Pneumatic valves
		E0*J	EJ-connector		•				(‡) O	valves
In-stop valve spacer		E0N	E-connector					•	100 VAC	
		E1	E-connector	•					(to) 0	FRL/Auxiliary components Electronic components
		E2	E-connector		•	•	•		DC (±) 0 4 4 4	nponents onents
		E2*J	EJ-connector		•	•	•		(±) ○	con V
D DIN rail mount		E2N	E-connector			•	•	•	100 VAC	Vacuum components
		E3	E-connector	•		•	•		(to) ○ \$\frac{1}{2} \tag{1}	nts
		A2N	A-connector			•	•	•	DC (±) O	Main line components
Double wiring W1 (With single spare wiring)		В	DIN terminal box	•		•	•		DC (±) O	Fluid control valves
Spare wiring		BN	DIN terminal box (without terminal box)	•			•		100 VAC (to) 0	Main line components
									200 VAC	Antibacterial/Bacteria- removing filter
	တ	E2	E-connector		•	•	•		(±) 0	
	Option	E2*J	EJ-connector		•	•	•		DC \$\frac{\frac{1}{2}}{2}\$	Vacuum components
	Ŏ	E2N	E-connector			•	•	•	(¥) O (¥)	nents
	ш	E2	E-connector		•	•	•		(±) O	П
	Option	E2*J	EJ-connector		•	•	•		DC Jacob latinos	Fluid control valves
	Ō	E2N	E-connector			•	•		(Ŧ) O	ntrol

components

Fluid control



3-position P/A/B connection



Single valve **Body piping**

3GA1/2/3, 4GA1/2/3-FP1 Series

Applicable cylinder bore size: ø20 to ø100

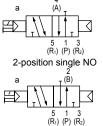




JIS symbol

3-port valve 2-position single NC

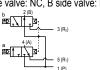
Pneumatic Valves Catalog No. CB-023SA



Two 3-port valves integrated (A side valve: NC, B side valve: NC)

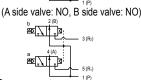


(A side valve: NC, B side valve: NO)

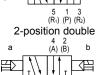


(A side valve: NO, B side valve: NC)

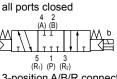




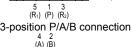
● 5-port valve 2-position single 4 2 (A) (B)

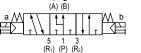


5 1 3 (R₁) (P) (R₂) 3-position



3-position A/B/R connection





Common specifications

00on	
Descriptions	Content
Valve and operation	Pilot operated soft spool valve
Working fluid	Compressed air
Max. working pressure MPa	0.7
Min. working pressure MPa	0.2
Proof pressure MPa	1.05
Ambient temperature °C	-5 to 55 (no freezing)
Fluid temperature °C	5 to 55
Manual override	Non-locking/locking common (standard)
Pilot exhaust method	Main valve/pilot valve common exhaust
Degree of protection *1	Dust-proof
Vibration resistance m/s ²	50 or less
Shock resistance m/s ²	300 or less
Atmosphere	Cannot be used in corrosive gas environments

^{*1:} Avoid water drops, oil, etc., during use. IP65 (jet-proof) applies for DIN terminal box specifications. However, the specified outer diameter of the cord and tightening torque must be used for fixing in place.

Electrical specifications

Descriptio	ns		Con	tent		
Rated voltag	je V	DC24	DC12	AC100	AC200	
Voltage fluctuat	tion range	±10%				
Holding current A	Standard	0.015 (0.017)	0.030 (0.034)	0.009 (0.009)	0.006 (0.006)	
(*2)	With low exoergic/ energy circuit	0.005	0.010		-	
Power consumption	Standard	0.35	(0.40)	-		
W (*2)	With low exoergic/ energy circuit	0	.1	-		
Apparent power VA (*2) (*3)	Standard		-		1.40	
Thermal class	SS	В				
Surge suppr	Option					
Indicator		Lamp (option)				

^{*2:} Values in () apply when lamp is included. In addition, the type with low exoergic/energy circuit is only available with lamp.

Individual specifications

Port si	ze	3GA1, 4GA1	3GA1, 4GA1 3GA2, 4GA2		
Rc thread,	A/B Port	Push-in fitting ø4, ø6 M5	Push-in fitting ø4, ø6, ø8 Rc1/8	Push-in fitting ø6, ø8, ø10 Rc1/4	
M5	P/R1/R2 Port	M5	Rc1/8	Rc1/4	

Descriptions		3G	A1	3G	A2	3G	A3	4G	A 1	4G	A2	4G	A 3	
		ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	
Doononoo	Two 3-port valves integrated		9	12	12	29	-	-	-	-	-	-	-	-
Response		Single	15	15	19	19	25	28	15	15	19	19	25	28
	2-position	Double	-	-	-	-	-	-	9	-	18	-	24	-
ms	0	ADD					1		_	4.5	47	00	-00	45

| 8 | 15 | 17 | 30 | Values with lamp/surge suppressor are shown. The response times are values with working pressure of 0.5 MPa at 20°C. They depend on the pressure

Descrip	otions		3GA1	3GA2	3GA3	4GA1	4GA2	4GA3
	Singl	Grommet lead wire	48 (41)	104 (74)	142 (100)	48 (41)	109 (79)	151 (109)
	ے	E-connector	50 (43)	106 (76)	144 (102)	50 (43)	111 (81)	153 (111)
	<u> [£</u>]	DIN terminal box	-	141 (111)	177 (135)	-	146 (116)	186 (144)
\\/aiabt	2-position	Grommet lead wire	-	-	-	65 (58)	127 (97)	174 (128)
Weight	' '	E-connector	-	-	-	69 (62)	131 (101)	178 (132)
g		DIN terminal box	-	-	-	-	169 (139)	214 (168)
	.5 All	Grommet lead wire	-	-	-	67 (60)	139 (109)	183 (141)
	3-postition	E-connector	-	-	-	71 (64)	143 (113)	187 (145)
	- CIUSE	DIN terminal box	-	-	-	-	181 (151)	223 (181)

- · Values in () do not include the pipe adapter. Values for the E-connector include the socket assembly (with 300 mm lead wire). For the EJ-connector, add 16 g/connector to the E-connector weight.
- · The weight of dual 3-port valve integrated is the same as that of 2-position double.

^{*3: 200} VAC is the value of DIN terminal box (with lamp).

3GA1/2/3, 4GA1/2/3-FP1 series Single valve; body piping

Flow characteristics

Madal Na	Cal	lancid position	P→	A/B	A/B→	R1/R2
Model No.	501	enoid position	C[dm³/(s·bar)]	b	C[dm³/(s·bar)]	b
	Two 3-port valves integrated		0.98	0.45	0.71	0.34
2014	2-position	on	1.2	0.47	0.72	0.37
3GA1 4GA1		All ports closed	1.1	0.39	0.70	0.34
40A1	3-position	ABR connection	1.1	0.33	0.72	0.34
		PAB connection	1.3	0.61	0.72	0.36
	Two 3-p	oort valves integrated	1.8	0.29	2.3	0.32
	2-position	on	2.4	0.33	2.8	0.30
3GA2 4GA2		All ports closed	2.2	0.28	2.5	0.28
40A2	3-position	ABR connection	2.3	0.26	2.8	0.27
		PAB connection	2.5	0.38	2.4	0.30
	2-position	on	3.4	0.29	4.0	0.24
3GA3		All ports closed	3.1	0.27	3.4	0.28
4GA3	3-position	ABR connection	3.1	0.33	4.1	0.20
		PAB connection	3.5	0.43	3.4	0.32

^{*1:} Effective cross-sectional area S and sonic conductance C are converted as S \approx 5.0 \times C.

Electric actuator Pneumatic cylinders Pneumatic valves FRL/Auxiliary components Electronic components Vacuum components Main line components Fluid control valves Main line components Antibacterial/Bacteria-removing filter Vacuum components Fluid control valves

3GA1/2/3, 4GA1/2/3-FP1 Series

Single valve; body piping

Electric actuator

Pneumatic

FRL/Auxiliary components Electronic components

components

Vacuum

Main line components

Fluid control

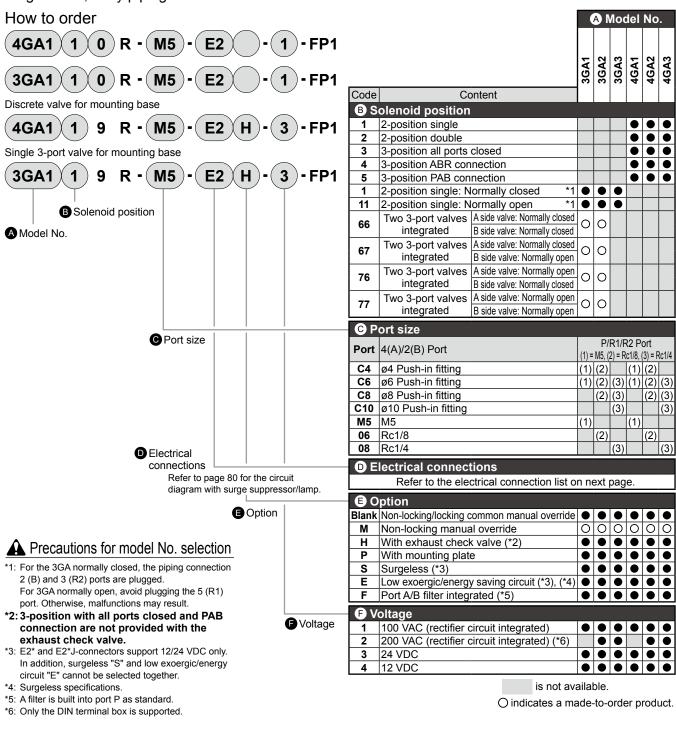
components

Main line

Antibacterial/Bacteriaremoving filter

Vacuum components

Fluid control valves



3GA1/2/3, 4GA1/2/3-FP1 series Single valve; body piping

		(A I	Mod	lel	No	
[Elec	ctrical connection list]	3GA1	3GA2	3GA3	4GA1	4GA2	4GA3
DΕ	lectrical connections						
Blank	Grommet lead wire (300 mm) (*7)	•	•	•	•	•	•
В	DIN terminal box (Pg7) With surge suppressor/lamp (*8)		•	•		•	•
BN	DIN terminal box (Pg7) (without terminal box) With surge suppressor/lamp (*8)		•	•		•	•
E-con	nector (upward/lateral direction common)						
E0	Lead wire (300 mm) (*9)	•	•	lacktriangle	•	•	•
E00	Lead wire (500 mm) (*9)	•	•	•	•	•	•
E01	Lead wire (1000 mm) (*9)	•	•	•	•	•	•
E02	Lead wire (2000 mm) (*9)	•	•	•	•	•	•
E03	Lead wire (3000 mm) (*9)	•	•	•	•	•	•
E0N	Without lead wire (without socket)	•	•	•	•	•	•
E1	Without lead wire (socket/terminal included) (*9)	•	•	•	•	•	•
E2	Lead wire (300 mm) With surge suppressor/lamp	•	•	•	•	•	•
E20	Lead wire (500 mm) With surge suppressor/lamp	•	•	•	•	•	•
E21	Lead wire (1000 mm) With surge suppressor/lamp	•	•	•	•	•	•
E22	Lead wire (2000 mm) With surge suppressor/lamp	•	•	•	•	•	•
E23	Lead wire (3000 mm) With surge suppressor/lamp	•	•	•	•	•	•
E2N	Without lead wire (without socket) With surge suppressor/lamp	•	•	•	•	•	•
E3	Without lead wire (socket/terminal included) With surge suppressor/lamp	•	•	•	•	•	•
EJ-co	nnector (socket with cover, upward/lateral di	ecti	ion (com	moi	n)	
E01J	Lead wire (1000 mm) (*9)	•	•	•	•	•	•
E02J	Lead wire (2000 mm) (*9)	•	•	•	•	•	•
E03J	Lead wire (3000 mm) (*9)	•	•	•	•	•	•
E21J	Lead wire (1000 mm) With surge suppressor/lamp	•	•	•	•	•	•
E22J	Lead wire (2000 mm) With surge suppressor/lamp	•	•	•	•	•	•
E23J	Lead wire (3000 mm) With surge suppressor/lamp	•	•	•	•	•	•

^{*7:} The grommet lead wire specifications are compatible with DC voltage only.

Electric actuator Pneumatic cylinders Pneumatic valves FRL/Auxiliary components Electronic components Vacuum components Main line components Fluid control valves Main line components Antibacterial/Bacteriaremoving filter Vacuum components Fluid control valves

^{*8:} A lamp comes with the terminal box.

^{*9:} AC voltage is with a rectifier circuit.

removing filter



Single valve Base side piping

3GB1/2, 4GB1/2/3-FP1 Series

Applicable cylinder bore size: ø20 to ø100





JIS symbol

 Two 3-port valves integrated (A side valve: NC, B side valve: NC)



(A side valve: NC, B side valve: NO)



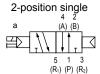
(A side valve: NO, B side valve: NC)



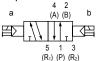
(A side valve: NO, B side valve: NO)



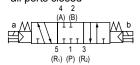
5-port valve



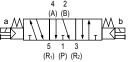
2-position double



3-position all ports closed



3-position A/B/R connection



3-position P/A/B connection



Common specifications

Descrip	tions	Content		
Valve and	operation	Pilot operated soft spool valve		
Working f	luid	Compressed air		
Max. working	pressure MPa	0.7		
Min. working	pressure MPa	0.2 (*2)		
Proof pres	ssure MPa	1.05		
Ambient ter	mperature °C	-5 to 55 (no freezing)		
Fluid temp	perature °C	5 to 55		
Manual o	verride	Non-locking/locking common (standard		
Pilot exhaust	Internal pilot	Main valve/pilot valve common exhaust		
method	External pilot	Main valve/pilot valve individual exhaust		
Degree of	protection *1	Dust-proof		
Vibration re	sistance m/s ²	50 or less		
Shock resi	stance m/s ²	300 or less		
Atmosphe	ere	Cannot be used in corrosive gas environments		
	•			

- *1: Avoid water drops, oil, etc., during use. IP65 (jet-proof) applies for DIN terminal box specifications. However, the specified outer diameter of the cord and tightening torque must be used for fixing in place.
- *2: The working pressure range is 0 to 0.7 MPa when the external pilot (option code: K) is selected. Set the external pilot pressure between 0.2 and 0.7 MPa.

Electrical specifications

Descri	iptions		Con	tent							
Rated v	oltage V	DC24	DC12	AC100	AC200						
Voltage flu	ctuation range		±10%								
Holding current A	Standard	0.015 (0.017)	0.030 (0.034)	0.009 (0.009)	0.006 (0.006)						
(*3)	With low exoergic/ energy circuit	0.005	0.010	-							
	Standard	0.35	(0.40)		_						
	With low exoergic/ energy circuit	0	.1	-							
Apparent power VA (*3) (*4)	Standard	-		0.93 (0.98)	1.40						
Therma	l class	В									
Surge s	uppressor	Option									
Indicato	or	Lamp (option)									

- *3: Values in () apply when lamp is included. In addition, the type with low exoergic/energy circuit is only available with lamp.
- *4: 200 VAC is the value of DIN terminal box with lamp.

Individual specifications

Port size		3GB1, 4GB1 3GB2, 4GB2		4GB3	
Rc thread	A/B Port	Rc1/8	Rc1/4	Rc1/4, Rc3/8	
	P/R1/R2 Port	Rc1/8	Rc1/4	Rc1/4, Rc3/8	

Descriptions			3GB1, 4GB1		3GB2, 4GB2		4GB3	
			ON	OFF	ON	OFF	ON	OFF
Response time ms	Two 3-port valves integrated		9	12	12	29	-	-
	2-position	Single	15	15	19	19	25	28
		Double	9	-	18	-	24	-
	3-position	ABR connection	8	15	17	30	23	45

Values with a lamp/surge suppressor are shown. The response times are values with working pressure of 0.5 MPa at 20°C. They depend on the pressure.

Description	ons	5		3GB1, 4GB1	3GB2, 4GB2	4GB3
Weight g	Single		Grommet lead wire	80 (38)	156 (74)	215 (96)
	u		E-connector	82 (40)	158 (76)	217 (98)
	sition		DIN terminal box	-	193 (111)	249 (130)
		<mark>위</mark> Double	Grommet lead wire	97 (55)	173 (91)	233 (114)
	5		E-connector	101 (59)	177 (95)	237 (118)
			DIN terminal box	-	216 (134)	273 (154)
	ion	All	Grommet lead wire	98 (56)	184 (102)	242 (123)
	osit	All ports closed	E-connector	102 (60)	188 (106)	246 (127)
	ြိုင် ငြင်		DIN terminal box	-	227 (145)	282 (163)

- · Values in parenthesis () do not include the single sub-plate. Values for the E-connector include the socket assembly (with 300 mm lead wire).
 - For EJ-connector, add 16 g/connector to E-connector weight.
- The weight of dual 3-port valve integrated is the same as that of 2-position double.

3GB1/2, 4GB1/2/3-FP1 series Single valve; base piping

Flow characteristics

Model No	Calanaid position		P→	A/B	A/B→	A/B→R1/R2		
Model No.	501	enoid position	C[dm³/(s·bar)]	b	C[dm³/(s·bar)]	b		
	Two 3-port valves		0.92	0.08	1.1	0.26		
2274	2-position	on	1.3	0.27	1.2	0.22		
3GB1 4GB1		All ports closed	1.1	0.31	1.1	0.27		
4061	3-position	ABR connection	1.1	0.31	1.3	0.29		
		PAB connection	1.4	0.30	1.1	0.26		
	Two 3-port valves integrated		1.7	0.42	2.1	0.26		
	2-position	on	2.6	0.20	2.6	0.19		
3GB2 4GB2		All ports closed	2.3	0.32	2.2	0.22		
4662	3-position	ABR connection	2.2	0.23	2.6	0.16		
		PAB connection	2.4	0.10	2.4	0.22		
	2-position	on	4.3	0.24	4.2	0.24		
40P2	3-position	All ports closed	3.3	0.40	3.4	0.27		
4GB3		ABR connection	3.3	0.36	4.2	0.18		
		PAB connection	4.5	0.28	3.4	0.30		

^{*1:} Effective cross-sectional area S and sonic conductance C are converted as S \approx 5.0 \times C.

Electric actuator Pneumatic valves FRL/Auxiliary components Electronic components Main line components Fluid control valves Main line components Antibacterial/Bacteria-removing filter Vacuum components Fluid control valves

3GB1/2, 4GB1/2/3-FP1 Series

Single valve; base piping How to order **E2** 3 **4GB1** 1 **R** -(06 3GB2 4GB2 3GB1 4**GB1** Content 3GB1 (66) 0 06 **B** Solenoid position Discrete valve for mounting base 1 2-position single 2 2-position double • **E2** 4GB1 (1) 9 R - 00 • • 3-position all ports closed 3-position ABR connection • 4 3 port discrete valve for mounting base • • • 5 3-position PAB connection Two 3-port valves A side valve: Normally closed \bigcirc \bigcirc 66 Н 3GB1 (66) 9 R - 00 **E2** 3 integrated *1 B side valve: Normally closed Two 3-port valves A side valve: Normally closed 67 0 0 integrated *1 B side valve: Normally open B Solenoid position A side valve: Normally open Two 3-port valves 0 76 0 integrated *1 B side valve: Normally closed A Model No. Two 3-port valves A side valve: Normally open 77 \circ 0 integrated *1 B side valve: Normally open © Port size Port size P/R1/R2 Port Port 4(A)/2(B) Port (2) = Rc1/8 (3) = Rc1/4 (4) = Rc3/8 **06** Rc1/8 (2) (2) 08 Rc1/4 (3) (3) (3) 10 Rc3/8 (4) 00 Discrete valve for mounting base • D Electrical connections Electrical connections Blank Grommet lead wire (300 mm) (*7) • • Refer to page 80 for the circuit В DIN terminal box (Pg7) With surge suppressor/lamp (*8) • lacktriangleDIN terminal box (Pg7) (without terminal box)
With surge suppressor/lamp (*8) diagram with surge suppressor/ • lamp. E-connector (upward/lateral direction common) **E0** Lead wire (300 mm) (*9) • • • E00 Lead wire (500 mm) (*9) • • • • E01 Lead wire (1000 mm) (*9) • • **E02** Lead wire (2000 mm) (*9) • • • • • E03 Lead wire (3000 mm) (*9) • • EON Without lead wire (without socket) (*9) • • • • • E1 Without lead wire (socket/terminal included) (*9) • • E2 Lead wire (300 mm) With surge suppressor/lamp lacktriangle• lacktriangle• **E20** Lead wire (500 mm) With surge suppressor/lamp E21 Lead wire (1000 mm) With surge suppressor/lamp • E22 Lead wire (2000 mm) With surge suppressor/lamp **E23** Lead wire (3000 mm) With surge suppressor/lamp • • lacktriangle• E2N Without lead wire (without socket) With surge suppressor/lamp E3 Without lead wire (with socket/terminal) With surge suppressor/lamp EJ-connector (socket with cover, upward/lateral direction commor **E01J** Lead wire (1000 mm) (*9) E02J Lead wire (2000 mm) (*9) • • • • E03J Lead wire (3000 mm) (*9) • E21J Lead wire (1000 mm) With surge suppressor/lamp • • • • • **E22J** Lead wire (2000 mm) With surge suppressor/lamp • lacktrianglelacktrianglelacktriangleE23J Lead wire (3000 mm) With surge suppressor/lamp • • Option Option Blank Non-locking/locking common manual override • 0 0 0 M Non-locking manual override \circ 0 With exhaust check valve (*2) • • • • External pilot Precautions for model No. selection s Surgeless (*3) • • • • • Low exoergic/energy saving circuit (*3), (*4) Е • • • • *1: Not compatible when combined with external pilot (K). Port A/B filter built in (*5) • lacktriangle• • F *2: 3-position with all ports closed and PAB Voltage connection are not provided with the exhaust F Voltage check valve. 1 100 VAC (rectifier circuit integrated) ullet*3: E2* and E2*J-connectors support 12/24 VDC only. 200 VAC (rectifier integrated) (*6) • • lacktriangleIn addition, surgeless "S" and low exoergic/energy circuit 24 VDC "E" cannot be selected together. 12 VDC • • *4: Surgeless specifications. *5: A filter is built into port P as standard. is not available. *6: Only the DIN terminal box is supported.

O indicates a made-to-order product.

- *7: The grommet lead wire specifications are compatible with DC voltage only.
- *8: A lamp comes with the terminal box.
- *9: AC voltage is with a rectifier circuit.

Electric actuator

Pneumatic

FRL/Auxiliary components Electronic components

components

Vacuum

Main line components

Fluid control

components

Main line

Antibacterial/Bacteria-

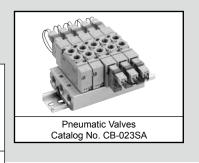
Fluid control

valves

removing filter

<u> </u>	luid control Main line Antibacterial/Bacteria-
<u> </u>	ine Antibacterial/Bacteria

components



Individual wiring manifold **Body piping** Direct mount/DIN rail mount

M3GA1/2/3-(D), M4GA1/2/3-(D)-FP1 Series

Applicable cylinder bore size: ø20 to ø100





JIS symbol

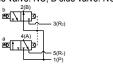
3-port valve 2-position single NC



5 1 3 (R₁) (P) (R₂) ■ Two 3-port valves integrated (A side valve: NC, B side valve: NC)



(A side valve: NC, B side valve: NO)



(A side valve: NO, B side valve: NC)



(A side valve: NO, B side valve: NO)

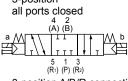


5-port valve 2-position single

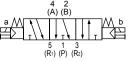




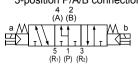
3-position



3-position A/B/R connection



3-position P/A/B connection



Manifold common specifications

Marilloid	COIIII	поп	specifications
Description	ons		Content
Manifold			Integrated base
Mounting method			Direct mount/DIN rail mount
Air supply and exhaust method			Common supply/common exhaust (With internal exhaust check valve)
Pilot exhaust	Internal pilot		Main valve/pilot valve common exhaust (Pilot exhaust check valve built-in)
method	Externa	l pilot	Main valve/pilot valve individual exhaust
Piping direction			Valve top direction
Valve and operation			Pilot operated soft spool valve
Working fluid			Compressed air
Max. working pressure MPa			0.7
Min. working pressure MPa			0.2 (*2)
Proof pressure MPa		MPa	1.05
Ambient ten	Ambient temperature °C		-5 to 55 (no freezing)
Fluid tempe	rature	°C	5 to 55
Manual ove	rride		Non-locking/locking common (standard)
Degree of p	rotection		Dust-proof
Vibration re	sistance	m/s ²	50 or less
Shock resis	tance	m/s ²	300 or less
Atmosphere	;		Cannot be used in corrosive gas environments

- *1: Avoid water drops, oil, etc., during use. IP65 (jet-proof) applies for DIN terminal box specifications. However, the specified outer diameter of the cord and tightening torque must be used for fixing in place.
- *2: The working pressure range is 0 to 0.7 MPa when the external pilot (option code: K) is selected. Set the external pilot pressure between 0.2 and 0.7 MPa.

Electrical specifications

Descriptions		Content					
Rated voltage	Rated voltage V		DC12	AC100	AC200		
Voltage fluctua	tion range	±10%					
Holding	Standard	0.015	0.030	0.009	0.006		
current	Stanuaru	(0.017)	(0.034)	(0.009)	(0.006)		
A (*3)	With low exoergic/energy circuit	0.005	0.010		-		
Power consumption	Power consumption Standard		(0.40)		-		
W (*3)	With low exoergic/energy circuit	0	.1	-			
Apparent power	Apparent power Standard			0.93	1.40		
VA (*3) (*4)	Stanuaru			(0.98)	1.40		
Thermal class		В					
Surge suppres	sor		Ор	tion			
Indicator			Lamp (option)			

*3: Values in () apply when lamp is included. In addition, the type with low exoergic/energy circuit is only available with lamp.

Individual specifications

maivide	adi Specine	ations							
			M3GA1	M4GA1	M3GA2	M4GA2	M3GA3	M4GA3	
Descriptions			Direct mount	DIN rail mount	Direct mount	DIN rail mount	Direct mount	DIN rail mount	
May station No	Max. station No. Standard (Internal p		20 stations 16 stations		20 stations	16 stations	20 stations	16 stations	
	External pilot		12 stations	12 stations	20 Stations	10 Stations	20 Stations	TO Stations	
Rc thread,	Rc thread, A/B Port		IV	15	Rc	1/8	Rc1/4		
전 M5	P/R1/R2 Port		Rc	1/8	Rc	1/4	Rc3/8		
Manifold base Standard		Standard	23n+52	25n+60	47n+64	49n+92	74n+88	76n+117	
Weight calculation	formula (n: station No.) g	External pilot	36n+105	38n+113	88n+135	90n+163	136n+194	138n+223	

For 10 or more manifold station No. (5 stations for 4G3), use ports on both sides for air supply and exhaust.

^{*4: 200} VAC is the value of DIN terminal box (with lamp).

M3GA1/2/3, M4GA1/2/3-FP1 series Individual wiring manifold; body piping

Flow characteristics

Madal Na	del No. Solenoid position		P→	A/B	A/B→	A/B→R1/R2		
Model No.			C[dm³/(s·bar)]	b	C[dm³/(s·bar)]	b		
	Two 3-port valves integrated 2-position		0.86	0.31	1.1 (0.66)	0.19 (0.22)		
M3GA1			0.99	0.20	1.2 (0.70)	0.20 (0.12)		
M4GA1		All ports closed	0.94	0.23	1.1 -	0.20 -		
WI4GAT	3-position	ABR connection	0.93	0.18	1.3 (0.70)	0.23 (0.02)		
		PAB connection	1.1	0.28	1.1 -	0.23 -		
	Two 3-p	ort valves integrated	1.7	0.40	2.3 (1.7)	0.29 (0.32)		
M3GA2	2-position		2.3	0.36	2.9 (1.7)	0.24 (0.33)		
		All ports closed	2.1	0.35	2.5 -	0.32 -		
M4GA2	3-positionn	ABR connection	2.2	0.37	2.9 (1.8)	0.32 (0.29)		
	PAB connection		2.4	0.34	2.5 -	0.33 -		
	2-position	on	3.2	0.37	3.8 (2.5)	0.13 (0.28)		
M3GA3		All ports closed	2.9	0.35	3.3 -	0.35 -		
M4GA3	3-positionn	ABR connection	3.0	0.34	3.8 (2.6)	0.12 (0.27)		
		PAB connection	3.3	0.30	3.3 -	0.32 -		

^{*1:} Effective cross-sectional area S and sonic conductance C are converted as $S \approx 5.0 \times C$.

Electric actuator Pneumatic valves FRL/Auxiliary components Electronic components Main line components Fluid control valves Main line components Antibacterial/Bacteria-removing filter Vacuum components Fluid control valves

^{*2:} Values in () are with the exhaust check valve.

M4GA1/2/3-FP1 Series

Individual wiring manifold; body piping

Electric actuator

Pneumatic

FRL/Auxiliary components Electronic components

Vacuum components

Main line components

Fluid control

components

Main line

Antibacterial/Bacteriaremoving filter

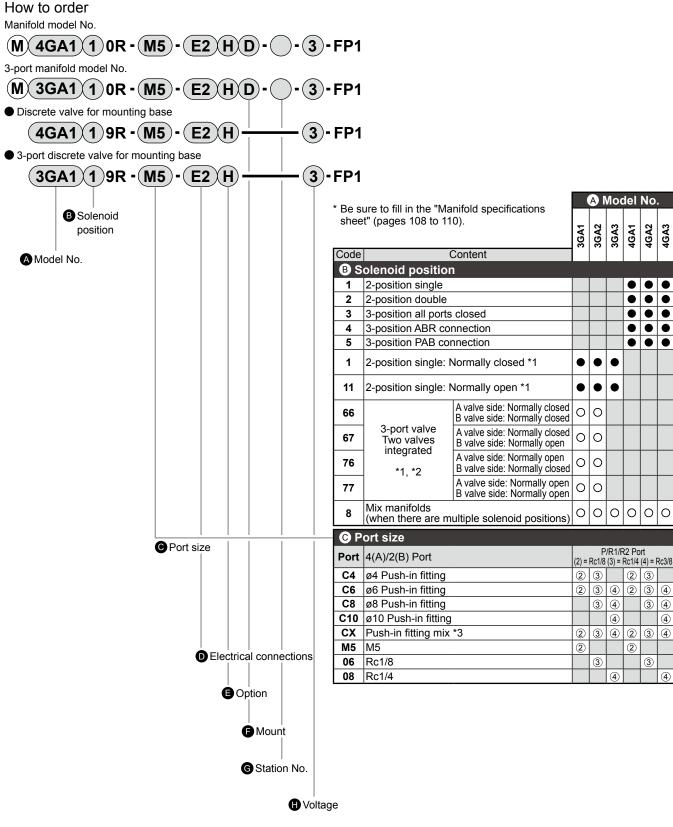
components

Vacuum

Fluid control

valves

cylinders



A Precautions for model No. selection

- *1: Select M4GA*80R when mixing with 3/5-port valves.
 - Furthermore, select M3GA*80R when mixing with masking plate.
- *2: Not compatible when combined with external pilot (K).
- *3: The push-in fitting cannot be mixed with the single valve's 4(A) or 2(B) port.

M4GA1/2/3-FP1 Series

Individual wiring manifold; body piping

		ļ	(A) I	Mod	del	No	
			3GA1	3GA2	3GA3	4GA1	4GA2	4GA3
			3	ä	ä	4	46	4
D E	lectrical connections							
		*12	•		•	•	•	•
-	DIN terminal box (Pg7) With surge suppressor/lamp	\rightarrow		•	•	Ť	•	•
	DIN terminal box (Pg7) (without terminal box)With surge suppressor/lam			•	•		•	•
	nector (upward/lateral direction commo							
		*14	•	•	•	•	•	•
	,	*14	•	•	•	•	•	•
		*14	•	•	•	•	•	•
		*14	•	•	•	•	•	•
		*14	•	•	•	•	•	•
		*14	•	•	•	•	•	•
	Without lead wire (socket/terminal included)		Ť	•	•	•	•	•
	Lead wire (300 mm) With surge suppressor/		Ť	•	•	•	•	•
	Lead wire (500 mm) With surge suppressor/			•	•	•	•	•
	Lead wire (1000 mm) With surge suppressor/				•	•	•	•
	Lead wire (2000 mm) With surge suppressor/				•	•	•	•
	Lead wire (3000 mm) With surge suppressor/				•	•	•	•
	Without lead wire (without socket) With surge suppressor				_	•	•	•
	Without lead wire (socket/terminal included) With surge suppressor					•	Ó	•
	nnector (socket with cover, upward/latera						1)	
		*14						•
		*14	Ť					ě
		*14	Ť		-	•		Ť
	Lead wire (3000 mm) With surge suppressor/l		÷	•	•			
	Lead wire (2000 mm) With surge suppressor/l				-	-		•
					 -	1		-
	Lead wire (3000 mm) With surge suppressor/l	ıaıııµ	=	•	•		_	_
	ption							
Blank	Non-locking/locking common manual over	ride	•	•	•	•	•	•
	Non-locking manual override		Ō	Ō	Ō	Ō	0	Ō
	With exhaust check valve	*4	•	•	•	•	•	•
	External pilot	*5	•	•	ě	•		ě
	Surgeless	*6	Ť	•	ě	ě	Ť	Ó
		6,*7	ŏ		•			ě
-	Port A/B filter integrated	*8	Ť					Ť
-	Air supply spacer	*9	÷					=
-		*10	÷					÷
		*9	-					=
==	Exhaust spacer	.9	_		_	•	<u> </u>	_
(3) M	ount							
Blank	Direct mount		•	•	•	•	•	•
	DIN rail mount		•			•		•
			Ť	Ť	Ť	Ť	Ť	
	tation No.							
	2 stations							
	to		lacktriangle				•	•
20	Refer to page 89 for the max. station numbers per mo	odel.						
(DVo	oltage							
1	100 VAC (rectifier circuit integrated)							
2	200 VAC (rectifier integrated)	*11	_					=
	24 VDC							-
			•		-	-		-
4			_					
	is not available.							
\circ	indicates a made-to-order product							
0	mulcales a made-to-order product.							
0	12 VDC is not available. indicates a made-to-order product. osition all ports closed and PAB con	inect	tion	are		ot p	rovi	ded

*4: 3-position all ports closed and PAB connection are not provided with the exhaust check valve (H).

- *5: Consult with CKD when using a vacuum with the external pilot (K).
- *6: E2* and E2*J-connectors support 12/24 VDC only.
 - In addition, surgeless "S" and low exoergic/energy circuit "E" cannot be selected together.
- *7: Surgeless specifications.
- *8: A filter is built into port P as standard.

*9: Specify the spacer mounting position and quantity in the manifold specifications sheet.

Stacking of spacers is not possible.
Combination with the masking plate is not supported.

Refer to page 105 for details.

- *10: Not compatible when combined with external pilot (K).
- *11: Only the DIN terminal box is supported.
- *12: The grommet lead wire specifications are compatible with DC voltage only.
- *13: A lamp comes with the terminal box.
- *14: AC voltage includes a rectifier circuit.

Electric actuator FRL/Auxiliary components Electronic components components Main line components Fluid control Main line components removing filter Vacuum components Fluid control

components

removing filter

components



Individual wiring manifold Base side piping Direct mount/DIN rail mount

M3GB1/2, M4GB1/2/3-(D)-FP1 Series

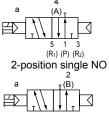
Applicable cylinder bore size: ø20 to ø100





JIS symbol

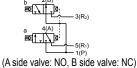
3-port valve 2-position single NC



5 1 3 (R₁) (P) (R₂) ● Two 3-port valves integrated (A side valve: NC, B side valve: NC)

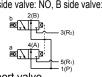


(A side valve: NC, B side valve: NO)





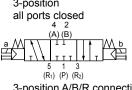
(A side valve: NO, B side valve: NO)



5-port valve 2-position single

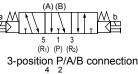


5 1 3 (R₁) (P) (R₂) 3-position



3-position A/B/R connection

4 2
(A) (B)





Manifold common specifications

<u> </u>		
Content		
Integrated base		
Direct mount/DIN rail mount		
Common supply/common exhaust (With internal exhaust check valve)		
Main valve/pilot valve common exhaust (Pilot exhaust check valve built-in)		
Main valve/pilot valve individual exhaust		
Lateral direction from base		
Pilot operated soft spool valve		
Compressed air		
0.7		
0.2 (*2)		
1.05		
−5 to 55 (no freezing)		
5 to 55		
Non-locking/locking common (standard)		
Dust-proof		
50 or less		
300 or less		
Cannot be used in corrosive gas environments		

- *1: Avoid water drops, oil, etc., during use. IP65 (jet-proof) applies for DIN terminal box specifications. However, the specified outer diameter of the cord and tightening torque must be used for fixing in place.
- *2: The working pressure range is 0 to 0.7 MPa when the external pilot (option code: K) is selected. Set the external pilot pressure between 0.2 and 0.7 MPa.

Electrical specifications

Descriptions		Content					
Rated voltage	Rated voltage V		DC12	AC100	AC200		
Voltage fluctuation	n range	±10%					
	olding current Standard		0.030 (0.034)	0.009 0.006 (0.009) (0.006)			
A (*3) With	low exoergic/energy circuit	0.005	0.010		-		
Power consumption Sta	andard	0.35 ((0.40)		-		
W (*3) With	n low exoergic/energy circuit	0.1		-			
Apparent power VA (*3) (*4) Sta	·· · · IStandard I			0.93 (0.98)	1.40		
Thermal class		В					
Surge suppressor	r		Opt	tion			
Indicator			Lamp (option)			

*3: Values in () apply when lamp is included. In addition, the type with low exoergic/energy circuit is only available with lamp.

*4: 200 VAC is the value of DIN terminal box (with lamp).

Individual specifications

	Descriptions			M3GB1,	M4GB1	M3GB2,	M4GB2	M4GB3	
De				Direct mount	DIN rail mount	Direct mount	DIN rail mount	Direct mount	DIN rail mount
Max	. station No.	Standard (Inter	rnal pilot)	20 stations	16 stations	20 stations	16 otations	20 stations	16 stations
	External pilot			12 stations 12 stations		20 Stations	16 Stations	20 Stations	to stations
size	Rc thread,	A/B Port		M	15	Rc	1/8	Rc	1/4
Port	M5	P/R1/R2 Port		Rc	1/8	Rc	1/4	Rc	3/8
Mani	Manifold base Standard		Standard	35n+61	36n+115	71n+106	73n+134	113n+170	115n+119
Weig	tht calculation	formula (n: station No.) g	External pilot	35n+106	36n+114	76n+135	78n+166	118n+194	120n+223

For 10 or more manifold station No. (5 stations for 4G3), use ports on both sides for air supply and exhaust.

M3GB1/2, M4GB1/2/3-FP1 series Individual wiring manifold; base piping

Flow characteristics

Medel No	. Solenoid position		P→	A/B	A/B→	R1/R2
Model No.	501	enoia position	C[dm³/(s·bar)]	b	C[dm³/(s·bar)]	b
	Two 3-port valves integrated		0.86	0.35	1.1 (0.67)	0.22 (0.23)
M3GB1	2-positi	on	1.1	0.22	1.2 (0.70)	0.20 (0.10)
M4GB1		All ports closed	0.98	0.22	1.1 -	0.24 -
WI4GBT	3-position	ABR connection	0.97	0.35	1.3 (0.68)	0.22 (0.24)
		PAB connection	1.1	0.38	1.1 -	0.21 -
	Two 3-p	oort valves integrated	1.7	0.44	2.1 (1.6)	0.32 (0.30)
M3GB2	2-positi	on	2.4	0.34	2.7 (1.7)	0.24 (0.31)
M4GB2		All ports closed	2.2	0.34	2.4 -	0.29 -
WI4GBZ	3-position	ABR connection	2.2	0.34	2.8 (1.8)	0.24 (0.27)
		PAB connection	2.4	0.29	2.4 -	0.29 -
	2-positi	on	3.5	0.34	3.8 (2.6)	0.11 (0.27)
M4GB3		All ports closed	3.1	0.33	3.3 -	0.22 -
IVI4GD3	3-position	ABR connection	3.0	0.30	3.8 (2.7)	0.11 (0.22)
		PAB connection	3.6	0.36	3.3 -	0.28 -

^{*1:} Effective cross-sectional area S and sonic conductance C are converted as $S \approx 5.0 \times C$.

Electric actuator FRL/Auxiliary components Electronic components Main line components Fluid control valves Main line components Antibacterial/Bacteria-removing filter Vacuum components Fluid control valves

^{*2:} Values in () are with the exhaust check valve.

M4GB1/2/3-FP1 Series

Individual wiring manifold; base piping

Electric actuator

Pneumatic

Vacuum

Fluid control

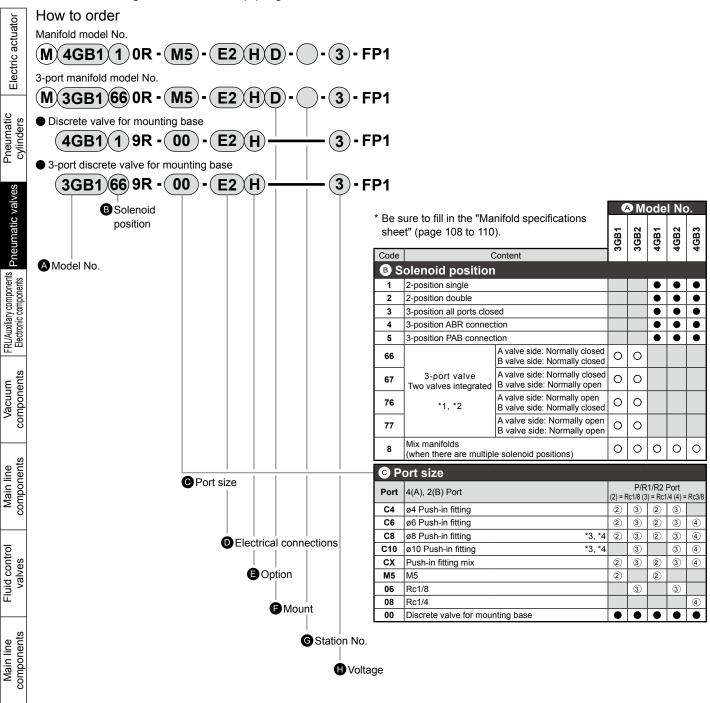
Main line

Antibacterial/Bacteriaremoving filter

components

Vacuum

Fluid control valves



Precautions for model No. selection

*1: Select M4GB*80R when mixing with 3/5-port valves.

Furthermore, select M3GB*80R when mixing with masking plate.

- *2: Not compatible when combined with external pilot (K).
- 4G1 C8 and 4G2 C10 do not support push-in fitting mixing.
- *4: Made-to-order.

M4GB1/2/3-FP1 Series

Individual wiring manifold; base piping

		•	M	ode	ΙNο	ο.
		3GB1	3GB2	4GB1	4GB2	4GB3
O E	lectrical connections					
Blank	Grommet lead wire (300 mm) *14	•	•	•	•	•
В	DIN terminal box (Pg7) With surge suppressor/lamp *15		•		•	•
BN	DIN terminal box (Pg7) (without terminal box) With surge suppressor/lamp *15		•		•	•
E-conn	ector (upward/lateral direction common)					
E0	Lead wire (300 mm) *16	•	•	•	•	•
E00	Lead wire (500 mm) *16	•	•	•	•	•
E01	Lead wire (1000 mm) *16	•	•	•	•	•
E02	Lead wire (2000 mm) *16	•	•	•	•	•
E03	Lead wire (3000 mm) *16	•	•	•	•	•
E0N	Without lead wire (without socket) *16	•	•	•	•	•
E1	Without lead wire (socket/terminal included) *16	•	•	•	•	•
E2	Lead wire (300 mm) With surge suppressor/lamp	•	•	•	•	•
E20	Lead wire (500 mm) With surge suppressor/lamp	•	•	•	•	•
E21	Lead wire (1000 mm) With surge suppressor/lamp	•	•	•	•	•
E22	Lead wire (2000 mm) With surge suppressor/lamp	•	•	•	•	•
E23	Lead wire (3000 mm) With surge suppressor/lamp	•	•	•	•	•
E2N	Without lead wire (without socket) With surge suppressor/lamp	•	•	•	•	•
E3	Without lead wire (with socket/terminal) With surge suppressor/lamp	•	•	•	•	•
EJ-con	nector (socket with cover, upward/lateral direction con	nmor	1)			
E01J	Lead wire (1000 mm) *16	•	•	•	•	•
E02J	Lead wire (2000 mm) *16	•	•	•	•	•
E03J	Lead wire (3000 mm) *16	•	•	•	•	•
E21J	Lead wire (1000 mm) With surge suppressor/lamp	•	•	•	•	•
E22J	Lead wire (2000 mm) With surge suppressor/lamp	•	•	•	•	•
E23J	Lead wire (3000 mm) With surge suppressor/lamp	•	•	•	•	•
3 0	ption					
Blank	Non-locking/locking common manual override	•	•	•	•	•
М	Non-locking manual override	0	0	0	0	0
Н	With exhaust check valve *5	•	•	•	•	•
K	External pilot *6	•	•	•	•	•
S	Surgeless *7	•	•	•	•	•
E	Low exoergic/energy saving circuit *7, *8	•	•	•	•	•
F	Port A/B filter integrated *9	•	•	•	•	•
Z 1	Air supply spacer *10	•	•	•	•	•
Z2	In-stop valve spacer *10, *11	•	•	•	•	•
Z 3	Exhaust spacer *10	•	•	•	•	•
6 M	ount					
Blank	Direct mount *12	•	•	•	•	•
D	DIN rail mount	•	•	•	•	•
G S	tation No.					
2	2 stations					
to	to	•	•	•	•	•
20	Refer to page 93 for the max. station numbers per model.	_	-	-	-	
ΩV	oltage			_		
1	100 VAC (rectifier circuit integrated)					
2	200 VAC (rectifier integrated) *13	_				•
3	24 VDC	•				•
4	12 VDC	Ť				
		_				_

is not available.

- 0 indicates a made-to-order product.
- *5: 3-position all ports closed and PAB connection are not provided with the exhaust check valve (H).

 Consult with CKD when using a vacuum with the external pilot (K).

 E2* and E2*J-connectors support 12/24 VDC only.

 In addition, surgeless "S" and low exoergic/energy circuit "E" cannot be selected together. Surgeless specifications.

- *9: A filter is built into port P as standard.
- *10: Specify the spacer mounting position and quantity in the manifold specifications Specify the spacer mounting position and quantity in the manifold spesishest.

 Stacking of spacers is not possible.

 Combination with the masking plate is not supported.

 Refer to page 105 for details.

 *11: Not compatible when combined with external pilot (K).

 *12: The direct mount of M4GB1 cannot be changed to the DIN rail mount after purchasing.

- *13: Only the DIN terminal box is supported.
- *14: The grommet lead wire specifications are compatible with DC voltage only.
 *15: A lamp comes with the terminal box.
 *16: AC voltage includes a rectifier circuit.

Electric actuator Pneumatic valves FRL/Auxiliary components Electronic components components Main line components Fluid control Main line components Antibacterial/Bacteriaremoving filter Vacuum components Fluid control



Reduced wiring manifold Body piping Direct mount/DIN rail mount

M3GA1/2/3-T*(D)-FP1 Series M4GA1/2/3-T*(D)-FP1 Series

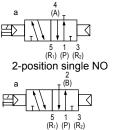
Applicable cylinder bore size: ø20 to ø100





JIS symbol

● 3-port valve 2-position single NC



 Two 3-port valves integrated (A side valve: NC, B side valve: NC)



(A side valve: NC, B side valve: NO)



(A side valve: NO, B side valve: NC)



(A side valve: NO, B side valve: NO)

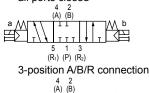


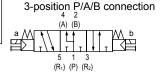
5-port valve 2-position single 4 2 (A) (B)



(A) (B) 5 1 3 (R₁) (P) (R₂)

3-position all ports closed





Manifold common specifications

	00111111011	opcomodiono				
Description	s	Content				
Manifold		Reduced wiring integrated base				
Mounting met	hod	Direct mount/DIN rail mount				
Air supply and	d exhaust	Common supply/common exhaust				
method		(With internal exhaust check valve)				
Pilot 1	nternal pilot	Main valve/pilot valve common exhaust				
exhaust	<u>'</u>	(Pilot exhaust check valve built-in)				
	External pilot	Main valve/pilot valve individual exhaust				
Piping direction		Valve top direction				
Valve and ope	eration	Pilot operated soft spool valve				
Working fluid		Compressed air				
Max. working p	ressure MPa	0.7				
Min. working p		0.2 (*2)				
Proof pressure		1.05				
Ambient temp		−5 to 55 (no freezing)				
Fluid tempera		5 to 55				
Manual overri		Non-locking/locking common (standard)				
Degree of pro	tection (*1)	Dust-proof				
Vibration resis		50 or less				
Shock resista	nce m/s ²	300 or less				
Atmosphere		Cannot be used in corrosive gas environments				

- *1: Avoid water drops, oil, etc., during use.
- *2: The working pressure range is 0 to 0.7 MPa when the external pilot (option code: K) is selected. Set the external pilot pressure between 0.2 and 0.7 MPa.

Electrical specifications

Descriptions	Content			
	T1□, T30	0□, T5□	T6□, T8□	
Rated voltage V	DC24	DC12	DC24	
Voltage fluctuation range (*3)	±10%		+10%, -5%	
Holding Standard	0.017	0.034	0.017	
current A With low exoergic/energy circuit	0.005	0.010	0.005	
Power Standard		0.4		
consumption W With low exoergic/energy circuit	0.1			
Thermal class	В			
Surge suppressor (*4)	Zener diode			
Indicator	LED			

- *3: T6□ and T8□ (serial transmission) may experience voltage drops due to internal circuitry, so care should be taken when regulating voltages.
- *4: If low exoergic/energy circuit or surgeless types are selected, then there will be a diode.

Common specifications

Descriptions		M3GA1/M4GA1	M3GA2/M4GA2	M3GA3/M4GA3
Port size	A/B Port	Push-in fitting ø4, ø6	0 , ,	
		M5	Rc1/8	Rc1/4
	P/R1/R2 Port	Rc1/8	Rc1/4	Rc3/8

T1□, T30□, T5□

				M3GA2/M4GA2			
Descriptions			DIN rail mount				
Max. station No.	Standard (Internal pilot) External pilot	20 stations 12 sta	16 stations ations	20 stations	16 stations	16 sta	ations
Manifold base weight	Standard	29n+215	31n+228	54n+264	56n+297	84n+320	86n+354
Weight calculation formula (n: station No.) g	External pilot	44n+334	46n+347	96n+433	96n+468	149n+554	151n+583

T6□

Descriptions		M3GA1/M4GA1	M3GA2/M4GA2	M3GA3/M4GA3	
		DIN rail mount	DIN rail mount	DIN rail mount	
Max. station No.	Standard (Internal pilot)	16 stations	16 stations	16 stations	
	External pilot	12 stations			
Manifold base weight	Standard	31n+375	56n+444	86n+501	
Weight calculation formula (n: station No.) g	External pilot	46n+494	98n+615	151n+731	

T8□ M3GA1/M4GA1 | M3GA2/M4GA2 | M3GA3/M4GA3 **Descriptions** DIN rail DIN rail Direct **Direct Direct** DIN rail mount mount mount mount | mount mount Standard 20 16 20 st<u>ations</u> Max. station No. (Internal pilot) stations 16 stations stations stations 12 stations External pilot 57n+259 60n+290 150n+384 153n+416 Manifold base weight 50n+305 | 52n+332 Standard

Weight calculation formula (n: station No.) g External pilot 51n+313 | 54n+340 | 102n+336 | 105n+368 | 169n+417 | 173n+449 The max. station numbers of the manifold is limited by the max. number of solenoids for each of the following wiring specifications.

Electric actuator

Pneumatic valves FRL/Auxiliary components Electronic components

Main line components

Main line components

Antibacterial/Bacteria-

Vacuum components

Fluid control valves

Flow characteristics

Model	Sal	anaid pasition	P→	A/B	A/B→l	R1/R2
No.	501	enoid position	C[dm³/(s·bar)]	b	C[dm³/(s·bar)]	b
	Two 3-port valves integrated		0.86	0.31	1.1 (0.66)	0.19 (0.22)
M3GA1	2-positi	on	0.99	0.20	1.2 (0.70)	0.20 (0.12)
M4GA1		All ports closed	0.94	0.23	1.1 -	0.20 -
	3-position	ABR connection	0.93	0.18	1.3 (0.70)	0.23 (0.02)
	<u> </u>	PAB connection	1.1	0.28	1.1 -	0.23 -
	Two 3-port valves integrated		1.7	0.40	2.3 (1.7)	0.29 (0.32)
M3GA2	2-positi	on	2.3	0.36	2.9 (1.7)	0.24 (0.33)
		All ports closed	2.1	0.35	2.5 -	0.32 -
M4GA2	3-position	ABR connection	2.2	0.37	2.9 (1.8)	0.32 (0.29)
		PAB connection	2.4	0.34	2.5 -	0.33 -
	2-positi	on	3.2	0.37	3.8 (2.5)	0.13 (0.28)
M3GA3		All ports closed	2.9	0.35	3.3 -	0.35 -
M4GA3	3-position	ABR connection	3.0	0.34	3.8 (2.6)	0.12 (0.27)
		PAB connection	3.3	0.30	3.3 -	0.32 -

^{*1:} Effective cross-sectional area S and sonic conductance C are converted as S ≈ 5.0 × C.

Wiring specifications

wining opcomed														_
Descriptions	T10 □	T11 □	T30 □	1	50 🗌		T51 □	T5	2			Г53 [
Descriptions	Common terminal block	Common terminal block	D-sub-connector	Flat c	able 20-	pin	Flat cable 20-pin	Flat cal	ole 10	-pin	Flat c	able 2	26-p	in
Connector and terminal	M3 thread fastening	Clamping	D-sub-connector	MIL-C-835	03 standard com	pliant	MIL-C-83503 standard compliant	MIL-C-83503	standard co	mpliant 1	MIL-C-835	503 standar	rd comp	liant
block specifications	18 terminals	26 terminals	25-pin	pressure v	velding socket 20	0-pin	pressure welding socket 20-pin	pressure welding socket 10-pin		10-pin	pressure	welding so	cket 26-	-pin
Max. number of solenoids	16-points	24-points	24-points	16	3-points		18-points	8-points			24	4-poir	nts	
	Left side: T□ ॄ	a solenoid side			Right s	side	e: T□R _{a solenoid} s	side						
Wiring block position Blank: Left side R: Right side		b solenoid side b solenoid side							Sth	Wiring	block			
Array method	(e.g.) For T50□ Manifold specific 1a 2a 3a	cations Standar	d wiring (sequentia	l): Blan	k		Double wiring: \	N						
Blank: Standard	s p s	D Connec	ctor pin No. 1	2 3	4 5	6	Connector pin No	o. 1	2 3	3 4	5	6	7	8
sequential		Valve s	olenoid No. 1a	2a 2b	3a 4a	4b	Valve solenoid N	o. 1a	Blank 2	a 2b	3a	Blank 4	la 4	4b
W : Double wiring		4b												
1st station 3rd station 2nd station 4th station														

Serial transmission slave unit specifications

Descript	tions	T6G1 ^{*1}	T6C0 ² T6C1			
Network n	name	CC-Link	CompoBus/S			
Power supply Unit side		24 \	24 VDC ±10%			
voltage	Valve side	24 VD	24 VDC +10% -5%			
Current	Unit side	100 mA or less (who	100 mA or less (when all output points are ON)			
consumption	Valve side	15 mA or less (when all output points are OFF)				
Output po	ints	16 point	T6 ☐ 0: 8 points T6 ☐ 1: 16 points			
Occupied	No	1 station	T6C0: 1 node address (8-point mode)			
Occupied	INO.	1 station	T6C1: 2 node address (8-point mode)			
Operation display		LED (power supply	LED (power supply and communication status)			

Serial transmission slave unit specifications

Decerin	tions	T8G1	T8GP1	T8P1	T8PP1	T8EC1	T8ECP1	T8EN1	T8ENP1	T8D1	T8DP1	T8EB1	T8EBP1	T8EP1	T8EPP1
Descrip	uons	T8G2	T8GP2	T8P2	T8PP2	T8EC2	T8ECP2	T8EN2	T8ENP2	T8D2	T8DP2	T8EB2	T8EBP2	T8EP2	T8EPP2
Communication system name		e CC-Link ver1.10 PROFIBUS-DP (V0) Eth		Ethe	rCAT	EtherNet/IP		DeviceNet		CC-Link IEF Basic		PROF	INET		
Power supply	wer supply Unit side 24 VDC ±10%														
voltage	Valve side		24 VDC +10%, -5%												
0 1	Unit side	(when a	or less all output are ON)	(when a	or less all output are ON)	(when a	or less all output are ON)	(when a	or less all output are ON)	(when a	or less Il output are ON)	130 mA or less (when all output points are ON)		(when a	or less all output are ON)
Current consumption				T	T8 ☐ 1: 15 mA or less				15 mA or less						
consumption	Valve side	T8 ☐ 2: 20 mA or less							(when all output points are ON)						
		(wh	(when all output points are ON) Load current is not included Load current is not included												
Output po	oints					_	Г8□1: 16	6 points	T8□2:	32 point	S				
Occupied	l No.	1 station													
Operation display LED (power supply and communication status)															
Output fo	rmat	NPN Output	NPN Output PNP Output NPN Output PNP Output NPN Output PNP Output NPN Output												

CKD

^{*2:} Values in () are with the exhaust check valve.

^{*2:} Long-distance communication mode is not supported. Contact CKD for details on support.

M³GA1/2/3-T*(D)-FP1 Series

Reduced wiring manifold; body piping

Electric actuator

Pneumatic

FRL/Auxiliary components Electronic components

components

Vacuum

Main line components

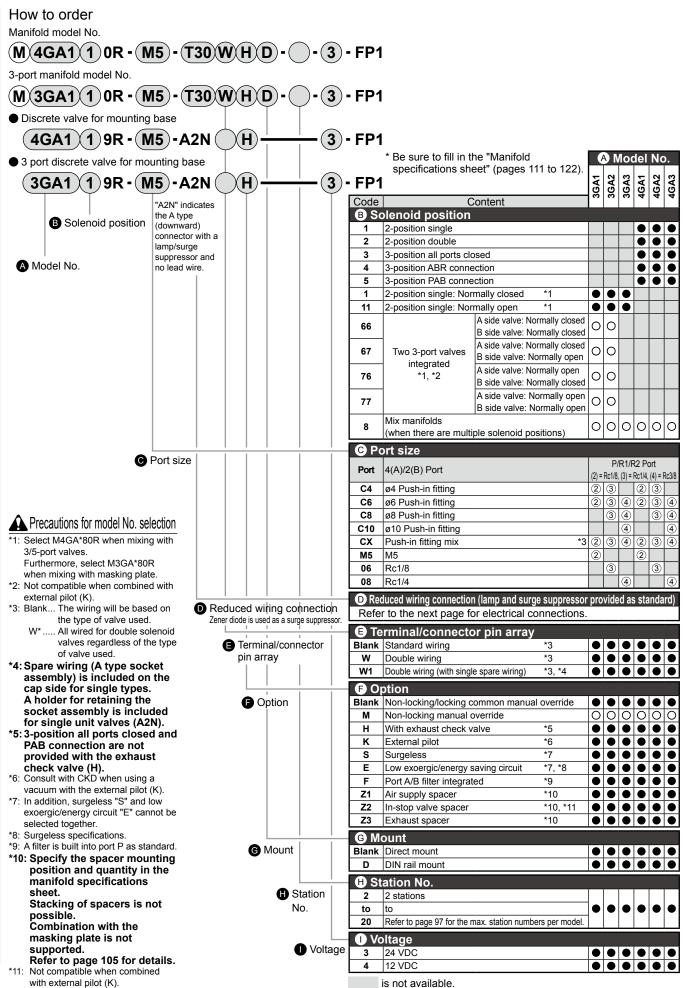
Fluid control

components

Antibacterial/Bacteria-

removing filter

cylinders



0

indicates a made-to-order product.

Fluid control

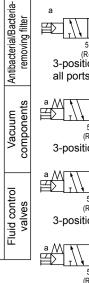
valves

M 3 GA1/2/3-T*(D)-FP1 series Reduced wiring manifold; body piping

			A Model No.					
			3GA1	3GA2	3GA3	4GA1	4GA2	4GA3
Reduced to	wiring connection (lamp and surge	e suppressor provide	ed as	star	ndaro	1) 12	/24 V	DC
T10		Left-sided specifications	•	•	•		•	•
T10R	Common terminal block (M3 thread)	Right-sided specifications	•	•	•	•	•	•
T11		Left-sided specifications	•	•	•	•	•	•
T11R	Common terminal block (clamping)	Right-sided specifications	•	•	•	•	•	•
T30		Left-sided specifications	•	•	•	•	•	•
T30R	D-sub-connector	Right-sided specifications	•	•	•	•	•	•
T50	20-pin flat cable connector	Left-sided specifications	•	•	•	•	•	•
T50R	(with power supply terminal)	Right-sided specifications	•	•	•	•	•	•
T51	20-pin flat cable connector	Left-sided specifications	•	•	•	•	•	•
T51R	(without power supply terminal)	Right-sided specifications	•	•	•	•	•	•
T52	10-pin flat cable connector	Left-sided specifications	•	•	•	•	•	•
T52R	(without power supply terminal)	Right-sided specifications	•	•	•	•	•	•
T53	26-pin flat cable connector	Left-sided specifications	•	•	•	•	•	•
T53R	(without power supply terminal)	Right-sided specifications	•	•	•	•	•	•
Serial tra	ansmission (lamp and surge s	unnressor provide	d as	sta	nda	rd)	24 V	DC.
T6C0		NPN 8 points	W (46			- u j		
T6C1	CompoBus/S	NPN 16 points	-		•			
T6G1	CC-Link	NPN 16 points		•	•	•	•	
T8G1		NPN 16 points	•	•	•	•	•	•
T8G2		NPN 32 points	•	•	•	•	•	•
T8GP1	CC-Link	PNP 16 points	•	•	•	•	•	•
T8GP2		PNP 32 points	•	•	•	•	•	•
T8P1		NPN 16 points	•	•	•	•	•	•
T8P2		NPN 32 points	•	•	•	•	•	•
T8PP1	PROFIBUS-DP	PNP 16 points	•	•	•	•	•	•
T8PP2		PNP 32 points	•	•	•	•	•	•
T8EC1		NPN 16 points	•	•	•	•	•	•
T8EC2	EtherCAT	NPN 32 points			•			•
T8ECP1	Ellercai	PNP 16 points	•				•	
T8ECP2		PNP 32 points	•	•	•	•	•	•
T8EN1		NPN 16 points	•			•		•
T8EN2	EtherNet/IP	NPN 32 points	•	•		•		lacktriangle
T8ENP1		PNP 16 points		•	•	•		•
T8ENP2		PNP 32 points	•	•	•	•	•	•
T8D1		NPN 16 points	•	•	•	•	•	•
T8D2	DeviceNet	NPN 32 points	•	•	•	•	•	•
T8DP1		PNP 16 points	•	•	•	•	•	
T8DP2		PNP 32 points	•	•	•	•	•	
T8EB1		NPN 16 points	•				•	
T8EB2	CC-Link IEF Basic	NPN 32 points	•		•	•		
T8EBP1		PNP 16 points					•	
T8EBP2		PNP 32 points						
T8EP1		NPN 16 points						
T8EP2	PROFINET	NPN 32 points						
T8EPP1 T8EPP2		PNP 16 points PNP 32 points						
		with surge suppressor	_					
A2N	Without lead wire (without socket)	and indicator lamp	•	•	•	•	•	•

	יל מכוממוסו	ic actuator	
	cylinders	Pneumatic	
		 Pneumatic valves	
	Electronic components	FRL/Auxiliary components	77-
	components	Vacuum	
	components	Main line	
	valves	Fluid control	
-	components	Main line	
•	removing filter	Antibacterial/Bacteria-	77
	components	Vacuum	•
	valves	Fluid control	

removing filter





Reduced wiring manifold Base side piping Direct mount/DIN rail mount

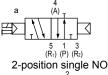
M3GB1/2-T*(D)-FP1 Series M4GB1/2/3-T*(D)-FP1 Series

Applicable cylinder bore size: ø20 to ø100



JIS symbol ● 3-port valve

2-position single NC

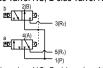




Two 3-port valves integrated (A side valve: NC, B side valve: NC)



(A side valve: NC, B side valve: NO)



(A side valve: NO, B side valve: NC)



(A side valve: NO, B side valve: NO)

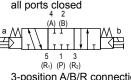


5-port valve 2-position single

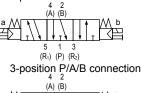




3-position all ports closed



3-position A/B/R connection



5 1 3 (R₁) (P) (R₂)

Manifold common specifications

Descripti	ions	Content
Manifold		Reduced wiring integrated base
Mounting r	nethod	Direct mount/DIN rail mount
Air supply and	exhaust method	Common supply/common exhaust (With internal exhaust check valve)
Pilot exhaust	Internal pilot	Main valve/pilot valve common exhaust (Pilot exhaust check valve built-in)
method External p		Main valve/pilot valve individual exhaust
Piping dire	ction	Lateral direction from base
Valve and	operation	Pilot operated soft spool valve
Working flu	uid	Compressed air
Max. working	pressure MPa	0.7
Min. working	pressure MPa	0.2 (*2)
Proof pres	sure MPa	1.05
Ambient terr	perature °C	−5 to 55 (no freezing)
Fluid temp	erature °C	5 to 55
Manual ov	erride	Non-locking/locking common (standard)
Degree of pr	otection (*1)	Dust-proof
Vibration res	sistance m/s ²	50 or less
Shock resi	stance m/s ²	300 or less
Atmospher	·e	Cannot be used in corrosive gas environments

Electrical specifications

Des	criptions	Content					
Data	d voltage V	T1□, T30)□, T5□	T6□, T8□			
Raie	i voltage v	DC24	DC12	DC24			
Voltage fl	uctuation range (*3)	±10	0%	+10%, -5%			
	Standard	0.017	0.034	0.017			
	With low exoergic/ energy circuit	0.005	0.010	0.005			
W No	Standard	0.4					
. a. ⊃	With low exoergic/ energy circuit	0.1					
Then	mal class	В					
Surge s	suppressor (*4)	Zener diode					
Indic	ator		LE	D			

- *1: Avoid water drops, oil, etc., during use
- *2: The working pressure range is 0 to 0.7 MPa when the external pilot (option code: K) is selected. Set the external pilot pressure between 0.2 and 0.7 MPa.
- *3: T6□ and T8□ (serial transmission) may experience voltage drops due to internal circuitry, so care should be taken when regulating voltages.
- *4: If low exoergic/energy circuit or surgeless types are selected then there will be a diode.

Common specifications

Descriptions		M3GB1/M4GB1	M3GB2/M4GB2	M3GB3/M4GB3
Port size	A/B Port	Push-in fitting ø4, ø6 M5	Push-in fitting ø4, ø6, ø8 Rc1/8	Push-in fitting ø6, ø8, ø10 Rc1/4
	P/R1/R2 Port	Rc1/8	Rc1/4	Rc3/8

T1□, T30□, T5□

Descriptions		M3GB1/M4GB1		M3GB2	M4GB2	M3GB3/M4GB3		
		Direct mount	DIN rail mount	Direct mount	DIN rail mount	Direct mount	DIN rail mount	
Max. station No.	Standard (Internal pilot)	20 stations	16 stations	20 stations	16 stations	16 sta	ations	
	External pilot	12 stations						
Manifold base weight	Standard	43n+335	45n+348	80n+398	82n+431	124n+548	126n+582	
Weight calculation formula (n: station No.) g	External pilot	44n+330	46n+344	88n+433	90n+467	129n+577	131n+606	

T6

Descriptions		M3GB1/M4GB1	M3GB2/M4GB2	M3GB3/M4GB3	
		DIN rail mount	DIN rail mount	DIN rail mount	
Max. station No.	Standard (Internal pilot)	16 stations	16 stations	16 stations	
	External pilot	12 stations			
Manifold base weight	Standard	45n+495	82n+578	126n+729	
Weight calculation formula (n: station No.) g	External pilot	46n+491	90n+615	131n+753	

T8_

Descriptions		M3GB1/M4GB1		M3GB2	/M4GB2	M3GB3/M4GB3		
		Direct mount	DIN rail mount	Direct mount	DIN rail mount	Direct mount	DIN rail mount	
Max. station No.	Standard (Internal pilot)	20 stations	16 stations	20 stations	16 stations	16 sta	ations	
	External pilot	12 stations						
Manifold base weight	Standard	46n+305	49n+332	83n+318	86n+350	128n+384	132n+416	
Weight calculation formula (n: station No.) g	External pilot	48n+312	51n+339	91n+336	94n+368	146n+417	150n+449	

The max. station numbers of the manifold is limited by the max. number of solenoids for each of the following wiring specifications.

Flow characteristics

Model No.	S-0	lancid position	P-	→A/B	A/B→	R1/R2
wodel No.	30	lenoid position	C[dm³/(s·bar)]	b	C[dm³/(s·bar)]	b
	Two 3-po	rt valves integrated	0.86	0.35	1.1 (0.67)	0.22 (0.23)
M3GB1	2-position	1	1.1	0.22	1.2 (0.70)	0.20 (0.10)
		All ports closed	0.98	0.22	1.1 —	0.24 —
M4GB1	3-position	ABR connection	0.97	0.35	1.3 (0.68)	0.22 (0.24)
		PAB connection	1.1	0.38	1.1 —	0.21 —
	Two 3-po	rt valves integrated	1.7	0.44	2.1 (1.6)	0.32 (0.30)
M3GB2	2-position	i	2.4	0.34	2.7 (1.7)	0.24 (0.31)
		All ports closed	2.2	0.34	2.4 —	0.29 —
M4GB2	3-position	ABR connection	2.2	0.34	2.8 (1.8)	0.24 (0.27)
		PAB connection	2.4	0.29	2.4 —	0.29 —
	2-position	Ì	3.5	0.34	3.8 (2.6)	0.11 (0.27)
M4GB3		All ports closed	3.1	0.33	3.3 —	0.22 —
WHGDS	3-position	ABR connection	3.0	0.30	3.8 (2.7)	0.11 (0.22)
		PAB connection	3.6	0.36	3.3 —	0.28 —

^{*1:} Effective cross-sectional area "S" and sonic conductance "C" are converted as S ≈ 5.0 × C. *2: Values in () are with the exhaust check valve.

Wiring specifications

Trining op comean														
Descriptions	T10 Common terminal block	T11 Common terminal block	T30 ☐ D-sub-connecto	r Flat	T50 ☐ cable 20	0-pin	T51 ☐ Flat cable 20-pin		Γ52 □ able 1		Flat	T53 cabl		-pin
Connector and terminal block specifications	M3 thread tightening Terminal count 18	Clamping Terminal count 26	D-sub-connector 25-pin		3503 standard or e welding sock		MIL-C-83503 standard compliant Pressure welding socket 20-pin			d compliant cket 10-pin		33503 sta ire weldin		
Max. number of solenoids	16-points	24-points	24-points		16-points	3	18-points	8	-point	s		24-p	oints	
Wiring block position Blank: Left side R: Right side		a solenoid side b solenoid side station 2nd station		O	Rig	jht s		enoid side			6th station	Wi	ring block	0
Array method Blank: Standard sequential W: Double wiring	(e.g.) For T50 Manifold specification 1a 2a 3a 4a S D S D 2b 4t 1st station 3rd station 4th	Standard w Connector Valve solence		3	4 5 3a 4a	6 4b	Double wiring: W Connector pin No. Valve solenoid No.	1 1a	2 Blank 2	3 4 2a 2b	5 3a	6 Blank	7 4a	8 4b

Serial transmission slave unit specifications

Descriptio	ns	T6G1 ^{*1}	T6C0 *2 T6C1						
Network name	9	CC-Link	CompoBus/S						
Power supply	Unit side	24 VD0	C ±10%						
voltage	Valve side	24 VDC +	+10% -5%						
Current	Unit side	100 mA or less (when a	all output points are ON)						
consumption	Valve side	15 mA or less (when al	l output points are OFF)						
Output points		16 point	T6 ☐ 0: 8 points T6 ☐ 1: 16 points						
Occupied No.		1 station	T6C0: 1 node address (8-point mode) T6C1: 2 node address (8-point mode)						
Operation disp	olay	LED (power supply and	d communication status)						

^{*1:} CC-Link is Ver. 1.10.

Serial transmission slave unit specifications

	Danas		T8GP1	T8P1	T8PP1	T8EC1	T8ECP1	T8EN1	T8ENP1	T8D1	T8DP1	T8EB1	T8EBP1	T8EP1	T8EPP1	-			
	Desci	riptions	T8G2	T8GP2	T8P2	T8PP2	T8EC2	T8ECP2	T8EN2	T8ENP2	T8D2	T8DP2	T8EB2	T8EBP2	T8EP2	T8EPP2			
(Communication	on system name	CC-Link	ver1.10	PROFIBL	JS-DP(V0)	Ethe	rCAT	Ether	Net/IP	Devid	eNet	CC-Link	IEF Basic	PROF	INET			
F	Power supply	Unit side							24 VD0	C ±10%									
١	voltage	Valve side							24 VDC +	10%, -5%									
		l lait aide	60 mA or le	ss (when all	60 mA or le	ss (when all	110 mA or le	ess (when all	120 mA or	less (when	70 mA or le	ss (when all	130 mA or	less (when	130 mA or	less (when	ſ		
	Current	Unit side output poir			utput points are ON) output points are ON) output points are ON) all output p							nts are ON)	all output po	ints are ON)	all output po	ints are ON)			
			T8 ☐ 1: 15 mA or less																
	Consumption	Valve side				T8□2: 20	mA or less	S			(whon all	output no	points are ON) Load current is not included						
				(when all	output poi	ints are Of	N) Load cu	rrent is not	t included		(wrieri ali	output po	ints are Or	N) Load cu	ment is not	included			
(Output points T8 1: 16 point									16 points T8□2: 32 points									
(Occupied No.									ation									
(Operation disp	olay	LED (power supply and communication status)													Ĺ			
(Output format	•	NPN Output PNP Output NPN Output PNP Output NPN Output NPN Output PNP Output NPN Output PNP Output NPN Output PNP Output NPN Output PNP Output NPN O																
	Output points Occupied No. Operation disp	olay	NPN Output		output poi	T8∐2: 20 ints are ON	mA or less N) Load cu LE	T8 1:	16 points 1 sta	ation d communic	2 points	us)	ints are Of				-		

Electric actuator

Pneumatic valves FRL/Auxiliary components Electronic components

Main line components

Fluid control valves

Main line components

Antibacterial/Bacteria-removing filter

Vacuum components

Fluid control valves

^{*2:} Long-distance communication mode is not supported. Contact CKD for details on support.

M4GB1/2/3-T*(D)-FP1 Series

Reduced wiring manifold; base piping

Electric actuator

Pneumatic

FRL/Auxiliary components Electronic components

components

Main line components

Fluid control

Antibacterial/Bacteria-

removing filter

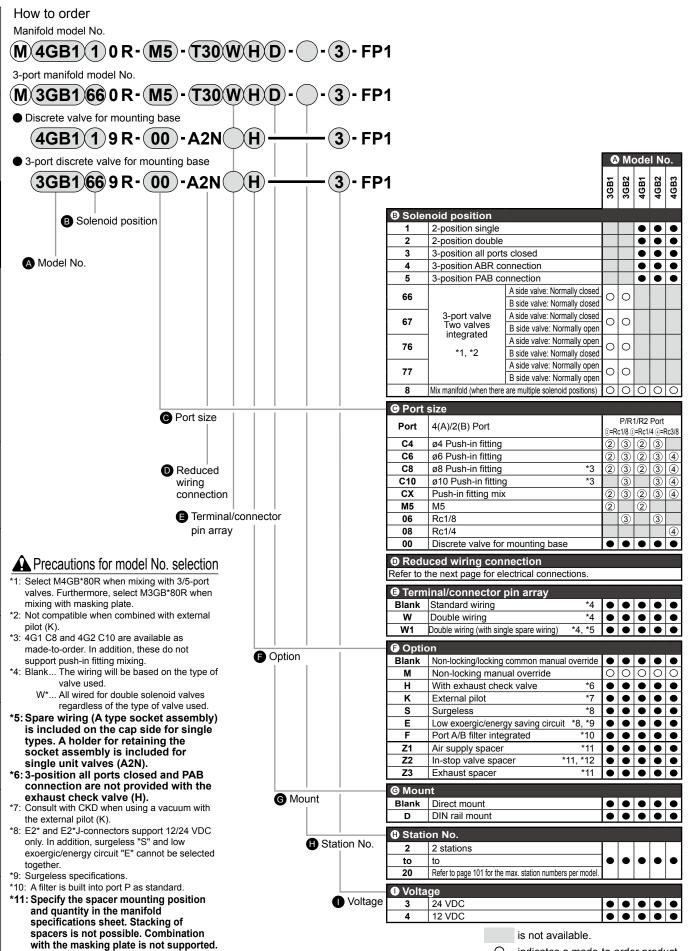
components

Vacuum

Fluid control

valves

cylinders



indicates a made-to-order product.

*12: Not compatible when combined with external

Refer to page 105 for details.

M4GB1/2/3-T*(D)-FP1 series Reduced wiring manifold; base piping

			A	M	ode	ΙN	ο.
			3GB1	3GB2	4GB1	4GB2	4GB3
Reduced v	viring connection (lamp and surge supp	pressor provided as	etan	dard	1 12/	24 V	DC
T10		Left-sided specifications	•	•	•	24 V	
T10R	Common terminal block (M3 thread)	Right-sided specifications	•	•	•	•	•
T11		Left-sided specifications	_	•	•	•	•
T11R	Common terminal block (clamping)	Right-sided specifications	_	•	•	•	•
T30		Left-sided specifications	-	•	•	•	•
T30R	D-sub-connector	Right-sided specifications	_	•	•	•	•
T50	20-pin flat cable connector	Left-sided specifications	-	•	•	•	•
T50R	(with power supply terminal)	Right-sided specifications	•	•	•	•	•
T51	20-pin flat cable connector	Left-sided specifications	•	•	•	•	•
T51R	(without power supply terminal)	Right-sided specifications	•	•	•	•	•
T52	10-pin flat cable connector	Left-sided specifications	•	•	•	•	•
T52R	(without power supply terminal)	Right-sided specifications	•	•	•	•	•
T53	26-pin flat cable connector	Left-sided specifications	•	•	•	•	•
T53R	(without power supply terminal)	Right-sided specifications	•	•	•	•	•
Serial tra	nsmission (lamp and surge suppr	essor provided as	sta	nda	rd)	24 V	/DC
T6C0	mamasion (lamp and surge suppr	NPN 8 points	912	•	•	•	•
T6C1	CompoBus/S	NPN 16 points	•	•	•	•	•
T6G1	CC-Link	NPN 16 points	•	•	•	•	_
T8G1	00 2	NPN 16 points	•	•	•	•	•
T8G2		NPN 32 points	•	•	•	•	•
T8GP1	CC-Link	PNP 16 points	•	•	•	•	•
T8GP2		PNP 32 points	•	•	•	•	•
T8P1		NPN 16 points	•	•	•	•	•
T8P2		NPN 32 points	•	•	•	•	•
T8PP1	PROFIBUS-DP	PNP 16 points	•	•	•	•	•
T8PP2		PNP 32 points	•	•	•	•	•
T8EC1		NPN 16 points	•	•	•	•	•
T8EC2	[FthorCAT	NPN 32 points	•	•	•	•	•
T8ECP1	EtherCAT	PNP 16 points	•	•	•	•	•
T8ECP2		PNP 32 points	•	•	•	•	•
T8EN1		NPN 16 points	•	•	•	•	•
T8EN2	EtherNet/IP	NPN 32 points	•	•	•	•	•
T8ENP1	Luienveun	PNP 16 points	•	•	•	•	•
T8ENP2		PNP 32 points	•	•	•	•	•
T8D1		NPN 16 points	•	•	•	•	•
T8D2	DeviceNet	NPN 32 points	•	•	•	•	•
T8DP1	201.001.01	PNP 16 points	•	•	•	•	•
T8DP2		PNP 32 points	•	•	•	•	•
T8EB1		NPN 16 points	•	•	•	•	•
T8EB2	CC-Link IEF Basic	NPN 32 points	•	•	•	•	-
T8EBP1		PNP 16 points	•	•	•	•	•
T8EBP2		PNP 32 points	•	•	•	•	•
T8EP1		NPN 16 points	•	•	•	•	•
T8EP2	PROFINET	NPN 32 points	•	•	•	•	•
T8EPP1		PNP 16 points	•	•	•	•	•
T8EPP2		PNP 32 points	•	•	•	•	•
A2N	Without lead wire (without socket)	with surge suppressor and indicator lamp	•	•	•	•	•

בוכסנווס מכוממנסו	Electric actuator	
cylinders	Pneumatic	
Electronic components	Programatic valves FRL/Auxiliary components	
components	Vacuum	
components	Main line	
valves	Fluid control	
components	Main line	
removing filter	Antibacterial/Bacteria-	
components	Vacuum	
valves	Fluid control	

M4G^A_B1/2/3-T6D/T8*-FP1 Series

Reduced wiring manifold; base piping

In-stop valve spacer

Electric actuator

Pneumatic

FRL/Auxiliary components Electronic components

components

Vacuum

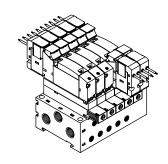
Fluid control

Main line components

Antibacterial/Bacteriaremoving filter

Vacuum components

Fluid control



Specifications

Model	P→	A/B	A/B	→R	Weight
No.	C [dm³/(s·bar)]	b	C [dm³/(s·bar)]	b	g
4G1	0.54	0.03	0.82	0.27	17
4G2	1.5	0.17	1.6	0.20	63
4G3	1.9	0.09	2.8	0.16	80

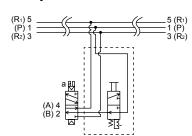
- *1: Values with base piping and 2-position valve mounted.
- *2: The effective cross-sectional area when discharging residual pressure is 1.0 mm² (reference value).
- *3: Effective cross-sectional area S and sonic conductance C are converted as $S \approx 5.0 \times C$.

Optional parts: PR check valve 2, body gasket 1 (for 4G*2 and 4G*3)

How to order discrete units

In-stop valve spacer

JIS symbol



A Precautions for model No. selection

- *1: Specify the spacer mounting position and quantity in manifold specifications sheet.
- *2: The in-stop valve spacer cannot be used with the external pilot (K).
- *3: When retrofitting to the reduced wiring manifold, the existing electric wire may be too short. Contact CKD for details.

Related products

Manifold related parts

Gasket with exhaust check valve

Model	Part model No.
3G1/4G1	4G1R-CHECK-VALVE-FP1
3G2/4G2	4G2R-CHECK-VALVE-FP1
3G3/4G3	4G3R-CHECK-VALVE-FP1
	·

Electronic components

removing filter

Fluid control

Manifold model No. (example)

M 4 G 6 1 8 OR- M5 -

Solenoid valve

Solenoid position

How to fill out metal base M4G Series manifold specifications sheet

Port size

connections

Terminal/connector Station pin array

Voltage

How to use base piping M4GB*10 as a 3-port valve

Indicate the required number of plugs in the "Thread plug" area at the end.

Solenoid valve										Ins	tallat	ion p	ositio	on											Qty
model No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Qty.
4G[B]1[1]9R-[M5]	0	0	0	0																					4
4G[B]1[2]9R-[M5]					0	0																			2
4G[B]1[5]9R-[M5]							0	0																	2
4G[]]1[]9R-[]]																									
3G[A]1[]9R-[]]																									
3G[A]1[]9R-[]]																									
lasking plate I-G1R-MP (S)																									
Masking plate 4G1R-MP (D)									0																1
_	parts					Blan	king	plug)					Thr	ead	plug				Si	lence	er			
D L2=									G۷	VP6	в		4	G1R	-M5	Р		SLV	V-65	3		SL	W-6	Α	
*Write an integer multiple of 12.5.	GWP8-B																								
12.5.	lıc	Ca	able w	ith D	-sub-	conne	ector	40	GR-C	ABLE	-D0□)-			Pusl	h-in f	itting	tube d (ch	remo	over (inclu	ded a	ıs sta	ndar	d)

^{*} A reference circuit diagram for the above manifold (example) is shown on the next page.

If the tube remover (included as standard) is not required, place a check

From the manifold specifications for each model, select and fill out the appropriate form.

M4GB1*OR-C8 does not have a removal tool

● Individual wiring...M4G A 1 (page 108), M4G A 2 (page 109), M4G A 3 (page 110)

included.

- Reduced wiring
- •Common terminal block (T1*), D-sub-connector (T30): M4G A 1 (page 111), M4G A 2 (page 112), M4G A 3 (page 113)
- •Flat cable connector (T5*)
- Serial transmission (T6*) · Serial transmission (T8*)
- : M4G $_{\rm B}^{\rm A}$ 1 (page 114), M4G $_{\rm B}^{\rm A}$ 2 (page 115), M4G $_{\rm B}^{\rm A}$ 3 (page 116)
- : M4G $_{\rm B}^{\rm A}$ 1 (page 117), M4G $_{\rm B}^{\rm A}$ 2 (page 118), M4G $_{\rm B}^{\rm A}$ 3 (page 119) : M4G ^A_B 1 (page 120), M4G ^A_B 2 (page 121), M4G ^A_B 3 (page 122)

*2: Use SLW-8S for the M4GA2 DIN rail mount. Interference occurs if SLW-8A is used.

^{*1:} Select the silencer mounting after confirming the dimensions. Pneumatic, Vacuum and Auxiliary Components (Catalog No. CB-024SA)

M4GA1 to 3/M4GB1 to 3-FP1 series

How to fill out wiring specifications sheet

Not required for standard wiring and double wiring.

Wiring specifications sheet (example)

Complete these specifications when specifying the wiring order and additional cables.

	Connec	ctor pin No.	Г						Ins	talla	tion	posi	ition						$\neg /\!$
Т3	0/T30R	T50/T50R/T6*	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1		1	а																\Box
	14	2		а															
2		3			а														$\square \! \! \! \! \! \! \! \! \! \! \! \! \! \! \! \! \! \! \!$
	15	4																	_///
3		5				а													//
	16	6																	Ш
4		7					а												
	17	8					b												Ш
5		9 - Power supply						а											Ш
	18	10 + (COM) Power	supp	ly				b				Ļ	l	l	l	l	l	١.پ	\square
6		11							а			L	Spa	re (cab	le v	virir	ng <u>i</u> _	\sqcup \sqcup
	19	12							b			Li	Р	rec	aut	ion	s ①	١.	Щ
7		13								а		L.	· <u>···</u>			ļ		Ë	ШІ
	20	14								b									<i>∟</i> //
8		15									(a)								_///
	21	16									(b)								///
9		17																	Ш
	22	18																	Ш
10		19 - Power supply																	Δ\
	23	20 + (COM) Power	supp	ly															Ш
11																			\square
	24																		$\perp \perp \!\! \downarrow $
12																			Ш
	25																		ЩЛ
13	(COM)																		$\perp\!\!\!\!\!\perp\!$

^{*} Note that when T50 wiring is used, the COM polarity is + (plus).

* Wiring is sequential from connector pin No. 1 in standard wiring. Contact CKD for special wiring order.

Precautions regarding spare wiring

① Spare wires are provided on the masking plate for the reduced wiring manifold.

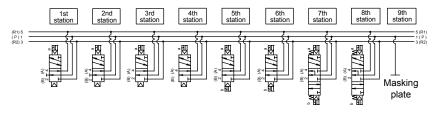
The number of wires for spare wiring can be specified by selecting the masking plate within the specifications.

4G *R -MP(S)...1 piece

4G *R -MP(D)...2 pieces

Indicate (a) or (b) in manifold specifications sheet for masking plate reserved wires.

Reference circuit diagram The simplified circuit diagram of the manifold model No. (example) on the previous page is shown below.



^{*} The manifold station numbers are set in order from the left with the piping port facing forward.

^{*} When T50 wiring is used, connector pin numbers 9, 10, 19, and 20 cannot be specified, because they are used for the external input power supply.

Push-in fitting tube remover (included as standard)

□Not required (check)

^{*} M4GB1 C8 does not have a tube removal tool included.

	Electric actuator	בוברווור מרוחמוטו	
	Pneumatic	cylinders	
P1	y components Presidents	components Filedillatic valves	
ш	FRL/Auxiliar	ts Electronic	
	Vacuum	components	
	Main line	components	
	Fluid control	valves	
	Main line	components	
Р2	Antibacterial/Bacteria-	removing filter	
Ū.	Vacuum	components	
	ntrol	Si	

M4G2 Indiv	/id	เเล	\A/	irir) (I																				
M4Gå2-F						ld	sr)e	cif	ic	at	io	ns	s	he	et	. !	Date	issue	ed	/		/		
				:			• r		•								٠	Comp	oany						
Contact			•	Quan	itity	;	set(s))			De	livery	/ date)	/			Conta	act						
Slip No.									0	rder I	No.						(Orde	r No.						
 Manifold model No. 																	-								
M G A 2 Solenoid valve							ort s			Elect	trical ectio	ns	Othe	 r optio	ons	M	oun	t		ation		/olta		FP	'1
Solenoid valve model No.	1	2	3	4	5	6	7	8	9	Va 10	alve in	stallat	ion po	sition 14	15	16	17	18	19	20	21	22	23	24	Qty.
4G 2 9R-	<u> </u>		"	4	3	-		0	9	10	''	12	13	14	13	10	17	10	19	20	21	22	23	24	
4G 2 9R-																									
4G 2 9R-																									
4G 2 9R-																									
4G 2 9R-																									
3G 2 9R-																									
3G 2 9R-																									
Masking plate 4G2R-MP-																									
Air supply spacer 4G2R-P-																									
In-stop valve spacer 4G2R-IS																									
Exhaust spacer 4G2R-R-																									
402K K																									
<u>ia</u> ;:	parts	Ή_				BI	ankin	g plug							Threa	d plu	g g			- :	Silenc	er			
Do L2= L2= L3 L3 L3 L4 L5	led ps			GWP	4-B			Т		WP6	-B			40	32R-0	6P		s	SLW-8	s		s	LW-8	A	
* Write an integer multiple of 12.5.	cluded	\vdash		GWP	8-R			+		WP1	Λ-R														

GWP10-B

GWP8-B

 $^{^{\}star}$ Can only be selected for B types.

Aounting

Fluid control

			1 1	
		בופטוווט מטוממוט		
	Pneumatic	cylinders		
	acyley citeminad	רווכטווומווט עמועכט		
FP1	FRL/Auxiliary components	Electronic components		
	Vacuum	components		
	Main line	components		
	Fluid control	valves		*
	Main line	components		
P 2	Antibacterial/Bacteria-	removing filter		
<u>L</u>	Vacuum	components		
	d control	/alves	1	

			l R											. c.								Data	iceu	od			/		
IVI4	ŀĿ	ĴΒ	1-	I 1/	3-	۲P	'1 I	via	nif	01	a s	sp	ec	ITIC	cat	10	ns	SI	ne	et		Com			/				
● Cc	nta	ct					•	Quar	itity	5	set(s)		•	D e	livery	date	e	/			Cont	act						
Sli	p N	0.											О	rder	No.							Orde	r No.						
M			mode G valve	A	1	lenoi	id pc	0	R-	Po	rt siz	70	Reduce	d wirin	g Terr	 ninal/co	nnecto	or O	ption	-	Mo	unt	-	Statio No.	 on	Volt	age	FP	1
Solen	oid v	/alv	e mode	l No.	L.		Ι.			_	-			_	e inst	_		_	145	1.0	1	T 40	140	T 00	T 0.4				Qty.
4G	1	ı (9R-	.[1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
4G	1		9R-	+===																									
4G	1	ii-	9R-																										
4G	= +	; =	9R-																										
4G	== ;	+=	9R-	;=== ;																									
3G	1		9R-	<u></u> !																									
3G			9R-																										
Maskin 4G			(S) -																										
Maskin	g pla	te	(D) -																										
Air sur	ply	spa																											
In-stop	valve	e sp	acer																										
Exhau 4G	st sp	ace																											
ס				:	_	T				Bla	nking	plug					Τ	Th	read p	olug	Τ				Silence	er			
ing	112	. <u>.</u> .		- 1	₩ .	, I	G	WP4.	.R				GW	P6-R				4G1R	-M5P		\neg	SI	W-6S			SI	W-6/	<u> </u>	

GWP8-B

Wiring specifications sheet (Not required for standard wiring/double wiring. Complete these specifications when specifying the wiring order and additional cables)

Push-in fitting tube remover (included as standard) $\;\;\Box$ Not required (check)

(Connector	pin No.										I	nsta	llatio	on po	ositic	on										
T10/T10R	T11/T11R	T3	30/T30R	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	1	1																									
2	2		14																								
3	3	2																									
4	4		15																								
5	5	3																									
6	6		16																								
7	7	4																									
8	8		17																								
9	9	5																									
10	10		18																								
11	11	6																									
12	12		19																								
13	13	7																									
14	14		20																								
15	15	8																									
16	16		21																						<u> </u>		
СОМ	17	9																							L	<u> </u>	
СОМ	18		22																							_	
	19	10																									_
	20		23																								4
	21	11																									4
	22	- 10	24																								-
	23	12			_								_		-							_	_				-
	24	10	25	_	_				_				_		_							_	_				-
-	COM	13	(COM)				_		_				_		-												
	COM																										

 [≥] multiple of 12.5.
 ≥
 Cable with D-sub-connector
 4GR-CABLE-D0□-□

 * M4GB C8 does not have a tube removal tool included.

Date issued

SLW-8A

Fluid control

M4G^A2-T1/3-FP1 Manifold specifications sheet Company Contact Delivery date Contact Quantity set(s) Slip No. Order No. Order No. Manifold model No. G_B2 Station Solenoid valve Reduced wiring Terminal/connector Option Mount Voltage Solenoid position Port size No. connection pin array Valve installation position Qty. Solenoid valve model No 10 11 12 13 14 18 19 16 17 4G 2 9R-2 4G 9R-4G 2 9R-4G 2 9R-4G 2 9R-3G 2 9R-3G 2

* Can only be selected for B types.

* Write an intege multiple of 12.5.

Included

parts

GWP4-B

GWP8-B

Cable with D-sub-connector

4G2R-MP (S) -4G2Ř-MP (D) -Air supply space 4G2R-P-

4G2R-IS

Mounting

rai

Exhaust spacer 4G2R-R-

Wiring specifications sheet (Not required for standard wiring/double wiring. Complete these specifications when specifying the wiring order and additional cables)

GWP6-B

GWP10-B

4GR-CABLE-D0 □-□

Thread plug

SLW-8S

4G2R-06P

	`annaatar	nin Na											Inate			i+i							, ,				\neg
	Connector			L				-		_		_			on p							T					
	T11/T11R		0/T30R	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	1	1																									
2	2		14																								
3	3	2																									
4	4		15																								
5	5	3																									
6	6		16																								
7	7	4																									
8	8		17																								
9	9	5																									
10	10		18																								
11	11	6																									
12	12		19																								
13	13	7																									
14	14		20																								
15	15	8																									
16	16		21																								
COM	17	9																									
COM	18		22																								
	19	10																									
	20		23																								
	21	11																									
	22		24																								
	23	12																									
	24		25																								
	СОМ	13	(COM)																								
	COM		·																								

Blanking plug

	o .	M4G	3 Re	du	ce	d v	wii	in	OI.																								
	Electric actuator	M4G								ifo	ld	s	p	ec	ifi	C	at	io	ns	5 5	sh	e	et	-		issi			/	1			
	_	Contact	ct				•	Quan	tity		set(s)				• [Deliv	very	date	е		/		_	Cont		y						
i tr	ers ers	Slip No).					•				,		Oı	der									-	Orde	r No).						
Pneumatic	cylinders	Manifo		No.																				-									
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ı	Pneumatic valves		alve model										CC	nnect	Va		nstal		n pos									No.					Qty.
ı	ımati	4G 3	, 1 		1	2	3	4	5	6	7		8	9	10	1.	1	12	13	14	1	15	16	17	18	19	9	20	21	22	23	24	Qty.
ı	Pne	4G 3	+==+++																														
nante	ents	4G 3	++ +							+																							
l mus	Electronic components	4G 3	+==+ +													\dagger					\dagger												
Vilian	tronic c	4G 3	+==+ +							T			\dashv								1												
EP! /A		3GA3	9R-																														
	ts	3GA3	9R-																														
Vacillim	onen	Masking plat 4G3R-M	P (S) -	;																													
282	components	Masking plat 4G3R-M	P (D) -																														
L		Air supply s	- !																														
	ts	In-stop valve	;																														
Main line	onen	Exhaust sp 4G3R-R																															
Z Z	components									1											4												
L		D		,																_													
2	5	Mounting rail			Included parts	-	GWP	6-B	Τ		GW		plug 3			GWF	210-	В		+		nrea 3 R-0	ıd plu 8 P	ng .	8	LW-	10A		ilenc		W-10L	-	
Control	lves	o w	rite an integer ultiple of 12.5		5 0	Ca	ble w	ith D-	sub-c	conne	ctor		4GR	-CAE	LE-D	00]-[]																
FILIA	- a	Wiring	specificati	ons sh	neet ((Not re	equir	ed for	stan	dard	wirin	g/do	uble	wirir							cati	ons	wher	spec	ifyinç	g the	wiri	ng oi	der a	and ac	dition	al cal	oles)
	\dashv	T10/T10R	Connector	pin N	lo. T30/T	T30R		1	2 3	3 4	5	6	7	8		_	allation		ositio		15	16	17	18 19	20	21	22	23	24				
٩	components	1	1	1							Ĺ	j	Ĺ		_												F	Ė					
air.	nodu	3	3	2	2	14																											
2	9	5	4 5	3	3	15			+	+															-								
. <u>c</u>	5	6 7	6 7	4		16																											
Antihacterial/Bacteria-	filter	8	8			17																											
terial	removing filter	9 10	9 10	5	5	18			+																+		+	+					
ntiba		11 12	11 12	6	3	19																											
4		13	13	7	7			1	#	1																							
8	nents	14 15	14 15	8	3	20			\pm	\pm																							
Vacillim	components	16 COM	16 17	9)	21		+	+	+	-		\vdash						\Box														
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Contact) - [P1		ar	iity		S et(s)	-	ec.		cat • De) (et	-	Date Comp Conta	oany	ea			/				Electric actuator
					uan	шу		Ci(S)			rder		1001	dutt				-	Orde									
Slip No.											nuei	INO.						-	Orac	110.								cylinders
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	G A		ļ 			R-				- [11					_] [_						ļ 			P	1	
lenoid	valve	Sole	noid	pos	ition		Por	t siz	е	Reduc conne	ed wiri ction	ng Term	inal/co pin arr	nnector ay	O	otion		Мо	unt		Statio No.	on	Vol	tage	9			7
enoid val	ve model No.	1	2	3	4	5	6	7	8	9	Va	lve ins	tallatio		ition 14	15	16	17	18	19	20	21	22	2 2	:3	24	Qty.	amue
1	9R-			3		3			Ů		10	1	12	13		13	10	- ''	10	13	20	21	-		.5	24	H	Pneumatic valves
11	9R-																											alve
1	9R-																								1		H	
1 1	9R-																										H	Electronic components
	9R-																										Н	ic com
																									+		H	ponen
[]]1	19R-1																								+		Н	S
sking plate	9R-																								+		H	8
1R-MP sking plate																									+		Н	components
S1R-MP supply sp	(D) -																										Щ	nent
1R-P-	<u> </u>																											S
top valve s																											Ш	
naust spac 61R-R-	cer																											Öm
																												one
	[]	p _e			ND4		Blar	nking	plug		NDC I		<u> </u>			ead p	olug	1		W 60		Silen	_	CL VA				components
L2=	te an integer	cluded			VP4- VP8-		Blar	nking	plug		VP6-I	3			Th: 4G1R		olug		SL	.W-6S		Silen	_	SLW	/-6A			onents
L ₂ =	te an integer iple of 12.5.	Included	-	G۱	VP8-					G۱			ck the b				olug		SL	W-6S		Silen	_	SLW	/-6A			
			Push	G\ n-in fittin	VP8- g tube	B remover	(include			G۱			ck the b				blug		SL	.W-6S		Silen	_	SLW	/-6A			
GB C8	iple of 12.5.	e a tub	Push be ren	G\ n-in fittin noval	VP8- g tube tool i	B remover nclude	(include	ed as s	tandar	GV rd) □N	ot requ	ired (che		ox)	4G1R	-M5P		spec									oles)	
GB C8 Viring sp	does not hav pecifications Connec	e a tut sheet (ctor pin	Push pe ren Not re	GN n-in fittin noval equire	vps- g tube tool in d for	remover nclude standa	(include d.	ed as s	tandar	GV d) □N e wiri	ot requ	omple	e the	ox)	4G1R	-M5P	when	n	cifying	the w	iring	order	and	addit	tiona	al cat		
GB C8	does not hav	e a tut sheet (ctor pin	Push pe ren	GN n-in fittin noval equire	vps- g tube tool in d for	B remover nclude	(include	ed as s	tandar	GV rd) □N	ot requ	ired (che		ox)	4G1R	-M5P	when	n		the w	iring			addit	tiona	al cat	oles)	valves
GB C8	does not hav Decifications Connect T51/T51R	sheet (Push pe ren Not re	GN n-in fittin noval equire	vP8- g tube tool in d for T53	remover nclude standa	(include d.	ed as s	tandar	GV d) □N e wiri	ot requ	omple	e the	ox)	4G1R	-M5P	when	n	cifying	the w	iring	order	and	addit	tiona	al cat		valves
IGB C8	does not hav Decifications Connect T51/T51R	sheet (Push pe ren Not re	GN n-in fittin noval equire	wps- g tube tool in d for	remover nclude standa	(include d.	ed as s	tandar	GV d) □N e wiri	ot requ	omple	e the	ox)	4G1R	-M5P	when	n	cifying	the w	iring	order	and	addit	tiona	al cat		valves
IGB C8	does not hav Decifications Connec T51/T51R 1 2 3 4 5	sheet (ctor pin 1 2 3 4 5	Push pe ren Not re	GN noval equire	d for	remover nclude standa	(include d.	ed as s	tandar	GV d) □N e wiri	ot requ	omple	e the	ox)	4G1R	-M5P	when	n	cifying	the w	iring	order	and	addit	tiona	al cat		
* Writ multi	does not have confications connect T51/T51R 1 2 3 4 4 5 6 6 7	sheet (stor pin 1 2 3 4	Push pe ren Not re	GNn-in fittin moval equire	T53. 1 2 2 3 3 4 4 5 5 6 6 7 7	remover nclude standa	(include d.	ed as s	tandar	GV d) □N e wiri	ot requ	omple	e the	ox)	4G1R	-M5P	when	n	cifying	the w	iring	order	and	addit	tiona	al cat		valves components
4GB C8 Wiring sp	does not hav Decifications Connec T51/T51R 1 2 3 4 5 6 7	sheet (stor pin 1 2 3 4 5 6 7 8	Push pe rem Not re No.	GN-in fittin noval equire	T53. 1 2 3 4 5 6 7 7 3	remover nclude standa	(include d.	ed as s	tandar	GV d) □N e wiri	ot requ	omple	e the	ox)	4G1R	-M5P	when	n	cifying	the w	iring	order	and	addit	tiona	al cat		valves components
4GB C8 Wiring sp	does not have confications Connec T51/T51R 1 2 3 4 5 6 7 8 8 9 9	sheet (ctor pin 2 3 4 5 6 7	Push Push Push Push Push Push Push Push	GN-in fittimnoval equire	T53. 1 2 2 3 3 4 4 5 5 6 6 7 7	remover nclude standa	(include d.	ed as s	tandar	GV d) □N e wiri	ot requ	omple	e the	ox)	4G1R	-M5P	when	n	cifying	the w	iring	order	and	addit	tiona	al cat		valves components
4GB C8 Wiring sp 50/T50R	does not have confications Connec T51/T51R 1 2 3 4 5 6 7 8 8 9 10 11	e a tub sheet (ctor pin 1 2 3 4 5 6 7 8 9	Push Push Push Push Push Push Push Push	GN-in fittinnoval equire 2R iiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiii	T53, 11 2 3 3 4 4 5 5 6 6 7 7 11 11 11 11	remover nclude standa	(include d.	ed as s	tandar	GV d) □N e wiri	ot requ	omple	e the	ox)	4G1R	-M5P	when	n	cifying	the w	iring	order	and	addit	tiona	al cat		valves components
GB C8 Wiring sp 50/T50R	Decifications	e a tub sheet (ctor pin 1 2 3 4 5 6 7 8 9	Push Push Push Push Push Push Push Push	GV G	T53. 1 2 3 3 4 4 5 5 6 6 7 7 8 9 110 111 112 113	remover nclude standa	(include d.	ed as s	tandar	GV d) □N e wiri	ot requ	omple	e the	ox)	4G1R	-M5P	when	n	cifying	the w	iring	order	and	addit	tiona	al cat		valves
FIGE C8	Decifications Connect	e a tub sheet (ctor pin 1 2 3 4 5 6 7 8 9	Push Push Push Push Push Push Push Push	GV G	T53. 1 2 3 3 4 4 5 5 6 6 7 7 11 11 11 11 11 11 11 11 11 11 11 11	remover nclude standa	(include d.	ed as s	tandar	GV d) □N e wiri	ot requ	omple	e the	ox)	4G1R	-M5P	when	n	cifying	the w	iring	order	and	addit	tiona	al cat		valves components removing filter
GB C8 Wiring sp 50/T50R	Decifications Connect	e a tub sheet (ctor pin 1 2 3 4 5 6 7 8 9	Push Push Push Push Push Push Push Push	GV G	T53. 1 2 3 4 4 5 5 6 6 7 7 8 9 9 110 111 112 113 114 115 116	remover nclude standa	(include d.	ed as s	tandar	GV d) □N e wiri	ot requ	omple	e the	ox)	4G1R	-M5P	when	n	cifying	the w	iring	order	and	addit	tiona	al cat		valves components removing filter
GB C8 Wiring sp 50/T50R	does not have	e a tub sheet (ctor pin 1 2 3 4 5 6 7 8 9	Push Push Push Push Push Push Push Push	GV G	WP8- g tube tool ii d for T53. 1 2 2 3 3 4 5 5 7 7 11 12 13 14 15 16 17	remover nclude standa	(include d.	ed as s	tandar	GV d) □N e wiri	ot requ	omple	e the	ox)	4G1R	-M5P	when	n	cifying	the w	iring	order	and	addit	tiona	al cat		valves components removing filter
GB C8 Wiring Sp 50/T50R - Power supp - Power supp - Power supp	Decifications	e a tut tor pin 1 2 3 4 5 6 7 8 9 10	Push Push Push Push Push Push Push Push	GV G	WP8- g tube d for T53: 12 23 44 55 66 77 11 11 11 11 11 11 11 11 11 11 11 11	remover nclude standa	(include d.	ed as s	tandar	GV d) □N e wiri	ot requ	omple	e the	ox)	4G1R	-M5P	when	n	cifying	the w	iring	order	and	addit	tiona	al cat		valves components removing filter co
GB C8 Wiring sp 50/T50R	Decifications		Push Push Push Push Push Push Push Push	GV G	WP8- g tube d for T53. 1 2 3 4 4 5 6 7 10 11 12 13 14 15 16 17 18 19 20	remover nclude standa	(include d.	ed as s	tandar	GV d) □N e wiri	ot requ	omple	e the	ox)	4G1R	-M5P	when	n	cifying	the w	iring	order	and	addit	tiona	al cat		valves components removing filter components
GB C8 Viring Sp 50/T50R - Power supp - (COM) Power supp - Power supp	Decifications		Push Push Push Push Push Push Push Push	GV G	WP8- g tube tool ii d for T53. 1 2 2 3 3 4 5 6 7 7 11 12 13 14 15 16 11 17 18 19 20 21	remover nclude standa	(include d.	ed as s	tandar	GV d) □N e wiri	ot requ	omple	e the	ox)	4G1R	-M5P	when	n	cifying	the w	iring	order	and	addit	tiona	al cat		valves components removing filter components
GB C8 Viring Sp O/T50R Power supp Power supp	Decifications		Push Push Push Push Push Push Push Push	GV G	WP8- g tube tool ii d for T53. 1 2 3 4 4 5 5 6 7 7 11 12 13 14 15 16 17 18 19 20 21	remover nclude standa	(include d.	ed as s	tandar	GV d) □N e wiri	ot requ	omple	e the	ox)	4G1R	-M5P	when	n	cifying	the w	iring	order	and	addit	tiona	al cat		valves components removing filter

^{*} Note that when T50 wiring is used, the COM polarity is + (plus).

* When T50 wiring is used, connector pin numbers 9, 10, 19, and 20 cannot be specified, because they are used for the external input power supply.

M4	1G2	Redu	IC	ed	wir	ing																									
M 4	ŀG₿	2-T5	5-F	P	1 N	/lar	nifo	olc	d s	sp	ec	cif	ïС	at	io	n	s s	sh	e	et			e is:	sued	b	/		1			
Cor	ntact					Quant	titv	s	et(s))			•	Del	iver	v da	ite		/				ntac						-		-
	No.						,		(-,	<u>'</u>	T	Ord	er N			_						Orc	ler N	No.							
		model No.										Old	CITY	0.																	
٠.	,					Λ	D	, I	;	ī							1:-			, ,			;	ï		1	;	;	_		1
-		GA2					R-		!	- [ina T] [_] [!	- : .					-F	'	
Soler	noid v	alve	Sol	enoi	d pos	sition	Р	ort	size		onnec		ing T		ai/con n arra		r	Opti	ion		Мс	unt		N N	tatio o.	n	Vol	tage	€		
Soleno	oid valve	model No.	1	2	3	4	5	6	7	8	9		Valve 10	inst 11	allati 12			n 14	15	16	17	1	8	19	20	21	2	2 :	23	24	Qty.
4G	2	9R-																													
4G	2	9R-																													
4G	2	9R-																										+			
4G	2	9R-																													
4G	2	9R-																													
3G	2	9R-																													
3G[]		9R-																													
Masking 4G2F	g plate R-MP (3	S) -																													
Masking		[]																													
	ply spac																														
In-stop v	valve spa	cer																										\top			
	st spacer	1 []																										+			
4G2F	K-K-	!!		+																								+			
				+														-										+	\dashv		\vdash
<u>p</u>	1 :-		σ	╁				Bl	ankir	na pl	ua						+		hrea	ad plu	1a	+				Sile	ncer				
Mounting rail	L2= :	an integer	Included	arts 		GWP4	-B			9 6.		GWI	P6-B						2R-0		1	T	SL	W-8	_	00.	100.	SLV	N-8A		
	multiple	e of 12.5.				GWP8	3-B					GW	P10-	В																	
	-	selected fo cifications s Connec	shee tor p	t (Not	•	ed for	standa	rd wi	ring/	doub	le wi	iring.	. Cor	nplet	e the		stall	ation	pos		spe	cifyir	ng th	e wir	ring (ordei	r and	addi	itiona	al cal	oles)
T50/1		T51/T51R	1	T52/T	52R	T53/	T53R	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
2		2	2			2																									
4		4	3 4			3		┢										\vdash											\vdash		
5		5	5			5																									
7		7	6 7			6 7		┢																					\vdash		
8		8	8			8																									
9 - Po	ower supply	9	9		COM	9 10		-																							
11		11	Ť		OOW	11																									
12		12	+			12 13																									
14		14	†			14																									
15 16		15 16	\perp			15 16																									
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		19 cor	_			19 20		\vdash										-													
						21																									

СОМ

^{*} Note that when T50 wiring is used, the COM polarity is + (plus).

* When T50 wiring is used, connector pin numbers 9, 10, 19, and 20 cannot be specified, because they are used for the external input power supply.

5

M4G ^A	3-T5	-	₽	1 N	/ la	nifo	olo	t t	sp	ec	cif	ic	at	io	n	S	sł	1e	et	-		e iss		t	1		1			_
Contact				•	Quar	ntity	s	et(s)			•	Del	ivery	/ da	te		/			Con	tact								
Slip No.											Ord	er N	0.								Ord	er N	lo.							_
Manifold m	nodel No.									•																				-
M	C A	2	['n	R-	[1 _	[- 1 [-				1:			11			1	_ [:	-FI	D 1	ı
Solenoid va			lono		: U sition		: Port	siz	, — e	L Reduc	ced w	irina	Termir	nal/con	necto	! ¦_ r	Opti	on	!!	Мо	ınt	!	ا S	tatio	.; — n	V∩l	tage			•
oole iloid va	aive		ICIIO	iu pc	Sitioi			. 012		conne			р	in arra	у			011		IVIO	arit.			lo.		V O	iage			,
Solenoid valve r	model No.	1	2	3	4	5	6	7	8	9	1		ve ins	tallat 12	13			15	16	17	18	1	9	20	21	22	2	3 24	Qt.	y.
G 3	9R-																													
G 3	9R-																													
G 3	9R-																													٦ F
G 3	9R-																													
G 3	9R-																													
GA3 9R	11																													7
GA3 9R	+===+	\vdash	+	+						+	+	\parallel								+	+									┤ -
lasking plate	1	\vdash	+	+						+	+	\dashv				+	+				+	+								$+ \mid_{\underline{s}}$
IG3R-MP (S Masking plate	3) -		+	+						+	+						-			-	-	+								
G3R-MP (I											+						-				-	-							_	_
G3R-P- i-stop valve space	<u> </u>																													- °
G3R-IS																														, ا ا
xhaust spacer G3R-R-																														
	 	ded	ts				ВІ	anki	ng pl	ug							Т	hrea	d plu	g					Siler	cer				1
Donution Lieu Le		Included	parts	GWI	P6-B		6	SWP	8-B			G۷	VP10)-В			4G	3R-0	8P			SLW	/-10	A			SLW	-10L		11.
•						•																				•				ָ בּ
Wiring spec	cifications	shee	et (No	t requi	red fo	r standa	ard w	iring/	doub	le wi	iring.	Con	nplet	e the	se s	pecif	ficati	ons	when	spec	ifyin	g the	e wir	ing c	order	and	addit	ional c	ables	s) ľ
	Connec														_				sitio]
T50/T50R	T51/T51R	-	T52/	T52R	1 T53	3/T53R	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22 23	3 24	-
	2	2			2																									
	4	3			3		+																							
!	5		5		5																									i
-	6 7	- E			6 7		+																							+
1	8	8	3		8																									
	9 10	9	0	COM	9		+																							
	11			COIVI	11																									
	12 13	4			12 13		+		₩								_	_												┩┟
4	14	+			14		\pm																							
	15 16	4			15 16		\perp							Щ						\Box		\exists								
	17	_			17		\pm																							
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	19 co 20 co	_			19 20		-							\vdash																+
					21																									
		+			22 23		+																							
					24																									
		+			25 26	COM	_							\vdash					-											+
					1	CON		1	1	1	1	1	1									- 1				1				

control	/acuum	Antibacterial/Bacteria-	Main line	Fluid control	Main line	Vacuum	FRL/Auxiliary components Branima fig. valvae	Pneumatic	Electric actuator
lives com	nponents	removing filter	components	valves	components	components	Electronic components	cylinders	בוברווור מרוחמות

M4G å1-T6D-	FP1 Mani	fold sp	ecificati	ons	she	et		issued	/	/ /		
			_				Com	. ,				
Contact	Quantity	set(s)	Delive	ry date	/		Cont	act				
Slip No.			Order No.				Orde	r No.				
Manifold model No.												
M G § 1	0	R-)_[-	3 -	FP	1
	enoid position	Port si	transmission	pin	i diray	Option		Station No.		Voltage		
Solenoid valve model No.	2 3	4 5	Valve installation	n position	n 10	11	12	13	14	15	16	Qty
4G 1 9R-	2 3	4 3	0 7 8	9	10	- ''	12	13	14	13	10	1
4G 1 9R-												
4G 1 9R-												╁
4G 1 9R-												+
4G 11 9R-												╁
3G 9R-												╀
3G 1 9R-												+
4G1R-MP (S) -				_								1
4G1R-MP (D) -												
Air supply spacer 4G1R-P-												
In-stop valve spacer 4G1R-IS												
Exhaust spacer 4G1R-R-												
,		Blanking plug	<u> </u>	<u> </u>	Thread p	lug			Siler	ncer		
Button of 12.5.	g GWP4-B		GWP6-B	4	G1R-M5P	Ĭ	SL	.W-6S		SLW-	6A	
한 *Write an integer 기원	S GWP8-B											

Wiring specifications sheet (Not required for standard wiring/double wiring. Complete these specifications when specifying the wiring order and additional cables)

Connector pin I	No.							Insta	allation	positio	n						
T6*		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	1																
	2																
	3																
	4																
	5																
	6																
	7																
	8																
T6C0: CompoBus/S 8 points	9																
T6C1: CompoBus/S 16 points	10 COM																
	11																
T6G1: CC-Link 16 points	12																
	13																
	14																
	15																
	16																
	17																
	18																
	19																
	20 COM																

Contact

Slip No.

Manifold model No.

Solenoid valve

2

2

2

2

Masking plate 4G2R-MP (S) -4G2R-MP (D) Air supply sp. 4G2R-P-4G2R-IS

Exhaust spacer 4G2R-R-

Mounting

ā

Write an integer multiple of 12.5.

T6C0: CompoBus/S 8 points

T6C1: CompoBus/S 16 points

T6G1: CC-Link 16 points

4G

4G

4G

4G

4G

3G 2 3G 2

Solenoid valve model No.

9R-

9R-

9R-

9R-

9R-9R-

> Included parts

Connector pin No.

T6*

6 7 8

9 10

11

COM

● Conta				Quantity		et(s)	PC			very o		she	—		ompai ontact					
Slip N	Ο.						(Order I	No.					0	rder N	lo.				
Slip No Manife Manife Solenoi	G A 3 d valve	Sol	enoid p	O	R-	Port	size		Serial smissio		 minal/c pin a	onnector	Optio	:	D-	Station No.		3 /oltag	- F	P
Solenoid v	alve model No.	1	2	3	4	5	6	Valve 7	_	ation p	ositio	n 10	11	1	2	13	14	15	16	
4G 3	9R-	<u>'</u>						- '				10	T ''	<u> </u>	_	10		10	10	
4G 3	>+ >+																		+	
4G 3 4G 3 4G 3																			+	
4G 3	} = = 																		+	
4G 3	} = = { 																		+	
3GA3	9R-																		+	
3GA3	9R-																		+	
Masking pla	ite i																		+	
Masking pla 4G3R-N Masking pla 4G3R-N Air supply	ite																		+	
AG3R-N	spacer																		+	
In-stop valve	spacer											+							+	
4G3R-IS Exhaust sp	acer											-							+	
4G3R-R	, ,	0 T			RI:	anking	nlua				Т	Thres	d plug				Silend	er er		
Wounting Rail Rail Rail Rail Rail Rail Rail Rail	=	Included parts								_			1				Ollerin			Т
Į ∑ į 'n	Vrite an integer nultiple of 12.5.	드	GWP	р-Б	<u> </u>	WP8-B			WP10-	ъ		4G3R-	JoP		SLW	/-10A		SLV	V-10L	
Wiring	specifications sh	eet (N	ot require	ed for stand	dard wi	rina/do	uble wi	rina. Ca	mplete	e these	spec	ifications	when	specify	vina the	e wirina	order	and add	ditional	са
	Connector					<u>g</u>						tion posi			, <u>g</u>					
	T6*				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	1
		-	1																	L
		-	2																<u> </u>	
		-	3																 	\vdash
		-	<u>4</u>																 	
		}	5 6																\vdash	\vdash
		-	7									-							<u> </u>	\vdash
T6C0: C		}	8																	\vdash
T6C0· C	ompoBus/S 8 poi	ints	9																	H
			10	СОМ																
T6C1:C	ompoBus/S 16 poi	ints	11																	T
T6G1: C	C-Link 16 points	ŀ	12																	
T6G1: C		ŀ	13																	T
		ļ	14																	
		Ī	15																	
-											1					T	l			Т
_		İ	16																	L
			16 17																	
		-																		
			17																	

M4G1 Serial	tra	nsm	issi	on	- th	in														
M4G	FP'	1 Ma	nif	olo	e h	ne	cifi	ca	tio	ns	sh	166.	f	Date i	issued	d	1	1		
WI-10 B I I I O	• •		4	U I(4	Po	U	Ju			U 11		•	Comp	any					
Contact		Qual	antity	5	set(s)			● De	elivery	date		/		Conta	act					
Slip No.							Orde	r No.						Order	No.					
Manifold model No.													_							
M G 8 1			0F	? -											- [-[]	3 -	FF)
Solenoid valve	Soleno	oid posi	tion	I	Port s	size	trans	erial missior	1	piii aiia	,	Optio	n	Mount	t St	tation o.	Vol	tage		
Solenoid valve model No.	1 2	2 3	4	5	6	7	Va 8	Ive insta	allation 10	positi 11	on 12	13	14	15	16	17	18	19	20	Q
IG 1 9R-																				T
G 1 9R-																				t
IG 1 9R-																				\dagger
IG 1 9R-																				+
IG 1 9R-																				+
																				+
3G 1 9R-								-												+
Aasking plate							-													╀
4G1R-MP (S) -							1													+
4G1R-MP (D) -								ļ												╀
Air supply spacer																				
n-stop valve spacer																				
xhaust spacer																				
	<u>, L</u>			Bla	anking	<u> </u>						ad plug				Sile	encer			
DO L2= L2= L3 T3 T3 T4 T3 T4 T3 T4 T3 T4 T3 T4 T3 T4 T3 T4 T3 T4 T4 T4 T4 T4 T4 T4 T4 T4 T4 T4 T4 T4	parts	GWP			-		GWP6	·B		+	4G1R-I	M5P		SL	N-6S			SLW-6	4	

Wiring specifications sheet (Not required for standard wiring/double wiring. Complete these specifications when specifying the wiring order and additional cables)

	Connector pi	in No.										Inst	allatio	on po	sition									
	T8*				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
T8G1	CC-Link	NPN	16-point	1																				
	CC-LIIK	INFIN		3																				
T8G2			32-point	3																				
T8GP1		PNP	16-point	4																				
T8GP2			32-point	5																				
T8P1	PROFIBUS-DP	NPN	16-point	6																				
T8P2			32-point	7																				
T8PP1		PNP	16-point	8																				
T8PP2			32-point	9																				
T8EC1	EtherCAT	NPN	16-point	10																				
T8EC2	2.10.07.11		32-point	11																				
T8ECP1		PNP		12																				
		FINE	16-point	13																				
T8ECP2	E0 N (00	NIDNI	32-point	14																				
T8EN1	EtherNet/IP	NPN	16-point	15																				
T8EN2			32-point	16																				
T8ENP1		PNP	16-point	17																				
T8ENP2			32-point	18																				
T8D1	DeviceNet	NPN	16-point	19																				
T8D2			32-point	20																				
T8DP1		PNP	16-point	21																				
T8DP2			32-point	22																				
T8EB1	CC-Link	NPN	16-point	23	<u> </u>																			
	4	INFIN		24	<u> </u>																			
T8EB2	IEF Basic	DNID	32-point	25	<u> </u>																			
T8EBP1	_	PNP	16-point	26	<u> </u>																			
T8EBP2			32-point	27	<u> </u>																			
T8EP1	PROFINET	NPN	16-point	28	<u> </u>																			
T8EP2			32-point	29	_																			
T8EPP1		PNP	16-point	30	_																			\sqcup
T8EPP2	1		32-point	31	<u> </u>																		<u> </u>	igspace
	1		J - = P N	32	1																			

^{*} Write an integer multiple of 12.5. Push-in fitting tube remover (included as standard) \(\sqrt{Not required (check the box)} \)

* M4GB C8 does not have a tube removal tool included.

Station

16 17

Voltage

SLW-8A

16

32-point

T8EPP2

te iss mpan ntact		1	/			Electric actuator	
der No	D.		3	-F	P1	Pneumatic cylinders	
unt	Statio No.		/oltag		Qty.	Pneumatic valves	
						FRL/Auxiliary components Electronic components	FP1
						Vacuum components	
SLW-	-10A	Silence		V-10L		Main line components	
ng the	wiring	order a	and add	ditional 15	cables)	Fluid control valves	
						Main line components	
						Main line Antibacterial/Bacteria Vacuum components removing filter components	FF
						Vacuum components	FP2
						Fluid control valves	
					\vdash		

M4G3 Serial transmis	sion - thin						
M4Gå3-T8-FP1 Man	ifold sp	ecificatio	ns shee	Date issued	d /	1	
	о.а ор			Company			
● Contact ● Quanti	ty set(s)	Deliver	y date /	Contact			
Slip No.		Order No.		Order No.			
Manifold model No.							
M GA3	0R-		, , , , , , , , , , , , , , , , , , ,		-	3 -FI	P1
Solenoid valve Solenoid position			minal/connector Option pin array	n Mount Si	tation v	oltage	
Solenoid valve model No.		Valve installation		44	1 44 1	45 40	Qty.
4G 3 9R-	4 5	6 7 8	9 10	11 12 13	14	15 16	Ť
4G 3 9R-							
4G 3 9R-							
4G 3 9R-							
4G 3 9R-							
3GA3 9R-							
3GA3 9R-							
Masking plate 4G3R-MP (S) -							
Masking plate 4G3R-MP (D)							
Air supply spacer 4G3R-P-							
In-stop valve spacer 4G3R-IS							
Exhaust spacer 4G3R-R-							

Wiring specifications sheet (Not required for standard wiring/double wiring. Complete these specifications when specifying the wiring order and additional cables)

GWP10-B

Thread plug

4G3R-08P

Blanking plug

GWP8-B

Included parts

GWP6-B

	Connector pi	n No.									Ir	stallati	on pos	ition						
	T8*				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
T8G1 T8G2	CC-Link	NPN	16-point 32-point	2																
T8GP1	1	PNP	16-point	3 4																
T8GP2 T8P1	PROFIBUS-DP	NPN	32-point 16-point	5 6																
T8P2 T8PP1]	DND	32-point 16-point	7 8																
T8PP2	_		32-point	9																
T8EC1 T8EC2	EtherCAT		16-point 32-point	10 11 12																
T8ECP1 T8ECP2		PNP	16-point 32-point	13																
T8EN1 T8EN2	EtherNet/IP	NPN	16-point 32-point	15 16																
T8ENP1	_	PNP	16-point	17																
T8ENP2 T8D1	DeviceNet	NPN	32-point 16-point	18 19																
T8D2 T8DP1			32-point 16-point	20 21																
T8DP2			32-point	22																
T8EB1 T8EB2	CC-Link IEF Basic	NPN	16-point 32-point	24 25																
T8EBP1 T8EBP2	- Dasie	PNP	16-point	26 27																
T8EP1	PROFINET	NPN	- F	28																
T8EP2 T8EPP1		PNP	32-point 16-point	30																
T8EPP2			32-point	31 32																

Series variation

MN4GA/4GB-FP1 Series

- * Refer to page 77 for metal base (integrated).
- * Refer to page 161 for the master valve.

		manifold	ndividual wiring	1	pı	wiring manifold	Reduced		
רופרווור מרוחמוטו	cylinders	Electronic components	components	components	valves	components	removing filter	components	valves
Electric actuator	Pneumatic	FRL/Auxiliary components Programmatic valves	Vacuum	Main line	Fluid control	Main line	Antibacterial/Bacteria-	Vacuum	Fluid control

						Valve per	formance		
		Appearance series	Model No.	Electrical connections	JIS symbol	Flow characteristics C [dm³/ (s·bar)]	Cylinder bore size	Voltage (V)	
anifold	pipi	MN4GA180R	MN4GA1	Blank -E□	3-port valve 2-position single NC a (A)T	1.0 to 1.2	ø20 to ø40	10400	
Individual wiring manifold	Body		MN4GA2	Blank -E□ -B	2-position single NO	2.2 to 2.5	ø40 to ø80	AC100 AC200 DC24	
dual wi	Base side piping	MN4GB180R	MN4GB1	Blank -E□	a (B) 5 1 3 (R)(P) (R2)	1.0 to 1.2	ø20 to ø40	DC12 (*2)	
Individ	Base sic		MN4GB2	Blank -E□ -B	• 5-port valve 2-position single a (A) (B)	2.2 to 2.5	ø40 to ø80	,	
		Terminal block MN4GA280R	MN4GA1 (N3GA1) (N4GA1)	-T10 T11	5 1 3 (R ₁) (P) (R ₂) 2-position double	1.0 to 1.2	ø20 to ø40	DC24	
			MN4GA2 (N3GA2) (N4GA2)	(-A2N)	a (A) (B) b	2.2 to 2.5	ø40 to ø80	DC12	
	[응	Connector MN4GA280R	MN4GA1 (N3GA1) (N4GA1)	-T30 T5□	3-position all ports closed (A) (B) (B) (A) (B) (B) (A) (B) (B) (B) (B) (B) (B) (B) (B) (B) (B	1.0 to 1.2	ø20 to ø40	DC24	
	Body I		MN4GA2 (N3GA2) (N4GA2)	(-A2N)	5 1 3 (R ₁) (P) (R ₂) 3-position A/B/R connection 4 2 (A) (B)	2.2 to 2.5	ø40 to ø80	DC12	
manifold		Serial transmission MN4GA180R	MN4GA1 (N3GA1) (N4GA1)	-T6□ -T7□	a M Mb 5 1 3 (R) (P) (Rs) 3-position P/A/B connection 4 2	1.0 to 1.2	ø20 to ø40	DC24	
ring me		The state of the s	MN4GA2 (N3GA2) (N4GA2)	-T8□ (-A2N)	4 2 (A) (B) 5 1 3 (B) (P) (Re) Two 3-port valves integrated	2.2 to 2.5	ø40 to ø80	DG2 4	
Reduced wiring		Terminal block MN4GB180R	MN4GB1 (N4GB1)	-T10 T11	NC/NC	1.0 to 1.2	ø20 to ø40	DC24	
Reduc	ور		MN4GB2 (N4GB2)	(-A2N)	a 4/A) 5(R.) NC/NO h 2(B)	2.2 to 2.5	ø40 to ø80	DC12	
		Connector MN4GB180R	MN4GB1 (N4GB1)	-T30 T5□	a 4/A) 5(R _c)	1.0 to 1.2	ø20 to ø40	DC24	
	Base side		MN4GB2 (N4GB2)	(-A2N)	NO/NC 2(B) 2(B) 3(R ₂)	2.2 to 2.5	ø40 to ø80	DC12	
		Serial transmission MN4GB280R	MN4GB1 (N4GB1)	-T6□ -T7□	NO/NO 5(R)	1.0 to 1.2	ø20 to ø40	DC24	
			MN4GB2 (N4GB2)	-T8□ (-A2N)	a 4(A) (R2)	2.2 to 2.5	ø40 to ø80	DC24	

MN4GA/4GB-FP1 Series

Series variation

- *1: Effective cross-sectional area S and sonic conductance C are converted as S \approx 5.0 \times C. *2: The grommet lead wire specifications are compatible with DC voltage only.
- *3: Only compatible with base piping models.
 *4: Specification for reduced wiring manifold equipped. Only 12/24 VDC is supported.

														I I	or read	uccu v		ectri					7 7 0 0	7 13 34	pporte	u.	.uator
		Sw	itch	ing p	osit	ion			P	VB p	oipin	g po	rt	Single	unit, in	dividua	wiring		Jai C	Rec	duce	d wi	ring				
2	2-pos	sitio	1	3-p	osit	ion	egrated			ush- fittin			nale ead				×		al block		supply terminal	supply terminal		ion			Pneumatic cylinders
Normally closed	Normally open	gle	Double	All ports closed	ABR connection	PAB connection	Two 3-port valves integrated		94	9ø	88	M5	Rc1/8	Grommet lead (*2)	E-connector	EJ-connector	DIN terminal box	A-connector (*4)	Common terminal block	D-sub-connector	Flat cable with power supply terminal	Flat cable without power supply terminal		Serial transmission		Page	Pneumatic valves FRL/Auxiliary components Electronic components
Nor	Nor	Single	Doc	₽ E	ABF	PAE	ΙM	Μ×	C4	C6	C8	M5	06	Blank	E□	E⊡J	В□	A2N	T1[T30	T50	T5_	T6_	T7_	T8□		-RL/Auxi Electro
•	•	•	•	•	•	•	0	•	•	•		•		•	•	•										127	iliary componer
•	•	•	•	•	•	•	0	•		•	•		•	•	•	•	•										
		•	•	•	•	•	0	•	•	•				•	•	•										131	Vacuum components
		•	•	•	•	•	0	•		•	•			•	•	•	•										
•	•	•	•	•	•	•	0	•	•	•	•	•	•					•	•								Main line components
•	•	•	•	•	•	•	0	•	•	•		•															Fluic
•	•	•	•	•	•	•	0	•		•	•		•							•	•	•				135	Fluid control valves
•	•	•	•	•	•	•	0	•	•	•		•						•					•	•	•		Main compoi
•	•	•	•	•	•	•	0	•		•	•		•														n line onents
		•	•	•	•	•	0	•	•	•								•	•								Antiba
		•	•	•	•	•	0	•		•	•															,	Antibacterial/Bacteria- removing filter
		•	•	•	•	•	0	•	•	•								•		•	•	•				139	
		•	•	•	•	•	0	•		•	•																Vacuum components
		•	•	•	•	•	0	•	•	•								•					•	•	•		um ients
		•	•	•	•	•	0	•		•	•																Fluid va

Electric actuator Pneumatic valves FRL/Auxiliary components

MN4GA/4GB-FP1 Series

Electric actuator	Discrete valve	Electrical c	onnections Reduced wir	ing manifold	Manual override	Other options
	Grommet lead wire	C connector with	Common terminal block M3 thread specifications (left side)	Flat cable with power supply terminal (left side)	Non-locking/locking common	H With exhaust check valve
Pneumatic	• Lead wire length 300 mm				(Standard equipment)	
Pneumatic valves	EO E-connector	A-connector downward without socket	Common terminal block T10R M3 thread specifications (right side)	Flat cable with power supply terminal (right side)		F Port A/B filter integrated
FRL/Auxiliary components Pn						A/B port filter
	E0N E-connector	For AC voltage, (a) dimension is 3.5 mm longer than DC voltage.	Common terminal block T11 Clamping specification (left side)	Flat cable without power supply terminal (left side)	① For non-locking, push to turn on and release to turn off ② For locking, push and turn	Z1 Air supply spacer Z3 Exhaust spacer
	willious socket	0			90° clockwise to hold the on state Turn anti-clockwise to unlock OFF	Air supply spacer
Main line	E-connector with socket/termina	B BN (BN: Without terminal box)	Common terminal block Clamping specification (right side)	Flat cable without power supply terminal (right side)	M Non-locking	Z2 In-stop valve spacer
control	sayles				Protective cover Manual button ① Push to turn ON, release to turn OFF	
ne	E2 E-connector	EJ-connector Lead wire length		T6*0 T6*1 Serial transmission		W1 Single spare wiring
teria- Main line		1 m 2 m 3 m				Sparr wiring Holder
Antibacterial/Bacteria-	E-connector without socket (S)(I	E2*J EJ-connector	T30R D-sub-connector (right side)	T7*0 Serial transmission T7*1 Thin slot		Q Reduced wiring duct
: 🗆	components					Reduced wiring duct
				T8*1 Serial transmission T8*2 Thin slot		
Fluid control	\danale \danal					

MN4GA/4GB-FP1 Series

Electrical connection circuit diagram

	Elec	ctrical connections	Without lead wire	With lead wire		With surge suppressor	Without socket	Circuit diagram
	Blank	Grommet lead wire		•		V		(±) O DC (∓) O
	E0	E-connector		•				(±) O
	E0*J	EJ-connector		•				DC
	E0N	E-connector					•	(to) 0 100 VAC
	E1	E-connector	•					(to)
	E2	E-connector		•	•	•		(±) O
	E2*J	EJ-connector		•	•	•		DC + / / / / / / / / / / / / / / / / / /
	E2N	E-connector			•	•	•	(to) 0 100 2 100 100 100 100 100 100 100 100
	E3	E-connector	•		•	•		VAC (to)
	A2N	A-connector			•	•	•	(±) O
	В	DIN terminal box	•		•	•		(t) (T) (to) (VAC (to) (value) (to) (value) (to) (value) (valu
	BN	DIN terminal box (without terminal box)						(to) 0 200 VAC (to) 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
	E2	E-connector		•	•	•		0.0 N.
S	E2*J	EJ-connector		•	•	•		DC Z
Option	E2N	E-connector			•	•	•	(‡) 0
ŏ	A2N	A-connector			•	•	•	
	E2	E-connector		•	•	•		(+) O THE TELES
ш	E2*J	EJ-connector		•	•	•		DC Control circuit
Option	E2N	E-connector			•	•	•	(±) Outro
ō	A2N	A-connector			•	•	•	

Pneumatic cylinders

components



Individual wiring block manifold **Body piping**

MN4GA1/2-FP1 Series

Applicable cylinder bore size: ø20 to ø80

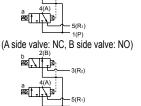




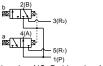
JIS symbol

3-port valve 2-position single NC (A) (R₁) (P) (R₂) 2-position single NO

(R₁) (P) (R₂) Two 3-port valves integrated (A side valve: NC, B side valve: NC)



(A side valve: NO, B side valve: NC)



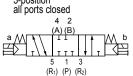
(A side valve: NO, B side valve: NO)



5-port valve 2-position single

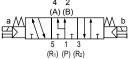






3-position A/B/R connection

(R₁) (P) (R₂) 3-position P/A/B connection



Manifold common specifications

Descriptions Content Manifold Block manifolds Mounting method DIN rail mount Air supply and exhaust method Common supply/common exitomic method (With internal exhaust check with internal exhaust	valve) exhaust lt-in)
Mounting method Air supply and exhaust method Pilot exhaust method Piping direction Valve and operation DIN rail mount Common supply/common exi (With internal exhaust check of the common exi (Pilot exhaust check valve bui) Valve top direction Pilot operated soft spool valve	valve) exhaust lt-in)
Air supply and exhaust method (With internal exhaust check or (With internal exhaust check or (Pilot exhaust method (Pilot exhaust check valve bui) Piping direction Valve top direction Valve and operation Pilot operated soft spool valve top direction valve top direction valve and operation Pilot operated soft spool valve top direction valve and operation valve top direction valve top direction valve and operation valve top direction valve t	valve) exhaust lt-in)
Pilot exhaust method (With internal exhaust check valve build Piping direction (Pilot exhaust check valve build Piping direction (Pilot exhaust check valve build Piping direction (Pilot exhaust check valve build Piping direction (Pilot operated soft spool valve and operation (Pilot operated soft spool valve spool valve soft spool valve soft spool valve soft spool valve soft spool valve soft spool valve soft spool valve soft spool valve soft spool valve spool valve soft spool valve spool	valve) exhaust lt-in)
Pilot exhaust method (Pilot exhaust check valve bui Piping direction Valve top direction Valve and operation Pilot operated soft spool valve are provided in the pilot operate	lt-in)
Valve and operation Pilot operated soft spool va	
Working fluid Compressed air	aive
Troning hala	
Max. working pressure MPa 0.7	
Min. working pressure MPa 0.2 *3	
Proof pressure MPa 1.05	
Ambient temperature °C	
Fluid temperature °C 5 to 55	
Manual override Non-locking/locking common (sta	ndard)
Degree of protection *1 Dust-proof	
Vibration resistance m/s ² 50 or less	
Shock resistance m/s ² 300 or less	
Atmosphere Cannot be used in corrosive gas enviro	onments

- *1: Avoid water drops or oil, etc., during use. IP65 (jet-proof) applies for DIN terminal box specifications. However, the specified outer diameter of the cord and tightening torque must be used for fixing in place.
- *2: The working pressure range is 0 to 0.7 MPa when the external pilot (option code: K) is selected. Set the external pilot pressure between 0.2 and 0.7 MPa.

Electrical specifications

Descripti	ons		Cor	ntent	
Rated voltage	ge V	DC24	DC12	AC100	AC200
Voltage fluc	tuation range		±1	0%	
Holding current	Standard	0.015 (0.017)	0.030 (0.034)	0.009 (0.009)	0.006 (0.006)
A (*3)	With low exoergic/energy circuit	0.005	0.010	-	-
Power consumption	Standard	0.35 ((0.40)	-	-
W (*3)	With low exoergic/energy circuit	0.	.1	-	-
Apparent power VA (*3)	Standard	-	-	0.93 (0.98)	1.40
Thermal cla	SS			В	
Surge supp	ressor		Ор	tion	
Indicator			Lamp	(option)	

^{*3:} Values in () apply when lamp is attached. In addition, the type with low exoergic/energy circuit is only available with

Individual specifications

Descriptions			MN3GA1/MN4GA1	MN3GA2/MN4GA2
Max. station No.			24 stations	20 stations
Port size	Metric fitting/ M5,	A/B Port	Push-in fitting ø4, ø6 M5	Push-in fitting ø4, ø6, ø8 Rc1/8
	Rc thread	P/R Port	Push-in fitting ø6, ø8	Push-in fitting ø8, ø10

Descriptions		MN3GA1	/MN4GA1	MN3GA2/MN4GA2			
		ON	OFF	ON	OFF		
Response -	Two 3-port va	lves integrated	9	12	12	29	
	0	Single	15	15	19	19	
	2-position	Double	9	-	18	-	
ms	3-position	ABR connection	8	15	17	30	

Values with lamp/surge suppressor are shown. The response times are values with supply pressure of 0.5 MPa at 20°C and without lubrication. They depend on the pressure and the lubricant quality.

MN4GA1/2-FP1 Series Individual wiring block manifold; body piping

Flow characteristics

Madal Na	0.1		P→	A/B	A/B→R1/R2				
Model No.	Solei	oid position	C[dm³/ (s·bar)]	b	C[dm³/ (s·bar)]	b			
MN3GA1 MN4GA1	Two 3-po	ort valves integrated	0.87	0.37	1.0 (0.68)	0.14 (0.22)			
	2-positi	on	0.98	0.33	1.2 (0.71)	0.11 (0.27)			
		All ports closed	0.92	0.34	1.0 —	0.16 —			
		ABR connection	0.92	0.29	1.1 (0.69)	0.13 (0.22)			
		PAB connection	1.1	0.35	1.1 —	0.17 —			
	Two 3-po	ort valves integrated	1.7	0.37	2.2 (1.6)	0.13 (0.21)			
MN3GA2	2-positi	on	2.2	0.21	2.5 (1.7)	0.19 (0.10)			
MN4GA2		All ports closed	2.0	0.25	2.3 —	0.10 —			
MN4GA2	3-position	ABR connection	2.0	0.27	2.5 (1.7)	0.18 (0.12)			
		PAB connection	2.3	0.31	2.3 —	0.16 —			

^{*1:} Effective cross-sectional area S and sonic conductance C are converted as S \approx 5.0 \times C.

Electric actuator Pneumatic cylinders Pneumatic valves FRL/Auxiliary components Electronic components Main line components Fluid control valves Main line components Antibacterial/Bacteria-removing filter Vacuum components Fluid control valves

^{*2:} Values in () are with built-in exhaust check valve.

MN4GA1/2-FP1 Series Individual wiring block manifold; body piping

Electric actuator

Pneumatic cylinders

FRL/Auxiliary components Electronic components

Vacuum components

Main line components

Fluid control valves

Main line components

Antibacterial/Bacteriaremoving filter

components Vacuum

Fluid control valves

How to order						-	M	ode	el N	0.	
Manifold model No.					N		ifold	Di	screte	valve b	
MN4GA1 1 0 R - C6 - E2 H - 10	-(3)-FP1				3-p	ort	5-po	ort //	Discret	enoid va e solen alve	
3-port manifold model No.	<u> </u>						П	\neg		Т	7
MN3GA1 1 0 R - C6 - E2 H - 10	-3-FP1				MN3GA1	MN3GA2	MN4GA1	MN4GA2	(N) 3GA2	4GA1	4GA2
Discrete valve block with solenoid valve		Code		Content	Ž	Ź	Ź	١	ŽĮΞ	E	Ē
N4GA1(1) 0 R - (C6) - (E2)(H)	- (3)-FP1	B 9	Solenoid p	osition							
	3 11 1	1	2-position sir	ngle				•			•
Discrete 3-port valve block with solenoid valve		2	2-position do				•	•		•	•
(N3GA1)(1) 0 R - (C6) - (E2)(H) -	-(3)-FP1	3	3-position all				•	•	-	•	•
Discrete solenoid valve		5	<u> </u>	BR connection AB connection				•			-
4GA1 1 9 R - C6 - E2 H -	- (3)-FP1	1	<u>'</u>	ngle: Normally closed *2	•	•		٠,	•		
	—(3)-FF1	11	<u> </u>	gle: Normally open *2	•	•			•		
Discrete 3-port solenoid valve				A side valve: Normally closed							
3GA1 1 9 R - C6 - E2 H	- (3)-FP1	66	3-port valve	B side valve: Normally closed A side valve: Normally closed	0	0		+			
A Model No.		67	Two valves	B side valve: Normally open	0	0					
		76	integrated	A side valve: Normally open	0	0					
B Solenoid position		L'°	*2	B side valve: Normally closed	Ľ	Ľ					
		77		A side valve: Normally open B side valve: Normally open	0	0					
		8	Mix manifold (wher	there are multiple solenoid positions)	•	•	•	•	•	•	•
		O F	ort size (po	ort A/B)							Ē
Port size		Туре		ic fitting/Rc thread							
*1		C4	ø4 Push-in fi	tting	•						
		C6	ø6 Push-in fi	tting	•	•	•	• •	•	•	•
		C8	ø8 Push-in fi			•		•	•		•
		CX	Push-in fitting	g mix *3	•	•	•	•			
		M5 06	M5 Rc1/8		•			_ `	<u>'</u>		
											=
D Electrical co	onnections	_	Electrical co	onnections ng page for electrical conne	octio	ne					
_		=	,	ig page for electrical confine	Clio	113					=
(a) Option	n		Option	cking common manual override							
		M		manual override	•	•	•				
		Н	With exhaust		•	•	•	• (•	•	•
		S	Surgeless	*5	•	•	•	•	•	•	•
A Precautions for model selection		E	Low exoergic/e	energy saving circuit *5, *6	•	•	•	•	•		•
		F	Port A/B filter		•	•	•	• •	•	•	•
*1: Specify the port P/R bore size with the supply and exhaust block model No. in the		Z1	Air supply sp		•	•	•	•	-		
manifold specifications sheet.		Z2 Z3	In-stop valve Exhaust space	· ·				-	+		
*2: Select MN4GA*80 when mixing with 4/5-port valves. Further, select MN3GA*80				0	_	_					=
when mixing with masking plate.	Station No.	1	tation No.								
*3: Push-in fitting cannot be mixed with the single valve 4(A) or 2(B) port.		to	to		•	•		•			
*4: 3-position all ports closed and PAB		24	24 stations (Max. sta	tion number for MN3GA2/MN4GA2 is 20.)							
connection are not provided with the exhaust check valve (H).		G \	/oltage		=						
*5: In addition, surgeless "S" and low exoergic/	G Voltage	1		ctifier circuit integrated)	•	•	•	•		•	•
energy circuit "E" cannot be selected		2	200 VAC (red	ctifier circuit integrated) *9		•		•	•		•
together. *6: Surgeless specifications.		3	24 VDC		•	•		•	•	•	•
*7: A filter is built into port P as standard.		4	12 VDC		•	•		• •	•		•
*8: Specify the spacer mounting position and quantity in manifold			not available.	e-to-order product.							
specifications sheet. Stacking of		U 111	aivaico a IIIdU	e to-order product.							

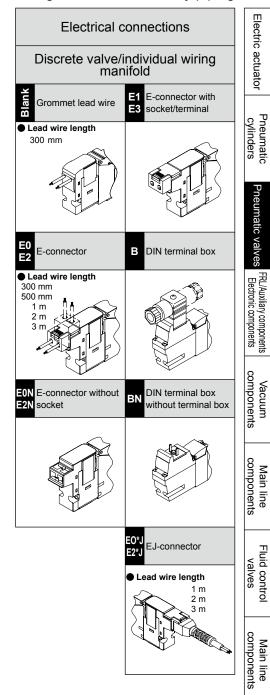
spacers is not possible. Combination with the masking plate is not supported. Refer to pages 149 to 150 for details.
*9: Only the DIN terminal box is supported.

MN4GA1/2-FP1 Series Individual wiring block manifold; body piping

[Electrical connection list]

			A Model No.						
		N	/lan	ifol	d			alve b	
			ort lve		ort Ive			soler	
					Ī.,				
		GA1	GAZ	GA1	GAS	ĞΑ	GA2	4GA	4GA2
		MN3GA1	MN3GA2	MN4GA1	MN4GA2	(N) 3GA1	(N) 3GA2	N) 4	(N)
O E	lectrical connections								
	Grommet lead wire (300 mm) *10								
В	DIN terminal box (Pg7) With surge suppressor/lamp *11	Ť	•	Ĭ	•	Ĭ	•		•
BN	DIN terminal box (Pq7) (without terminal box) With surge suppressor *11		•		•		•		•
E-con	nector (upward/lateral direction common)		_						
E0	Lead wire (300 mm) *12	•	•	•	•	•	•	•	•
E00	Lead wire (500 mm) *12	•	•	•	•	•	•	•	•
E01	Lead wire (1000 mm) *12	•	•	•	•	•	•	•	•
E02	Lead wire (2000 mm) *12	•	•	•	•	•	•	•	•
E03	Lead wire (3000 mm) *12	•	•	•	•	•	•	•	•
E0N	Without lead wire (without socket) *12	•	•	•	•	•	•	•	•
E1	Without lead wire (socket/terminal included) *14	•	•	•	•	•	•	•	•
E2	Lead wire (300 mm) With surge suppressor/lamp	•	•	•	•	•	•	•	•
E20	Lead wire (500 mm) With surge suppressor/lamp	•	•	•	•	•	•	•	•
E21	Lead wire (1000 mm) With surge suppressor/lamp	•	•	•	•	•	•	•	•
E22	Lead wire (2000 mm) With surge suppressor/lamp	•	•	•	•	•	•	•	•
E23	Lead wire (3000 mm) With surge suppressor/lamp	•	•	•	•	•	•	•	•
E2N	Without lead wire (without socket) With surge suppressor/lamp	•	•	•	•	•	•	•	•
E3	Without lead wire (with socket/terminal) With surge suppressor/lamp		•	•	•	•	•	•	•
EJ-co	nnector (socket with cover, upward/lateral c	lired	ctio	n co	omr	nor	1)		
	Lead wire (1000 mm) *12	•	•	•	•	•	•	•	•
	Lead wire (2000 mm) *12	•	•	•	•	•	•	•	•
	Lead wire (3000 mm) *12	•	•	•	•	•	•	•	•
	Lead wire (1000 mm) With surge suppressor/lamp	•	•	•	•	•	•	•	•
-	Lead wire (2000 mm) With surge suppressor/lamp	•	•	•	•	•	•	•	•
E23J	Lead wire (3000 mm) With surge suppressor/lamp		•	•	•	•	•	lacksquare	•

^{*10:} The grommet lead wire specifications are compatible with DC voltage only.



Fluid control

Antibacterial/Bacteriaremoving filter

Vacuum components

Fluid control valves

^{*11:} A lamp comes with the terminal box.

^{*12:} AC voltage includes a rectifier circuit.

Pneumatic cylinders

components





Individual wiring block manifold Base side piping

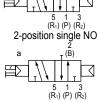
MN4GB1/2-FP1 Series

Applicable cylinder bore size: ø20 to ø80



JIS symbol

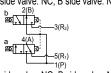
3-port valve 2-position single NC



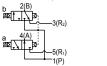
Two 3-port valves integrated (A side valve: NC, B side valve: NC)



(A side valve: NC, B side valve: NO)



(A side valve: NO, B side valve: NC)



(A side valve: NO, B side valve: NO)

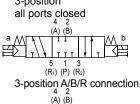


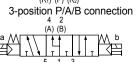
● 5-port valve 2-position single



4 2 (A) (B) , **B**

> (R₁) (P) (R₂) 3-position





Manifold common specifications

Manifold comm	non specifications
Descriptions	Content
Manifold	Block manifolds
Mounting method	DIN rail mount
Air supply and exhaust method	Common supply/common exhaust (With internal exhaust check valve)
Pilot exhaust method	Main valve/pilot valve common exhaust (Pilot exhaust check valve built-in)
Piping direction	Lateral direction from base
Valve and operation	Pilot operated soft spool valve
Working fluid	Compressed air
Max. working pressure MPa	0.7
Min. working pressure MPa	0.2 *3
Proof pressure MPa	1.05
Ambient temperature °C	-5 to 55 (no freezing)
Fluid temperature °C	5 to 55
Manual override	Non-locking/locking common (standard)
Degree of protection *1	Dust-proof
Vibration resistance m/s ²	50 or less
Shock resistance m/s ²	300 or less
Atmosphere	Cannot be used in corrosive gas environments

- *1: Avoid water drops or oil, etc., during use. IP65 (jet-proof) applies for DIN terminal box specifications. However, the specified outer diameter of the cord and tightening torque must be used for fixing in place.
- *2: The working pressure range is 0 to 0.7 MPa when the external pilot (option code: K) is selected. Set the external pilot pressure between 0.2 and 0.7 MPa.

Electrical specifications

	ai specification	3						
Description	ons		Cor	ntent				
Rated voltag	je V	DC24	DC12	AC100	AC200			
Voltage fluct	uation range	±10%						
Holding current	Standard	0.015 (0.017)	0.030 (0.034)	0.009 (0.009)	0.006 (0.006)			
A (*3)	With low exoergic/energy circuit	0.005	0.010	-				
Power consumption	Standard	0.35 (0.40)			-			
W (*3)	With low exoergic/energy circuit	0	.1	-				
Apparent power VA (*3)	Standard		-	0.93 (0.98)	1.40			
Thermal class	SS	В						
Surge suppr	essor	Option						
Indicator		Lamp (option)						

^{*3:} Values in () apply when lamp is included. In addition, the type with low exoergic/energy circuit is only available with

Individual specifications

Descrip	tions		M3GB1/M4GB1 M3GB2/M4G			
Max. stati	on No.		24 stations	20 stations		
Dant sins	Metric	A/B Port	Push-in fitting ø4, ø6	Push-in fitting ø6, ø8		
Port size	fitting	P/R Port	Push-in fitting ø6, ø8	Push-in fitting ø8, ø10		

Descriptions		MN3GB1	/MN4GB1	MN3GB2/MN4GB2			
Desc	Descriptions		ON	OFF	ON	OFF	
time	nse Two 3-po	t valves integrated	9	12	12	29	
	me 2 positio	Single	15	15	19	19	
	ms 2-position	Double	9	-	18	-	
	3-positio	n ABR connection	8	15	17	30	

Values with lamp/surge suppressor are shown. The response times are values with supply pressure of 0.5 MPa at 20°C and without lubrication. They depend on the pressure and the lubricant quality.

MN4GB1/2-FP1 series Individual wiring manifold; base piping

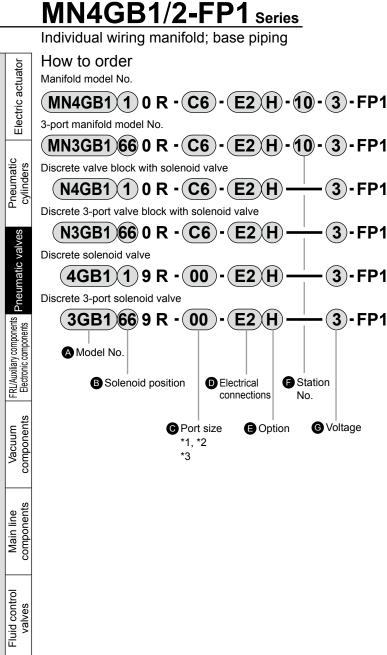
Flow characteristics

Madal Na			P	A/B	A/B→R1/R2				
Model No.	Sole	noid position	C[dm³/(s·bar)]	b	C[dm³/(s·bar)]	b			
	Two 3-port valves integrated		0.86	0.35	1.0 (0.66)	0.15 (0.25)			
MN3GB1 MN4GB1	2-position	ı	1.0	0.30	1.1 (0.72)	0.11 (0.26)			
	3-position	All ports closed	0.96	0.32	1.0 —	0.14 —			
		ABR connection	0.96	0.29	1.2 (0.71)	0.11 (0.30)			
		PAB connection	1.1	0.31	1.0 —	0.15 —			
	Two 3-po	rt valves integrated	1.7	0.42	2.2 (1.6)	0.15 (0.19)			
	2-position	ı	2.4	0.35	2.5 (1.7)	0.19 (0.19)			
MN3GB2 MN4GB2		All ports closed	2.2	0.38	2.3 —	0.17 —			
WIN4GB2	3-position	ABR connection	2.2	0.38	2.5 (1.7)	0.18 (0.20)			
		PAB connection	2.3	0.29	2.3 —	0.15 —			

^{*1:} Effective cross-sectional area S and sonic conductance C are converted as S \approx 5.0 \times C.

Electric actuator Pneumatic valves FRL/Auxiliary components Electronic components Main line components Fluid control valves Main line components Antibacterial/Bacteria-removing filter Vacuum components Fluid control valves

^{*2:} Values in () are with the exhaust check valve.



A Precautions for model selection

- *1: Ports A and B plug specifications are available for 2-position single only. Specify the port P/R bore size with the supply and exhaust block model No. in the manifold specifications
- *2: Ports A and B are the same size for radial push-in fitting mix (CX).
- *3: For a discrete solenoid valve, select "00" for port size.
- *4: Select MN4GB*80R when mixing with 4/5-port valves. Further, select MN3GB*80R when mixing with masking
- *5: The push-in fitting cannot be mixed with the discrete valve's 4(A) or 2(B) port.
- *6: 3-position all ports closed and PAB connection are not provided with the exhaust check valve (H).
- *7: In addition, surgeless "S" and low exoergic/energy circuit "E" cannot be selected together.
- *8: Surgeless specifications.
- *9: A filter is built into port P as standard.
- *10: Specify the spacer mounting position and quantity in manifold specifications sheet. Stacking of spacers is not possible. Combination with the masking plate is not supported. Only single solenoid can be selected together with radial push-in fitting (upward). Refer to pages 149 to 150 for
- *11: Only the DIN terminal box is supported.

			Two۱	valve valves rated		ort			soler lve	
			MN3GB1	IN3GB2	IN4GB1	IN4GB2	4) 3GB1	4) 3GB2	(N) 4GB1	(N) 4GB2
Code		Content	2	2	2	2	٤	٤	٤	٦
B Sol	enoid positi	on								
1	2-position sing			•	•				lacksquare	
2	2-position dou	2-position double			•	•			•	lacksquare
3	3-position all ports closed				•	•				
4	3-position ABR connection				•	•			•	lacksquare
5	3-position PAE	connection			•	•				
66		A side valve: Normally closed B side valve: Normally closed	0	0			0	0		
67	3-port valve Two valves	A side valve: Normally closed B side valve: Normally open	0	0			0	0		
76	integrated *4	A side valve: Normally open B side valve: Normally closed	0	0			0	0		
77		A side valve: Normally open B side valve: Normally open	0	0			0	0		
8	Mix manifold (when there are multiple solenoid positions)			•	•	•	•	•	•	lacksquare
© Por	t size (port A	/B)								
Туре		ting/Rc thread								
C4	ø4 Push-in fitti		•	•	•	•	•	•	•	•
			_	-	-	_	_	-	-	-

A Model No.

Manifold Discrete valve block

with solenoid valve

© Por	t size (port A/B)								
Туре	Metric fittin	g/Rc thread								
C4	ø4 Push-in fitting		•	•	•	•	•	•	•	•
C6	ø6 Push-in fitting		•	•	•	•	•	•	•	•
C8	ø8 Push-in fitting			•		•		•		•
СХ	Push-in fitting mix *5			•	•	•				
Single side plug specifications	A Port	B Port								
C4NC	ø4 Push-in fitting				•	•			•	•
C6NC	ø6 Push-in fitting	Plug			•	•			•	•
C8NC	ø8 Push-in fitting					•				•
C4NO		ø4 Push-in fitting			•	•			•	•
C6NO	Plug	ø6 Push-in fitting			•	•			•	•
C8NO		ø8 Push-in fitting				•				•
00	Discrete valve for	mounting base					•	•	•	•

D Electrical connections Refer to the next page for electrical connections.

🖪 Ор	tion									
Blank	Non-locking/locking common manual	override	•	•	•	•	•	•	•	•
М	Non-locking manual override		•	•	•	•	•	•	•	•
Н	With exhaust check valve	*6	•	•	•	•	•	•	•	•
S	Surgeless	*7	•	•	•	•	•	•	•	•
E	Low exoergic/energy saving circuit	*7, *8	lacktriangle	•	•	•	•	•	•	•
F	Port A/B filter integrated	*9	•	•	•	•	•	•	•	•
Z1	Air supply spacer	*10	•	•	•	•				
Z2	In-stop valve spacer	*10	•	•	•	•				
Z 3	Exhaust spacer	*10	•	•	•	•				

l	F Sta	tion No.					
	1	1 station					
	to	to		lacksquare			
	24	24 stations (Max. station number for MN4GB2 is 20.)					

G Voltage									
1	100 VAC (rectifier circuit integrated)	•	•	•	•	•	•	•	•
2	200 VAC (rectifier circuit integrated) *11		•				•		•
3	24 VDC	•	•	•	•	•	•	•	•
4	12 VDC	•	•	•	•	•	•	•	•

is not available.

O indicates a made-to-order product.

components Main line

Antibacterial/Bacteria-

Fluid control

valves

removing filter

sheet.

MN4GB1/2-FP1 series Individual wiring manifold; base piping

[Electi		Man	lo.	o. ete valve block							
		3-port	3-port valve Two valves integrated 5-por valve			with solenoid valve					
		integ	rated				vai	VE			
		MN3GB1	MN3GB2	MN4GB1	MN4GB2	(N) 3GB1	(N) 3GB2	(N) 4GB1	(N) 4GB2		
			Ž	Ž	Ž	Ž	Î	î	ź	Î	
Code	Content			_	_						
D Ele	ctrical connections										
Blank	Grommet lead wire (300 mm)	*12	•	•	•	•	•	•	•	•	
В	DIN terminal box (Pg7) W	ith surge suppressor/lamp *13		•		•		•		•	
BN	DIN terminal box (Pg7) (without terminal box)	With surge suppressor/lamp *13		•		•		•		•	
E-conne	ctor (upward/lateral direction common)										
E0	Lead wire (300 mm)	*14	•	•	•	•	•	•	•	•	
E00	Lead wire (500 mm)	,						•	•	•	
E01	Lead wire (1000 mm)	*14	•	•	•	•	•	•	•	•	
E02	Lead wire (2000 mm)	*14	•	•	•	•	•	•	•	•	
E03	Lead wire (3000 mm)	*14	•	•	•	•	•	•	•	•	
E0N	Without lead wire (without socket)	*14	•	•	•	•	•	•	•	•	
E1	Without lead wire (socket/terminal include	d) *14	•	•	•	•	•	•	•	•	
E2	Lead wire (300 mm)	With surge suppressor/lamp	•	•	•	•	•	•	•	•	
E20	Lead wire (500 mm)	With surge suppressor/lamp	•	•	•	•	•	•	•	•	
E21	Lead wire (1000 mm)	With surge suppressor/lamp	•	•	•	•	•	•	•	•	
E22	Lead wire (2000 mm)	With surge suppressor/lamp	•	•	•	•	•	•	•	•	
E23	Lead wire (3000 mm)	With surge suppressor/lamp	•	•	•	•	•	•	•	•	
E2N	Without lead wire (without socket)	With surge suppressor/lamp	•	•	•	•	•	•	•	•	
E3	Without lead wire (with socket/terminal)	With surge suppressor/lamp	•	•	•	•	•	•	•	•	
EJ-conn	ector (socket with cover, upward/lateral di	rection common)									
E01J	Lead wire (1000 mm)	*14	•	•	•	•	•	•	•	•	
E02J	Lead wire (2000 mm)	*14	•	•	•	•	•	•	•	•	
E03J	Lead wire (3000 mm) *14				•	•	•	•	•	•	
E21J	Lead wire (1000 mm)	With surge suppressor/lamp	•	•	•	•	•	•	•	•	
E22J	Lead wire (2000 mm)	With surge suppressor/lamp	•	•	•	•	•	•	•	•	
E23J	Lead wire (3000 mm)	With surge suppressor/lamp	•	•	•	•	•	•	•	•	

is not available.

Electric actuator Pneumatic cylinders Pneumatic valves FRL/Auxiliary components Electronic components Vacuum components Main line components Fluid control valves Main line components Antibacterial/Bacteriaremoving filter Vacuum components Fluid control valves

^{*12:} The grommet lead wire specifications are compatible

with DC voltage only.

*13: A lamp comes with the terminal box.

^{*14:} AC voltage includes a rectifier



Reduced wiring block manifold **Body piping**

MN4GA1/2-T*-FP1 Series

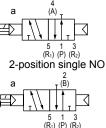
Applicable cylinder bore size: ø20 to ø80





JIS symbol

3-port valve 2-position single NC



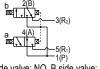
Two 3-port valves integrated (A side valve: NC, B side valve: NC)



(A side valve: NC, B side valve: NO)



(A side valve: NO, B side valve: NC)



(A side valve: NO, B side valve: NO)



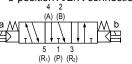
5-port valve 2-position single



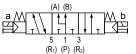


3-position all ports closed

(R₁) (P) (R₂) 3-position A/B/R connection



3-position P/A/B connection



Manifold common specifications

Descriptions	Content
Manifold	Block manifolds
Mounting method	DIN rail mount
Air supply and exhaust method	Common supply/common exhaust (With internal exhaust check valve)
Pilot exhaust method	Main valve/pilot valve common exhaust (Pilot exhaust check valve built-in)
Piping direction	Valve top direction
Valve and operation	Pilot operated soft spool valve
Working fluid	Compressed air
Max. working pressure MPa	0.7
Min. working pressure MPa	0.2 *3
Proof pressure MPa	1.05
Ambient temperature °C	-5 to 55 (no freezing)
Fluid temperature °C	5 to 55
Manual override	Non-locking/locking common (standard)
Degree of protection *1	Dust-proof
Vibration resistance m/s ²	50 or less
Shock resistance m/s ²	300 or less
Atmosphere	Cannot be used in corrosive gas environments

Electrical specifications

	.ca. cpcc									
Descrip	otions		Conte	nt						
Rated vol	tage	T1□, T3	0□, T5□	T6□, T7□, T8□						
	V	DC24	DC12	DC24						
Voltage fluc	ctuation range (*3)	±1	0%	+10%, -5%						
Holding	Standard	0.017	0.034	0.017						
current	With low exoergic/	0.005	0.010	0.005						
A	energy saving circuit	0.003	0.010	0.003						
Power	Standard		0.4							
consumption	With low exoergic/		0.1							
W	energy saving circuit		0.1							
Thermal o	class		В							
Surge sup	pressor *4		Zener dic	ode						
Indicator			LED							

- *3: T6□, T7□ and T8□ (serial transmission) may experience voltage drops due to internal circuitry, so care should be taken when regulating voltages.
- *4: If low exoergic/energy circuit or surgeless types are selected then there will be a diode.
- *1: Dust-proof degree of protection. Not drip-proof. Avoid dripping water or oil, etc., during use.
- *2: The working pressure range is 0 to 0.7 MPa when the external pilot (option code: K) is selected. Set the external pilot pressure between 0.2 and 0.7 MPa.

Individual specifications

Doo	ovintions.						MN3	GA1/MI	N4GA1						
Des	criptions		T10	T11	T30	T50	T51	T52	T53	T6*0/1	T7*0/1	T8*1/2			
Max.	Standard wiring		16 stations	24 stations	24 stations	16 stations	18 stations	8 stations	24 stations	8/16 stations	8/16 stations	16/24 stations			
station No.	Double wiring		8 stations	12 stations	12 stations	8 stations	9 stations	4 stations	12 stations	4/8 stations	4/8 stations	8/16 stations			
Max.	Max. number of solenoids			24-points	24-points	16-points	18-points	8-points	24-points	8/16-points	8/16-points	16/32-points			
Port	Metric fitting/	A/B Port		Push-in fitting ø4, ø6 M5											
size	M5, Rc thread	P/R Port		Push-in fitting ø6, ø8											
D	41		MN3GA2/MN4GA2												
Des	criptions		T10	T11	T30	T50	T51	T52	T53	T6*0/1	T7*0/1	T8*1/2			
Max.	Standard wiring		16 stations	20 stations	20 stations	16 stations	18 stations	8 stations	20 stations	8/16 stations	8/16 stations	16/20 stations			
station No.	Double wiring		8 stations	12 stations	12 stations	8 stations	9 stations	4 stations	12 stations	4/8 stations	4/8 stations	8/16 stations			
Max.	number of solen	oids	16-points	24-points	24-points	16-points	18-points	8-points	24-points	8/16-points	8/16-points	16/32-points			
Port	Metric fitting/	A/B Port				Pus	sh-in fittir	ng ø4, ø6	6, ø8 F	Rc1/8					
			Push-in fitting ø8, ø10												

Flow characteristics

Model No.	Solo	noid position	P→	A/B	A/B→	R1/R2
woder No.	Sole	noid position	C[dm³/(s·bar)]	b	C[dm³/(s·bar)]	b
	Two 3-p	ort valves integrated	0.87	0.37	1.0 (0.68)	0.14 (0.22)
MN3GA1	2-positio	on	0.98	0.33	1.2 (0.71)	0.11 (0.27)
MN4GA1		All ports closed	0.92	0.34	1.0 —	0.16 —
WIN4GA I	3-position	ABR connection	0.92	0.29	1.1 (0.69)	0.13 (0.22)
		PAB connection	1.1	0.35	1.1 —	0.17 —
	Two 3-p	ort valves integrated	1.7	0.37	2.2 (1.6)	0.13 (0.21)
MN3GA2	2-positio	on	2.2	0.21	2.5 (1.7)	0.19 (0.10)
MN4GA2		All ports closed	2.0	0.25	2.3 —	0.10 —
MINTOAL	3-position	ABR connection	2.0	0.27	2.5 (1.7)	0.18 (0.12)
		PAB connection	2.3	0.31	2.3 —	0.16 —

- *1: Effective cross-sectional area S and sonic conductance C are converted as S ≈ 5.0 × C.
 - *2: Values in () are with the exhaust check valve.

Reduced wiring specifications

Descriptions	T10	T11	T30	T50	T51	T52	T53
Туре	Common terminal block M3 thread	block clamping		connector with power supply terminal	20P Flat cable connector, no power supply terminal	supply terminal	supply terminal
Connector	_	_	D-sub-connector 25-pin	compliant pressure	MIL-C-83503 standard compliant pressure welding socket 20-pin	compliant pressure	MIL-C-83503 standard compliant pressure welding socket 26-pin

Serial transmission slave unit specifications

Descriptions	T6G1	T6C0∗1	T6C1∗1					
Network name	CC-Link ver1.10	Compo	DBus/S					
Power Unit side		24 VDC ±10%						
supply voltage Valve side								
Unit side		100 mA or less (when all output points are ON)						
Unit side Valve side		15 mA or less (when all output points are OFF)						
Output points	16 point	8 point	16 point					
Occupied No. 1 station		1 Node address (8-point mode)	2 Node address (8-point mode)					
Operation display		LED (power supply and communication status)						
Output format		NPN						

Des	criptions	T7C0*2	T7C1∗2	T7G1	T7L1∗₃	T7D1	T7S1	T7SP1				
Network name Com			Bus/S	CC-Link ver1.10	SAVE NET	DeviceNet*4,*5	Comp	ooNet				
Power	Unit side	24 VD0	C ±10%		24 VDC +10%, -5%							
supply	Valve side	24 VDC +	10%, -5%		Common power supply terminal							
voltage	Communication side	_	_	_	_	11 to 25 VDC *6	14.0 to 2	6.4 VDC				
consumption	Unit side	50 mA (when all output	or less points are ON)	(whom	110 mA or less	ro ONI)		or less				
consur	Valve side	15 mA (when all output		`	all output points a current is not incl	(when all output points are ON) Load current is not included						
Current	Communication side	_	50 mA or less				65 mA or less (all points ON: 24 VDC) 95 mA or less (all points ON: 14 VDC)					
Outp	ut points	8 point	16 point	16 point	16 point	16 point	16 point					
Occupied No. 1 Node address (8-point mode)		2 Node address (8-point mode)	1 station	1 station	2 bytes	Word 1 node (1	slave 6 points)					
Operation display			LED (power su	pply and commur	nication status)							
Outp	ut format	-	-	NPN			NPN	PNP				

Descriptions			T8GP1												
Commun	ication system name					T8EC2 T8ECP2 T8EN2 T8ENP2 EtherCAT EtherNet/IP							IEF Basic		
Power	Unit side	Jnit side						24 VD0	C ±10%						
voltage	Valve side						2	4 VDC +	10%, -5%	6					_
ion	Unit side	(when a	or less all output are ON)	(when a	or less Ill output are ON)	(when a	A or less all output are ON)		or less Il output are ON)		or less Ill output are ON)		or less Il output are ON)	130 mA (when a points a	
Current consumption	Valve side	T8 ☐ 1: 15 mA or less T8 ☐ 2: 20 mA or less (when all output points are ON) Load current is not included Load current is not included													
	ut points						T8□1: 1	6 points	T8□2:	32 points	3				
Occupied No. 1 station															
Opera	ation display					LED ((power su	ipply and	commun	nication s	tatus)				
Outpu	ut format	NPN Output	PNP Output	NPN Output	PNP Output	NPN Output	PNP Output	NPN Output	PNP Output	NPN Output	PNP Output	NPN Output	PNP Output	NPN Output	PNP Output

^{*1} Long-distance communication mode is not supported.

Fluid control valves

Electric actuator

Pneumatic valves FRL/Auxiliary components Electronic components

Main line components

Fluid control Main line components

removing filter

Antibacterial/Bacteria-

Vacuum components

^{*2} Long-distance communication mode is supported.

^{*3} Transmission bit rate of 128 bits and half-duplex transmission method are supported. Contact CKD for other specifications.

^{*4} DeviceNet compliant networks (DLNK, etc.) are supported as well.

^{*5} Contact CKD for EDS file. EDS file: A text file of parameters for communication with various companies' master units

^{*6} Communication power supply (V+ and V- of DeviceNet cable) is isolated from power supply terminals (unit power supply/valve power supply).

MN4GA1/2-T*-FP1 series Reduced wiring block manifold; body piping

	Reduced wiring block manifold; body piping											
'n	How to order					A	M	od	lel l	No.		l
Electric actuator					١	/lan					ve block	ĺ
actı	Manifold model No.				_	ort		ort			id valve	İ
ric	MN4GA1 1 0 R - C6 - T30 W H - 10 - 3 - FP1					lve			IDISC	rete so valve	olenoid e	l
lect	3-port manifold model No.							\neg		\Box	\Box	İ
Ш	<u> </u>				Ϋ́	MN3GA2	MN4GA1	¥2	3GA1	3GA2	4GA1	l
	MN3GA1 1 0 R - C6 - T30 W H - 10 - 3 - FP1				MN3GA1	S	¥	MN4GA2	33	8	4 4	l
ers ers	Discrete valve block with solenoid valve	Code		Content	Σ	Σ	Σ	Σ	Ê	2	Î Î	
cylinders	N4GA1(1) 0 R - (C6) - (A2N(1)) (H) - (3)-FP1		Solenoid p									
중	NAGATITUR - CO - MINITURE - CO	1	2-position s							1		
	Discrete 3-port valve block with solenoid valve	2	2-position d	-					\dashv			ĺ
S S	N3GA1(1) 0 R - (C6) - (A2N(*1)) (H) - (3) - FP1	3	+ -	II ports closed			•	•	\dashv			ĺ
alv	* When a cable is required, refer	4	+	BR connection			•	•	\dashv		•	ĺ
tic v	to page 147 and specify the cable length for (♣1). When not	5	+	AB connection			•	•		-	• •	İ
ma	required, leave the space blank.	1	2-position si	ngle: Normally closed *2	0	0			0	0		ĺ
Pneumatic valves	Discrete solenoid valve	11	2-position sin	gle: Normally open *2	0	0			0	0		
	4GA1 1 9 R - C6 - A2N H - 3-FP1	66		A side valve: Normally closed	0				0	0		
ents	(4GA1)(1) 9 R - (C6) - (A2N) (H) - (3) - FP1	ļ.,	3-port	B side valve: Normally closed	Ľ			\rightarrow	\dashv	_	+	l
Electronic components	Discrete 3-port solenoid valve	67	valve	A side valve: Normally closed B side valve: Normally open	0				0	\circ		
15. g	3GA1 (1) 9 R - (C6) - (A2N) (H) - (3) - FP1	70	Two valves	A side valve: Normally open		0			0	0		ı
ectro		76	integrated *2	B side valve: Normally closed	$ ^{\circ}$	Ш				4		
	A Model No.	77	_	A side valve: Normally open	0				0	0		ı
(0)		8	Mix manifold (when	B side valve: Normally open there are multiple solenoid positions)	•	•	•	•	•	•		l
ents	B Solenoid position		<u> </u>					=				
components	Port size		Port size (p	<u> </u>								ı
	*1	Type		fitting/Rc thread	•			\neg		1		
		C18	1	ng (compatible tube UP-9402-**)	•		•		•			ı
		C4	ø4 Push-in		•		•		•			ĺ
components		C6	ø6 Push-in	fitting	•	•	•	•	•	• (•	ı
e e		C8	ø8 Push-in	fitting		•		•		•	•	ĺ
g K		СХ	Push-in fitti	ng mix *3	•	•	•	•				
ಠ	A Precautions for model selection	M5	M5		•		•		•	•	•	
	*1: Specify the port P/R bore size with the	06	Rc1/8					<u>•</u>		<u>•</u>		l
5 .	supply and exhaust block model No. in the	- O	Reduced w	riring connection, s	eria	al tr	ans	mi	ssic	on		
valves	manifold specifications sheet. *2: Select MMCA*20 when mixing with serial transmission	Refe	r to the next p	page for reduced wiring	and	ser	ial tr	ans	miss	sion.		ı
\ a	2. Select WINHOA OUT WHEN MIXING WITH	B	Terminal/co	onnector pin array								
-	MN3GA*80R when mixing with masking	Blani	Standard w		•	•	•	•	•	• •	•	
	plate. *3: Push-in fitting cannot be mixed with the	W	Double wiri	U	•	•	•	•	•	• •	•	
ıts	single valve 4(A) or 2(B) port.	W1	Double wiring (w	ith single spare wiring) *4, *5	•		•	<u>•</u>	<u>•</u>	<u> </u>		l
components	*4: BlankThe wiring will be based on the type of valve used. W*All wired for double		Option						Щ.			
E E	of valve used. W*All wired for double solenoid valves regardless of the type of		+	king common manual override	•	•	•	•	•	• •	•	
- 8	valve used.	M		manual override	•	•	•	-	•	9		
<u>_</u>	*5: Spare wiring (A type socket assembly) is included on the cap	H S	+	st check valve *6	•			₽	-			
<u> </u>	side for single types. A holder for	E	Surgeless	energy saving circuit *7, *8	•							
gfilt	retaining the socket assembly is	Q	Reduced w		•	•	•		•			ĺ
removing filter	included for single unit valves (A2N).	F	+	er integrated *9	•	•	•	•	•	• (• •	ĺ
Led L	*6: 3-position all ports closed and PAB	Z 1	Air supply s		•	•	•	•				ı
-	connection are not provided with the exhaust check valve (H).	Z2	In-stop valv	e spacer *10	•	•	•	•		T		ĺ
S.	*7: Surgeless "S" and low exoergic/energy	Z 3	Exhaust spa	acer *10	•		•	•				
i je	circuit "E" cannot be selected together.	G	Station No.									ĺ
components	*8: Surgeless specifications. *9: A filter is built into port P as standard. G Station No.	1	1 station						Ī	T		ĺ
, 00 00	*10: Specify the spacer mounting	to	to		•	•	•	•				l
	position and quantity in manifold specifications sheet. Stacking of	24		(Refer to page 238 for ation number per model)	ĺ							ĺ
_	spacers is not possible.	<u> </u>		ation number per model)	_			_	_	_		1
S S	Combination with the masking		Voltage		-	ا م						ĺ
valves	plate is not supported. Refer to pages 149 to 150 for	3	24 VDC 12 VDC			•				<u> </u>		
>	details.	_) O:	0040		mar'	0.45	Oral	or	odust	ı
-		IS	not available	e. O indi	uale	o d l	nad	ʊ- ἰ0·	-ord	=ı pr	ouucí.	

Pneumatic

Fluid control

Main line

Antibacterial/Bacteria-

Fluid control

MN4GA1/2-T*-FP1 series Reduced wiring block manifold; body piping

					A	Мо	del 1	No.		
				Man	ifold				alve b	
			3-port	tvalve	5-port	valve			noid va Ienoid	
			1	8	1	8				
			MN3GA1	MN3GA2	MN4GA1	MN4GA2	(N) 3GA1	(N) 3GA2	(N) 4GA1	(N) 4GA2
			N3(ž	4 4	A	3	3	4	4
			Σ	Σ	Σ	Σ	Z	Z	ᇰ	ᇰ
Rec	duced wiring (lamp and surge suppressor prov	rided as standa	rd) 1	2/24	1 VD	С				
T10		Left-sided specifications	•							
T10R	Common terminal block (M3 thread)	Right-sided specifications								
T11		Left-sided specifications	•	•	•	•				
T11R	Common terminal block (clamping) -	Right-sided specifications	•	•	•	•				
T30		Left-sided specifications	•	•	•	-				
T30R	D-sub-connector -		Ť	<u> </u>	-	Ť				
-		Right-sided specifications	•	•	•	•				
T50		Left-sided specifications	•	•	•	•				
T50R		Right-sided specifications	•	•	•	•				
T51	-	Left-sided specifications	•	•	•	•				
T51R		Right-sided specifications	•	•	•	•				
T52		Left-sided specifications	•	•	•	•				
T52R	(without power supply terminal)	Right-sided specifications	•	•	•	•				
T53	26-pin flat cable connector	Left-sided specifications	•	•	•	•				
T53R	(without power supply terminal)	Right-sided specifications	•	•	•	•				
(i) Sei	ial transmission (lamp and surge suppressor p	provided as sta	nda	rd) 2	4 VI	nc.				
T6C0		NPN 8 points	nerel	-uj 2						
T6C1	- CompoBus/S	NPN 16 points								
T6G1		·	-			•				
		NPN 16 points	_	•	•	•				
T7C0	CompoBus/S -	NPN 8 points	-	•	•	-				
T7C1		NPN 16 points	-	•	•	•				
T7D1		NPN 16 points	•	•	•	•				
T7G1		NPN 16 points	•	•	•	•				
T7L1		NPN 16 points	•	•	•	•				
T7S1	- CompoNet	NPN 16 points	•	•	•	•				
T7SP1	·	PNP 16 points	•	•	•	•				
T8G1	 -	NPN 16 points	•	•	•	•				
T8G2	CC-Link -	NPN 32 points	•	•	•	•				
T8GP1		PNP 16 points	•	•	•	•				
T8GP2	1	PNP 32 points	•	•	•	•				
T8P1	<u>_</u>	NPN 16 points	•		•	•				
T8P2	DDOCIDLIC DD	NPN 32 points	•	•	•	•				
T8PP1	PROFIBUS-DP -	PNP 16 points	•	•	•	•				
T8PP2	Ī	PNP 32 points	•	•	•	•				
T8EC1		NPN 16 points	•	•	•	•				
T8EC2		NPN 32 points	•	•	•	•				
T8ECP1	- EtherCAT	PNP 16 points	•	•	•	•				
T8ECP2		PNP 32 points	•	•	•	•				
T8EN1		NPN 16 points	•	•	•	•				
T8EN2	-	NPN 32 points	•	•	•	•				
T8ENP1	EtherNet/IP -	PNP 16 points	•	•	•	•				
T8ENP2	 	PNP 32 points	•	•	•	•				
T8D1		NPN 16 points	•	•	•	•				
T8D2	-		•	•		_				
T8DP1	DeviceNet -	NPN 32 points		-	_	-				
<u> </u>	-	PNP 16 points		•	-	•				
T8DP2		PNP 32 points	•	•	•	•				
T8EB1	-	NPN 16 points	•	•	•	•				
T8EB2	CC-Link IEF Basic -	NPN 32 points	•	•	•	•				
T8EBP1	 	PNP 16 points	•	•	•	•				
T8EBP2		PNP 32 points	•	•	•	•				
T8EP1	-	NPN 16 points	•	•	•	•				
T8EP2	PROFINET -	NPN 32 points	•	•	•	•				
T8EPP1	<u> </u>	PNP 16 points	•	•	•	•				
T8EPP2		PNP 32 points	•	•	•	•				
A2N		with surge suppressor and indicator lamp					•	•	•	•

components

valves



Reduced wiring block manifold Base side piping

MN4GB1/2-T*-FP1 Series

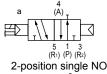
Applicable cylinder bore size: ø20 to ø80





JIS symbol ● 3-port valve

3-port valve2-position single NC

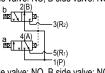




Two 3-port valves integrated (A side valve: NC, B side valve: NC)



(A side valve: NC, B side valve: NO)



(A side valve: NO, B side valve: NC)



(A side valve: NO, B side valve: NO)



• 5-port valve
2-position single

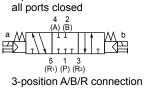
(A) (B)

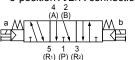


2-position double

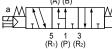
a (A) (B) b

5 1 3 (R₁) (P) (R₂) 3-position





5 1 3 (R¹) (P) (R²) 3-position P/A/B connection 4 2 (A) (B)



Manifold common specifications

Descriptions	Content
Manifold	Block manifolds
Mounting method	DIN rail mount
Air supply and exhaust method	Common supply/common exhaust (With internal exhaust check valve)
Pilot exhaust method	Main valve/pilot valve common exhaust (Pilot exhaust check valve built-in)
Piping direction	Lateral direction from base
Valve and operation	Pilot operated soft spool valve
Working fluid	Compressed air
Max. working pressure MPa	0.7
Min. working pressure MPa	0.2 *3
Proof pressure MPa	1.05
Ambient temperature °C	-5 to 55 (no freezing)
Fluid temperature °C	5 to 55
Manual override	Non-locking/locking common (standard)
Degree of protection *1	Dust-proof
Vibration resistance m/s ²	50 or less
Shock resistance m/s ²	300 or less
Atmosphere	Cannot be used in corrosive gas environments

Electrical specifications

	Descri	ptions		Con	tent			
	Rated vo	ltage	T1□, T3	0□, T5□	T6□, T7□, T8□			
		V	DC24	DC12	DC24			
	Voltage fluctu	ation range (*3)	±10	0%	+10%, -5%			
-	Holding	Standard	0.017	0.034	0.017			
-	current A	With low exoergic/ energy saving circuit	0.005	0.010	0.005			
	Power	Standard	0.4					
	consumption W	With low exoergic/ energy saving circuit		0	.1			
	Thermal	class		E	3			
	Surge sup	pressor (*4)		Zener	diode			
	Indicator			LE	D			

- *1: Dust-proof degree of protection. Not drip-proof. Avoid dripping water or oil, etc., during use.
- *2: The working pressure range is 0 to 0.7 MPa when the external pilot (option code: K) is selected. Set the external pilot pressure between 0.2 and 0.7 MPa.
- *3: T6□, T7□ and T8□ (serial transmission) may experience voltage drops due to internal circuitry, so care should be taken when regulating voltages.
- *4: If low exoergic/energy circuit or surgeless types are selected then there will be a diode.

Individual specifications

Doo	cription						MN30	GB1/N	IN4GE	31		
Des	cription	15	T10	T11	T30	T50	T51	T52	T53	T6*0/1	T7*0/1	T8*1/2
May	station No.	Standard wiring	16 stations	24 stations	24 stations	16 stations	18 stations	8 stations	24 stations	8/16 stations	8/16 stations	16/24 stations
iviax.	Station No.	Double wiring	8 stations	12 stations	12 stations	8 stations	9 stations	4 stations	12 stations	4/8 stations	4/8 stations	8/16 stations
Max.	Max. number of solenoids		16-points	24-points	24-points	16-points	18-points	8-points	24-points	8/16-points	8/16-points	16/32-points
Port	Metric	A/B Port	Push-in fitting ø4, ø6									
size	fitting	P/R Port	Push-in fitting ø6, ø8									

Doc	orintion			MN3GB2/MN4GB2 T10 T11 T30 T50 T51 T52 T53 T6*0/1 T7*0/1 T8*1/2										
Des	scription	15	T10	T11	T30	T50	T51	T52	T53	T6*0/1	T7*0/1	T8*1/2		
Max	station No.	Standard wiring	16 stations	20 stations	20 stations	16 stations	18 stations	8 stations	20 stations	8/16 stations	8/16 stations	16/20 stations		
IVIAX.	Station No.	Double wiring	8 stations	12 stations	12 stations	8 stations	9 stations	4 stations	12 stations	4/8 stations	4/8 stations	8/16 stations		
Max.	number of	solenoids	16-points	24-points	24-points	16-points	18-points	8-points	24-points	8/16-points	8/16-points	16/32-points		
Port	Metric	A/B Port		Push-in fitting ø4, ø6, ø8										
size	fitting	P/R Port		Push-in fitting ø8, ø10										

Flow characteristics

Model No.	801	enoid position	P→A/B		A/B→R1/R2					
wouel no.	301	enoia position	C[dm³/(s·bar)]	b	C[dm³/(s·bar)]	b				
	Two 3-	oort valves integrated	0.86	0.35	1.0 (0.66)	0.15 (0.25)				
MN3GB1	2-positi	on	1.0	0.30	1.1 (0.72)	0.11 (0.26)				
MN4GB1		All ports closed	0.96	0.32	1.0 —	0.14 —				
WINTODI	3-position	ABR connection	0.96	0.29	1.2 (0.71)	0.11 (0.30)				
		PAB connection	1.1	0.31	1.0 —	0.15 —				
	Two 3-	oort valves integrated	1.7	0.42	2.2 (1.6)	0.15 (0.19)				
MN3GB2	2-positi	on	2.4	0.35	2.5 (1.7)	0.19 (0.19)				
MN4GB2		All ports closed	2.2	0.38	2.3 —	0.17 —				
WIN4GBZ	3-position	ABR connection	2.2	0.38	2.5 (1.7)	0.18 (0.20)				
		PAB connection	2.3	0.29	2.3 —	0.15 —				

^{*1:} Effective cross-sectional area S and sonic conductance C are converted with the formula S ≈ 5.0 × C.

^{*2:} Values in () are with the exhaust check valve.

Reduced wiring block manifold; base piping

Reduced wiring specifications

Descriptions	T10	T11	T30	T50	T51	T52	T53
Туре	Common terminal block M3 thread	block clamping	connector	supply terminal	supply terminal	supply terminal	26P Flat cable connector, no power supply terminal
Connector	_	_	D-sub-connector 25-pin	compliant pressure	compliant pressure	compliant pressure	MIL-C-83503 standard compliant pressure welding socket 26-pin

Serial transmission slave unit specifications

Descriptions	T6G1	T6C0∗1	T6C1∗₁					
Network name	CC-Link ver1.10	Compol	Bus/S					
Power Unit side		24 VDC ±10%						
supply voltage Valve side		24 VDC +10%, −5%						
Unit side		100 mA or less (when all output points are ON)						
Unit side Valve side		15 mA or less (when all output points are OFF)						
Output points	16 point	8 point	16 point					
Occupied No.	1 station	1 Node address 2 Node address (8-point mode) (8-point mode)						
Operation display	I	LED (power supply and communication status)						
Output format		NPN						

Des	criptions	T7C0*2	T7C1∗2	T7G1	T7L1∗₃	T7D1	T7S1	T7SP1	
Netw	ork name	Compo	Bus/S	CC-Link ver1.10	SAVE NET	DeviceNet*4,*5	Comp	ooNet	
Power	Unit side	24 VD0	C ±10%		2	4 VDC +10%, -5°	%		
supply	Valve side	24 VDC +	10%, -5%		Comm	on power supply t	erminal		
voltage	Communication side	_	_	_	-	14.0 to 2	.6.4 VDC		
L.	Unit side		or less t points are ON)		110 mA or less		40 mA		
Current insumption	Valve side	15 mA	or less points are OFF)	·	all output points a current is not inc	,		t points are ON) s not included	
8	Communication side	_	_	_	_	50 mA or less	65 mA or less (all p 95 mA or less (all p	,	
Outp	ut points	8 point	16 point	16 point	16 point	16 point	16 p	point	
Occu	Occupied No. 1 Node address 2 Node address (8-point mode) (8-point mode)			1 station	1 station	2 bytes	Word slave 1 node (16 points)		
Oper	ation display			LED (power su	ipply and commu	nication status)			
Outp	ut format			NF	-	PNP			

Doo	ovintiono	T8G1	T8GP1	T8P1	T8PP1	T8EC1	T8ECP1	T8EN1	T8ENP1	T8D1	T8DP1	T8EB1	T8EBP1	T8EP1	T8EPP1	
Des	criptions	T8G2	T8GP2	T8P2	T8PP2	T8EC2	T8ECP2	T8EN2	T8ENP2	T8D2	T8DP2	T8EB2	T8EBP2	T8EP2	T8EPP2	
Commur	nication system name	CC-Link	ver1.10	PROFIBL	JS-DP(V0)	Ethe	rCAT	Etherl	Net/IP	DeviceNet CC-Link IEF Basic PROFINET						
Power	Unit side							24 VD0	±10%							
supply voltage	Valve side		24 VDC +10%, -5%													
	Unit side	60 mA or le	ss (when all	60 mA or le	ss (when all	120 mA or	less (when	120 mA or	ess (when	70 mA or le	ss (when all	130 mA or	less (when	130 mA or	less (when	
pi ji	Unit side Unit side 60 mA or less (when all 60 mA or less (when all 120 mA or less (when 120 mA or less (when all 120 m							nts are ON)	l) output points are ON) all output points are ON) all output points are ON)							
E E				Т	8□1: 15	mA or le	SS					15 mA	or less			
O Si	Valve side			Т	8□2: 20	mA or le	ss				•	all output	•	,		
		(wh	nen all ou	tput poin	ts are ON	N) Load c	current is	not includ	led		Load	current i	s not incl	uded		
Outp	ut points						T8□1: 1	6 points	T8□2:	32 points	3					
Occupied No. 1 station																
Oper	ation display					LED ((power su	ipply and	commun	nication s	tatus)					
Outp	ut format	NPN Output	PNP Output	NPN Output	PNP Output	NPN Output	PNP Output	NPN Output	PNP Output	NPN Output	PNP Output	NPN Output	PNP Output	NPN Output	PNP Output	

^{*1} Long-distance communication mode is not supported.

140

Fluid control valves

Electric actuator

Pneumatic valves FRL/Auxiliary components Electronic components

Main line components Fluid control

Main line components

removing filter

Antibacterial/Bacteria-

Vacuum components

^{*2} Long-distance communication mode is supported.

^{*3} Transmission bit rate of 128 bits and half-duplex transmission method are supported. Contact CKD for other specifications.

^{*4} DeviceNet compliant networks (DLNK, etc.) are supported as well.

^{*5} Contact CKD for EDS file: A text file of parameters for communication with various companies' master units
*6 Communication power supply (V+ and V- of DeviceNet cable) is isolated from power supply terminals (unit power supply/valve power supply).

MN4GB1/2-T*-FP1 Series

		WIN4GDI/Z-I -FP I Series
		Reduced wiring block manifold; base piping
	ator	How to order
	Electric actuator	 Manifold model No. MN4GB1 1 0 R - C6 - T30 W H - 10 - 3 - FP1 3-port manifold model No.
	s iic	MN3GB1 66 0 R - C6 - T30 W H - 10 - 3 - FP1
	Pneumatic cylinders	• Discrete valve block with solenoid valve N4GB1 1 0 R - C6 - A2N*1 H 3 - FP1
	alves	Obscrete 3-port valve block with solenoid valve N3GB1 66 0 R - C6 - A2N*1 H 3 - FP1
	Pneumatic valves	* When a cable is required, refer to page 147 and specify the cable length for (**_1*). When not required, leave the space blank.
	FRL/Auxiliary components Pn Electronic components	Single solenoid valve 4GB1 1 9 R - 00 - A2N H 3 - FP1
F P 1	diany com	● Discrete 3-port solenoid valve 3GB1 66 9 R - 00 - A2N
	FRL/Au) Electro	
	Vacuum components	B Solenoid position Port size A Model No. *1 *2 *3 A Voltage
	s	Reduced wiring Option
	Main line components	connection
	Mai	E Terminal/connector pin array
	Fluid control valves	
		▲ Precautions for model selection
	Main line components	*1: Ports A and B plug specifications are available for 2-position single only.
	Mair	Specify the port P/R bore size with the supply and exhaust block model No. in the manifold specifications sheet. *2: Ports A and B are the same size for radial push-in fitting mix (CX).
	nia-	*3: For a discrete solenoid valve, select "00" for Port size. *4: Select MN4GB*80R when mixing with 4, 5-port valves. Further,
	bacterial/Bacte removing filter	select MN3GB*80R when mixing with masking plate.*5: Push-in fitting cannot be mixed with the single valve 4(A) or 2(B) port.
	Antibacterial/Bacteria- removing filter	*6: BlankThe wiring will be based on the type of valve used. W*All wired for double solenoid valves regardless of the type of valve used.
F P 2		*7: Spare wiring (A type socket assembly) is included on the cap side for single types.
	Vacuum components	A holder for retaining the socket assembly is included for single unit valves (A2N). *8: 3-position all ports closed and PAB connection are
	Vac	not provided with the exhaust check valve (H). *9: In addition, surgeless "S" and low exoergic/energy circuit "E" cannot be selected together.
		*10: Surgeless specifications. *11: A filter is built into port P as standard.
	Fluid control valves	*12: Specify the spacer mounting position and quantity in manifold specifications sheet. Stacking of spacers is not possible.
	Fluid o	Combination with the masking plate is not supported. Cannot be selected together with radial push-in fitting (upward).
		Refer to pages 149 to 150 for details.

					A	Мо	del	No.		
			- 1	Man	ifolo	d		ete v		
				3-port	5-p	ort		soler crete		
				ves rated		lve	7013	va		ioiu
			B1	B2	B1	B2	19	B2	B1	B2
			MN3GB	MN3GB2	MN4GB1	MN4GB2	3GB1	3GB2	4GB1	4GB2
Code	Cor	ntent	Ź	É	É	É	Ê	2	Ê	Ê
B Solen	oid position									
1	2-position single				•	•			•	•
2	2-position double				•	•			•	•
3	3-position all ports cl	osed			•	•			•	•
4	3-position ABR conn	ection			•	•			•	•
5	3-position PAB conn				•	•			•	•
66	2 mont value	A side valve: Normally closed B side valve: Normally closed	0	0			0	0		
67	- 3-port valve Two valves	A side valve: Normally closed B side valve: Normally open	0	0			0	0		
76	integrated	A side valve: Normally open	0	0			0	0		
77	*4	B side valve: Normally closed A side valve: Normally open	0	0			0	0		
8	Miv manifold (when there are	B side valve: Normally open multiple solenoid positions)	_							
		s matapie solenola positiono)								
	ize (port A/B)	a/Do throad								
Type C4		g/Rc thread								
	ø4 Push-in fitting		-		-		-		•	
C6 C8	ø6 Push-in fitting		_	•	•	•	•	•	•	•
cx	ø8 Push-in fitting	*5		-		-				_
	Push-in fitting mix	1	_	•	•	_				
Single side plug specifications	A Port	B Port								
C4NC	ø4 Push-in fitting				•	•			•	•
C6NC	ø6 Push-in fitting	Plug			•	•			•	•
C8NC	ø8 Push-in fitting					•				•
C4NO		ø4 Push-in fitting			•	•			•	•
C6NO	Plug	ø6 Push-in fitting			•	•			•	•
C8NO		ø8 Push-in fitting				•				•
00	Discrete valve for mo	ounting base					•	•	•	•
Reduce	ed wiring connec	tion								
Refer to th	e next page for electr	ical connections.								
☐ Termin	nal/connector pin	array								
Blank	Standard wiring	<u> </u>	•	•	•	•	•	•	•	•
w	Double wiring	*6	•	•	•	•	•	•	•	•
W1	Double wiring (with sing	gle spare wiring) *6, *7	•	•	•	•	•	•	•	•
Option										
Blank	1	mmon manual override	•	•	•	•	•	•	•	•
м	Non-locking manual		•	•	•	•	•	•	•	•
н	With exhaust check		•	•	•	•	•	•	•	•
s	Surgeless	*9	•	•	•	•	•	•	•	•
E	Low exoergic/energy	saving circuit *9, *10	•	•	•	•	•	•	•	•
Q	Reduced wiring duct		•	•	•	•	•	•	•	•
F	Port A/B filter integra		•	•	•	•	•	•	•	•
			Ė	Ė	Ė	Ė	Ė	Ě	Ě	Ė

Specify the spacer mounting position and quantity in manifold specifications sheet.

Stacking of spacers is not possible.

Combination with the masking plate is not supported.

Cannot be selected together with radial push-in fitting (upward).

Refer to pages 149 to 150 for details.

is not available.

*12 • • • •

*12

• • • •

. . .

•

Z1

Z2

Z3

to 24

(H) Voltage 3

G Station No.

Air supply spacer

Exhaust spacer

1 station

24 VDC

12 VDC

In-stop valve spacer

24 stations (Max. station number for MN4GB2 is 20.)

O indicates a made-to-order product.

MN4GB1/2-T*-FP1 series Reduced wiring block manifold; base piping

Code Common terminal block (MS thread) Common terminal blo	[Wiring	g method list]				A	Мо	del I	No.		
Code	[5eueue.,			Mar			Disc	rete v		
Code Content				Two: valves ir	3-port ntegrated	5-por	valve				
Code Content				19	B2	19	B2	18	B2	Į.	1B2
Triggramma				136	33	446	446	36	36		4G
T10R	Code	Conten	t	Σ	Ž	Ž	Ž	Z	Z	Z	Z
Total Common terminal block (N3 thread)	Red	uced wiring (lamp and surge suppr	essor provided as standard) 12/2	4 V	C					
Tit Tit Tit Common terminal block (clamping)		Common terminal block (M3 thread)		•	•	•	_				
Triangle		, ,		•	•	•	_				
T300		Common terminal block (clamping)	<u>-</u>	-		-					
T30R D-sub-connector Right-sided specifications D-sub-connector Left-sided specifications D-sub-connector D-sub-connector Left-sided specifications D-sub-connector D-sub-connector Left-sided specifications D-sub-connector D-sub-connector Left-sided specifications D-sub-connector D-sub-connector D-sub-connecto			- ·		•	+-	•				
T50R		D-sub-connector	<u></u>	•	•	•	H				
T511 20-pin flat cable connector Left-sided specifications 0	T50	20-pin flat cable connector	Left-sided specifications	•	•	•	•				
T51R	T50R	1 .	Right-sided specifications	•	•	•	•				
T52	T51	20-pin flat cable connector	Left-sided specifications	•	•	•	•				
T52R	T51R	(without power supply terminal)	Right-sided specifications	•	•	•	•				
T53 26-pin flat cable connector Left-sided specifications	T52	4 '	Left-sided specifications	•	•	•	•				
TSSR		, , , , ,		•	•	•	-				
Serial transmission (lamp and surge suppressor provided as standard) 24 VDC		4 .		1	•	•	•				
TECO CompoBus/S NPN 8 points				<u> </u>	•	•	•				
TeC1		al transmission (lamp and surge su		lard) 2	24 V	DC					
TGG1		CompoBus/S	<u> </u>		•	•	•				
TrC0		CC Link	·		-	<u> </u>	<u> </u>				
TrC1		CC-LITIK	· · · · · · · · · · · · · · · · · · ·		_		-				
T7D1 DeviceNet NPN 16 points		CompoBus/S			-	•	_				
T7G1 CC-Link		DeviceNet	· · · · · · · · · · · · · · · · · · ·	•	-	•	<u> </u>				
T7S1 CompoNet PNP 16 points	T7G1	CC-Link	· · · · · · · · · · · · · · · · · · ·	•	•	•	•				
T7SP1 CompoNet	T7L1	SAVE NET	NPN 16 points	•	•	•	•				
T891	T7S1	CompoNot	NPN 16 points	•	•	•	•				
T8G2 T8GP1 T8GP2 T8GP1 T8GP2 T8GP1 T8GP2 T8GP1 T8GP2 T8P1 T8P2	T7SP1	Componer	PNP 16 points	•	•	•	•				
T8GP1 T8GP2 PNP 16 points	T8G1		NPN 16 points	•	•	•	•				
T8GP2		CC-Link	<u>-</u>	•	•	•	÷				
T8P1 T8P2 PROFIBUS-DP	-		<u> </u>	•	-	•	_				
T8P2 T8PP1 T8PP2 PROFIBUS-DP PROFIBUS-DP PNP 16 points DeviceNet PNP 32 points DeviceNet DeviceNet PNP 32 points DeviceNet D			· · · · · · · · · · · · · · · · · · ·	•	•	•	<u> </u>				-
T8PP1							-				
T8PP2		PROFIBUS-DP		1							
TREC1 TREC2 TRECP1 EtherCAT EtherCAT EtherCAT EtherCAT NPN 16 points	-			+		1					
TREC2 EtherCAT E			· · · · · · · · · · · · · · · · · · ·	•	•	-	<u> </u>				
T8ECP1				•	•	•	•				
T8EN1 T8EN2 EtherNet/IP EtherNet/IP EtherNet/IP NPN 32 points		EtherCAI		•	-	H	-				
T8EN2 EtherNet/IP	T8ECP2		PNP 32 points	•	•	•	•				
T8ENP1 EtherNet/IP	T8EN1		NPN 16 points	•	•	•	•				
T8ENP1		 EtherNet/IP		•	-	-	_				
T8D1 T8D2 T8DP1 NPN 32 points PNP 16 points ●<		1		+ -	-	1	-				
T8D2 T8DP1 NPN 32 points ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●			· · · · · · · · · · · · · · · · · · ·	•	-	<u> </u>	-				
T8DP1 DeviceNet						-					
T8DP2 PNP 32 points ●		DeviceNet				-	_				
T8EB1 T8EB2 CC-Link IEF Basic NPN 16 points NPN 32 p	-		-			1	<u> </u>				
T8EB2 T8EBP1 CC-Link IEF Basic NPN 32 points ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●			· · · · · · · · · · · · · · · · · · ·			-	<u> </u>				
T8EBP1 CC-Link IEF Basic PNP 16 points		1		•	-	-	-				
T8EP1 T8EP2 NPN 16 points • • • • • • • • • • • • • • • • • • •		CC-Link IEF Basic		•	•	•	•				
T8EP2 T8EPP1 PROFINET NPN 32 points ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●	T8EBP2		<u>-</u>	•	•	•	•				
T8EPP1 PNP 16 points Image: Control of the point of	T8EP1		NPN 16 points	•	•	•	•				
T8EPP1 PNP 16 points Image: Control of the point of	T8EP2	PROFINET	NPN 32 points	•	•	•	•				
	T8EPP1	I NOT INET	PNP 16 points	•	•	•	•				
A2N Without lead wire (without socket) with surge suppressor and indicator lamp	T8EPP2		PNP 32 points	•	•	•	•				
	A2N	Without lead wire (without socket)	with surge suppressor and indicator lan	np				•	•		•

c actuator	Pneumatic	Pneumatic valves	FRL/Auxiliary components	· = I	5 -	Main	Main I	Main line F	Main line Fluid control M	Main line Fluid control Main line A
	Pneumatic	neumatic valves	FRL/Auxiliary components	Vacuum	Main line	Fluid control	2		1ain line A	Main line Antibacterial/Bacteria-

Pneumatic

removing filter

components



4G1/2 mix manifolds

NSF H1

MN3GAX12, MN4GAX12 MN4GBX12-FP1 Series

Applicable cylinder bore size: ø20 to ø80



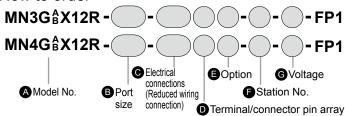


Specifications

Common with all series.

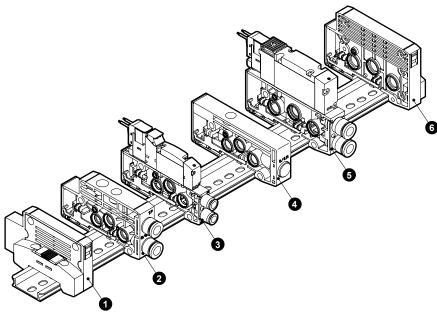
For individual wiring, refer to page 127 (body piping) or page 131 (base piping), and for reduced wiring, refer to page 135 (body piping) or page 139 (base piping).

How to order



The model No. will be "MN G X12R-". Other items are common with the example of model No. for each series. For individual wiring, refer to page 129 (body piping) or page 133 (base piping), and for reduced wiring, refer to page 137 (body piping) or page 141 (base piping).

Manifold components explanation and parts list



* Notes on 4G1/2 mix manifolds With the fitting at the front, the left side of the mixed block is the 4G1 Series and the right side the 4G2 Series. (Note that these position settings cannot be reversed.)

List of main components (refer to pages 145 to 150 for details)

No.	Component name	Model No. (example)
1	End block L	N4G1R-EL
2	Supply and exhaust block	N4G1R-Q-8-FP1
3	Discrete valve block with solenoid valve N4GB110R-C6-H-3-F	
4	Mixed block	N4G12R-MIX-FP1
5	Discrete valve block with solenoid valve	N4GB210R-C8-H-3-FP1
6	End block R	N4G2R-ER-FP1

Weight

N4G12R-MIX: 49 g

Refer to the specifications of each series for other components.

		7 7 2						- T	T T V
neumatic	굗	/Auxiliary components	Vacuum	Main line	Fluid control	Main I	line	line Antibacterial/Bacteria-	ine
r liediliatic va	Elec	Electronic components	components	components	valves	compo	nents	nonto nomovino filtor	nente removing filter componente

Block manifold: piping section

Electric actuator

Pneumatic cylinders

FRL/Auxiliary components Electronic components components Vacuum

> Main line components Fluid control

components Main line

valves

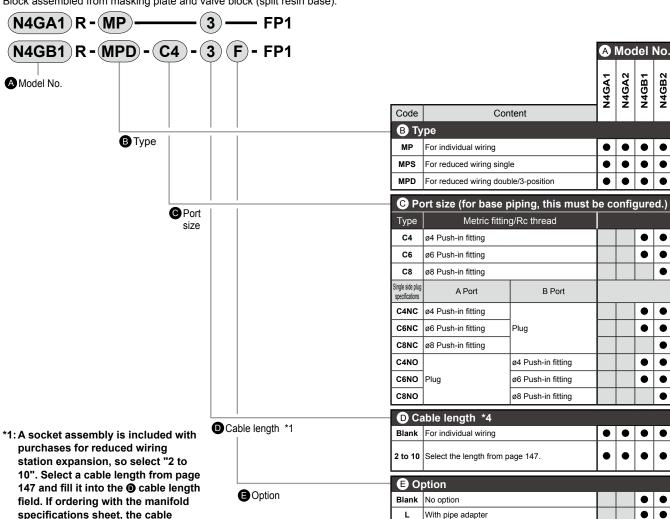
Piping

A. Discrete valve block with solenoid valve

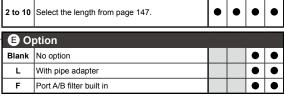
Block assembled from solenoid valve body and valve block (split resin base). For model selection, refer to the following pages. Body piping individual wiring: page 129, base piping individual wiring: page 133, body piping reduced wiring: page 137, base piping reduced wiring: page 141

B. Discrete valve block with masking plate

Block assembled from masking plate and valve block (split resin base).



specifications sheet, the cable length can be omitted.



is not available.

indicates a made-to-order product.

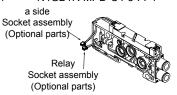
N4GA1R-MP-FP1

N4GB1R-MPD-C4-3-FP1

N4GB1R-MPD-C4-3L-FP1

N4GA2R-MP-FP1

N4GB2R-MPD-C6-5-FP1 Socket assembly (Optional parts) Relay Socket assembly (Optional parts)





Block manifold: piping section

Electric actuator

Pneumatic

FRL/Auxiliary components Electronic components

components

Main line components

Fluid control

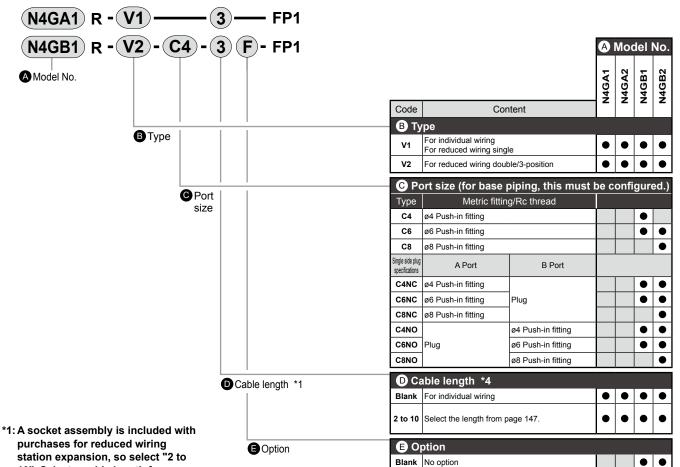
Main line components

removing filter

Piping

C. Discrete valve block (separate item only)

Discrete valve block (split resin base).

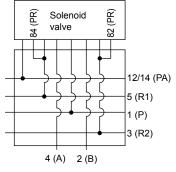


station expansion, so select "2 to 10". Select a cable length from page 147 and fill it into the ① cable length field. If ordering with the manifold specifications sheet, the cable length can be omitted.

With pipe adapter • \bullet Port A/B filter built in

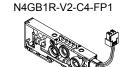
is not available.

indicates a made-to-order product.

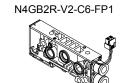


Discrete valve block circuit diagram









Antibacterial/Bacteria-Vacuum components

Fluid control

Block manifold: piping section

Electric actuator

Pneumatic cylinders

Pneur

FRL/Auxiliary components Pneuma Electronic components

Vacuum

Fluid control rowsymbols

Main line components

Fluid control Vacuum valves components

Piping

As problems may occur depending on the configuration, make selections with a sufficient understanding of the features of each block.

C. Discrete valve block (separate item only)

Valve block for expansion Cable length

Calculate the distance W between the expansion position and the wiring block (Fig. 1), and select an appropriate cable length from [Table 1]. Note that the required socket assembly will differ between the a side solenoid and the b side solenoid.

While Fig. 1 shows the wiring block with left side specifications, similarly calculate the distance W between the expansion position and the wiring block for the right side specifications.

Calculation of W

For MN4G1

 $W = (10.5 \times n) + (16 \times m) + (10.5 \times l)$

• For MN4G2

 $W = (16 \times n) + (18 \times m) + (10.5 \times l)$

n: No. of valve blocks m: No. of supply and exhaust blocks I: No. of partition blocks

• For MN4GX

Calculate W using the mix block width of 16.

[Table 1] W length - selection No. compatibility table

Selection No.		Type of wiring	
Selection No.	T10/11 (R)	T30/5*/6* (R)	T7*/T8*
2		0	25 or less
3	20 or less	Over 0 to 30	Over 25 to 55
4	Over 20 to 70	Over 30 to 80	Over 55 to 105
5	Over 70 to 120	Over 80 to 130	Over 105 to 155
6	Over 120 to 170	Over 130 to 180	Over 155 to 205
7	Over 170 to 260	Over 180 to 270	Over 205 to 295
8	Over 260 to 350	Over 270 to 360	Over 295 to 385
9	Over 350 to 450	Over 360 to 460	Over 385 to 485
10	Over 450 to 570	Over 460 to 580	Over 485 to 605
		•	

Fig. 1

Wiring block

a-SOL side
(Wiring cover side)

b-SOL side
(Fitting side)

D. Supply and exhaust block

The supply and exhaust block can be installed at any position adjacent to the valve block.

As there is no set number of units, install two or more units when necessary for combinations with partition blocks or in order to increase the flow rate for supply and exhaust.

In order to prevent foreign matter from entering, port P is equipped with a filter.



А Во	re size	В Ех	haust
6	ø6 Push-in fitting	Blank	Common exhaust
8	ø8 Push-in fitting	X *1	Atmospheric release

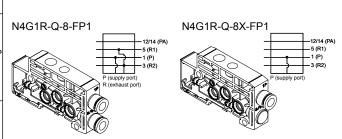
^{*1:} For X, select atmosphere release (EX) for the end block

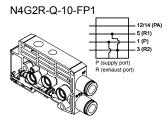


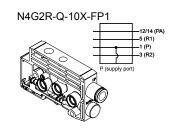
А Во	re size	ВЕх	haust
8	ø8 Push-in fitting	Blank	Common exhaust
10	ø10 Push-in fitting	X *1	Atmospheric release

^{*2:} Select 6*M or 8*M when using a silencer with inch fitting specifications.

^{*3:} For X, select atmosphere release (EX) for the end block







MN4GA/4GB-FP1 Series Block manifold: piping section

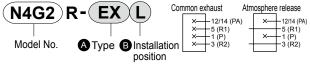
Piping

E. End block

Install on both ends of the manifold for individual wiring. Install on opposite sides of the wiring block for reduced wiring. An exhaust muffler is built into the atmosphere release type.



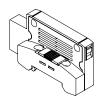
А Тур	ре	B Ins	tallation position
E	Common exhaust	L	For left side
EX	Atmospheric release	R	For right side

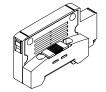


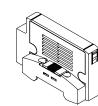
A.	Туј	ре	B Ins	tallation position
Е		Common exhaust	L	For left side
E	(Atmospheric release	R	For right side



N4G1R-ER-FP1







N4G2R-EL-FP1



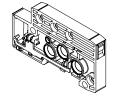
N4G2R-ER-FP1

F. Partition block

Multi-pressure mixing and measures for back pressure increase prevention can be achieved by combining partition blocks and supply and exhaust blocks.

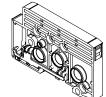


А Тур	ре
SA	P/R/PA blocked
S	P/R blocked PA through
SP	P blocked R/PA through
SE	R blocked P/PA through





A Ty	ре
SA	P/R/PA blocked
S	P/R blocked PA through
SP	P blocked R/PA through
SE	R blocked P/PA through



-SA	-S	-	-SP		-SE	
	-12/14 (PA)	12/14 (PA) -5 (R1) -1 (P) -3 (R2)	-x	-12/14 (PA) -5 (R1) -1 (P) -3 (R2)	x	-12/14 (PA) -5 (R1) -1 (P) -3 (R2)

G. Mixed block

Install when 4G1 and 4G2 will be mixed within the same manifold.

Installation positions are 4G1 on the left side of the mixed block and 4G2 on the right side.



Pneumatic

Electric actuator

components

Related products

Electric actuator

Pneumatic cylinders

FRL/Auxiliary components Electronic components

components

components

Fluid control

Main line components

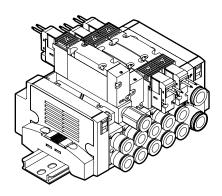
Antibacterial/Bacteriaremoving filter

Vacuum components

Fluid control

valves

Air supply spacer



How to order discrete units



A Air supply spacer model No. B Port size
*1, *2

A Precautions for model selection

- *1 Blank indicates (1) M5, (2) Rc1/8.
- 2 Blank indicates the FP1 specifications or equivalent as standard, and thus does not require "FP1" at the end of the model number.
- 3 Specify the positions and quantity of air supply spacers for manifold in the manifold specifications sheet.
- *4 Combination with the masking plate is not supported.

Specifications

Model No	P→		A/B	→R	Weight
Model No.	C[dm³/(s·bar)]	b	C[dm ³ /(s·bar)]	b	g
4G1	0.70	0.23	0.93	0.16	8
4G2	1.6	0.17	1.8	0.16	35

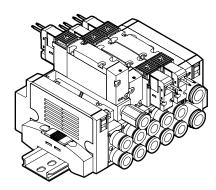
- *1: Values are when a valve is mounted.
- *2: Effective cross-sectional area S and sonic conductance C are converted as S \approx 5.0 \times C.

			Mode	el No.	
		4GA1	4GB1	4GA2	4GB2
Code	Content	7	4	4	4
A Air	supply spacer model No.				
1	For 4G1				
2	For 4G2				
В Ро	rt size				
Blank	M5 thread (4G1), Rc thread (4G2)	(1)	(2	2)
GWS4	ø4 Fitting				
GWS6	ø6 Fitting			•)
GWS8	ø8 Fitting			•)

is not available.

Optional parts: 4G1 mounting screws (2), dedicated gasket (1) 4G2 mounting screws (2), PR check valves (2), body gasket (1)

Exhaust spacer



How to order discrete units



A Exhaust spacer model No.

B Port size *1, *2

Precautions for model selection

- *1 Blank indicates (1) M5, (2) Rc1/8.
- *2 Blank indicates the FP1 specifications or equivalent as standard, and thus does not require "FP1" at the end of the model number.
- *3 Specify the positions and quantity of air supply spacers for manifold in the manifold specifications sheet.
- *4 Combination with the masking plate is not supported.

Specifications

Madel No	P→	A/B	A/B	→R	Weight
Model No.	C[dm³/(s·bar)]	b	C[dm³/(s·bar)]	b	g
4G1	0.94	0.28	0.68	0.33	7
4G2	1.5	0.24	1.9	0.24	34

- *1: Values are when a valve is mounted.
- *2: Effective cross-sectional area S and sonic conductance C are converted as S \approx 5.0 \times C.

			Mode	el No.	
		4GA1	4GB1	4GA2	4GB2
Code	Content	\	`	`	`
A Ex	haust spacer model No.				
1	For 4G1				
2	For 4G2				
В Ро	rt size				
Blank	M5 thread (4G1), Rc thread (4G2)	(1)	(2	2)
GWS4	ø4 Fitting				
GWS6	ø6 Fitting				
GWS8	ø8 Fitting				

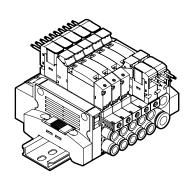
is not available.

Optional parts: 4G1 mounting screws (2), dedicated gasket (1) 4G2 mounting screws (2), PR check valves (2), body gasket (1)

Block manifold; related products Block manifold; related parts

Related products

In-stop valve spacer

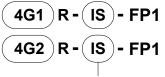


Specifications

Model	P→	A/B	A/B	→R	Weight
No.	C [dm³/ (s·bar)]	b	C [dm³/ (s·bar)]	b	g
4G1	0.54	0.03	0.82	0.27	17
4G2	1.5	0.17	1.6	0.20	63

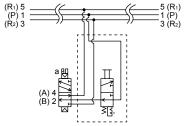
- *1: Values with base piping and 2-position valve mounted.
- *2: The effective cross-sectional area when discharging residual pressure is 1.0 mm² (reference value).
- *3: Effective cross-sectional area S and sonic conductance C are converted as S \approx 5.0 \times C. Optional parts: PR check valve 2, body gasket 1

How to order discrete units



In-stop valve spacer



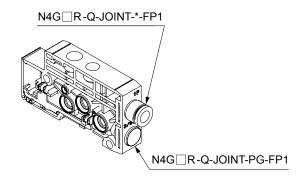


A Precautions for model No. selection

- *1: Specify the spacer mounting position and quantity in manifold specifications sheet.
- *2: When retrofitting to the reduced wiring manifold, the existing wiring may be too short. Contact CKD for details.

Related parts

1. MN4G cartridge push-in fitting for supply and exhaust block



1.1 MN4G1 supply and exhaust block, fitting for 1(P), 3/5(R)

Bore size	Part model No.
ø6 Straight	N4G1R-Q-JOINT-6-FP1
ø8 Straight	N4G1R-Q-JOINT-8-FP1
Plug cartridge	N4G1R-Q-JOINT-PG-FP1

1.2 MN4G2 supply and exhaust block, fitting for 1(P), 3/5(R)

Bore size	Part model No.
ø8 Straight	N4G2R-Q-JOINT-8-FP1
ø10 Straight	N4G2R-Q-JOINT-10-FP1
Plug cartridge	N4G2R-Q-JOINT-PG-FP1

C	כ	
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<u>at</u>		

rRL/Auxiliary components
Electronic components

Vacuum

Main line components

Fluid control valves

	[= = = = = = = = = = = = = = = = = = = =		,				
Electric actuator	cylinders	nic components	components Electro	components	valves	components	removing filter	components
Electric actuator	Pneumatic	iliary components	Vacuum FRL/Aux	Main line	Fluid control	Main line	Antibacterial/Bacteria-	Vacuum

FP1

How to fill out block manifold MN4G Series manifold specifications sheet

_			, , ,
•	Manifold	model No.	(example)

MN 4GA1 8 0R- CX - T50 **6** Option **6** Station Woltage

(Reduced wiring pin array (Note: Fill in connection) for reduced wiring.)

Part name	Model No.														La	yout	posi	tion														Ouantite
Part name	Model No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	Quantity
Wiring block	N4G1R-T [50]	0																														1
Valve block with	N4GA1 [1] 0R- [C4]		0	0																												2
solenoid valve	N4GA1 2 0R- C6					0																										1
(page 145)	N4GA1 3 0R- C4				0																											1
	N4GA1 0R-																															
	N4GA1 0R-																															
	N4GA1 0R-																															
	N3GA1 [1] 0R- [C4]									0	0	0																				3
	N3GA1 0R-																															
Valve block with	N4GA1R-MP																															
masking plate	N4GA1R-MPS																															
(page 145)	N4GA1R-MPD						0																									1
Supply and	N4G1R-Q - 8L							0					0																			2
exhaust block	N4G1R-Q -																															
(page 147)	N4G1R-Q -																															
Partition block	N4G1R-S A								0																							1
(page 148)	N4G1R-S																															
	N4G1R-S																															
End block	N4G1R-E R													0												Ì						1
(page 148)	N4G1R-E																															
	. ,	İ	•	•		_		Blar	king	plug	1										Sile	ncer		•		•	Та	g pla	te (ir	clud	ed)	
Mounting rail	L ₂ = (How to calculate length	G	WP4	1-B			G	WP6	-B			GI	WP8	8-B			SI	LW-I	H6			S	LW-	Н8				Α			5	Included
	on next page)	С	able	with	D-sı	ub-co	onne	ctor		4	GR-	CAB	LE-C	00 -				Push	-in fitti	ina tut	e rem	nover ((includ	led as	stand	lard) [2 Not	require	ed (che	ck the	box)	parts

A circuit diagram of the above manifold model No. (example) is provided on the following page. Use for reference.

Place a check here if the tube remover

No.

Preparing the manifold specifications

- Complete from the left end, with the piping port facing forward. (Include the model No. of the block selected from block configurations (pages 145 to 150) and instructions for the arrangement thereof.)
- Indicate the total number of blocks specified in thecolumn for quantity on the right end of the table.
- Mark a circle for optional parts that are required.
- Indicate the mounting rail length. (Fill in only when a length other than the standard length is required.)
- As there are manifold specifications sheets for each of the various series, fill in the form for the corresponding specifications.
 - MN4GA1: page 154
 - MN4GB1: page 154
 - MN4GA2: page 155
 - MN4GB2: page 155
 - MN4GA×1/2 (Mix manifold): page 156
 - MN4GB×1/2 (Mix manifold): page 156

Mounting rail length (L2)

- ① Determine the rail length using the calculation method shown below. The obtained length is standard.
- ② For standard length, length (L2) is not required on the specifications sheet. Indicate the length when using a non-standard length.
- How to determine the length of the mounting rail

 $\begin{array}{c} \begin{array}{c} \text{Valve Quantity} \\ \text{block Quantity} \end{array} \begin{array}{c} \text{Supply and block Quantity} \\ \text{block Quantity} \end{array} \begin{array}{c} \text{Supply and plock Quantity} \end{array} \begin{array}{c} \text{Partition Quantity} \\ \text{block Quantity} \end{array} \begin{array}{c} \text{Wiring Mixed block} \\ \text{block} \end{array} \end{array}$ $\text{Manifold length (L1) = (A \times \boxed{}) + (B \times \boxed{}) + (C \times \boxed{}) + D + E \\ \text{Mounting rail length (L2) = L2' \times 12.5} \\ \text{L2':} \begin{array}{c} \text{A, B, C, D, and E indicate the length (width) of each block.} \end{array}$

Rail mounting pitch (L3) = L2-12.5

Block length (width) dimensions table

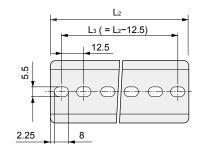
						(
			MN4GA/B1	MN4GA/B2	MN4G1	/2MIX
			MIN4GA/B1	MIN4GA/BZ	MN4GA/B1	MN4GA/B2
Α	Valve block		10.5	16	10.5	16
В	Supply and	exhaust block	16	18	16	18
С	Partition blo	ock	10.5	10.5	10.5	10.5
	Individual v	/iring	41	46	44	.5
		T10/T11	83.8	86.3	86	.3
		T10R/T11R	83.8	86.3	83	.8
	Wiring	T30/T5*	69.3	71.8	71	.8
D	block for reduced	T30R/T5*R	69.3	71.8	69	.3
	wiring	T6*	143.5	146	14	6
	,,, ,,,,,	T7*	64.3	66.8	66	.8
		T8*	64.3	66.8	66	.8
Е	Mixed block	(16	3

^{*} The end block is included in the wiring block.

DIN rail length quick reference table

·· Manifold Length		47.5 Over	60	72.5	85	97.5	110	122.5	135	147.5	160	172.5	185	197.5	210	222.5	235	247.5	260	272.5	285	297.5	310	322.5	335	347.5
Maı		to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to	to
-	47.5 or less	60 or less	72.5	85	97.5	110	122.5	135	147.5	160	172.5	185	197.5	210	222.5	235	247.5	260	272.5	285	297.5	310	322.5	335	347.5	360
L₂·· Rail Length	87.5	100	112.5	125	137.5	150	162.5	175	187.5	200	212.5	225	237.5	250	262.5	275	287.5	300	312.5	325	337.5	350	362.5	375	387.5	400
Pitch L ₃	75	87.5	100	112.5	125	137.5	150	162.5	175	187.5	200	212.5	225	237.5	250	262.5	275	287.5	300	312.5	325	337.5	350	362.5	375	387.5

^{*1:} When L1 exceeds this table, calculate the length by referring to "How to calculate the length of the mounting rail".



Electric actuator

(mm)

cylinders

Pneumatic valv

FRL/Auxiliary components Electronic components

Vacuum components

Main line components

Fluid control

Main line Antibacterial/Bacteriacomponents removing filter

FP2

Vacuum Fluid control components valves

Electric actuator

Pneumatic cylinders

'Auxiliary components

FRL/Auxiliary component Electronic components components Vacuum Main line components

Fluid control valves

How to fill out wiring specifications sheet

Not required for standard wiring and double wiring.

- Wiring specifications sheet (example)
 - * The following example has been filled out in accordance with the manifold specifications sheet on the previous page.

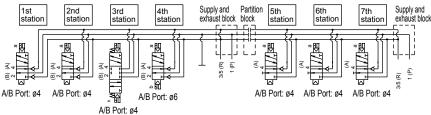
	Connecto													,	Valve												Ť
T50/T50R	T51/T51R	T52/T52R	T53/T53R	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	1	1	1	а																							
2	2	2	2		а																						
3	3	3	3				а																				
4	4	4	4				b																				
5	5	5	5					а																			
6	6	6	6					b																			
7	7	7	7			а																					
8	8	8	8			b																					
9 -power supply	9	9 сом	9																								
10 + (COM) power supply	10	10 _{сом}	10																								
11	11		11						а																		
12	12		12							а																	
13	13		13								а																
14	14		14																								
15	15		15																								
16	16		16																								
17	17		17																								
18	18		18																								
19 _{-power supply}	19 _{COM}		19																								
	20 _{COM}		20																								
			21																								
			22																								
			23																								
			24																								
			25 _{COM}																								
			26 _{COM}																								

^{*} Note that when the wiring method is T50/T50R, the COM polarity will be + (positive).

Notes on wiring specifications

- ① Fill in and attach to the manifold specifications sheet for anything other than the standard wiring or double wiring. Consult with CKD, as products will be made to order in this case.
- The valve No. is determined by counting the valve blocks only in order from the left with the ports facing forward. Note that this differs from the installation position numbers.
- 3 As the connector pin No. and valve No. differ for each reduced wiring method (T1*/T30/T5*/T6*/T7*/T8*), fill out the form upon reviewing the notes for each.
- Wiring (socket assembly) is included with valve blocks with masking plates. A side only for "-MPS". Both A and B sides for "-MPD".
- (5) Double solenoids or 3-position solenoid valves cannot be assembled to "-MPS". Order valve block with solenoid valve and carry out expansion.
- (6) It is not possible to install spare wires for station expansion in advance. Wire the socket assembly of the solenoid valve for expansion of stations. For the procedure for station expansion, refer to "Pneumatic Valves (CB-023SA)".

Reference circuit diagram Simplified circuit diagram of manifold model No. (example) from previous page



- The manifold station numbers are set in order from the left with the piping port facing forward. (The electrical blocks, supply and exhaust blocks, partition block, and end block are not included in thenumber of manifold stations.)
- Select the model No. from block configuration (pages 145 to 150) and each specification model No. page.
- * With piping port facing front, arrangement positions are set in order from the left.

MN4G Contact Slip No.	A/E	51	-r	- F		Qu					na		t (s		a			● C er N	Deli					S :		10	et				_		iss pan		l	1		1		Tiecilic actuator	Electric actuator	
■ Manifold n	nodel	No.																													_	ont	act r N	0.				<u> </u>		cylinders	Pneumatic	
MN Model N	lo. B	So po	ole osit	noi	id 1	from	Po	rt s	Rize	e	Ele (R	ectric educ (pag	ed w	onned iring 15 to	ctions conn 150).	ectio	on)	•	pin a	rray	(No ced v	ote: F wirin	Fill in g.)			ptic	on		Sta		•		·FI ′olta								┙	
Part name (Description Page)		N	lode	el No	0.		-	1	2	3	4	5	6	7	8	9	10	11	1:	2 1	Т	Lay		posit 16	ion 17	18	19	20	21	22	23	24	25	26	27	28	29	30	Qty.	Fileumanc valves	natio valv	
Wiring block	N4G	1R-	т	,																																						
Valve block with solenoid valve (page 145)	N4G N4G		1		OF																																			Electronic components	Auxiliary com	FP1
(page 140)	N4G		1		0F																																			onents	ponents	
	N4G		1		0F																																			components	Vacuum	
	N4G N4G		1		OF																																			nents	m	
	N3G		1		0F																																			comp	Ма	
Valve block with	N3G N4G		1	<u> </u>	0F	1	i												l	1	1																			components	n line	
masking plate (page 145)	N4G				1R-	MP	s													1																					끝	
Air supply	N4G 4G1F	2-P			1R-	MP	D												<u> </u>	<u> </u>																				valves	Fluid control	
spacer (page 149)	4G1F		1																																							
Exhaust spacer (page 149)	4G1F	R-R	- [components	Main li	
In-stop valve spacer (page 150)	4G1F	R-IS	<u>;</u>		1 1																																			ents	ne	
Supply and exhaust block (page 147)	N4G				-																																			removing filter	Antibacteria	
	N4G	1R-	Q		-																																			ng filter	al/Bacteri	_
Partition block (page 148)	N4G		-																																					\Box		FP2
	N4G	1R-	s																																					components	Vacuum	
End block (page 148)	N4G	1R-	E																																					ıts		
Mounting roll	N4G	1R-	E		<u></u>		<u> </u>							Pla	nking	n plu			<u></u>									Sile	ncer					Tai	a pla	te (in		led)		valves	Fluid control	
Mounting rail	L₂= *Write	an i	 nteg	er i	_ nulti	ple o	of	GI	WP4	-В			G	iWP(, Piu	ਬ	(SWF	'8-E	3			SI	LW-	Н6		Sile		LW-I	18			ıd	у ріа А	(111	Joint		Included parts	es	ontrol	
	12.5. (How t length:				the		-	C	able	with	D-s	sub-c	onn	ector			4GF	R-CA	BLE	-D0) -					Pι	ısh-i						nclud			anda	rd)		Inclu			

Electric actuator	MN4G	A/B2-FP1 Bl	ock mai	nifold s	pecification	ns sheet	
ric ac	Contact	Quar	ntity	set (s)	Delivery date	e /	Date issued / /
Electi	Slip No.				Order No.		Company
							Contact
Pneumatic cylinders	Manifold m	nodel No.					Order No.
ylind	MAL	G 2	0R-				-FP1
F 2		lj G [] Z [trical connections	Terminal/conne	ctor	
alves		position is field, select the model No. fro	(Red	luced wiring conne	ction) pin array (Note	: Fill in No	• Totago
fic va	Part name				Lay	out position	
Pneumatic valves	(Description Page)	Model No.	1 2 3 4	5 6 7 8	9 10 11 12 13 14	15 16 17 18 19 20 21 22	23 24 25 26 27 28 29 30 Qty.
ints Pro	Wiring block	N4G2R-T					
FRL/Auxiliary components Electronic components	Valve block with solenoid valve	N4G 2 0R-					
/Auxiliary ectronic c	(page 145)	N4G 2 0R-					
돌ᆱ		N4G 2 0R-					
um nents		N4G 2 0R-					
Vacuum components		N4G 2 0R-					
5		N4G 2 0R-					
ne ents		N3G 2 0R-					
Main line components		N3G 2 0R-					
2 0	Valve block with masking plate	N4G 2R-MP					
lo l	(page 145)	N4G 2R-MPS					
Fluid control valves		N4G 2R-MPD					
in A	Air supply spacer	4G2R-P-					
g	(page 149)	4G2R-P-					
Main line components	Exhaust spacer (page 149)	4G2R-R-					
Comp	In-stop valve spacer (page 150)	4G2R-IS					
eria .	Supply and exhaust block	N4G2R-Q -					
Antibacterial/Bacteria- removing filter	(page 147)	N4G2R-Q -					
ibacteri		N4G2R-Q -					
	Partition block (page 148)	N4G2R-S					
um	(page 110)	N4G2R-S					
Vacuum components		N4G2R-S					
ō	End block (page 148)	N4G2R-E					
s		N4G2R-E					
Fluid control valves	Mounting rail	L ₂ =	CWD4 P	Blanking		Silencer	Tag plate (included)
Flui >		*Write an integer multiple of 12.5.	GWP4-B GWP6-B		GWP8-B GWP10-B	SLW-H8 SLW-H10	A Band papuloul
		(How to determine the length: page 152)	Cable with D-su	b-connector	4GR-CABLE-D0□-□	SLW-IIIV	

FP2

																											_		:		ı	,		,		tric	
Contact					● Qua	antit	у		;	set	(s)				• [Deliv	ery	dat	е	/					_		_	ate				/		/		lectric actuator	
Slip No.														Ord	der I	No.											Co	omp	oan	У						ator	
																											_	onta]
Manifold m	odel	No	•																								<u>O</u> ı	der	r No).						cylir	Pneumatic
MN	(3			X12	R.	. [_	ĺ				[ľ			-	[_	[_	FF	21						cylinders	mati
A Mod									size) Ei	ectric	al co	nnect	ions		€			/conn			•	Op	tior	n (Stati)) V	olta	ge			'	
When filling in this	s field,	seled	ct the	e mod	del No. f	rom "	Block	k con	figura	tions				iring o		ction)				(Note							١	10.								Pne	
Part name																		La	yout	positi	ion															umai	ı
(Description Page)		N	lode	l No.		1	2	3	4	5	6	7	8	9 1	0 1	1 12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	Qty.	Pneumatic valves	
Wiring block	N4G		R	-Т																											П	П				_	_
Valve block with	N4G			0R-			T				T	T		Ť																	П					Electro	RI /Aux
solenoid valve (page 145)	N4G		<u> </u>	0R-	-																															nic con	iliary cc
page,	N4G	[<u> </u>	0R-	<u> </u>									+									1								Н	Н				Electronic components	mnone
	N4G	<u> </u>		0R-	<u> </u>						+																									8	nts
	N4G	[[0R-	1		+					+		+									\dashv								Н	\forall		\vdash		com	s l
	N4G	<u> </u>	<u> </u>	0R-	1						+												+													components	Vacuum
	N3G	<u> </u>	<u>L</u>	0R-	7	1								+									+								\vdash	\vdash				nts .	-
	N3G	<u> </u>	<u>L.</u>	OR-	1	1					+																				\vdash	\vdash		\vdash		0	٦
		[]	<u> </u>	.1	1	1	+	<u> </u>			<u> </u>	<u> </u>		+	+								\dashv								\dashv	\dashv		\dashv		components	Main line
Valve block with masking plate	N4G	<u> </u>			-MP	+	-			-	+	-	+	+									\dashv	-							\vdash	Н		\vdash		onent	line
(page 145)	N4G	<u> </u>		1	-MPS	+	-				+			+									_								\vdash	$\vdash \vdash$		\vdash		S	_
	N4G	<u> </u>		R	-MPD	<u> </u>	<u> </u>				1		_	_									1									Щ			\vdash	;	ᆈ
Air supply spacer	4G1	R-P-	-																																	valves	ᇟ
page 149)	4G2	R-P-	.			<u> </u>	_							1																	Ш	Ш		Щ		SS	Fluid control
Exhaust spacer (page 149)	4G1	R-R	-																													Ш					\dashv
page 140)	4G2	R-R	-																																	com :	<u> </u>
In-stop valve	4G1	R-1	S																																	components	Main line
spacer (page 150)	4G2	R-1	S																																	shts	ศี
Mixed block page 148)	N4G	12R	-MI	X																																	Ant
Supply and	N4G		R-	Q	-																															removing filter	hacter
exhaust block (page 147)	N4G		R-	Q	-																															ing filt	ial/Ba
	N4G	}	R-	Q	-																															er s	cteria-
Partition block	N4G			R-S										1																	П	П				S	_
(page 148)	N4G			R-S							\dashv			+									\dashv								П					ompo	Vacuum
	N4G			R-S							+		+																							components	Ī
End block	N4G	<u> </u>	<u>i</u>	R-E			<u> </u>				+	$\frac{1}{1}$	+	+	<u> </u>	<u> </u>								1										\dashv	=		_
(page 148)	N4G			R-E						1	+	+	+	+		-							+	\dashv							\vdash						핃
Mounting =="		<u> </u>	!'			+								Plon	king	nluc								$\frac{1}{1}$					Siler	ncer			Ш	\dashv		valves	Fluid control
Mounting rail	L ₂ =	ani	ntec	ier mi	ultiple of		VD.	1_			01410		_	Blan	_					C)***				\dashv							- 1			=	Included parts	S S	ntrol
	12.5			nine t		GV	۷P	-В			GWP		-В			WP ABLE-	-В			GWF	<u> </u>	-В	sh-in		SLV			/·		SLV	[_	clude		\perp

Pneumatic cylinders

nponents Programatic

Main line Vacuum FRL/Auxiliary components components components

Fluid control valves

Vacuum Antibacterial/Bacteria- Main line components removing filter components

Common terminal block (T10/T11) wiring specifications sheet

* Fill in and attach to the manifold specifications sheet for anything other than the standard wiring or double wiring. (Available on a made to order basis)

*	Not	rea	uired	with	standaı	rd wirin	a/d	oubl	e v	virina.	

	or pin No.												Valve	e No.											
T10 🔲	T11	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	1																								
2	2																								
3	3																								
4	4																								
5	5																								
6	6																								
7	7																								
8	8																								
9	9																								
10	10																								
11	11																								
12	12																								
13	13																								
14	14																								
15	15																								
16	16																								
COM	17																								
COM	18																								
	19																								
	20																								
	21																								
	22																								
	23																								
	24																								
	СОМ																								
	COM																								

D-sub-connector (T30) wiring specifications sheet

* Fill in and attach to the manifold specifications sheet for anything other than the standard wiring or double wiring. (Available on a made to order basis)

* Not required with standard wiring/double wiring.

	Connector p													Valve	No.											
t	T30		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
T	1																									
ı		14																								
ľ	2																									
r		15																								
r	3																									
r		16																								
İ	4																									
ľ		17																								
İ	5																									
r		18																								
ľ	6																									
İ		19																								
r	7																									
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Ī	8																									
ľ		21																								
Ī	9																									
Ī		22																								
Ī	10																									
Ī		23																								
Ī	11																									
Γ		24																								
Ī	12																									
ſ		25																								
Ī	13 (CO	M)																								

Fluid control valves

Pneumatic cylinders

Pneumatic valves FRL/Auxiliary components Electronic components

Main line components

Fluid control valves

Main line components

Antibacterial/Bacteriaremoving filter

Vacuum components

Fluid control valves

* Fill in and attach to the manifold specifications sheet for anything other than the standard wiring or double wiring. (Available on a made to order basis)

* Not required with	standard wiring/double wiring.
NOLIEUUIIEU WILI	Statiuatu Withu/uouble Withu.

	Connecto	or pin No.												,	Valve	e No											
T50/T50R	T51/T51R	T52/T52R	T53/T53R	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	1	1	1																								
2	2	2	2																								
3	3	3	3																								
4	4	4	4																								
5	5	5	5																								
6	6	6	6																								
7	7	7	7																								
8	8	8	8																								
9 -power supply	9	9 _{COM}	9																								
10 + (COM) power supply	10	10 _{COM}	10																								
11	11		11																								
12	12		12																								
13	13		13																								
14	14		14																								
15	15		15																								
16	16		16																								
17	17		17																								
18	18		18																								
19 _{-power supply}	19 _{сом}		19																								
20 _{+ (COM) power supply}	20 _{COM}		20																								
			21																								
			22																								
			23																								
			24																								
			25 _{COM}																								
			26 _{COM}																								

^{*} Note that when the wiring method is T50/T50R, the COM polarity will be + (positive).

Serial transmission (T6*/T7*) wiring specifications sheet

* Fill in and attach to the manifold specifications sheet for anything other than the standard wiring or double wiring. (Available on a made to order basis)

* Not required with standard wiring/double wiring.

0 - 1 - 1 - 1 - 1 - 1 - 1 - 1	Connec	tor pin No.								Valv	e No.							
Serial transmission	T6*	T7*	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Connector	1	1																
T6C0: CompoBus/S 8-points	2	2																
T6C1: CompoBus/S 16-points	3	3																
T6G1: CC-Link 16-points	4	4																
	5	5																
	6	6																
	7	7																
	8	8																
	9	9																
	10 _{CON}	10																
	11	11																
	12	12																
Thin slot-insertion	13	13																
T7C0: CompoBus/S 8-points	14	14																
T7C1: CompoBus/S 16-points	15	15																
T7D1: DeviceNet 16-points	16	16																
T7E0: S-LINK 8-points	17	17																
T7E1: S-LINK 16-points T7G1: CC-Link 16-points	18	18																
T7L1: SAVE NET 16-points	19	19																
	20 _{CON}	20																

Pneumatic cylinders

FRL/Auxiliary components Electronic components components

Vacuum

Main line components Fluid control valves

Main line components

Antibacterial/Bacteriaremoving filter

components Vacuum Fluid control valves

Serial transmission (T8*) wiring specifications sheet

- * Fill in and attach to the manifold specifications sheet for anything other than the standard wiring or double wiring. (Available on a made to order basis)

	Serial transmiss	sion		Connecto pin No.	r											Valve	e No.											
	Senai transmiss	SIOTI		T8*	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
T8G1		1	16-point	1																								
T8G2	1	NPN	32-point	2																								
T8GP1	CC-Link	PNP	16-point	3																								
T8GP2	1	PNP	32-point	4																								
T8P1		NPN	16-point	5																								
T8P2	PROFIBUS-DP	INPIN	32-point	6																								
T8PP1	T KOI IBOS-BI	PNP	16-point	7																								İ
T8PP2		FINE	32-point	8																								T
T8EC1		NPN	16-point	9	t																							
T8EC2	EtherCAT		32-point	10																								
T8ECP1		PNP	16-point	11	\vdash																							\vdash
T8ECP2			32-point	12																								
T8EN1		NPN	16-point	13	\vdash																							├
T8EN2	EtherNet/IP		32-point	14	<u> </u>																							⊢
T8ENP1		PNP	16-point	_	-																							⊢
T8ENP2 T8D1			32-point	15																								⊢
T8D1	-	NPN	16-point 32-point	16	├																							⊢
T8DP1	DeviceNet		16-point	17																								ــــ
T8DP2	-	PNP	32-point	18	<u> </u>																							╙
T8EB1			16-point	19																								$oxed{oxed}$
T8EB2	CC-Link	NPN	32-point	20																								L
T8EBP1	IEF Basic		16-point	21																								L
T8EBP2	1	PNP	32-point	22																								L
T8EP1			16-point	23																								
T8EP2	PROFINET	NPN	32-point	24																								
T8EPP1	PROFINET	PNP	16-point	25																								
T8EPP2		PINE	32-point	26																								
				27																								
				28	l																							T
				29																								\vdash
				30	t																							t
				31	t																							H
				32	+	-				-	-			-						-		-	-	-	\vdash	\vdash	\vdash	\vdash

Electric actuator Pneumatic cylinders Pneumatic valves FRL/Auxiliary components Electronic components FP1 Vacuum components Main line components Fluid control valves Main line components Antibacterial/Bacteria-removing filter Vacuum components Fluid control valves

Series variation

Master valve 4GA/4GB-FP1 Series

	Electific actuator
Pneumatic	cylinders
۶	ß

Vacuum components Main line components Fluid control valves

Antibacterial/Bacteria-removing filter

luid control	Vacuum	_
valves	components	

Valve performance Valv	_								
Series external appearance							Valve per	formance	
AGA AGA		Series external a	ppea	arance	Model No.	Pilot port No.	characteristics	bore size	
September Sep		4GA			3GA1		0.70	20 to 40	
See See		400		3-port	3GA2		2.7	40 to 80	
See See		66	piping		3GA3	a (A)	3.9	63 to 100	
Maga Specific Sp	item	5.6	Body		4GA1	PA 5 1 3 (R ₁) (P) (R ₂)	0.66 to 0.70	20 to 40	
Maga Specific Sp	arate	400		5-port	4GA2	2	2.4 to 2.7	40 to 80	
MAGA1 PA S S S S S S S S S	Sepa	4GB			4GA3		3.2 to 4.0	63 to 100	
MAGA1 PA S S S S S S S S S			piping		4GB1		1.1 to 1.3	20 to 40	
MAGA1 PA S S S S S S S S S			side	5-port	4GB2	2-position single	2.2 to 2.5	40 to 80	
Direct mount M4GA2 Direct mount M4GA2 Direct mount M4GA2 Direct mount Direct mount Direct mount M4GA2 Direct mount Di			Base		4GB3	a (A) (B)	3.2 to 4.2	63 to 100	
Maga Maga		M4GA			M4GA1	PA 5 1 3 (R ₁) (P) (R ₂)	0.7 to 1.0	20 to 40	
Magan Maga				Direct mount	M4GA2		1.7 to 2.5	40 to 80	
DIN rail mount (-D) M4GA2 3-position all ports closed 1.7 to 2.5 40 to 80 2.5 to 3.3 63 to 100 68 to 1.0 20 to 40 64 68 69 69 69 69 69 69 69		200 000	piping		M4GA3		2.5 to 3.3	63 to 100	
M4GB3 3-position P/A/B connection M4GB1 M4GB1 M4GB2 M4GB2 M4GB2 DIN rail mount (-D) M4GB2 DIN rail mount (-D) M4GB3 3-position P/A/B connection (A) (B) (B)			Body		M4GA1	3-position	0.7 to 1.0	20 to 40	
M4GB3 3-position P/A/B connection M4GB1 M4GB1 M4GB2 M4GB2 M4GB2 DIN rail mount (-D) M4GB2 DIN rail mount (-D) M4GB3 3-position P/A/B connection (A) (B) (B)	base	0.		DIN rail mount (-D)	M4GA2	4 2	1.7 to 2.5	40 to 80	
M4GB3 3-position P/A/B connection M4GB1 M4GB1 M4GB2 M4GB2 M4GB2 DIN rail mount (-D) M4GB2 DIN rail mount (-D) M4GB3 3-position P/A/B connection (A) (B) (B)	metal				M4GA3		2.5 to 3.3	63 to 100	
M4GB3 3-position P/A/B connection M4GB1 M4GB1 M4GB2 M4GB2 M4GB2 DIN rail mount (-D) M4GB2 DIN rail mount (-D) M4GB3 3-position P/A/B connection (A) (B) (B)	fold (I	M4GB			M4GB1	3-position A/B/R connection	0.68 to 1.0	20 to 40	
DIN fall flourit (-D) W4GB2 PA (R) (P) (R) F0 1.7 (U 2.4 40 (U 80)	Mani	20	ing	Direct mount	M4GB2		1.7 to 2.4	40 to 80	
DIN fall flourit (-D) W4GB2 PA (R) (P) (R) F0 1.7 (U 2.4 40 (U 80)		2	de pip		M4GB3	3-position P/A/B connection	2.6 to 3.3	63 to 100	
DIN fall flourit (-D) W4GB2 PA (R) (P) (R) PD 1.7 (0 2.4 40 to 80			ase si		M4GB1	a M (Å) (B)	0.68 to 1.0	20 to 40	
M4GB3 2.6 to 3.3 63 to 100		0.	ĕ	DIN rail mount (-D)	M4GB2	PA (R ₁) (P) (R ₂) PB	1.7 to 2.4	40 to 80	
					M4GB3		2.6 to 3.3	63 to 100	

Master valve series variation

		Swit	tching	posi	tion				Р	ort A/	B con	necti	on po	rt		
3-р	ort							Р	ush-iı	n fittir	ng	Fe	male	threa	ad	
Normally closed	Normally open	Single	Double	All ports closed	ABR connection	PAB connection	Mix	40 C4	9ø C6	8ø C8	C10 Ø10	G M5	<u> </u>	ක <mark>ි</mark> Rc1/4	ə Rc3/8	Page
•	•							•	•			•				
•	•							•	•	•			•			
•	•								•	•	•			•		
		•	•	•	•	•		•	•			•				163
		•	•	•	•	•		•	•	•			•			
		•	•	•	•	•			•	•	•			•		
		•	•	•	•	•							•			
		•	•	•	•	•								•		165
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									•	•	•			•		163
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									•	•	•			•		
								•	•			•				
		•	•	•	•	•	•	•	•	•			•			
									•	•	•			•		165
								•	•			•				
		•	•	•	•	•		•	•	•			•			
									•	•						

Pneumatic cylinders

components



Master valve single unit/manifold (metal base) Body piping

(M) 3GA1/2/3, (M) 4GA1/2/3-FP1 Series

■ Applicable cylinder bore size: ø20 to ø100





Common specifications

Common specin	Cali	3110
Descriptions		Content
Valve and operation		Pilot operated soft spool valve
Working fluid		Compressed air
Max. working pressure	MPa	0.7
Min. working pressure *1	MPa	Refer to main pressure section in the table below
Proof pressure	MPa	1.05
Ambient temperature	°C	−5 to 55 (no freezing)
Fluid temperature	°C	5 to 55
Manual override		Non-locking/locking common
Pilot exhaust method (manual operation)		Main valve/pilot valve common exhaust
Degree of protection	*2	Dust-proof
Vibration resistance	m/s ²	50 or less
Shock resistance	m/s ²	300 or less
Atmosphere		Cannot be used in corrosive gas environments

^{*1} When operating manually, supply pressure to port P as shown in the table below is required.

2-positions 0.1 MPa or higher 3-positions 0.2 MPa or higher

*2 Avoid water drops or oil, etc., during use.

Individual specifications

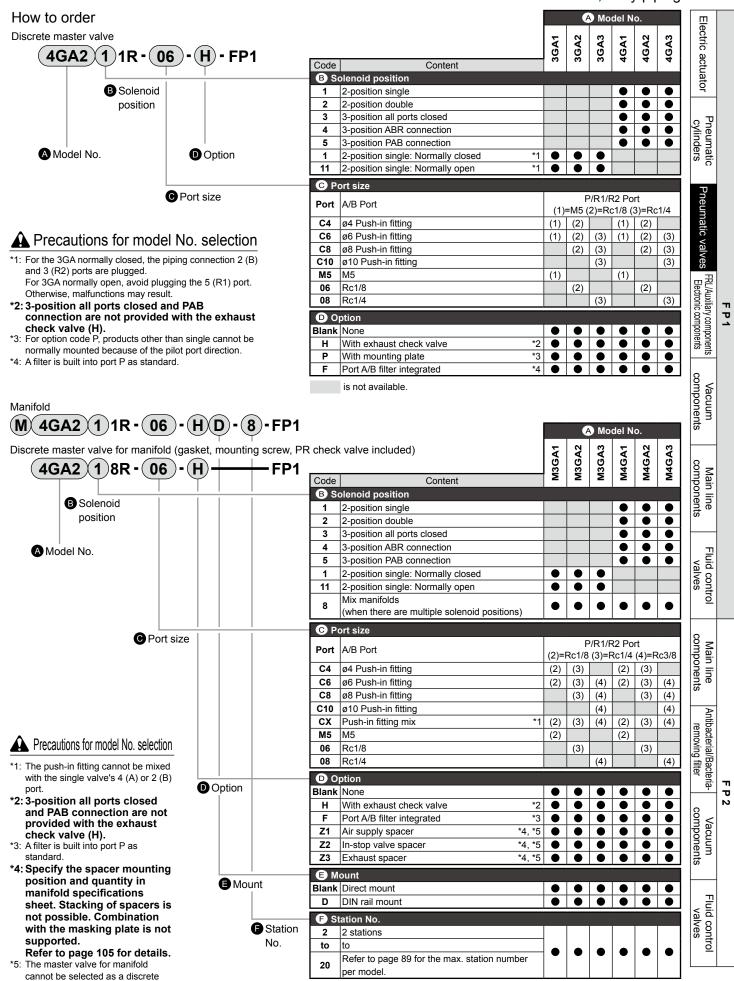
Body piping (discrete/manifold)

No. of	Mod	lel No.	Solenoid	Pilot port	Main	Pilot signal pressure MPa	Other specifications
Ports	Single unit	Manifold	position	PA/PB	pressure	Pilot Signal pressure MFa	Description Page *
	3GA1**1R	M3GA1**1R	2-position				
3-port	3GA2**1R	M3GA2**1R	single	M5	0.2 to 0.7	(0.6 × Main pressure +0.06) to 0.7	
	3GA3**1R	M3GA3**1R	NC/NO				
	4GA111R	M4GA111R	2-position single		0.2 to 0.7	(0.6 × Main pressure +0.06) to 0.7	
	4GA121R	M4GA121R	2-position double	M5	0 to 0.7	0.2 to 0.7	Single unit:
	4GA1 ³ ₅ 1R	M4GA1 ³ / ₅ 1R	3-position		0 10 0.7	0.2 to 0.7	Page 81
	4GA211R	M4GA211R	2-position single		0.2 to 0.7	(0.6 × Main pressure +0.06) to 0.7	Manifold:
5-port	4GA221R	M4GA221R	2-position double	M5	0 to 0.7	0.2 to 0.7	Page 89
	4GA2 ³ / ₅ 1R	M4GA2 3 1R	3-position		0 10 0.7	0.2 to 0.7	
	4GA311R	M4GA311R	2-position single		0.2 to 0.7	(0.6 × Main pressure +0.06) to 0.7	
	4GA321R	M4GA321R	2-position double	M5	0 to 0.7	0.2 to 0.7]
	4GA3 ³ 1R	M4GA3 ³ ₅ 1R	3-position		0 10 0.7	0.2 (0 0.7	

^{*} Other specifications are the same as those of 4G-FP1 Series. Refer to pages for each specification.

3GA/4GA-FP1 Series

Master valve; body piping



is not available

valve.



Master valve single unit/manifold (metal base) Base side piping

(M) 4GB1/2/3-FP1 Series

Applicable cylinder bore size: ø20 to ø100





Common specifications

Common specin	Calic	3115
Descriptions		Content
Valve and operation		Pilot operated soft spool valve
Working fluid		Compressed air
Max. working pressure	MPa	0.7
Min. working pressure *1	MPa	Refer to main pressure section in the table below
Proof pressure	MPa	1.05
Ambient temperature	°C	-5 to 55 (no freezing)
Fluid temperature	°C	5 to 55
Manual override		Non-locking/locking common
Pilot exhaust method		Main valve/pilot valve common exhaust
(manual operation)		wain valve/pilot valve common exhaust
Degree of protection	*2	Dust-proof
Vibration resistance	m/s ²	50 or less
Shock resistance	m/s ²	300 or less
Atmosphere		Cannot be used in corrosive gas environments

- *1 When operating manually, supply pressure to port P as shown in the table below is required.
 - 2-positions 0.1 MPa or higher 3-positions 0.2 MPa or higher
- *2 Avoid water drops or oil, etc., during use.

Individual specifications

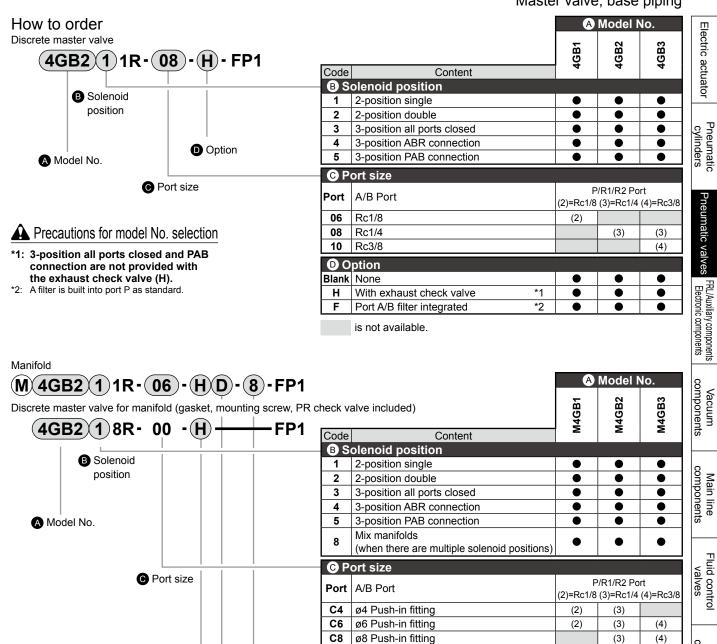
Base piping (discrete/manifold)

No. of	Mod	lel No.	Solenoid	Pilot port	Main	Pilot signal pressure MPa	Other specifications
Ports	Single unit	Manifold	position	PA/PB	pressure	Filot signal pressure infa	Description Page *
	4GB111R	M4GB111R	2-position single		0.2 to 0.7	(0.6 × Main pressure +0.06) to 0.7	
	4GB121R	M4GB121R	2-position double	M5	0 to 0.7	0.2 to 0.7]
	4GB1 ³ / ₅ 1R	M4GB1 ³ / ₅ 1R	3-position		0 10 0.7		
	4GB211R	M4GB211R	2-position single		0.2 to 0.7	(0.6 × Main pressure +0.06) to 0.7	Single unit:
5-port	4GB221R	M4GB221R	2-position double	M5	0 to 0.7	0.2 to 0.7	Page 85 Manifold:
	4GB2 ⅔ 1R	M4GB2 ³ / ₅ 1R	3-position		0 10 0.7	0.2 to 0.7	Page 93
	4GB311R	M4GB311R	2-position single		0.2 to 0.7	(0.6 × Main pressure +0.06) to 0.7] agair
	4GB321R	M4GB321R	2-position double	M5	0 to 0.7	0.2 to 0.7	
	4GB3 3 1R	M4GB3 ³ / ₅ 1R	3-position		0 10 0.7	0.2 10 0.7	

^{*} Other specifications are the same as those of 4G-FP1 Series. Refer to pages for each specification.

4GB-FP1 Series

Master valve; base piping



A Precautions for model No. selection

Option

- *1: 3-position all ports closed and PAB connection are not provided with the exhaust check valve (H).
- *2: A filter is built into port P as standard.
- *3: Specify the spacer mounting position and quantity in manifold specifications sheet. Stacking of spacers is not possible. Combination with the masking plate is not supported. Refer to page 105 for details.

*4: The master valve for manifold cannot be selected as a discrete valve.

				- ,	_		_	
		Z2	In-stop valve spacer	*3, *4		•	•	
		Z 3	Exhaust spacer	*3, *4	•	•	•	
		B M	ount					
■ Mo	unt	Blank	Direct mount		•			
		D	DIN rail mount	•	•			
		■ St	tation No.					
•	Station No.	2	2 stations					
		to	to					

Refer to page 93 for the max. station

is not available.

number per model.

ø10 Push-in fitting

Push-in fitting mix

With exhaust check valve

Port A/B filter integrated

Air supply spacer

C10

CX

M5 M5

06

08

Blank

20

Rc1/8

Rc1/4

None

Option

components

Antibacterial/Bacteria-

removing filter

components

Vacuum

Fluid control

(4)

(4)

(4)

(2)

(2)

*2

*3. *4

(3)

(3)

How to fill out master valve M4G Series manifold specifications sheet

Manifold model No. (example)

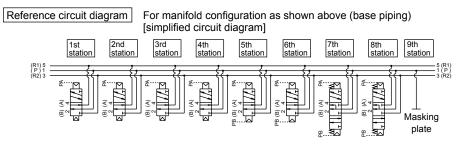
M 4 G 6 1 8 1R-

Solenoid position

Port size

How to use base piping M4GB*11R as a 3-port valve Indicate the required number of plugs in the "Thread plug" area at the end.

Valve model No.												Insta	allatio	n pos	sition										Qty.
valve model No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Qiy
4G[B]11 8R-M5	0	0	0	0																					4
4G[B]1[2]8R-[M5]					0	0																			2
4G[B]15]8R-M5]							0	0																	2
4G[]]1[]8R-[]]																									
3GA1[]8R-[]]																									
3GA1[]8R-[]]																									
4G1R-MP []]									0																1
																								L	
E L2=	g		E	Blanl	king	plug			Thre	ead p	olug		Silencer				,	Silencer							
L ₂ = L ₁ Write an integer multiple of 12.5.	(GWI	P4-B	3			GWP6-B					4	4G1R-M5P				SLV	V-69	3		SL	W-6	A		
integer multiple of 12.5.	Included			Pus	sh-in tiona	fittin I par	g tub ts no	e rer t req	nove	er (ind	clude	d as	stan	dard)										



^{*} The manifold station numbers are set in order from the left with the piping port facing forward.

Preparing the manifold specifications

• From the manifold specifications for each model, select and fill out the appropriate form.

M4Gå1 .	Page	168
M4Gå2	Page	169
M4GA3	Page	170

^{*1:} Select the silencer mounting after confirming the dimensions. Pneumatic, Vacuum and Auxiliary Components (Catalog No. CB-024SA)

Fluid control

Electric actuator

Pneumatic

FRL/Auxiliary components Electronic components

components

Main line components

components Vacuum Fluid control

valves

167

^{*2:} Use SLW-8S for the M4GA2 DIN rail mount. Interference occurs if SLW-8A is used.

Ma	38	te	r v	al۱	/e																								
N/I /	1	C	A 1	_ F	- C	1	NΛ	an	ifc	٦lc	اد	ne	iمد	fic	a t	io	ne	.	hд	۵t	[Date	issue	ed	/	/			
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Cor	nta	ct					•	Quar	ntity		set(s	5)		(● De	liver	/ dat	e	/		(Conta	act						
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Ma	nif	old r	nodel	No.																									
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Valve n	noc	lel No).		1	2	3	4	5	6	7	8	9	10	/alve i	nstalla 12	tion p	ositior 14	15	16	17	18	19	20	21	22	23	24	Qty.
4G	-]	1	8R-			2	-	-	5	0	,	-	9	10	- ' '	12	13	14	13	10	17	10	19	20	21	22	23	24	
4G	-	1	8R-																										
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4G	= ;	1	8R-																										
3GA1		8	R-																										
3GA1	} = :	8	R-	= =																									
Mask 4G1																													
Air sup	ply	spac																											
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	Electric actuator	בופרווור מכוממוסו	
	Pneumatic	cylinders	
т С	FRL/Auxiliary components Programme ties wally as	Electronic components	
	Vacuum	components	
	Main line	components	
	Fluid control	valves	
	Main line	components	
2 2	Antibacterial/Bacteria-	removing filter	
FP2	Vacuum	components	
	id control	valves	

M4G ê 2 - FP1 Manifold specifications sheet Company	Ma	ste	er va	alv	⁄e																								
Slip No.	M 4	ŀG	≙2 -	-F	P	1	M	an	ifo	olo	ls	ре	ci	fic	at	io	ns	sl	he	et					/	1			
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Valve type	Slip	No.												Order No.							Order No.								
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Valve model No.															•	Otl													
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4G 2 8R- 4G 2 8R- 4G 2 8R- 3GA2 8R- 3GA2 8R- Masking plate 4G2R-MP- Air supply spacer 4G2R-P. In-stop valve spacer 4G2R-IS Exhaust spacer 4G2R-R. Blanking plug Thread plug Silencer Mounting Fail Write an integer GWP4-B GWP6-B GWP8-B 4G2R-06P SLW-8S SLW-8A	4G	2	8R-	1	-		3		3		'	0	3	10	- 11	12	13	14	13	10	17	10	13	20	21	22	25	24	
4G 2 8R- 4G 2 8R- 3GA2 8R- 3GA2 8R- Masking plate 4G2R-MP- Air supply spacer 4G2R-P- In-stop valve spacer 4G2R-IS Exhaust spacer 4G2R-R- Blanking plug Thread plug Silencer Mounting L2= Included parts GWP4-B GWP6-B GWP8-B 4G2R-06P SLW-8S SLW-8A	4G	2	8R-	:																									
4G 2 8R- 3GA2 8R- Masking plate 4G2R-MP- Air supply spacer 4G2R-P- In-stop valve spacer 4G2R-P- 4G2R-R- Mounting L2= Included parts Worlte an integer GWP4-B GWP6-B GWP8-B 4G2R-06P SLW-8S SLW-8A	4G	2	8R-																										
3GA2 8R- Masking plate 4G2R-MP- Air supply spacer 4G2R-P- In-stop valve spacer 4G2R-IS Exhaust spacer 4G2R-R- Mounting L2= Included rail Witte an integer GWP4-B GWP6-B GWP8-B	4G	2	8R-																										
Masking plate 4G2R-MP- Air supply spacer 4G2R-P- In-stop valve spacer 4G2R-IS Exhaust spacer 4G2R-R- Mounting Indied Included Blanking plug Thread plug Silencer Write an integer GWP4-B GWP6-B GWP8-B 4G2R-06P SLW-8S SLW-8A	4G	2	8R-																										
Masking plate 4G2R-MP- Air supply spacer 4G2R-P- In-stop valve spacer 4G2R-IS Exhaust spacer 4G2R-R- Blanking plug Thread plug Silencer Write an integer GWP4-B GWP6-B GWP8-B 4G2R-06P SLW-8S SLW-8A	3GA2	8	R-																										
Air supply spacer 4G2R-P- In-stop valve spacer 4G2R-IS Exhaust spacer 4G2R-R- Blanking plug Thread plug Silencer Write an integer GWP4-B GWP6-B GWP8-B 4G2R-06P SLW-8S SLW-8A	1 :																												
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AG2R-IS Exhaust spacer 4G2R-R- Blanking plug Thread plug Silencer Write an integer GWP4-B GWP6-B GWP8-B 4G2R-06P SLW-8S SLW-8A																													
Mounting L2= Included			pacer																										
Mounting L2= Included parts Included parts GWP4-B GWP6-B GWP8-B 4G2R-06P SLW-8S SLW-8A																													
Mounting L2= Included parts Included parts GWP4-B GWP6-B GWP8-B 4G2R-06P SLW-8S SLW-8A																													
Mounting L2= Included parts Included parts GWP4-B GWP6-B GWP8-B 4G2R-06P SLW-8S SLW-8A																													
*Write an integer GWP4-B GWP6-B GWP8-B 4G2R-06P SLW-8S SLW-8A	Mounting	L ₂ =			1	ed	Blanking plu						ug	g					Thread plug			Silencer							
	*Writ			!		- 1	GWP4-B GWP6-B			6-B	GWP8-B				4G2R-06P				SLW-8S				SLW-8A						

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rail	* Wr	ite ar	integ			parts		3WP	6-B		0	SWP8	3-B		G	NP1	0-B		4G	3R-0)8P		SL	.W-1	DA		SL	.W-10)L	

Series variation

Electric actuator

Pneumatic cylinders

FRL/Auxiliary components Electronic components

Vacuum components

Main line components

Fluid control valves

Main line components

Antibacterial/Bacteriaremoving filter

Vacuum components

Fluid control valves

W4G2-FP1 Series

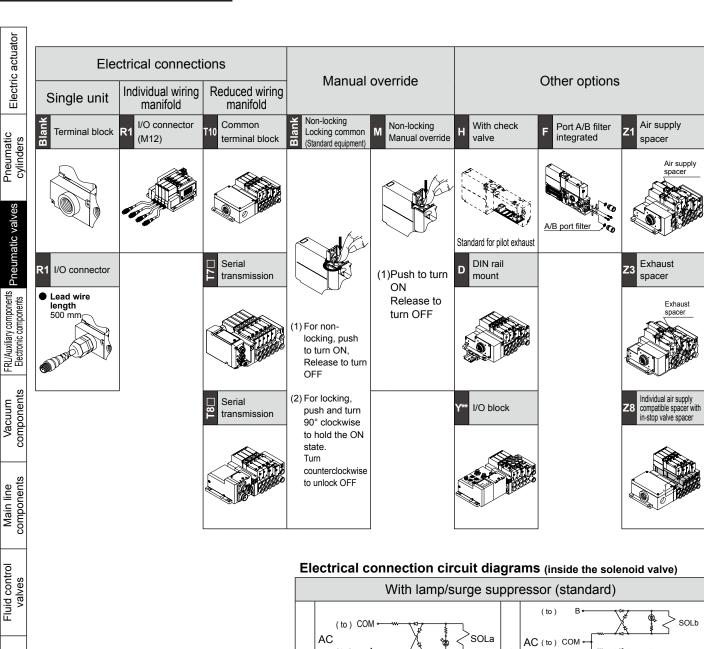
,		eries variation/appearance	Мос	del No.	Position Number of solenoid valves JIS symbol	Valve per Low (ama: (s-bar)) And (s-bar) (ama: (s-bar))	Applicable cylinder bore size	100	24 VDC	12	Degree of protection	
Separate item			W ²	IGB2	$lacktrianglet$ 3-port valve 2-position single NC a $\begin{pmatrix} 4 \\ A \end{pmatrix}_T$ $\begin{pmatrix} 4$	2.1 to 2.5	ø20 to ø80	•	•	•	IP 65	
Individual wiring manifold	ng Body piping	MW4GB2*0	MW3GA2 MW4GA2 (NW3GA2) (NW4GA2)		2-position single NO a (B) 5 1 3				•	•	IP65 It Equivalent	
al wiring	Base side pipii	I/O connector (R1) MW4GZ2*0 I/O	MW4GB2 (NW4GB2)	Individual wiring (-R1)	(R₁)(P)(R₂) ■ 5-port valve 2-position single	1.7 to 2.3	ø20 to ø80		•	•	IP65 Equivalent	
Individu	Base bottom piping Base side piping Body	connector (R1)	MW4GZ2 (NW4GZ2)		a $(A)(B)$ $ \downarrow \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad$				•	•	IP65 Equivalent	
-	Body piping	MW3 GA2*0	MW3GA2 MW4GA2	Common terminal block (-T10)	2-position double a (A)(B) b	1.7 to	ø20 to	•	•	•	IP 65	L.
- Fold		Common terminal block (T10) Serial transmission (T7, T8*)	(NW3GA2) (NW4GA2)	Serial transmission (-T7, T8*)	5 1 3 (R ₁)(P)(R ₂) 3-position all ports closed	2.3	ø80		•		IP 65	
Reduced wiring manifold	side pipina	MW4GB2*0	MW4GB2	Common terminal block (-T10)	$\begin{array}{c} \begin{array}{ccccccccccccccccccccccccccccccccc$	1.7 to	ø20 to	•	•	•	IP 65	
liced wir	Base sic	terminal block (T10) Serial transmission	(NW4GB2)	Serial transmission (-T7, T8*)	3-position A/B/R connection A 2 (A)(B) A M b	2.3	ø80		•		IP 65	
N C	bottom pipina	MW4GZ2*0	MW4GZ2	Common terminal block (-T10)	$ \begin{array}{c} 5 & 1 & 3 \\ \langle R_1 \rangle \langle P \rangle \langle R_2 \rangle \end{array} $ 3-position P/A/B connection $ \begin{array}{c} 4 & 2 \\ \langle A \rangle \langle B \rangle \end{array} $	1.7	ø20 to	•	•	•	IP 65	
	Base bott	Common terminal block (T10) Serial transmission (T7, T8*)	(NW4GZ2)	Serial transmission (-T7, T8*)	a	to 2.3	ø80		•		IP 65	

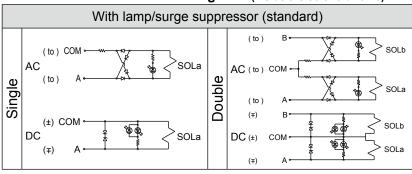
W4G2-FP1 series Series variation

*1: Effective cross-sectional area S and sonic conductance C are converted as S \approx 5.0 \times C.

		Swit	tching	posi	ition								rical c	onnec	tions	
	2-pos	sition		3.	-positio	on		Push-ii	n fitting	Female	thread)ck	tor	<u>इ</u>	sion	
Normally closed	Normally open	Single	Double	All ports closed	ABR connection	PAB connection	Mix	90	88	Rc1/8	Rc1/4	Terminal block	I/O connector	Common terminal block	Serial transmission	Page
ž	ž	S	۵	₹	Ā	9	Σ	C6	C8	06	80	Blank	R1	T10	T7[]/T8[]	
		•	•	•	•	•					•	•	•			175
•	•	•	•	•	•	•	•	•	•	•			•			177
		•	•	•	•	•	•	•	•				•			179
		•	•	•	•	•	•	•	•				•			179
•	•	•	•	•	•	•	•	•	•	•				•		404
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		•	•	•	•	•	•	•	•					•		187
		•	•	•	•	•	•	•	•						•	107
		•	•	•	•	•	•	•	•					•		187
		•	•	•	•	•	•	•	•						•	101

			77.					77	2	
Electric actuator	Pneumatic	Dogumatic valves	FRL/Auxiliary components	Vacuum	Main line	Fluid control	Main line	Antibacterial/Bacteria-	Vacuum	Fluid contro
בופטווט מטוממוטו	cylinders	I licalliatic valves	Electronic components	components	components	valves	components	removing filter	components	valves





Zener diode is used as a surge suppressor.

Main line components

Antibacterial/Bacteriaremoving filter

Vacuum components

Fluid control valves

Electric actuator	
Pneumatic cylinders	
Pneumatic valves FRL	
FRL/Auxiliary components Electronic components	77-
Vacuum components	
Main line components	
Fluid control valves	
Main line components	
Antibacterial/Bacteria- removing filter	77
Vacuum components	•
Fluid control valves	



Single unit Base side piping

W4GB2-FP1 Series

Applicable cylinder bore size: ø20 to ø80





Common specifications

Descriptions	W4GB2				
Valve and operation	Pilot operated soft spool valve				
Working fluid	Compressed air				
Max. working pressure MPa	0.7				
Min. working pressure MPa	0.2				
Proof pressure MPa	1.05				
Ambient temperature °C	-5 to 55 (no freezing)				
Fluid temperature °C	5 to 55				
Manual override	Non-locking/locking common (standard)				
Degree of protection *1	Dust proof/jet proof (IP65)				
Vibration resistance m/s ²	49 or less				
Shock resistance m/s ²	294 or less				
Atmosphere	Cannot be used in corrosive gas environments				

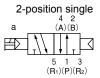
Electrical specifications

Description	s	W4GB2
Rated	DC	12, 24
voltage V	AC	100
Voltage fluctu	ation range	±10%
Holding	24 VDC	0.025
current A	12 VDC	0.050
	100 VAC	0.012
Power	24 VDC	0.6
consumption W *2	12 VDC	0.6
Apparent power VA	100 VAC	1.2
Thermal class		В

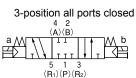
^{*2:} Surge suppressor and indicator are supplied as standard.

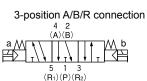
JIS symbol

● 5-port valve











5 1 3 (R₁)(P)(R₂)

Individual specifications

Description	S	W4GB2
Port size	A/B Port	Rc1/4
	P/R Port	Rc1/4

Descriptions			ON	OFF
Response time	2 nosition	Single	22	24
ms	2-position	Double	26	_
	3-position		25	35

The response times are values with supply pressure of 0.5 MPa at 20°C and without lubrication. They depend on the pressure and the lubricant quality.

Description	ons			Terminal block	I/O connector
Weight	g	0 :#:	Single	351	409
		2-position	Double	367	424
		3-position		374	431

Flow characteristics

Model	Sol	anoid position	P→	A/B	A/B	→R
No.	301	enoid position	C[dm³/(s·bar)]	b	C[dm³/(s·bar)]	b
	2-positio	n	2.5	0.27	2.5	0.20
W4GB2		All ports closed	2.3	0.32	2.1	0.21
W4GB2	3-position	ABR connection	2.3	0.30	2.2	0.22
		PAB connection	2.4	0.02	2.3	0.19

Note: Formula to calculate sonic conductance C from effective cross-sectional area S is S \approx 5.0 \times C.

^{*1:} Tested according to the test method for IP65 (IEC60529 [IEC529: 1989-11]) standards.

Single valve; base piping

Electric actuator

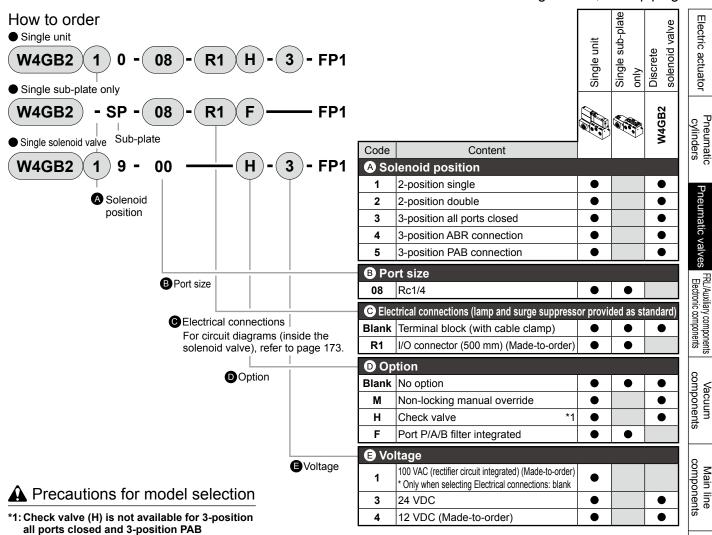
Pneumatic

Fluid control

Main line components

Antibacterial/Bacteria-

Fluid control



Electrical connections

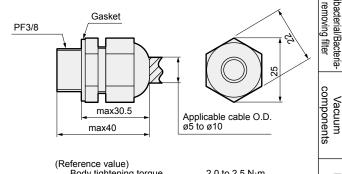
connection.

	noar commodicine	
Name	Terminal block	I/O connector
Code	Blank	R1
Shape Terminal layout	B COM A	2: B do do do do do do do do do do do do do

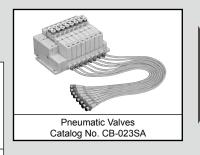
Parts kit No. for terminal block

Cable clamp (with gasket)

Model No.	Content
	Used to protect cables from dust
	and jetting water.



Body tightening torque
Cable clamp tightening torque 2.0 to 2.5 N·m 1.5 to 2.0 N·m Pneumatic cylinders



Individual wiring manifold Body piping

MW³GA2-R1-FP1 Series

Applicable cylinder bore size: ø20 to ø80



Manifold common specifications

Marillold common specifications				
Descriptions	MW3GA2/MW4GA2			
Manifold	Block manifolds			
Air supply and exhaust method	Common supply/common exhaust (with check valve built-in)			
Pilot exhaust method	Internal pilot Main valve/pilot valve common exhaust (pilot exhaust check valve built-in)			
	External pilot Main valve/pilot valve individual exhaust			
Valve and operation	Pilot operated soft spool valve			
Working fluid	Compressed air			
Max. working pressure MPa	0.7			
Min. working pressure MPa	0.2			
Proof pressure MPa	1.05			
Ambient temperature °C	−5 to 55 (no freezing)			
Fluid temperature °C	5 to 55			
Manual override	Non-locking/locking common (standard)			
Degree of protection *1	Dust proof/jet proof (IP65 equivalent)			
Vibration resistance m/s ²	49 or less			
Shock resistance m/s ²	294 or less			
Atmosphere	Cannot be used in corrosive gas environments			

*1: Tested according to the test method for IP65 (IEC60529 [IEC529: 1989-11]) standards.

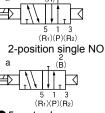
Electrical specifications

Descriptio	ns	MW3GA2/MW4GA2
Rated voltage V DC		12, 24
Voltage fluct	uation range	±10%
Holding	24 VDC	0.025
current A	12 VDC	0.050
Power consumption W	24 VDC	0.6
*2	12 VDC	0.6
Thermal class	SS	В

^{*2:} Surge suppressor and indicator are supplied as standard.

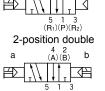
JIS symbol

3-port valve
 2-position single NC

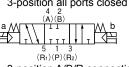


• 5-port valve
2-position single

a (A)(B)



 $\begin{array}{ccc}
5 & 1 & 3 \\
(R_1)(P)(R_2)
\end{array}$ 3-position all ports closed



3-position A/B/R connection

3-position P/A/B connection

4 2

(A) (B)



Individual specifications

Descrip	tions	MW3GA2/MW4GA2
Max. stat	ion No.	16
Port size	A/B Port	Push-in fitting ø6, ø8, Rc1/8
	P/R Port	Push-in fitting ø8, ø10

Descriptions			MW3GA2	MW3GA2/MW4GA2		
Descriptions			ON	OFF		
Response time	2 position	Single	22	24		
ms	2-position	Double	26	_		
3-position		•	25	35		

The response times are values with supply pressure of 0.5 MPa at 20°C and without lubrication. They depend on the pressure and the lubricant quality.

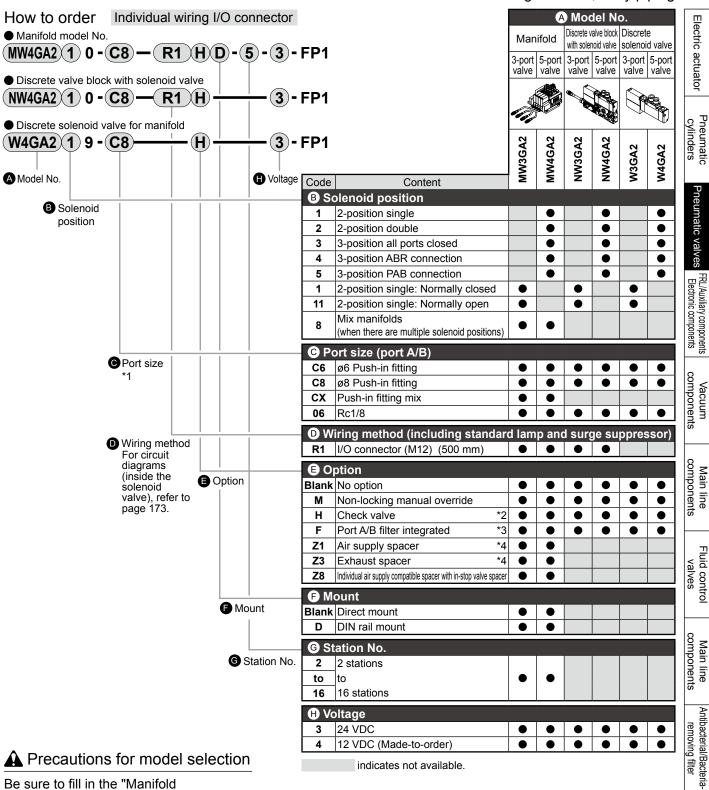
Flow characteristics

Model No. Solenoid position		anaid pasition	P→A/B		A/B→R	
		enoia position	C[dm³/(s·bar)]	b	C[dm³/(s·bar)]	b
	2-position	on	2.2	0.35	1.7	0.25
MW3GA2		All ports closed	2.0	0.36	2.2	0.21
MW4GA2	3-position	ABR connection	2.1	0.34	1.7	0.26
		PAB connection	2.3	0.35	2.3	0.27

- *1: Effective cross-sectional area S and sonic conductance C are converted as S ≈ 5.0 × C.
- *2: Values for 2-position and ABR connection are those with integrated check valve.

MW 4 GA2-R1-FP1 Series

Individual wiring manifold; body piping



Be sure to fill in the "Manifold specifications sheet".

- *1: Specify the size of port P/R in the supply and exhaust block section.
- *2: Check valve (H) is not available for 3-position all ports closed and 3-position PAB connection.
- *3: A filter is built into port P.
- *4: Specify the spacer mounting position and quantity in manifold specifications sheet. Stacking of spacers is not possible. Combination with the masking plate is not supported.

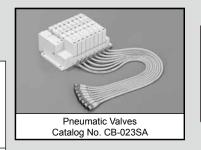
 Refer to pages 200 to 201 for details.

Vacuum components

Fluid control

Pneumatic cylinders

removing filter



Individual wiring manifold Base side piping/base bottom piping

MW4G^B_Z2-R1-FP1 Series

Applicable cylinder bore size: ø20 to ø80



Manifold common specifications

Marillold Commo	n specifications		
Descriptions	MW4GB2 MW4GZ2		
Manifold	Block manifolds		
Air supply and exhaust method	Common supply/common exhaust (with check valve built-in)		
Pilot exhaust method	Internal pilot Main valve/pilot valve common exhaust (pilot exhaust check valve built-in)		
	External pilot Main valve/pilot valve individual exhaust		
Piping direction	Lateral direction from base Downward from base		
Valve and operation	Pilot operated soft spool valve		
Working fluid	Compressed air		
Max. working pressure MPa	0.7		
Min. working pressure MPa	0.2 *3		
Proof pressure MPa	1.05		
Ambient temperature °C	-5 to 55 (no freezing)		
Fluid temperature °C	5 to 55		
Manual override	Non-locking/locking common (standard)		
Degree of protection *1	Dust proof/jet proof (IP65 equivalent)		
Vibration resistance m/s ²	49 or less		
Shock resistance m/s ²	294 or less		
Atmosphere	Cannot be used in corrosive gas environments		

Electrical specifications

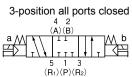
Descriptio	ns	M4GB2
Rated voltage V DC		12, 24
Voltage fluct	uation range	±10%
Holding	24 VDC	0.025
current A	12 VDC	0.050
Power consumption W *4	24 VDC	0.6
	12 VDC	0.6
Thermal class	ss	В

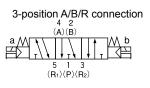
^{*4:} Surge suppressor and indicator are supplied as standard.

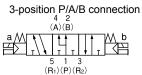
JIS symbol

● 5-port valve 2-position single 4 2 (A)(B)









Individual specifications

Descriptions		MW4GB2/MW4GZ2
Max. station No.		16
Port size	A/B Port	Push-in fitting ø6, ø8, Rc1/8
	P/R Port	Push-in fitting ø8, ø10

Descriptions			MW4GB2/MW4GZ2	
			ON	OFF
Response time	2 position	Single	22	24
ms 2-position Double 3-position		Double	26	_
		25	35	

The response times are values with supply pressure of 0.5 MPa at 20°C and without lubrication. They depend on the pressure and the lubricant quality.

Flow characteristics

Model	Sal	anaid position	P→A/B		A/B→R	
No.	301	enoid position	C[dm³/(s·bar)]	b	C[dm³/(s·bar)]	b
	2-position	on	2.4	0.36	1.7	0.25
MW4GB2		All ports closed	2.1	0.37	2.2	0.22
MW4GZ2	3-position	ABR connection	2.2	0.35	1.7	0.25
		PAB connection	2.3	0.32	2.3	0.24

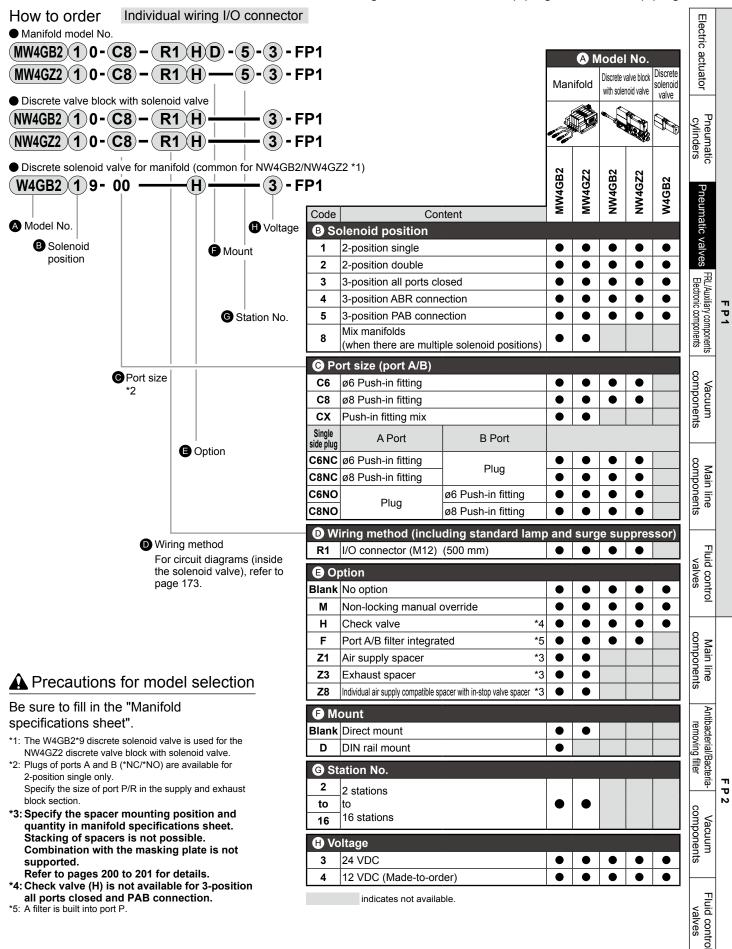
^{*1:} Effective cross-sectional area S and sonic conductance C are converted as $S \approx 5.0 \times C$.

^{*1:} Tested according to the test method for IP65 (IEC60529 [IEC529: 1989-11]) standards.

^{*2:} Values for 2-position and ABR connection are those with integrated check valve.

MW4G^B₂2-R1-FP1 Series

Individual wiring manifold; base side piping/base bottom piping



Pneumatic cylinders

Reduced wiring manifold **Body piping**

MW³GA2-T1/7/8-FP1 Series

Applicable cylinder bore size: ø20 to ø80





Manifold common specifications

Pneumatic Valves Catalog No. CB-023SA

Manifold Common specifications				
Descriptions		MW3GA2/MW4GA2		
Manifold		Block manifolds		
Air supply and exhaust method	Common su	upply/common exhaust (with check valve built-in)		
Pilot exhaust method	Internal pilot M	ain valve/pilot valve common exhaust (pilot exhaust check valve built-in)		
	External pilot N	lain valve/pilot valve individual exhaust		
Piping direction		Valve top direction		
Valve and operation		Pilot operated soft spool valve		
Working fluid		Compressed air		
Max. working pressure MF	a	0.7		
Min. working pressure MF	а	0.2 *4		
Proof pressure MF	а	1.05		
Ambient temperature S	С	-5 to 55 (no freezing)		
Fluid temperature S	С	5 to 55		
Manual override	No	on-locking/locking common (standard)		
	2	Dust-proof/jet-proof (IP65) *3		
Vibration resistance m/	s ²	49 or less		
Shock resistance m/	s ²	294 or less		
Atmosphere	Cann	ot be used in corrosive gas environments		
		<u> </u>		

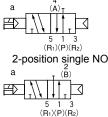
Electrical specifications

Descriptio	ns	MW3GA2/MW4GA2
Rated voltage V	DC	12, 24
	AC	100
Voltage fluct	uation range	±10%
Holding	24 VDC	0.025
current A	12 VDC	0.050
	100 VAC	0.012
Power	24 VDC	0.6
consumption W *2	12 VDC	0.6
Apparent power VA *3	100 VAC	1.2
Thermal class	SS	В

- *2: Surge suppressor and indicator are supplied as standard.
- *3: Serial transmission is not available with 100 VAC and 12 VDC.
- *1: Tested according to the test method for IP65 (IEC60529 [IEC529: 1989-11]) standards.

JIS symbol

3-port valve 2-position single NC

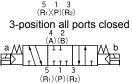


● 5-port valve 2-position single



4 2 (A)(B)

b



3-position A/B/R connection (A)(B)



Individual specifications

	MW3GA2/MW4GA2														
Descrip	otions	T10	T7EC □1	T7EC □2	T7EC □7	T7EN □1	T7EN □2	T7EN □7	T8G1 T8D1	T8G2 T8D2	T8G7 T8D7	T8MA	T8M6	T8C1	T8C6
Max. station No.	Standard wiring	18	16	18	16	16	18	16	16	18	16	4	8	16	8
	Double wiring	9	8	16	8	8	16	8	8	16	8	2	4	8	4
Max. number of solenoids		18	16	32	16	16	32	16	16	32	16	4	8	16	8
Port size	A/B Port		Push-in fitting ø6, ø8, Rc1/8												
	P/R Port						Push	-in fitt	่ทด	ø10					

Descriptions			MW3GA2	MW3GA2/MW4GA2			
Descriptions			ON	OFF			
Response time	0	Single	22	24			
ms	2-position	Double	26	_			
	3-position	•	25	35			

The response times are values with supply pressure of 0.5 MPa at 20°C and without lubrication. They depend on the pressure and the lubricant quality.

Flow characteristics

Model	Solenoid position		P→	A/B	A/B→R					
No.	301	enoiu position	C[dm³/(s·bar)]	b	C[dm³/(s·bar)]	b				
	2-position		2.2	0.35	1.7	0.25				
MW3GA2		All ports closed	2.0	0.36	2.2	0.21				
MW4GA2	3-position	ABR connection	2.1	0.34	1.7	0.26				
		PAB connection	2.3	0.35	2.3	0.27				

- *1: Effective cross-sectional area S and sonic conductance C are converted as S ≈ 5.0 × C.
- *2: Values for 2-position and ABR connection are those with integrated check valve.

Reduced wiring specifications

Descriptions	T10			
Туре	Common terminal block M3 thread			
Connector	_			

MW 4 GA2-T1/7/8-FP1 Series

Reduced wiring manifold; body piping

Serial transmission slave unit specifications

Descriptions -		Slave (adap	ter) unit dedica	Slave (adapter) u	Slave (adapter) unit with I/O block				
Desc	ripuons	T7EC1	T7EC2	T7ECP1	T7ECP2	Т7ЕСВ7	T7ECPB7		
Network n	ame		EtherCAT EtherCA						
Power supply	Unit side		24 VD0	24 VD0	C ±10%				
voltage	Valve side		24 VDC +	24 VDC +	24 VDC +10%, -5%				
Current	Unit side		110 mA	or less		110 mA or less (exclud	110 mA or less (excluding input block current)		
consumption	Valve side	•	15 mA or less (exc	15 mA or less (exc	15 mA or less (excluding load current)				
Valve outp	out	NP	'n	PN	IP	NPN	PNP		
Input/outp	ut point count	0/16	0/32	0/16	0/32	16	/16		
Operation display Power supply/communication status/valve por				ower supply					
Degree of	protection		IP65						

Dosc	criptions	Slave (adap	oter) unit dedicat	ted for valves (n	o I/O block)	Slave (adapter) unit with I/O block				
Desc	ripuoris	T7EN1	T7EN2 *1	T7ENP1	T7ENP2 *1	T7ENB7	T7ENPB7			
Network name EtherNet/IP										
Power supply	Unit side		24 VDC ±10%							
voltage	Valve side		24 VDC +10%, -5%							
Current	Unit side		130 mA	or less		130 mA or less (*2: exclu	uding input block current)			
consumption	Valve side			15 mA or less (excl	uding load current)					
Valve outp	out	NPN (Dutput	PNP (Dutput	NPN Output	PNP Output			
Number of	f I/O points	16 point output	32 point output	16 point output	32 point output	16 point input/16 point output	16 point input/16 point output			
LED	Power supply		2 pc	ints: Unit power sup	oply/valve power su	ipply				
display	Communication	4 points: MS, NS, L/A IN, L/A OUT								
Degree of	protection			IP	65					

Descriptions		Slave (adap	oter) unit dedicat	o I/O block)	Slave (adapter) unit with I/O block					
Desc	ripuoris	T7EB1	T7EB2 *1	T7EBP1	T7EBP2 *1	T7EBB7	T7EBPB7			
Network n	ame	CC-Link IEF Basic								
Power supply	Unit side		24 VDC ±10%							
voltage	Valve side		24 VDC +10%, -5%							
Current	Unit side		130 mA	or less		130 mA or less (*2: exclu	uding input block current)			
consumption	Valve side			15 mA or less (excl	uding load current)					
Valve outp	out	NPN C	Dutput	PNP (Dutput	NPN Output	PNP Output			
Number of	f I/O points	16 point output	32 point output	16 point output	32 point output	16 point input/16 point output	16 point input/16 point output			
LED	Power supply			2-positions:	PW, PW (V)					
display	Communication	4 positions: RUN, ERR, L/A IN, L/A OUT, INFO								
Degree of	protection			IP	65					

Door	riptions	Slave (adap	oter) unit dedicat	Slave (adapter) unit with I/O block						
Desc	ripuoris	T7EP1	T7EP2 *1	T7EPP1	T7EPP2 *1	Т7ЕРВ7	Т7ЕРРВ7			
Network n	ame	PROFINET								
Power supply	Unit side		24 VDC ±10%							
voltage	Valve side		24 VDC +10%, -5%							
Current	Unit side	130 mA or less 130 mA or less 130 mA or less (*2: excluding input block current)								
consumption	Valve side			15 mA or less (excl	uding load current)					
Valve outp	ut	NPN (Dutput	PNP (Dutput	NPN Output	PNP Output			
Number of	f I/O points	16 point output	32 point output	16 point output	32 point output	16 point input/16 point output	16 point input/16 point output			
LED	Power supply			2-positions:	PW, PW (V)					
display	Communication	4 positions: RUN, ERR, L/A IN, L/A OUT, INFO								
Degree of	protection			IP	3 5					

Electric actuator F

MW 4GA2-T1/7/8-FP1 Series

Reduced wiring manifold; body piping

Electric actuator

Serial transmission slave unit specifications

	Network name	CC	-Link (Ver1.	10)		DeviceNet *1		AS-i (Ver2.0)		
Descriptions	Slave (adapter) unit model No.	T8G1	T8G2	T8G7	T8D1	T8D2	T8D7	T8MA	T8M6	
Communica	Communication speed		156 K/625 K/2.5 M/5 M/10 Mbps			125 K/250 K/500 Kbps			167 Kbps	
Power supply	Power supply Unit side 24 VDC ±10%				24 VDC ±10%		30 VD	C ±2%		
voltage	Valve side	24	VDC +10%, -	5%	24	VDC +10%, -	5%	24 VDC +	10%, -5%	
	Communication side	_			11 to 25 VDC			_		
Current	Unit side	60 mA or less	100 mA or less	75 mA or less *2	70 mA or less 90 mA or less 80 mA or less *2			2 60 mA or less *2 90 mA or less *2		
Current	Valve side	15 mA or less (when all points are OFF)			15 mA or less (when all points are OFF)			15 mA or less (when all points are OFF)		
	Communication side		_		50 mA or less			_		
Valve output	t		NPN			NPN		NF	PN	
Input/output	point count	0/16	0/32	16/16	0/16	0/32	16/16	4/4 *3	8/8 *4	
Occupied No	0.		1 station		2 bytes	4 bytes	4 bytes	1 station	2 station	
Operation d	isplay	Power supply/com	munication status/v	alve power supply	Communication status/valve power supply			Communication status/valve power supply		
Others			_		For EDS file, contact CKD. *5 Profile: 7, F			7, F *6		

	Network name	Compo	Bus/S			
Descriptions	Slave (adapter) unit model No.	T8C1	T8C6			
Communica	tion speed	93.75 K/750 Kbps				
Power supply	Unit side	24 VDC ±10% (commu	nication power supply)			
voltage	Valve side	24 VDC +	10%, -5%			
ronago	Communication side	_				
Current	Unit side	50 mA or less *2 (communication power supply)				
consumption	Valve side	15 mA or less (when all points are OFF)				
	Communication side	_	_			
Valve output	t	NPN				
Input/output	point count	0/16	8/8			
Occupied N	0.	_				
Operation d	isplay	Power supply/communication status/valve power supply				
Others		_	-			

- *1: Compatible with DeviceNet compliant networks (DLNK, etc.) as well.
- *2: If the feed power supply of the input blocks also serves as the unit power supply, use the formula below for calculation.
 - (unit current consumption) = + (35 mA × number of input blocks) + (total internal current consumption of connected sensors)
 - *.....T8G7: 60 mA, T8D7: 80 mA, T8MA: 60 mA, T8M6: 90 mA, T8C6: 50 mA
- Note that the sensors should be selected so that the unit current consumption is 600 mA or less for T8G7 and T8D7 and 250 mA or less for T8MA, T8M6 and T8C6.
- *3: Outputs of the slave unit with 4 inputs/4 outputs (T8MA) are all dedicated for valves.
- *4: The slave unit with 8 inputs/8 outputs (T8M6) requires two addresses. Therefore, the automatic address setting cannot be used.
- *5: EDS file: A text file of parameters for communication with various companies' master units
- *6: Profile: Definition of meanings of I/O data and parameters of the slave unit for communication with the master unit. Defined in the AS-i specifications sheet.

I/O block specifications

Input block

Fluid control

Model No. Descriptions	NW4GA2- IN-N-K	NW4GA2- IN-N-B	NW4GA2- IN-P-K	NW4GA2- IN-P-B					
No. of inputs		4 point							
Rated input voltage		24 VDC							
Rated input current		7 mA							
ON voltage	15 VDC or more (between	en input terminals and V)	15 VDC or more (between	en input terminals and G)					
OFF voltage/OFF current	5 VDC or less (between input t	terminal and V)/1.5 mA or less	5 VDC or less (between input t	erminal and G)/1.5 mA or less					
Input format	Sink	type	Source	e type					
Supply power	Common with unit power supply	Externally supplied power	Common with unit power supply	Externally supplied power					
Operation display	Power supply/input status								

^{*1:} Refer to page 199 for model No.

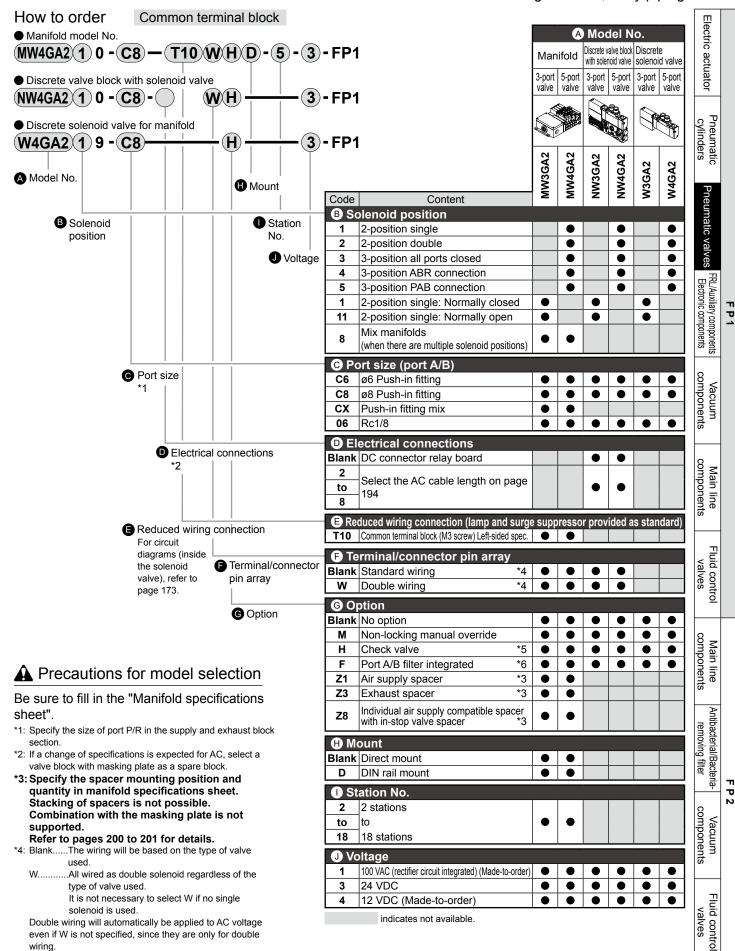
Output block

Output block									
Model No.	NW4GA2-OUT-N-B	NW4GA2-OUT-P-B							
Descriptions	NW4GA2-001-N-B	NW4GAZ-001-F-B							
Output points	4 p	oint							
Rated voltage	24 \	24 VDC							
Max. load current	1 A/1 point (1 A/1 point (3 A/common)							
Residual voltage	1.5 V	or less							
Output format	Sink type	Source type							
Protection circuit	Overcurrent protection/rev	rerse connection protection							
Fuse	Power supply for external load: 2	4 VDC and 5 A (can be replaced)							
Operation display	Power supply	Power supply/output status							

^{*1:} Refer to page 199 for model No.

MW ³GA2-T10-FP1 Series

Reduced wiring manifold; body piping



*5: Check valve (H) is not available for 3-position all ports closed and 3-position PAB connection.

*6: A filter is built into port P.

MW³GA2-T7/T8-FP1 Series

Reduced wiring manifold; body piping

Electric actuator

Pneumatic

FRL/Auxiliary components Electronic components

components

components

Fluid control

Antibacterial/Bacteria-

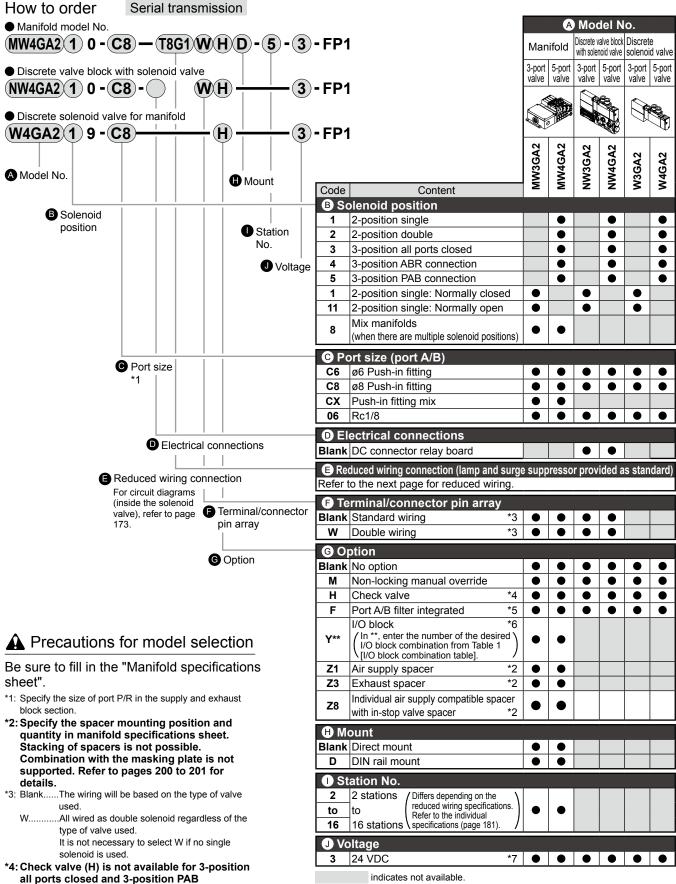
removing filter

components

Vacuum

Fluid control

valves



- *6: Specify the I/O (sink/source) of I/O block and the power supply (shared with slave unit/ external) in the manifold specifications sheet (page 206).
- *7: Serial transmission is not available with 100 VAC and 12 VDC

connection. *5: A filter is built into port P.

MW 4 GA2-T7/T8-FP1 series Reduced wiring manifold; body piping

Electric actuator

Pneumatic cylinders

Pneumatic valves FRL/Auxiliary components Electronic components

Vacuum components

Main line components

Fluid control valves

[Reduced wiring list]

		A	del No	o.		
	Man	ifold			Discrete solenoie	
	3-port valve	5-port valve	3-port valve	5-port valve	3-port valve	5-por valve
	MW3GA2 MW4GA2					
			NW3GA2	NW4GA2	W3GA2	W4GA2

B reduced wiring connection (lamp and surge suppressor provided as standard) T7EC1						<u> </u>	 	
T7ECP1	■ Reduced	wiring connection (amp and surge suppressor provide	d as sta	andar	d)		
T7EC2 Thin 32 point output (NPN valve output) ● ● T7ECP2 EtherCAT 32 point output (PNP valve output) ● ● T7ECB7 16/16 points I/O (NPN valve output) ● ● T7ECP87 16/16 points I/O (PNP valve output) ● ● T7EN1 16 point output (PNP valve output) ● ● T7ENP1 16 point output (PNP valve output) ● ● T7ENP2 Thin 32 point output (PNP valve output) ● ● T7ENP2 EtherNet/IP 32 point output (PNP valve output) ● ● ● T7ENP7 16/16 points I/O (PNP valve output) ●			16 point output (NPN valve output)	•	•			
T7ECP2 EtherCAT 32 point output (PNP valve output)				•	•			
T7ECB7	T7EC2	Thin	32 point output (NPN valve output)	•	•			
T7ECP87	T7ECP2	EtherCAT	,	•	•			
T7EN1	T7ECB7		16/16 points I/O (NPN valve output)	•	•			
T7ENP1	T7ECPB7		16/16 points I/O (PNP valve output)	•	•			
T7EN2 Thin 32 point output (NPN valve output) ●	T7EN1		16 point output (NPN valve output)	•	•			
T7ENP2	T7ENP1		16 point output (PNP valve output)	•	•			
T7ENB7	T7EN2	Thin	32 point output (NPN valve output)	•	•			
T7ENBP7	T7ENP2	EtherNet/IP	32 point output (PNP valve output)	•	•			
T7EB1 16 point output (NPN valve output) ●	T7ENB7		16/16 points I/O (NPN valve output)	•	•			
T7EBP1 16 point output (PNP valve output) ● ● ■	T7ENBP7		16/16 points I/O (PNP valve output)	•	•			
T7EB2 Thin 32 point output (NPN valve output) ● T7EBP2 CC-Link IEF Basic 32 point output (PNP valve output) ● T7EBB7 16/16 points I/O (NPN valve output) ● T7EPBB7 16 point output (NPN valve output) ● T7EP1 16 point output (NPN valve output) ● T7EPP1 16 point output (NPN valve output) ● T7EPP2 Thin 32 point output (NPN valve output) ● T7EPP3 16/16 points I/O (NPN valve output) ● T7EPB7 16/16 points I/O (NPN valve output) ● T7EPPB7 16/16 points I/O (NPN valve output) ● T8G1 16 point output ● T8G2 CC-Link 32 point output ● T8G7 16 point input/16 point output ● T8C1 CompoBus/S 16 point output ● T8D1 16 point output ● T8D2 DeviceNet 32 point output ● T8D7 16 point input/16 point output ● T8MA 4 point input/16	T7EB1		16 point output (NPN valve output)	•	•			
T7EBP2	T7EBP1		16 point output (PNP valve output)	•	•			
T7EBB7 16/16 points I/O (NPN valve output) ● T7EBP87 16/16 points I/O (PNP valve output) ● T7EP1 16 point output (NPN valve output) ● T7EPP1 16 point output (PNP valve output) ● T7EPP1 32 point output (PNP valve output) ● T7EPP2 PROFINET 32 point output (PNP valve output) ● T7EPB7 16/16 points I/O (NPN valve output) ● T7EPB7 16/16 points I/O (PNP valve output) ● T8G1 16 point output ● T8G2 CC-Link 32 point output ● T8G7 16 point input/16 point output ● T8C1 CompoBus/S 16 point output ● T8D1 16 point output ● T8D2 DeviceNet 32 point output ● T8D7 16 point input/16 point output ● T8MA 4 point input/14 point output ●	T7EB2	Thin	32 point output (NPN valve output)	•	•			
T7EBPB7 16/16 points I/O (PNP valve output) ● T7EP1 16 point output (NPN valve output) ● T7EPP1 16 point output (PNP valve output) ● T7EPP1 32 point output (PNP valve output) ● T7EPP2 PROFINET 32 point output (PNP valve output) ● T7EPB7 16/16 points I/O (NPN valve output) ● T7EPB7 16/16 points I/O (PNP valve output) ● T8G1 16 point output ● T8G2 CC-Link 32 point output ● T8G7 16 point input/16 point output ● T8C1 CompoBus/S 16 point output ● T8D1 16 point output ● T8D2 DeviceNet 32 point output ● T8D7 16 point input/16 point output ● T8MA 4 point input/16 point output ●	T7EBP2	CC-Link IEF Basic	32 point output (PNP valve output)	•	•			
T7EP1	T7EBB7		16/16 points I/O (NPN valve output)	•	•			
T7EPP1 16 point output (PNP valve output) ● ● ■	T7EBPB7		16/16 points I/O (PNP valve output)	•	•			
T7EP2 Thin 32 point output (NPN valve output) ● T7EPP2 PROFINET 32 point output (PNP valve output) ● T7EPB7 16/16 points I/O (NPN valve output) ● T7EPB7 16/16 points I/O (PNP valve output) ● T8G1 16 point output ● T8G2 CC-Link 32 point output ● T8G7 16 point input/16 point output ● T8C1 CompoBus/S 16 point output ● T8C6 T8D1 16 point output ● T8D2 DeviceNet 32 point output ● T8D7 16 point input/16 point output ● T8MA AS.i 4 point input/4 point output	T7EP1		16 point output (NPN valve output)	•	•			
T7EPP2 PROFINET 32 point output (PNP valve output) ● ● ● ■	T7EPP1		16 point output (PNP valve output)	•	•			
T7EPB7 16/16 points I/O (NPN valve output) ● T7EPPB7 16/16 points I/O (PNP valve output) ● T8G1 16 point output ● T8G2 CC-Link 32 point output ● T8G7 16 point input/16 point output ● T8C1 CompoBus/S 16 point output ● T8C6 8 point input/8 point output ● ● T8D1 16 point output ● ● T8D2 DeviceNet 32 point output ● ● T8D7 16 point input/16 point output ● ● T8MA AS.i 4 point input/4 point output ●	T7EP2	Thin	32 point output (NPN valve output)	•	•			
T7EPPB7 16/16 points I/O (PNP valve output) ● ● T8G1 16 point output ● ● T8G2 CC-Link 32 point output ● ● T8G7 16 point input/16 point output ● ● T8C1 CompoBus/S 16 point output ● ● T8C6 8 point input/8 point output ● ● T8D1 16 point output ● ● T8D2 DeviceNet 32 point output ● ● T8D7 16 point input/16 point output ● ● T8MA AS.i 4 point input/4 point output ● ●	T7EPP2	PROFINET	32 point output (PNP valve output)	•	•			
T8G1 16 point output ● ■ T8G2 CC-Link 32 point output ● ■ T8G7 16 point input/16 point output ● ■ T8C1 CompoBus/S 16 point output ● ● T8C6 8 point input/8 point output ● ● T8D1 16 point output ● ● T8D2 DeviceNet 32 point output ● ● T8D7 16 point input/16 point output ● ● T8MA AS.i 4 point input/4 point output ●	T7EPB7		16/16 points I/O (NPN valve output)	•	•			
T8G2 CC-Link 32 point output ● ● ■ <th>T7EPPB7</th> <th></th> <th>16/16 points I/O (PNP valve output)</th> <th>•</th> <th>•</th> <th></th> <th></th> <th></th>	T7EPPB7		16/16 points I/O (PNP valve output)	•	•			
T8G7 16 point input/16 point output ● ● ■	T8G1		16 point output	•	•			
T8C1 CompoBus/S 16 point output ● ● T8C6 8 point input/8 point output ● ● T8D1 16 point output ● ● T8D2 DeviceNet 32 point output ● ● T8D7 16 point input/16 point output ● ● T8MA AS.i 4 point input/4 point output ● ●	T8G2	CC-Link	32 point output	•	•			
T8C6 CompoBus/S 8 point input/8 point output ● ■ T8D1 16 point output ● ● ■ T8D2 DeviceNet 32 point output ● ● ■ T8D7 16 point input/16 point output ● ● ■ T8MA AS.i 4 point input/4 point output ● ●	T8G7		16 point input/16 point output	•	•			
T8D1	T8C1	CompoPus/S	16 point output	•	•			
T8D2 DeviceNet 32 point output ● ● T8D7 16 point input/16 point output ● ● T8MA 4 point input/4 point output ● ●	T8C6	Compodus/S	8 point input/8 point output	•	•			
T8D7 16 point input/16 point output	T8D1		16 point output	•	•			
T8MA 4 point input/4 point output ● ●	T8D2	DeviceNet	32 point output	•	•			
AS-i	T8D7		16 point input/16 point output	•	•			
T8M6 AS-I 8 point input/8 point output	T8MA	AC i	4 point input/4 point output	•	•			
o point inputo point output	T8M6	A9-I	8 point input/8 point output	•	•			

T8

Y32 Y42

Table 1 [I/O block combination table]

1 /										
Code	Layou	Layout of I/O blocks and station No								
Y10						IN				
Y20					IN	IN				
Y30				IN	IN	IN	g g			
Y40			IN	IN	IN	IN	Si			
Y11					OUT	IN	Electrical block side			
Y21				OUT	IN	IN	ᅙ			
Y31			OUT	IN	IN	IN	<u>2</u>			
Y41		OUT	IN	IN	IN	IN	ect			
Y12				OUT	OUT	IN	<u> </u>			
Y22			OUT	OUT	IN	IN				
Y32		OUT	OUT	IN	IN	IN				
Y42	OUT	OUT	IN	IN	IN	IN				

^{*1:} How to read the table

^{*1:} How to read the table
Example) Y11 is a combination of one input block
(4 points) and one output block (4 points).

*2: For details, refer to "Input/output point
count corresponding to wiring method T8*
I/O No." in "Pneumatic Valves (CB023SA)".

Code	Layo	ayout of I/O blocks and station No.								
Y10						IN				
Y20					IN	IN				
Y30				IN	IN	IN				
Y40			IN	IN	IN	IN				
Y01						OUT	8			
Y02					OUT	OUT	Si			
Y03				OUT	OUT	OUT	8			
Y04			OUT	OUT	OUT	OUT	ㅁ			
Y11					OUT	IN	Electrical block side			
Y21				OUT	IN	IN	ectr			
Y31			OUT	IN	IN	IN	ı			
Y41		OUT	IN	IN	IN	IN				
Y12				OUT	OUT	IN				
Y22			OUT	OUT	IN	IN				

OUT OUT IN IN IN

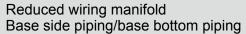
OUT OUT IN IN IN IN

Main line components Antibacterial/Bacteriaremoving filter Vacuum components Fluid control valves

Pneumatic cylinders







IW4G^B2-T1/7/8-FP1 Series

Applicable cylinder bore size: ø20 to ø80



Refer to the Ending for





Manifold common specifications

Marillold Commo	Manifold Common specifications										
Descriptions	MW4GB2	MW4GZ2									
Manifold	Block m	anifolds									
Air supply and exhaust method	Common supply/common exha	aust (with check valve built-in)									
Pilot exhaust method	Internal pilot Main valve/pilot valve common	n exhaust (pilot exhaust check valve built-in)									
	External pilot Main valve/pilot val	ve individual exhaust									
Piping direction	Lateral direction from base	Downward from base									
Valve and operation	Pilot operated s	soft spool valve									
Working fluid	Compressed air										
Max. working pressure MPa	0.	0.7									
Min. working pressure MPa	0.2 *4										
Proof pressure MPa	1.0)5									
Ambient temperature °C	−5 to 55 (n	o freezing)									
Fluid temperature °C	5 to	55									
Manual override	Non-locking/locking	common (standard)									
Degree of protection *1	Dust-proof/jet-proof (IP65) *3										
Vibration resistance m/s	49 or less										
Shock resistance m/s2	294 or less										
Atmosphere	Cannot be used in corro	osive gas environments									

^{*1:} Tested according to the test method for IP65 (IEC60529 [IEC529: 1989-11]) standards.

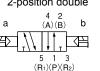
Electrical specifications

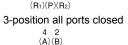
Descriptio	ns	W4GB2				
Rated	DC	12, 24				
voltage V	AC	100				
Voltage fluct	uation range	±10%				
Holding	24 VDC	0.025				
current A	12 VDC	0.050				
	100 VAC	0.012				
Power consumption W	24 VDC	0.6				
*2	12 VDC	0.6				
Apparent power VA *3	100 VAC	1.2				
Thermal clas	ss	В				

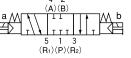
^{*2:} Surge suppressor and indicator are supplied as standard.

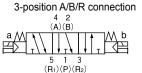
Individual specifications JIS symbol

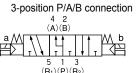
● 5-port valve 2-position single 5 1 3 (R₁)(P)(R₂) 2-position double











			MW4GB2/MW4GZ2												
Descriptions		T10	T7EC □1	T7EC □2	T7EC □7	T7EN	T7EN 2	T7EN □7	T8G1 T8D1	T8G2 T8D2	T8G7 T8D7	T8MA	T8M6	T8C1	T8C6
Max.	Standard wiring	18	16	18	16	16	18	16	16	18	16	4	8	16	8
station No.	Double wiring	9	8	16	8	8	16	8	8	16	8	2	4	8	4
Max. number of solenoids		18	16	32	16	16	32	16	16	32	16	4	8	16	8
Port size A/B Port Push-in fitting ø6, ø8, Rc1/8															
P/R Port Push-in fitting ø8, ø10															

Descriptions			MW4GB2	/MW4GZ2
Descriptions			ON	OFF
Response time ms	2-position	Single	22	24
		Double	26	_
1	2 position	•	25	25

The response times are values with supply pressure of 0.5 MPa at 20°C and without lubrication. They depend on the pressure and the lubricant quality.

Flow characteristics

LIOM CIT	-low characteristics											
Model	801	enoid position	P→	A/B	A/B→R							
No.	301	enola position	C[dm³/(s·bar)]	b	C[dm³/(s·bar)]	b						
	2-position		2.4	0.36	1.7	0.25						
MW4GB2		All ports closed	2.1	0.37	2.2	0.22						
MW4GZ2	3-position	ABR connection	2.2	0.35	1.7	0.25						
		PAB connection	2.3	0.32	2.3	0.24						

^{*1:} Effective cross-sectional area S and sonic conductance C are converted as S \approx 5.0 \times C.

Reduced wiring specifications

Descriptions	T10
Туре	Common terminal block M3 thread
Connector	_

^{*3:} Serial transmission is not available with 100 VAC and 12 VDC.

^{*2:} Values for 2-position and ABR connection are those with integrated check valve.

MW4G^B 2-T1/7/8-FP1 Series

Reduced wiring manifold; base side piping/base bottom piping

Serial transmission slave unit specifications

Door	vintiono	Slave (adap	oter) unit dedicat	Slave (adapter) unit with I/O block						
Desc	riptions	T7EC1	T7EC2	T7ECP1	T7ECP2	T7ECB7	T7ECPB7			
Network n	ame		Ethe	rCAT	•	EtherCAT				
Power supply	Unit side		24 VD0	C ±10%		24 VD0	C ±10%			
voltage	Valve side		24 VDC +	24 VDC +	24 VDC +10%, -5%					
Current	Unit side		110 mA	110 mA or less (exclud	110 mA or less (excluding input block current)					
consumption	Valve side		15 mA or less (exc	luding load current		15 mA or less (exc	luding load current)			
Valve outp	ut	N	PN	Pi	NP	NPN	PNP			
Input/outp	ut point count	0/16	0/32	0/16	0/32	16	/16			
Operation	display		Power supply/communication status/valve power supply							
Degree of	protection		IP65							

Descriptions		Slave (adap	oter) unit dedicat	Slave (adapter) unit with I/O block							
Desc	ripuoris	T7EN1	T7EN2 *1	T7ENP1	T7ENP2 *1	T7ENB7	T7ENPB7				
Network n	ame			Etherl	Net/IP	•					
Power supply	Unit side			24 VD0	£10%		_				
voltage	Valve side		24 VDC +10%, -5%								
Current	Unit side		130 mA	or less		130 mA or less (*2: excluding input block current)					
consumption	Valve side	15 mA or less (excluding load current)									
Valve outp	ut	NPN Output PNP Output			Dutput	NPN Output	PNP Output				
Number of	f I/O points	16 point output	32 point output	16 point output	32 point output	16 point input/16 point output	16 point input/16 point output				
LED	Power supply	2 points: Unit power supply/valve power supply									
display	Communication	on 4 points: MS, NS, L/A IN, L/A OUT									
Degree of	protection	IP65									

Descriptions		Slave (adap	Slave (adapter) unit dedicated for valves (no I/O block)						
Desc	ripuoris	T7EB1	T7EB2 *1	T7EBP1	T7EBP2 *1	T7EBB7	Т7ЕВРВ7		
Network n	ame			CC-Link I	EF Basic	•			
Power supply	Unit side			24 VD0	C ±10%		_		
voltage	Valve side		24 VDC +10%, -5%						
Current	Unit side		130 mA	or less		130 mA or less (*2: excluding input block current)			
consumption	Valve side	15 mA or less (excluding load current)							
Valve outp	out	NPN Output PNP Output			NPN Output	PNP Output			
Number of	f I/O points	16 point output	32 point output	16 point output	32 point output	16 point input/16 point output	16 point input/16 point output		
LED	Power supply	2-positions: PW, PW (V)							
display Communication 4 positions: RUN, ERR, L/A IN, L/A OUT, INFO									
Degree of	protection	IP65							

Descriptions		Slave (adap	oter) unit dedicat	o I/O block)	Slave (adapter) unit with I/O block					
Desc	ripuons	T7EP1	T7EP2 *1	T7EPP1	T7EPP2 *1	Т7ЕРВ7	Т7ЕРРВ7			
Network na	ame			PROF	INET		_			
Power supply	Unit side			24 VDC	±10%					
voltage	Valve side		24 VDC +10%, -5%							
Current	Unit side		130 mA	or less		130 mA or less (*2: exclu	uding input block current)			
consumption	Valve side	15 mA or less (excluding load current)								
Valve outp	ut	NPN Output PNP Output			Output	NPN Output	PNP Output			
Number of	I/O points	16 point output	32 point output	16 point output	32 point output	16 point input/16 point output	16 point input/16 point output			
LED	Power supply	y 2-positions: PW, PW (V)								
display	display Communication 4 positions: RUN, ERR, L/A IN, L/A OUT, INFO									
Degree of	protection	IP65								

Electric actuator

MW4G^B_Z2-T1/7/8-FP1 Series

Reduced wiring manifold; base side piping/base bottom piping

Serial transmission slave unit specifications

	Network name	CC-Link (Ver1.10)			ا	DeviceNet *1		AS-i (Ver2.0)		
Descriptions	Slave (adapter) unit model No.	T8G1	T8G2	T8G7	T8D1	T8D2	T8D7	T8MA	T8M6	
Communication speed		156 K/62	5 K/2.5 M/5 M	/10 Mbps	125	K/250 K/500 k	(bps	167 I	Kbps	
Power supply	Unit side	24 VDC ±10%				24 VDC ±10%		30 VD	C ±2%	
voltage	Valve side				24	VDC +10%, -	5%	24 VDC +	10%, -5%	
	Communication side					11 to 25 VDC		_		
Current	Unit side	60 mA or less	0 mA or less 100 mA or less 75 mA or less *2 70 mA or less 90 mA or less 80 mA or less *2					60 mA or less *2 90 mA or less *2		
consumption	Valve side	15 mA or les	s (when all poi	nts are OFF)	15 mA or less (when all points are OFF)			15 mA or less (when all points are OFF)		
	Communication side		_		50 mA or less			_		
Valve output	t		NPN		NPN			NPN		
Input/output	point count	0/16	0/32	16/16	0/16	0/32	16/16	4/4 *3	8/8 *4	
Occupied No.		1 station			2 bytes	4 bytes	4 bytes	1 station	2 station	
Operation di	isplay	Power supply/communication status/valve power supply			Communication status/valve power supply			Communication status/valve power supply		
Others					For EDS file, contact CKD. *5			Profile: 7, F *6		

	Network name	Compo	Bus/S			
Descriptions	Slave (adapter) unit model No.	T8C1	T8C6			
Communica	tion speed	93.75 K/750 Kbps				
Power supply	Unit side	24 VDC ±10% (commu	nication power supply)			
voltage	Valve side	24 VDC +10%, −5%				
ŭ	Communication side	_				
Current	Unit side	50 mA or less *2 (communication power supply)				
consumption	Valve side	15 mA or less (when all points are OFF)				
	Communication side	_	-			
Valve output	t	NPN				
Input/output	point count	0/16	8/8			
Occupied No	0.					
Operation di	splay	Power supply/communication status/valve power supply				
Others		_				

- *1: Compatible with DeviceNet compliant networks (DLNK, etc.) as well.
- *2: If the feed power supply of the input blocks also serves as the unit power supply, use the formula below for calculation.
 - (unit current consumption) = * + (35 mA × number of input blocks) + (total internal current consumption of connected sensors)
 - *T8G7: 60 mA, T8D7: 80 mA, T8MA: 60 mA, T8M6: 90 mA, T8C6: 50 mA

Note that the sensors should be selected so that the unit current consumption is 600 mA or less for T8G7 and T8D7 and 250 mA or less for T8MA, T8M6 and T8C6.

- *3: Outputs of the slave unit with 4 inputs/4 outputs (T8MA) are all dedicated for valves.
- *4: The slave unit with 8 inputs/8 outputs (T8M6) requires two addresses. Therefore, the automatic address setting cannot be used.
- *5: EDS file: A text file of parameters for communication with various companies' master units
- *6: Profile: Definition of meanings of I/O data and parameters of the slave unit for communication with the master unit. Defined in the AS-i specifications sheet.

I/O block specifications

Input block

Fluid control

removing filter

Electric actuator

Model No. Descriptions	NW4GB2-	NW4GB2- IN-N-B	NW4GB2- IN-P-K	NW4GB2- IN-P-B					
· -	IN-N-K			IN-P-b					
No. of inputs		4 p	oint						
Rated input voltage		24 \	VDC						
Rated input current	7 mA								
ON voltage	15 VDC or more (betwee	en input terminals and V)	15 VDC or more (between	en input terminals and G)					
OFF voltage/OFF current	5 VDC or less (between input	terminal and V)/1.5 mA or less	5 VDC or less (between input	terminal and G)/1.5 mA or less					
Input format	Sink	type	Source type						
Supply power	Common with unit power supply	Externally supplied power	Common with unit power supply	Externally supplied power					
Operation display Power supply/input status									

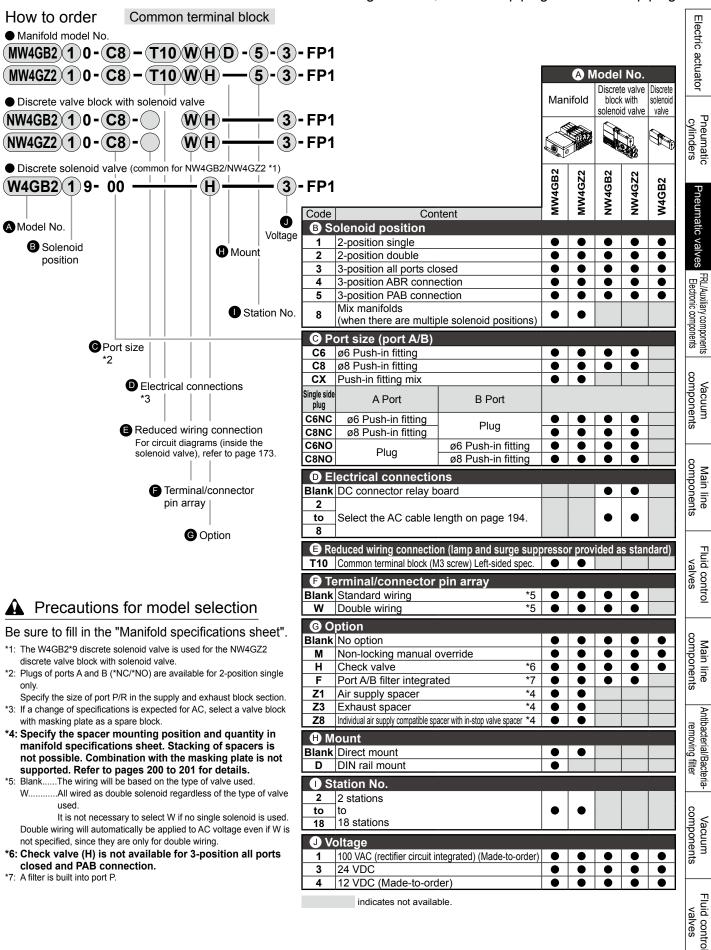
- *1: Refer to page 199 for model No.
- Output block

Model No. Descriptions	NW4GB2-OUT-N-B	NW4GB2-OUT-P-B						
Output points	4 p	oint						
Rated voltage	24 VDC							
Max. load current	1 A/1 point (3 A/common)							
Residual voltage	1.5 V	or less						
Output format	Sink type	Source type						
Protection circuit	Overcurrent protection/rev	erse connection protection						
Fuse	Power supply for external load: 2	Power supply for external load: 24 VDC and 5 A (can be replaced)						
Operation display	Power supply	/output status						

^{*1:} Refer to page 199 for model No.

MW4GB2-T10-FP1 Series

Reduced wiring manifold; base side piping/base bottom piping



MW4G^B_z2-T7/T8-FP1 Series

Electric actuator

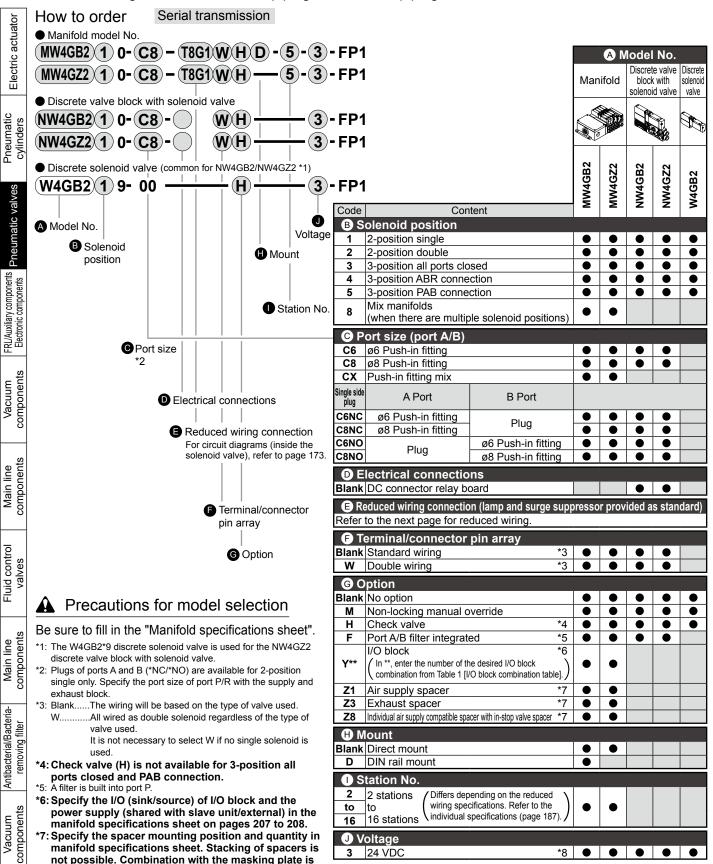
Pneumatic

Auxiliary components

Fluid control

Antibacterial/Bacteria-

Fluid control valves Reduced wiring manifold; base side piping/base bottom piping



indicates not available

not supported. Refer to pages 200 to 201 for details.

*8: Serial transmission is not available with 100 VAC and 12 VDC.

MW4G Z2-T7/T8-FP1 series Reduced wiring manifold; base side piping/base bottom piping

Electric actuator

Pneumatic valves FRL/Auxiliary components Electronic components

Main line components

Fluid control valves

Main line components

Antibacterial/Bacteria-

removing filter

Vacuum components

Fluid control valves

[Reduced wiring list]

A Model No.								
Man	ifold	block	e valve with d valve	Discrete solenoid valve				
MW4GB2	MW4GB2		NW4GZ2	W4GB2				

	d wiring (lamp ar	nd surge suppressor provided	as	stan	dard)	
T7EC1]	16-point output (NPN valve output)	•	•			
T7ECP1]	16-point output (PNP valve output)	•	•			
T7EC2	Thin type	32-point output (NPN valve output)	•	•			
T7ECP2	EtherCAT	32-point output (PNP valve output)	•	•			
T7ECB7]	16/16-point I/O (NPN valve output)	•	•			
T7ECPB7		16/16-point I/O (PNP valve output)	•	•			
T7EN1		16-point output (NPN valve output)	•	•			
T7ENP1]	16-point output (PNP valve output)	•	•			
T7EN2	Thin type	32-point output (NPN valve output)	•	•			
T7ENP2	EtherNet/IP	32-point output (PNP valve output)	•	•			
T7ENB7]	16/16-point I/O (NPN valve output)	•	•			
T7ENBP7		16/16-point I/O (PNP valve output)	•	•			
T7EB1]	16-point output (NPN valve output)	•	•			
T7EBP1]	16-point output (PNP valve output)	•	•			
T7EB2	Thin type	32-point output (NPN valve output)	•	•			
T7EBP2	CC-Link IEF Basic	32-point output (PNP valve output)	•	•			
T7EBB7]	16/16-point I/O (NPN valve output)	•	•			
T7EBPB7		16/16-point I/O (PNP valve output)	•	•			
T7EP1		16-point output (NPN valve output)	•	•			
T7EPP1]	16-point output (PNP valve output)	•	•			
T7EP2	Thin type	32-point output (NPN valve output)	•	•			
T7EPP2	PROFINET	32-point output (PNP valve output)	•	•			
T7EPB7]	16/16-point I/O (NPN valve output)	•	•			
T7EPPB7		16/16-point I/O (PNP valve output)	•	•			
T8G1		16 point output	•	•			
T8G2	CC-Link	32 point output	•	•			
T8G7		16 point input/16 point output	•	•			
T8C1	CompoBus/S	16 point output	•	•			
T8C6	Compobus/S	8 point input/8 point output	•	•			
T8D1]	16 point output	•	•			
T8D2	DeviceNet	32 point output	•	•			
T8D7		16 point input/16 point output	•	•			
T8MA	-AS-i	4 point input/4 point output	•	•			
T8M6		8 point input/8 point output	•	•			
I BIVID	<u> </u>	o point inpul/8 point output		_ •			

Table 1 [I/O block combination table]

Code	Layo	Layout of I/O blocks and station No.								
Y10						IN				
Y20					IN	IN				
Y30				IN	IN	IN	e B			
Y40			IN	IN	IN	IN	.S			
Y11					OUT	IN	Electrical block side			
Y21				OUT	IN	IN	ᅙ			
Y31			OUT	IN	IN	IN	<u>8</u> .			
Y41		OUT	IN	IN	IN	IN	ect			
Y12				OUT	OUT	IN	i iii			
Y22			OUT	OUT	IN	IN				
Y32		OUT	OUT	IN	IN	IN				
Y42	OUT	OUT	IN	IN	IN	IN				

How to read the table
Example) Y11 is a combination of one input
block (4 points) and one output block
(4 points).

T8

10									
Code	Layout of I/O blocks and station No.								
Y10						IN			
Y20					IN	IN			
Y30				IN	IN	IN			
Y40			IN	IN	IN	IN			
Y01						OUT	qe		
Y02					OUT	OUT	Si		
Y03				OUT	OUT	OUT	Electrical block side		
Y04			OUT	OUT	OUT	OUT	q		
Y11					OUT	IN	rica		
Y21				OUT	IN	IN	ect		
Y31			OUT	IN	IN	IN	並		
Y41		OUT	IN	IN	IN	IN			
Y12				OUT	OUT	IN			
Y22			OUT	OUT	IN	IN			
Y32		OUT	OUT	IN	IN	IN			
Y42	OUT	OUT	IN	IN	IN	IN			

^{*2:} For details, refer to "Input/output point count corresponding to wiring method T8* I/O No." in "Pneumatic Valves (CB-023SA)".

Block manifold; piping section

Electric actuator

natic | Ele

Pneumatic cylinders

ents Pneumatic valv

e Vacuum FRL/Auxiliary components nts components Electronic components

Fluid control Main line valves components

Antibacterial/Bacteria- Main line removing filter components

components

valves

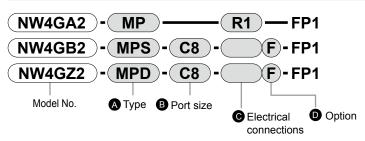
Piping

A. Discrete valve block with solenoid valve *Two tie rods are included when it is ordered for expansion.

Block assembled from solenoid valve body and valve block (split resin base).

For selection guide, refer to pages 178, 180, 184 to 186 and 190 to 192.

B. Discrete valve block with masking plate * Two tie rods are included when it is ordered for expansion.



A Type (*1)		ВР	B Port size (*2)		ectrical connections (*3)	① Option	
MP	Individual wiring	C6	ø6 Push-in fitting	Blank	DC connector relay board specifications	Blank	No option
MPS	Standard wiring (single)	C8	ø8 Push-in fitting	R1	I/O connector (M12) (500 mm)	F	Port A/B filter built in
MPD	Double wiring (single),	C6NC	Port A/ø6 push-in fitting, port B/plug				
	double/3-position	C6NO	Port A/plug, port B/ø6 push-in fitting	! 2 to X	Select the AC cable length on page 943.		
*1: Select MPD for AC voltage since the socket assembly is wired as double solenoid.		C8NC	Port A/ø8 push-in fitting, port B/plug		page 6 to.		
		C8NO	Port A/plug, port B/ø8 push-in fitting	g *3: Keep the code blank for DC and specify the cable length of socket asse for AC. If specified in the manifold specifications sheet, the cable length			
			1 0/1 1				

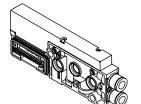
for AC. If specified in the manifold specifications sheet, the cable length can be omitted.

The socket assembly for AC is wired as double solenoid.

[for DC]

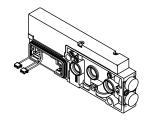
NW4GA2-MPS-FP1

NW4GB2-MPS-C8-FP1

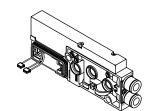


[for AC]

NW4GA2-MPD-2-FP1



NW4GB2-MPD-C8-2-FP1



Main line components

Fluid control valves

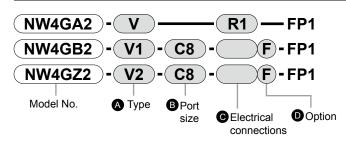
components

Antibacterial/Bacteria-

Fluid control

Piping

C. Discrete valve block (discrete only) * Two tie rods are included when it is ordered for expansion.

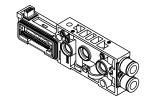


A Type (*1)		ВР	ort size (*2)	© Electrical connections (*3)		D Option	
٧	Individual wiring	C6	ø6 Push-in fitting	Blank	DC connector relay board specifications	Blank	No option
V1	Standard wiring (single)	C8	ø8 Push-in fitting	R1	I/O connector (M12) (500 mm)	F	Port A/B filter built in
V2	Double wiring (single), double/3-position	C6NC	Port A/ø6 push-in fitting, port B/plug	to	Select the AC cable length in the table below.		
		C6NO	Port A/plug, port B/ø6 push-in fitting				
*1: Select V2 for AC voltage since the socket assembly is wired as double solenoid.		C8NC	Port A/ø8 push-in fitting, port B/plug		and table below		
		C8NO	Port A/plug, port B/ø8 push-in fitting				
uou	double solenoid.		for AC.				

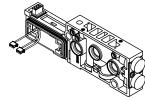
The socket assembly for AC is wired as double solenoid.

[for DC] NW4GA2-V1-FP1

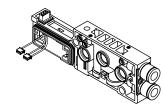
NW4GB2-V2-C8-FP1



[for AC] NW4GA2-V2-2-FP1



NW4GB2-V2-C8-2-FP1



AC valve block cable length

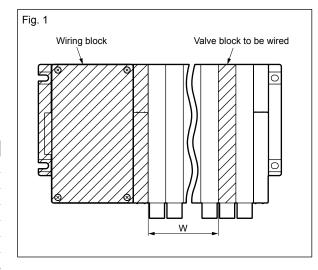
When the total width of supply and exhaust blocks and partition blocks between the valve block to be connected and the wiring block is 63 mm and over (e.g., two supply and exhaust blocks + two partition blocks), calculate the width (W) and select the longer lead wire length closest to the width value.

 $W = (23.5 \times n) + (18 \times m) + (13.5 \times I) + 230$

n/m/l: No. of valve blocks/supply and exhaust blocks/partition blocks

Consult with CKD if W exceeds 610 mm.

Selection No.	Cable length		
2	1- to 2-station socket assembly (290 mm cable), AC		
3 3- to 4-station socket assembly (330 mm cable), AC			
4 5- to 6-station socket assembly (380 mm cable), AC			
5	7- to 8-station socket assembly (430 mm cable), AC		
6 9- to 10-station socket assembly (480 mm cable), AC			
7	11- to 14-station socket assembly (530 mm cable), AC		
8	15- to 18-station socket assembly (610 mm cable), AC		



Block manifold; piping section

Electric actuator

Pneumatic cylinders

FRL/Auxiliary components Electronic components components Vacuum

> components Main line

Fluid control components Main line Antibacterial/Bacteria-

removing filter

components

valves

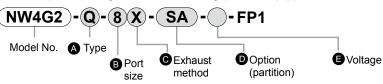
Piping

As problems may occur depending on the configuration, make selections with a sufficient understanding of the features of each block.

D. Supply and exhaust block * Two tie rods are included when it is ordered for expansion.

The supply and exhaust block can be installed at any position adjacent to the valve block.

As there is no set number of units, install two or more units when necessary to increase the flow rate for supply and exhaust. In order to prevent foreign matter from entering, port P is equipped with a filter.



A Type (*1)		B Port size (port P/R) (*2) C Exhaust method (*3)		D 0 _l	ption (partition) (*4)	€ Voltage			
Q	Internal pilot	8	ø8 Push-in fitting	Blank	Common exhaust	Blank	Without partition	Blank	DC connector relay board
QZ	Multi-pressure circuit	10	ø10 Push-in fitting	Х	Atmospheric release	SA	P/R/PA/PR blocked	AC	Without AC connector relay board
*1: O7 cannot be used as an		*2· Δ f	ilter for preventing entry	*3. Th	a atmosphere release	S	P/R blocked PA/PR through	*5: So	lect "AC" for individual

- independent part. Be sure to use with another type (Q).
- of foreign matter is incorporated in P port.
- (X) discharges exhaust from the end block. Select the atmosphere release end block (EX) for X.
- *4: Specify when integrating partition into the supply and exhaust block. Width of the manifold with multi-pressure can be reduced. In the manifold specifications

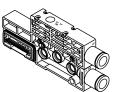
and exhaust block is on the

does not need a DC connector relay PCB. "Blank" is also allowed. sheet, specify the mounting position so that the partition is on the left and the supply

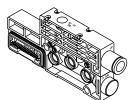
wiring manifold since it

[for DC]

NW4G2-Q-10-FP1



NW4G2-Q-10X-FP1



* For circuit diagrams, refer to page 173.

E. End block

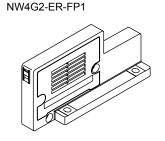
An exhaust muffler is built into the atmosphere release type.

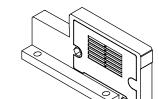


A Type (*1)						
EL	Common exhaust Left					
ER	Common exhaust Right					
EXL	Atmospheric pressure release Left					
EXR	Atmospheric pressure release Right					

^{*1:} An exhaust muffler is built into the

atmosphere release (EX).



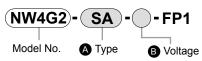


NW4G2-EL-FP1

F. Partition block

[For DC]

* Two tie rods are included when it is ordered for expansion.

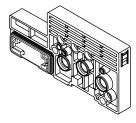


А Ту	pe (*1)	B Voltage		
SA	P/R/PA/PR blocked	Blank	DC connector relay board	
S	P/R blocked, PA/PR through	AC	Without AC connector relay board	

- *1: PA and PR paths of pilot pressure for blocks other than SA are not blocked. Take note when configuring the system.
- *2: Select "AC" for individual wiring manifold since it does not need a DC connector relay PCB. "Blank" is also allowed.



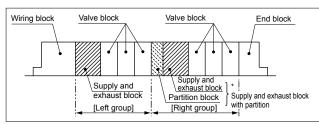




Block manifold; piping section

Piping

Notes on configuring manifold



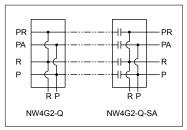
- · The selected supply and exhaust block determines internal or external pilot operated. Valve block is the same for both types.
- The multi pressure type can be included when a partition block is combined with the supply and exhaust block.
- · Using a supply and exhaust block with partition that combines the supply and exhaust function and partition in a single block can reduce the manifold width.
- · Mount the supply and exhaust block with partition so that the partition is on the left and the supply and exhaust part is on the right with the piping port being on the near side.

System configurations by block combination

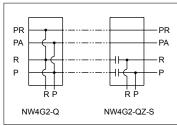
- · Combine the partition block and supply and exhaust block or use the supply and exhaust block with partition to configure the desired pneumatic system. As some combinations may cause malfunction depending on the configuration, check the function of each block before actual implementation.
- Use the configuration examples below as a guide. (Supply and exhaust block with partition is used in the examples.)

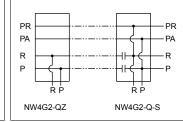
Configuration for internal pilot (circuit code)

1) Two supply pressures within the working pressure (0.2 to 0.7 MPa)



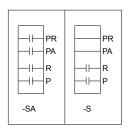
② Supply pressure within the working pressure (0.2 to 0.7 MPa) and supply pressure of low pressure (0.2 MPa or less) or low vacuum





- QZ side is the low pressure or low vacuum circuit side.
- * In the low vacuum circuit, port R is the vacuum side and port P is open to atmosphere or pressurized

Partition specifications (partition block)



Electric actuator

Pneumatic cylinders

components

Block manifold; piping section

Electric actuator

Pneumatic cylinders

FRL/Auxiliary components Electronic components components Vacuum

Main line components Fluid control valves

components Main line Antibacterial/Bacteriaremoving filter

components Vacuum Fluid control valves

Piping

A A/B port

Port size

ø6 Push-in fitting

G. Manifold base

Manifold base alone may be ordered. However, specifications are limited.

Model No.

B P/R port

Port size

ø8 Push-in fitting

(The manifold specifications sheet is not necessary when ordering only the manifold base.)

(MW4GA2)· -10 (U)-(R1)Body piping:

Base side piping: (MW4GB2)-(C8)-10 (U)-(T10)(W)

Base bottom piping: (MW4GZ2 (C8)-(10)

A A/B Port

Port size

BP/R Port P/R Port Port size

© Exhaust method

Common exhaust

Exhaust

method

Air supply method connector and exhaust position

Air supply and exhaust position

G Option ■ Station
■ Voltage **■** Wiring method *2

(including standard lamp and surge suppressor)

T10

T7EC1

Individual wiring I/O cable outlet

Common terminal block (M3 screw) Left-sided spec.

16-point output (NPN)

F Terminal/connector pin array

Double wiring

w

C8 ø8 Push-in fitting 10 ø10 Push-in fitting X Atmospheric release U Right *1 In the case of X, the end block is an atmosphere release

Blank

(EX).

D P/R port

Left

G 0	ption	H Station No.		● Voltage		
	*3		*5			
Blank	No option	2	2 stations	1	100 VAC (rectifier circuit integrated) (Made-to-order)	
F	Port A/B filter integrated *4	to	to	3	24 VDC	
3: I/O block cannot be		16	16 stations	4	12 VDC (Made-to-order)	

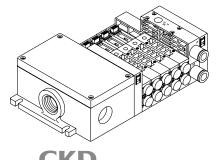
selected. *4: A filter is built into port P.

*5: Differs depending on the reduced wiring specifications. Note that double wiring is applied to those other than the R1 wiring method. Refer to (pages 177, 179, 181 and 187).

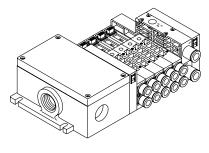
		To point output (Till Tt)
T7ECP1	Serial	16-point output (PNP)
T7EC2	transmission	32-point output (NPN)
T7ECP2	thin	32-point output (PNP)
T7ECB7	EtherCAT	16/16 I/O point (NPN)
T7ECPB7		16/16 I/O point (PNP)
T7EN1		16-point output (NPN)
T7ENP1	Serial	16-point output (PNP)
T7EN2	transmission	32-point output (NPN)
T7ENP2	thin	32-point output (PNP)
T7ENB7	EtherNet/IP	16/16 I/O point (NPN)
T7ENPB7]	16/16 I/O point (PNP)
T7EB1		16-point output (NPN)
T7EBP1	Serial	16-point output (PNP)
T7EB2	transmission thin	32-point output (NPN)
T7EBP2	CC-Link IEF	32-point output (PNP)
T7EBB7	Basic	16-point/16-point I/O point (NPN)
T7EBPB7	Baoio	16-point/16-point I/O point (PNP)
T7EP1		16-point output (NPN)
T7EPP1	Serial	16-point output (PNP)
T7EP2	transmission	32-point output (NPN)
T7EPP2	thin	32-point output (PNP)
T7EPB7	PROFINET	16-point/16-point I/O point (NPN)
T7EPPB7		16-point/16-point I/O point (PNP)
T8G1	Serial	16 point output
T8G2	transmission	32 point output
T8G7	CC-Link	16 point input/16 point output
T8C1	Serial transmission	16 point output
T8C6	CompoBus/S	8 point input/8 point output
T8D1	Serial	16 point output
T8D2	transmission	32 point output
T8D7	DeviceNet	16 point input/16 point output
T8MA	Serial transmission	4 point input/4 point output
T8M6	AS-i	8 point input/8 point output

*2: 100 VAC is only for common terminal block. Serial transmission is not available with 100 VAC and 12 VDC.

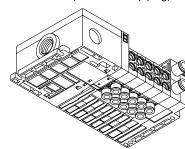
MW4GA2 (Body piping)



MW4GB2 (Base side piping)



MW4GZ2 (Base bottom piping)



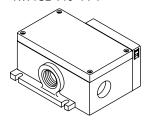
Block manifold; wiring section

Wiring

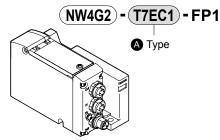
(Wiring block) * Wiring block cannot be ordered as a separate item.

H. Common terminal box (T10)

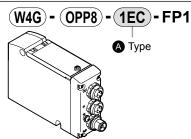
NW4G2-T10*-FP1



L. Serial transmission block
(When ordered as manifold component and combined with I/O block, an end block is mounted on the left of the I/O block as standard.)

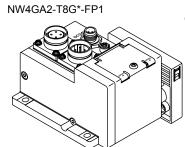


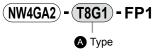
	*
A Type	
T7EC1	16-point output (NPN valve output)
T7ECP1	16-point output (PNP valve output)
T7EC2	32-point output (NPN valve output)
T7ECP2	32-point output (PNP valve output)
T7ECB7	16-point I/O (NPN valve output)
T7ECPB7	16-point I/O (PNP valve output)
T7EN1	16-point output (NPN valve output)
T7ENP1	16-point output (PNP valve output)
T7EN2	32-point output (NPN valve output)
T7ENP2	32-point output (PNP valve output)
T7ENB7	16-point I/O (NPN valve output)
T7ENPB7	16-point I/O (PNP valve output)
T7EB1	16-point output (NPN valve output)
T7EBP1	16-point output (PNP valve output)
T7EB2	32-point output (NPN valve output)
T7EBP2	32-point output (PNP valve output)
T7EBB7	16-point I/O (NPN valve output)
T7EBPB7	16-point I/O (PNP valve output)
T7EP1	16-point output (NPN valve output)
T7EPP1	16-point output (PNP valve output)
T7EP2	32-point output (NPN valve output)
T7EPP2	32-point output (PNP valve output)
T7EPB7	16-point I/O (NPN valve output)
T7EPPB7	16-point I/O (PNP valve output)



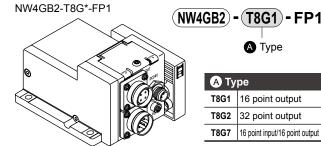
A Type	1	
1EC	T7EC1	16-point output (NPN valve output)
1EC-P	T7ECP1	16-point output (PNP valve output)
2EC	T7EC2	32-point output (NPN valve output)
2EC-P	T7ECP2	32-point output (PNP valve output)
7EC-B	T7ECB7	16-point I/O (NPN valve output)
7EC-PB	T7ECPB7	16-point I/O (PNP valve output)
1EN	T7EN1	16-point output (NPN valve output)
1EN-P	T7ENP1	16-point output (PNP valve output)
2EN	T7EN2	32-point output (NPN valve output)
2EN-P	T7ENP2	32-point output (PNP valve output)
7EN-B	T7ENB7	16-point I/O (NPN valve output)
7EN-PB	T7ENPB7	16-point I/O (PNP valve output)
1EB	T7EB1	16-point output (NPN valve output)
1EB-P	T7EBP1	16-point output (PNP valve output)
2EB	T7EB2	32-point output (NPN valve output)
2EB-P	T7EBP2	32-point output (PNP valve output)
7EB-B	T7EBB7	16-point I/O (NPN valve output)
7EB-PB	T7EBPB7	16-point I/O (PNP valve output)
1EP	T7EP1	16-point output (NPN valve output)
1EP-P	T7EPP1	16-point output (PNP valve output)
2EP	T7EP2	32-point output (NPN valve output)
2EP-P	T7EPP2	32-point output (PNP valve output)
7EP-B	T7EPB7	16-point I/O (NPN valve output)
7EP-PB	T7EPPB7	16-point I/O (PNP valve output)

CC-Link (T8G*)





А Ту	
	16 point output
T8G2	32 point output
T8G7	16 point input/16 point outpu



NW4GB2) - T8G1) - FP1				
		А Туре		
	А Ту	pe		
	T8G1	16 point output		
	T8G2	32 point output		

Electric actuator

Block manifold; related products



Pneumatic

FRL/Auxiliary components Electronic components

Main line components

Fluid control

valves

components Main line

Antibacterial/Bacteria-

removing filter

components

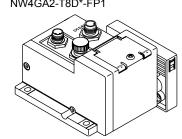
Vacuum

Fluid control

valves

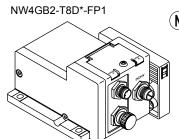
cylinders

DeviceNet (T8D*) NW4GA2-T8D*-FP1



(NW4GA2) - (T8D1) - FP1 A Type **A** Type T8D1 16 point output

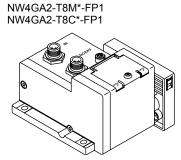
TRD2 32 point output 16 point input/16 point output T8D7



(NW4GB2) - (T8D1) - FP1 A Type

A Ty	pe		
T8D1	16 point output		
T8D2	32 point output		
T8D7	16 point input/16 point output		

- AS-i (T8M*)
- CompoBus/S (T8C*)



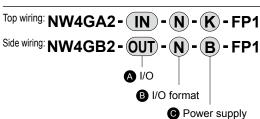
(NW4GA2) - (T8M6) - FP1 A Type

А Ту	pe
T8MA	4 point input/4 point output
T8M6	8 point input/8 point output
T8C1	0 point input/16 point output
T8C6	8 point input/8 point output

NW4GB2-T8M*-FP1 NW4GB2-T8C*-FP1 (NW4GB2) - (T8M6) - FP1 A Type A Type T8MA

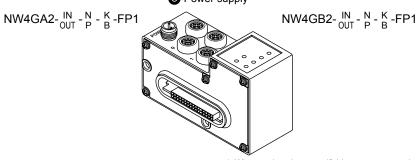
4 point input/4 point output T8M6 8 point input/8 point output T8C1 0 point input/16 point output T8C6 8 point input/8 point output

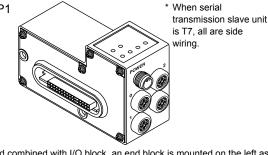
M. I/O block * Two tie rods are included when it is ordered for expansion.



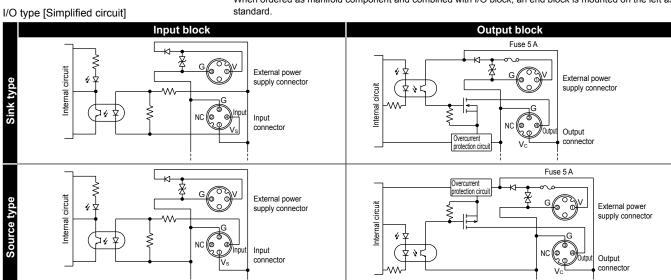
A 1/0	0	B I/	O format	G P	ower supply
IN	Input	N	Sink	K	Shared with serial transmission slave unit *1, *2
OUT	Output	Р	Source	В	External power supply

- *1 Output block can be used with external power supply (B) only.
- *2 A waterproof cap is included as standard to the power supply connector of the power supply shared (K) with the serial transmission slave unit.





* When ordered as manifold component and combined with I/O block, an end block is mounted on the left as standard.

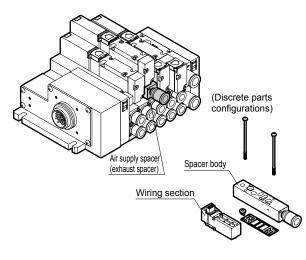


^{*} For the procedure for wiring connection, refer to "Pneumatic Valves (CB-023SA)".

removing filter

Related products

Air supply spacer/exhaust spacer



Specifications

Air supply spacer

Model No.	P→	A/B	A/B	→R	Weight
Model No.	C[dm³/(s·bar)]	b	C[dm³/(s·bar)]	b	g
W4G2-P-*-*-FP1	1.8	0.20	1.6	0.15	60

Note: Formula to calculate sonic conductance C from effective cross-sectional area S is S ≈ 5.0 × C.

Exhaust spacer

Model No.	P→	A/B	A/B	→R	Weight
Model No.	C[dm³/(s·bar)]	b	C[dm³/(s·bar)]	b	g
W4G2-R-*-*-FP1	1.9	0.20	1.5	0.21	60

Note: Formula to calculate sonic conductance C from effective cross-sectional area S is

Discrete air supply spacer model No.



A Precautions for model No. selection

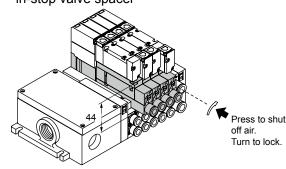
A Port size

- *1:Specify the positions and quantity of spacers for manifold in the manifold specifications sheet (pages 205 to 208).
- *2: Stacking of spacers is not possible.
- *3: A spacer cannot be combined with a masking plate.

_	A Port	size	
		Bore size	Content
	Blank	Rc1/8	
	GWS6	ø6	With GWS6-6-S-FP1
	GWS8	ø8	With GWS8-6-S-FP1
	SLW	With silencer (SLW-6S)

Block manifold; related products

 Individual air supply compatible spacer with in-stop valve spacer



Specifications

Descriptions		W4G2-PIS
Working fluid		Compressed air
Max. working pressure	MPa	0.7
Min. working pressure	MPa	0.2
Proof pressure	MPa	1.05
Flow characteristic C dm	³/(s·bar)	1.1
Ambient temperature	°C	-5 to 55 (no freezing)
Working fluid temperature	°C	5 to 55
Lubrication		Not required
Atmosphere		Cannot be used in corrosive gas environment.
Weight	g	115.4

JIS symbol

Electric actuator

Pneumatic cylinders

FRL/Auxiliary components Electronic components

components Vacuum

Main line components

Fluid control

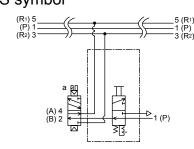
components Main line

Antibacterial/Bacteria-

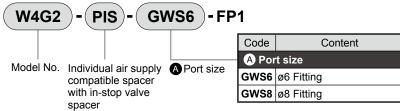
removing filter

components Vacuum

Fluid control valves



How to order discrete units



Precautions for model No. selection

- *1: Specify the spacer positions in the manifold specifications sheet.
- *2: Stacking of spacers is not possible.
- *3: A spacer cannot be combined with a masking plate.

Related products

Tie rod, silencer, blanking plug, masking plate kit, DIN rail and DIN rail mounting bracket kit

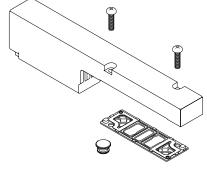






А Ту	ре
V1	For 1-station valve block (2)
Q	For supply and exhaust block (2)
s	For partition block (2)
М	For I/O block (2)

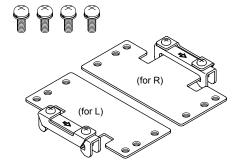
Masking plate kit W4G2-MP-FP1



* Kit includes a masking plate, gasket, PR plug and two mounting screws

DIN rail mounting bracket kit

W4G2-D-FP1



* One DIN rail mounting bracket kit set is for one manifold. (A kit includes two mounting brackets and four mounting screws.)

		F # 1					77	, ,	
Electric actuator	Pneumatic	FRL/Auxiliary components	Vacuum	Main line	Fluid control	Main line	Antibacterial/Bacteria-	Vacuum	Fluid control
בופטווט מטוממוטו	cylinders	Electronic components	components	components	valves	components	removing filter	components	valves

How to fill out manifold specifications sheet

Manifold model No. (example)

Electric actuator

Pneumatic cylinders

Auxiliary components FRL/Auxiliary component Electronic components

components

Vacuum

Main line components

Fluid control

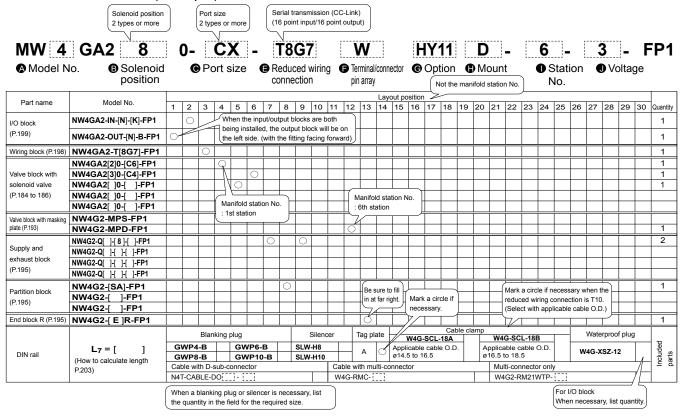
components

Antibacterial/Bacteriaremoving filter

components Vacuum

Fluid control

valves



Preparing the manifold specifications

- Complete from the left end, with the piping port facing forward, regardless of the electrical block method.
- (Include the model No. of the block selected from block configurations (pages 193 to 201) and instructions for the arrangement thereof.)
- Indicate the total number of blocks designated in the required quantity on the right of the table.
- Mark a circle for optional parts that are required.
- Indicate the mounting rail length. (Fill in only when a length other than the standard length is required.)
- As there are manifold specifications sheets for each of the various series, fill in the form for the corresponding specifications.

MW4GA/B/Z2 (individual wiring body piping, base side piping, base bottom piping)........Page 205 MW4GA2 (reduced wiring body piping)..... .Page 206 MW4GB2 (reduced wiring base side piping)Page 207

* DIN rail length (L7)

- (1) Determine the rail length using the calculation method shown below. The obtained length is standard.
- For standard length, length (L₇) is not required on the specifications sheet. Indicate the length when using a non-standard length.

● How to calculate length of DIN rail

Partition Wiring block (including end I/O block Quantity block) + (45 × :....) $\begin{array}{c} \text{Valve} & \text{Supply and} \\ \text{block} & \text{Quantity} \\ \text{Manifold length} \; (L_{\text{\tiny B}}) = (16 \times \underbrace{||...||}) + (18 \times \underbrace{||...||}) + (13.5 \times \underbrace{||...||}) + [1.5 \times \underbrace{||...||}) + [1.5 \times \underbrace{||...||}) + [1.5 \times \underbrace{||...||}) + [1.5 \times \underbrace{||...||}] \\ \end{array}$ DIN rail length $(L_7) = L_7' \times 12.5$ ---- Select from the right table $L_7': \frac{L_6+40}{L_7} \rightarrow \text{round up to integer}$

12.5 Rail mounting pitch (L₈) = $L_7 - 12.5$

DIN rail length quick reference table

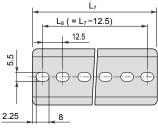
Wiring	block	dime	nsions	table

Model No.		Dimensions (mm)
	T10	175.5
Wiring block for	T20	110
reduced wiring	T30/5*	106
	T8*	148.5

* The end block is included in the wiring block.

- DIN Tall left	jui q	uick	ICICI	CIIC	tau	IC																							
	405	135 Over	147.5	160	172.5	185	197.5	210	222.5	235	247.5	260				310	322.5	335	347.5	360	372.5	385	397.5	410	422.5	435	447.5	460	472.5
Manifold length	135 or	to	to		to	to		to	to	to		to					to		to	to		to		to		to	to	to	
ao.a longar	less	or less	160	172.5	185	197.5	210	222.5	235	247.5	260	272.5	285	297.5	310	322.5	335	347.5	360	372.5	385	397.5	410	422.5	435	447.5	460	472.5	485
L ₇ Rail length	175	187.5	200	212.5	225	237.5	250	262.5	275	287.5	300	312.5	325	337.5	350	362.5	375	387.5	400	412.5	425	437.5	450	462.5	475	487.5	500	512.5	525
Pitch L₃	162.5	175	187.5	200	212.5	225	237.5	250	262.5	275	287.5	300	312.5	325	337.5	350	362.5	375	387.5	400	412.5	425	437.5	450	462.5	475	487.5	500	512.5

^{*1:} When L₆ exceeds the range shown in this table, calculate according to "How to calculate DIN rail length".



How to fill out the wiring specifications sheet (AC specifications only)

- * This is not required with standard wiring/double wiring.

 (With DC specifications, only standard wiring and double wiring will be supported)
- Wiring specifications sheet (example)
 - * The following example has been filled out in accordance with the manifold specifications sheet on page 203.

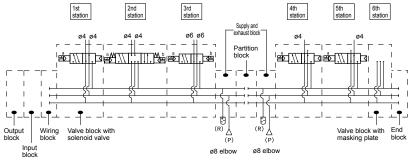
Connector pin No.												Valve	No.											
T10	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	а																							
2																								
3			а																					
4			b																					
5		а																						
6		b																						
7				а																				
8																								
9					а																			
10																								
11						а																		
12						b																		
13																								
14																								
15																								
16																								
17																								
18																								
COM																								
СОМ																								

Notes on wiring specifications

- (1) Fill in and attach to the manifold specifications sheet for anything other than the standard wiring or double wiring. Consult with CKD, as products will be made to order in this case.
- (2) The valve No. is determined by only counting the valve blocks in order from the left with the ports facing forward. Note that this differs from the installation position numbers.
- (3) The valve block with masking plate is wired in advance.
 - "-MPS" will be wired on only the a side while "-MPD" will be wired on the a and b sides.
- (4) It is not possible to assemble a double solenoid or 3-position solenoid valve to "-MPS". Order valve block with solenoid valve and carry out expansion.
 - For the procedure for station expansion, refer to "Pneumatic Valves (CB-023SA)".
- (5) It is not possible to install spare wires for station expansion only in advance. Install a valve block with a masking plate.

Reference circuit diagram

The circuit diagram of the manifold model No. (example) on the previous page is as shown below.



- [_ _] indicates each block configuration.
- The manifold station numbers are set in order from the left with the piping port facing forward.
 (* The I/O blocks, wiring blocks, supply and exhaust blocks, partition block, and end block are not included in the manifold station No.)
- Select a model No. from the block configurations (pages 193 to 201) and individual wiring manifolds (pages 178 to 180), and reduced wiring manifolds (pages 184 to 185, 190 to 191).
- With piping port facing front, arrangement positions are set in order from the left.
- When the input block and output block are both being installed, the output block will be on the left side with the piping port facing forward.

Electric actuator

Pneumatic cylinders

Pneumatic valves

FRL/Auxiliary components Electronic components

Vacuum components

Main line components

Fluid control valves

Main line components

Antibacterial/Bacteriaremoving filter

Vacuum components

Fluid control valves

FP2

MW4G	A/B/Z2-FP1	(inc	Λib	/ic	du	al	W	/ir	in	g)	b	lo	C	k	m	ar	nif	ol	d	S	эe	Ci	fic	ca	ti	on	ıs	s	he	ei	t
Contact	•	Quantity set(s)								Delivery date							1							ate	iss	sue	d	1		1	
Slip No.									Or	der	No													Com	ıpaı	ny					
																							_	Con	tact						
Manifold m	nodel No.																						_	Orde	er N	lo.					
MW	G 2		0-	•					F	? 1]-							-	FI	P1			
	el No. B So	lenoid sition							W		g				n																
When filling	in this field, select the		el N	o. f	ron	n Bl	ock	СО	nfiç	gura	atio	ns	(pa	ge	s 19	93 t	o 2	01)	an	d p	age	es 1	78	to	180).					
I														Lay	out	pos	ition	1													
Part name	Model No.	1 2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	Qty.
Valve block with solenoid valve (P.178, P180)	NW4G 2 0FP1																														
	NW4G 2 1FP1																														
	NW4G 2 2FP1																														
	NW4G[]2[]0-[]-FP1																														
	NW4G 2 0FP1																														
	NW4G 2 0FP1																														
	NW3G 2 0FP1																														
	NW3G 2 0FP1																														
Valve block with masking plate (P.193)	NW4G 2-MP- R1-FP1																												П		
	NW4G 2-MPR1-FP1																														
	NW4G 2-MPR1-FP1																												П		
Supply and exhaust block (P.195)	NW4G2-QFP1																														
	NW4G2-QFP1																												H		
	NW4G2-QFP1																												H		
	NW4G2-QFP1																												H		
Various spacers (P.200, P.201)	Air supply spacer																														
	W4G2-PFP1 Exhaust spacer		-																										\vdash		
	W4G2-R-																														
	Individual air supply compatible spacer with in-stop valve spacer W4G2-PISFP1																														
Partition block	NW4G2-S -FP1																												П		
(P.195)	NW4G2-S -FP1																												П		
End block (P.195)	NW4G2-E L-FP1		Ĺ												İ														П		
	NW4G2-E R-FP1																												П		
DIN rail	L ₇ =		kina	ing plug								Silence									Ta	Tag plate (included)				Included					
	(How to calculate length P.203)	GWP	6-B				NP8	_		GV	VP1	10-B										SLW-H10					A or B				
				1		<u> </u>								1							L										

● Contact	A2-FP1 (red	Qu					et(s)					• [/									uec				/		Electric actuator	
Slip No.				-,			-(-)	<u> </u>		Or	der													C	om	par	ny						ator	
																								C	ont	act								
Manifold m	nodel No.																							<u>C</u>	rde	r N	0.						cylinders	Pneumatic
MW	GA2	0-															-							-	F	P	1						ders	natic
	el No. Solenoid position in this field, select the	siz	е	C	onne	ction	١		pin a	array	'										No.												Pneumatic valves	
Part name	in this held, select th		ouc	,1 14	0. 11	OII	1 01	OCIN		11116	juic	200	113 (_		pos			un	чρ	age	, ,	0-		100	·-						IIC Ve	
(Page)	Model No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	Qty.	alves.	
	NW4G[]2-IN-[]-[]-FP1																																Elec	2
(P.199)	NW4G[]2-OUT-[]-B-FP1																																tronic	uxilian
Wiring block (P.198)	NW4G[[]]2-T[[]]-FP1 (*	1)																															Electronic components	7 compone
Valve block	NW4GA2[]0-[]-FP1																																S	Str
with solenoid valve	NW4GA2[]0-[]-FP1																																8	_
(P.184 to 186)	NW4GA2[]0-[]-FP1																																components	Vacuum
	NW4GA2[_]0-[_]-FP1																																ents	∄│
	NW4GA2[]0-[]-FP1																																ı	4
	NW4GA2[_]0-[_]-FP1																																8	S
	NW4GA2[_]0-[_]-FP1																																components	ain II
	NW4GA2[]0-[]-FP1	<u> </u>	<u> </u>		Ш			Щ																					Щ		_		ents	ne
Valve block with masking plate (P.193)	NW4GA2-MPS-FP1 NW4GA2-MPD-FP1																																	
Supply and	NW4G2-Q[]-[]-FP1	T	T																														valves	Fluid control
exhaust block (P.195)	NW4G2-Q[]-[]-FP1																																/es	ontro
(******)	NW4G2-Q[]-[]-FP1																																ıL	의
	NW4G2-Q[]-[]-[]-FP1																																8	
Various spacers	Air supply spacer W4G2-P[]-[]-FP1																																components	Main lir
(P.200, P.201)	Exhaust spacer W4G2-RFP1																																nts	ดิ
	Individual air supply compatibl spacer with in-stop valve spac W4G2-PIS-[e er																															ਜ	Antiba
Partition block	NW4G2-:	<u> </u>			П																												removing filter	Antibacterial/Bacteria-
(P.195)	NW4G2-[FP1																																ilter	acteria-
End block (P.195)	NW4G2-R-FP	1																																
				Bla	ınkin	g pl	ug			s	ilen	cer	T	Ta pla	_	Ę	N4G	-SCL		_	ole d	lam W4	_	CL-1	3B		w	ater	proc	of plu	Jg	rts	components	Vacuum
DIN rail	L ₇ = [] (How to calculate lengt	h	WP6	_		GW	/P8-	В			W-H	-+		A		A	pplic	able	cabl	le		App O.D.	licab	le ca	ble		W	IG->	KSZ-	-12		Included parts	nts	٦
	P.203)	G	NP10		D-sı	ub-c	conn	ecto	 or	SLV	V-H1	_	ble v	vith	mul					اد.ر		_		conr		r or	l nly					nclud		爿
(*3)		N4	T-C	ABL	E-D	0]]-[G-R									_)- []					va	i'l d
	nodel No. for the wiring blo 2-T -FP1 Type of wi (Refer to p	ring bl	ock	ollov	ving r	man	ner.			M۷	nen t V4G * is r	B2- ₀	IN is	s sel	lecte	ed.	duce	d wi	ring	T7*,	the	I/O I	olock	(is s	ide v	wirin	g an	d					valves	Fluid control

Blank: when T10/T7* A: when T8*

ctuator	MW4G	B2-FP1 (red	uc	e	νk	vii	in	g)	b	lo	cl	ΚI	ma	an	ife	ol	d :	sp	Эе	ci	fic	ca	tic	on	S	sl	ne	et				
Electric actuator	● Contact	•	Qua	ntity	<u>/_</u>	8	et(s	s)_				•	Del	iver	y da	ate		/						<u> </u>	ate	iss	suec	t t	1	,	/	
Ш	Slip No.									Or	der	No).											C	om	par	ıy					
rs rs																								<u>C</u>	ont	tact						
Pneumatic cylinders	Manifold n	nodel No.																						<u>C</u>)rde	er N	0.					
Pne	MW4G	B2 0-		<u>}</u> -	•			[] []-	[-			_]-	•	F	21							
Pneumatic valves	♠ Mod	el No. Solenoid position	Port size			luced nection		g G		mina array		nect	or (9 0	ptio	n	() N	Λοι	ınt		Sta No		n (D V	olta	ge						
mati	When filling	in this field, select the	mo	del	No.	fro	n B	locl	cc	nfi	gura	atio	ns	(pa	ges	19	3 to	20	01)	an	d p	age	s 1	90	to 1	192						
neu															Lay	out	posi	tion														
ents ts	Part name (Page)	Model No.	1	2	3 4	1 5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28 2	9 30	0 O	itv
FRL/Auxiliary components Electronic components	(* 252)	NW4GB2-IN-[]-[]-FP1		+	+																					\dashv		П	+	+	+	
liary oo nic con	I/O block (P.199)	NW4GB2-OUT-[B-FP1			+																					\vdash			+	+	+	
IL/Auxi	Wiring block			\pm	<u> </u>														 							Щ	Ш		<u> </u>	\pm	\pm	_
	(P.198)	NW4G[[]2-T[[]-FP1 (*1)					<u> </u>																			Щ			\perp	$\frac{\perp}{+}$	<u> </u>	
um	Valve block with solenoid	NW4GB2[[]]0-[[]]-FP1		-	\perp			-																		\vdash	\square	\vdash	+	+	+	
Vacuum	valve (P 190 to 192)	NW4GB2[[]]0-[[]]-FP1		+	+			-																		Н	\square		+	+	+	_
_ cor	(1.190 to 192)	NW4GB2[[]]0-[[]]-FP1			-																					\vdash			+	+	+	
		NW4GB2[[]]0-[[]]-FP1		-	+																					\vdash	\square		+	+	+	
ne ents		NW4GB2[[]]0-[[]]-FP1		+	+			-																		\vdash			+	+	+	_
in lir Jone		NW4GB2[[]]0-[[]]-FP1			\perp			-																		\vdash	\square	\vdash	+	+	+	
Main line components		NW4GB2[[]]0-[[]]-FP1		-	+																					$\vdash \vdash$	\square	\vdash	+	+	+	
		NW4GB2[[]]0-[[]]-FP1		4	<u> </u>			<u> </u>																		\sqsubseteq	Щ	ᆜ	\dashv	\downarrow	\downarrow	
Ы	Valve block with masking plate	NW4GB2-MPSFP1																								Ш			\perp	\perp	\perp	
ontr	(P.193)	NW4GB2-MPD-FP1																										Ш	\perp		\perp	
Fluid control valves		NW4G2-Q[]-[]-FP1																														
正	exhaust block (P.195)	NW4G2-Q[]-[]-FP1																														
		NW4G2-Q[]-[]-FP1																													T	
ne ents		NW4G2-Q[]-[]-FP1																														
Main line components	Various spacers	Air supply spacer W4G2-P[-]-[-]-FP1																														
	(P.200, P.201)	Exhaust spacer W4G2-R-[
Antibacterial/Bacteria- removing filter		Individual air supply compatible spacer with in-stop valve spacer W4G2-PIS																														
terial/ ioving	Partition block	NW4G2FP1		Ť	Ť																					П	П		Ť	Ť	Ŧ	=
Antibac	(P.195)	NW4G2FP1																											\perp	\pm		
	End block (P.195)	NW4G2-R-FP1																														
Vacuum components		,		Е	Blank	ing į	olug			S	Silen	cer			ag ate	٧	V4G-	SCL		_	le c	lam W4	•	:L-18	ВВ	П	Wa	ater	proof	plug	+	parts
_ cor	DIN rail	L ₇ = [] (How to calculate length		P6-E	-	G	WP8	-В			W-H	-		В			pplica					Appl					W4	IG-X	(SZ-1	2	7	ed be
		P.203)	GWI Cab	P10-E		-sub	-con	nect	or	SL	N-H1	_	hle	with	mul		D. ø1			0.5	-).D. Мі				or or					- 5	Included
itrol	(*2)		N4T						Ο Ι						-[,,,,,,E	OlUI			Τ					NTP		1	-	\top	- ا	=
Fluid control valves		nodel No. for the wiring block							*2:	T7*	is no				ount.							'										
E		Type of wirin																														
		(Refer to page k: when T10/T7* when T8*	je 198	5)																												

FP2

Conta	ct		•	Qu	anti	ity		se	et(s))			(Deliv	ver	y da	ite		/						D	ate	iss	uec	i	/		1		Electric actuator
Slip No	ο.											Or	der	No.												С	om	par	ıy						. 📑
											_															<u>C</u>	ont	act							. cy
Manifo	old mo	odel No.																								0	rde	r N	0.						cylinders
MW	4G	Z2	0-	[_	[-	[-	[-	. [-	F	=P	1							S
(A)	Лode	el No. Soleno positio		Por size				ed w			Term pin a		conn	ecto	r @	•0	ptic	n	_	Sta No	atior	า (D V	olta'	age										Pneumatic valves
hen fil	ing ir	n this field, sel	ect the	mo	ode	el N	0. f	rom	BI	ock	СО	nfig	jura	tior	าร (pa	ges	19	3 to	20)1) :	and	d pa	age	s 1	90	to 1	192	-						ilo va
Dort no.																	Lay	out	posit	ion															
Part nar (Page		Model No.		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	Qty.	Ee
) block	ı	NW4GB2-IN-[]-[]-FP1																																tronic
199)	ı	NW4GB2-OUT-[]-B	-FP1																																compo
ring blo	ick I	NW4G[_]2-T[_]-	FP1 _(*1)																																Electronic components
ve bloo	k I	NW4GZ2[]0-[_]-	FP1																																8
h soler Ive	ľ	NW4GZ2[]0-[]-																																	mponer
190 to	192)	NW4GZ2[]0-[]-	FP1																																components
	ı	NW4GZ2[]0-[]-	FP1																																
	-	NW4GZ2 0																																	8
		NW4GZ2[]0-[]-																																	components
	-	NW4GZ2[]0-[]-																																	nent
		NW4GZ2[]0-[]-									_								Щ	_	_												_		
ve block sking pl	ate -	NW4GZ2-MPS-																		4															
193)		NW4GZ2-MPD-																																	valves
pply ar haust b	ا ماد ا	NW4G2-Q[]-[]-																																	es
195)	ľ	NW4G2-Q[]-[]-[_														
	-	NW4G2-Q[]-[]-[ြ
		NW4G2-Q[]-[]-[_j-FP1																																ompo
rious acers	ľ	Air supply spacer W4G2-P[]-[]	-FP1																																components
200, P.2	201)	Exhaust spacer W4G2-R-	.FD1																																S
	Ī	Individual air supply cor	mpatible																																
	1	spacer with in-stop valv	e spacer -FP1																																emov
ırtition b		NW4G2-																	\exists	T	Ì											\exists	T		removing filter
.195)	_	NW4G2-																																	removing filter
nd block .195)	ı	NW4G2-	R-FP1																																cor
		Blanking	ı plug						Sile	ence	r		Та	g pl	ate						able	_	<u> </u>						Wat	erpi	roof	plug		S	components
cluded	GV	WP6-B	GWP	8-B			-	ŞI	.W-I		_				1				cable (-			L-18 able (_						. J	_	Included parts	ents
parts		VP10-B		_			\perp		W-H				E	3					16.5			App			18.5			V	V4G	-XS	SZ-1	2		papn	
		with D-sub-conn								wit	h m	ulti-	conn	ecto	or						Mul W4				r on									<u> </u>	valves

Type of wiring block (Refer to page 198)

Blank: when T10/T7* B: when T8*

Electric actuator

Pneumatic cylinders

FRL/Auxiliary components Electronic components components

Main line components Fluid control Main line components

Antibacterial/Bacteria-

removing filter

components

Fluid control valves

Common gland (T10)-FP1 wiring specifications sheet (AC specifications only)

- * Fill in and attach to the manifold specifications sheet for anything other than double wiring. (Available as made-to-order.)
- * Not required with double wiring. (With DC specifications, only standard wiring and double wiring will be supported)

Connector pin No.												Valve	No.											
T10	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1																								
2																								
3																								
4																								
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neumatic	굗	/Auxiliary components	Vacuum	Main line	Fluid control	Main I	line	line Antibacterial/Bacteria-	ine
r liediliatic va	Elec	Electronic components	components	components	valves	compo	nents	nonto nomovino filtor	nente removing filter componente

Pneumatic cylinders



Catalog No. CB-024SA

F.R combination

C1020/C2020/C2520 C3020/C4020/C6020/C8020-W-FP1 Series

Integrated filter and regulator

Port size: Rc1/8 to Rc1

JIS symbol







Specifications

Specific	Jalions							
Descripti	ions	C1020-W	C2020-W	C2520-W	C3020-W	C4020-W	C6020-W	C8020-W
Appearanc	ce							
Components	Filter	F1000-W	F2000-W	F3000-W	F3000-W	F4000-W	F6000-W	F8000-W
Components	Regulator	R1000-W	R2000-W	R2000-W	R3000-W	R4000-W	R6000-W	R8000-W
Working flu	uid				Compressed air			
Max. working	g pressure MPa				1.0 *2			
Proof pres	sure MPa				1.5			
Ambient/fluid	temperatures °C				5 to 60			*1
Filtration	μm				5			
Set pressu	ire MPa	0.05 to 0.85 *2			0.05 to	0.85		
Relief				Wi	th relief mechani	sm		
Drain capa	acity cm ³	12	25	45	45	80	80	80 (*3)
Port size	Rc *8	1/8, 1/4	1/4, 3/8	1/4, 3/8	1/4, 3/8	1/4, 3/8, 1/2	3/4, 1	3/4, 1
		(3/8 with adapter)					(1 1/4 with adapter)	
Weight	kg	0.28	0.64	0.65	0.79	1.25	2.07	2.93
Standard a	accessories			Pressure (gauge, bracket, b	owl guard		

With PPX attached, the ambient/fluid temperature of the digital pressure sensor "R2" is 5 to 50°C.

Option weight

*Add to the weight of the standard accessories.

Uni	t: ka

													5
Code	Drain di	ischarge	Bowl n	naterial	Pressu	e gauge			Pipe	adaptei	r set		
Code	F	F1	M	M1	T*	RN/RP	A6W	W8A	A10W	A15W	A20W	A25W	A32W
C1020		0.007			0	0.04	0.09	0.09	0.09				
C2020		0.02		0.1	0	0.04		0.16	0.16	0.16			
C2520		0.02	0.1	0.1	0	0.04		0.16	0.16	0.16			
C3020	0.02	0.02	0.1	0.1	0	0.04		0.16	0.16	0.16			
C4020	0.02	0.02	0.1	0.1	0	0.04		0.16	0.16	0.16	0.16		
C6020	0.02	0.02	0.1	0.1	0	0.04					0.53	0.53	0.53
C8020	0.02	0.02	0.1	0.1	0	0.04					0.53	0.53	0.53

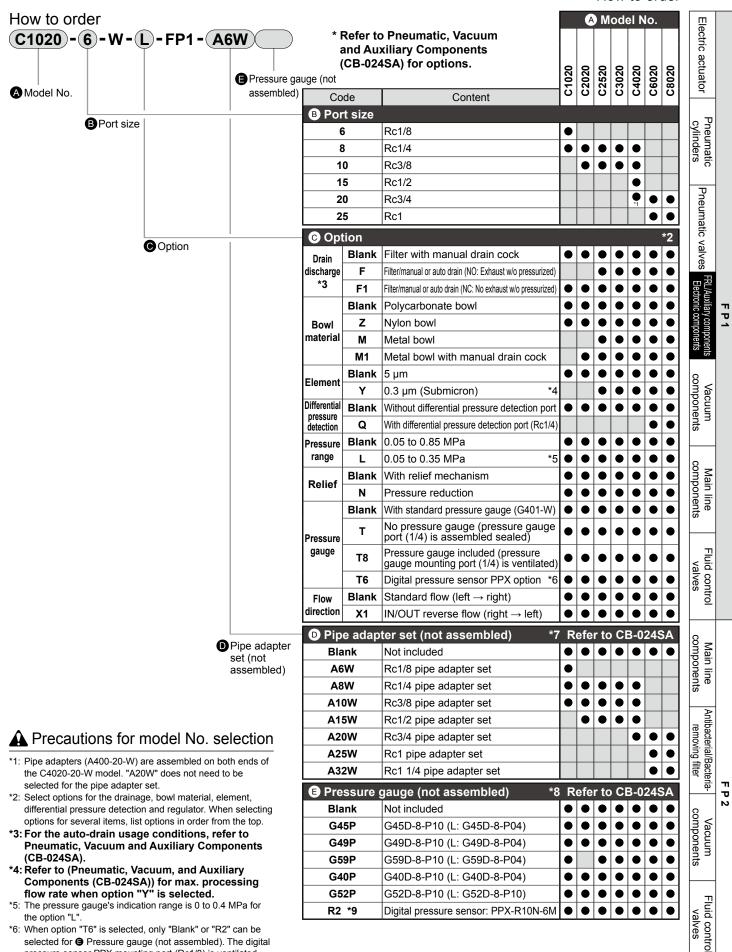
Code			Pressur	e gauge		
Code	G45P	G49P	G59P	G40P	G52P	R2
C1020	0.074	0.086	0.115	0.085	0.15	0.04
C2020	0.074	0.086		0.085	0.15	0.04
C2520	0.074	0.086	0.115	0.085	0.15	0.04
C3020	0.074	0.086	0.115	0.085	0.15	0.04
C4020	0.074	0.086	0.115	0.085	0.15	0.04
C6020	0.074	0.086	0.115	0.085	0.15	0.04
C8020	0.074	0.086	0.115	0.085	0.15	0.04

^{*2:} When using C1020 Series "F1" with auto-drain, the min. working pressure is 0.2 MPa and max. working pressure is 0.7 MPa. Refer to the max. working flow rate table for F1000-F1 auto-drain (Pneumatic, Vacuum and Auxiliary Components (CB-024SA)). Set the working flow rate to less than or equal to the max. working flow rate.

^{*3:} Up to 170 cm³ is stored with the manual drain cock only.
*4: In the case of "F" with auto-drain, the min. working pressure of auto-drain is 0.1 MPa. Air is purged with initial drainage until pressure reaches 0.1 MPa.

^{*4:} In the case of "F" with auto-drain, the min. working pressure of auto-drain is 0.1 MPa. Air is purged with initial drainage until pressure reaches 0.1 MPa.
*5: In the case of "F1" with auto-drain, the min. working pressure of auto-drain is 0.15 MPa.
*6: Refer to (Pneumatic, Vacuum, and Auxiliary Components (CB-024SA)) for max. flow rate when element option "Y" is selected. Set the working flow rate to less than or equal to the max. working flow rate.
*7: C2020-W Series with "F1" (with auto-drain) must be used at equal to or less than the max. working flow rate. (Refer to the F2000-W section (Pneumatic, Vacuum, and Auxiliary Components (CB-024SA)) for max. flow rate.)
*8: Contact CKD for the NPT and G threads.

F.R Combination



R2 *9

the option "L"

*6: When option "T6" is selected, only "Blank" or "R2" can be selected for <a> Pressure gauge (not assembled). The digital pressure sensor PPX mounting port (Rc1/8) is ventilated. *7: The joiner set is included with the pipe adapter set. *8: An R thread pressure gauge is included.

CKD

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Digital pressure sensor: PPX-R10N-6M

Pneumatic cylinders

Pneumatic valves

Fluid control

components



F.M.R combination

C1030/C2030/C2530 C3030/C4030/C6030/C8030-W-FP1 Series

Integrated filter, oil mist filter and regulator

Port size: Rc1/8 to Rc1

JIS symbol







Specifications

Desc	riptions		C1030-W	C2030-W	C2530-W	C3030-W	C4030-W	C6030-W	C8030-W
Appea	arance								
ents	Filter		F1000-W	F2000-W	F3000-W	F3000-W	F4000-W	F6000-W	F8000-W
Components	Oil mist filte	er	M1000-W	M2000-W	M3000-W	M3000-W	M4000-W	M6000-W	M8000-W
္ပြ	Regulator		R1000-W	R2000-W	R2000-W	R3000-W	R4000-W	R6000-W	R8000-W
Worki	ng fluid					Compressed air			
Max. w	orking pressur	е МРа				1.0 *3			
Proof	pressure	MPa				1.5			
Ambien	t/fluid temperati	ures °C				5 to 60			*2
Set pr	essure	MPa	0.05 to 0.85 *3			0.05 to	0 0.85		
Relief					Wi	th relief mechani	sm		
Port s	ize	Rc *7	1/8, 1/4 (3/8 with adapter)	1/4, 3/8 (1/2 with adapter)	1/4, 3/8 (1/2 with adapter)	1/4, 3/8 (1/2 with adapter)	1/4, 3/8, 1/2 (3/4 with adapter)	3/4, 1 (1 1/4 with adapter)	3/4, 1 (1 1/4 with adapter)
Weigh	nt	kg	0.40	0.98	1.02	1.10	1.86	3.19	4.45
Secon	dary oil conce st filter outlet			0.0	1 mg/m³ or less (0.1 mg/m³ or less	s after oil saturati	on)	
Max. f	low rate (*1)	m³/min	0.15	0.25	0.36	0.36	0.825	1.27	2.6

- *1: The max. flow is for a primary pressure of 0.7 MPa. Refer to Pneumatic, Vacuum, and Auxiliary Components (CB-024SA) for max. flow rate when element option "Y" is selected.
- *2: With PPX attached, the ambient/fluid temperature of the digital pressure sensor "R2" is 5 to 50°C.
- *3: When using C1030-W Series "F1" with auto-drain, the NC auto-drain is included for both the filter and oil mist filter. Min. working pressure is 0.2 MPa and max. working pressure is 0.7 MPa. Refer to the M1000-W-F1 auto-drain max. working flow rate table (Pneumatic, Vacuum, and Auxiliary Components (CB-024SA)) for the max. working flow rate.
- *4: Refer to Pneumatic, Vacuum, and Auxiliary Components (CB-024SA) for details on other oil mist filters.
- *5: In the case of "F" with auto-drain, the supply air pressure is 0.15 MPa or more. For the air filter auto-drain, air is purged with the initial drainage until pressure reaches 0.1 MPa.
- *6: When "F1" with an auto-drain is selected, the filter, oil mist filter, and NC auto-drain are assembled, but the supply air pressure must be 0.15 MPa and over.
- *7: Contact CKD for the NPT and G threads.

Option weight

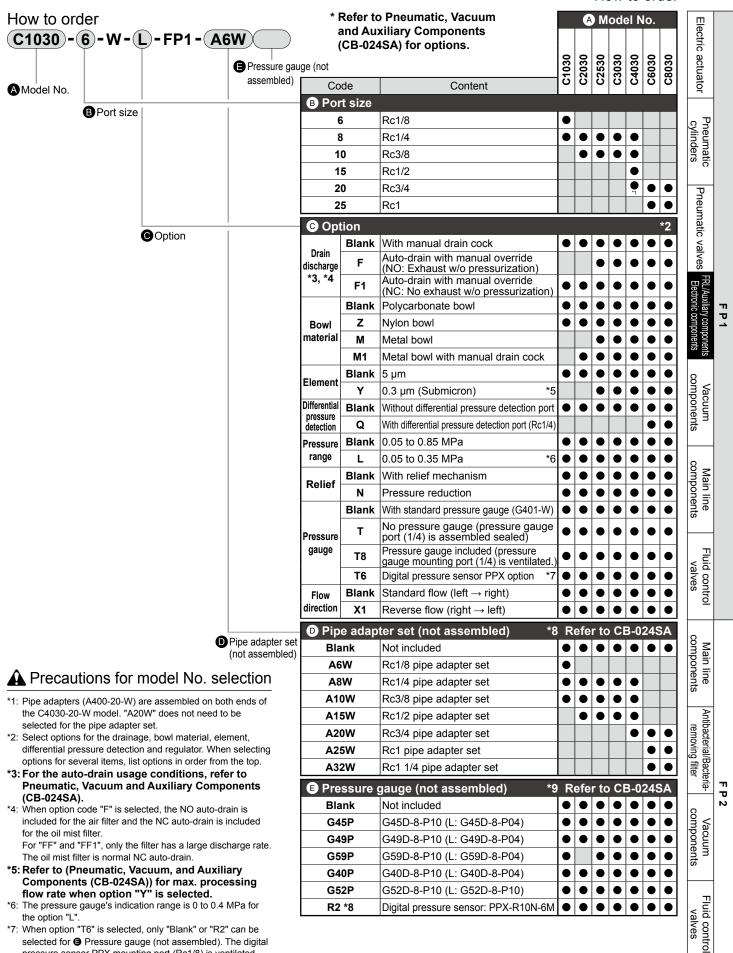
*Add to the weight of the standard accessories.

Code	Drain di	scharge	Bowl n	naterial	Pressur	e gauge			Pip	e adapter	set		
Code	F	F1	М	M1	T*	RN/RP	A6W	A8W	A10W	A15W	A20W	A25W	A32W
C1030		0.014			0	0.04	0.09	0.09	0.09				
C2030		0.04		0.2	0	0.04		0.16	0.16	0.16			
C2530		0.04	0.2	0.2	0	0.04		0.16	0.16	0.16			
C3030	0.04	0.04	0.2	0.2	0	0.04		0.16	0.16	0.16			
C4030	0.04	0.04	0.2	0.2	0	0.04		0.16	0.16	0.16	0.16		
C6030	0.04	0.04	0.2	0.2	0	0.04					0.53	0.53	0.53
C8030	0.04	0.04	0.2	0.2	0	0.04					0.53	0.53	0.53

Code			Pressur	e gauge		
Code	G45P	G49P	G59P	G40P	G52P	R2
C1030	0.074	0.086	0.115	0.085	0.15	0.04
C2030	0.074	0.086		0.085	0.15	0.04
C2530	0.074	0.086	0.115	0.085	0.15	0.04
C3030	0.074	0.086	0.115	0.085	0.15	0.04
C4030	0.074	0.086	0.115	0.085	0.15	0.04
C6030	0.074	0.086	0.115	0.085	0.15	0.04
C8030	0.074	0.086	0.115	0.085	0.15	0.04

F.M.R Combination

How to order



selected for **②** Pressure gauge (not assembled). The digital pressure sensor PPX mounting port (Rc1/8) is ventilated.
*8: The joiner set is included with the pipe adapter set.
*9: An R-thread pressure gauge is included.

Pneumatic

Pneumatic, Vacuum and Auxiliary Components Catalog No. CB-024SA

F.M combination

C1060/C2060/C3060/ C4060/C6060/C8060-W-FP1 Series

Filter and oil mist filter integrated.

Port size: Rc1/8 to Rc1

JIS symbol







Specifications

Descrip	otions		C1060-W	C2060-W	C3060-W	C4060-W	C6060-W	C8060-W		
Appeara	nce									
Componento	Filter		F1000-W	F2000-W	F3000-W	F4000-W	F6000-W	F8000-W		
Components	Oil mist filt	er	M1000-W	M2000-W	M3000-W	M4000-W	M6000-W	M8000-W		
Working	fluid		Compressed air							
Max. work	ing pressure	MPa	1.0 *3, *4, *5							
Proof pre	essure	MPa			1	.5 *3				
Ambient/flu	id temperature	s °C			5 to	60				
Port size	e R	c *7	1/8, 1/4 (3/8 with adapter)	1/4, 3/8 (1/2 with adapter)	1/4, 3/8 (1/2 with adapter)	1/4, 3/8, 1/2 (3/4 with adapter)	3/4, 1 (1 1/4 with adapter)	(1 1/4 with adapter)		
Weight		kg	0.22	0.58	0.62	1.06	2.02	2.68		
Secondar	y oil concent	ration		0.01 mg/	m³ or less (0.1 mg/r	n ³ or less after oil sa	aturation)			
Max. flow	rate (*1, *2)	m³/min	0.15 *3	0.25	0.36	0.825	1.27	2.6		

- *1: The max. flow is for a primary pressure of 0.7 MPa.
- *2: Refer to Pneumatic, Vacuum, and Auxiliary Components (CB-024SA) for max. flow rate when element option "Y" is selected. The working flow must be less than the max. working flow.
- *3: For "F1" with auto-drain, the NC auto-drain is included for both the filter and oil mist filter. Min. working pressure is 0.2 MPa, max. working pressure is 0.7 MPa, and proof pressure is 1.05 MPa. Refer to the max. working flow rate table (Pneumatic, Vacuum, and Auxiliary Components (CB-024SA)) for M1000-W-F1 auto-drain for the max. working flow rate. The working flow must be less than the max. working flow.
- *4: In the case of "F" with auto-drain, the supply air pressure is 0.15 MPa or more. For the air filter auto-drain, air is purged with the initial drainage until pressure reaches 0.1 MPa.
- *5: In the case of "F1" with auto-drain, the required supply air pressure is 0.15 MPa or more.
- *6: Refer to Pneumatic, Vacuum, and Auxiliary Components (CB-024SA) for details on other oil mist filters.
- *7: Contact CKD for the NPT and G threads.

Option weight

*Add to the weight of the standard accessories.

Code	Drain discharge		Bowl material		Pipe adapter set						
Code	F	F1	M	M1	A6W	A8W	A10W	A15W	A20W	A25W	A32W
C1060		0.014			0.09	0.09	0.09				
C2060		0.04		0.2		0.16	0.16	0.16			
C3060	0.04	0.04	0.2	0.2		0.16	0.16	0.16			
C4060	0.04	0.04	0.2	0.2		0.16	0.16	0.16			
C6060	0.04	0.04	0.2	0.2					0.53	0.53	0.53
C8060	0.04	0.04	0.2	0.2					0.53	0.53	0.53

F.M Combination

How to order

Electric actuator

Pneumatic valves

components

Fluid control

Main line components

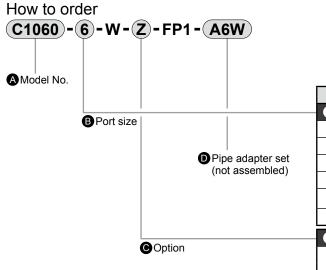
Antibacterial/Bacteria-

removing filter

Vacuum components

Fluid control

A Model No.



*	Refer to Pneumatic, Vacuum
	and Auxiliary Components
	(CB-024SA) for options.

(02 02 10)	ry for options.	1060	C2060	3060	4060	0909	C8060
Code	Content	ပ	ပ	ပ	ပ	ပ	ပ
B Port size							
6	Rc1/8	•					
8	Rc1/4	•		•			
10	Rc3/8						
15	Rc1/2				•		
20	Rc3/4				≟	•	lacksquare
25	Rc1					•	•
© Option							*2

© Opt	tion							*2
	Blank	With manual drain cock	•	•	•	•	•	•
Drain discharge	F	Auto-drain with manual override (NO: Exhaust w/o pressurization)			•	•	•	•
*3, *4	F1	Auto-drain with manual override (NC: No exhaust w/o pressurization)	•	•	•	•	•	•
	Blank	Polycarbonate bowl	•	•	•	•	•	•
Bowl	Z	•	•	•	•	•	•	
material	М	M Metal bowl				•	•	•
	M1	Metal bowl with manual drain cock		•	•	•	•	•
Element	Blank	5 μm	•	•	•	•	•	•
Element	Υ	0.3 µm (Submicron) *5			•	•	•	•
Differential	Blank	Without differential pressure detection port	•	•	•	•	•	•
pressure detection	Q	Q With differential pressure detection port (Rc1/4					•	•
Flow	Blank	Standard flow (left → right)	•	•	•	•	•	•
Direction	X1	Reverse flow (right → left)	•	•	•	•	•	•

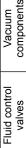
D Pipe adap	ter set (not assembled)	*6	R	efe	r to	C	B-0	245	SA
Blank	Not included			•	•	•	•	•	•
A6W	Rc1/8 pipe adapter set			•					
A8W	Rc1/4 pipe adapter set			•	•	•	•		
A10W	Rc3/8 pipe adapter set			•	•	•	•		
A15W	Rc1/2 pipe adapter set				•	•	•		
A20W	Rc3/4 pipe adapter set							•	•
A25W	Rc1 pipe adapter set							•	•
A32W	Rc1 1/4 pipe adapter set							•	•

A Precautions for model No. selection

- *1: Pipe adapters (A400-20-W) are assembled on both ends of the C4060-20-W model. "A20W" does not need to be selected for the pipe adapter set.
- *2: Select options for drainage, bowl material, element, and differential pressure detection sections. When selecting options for several items, list options in order from the top.
- *3: For the auto-drain usage conditions, refer to Pneumatic, Vacuum and Auxiliary Components (CB-024SA).
- *4: When option code "F" is selected, the NO auto-drain is supplied with the air filter and the NC auto-drain is supplied with the oil mist filter. When option code "F1" is selected, the NC auto-drain is included with the air filter and oil mist filter. For "FF" and "FF1", only the filter has a large discharge rate. The oil mist filter is normal NC auto-drain.
- *5: Refer to (Pneumatic, Vacuum, and Auxiliary Components (CB-024SA)) for max. processing flow rate when option "Y" is selected.
 *6: The joiner set is included with the pipe adapter set.

Pneumatic valves

removing filter





Pneumatic, Vacuum and Auxiliary Components Catalog No. CB-024SA

Filter/regulator

W1000/W2000/W3000/W4000/W8000-W-FP1 Series

New series using 5 µm elements for dust removal, and 0.3 µm elements for tar removal.

Port size: Rc1/8 to Rc1

JIS symbol







Specifications

opeomodiums												
Descriptions		W1000-W	W2000-W	W3000-W	W4000-W	W8000-W						
Appearance												
Working fluid				Compressed air								
Max. working pressu	ıre MPa		1.0 *1, *2, *3									
Proof pressure	MPa			1.5 *1								
Ambient/fluid tempera	tures °C			*4								
Filtration	μm	Ę	5		5 or 0.3							
Set pressure	MPa	0.05 to 0.85 *1		0.05 t	o 0.85							
Relief				With relief mechanism								
Drain capacity	cm ³	12	25	45	80	80 (*5)						
Port size	Rc *7	1/8, 1/4 (3/8 with adaptor)	1/4, 3/8 (1/2 with adaptor)	1/4, 3/8, 1/2	1/4, 3/8, 1/2 (3/4 with adaptor)	3/4, 1 (1 1/4 with adaptor)						
Weight	kg	0.175	0.40	0.6	0.9	2.0						
Standard access	ories		Pres	sure gauge and bowl g	uard							

- *2: In the case of "F" with auto-drain, the min. working pressure of auto-drain is 0.1 MPa.
- Air is purged with initial drainage until pressure reaches 0.1 MPa.
- *3: In the case of "F1" with auto-drain, the min. working pressure of auto-drain is 0.15 MPa.
- *4: With PPX attached, the ambient/fluid temperature of the digital pressure sensor "R2" is 5 to 50°C.
- *5: Up to 170 cm³ is stored with the manual drain cock only.
- *6: W2000-W Series with "F1" (with auto-drain) must be used at equal to or less than the max. working flow rate. (Refer to Pneumatic, Vacuum, and Auxiliary Components (CB-024SA) for max. flow rate.)
- *7: Contact CKD for the NPT and G threads.

Option weight

* Add to the weight of the standard accessories.

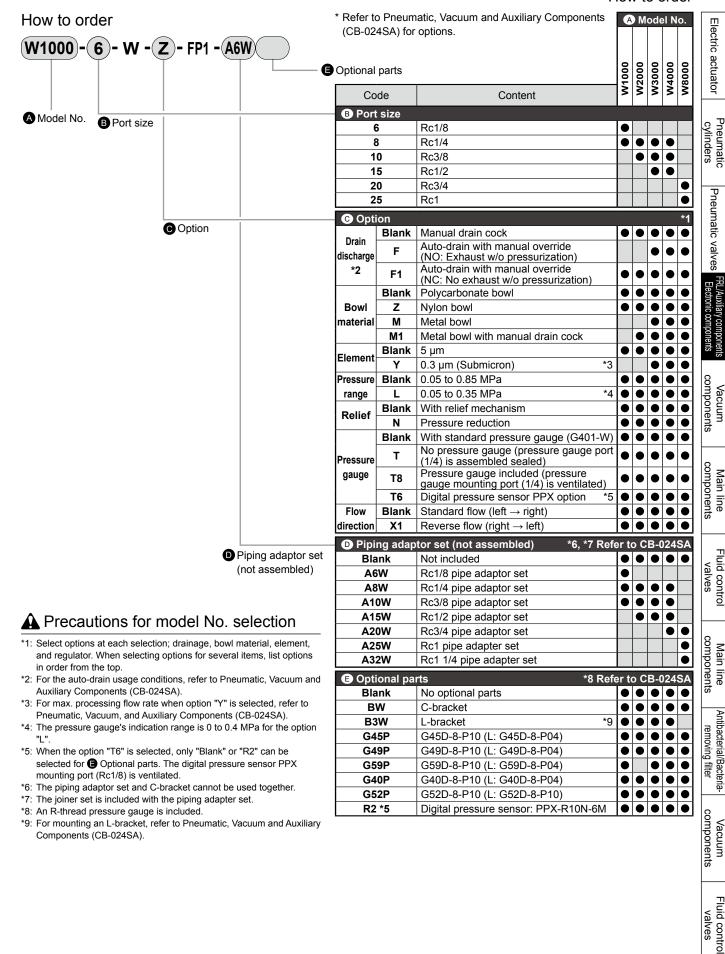
Unit:	kc

Code	Drain di	scharge	Bowl material		Pressure gauge	Pipe adaptor set				
Code	F	F1	M	M1	T*	A6W	W8A	A10W	A15W	
W1000		0.007			0	0.09	0.09	0.09		
W2000		0.02		0.1	0		0.16	0.16	0.16	
W3000	0.02	0.02	0.1	0.1	0		0.16	0.16	0.16	
W4000	0.02	0.02	0.1	0.1	0		0.16	0.16	0.16	
W8000	0.02	0.02	0.1	0.1	0				·	

Code	Pipe adaptor set				Optional parts							
Code	A20W	A25W	A32W	BW	B3W	G45P	G49P	G59P	G40P	G52P	R2	
W1000				0.1	0.04	0.074	0.086	0.115	0.085	0.15	0.04	
W2000				0.15	0.06	0.074	0.086		0.085	0.15	0.04	
W3000				0.17	0.07	0.074	0.086	0.115	0.085	0.15	0.04	
W4000	0.16			0.21	0.11	0.074	0.086	0.115	0.085	0.15	0.04	
W8000	0.53	0.53	0.53	0.36		0.074	0.086	0.115	0.085	0.15	0.04	

Filter/Regulator Series

How to order



Pneumatic valves

removing filter

Fluid control



Catalog No. CB-024SA

Reverse filter/regulator

W1100/W2100/W3100/W4100/W8100-W-FP1 Series

New series of 5 µm elements for dust removal and 0.3 µm elements for tar removal, with back flow function.

Port size: Rc1/8 to Rc1

JIS symbol







Specifications

Descriptions		W1100-W	W2100-W	W3100-W	W4100-W	W8100-W			
Appearance									
Working fluid				Compressed air					
Max. working pressure	MPa	1.0 *1, *2, *3							
Proof pressure	MPa			1.5 *3					
Ambient/fluid temperatu	ıres °C			5 to 60 *4					
Filtration	μm		5		5 or 0.3				
Set pressure (*2)	MPa	0.05 to 0.85 *1		0.05 to	o 0.85				
Relief				With relief mechanism					
Drain capacity	cm ³	12	25	45	80	80 (*5)			
Port size F	Rc *9	1/8, 1/4 (3/8 with adaptor)	1/4, 3/8 (1/2 with adaptor)	1/4, 3/8, 1/2	1/4, 3/8, 1/2 (3/4 with adaptor)	3/4, 1 (1 1/4 with adaptor)			
Weight	kg	0.175	0.40	0.6	0.9	2.0			
Standard accessor	ies	Pressure gauge and bowl guard							
A Laborator (IEEE State designation of the designation of AAAD).									

- *1: In the case of "F" with auto-drain, the min. working pressure of auto-drain is 0.1 MPa. Air is purged with initial drainage until pressure reaches 0.1 MPa.
- *2: In the case of "F1" with auto-drain, the min. working pressure of auto-drain is 0.15 MPa.
- *3: When using W1100 Series "F1" with auto-drain, the min. working pressure is 0.2 MPa, the max. working pressure is 0.7 MPa and the proof pressure is 1.05 MPa. For the max. working flow rate, refer to the max. working flow rate table of F1000-F1 with auto-drain (Pneumatic, Vacuum, and Auxiliary Components (CB-024SA)). Set the working flow rate to less than or equal to the max. working flow rate.
- *4: With PPX attached, the ambient/fluid temperature of the digital pressure sensor "R2" is 5 to 50°C.
- *5: Up to 170 m³ is stored with the manual drain cock only.
- *6: Check that the primary pressure is at least 0.05 MPa or more than the secondary pressure.
- *7: Refer to the set pressure range for the back pressure given in Pneumatic, Vacuum and Auxiliary Components (CB-024SA) when selecting the model.
- *8: W2100-W Series with "F1" (with auto-drain) must be used at equal to or less than the max. working flow rate. (Refer to the F2000-W section in Pneumatic, Vacuum, and Auxiliary Components (CB-024SA) for max. flow rate.)
- *9: Contact CKD for the NPT and G threads.

Option weight

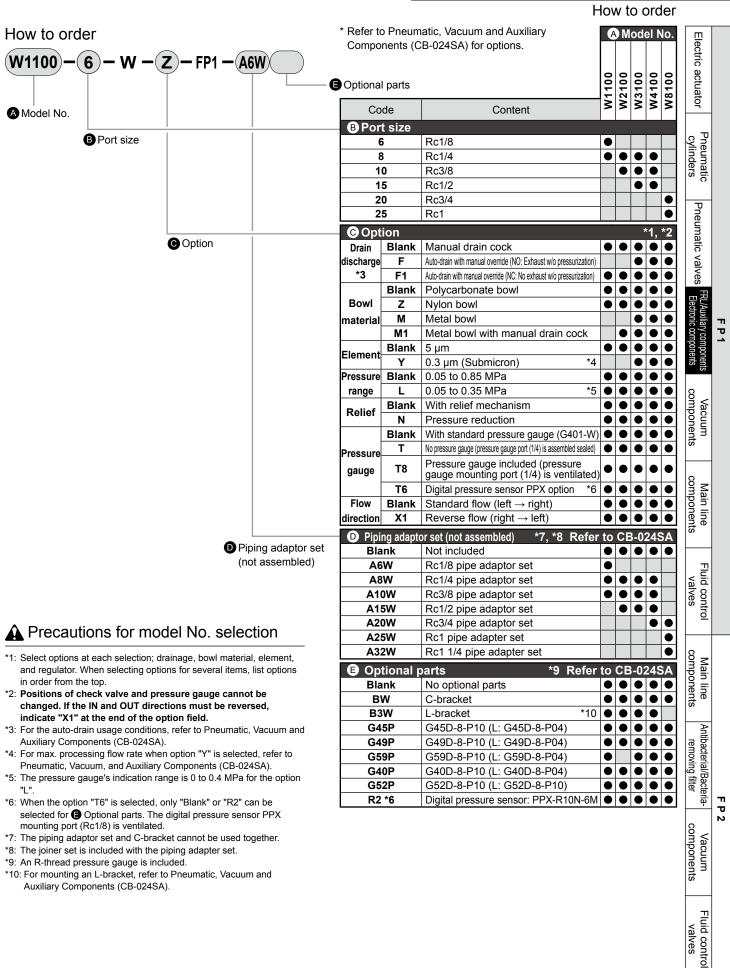
* Add to the weight of the standard accessories.

U	Init:	k

Code	Drain discharge		Bowl material		Pressure gauge	Pipe adaptor set				
Code	F	F1	M	M1	T*	A6W	A8W	A10W	A15W	
W1100		0.007			0	0.09	0.09	0.09		
W2100		0.02		0.1	0		0.16	0.16	0.16	
W3100	0.02	0.02	0.1	0.1	0		0.16	0.16	0.16	
W4100	0.02	0.02	0.1	0.1	0		0.16	0.16	0.16	
W8100	0.02	0.02	0.1	0.1	0					

Code	Pipe	Pipe adaptor set			Optional parts							
Code	A20W	A25W	A32W	BW	B3W	G45P	G49P	G59P	G40P	G52P	R2	
W1100				0.1	0.04	0.074	0.086	0.115	0.085	0.15	0.04	
W2100				0.15	0.06	0.074	0.086		0.085	0.15	0.04	
W3100				0.17	0.07	0.074	0.086	0.115	0.085	0.15	0.04	
W4100	0.16			0.21	0.11	0.074	0.086	0.115	0.085	0.15	0.04	
W8100	0.53	0.53	0.53	0.36		0.074	0.086	0.115	0.085	0.15	0.04	

Filter/Regulator Series



Pneumatic valves

Fluid control

Fluid control

removing filter



Air filter

F1000/F2000/F3000 F4000/F6000/F8000-W-FP1 Series

New series using 5 µm elements for dust removal and 0.3 µm element for tar removal. (excluding F1000 Series) ● Port size: Rc1/8 to Rc1

JIS symbol





Specifications

Opcomodit	1113									
Descriptions		F1000-W	F2000-W	F3000-W	F4000-W	F6000-W	F8000-W			
Appearance			and the same of th							
Working fluid				Compre	ssed air					
Max. working press	ure MPa			1.0 *1	, *2, *3					
Proof pressure	MPa		1.5 *1							
Ambient/fluid temper	atures °C			5 to	60					
Filtration	μm	Į	5		5 or	0.3				
Drain capacity	cm ³	12	25	45	80	80	80 (*4)			
Port size	Rc *5	1/8, 1/4 (3/8 with adaptor)		3/8 adaptor)	1/4, 3/8, 1/2 (3/4 with adaptor)	3/4, 1 (1 1/4 with adaptor)	3/4, 1 (1 1/4 with adaptor)			
Weight kg 0.087 0.24 0.25 0.45 0.9 1					1.16					
Standard accessories Bowl guard										

- *1: When using F1000-W Series "F1" with auto-drain, the min. working pressure is 0.2 MPa, max. working pressure is 0.7 MPa and proof pressure is 1.05 MPa. Refer to the max. working flow rate table (table below) for F1000-W-F1 auto-drain for the max. working flow rate. Set the working flow rate to less than or equal to the max. working flow rate. When using F2000-W Series "F1" with auto-drain, refer to the max. working flow rate (table below). The working flow rate must be less than the max. working flow rate.
- *2: In the case of "F" with auto-drain, the min. working pressure of auto-drain is 0.1 MPa. Air is purged with initial drain until pressure reaches 0.1 MPa.
- *3: In the case of "F1" with auto-drain, the min. working pressure of auto-drain is 0.15 MPa.
- *4: Up to 170 cm3 is stored with the manual drain cock only.
- *5: Contact CKD for the NPT and G threads.

F1000-W-F1 with auto-drain Max. working flow rate

(m³/min (ANR))

Primary pressure MPa Port size	0.2	0.3	0.4	0.5	0.6	0.7
6	0.185	0.250	0.310	0.375	0.435	0.500
8	0.225	0.300	0.375	0.450	0.525	0.600

■ F2000-W-F1 with auto-drain Max. working flow rate

(m³/min (ANR))

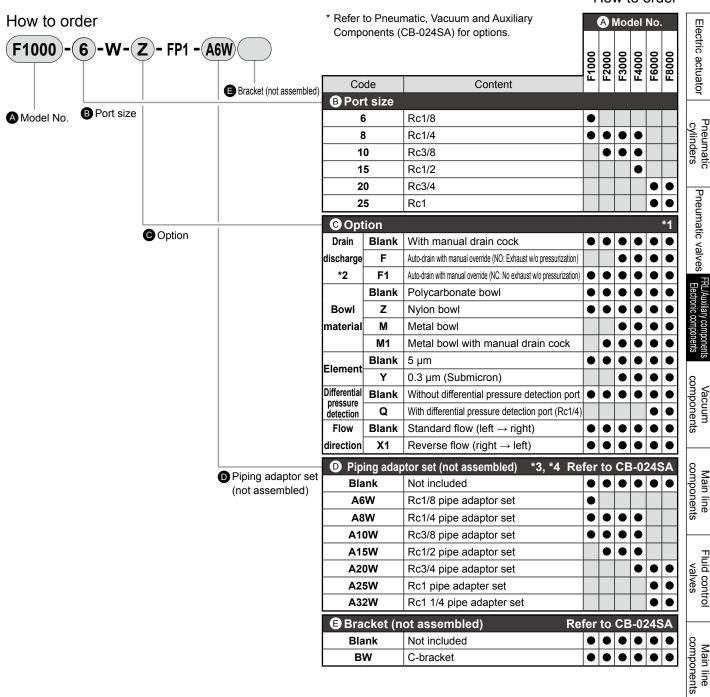
Primary pressure MPa	0.15	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1
Flow rate	0.50	0.60	0.80	1.00	1.20	1.40	1.65	1.85	2.05	2.25

Option weight

* Add to the weight of the standard accessories.

Code	Drain discharge Bowl material			naterial		Pipe adaptor set						
Code	F	F1	M	M1	A6W	A8W	A10W	A15W	A20W	A25W	A32W	BW
F1000		0.007			0.09	0.09	0.09					0.1
F2000		0.02		0.1		0.16	0.16	0.16				0.15
F3000	0.02	0.02	0.1	0.1		0.16	0.16	0.16				0.17
F4000	0.02	0.02	0.1	0.1		0.16	0.16	0.16	0.16			0.21
F6000	0.02	0.02	0.1	0.1					0.53	0.53	0.53	0.34
F8000	0.02	0.02	0.1	0.1					0.53	0.53	0.53	0.36

Air Filter Series



Precautions for model No. selection

- *1: Select options for the drainage, bowl material, element and differential pressure detection. When selecting options for several items, list options in order from the top.
- *2: For the auto-drain usage conditions, refer to Pneumatic, Vacuum and Auxiliary Components (CB-024SA).
- *3: The piping adaptor set and C-bracket cannot be used
- *4: The joiner set is included with the piping adapter set.

Fluid control

Antibacterial/Bacteria-

removing filter

Vacuum components

Fluid control

components



Oil mist filter

M1000/M2000/M3000 M4000/M6000/M8000-W-FP1 Series

Ideal for circuits susceptible to oil

Port size: Rc1/8 to Rc1

JIS symbol







Specifications

Descriptions		M1000-W	M2000-W	M3000-W	M4000-W	M6000-W	M8000-W
Appearance		A SEPTIMENT OF THE PROPERTY OF	serve, and				
Working fluid				Compre	ssed air		
Working pressur	e MPa			0.1 to 1.	0 *2, *3		
Proof pressure	MPa			1.5	*2		
Drain capacity	cm ³	3	25	45	80	80	80
Port size	Rc *8	1/8, 1/4	1/4,	3/8	1/4, 3/8, 1/2	3/4, 1	3/4, 1
FUIT SIZE	KC 0	(3/8 with adaptor)	(1/2 with	adaptor)	(3/4 with adaptor)	(1 1/4 with adaptor)	(1 1/4 with adaptor)
Weight	kg	0.096	0.25	0.28	0.52	0.95	1.35
Standard access	sories			Bowl	guard		

Mantle option name		Blank (M type)	S (S type)	X (X type)
	M1000-□-W	150 *2	150 *2	150
Max. processing flow rate *1	M2000	250	310	310
ℓ/min (ANR)	M3000W	360	450	450
For the primary pressure	M4000W	825	1000	1000
of 0.7 MPa	M6000W	1270	1400	1400
	M8000W	2600	2900	2900
Ambient/fluid temperatures	s °C	5 to 6	60	5 to 30
Filtration µn		0.01 (nominal)	0.3	Suction by activated carbon
Secondary side oil concen	tration mg/m ³	0.01 or less (0.1 or less after oil saturation) *4, *5	0.5 or less *4	0.003 or less *6
Mantle (element) replacem	nent	1 year (6000 hours) or p	ressure drop 0.1 MPa	- *7

- *1: Use within the max. processing flow rate.
 - If the max. processing flow is exceeded temporarily, or if the filter is installed at a place with high levels of pulsation, the mantle could be damaged or oil or drainage, etc., could splatter to the secondary side and result in faults at the terminal.
- *2: When using M1000-W-F1 auto-drain, the min. working pressure is 0.2 MPa, the max. working pressure is 0.7 MPa and the proof pressure is 1.05 MPa. For the max. processing flow rate, refer to the max. processing flow rate graph (Pneumatic, Vacuum, and Auxiliary Components (CB-024SA)).
- *3: In the case of "F1" with auto-drain, the min. working pressure is 0.15 MPa.
- *4: The secondary oil concentration is the value when the primary oil concentration is 30 mg/m³ and inlet air temperature is 21°C.
- *5: Install an oil mist filter (S type) as a pre-filter on the primary side to prevent early clogging.
- *6: When an oil mist filter (M Series M type) is installed on the primary side.
- *7: The mantle (element) replacement period differs depending on the odor density in compressed air, and thus cannot be clearly indicated. Consider the total period from initial installation to when the smell of oil is confirmed as the effective deodorizing period, and replace at the same time as the M type or control with usage time. (When the inlet temperature is 21°C, replace at the control time or 1,000 hours, whichever comes first) Keep the primary air temperature at 30°C or less. The deodorizing effect will drop if temperature is high, so provide heat dissipation measures.
- *8: Contact CKD for the NPT and G threads.

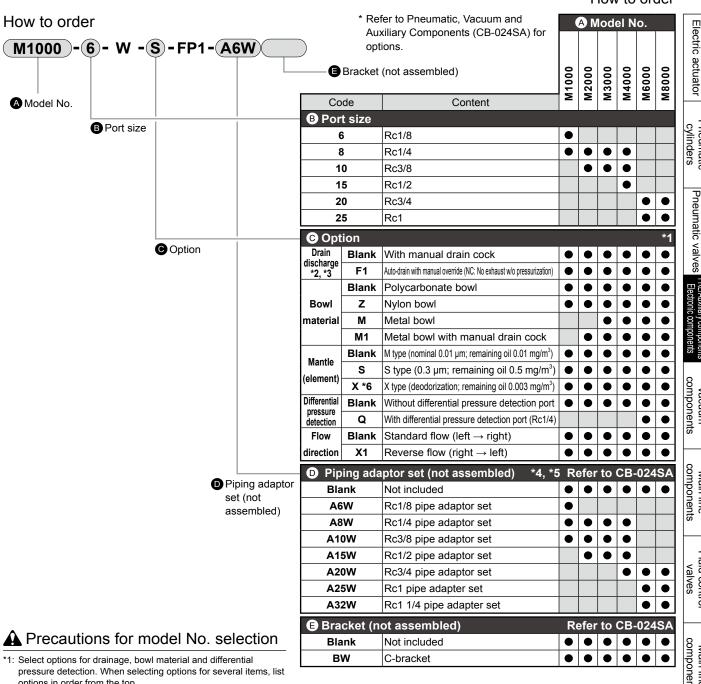
Option weight

* Add to the weight of the standard accessories.

Code	Drain discharge	Bowl n	naterial		Pipe adaptor set								
Code	F1	M	M1	A6W	A8W	A10W	A15W	A20W	A25W	A32W	BW		
M1000	0.007			0.09	0.09	0.09					0.1		
M2000	0.02		0.1		0.16	0.16	0.16				0.15		
M3000	0.02	0.1	0.1		0.16	0.16	0.16				0.17		
M4000	0.02	0.1	0.1		0.16	0.16	0.16	0.16			0.21		
M6000	0.02	0.1	0.1					0.53	0.53	0.53	0.34		
M8000	0.02	0.1	0.1					0.53	0.53	0.53	0.36		

Oil Mist Filter Series

How to order

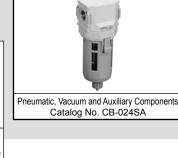


- options in order from the top.
- *2: NO auto-drain cannot be selected.
- *3: For the auto-drain usage conditions, refer to Pneumatic, Vacuum and Auxiliary Components (CB-024SA).
- *4: The piping adaptor set and C-bracket cannot be used together.
- *5: The joiner set is included with the piping adapter set.
- *6: When the mantle is "X", combination with option F1 is not possible.

Pneumatic

Pneumatic valves

Fluid control



High-performance oil mist filter

MX1000/MX3000/MX4000 MX6000/MX8000-W-FP1 Series

Secondary side oil concentration 0.001 mg/m³

Port size: Rc1/8 to Rc1

JIS symbol







Specifications

Descriptions	MX1000-W	MX3000-W	MX4000-W	MX6000-W	MX8000-W					
Appearance	Maryer last									
Working fluid			Compressed air							
Working pressure MPa	0.1 to 1.0 *2									
Proof pressure MPa	1.5									
Ambient/fluid temperatures °C	5 to 60									
Filtration µm	0.01 (nominal)									
Secondary side oil concentration mg/m³			0.001 or less *3							
Max. processing flow rate ℓ/min (ANR) *1	75	180	370	670	1480					
Drain capacity cm ³	3	45	80	80	80					
Port size Rc *5	1/8, 1/4	1/4, 3/8	1/4, 3/8, 1/2	3/4, 1	3/4, 1					
FUIT SIZE RC 5	(3/8 with adaptor)	(1/2 with adaptor)	(3/4 with adaptor)	(1 1/4 with adaptor)	(1 1/4 with adaptor)					
Weight kg	0.096	0.28	0.52	0.95	1.35					
Mantle (element) replacement		1 year (6000 hours) or pressure drop 0.1 MPa								
Standard accessories			Bowl guard							

^{*1:} Values when primary pressure is 0.7 MPa and pressure drop is 0.01 MPa. Use the product within the max. processing flow rate.

If the max. processing flow is exceeded temporarily, or if the filter is installed at a place with high levels of pulsation, the mantle could be damaged or oil or drainage, etc., could splatter to the secondary side and result in faults at the terminal.

Option weight

* Add to the weight of the standard accessories.

Code	Drain discharge	Bowl n	naterial		Pipe adaptor set						
Code	F1	M	M1	A6W	W8A	A10W	A15W	A20W	A25W	A32W	BW
MX1000	0.007			0.09	0.09	0.09					0.1
MX3000	0.02	0.1	0.1		0.16	0.16	0.16				0.17
MX4000	0.02	0.1	0.1		0.16	0.16	0.16	0.16			0.21
MX6000	0.02	0.1	0.1					0.53	0.53	0.53	0.34
MX8000	0.02	0.1	0.1					0.53	0.53	0.53	0.36

^{*2:} In the case of "F1" with auto-drain, the min. working pressure is 0.15 MPa.

^{*3:} The secondary oil content is the value when the primary oil content is 30 mg/m³, the inlet air temperature is 21°C, and before the oil is saturated.

^{*4:} Install an oil mist filter (S type) as a pre-filter on the primary side to prevent early clogging.

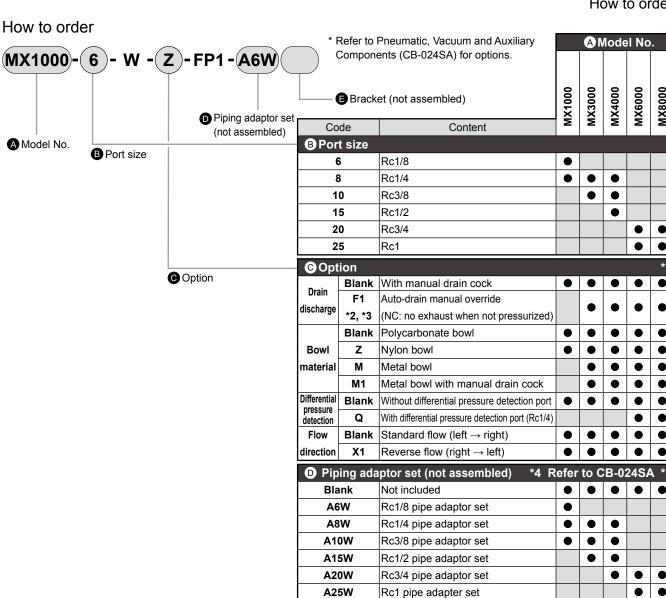
^{*5:} Contact CKD for the NPT and G threads.

Super Oil Mist Filter Series

How to order

Electric actuator

Pneumatic valves



A32W Bracket

Blank

BW

cautions for model No. selection

- *1: Select options for drainage, bowl material and differential pressure detection. When selecting options for several items, list options in order from the top.
- *2: NO auto-drain cannot be selected.
- *3: For the auto-drain usage conditions, refer to Pneumatic, Vacuum and Auxiliary Components (CB-024SA).
- *4: The piping adaptor set and C-bracket cannot be used together.
- *5: The joiner set is included with the piping adapter set.

1 *3	(NC: no exhaust when not pressurized)		•	•	•	$ \bullet $	ectroni	/Auxilia	_
nk	Polycarbonate bowl						ic components	xiliary components	D
,	Nylon bowl						pone	mpon	
1	Metal bowl						nts	ents	
1	Metal bowl with manual drain cock								
nk	Without differential pressure detection port						mod	<u></u>	
)	With differential pressure detection port (Rc1/4)						pon	Vacuum	
nk	Standard flow (left → right)						components	∄	
1	Reverse flow (right → left)						0,		
		_			010	-			
ada	· · · · · · · · · · · · · · · · · · ·	eter	to C	B-0	245	1 *5	components	ĭ.	
	Not included	•	•	•	•		por	Main line	
	Rc1/8 pipe adaptor set	•					ent	ine	
	Rc1/4 pipe adaptor set	•	•	•			S		
	Rc3/8 pipe adaptor set	•	•	•					
	Rc1/2 pipe adaptor set		•	•			_	띪	
	Rc3/4 pipe adaptor set			•	•		valves	8	
	Rc1 pipe adapter set				•		Se	Fluid control	
	Rc1 1/4 pipe adapter set							의	
t (n	ot assembled)	Re	fer	to C	B-02	4SA			
	Not included	•	•	•	•		COM	≤	
	C-bracket	•	•	•	•		bo	Main line	
								<u>=</u>	
							nent	(D)	
							components	W	
							nents		
							nents removing filter		т
								e Antibacterial/Bacteria-	FP2
							removing filter	Antibacterial/Bacteria-	FP2
							removing filter	Antibacterial/Bacteria-	FP2
							removing filter		FP2
								Antibacterial/Bacteria-	FP2
							removing filter	Antibacterial/Bacteria-	FP2
							removing filter components	Antibacterial/Bacteria- Vacuum	FP2
							removing filter	Antibacterial/Bacteria-	FP2

Pneumatic valves

Main line components



Pneumatic, Vacuum and Auxiliary Components Catalog No. CB-024SA

Regulator

R1000/R2000/R3000 R4000/R6000/R8000-W-FP1 Series

Compact, pressure gauge embedded

Port size: Rc1/8 to Rc1

JIS symbol







Specifications

Specification	UHS						
Descriptions		R1000-W	R2000-W	R3000-W	R4000-W	R6000-W	R8000-W
Appearance		COLUMN IN THE PARTY OF THE PART		Card Card Card Card Card Card Card Card		Cost 311	arra en
Working fluid				Compre	ssed air		
Max. working press	sure MPa			1.	.0		
Proof pressure	MPa			1.	.5		
Ambient/fluid temper	atures °C			5 to	60		*1
Set pressure	MPa			0.05 to	0.85		
Relief				With relief r	mechanism		
Port size	Rc *2	1/8, 1/4	1/4, 3/8	1/4, 3/8	1/4, 3/8, 1/2	3/4, 1	3/4, 1
FUIL SIZE	RC Z	(3/8 with adaptor)	(1/2 with adaptor)	(1/2 with adaptor)	(3/4 with adaptor)	(1 1/4 with adaptor)	(1 1/4 with adaptor)
Weight	kg	0.16	0.31	0.45	0.7	1.0	1.6
Standard accessories Pressure gauge, nut for panel mount Pr							
*1: With PPX attac	ched the	ambient/fluid temperat	ure of the digital press	ire sensor "R2" is 5 to	50°C	· ·	•

- *1: With PPX attached, the ambient/fluid temperature of the digital pressure sensor "R2" is 5 to 50°C. *2: Contact CKD for the NPT and G threads.

Option weight

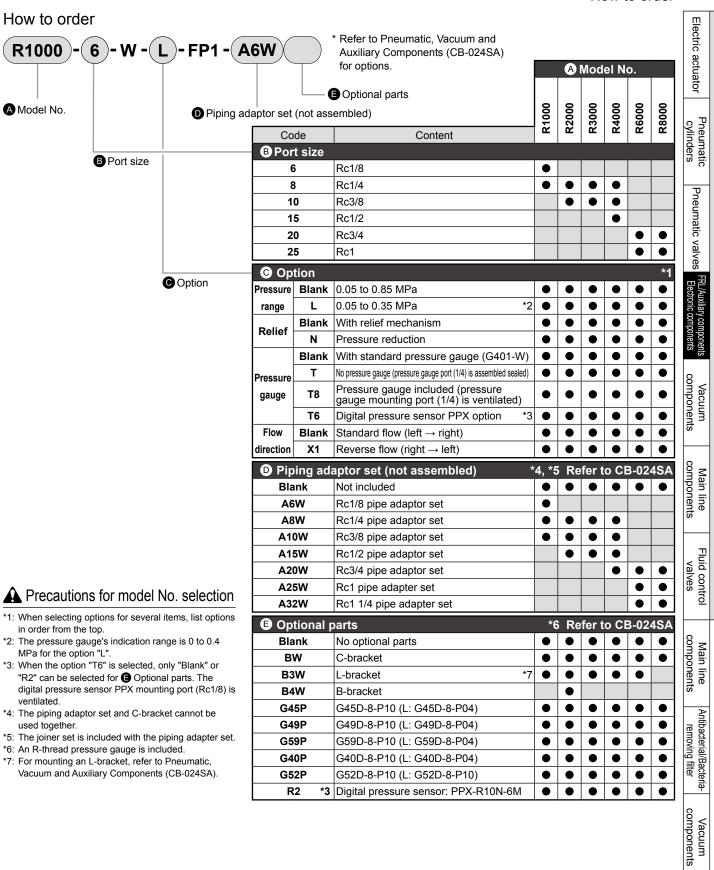
* Add to the weight of the standard accessories.

Code	Pressure gauge			Optional parts							
	T*	A6W	A8W	A10W	A15W	A20W	A25W	A32W	BW	B3W	B4W
R1000	0	0.09	0.09	0.09					0.1	0.04	
R2000	0		0.16	0.16	0.16				0.15	0.06	0.17
R3000	0		0.16	0.16	0.16				0.17	0.07	
R4000	0		0.16	0.16	0.16	0.16			0.21	0.11	
R6000	0					0.53	0.53	0.53	0.34	0.11	
R8000	0					0.53	0.53	0.53	0.36		

Code	Optional parts										
Code	G45P	G49P	G59P	G40P	G52P	R2					
R1000	0.074	0.086	0.115	0.085	0.15	0.04					
R2000	0.074	0.086	0.115	0.085	0.15	0.04					
R3000	0.074	0.086	0.115	0.085	0.15	0.04					
R4000	0.074	0.086	0.115	0.085	0.15	0.04					
R6000	0.074	0.086	0.115	0.085	0.15	0.04					
R8000	0.074	0.086	0.115	0.085	0.15	0.04					

Regulator Series

How to order



Fluid control

Pneumatic cylinders

Pneumatic valves

removing filter

Fluid control

Antibacterial/Bacteriacomponents Vacuum

> Fluid control valves



Pneumatic, Vacuum and Auxiliary Components Catalog No. CB-024SA

Reverse regulator

R1100/R2100/R3100 R4100/R6100/R8100-W-FP1 Series

From secondary pressure to primary side with reverse flow function built in.

Port size: Rc1/8 to Rc1

JIS symbol







Specifications

oposinoations.							
Descriptions	R1100-W	R2100-W	R3100-W	R4100-W	R6100-W	R8100-W	
Appearance	7 (20) (2) (2) (2) (2) (2) (2) (2) (2) (2) (2	Service of the servic	78	The state of the s		cret in	
Working fluid			Compre	ssed air			
Max. working pressure MPa			1	.0			
Proof pressure MPa			1	.5			
Ambient/fluid temperatures °C			5 to	60		*2	
Set pressure (*1) MPa			0.05 t	o 0.85			
Relief	With relief mechanism						
Port size Rc *4	1/8, 1/4	1/4, 3/8	1/4, 3/8	1/4, 3/8, 1/2	3/4, 1	3/4, 1	
FUIL SIZE RC 4	(3/8 with adaptor)	(1/2 with adaptor)	(1/2 with adaptor)	(3/4 with adaptor)	(1 1/4 with adaptor)	(1 1/4 with adaptor)	
Weight kg	0.16	0.31	0.45	0.7	1.0	1.6	
Standard accessories		Pressure	e gauge, nut for pan	el mount		Pressure gauge	
** • • • •					20104)		

- *1: Refer to the set pressure range for the back pressure given in Pneumatic, Vacuum and Auxiliary Components (CB-024SA) when selecting the model.
- *2: With PPX attached, the ambient/fluid temperature of the digital pressure sensor "R2" is 5 to 50°C.
- *3: Check that the primary pressure is higher than the secondary pressure by 0.05 MPa or more.
- *4: Contact CKD for the NPT and G threads.

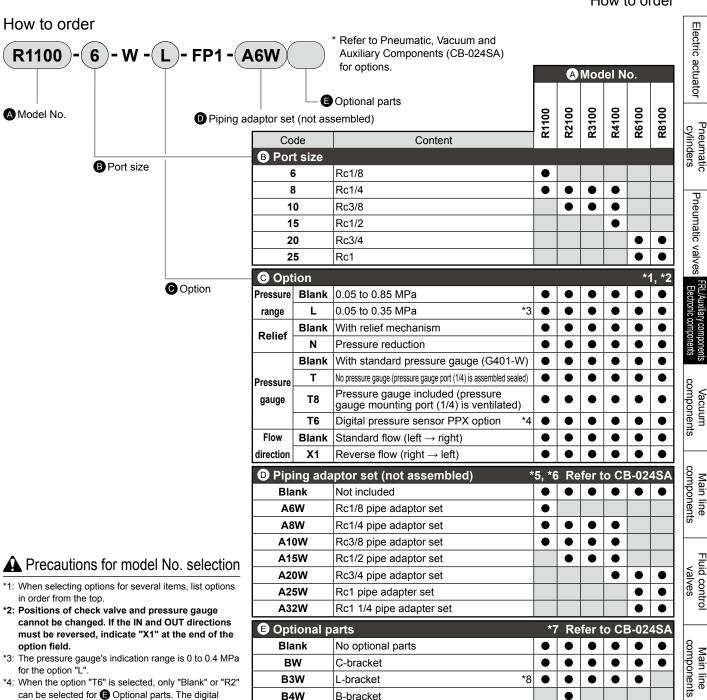
Option weight

* Add to the weight of the standard accessories.

Code	Pressure gauge		Pipe adaptor set								Optional parts			
	T*	A6W	W8A	A10W	A15W	A20W	A25W	A32W	BW	B3W	B4W			
R1100	0	0.09	0.09	0.09					0.1	0.04				
R2100	0		0.16	0.16	0.16				0.15	0.06	0.17			
R3100	0		0.16	0.16	0.16				0.17	0.07				
R4100	0		0.16	0.16	0.16	0.16			0.21	0.11				
R6100	0					0.53	0.53	0.53	0.34	0.11				
R8100	0		·			0.53	0.53	0.53	0.36					

Code	Optional parts									
Code	G45P	G49P	G59P	G40P	G52P	R2				
R1100	0.074	0.086	0.12	0.085	0.15	0.04				
R2100	0.074	0.086	0.12	0.085	0.15	0.04				
R3100	0.074	0.086	0.12	0.085	0.15	0.04				
R4100	0.074	0.086	0.12	0.085	0.15	0.04				
R6100	0.074	0.086	0.12	0.085	0.15	0.04				
R8100	0.074	0.086	0.12	0.085	0.15	0.04				

Regulator Series



- *3: The pressure gauge's indication range is 0 to 0.4 MPa for the option "L"
- *4: When the option "T6" is selected, only "Blank" or "R2" can be selected for
 Optional parts. The digital pressure sensor PPX mounting port (Rc1/8) is
- *5: The piping adaptor set and C-bracket cannot be used together.
- *6: The joiner set is included with the piping adapter set.
- *7: An R-thread pressure gauge is included.
- *8: For mounting an L-bracket, refer to Pneumatic, Vacuum and Auxiliary Components (CB-024SA).

A32W		Rc1 1/4 pipe adapter set					•	•
Option	al p	arts	*7	7 Re	efer t	o CI	3-02	4SA
Blank		No optional parts	•	•	•	•	•	•
BW		C-bracket	•	•	•	•	•	•
B3W		L-bracket *8	•	•	•	•	•	
B4W		B-bracket		•				
G45P		G45D-8-P10 (L: G45D-8-P04)	•	•	•	•	•	•
G49P		G49D-8-P10 (L: G49D-8-P04)	•	•	•	•	•	•
G59P		G59D-8-P10 (L: G59D-8-P04)	•	•	•	•	•	•
G40P		G40D-8-P10 (L: G40D-8-P04)	•	•	•	•	•	•
G52P	G52P G52D-8-P10 (L: G52D-8-P10)				•	•	•	•
R2	,						•	•

CKD

Fluid control

Antibacterial/Bacteria-

removing filter

Vacuum components

Fluid control

Pneumatic cylinders

removing filter

components

valves

Reed switch type compact mechanical pressure switch

NSF H1

P1100-W/P4100-W/P8100-W-FP1 Series

· Compatible with module connection to rotary actuator F.R.L.

JIS symbol







Specifications

Pneumatic, Vacuum and Auxiliary Components

Catalog No. CB-024SA

opeomediene -											
Descriptions		P1100-W	P4100-W	P8100-W							
Working fluid		Compressed air									
Max. working pressur	re MPa	1.0									
Set pressure	MPa		0.1 to 0.6								
Hysteresis	MPa	0.08 or less									
Repeatability	MPa		±0.02 or less								
Contact array			1a *1								
Wiring		Lead wire (oil resistant vinyl cabtyre cable 2-conductor 0.2 mm²)									
Ambient/fluid tempe	ratures	5 to 60°C									
Degree of protect	ion *2	IP20 equivalent									
Product weight (excluding j	oiner) kg	0.13 0.19 0.41									

- *1: The contact turns on if air pressure exceeding the scale set pressure is applied.
- *2: Note that when connecting a fitting into the atmospheric pressure inlet port and extending the tube until water does not enter, IP65 or equivalent is applied. Not for outdoor use.

Wiring section specifications										
Load voltage	oltage 12/24 VDC 100 VAC									
Load current	5 to 50 mA 7 to 20 mA									
Internal voltage drop	3 V or less									
Lamp	LED (Lit v	vhen ON)								
Max. shock	294	m/s ²								
Insulation resistance	20 MΩ or over at	500 VDC megger								
Withstand voltage	nd voltage No failure impressed at 1000 VAC for one minute									

Option weight

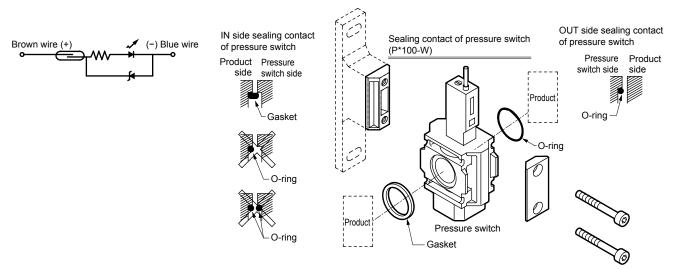
* Add to the weight of the standard accessories.

Unit: g

Code			Lead wire length				
Code	Blank	B11W	B31W	B41W	B81W	3	5
P1100	11	24				30	60
P4100	36		86	94		30	60
P8100	94				170	30	60

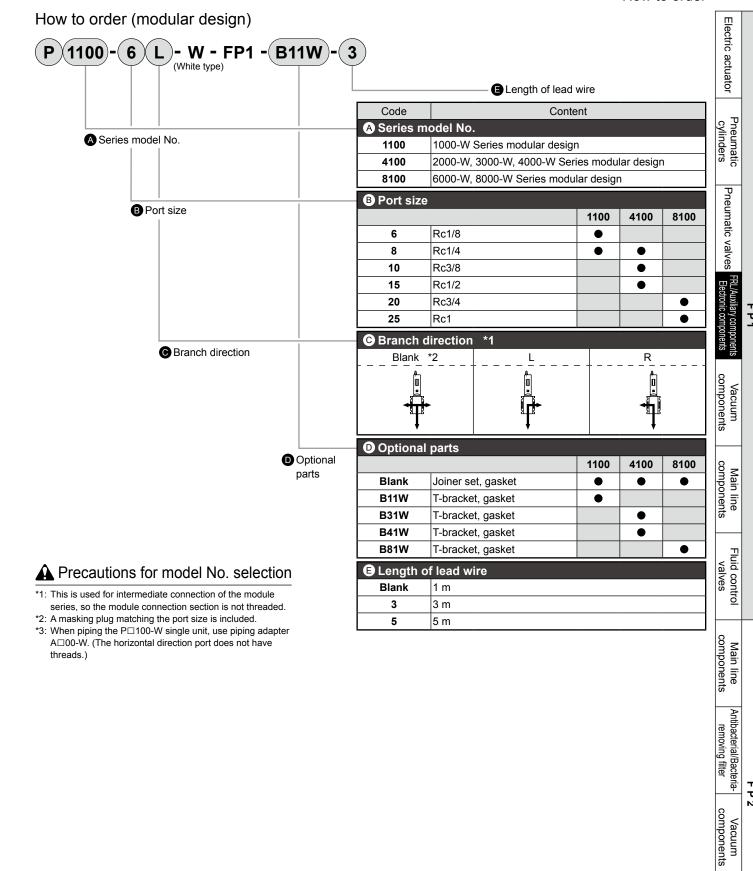
Internal circuit diagram

How to assemble (P1100-W, P4100-W, P8100-W)



P*100-W-FP1 Series

How to order



Fluid control valves

Pneumatic valves

Fluid control

components



Shut-off valve

000-W/V3000-W-FP1 Series

One action exhaust operation. Ideal for preventing accidents due to residual pressure in pneumatic lines.

Port size: Rc1/8 to Rc1/2

JIS symbol EXH





Specifications

Description	ıs	V100	0-W		V3000-W		
Appearance		V1000-6-W			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
Descri Working fluid	puons	V 1000-6-VV		Compressed a		V 3000-15-VV	
Max. working pr	essure MPa			1.0			
Proof pressur				1.5			
Ambient/fluid tem		1.5 5 to 60					
Operation lever s	- p			90°			
Operating	Pushing force N	18	<u> </u>	90	80		
force	Rotation N·m						
Valve section leakage							
	cm³/min (ANR)			10			
External leakage	IN-OUT	1/8	1/4	1/4	3/8	1/2	
Port size	EXH	1/6 Rc		1/4	Rc3/8	1/2	
Moight		0.1			0.25		
Weight	kg			_			
Effective	IN/OLIT	15	12	1 40	l 7∩ I	l 85	
Effective cross-sectional area (mm²)	IN/OUT OUT/EXH	15 5	18	40	70 50	85 50	

Option weight

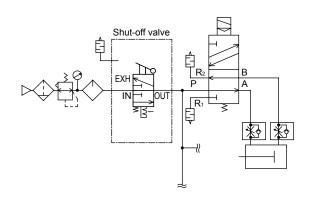
* Add to the weight of the standard accessories.

Unit: kg

Code				Optional parts			
Code	A6W	W8A	A10W	A15W	A20W	BW	S
V1000	0.09	0.09	0.09			0.1	0.004
V3000		0.16	0.16	0.16	0.16	0.17	0.015

Applications

Explanation: For safety, release compressed air in the pneumatic circuit from the shut-off valve before repairing or adjusting the solenoid valve or air cylinder, etc.

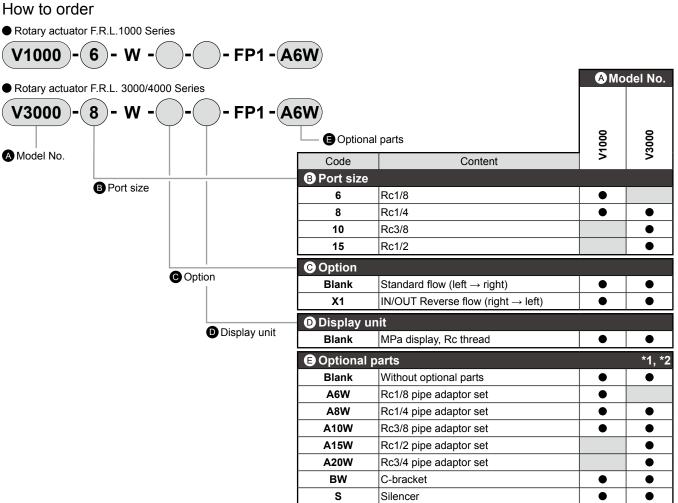


V*000-W-FP1 Series

Electric actuator

Pneumatic cylinders

Pneumatic valves



A Precautions for model No. selection

Main line components Fluid control valves Main line components Antibacterial/Bacteriaremoving filter Vacuum components Fluid control valves

^{*1:} The piping adaptor set and C-bracket cannot be used together.

^{*2:} The joiner set is included with the piping adapter set.

removing filter



V3010-W/V6010-W-FP1 Series

Ideal for preventing accidents due to residual pressure in pneumatic lines.

Port size: Rc1/4 to Rc1

JIS symbol







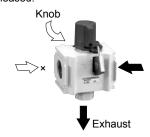
Specifications

Descriptio	ns	V3010-8-W	V3010-10-W	V3010-15-W	V6010-20-W	V6010-25-W
Working fluid	t		(Compressed ai	r	
Max. working p	ressure MPa			1.0		
Proof pressu	ıre MPa			1.5		
Ambient/fluid te	mperatures °C			5 to 60		
Operation lever	switching angle			90°		
Operating	Pushing force N			80 or less		
force	Rotation N·m			2.5 or less		
Valve seat leakag	e cm³/min (ANR)			10 or less		
External leakage	cm³/min (ANR)			10 or less		
Port size	IN-OUT	1/4	3/8	1/2	Rc3/4	Rc1
Port Size	EXH		3/8		Rc	1/2
Weight	kg		0.3		0.	8
Effective cross- sectional area	IN→OUT	40	70	85	145	150
(mm²)	OUT→EXH	40	50	50	105	110

Usage methods



During maintenance work A lock is set where residual pressure is released.



A Model No.

OSHA (Occupational Safety and Health Administration)

Establishes safety standards for employees, as well as US safety standards.

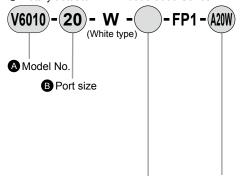
[Lockout/Tagout Regulation] When servicing or maintaining machinery, the air source shall be closed with a shut-off valve (shut-off valve), and residual pressure shall be discharged. If a third party inadvertently operates the valve during such operation and compressed air is applied, the cylinder, etc., could move suddenly and injure personnel. This standard states that, "All valves used for such purposes shall have a key or a structure which can be locked with a

How to order

■ Rotary actuator F.R.L. 2000/3000/4000 Series



Rotary actuator F.R.L. 6000/8000 Series



Option

Optional parts

V6010 Code Content B Port size 8 Rc1/4 10 Rc3/8 • 15 Rc1/2 • 20 Rc3/4 • 25 Rc1

© Optio	n		
Blank	None	•	•
X1	IN/OUT Reverse flow (right \rightarrow left)	•	•
60.00			4 40

-	Option	nal parts	,	1, *2
•	Blank	Without accessories	•	•
	A8W	Rc1/4 pipe adaptor set	•	
	A10W	Rc3/8 pipe adaptor set	•	
	A15W	Rc1/2 pipe adaptor set	•	
	A20W	Rc3/4 pipe adaptor set	•	•
	A25W	Rc1 pipe adapter set	•	•
	A32W	Rc1 1/4 pipe adapter set		•
	BW	C-bracket	•	•
	S	Silencer	•	•

Precautions for model No. selection

- *1: The piping adaptor set and C-bracket cannot be used together.
- *2: The joiner set is included with the piping adapter set.

Select the reverse regulator (R*100-W) or reverse filter regulator (W*100-W) when installing the V*010-W onto the primary side of the regulator or filter regulator.

Option weight * Add to the weight of the standard accessories. Unit: kg

Code				Option	al parts			
Code	W8A	A10W	A15W	A20W	A25W	A32W	BW	S
V3010	0.16	0.16	0.16	0.16	0.16		0.17	0.015
V6010				0.53	0.53	0.53	0.34	0.02

Electric actuator Pneumatic cylinders Pneumatic valves FP1 Vacuum components Main line components Fluid control valves Main line components Antibacterial/Bacteria-removing filter Vacuum components Fluid control valves

Pneumatic cylinders

Pneumatic valves

components

Main line components

Fluid control

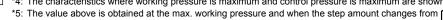
components Main line

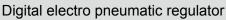
Antibacterial/Bacteriaremoving filter

Vacuum

components

Fluid control





EVD-FP1 Series

JIS symbol









Pneumatic, Vacuum and Auxiliary Components

Catalog No. CB-024SA

Specific	ations									
Descripti	ons	EVD-1100-*08□ Analog (*…0/1/2)	EVD-1100-P08□ Parallel	EVD-1500-*08☐ Analog (*…0/1/2)	EVD-1500-P08□ Parallel	EVD-1900-*08□ Analog (*…0/1/2)	EVD-1900-P08□ Parallel	EVD-3500-*08 EVD-3500-*10 Analog (*…0/1/2)	EVD-3500-P08☐ EVD-3500-P10☐ Parallel	
Working flu	id		Clean comp	ressed air (JIS	B 8392-1: 201	2 (ISO 8573-1:	2010) [1:3:2] o	. , ,		
Max. working	g pressure	160	kPa	700	kPa	1000) kPa	700	kPa	
Min. workin	g pressure	Control press	sure +50 kPa			Control press	ure +100 kPa	•		
Proof	Inlet	240	kPa	1050) kPa	1500) kPa	1050	kPa	
pressure	Output side	150	kPa	750	kPa	1350) kPa	750	kPa	
Pressure cont	rol range *1	0 to 10	00 kPa	0 to 5	00 kPa	0 to 90	00 kPa	0 to 50	00 kPa	
Power supp	oly voltage		24	VDC ±10% (sta	abilized power	supply with ripp	le rate 1% or le	ess)		
Current cor	nsumption				ì	ish current whe				
Input signa (Input impe	dance)	0-10 VDC (6.7 kΩ) 0-5 VDC (10 kΩ) 4-20 mADC (250 Ω)	10 bit	0-10 VDC (6.7 kΩ) 0-5 VDC (10 kΩ) 4-20 mADC (250 Ω	10 bit	0-10 VDC (6.7 kΩ) 0-5 VDC (10 kΩ) 4-20 mADC (250 Ω)	10 bit	0-10 VDC (6.7 kΩ) 0-5 VDC (10 kΩ) 4-20 mADC (250 Ω)	10 bit	
Preset inpu	ıt	8 point	None	8 point	None	8 point	None	8 point	None	
Output sign	nal *2	Output a	ccuracy: ±6% F	S. or less, and	log output: 1 to	5 VDC (conne	cting load impe	edance 500 kΩ	and over)	
————		Switch output: I	NPN or PNP ope	n collector outpu	t, 30 V or less ar	nd 50 mA or less,	voltage drop 2.4	V or less, PLC/r	elay compatible	
Error outpu				<u> </u>				V or less, PLC/re		
Direct mem setting	nory							5 to 500 kPa (M		
					ator accuracy: ±					
Pressure display	Display range	0 to 100 kPa						0 to 500 kPa		
uispiay	Display resolution	1 k	Pa	11	Ра	1 k	Pa			
Hysteresis	*3			0.5% F.S. or less ±0.3% F.S. or less						
Linearity	*3									
Resolution	*3			0.2% F.S. or less						
Repeatabili					0.3% F.	S. or less		_		
Temperature	Zero point fluctuation				0.15% F.S	./°C or less				
characteristics	Span fluctuation			0.07% F.S./°C or less						
Max. flow rate		60 l	/min		400	1500	ℓ/min			
Step response					0.2 sec	. or less				
Vibration re	sistance				98 m/s	or less				
Ambient ter	mperature				5 to	50°C				
Fluid tempe	erature				5 to	50°C				
	IN, OUT			Ro	:1/4			Rc1/4, Rc3/8		
Port size	EXH Port				-			Rc	3/8	
	Pilot air exhaust port					15				
Mounting o	rientation					ree		1		
Weight					0 g			45		
Protection	circuit	Power reverse	connection pro	tection, switch of	output reverse c	onnection protec	ction, switch out	put load short-ci	rcuit protection	

^{*1:} There is 1% F.S. or less residual pressure when the input signal is 0%. (EVD-1100: 1 kPa, EVD-1500: 5 kPa, EVD-1900: 9 kPa, EVD-3500: 5 kPa)

CKD

^{*2:} Select analog output or switch output.

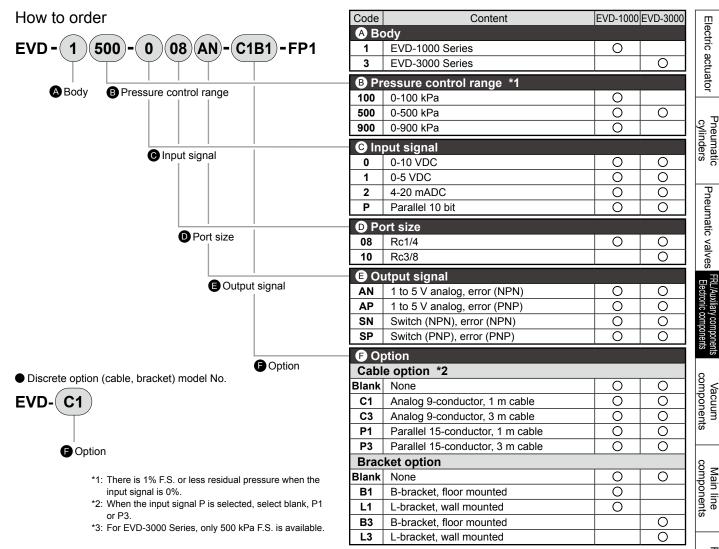
^{*3:} The above characteristics apply in the control pressure 10 to 90% range with a 24 ±0.1 VDC power voltage and the working pressure set to maximum control pressure +50 kPa (EVD-1100), or maximum control pressure +100 kPa (EVD-1500, 1900, 3500), with no load, at ambient temperature of 25 ±3°C. In addition, when the secondary side is a closed circuit, pressure fluctuations will occur if the product is used for blowing or for similar applications.

^{*4.} The characteristics where working pressure is maximum and control pressure is maximum are shown.

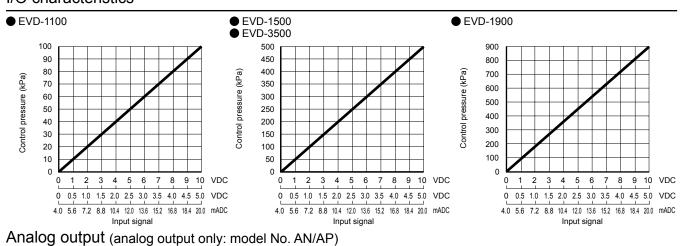
^{50%} F.S. to 100% F.S.

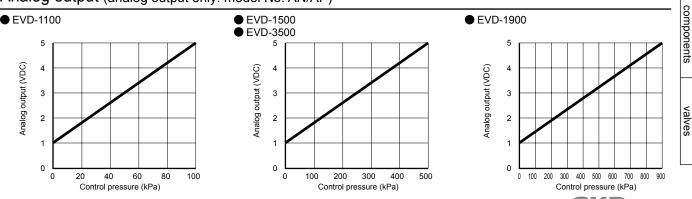
EVD-FP1 Series

How to order



I/O characteristics





Fluid control

Main line components

Antibacterial/Bacteria-

Vacuum

Fluid control

fler

EVD-FP1 Series

Flow characteristics/Relief flow characteristics

Flow characteristics

Electric actuator

Pneumatic cylinders

Pneumatic valves

components

Vacuum

Main line components

Fluid control

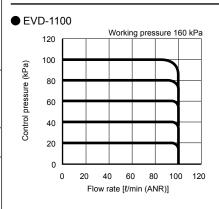
valves

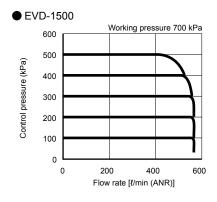
Main line components

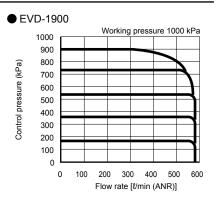
Antibacterial/Bacteria-

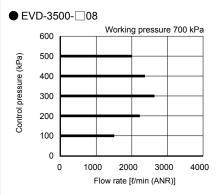
Vacuum

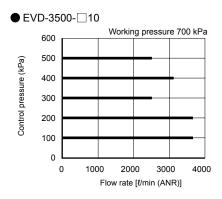
Fluid control



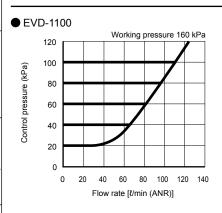


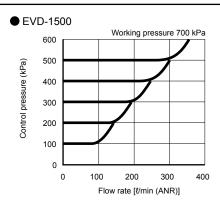


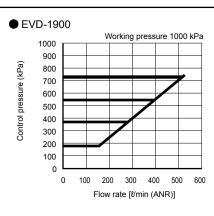


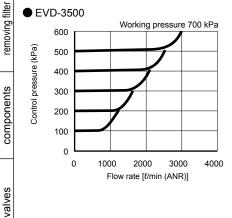


Relief characteristics









			777					T	2	
Electric actuator	Pneumatic	Dogumatic valves	FRL/Auxiliary components	Vacuum	Main line	Fluid control	Main line	Antibacterial/Bacteria-	Vacuum	Fluid control
5	cylinders	Electronic	Electronic components	components	components	valves	components	removing filter	components	valves



Pneumatic, Vacuum and Auxiliary Components Catalog No. CB-024SA

Fitting

GW-FP1 Series

- Port size M5 to R1/2, ø4 to ø12
- Compatible tube ø4 to ø12



Specifications

Descriptions		GW				
Working fluid		Compressed air				
Max. working pressure	MPa	1.0				
Negative pressure	KPa	− 100 *2				
Ambient temperature	°C	-10 to 60 (no freezing)				
		Soft nylon tube (F-15**)				
Tube used		Urethane tube (U-95**, NU-**) *1				

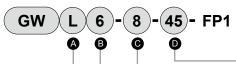
- *1: Refer to Pneumatic, Vacuum and Auxiliary Components (CB-024SA) for tube dimensions, ambient
- temperature and working pressure. *2: Use a urethane tube $(U-95^{**}/NU-^{**})$ together with an insert ring at vacuum pressure.

How to order

* Refer to Pneumatic, Vacuum and Auxiliary Components (CB-024SA) for model combinations.

L plug

Y plug



810

812

108

1010

1012

1210

1212

ø8/ø10

ø8/ø12

ø10/ø8

ø10/ø10

ø10/ø12

ø12/ø10

ø12/ø12

(Sha	ре	B Com	patible tube O.D.	C	Port	size	Othe	r combinations
	S	Straight	4	ø4		M5	M5 × 0.8	L	Long
	L	Elbow	6	ø6		6	R1/8	Т	Turn
	Т	Tee	8 10	ø8 ø10		8	R1/4	D	D type
	TR	Tetrapod	12	ø12		10	R3/8	Х	Bulkhead
	Υ	Y tee	16	ø16		15	R1/2	S	Round
	FY	FY	44	ø4/ø4		0	No thread	М	Female
	WY	Double Y	46	ø4/ø6		4P	Plug for ø4	Е	Bulkhead female
	CR	Cross	48	ø4/ø8		6P	Plug for ø6	W	Double
	С	Сар	64 66	ø6/ø4 ø6/ø6		8P	Plug for ø8	2T	2-port turn
	M	For tightening fitting	68	ø6/ø8		10P	Plug for ø10	45	Single 45°
	MF	Manifold	610	ø6/ø10		12P	Plug for ø12	Note: Sa	les unit is 10 pcs. /
			86	ø8/ø6		С	C plug		
			88	ø8/ø8	\vdash	ı	Lolug		

E	Bulkhead female
W	Double
2T	2-port turn
45	Single 45°

/1 bag.

Internal structure and parts list

0	2 3 4
	6 6
	7

Internal structure and parts list

	No.	Part name	Material
		Dady *1	Copper alloy (electroless nickeling treatment)
	1	Body *1	Polybutylene terephthalate (flame-resistant resin *2)
_	2	Packing	Nitrile rubber
_	3	Chuck holder	Polyetherimide
_	4	Chuck	Stainless steel
_	5	Push ring	Polybutylene terephthalate (flame-resistant resin *2)
_	6	Outer ring	Copper alloy (electroless nickeling treatment)
_	7	Drive-in nipple	Copper alloy (electroless nickeling treatment)

^{*1:} Body is copper alloy (electroless nickel plated) for single straight, single straight (round), female straight, bulkhead female, bulkhead, and tightening connector.
*2: UL94 standards V-0 equivalent

Electric actuator

Pneumatic valves



ZW-FP1 Series

Port size M3 to R1/2, ø4 to ø12

Fitting

Compatible tube O.D.: ø3.2 to ø12



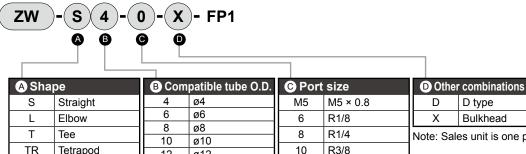
Specifications

Descriptions	ZW
Working fluid	Air
Max. working pressure MPa	1.0
Operating vacuum pressure KPa	-100
Ambient temperature °C	0 to 60 (no freezing. *1)
Tube used	Soft nylon tube (F-15**)/Urethane tube (U-92**, U-95**, NU-**)

*1: Freezing could occur by adiabatic expansion depending on air quality (dew point).

How to order

* Refer to Pneumatic, Vacuum and Auxiliary Components (CB-024SA) for model combinations.



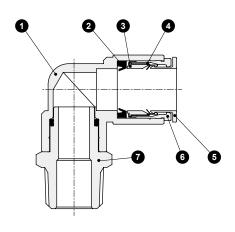
	* *				
S	Straight	4	ø4	M5	M5 × 0.8
L	Elbow	6	ø6	6	R1/8
Т	Tee	8	ø8	8	R1/4
TR	Tetrapod	10	ø10 ø12	10	R3/8
Y	Y tee	44	Ø4/Ø4	15	R1/2
FY	FY	46	ø4/ø6	0	No thread
WY	Double Y	48	ø4/ø8	4P	Plug for ø4
		64	ø6/ø4		<u> </u>
С	Сар	66	ø6/ø6	6P	Plug for ø6
MF	Manifold	68	ø6/ø8	8P	Plug for ø8
		610	ø6/ø10	10P	Plug for ø10
		86	ø8/ø6	12P	Plug for ø12
		88	ø8/ø8		
		810	ø8/ø10		
		108	ø10/ø8		
		1010	ø10/ø10		
		1012	ø10/ø12		

1210 ø12/ø10

Bulkhead Note: Sales unit is one piece.

D type

Internal structure and main parts list



No.	Part name	Material
1	Dody *1	Stainless steel (SUS303)
ı	Body *1	Polybutylene terephthalate (flame-resistant resin *2)
2	Packing	Nitrile rubber
3	Chuck holder	Polyacetal
4	Chuck	Stainless steel (SUS301)
5	Push ring *3	Polybutylene terephthalate (flame-resistant resin *2)
6	Outer ring	Stainless steel (SUS303)
7	Drive-in nipple	Stainless steel (SUS303)

- *1: The single straight body is stainless steel (SUS303).
- *2: UL94 standards V-0 equivalent
- *3: Standard push ring color is light blue.

^{*2:} Use an insert ring when using urethane tube (U-92**, U-95**, NU-**) under vacuum pressure.

Dimensions

Electric actuator

Pneumatic cylinders

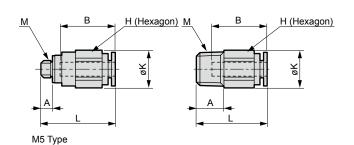
Pneumatic valves

Main line components

removing filter

Dimensions: Single straight/bulkhead/straight/different diameter straight

Single straight ● ZW-S□-□-FP1

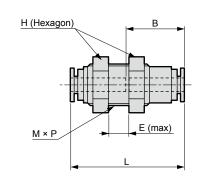


Model No.	Compatible tube O.D. ø	I M	н	ĸ	L	A	В	Min. bore size	Effective cross- sectional area mm²
ZW-S 4-M5-FP1		M5 × 0.8	10	11	21.5	3.4	16	2.5	4
ZW-S 4- 6-FP1	4	R1/8	10	11	20.5	8	16	2.5	4
ZW-S 4- 8-FP1	1	R1/4	14	15.8	19.5	11	16	2.5	4
ZW-S 6-M5-FP1		M5 × 0.8	12	13.5	23	3.4	17.5	2.5	4.4
ZW-S 6- 6-FP1	6	R1/8	12	13.5	23	8	17.5	4	10.3
ZW-S 6- 8-FP1	l °	R1/4	14	15.8	23.5	11	17.5	4	10.3
ZW-S 6-10-FP1	1	R3/8	17	19.1	21.5	12	17.5	4	10.3
ZW-S 8- 6-FP1		R1/8	14	15.8	28	8	19	5	17.5
ZW-S 8- 8-FP1	8	R1/4	14	15.8	27	11	19	6	22.4
ZW-S 8-10-FP1	1	R3/8	17	19.1	22.5	12	19	6	22.4
ZW-S10- 6-FP1		R1/8	17	19.1	31	8	21.5	5	17.5
ZW-S10- 8-FP1	10	R1/4	17	19.1	32.5	11	21.5	8	30.5
ZW-S10-10-FP1	10	R3/8	17	19.1	28.5	12	21.5	8	30.5
ZW-S10-15-FP1		R1/2	22	24	26.5	15	21.5	8	30.5
ZW-S12- 8-FP1		R1/4	19	21.4	35.5	11	23	8	35.5
ZW-S12-10-FP1	12	R3/8	19	21.4	30.5	12	23	10	40
ZW-S12-15-FP1	1	R1/2	22	24	29.5	15	23	10	40

Bulkhead

● ZW-S□-□-X-FP1

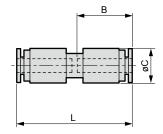
Different diameter straight ● ZW-S□-0-FP1



Model No.	Compatible tube O.D. ø	н	L	В	E	Μ×Ρ	Mounting hole diameter	Min. bore size	Effective cross- sectional area mm²
ZW-S 4-0-X-FP1	4	14	33	16	7.5	M12 × 1	13	2.5	4
ZW-S 6-0-X-FP1	6	17	36	17.5	9.5	M14 × 1	15	4	10
ZW-S 8-0-X-FP1	8	19	39	19	12.5	M16 × 1	17	6	22
ZW-S10-0-X-FP1	10	23	44.5	21.5	18	M20 × 1	21	8	30
ZW-S12-0-X-FP1	12	26	47	23	20.5	M22 × 1	23	9	35

Straight

■ ZW-S□-0-FP1



	B₁ ►	B ₂ ►
A side-		B side &

Model No.	Compatible tube O.D. ø	L	В	С	Min. bore size	Effective cross- sectional area mm²
ZW-S 4-0-FP1	4	33.5	16	10	2.5	4
ZW-S 6-0-FP1	6	36.5	17.5	12.5	4	10
ZW-S 8-0-FP1	8	39.5	19	14.5	6	22
ZW-S10-0-FP1	10	45	21.5	17.5	8	30
ZW-S12-0-FP1	12	47.5	23	20	10	35
					•	

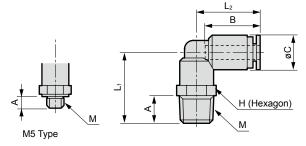
Model No.	Compatible	tube O.D. ø		В₁	B ₂	С	Min. bore	Effective cross- sectional area
Woder No.	A side	B side	L	D 1	D 2	C	size	mm ²
ZW-S 46-0-FP1	6	4	36.5	17.5	16	12.5	2.5	4
ZW-S 68-0-FP1	8	6	39.5	19	17.5	14.5	4	10
ZW-S 810-0-FP1	10	8	45	21.5	19	17.5	6	22
ZW-S1012-0-FP1	12	10	47.5	23	21.5	20	8	30

Fluid control Vacuum valves components

Dimensions: Single elbow/elbow/double tee/D tee

Single elbow

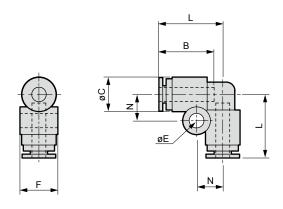
● ZW-L□-□-FP1



Model No.	Compatible tube O.D. ø	М	н	L ₁	L ₂	Α	В	С	Min. bore size	Effective cross- sectional area mm²
ZW-L 4-M5-FP1		M5 × 0.8	8	15	18	3.4	16	10	2.5	3.2
ZW-L 4- 6-FP1	4	R1/8	10	20.5	18.5	8	16	10	2.5	3.2
ZW-L 4- 8-FP1		R1/4	14	24	18.5	11	16	10	2.5	3.2
ZW-L 6-M5-FP1		M5 × 0.8	10	15	20	3.4	17.5	12.5	2.5	4.2
ZW-L 6- 6-FP1	6	R1/8	12	24	21	8	17.5	12.5	4	8
ZW-L 6- 8-FP1	ľ	R1/4	14	27.5	21	11	17.5	12.5	4	8
ZW-L 6-10-FP1		R3/8	17	29	21	12	17.5	12.5	4	8
ZW-L 8- 6-FP1		R1/8	14	25.5	23.5	8	19	14.5	6	18
ZW-L 8- 8-FP1	8	R1/4	14	28.5	23.5	11	19	14.5	6	18
ZW-L 8-10-FP1		R3/8	17	30	23.5	12	19	14.5	6	18
ZW-L10- 6-FP1		R1/8	17	28	27	8	21.5	17.5	6.5	24.3
ZW-L10- 8-FP1	10	R1/4	17	31	27	11	21.5	17.5	8	27
ZW-L10-10-FP1	1 10	R3/8	17	32.5	27	12	21.5	17.5	8	27
ZW-L10-15-FP1	l	R1/2	22	35.5	27	15	21.5	17.5	8	27
ZW-L12- 8-FP1	12	R1/4	19	33	29.5	11	23	20	8.5	33
ZW-L12-10-FP1		R3/8	19	34.5	29.5	12	23	20	9	35
ZW-L12-15-FP1		R1/2	22	37.5	29.5	15	23	20	9	35.5

Elbow

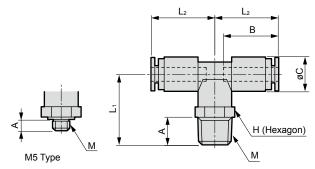
● ZW-L□-0-FP1



Model No.	Compatible tube O.D. ø		В	С	N	E	F	Min. bore size	Effective cross-sectional area mm²
ZW-L 4-0-FP1	4	18.5	16	10	7.5	4.2	11	2.5	3
ZW-L 6-0-FP1	6	21	17.5	12.5	8.5	4.2	13.5	4	7.5
ZW-L 8-0-FP1	8	23.5	19	14.5	9.5	4.2	15.5	6	17
ZW-L10-0-FP1	10	27	21.5	17.5	11	4.2	18.5	8	25.5
ZW-L12-0-FP1	12	29.5	23	20	12	4.2	21	10	34

Double tee

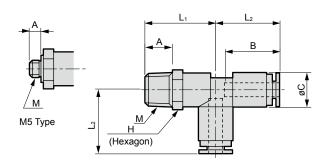
● ZW-T□-□-FP1



Model No.	Compatible tube O.D. ø	NI I	н	L ₁	L ₂	Α	В	С	Min. bore size	Effective cross- sectional area mm²
ZW-T 4-M5-FP1		M5 × 0.8	10	16.5	18.5	3.4	16	10	2.5	4.3
ZW-T 4- 6-FP1	4	R1/8	10	20.5	18.5	8	16	10	2.5	4.3
ZW-T 4- 8-FP1		R1/4	14	24	18.5	11	16	10	2.5	4.3
ZW-T 6-M5-FP1		M5 × 0.8	12	20	21	3.4	17.5	12.5	2.5	4.3
ZW-T 6- 6-FP1	6	R1/8	12	24	21	8	17.5	12.5	4	10.5
ZW-T 6- 8-FP1	ľ	R1/4	14	27.5	21	11	17.5	12.5	4	10.5
ZW-T 6-10-FP1		R3/8	17	29	21	12	17.5	12.5	4	10.5
ZW-T 8- 6-FP1		R1/8	14	25.5	23.5	8	19	14.5	6	23.5
ZW-T 8- 8-FP1	8	R1/4	14	28.5	23.5	11	19	14.5	6	23.5
ZW-T 8-10-FP1		R3/8	17	30	23.5	12	19	14.5	6	23.5
ZW-T10- 8-FP1		R1/8	17	31	27	11	21.5	17.5	8	33.5
ZW-T10-10-FP1	10	R1/4	17	32.5	27	12	21.5	17.5	8	33.5
ZW-T10-15-FP1		R3/8	22	35.5	27	15	21.5	17.5	8	33.5
ZW-T12- 8-FP1		R1/2	19	33	29.5	11	23	20	8.5	37
ZW-T12-10-FP1	12	R1/4	19	34.5	29.5	12	23	20	9	41
ZW-T12-15-FP1]	R3/8	22	37.5	29.5	15	23	20	9	41

D tee

● ZW-T□-□-D-FP1



Model No.	Compatible tube O.D. ø		н	L ₁	L ₂	A	В	С	Min. bore size	Effective cross- sectional area mm²
ZW-T 4-M5-D-FP1		M5 × 0.8	10	16.5	18.5	3.4	16	10	2.5	4.3
ZW-T 4- 6-D-FP1	4	R1/8	10	20.5	18.5	8	16	10	2.5	4.3
ZW-T 4- 8-D-FP1		R1/4	14	24	18.5	11	16	10	2.5	4.3
ZW-T 6-M5-D-FP1		M5 × 0.8	12	19.5	21	3.4	17.5	12.5	2.5	4.3
ZW-T 6- 6-D-FP1	6	R1/8	12	24	21	8	17.5	12.5	4	10.5
ZW-T 6- 8-D-FP1	١ ٥	R1/4	14	27.5	21	11	17.5	12.5	4	10.5
ZW-T 6-10-D-FP1		R3/8	17	29	21	12	17.5	12.5	4	10.5
ZW-T 8- 6-D-FP1		R1/8	14	25.5	23.5	8	19	14.5	6	23.5
ZW-T 8- 8-D-FP1	8	R1/4	14	28.5	23.5	11	19	14.5	6	23.5
ZW-T 8-10-D-FP1		R3/8	17	30	23.5	12	19	14.5	6	23.5
ZW-T10- 8-D-FP1		R1/8	17	31	27	11	21.5	17.5	8	33.5
ZW-T10-10-D-FP1	10	R1/4	17	32.5	27	12	21.5	17.5	8	33.5
ZW-T10-15-D-FP1		R3/8	22	35.5	27	15	21.5	17.5	8	33.5
ZW-T12- 8-D-FP1		R1/2	19	33	29.5	11	23	20	8.5	37
ZW-T12-10-D-FP1	12	R1/4	19	34.5	29.5	12	23	20	9	41
ZW-T12-15-D-FP1		R3/8	22	37.5	29.5	15	23	20	9	41

Dimensions

Electric actuator

Pneumatic cylinders

Pneumatic valves

L/Auxiliary componen

Vacuum components

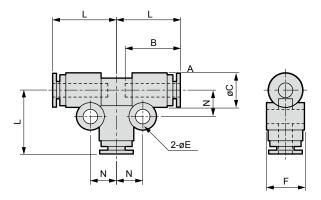
Main line components

Fluid control valves

Dimensions: Tee/different diameter tee/Y tee/double Y tee

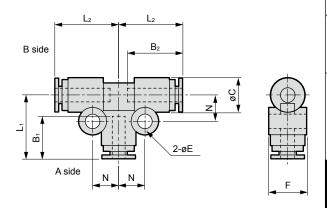
Tee

● ZW-T□-0-FP1



Different diameter tee

● ZW-T□-0-FP1

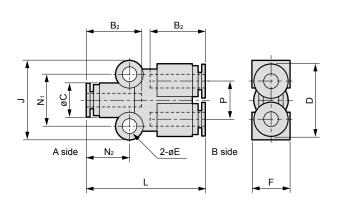


Model No.	Compatible tube O.D. ø	L	В	С	E	F	N	Min. bore size	Effective cross- sectional area mm²
ZW-T 4-0-FP1	4	18.5	16	10	4.2	11	7.5	2.5	3.6
ZW-T 6-0-FP1	6	21	17.5	12.5	4.2	13.5	8.5	4	9.7
ZW-T 8-0-FP1	8	23.5	19	14.5	4.2	15.5	9.5	6	22
ZW-T10-0-FP1	10	27	21.5	17.5	4.2	18.5	11	8	30
ZW-T12-0-FP1	12	29.5	23	20	4.2	21	12	10	35.5

Model No.	Comp tube (atible O.D. ø		L ₂	B₁	B ₂	С	E	F	N	Min. bore	Effective cross-sectional
	A side	B side									size	area mm²
ZW-T 46-0-FP1	4	6	21	21	16	17.5	12.5	4.2	13.5	8.5	2.5	3.6
ZW-T 68-0-FP1	6	8	23.5	23.5	17.5	19	14.5	4.2	15.5	9.5	4	9.7
ZW-T 810-0-FP1	8	10	27.5	27	19	21.5	17.5	4.2	18.5	11	6	22
ZW-T1012-0-FP1	10	12	29.5	29.5	21.5	23	20	4.2	21	12	8	30

Y tee

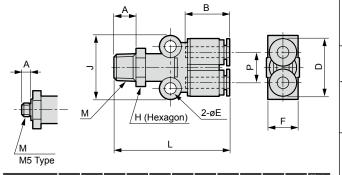
● ZW-Y□-0-FP1



Model No.		atible O.D. ø		B ₁	B ₂	С	D	E	F	J	N ₁	N ₂	Р	Effective cross- sectional
	A side	B side												area mm²
ZW-Y 44-0-FP1	4	4	34.5	16	16	10	21	4.2	11	23	15	12.5	11	3.6
ZW-Y 66-0-FP1	6	6	37.5	17.5	17.5	12.5	26	4.2	13.5	25.5	17.5	14	13.5	10.5
ZW-Y 88-0-FP1	8	8	40.5	19	19	14.5	30	4.2	15.5	27	19	15	15.5	23
ZW-Y1010-0-FP1	10	10	48	21.5	21.5	17.5	36	4.2	18.5	30	22	18	18.5	38
ZW-Y1212-0-FP1	12	12	53	23	23	20	41	4.2	21	32	24	19.5	21	50
ZW-Y 64-0-FP1	6	4	37.5	17.5	16	12.5	26	4.2	13.5	25.5	17.5	14	13.5	5.4
ZW-Y 86-0-FP1	8	6	40.5	19	17.5	14.5	30	4.2	15.5	27	19	15	15.5	14.3
ZW-Y 108-0-FP1	10	8	48	21.5	19	17.5	36	4.2	18.5	30	22	18	18.5	21.1
ZW-Y1210-0-FP1	12	10	53	23	21.5	20	41	4.2	21	32	24	19.5	21	35.5

Double Y tee

● ZW-Y□-□-FP1



Model No.	Compatible tube O.D. ø	M	н	L	A	В	D	E	F	J	Р	Effective cross- sectional area mm ²
ZW-Y 4-M5-FP1		M5 × 0.8	12	38	3.4	16	21	4.2	11	23	11	4.5
ZW-Y 4- 6-FP1	4	R1/8	12	42	8	16	21	4.2	11	23	11	5.5
ZW-Y 4- 8-FP1		R1/4	14	45.5	11	16	21	4.2	11	23	11	5.5
ZW-Y 6-M5-FP1		M5 × 0.8	14	41	3.4	17.5	26	4.2	13.5	25.5	13.5	4.5
ZW-Y 6- 6-FP1	6	R1/8	14	46	8	17.5	26	4.2	13.5	25.5	13.5	17.5
ZW-Y 6- 8-FP1	١°	R1/4	14	49	11	17.5	26	4.2	13.5	25.5	13.5	17.5
ZW-Y 6-10-FP1		R3/8	17	50.5	12	17.5	26	4.2	13.5	25.5	13.5	17.5
ZW-Y 8- 6-FP1		R1/8	17	49	8	19	30	4.2	15.5	27	15.5	25.5
ZW-Y 8- 8-FP1	8	R1/4	17	52	11	19	30	4.2	15.5	27	15.5	25.5
ZW-Y 8-10-FP1		R3/8	17	53.5	12	19	30	4.2	15.5	27	15.5	25.5
ZW-Y10- 8-FP1		R1/4	19	59.5	11	21.5	36	4.2	18.5	30	18.5	35
ZW-Y10-10-FP1	10	R3/8	19	61	12	21.5	36	4.2	18.5	30	18.5	38.5
ZW-Y10-15-FP1		R1/2	22	64	15	21.5	36	4.2	18.5	30	18.5	38
ZW-Y12- 8-FP1		R1/4	22	64.5	11	23	41	4.2	21	32	21	37
ZW-Y12-10-FP1	12	R3/8	22	66	12	23	41	4.2	21	32	21	37
ZW-Y12-15-FP1		R1/2	22	69	15	23	41	4.2	21	32	21	40.5

М

M5 × 0.8

R1/8

M5 × 0.8

R1/4 14

R3/8 17

R1/8

R3/8

R1/4

R3/8

R1/2

R3/8 22 43 30 12

> 22 46 30 15

12

R1/4 14

н

10 26.5

30 19 11

33 21.5

34.5 21.5

17 32.5 24

17 35.5 24

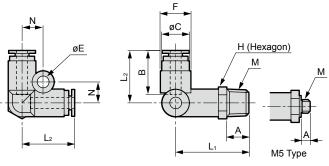
19 39.5 27.5

19 41 27.5

Dimensions: Tetrapod (with R)/FY (with R)/double Y (with R)/tetrapod

Tetrapod (with R)

● ZW-TR□-□-FP1



Α В

R1/8 14 30 21.5 8 17.5 12.5 4.2 13.5 8.5

12

8

11

11

R1/4 22 41.5 30 11 23 20 4.2 21

22 44 27.5 15 21.5 17.5 4.2 18.5

17 37 24 12 19 14.5 4.2 15.5 9.5

12 21.5 17.5 4.2

23 20 4.2

23 | 20 | 4.2 | 21

19 8

F	H (He:	xagon) M M5 Type
-	L ₁ -	M5 Type

С Ε F N

10 22.5 19 3.4 16 10 4.2 11 7.5 2.5 4.3

16 10 4.2

16 10 4.2

14 | 25 | 21.5 | 3.4 | 17.5 | 12.5 | 4.2 | 13.5 | 8.5 | 2.5 | 4.3

17.5 12.5 4.2

11 17.5 12.5 4.2 13.5 8.5

21.5 17.5 4.2 18.5

19 14.5 4.2 15.5 9.5

19 14.5 4.2 15.5 9.5

11 7.5 2.5 4.5

4 10.5

23.5

6 23.5

8 35.5

14 8.5 37.5

14 8.5 37.5

14 8.5 37.5

4 10.5

11 7.5

13.5 8.5

18.5 13 8 35.5

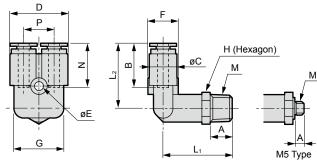
21

13 8 35.5

13

● ZW	-FY_	-□-FP1	
1	D		

FY (with R)

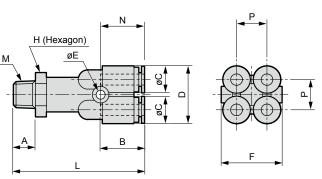


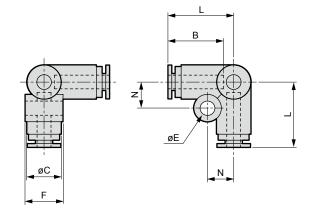
Model No.	Compatible tube 0.D. ø	М	н	L ₁	L ₂	A	В	С	D	E	F	G	N	Р	Min. bore size	Effective cross- sectional area mm ²
ZW-FY 4-M5-FP1		M5 × 0.8	10	21	23.5	3.4	16	10	21	3.2	11	18	15.5	11	2.5	4.5
ZW-FY 4- 6-FP1	4	R1/8	10	25	23.5	8	16	10	21	3.2	11	18	15.5	11	2.5	4.6
ZW-FY 4- 8-FP1		R1/4	14	28.5	23.5	11	16	10	21	3.2	11	18	15.5	11	2.5	4.6
ZW-FY 6-M5-FP1		M5 × 0.8	14	23	27	3.4	17.5	12.5	26	4.2	13.5	22.5	17	13.5	2.5	4.5
ZW-FY 6- 6-FP1	6	R1/8	14	28	27	8	17.5	12.5	26	4.2	13.5	22.5	17	13.5	4	10.5
ZW-FY 6- 8-FP1	١	R1/4	14	31	27	11	17.5	12.5	26	4.2	13.5	22.5	17	13.5	4	10.5
ZW-FY 6-10-FP1		R3/8	17	32.5	27	12	17.5	12.5	26	4.2	13.5	22.5	17	13.5	4	10.5
ZW-FY 8- 6-FP1		R1/8	17	30.5	29	8	19	14.5	30	4.2	15.5	26.5	18	15.5	6	23
ZW-FY 8- 8-FP1	8	R1/4	17	33.5	29	11	19	14.5	30	4.2	15.5	26.5	18	15.5	6	23
ZW-FY 8-10-FP1		R3/8	17	35	29	12	19	14.5	30	4.2	15.5	26.5	18	15.5	6	23
ZW-FY10- 8-FP1		R1/4	19	37.5	33	11	21.5	17.5	36	4.2	18.5	31.5	20	18.5	8	34.4
ZW-FY10-10-FP1	10	R3/8	19	39	33	12	21.5	17.5	36	4.2	18.5	31.5	20	18.5	8	34.4
ZW-FY10-15-FP1		R1/2	22	42	33	15	21.5	17.5	36	4.2	18.5	32.5	20	18.5	8	34.4
ZW-FY12- 8-FP1		R1/4	22	39.5	35.5	11	23	20	41	4.2	21	37	21.5	21	8.5	37.5
ZW-FY12-10-FP1	12	R3/8	22	41	35.5	12	23	20	41	4.2	21	37	21.5	21	8.5	37.5
ZW-FY12-15-FP1		R1/2	22	44	35.5	15	23	20	41	4.2	21	37	21.5	21	8.5	37.5

Double Y (with R) ZW-WY .-----FP1

Tetrapod

■ ZW-TR□-0-FP1





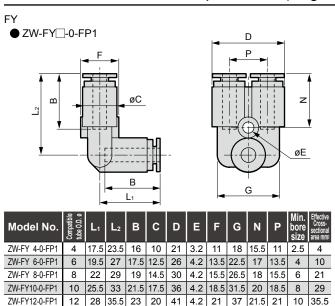
Model No.	Compatible tube 0.D. ø	M	н	L	Α	В	С	D	E	F	N	Р	Effective cross- sectional area mm ²
ZW-WY4- 6-FP1	4	R1/8	14	47.5	8	16	10	21	3.2	22	15.5	11	9.7
ZW-WY4- 8-FP1	4	R1/4	14	50.5	11	16	10	21	3.2	22	15.5	11	9.7
ZW-WY6- 6-FP1	6	R1/8	17	51.5	8	17.5	12.5	26	3.2	27	17	13.5	23

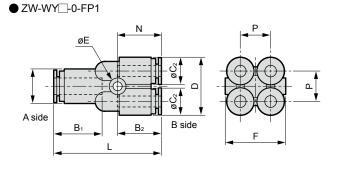
Model No.	Compatible tube O.D. ø	L	В	С	E	F	N	Min. bore size	Effective Cross- sectional area mm ²
ZW-TR 4-0-FP1	4	19	16	10	4.2	11	7.5	2.5	4
ZW-TR 6-0-FP1	6	21.5	17.5	12.5	4.2	13.5	8.5	4	9.5
ZW-TR 8-0-FP1	8	24	19	14.5	4.2	15.5	9.5	6	12.5
ZW-TR10-0-FP1	10	27.5	21.5	17.5	4.2	18.5	13	8	29.5
ZW-TR12-0-FP1	12	30	23	20	4.2	21	14	10	35.5

Fluid control valves

Dimensions

Dimensions: FY/double Y/cap/manifold (single/with R)





Model No.		atible O.D. ø		В₁	B ₂	C ₁	C ₂	D	E	F	N	Р	Effective cross-
	A side	B side	_										sectional area mm²
ZW-WY64-0-FP1	6	4	39	17.5	16	12.5	10	21	3.2	22	15.5	11	9
ZW-WY86-0-FP1	8	6	43	19	17.5	14.5	12.5	26	3.2	27	17	13.5	22

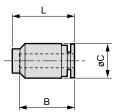
Cap

Model

ZW-C 4-FP1 ZW-C 6-FP1 ZW-C 8-FP1 ZW-C10-FP1

ZW-C12-FP1

● ZW-C□-FP1



		B B	<u> </u>	
l No.	Compatible tube O.D. ø	В	øС	

ible tube O.D. ø	В	øС	L
4	16	10	18
6	17.5	12.5	19.5
8	19	14.5	21

17.5

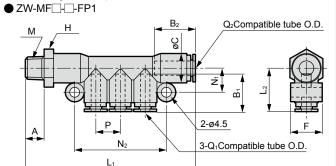
20

24

26

Manifold (single/with R)

Double Y



Model No.	Comp tube (atible D.D. ø	м	н	1.4	L ₂	Δ	R₄	R₂	С	F	N ₄	Na	P	Effective Cross-
Model No.	Q1	Q2	IVI					D1			•	Mi	142		sectional area mm²
ZW-MF 46- 6-FP1	4	6	R1/8	14	72.5	18.5	8	16	17.5	12.5	13.5	10.5	39	10.5	8.3
ZW-MF 48- 8-FP1	4	8	R1/4	17	77.5	19.5	11	16	19	14.5	15.5	11.5	39	10.5	24.2
ZW-MF 68- 8-FP1	6	8	R1/4	17	84.5	21	11	17.5	19	14.5	15.5	11.5	46.5	13	24.2
ZW-MF810-10-FP1	8	10	R3/8	19	97.5	23.5	12	19	21.5	17.5	18.5	13	52.5	15	35.5

Dimensions: Manifold (single)/plug reducer

21.5

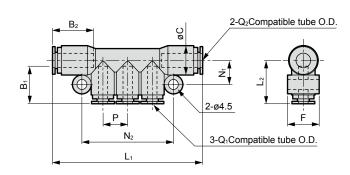
23

Manifold (single)

● ZW-MF□-0-FP1

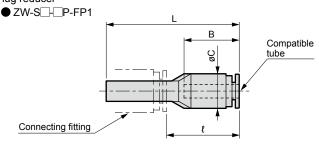
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12



Model No.	Comp tube	atible O.D. ø	L	L ₁ L ₂		L ₂ B ₁		_1		C F		F N ₁		P	Effective Cross-
Model No.	Q1	Q2		L 2				•	INI	142		sectional area mm²			
ZW-MF 46-0-FP1	4	6	64	18.5	16	17.5	12.5	13.5	10.5	39	10.5	7.9			
ZW-MF 48-0-FP1	4	8	66	19.5	16	19	14.5	15.5	11.5	39	10.5	22			
ZW-MF 68-0-FP1	6	8	73	21	17.5	19	14.5	15.5	11.5	46.5	13	22			
ZW-MF610-0-FP1	6	10	78.5	22	17.5	21.5	17.5	18.5	13	46.5	13	30			
ZW-MF810-0-FP1	8	10	84.5	23.5	19	21.5	17.5	18.5	13	52.5	15	30			

Plug reducer



Model No.	Compatible tube O.D. ø	Connecting fitting Diameter ø	L	e*	В	С	Min. bore size	Effective cross-sectional area mm2
ZW-S 4- 6P-FP1		6	38.5	21	16	10	2.3	3.5
ZW-S 4- 8P-FP1	4	8	40.4	21.5	16	10	3	5.6
ZW-S 4-10P-FP1		10	42	20.5	16	12.5	3	5.6
ZW-S 6- 4P-FP1		4	42	26	17.5	12.5	2.3	3.5
ZW-S 6- 8P-FP1	6	8	41	22	17.5	12.5	4	10
ZW-S 6-10P-FP1	0	10	42	20	17.5	12.5	4	10
ZW-S 6-12P-FP1		12	44	21	17.5	14.5	4	10
ZW-S 8-10P-FP1	0	10	44.5	22.5	19	14.5	6	22
ZW-S 8-12P-FP1	8	12	44	21	19	14.5	6	22
ZW-S10-12P-FP1	10	12	48	25	21.5	17.5	8	30

^{*} Dimensions for CKD connection fittings (ZW-FP1 Series).

Electric actuator

Pneumatic cylinders

Pneumatic valves

Vacuum components

Main line components

Fluid control valves

Main line components

Antibacterial/Bacteria-

removing filter

Vacuum components

Fluid control valves

Pneumatic cylinders

Fluid control valves

components

Pneumatic, Vacuum and Auxiliary Components

Catalog No. CB-024SA

Speed controller, elbow with push-in fitting

SC3W-FP1 Series

Port size: M5, R1/8 to R1/2

JIS symbol







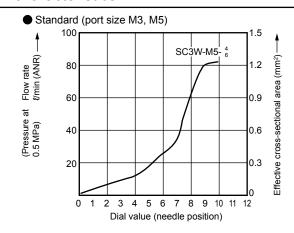


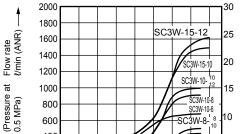
Specifications

Ороб.	modificine														
Descri	ntions														
Descii	ptions	SC3\	V-M5	•	SC3W-6	6	;	SC3W-	3		SC3	W-10		SC3	W-15
Compat	ible tube O.D. mm	ø4	ø6	ø4	ø6	ø8	ø6	ø8	ø10	ø6	ø8	ø10	ø12	ø10	ø12
Working	g fluid						Compressed air								
Max. wo	rking pressure MPa							1	.0						
Min. wo	rking pressure MPa		0.05												
Proof pr	essure MPa						1.5								
Fluid ter	mperature °C	rature °C				5 to 60 (no freezing. *2)									
Ambien	t temperature °C						0	to 60 (no	o freezin	g)					
Port size	е	N	15		R1/8		R1/4				R3/8			R1/2	
Weight	g	8.8	9.6	25	26	27	50	51	54	63.7	75	78	81	134	138
Dial valu	ue (needle position)	10 or	more	1	0 or mor	e	1	3 or moi	e	13 or more				14 or	more
Free	Flow rate {/min (ANR)	8	7	210	270	270	470	500	530	650	1000	11	00	1500	1600
flow	Effective cross-sectional area mm ²	1.3		3.2	4.0	4.0	7	7.5	8	10	15	16		22	24
Controlled	Flow rate {/min (ANR)	80		190	240	240	430	470	470	650	930	10	000	1500	1600
flow	Effective cross-sectional area mm ²	1	.2	2.8	3.6	3.6	6.5	7	7.0	10	14	1	5	22	24
														'	

- *1: Flow rate is the atmospheric pressure conversion value at pressure 0.5 MPa.
- *2: Freezing could occur by adiabatic expansion depending on air quality (dew point).

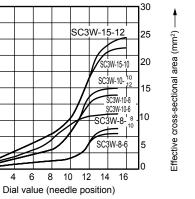
Flow characteristics

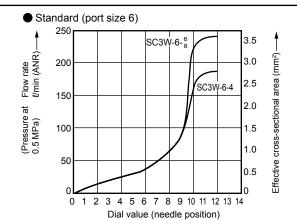




6 8 10 12

● Standard (port size 8, 10, 15)





600

400

0

SC3W-FP1 Series

Electric actuator

Pneumatic cylinders

Pneumatic valves

Vacuum components

Main line components

Fluid control valves

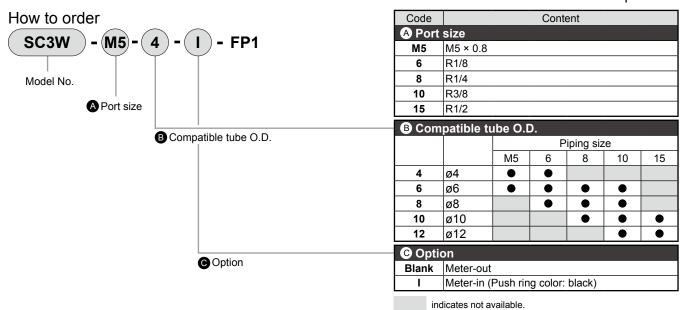
Main line components

Antibacterial/Bacteriaremoving filter

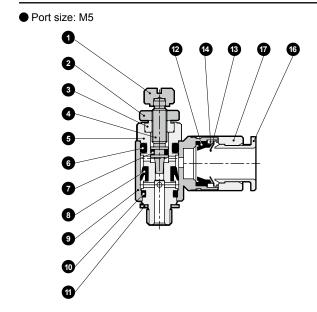
Vacuum components

Fluid control valves

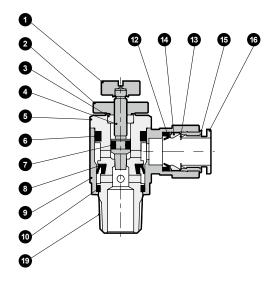
How to order/internal structure and parts list



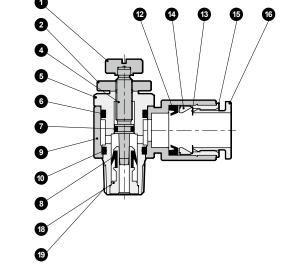
Internal structure and parts list



● Port size: 8, 10, 15



• Port size: 6, 10 (ø6 only)



No.	Part name	Mate	rial				
1	Knob	Coppe	r alloy				
2	Lock nut	Coppe	r alloy				
3	Gland nut	Coppe	r alloy				
4	Needle	Stainle	ss steel				
5	Rotary shaft	Coppe	r alloy				
6	O-ring	Nitrile	rubber				
7	O-ring	Nitrile	rubber				
8	Packing	Hydrog	genated nitrile rubber				
9	Rotor	Polybutyle	Polybutylene terephthalate (flame-resistant resin '				
10	O-ring	Nitrile	rubber				
11	Gasket	Steel +	nitrile rubber (M5 only)				
12	Packing	Nitrile	rubber				
13	Chuck	Stainle	ss steel				
14	Chuck holder	M5	Copper alloy				
14	Chuck Holder	R1/8 to	Polyetherimide				
15	Outer ring	Coppe	r alloy				
16	Push ring	Polybutyle	ene terephthalate (flame-resistant resin *2)				
17	Fitting body	Coppe	r alloy				
18	Check part	Coppe	r alloy				
19	Sealant	Fluorin	Fluorinated resin				

^{*1:} All the copper alloy parts have electroless nickel plating.

^{*2:} UL94 standards V-0 equivalent

Pneumatic cylinders

Pneumatic valves



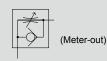
Pneumatic, Vacuum and Auxiliary Components Catalog No. CB-024SA

Speed controller with adjusting dial

DSC-FP1 Series

Port size: R1/8 to R1/2

JIS symbol







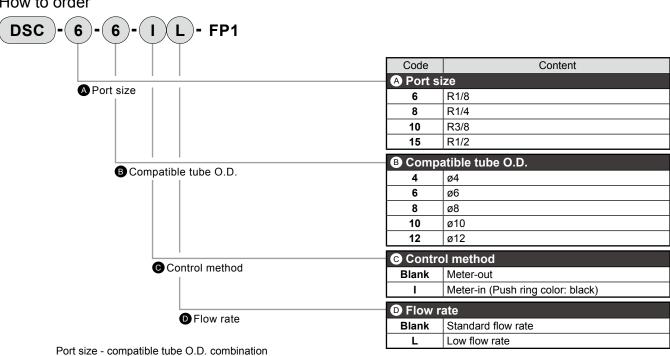


Specifications

ions														
s			DSC-6			DSC-8			DSC	C-10		DSC-15		
be O.D.	mm	ø4	ø6	ø8	ø6	ø8	ø10	ø6	ø8	ø10	ø12	ø10	ø12	
			Compressed air											
pressure	MPa						1	1.0						
ressure	MPa						0.	05						
Э	MPa						1	.5						
ture	°C		5 to 60 (no freezing *2)											
Ambient temperature °C						0	to 60 (n	o freezin	g)					
		R1/8				R1/4			R3/8				1/2	
	g	33	34	35	45	46	48	60	61	64	65	95	97	
l range			1 to 10 rotations											
Flow rate	ℓ/min (ANR)	210	270	270	470	530	530	670	1000	1070	1070	1470	1600	
Effective cross-sec	tional area mm²	3.2	4	4	7	8	8	10	15	16	16	22	24	
Flow rate	ℓ/min (ANR)	Mmin (ANR) 160 200 200				400	400	400	700	800	800	1120	1200	
(Standard flow rate) Effective cross-sectional area mm²		2.4	3	3	5	6	6	6	10.5	12	12	17	17.5	
Flow rate	ℓ/min (ANR)		60			130			27	70		40	00	
(Low flow rate) Effective cross-sectional area mm²		0.9 2				4				6				
	be O.D. pressure pressure ture erature I range Flow rate Effective cross-sec Flow rate Effective cross-sec Flow rate	be O.D. mm pressure MPa pressure MPa pressure MPa ture °C erature °C g I range Flow rate \$\(llimin\) (ANR) Effective cross-sectional area mm² Flow rate \$\(llimin\) (ANR) Effective cross-sectional area mm² Flow rate \$\(llimin\) (ANR) Effective cross-sectional area mm² Flow rate \$\(llimin\) (ANR)	be O.D. mm ø4 pressure MPa pressure MPa ture °C erature °C g 33 I range Flow rate t/min (ANR) 210 Effective cross-sectional area mm² 3.2 Flow rate t/min (ANR) 160 Effective cross-sectional area mm² 2.4 Flow rate t/min (ANR)	DSC-6	DSC-6	DSC-6 DSC-	DSC-6 DSC-8	DSC-6 DSC-8 DSC-8 DSC-8 DSC-8 DSC-8 DSC-8 DSC-8 DSC-9 DSC-	DSC-6 DSC-8 DSC-8 DSC-8 DSC-8 DSC-8 DSC-9 DSC-	DSC-6 DSC-8 DSC-	DSC-6 DSC-8 DSC-10	DSC-6 DSC-8 DSC-10	DSC-6 DSC-8 DSC-10 DSC	

- *1: Flow rate is the atmospheric pressure conversion value at 0.5 Mpa.
- *2: Freezing could occur by adiabatic expansion depending on air quality (dew point).

How to order



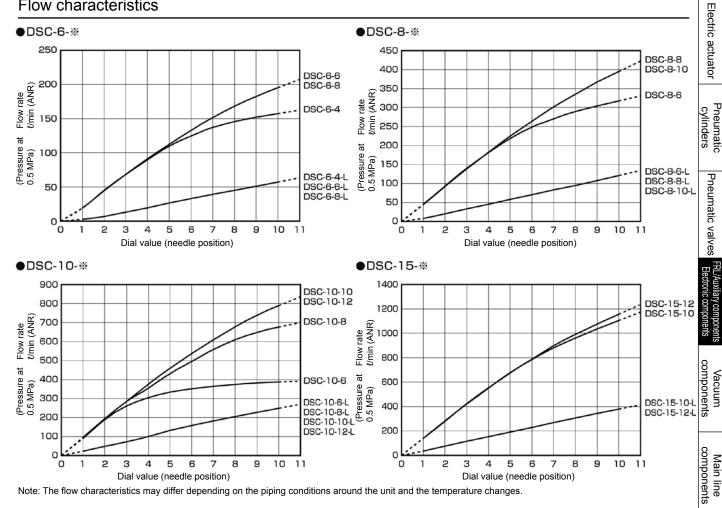
Piping Tube	R1/8	R1/4	R3/8	R1/2
ø4	0			
ø6	0	0	0	
ø8	0	0	0	
ø10		0	0	0
g12				

valves

DSC-FP1 Series

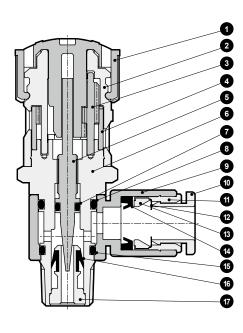
Flow characteristics/Internal structure and parts list

Flow characteristics



Note: The flow characteristics may differ depending on the piping conditions around the unit and the temperature changes.

Internal structure and parts list



No.	Part name	Material
1	Knob	Polyacetal
2	Gear cover	Polybutylene terephthalate
3	Gear	Stainless steel
4	Indication ring	Polyacetal
5	Needle	Stainless steel
6	Rotary shaft	Copper alloy
7	O-ring	Nitrile rubber
8	O-ring	Nitrile rubber
9	Rotor	Polybutylene terephthalate
10	Push ring	Polybutylene terephthalate
11	Outer ring	Copper alloy
12	Chuck	Stainless steel
13	Chuck holder	Polyetherimide
14	Packing	Nitrile rubber
15	O-ring	Nitrile rubber
16	Packing	Hydrogenated nitrile rubber
17	Check part	Copper alloy

^{*1:} All the copper alloy parts have electroless nickel plating.

FP1

Fluid control valves

Main line components

Antibacterial/Bacteria-

removing filter

Vacuum components

Fluid control



Speed controller Line type with push-in fitting

Port size: ø4, ø6, ø8, ø10, ø12

JIS symbol







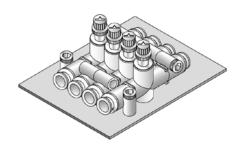
Overview

The SCL2 Series is an inline speed controller useful for remote or centralized actuator control.

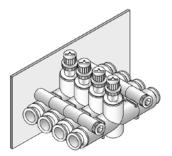
Features

Unrestricted mounting

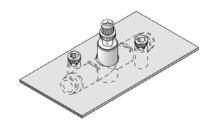
The mounting part rotates by 360°, enabling flexible selection of bottom/side mounting, panel mounting and mounting/installation style. An installation bracket is not required.



Example of base mounting



Example of wall mounting



Example of panel mounting

Large flow rate with compact

The max. flow rate achieved even with a compact body is large, which extends the selection range for cylinder size and speed control.

Standard ozone-resistant materials

Ozone-resistant materials are used as standard for check packing to prevent deterioration of product.

Push-in connection

Push-in fittings simplify tubing connections.

Standard flame-resistant resin

(UL94 Standard V-0 or equivalent)

Specifications

Speed controller Line type SCL2

Model N	lo.		SCL2-04	SCL2-06	SCL	2-08		SCL2-10	
Compatib	ole tube O.D.	mm	ø4	ø6	ø6	ø8	ø8	ø10	ø12
Working f	fluid					Compressed ai	r		
Max. wor	king pressure	MPa			1.0				
Min. work	working pressure MPa 0.1								
Proof pressure MPa 1.5									
Fluid tem	perature	°C			5 to	60 (no freezing	J. *2)		
Ambient t	temperature	°C			0 t	o 60 (no freezii	ng)		
Weight		g	11.5	16	32	33	53	57	59
Needle ro	otation speed					12 [15]			
	Flow rate	ℓ/min (ANR)	130	300	400	550	900	1100	1200
Free flow	Effective cross-sect	ional area mm²	1.9	4.5	6	8	13.5	16.5	18
Controlled	Flow rate	ℓ/min (ANR)	130	300	400	550	900	1100	1200
flow	Effective cross-sect	ional area mm²	1.9	4.5	6	8	13.5	16.5	18

^{*1:} Flow rate is the atmospheric pressure conversion at 0.5 MPa.

^{*2:} Freezing may occur due to adiabatic expansion depending on the air quality (dew point).



Refer to Pneumatic, Vacuum and Auxiliary Components (CB-024SA) for the safety precautions for the SCL2 Series.

Electric actuator

Pneumatic cylinders

Pneumatic valves

components

Fluid control

Main line components

Antibacterial/Bacteriaremoving filter

Vacuum components

Fluid control

How to order/flow characteristics

Internal structure and parts list

Combination of body size, compatible tube O.D., and flow characteristics

			A Body size						
			04	06	08	10			
O.D.	H44	ø4	•						
Compatible tube O.D.	H66	ø6		•	•				
atible	H88	ø8			•	•			
Сотр	H1010	ø10				•			
@	H1212	ø12				•			

Flow characteristics "standard" Not available

Flow characteristics

How to order

SCL₂

Model No.

Speed controller Line type

(04)

A Body size

Refer to the table at right for body size, compatible tube O.D., and flow

characteristic combinations.

H44)-FP1

B Compatible tube O.D.

Code

04 06

08

10

H44

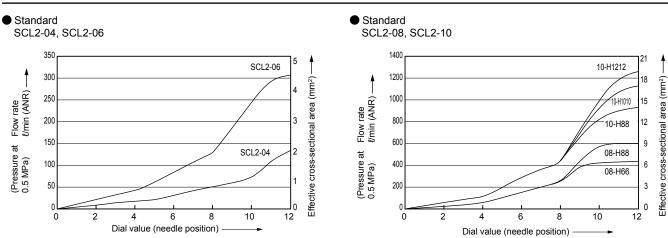
H66

H88

H1010

H1212

A Body size



Content

M5 thread equivalent

1/8 thread equivalent

1/4 thread equivalent

3/8 thread equivalent

B Compatible tube O.D.

ø4

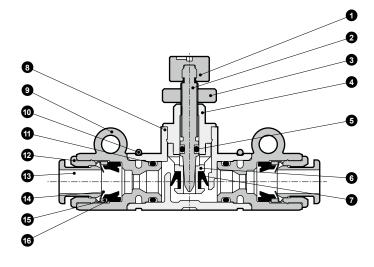
ø6

ø8

ø10

ø12

Internal structure and parts list



No.	Part name	Material
1	Knob	Polybutylene terephthalate
2	Needle	Copper alloy
3	Lock nut	Copper alloy
4	Guide ring	Copper alloy
5	O-ring	Nitrile rubber
6	Check bracket	Copper alloy
7	Check packing	Hydrogenated nitrile rubber
8	Body	Polybutylene terephthalate
9	Fitting case	Polybutylene terephthalate
10	Stopper ring	Stainless steel
11	O-ring	Nitrile rubber
12	Outer ring	Copper alloy
13	Push ring	Polybutylene terephthalate
14	Chuck	Stainless steel
15	Holder	Copper alloy or polyetherimide
16	Packing	Nitrile rubber

- *1: All the copper alloy parts have electroless nickel plating.
 - *2: Resin parts are all flame-resistant (UL94 standards V-0 or equivalent)

removing filter



Pneumatic, Vacuum and Auxiliary Components Catalog No. CB-024SA

Needle valve with adjusting dial, check valve

VL-S-FP1 Series

● Port size: ø4, ø6, ø8, ø10, ø12

JIS symbol







Specifications

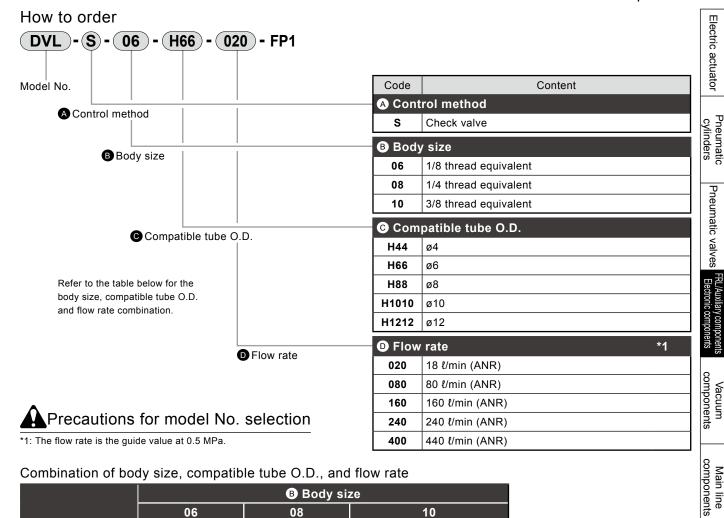
Needle valve with adjusting dial, check valve DVL-S

	alo valvo		<u> </u>	,								
Descriptions -			DVL-S-06				DVL-S-08		DVL-S-10			
Descri	puons		02	20	08	080		240		400		
Compatible	e tube O.D.	mm	ø4	ø6	ø4	ø6	ø6	ø6	ø8	ø8	ø10	ø12
Working	fluid				•		Compre	ssed air				
Max. worki	ng pressure	MPa					1	.0				
Min. workir	ng pressure	MPa		0.1 (*3)								
Proof pressure MPa			1.5									
Fluid ten	nperature	°C	5 to 60 (no freezing. *2)									
Ambient te	emperature	°C	0 to 60 (no freezing)									
Weight		g	54	48	54	48	48	60	61	82	86	88
Needle	control ran	ge		1 to 12 rotations				1 to 13 rotations				
Free	Flow rate	ℓ/min (ANR)	170	300	170	300	300	400	550	900	1100	1200
flow	Effective cross-sec	ctional area mm²	2.5	4.5	2.5	4.5	4.5	6	8	13.5	16.5	18
Controlled Flow rate {/min (ANR)		1	18 80 160			160	60 240		440			
flow	Effective cross-sec	ctional area mm²	0.	15	1	.2	2.4	3.6 6.6				

^{*1:} Flow rate is the atmospheric pressure conversion at 0.5 MPa.

^{*2:} Freezing could occur by adiabatic expansion depending on air quality (dew point).
*3: Evacuating up to -100 kPa is possible only in the direction of free flow. (Needle control is not available)

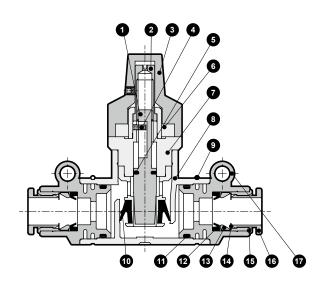
How to order/internal structure and parts list



Combination of body size, compatible tube O.D., and flow rate

			B	Body si	ze		
	0	6	0	8		10	
© Compatible tube O.D.	1144	LIGG	LIGG	H88	H88	111010	H1212
Flow rate	H44	H66	H66	Поо	Поо	H1010	1212
020	•	•					
080	•	•					
160		•					
240			•	•			
400					•	•	•

Internal structure and parts list



No.	Part name	Material
1	Needle	Copper alloy
2	Rotary shaft	Copper alloy
3	Dial	Aluminum alloy, polyamide, etc.
4	Parallel pin	Stainless steel
5	O-ring	Nitrile rubber
6	Guide bush	Copper alloy
7	Check bracket	Copper alloy
8	Body	Polybutylene terephthalate
9	Stopper ring	Stainless steel
10	Check packing	Hydrogenated nitrile rubber
11	O-ring	Nitrile rubber
12	Packing	Nitrile rubber
13	Holder	Copper alloy or polyetherimide
14	Chuck	Stainless steel
15	Outer ring	Copper alloy
16	Push ring	Polybutylene terephthalate or polyacetal
17	Fitting case	Polybutylene terephthalate

^{*1:} All the copper alloy parts have electroless nickel plating.

Main line components

Antibacterial/Bacteriaremoving filter

Vacuum components

Fluid control

^{*2:} Some structures differ depending on the type. (No material changed)

Pneumatic cylinders

Pneumatic valves



Miniature speed controller

SC-M5-FP1 Series

Compact and lightweight enabling space-saving piping.

JIS symbol SC-M5-S SC-M5-F







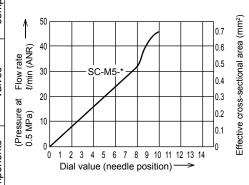


Specifications

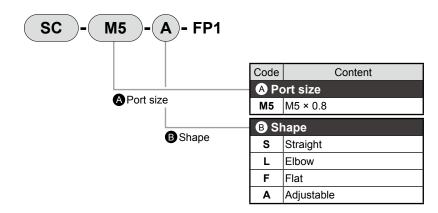
Оробііі	Cations								
Descriptions			SC-M5-S	SC-M5-L	SC-M5-F	SC-M5-A			
Working f	luid			Compre	ssed air				
Max. work	king pressure	MPa		0.	7				
Min. work	ing pressure	MPa		0.	1				
Proof pres	ssure	MPa		1.0	05				
Fluid tem	perature	°C		5 to 60 (no freezing) *1					
Ambient t	emperature	°C	0 to 60 (no freezing)						
Port size			M5						
Weight		g	5.6	4.8	7.9	8.5			
Cylinder b	ore size	mm	ø6 to ø25						
Needle ro	tation speed		10						
Cros flow	Flow rate	ℓ/min (ANR)	53						
Free flow	Effective cross-secti	ional area mm²	0.8						
Controlled Flow rate \(\ell\)/min (ANR)			47						
flow	Effective cross-secti	ional area mm²		0.7					

^{*1:} Freezing may occur due to adiabatic expansion depending on the air quality (dew point).

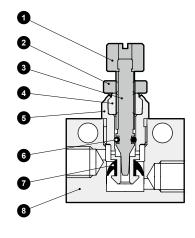
Flow characteristics



How to order



Internal structure and parts list



No.	Part name	Material
1	Knob	Aluminum alloy
2	Lock nut	Aluminum alloy
3	Needle	Stainless steel
4	Needle guide	Aluminum alloy
5	Check bracket	Aluminum alloy
6	O-ring	Nitrile rubber
7	Packing	Hydrogenated nitrile rubber
8	Body	Aluminum alloy

Note: For fine speed, the material of the needle guide is stainless steel.

^{*2:} Flow rate is the atmospheric pressure conversion at 0.5 MPa.

components

Fluid control







Pneumatic, Vacuum and Auxiliary Components Catalog No. CB-024SA

SC1-FP1 Series

● Port size: Rc1/8 to Rc1/2

JIS symbol





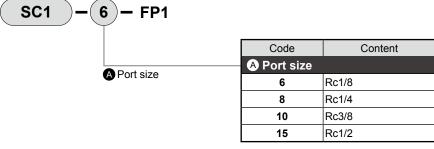


Specifications

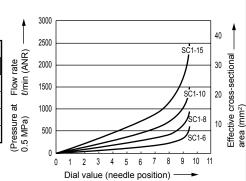
	ncations	,						
Descriptions			SC1-6	SC1-8	SC1-10	SC1-15		
Working	g fluid			Compre	essed air			
Max. wor	king pressure	MPa		1	.0			
Min. work	king pressure	MPa		0	.05	,		
Proof pr	essure	MPa		1	.5			
Fluid ter	mperature	°C	5 to 60 (no free	5 to 60 (no freezing. *2) (5°C to 120°C for heat resistance/ozone-proof specifications)				
Ambient	temperature	e °C	0 to 60 (no fro	0 to 60 (no freezing) (5°C to 120°C for heat resistance/ozone-proof specifications)				
Port size	е	Rc	1/8	1/4	3/8	1/2		
Weight		g	100	95	205	195		
Cylinde	r bore size	mm	ø20 to ø50	ø32 to ø75	ø50 to ø140	ø80 to ø160		
Needle	rotation spe	ed	10	10	10	10		
Free	Flow rate	ℓ/min (ANR)	730	930	2600	2900		
flow	Effective cross-sec	tional area mm²	11	14	39	43		
Controlled	Flow rate	ℓ/min (ANR)	530	870	1500	2400		
flow Effective cross-sectional area mm ²		tional area mm²	8	13	22	36		

^{*1:} Flow rate is the atmospheric pressure conversion at 0.5 MPa.

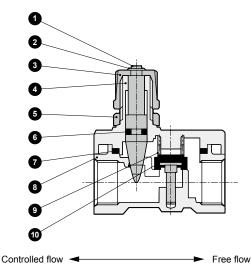
How to order



Flow characteristics



Internal structure and parts list



No.	Part name	Material
1	Needle	Copper alloy
2	E snap ring	Steel
3	Knob	Zinc die-casting
4	Needle guide	Aluminum die-casting
5	Lock nut	Zinc die-casting
6	O-ring	Nitrile rubber
7	Gasket	Nitrile rubber
8	Body	Aluminum die-casting
9	Spring	Stainless steel
10	Valve seat	Copper alloy/nitrile rubber

^{*2:} Freezing could occur by adiabatic expansion depending on air quality (dew point).

Pneumatic, Vacuum and Auxiliary Components Catalog No. CB-024SA

Electric actuator

Pneumatic cylinders

Pneumatic valves

Main line components Fluid control

Main line components Antibacterial/Bacteriaremoving filter

components

Metering valve with silencer

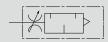
SMW-FP1 Series

Port size: R3/8, R1/2

JIS symbol

1700

25







Specifications

Descriptions	SMW-10A	SMW-15A		
Working fluid	Compre	essed air		
Max. working pressure MPa	C).7		
Min. working pressure MPa		0		
Proof pressure MPa	1.	.05		
Fluid temperature °C	5 to 60 (no	freezing. *3)		
Ambient temperature °C	-10 to 60 ((no freezing)		
Port size R	3/8	1/2		
Weight g	125	170		
Cylinder bore size mm	ø50 to ø100	ø50 to ø100		
Needle rotation speed	19	19		
Noise reduction effect *2 dB	20 oi	20 or more		

- *1: Flow rate is the atmospheric pressure conversion at 0.5 MPa.
- *2: Noise reduction effect at maximum flow rate is shown.

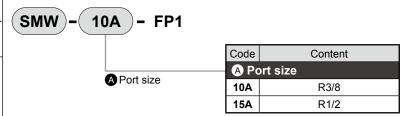
l/min (ANR

*3: Freezing could occur by adiabatic expansion depending on air quality (dew point).

How to order

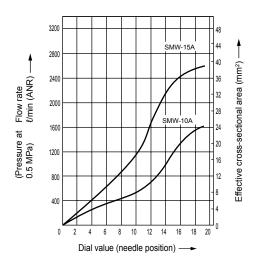
Effective cross-sectional area mm2

Flow rate *1



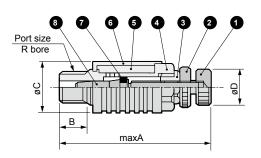
Flow characteristics

● SMW-10A/15A



Internal structure and parts list/dimensions

● SMW-10A/15A



2600

39

Mod	del No.	A	В		C	D	Port size	
SMV	V-10A	85 12			25	16	R3/8	
SMV	V-15A	98 15			28	16	R1/2	
No.	Part name	Material		No	. Part n	ame	Material	
1	Knob	Copper alloy		5	Sound abso	orbent material	Felt	
2	2 Lock nut Copper alloy		loy	6	Cover		Polyamide resin	
3	Gland nut	Copper alloy		7	O-ring		Nitrile rubber	
4	Shaft body	Copper alloy		8	Spindle		Copper alloy	

CAD

Fluid control





Catalog No. CB-024SA

SMW2-FP1 Series

Port size: R1/8 to R1/4

Metering valve with silencer

JIS symbol





Features

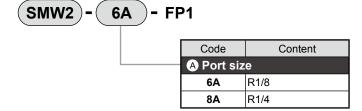
- Compact/lightweight/high flow rate Volume reduced by 50%, and weight reduced by 80% compared with conventional series, while max. effective cross-sectional area in the class is achieved.
- Noise reduction effect 23 dB (A) and over P.P. sintering element with high damping effect integrated into the body to maintain low noise level.
- Uses a push lock type needle Knob with push lock mechanism enables easy and secure locking.
- Environmental friendly design By using plastic material only, sorting at disposal is eliminated.

Specifications

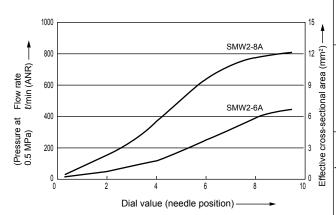
Descriptions	SMW2-6A	SMW2-8A	
Working fluid	Compressed air		
Max. working pressure MPa	0	.7	
Min. working pressure MPa	()	
Proof pressure MPa	1.0	05	
Fluid temperature °C	5 to	60	
Ambient temperature °C	-10 to 60 (r	no freezing)	
Ambient humidity %RH	85 oi	less	
Port size R	1/8	1/4	
Weight g	4.5	5	
Cylinder bore size mm	ø20 to ø50	ø32 to ø75	
Needle rotation speed	9		
Noise reduction effect (*2) dB[A]	23 or more	28 or more	
Flow rate (*1) {/min (ANR)	370	660	
Effective cross-sectional area mm ²	5.6	9.9	

^{*1:} Flow rate is the atmospheric pressure conversion at 0.5 MPa.

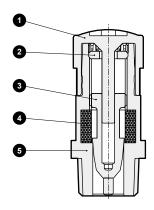
How to order



Flow characteristics



Internal structure and parts list



	No.	Part name	Material
	1	Knob	Polybutylene terephthalate
	2	Guide ring	Polyamide
	3	Needle	Polyamide
•	4	Element	PP sintered resin
•	5	Body	Polyamide

^{*2:} Noise reduction effect at maximum flow rate is shown.



Catalog No. CB-024SA

Block valve

FPV-FP1 Series

Port size: M5, R1/8 to R1/2

JIS symbol







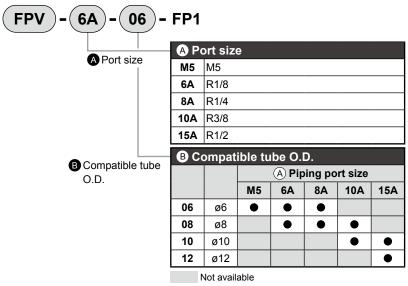
Features

- Compact valve ideal for position locking dropping and for cylinder braking.
- Compact and lightweight
- Variety of bore sizes available Series variations from M5 to R1/2 bore sizes enable direct cylinder installation.

Specifications

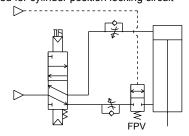
Descriptions	FPV-M5	FPV-M5 FPV-6A		FPV-8A		FPV	-10A	FPV-15A		
Port size	M5	R ²	1/8	R′	1/4	R	3/8	R1	/2	
Main side applicable tube O.D.	ø6	ø6	ø8	ø6	ø8	ø8	ø10	ø10	ø12	
Pilot side applicable tube O.D.		ø4		Ø	4	Ø	4	Ø	4	
Working fluid Com						air				
Max. working pressure MPa		1.0								
Min. working pressure MPa	0									
Proof pressure MPa					1.5					
Pilot pressure MPa			*	Refer to the	separate tab	le (page 192)).			
Fluid temperature °C					5 to 60					
Ambient temperature °C				0 to	60 (no freez	ring)				
Weight g	28	2	6	50	51	90	93	143	145	
Effective cross-sectional area mm ²	1.3	;	5	1	0	1	7	27		

How to order

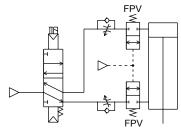


Applications

Used for cylinder position locking circuit



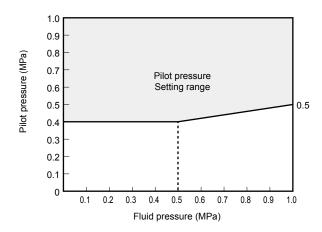
Used for cylinder braking circuit



Operational principle/internal structure and parts list

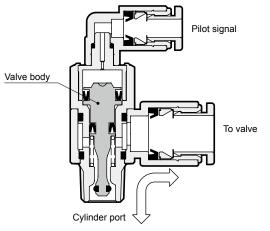
Pilot pressure

Set pilot air pressure within the specified range.



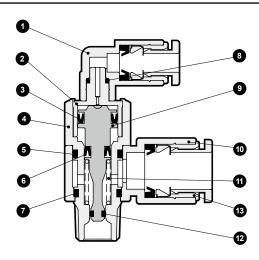
Note that the characteristics differ from the standard.

Operational principle



The valve opens if there is a pilot signal, but closes if the pilot signal is cut off.

Internal structure and parts list



No.	Part name	Material					
1	Fitting body	Polybutylene terephthalate (flame-resistant resin)					
2	Rotary shaft A	Copper alloy (electroless nickeling)					
3	Packing	Nitrile rubber					
4	Rotary shaft B	Copper alloy (electroless nickeling)					
5	O-ring	Nitrile rubber					
6	Packing	Nitrile rubber					
7	O-ring	Nitrile rubber					
8	O-ring	Nitrile rubber					
9	Valve body	Copper alloy (electroless nickeling)					
10	Body	Polybutylene terephthalate (flame-resistant resin) *1					
11	Spring	Stainless steel					
12	O-ring	Nitrile rubber					
13	Push-in fitting						

^{*1:} Zinc alloy die-casting is applied for female thread.

removing filter

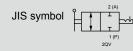
removing filter



Quick valve

2QV/3QV-FP1 Series

Port size: Push-in fitting ø4, ø6, ø8, ø10, ø12









Features

- Straight flow path and large effective sectional
- Flame-resistant resin has been adopted as a standard material. (UL94 standards V-0 equivalent)
- Manifold enabled by optional bracket.
- 2- and 3-port valves are available.

Specifications

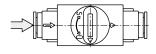
2QV/3QV				
Air				
1.0				
−100 (*1)				
1.5				
0 to 60				
0 to 60				
90				
Soft nylon tube (tube F-15**)				
Urethane tube (tube U-95**, NU-**)				
Arbitrary				

^{*1:} When using urethane tube (U-95**, NU-**) at vacuum, use an insert ring.

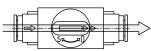
Operational explanation

2-port valve (2QV Series)

[Closed state]

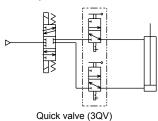




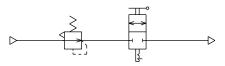


Applications

Shut-off valve in air cylinder circuit



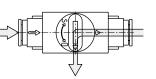
Stop valve in air blow circuit



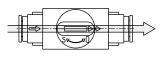
Quick valve (2QV)

3-port valve (3QV Series)

[Closed state]







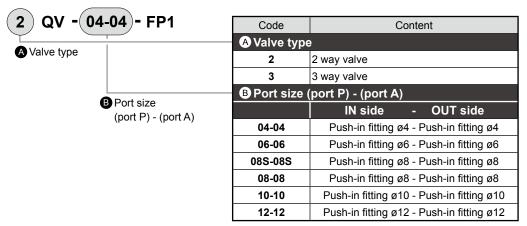
^{*2:} Lubricant is used, so oil-prohibited specification is not available.

2QV/3QV-FP1 Series

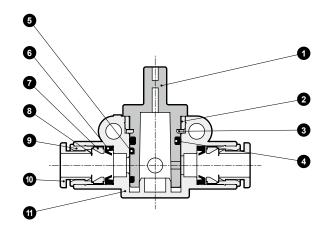
How to order/internal structure and parts list

How to order





Internal structure and parts list



Parts list

	Part name	Material				
1	Rotary shaft	PBT (UL94V-0 or equivalent)				
2	Stopper	Copper alloy (electroless nickeling treatment) *1				
2	Stopper	Stainless steel *2				
3	Ring	Steel				
4	O-ring	Nitrile rubber				
5	O-ring	Nitrile rubber				
6	Packing	Nitrile rubber				
7	Chuck holder	Polyetherimide				
8	Chuck	Stainless steel				
9	Outer ring	Copper alloy (electroless nickeling treatment)				
10	Push ring	PBT (UL94V-0 or equivalent)				
11	Body	PBT (UL94V-0 or equivalent)				

^{*1:} The port sizes in the dimensions apply to the 04-04, 06-06, and 08S-08S model material.

Electric actuator

removing filter

Vacuum components

Fluid control valves

^{*2:} The port sizes in the dimensions apply to the 08-08, 10-10, and 12-12 model material.

Pneumatic cylinders

Pneumatic valves

FRL/Auxiliary components Electronic components

components

valves



Single ejectors

VSH/VSC-FP1 Series

Nozzle diameter: Ø0.5, Ø0.7, Ø1.0, Ø1.2, Ø1.5, Ø2.0



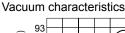
Common specifications

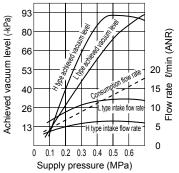
Descriptions	Specifications			
Working fluid	Air			
Working pressure MPa	0.15 to 0.7			
Working temperature/fluid temperature °C	0 to 60			

Vacuum characteristics, flow characteristics

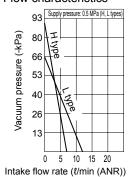
Supply pressure - achieved vacuum pressure, intake flow rate, air consumption rate

● VSH- † 05

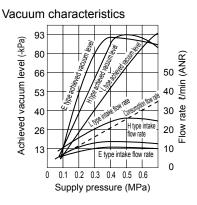




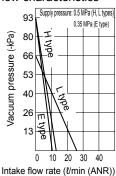




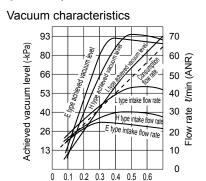
● VSH-*07, VSC-*07



Flow characteristics

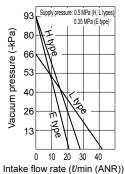


● VSH-*10, VSC-*10

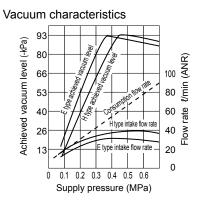


Supply pressure (MPa)

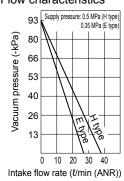
Flow characteristics



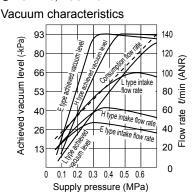
● VSH-*12, VSC-*12



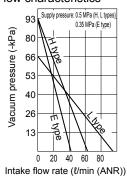
Flow characteristics



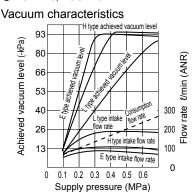
● VSH-*15, VSC-*15



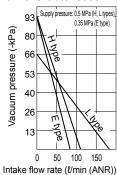
Flow characteristics



● VSH-*20, VSC-*20

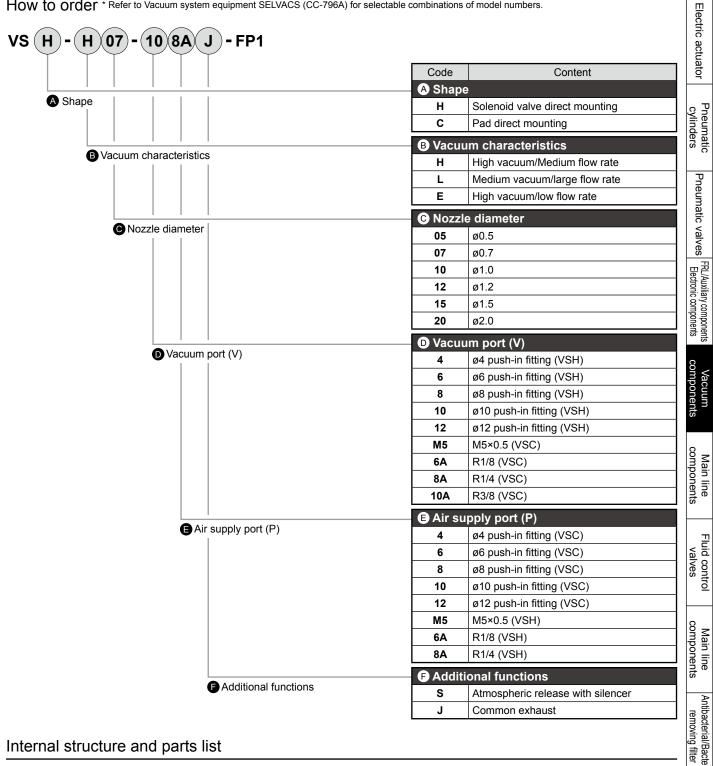


Flow characteristics

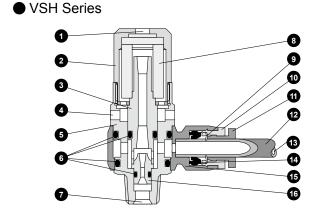


VSH/VSC-FP1 Series

How to order * Refer to Vacuum system equipment SELVACS (CC-796A) for selectable combinations of model numbers.



Internal structure and parts list



No.	Part name	Material	Remarks
1	Exhaust port (EX)		
2	Сар	Aluminum	
3	Diffuser	Copper alloy	Electroless nickel plating
4	Exhaust port (EX)		
5	Metal body	Copper alloy	Electroless nickel plating
6	O-ring	Nitrile rubber	
7	Air supply port (P)		
8	Silencer element	Polyvinyl formal	
9	Lock claw	Stainless steel	
10	Guide ring	Copper alloy	Electroless nickel plating
11	Release ring	Polyacetal	
12	Tube		
13	Vacuum port (V)		
14	Elastic sleeve	Nitrile rubber	
15	Resin body	Polybutylene terephthalate	
16	Nozzle	Copper alloy	Electroless nickel plating

Fluid control

Antibacterial/Bacteria-

Vacuum components

Fluid control valves

Antibacterial/Bacteriaremoving filter



E/SU400E/SD300E/SD400E-W-FP1 Series

E Series, with small air loss and filter-like usability

Reduces operation costs through energy-saving moisture removal with a purge ratio of 10%.

3 types of units are available. Appropriate system is available according to applications.

Processing air flow rate: 75 to 450 l/min (ANR) (0.7 MPa, atmospheric dew point -15°C)





Specifications

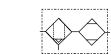
S	Jecli	icatioi	15																
De	scrip	otions							SU302E -*-W-C2							SD301E -*-W	SD302E -*-W	SD401E -*-W	SD402E -*-W
Appearance							N. Control of the Con												
			structu moistu which	Simple & space saving structure unit that removes moisture from the air from which solid impurities have already been removed. (*1)					A unit that supplies pressure- adjusted clean dry air just by supplying compressed air.			Discrete super dryer enabling easy system configuration with peripheral devices due to modular design.							
Configuration						st filter r dryer		Air filter Oil mist filter (with differential pressure gauge) Super dryer Air filter Oil mist filter (with differential pressure gauge) Super dryer Regulator				Super dryer							
ions	Worki	ing fluid			Compressed air														
condii	Inlet a	air pressu	re MPa	0.4 to 1.0															
Range of working conditions	Proof	pressure	MPa								1	.5							
e of w	Inlet a	air temper	ature °C								5 to	50							
Rang	Ambie	ent tempe	rature °C								5 to	50							
	Outlet ai	r atmospheric	dew point °C									15							
ח	Inlet a	ir flow rate	∜min (ANR)	75	150	300	450	75	150	300	450	75	150	300	450	75	150	300	450
Standard rating	Outle	t air flow	ℓ/min (ANR)	67	135	270	405	67	135	270	405	67	135	270	405	67	135	270	405
p D	Purge	e flow rate	e ℓ/min (ANR)	8	15	30	45	8	15	30	45	8	15	30	45	8	15	30	45
ndar	Inlet air	pressure de	ew point °C								2	25							
Star	Inlet a	air pressu	re MPa								0	.7							
•,		air temper									2	25							
		1	rature °C		25									r					
		Filtration			-	_						5					-	_	
Oil	mist filter	Oil remov					0.1	(about	0.1 PP	M) (inle	t air 30)°C)					-	_	
Re	gulator		range MPa				-	_					0.05 t				-	_	
	Relief pressure M						-	_				-	g press				-	_	
_		accesso				cket			tial pressu								-	_	
*1:	Oil mis	t filter cann	not be contro	olled with	n a diffe	rential pr	ressure (gauge fo	r C1. Re	place th	e oil mis	st filter m	antle ev	ery year					

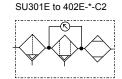
- : Oil mist filter cannot be controlled with a differential pressure gauge for C1. Replace the oil mist filter mantle every year.
- $^{\star}2$: Purge flow rate in reference rating section is also the same value at 0.5 MPa.

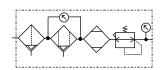
JIS symbol

SD301E to 402E-*

SU301E to 402E-*-C1







SU301E to 402E-*-C3

SU 3 00E/SD 3 00E-W-FP1 Series

Electric actuator

Pneumatic cylinders

Pneumatic valves | FRL/Auxiliary components | Electronic components

Fluid control

Main line components

Antibacterial/Bacteria-

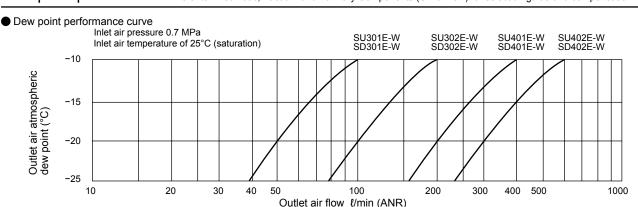
removing filter

components

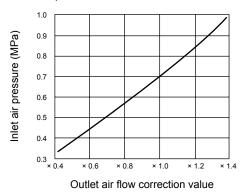
Vacuum

Fluid control

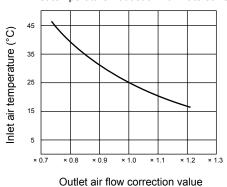
Dew point performance Refer to Pneumatic, Vacuum and Auxiliary Components (CB-024SA) for selection guide and compensation method.





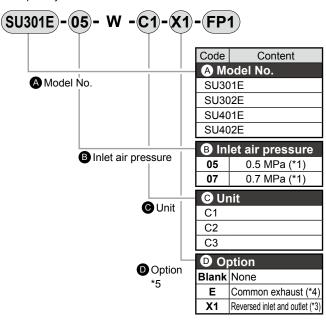


Inlet temperature - outlet air flow rate correction curve

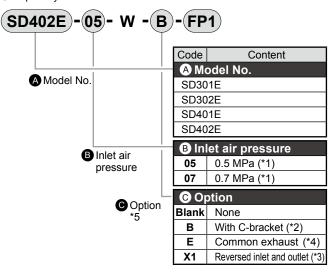


How to order

Super dryer unit







A Precautions for model No. selection

- *1: If inlet air pressure is less than 0.7 MPa, indicate 05; for 0.7 MPa and over, indicate 07.
- *2: If fixed by C-bracket, modular connection with peripheral devices is not possible.
- *3: Viewed from the front, standard products have an air inlet on the left port and an air outlet on the right port. For "X1", an air inlet is provided on the right port, with an air outlet provided on the left port.
- *4: Purge air of standard products is released to the atmosphere. If "E" is indicated, common exhaust of purge air is enabled. The size of exhaust ports include the Rc1/8 for the 300 Series and the Rc1/4 for the 400 Series.
- *5: When ordering several options, indicate the required options in alphabetical order.



Pneumatic valves

components Vacuum

removing filter



Super dryer combination Super dryer

300D/SU400D/SD300D/SD400D-W-FP1 Series

Slim body and high performance D Series

- Small and powerful removal performance. Appropriate for integrating in devices.
 3 types of units are available. Appropriate system is available according to applications.
- Processing air flow rate: 125 to 750 l/min (ANR) (0.7 MPa, atmospheric dew point −20°C)



Specifications

2	becit	ications																
De	escrip	tions							SU401D -*-W-C2						SD301D -*-W	SD302D -*-W	SD401D -*-W	SD402D -*-W
Ар	pearar	nce																
			Simple & space saving structure unit that removes moisture from the air from which solid impurities have already been removed. (*1)				Unit supplying clean dry air with line not requiring pressure adjustment.			adjuste	A unit that supplies pressure- adjusted clean dry air just by supplying compressed air.			Discrete super dryer enabling easy system configuration with peripheral devices due to modular design.			tion	
Configuration				Oil mist filter Oil mist filter Oil mist filter (with differential pressure gauge) Super dryer Super dryer Air filter Oil mist filter (with differential pressure gauge) Super dryer Regulator				Super dryer										
ions	Worki	ng fluid							C	ompre	ssed ai	r						
condi	Inlet a	ir pressure MPa		0.4 to 1.0														
orking	Proof	pressure MPa	1.5															
Range of working conditions	Inlet a	ir temperature °C								5 tc	50							
Rang	Ambie	ent temperature °C								5 tc	50							
	Outlet air	atmospheric dew point °C								-2	20							
С	Inlet ai	r flow rate ℓ/min (ANR)	125	250	500	750	125	250	500	750	125	250	500	750	125	250	500	750
Standard rating	Outlet	air flow ℓ/min (ANR)	100	200	400	600	100	200	400	600	100	200	400	600	100	200	400	600
b E	Purge	flow rate {/min (ANR)	25	50	100	150	25	50	100	150	25	50	100	150	25	50	100	150
ndaı	Inlet air	pressure dew point °C								2	5							
Star	Inlet a	ir pressure MPa								0.	.7							
•,	Inlet a	ir temperature °C								2	5							
Ambient temperature °C									2	5								
		Filtration µm		_	_					į							_	
Oil ı	mist filter	Oil removal mg/m ³				0.1	(about	0.1 PP	M) (inle	t air 30	°C)						_	
Re	gulator	Set pressure range MPa				-	_					0.05 to						
	Relief pressure MPa					-	_					g press					_	
_		accessories			cket				ure gauge			<u> </u>		<u> </u>				
^1:	Oil mis	t filter cannot be contro	oned with	n a differ	rential bi	essure (gauge to	r C1. Re	ediace th	e oil mis	st filter m	antle ev	erv veai	ſ.				

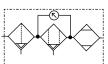
^{*1:} Oil mist filter cannot be controlled with a differential pressure gauge for C1. Replace the oil mist filter mantle every year.

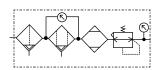
JIS symbol

SD301D to 402D-* SU301D to 402D-*-C1 SU301D to 402D-*-C2









SU302D to 402D-*-C3

CKD

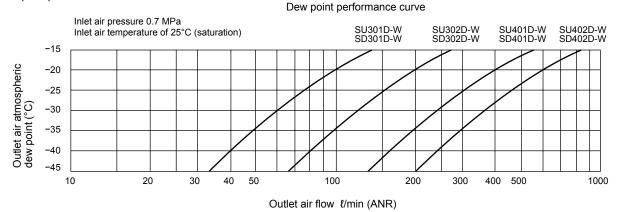
^{*2:} Purge flow rate in reference rating section is also the same value at 0.5 MPa.

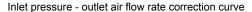
SU 300D/SD 300D-W-FP1 Series

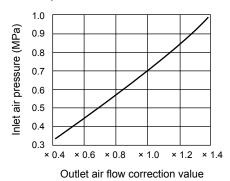
Dew point performance/how to order

Dew point performance machine Refer to Pneumatic, Vacuum and Auxiliary Components (CB-024SA) for selection guide and compensation method.

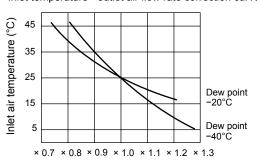
Dew point performance curve





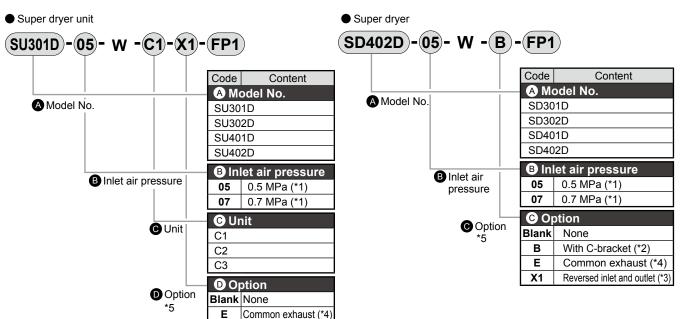


Inlet temperature - outlet air flow rate correction curve



Outlet air flow correction value

How to order



A Precautions for model No. selection

- *1: If inlet air pressure is less than 0.7 MPa, indicate 05: for 0.7 MPa and over, indicate 07.
- *2: If fixed by C-bracket, modular connection with peripheral devices is not possible.
- *3: Viewed from the front, standard products have an air inlet on the left port and an air outlet on the right port. For "X1", an air inlet is provided on the right port, with an air outlet provided on the left port.
- *4: Purge air of standard products is released to the atmosphere. If "E" is indicated, common exhaust of purge air is enabled. The size of exhaust ports include the Rc1/8 for the 300 Series and the Rc1/4 for the 400 Series.

Reversed inlet and outlet (*3

*5: When ordering several options, indicate the required options in alphabetical order.

Electric actuator

Pneumatic cylinders

Pneumatic valves | FRL/Auxiliary components | Electronic components

components

Fluid control

removing filter

Pneumatic cylinders

Pneumatic valves

components



Nitrogen gas extraction unit system

NSU-FP1 Series

Nitrogen gas supplied easily and stably.

- Obtain nitrogen gas by just piping to the pneumatic source.
- All in one design with superior installability.

Specifications

Sμ	Concations										
De	scriptions			NSU-3S	NSU-3L	NSU-4S	NSU-4L				
Suo	Working fluid				Compre	ssed air					
Range of working conditions	Inlet air pressure		MPa		0.4 to 1.0						
.ie	Proof pressure		MPa	1.5							
Work	Inlet air temperature °C			5 to 50							
ge of	Inlet air relative humidity RH				50)%					
Ran	Ambient temperatur	е	°C		5 to	50					
_	Inlet air pressure de	w po	int °C		1	0					
Rating	Inlet air pressure		MPa		0	.7					
Zat	Inlet air temperature °C			25							
_	Ambient temperature °C			25							
	Outlet nitrogen gas	(%)	99.9	1.9	5.6	11.0	30.6				
	flow rate		99	5.0	15.5	28.2	66.9				
Š		.agi	97	8.9	28.7	49.9	118.1				
Ĕ	ℓ/min (ANR)	gut	95	14.0	39.8	65.3	169.2				
Rated flow		concentration	99.9	21.2	62.3	122.3	340.0				
å	Inlet air flow rate	E	99	20.9	64.6	117.5	278.8				
	ℓ/min (ANR)	Nitrogen	97	24.1	77.6	134.9	319.2				
	, ,	差	95	31.2	88.5	145.2	376.0				
Air	filter	Filtra	ation µm		Į.	5					
Oil	mist filter	Oil r	emoval mg/m ³	0.01 or less (0.1 or less after oil saturation) *Value when primary oil concentration is 30 mg/m³ and temperature is 21°C.							
Reg	gulator	Set p	ressure range MPa	0.05 to 0.85							
Sta	ndard accessories			Pi	ressure gauge/differentia	al pressure gauge/brack	et				

Compare outlet nitrogen gas and needle valve flow characteristics (refer to page 274) and confirm the whether you are withing the working range. Contact CKD when working outside the specified range.

Selection guide

Temperature and inlet air pressure affect the outlet nitrogen gas flow rate, so compensation is required when the rate differs from the specifications.

STEP 1 Confirm the working conditions and specification rates. Working conditions: inlet air pressure, inlet air temperature, required nitrogen gas flow rate

STEP 2 Confirm the compensation coefficient of outlet nitrogen gas flow rate affected by inlet air temperature. (Table (1) at right)

STEP 3 Confirm the compensation coefficient of outlet nitrogen gas flow rate affected by inlet air pressure. (Table (2) at right)

STEP 4 Determine the appropriate model from the rated outlet nitrogen gas flow rate of each model.

Rated outlet nitrogen gas flow rate \times (1) Temperature - gas flow rate compensation coefficient × (2) Pressure - gas flow rate compensation coefficient = Outlet nitrogen gas flow rate after compensation Select a model that has the required outlet nitrogen gas flow rate after compensation as calculated above.

STEP 5 Confirm the compensation coefficient of inlet air flow rate affected by inlet air temperature. (Table (3) at right)

STEP 6 Confirm the compensation coefficient of inlet air flow rate affected (Table (4) at right) by inlet air pressure.

STEP 7 Determine the inlet air flow rate from the rated outlet nitrogen (4) Pressure - air flow rate compensation coefficient gas flow rate of each model.

Inlet air flow rate of the model selected in STEP 4 × (3) Temperature - air flow rate compensation coefficient × (4) Pressure - air flow rate compensation coefficient = Inlet air flow rate after compensation \(\ell / \text{min (ANR)} \)

Confirm that the model can be used with the compressor's capacity from the inlet air flow rate after compensation as calculated above.

(1) Temperature - gas flow rate compensation coefficient

	Temperature (°C)	Outlet nitrogen gas concentration								
ľ	iemperature (C)	99.9%	99%	97%	95%					
	10	0.73	0.84	0.84	0.81					
	25	1	1	1	1					
	40	0.95	1.08	1.06	1.11					
	50	0.9	1.09	1.11	1.15					

(2) Pressure - gas flow rate compensation coefficient

()									
		Pre	ssure (M	lPa)					
0.4	0.5	0.6	0.7	0.8	0.9	1.0			
0.4	0.65	0.75	1	1.07	1.2	1.3			

(3) Temperature - air flow rate compensation coefficient

Temperature (°C)	Outlet nitrogen gas concentration								
remperature (C)	99.9%	99%	97%	95%					
10	0.8	0.76	0.81	0.77					
25	1	1	1	1					
40	1.32	1.25	1.17	1.2					
50	2.05	1.38	1.31	1.31					

(. ,							
		Pressure (MPa) 0.5					
0.4	0.5	0.5 0.6 0.7		0.8	0.9	1.0	
0.61	0.79	0.91	1	1.07	1.2	1.3	

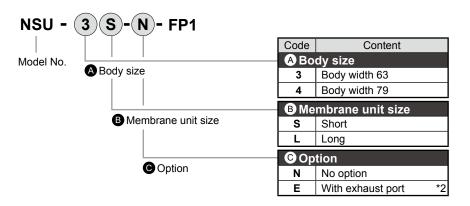
Example of calculation

Example of calculation									
Conditions	Working conditions	Selecting conditions	Compensation coefficient of outlet nitrogen gas flow rate	Compensation coefficient of inlet air flow rate					
Inlet air temperature	35 to 39°C	40°C	(1) 1.08	(3) 1.25					
Inlet air pressure	0.5 to 0.55 MPa	0.5 MPa	(2) 0.65	(4) 0.79					

Substitute the above conditions in the above formula and determine the outlet nitrogen gas flow rate in cases when NSU-4L is used with a nitrogen concentration of 99%.

66.9 (rated outlet nitrogen gas flow rate) × 1.08 × 0.65 = 46.9 ℓ/min (ANR). If the required product nitrogen gas flow rate is less than or equal to this value, select that model. The inlet air flow rate in that case is 278.8 × 1.25 × 0.79 = 275.3 ℓ/min (ANR).

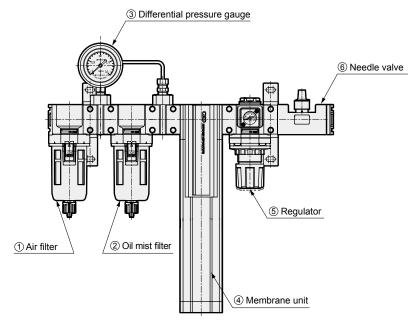
How to order



A Precautions for model No. selection

- *1: Viewed from the front, standard products have an air inlet on the left port and an air outlet on the right port.
- *2: Exhaust (oxygen-rich gas) from standard products is released into the atmosphere. For "E", piping connection for exhaust (oxygen-rich gas) is possible. The bore size of the exhaust port is Rc1/2.

Components



Unit model No.	NSU-3S-⊡-FP1	NSU-3L-⊡-FP1	NSU-4S-⊡-FP1	NSU-4L-⊡-FP1		
① Air filter	F3000-10	-W-F-FP1	F4000-10-W-F-FP1			
② Oil mist filter	M3000-10-	-W-F1-FP1	M4000-10-W-F1-FP1			
③ Differential pressure gauge		GA400	i-8-P02			
4 Membrane unit	NS-3S1-N-FP2	NS-3L1-N-FP2	NS-4S1-N-FP2	NS-4L1-N-FP2		
⑤ Regulator	NS-QF	R3-FP1	NS-QF	R4-FP1		
Needle valve	NS-QDVL-020	NS-QDVL-080	NS-QDVL-160	NS-QDVL-240		

NSU-FP1 Series

Dimensions

Electric actuator

Pneumatic cylinders

FRL/Auxiliary components | Pneumatic valves |

Vacuum components

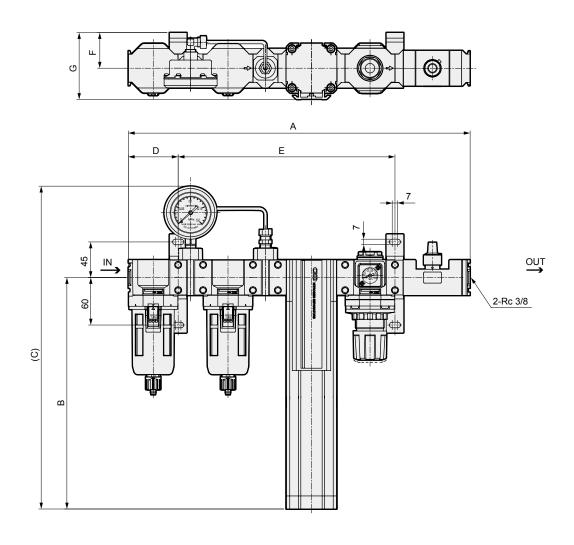
Fluid control valves

Main line components

Antibacterial/Bacteriaremoving filter

Vacuum components

F P 1



	Α	В	С	D	E	F	G	Weight (kg)
NSU-3S-FP1	432	293	408	63	274	45	85	4.0
NSU-3L-FP1	432	543	658	63	274	45	85	4.9
NSU-4S-FP1	498	543	658	80	323	55	106	6.9
NSU-4L-FP1	498	1043	1158	80	323	55	106	9.7

NSU-FP1 Series

Electric actuator

Pneumatic cylinders

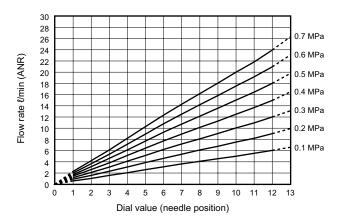
Pneumatic valves | FRL/Auxiliary components | Electronic components

Needle valve flow characteristics

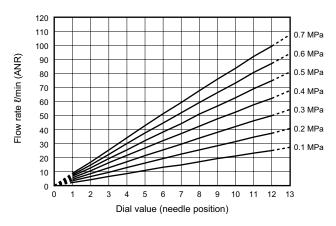
Flow characteristics

*The flow characteristics graph gives reference values and does not guarantee the values.

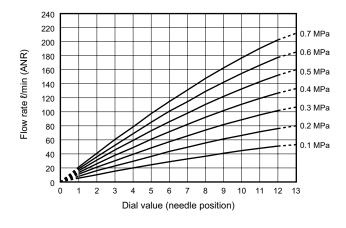
NS-QDVL-020



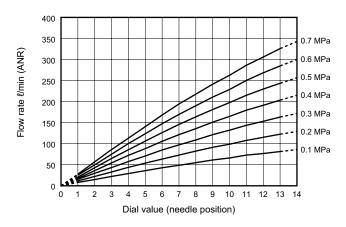
NS-QDVL-080



NS-QDVL-160



NS-QDVL-240



Electric actuator

Pneumatic

Pneumatic valves



Catalog No. CB-024SA

Medium main line stainless steel filter

AF4000P/S/M/X-FP1 Series

Ideal for pre-filter, oil removal and deodorizing applications.

Processing air flow rate: 3.7 to 18.8 m³/min (ANR) (at 0.7 MPa)

JIS symbol









Specifications

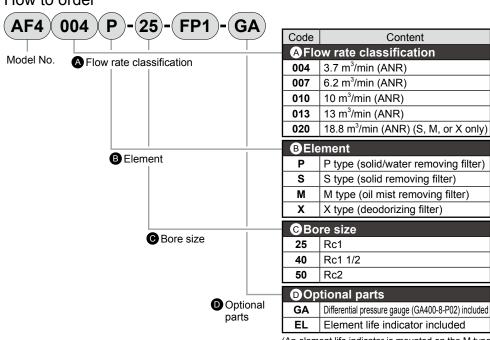
Descriptions		AF4004□-25	AF4007□-40	AF4010□-40	AF4013□-50	AF4020□-50			
Processing air flow rate	m³/min (ANR)	3.7	6.2	10	13	18.8			
Working fluid				Compressed air					
Working pressure	MPa		0.1 to 1.0						
Ambient temperature	°C		5 to 60						
Proof pressure	MPa		1.5						
Port size	Rc	1	1 -	1/2		2			
Weight	kg	3	3.3	3.7	4.3	6			
Element life indicator Standard only for M type									
Drain discharger	DT3000-15-W-FP1 (Excluding X type)								
Drain outlet bore size		Directly connecting bore size ø5.7 to ø6 nylon tube (Excluding X type)							

indicates series name

	ulcales serie	S Harrie.						
Descriptions			P type	S type	M type	X type		
	Dragoning	Inlet air pressure	MPa			0.7		
ээг	Processing air	Inlet air temperatu	re °C			32		
	conditions	Inlet air dew point	°C	-	-	No water infiltration or droplet generation	Pressure dew point 10°C	
	CONTUILIONS	Inlet oil content	mg/m³	-	-	3	0.01	
mar	Filtration µm			5	1	0.01	Suction by activated carbon fibers	
Performar	Secondary side oil concentration mg/m³			-	-	0.01	0.003	
Pe	Water sep	Water separation efficiency %		99	-	-	-	
	Pressure drop	Initial	MPa	0.005	0.005	0.01	0.009	
	Element	Pressure drop	MPa	0.02	0.07	0.07	-	
	replacement time	Duration of use			8000 h	ours or 1 year		

- *1: Processing air flow rate is the atmospheric pressure conversion value where the inlet pressure is 0.7 MPa.
- *2: ANR indicates conditions of 20°C atmospheric pressure and relative humidity 65%
- *3: The secondary side oil concentration is the value when the inlet air temperature is 20°C.
- *4: The drain discharger is NO. Air is purged with initial drainage until pressure reaches 0.1 MPa.
- *5: The P/S/M type element must be replaced when the pressure drops or the service life is reached, whichever is sooner.
- *6: Replace the X type element when the service life is reached or when the deodorizing effect is lost.
- *7: P type is not available in AF4020.

How to order



(An element life indicator is mounted on the M type as standard.)

A Note on model No. selection

The required performance may not be attained if using at a level less than the selected pressure. Always select the model No. with the working pressure.

Flow rate compensation coefficient

Pressure (MPa)	Auxiliary coefficient
0.2	0.36
0.3	0.5
0.4	0.62
0.5	0.75
0.6	0.88
0.7	1.0
8.0	1.13
0.9	1.25
1.0	1.38

If the inlet pressure is not 0.7 MPa, multiply the coefficient above with the processing air flow rate.

Electric actuator Pneumatic cylinders Pneumatic valves FRL/Auxiliary components Electronic components FP1 Vacuum components Fluid control valves Main line components Antibacterial/Bacteria-removing filter Vacuum components Fluid control valves

. .	

Pneumatic cylinders

FRL/Auxiliary components | Pneumatic valves

components Vacuum

removing filter



Drain separator FX-W-FP1 Series

Lightweight compact drain separator

Compatible compressor: 0.75 kW to 37 kW

Port size: Rc1/4 to Rc1

JIS symbol







Specifications

Descriptions	FX1004	FX1011	FX1037				
Working fluid		Compressed air					
Working pressure MPa		0.1 to 1.0 *3					
Proof pressure MPa	1.5						
Ambient/fluid temperatures °C	5 to 60						
Water separation efficiency %	99 *2						
Max. processing flow rate *1 L/min (ANR)	550	1800	6100				
Port size Rc, NPT, G	1/4, 3/8	1/4, 3/8, 1/2	3/4, 1				
Weight kg	0.3	0.5	1.2				

^{*1:} At inlet pressure 0.7 MPa.

Option weight

* Add to the weight of the standard accessories.

Unit: kg

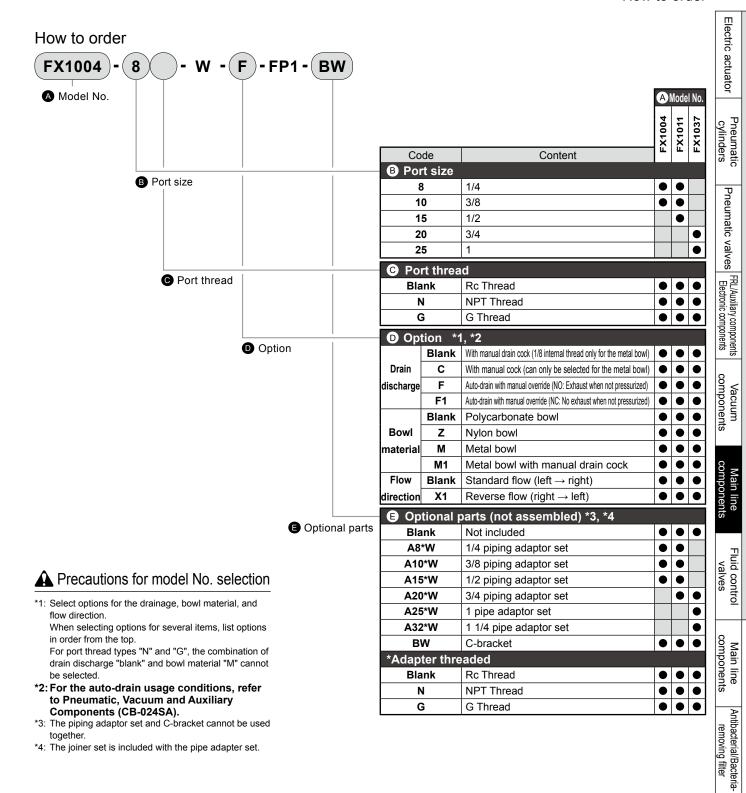
Code	Drain di	scharge	Bowl n	naterial	Pipe adaptor set					Bracket	
Code	F	F1	М	M1	A8W	A10W	A15W	A20W	A25W	A32W	Bracket BW 0.17 0.21 0.36
FX1004	0.02	0.02	0.1	0.1	0.16	0.16	0.16				0.17
FX1011	0.02	0.02	0.1	0.1	0.16	0.16	0.16	0.16			0.21
FX1037	0.02	0.02	0.1	0.1				0.53	0.53	0.53	0.36

^{*2:} Water separation efficiency during max. processing flow rate. (Evaporated water droplets (water vapor) cannot be separated)

^{*3:} In the case of "F1" with auto-drain, the min. working pressure of auto-drain is 0.15 MPa.

FX-FP1 Series

How to order



Vacuum components

Fluid control



Pilot kick 2-port solenoid valve (general purpose valve)

APK21-FP1 Series

NC (normally closed)

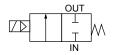
● Port size: Rc1¹/₄ to Rc2, 32 to 50 flange

Piston drive





JIS symbol



Mounting orientation

Common specifications

Descriptions	Specifications
Working fluid	Steam
Working pressure differential MPa	0 to 0.7
Max. working pressure MPa	1
Proof pressure (water pressure) MPa	3.2
Fluid temperature °C	5 to 180
Ambient temperature °C	−10 to 60
Thermal class	Class 180 (H)
Atmosphere	Place free of corrosive gas and explosive gas
Valve structure	Pilot kick poppet, piston drive
Valve seat leakage (*) cm³/min (ANR)	800 or less (air)
Mounting orientation	Limited to vertical orientation with the coil on top

^{*} Value at pneumatic pressure of 0.05 to 0.7 MPa. When used at a pressure less than 0.05 MPa, the sealant may be unstable. Contact CKD in this case.

Individual specifications

Descriptions		Orifice	Min. working	Max. working pressure	Rated	App	arent	power	(VA)	Power consumption (W)	Mojaht
Madal Na	Port size	size	pressure	differential (MPa)	voltage	When			stai tiiig	50/60 Hz	(kg)
Model No.		(mm)	differential (MPa)	Steam	voitage	50 Hz	60 Hz	50 Hz	60 Hz	30/00 112	(Ng)
APK21-32A	Rc1¹/₄	35			400 \ /4 0						4.5
APK21-32F	32 flange	43	0	0.7	100 VAC 50/60 Hz						8
APK21-40A	Rc1 ¹ / ₂				30/60 HZ	64	69	274	289	44/48	5.5
APK21-40F	40 flange				200 VAC	04	09	2/4	209	44/40	9
APK21-50A	Rc2				50/60 Hz						7
APK21-50F	50 flange	33			00/00 112						11.5

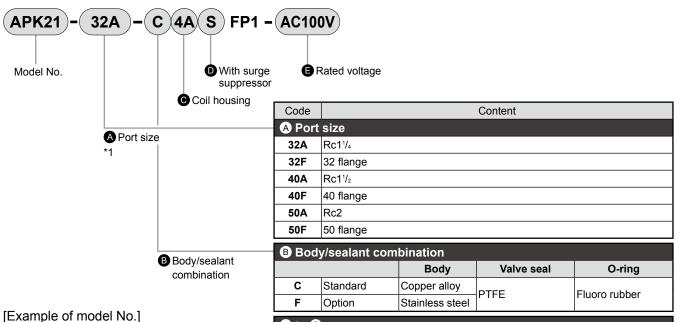
^{*1:} The model numbers above are for the basic port size. Refer to How to order for other combinations.

Flow characteristics

Model No.	Port size	Orifice size (mm)	Cv	Effective cross- sectional area (mm²)
APK21-32A	Rc1 ¹ / ₄	35	25	460
APK21-32F	32 flange	33	25	460
APK21-40A	Rc1 ¹ / ₂	43	34	625
APK21-40F	40 flange	43	34	
APK21-50A	Rc2	53	53	975
APK21-50F 50 flange		55	55	975

^{*2:} The voltage fluctuation range must be within ±10% of the rated voltage.

Electric actuator



APK21-32F-C4A-FP1-AC100V

Model: APK21 A Port size: 32 flange

How to order

B Body/sealant combination

: Body - copper alloy, valve seal - PTFE

O-ring - fluoro rubber

© Coil housing: Open frame lead wire

None

■ Rated voltage: 100 VAC



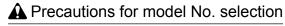
Refer to the table below for details on the coil housing, other options and voltage, etc.

A Precautions for model No. selection

The companion flange is JIS B2210 10K. (Flange is not included with the product and must be purchased separately.)

For Items © to ©, the combinations indicated with codes are available. Note that if an option for Item ① is not required, this item should be left blank.

© Coil housing					D	■ Rated voltage
Content			With surge suppressor	Content		
4A	Standard		Lead wire		s	
4M	Ontion	Open frame (Thermal class 180 (H))	HP terminal box	(G1/2)		100 VAC, 200 VAC
4N	Option		HP terminal box with lamp	(G1/2)		



Notes for Item

Pneumatic cylinders Pneumatic valves | FRL/Auxiliary components | Electronic components Vacuum components Main line components Main line components Antibacterial/Bacteria-Vacuum components Fluid control

^{*2:} A surge suppressor is included, if applicable

Pneumatic cylinders

Pneumatic valves

components

Vacuum

Main line components

Antibacterial/Bacteriaremoving filter components Vacuum

> Fluid control valves



General Purpose Valves Catalog No. CB-03-1SA

Air operated 2-port valve (cylinder valve)

SAB*A-FP1 Series

NC (normally closed), NO (normally open), double acting

● Port size: Rc1/4 to Rc2, 32 to 50 flange

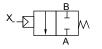
Working fluid: Air



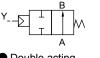


JIS symbol

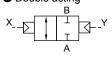
NC (normally closed)



NO (normally open)



Double acting



Common specifications

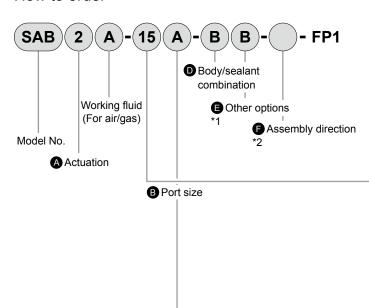
Descriptions	SAB1A	SAB2A	SAB3A			
Actuation	NC (normally closed)	NC (normally closed) NO (normally open)				
Working fluid		Air				
Working pressure MPa	0 to 0.9	0 to	o 1			
Proof pressure (water pressure) MPa	2.0					
Fluid temperature °C	-10 to 90 (no freezing)					
Ambient temperature °C	-10 to 60					
Valve seat leakage cm³/min	0.12 or less (pneumatic pressure)					
Mounting orientation	Unrestricted					
Pilot fluid	Air					
Pilot pressure MPa	0.35 to 0.7 Refer to General Purpose Valves (CB-03-1SA).					

Individual specifications

	individual specifications							
Descriptions Model No.	Port size	Orifice size (mm)	C [dm³/(s·bar)]	b	S (mm²)	Allowable back pressure (MPa)	Pilot port size	Weight (kg)
NC (normally close								
SAB1A-8A	Rc1/4	10	8.3	0.4	-	0.5		0.3
SAB1A-10A	Rc3/8	10	11	0.4	-	0.5		0.3
SAB1A-15A	Rc1/2	15	-		120			0.6
SAB1A-20A	Rc3/4	16	-		150			0.8
SAB1A-25A	Rc1	20	-		240			1.1
SAB1A-32A	Rc1 ¹ / ₄	26	-	-	390		Rc1/8	2.2
SAB1A-32F	32 flange	26	-	-	390	0.1		5.2
SAB1A-40A	Rc1 ¹ / ₂	32	-	-	610			3.2
SAB1A-40F	40 flange	32	-	-	610			6.3
SAB1A-50A	Rc2	42	-	-	920			5.2
SAB1A-50F	50 flange	42	-	-	920			9.1
NO (normally open)							
SAB2A-8A	Rc1/4	10	8.9	0.4	-			0.3
SAB2A-10A	Rc3/8	10	12	0.3	-			0.3
SAB2A-15A	Rc1/2	15	-	-	140	0.1		0.6
SAB2A-20A	Rc3/4	16	-	-	180			0.8
SAB2A-25A	Rc1	20	-	-	280			1.1
SAB2A-32A	Rc1 ¹ / ₄	26	-	-	450		Rc1/8	2.2
SAB2A-32F	32 flange	26	-	-	450]		5.2
SAB2A-40A	Rc1 ¹ / ₂	32	-	-	680	0.05		3.2
SAB2A-40F	40 flange	32	-	-	680] 0.05		6.3
SAB2A-50A	Rc2	42	-	-	1020			5.2
SAB2A-50F	50 flange	42	-	-	1020			9.1
Double acting (*1)								
SAB3A-8A	Rc1/4	10	8.3 (8.9)	0.4	-			0.3
SAB3A-10A	Rc3/8	10	11 (12)	0.4 (0.3)	-			0.3
SAB3A-15A	Rc1/2	15	-	-	120 (140)			0.6
SAB3A-20A	Rc3/4	16	-	-	150 (180)			0.8
SAB3A-25A	Rc1	20	-	-	240 (280)			1.1
SAB3A-32A	Rc1 ¹ / ₄	26	-	-	390 (450)] 1	Rc1/8	2.2
SAB3A-32F	32 flange	26	-	-	390 (450)]		5.2
SAB3A-40A	Rc1 ¹ / ₂	32	-	-	610 (680)]		3.2
SAB3A-40F	40 flange	32	-	-	610 (680)			6.3
SAB3A-50A	Rc2	42	-	-	920 (1020)			5.2
SAB3A-50F	50 flange	42	-	-	920 (1020)			9.1
*1: /) for C b and C as				A **				

^{*1: ()} for C, b and S columns of double acting shows the flow rate when port A is pressurized. *2: Effective cross-sectional area S and sonic conductance C are converted as S \approx 5.0 × C.

How to order



Code	Content		
A Actuation			
1	NC (normally closed)		
2	NO (normally open)		
3	Double acting		

B Port size				
8	1/4			
10	3/8			
15	1/2			
20	3/4			
25	1			
32 1 ¹ / ₄ , 32 (Flange)				
40 1 ¹ / ₂ , 40 (Flange)				
50	2, 50 (Flange)			

© Туре	of thread/flai	nge
Α	Rc (8 A to	50 A)
F	Flange (32	2 F to 50 F)

Body/sealant combination					
	Body	Seal			
В	Copper alloy	Fluoro rubber			
E	Stainless steel	Fluoro rubber			

Other options				
Blank	No option			
В	Mounting plate	*1		

Assembly direction				
Blank	Blank No option			
R	Mounting plate assembly position reversed			

Refer to the figure below for the layout drawing.

A Precautions for model No. selection

- *1: The mounting plate (Item B) can be attached to only the female thread of port sizes 8 to 32.
- *2: Reversed mounting plate (Item B-R) is available for port sizes 15 to 32.
- *3: Clockwise when viewed from above with port A on the right.

[Example of model No.]

SAB2A-15A-BB-FP1

Model: SAB

A Actuation : NO (normally open)

B Port size Type of thread/flange : Rc D Body/sealant combination

: Body - copper alloy, sealant - fluoro rubber

Type of thread/flange

Other options : Mounting plate Assembly direction : No option

Item Assembly direction

SAB [Air operated] *1, *3					
Code	B (with mounting plate)	B-R *2				
Direction	No rotation	Mounting plate reversed				
Layout	B A	B A				

shows pilot port IN.

Electric actuator

Pneumatic valves

FRL/Auxiliary components

Main line components

Antibacterial/Bacteriaremoving filter

Vacuum components Fluid control

removing filter



Air operated 3-port valve

NAP11-FP1 Series

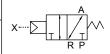
Universal type

Port size: Rc3/8 to Rc2



JIS symbol

Universal type



Common specifications

Descriptions	NAP11
Actuation	Universal type
Working fluid	Compressed air, low vacuum
Proof pressure MPa	1.2
Working pressure MPa	0 to 0.8 (1.3 × 10 ² to 8 × 10 ⁵ Pa (abs) when used in vacuum)
Fluid temperature °C	5 to 60
Ambient temperature °C	−5 to 60
Lubrication	No lubrication
Valve seat leakage cm³/min	1 or less (pneumatic pressure at 0.02 to 0.8 MPa)
Valve structure	External pilot balance poppet structure
Mounting orientation	Unrestricted
Pilot fluid	Air
Pilot pressure MPa	0.35 to 0.7
Pilot port size (port X)	Rc1/8

Individual specifications

Descriptions	Port	size		Response time	Weight	
Model No.	P, A port	R port	Orifice size (mm)	(ms)	(kg)	
NAP11-10A	Rc3/8	Rc1/2	14.8 or equiv.	30 or less	0.6	
NAP11-15A	Rc1/2	RC1/2	14.6 or equiv.	(*1)	0.6	
NAP11-20A	Rc3/4	Rc1	25.4 or equiv.	60 or less	1.4	
NAP11-25A	Rc1	RCI	25.4 or equiv.	(*1)	1.4	
NAP11-32A	Rc1 1/4			120 or less	4.2	
NAP11-40A	Rc1 1/2	Rc2	41.4 or equiv.		4.2	
NAP11-50A	Rc2			(*1)	4.1	

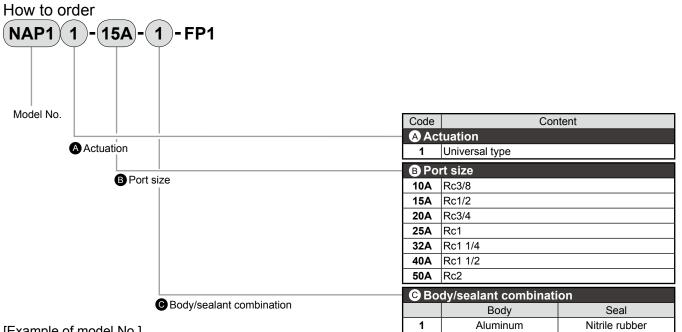
^{*1:} Response time is the time required for the valve to turn on at a supply pressure of 0.5 MPa and without lubrication. They depend on the pressure.

Flow characteristics

Madal Na		P-	→A		A→R					
Model No.	C[dm³/(s·bar)]	b	Cv	S (mm²)	C[dm³/(s·bar)]	b	Cv	S (mm²)		
NAP11-10A	15	0.31	3.4	-	16	0.28	3.4	-		
NAP11-15A	18 0.29 3.		3.6	-	17	0.26	0.26 3.6			
NAP11-20A	35	35 0.27		-	41	0.21	8.6	-		
NAP11-25A	-			200	-	-	9.0	210		
NAP11-32A	-	-	25.8	600	-	-	26.2	610		
NAP11-40A	NAP11-40A -		27.0	630	-	-	26.6	620		
NAP11-50A	-	-	28.2	660	-	-	27.0	630		

^{*1:} Effective cross-sectional area S and sonic conductance C are converted as S \approx 5.0 \times C.

NAP11-FP1 Series



[Example of model No.]

NAP11-15A-1-FP1

Model: NAP

A Actuation : Universal B Port size: Rc1/2 © Body/sealant combination

: Body/aluminum, sealant/nitrile rubber

Electric actuator

Pneumatic cylinders

Pneumatic valves | FRL/Auxiliary components |

Vacuum components

Main line components

Main line components

Antibacterial/Bacteriaremoving filter

Vacuum components

Fluid control valves

Nitrogen gas extraction unit

NS-FP2 Series

Modular design for easy system expansion with peripheral devices
■ Obtain nitrogen gas by just supplying compressed air.



Specifications

Electric actuator

Pneumatic cylinders

FRL/Auxiliary components | Pneumatic valves |

components

Main line components

Fluid control valves

removing filter

components

Fluid control valves

Single cylinder

	Single cylinder											
De	Descriptions			NS-3S1	NS-3L1	NS-4S1	NS-4L1					
ions	Working fluid				Compre	essed air						
ondit	Inlet air pressure		MPa		0.4 to 1.0							
ing c	Proof pressure		MPa	1.5								
work	Inlet air temperature	;	°C	5 to 50								
Rating Range of working condition	Inlet air relative hum	idity	RH		50% or less							
Ranç	Ambient temperatur	e	°C									
	nlet air purity grade			1:6:1 (JIS B 8392-1:2012)								
	Inlet air pressure MPa				0.7							
	Inlet air temperature °C				25							
	Ambient temperatur	e	°C		2	25						
	0 11 1 11		99.9	1.9	5.6	11.0	30.6					
	Outlet nitrogen gas flow rate	(%)	99	5.0	15.5	28.2	66.9					
>	llow rate	ation	97	8.9	28.7	49.9	118.1					
- 100	Uniiii (AlVIV)	entra	95	14.0	39.8	65.3	169.2					
Rated flow		concentration	99.9	21.2	62.3	122.3	340.0					
ď	Inlet air flow rate	gen (99	20.9	64.6	117.5	278.8					
	l∕min (ANR)	Nitrogen	97	24.1	77.6	134.9	319.2					
	-		95	31.2	88.5	145.2	376.0					

■ Double cylinder

	Jouble Cylinder													
De	scriptions			NS-4S2	NS-4S3	NS-4L2	NS-4L3	NS-4S6	NS-4S8	NS-4SA	NS-4L6	NS-4L8		
ions	Working fluid						Co	ompressed	air					
of working conditions	Inlet air pressure		MPa		0.4 to 1.0									
ing o	Proof pressure		MPa					1.5						
work	Inlet air temperature	;	°C					5 to 50						
je of	Inlet air relative hum	nidity	RH					50% or less			183.6 244.8			
Range	Ambient temperature	е	°C					5 to 50						
	Inlet air purity grade				1:6:1 (JIS B 8392-1:2012)									
Rating	Inlet air pressure		MPa					0.7						
Rat	Inlet air temperature	;	°C					25						
	Ambient temperature	е	°C					25						
	Outlet witnesses are		99.9	22.0	33.0	61.2	91.8	66.0	88.0	110.0	183.6	244.8		
	Outlet nitrogen gas	ಲ	99	56.4	84.6	133.8	200.7	169.2	225.6	282.0	401.4	535.2		
>	l/min (ANR)	atior	97	99.8	149.7	236.2	354.3	299.4	399.2	499.0	708.6	944.8		
i flo	(a tr t)	entr	95	130.6	195.9	338.4	507.6	391.8	522.4	653.0	401.4 535.2 708.6 944.8 1015.2 1353.6 0 2040.0 3400.0			
Rated flow		concentration	99.9	244.6	366.9	680.0	1020.0	733.8	978.4	1223.0	2040.0	3400.0		
22	Inlet air flow rate	gen	99	235.0	352.5	557.6	836.4	705.0	940.0	1175.0	1672.8	2788.0		
		 	97	269.8	404.7	638.4	957.6	809.4	1079.2	1349.0	1915.2	3192.0		
		_	95	290.4	435.6	752.0	1128.0	871.2	1161.6	1452.0	2256.0	3760.0		

Note: Six or more units of the product will be floor-mounted.

Selection guide

Temperature and inlet air pressure affect the outlet nitrogen gas flow rate, so compensation is required when the rate differs from the specifications.

STEP 1 Confirm the working conditions and specification rates.

Working conditions: inlet air pressure, inlet air temperature, required nitrogen gas flow rate

STEP 2 Confirm the compensation coefficient of outlet nitrogen gas flow rate affected by inlet air temperature.

(1) Temperature - gas flow rate compensation coefficient

Temperature	Out	let nitrogen g	as concentra	centration						
(°C)	99.9%	99%	97%	95%						
10	0.73	0.84	0.84	0.81						
25	1	1	1	1						
40	0.95	1.08	1.06	1.11						
50	0.9	1.09	1.11	1.15						

STEP 3 Confirm the compensation coefficient of outlet nitrogen gas flow rate affected by inlet air pressure.

(2) Pressure - gas flow rate compensation coefficient

	Pressure (MPa)										
0.4	0.5	0.6	0.7	0.8	0.9	1.0					
0.4	0.65	0.75	1	1.07	1.2	1.3					

STEP 4 Determine the appropriate model from the rated outlet nitrogen gas flow rate of each model.

Rated outlet nitrogen gas flow rate × (1) Temperature - gas flow rate compensation coefficient × (2) Pressure - gas flow rate compensation coefficient = Outlet nitrogen gas flow rate after compensation

Select a model that has the required outlet nitrogen gas flow rate after compensation as calculated above.

STEP 5 Confirm the compensation coefficient of inlet air flow rate affected by inlet air temperature.

(3) Temperature - air flow rate compensation coefficient

Temperature	Out	let nitrogen g	as concentra	tion				
(°C)	99.9%	99%	97%	95%				
10	0.8	0.76	0.81	0.77				
25	1	1	1	1				
40	1.32	1.25	1.17	1.2				
50	2.05	1.38	1.31	1.31				

STEP 6 Confirm the compensation coefficient of inlet air flow rate affected by inlet air pressure.

(4) Pressure - air flow rate compensation coefficient

	Pressure (MPa)										
0.4	0.5	0.6	0.7	0.8	0.9	1.0					
0.61	0.79	0.91	1	1.07	1.2	1.3					

STEP 7 Determine the inlet air flow rate from the rated outlet nitrogen gas flow rate of each model.

Inlet air flow rate of the model selected in STEP 4 × (3) Temperature - air flow rate compensation coefficient × (4) Pressure - air flow rate compensation coefficient = Inlet air flow rate after compensation (ANR)

Confirm that the model can be used with the compressor's capacity from the inlet air flow rate after compensation as calculated above.

Example of calculation

Conditions	Working conditions	Selecting conditions	Compensation coefficient of outlet nitrogen gas flow rate	Compensation coefficient of inlet air flow rate		
Inlet air temperature	35 to 39°C	40°C	(1) 1.08	(3) 1.25		
Inlet air pressure	0.5 to 0.55 MPa	0.5 MPa	(2) 0.65	(4) 0.79		

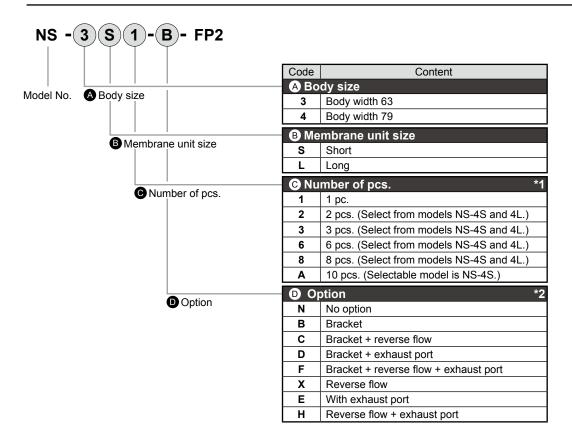
Substitute the above conditions in the above formula and determine the outlet nitrogen gas flow rate in cases when NS-4L1 is used with a nitrogen concentration of 99%.

66.9 (rated outlet nitrogen gas flow rate) × 1.08 × 0.65 = 46.9 ℓ/min (ANR).

If the required product nitrogen gas flow rate is less than or equal to this value, select that model.

The inlet air flow rate in that case is 278.8 × 1.25 × 0.79 = 275.3 ℓ/min (ANR).

Antibacterial/Bacteriaremoving filter How to order



A Precautions for model No. selection

- *1: Six or more units of the product will be floor-mounted and have no bracket.
- *2: Viewed from the front, a standard product has an air inlet on the left port, while an air outlet on the right port. For "X", an air inlet is provided on the right port, with an air outlet provided on the left port.
- *3: Exhaust (oxygen-rich gas) from standard products is released into the atmosphere.

For "E", piping connection for exhaust (oxygen-rich gas) is possible.

Size of exhaust port is Rc1/2.

NS-FP2 Series

Dimensions

Bracket (Option)
OUT
2-Rc 3/8

Dimensions

Model No.	^	В	_	D	Weight			Brack	et relatio	nal dime	nsions		
Wodel No.	Α	Ь			(kg)	E	F	G	Н	I	J	K	8 8 10
NS-3S1-FP2	315	85	71	63	1.8	345	55	30	7.5	330	7	40	8
NS-3L1-FP2	565	85	71	63	2.7	595	55	30	7.5	580	7	40	8
NS-4S1-FP2	565	100	90	79	4.0	605	70	32.5	10	585	9	50	10
NS-4L1-FP2	1065	100	90	79	6.8	1105	70	32.5	10	1085	9	50	10

Pneumatic valves FRL/Auxiliary components Electronic components

Electric actuator

Pneumatic cylinders

Vacuum components

Main line components

Fluid control valves

Main line

Antibacterial/Bacteriaremoving filter

Vacuum components

Fluid control valves

NS-FP2 Series

Dimensions

Electric actuator

Pneumatic cylinders

FRL/Auxiliary components | Pneumatic valves |

Vacuum

Main line components

Fluid control valves

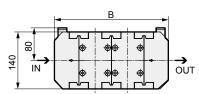
Antibacterial/Bacteriaremoving filter

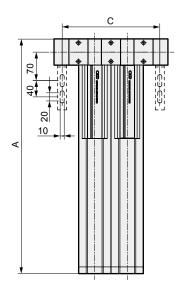
components

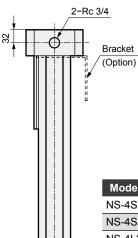
Vacuum

Fluid control valves

Number of pcs.: 2 or 3

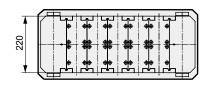


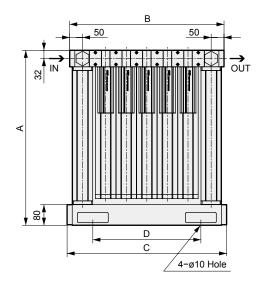


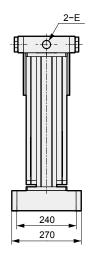


Model No.	Α	В	С	Weight (kg)
NS-4S2-FP2	577	280	240	12
NS-4S3-FP2	577	360	320	17
NS-4L2-FP2	1077	280	240	18
NS-4L3-FP2	1077	360	320	25

● Number of pcs.: 6, 8, or 10







Model No.	Α	В	С	D	E	Weight (kg)
NS-4S6-FP2	680	440	460	260	Rc1	41
NS-4S8-FP2	680	520	540	340	Rc1	50
NS-4SA-FP2	680	600	620	420	Rc1	59
NS-4L6-FP2	1180	440	460	260	Rc1	63
NS-4L8-FP2	1180	520	540	340	Rc1	78

Electric actuator Pneumatic cylinders Pneumatic valves FRL/Auxiliary components Electronic components FP1 Vacuum components Main line components Fluid control valves Antibacterial/Bacteria-removing filter Vacuum components Fluid control valves

Pneumatic cylinders



Antibacterial/Bacteria-removing combination

SFC307/SFC407-FP2 Series

Port size: 1/4 to 1/2



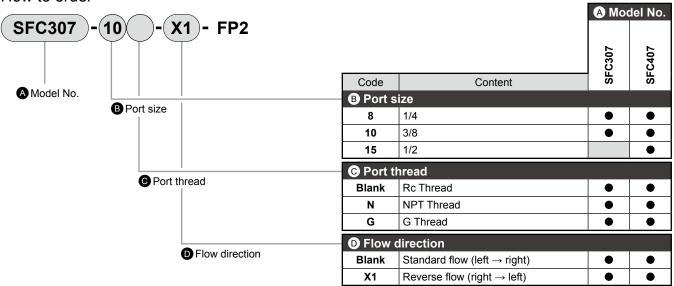


Specifications

Ореспісацогіз		
Descriptions	SFC307	SFC407
(1) Antibacterial pre-filter	SFC310	SFC410
Components (2) High-performance antibacterial filter	SFC320	SFC420
(3) Bacteria-removing filter	SFC330	SFC430
Working fluid	Compressed air, nitrogen gas	N ₂), and carbon dioxide (CO ₂)
Working pressure range MPa	0.15 1	o 1.0
Proof pressure MPa	a 1.5	
Differential pressure-resistant MPa	0.5	
Ambient/fluid temperatures °C 5 to 45		45
Filtration µm	μm 0.01 (removal efficiency 99.99%)	
Max. processing flow rate *1	300	500
Port size Rc, NPT, G	1/4, 3/8	1/4, 3/8, 1/2
Weight Kg	0.96	1.61
Standard accessories	Maintenance seal (included)	
Element replacement	1 year (6000 hours) or pressure drop 0.1 MPa	

^{*1:} Use within the max. processing flow rate. This value applies when the primary pressure is 0.7 MPa.

How to order



Single unit model number for replacement element

Element model No. Model	Antibacterial pre-filter Element	High-performance antibacterial filter Element	Bacteria-removing filter Element
SFC307	SFC310-ELEMENT	SFC320-ELEMENT	SFC330-ELEMENT
SFC407	SFC410-ELEMENT	SFC420-ELEMENT	SFC430-ELEMENT

SFC407-FP2 Series

Electric actuator

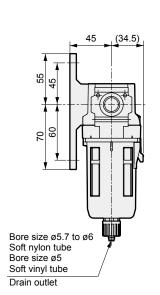
Pneumatic cylinders

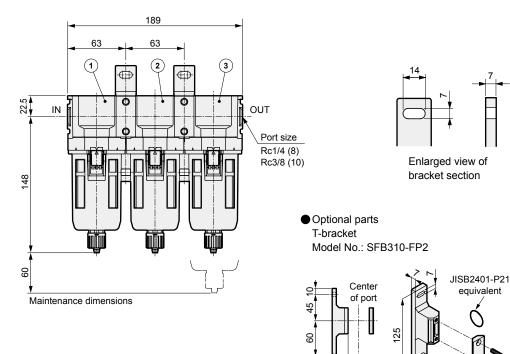
Pneumatic valves | FRL/Auxiliary components |



CAD

● SFC307

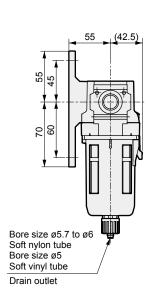




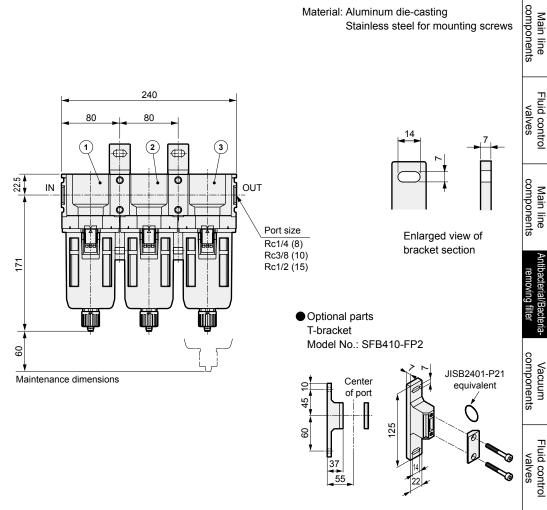
No.	Series
(1)	Antibacterial pre-filter
(2)	High-performance antibacterial filter
(3)	Bacteria-removing filter

Material: Aluminum die-casting Stainless steel for mounting screws

● SFC407



No.	Series
(1)	Antibacterial pre-filter
(2)	High-performance antibacterial filter
(3)	Bacteria-removing filter



Material: Aluminum die-casting Stainless steel for mounting screws

Fluid control

FDA compatible materials

Electric actuator

Pneumatic cylinders Pneumatic valves

FRL/Auxiliary components
Electronic components

components Main line components

Fluid control Main line components



components

Fluid control valves



Antibacterial combination

SFC306/SFC406/SFC806-FP2 Series

Port size: 1/4 to 1



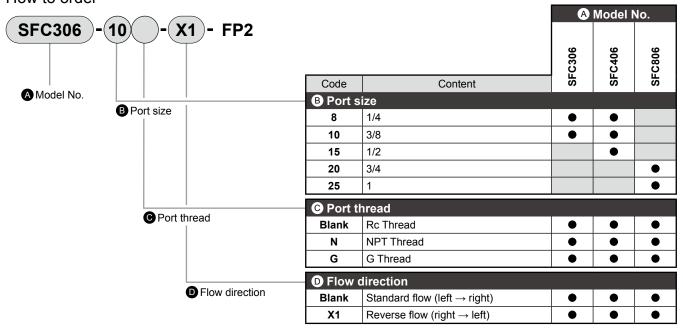


Specifications

opcomodions				
Descriptions	SFC306	SFC406	SFC806	
(1) Antibacterial pre-filter	SFC310	SFC410	SFC810	
Components (2) High-performance antibacterial filter	SFC320	SFC420	SFC820	
Working fluid	Compressed	l air, nitrogen gas (N ₂), and carbon o	lioxide (CO ₂)	
Working pressure range MPa		0.15 to 1.0		
Proof pressure MPa		1.5		
Ambient/fluid temperatures °C		5 to 45		
Filtration µm	C	0.1 (removal efficiency 99% and over)		
Max. processing flow rate *1 \$\text{\min}\$ (ANR)	360	700	2200	
Port size Rc, NPT, G	1/4, 3/8	1/4, 3/8, 1/2	3/4, 1	
Weight Kg	0.62	1.06	2.7	
Standard accessories	Maintenance seal (included)			
Element replacement	1 year (6000 hours) or pressure drop 0.1 MPa			

^{*1:} Use within the max. processing flow rate. This value applies when the primary pressure is 0.7 MPa.

How to order



Single unit model number for replacement element

Element model No. Model	Antibacterial pre-filter Element	High-performance antibacterial filter Element
SFC306	SFC310-ELEMENT	SFC320-ELEMENT
SFC406	SFC410-ELEMENT	SFC420-ELEMENT
SFC806	SFC810-ELEMENT	SFC820-ELEMENT

Antibacterial combination SFC \$406-FP2 series

Dimensions

Electric actuator

Pneumatic cylinders

Pneumatic valves

FRL/Auxiliary components Electronic components

Vacuum components

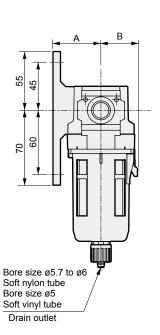
Main line components

Fluid control valves

Main line components

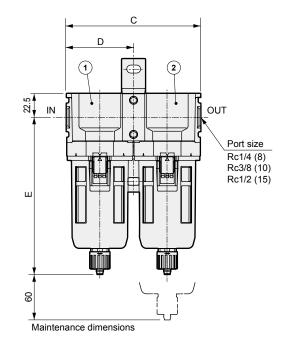
Dimensions

● SFC306/SFC406

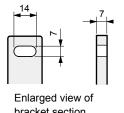


Antibacterial pre-filter

High-performance antibacterial filter



Model No.	Α	В	С	D	Е	F	G
SFC306	45	34.5	126	63	148	27	45
SFC406	55	42.5	160	80	171	37	55



bracket section

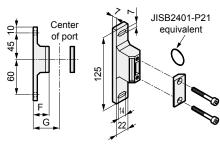
Optional parts T-bracket

Model No.: SFB310-FP2

(Compatible model: SFC306)

SFB410-FP2

(Compatible model: SFC406)



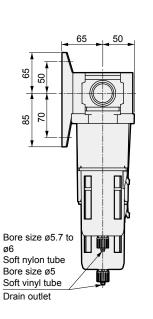
Material: Aluminum die-casting Stainless steel for mounting screws

SFC806

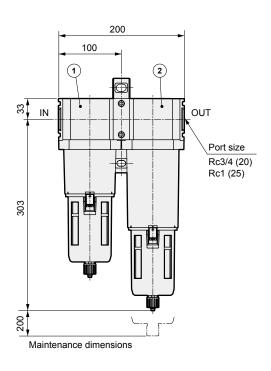
No.

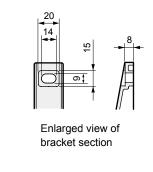
(1)

(2)

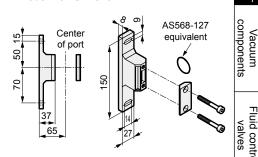


No.	Series
(1)	Antibacterial pre-filter
(2)	High-performance antibacterial filter





Optional parts T-bracket Model No.: SFB810-FP2



Material: Aluminum die-casting Stainless steel for mounting screws

Fluid control

Pneumatic cylinders

components

components Fluid control valves



Antibacterial pre-filter

SFC310/SFC410/SFC810-FP2 Series

Port size: 1/4 to 1



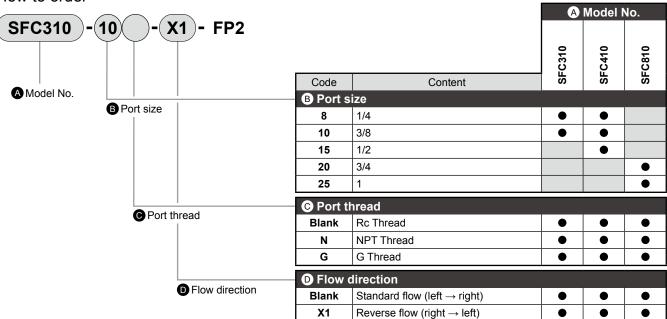


Specifications

Opecifications				
Descriptions	SFC310	SFC410	SFC810	
Working fluid	Compressed	Compressed air, nitrogen gas (N ₂), and carbon dioxide (CO ₂)		
Working pressure range MPa		0.15 to 1.0		
Proof pressure MPa		1.5		
Ambient/fluid temperatures °C	5 to 45			
Filtration µm		5 (removal efficiency 90% and over)		
Max. processing flow rate *1 \$\emptyset\text{min (ANR)}	essing flow rate *1 1/min (ANR) 360 700 2200		2200	
Port size Rc, NPT, G	1/4, 3/8	1/4, 3/8, 1/2	3/4, 1	
Weight Kg	0.28	0.52	2.7	
Standard accessories	Maintenance seal (included)			
Element replacement	1 year (6000 hours) or pressure drop 0.1 MPa			

^{*1:} Use within the max. processing flow rate. This value applies when the primary pressure is 0.7 MPa.

How to order



Single unit model number for replacement element

9 • 9 • • • • • • • • • • • • • • • • • • •				
Element model No.	Antibacterial pre-filter			
Model	Element			
SFC310	SFC310-ELEMENT			
SFC410	SFC410-ELEMENT			
SFC810	SFC810-ELEMENT			

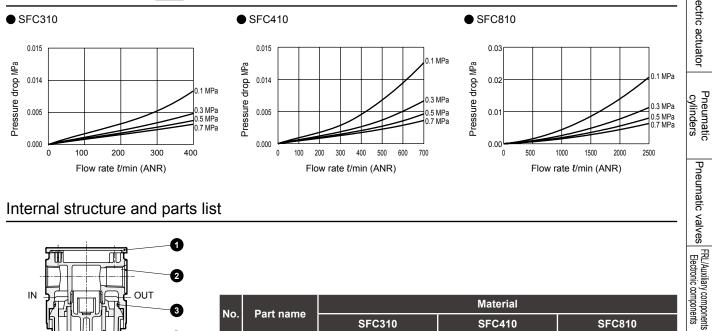
Electric actuator

components

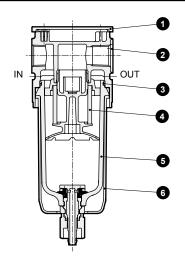
Main line components

Flow characteristics CAD





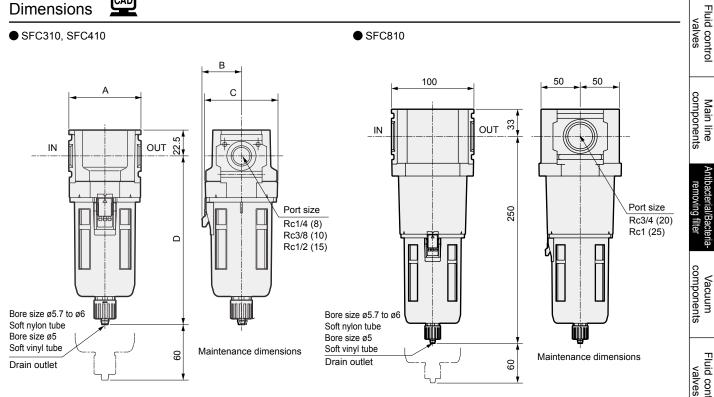
Internal structure and parts list



No.	Part name	Material			
NO.		SFC310	SFC410	SFC810	
1	Plate cover	ABS Resin			
2	Body	Aluminum alloy die-casting			
3	O-ring	Fluoro rubber			
4	Element	Polyethylene, polypropylene, etc.			
5	Bowl	Polyamide resin			
6	Bowl guard	Polyamide resin			
7	Drain cock	Polyacetal resin, polyester			

Dimensions





Model No.	Α	В	С	D
SFC310	63	34.5	63	148
SFC410	80	42.5	79	171

Fluid control valves

Pneumatic cylinders

FRL/Auxiliary components | Pneumatic valves

components

Main line components



High-performance antibacterial filter

SFC320/SFC420/SFC820-FP2 Series

Port size: 1/4 to 1



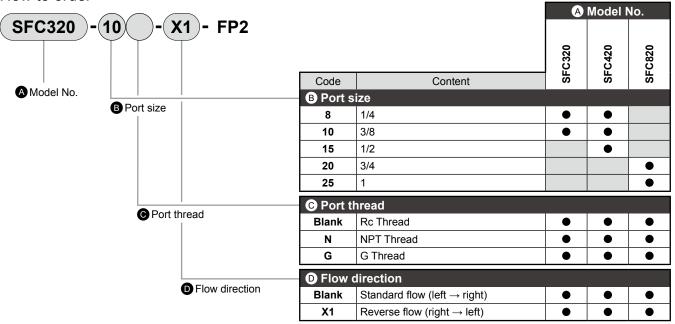


Specifications

Descriptions	SFC320	SFC420	SFC820	
Working fluid	Compressed	air, nitrogen gas (N2), and carbon d	flioxide (CO ₂)	
Working pressure range MPa	0.15 to 1.0			
Proof pressure MPa	1.5			
Ambient/fluid temperatures °C	5 to 45			
Filtration µm	0.1 (removal efficiency 99% and over)			
Max. processing flow rate *1	360	700	2200	
Port size Rc, NPT, G	1/4, 3/8	1/4, 3/8, 1/2	3/4, 1	
Weight Kg	0.28	0.52	2.7	
Standard accessories	Maintenance seal (included)			
Element replacement	1 year (6000 hours) or pressure drop 0.1 MPa			

^{*1:} Use within the max. processing flow rate. This value applies when the primary pressure is 0.7 MPa.

How to order



Single unit model number for replacement element

-				
Element model No.	High-performance antibacterial filte			
Model	Element			
SFC320	SFC320-ELEMENT			
SFC420	SFC420-ELEMENT			
SFC820	SFC820-ELEMENT			

Electric actuator

Pneumatic cylinders

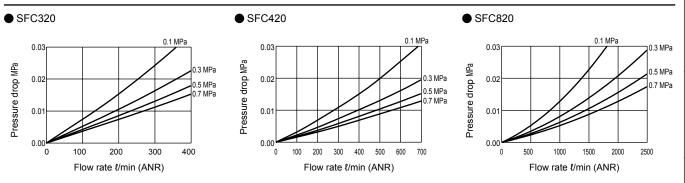
Pneumatic valves | FRL/Auxiliary components |

Vacuum components

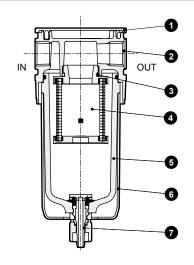
Main line components

Flow characteristics/internal structure and parts list/dimensions

Flow characteristics



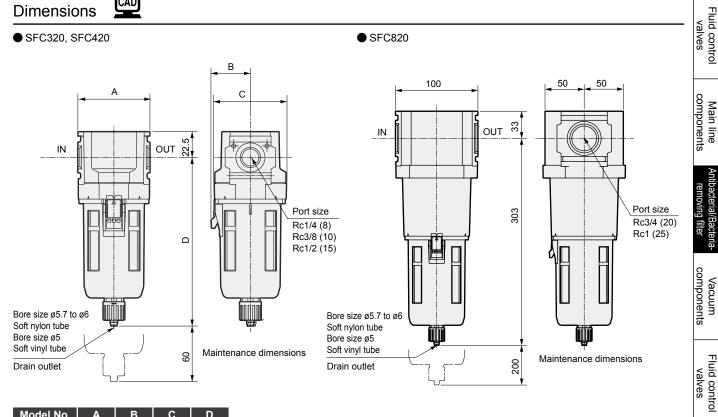
Internal structure and parts list



No.	Part name	Material			
NO.		SFC320	SFC420	SFC820	
1	Plate cover	ABS Resin			
2	Body	Aluminum alloy die-casting			
3	O-ring	Fluoro rubber			
4	Element	Glass fiber, polypropylene Glass fiber, PET,		Glass fiber, PET, etc.	
5	Bowl	Polyamide resin			
6	Bowl guard	Polyamide resin			
7	Drain cock	Polyacetal resin, polyester			

CAD

Dimensions



Model No.	Α	В	С	D
SFC320	63	34.5	63	148
SFC420	80	42.5	79	171

Pneumatic cylinders

components

Vacuum

Bacteria-removing filter

SFC330/SFC430-FP2 Series

Port size: 1/4 to 1/2



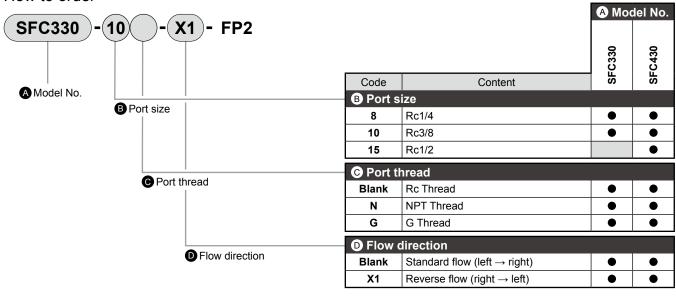


Specifications

Descriptions	SFC330	SFC430	
•			
Working fluid	Compressed air, nitrogen gas (N ₂), and carbon dioxide (CO ₂)	
Working pressure range MPa	0.15 t	o 1.0	
Proof pressure MPa	1.	5	
Differential pressure-resistant MPa	0.5		
Ambient/fluid temperatures °C	5 to 45		
Filtration µm	0.01 (removal efficiency 99.99%)		
Max. processing flow rate *1 \$\mathcal{U}\text{min} (ANR)	300	500	
Port size Rc, NPT, G	1/4, 3/8	1/4, 3/8, 1/2	
Weight Kg	0.28	0.52	
Standard accessories	Maintenance seal (included)		
Element replacement	1 year (6000 hours) or pressure drop 0.1 MPa		

^{*1:} Use within the max. processing flow rate. This value applies when the primary pressure is 0.7 MPa.

How to order



Single unit model number for replacement element

Element model No.	Bacteria-removing filter Element
SFC330	SFC330-ELEMENT
SFC430	SFC430-ELEMENT

Electric actuator

Pneumatic cylinders

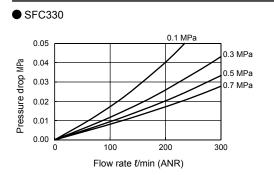
Pneumatic valves | FRL/Auxiliary components |

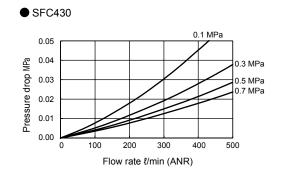
Vacuum components

Main line components

Flow characteristics

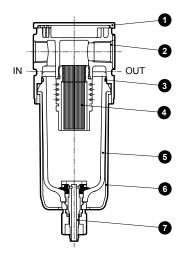






Flow characteristics/internal structure and parts list/dimensions

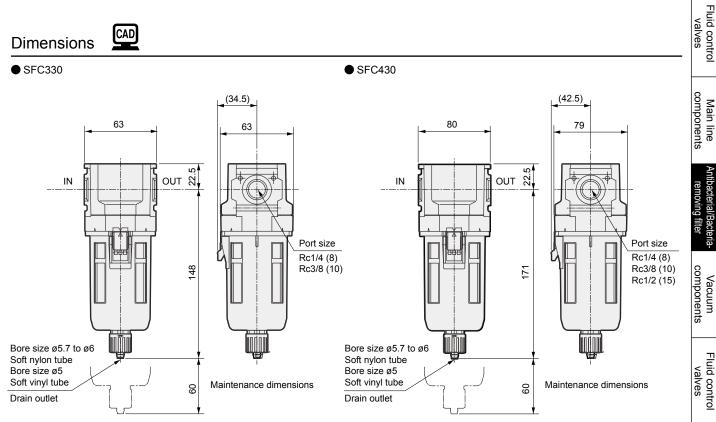
Internal structure and parts list



No.	Part name	Material			
NO.		SFC330	SFC430		
1	Plate cover	ABS Resin			
2	Body	Aluminum alloy die-casting			
3	O-ring	Fluoro rubber			
4	Element	Polypropylene, urethane rubber resin, transparent polyamide resin			
5	Bowl	Polyamide resin			
6	Bowl guard	Polyamide resin			
7	Drain cock	Polyacetal resin, polyester			

Dimensions





Pneumatic cylinders

Pneumatic valves



Bacteria-removing filter/inline

SFS10-FP2 Series

Port size: Rc1/4, Rc3/8Push-in fitting ø8, ø10, ø12



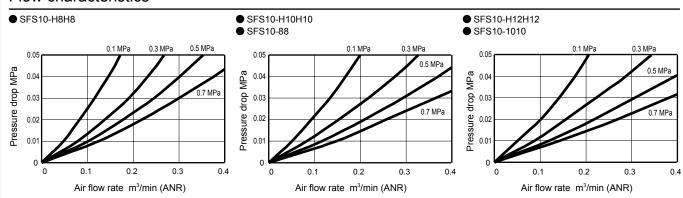


Specifications

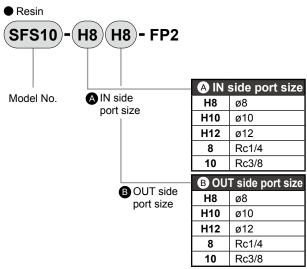
Specifications				
Descriptions	Resin		Stainless steel	
Descriptions	SFS10-	(*1) (*2)	SFS10- (*1) (*2) -M	
Working fluid	C	ompressed air, nitrogen gas	(N ₂), and carbon dioxide (CO ₂)	
IN side bore size (*1)	Push-in fitting	ø8, ø10, ø12,	Select from Rc1/4 and Rc3/8	
OUT side bore size (*2)	Select from Ro	:1/4 and Rc3/8	Select Itom RC 1/4 and RC3/6	
Proof pressure MPa	1.	5	2.25 (Compressed air), 1.5 (N ₂ , CO ₂)	
Differential pressure-resistant MPa		0.5		
Working pressure MPa	-0.095	to 0.99	-0.095 to 1.5 (Compressed air), -0.095 to 0.99 (N ₂ , CO ₂)	
Ambient/fluid temperatures °C	5 to 45			
Filtration µm		0.01 (removal efficiency 99.99%)		
Processing flow rate {/min (ANR)		300 to 400 *1		
Weight kg	Push-in fitting	Thread	0.5	
Weight kg	0.15	0.11	0.5	
Assembling/inspection/packaging	Integrated production in cleanroom			
Cleaning	Degreasing			
Element replacement	1 year (6000 hours) or pressure drop 0.1 MPa			

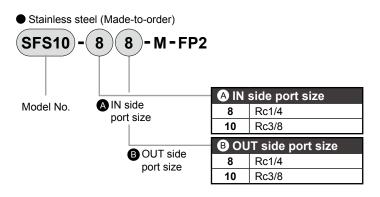
^{*1:} Initial flow rate at primary pressure 0.7 MPa and pressure drop 0.03 MPa. (Differs according to port size.)

Flow characteristics



How to order





- Single unit model number for replacement element (1 element, 2 O-rings)
 - Resin: **SFS10-E** Stainless steel: **SFS10-E-M**

^{*1:} Two mounting screws (M3 × 40), two plain washers, and two spring washers are included with the product.

SFS10-FP2 Series

Electric actuator

Pneumatic cylinders

Pneumatic valves | FRL/Auxiliary components | Electronic components

Vacuum components

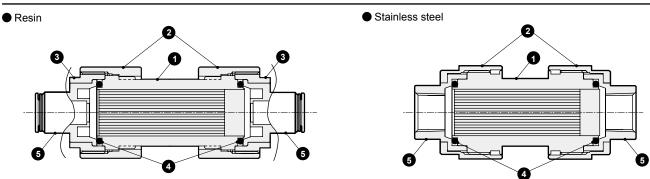
Main line components

Fluid control valves

Main line components

Internal structure and parts list/dimensions

Internal structure and parts list

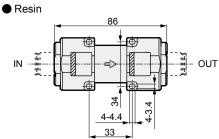


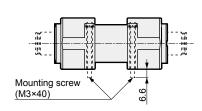
Parts list

No.	Part name		Part name Resin	
		Housing	Clear polyamide	Stainless steel
1	Element	Filter	Polypro	ppylene
		Filler material	Urethane r	ubber resin
2	Body		Polyamide resin	Stainless steel
3	Plug		Polyamide resin	-
4	O-ring		Fluoro rubber	Fluoro rubber
5	Cartridge fitting (Port size ø8, ø10, ø12)		Copper alloy (nickeling) Fluoro rubber Push ring: stainless steel	-
	Adaptor (Port size Rc1/4, Rc3/8)		Aluminum (Alumite treatment)	Stainless steel

Dimensions



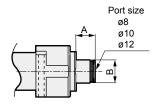






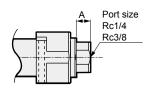
	Connection model No.	Port size	Α	В
H8 ø8 Push-in fitting		12	ø17.5	
H10 ø10 Push-in fitting		14.5	ø17.5	
	H12	ø12 Push-in fitting	16	ø19.5
	8	Rc1/4	11	-
	10	Rc3/8	11	-

• Push-in fitting (ø8, ø10, ø12)





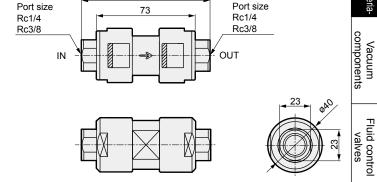
• Rc Thread (Rc1/4, Rc3/8)





Stainless steel

IN side



95

OUT side

Antibacterial/Bacteria-removing filter

Weight (kg)

0.036

0.094

O-ring

Port

Joiner

Cross section A-A

JIS

B2401-P21

equivalent

Gasket

Front

AS568-127 equivalent

Electric actuator Joiner set Model No.: SFJ400-FP2 SFJ800-FP2 Model No. Compatibility Α В С D Pneumatic SFC3**Series SFJ400-FP2 21 44 32 cylinders SFC4**Series SFJ800-FP2 SFC8**Series 26 M6 65 50 Material: Aluminum die-casting Pneumatic valves Stainless steel for mounting screws **Distributor** Installation method How to order Code Content A Model No. T-bracket FRL/Auxiliary components Electronic components SFD401)-00 For SFC3**Series For SFC4**Series SFD801 For SFC8**Series A Model No. B Port size SFD401 SFD801 components 10 Vacuum 15 20 25 Circuit © Port thread Main line components Port thread Blank Rc Thread Precautions for *1: Insert the O-ring when mounting on the NPT Thread primary side, and the gasket when mounting model No. selection on the secondary side for the air flow. G Thread G *2: When inserting the O-ring and gasket during **□** T-bracket *1: The joiner set (joiner, bolt, O-ring) and assembly, the O-ring and gasket must not be one gasket are included as standard. T-bracket **Blank** None *2: Contact CKD regarding 2-way branch. **B31** SFC3**Series Fluid control Material: Aluminum die-casting **B41** SFC4**Series Stainless steel for mounting screws **B81** SFC8**Series **Dimensions** ● SFD401-00-*-*-FP2 ● SFD801-00-*-*-FP2 components Main line 20 8 Top Тор 50 Port size Port size components Rc1/4 (8) Rc3/4 (20) 30 Vacuum Rc3/8 (10) Rc1 (25) Rc1/2 (15) 5 20 53 34 Fluid control 9 86 valves

Cross section A-A

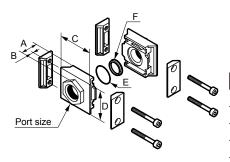
CKD

Antibacterial/Bacteria-removing filter

Dimensions and applications

Pipe adaptor set

● Model No.: SFA400-*-FP2 SFA800-*-FP2



Material: Aluminum die-casting Stainless steel for mounting screws

Model No.	Port size	Α	В	С	D	E (O-ring)	F (Gasket)	Weight (kg)
SFA400-8-FP2	1/4					JISB2401		
SFA400-10-FP2	3/8	20	6	50	45	P21 equivalent	1 pc.	0.16
SFA400-15-FP2	1/2					1 pc.		
SFA800-20-FP2	3/4					AS568-127		
SFA800-25-FP2	1	35 (38)		15 81		equivalent	1 pc.	0.53
SFA800-32-FP2	1 1/4	(00)	(10)			1 pc.		

Note: Numbers in () are for 11/4.

Electric actuator

removing filter



Vacuum system equipment SELVACS Catalog No. CC-796A

Suction pad **VSP-FP2** Series

Pad diameter: ø1 to ø200



Features

- We provide a diverse lineup of products enabling suction of any type of workpiece.
 - Pad shape: 9 types [Standard (standard, deep), sponge, bellows, multi-stage bellows, soft, soft bellows, thin, flat]
 - Pad diameter: Standard (standard) → 10 types (ø1 to ø200)

Standard (deep) \rightarrow 9 types (ø15 to ø100)

Sponge \rightarrow 4 types (ø35 to ø100)

Bellows → 9 types (ø6 to ø100)

Multi-stage bellows → 5 types (ø10 to ø50)

Soft \rightarrow 8 types (ø4 to ø40)

Soft bellows \rightarrow 5 types (ø6 to ø20)

Thin \rightarrow 4 types (ø8 to ø20)

Flat \rightarrow 5 types (ø10 to ø30)

- Holder shape: 6 types [standard holder and compact holder with side piping/upward piping/direct mounting available]
- Pad material: Silicone rubber (material compatible with Food Sanitation Act)

Pad material characteristics

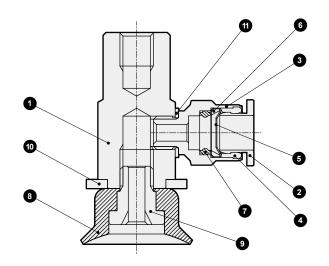
		Pad material	Silicone Rubber	Silicone Sponge rubber	
Des	scriptions		S	S	
Applications		Semiconductor Molded products Remove Thin workpieces Food-related	Workpieces with uneven surface Food-related		
Pac	d color		Natural	Salmon pink	
		Standard	50°	-	
	Surface	Bellows	50°	-	
	hardness	Multi-stage bellows	50°	-	
	(Shore A)	Soft type	40°	-	
	by pad	Soft bellows	40°	-	
S	shape	Type for thin object	40°	-	
ristic		Flat	40°	-	
Characteristics	High-temper	rature usage limits	180°C		
Jara	Low-temper	ature usage limits	-40°C		
ਹ	Weather res	istance	0		
	Ozone resistance		0		
Acid resistance			0		
Alkali resistance			0		
	Oil resistance	(Gasoline/light oil)	Δ		
	(Benzene/toluene)		Δ		

Reading the rating → ②: Ideal, O: Suitable, △: Good, ×: Unsuitable

- *1: Characteristics of general synthetic rubbers used for the pad material are indicated in the table of characteristics.
- *2: The values for the high and low temperature usage limits are for very short periods of use. Therefore, careful consideration should be employed for usage extending for a constant period of time.

Internal structure and parts list

VSP-B

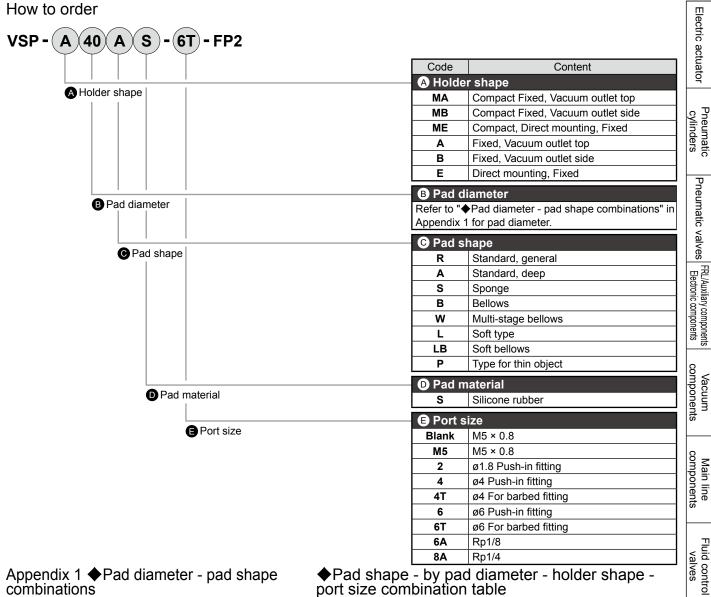


No.	Part name	Material	Remarks
1	Metal body	Copper alloy	Electroless nickeling
2	Release ring	Polyacetal	-
3	Fitting body	Copper alloy	Electroless nickeling
4	Guide ring	Copper alloy	Electroless nickeling
5	Lock claw	Stainless steel	-
6	Lock ring	Copper alloy	Electroless nickeling
7	Elastic sleeve	Nitrile rubber	-
8	Pad	Silicone rubber	-
9	Pad screws	Copper alloy	Electroless nickeling
10	Flat washer	Copper alloy	Electroless nickeling
11	Gasket	Nitrile rubber/steel	-

Safety precautions

- *Use after confirming the usage conditions, structure and material of each component carefully yourself.
- * Wear powder may be generated when replacing the pad. Before use, clean the equipment with air blow, etc.

VSP-FP2 Series



Appendix 1 ◆Pad diameter - pad shape combinations

	Pad sl	паре	R	Α	S	В	W	L	LB	Р	F
	1	ø1	•	-	-	-	-	-	-	-	-
	2	ø2	•	-	-	-	-	-	-	-	-
	3	ø3	•	-	-	-	-	-	-	-	-
	4	ø4	•	-	í	í	-	•	1	1	1
	6	ø6	•	-	ı	•	-	•	•	-	1
	8	ø8	•	-	-	•	-	•	•	•	-
	10	ø10	-	-	ı	•	•	•	•	•	•
	15	ø15	-	•	-	•	-	•	•	•	•
ţe	20	ø20	-	•	-	•	•	•	•	•	•
diameter	25	ø25	-	•	-	•	-	-	-	-	•
g	30	ø30	-	•	-		•	•	-	-	•
Pad	35	ø35	-	-	•	-	-	-	-	-	-
	40	ø40	-	•	-	•	•	•	-	-	-
	50	ø50	-	•	•	•	•	-	-	-	-
	60	ø60	-	•	i	•	-	ı	-	1	-
	70	ø70	-	-	•	-	-	-	-	-	-
	80	ø80	•	•	ı	•	-	ı	-	-	1
	100	ø100	•	•	•	•	-	1	-	-	-
	150	ø150	•	-	ı	-	-	-	-	-	-
	200	ø200	•	-	-	-	-	-	-	-	-

◆Pad shape - by pad diameter - holder shape - port size combination table

Pad	Applicable	Selectable codes (holder shape/port size/shape)					e)
Shape	Pad diameter	Α	В	E	MA	MB	ME
	ø1 to ø4	4/4T	4/4T	Blank	×	×	×
R	ø6, ø8	6/6T	6/6T	Blank	2/4T	2/4T	M5
ĸ	ø80, ø100	6A	6A	×	×	×	×
	ø150, ø200	8A	8A	×	×	×	×
	ø15	6/6T	6/6T	×	4/4T	4/4T	×
Α	ø20 to ø30	6/6T	6/6T	×	4/4T/6T	4/4T/6T	×
А	ø40 to ø60	6/6T	6/6T	×	×	×	×
	ø80, ø100	6A	6A	×	×	×	×
S	ø35, ø50	6/6T	6/6T	×	×	×	×
5	ø60 to ø100	6A	6A	×	×	×	×
	ø6, ø8	6/6T	6/6T	×	2/4T	2/4T	×
	ø10, ø15	6/6T	6/6T	×	4/4T	4/4T	×
В	ø20 to ø30	6/6T	6/6T	×	4/4T/6T	4/4T/6T	×
	ø40, ø50	6/6T	6/6T	×	×	×	×
	ø60 to ø100	6A	6A	×	×	×	×
	ø10	6/6T	6/6T	×	4/4T	4/4T	×
W	ø20, ø30	6/6T	6/6T	×	4/4T/6T	4/4T/6T	×
	ø40, ø50	6/6T	6/6T	×	×	×	×
	ø4 to ø15	6/6T	6/6T	×	4/4T	4/4T	×
L	ø20, ø30	6/6T	6/6T	×	4/4T/6T	4/4T/6T	×
	ø40	6/6T	6/6T	×	×	×	×
	ø6 to ø15	6/6T	6/6T	×	4/4T	4/4T	×
LB	ø20	6/6T	6/6T	×	4/4T/6T	4/4T/6T	×
	ø30	6/6T	6/6T	×	×	×	×
Р	All sizes	4/4T	4/4T	Blank	2/4T	2/4T	M5
F	ø10, ø15	6/6T	6/6T	×	4/4T	4/4T	×
Г	ø20 to ø30	6/6T	6/6T	×	4/4T/6T	4/4T/6T	×

Main line components

Antibacterial/Bacteria-

Pneumatic cylinders

Pneumatic valves

FRL/Auxiliary components
Electronic components

components

Vacuum components



Pilot operated 2-port solenoid valve for compressed air

EXA-FP2 Series

NC (normally closed)

● Port size: Push-in fitting ø6, ø8, ø10, ø12

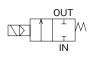
Diaphragm drive





JIS symbol

NC (normally closed)



Descriptions	EXA-C6	EXA-C8	EXA-C10	EXA-C12		
Working fluid		Compressed air				
Working pressure differential MPa		0.01	to 0.7			
Max. working pressure MPa		0	.7			
Proof pressure (water pressure) MPa		1.	05			
Fluid temperature °C		0 to 55 (no	o freezing)			
Ambient temperature °C		−5 t	o 55			
Atmosphere	Place free of corrosive gas, explosive gas and water splash					
Valve structure	Pilot operated diaphragm drive					
Internal leakage cm³/min	2 or less					
External leakage cm³/min		2 or	less			
Mounting orientation		Unres	tricted			
Port size	Push-in fitting ø6	Push-in fitting ø8	Push-in fitting ø10	Push-in fitting ø12		
C[dm ³ /(s·bar)]	1.6	3.0	3.3	3.6		
b	0.45	0.33	0.26	0.20		
Weight *1 g	56	57	68	69		
Electrical specification	ns					
Rated voltage	100 VAC (50/60Hz) , 24 VDC, 12 VDC *2					
Apparent power VA	1.2					
Power consumption W DC	0.6					
Thermal class	Class 130 (B)					
Degree of protection (IEC standard: 529)	Le	ad wire: IPX0, with	DIN terminal box: IP	X5		

^{*1:} Weight with the DIN terminal box is +20 g.

^{*2:} The voltage fluctuation range is ±10%.

EXA-FP2 Series

How to order

Electric actuator

Pneumatic valves | FRL/Auxiliary components |

Vacuum components

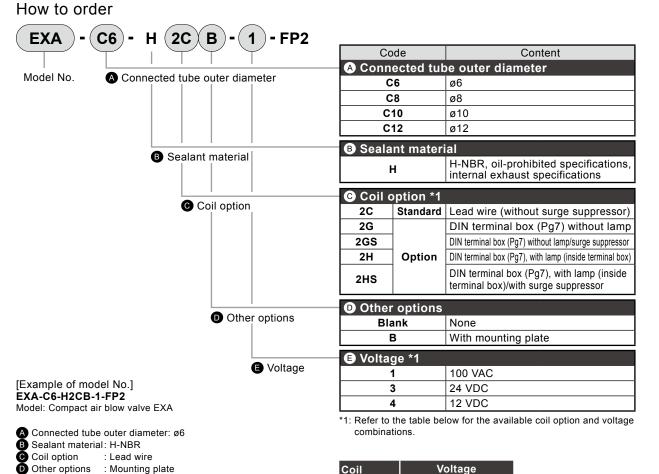
Main line components

Fluid control

Main line components

Antibacterial/Bacteriaremoving filter

Vacuum components



: 100 VAC

Voltage

Coil	Voltage			
option	1	3	4	
2C	•	•	•	
2G	•			
2GS		•	•	
2H	•			
2HS		•	•	

Select from the combinations indicated with

above.

CKD

Pneumatic cylinders

FRL/Auxiliary components | Pneumatic valves |

components

components Vacuum



FWD-FP2 Series

NC (normally closed)

Port size: Rc1/4 to Rc1





оросписации.							
Descriptions	FWD11-8A	FWD11-10A	FWD11-15A	FWD11-20A	FWD11-25A		
Actuation		NC (normally closed)					
Working fluid	Water	(excluding sewage, ag	gricultural water, liquid	manure and antifreeze	liquid)		
Working pressure differential MPa			0.02 to 0.7				
Max. working pressure MPa			0.7				
Proof pressure (water pressure) MPa			1.05				
Fluid temperature °C			5 to 60 (no freezing)				
Ambient temperature °C			-10 to 60 (no freezing)			
Atmosphere		Place free	of corrosive gas and e	xplosive gas			
Valve structure		Pilot op	erated poppet, diaphra	gm drive			
Valve seat leakage cm³/min			0 (water pressure) (*1)			
Mounting orientation			Unrestricted				
Degree of protection			IPX5				
Port size	Rc1/4	Rc3/8	Rc1/2	Rc3/4	Rc1		
Orifice size mm		15 (*2)		22	(*2)		
Cv	2.8	4.2	6.0	11.0	12.0		
Weight g	340	320	390	730	950		
Rated voltage	100 VAC 50/60 Hz, 200 VAC 50/60 Hz, 24 VDC						
Voltage fluctuation range	Rated voltage ±10%						
Apparent power VA	When holding (50/60 Hz): 5/4, when starting (50/60 Hz): 9/8 When holding (50/60 Hz): 9.5/7, when starting (50/60 Hz): 2			when starting (50/60 Hz): 23/20			
Power consumption W	AC	AC (50/60 Hz): 2.7/2, DC: 4 AC (50/60 Hz): 4/3.2, DC: 4					
Thermal class			Class 130 (B)				

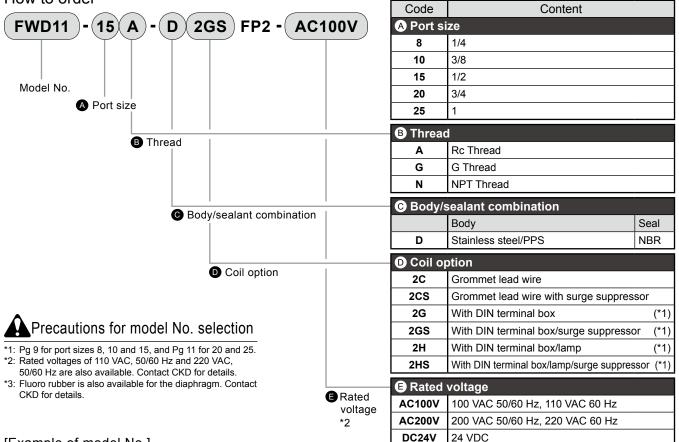
^{*1:} Valve seat leakage of 0 cm³/min means that no water drops come out of the valve seat within the span of 1 min.

^{*2:} Orifice size means the size of valve seat.

FWD-FP2 Series

How to order

Electric actuator



[Example of model No.]

How to order

FWD11-15A-D2GSFP2-AC100V

♠Port size : 1/2
♠Thread : Rc Thread

GBody/sealant combination: Stainless steel/PPS, NBR

Coil option : DIN terminal box/with surge suppressor (Pg9)

●Rated voltage :100 VAC 50/60 Hz, 110 VAC 60 Hz

components

removing filter

components

Vacuum



USB2-FP2 Series

NC (normally closed)

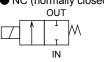
Port size: M5





JIS symbol

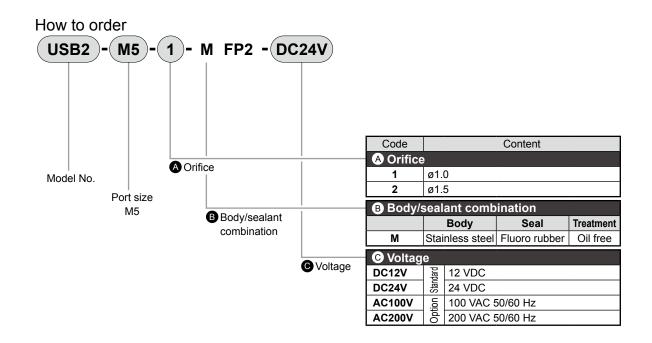
NC (normally closed)



Day of the control	LIODO ME 4	LIODO ME O				
Descriptions	USB2-M5-1	USB2-M5-2				
Working fluid	Air, water, dry air, low vac	Air, water, dry air, low vacuum [1.33 \times 10 ² Pa (abs)]				
Max. working pressure MPa	0.7	0.3				
Working pressure differential MPa	0 to 0.7	0 to 0.3				
Proof pressure (water pressure) MPa	1	.5				
Fluid temperature °C	-10 to 60 (no freezing)				
Ambient temperature °C	-20	−20 to 50				
Valve seat leakage cm³/mir	0.2 or less (pneumatic pressure)					
Mounting orientation	Unrestricted					
Weight kg	0.	07				
Port size	M5	M5				
Orifice size mm	1	1.5				
Cv	0.03	0.06				
C[dm ³ /(s·bar)]	0.13	0.28				
b	0.57	0.46				
Electrical specification	s					

Electrical specifications						
Rated voltage		12 VDC, 24 VDC (Option: 100 VAC 50/60 Hz, 200 VAC 50/60 Hz)				
Voltage fluctuation range		±10%				
Power consumption DC		3				
w	AC	4				
Thermal class		Class 130 (B)				

^{*1:} Effective cross-sectional area S and sonic conductance C are converted as $S \approx 5.0 \times C$.



^{*2:} When using at low vacuum, vacuum the OUT port side.

Pneumatic valves

FRL/Auxiliary components
Electronic components

Main line components



Compact direct acting 2-port solenoid valve

USB3-FP2 Series

NC (normally closed)

Port size: Rc1/8



CAD

JIS symbol

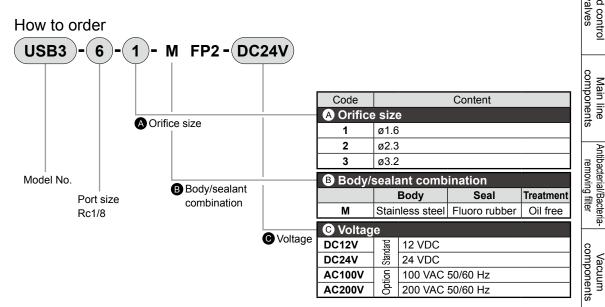
● NC (normally closed)



Descriptions	USB3-6-1	USB3-6-2	USB3-6-3		
Working fluid	Air, water, di	Air, water, dry air, low vacuum [1.33 × 10 ² Pa (abs)]			
Max. working pressure MP	0.9	0.4	0.1		
Working pressure differential MP	0 to 0.9	0 to 0.4	0 to 0.1		
Proof pressure (water pressure) MP	a	2			
Fluid temperature °C		-10 to 60 (no freezing)			
Ambient temperature °C		-20 to 50			
Valve seat leakage cm³/mi	0.2	or less (pneumatic pressu	ire)		
Mounting orientation		Unrestricted			
Weight kg	0.13				
Port size	Rc1/8	Rc1/8	Rc1/8		
Orifice size mn	n 1.6	2.3	3.2		
Cv	0.09	0.18	0.3		
C[dm ³ /(s·bar)]	0.34	0.64	1.2		
b	0.56	0.51	0.48		
Electrical specifications					
Rated voltage	12 VDC, 24 VDC (Option : 100 VAC 50/60 Hz, 200 VAC 50/60 Hz)				
Voltage fluctuation range	±10%				
Power consumption DC	4				
W AC	4				
Thermal class		Class 130 (B)			

^{*1:} Effective cross-sectional area S and sonic conductance C are converted as $S \approx 5.0 \times C$.

^{*2:} When using at low vacuum, vacuum the OUT port side.



FRL/Auxiliary components | Pneumatic valves |

components

removing filter

components



USG2-FP2 Series

Universal type Port size: M5



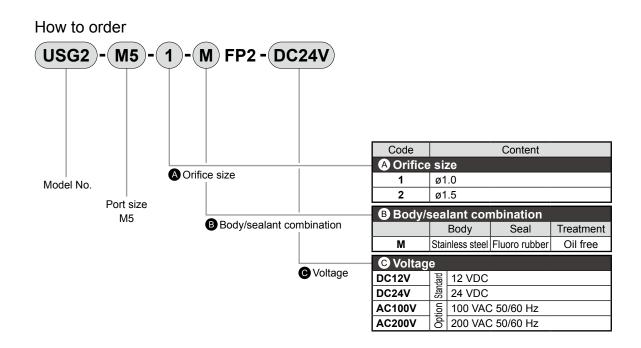
JIS symbol

Universal type



Descriptions USG2-M5-1 USG2-M5-2 Working fluid Air, water, dry air, low vacuum [1.33 × 10² Pa (abs)] Max. working pressure MPa 0.7 0.3 Working pressure differential MPa or to 0.7 (0 to 0.3 when pressurized at NO port) 0 to 0.3 (0 to 0.1 when pressurized at NO port) Proof pressure (water pressure) MPa core pressure (water pressure) MPa core pressure (water pressure) MPa core pressure (water pressure) MPa core pressure or 2.5 to 50 Ambient temperature °C core product temperature °C core pressure or 2.2 to 50 -20 to 50 Valve seat leakage cm³/min core pressure) 0.2 or less (pneumatic pressure) Mounting orientation core production or display the pressure or pr	Opecinications					
Max. working pressure MPa 0.7 0.3 Working pressure differential MPa 0 to 0.7 (0 to 0.3 when pressurized at NO port) 0 to 0.3 (0 to 0.1 when pressurized at NO port) Proof pressure (water pressure) MPa 1.5 Fluid temperature °C -10 to 60 (no freezing) Ambient temperature °C -20 to 50 Valve seat leakage cm³/min 0.2 or less (pneumatic pressure) Mounting orientation Unrestricted Weight kg 0.07 Port size M5 M5 Orifice size mm 1 1.5 Cv 0.03 0.06 0.06 C[dm³/(s·bar)] 0.13 0.28 b 0.57 0.46 Electrical specifications Rated voltage 12 VDC, 24 VDC (Option : 100 VAC 50/60 Hz, 200 VAC 50/60 Hz) Voltage fluctuation range ±10% Power consumption DC 3 W AC 4	Descriptions	USG2-M5-1	USG2-M5-2			
Working pressure differential MPa	Working fluid	Air, water, dry air, low vacuum [1.33 × 10 ² Pa (abs)]				
Proof pressure (water pressure) MPa 1.5 Fluid temperature °C -10 to 60 (no freezing) Ambient temperature °C -20 to 50 Valve seat leakage cm³/min 0.2 or less (pneumatic pressure) Mounting orientation Unrestricted Weight kg 0.07 Port size M5 M5 Orifice size mm 1 1.5 Cv 0.03 0.06 C[dm³/(s·bar)] 0.13 0.28 b 0.57 0.46 Electrical specifications Rated voltage 12 VDC, 24 VDC (Option : 100 VAC 50/60 Hz, 200 VAC 50/60 Hz) Voltage fluctuation range ±10% Power consumption WAC DC 3 AC 4	Max. working pressure MPa	0.7	0.3			
Fluid temperature °C -10 to 60 (no freezing) Ambient temperature °C -20 to 50 Valve seat leakage cm³/min 0.2 or less (pneumatic pressure) Mounting orientation Unrestricted Weight kg 0.07 Port size M5 M5 Orifice size mm 1 1.5 Cv 0.03 0.06 C[dm³/(s·bar)] 0.13 0.28 b 0.57 0.46 Electrical specifications Rated voltage 12 VDC, 24 VDC (Option : 100 VAC 50/60 Hz, 200 VAC 50/60 Hz) Voltage fluctuation range ±10% Power consumption DC 3 W AC 4	Working pressure differential MPa	0 to 0.7 (0 to 0.3 when pressurized at NO port)	0 to 0.3 (0 to 0.1 when pressurized at NO port)			
Ambient temperature °C -20 to 50 Valve seat leakage cm³/min 0.2 or less (pneumatic pressure) Mounting orientation Unrestricted Weight kg 0.07 Port size M5 M5 Orifice size mm 1 1.5 Cv 0.03 0.06 C[dm³/(s·bar)] 0.13 0.28 b 0.57 0.46 Electrical specifications Rated voltage 12 VDC, 24 VDC (Option : 100 VAC 50/60 Hz, 200 VAC 50/60 Hz) Voltage fluctuation range ±10% Power consumption DC 3 W AC 4	Proof pressure (water pressure) MPa	1	.5			
Valve seat leakage cm³/min 0.2 or less (pneumatic pressure) Mounting orientation Unrestricted Weight kg 0.07 Port size M5 M5 Orifice size mm 1 1.5 Cv 0.03 0.06 C[dm³/(s·bar)] 0.13 0.28 b 0.57 0.46 Electrical specifications Rated voltage 12 VDC, 24 VDC (Option : 100 VAC 50/60 Hz, 200 VAC 50/60 Hz) Voltage fluctuation range ±10% Power consumption DC 3 W AC 4	Fluid temperature °C	−10 to 60 (ı	no freezing)			
Mounting orientation Unrestricted Weight kg 0.07 Port size M5 M5 Orifice size mm 1 1.5 Cv 0.03 0.06 C[dm³/(s·bar)] 0.13 0.28 b 0.57 0.46 Electrical specifications Rated voltage 12 VDC, 24 VDC (Option : 100 VAC 50/60 Hz, 200 VAC 50/60 Hz) Voltage fluctuation range ±10% Power consumption DC 3 W AC 4	Ambient temperature °C	-20	to 50			
Weight kg 0.07 Port size M5 M5 Orifice size mm 1 1.5 Cv 0.03 0.06 C[dm³/(s·bar)] 0.13 0.28 b 0.57 0.46 Electrical specifications Rated voltage 12 VDC, 24 VDC (Option : 100 VAC 50/60 Hz, 200 VAC 50/60 Hz) Voltage fluctuation range ±10% Power consumption DC 3 W AC 4	Valve seat leakage cm³/min	0.2 or less (pnea	umatic pressure)			
Port size M5 M5 Orifice size mm 1 1.5 Cv 0.03 0.06 C[dm³/(s·bar)] 0.13 0.28 b 0.57 0.46 Electrical specifications Rated voltage 12 VDC, 24 VDC (Option : 100 VAC 50/60 Hz, 200 VAC 50/60 Hz) Voltage fluctuation range ±10% Power consumption DC 3 W AC 4	Mounting orientation	Unrestricted				
Orifice size mm 1 1.5 Cv 0.03 0.06 C[dm³/(s·bar)] 0.13 0.28 b 0.57 0.46 Electrical specifications Rated voltage 12 VDC, 24 VDC (Option : 100 VAC 50/60 Hz, 200 VAC 50/60 Hz) Voltage fluctuation range ±10% Power consumption DC 3 W AC 4	Weight kg	0.07				
Cv 0.03 0.06 C[dm³/(s·bar)] 0.13 0.28 b 0.57 0.46 Electrical specifications Rated voltage 12 VDC, 24 VDC (Option : 100 VAC 50/60 Hz, 200 VAC 50/60 Hz) Voltage fluctuation range ±10% Power consumption DC 3 W AC 4	Port size	M5	M5			
C[dm³/(s·bar)] 0.13 0.28 b 0.57 0.46 Electrical specifications Rated voltage 12 VDC, 24 VDC (Option : 100 VAC 50/60 Hz, 200 VAC 50/60 Hz) Voltage fluctuation range ±10% Power consumption DC 3 W AC 4	Orifice size mm	1	1.5			
b 0.57 0.46 Electrical specifications Rated voltage 12 VDC, 24 VDC (Option : 100 VAC 50/60 Hz, 200 VAC 50/60 Hz) Voltage fluctuation range ±10% Power consumption DC 3 W AC 4	Cv	0.03	0.06			
Electrical specifications Rated voltage 12 VDC, 24 VDC (Option : 100 VAC 50/60 Hz, 200 VAC 50/60 Hz) Voltage fluctuation range ±10% Power consumption DC 3 W AC 4	C[dm ³ /(s·bar)]	0.13	0.28			
Rated voltage 12 VDC, 24 VDC (Option : 100 VAC 50/60 Hz, 200 VAC 50/60 Hz) Voltage fluctuation range ±10% Power consumption DC 3 W AC 4	b	0.57	0.46			
Voltage fluctuation range ±10% Power consumption DC 3 W AC 4	Electrical specificat	tions				
Power consumption DC 3 W AC 4	Rated voltage	12 VDC, 24 VDC (Option : 100 VAC 50/60 Hz, 200 VAC 50/60 Hz)				
W AC 4	Voltage fluctuation range	±10%				
	Power consumption DC	3				
Thermal class Class 130 (B)	W AC	4				
	Thermal class	Class	130 (B)			

^{*1:} Effective cross-sectional area S and sonic conductance C are converted as S \approx 5.0 \times C.



Pneumatic valves | FRL/Auxiliary components |

Vacuum components

Main line components

Fluid control valves

Main line components

Antibacterial/Bacteria-

Vacuum Fluid components valv



USG3-FP2 Series

Compact direct acting 3-port solenoid valve

Universal type

Port size: Rc1/8





JIS symbol

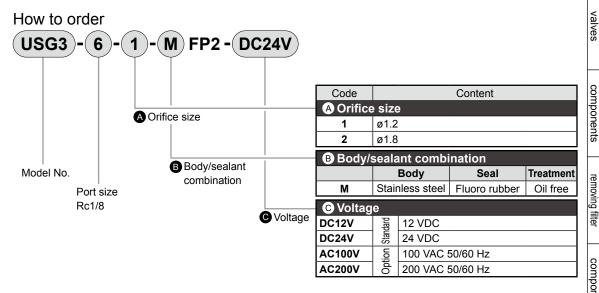
Universal type



Specifications

Descriptions	USG3-6-1	USG3-6-2
Working fluid	Air, water, dry air, low vac	uum [1.33 × 10² Pa (abs)]
Max. working pressure MPa	0.7	0.3
Working pressure differential MPa	0 to 0.7 (0 to 0.3 when pressurized at NO port)	0 to 0.3 (0 to 0.1 when pressurized at NO port)
Proof pressure (water pressure) MPa	2	2
Fluid temperature °C	−10 to 60 (ı	no freezing)
Ambient temperature °C	-20	to 50
Valve seat leakage cm³/min	0.2 or less (pne	umatic pressure)
Mounting orientation	Unres	tricted
Weight kg	0.	14
Port size	Rc1/8	Rc1/8
Orifice size mm	1.2	1.8
Cv	0.05	0.1
C[dm ³ /(s·bar)]	0.19	0.42
b	0.57	0.5
Electrical specificat	tions	
Rated voltage	12 VDC, 24 VDC (Option: 100 V/	AC 50/60 Hz, 200 VAC 50/60 Hz)
Voltage fluctuation range	±10	0%
Power consumption DC	4	1
W AC	4	1
Thermal class	Class	130 (B)

^{*1:} Effective cross-sectional area S and sonic conductance C are converted as S ≈ 5.0 × C.



Pneumatic cylinders

Pneumatic valves

Fluid control

components



US (Resin body) -FP2 Series

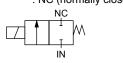
- NC (normally closed), universal type
- Port size: M6, barbed fitting (compatible tube size ø6 × ø4)



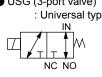


JIS symbol

USB (2-port valve) : NC (normally closed)



USG (3-port valve) : Universal type



Common specifications

Descriptions		USB/USG
Working fluid		Refer to the working fluid in individual specifications.
Working pressure		0 to 0.7 (refer to max. working pressure differential in
differential	MPa	individual specifications.)
Proof pressure	MPa	1.5 (US*2), 2 (US*3) (water pressure)
Fluid temperature	°C	0 to 60 (no freezing)
Ambient temperatur	e °C	0 to 50
Thermal class		Class 130 (B)
Atmosphere		No explosive or corrosive atmospheres
Valve seat leakage	cm ³ /min	0.2 or less (air)
Port size		M6, barbed fitting (compatible tube size ø6 × ø4)
Mounting orientation	on	Unrestricted
Rated voltage		12 VDC 24 VDC
Treatment		Oil free

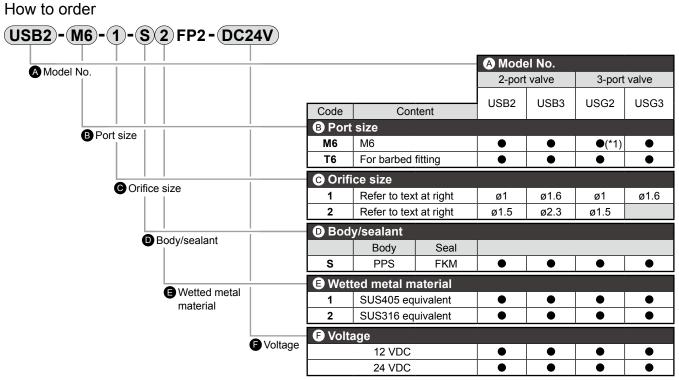
Individual specifications

Descri Model		ns	Working fluid	Orifice size [mm]	Cv	C[dm³/(s·bar)]	b	Max. working pressure differential [MPa]	Power consumption [W]
2-port v	/alve	(Item (E) V	Vetted metal mat	erial: 2 (equival	ent to SUS316))				
USB2-	*	-1	Water/pure	1	0.03	0.13	0.36	0.6	3
		-2	water	1.5	0.06	0.27	0.28	0.3	3
USB3-	*	-1		1.6	0.08	0.32	0.30	0.7	4
		-2	(*1)	2.3	0.13	0.45	0.30	0.3	4
3-port v	/alve	(Item (E) V	Vetted metal mat	erial: 2 (equival	ent to SUS316))				
USG2-	*	-1		1	0.03	0.13	0.36	0.6 (0.2 when pressurized at NO port)	3
		-2	Water/pure water (*1)	1.5	0.06	0.27	0.28	0.3 (0.1 when pressurized at NO port)	3
USG3-	*	-1		1.6	0.08	0.32	0.30	0.2 (0.08 when pressurized at NO port)	4
2-port v	/alve	(Item (E) V	Vetted metal mat	erial: 1 (equival	ent to SUS405))				
USB2-	*	-1	Air/water/dry air/	1	0.03	0.13	0.36	0.7	3
		-2	low vacuum	1.5	0.06	0.27	0.28	0.3	3
USB3-	*	-1	(1.33 × 10 ² Pa (abs))	1.6	0.08	0.32	0.30	0.9	4
		-2	(*1)	2.3	0.13	0.45	0.30	0.3	4
3-port v	/alve	(Item (E) V	Vetted metal mat	erial: 1 (equival	ent to SUS405))				
USG2-	*	-1	Air/water/dry air/	1	0.03	0.13	0.36	0.7 (0.3 when pressurized at NO port)	3
		-2	low vacuum (1.33 × 10² Pa (abs))	1.5	0.06	0.27	0.28	0.3 (0.1 when pressurized at NO port)	3
USG3-	*	-1	(*1)	1.6	0.08	0.32	0.30	0.3 (0.1 when pressurized at NO port)	4

- *1: Check the compatibility between the wetted part material and working fluid before using chemical liquid for washing.
- *2: Effective cross-sectional area S and sonic conductance C are converted as S \approx 5.0 \times C.
- *3: When using a 2-port valve at low vacuum, vacuum the NC port side.

US (Resin body) -FP2 series

How to order



A Precautions for model No. selection

Electric actuator Pneumatic cylinders Pneumatic valves | FRL/Auxiliary components | Vacuum components Main line components Fluid control valves Main line components Antibacterial/Bacteria-removing filter Vacuum components

^{*1:} NO port of USG2 is M5.

Pneumatic

Pneumatic valves

FRL/Auxiliary components
Electronic components

components



Direct acting 2-port solenoid valve, single unit

Materials compliant with the Food Sanitation Act (general purpose valve)

AB31-FP2/AB41-FP2 Series

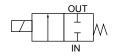
- NC (normally closed)
- Port size: Rc1/8 to Rc3/8





JIS symbol

NC (normally closed)



Common specifications

Descriptions	Specifications								
Working fluid	Air/low vacuum [1.33 × 10² Pa (abs)]/water/oil (50 mm²/s or less)	Steam							
Working pressure differential MPa	0 to 5 (Refer to max. operating pressure differential in individual specifications.)								
Proof pressure (water pressure) MPa	25								
Fluid temperature °C	−10 to 60 (no freezing)	-10 to 90	-10 to 184						
Ambient temperature °C	−20 to 60	−20 to	100 *1						
Thermal class	Class 130 (B)	Class	180 (H)						
Atmosphere	Place free of corrosive gas and expl	osive gas							
Valve structure	Direct acting poppet structur	е							
Valve seat leakage cm³/min (ANR)	0.2 or less (air)		300 or less (air)						
Mounting orientation	Unrestricted								
Degree of protection	IP65 equivalent	00							
Sealant material	Fluoro rubber	PTFE							

^{*1: -20} to 80°C when coil housing is HP terminal box with lamp

Individual specifications

IIIaivia	uai .	specific	ations																
Description	ıs	Port	Orifice				ssure				warkina	Rated	Appa	rent	powei	r (VA)	Power consump	ion (W)	Weight
Model No	o. \	size	size (mm)				ot water	_ `			pressure	voltage	when	iolaing	when	starting	AC 50/60 Hz	DC	
NC (norma	ally clo	osed)																	
AB31- 01 02	-2	Rc1/8 Rc1/4	2.0	1.5	1.5	1.5	1.5	1.5	1.5	1.0	5	100 VAC	12	10	17	14	5.2/3.8	11	0.52
AB41- 02 03	-3	Rc1/4	3.0	1.5	0.9	1.3	0.9	0.9	0.9	1.0	/ Fluid: \	50/60 Hz*6 200 VAC 50/60 Hz*6	18	15	29	24	6.7/5.7	11	0.69
	-5	Rc3/8	4.0	1.0	0.5	0.7	0.5	0.5	0.5	0.7	\ for 1 /	24 VDC	10	15	29	24	6.7/5.7	11	0.09

^{*1:} The model numbers above are for the basic port size (Rc) and orifice size. Refer to How to order for other combinations.

Flow characteristics

Model N	اما	Port size	Orifice	Flow characteristics							
Model No.		Port Size	size (mm)	C[dm³/(s·bar)]	b	Cv					
NC (norma	ally clo	osed)									
AB31- 01 02	-2	Rc1/8 Rc1/4	2.0	0.53	0.52	0.15					
AB41- 02 03	-3	Rc1/4	3.0	1.1	0.52	0.31					
	₋₅ Rc3/8		4.0	1.9	0.47	0.48					

^{*} Effective cross-sectional area S and sonic conductance C are converted as S \approx 5.0 \times C.

^{*2:} The port size symbol is 01 for Rc1/8 (6A), 02 for Rc1/4 (8A) and 03 for Rc3/8 (10A).

^{*3:} Refer to DC column for the max. operating pressure differential of coil with diode.
*4: The voltage fluctuation range must be within ±10% of the rated voltage.

^{*5:} When using at low vacuum, vacuum the OUT port side.
*6 The 100 VAC (50/60 Hz) type can be used with 110 VAC (60 Hz). The 200 VAC (50/60 Hz) type can be used with 220 VAC (60 Hz). However, this does not apply to coil housings 5A/5I/5J.

AB31/41-FP2 Series

How to order

					io order	
How to order (AB31 - 01 - 2 - M(3A) FP2-(AC100V)				AB31 (V)	AB41 No.	Electric actuator
AD44	Code	C	Content	ገ ፞		tuat
(AB41)	B Por	t size				ğ
B Port size A Model No.	01	Rc1/8		•		
Wilder No.	02	Rc1/4		•	•	Cyl Cyl
	03	Rc3/8				inde
	© Orif	ice size				Pneumatic cylinders
Orifice size	2	ø2		•		
	3	ø3			•	Pne
	5	ø4			•	mű
	D Boo	ly/sealant comb	pination	·		Pneumatic valves
Body/sealant combination		Body	Seal			valv
	М	Stainless stee	el Fluoro rubber	•		es
	N	Stainless stee	el PTFE	•	•	Eec FRLA
	■ Coi	housing	·			FRL/Auxiliary components Electronic components
Coil housing	3A		Lead wire			y con
	31	Open frame	HP terminal box		(G1/2)	npone
	3J 4A		HP terminal box with la Lead wire	amp	(G1/2)	nts
	4M	Open frame (Thermal class	HP terminal box		(G1/2)	R
	4N	180 (H))	HP terminal box with la	amp	(G1/2)	Vac omp
	5A	Open frame	Lead wire			Vacuum components
	5I 5J	(diode integrated)	HP terminal box		(G1/2)	nts
			HP terminal box with la	amp	(G1/2)	
₽ Rated		ed voltage				8 _
voltage	3A					Main line components
	31	100 VAC, 200 VAC	5, 24 VDC			n lin one
	3J					nts
	4A	100 \/A C 200 \/A C	、			
	4M 4N	100 VAC, 200 VAC	•			□
	5A					Fluid control valves
	51	100 VAC, 200 VAC	`			uid cont valves
	5J	100 VAO, 200 VAC	,			
		<u> </u>				

Pneumatic

Pneumatic valves

removing filter

Fluid control

components



Direct acting 3-port solenoid valve, single unit (general purpose valve)

AG31-FP2/AG41-FP2 Series

Universal type

Port size: Rc1/8, Rc1/4, Rc3/8





JIS symbol

AG31/41: Universal type



Common specifications

Descriptions	Specifications		
Working fluid	Air/low vacuum [1.33 × 10 ² Pa (abs)]/water/oil (50 mm ² /s or less)	Hot water	Steam
Working pressure differential MPa	0 to 1 (Refer to max. operating pressure differentia	ıl in individual s	pecifications.)
Proof pressure (water pressure) MPa	25		
Fluid temperature (*) °C	-10 to 60 (no freezing)	-10 to 90	-10 to 184
Ambient temperature °C	-20 to 60	−20 to	100 *1
Thermal class	Class 130 (B)	Class	180 (H)
Atmosphere	Place free of corrosive gas and ex	kplosive gas	
Valve structure	Direct acting poppet struc	ture	
Valve seat leakage cm³/min (ANR)	0.2 or less (air)		300 or less (air)
Mounting orientation	Unrestricted		
Degree of protection	IP65 equivalent	000	
Sealant material	Fluoro rubber	PTFE	

^{*1: -20} to 80°C when coil housing is HP terminal box with lamp

Individual specifications

Descr	iptions	Port	Orific	e size	Max.	working pressure differential (MPa) Rated Apparent power (VA)							Power consum	Weight					
	·	1 011	(mm)		Air		Water/hot water Oil (Oil (50 mm²/s) Steam			When holding		When starting		AC	DC	
Mode	l No.\	size	TOP	BODY	AC	DC	AC	DC	AC	DC	AC	voltage	50 Hz	60 Hz	50 Hz	60 Hz	50/60 Hz		(kg)
AG31	-01-1	Rc1/8	1.5	1.5	0.7	0.7	0.7	0.7	0.6	0.6	0.7								
	-01-2	RC1/6	2.0	2.0	0.4	0.4	0.4	0.4	0.25	0.2	0.4	100 VAC 50/60 Hz	14	11	20	16	6/4.2	11	0.51
	-02-1	Rc1/4	1.5	1.5	0.7	0.7	0.7	0.7	0.6	0.6	0.7	50/60 ⊓2 *4	14	11	20	16	0/4.2	11	0.51
	-02-2	RC1/4	2.0	2.0	0.4	0.4	0.4	0.4	0.25	0.2	0.4	200 VAC							
AG41	-02-1	Rc1/4	2.0	2.0	1.0	0.7	1.0	0.7	0.4	0.3	1.0	50/60 Hz							0.65
	-02-2	RC1/4	2.3	2.3	0.7	0.4	0.7	0.4	0.25	0.15	0.7	*4	22	17	35	27	8.3/6.2	11	0.05
	-03-1	De2/0	2.0	2.0	1.0	0.7	1.0	0.7	0.4	0.3	1.0	24 VDC	22	17	35	21	0.3/0.2	11	0.70
	-03-2	Rc3/8	2.3	2.3	0.7	0.4	0.7	0.4	0.25	0.15	0.7								0.70

- *1: The model numbers above are for the basic port size (Rc) and orifice size. Refer to How to order for other combinations.
- *2: Refer to dc column for the max. operating pressure differential of coil with diode.
- *3: The voltage fluctuation range must be within ±10% of the rated voltage.
- *4: The 100 VAC (50/60 Hz) type can be used with 110 VAC (60 Hz). The 200 VAC (50/60 Hz) type can be used with 220 VAC (60 Hz). However, this does not apply to coil housings 5A/5M/5N/5I/5J.
- *5: NO port pressurization is not possible for PTFF seal.

Flow characteristics

		Orifice s	ize (mm)	Flow characteristics							
Model No.	Port size	ТОР	BODY	C[dm ³ /	(s·bar)]	b		C	v		
		TOP	БООТ	TOP	BODY	TOP	BODY	TOP	BODY		
AG31 -01-1	Rc 1/8	1.5	1.5	0.29	0.29	0.64	0.53	0.09	0.09		
-01-2	RC 1/8	2.0	2.0	0.53	0.53	0.54	0.52	0.15	0.15		
-02-1	Rc 1/4	1.5	1.5	0.29	0.29	0.64	0.53	0.09	0.09		
-02-2	RC 1/4	2.0	2.0	0.53	0.53	0.54	0.52	0.15	0.15		
AG41 -02-1	Do 1/4	2.0	2.0	0.53	0.53	0.54	0.52	0.15	0.15		
-02-2	Rc 1/4	2.3	2.3	0.74	0.74	0.66	0.53	0.19	0.19		
-03-1	Rc 3/8	2.0	2.0	0.53	0.53	0.54	0.52	0.15	0.15		
-03-2		2.3	2.3	0.74	0.74	0.66	0.53	0.19	0.19		

^{*1:} Effective cross-sectional area S and sonic conductance C are converted as S \approx 5.0 \times C.

AG31/41-FP2 Series

How to order

FP1

How to order AG31 - 02 - 2 - M 3A FP2 - AG41	C100V								Electric actuator
Model No.		Code		Co	ntent		AG31	P AG41 P AG41	Pneumatic cylinders
A Port size			Rc1/8 Rc1/4 Rc3/8				•	•	iic Pneumatic valves
Orifice size		1 2	### AG ### TOP ### ### ### ### ### ### ### ### ### ##	BODY Ø1.5 Ø2.0	70P Ø2.0 Ø2.3	BODY Ø2.0 Ø2.3	•	•	tic valves FRL/Auxiliary components Electronic components
© Body/sealant combination D Coil housing		M N	ody/sealant Bo Stainles Stainles	ss steel	Se Fluoro	eal rubber FFE	•	•	mponents Vacuum components
G Con Housing		3A 3I 3J 4A 4M 4N	Open frame Open frame (Thermal cla	HP te	rminal box rminal box wi	-		(G1/2) (G1/2) (G1/2) (G1/2)	nts Components
	Rated voltage	5A 5I 5J E Ra 3A	Open frame (diode integr	Lead HP te HP te	wire rminal box rminal box wit	•		(G1/2) (G1/2)	Fluid control valves
	ŭ	3I 3J 4A 4M 4N	100 VAC, 20		/DC				Main line components
		5A 5I 5J * For PT	100 VAC, 20		of the socket wil	ll be fluoro rub	ober.		Antibacterial/Bacteria- removing filter

CKD

Vacuum components

Pneumatic cylinders

Pneumatic valves

Fluid control

Antibacterial/Bacteria-

removing filter



Direct acting 3-port solenoid valve, single unit (general purpose valve)

AG33-FP2/AG43-FP2 Series

- NC pressurization
- Port size: Rc1/8, Rc1/4, Rc3/8





JIS symbol

AG33/43: NC pressurization



Common specifications

Descriptions	Specifications							
Working fluid	Air/low vacuum [1.33 × 10 ² Pa (abs)]/water/oil (50 mm ² /s or less)	Steam						
Working pressure differential MPa	0 to 1 (Refer to max. operating pressure differential	al in individual s	pecifications.)					
Proof pressure (water pressure) MPa	25							
Fluid temperature °C	-10 to 60 (no freezing)	−10 to 90	−10 to 184					
Ambient temperature °C	-20 to 60	−20 to	100 *1					
Thermal class	Class 130 (B)	Class	180 (H)					
Atmosphere	Place free of corrosive gas and e	xplosive gas						
Valve structure	Direct acting poppet struc	ture						
Valve seat leakage cm³/min (ANR	0.2 or less (air)		300 or less (air)					
Mounting orientation	Unrestricted							
Degree of protection	IP65 equivalent	00						
Sealant material	Fluoro rubber	PTFE						

^{*1: −20} to 80°C when coil housing is HP terminal box with lamp

Individual specifications

Descriptions	Port	Orific	e size	Max.	worki	ng pre	ssure	differe	ential	(MPa)	Dotod	Rated Apparent power (VA			r (VA)	Power consum	Wajaht	
	size	(mm)		Air		Water/hot water Oil (50 mm²/s		mm²/s)	Steam		When holding When starting		starting	AC	DC			
Model No.	SIZE	TOP	BODY	AC	DC	AC	DC	AC	DC	AC	voltage	50 Hz	60 Hz	50 Hz	60 Hz	50/60 Hz		(kg)
AG33-01-1	Rc1/8	1.5	1.5	1.0	1.0	1.0	1.0	1.0	1.0	1.0	400 \ 44 0							
-01-2	KC1/6	2.0	2.0	0.7	0.7	0.7	0.7	0.7	0.7	0.7	100 VAC 50/60 Hz	14	11	20	16	6/4.2	11	0.51
-02-1	Rc1/4	1.5	1.5	1.0	1.0	1.0	1.0	1.0	1.0	1.0	*5	14	''	20	10	0/4.2	11	0.51
-02-2	RC1/4	2.0	2.0	0.7	0.7	0.7	0.7	0.7	0.7	0.7	200 VAC							
AG43-02-4	Rc1/4	3.0	3.0	0.7	0.7	0.7	0.7	0.7	0.7	0.7	50/60 Hz							0.65
-02-5	RC1/4	3.5	3.0	0.4	0.4	0.4	0.4	0.4	0.4	0.4	*5	22	17	25	27	8.3/6.2	11	0.05
-03-4	Rc3/8	3.0	3.0	0.7	0.7	0.7	0.7	0.7	0.7	0.7	24 VDC	22	17	35 27	21	0.3/0.2	11	0.70
-03-5		3.5	3.0	0.4	0.4	0.4	0.4	0.4	0.4	0.4	2110							0.70

- *1: The model numbers above are for the basic port size (Rc) and orifice size. Refer to How to order for other combinations.
- *2: Refer to dc column for the max. operating pressure differential of coil with diode.
- *3: The voltage fluctuation range must be within ±10% of the rated voltage.
 *4: When using in vacuum, vacuum the NO port side.
- *5: 100 VAC coil is compatible with 100 VAC 50/60 Hz and 110 VAC 60 Hz, and 200 VAC coil is compatible with 200 VAC 50/60 Hz and 220 VAC 60 Hz. However, coils for Item ① 5A/5I/5J can be used with 100 VAC 50/60 Hz and 200 VAC 50/60 Hz only.

Flow characteristics

	Port	Orifice size (mm)		Flow characteristics						
Model No.	size	ТОР	BODY	C[dm ³ /	C[dm³/(s·bar)]		b	C	v	
	5126	IUP	ВОВТ	TOP	BODY	TOP	BODY	TOP	BODY	
AG33-01-1	Rc1/8	1.5	1.5	0.29	0.29	0.64	0.53	0.09	0.09	
-01-2	KC1/O	2.0	2.0	0.53	0.53	0.54	0.52	0.15	0.15	
-02-1	Rc1/4	1.5	1.5	0.29	0.29	0.64	0.53	0.09	0.09	
-02-2	KC1/4	2.0	2.0	0.53	0.53	0.54	0.52	0.15	0.15	
AG43-02-4	Rc1/4	3.0	3.0	1.1	1.1	0.72	0.52	0.31	0.31	
-02-5	KC1/4	3.5	3.0	1.5	1.1	0.62	0.52	0.40	0.31	
-03-4	D-2/9	3.0	3.0	1.1	1.1	0.72	0.52	0.31	0.31	
-03-5	Rc3/8	3.5	3.0	1.5	1.1	0.62	0.52	0.40	0.31	

^{*1:} Effective cross-sectional area S and sonic conductance C are converted as S \approx 5.0 \times C.

AG33/43-FP2 series How to order

How to order (AG33 - 02 - 2 - M)	BA FP2 - AC100V									Electric actuator
Model No.		Code			Con	tont		Mod Weg33	PG No.	Pneumatic cylinders
			rt size		Con	tent				tic
A Port size		01 02	Rc1/8 Rc1/4					•		Pneumatic valves
		03	Rc3/8							ımat
			ifice size							tic v
B Orifice siz	e	901		333		AG	343			alves
			TOP	ВОГ	DY	TOP	BODY			- 翌
		1	ø1.5	ø1.	.5	-	-	•		FRL/Auxiliary components Electronic components
		2	ø2.0	ø2.	.0	-	-	•		iary co
		4	-	-		ø3.0	ø3.0		•	npone
		5	-	-		ø3.5	ø3.0		•	ents nts
	adv/acalant	© Bo	dy/sealant	comb	inatio	on				Ω
	ody/sealant ombination		Body			Seal				Vacuum components
		M		ss steel		Fluoro		•	•	one
		N		ss steel		PT	FE	•		nts
	O Coil housing		il housing							
	O con nousing	3A		-	Lead v				(0.1(0)	Main line components
		3I 3J	Open frame	-		minal box minal box wi	th lamp		(G1/2) (G1/2)	ain npor
		4A	0		Lead \		шатр		(G1/2)	line nent:
		4M	Open frame (Thermal cla	-		minal box			(G1/2)	S
		4N	180 (H))	-		minal box wi	th lamp		(G1/2)	
		5A	0 (l	Lead v	wire	-			luid
		5I	Open frame (diode integ		HP ter	minal box			(G1/2)	Fluid control valves
		5J	(* * * * * * * * * * * * * * * * * * *	I	HP ter	minal box wi	th lamp		(G1/2)	trol
	 ■ Rated	Ra	ted voltage	Э						
	voltage	3A								or ~
		31	100 VAC, 20	00 VAC,	, 24 VI	DC				Main line omponent
		3J								Main line components
		4A 4M	100 VAC, 20	nn VΔC						S
		4N	100 VAO, 20	30 VAO						Anti
		5A							Antibacterial/Bacteria- removing filter	
		5I 100 VAC, 200 VAC 5J						rial/B ving f		
								lacter ilter		
		* For PTI	FE seal, the O-	ring mate	erial of	the socket will	be fluoro rub	ber.		₫.

Vacuum components

Pneumatic

Pneumatic valves

FRL/Auxiliary components Electronic components

removing filter



Direct acting 3-port solenoid valve, single unit the Food Sanitation Act (general purpose valve)

AG34-FP2/AG44-FP2 Series

NO pressurization

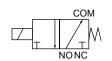
Port size: Rc1/8, Rc1/4, Rc3/8





JIS symbol

■ AG34/44: NO pressurization



Common specifications

Descriptions	Specifications				
Working fluid	Air/low vacuum [1.33 × 10 ² Pa (abs)]/water/oil (50 mm ² /s or less)	Hot water			
Working pressure differential MPa	0 to 1 (Refer to max. operating pressure differential in indivi	dual specifications.)			
Proof pressure (water pressure) MPa	25				
Fluid temperature °C	-10 to 60 (no freezing)	-10 to 90			
Ambient temperature °C	−20 to 60	−20 to 100 *1			
Thermal class	Class 130 (B)	Class 180 (H)			
Atmosphere	Place free of corrosive gas and explosive gas				
Valve structure	Direct acting poppet structure				
Valve seat leakage cm³/min (ANR)	0.2 or less (air)				
Mounting orientation	Unrestricted				
Degree of protection	IP65 equivalent IP00				
Sealant material	Fluoro rubber				

^{*1: -20} to 80°C when coil housing is HP terminal box with lamp

Individual specifications

Descr	iptions	Dort	Orific	e size	Max. v	vorking	pressi	ure diffe	erential	(MPa)	Datad	Appa	arent p	ower	(VA)	Power consump	tion (W)	Wajaht		
	<u>·</u>	Port size	(m	ım)	Α	ir	Water/h	ot water	Oil (50	mm²/s)	Rated voltage	When holding		g When starting		AC	DC			
Mode	el No.\	SIZE	TOP	BODY	AC	DC	AC	DC	AC	DC	voitage	50 Hz	60 Hz	50 Hz	60 Hz	50/60 Hz		(kg)		
AG34	I-01-1	Rc1/8	1.5	1.5	1.0	1.0	1.0	1.0	1.0	0.7										
	-01-2	KC1/0	2.0	2.0	0.7	0.45	0.7	0.6	0.3	0.2		14	11	20	16	6/4.2	11	0.51		
	-02-1	Rc1/4	1.5	1.5	1.0	1.0	1.0	1.0	1.0	0.7	100 VAC 50/60 Hz *5	TOO VAC	TOO VAC	'4	''	20	.0 10	0/4.2		0.51
	-02-2	KC1/4	2.0	2.0	0.7	0.45	0.7	0.6	0.3	0.2										
AG44	I-02-1		2.0	2.0	1.2	0.75	1.5	1.0	1.0	0.45	200 VAC									
	-02-3	Rc1/4	2.0	3.0	1.2	0.75	1.5	0.9	1.0	0.45	50/60 Hz							0.65		
	-02-4		3.0	3.0	0.4	0.3	0.5	0.3	0.3	0.2	*5	22	17	35	27	8.3/6.2	11			
	-03-1		2.0	2.0	1.2	0.75	1.5	1.0	1.0	0.45	24 VDC	22	''	35	21	0.3/0.2	"			
	-03-3	Rc3/8	2.0	3.0	1.2	0.75	1.5	0.9	1.0	0.45								0.70		
	-03-4		3.0	3.0	0.4	0.3	0.5	0.3	0.3	0.2										

- *1: The model numbers above are for the basic port size (Rc) and orifice size. Refer to How to order for other combinations.
- *2: Refer to DC column for the max. operating pressure differential of coil with diode.
- *3: The voltage fluctuation range must be within ±10% of the rated voltage.
- *4: When using at low vacuum, vacuum the NC port side.
- *5: The 100 VAC (50/60 Hz) type can be used with 110 VAC (60 Hz). The 200 VAC (50/60 Hz) type can be used with 220 VAC (60 Hz). However, this does not apply to coil housings 5A/5I/5J.

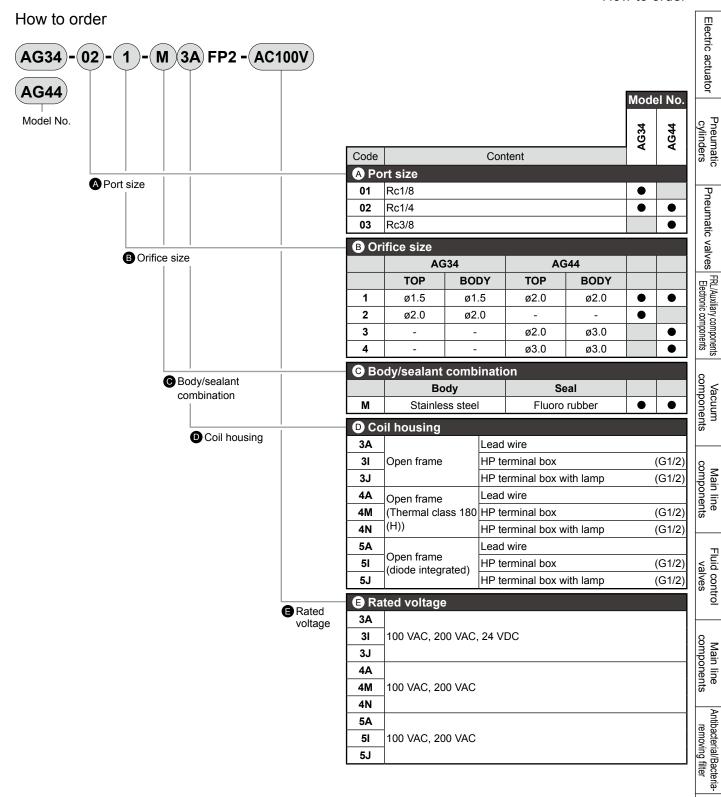
Flow characteristics

	Port	Orifice s	ize (mm)	Flow characteristics							
Model No.	size	ТОР	BODY	C[dm ³ /	(s·bar)]	l	o	Cv			
		IOF	ВООТ	TOP	BODY	TOP	BODY	TOP	BODY		
AG34-01-1	Rc1/8	1.5	1.5	0.29	0.29	0.64	0.53	0.09	0.09		
-01-2	RC1/6	2.0	2.0	0.53	0.53	0.54	0.52	0.15	0.15		
-02-1	Do1/4	1.5	1.5	0.29	0.29	0.64	0.53	0.09	0.09		
-02-2	Rc1/4	2.0	2.0	0.53	0.53	0.54	0.52	0.15	0.15		
AG44-02-1		2.0	2.0	0.53	0.53	0.54	0.52	0.15	0.15		
-02-3	Rc1/4	2.0	3.0	0.53	1.1	0.54	0.52	0.15	0.31		
-02-4		3.0	3.0	1.1	1.1	0.72	0.52	0.31	0.31		
-03-1		2.0	2.0	0.53	0.53	0.54	0.52	0.15	0.15		
-03-3	Rc3/8	2.0	3.0	0.53	1.1	0.54	0.52	0.15	0.31		
-03-4		3.0	3.0	1.1	1.1	0.72	0.52	0.31	0.31		

^{*1:} Effective cross-sectional area S and sonic conductance C are converted as S \approx 5.0 \times C.

AG34/44-FP2 Series

How to order



CKD

Vacuum components

Pneumatic

Pneumatic valves

removing filter

components

Vacuum



Pilot kick 2-port solenoid valve for dry air (general purpose valve)

ADK11-Z-FP2 Series

NC (normally closed)

Port size: Rc1/4 to Rc1

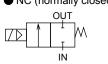
Diaphragm drive





JIS symbol

NC (normally closed)



Common specifications

Descriptions	Standard specifications
Working fluid	For dry air (atmospheric dew point -60°C and over)/inert gas/low vacuum [1.33 × 10³ Pa (abs)]
Working pressure differential MPa	0 to 0.7 (Refer to max. operating pressure differential in individual specifications.)
Proof pressure (water pressure) MPa	4
Fluid temperature °C	5 to 40 (no freezing)
Ambient temperature °C	−10 to 40
Thermal class	Class 130 (B)
Atmosphere	Place free of corrosive gas and explosive gas
Valve structure	Pilot kick poppet/diaphragm drive
Valve seat leakage cm³/min (ANR)	1 or less (8 A/10 A: at 0.02 to 0.7 MPa, 15 A to 25 A: at 0.02 to 0.6 MPa)*
Mounting orientation	Unrestricted
Degree of protection	IP65 equivalent

^{*} When used at a pressure less than 0.02 MPa, the sealant may be unstable. Contact CKD in this case.

Individual specifications

Descriptions	Port size	Orifice size	Min. working pressure	Max. working pressure	Botod voltage	Power cons	umption (W)	Weight
Model No.	POIL SIZE	(mm)	differential (MPa)	differential (MPa)	Rated voltage	AC	DC	(kg)
ADK11-8A	Rc1/4	12		0.7				0.8
-10A	Rc3/8	12		0.7	100 VAC 50/60 Hz			0.8
-15A	Rc1/2	16	0	0.6	200 VAC 50/60 Hz	17	14	1.0
-20A	Rc3/4	23		0.6	24 VDC			1.1
-25A	Rc1	28		0.6				1.5

^{*1:} The model numbers above show the basic port size (Rc). Refer to How to order for other combinations.

^{*3:} The leakage current must be less than or equal to the values shown below.

akage Irrent	Voltage Model No.	100 VAC	200 VAC	24 VDC
2 E	ADK11-8A to 25A-*ZFP2	10 mA or less	5 mA or less	20 mA or less

Flow characteristics

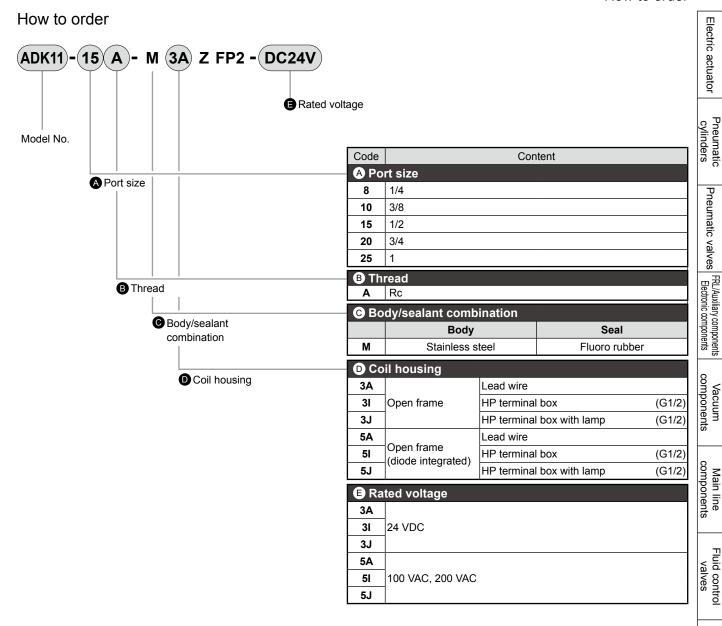
Model No.	Port size	Orifice size	Flow characteristics				
Model No.	Port Size	(mm)	C[dm³/ (s·bar)]	b	S (mm²)		
ADK11-8A	Rc1/4	12	9.2	0.36	-		
ADK11-10A	Rc3/8	12	11	0.46	-		
ADK11-15A	Rc1/2	16	20	0.31	-		
ADK11-20A	Rc3/4	23	-	-	162		
ADK11-25A	Rc1	28	-	-	231		

^{*1:} Effective cross-sectional area S and sonic conductance C are converted as S \approx 5.0 \times C.

^{*2:} The voltage fluctuation range must be within ±10% of the rated voltage.

ADK11-Z-FP2 Series

How to order



CKD

Main line components

Antibacterial/Bacteriaremoving filter

Vacuum components

Pneumatic

Pneumatic valves

removing filter

components

Fluid control

Diaphragm cylinder valve

LAD-FP2 Series

Materials compliant with the Food Sanitation Act

FDA compatible materials

NC (normally closed), NO (normally open), double acting

Port size: Rc3/8, Rc1/2, Rc3/4, Rc1

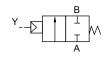
■ Working fluid: Pure water, water, air, N₂ gas





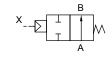
JIS symbol

NC (normally closed)

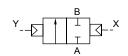


General Purpose Valves Catalog No. CB-03-1SA

NO (normally open)



Double acting



Common specifications (PTFE diaphragm)

• • • • • • • • • • • • • • • • • • • •	John of Specifications (Fire alaphagin)										
Descript	ions		LAD1	LAD2	LAD3						
Actuation			NC (normally closed)	NO (normally open)	Double acting						
Working fl	uid		Water, pure water, air, N ₂ gas, non-corrosive/non-absorbable fluid (*1)								
Fluid temp	erature	°C		5 to 90 (*2)							
Proof pressure (water pressure) MPa				0.9							
Working pressure (A→B) MPa			0 to 0.3								
Valve seat	leakage	cm³/min	0 (water press	sure), 1 or less (pneum	atic pressure)						
Back pres	sure	MPa	0 to 0.1								
Ambient te	emperature	°C	0 to 60								
Mounting	orientation			Unrestricted							
Pilot fluid				Air							
Operating section	Pilot pressure	MPa	0.3 to	0 0.5	0.3 to 0.4						
35011011	Pilot port size		Rc1/8 (*3)								

^{*1:} Check the compatibility of product component materials, working fluids and atmosphere. Strong acids and highly absorbable fluids cannot be used.
*2: 5 to 100°C for stainless steel body (SCS13).

Individual specifications (PTFE diaphragm)

Descriptions		Orifice size		Frequency	Weight	kg	
Model No.	Port size	mm	Cv		PPS Body	SCS13 Body	
LAD*-10A	Rc3/8	8	1.7	30 or less	0.15	0.3	
LAD*-15A	Rc1/2	12	3.3	20 or less	0.28	0.6	
LAD*-20A	Rc3/4	20	8.5	20 or less	0.55	1.1	
LAD*-25A	Rc1	20	8.5	20 or less	0.60	1.2	

Common specifications (EPDM diaphragm)

Descriptions		LAD1	LAD2	LAD3				
Actuation		NC (normally closed)	NO (normally open)	Double acting				
Working fl	uid		Water, air, N₂ gas	Water, air, N ₂ gas, non-corrosive/non-absorbable fluid (*1)				
Fluid temp	erature	°C		0 to 60 (no freezing)				
Proof pres	sure (water	MPa	1.5 (refer to proof pressure in individual specifications.)					
Working pressure (A→B) MPa		MPa	0 to 0.5 (refer to working pressure range in individual specifications.)					
Valve seat	leakage	cm ³ /min	0 (water pressure), 0.12 or less (pneumatic pressure)					
Back pres	sure	MPa	0 to 0.1					
Ambient to	emperature	°C	0 to 60					
Mounting orientation		Unrestricted						
	Pilot fluid		Air					
Operating section	Pilot pressure	MPa	0.3 to	0.5	0.3 to 0.4			
Section	Pilot port size		Rc1/8 (*2)					

^{*1:} Check the compatibility of product component materials, working fluids and atmosphere. Strong acids and highly absorbable fluids cannot be used.

Individual specifications (EPDM diaphragm)

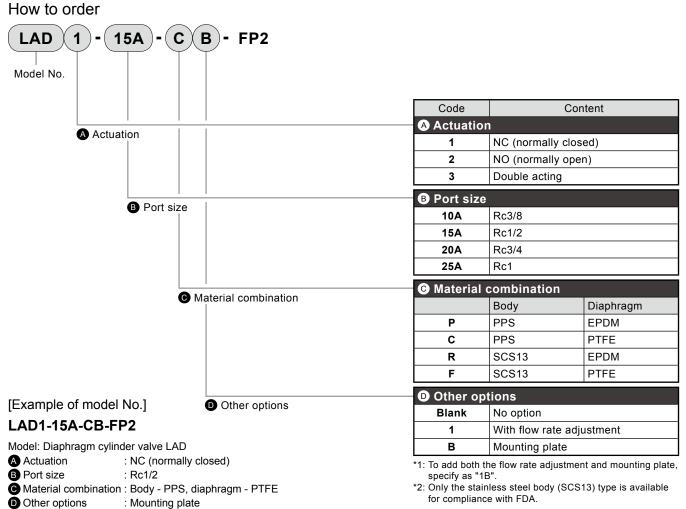
Descriptions		Proof pressure	Working	Orifice size		Frequency	Weight	kg
Model \	Port size	(water pressure) MPa	pressure (A→B) MPa	mm	Cv	times/min.	DDC	SCS13 Body
LAD*-10A	Rc3/8	1.5	0.5	8	1.7	30 or less	0.15	0.3
LAD*-15A	Rc1/2	1.5	0.5	12	3.3	20 or less	0.28	0.6
LAD*-20A	Rc3/4	1.2	0.4	20	8.5	20 or less	0.55	1.1
LAD*-25A	Rc1	1.2	0.4	20	8.5	20 or less	0.60	1.2

^{*3:} With stainless steel stiffening ring

^{*2:} With stainless steel stiffening ring.

LAD-FP2 Series

How to order



Pneumatic Pneumatic valves FRL/Auxiliary components Vacuum Main line Fluid control components components valves

Electric actuator

Antibacterial/Bacteriaremoving filter

Main line components

components

components



NAD*-FP2/NAD*V-FP2 Series

NC (normally closed), NO (normally open), double acting

Port size: Rc3/8 Working fluid

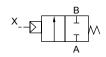
NAD* : Air, inert gas, water, non-corrosive liquid

NAD*V: low vacuum

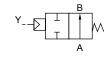


JIS symbol

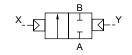
NC (normally closed)



NO (normally open)



Double acting

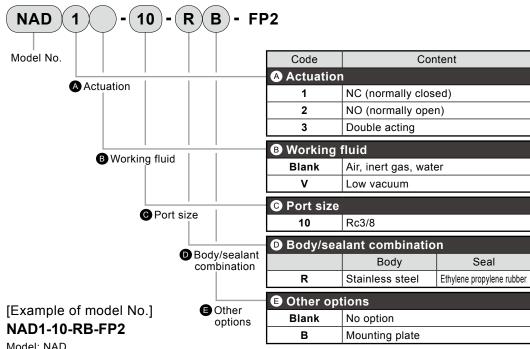


Specifications

-						
Descriptions	NAD1-10	NAD2-10	NAD3-10	NAD1V-10	NAD2V-10	NAD3V-10
Actuation	NC (normally	NO (normally	Double	NC (normally	NO (normally	Double
	closed)	open)	acting	closed)	open)	acting
Working fluid	Air, inert gas, wate	r, non-corrosive/nor	n-absorbable liquid	Low	vacuum (air/w	rater)
Fluid viscosity mm ² /s			500 c	r less		
Working pressure	0 to 0.5 MPa (secondary pressure 0.4 MPa or less) 1.3×10^2 to 5×10^5 Pa (abs) (secondary pressure 4 × 10 ⁵ Pa (abs) or les				s) (secondary s) or less)	
Proof pressure (water pressure) MPa	1.0					
Fluid temperature °C	-10 to 50 (no freezing)					
Ambient temperature °C	−10 to 50					
Valve seat leakage	0.12 cm ³ /min or less (pneumatic pressure) 1.33 × 10			0 ⁻³ Pa·m³/sHe or less		
Port size		Rc3/8			Rc3/8	
Orifice size mm			-	7		
Cv			1	.1		
C[dm³/(s·bar)]			4	.4		
b		0.3			0.1	
Weight kg	0.32					
Mounting orientation	Unrestricted					
Pilot fluid	Air					
Pilot pressure MPa	0.4 to 0.5					
Pilot port size			Rc	1/8		

^{*1:} Effective cross-sectional area S and sonic conductance C are converted as S \approx 5.0 \times C.

How to order



Model: NAD

Actuation : NC (normally closed) BWorking fluid : Air, inert gas, water

Port size

Body/sealant combination : Body - stainless steel/sealant - ethylene propylene rubber

Other options : With mounting plate

Main line components

Antibacterial/Bacteriaremoving filter

components Vacuum



Diaphragm cylinder valve, manifold

GNAD*-FP2/GNAD*V-FP2 Series

NC (normally closed), NO (normally open), double acting

Port size: Rc1/4, Rc3/8

Working fluid

GNAD*: Air, inert gas, water, non-corrosive liquid

GNAD*V: low vacuum



JIS symbol

Common supply (port C pressurization)

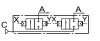
NC (normally closed)



NO (normally open)



Double acting



Individual supply (port A pressurization)

NC (normally closed)



NO (normally open)



Double acting

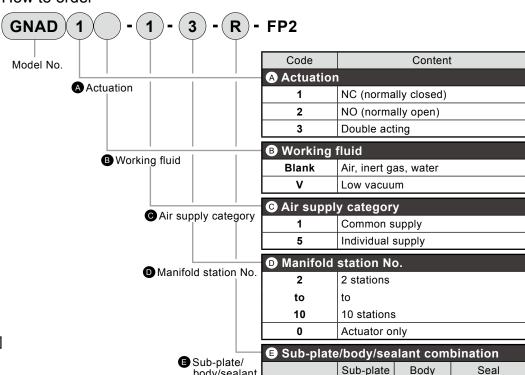


Specifications

Descriptions	GNAD1-1/5	GNAD2-1/5	GNAD3-1/5	GNAD1V-1/5	GNAD2V-1/5	GNAD3V-1/5	
Actuation	NC (Normally	NO (Normally	Double	NC (Normally	NO (Normally	Double	
Actuation	closed)	open)	acting	closed)	open)	acting	
Working fluid	Air, inert gas, wate	r, non-corrosive/no	n-absorbable liquid	Low	vacuum (air/w	rater)	
Fluid viscosity mm ² /s			500 o	r less			
Working pressure	0 to 0.5 MPa (se	condary pressure	0.4 MPa or less)		× 10⁵ Pa (abs 1 × 10⁵ Pa (ab		
Proof pressure (water pressure) MPa			1.	.0			
Fluid temperature °C	-10 to 50 (no freezing)						
Ambient temperature °C	-10 to 50						
Valve seat leakage	0.12 cm³/min or less (pneumatic pressure) 1.33 × 10 ⁻³ Pa·m³/sHe or less			or less			
Orifice size mm	7						
Cv	0.7						
C[dm ³ /(s·bar)]	3.4						
b		0.1 -					
Mounting orientation	Unrestricted						
Pilot fluid		,		ir			
Pilot pressure MPa		0.4			to 0.5		
Pilot port size		Rc1/8					

^{*1:} Effective cross-sectional area S and sonic conductance C are converted as S \approx 5.0 \times C.

How to order



body/sealant

combination

R

8

3

Stainless steel

Stainless steel

Aluminum

[Example of model No.] GNAD1-1-3-R-FP2

Model: GNAD

Actuation : NC (normally closed) : Air, inert gas, water Air supply category : Common supply

Manifold station No. : 3 stations

Sub-plate/body/sealant : Sub-plate - stainless steel/body - stainless steel/sealant - ethylene propylene rubber combination

Stainless steel

Polypropylene

Polypropylene

Ethylene propylene rubber

Ethylene propylene rubber

Ethylene propylene rubber

CHB-FP2/CHB-R*-FP2 Series

Port size: Rc3/8 to Rc2





Pneumatic cylinders JIS symbol

Electric actuator

Pneumatic valves

FRL/Auxiliary components
Electronic components

components

components

Fluid control

Main line components

Antibacterial/Bacteria-

Vacuum

CHB (double acting)

CHB-R1 (single acting-NC)

CHB-R2 (single acting-NO)

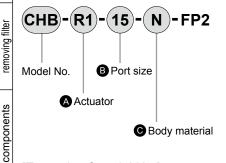
Common specifications

Door	rintiono	Double acting	Single acting		
Desc	riptions	CHB (standard bore)	CHB-R* (standard bore)		
Actuat	tion	Air operated: Double acting	Air operated: Single acting		
Workir	ng fluid	Water/air/oil (50	0 mm ² /s or less)		
Workir	ng pressure MPa	0 to	1.0		
Proof pre	essure (water pressure) MPa	2.	.0		
Fluid t	emperature °C	0 to 80 (no	reezing)		
Ambie	nt temperature °C	−10 to 60 (r	-10 to 60 (no freezing)		
Workir	ng environment	Indoors			
Mount	ting orientation	Unrestricted			
Freque	ency times/min	1 or less			
Pil	lot fluid	Compressed air			
Lu	ıbrication	Not required			
	oof pressure vater pressure) MPa	1.5			
W act	orking pressure MPa	0.35 to 0.7	0.4 to 0.7		
Rotary :	uid temperature °C	5 to 60			
	ort size	Rc1/8	Rc1/8		

Individual specifications

Descriptions		Port size	Orifice size	Cv	Weight (kg)	
Mod	el No.	FUIT SIZE	(mm)	CV	Double acting	Single acting
	CHB- (R*-) 10	Rc3/8	10	10	1.0	1.1
ഉ	CHB- (R*-) 15	Rc1/2	10	6	1.0	1.1
bore	CHB- (R*-) 20	Rc3/4	15	16	1.2	1.3
Standard	CHB- (R*-) 25	Rc1	20	29	1.3	2.2
tanc	CHB- (R*-) 32	Rc11/4	25	50	2.3	2.8
Ś	CHB- (R*-) 40	Rc1½	32	98	2.7	4.9
	CHB- (R*-) 50	Rc2	40	125	3.5	5.7

How to order



[Example of model No.]

CHB-R1-15-N-FP2

Model No.: CHB (standard bore)

A Actuator : Single acting NC (normally closed)

B Port size : Rc1/2 Body material: Stainless steel

Code	Content				
A Act	A Actuator				
Blank	Double acting				
R1	Single acting NC (normally closed)				
R2	Single acting NO (normally open)				
B Por	t size				
10	Rc3/8				
15	Rc1/2				
20	Rc3/4				
25	Rc1				
32	Rc1 ¹ / ₄				
40	Rc1 ¹ / ₂				
50	Rc2				
C Bod	© Body material				
N	Stainless steel				

Main line components

riuld control



Air operated 3-port ball valve (Compact rotary valve)

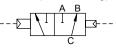
CHG-FP2/CHG-R*-FP2 Series

Port size: Rc1/2 to Rc2



JIS symbol

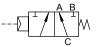
CHG (double acting)



CHG-R1 (single acting - normally B-C path)



CHG-R2 (single acting - normally A-C path)



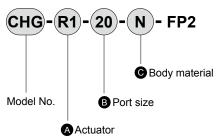
Common specifications

De	scriptions	CHG (double acting)	CHG-R* (single acting)			
Act	uation	Air operated: Double acting	Air operated: Single acting			
Wo	rking fluid	Water/air/oil (50	0 mm ² /s or less)			
Wo	rking pressure MPa	0 to	1.0			
Proo	f pressure (water pressure) MPa	2.	0			
Flu	id temperature °C	0 to 80 (no	o freezing)			
Am	bient temperature °C	−10 to 60 (r	no freezing)			
Wo	rking environment	Indoors				
Мо	unting orientation	Unrestricted				
Fre	quency times/min	1 or less				
Pre	ssurization direction	Port C pressurization only				
Flo	w path shape	Multi-fluid (90° rotation switching)				
	Pilot fluid	Compressed air				
ō	Lubrication	Not required				
Proof pressure (water pressure) MPa		1.	5			
		0.35 to 0.7	0.4 to 0.7			
Rotary	Fluid temperature °C	5 to 60				
R	Port size	Rc1/8	Rc1/8			

Individual specifications

Descriptions Model No.	Port size	Orifice size (mm)	Cv		nt (kg) Single acting
CHG- (R*-) 15	Rc1/2	10	3	1.1	1.2
CHG- (R*-) 20	Rc3/4	14	6	1.3	1.4
CHG- (R*-) 25	Rc1	19	11	1.5	2.4
CHG- (R*-) 32	Rc1 ¹ / ₄	23	16	2.3	2.8
CHG- (R*-) 40	Rc1 ¹ / ₂	30	28	2.8	5.0
CHG- (R*-) 50	Rc2	38	47	3.7	5.9

How to order



[Example of model No.]

CHG-R1-20-N-FP2

Model: CHG

A Actuator : Single acting, normally B-C path

B Port size : Rc3/4Body material : Stainless steel

Code	Content			
A Ac	A Actuator			
Blank	Double acting			
R1	Single acting, normally B-C path			
R2	Single acting, normally A-C path			
ВРо	rt size			
15	Rc1/2			
20	Rc3/4			
25	Rc1			
32	Rc1 ¹ / ₄			
40	Rc1 ¹ / ₂			
50	Rc2			
© Во	© Body material			

Stainless steel/oil-prohibited specifications

removing filter





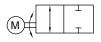
MXB1-FP2/MXB1D-FP2 Series

Port size: Rc3/8 to Rc2





JIS symbol



Common specifications

Descriptions	MXB1 (standard)/MXB1D (with relay)		
Working fluid	Water/air/oil (500 mm²/s or less)		
Working pressure MPa	0 to 1.0 (refer to working pressure in individual specifications.)		
Proof pressure (water pressure) MPa	2.0		
Fluid temperature °C	0 to 80 (no freezing)		
Ambient temperature °C	−10 to 50		
Ambient humidity %	95 or less		
Mounting orientation	From vertical direction with the actuator on the top to horizontal direction. (Refer to General Purpose Valves (catalog No. CB-03-1SA).)		
Pressurization direction	Arbitrary		
Degree of protection	IPX3 "Rainproof"		

Flectrical specifications

Electrical specifications					
Descriptions		MXB1-10 MXB1-15 MXB1-20 MXB1-25	MXB1-32 MXB1-40 MXB1-50		
Rated voltage *1		100 VAC (50/60 Hz), 200 VAC (50/60 Hz), 12 VDC, 24 VDC			
Apparent	100 VAC 200 VAC	4.9/5.9 (50/60 Hz)	13/15 (50/60 Hz)		
power VA	200 VAC	5.4/6.2 (50/60 Hz)	13/15 (50/60 Hz)		
starfing	100 VAC	4.9/5.9 (50/60 Hz)	13/15 (50/60 Hz)		
When		5.4/6.2 (50/60 Hz)	13/15 (50/60 Hz)		
Average current value A	12 VDC	1.1	1.5		
*2	24 VDC	0.7	1.0		
Starting current A	12 VDC	1.8 or less	3 or less		
*2	24 VDC	1.2 or less	2 or less		
Power	AC	7	15		
consumption W	12 VDC	13	18		
	24 VDC	17	24		
Descriptions		MXB1D-10 MXB1D-15 MXB1D-20 MXB1D-25	MXB1D-32 MXB1D-40 MXB1D-50		
Rated voltage	*1	100 VAC (50/60 Hz), 200 \	/AC (50/60 Hz)		
Apparent	100 VAC	6.0/6.8 (50/60 Hz)	14/16 (50/60 Hz)		
power VA	100 VAC 200 VAC	6.6/7.2 (50/60 Hz)	14/16 (50/60 Hz)		
starting	100 VAC	6.0/6.8 (50/60 Hz)	14/16 (50/60 Hz)		
	200 VAC	6.6/7.2 (50/60 Hz)	14/16 (50/60 Hz)		
Power consumpt	tion W	8	16		

Individual specifications

Deceriptions			MXB1-10	MXB1-15	MXB1-20	MXB1-25	MXB1-32	MXB1-40	MXB1-50
Descriptions	5		MXB1D-10	MXB1D-15	MXB1D-20	MXB1D-25	MXB1D-32	MXB1D-40	MXB1D-50
Port size			Rc3/8	Rc1/2	Rc3/4	Rc1	Rc1 ¹ / ₄	Rc1 ¹ / ₂	Rc2
Orifice size		mm	10	10	15	20	25	32	40
Cv			10	6	16	29	50	98	125
Working pressu	ure N	ИРа			0 to	1.0	0 to 0.5		
Response time	:	AC		10/8 (50)/60 Hz)		13	/11 (50/60 H	lz)
\$	sec	DC		3	3			10.5	
Frequency		AC		2 time/mi	n. or less	1 time/min. or less			
	*3	DC		1 time/mi	n. or less		1 time/2 min. or less		
Weight kg	MXB1		1.2	1.2	1.4	1.5	2.6	3.1	3.8
	MXB1	D	1.2	1.3	1.4	1.6	2.7	3.1	3.9

^{*1:} Use the product within $\pm 10\%$ of the rated voltage.

^{*2:} Current values at the rated voltage

^{*3:} Be sure to observe the specified frequency of use.

^{*4:} Contact CKD about specifications other than above.

MXB1-FP2/MXB1D-FP2 Series

and 50. Manual override is provided as standard with other port size.

How to order

Electric actuator

How to order							
MXB1 - 32 - N T	M - FP2 - 1					Mod	el No.
(MXB1D)		Code		Content			MXB1D
		A Po	rt size				
A Port size		10	Rc3/8			•	•
Model No.		15	Rc1/2			•	•
		20	Rc3/4			•	•
		25	Rc1			•	•
		32	Rc1 ¹ / ₄			•	•
		40	Rc1 ¹ / ₂			•	•
		50	Rc2			•	
□ □ □	/seat material	ВВ	dy/seat materia	al			
6 800y	//seat material	N	Stainless steel body/	PTFE seating/oil-pro	hibited specifications	•	•
		© Ot	her options				
•	Other options		Content	Applications	Remarks		
		Blank	5-conductor cable 0.5 mm ² (with output lead wire)	_	_	•	•
		т	3-conductor cable 0.75 mm ² (without signal output)	When output lead wire is not required	3-conductor cabtyre cable used	•	•
		D Ma	nual override				
	Manual override *1	Blank	None			•	
	1	М	Manual override			•	•
		■ Vo	Itage				
	Voltage	1	100 VAC (50/60 H	Hz)		•	
		2	200 VAC (50/60 H			•	•
		3	24 VDC			•	
		4	12 VDC			•	
			n the manual overrid		lected, available port	sizes are	32, 40

[Example of model No.]

MXB1-32-NTM-FP2-1

Model No.: MXB1 (standard)

A Port size : Rc1¹/

B Body material : Stainless steel body/PTFE seating/oil-prohibited specifications

© Other options : 3-conductor cable (without output lead wire)

Manual override : Selected

(E) Voltage : 100 VAC (50/60 Hz)

Pneumatic valves | FRL/Auxiliary components | Electronic components Vacuum components Main line components Fluid control valves Main line components Antibacterial/Bacteriaremoving filter Vacuum components

removing filter

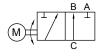


MXG1-FP2/MXG1D-FP2 Series

Port size: Rc1/2 to Rc2



JIS symbol



Common specifications

Descriptions	MXG1 (standard)/MXG1D (with relay)
Working fluid	Water/air/oil (500 mm²/s or less)
Working pressure MPa	0 to 1.0 (refer to working pressure in individual specifications.)
Proof pressure (water pressure) MPa	2.0
Fluid temperature °C	0 to 80 (no freezing)
Ambient temperature °C	−10 to 50
Ambient humidity %	95 or less
Mounting orientation	From vertical direction with the actuator on the top to horizontal direction.
Pressurization direction	Port C pressurization only
Degree of protection	IPX3 "Rainproof"

Flectrical specifications

Electrical s	респіс	ations			
Descriptions		MXG1-15 MXG1-20 MXG1-25	MXG1-32 MXG1-40 MXG1-50		
Rated voltage	*1		(50/60 Hz), 12 VDC, 24 VDC		
Apparent	100 VAC 200 VAC	4.9/5.9 (50/60 Hz)	13/15 (50/60 Hz)		
		5.4/6.2 (50/60 Hz)	13/15 (50/60 Hz)		
:	ျွို့ 100 VAC	4.9/5.9 (50/60 Hz)	13/15 (50/60 Hz)		
	200 VAC	5.4/6.2 (50/60 Hz)	13/15 (50/60 Hz)		
Average current value	A 12 VDC	1.1	1.5		
*	2 24 VDC	0.7	1.0		
Starting current	A 12 VDC	1.8 or less	3 or less		
*	2 24 VDC	1.2 or less	2 or less		
Power	AC	7	15		
consumption \	N 12 VDC	13	18		
	24 VDC	17	24		
Descriptions		MXG1D-15 MXG1D-20 MXG1D-25	MXG1D-32 MXG1D-40 MXG1D-50		
Rated voltage	*1		200 VAC (50/60 Hz)		
Apparent	100 VAC 200 VAC	6.0/6.8 (50/60 Hz)	14/16 (50/60 Hz)		
power VA	<u>ම</u> 200 VAC	6.6/7.2 (50/60 Hz)	14/16 (50/60 Hz)		
:	୍ଥିଲି 100 VAC	6.0/6.8 (50/60 Hz)	14/16 (50/60 Hz)		
	200 VAC	6.6/7.2 (50/60 Hz)	14/16 (50/60 Hz)		
Power consump	otion W	8	16		

Individual specifications

Descriptions			MXG1-15	MXG1-20	MXG1-25	MXG1-32	MXG1-40	MXG1-50	
Descriptions			MXG1D-15	MXG1D-20	MXG1D-25	MXG1D-32	MXG1D-40	MXG1D-50	
Port size			Rc1/2	Rc3/4	Rc1	Rc1 ¹ / ₄	Rc1 ¹ / ₂	Rc2	
Orifice size	r	nm	10	14	19	23	30	38	
Cv			3	6	11	16	28	47	
Working pressu	ire M	ΙPa			0 to 1.0	0 to 0.5			
Response time		AC	2	0/16 (50/60 Hz	z)	26/22 (50/60 Hz)			
5	sec	DC		16			21		
Frequency		AC	1 time/min. or less			1 time/2 min. or less			
	*3	DC	1 ti	me/2 min. or le	ess	1 time/5 min. or less			
Weight kg	MXG1		1.3	1.4	1.7	2.7	3.2	4.1	
	MXG1E)	1.3	1.5	1.7	2.7	3.3	4.2	

^{*1:} Use the product within ±10% of the rated voltage.

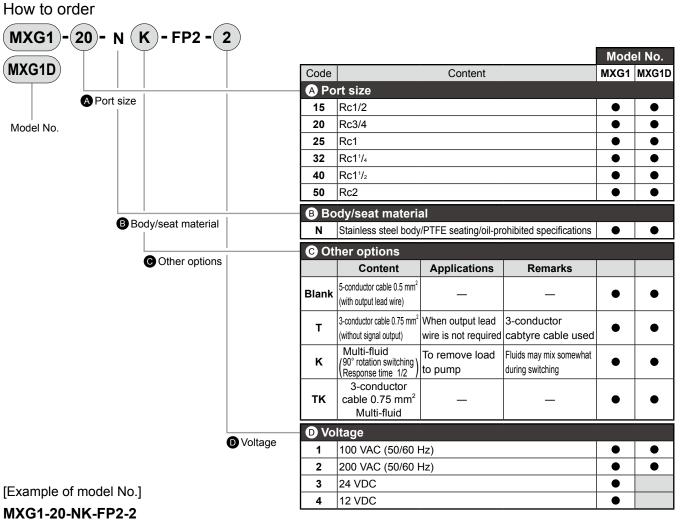
^{*2:} Current values at the rated voltage

^{*3:} Be sure to observe the specified frequency of use.

^{*4:} Contact CKD about specifications other than above.

MXG1-FP2/MXG1D-FP2 Series

How to order



Model: MXG1

A Port size : Rc3/4

B Body/seat material: Stainless steel body/PTFE seating/oil-prohibited specifications

Other options: Multi-fluid (90° rotation switching, response time 1/2)

D Voltage : 200 VAC (50/60 Hz)

Electric actuator Pneumatic valves FRL/Auxiliary components Electronic components Vacuum components Main line components Fluid control Main line components Antibacterial/Bacteriaremoving filter Vacuum components

components

General Purpose Valves Catalog No. CB-03-1SA

Pilot kick 2-port solenoid valve for steam

SPK-FP2 Series

NC (Normally closed) Working fluid: Steam Port size: Rc1/2 to Rc1

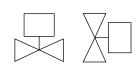




JIS symbol



Mounting orientation



Common specifications

отпист организации						
Descriptions	SPK11					
Working fluid	Steam					
Working pressure differential MPa	0 to 1.0					
Max. working pressure MPa	1					
Proof pressure (water pressure) MPa	2					
Fluid temperature °C	5 to 180					
Ambient temperature °C	-10 to 60					
Thermal class	Class 180 (H)					
Atmosphere	Place free of corrosive gas and explosive gas					
Valve structure	Pilot kick poppet, piston drive					
Valve seat leakage (*1) cm³/min (ANR)	400 or less (air)					
Mounting orientation	Limited to the range of vertical orientation with the coil on top to horizontal orientation (*2)					

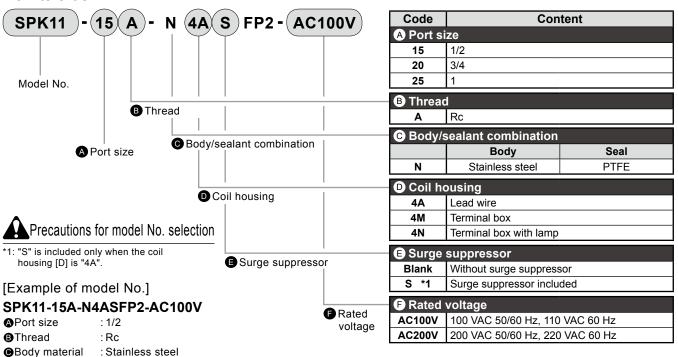
^{*1:} Value at pneumatic pressure of 0.05 to 1.0 MPa. When used at a pressure less than 0.05 MPa, the sealant may be unstable. Contact CKD in this case.

Individual specifications

Descriptions		Orifice		Į į	Apparent	oower (VA	.)	Power consumption (W)	Weight
Model No.	Port size	size	Rated voltage	When I	nolding	When s	starting	AC	
wiodei No.		(mm)		50 Hz	60 Hz	50 Hz	60 Hz	50/60 Hz	(kg)
SPK11-15A	Rc1/2	16	100 VAC						1.1
SPK11-20A	Rc3/4	23	110 VAC 200 VAC	14	12	49	43	6.5/5.6	1.3
SPK11-25A	Rc1	28	220 VAC						1.8

^{*1:} The model numbers above show the basic port size (Rc). Refer to How to order for other combinations.

How to order



: Lead wire Surge suppressor : Surge suppressor included

: 100 VAC 50/60 Hz, 110 VAC 60 Hz

Coil housing

^{*2:} Limited to vertical orientation when used at a pressure less than 0.05 MPa.

^{*2:} The voltage fluctuation range must be within ±10% of the rated voltage. If the pressure difference is more than 0.7 MPa, it should be within −5% to +10%.

			-					1	•	
Electric actuator	Pneumatic	Dna imatic valves	FRL/Auxiliary components	Vacuum	Main line	Fluid control	Main line	Antibacterial/Bacteria-	Vacuum	Fluid cont
בופטווט מטוממוטו	cylinders	ו וופטווומנוכ אמואכט	Electronic components	components	components	valves	components	removing filter	components	valves
-										

Pneumatic

Pneumatic valves

removing filter

components



MYB3-FP2 Series

NC (normally closed)

Working fluid: Water/pure water/chemical liquids

Port size: Rc1/8, Rc1/4, Rc3/8





JIS symbol

 MYB3 (2-port) : NC (normally closed)

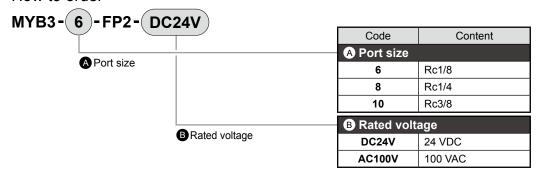


Specifications

Descriptions	MYB3					
Working fluid	Water/pure water/chemical liquids (fluids that do not corrode wetted part materials)					
Proof pressure MPa	0.3 (water pressure)					
	Conditions Fluid flow Working pressure of each port					
	direction IN OUT					
Working pressure MPa	IN Positive pressure IN→OUT 0 to 0.2 0 to 0.1					
	OUT Positive pressure OUT→IN 0 to 0.1 0 to 0.1					
	IN Negative pressure OUT→IN −0.05 to 0 −0.05 to 0					
Fluid temperature °C	5 to 60					
Ambient temperature °C	0 to 50					
Atmosphere	No explosive or corrosive atmospheres					
Valve seat leakage cm³/min	0 (water pressure)					
Port size	Rc1/8, Rc1/4, Rc3/8					
Orifice size mm	5.0 or equiv.					
Cv	0.5					
Mounting orientation	Unrestricted					
Weight kg	0.55					
Electrical specifications						
Rated voltage	24 VDC/100 VAC (50/60 Hz)					
Voltage fluctuation range	±10%					
Power AC	11					
consumption W DC	11.5					
Leakage current mA	1 or less (24 VDC)/2 or less (100 VAC) (*1)					
Thermal class	Class 130 (B)					

^{*1:} The leakage current from the control circuit must be equal to or less than the values shown in the table.

How to order



^{*2:} Read safety precautions in "General Purpose Valves (catalog No. CB-03-1SA)" as well before use.



High corrosion resistant direct acting 2-port solenoid valve

HB-FP2 Series

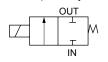
- NC (normally closed)
- Working fluid: Water/pure water/chemical liquids
- Port size: Rc1/8, Rc1/4, Rc3/8





JIS symbol

NC (normally closed)



Common specifications

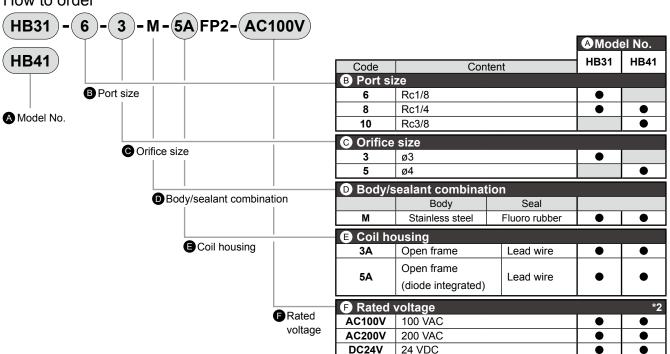
Descriptions	HB31/41
Working fluid	Water/pure water/chemical liquids (fluids that do not corrode wetted part materials)
Working pressure MPa	0 to 0.4
Proof pressure (water pressure) MPa	2
Fluid temperature °C	−10 to 60 (no freezing)
Valve seat leakage cm³/min	0 (water pressure)
Mounting orientation	Unrestricted
Degree of protection	IP65 equivalent
Electrical specifications	
Rated voltage	100 VAC (50/60 Hz), 200 VAC (50/60 Hz), 24 VDC

^{*1:} The AC rated voltage will be converted to DC by the diode integrated into the coil.

Individual specifications

Descriptions Model No.	Port size	Orifice size (mm)	Cv	Working pressure (MPa)	•	Power consumption (w)	Weight (kg)	
HB31-6-3	Rc1/8	3.0	0.31				0.52	
HB31-8-3	Rc1/4	3.0	0.51	0 to 0.4	-20 to 60	11	0.52	
HB41-8-5	RC1/4	4.0	0.48	0 10 0.4			0.69	
HB41-10-5	Rc3/8	4.0	0.46				0.09	

How to order



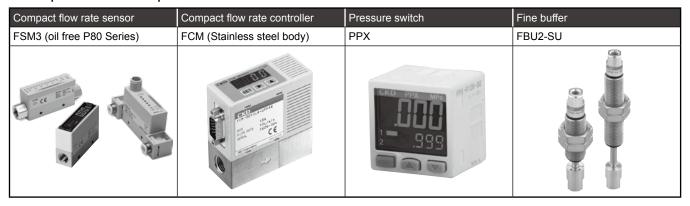
- *1: The combinations indicated with above are available.
- *2: 100 VAC or 200 VAC for 5A of Item (and 24 VDC for 3A.

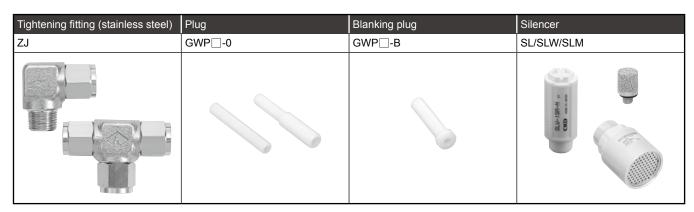
^{*2:} Read safety precautions in "General Purpose Valves (catalog No. CB-03-1SA)" as well before use.

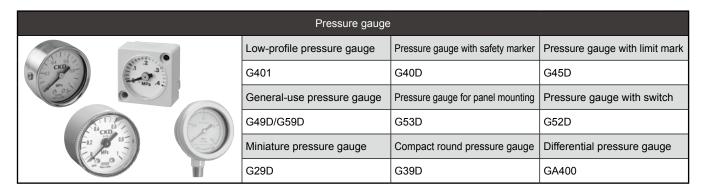
Compatible with standard models

Models below are standard types and they are FP* specifications equiv.

FP1 specifications equiv.







Contact CKD for details.

Karman vortex flow rate sensor for water	Karman vortex flow rate sensor for water	Dust collector control valve	Air operated valve for chemical liquids	Roller gear cam units
WFK2	WFK3000 Series	PD3 Series	AMD* Series	RGI* Series
			M3211-6-72-FP2 \$\$211. A321-6-72-FP2 \$\$321.	



Bacteria-removing filter Made-to-order product

AF7000A Series

Ideal for bacteria and solid removing. Bacteria-removing performance LRV ≥ 8

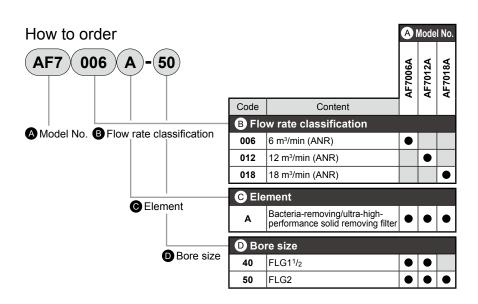
Processing air flow rate: 6 to 18 m³/min (ANR) (at 0.7 MPa)

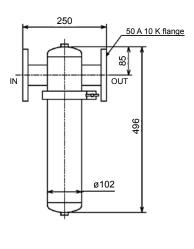
Specifications

Descriptions	AF7006A	AF7012A	AF7018A			
Processing air flow rate m³/min (ANR)	6	12	18			
Working fluid	Compressed air (JISB8392-1: 2012 [1	1: 1: 1] to [1: 6: 1])			
Working pressure MPa		0.1 to 0.8				
Proof pressure MPa	1.2					
Operating ambient temperature range °C	5 to 60					
Bacteria-removing performance	LRV ≥ 8					
Filtration µm	0.01					
Initial pressure drop MPa		0.01				
Port size flange	11/2, 2 11/2, 2 2					
Weight kg	12.5 14 15.5					

- *1: Processing air flow rate is the atmospheric pressure conversion value where the inlet pressure is 0.7 MPa.
- *2: ANR indicates conditions of 20°C atmospheric pressure and relative humidity 65%.
- *3: Drain discharger is not included.
- *4: Replace the element once per year as general guide.
- *5: Attach an air dryer and M Series equiv. filter on primary side for drain and particle elimination.
- *6: Flange is 10K flange.

Dimensions • AF7006A-50





A

Safety precautions

FP Series: Warnings and Cautions

Always read this section before use.

Refer to "Pneumatic Cylinders I (CB-029SA)", "Pneumatic Cylinders II (CB-030SA)", "Pneumatic Valves (CB-023SA)", "Pneumatic, Vacuum, and Auxiliary Components (CB-024SA)", and "Fluid Control Valves (CB-03-1SA)" for general and product-specific precautions.

The above catalogs indicate that the products cannot be used for components or applications involving direct contact with beverages or foodstuffs. However, the FP2 Series can be used for such applications, as long as product use remains within specification ranges.

Design/selection

CAUTION

- "Food Sanitation Act compliant" are products with material conforming to the Food Sanitation Act.
- Use after confirming the structure and material, valve structure, working fluids, and working atmospheres of each component carefully yourself.
- Depending on the model, internal parts may wear when the valve operates. If the product is affected, take necessary measures, such as installing a filter on the secondary side.
- If the fluid is water or water drops remain inside, rust may be generated and flow to the secondary side depending on the model. Take necessary measures in that case.
- The cylinder bearings contain a minute amount of mineral oil. Although it is treated so that it will not be discharged within the product specifications, select installation locations with care.
- The protection structure and material (except lubricant) of the 4G-FP1 Series are the same as those of standard products. Therefore, leakage or corrosion may occur in an environment with a high temperature and humidity or where the product is exposed to water. Select installation locations with care.

When using the product

A CAUTION

After installing, check for leaks from pipes and for wire connections, and check that the product is correctly installed.

- Do not use products as footing or place any heavy objects on top of the products.
- If the product has not been in use for over one month, perform a test run before starting actual operation.

Product-specific cautions: Electric actuator ETS/ETV/ECS/ECV Series

Refer to "Electric Actuator ETS Series (CC-1165A)", "Electric Actuator ECS Series (CC-1217A)", "Electric Actuator ETV Series (CC-1216A)", "Electric Actuator ECV Series (CC-1257A)" for general and product-specific precautions.

Design/selection

▲ CAUTION

- Do not use in a range where the moving table could collide with the stroke end and break.
- Indicate the maintenance conditions in the device's instruction manual.
- The product's performance may drop too low to maintain an appropriate safety level depending on usage conditions, working environment and maintenance status. With correct maintenance, the product functions can be used to the fullest.
- Regarding installing, setting up, and/or adjusting the actuator, read through the instruction manual and operate correctly.
- The products are manufactured in accordance with the specifications.
 - Do not disassemble or modify the product.
- Refer to the instruction manual of the motor mounted to the product and control for your safety before wiring and designing.
- The customer is responsible for confirming the compatibility of CKD products with the customer's systems, machines and equipment.

During Use & maintenance

A CAUTION

- Food-grade grease (NSF H1) is used for this product. Do not mix with other greases.
- Regularly inspect the product at least two or three times a year to check that it operates correctly.
- Grease the product at 100 km intervals as a general guide. Note that grease interval differs depending on the working conditions. It is recommended to determine the interval based on initial inspection. Refer to the instruction manual for details.
- If the product has not been in use for over one month, perform a test run before starting actual operation.



Safety Precautions

Always read this section before use.

Refer to "Pneumatic Valves (CB-023SA)" and "Pneumatic, Vacuum, and Auxiliary Components (CB-024SA)" for general and product-specific precautions.

The above catalogs indicate that the products cannot be used for components or applications involving direct contact with beverages or foodstuffs. However, the FP2 Series can be used for such applications, as long as product use remains within specification ranges.

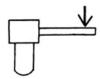
Antibacterial/Bacteria-removing filter SFC/SFS Series

Design/selection

A WARNING

- The antibacterial filter has an antibacterial effect on bacteria attached to internal filter elements, suppressing bacteria growth. The working fluid has no bacteria-reducing effects. The antibacterial activity value, which represents the antibacterial effect, is an actual value from CKD's prescribed conditions.
- The bacteria-removing filter removes and reduces the bacteria in working fluid, but it does not remove all bacteria. It also does not remove viruses. LRV, which represents bacteria-removing effect, is an actual value from CKD's prescribed conditions.
- This product is designed for industrial use. Do not use in any equipment or circuit that concerns human life.
- This product exerts no influence on performance and a small amount of leakage is tolerable.
- Ventilate well when using nitrogen gas (N₂) and carbon dioxide (CO₂).
- This filter traps waste and bacteria in working fluids and provides clean working fluids to the secondary side. Working fluid itself does not add to antibacterial or bacteria-killing functions.
- It cannot be used in environments containing sodium hypochlorite, synthetic oil, organic solvents, chemicals, cutting oil, screw locking agent, leak detection solutions, or hot water, etc., or where these substances may come in contact with the product. Refer to page 346 for details on plastic bowl and transparent case chemical resistance.
- Piping load torque
 Avoid piping fixed with a single support, as this can
 result in excessive force and lead to damage.
 [Combination, module type]
 Make sure that no piping load or torque is applied
 to the body or pipes.

Series	SFC3**	SFC4**	SFC8**	
Max. torque N⋅m	50	50	100	

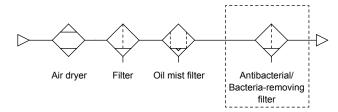


■ Properly check the compatibility of the material with its working conditions and environment before using this product.

CAUTION

■ Check the working circuit and working fluid.

To prevent drop in filter performance, install dryer, air filter and oil mist filter on the primary side, and remove water or oil.



- Do not exceed max. working or differential pressure. Not observing this could damage the product or element.
- Do not flow over the max. flow rate. Doing so may degrade the filtration accuracy and damage the element.
- This device cannot be used as an absolute filter.
- Do not use where IN and OUT side pressure difference exceeds 0.1 MPa. Suddenly supplying fluid to the filter by blowing it with secondary side released to atmospheric pressure, etc., could make removal inefficient. In this case, install a restriction valve on the filter's IN side to keep the pressure difference to 0.1 MPa or less. Consult with CKD about attaching differential pressure gauge GA400.
- High moisture levels
 Install the air dryer and drain separator before the bacteria-removing/antibacterial filter.
 If there is a large drainage from the compressor, hot and highly humid air could shorten the device's life or result in corrosion.
- Water-lubricated compressor circuit

 Take measures to prevent chlorine-based substances from entering the compressed air.

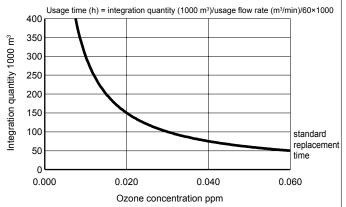
Antibacterial/Bacteria-removing filter

Mounting, installation and adjustment

WARNING

- Prevent the generated ozone from passing through the filter. Otherwise the filter element may be degraded. Take care especially when using an ozone generator (e.g., ionizer) in combination.
 - (1) Do not install in the upstream portion of the filter.
 - (2) When installing downstream of the filter, stop air while static electricity is neutralized since generated ozone may flow back.
- Avoid installing this product where it is subject to direct ultraviolet.
- If the hollow fiber membrane in the bacteriaremoving filter suffers oxidative degradation from ozone or ultraviolet in the fluid, it may be damaged and allow flow over to the secondary side. Implement periodic inspections and exchange. Consult the graph below for standard replacement times.

Relation between ozone concentration and integration quantity Element replacement time



ACAUTION

- Check the flow direction with arrow and connect correctly.
- Securing of maintenance space
 Secure sufficient space for maintenance and inspection.
- After attaching the pipes, flush and clean them before use.
 - Dirt or foreign materials in piping will lower product performance.
- Check that foreign materials do not enter when tightening pipes or fittings.
 - When screwing in piping or fittings, check that swarf from port threads or sealant does not get inside. Dirt or foreign matter remaining in the piping will deteriorate product performance. In particular, if swarf from the OUT side port thread on the last-installed unit is produced, that swarf will be blown through too.
 - During piping, tighten at or below the torque determined in the catalog, and then flush thoroughly before use.
- Install the drain cock downward and vertically.

Piping screw-in torque
 [Combination, module type]
 Make sure that excessive torque is not applied on the body and pipe when piping.

Series	SFC3**	SFC4**	SFC8**	
Max. torque N·m	30	30	70	



[Inline]

Port thread	Tightening torque N·m
Rc1/4	6 to 8
Rc3/8	13 to 15

Drain piping

- The drain piping for the plastic bowl has a barbed nipple, and can be directly installed. However, confirm that the drain cock is closed before inserting the tube. Pipe so that no lateral load applies on the bowl. Do not fix the tube connected to the drain outlet with a lateral load applied. If drainage is performed with a lateral load applied, external leakage may occur.
- Tightening torque of drain cock
 - The maximum tightening torque of the drain cock of the plastic bowl is 0.5 N·m.
- Pipe so no excessive force is applied to the product. When piping or installing, do not apply tension, pressure, bending or external force from tube, etc.
- When supplying working fluid after connecting pipes, do not suddenly apply high pressure.
 Connected piping could be dislocated and tubing could fly off
- Select the appropriate piping tube.
- Securely insert a tube into the push-in fitting before use
- Use width across flats of the connection part when piping.

[Inline]

In the case of Rc thread piping, apply the wrench to the tang of the connection part. Do not apply it to any other part when tightening.

■ Attach the maintenance label to this product to clarify maintenance periods.

Storage

Do not store this product in a hot, humid atmosphere or atmospheric conditions outside of the specified range for a prolonged period of time. Resin or rubber parts could deteriorate, and the resin element housing could become discolored. Contact CKD when storing products exceeding specifications.

Antibacterial/Bacteria-removing filter

During Use & maintenance

▲ WARNING

■ Perform a periodic inspection at least once every six months to check for any cracks, scratches, and other damage to the plastic bowl and transparent

Replace the bowl with a new plastic or another product if you find any damages.

- Check the plastic bowl periodically for contamination.
 - If parts are heavily contaminated or if transparency has decreased, replace with a new bowl.
 - Use water and household detergent to wash parts. Rinse them out well with clean water afterward.
- Removing the bowl

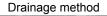
Stop the working fluid supply. Release the pressure in the bowls completely and make sure that there is no residual pressure before removing the bowls.

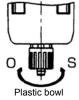
- Remove air filter drain. Components could malfunction if drainage flows into the secondary side.
- Do not disinfect or clean using alcohol. It may deteriorate or damage the plastic part.

A CAUTION

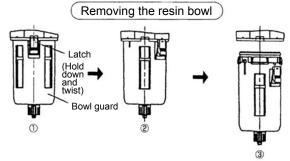
- Antibacterial and bacteria-removing effects lessen when there are dirt or oil deposits in the filter element. Periodically implement inspections and replacements. Contact CKD for maintenance details.
- Do not modify the product.

■ Read the instructions and precautions attached with the product before use or maintenance. Wash your hands before attaching new elements.





Drainage starts when the cock is turned to O side, and the discharge stops when the cock is turned in S direction. Tighten by hand in the S direction.



- This filter cannot be flushed with air, water, etc., and reused. When 1 year (6,000 hours) has passed or the pressure drops to 0.1 MPa, replace the element with a new one.
 - We ask that customers perform element replacement maintenance by themselves.
 - During element replacement, take consideration that bacteria, waste, or foreign matter deposits in the primary side do not flow into the secondary side.
- While operating, do not apply vibration, impact, or other external force from tube.

Chemical resistance of plastic

- ▲ WARNING The chemical resistance of plastic parts is shown below.
 - Avoid using products in an atmosphere where chemicals are contained in working fluid or atmosphere, or where they could adhere to parts.
 - Use in the above state could lead to bowl damage and accidents.

Chemical resistance of plastic bowl and clear housing Consult CKD when using in environments lined with the following chemicals.

Check whether the testing solutions, sealants and adhesives contain the following chemicals. Consult CKD when using in environments filled with the following chemicals.

Types of chemical	s Categories of chemicals	Main products of chemicals	General applications	Nylon
	Acids	Sodium hypochlorite, hydrochloric acid, sulfuric acid, hydrofluoric acid, phosphoric acid, chromic acid, etc.	Sterilization, acid washing of metals, acidic degreasing solutions, coating treatment solutions, etc.	×
Inorganic chemicals Alkalines		Caustic soda, caustic potash, calcium hydroxide, aqueous ammonia, Alkalis such as sodium carbonate	Alkaline degreasing solution for metals Soluble cutting oil, leakage detection agent	0
	Inorganic salts	Sodium sulfide, sodium nitrate, potassium bichromate, sulfate of soda, etc.		0
	Aromatic hydrocarbons	Benzene, toluene, xylene, ethyl benzene, styrene, etc.	Contained in paint thinner (benzene, toluene, and xylene)	×
	Chlorinated aliphatic hydrocarbons	Methyl chloride, ethylene chloride, methylene chloride, acetylene chloride, chloroform, trichlene, perchlene, carbon tetrachloride	Organic solvent-based washing solution for metals (trichlene, perchlene, carbon tetrachloride, etc.)	0
Chlorinated aron hydrocarbon:		Chlorobenzene, dichlorobenzene, benzene hexachloride (B/ H/C), etc.	Agricultural chemicals	0
Petroleum compone	Petroleum components	Solvent naphtha, gasoline, kerosene		0
	Alcohols	Methyl alcohol, ethyl alcohol, cyclohexanol, benzyl alcohol	Used as antifreezing agent Leakage detection agent	×
	Phenol	Carbolic acid, cresol, naphthol, etc.	Disinfectant solution	×
Organic	Ethers	Methyl ether, methyl ethyl ether, ethyl ether	Additive of brake oil	0
chemicals	Ketones	Acetone, methyl ethyl ketone, cyclohexanone, acetophenone, etc.		×
	Carboxylic acids	Formic acid, acetic acid, butyl acid, acrylic acid, oxalic acid, phthalic acid, etc.	Dyes/oxalic acid for aluminum processing, phthalic acid for paint base and leakage detection agents	×
	Esters	Dimethyl phthalate (DMP), diethyl phthalate (DEP), dibutyl phthalate (DBP), dioctyl phthalate (DOP)	Lubricant, synthetic oil, rust preventing agent additive plasticizer for synthetic resin	0
	Oxyacids	Glycol acid, lactic acid, malic acid, citric acid, tartaric acid		×
	Nitro compounds	Nitromethane, nitroethane, nitroethylene, nitrobenzene, etc.		0
	Amines	Methylamine, diemethylamine, ethylamine, aniline, acetoacetanilide, etc.	Additive of brake oil	×
	Nitriles	Acetonitrile, acrylonitrile, benzonitrile, acetoisonitrile, etc.	Raw material for nitrile rubber	0



Safety Precautions

Always read this section before use.

Refer to "Pneumatic, Vacuum and Auxiliary Components (No. CB-024SA)" for product-specific cautions. The above catalogs indicate that the products cannot be used for components or applications involving direct contact with beverages or foodstuffs. However, the FP2 Series can be used for such applications, as long as product use remains within specification ranges.

Nitrogen gas extraction unit NS, NSU Series

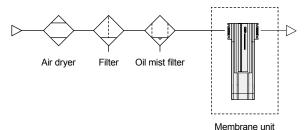
Design/selection

ACAUTION

- Working environment
 - Avoid installing this product where it will be subject to direct sunlight or rain.
 - As the bowl material is polycarbonate, avoid use with the following chemicals or in an atmosphere containing these chemicals. [NSU Series]
 - Avoid use in environments where ozone is generated.
 - Avoid using this product where vibration and impact are present.
 - Avoid using this product where it will be subject to air with a relative humidity of 50% or more. (When the separation membrane is moistened by a liquid (water, etc.), performance drops markedly.)
 - Avoid using air containing corrosive gases (strong acidic gases such as hydrogen sulfide, sulfur dioxide, hydrogen chloride, fluorine, etc.) or strong alkali gases (amines, ammonia, caustic soda, etc.).
- The needle valve cannot be used as a stop valve that requires no leakage.
 - Due to structure, a few leakage could occur.
- Dust cannot be completely kept out of the flow path. Install a final clean filter if dust could be a problem with the circuit. (Use a antibacterial/bacteria-removing filter for food processing.)

- "Food Sanitation Act compliant" refers to products with material conforming to the Food Sanitation Act.
- Use after confirming the structure and material, valve structure, working fluids, and working atmospheres of each component carefully yourself.
- Internal parts may wear when the needle valve operates. If the product is affected, take necessary measures, such as installing a filter on the secondary side.
- Check the working circuit and working fluid.

 To prevent drop in membrane unit performance, install the dryer, air filter and oil mist filter on the primary side, and remove water or oil. If the working fluid could contain hydrocarbons, install an activated carbon filter.



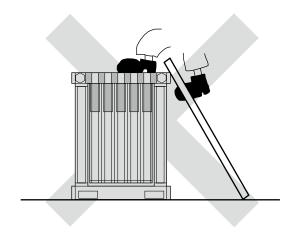
Types of chemicals	Categories of chemicals	Main products of chemicals	General applications	Polycarbonate
	Acids	Hydrochloric acid, sulfuric acid, fluorine, phosphoric acid, chromic acid, etc.	Acid washing of metals and acidic degreasing solutions Coating treatment solution	×
Inorganic compound	Alkalines	Caustic soda, caustic potash, calcium hydroxide, aqueous ammonia, sodium carbonate, etc.	Alkaline degreasing solution for metals	×
	Inorganic salts	Sodium sulfide, potassium nitrate, potassium bichromate, sodium sulfate, etc.		×
	Aromatic hydrocarbons	Benzene, toluene, xylene, ethyl benzene, styrene, etc.	Contained in paint thinner (Benzene, toluene, and xylene)	×
Chlorinated aliphatic hydrocarbons		Methyl chloride, ethylene chloride, methylene chloride, acetylene chloride, chloroform, trichlene, perchlene, carbon tetrachloride	Organic solvent-based washing solution for metals (trichlene, perchlene, carbon tetrachloride, etc.)	×
	Chlorinated aromatic hydrocarbons	Chlorobenzene, dichlorobenzene, benzene hexachloride (B/ H/C), etc.	Agricultural chemicals	×
	Petroleum components	Solvent, naphtha, gasoline		×
	Alcohols	Methyl alcohol, ethyl alcohol, cyclohexanol, benzyl alcohol	Used as antifreezing agent	×
Organic	Phenol	Carbolic acid, cresol, naphthol, etc.	Disinfectant solution	×
compound	Ethers	Methyl ether, methyl ethyl ether, ethyl ether	Additive of brake oil	×
	Ketones	Acetone, methyl ethyl ketone, cyclohexanone, acetophenone, etc.		×
	Carboxylic acids	Formic acid, acetic acid, butyl acid, acrylic acid, oxalic acid, phthalic acid, etc.	Dyes/oxalic acid are used for aluminum treatment Phthalic acid is used as a paint base	×
	Phosphate ester	Dimethyl phthalate (DMP), diethyl phthalate (DEP), dibutyl phthalate (DBP), dioctyl phthalate (DOP)	Lubricant, synthetic coolant, rust preventing agent additives Plasticizer for synthetic resin	×
	Oxyacids	Glycol acid, lactic acid, malic acid, citric acid, tartaric acid		×
	Nitro compounds	Nitromethane, nitroethane, nitroethylene, nitrobenzene, etc.		×
	Amines	Methylamine, dimethylamine, ethylamine, aniline, acetanilide, etc.	Brake oil additive	×
	Nitriles	Acetonitrile, acrylonitrile, benzonitrile, acetoisonitrile, etc.	Raw material for nitrile rubber	×

Product-specific cautions

Mounting, installation and adjustment

A CAUTION

■ Do not step onto the body.



- When piping, remove cutting oil, rust preventing agents, contaminants, etc.
- Mount the air filter and oil mist filter so that the drain outlet faces straight downward. Use a bore size Ø5.7 to 6 tube for drain discharge piping, and keep the length within 5 m. Avoid vertical piping. [NSU Series]
- Install an oil removing filter (M type) in front of the membrane unit inlet to remove all water drops and oil.

If oil adheres on the separation membrane, nitrogen concentration could degrade.

- Install the regulator on the outlet side of the membrane unit.
- When installing NS (2 or 3 units), fix the inlet and outlet pipes or fix the body with a bracket.
- When installing NS (6 or more units), place on a solid and flat surface that does not vibrate and fix the base with anchor bolts.

Precautions for needle valve with adjusting dial

- To adjust the flow rate, turn the dial to the right to open or the left to close.
- After adjustment, lock the dial with the sliding lock lever
- The flow rate control range is from "1" to "12" or "13" on the dial rotation display.

 Do not set the flow rate outside this range. Turning the dial to the fully closed or fully open position forcibly may result in failure or abnormal flow characteristics.
- Even when the needle is fully closed, the dial display is not "0".

 Calibration of the dial indicator flow rate is performed when the needle is not fully closed. Note that "0" is not necessarily indicated when the needle is fully closed.

 After "0", either "19" or no number at all is displayed.
- Do not remove the dial from the body.

 If the dial is removed, readjustment and calibration of flow characteristics cannot be performed.

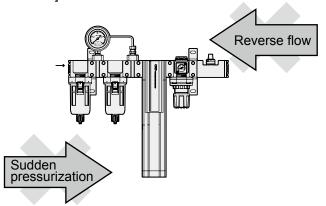
During Use & maintenance

▲ WARNING

- There may be oxygen deficiency in the nitrogen gas. Observe the following instructions when using.
- Use this product in well ventilated locations.
- Ventilate the work area when nitrogen gas is being used
- Perform periodical leakage inspections of nitrogen gas piping.
- Oxygen-rich gas is discharged from the exhaust port of the membrane unit, so be aware of the following points when installing the equipment.
- Install away from sources of fire and flammable substances.
- Ventilate the work area when equipment is being used.
- Do not use this product for purposes that directly concern human life.

A CAUTION

Do not use reverse airflow. Do not pressurize suddenly. The differential pressure gauge or mantle may be damaged. [NSU Series]



■ The oil mist filter life is spent when the pressure drops to 0.07 MPa or after one year of use, whichever comes first. Replace the mantle with a new one at the end of its life. (Check the pressure drop with the differential pressure gauge.)

(Do not touch the urethane rubber foam layer when replacing the mantle)

[NSU Series]



0.07 MPa

- The service life of the membrane unit differs according to the working conditions. As a guideline, replace the membrane every 3 to 5 years.
- Confirm that pressure has been released before mounting or removing the bowl and bowl guard. [NSU Series]
- Be aware that adequate time is necessary to obtain a required nitrogen concentration after compressed air is supplied.

MEMO

Related products

Vacuum system equipment SELVACS

Compact design

Compact components save space.

A wide variety of models

Broad series of models and variations enable use in different fields and applications.

Unit and module

The ejector system/vacuum pump system which form the core are unitized and modularized, designed to save space and increase ease of use.

Integrated unit for water control WXU Series

Space saving without piping

The unitized design without piping has greatly reduced the installation space compared with the discrete type.

80% smaller footprint than conventional models (two fluid control)

High quality

No need to worry about outside leakage since there is no piping threaded between equipment. No entry of foreign substance during installation.

Reduced processes

Greatly reduced troublesome processes such as piping design, piping work and parts ordering.

Weir diaphragm valve SWD/MWD Series

Pursuit for highly aseptic conditions (sterility)

Adopts a sealing structure to eliminate gaps between diaphragm and body. A flow path with high efficiency of washing has been achieved by thorough analysis work.

Space and energy saving

Air consumption can be reduced significantly by the downsized actuator with highly-efficient diaphragm that operates at a low pilot pressure.

Air blow nozzle BN* Series

Wide variation

Diverse lineup of shapes to match industries and applications.

Energy saving

Employs a special structure that sucks in the surrounding air and amplifies it. Blows air strongly even with little air consumption.

Uniformity

Employs a special structure that injects air to a more uniformly directed spot. Achieves stable quality of workpieces.

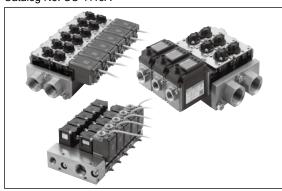
Low noise

In addition to a work environment-friendly silent design that reduces turbulence, there are also flat types and round types for the appropriate situations.

Catalog No. CC-796A-5



Catalog No. CC-1116A



Catalog No. CC-1096A



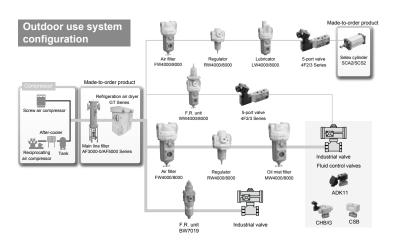
Catalog No. CC-1347A



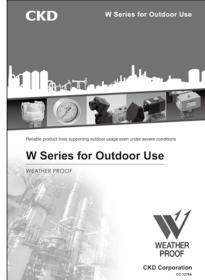
W Series for outdoor use

CKD's outdoor series guarantees long-term use even in severe outdoor environments.

- The durability required for outdoor use is guaranteed
 - Accelerated weathering test
 3-year acceleration equivalent passed
 - Combined cycle test (JIS H8502:1999)
 7-year acceleration equivalent passed
 - Ozone exposure test (JIS D0205:1987) 400 hours cleared



Catalog No. CC-1276A





Power Arm PFB2 Series

Compact

Multi-axis, compact type which can be folded

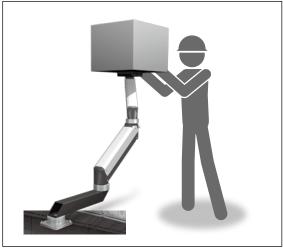
■ Wide operation range enables a variety of usages

Single axis or multiple axis can be selected according to your application.

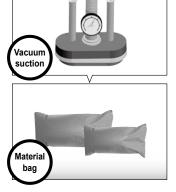
- Easy operation
- Lightweight/high rigidity

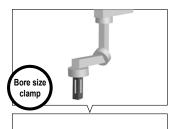
 Compact and lightweight with enhanced rigidity, integrating a pneumatic cylinder into the body.

Catalog No. CC-1262A

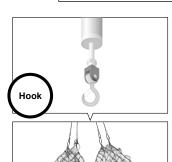


[Attachment examples]

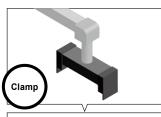














Special polyolefin-based resin (polypropylene + special elastomer) used!



Aoi Co., Ltd.

"eco-flex" is an environment-friendly tube with unprecedented flexibility and transparency.

Characteristics of eco-flex

Flexibility

Excellent flexibility: Soft type is softer than a soft urethane tube, and even semi-soft type is as soft as a soft nylon tube. (in-house comparison)

Eco-friendly and pollution-free product

Compliant with the Food Sanitation Act (Ministry of Health and Welfare, Notification No. 370)

* "ecos" Series only excludes dissolution tests for oil and fatty foods.

Lightweight and economical

Small specific gravity (0.9) contributes to less weight, better workability, and reduction in device weight.

Transparent and clean

No dust generation due to special elastomer used for the tube. High transparency ideal for a clean room, pure water piping, etc.

Ecology compatibility

Only carbon dioxide is emitted during incineration (at 750°C). No toxic gas is generated, such as nitrogen oxide (NOx) or sulfur oxide (SOx). Ecology tube emitting no dioxins.

ecos Series [Soft type]

Standards mm Length of 1 standard roll: 20 m Standard color: transparent, black

Name	O.D. × I.D.	Min. bending radius		Product weight	Max. working pressure	Operating ambient
Name	mm × mm	At positive pressure (mm)	At negative pressure (mm)	g/m	MPa	temperature range °C
ecos-4×2.5	4.0 × 2.5	8.0	10.0	6.9		
ecos-6×4	6.0 × 4.0	14.0	17.0	14.1		
ecos-8×5	8.0 × 5.0	20.0	24.0	27.6	0.50	-20 to 60
ecos-10×6.5	10.0 × 6.5	25.0	30.0	40.8		
ecos-12×8	12.0 × 8.0	30.0	36.0	56.5		

Negative pressure \rightarrow 1.0 to 600 Torr *Do not use push-in fitting for ecos 4×2.5 only.

(at 20°C)

Max. working pressure change ratio by the ambient temperature (%)

• .	•	•	•	` ,	
Ambient temperature	20°C or less	30°C	40°C	50°C	60°C
Change ratio	100	90	70	60	50

E.g.) Max. working pressure at 40°C 0.50 MPa × 70% = 0.35 MPa (all sizes)

ecoh Series [Semi-soft type]

Standards mm Length of 1 standard roll: 20 m Standard color: transparent, black

Name	O.D. × I.D.	Min. bend	ing radius	Product weight	Max. working pressure	Operating ambient
Name	mm × mm	At positive pressure (mm)	At negative pressure (mm)	g/m	MPa	temperature range °C
ecoh-4×2.5	4.0 × 2.5	12.0	14.0	6.9	1.20	
ecoh-6×4	6.0 × 4.0	20.0	23.0	14.1	1.10	
ecoh-8×6	8.0 × 6.0	35.0	40.0	19.8	0.80	-20 to 80
ecoh-10×7.5	10.0 × 7.5	45.0	50.0	30.9	0.80	-20 10 60
ecoh-12×9	12.0 × 9.0	55.0	62.0	44.5	0.80	
ecoh-10×8	10.0 × 8.0	60.0	70.0	25.4	0.60	

Negative pressure \rightarrow 1.0 to 600 Torr

(at 20°C)

■ Max. working pressure change ratio by the ambient temperature (%)

Ambient temperature	20°C or less	30°C	40°C	50°C	60°C	80°C
Change ratio	100	90	70	60	50	30

ECO BLISTER CFF-360E



ECO BLISTER CFF-360E

Reduce running cost

, Saves labor

Prevents foreign body contamination



Always exact alignment of punching/sealing positions with automatic position correction

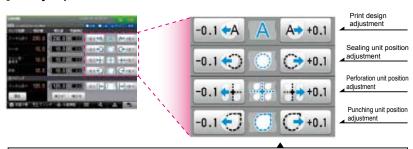


Forming: Thickness control (Plug's extrusion amount) is Easy set digitally.

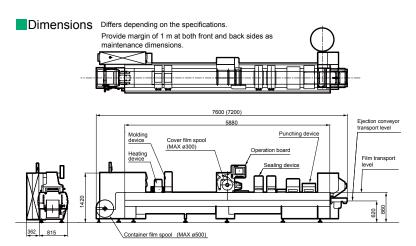


Easy digital setting of sealing pressure control

Easy operation without effort



Postion of each unit can be adjusted easily by pushing "+" or "-" buttons.



Specifications

Type Descriptions		CFF-360E
Film width		200 to 360 mm
Packaging capacity	Film drive	120 to 200 mm
oupuoity	Production speed	MAX 20 shots/min. (Differs depending on the item packaged)
Molding depth		MAX 60 mm
Packaging	Container	Thermoplastic film (A-PET, PP, HIPS, PVC, PVDC, etc.)
materials	Lid	Combination films (PA+PE, PET+MPET+PE, etc.)
Packaging style	Standard	0
rackaging style	Full	0
Power supply *		200 VAC 51 kVA
Compressed air (working pressure 0.6 MPa)*		1,600 Nℓ/min.
Weight *		Approx. 3,800 kg
Total length *		7,600 mm (7,200 mm)

PP requires cooling water of 10 to 20°C. * Differs depending on the specifications

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Automated Machines Nagoya Sales Dept. Automated Machines Osaka Sales Dept.

Overseas Sales Dept.

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