

Pneumatic Valves
Catalog No. CB-023S

Individual wiring manifold
Body piping
Direct mount/DIN rail mount

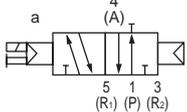
M3GA1, 2, 3-(D) / M4GA1, 2, 3-(D)-FP1 Series

● Applicable cylinder bore size: $\varnothing 20$ to $\varnothing 100$

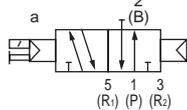


JIS symbol

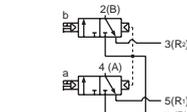
- 3-port valve
2-position single NC



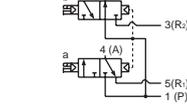
- 2-position single NO



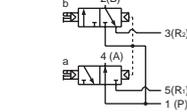
- Two 3-port valves integrated
(A side Valve: NC, B side Valve: NC)



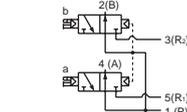
- Two 3-port valves integrated
(A side Valve: NC, B side Valve: NO)



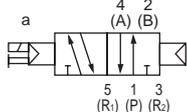
- Two 3-port valves integrated
(A side Valve: NO Type, B side Valve: NC Model)



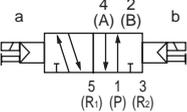
- Two 3-port valves integrated
(A side Valve: NO Type, B side Valve: NO Model)



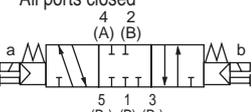
- 5-port valve
2 position single



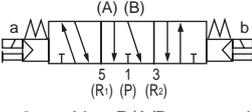
- 2-position double



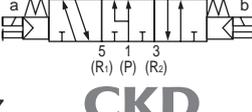
- 3-position
All ports closed



- 3-position A/B/R connection



- 3-position P/A/B connection



Manifold common specifications

Item	Description	
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 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	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	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	
ResistanceVibration m/s ²	50 or less	
ResistanceImpact m/s ²	300 or less	
Atmosphere	Cannot be used in corrosive gas environments	

*1: Avoid water drops or oil, etc., during use. IP65 (water 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

Item	Content	
Rated voltage	V DC24, DC12, AC100, AC200	
Voltage fluctuation range	±10%	
Holding current A (*3)	Standard	0.015 (0.017), 0.030 (0.034), 0.009 (0.009), 0.006 (0.006)
	Low exoergic/energy saving circuit	0.005, 0.010, -
Power consumption W (*3)	Standard	0.35 (0.40)
	Low exoergic/energy saving circuit	0.1, -
Apparent power VA (*3)(*4)	Standard	-
		0.93 (0.98), 1.40
Resistance thermal class	B	
Surge suppressor	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 lamp.

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

Individual specifications

Item	M3GA1/M4GA1		M3GA2/M4GA2		M3GA3/M4GA3		
	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	16	20	16
station No.	External pilot	12 stations	12 stations	stations	stations	stations	stations
	Rc thread, Port A/B	M5		Rc1/8		Rc1/4	
Port size	M5	Rc1/8		Rc1/4		Rc3/8	
	Manifold base	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.

M3GA1, 2, 3/M4GA1, 2, 3-FP1 Series

Individual wiring manifold; Body piping

Flow characteristics

Model No.	Solenoid position	P → A/B		A/B → R1/R2		
		C[dm ³ /(s·bar)]	b	C[dm ³ /(s·bar)]	b	
M3GA1 M4GA1	Two 3-port valves integrated	0.86	0.31	1.1 (0.66)	0.19 (0.22)	
	2-position	0.99	0.20	1.2 (0.70)	0.20 (0.12)	
	3-position	All ports closed	0.94	0.23	1.1 -	0.20 -
		ABR connection	0.93	0.18	1.3 (0.70)	0.23 (0.02)
	PAB connection	1.1	0.28	1.1 -	0.23 -	
M3GA2 M4GA2	Two 3-port valves integrated	1.7	0.40	2.3 (1.7)	0.29 (0.32)	
	2-position	2.3	0.36	2.9 (1.7)	0.24 (0.33)	
	3-position	All ports closed	2.1	0.35	2.5 -	0.32 -
		ABR connection	2.2	0.37	2.9 (1.8)	0.32 (0.29)
	PAB connection	2.4	0.34	2.5 -	0.33 -	
M3GA3 M4GA3	2-position	3.2	0.37	3.8 (2.5)	0.13 (0.28)	
	3-position	All ports closed	2.9	0.35	3.3 -	0.35 -
		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 $S \approx 5.0 \times C$.

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

Electric actuator	Pneumatic cylinders	Assistive device	Pneumatic valves	FR L/Auxiliary Components Electronic Component	Vacuum components	Main line components	Fluid control valves	Main line components	Anti-bacterial/bacteria-removing filter	Vacuum components	Fluid control valves
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FP1

FP2

M4GA1, 2, 3-FP1 Series

Individual wiring manifold; Body piping

How to order

Manifold model No.

M **4GA1** **1** **0R** - **M5** - **E2** **H** **D** - **3** - **FP1**

3-port manifold model No.

M **3GA1** **1** **0R** - **M5** - **E2** **H** **D** - **3** - **FP1**

● Single valve for mounting base

4GA1 **1** **9R** - **M5** - **E2** **H** - **3** - **FP1**

● 3-port discrete valve for mounting base

3GA1 **1** **9R** - **M5** - **E2** **H** - **3** - **FP1**

B Solenoid position

A Model No.

C Port size

D Electrical connections

E Option

F Mount type

G Station No.

H Voltage

⚠ Precautions for model No. selection

*1: M4GA*80R when using a mixture of 3, 5-port valves. Further, 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.

* "Manifold specifications sheet" (Pages 126 to 128).

			A Model No.					
			3GA1	3GA2	3GA3	4GA1	4GA2	4GA3
Code	Content	Volume						
B Solenoid position								
1	2 position	single				●	●	●
2	2-position	double				●	●	●
3	3-position	all ports closed				●	●	●
4	3-position	ABR connection				●	●	●
5	3-position	PAB connection				●	●	●
1	2-position	single normally closed	*1	●	●	●		
11	2-position	single normally open	*1	●	●	●		
66	3-port valve Two valves integrated	A valve side: Normally closed B valve side: Normally closed		○	○			
67		A valve side: Normally closed B valve side: Normally open		○	○			
76		A valve side: Normally open B valve side: Normally closed		○	○			
77	*1, *2	A valve side: Normally open B valve side: Normally open		○	○			
8	Mix manifold (when there are multiple solenoid positions)		○	○	○	○	○	○
C Port size								
Port	4(A)/2(B)Port	Port P/R1/R2 (1/8) = Rc1/8 (1/4) = Rc1/4 (3/8) = Rc3/8						
C4	ø4 push-in fitting	②			②			
C6	ø6 push-in fitting	②	③		②	③		
C8	ø8 push-in fitting		③	④		③	④	
C10	ø10 push-in fitting			④			④	
CX	Push-in fitting mix	*3	②	③	④	②	③	④
M5	M5	②			②			
06	Rc1/8		③			③		
08	Rc1/4			④			④	

Refer to the M4GA1 to 3 Series in "Pneumatic Valves (CB-023SA)" for dimensions.

M4GA1, 2, 3-FP1 Series

Individual wiring manifold; Body piping

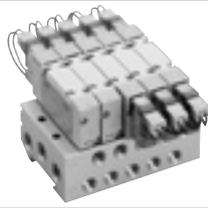
		A Model No.					
		3GA1	3GA2	3GA3	4GA1	4GA2	4GA3
D Electrical connections							
Blank	Grommet Lead wire(300 mm)	*12	●	●	●	●	●
B	DIN terminal box(Pg7) With surge suppressor/lamp *13, *15		●	●	●	●	●
BN	DIN terminal box(Pg7)(without terminal box)With surge suppressor *13,*15		●	●	●	●	●
E-conductor (upward/lateral common)							
E0	Lead wire(300 mm)	*14	●	●	●	●	●
E00	Lead wire(500 mm)	*14	●	●	●	●	●
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 attached)	*14	●	●	●	●	●
E2	Lead wire(300 mm) with surge suppressor and indicator lamp		●	●	●	●	●
E20	Lead wire(500 mm) with surge suppressor and indicator lamp		●	●	●	●	●
E21	Lead wire(1000 mm) with surge suppressor and indicator lamp		●	●	●	●	●
E22	Lead wire(2000 mm) with surge suppressor and indicator lamp		●	●	●	●	●
E23	Lead wire(3000 mm) with surge suppressor and indicator lamp		●	●	●	●	●
E2N	Without lead wire(Without socket)with surge suppressor and indicator lamp		●	●	●	●	●
E3	Without lead wire(socket/terminal attached)with surge suppressor and indicator lamp		●	●	●	●	●
EJ-conductor (socket with cover, upward/lateral 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 and indicator lamp		●	●	●	●	●
E22J	Lead wire(2000 mm) with surge suppressor and indicator lamp		●	●	●	●	●
E23J	Lead wire(3000 mm) with surge suppressor and indicator lamp		●	●	●	●	●
E Option							
Blank	Manual override of non-locking/locking common		●	●	●	●	●
M	Manual override of non-locking		○	○	○	○	○
H	With exhaust check valve	*4	●	●	●	●	●
K	External pilot	*5	●	●	●	●	●
S	Surgeless	*6	●	●	●	●	●
E	Low exoergic/energy saving circuit	*6,*7	●	●	●	●	●
F	Port A/B filter built in	*8	●	●	●	●	●
Z1	Air supply spacer	*9	●	●	●	●	●
Z2	In-stop valve spacer	*9,*10	●	●	●	●	●
Z3	Exhaust spacer	*9	●	●	●	●	●
F Mount type							
Blank	Direct mount		●	●	●	●	●
D	DIN rail mount		●	●	●	●	●
G Station No.							
2	2 stations		●	●	●	●	●
to	to		●	●	●	●	●
20	Refer to page 107 for the max. station number per model.		●	●	●	●	●
H Voltage							
1	100 VAC(rectifier integrated)		●	●	●	●	●
2	200 VAC(rectifier integrated)	*11	●	●	●	●	●
3	24 VDC		●	●	●	●	●
4	12 VDC		●	●	●	●	●

is not available.

○ indicates made to order.

- *4: The 3-position all ports closed and PAB connection are not provided with the exhaust check valve specifications (H).
- *5: Consult with CKD when using a vacuum with the external pilot (K).
- *6: E2* type and E2*J type 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/quantity in the manifold specifications sheet. Stacking of spacers is not possible. Combination with the masking plate is not supported. Refer to page 123 for details.
- *10: Not compatible with combination with external pilot (K).
- *11: DIN terminal box only 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 is with a rectifier circuit.
- *15: The terminal box is a EN175301-803TypeC (former DIN43650-C) compliant product.

Electric actuator	Pneumatic cylinders	Assistive device	Pneumatic valves	FR/L Auxiliary Components Electronic Component	Vacuum components	Main line components	Fluid control valves	Main line components	Anti-bacterial/bacteria-removing filter	Vacuum components	Fluid control valves
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Pneumatic Valves
Catalog No. CB-023S

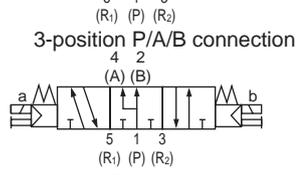
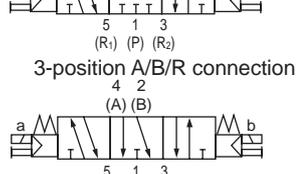
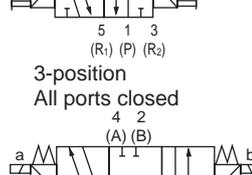
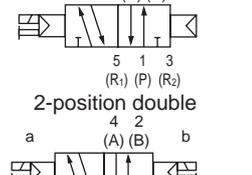
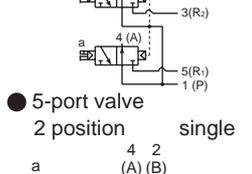
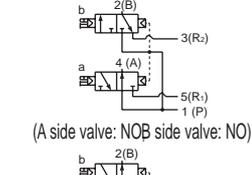
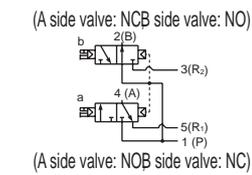
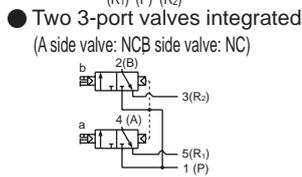
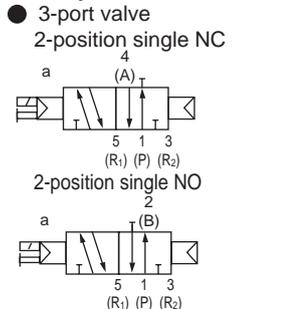
Individual wiring manifold
Base piping
Direct mount/DIN rail mount

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

● Applicable cylinder bore size: $\varnothing 20$ to $\varnothing 100$



JIS symbol



Manifold common specifications

Item	Description	
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 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	Side direction of 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 (*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	
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 (water 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 0.7MPa when the external pilot (option code: K) is selected. Set the external pilot pressure between 0.2 and 0.7 MPa.

Electrical specifications

Item	Item	Content Volume			
		24 DC	12 DC	100 AC	200 AC
Rated voltage	V	24 DC	12 DC	100 AC	200 AC
Voltage fluctuation range		±10%			
Holding current A	Standard (*3)	0.015 (0.017)	0.030 (0.034)	0.009 (0.009)	0.006 (0.006)
	Low exoergic/energy saving circuit	0.005	0.010	-	-
Power consumption W	Standard (*3)	0.35 (0.40)		-	-
	Low exoergic/energy saving circuit	0.1		-	-
Apparent power VA	Standard (*3)(*4)	-	-	0.93 (0.98)	1.40
	Resistancethermal class	B			
Surge suppressor		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 lamp.

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

Individual specifications

Item		M3GB1/M4GB1		M3GB2/M4GB2		M4GB3	
		Direct mount	DIN rail mount	Direct mount	DIN rail mount	Direct mount	DIN railLe Mount
Max. station No.	Standard(Internal pilot)	20 stations	16 stations	20 stations	16 stations	20 stations	16 stations
	External pilot	12 stations	12 stations	20 stations	16 stations	20 stations	16 stations
port size	Port A/B	M5		Rc1/8		Rc1/4	
	Port P/R1/R2	Rc1/8		Rc1/4		Rc3/8	
Manifold base Weight calculationExpression(n: Station No.) g	Standard	35n+61	36n+115	71n+106	73n+134	113n+170	115n+119
	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

Model No.	Solenoid position		P → A/B		A/B → R1/R2	
			C[dm ³ /(s·bar)]	b	C[dm ³ /(s·bar)]	b
M3GB1	Two 3-port valves integrated		0.86	0.35	1.1 (0.67)	0.22 (0.23)
	2-position		1.1	0.22	1.2 (0.70)	0.20 (0.10)
M4GB1	3-position	All ports closed	0.98	0.22	1.1 -	0.24 -
		ABR connection	0.97	0.35	1.3 (0.68)	0.22 (0.24)
		PAB connection	1.1	0.38	1.1 -	0.21 -
M3GB2	Two 3-port valves integrated		1.7	0.44	2.1 (1.6)	0.32 (0.30)
	2-position		2.4	0.34	2.7 (1.7)	0.24 (0.31)
M4GB2	3-position	All ports closed	2.2	0.34	2.4 -	0.29 -
		ABR connection	2.2	0.34	2.8 (1.8)	0.24 (0.27)
		PAB connection	2.4	0.29	2.4 -	0.29 -
M4GB3	2-position		3.5	0.34	3.8 (2.6)	0.11 (0.27)
	3-position	All ports closed	3.1	0.33	3.3 -	0.22 -
		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 $S \approx 5.0 \times C$.

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

Electric actuator	Pneumatic cylinders	Assistive device	Pneumatic valves	F.R.L./Auxiliary Components Electronic Component	Vacuum components	Main line components	Fluid control valves	Main line components	Anti-bacterial/ bacteria-removing filter	Vacuum components	Fluid control valves
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FP1

FP2

M4GB1, 2, 3-FP1 Series

Individual wiring manifold; Base piping

How to order

Manifold model No.

M **4GB1** **1** **0R** - **M5** - **E2** **H** **D** - **3** - FP1

3-port manifold model No.

M **3GB1** **66** **0R** - **M5** - **E2** **H** **D** - **3** - FP1

● Single valve for mounting base

4GB1 **1** **9R** - **00** - **E2** **H** - **3** - FP1

● 3-port discrete valve for mounting base

3GB1 **66** **9R** - **00** - **E2** **H** - **3** - FP1

B Solenoid position

A Model No.

C Port size

D Electrical connections

E Option

F Mount type

G Station No.

H Voltage

* Be sure to fill in the "Manifold specifications sheet" (pages 126 to 128).

		A Model No.				
		3GB1	3GB2	4GB1	4GB2	4GB3
Code	Description					
B Solenoid position						
1	2 position single			●	●	●
2	2-position double			●	●	●
3	3-position all ports closed			●	●	●
4	3-position ABR connection			●	●	●
5	3-position PAB connection			●	●	●
66	3-port valve Two valves integrated *1, *2	A valve side: Normally closed B valve side: Normally closed	○	○		
67		A valve side: Normally closed B valve side: Normally open	○	○		
76		A valve side: Normally open B valve side: Normally closed	○	○		
77		A valve side: Normally open B valve side: Normally open	○	○		
8	Mix manifold (when there are multiple solenoid positions)	○	○	○	○	○
C Port size						
Port	4(A)/2(B)Port	Port P/R1/R2 (1/8) = Rc1/8 (1/4) = Rc1/4 (3/8) = Rc3/8				
C4	ø4 push-in fitting	②		②		
C6	ø6 push-in fitting	②	③	②	③	
C8	ø8 push-in fitting		③		③	④
C10	ø10 push-in fitting					④
CX	Push-in fitting mix	②	③	②	③	④
M5	M5	②		②		
06	Rc1/8		③		③	
08	Rc1/4					④
00	Discrete valve for integrated base	●	●	●	●	●

⚠ Precautions for model No. selection

*1: Select M4GB*80R when mixing with 3/5-port valves. When using a mixture with the masking plate, M3GB*80R.

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

*3: 4G1 C8 and 4G2 C10 do not support push-in fitting mixing.

*4: Made to order.

Refer to the M4GB1 to 3 Series in "Pneumatic Valves (CB-023SA)" for dimensions.

M4GB1, 2, 3-FP1 Series

Individual wiring manifold; Base piping

		A Model No.				
		3GB1	3GB2	4GB1	4GB2	4GB3
D Electrical connections						
Blank	Grommet lead wire (300 mm)	*14	●	●	●	●
B	DIN terminal box (Pg7) With surge suppressor/lamp *15, *17		●	●	●	●
BN	DIN terminal box (Pg7) (without terminal box) With surge suppressor *15, *17		●	●	●	●
E-connector (upward/lateral 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 attached)	*16	●	●	●	●
E2	Lead wire (300 mm) Surge suppressor / Lamp		●	●	●	●
E20	Lead wire (500 mm) Surge suppressor / Lamp		●	●	●	●
E21	Lead wire (1000 mm) Surge suppressor / Lamp		●	●	●	●
E22	Lead wire (2000 mm) Surge suppressor / Lamp		●	●	●	●
E23	Lead wire (3000 mm) Surge suppressor / Lamp		●	●	●	●
E2N	Without lead wire (without socket) Surge suppressor / Lamp		●	●	●	●
E3	Without lead wire (socket / Terminal attached) Surge suppressor / Lamp		●	●	●	●
EJ-connector (socket with cover, upward/lateral common)						
E01J	Lead wire (1000 mm)	*16	●	●	●	●
E02J	Lead wire (2000 mm)	*16	●	●	●	●
E03J	Lead wire (3000 mm)	*16	●	●	●	●
E21J	Lead wire (1000 mm) Surge suppressor / Lamp		●	●	●	●
E22J	Lead wire (2000 mm) Surge suppressor / Lamp		●	●	●	●
E23J	Lead wire (3000 mm) Surge suppressor / Lamp		●	●	●	●
E Option						
Blank	Manual override of non-locking/locking common		●	●	●	●
M	Manual override of non-locking		○	○	○	○
H	With exhaust check valve *5		●	●	●	●
K	External pilot *6		●	●	●	●
S	Surgeless *7		●	●	●	●
E	Low exoergic/energy circuit *7, *8		●	●	●	●
F	Port A/B filter integrated *9		●	●	●	●
Z1	Air supply spacer *10		●	●	●	●
Z2	In-stop valve spacer *10, *11		●	●	●	●
Z3	Exhaust spacer *10		●	●	●	●
F Mount type						
Blank	Direct mount *12		●	●	●	●
D	DIN rail mount		●	●	●	●
G Station No.						
2	2 stations		●	●	●	●
to	to		●	●	●	●
20	The max. station number per model is 111 refer to page.		●	●	●	●
H Voltage						
1	100 VAC (rectifier integrated)		●	●	●	●
2	200 VAC (rectifier integrated) *13		●	●	●	●
3	24 VDC		●	●	●	●
4	12 VDC		●	●	●	●

is not available.

○ indicates made to order.

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

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

7: E2 and E2*J connectors support 12/24 VDC only. 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/quantity in the manifold specifications sheet. Stacking of spacers is not possible. Combination with the masking plate is not supported. Refer to page 123 for details.

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

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

*13: DIN terminal box only 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 is with a rectifier circuit.

*17: The terminal box is a EN175301-803TypeC (former DIN43650-C) compliant product.

Electric actuator
Pneumatic cylinders
Assistive device
Pneumatic valves
FRL/Auxiliary Components
Electronic Component
Vacuum components
Main line components
Fluid control valves
Main line components
Anti-bacterial/bacteria-removing filter
Vacuum components
Fluid control valves

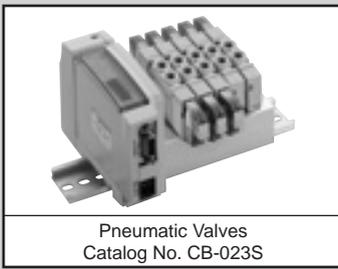
FP1

FP2

Reduced wiring manifolds
Body piping
Direct mount/DIN rail mount

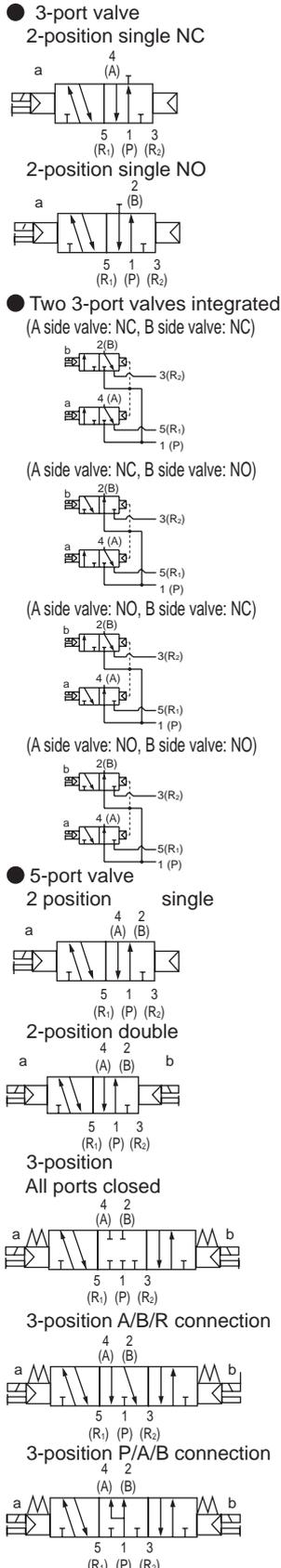
M3GA1, 2, 3-T*(D)-FP1 Series M4GA1, 2, 3-T*(D)-FP1 Series

● Cylinder bore size: $\varnothing 20$ to $\varnothing 100$



F P 1
 Electric actuator
 Pneumatic cylinders
 Assistive device
 Pneumatic valves
 F.R.L./Auxiliary Components
 Electronic Component
 Vacuum components
 Main line components
 Fluid control valves
 Main line components
 Anti-bacterial/bacteria-removing filter
 Vacuum components
 Fluid control valves
 F P 2

JIS symbol



Manifold common specifications

Item	Description	
Manifold	Reduced wiring 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 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	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	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.
*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

Item	Content		
	T1□, T30□, T5□	T6□, T8□	
Rated voltage V	DC24	DC12	DC24
Voltage fluctuation range (*3)	±10%		
Holding current	Standard	0.017	0.034
	A	Low exoergic/energy saving circuit	0.005
Power consumption W	Standard	0.4	
	A	Low exoergic/energy saving circuit	0.1
Resistancethermal class	B		
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

Item	Port A/B	M3GA1/M4GA1	M3GA2/M4GA2	M3GA3/M4GA3
		Push-in fitting $\varnothing 4, \varnothing 6$ M5 Rc1/8	Push-in fitting $\varnothing 6, \varnothing 8$ Rc1/8	Push-in fitting $\varnothing 6, \varnothing 8, \varnothing 10$ Rc1/4 Rc3/8
Port size	Port P/R1/R2	Rc1/8	Rc1/4	Rc3/8

T1 □, T30 □, T5 □

Item		M3GA1/M4GA1		M3GA2/M4GA2		M3GA3/M4GA3	
		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 stations	
	External pilot	12 stations					
Manifold base weight Calculation formula (n: Station No.) g	Standard	29n+215	31n+228	54n+264	56n+297	84n+320	86n+354
	External pilot	44n+334	46n+347	96n+433	96n+468	149n+554	151n+583

T6 □

Item		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 Calculation formula (n: Station No.) g	Standard	31n+375	56n+444	86n+501
	External pilot	46n+494	98n+615	151n+731

T8 □

Item		M3GA1/M4GA1		M3GA2/M4GA2		M3GA3/M4GA3	
		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 stations	
	External pilot	12 stations					
Manifold base weight Calculation formula (n: Station No.) g	Standard	50n+305	52n+332	57n+259	60n+290	150n+384	153n+416
	External pilot	51n+313	54n+340	102n+336	105n+368	169n+417	173n+449

Note that the maximum number of stations in the manifold is also limited by the maximum number of solenoid points per wiring specification as shown on the right.

M₄GA1, 2, 3-T*(D)-FP1 Series

Reduced wiring manifolds; Body piping

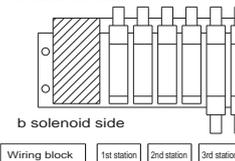
Flow characteristics

Model No.	Solenoid position	P → A/B		A/B → R1/R2		
		C[dm ³ /(s·bar)]	b	C[dm ³ /(s·bar)]	b	
M3GA1 M4GA1	Two 3-port valves integrated	0.86	0.31	1.1 (0.66)	0.19 (0.22)	
	2-position	0.99	0.20	1.2 (0.70)	0.20 (0.12)	
	3-position	All ports closed	0.94	0.23	1.1 -	0.20 -
		ABR connection	0.93	0.18	1.3 (0.70)	0.23 (0.02)
	PAB connection	1.1	0.28	1.1 -	0.23 -	
M3GA2 M4GA2	Two 3-port valves integrated	1.7	0.40	2.3 (1.7)	0.29 (0.32)	
	2-position	2.3	0.36	2.9 (1.7)	0.24 (0.33)	
	3-position	All ports closed	2.1	0.35	2.5 -	0.32 -
		ABR connection	2.2	0.37	2.9 (1.8)	0.32 (0.29)
PAB connection		2.4	0.34	2.5 -	0.33 -	
M3GA3 M4GA3	2-position	3.2	0.37	3.8 (2.5)	0.13 (0.28)	
	3-position	All ports closed	2.9	0.35	3.3 -	0.35 -
		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 $S \approx 5.0 \times C$.

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

Wiring specifications

Item	T10 □ Common terminal block	T11 □ Common terminal block	T30 □ DSub-connector	T50 □ Flat cable 20-pin	T51 □ Flat cable 20-pin	T52 □ Flat cable 10-pin	T53 □ Flat cable 26-pin																																					
Connector and terminal block specifications	M3 thread tightening Terminal count 18	Clamping 26 terminals	D-sub-connector 25-pin	MIL-C-83503 standard compliant Pressure welding socket 20-pin	MIL-C-83503 standard compliant Pressure welding socket 20-pin	MIL-C-83503 standard compliant Pressure welding socket 10-pin	MIL-C-83503 standard compliant Pressure welding socket 26-pin																																					
Max. number of solenoids	16 points	24 points	24 points	16 points	18 points	8 points	24 points																																					
Wiring block position Blank: Left side R: Right side	Left side: T □ a solenoid side 				Right side: T □ R a solenoid side 																																							
Array method Blank: Standard sequential W: Double wiring	(Ex.) In the case of T50 □ Manifold specifications 				Standard wiring (sequential): Blank <table border="1"> <tr> <td>Connector pin No.</td> <td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td> </tr> <tr> <td>Valve solenoid No.</td> <td>1a</td><td>2a</td><td>2b</td><td>3a</td><td>4a</td><td>4b</td> </tr> </table>				Connector pin No.	1	2	3	4	5	6	Valve solenoid No.	1a	2a	2b	3a	4a	4b	Double wiring: W <table border="1"> <tr> <td>Connector pin No.</td> <td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td> </tr> <tr> <td>Valve solenoid No.</td> <td>1a</td><td>Blank</td><td>2a</td><td>2b</td><td>3a</td><td>Blank</td><td>4a</td><td>4b</td> </tr> </table>				Connector pin No.	1	2	3	4	5	6	7	8	Valve solenoid No.	1a	Blank	2a	2b	3a	Blank	4a	4b
Connector pin No.	1	2	3	4	5	6																																						
Valve solenoid No.	1a	2a	2b	3a	4a	4b																																						
Connector pin No.	1	2	3	4	5	6	7	8																																				
Valve solenoid No.	1a	Blank	2a	2b	3a	Blank	4a	4b																																				

Serial transmission slave unit specifications

Download the communication setting file from the CKD website (<https://www.ckd.co.jp/en/>).

Item	T6G1
Network name	CC-Link ver. 1.10
Power supply voltage	Unit side: 24 VDC ±10% Valve side: 24 VDC +10% -5%
Current consumption	Unit side: 100mA or less (when all output points are ON) Valve side: 15 mA or less (when all output points are OFF)
No. of output points	16 points
Occupied number	1 station
Operation display	LED (power supply and communication status)

Item	T8G1	T8GP1	T8P1	T8PP1	T8EC1	T8ECP1	T8EN1	T8ENP1	T8D1	T8DP1	T8EB1	T8EBP1	T8EF1	T8EFP1	T8EP1	T8EPP1	T8KC1	T8KCP1
	T8G2	T8GP2	T8P2	T8PP2	T8EC2	T8ECP2	T8EN2	T8ENP2	T8D2	T8DP2	T8EB2	T8EBP2	T8EF2	T8EFP2	T8EP2	T8EPP2	T8KC2	T8KCP2
Communication protocol	CC-Link ver. 1.10	PROFIBUS-DP(V0)	Ether CAT	Ether Net/IP	Device Net	CC-Link IEF Basic	CC-Link IE Field	PROFINET	IO-Link									
Power supply voltage	24 VDC ±10% (DC11 to 25V for T8D* only)																	
Current consumption	Unit side	60 mA or less (when all output points are ON)	60 mA or less (when all output points are ON)	110 mA or less (when all output points are ON)	120 mA or less (when all output points are ON)	70 mA or less (when all output points are ON)	130 mA or less (when all output points are ON)	140 mA or less (when all output points are ON)	130 mA or less (when all output points are ON)	50 mA or less (when all output points are ON)								
	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									15 mA or less (When all output points are ON) Load current is not included							
No. of output points	T8 □ 1: 16 points / T8 □ 2: 32 points																	
Occupied number	1 station																	
Operation display	LED (power supply and communication status)																	
Output	NPN output PNP output NPN output PNP output																	

M₄GA1, 2, 3-T*(D)-FP1 Series

Reduced wiring manifolds; Body piping

How to order

Manifold model No.

M **4GA1** **1** **0R** - **M5** - **T30** **W** **H** **D** - **3** - **FP1**

3-port manifold model No.

M **3GA1** **1** **0R** - **M5** - **T30** **W** **H** **D** - **3** - **FP1**

● Single valve for mounting base

4GA1 **1** **9R** - **M5** - **A2N** **H** - **3** - **FP1**

● 3-port discrete valve for mounting base

3GA1 **1** **9R** - **M5** - **A2N** **H** - **3** - **FP1**

B Solenoid position

A2N indicates the A-connector (downward), with lamp/surge suppressor and no lead wire.

A Model No.

C Port size

D Reduced wiring connection
Zener diode is used as a surge suppressor.

E Terminal/Connector pin Array method

F Option

G Mount Type

H Station No.

I Voltage

* Be sure to fill in the "Manifold specifications sheet" (pages 129 to 140).

A Model No.

Code	Description	3GA1	3GA2	3GA3	4GA1	4GA2	4GA3
B Solenoid position							
1	2 position single				●	●	●
2	2-position double				●	●	●
3	3-position all ports closed				●	●	●
4	3-position ABR connection				●	●	●
5	3-position PAB connection				●	●	●
1	2-position single: Normally closed *1	●	●	●			
11	2-position single: Normally open *1	●	●	●			
66	Two 3-port valves integrated *1/2	○	○				
67		○	○				
76		○	○				
77		○	○				
8	Mix manifold (when there are multiple solenoid positions)	○	○	○	○	○	○

Port	4(A)/2(B)Port	Port P/R1/R2			
		(1/8) = Rc1/8	(1/4) = Rc1/4	(3/8) = Rc3/8	
C4	ø4 push-in fitting	②		②	
C6	ø6 push-in fitting	②	③	②	③
C8	ø8 push-in fitting		③	④	③
C10	ø10 push-in fitting			④	④
CX	Push-in fitting mix	②	③	④	②
M5	M5	②		②	
06	Rc1/8		③		③
08	Rc1/4			④	④

D Reduced wiring (lamp and surge suppressor provided as standard)
Refer to the next page for electrical connections.

E Terminal/connector pin array							
Blank	Standard wiring	*3	●	●	●	●	●
W	Double wiring	*3	●	●	●	●	●
W1	Double wiring(With single spare wiring)	*3, *14	●	●	●	●	●

F Option							
Blank	Manual override of non-locking/locking common		●	●	●	●	●
M	Manual override of non-locking		○	○	○	○	○
H	With exhaust check valve	*5	●	●	●	●	●
K	External pilot	*6	●	●	●	●	●
S	Surgeless	*7	●	●	●	●	●
E	Low exoergic/energy saving circuit	*7, *18	●	●	●	●	●
F	Port A/B filter built in	*9	●	●	●	●	●
Z1	Air supply spacer	*10	●	●	●	●	●
Z2	In-stop valve spacer	*10, *11	●	●	●	●	●
Z3	Exhaust spacer	*10	●	●	●	●	●

G Mount type							
Blank	Direct mount		●	●	●	●	●
D	DIN rail mount		●	●	●	●	●

H Station No.							
2	2 stations						
to	to	●	●	●	●	●	●
20	Refer to page 115 for the max. station number per model.						

I Voltage							
3	24 VDC		●	●	●	●	●
4	12 VDC		●	●	●	●	●

is not available.

○ indicates made to order.

⚠ Precautions for model No. selection

*1: M4GA*80R when using a mixture of 3, 5-port valves. Further, select M3GA*80R when mixing with masking plate.

*2: Not compatible with combination with external pilot (K).

*3: Blank...The wiring will be based on the type of valve mounted.
W* ...built-in is all wired as double solenoid regardless of the type of valve used.

*4: Spare wiring (A type socket assembly) is included on the cap side for single types. A holder for retaining the socket assembly is included for single unit valves (A2N).

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

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

*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/quantity in the manifold specifications sheet. Stacking of spacers is not possible. Combination with the masking plate is not supported. Refer to page 123 for details.

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

M₄GA1, 2, 3-T*(D)-FP1 Series

Reduced wiring manifolds; Body piping

		A Model No.						
			3GA1	3GA2	3GA3	4GA1	4GA2	4GA3
D Reduced wiring (lamp and surge suppressor provided as standard) DC12/24V								
T10	Common terminal block (M3 thread)	Left-sided specifications	●	●	●	●	●	●
T10R		Right-sided specifications	●	●	●	●	●	●
T11	Common terminal block (clamping)	Left-sided specifications	●	●	●	●	●	●
T11R		Right-sided specifications	●	●	●	●	●	●
T30	D-sub-connector	Left-sided specifications	●	●	●	●	●	●
T30R		Right-sided specifications	●	●	●	●	●	●
T50	20-pin flat cable connector (with power supply terminal)	Left-sided specifications	●	●	●	●	●	●
T50R		Right-sided specifications	●	●	●	●	●	●
T51	20-pin flat cable connector (without power supply terminal)	Left-sided specifications	●	●	●	●	●	●
T51R		Right-sided specifications	●	●	●	●	●	●
T52	10-pin flat cable connector (without power supply terminal)	Left-sided specifications	●	●	●	●	●	●
T52R		Right-sided specifications	●	●	●	●	●	●
T53	26-pin flat cable connector (without power supply terminal)	Left-sided specifications	●	●	●	●	●	●
T53R		Right-sided specifications	●	●	●	●	●	●

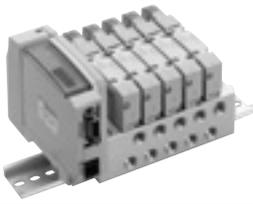
		D Serial transmission (lamp/surge suppressor provided as standard) 24 VDC						
T6G1	CC-Link	NPN 16 points	●	●	●	●	●	●
T8G1	CC-Link	NPN 16 points	●	●	●	●	●	●
T8G2		NPN 32 points	●	●	●	●	●	●
T8GP1		PNP 16 points	●	●	●	●	●	●
T8GP2		PNP 32 points	●	●	●	●	●	●
T8P1		PROFIBUS-DP	NPN 16 points	●	●	●	●	●
T8P2	NPN 32 points		●	●	●	●	●	●
T8PP1	PNP 16 points		●	●	●	●	●	●
T8PP2	PNP 32 points		●	●	●	●	●	●
T8EC1	EtherCAT		NPN 16 points	●	●	●	●	●
T8EC2		NPN 32 points	●	●	●	●	●	●
T8ECP1		PNP 16 points	●	●	●	●	●	●
T8ECP2		PNP 32 points	●	●	●	●	●	●
T8EN1	EtherNet/IP	NPN 16 points	●	●	●	●	●	●
T8EN2		NPN 32 points	●	●	●	●	●	●
T8ENP1		PNP 16 points	●	●	●	●	●	●
T8ENP2		PNP 32 points	●	●	●	●	●	●
T8D1	DeviceNet	NPN 16 points	●	●	●	●	●	●
T8D2		NPN 32 points	●	●	●	●	●	●
T8DP1		PNP 16 points	●	●	●	●	●	●
T8DP2		PNP 32 points	●	●	●	●	●	●
T8EB1	CC-Link IEF Basic	NPN 16 points	●	●	●	●	●	●
T8EB2		NPN 32 points	●	●	●	●	●	●
T8EBP1		PNP 16 points	●	●	●	●	●	●
T8EBP2		PNP 32 points	●	●	●	●	●	●
T8EF1	CC-Link IE Field	NPN 16 points	●	●	●	●	●	●
T8EF2		NPN 32 points	●	●	●	●	●	●
T8EFP1		PNP 16 points	●	●	●	●	●	●
T8EFP2		PNP 32 points	●	●	●	●	●	●
T8EP1	PROFINET	NPN 16 points	●	●	●	●	●	●
T8EP2		NPN 32 points	●	●	●	●	●	●
T8EPP1		PNP 16 points	●	●	●	●	●	●
T8EPP2		PNP 32 points	●	●	●	●	●	●
T8KC1	IO-Link	NPN 16 points	●	●	●	●	●	●
T8KC2		NPN 32 points	●	●	●	●	●	●
T8KCP1		PNP 16 points	●	●	●	●	●	●
T8KCP2		PNP 32 points	●	●	●	●	●	●
A2N	Without lead wire (without socket)	with surge suppressor, lamp	●	●	●	●	●	●

Refer to the M4GA1 to 3-T Series in "Pneumatic Valves (CB-023SA)" for dimensions.

Electric actuator
 Pneumatic cylinders
 Assistive device
 Pneumatic valves
 FRL/Auxiliary Components Electronic Component
 Vacuum components
 Main line components
 Fluid control valves
 Main line components
 Anti-bacterial/bacteria-removing filter
 Vacuum components
 Fluid control valves

FP1

FP2



Pneumatic Valves
Catalog No. CB-023S

Reduced wiring manifolds
Base 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

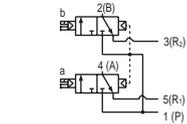


F P 1
 Electric actuator
 Pneumatic cylinders
 Assistive device
 Pneumatic valves
 F.R.L./Auxiliary Components
 Electronic Component
 Vacuum components
 Main line components
 Fluid control valves
 Main line components
 Anti-bacterial/bacteria-removing filter
 Vacuum components
 Fluid control valves
 F P 2

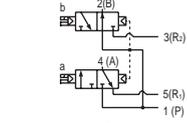
JIS symbol

- 3-port valve
2-position single NC
-
- 2-position single NO
-

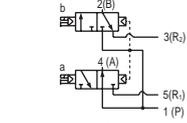
- Two 3-port valves integrated
(A side valve: NC, B side valve: NC)



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

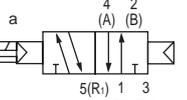


(A side valve: NO, B side valve: NC)

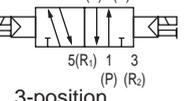


(A side valve: NO, B side valve: NO)

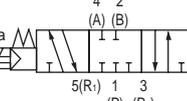
- 5-port valve
2 position single



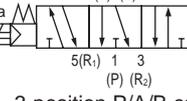
- 2-position double



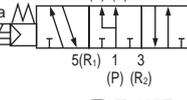
- 3-position
All ports closed



- 3-position A/B/R connection



- 3-position P/A/B connection



Manifold common specifications

Item	Description	
Manifold	Reduced wiring 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 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	Side direction of 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 (*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	
Vibration resistance cm/s ²	50 or less	
Shock resistance m/s ²	300 or less	
Atmosphere	Cannot be used in corrosive gas environments	

Electrical specifications

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

*1: Avoid water drops 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 to 0.2 to 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

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

T1□, T30□, T5□

Item	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 stations	
	External pilot	12 stations					
Manifold base weight Weight calculation formula (n: station No.) g	Standard	43n+335	45n+348	80n+398	82n+431	124n+548	126n+582
	External pilot	44n+330	46n+344	88n+433	90n+467	129n+577	131n+606

T6□

Item	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 Weight calculation formula (n: station No.) g	Standard	45n+495		82n+578		126n+729	
	External pilot	46n+491		90n+615		131n+753	

T8□

Item	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 stations	
	External pilot	12 stations					
Manifold base weight Weight calculation formula (n: station No.) g	Standard	46n+305	49n+332	83n+318	86n+350	128n+384	132n+416
	External pilot	48n+312	51n+339	91n+336	94n+368	146n+417	150n+449

Note that the maximum number of stations in the manifold is also limited by the maximum number of solenoid points per wiring specification as shown on the right.

M₄GB1, 2, 3-T*(D)-FP1 Series

Reduced wiring manifolds; Base piping

Flow characteristics

Model No.	Solenoid position	P → A/B		A/B → R1/R2	
		C[dm ³ /(s·bar)]	b	C[dm ³ /(s·bar)]	b
M3GB1	Two 3-port valves integrated	0.86	0.35	1.1 (0.67)	0.22 (0.23)
	2-position	1.1	0.22	1.2 (0.70)	0.20 (0.10)
	3-position	0.98	0.22	1.1 -	0.24 -
M4GB1	All ports closed	0.97	0.35	1.3 (0.68)	0.22 (0.24)
	ABR connection	1.1	0.38	1.1 -	0.21 -
	PAB connection	1.1	0.38	1.1 -	0.21 -
M3GB2	Two 3-port valves integrated	1.7	0.44	2.1 (1.6)	0.32 (0.30)
	2-position	2.4	0.34	2.7 (1.7)	0.24 (0.31)
	3-position	2.2	0.34	2.4 -	0.29 -
M4GB2	All ports closed	2.2	0.34	2.8 (1.8)	0.24 (0.27)
	ABR connection	2.4	0.29	2.4 -	0.29 -
	PAB connection	2.4	0.29	2.4 -	0.29 -
M4GB3	2-position	3.5	0.34	3.8 (2.6)	0.11 (0.27)
	3-position	3.1	0.33	3.3 -	0.22 -
	PAB 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 $S = 5.0 \times C$. *2: Values in () are with the exhaust check valve.

Wiring specifications

Item	T10 □	T11 □	T30 □	T50 □	T51 □	T52 □	T53 □																																
Connector and terminal block specifications	M3 thread tightening Terminal count 18	Clamping Terminal count 26	DSub-connector D-sub-connector 25-pin	Flat cable 20-pin MIL-C-83503 standard compliant Pressure welding socket 20-pin	Flat cable 20-pin MIL-C-83503 standard compliant Pressure welding socket 20-pin	Flat cable 10-pin MIL-C-83503 standard compliant Pressure welding socket 10-pin	Flat cable 26-pin MIL-C-83503 standard compliant Pressure welding socket 26Pin																																
Max. number of solenoids	16 points	24 points	24 points	16 points	18 points	8 points	24 points																																
Wiring block position																																							
Array method	<p>(Ex.) In the case of T50 □</p> <p>Manifold specifications</p> <p>Standard wiring (sequential): Blank</p> <table border="1"> <tr> <td>Connector pin No.</td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> <td>6</td> </tr> <tr> <td>Valve solenoid No.</td> <td>1a</td> <td>2a</td> <td>2b</td> <td>3a</td> <td>4a</td> <td>4b</td> </tr> </table> <p>Double wiring: W</p> <table border="1"> <tr> <td>Connector pin No.</td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> <td>6</td> <td>7</td> <td>8</td> </tr> <tr> <td>Valve solenoid No.</td> <td>1a</td> <td>Blank</td> <td>2a</td> <td>2b</td> <td>3a</td> <td>Blank</td> <td>4a</td> <td>4b</td> </tr> </table>							Connector pin No.	1	2	3	4	5	6	Valve solenoid No.	1a	2a	2b	3a	4a	4b	Connector pin No.	1	2	3	4	5	6	7	8	Valve solenoid No.	1a	Blank	2a	2b	3a	Blank	4a	4b
Connector pin No.	1	2	3	4	5	6																																	
Valve solenoid No.	1a	2a	2b	3a	4a	4b																																	
Connector pin No.	1	2	3	4	5	6	7	8																															
Valve solenoid No.	1a	Blank	2a	2b	3a	Blank	4a	4b																															

Serial transmission slave unit specifications

Download the communication setting file from the CKD website (<https://www.ckd.co.jp/en/>).

Item	T6G1
Network name	CC-Link ver1.10
Power supply voltage	Unit side: 24 VDC ±10% Valve side: 24 VDC +10% -5%
Current consumption	Unit side: 100mA or less (when all output points are ON) Valve side: 15 mA or less (when all output points are OFF)
No. of output points	16 points
Occupied number	1 station
Operation display	LED (power supply and communication status)

Item	T8G1	T8GP1	T8P1	T8PP1	T8EC1	T8ECP1	T8EN1	T8ENP1	T8D1	T8DP1	T8EB1	T8EBP1	T8EF1	T8EFP1	T8EP1	T8EPP1	T8KC1	T8KCP1	
	T8G2	T8GP2	T8P2	T8PP2	T8EC2	T8ECP2	T8EN2	T8ENP2	T8D2	T8DP2	T8EB2	T8EBP2	T8EF2	T8EFP2	T8EP2	T8EPP2	T8KC2	T8KCP2	
Communication protocol	CC-Link ver. 1.10	PROFIBUS-DP (V0)	EtherCAT	EtherNet/IP	DeviceNet	CC-Link IEF Basic	CC-Link IE Field	PROFINET	IO-Link										
Power supply voltage	24 VDC ±10% (DC11 to 25V for T8D* only)																		
Current consumption	24 VDC 10%, 5%																		
Current consumption	Unit side	60 mA or less (when all output points are ON)	60 mA or less (when all output points are ON)	110 mA or less (when all output points are ON)	120 mA or less (when all output points are ON)	70 mA or less (when all output points are ON)	130 mA or less (when all output points are ON)	140 mA or less (when all output points are ON)	130 mA or less (when all output points are ON)	50 mA or less (when all output points are ON)									
	Valve side	T8□1: 15mA or less T8□2: 20mA or less (when all output points are ON) Load current is not included									15 mA or less (When all output points are ON) Load current is not included								
No. of output points	T8□1: 16 points T8□2: 32 points																		
Occupied number	1 station																		
Operation display	LED (power supply and communication status)																		
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	NPN output	PNP output	NPN output	PNP output	NPN output	PNP output	

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

Reduced wiring manifolds; Base piping

How to order

Manifold model No.

M **4GB1** **1** **0R** - **M5** - **T30** **W** **H** **D** - **3** - **FP1**

3-port manifold model No.

M **3GB1** **66** **0R** - **M5** - **T30** **W** **H** **D** - **3** - **FP1**

● Single valve for mounting base

4GB1 **1** **9R** - **00** - **A2N** **H** - **3** - **FP1**

● 3-port discrete valve for mounting base

3GB1 **66** **9R** - **00** - **A2N** **H** - **3** - **FP1**

B Solenoid position

A Model No.

C Port size

D Reduced wiring connection

E Terminal/connector pin array

F Option

G Mount type

H Station No.

I Voltage

⚠ Precautions for model No. selection

- *1: Select M4GB*80R when mixing with 3, 5-port valves. When using a mixture with the masking plate, M3GB*80R.
- *2: Not compatible when combined with external pilot (K).
- *3: 4G1 C8 and 4G2 C10 are available as made to order. In addition, these do not support push-in fitting mixing.
- *4: Blank...The wiring will be based on the type of valve mounted.
W*...built-in is all wired as double solenoid regardless of the type of valve used.
- *5: Spare wiring (A type socket assembly) is included on the cap side for single types. A holder for retaining the socket assembly is included for single unit valves (A2N).
- *6: The 3-position all ports closed and PAB connection are not provided with the exhaust check valve specifications (H).
- *7: Consult with CKD when using a vacuum with the external pilot (K).
- *8: E2* type and E2*J type connectors only support 12/24 VDC. In addition, surgeless "S" and low exoergic/energy circuit "E" cannot be selected together.
- *9: Surgeless specifications.
- *10: A filter is built into port P as standard.
- *11: Specify the spacer mounting position/quantity in the manifold specifications sheet. Stacking of spacers is not possible. Combination with the masking plate is not supported. Refer to page 123 for details.
- *12: Not compatible with combination with external pilot (K).

A Model No.				
3GB1	3GB2	4GB1	4GB2	4GB3

B Solenoid position						
1	2 position single			●	●	●
2	2-position double			●	●	●
3	3-position all ports closed			●	●	●
4	3-position ABR connection			●	●	●
5	3-position PAB connection			●	●	●
66	3-port valve Two valves integrated *1, *2	A side valve: Normally closed	○	○		
		B side valve: Normally closed				
67		A side valve: Normally closed	○	○		
		B side valve: Normally open				
76		A side valve: Normally open	○	○		
		B side valve: Normally closed				
77	A side valve: Normally open	○	○			
	B side valve: Normally open					
8	Mix manifold (when there are multiple solenoid positions)	○	○	○	○	○

C Port size						
Port	4(A), 2(B) port	Port P/R1/R2 ②=Rc1/8 ③=Rc1/4 ④=Rc3/8				
C4	ø4 push-in fitting	②		②		
C6	ø6 push-in fitting		②	③		
C8	ø8 push-in fitting *3			③		④
C10	ø10 push-in fitting *3					④
CX	Push-in fitting mix	②	③	②	③	④
M5	M5	②		②		
06	Rc1/8			③		③
08	Rc1/4					④
00	Discrete valve for integrated base	●	●	●	●	●

D Reduced wiring connection						
Refer to the next page for electrical connections.						

E Terminal/connector pin array						
Blank	Standard wiring *4	●	●	●	●	●
W	Double wiring *4	●	●	●	●	●
W1	Double wiring (with single spare wiring) *4, *5	●	●	●	●	●

F Option						
Blank	Manual override of non-locking/locking common	●	●	●	●	●
M	Manual override of non-locking	○	○	○	○	○
H	With exhaust check valve *6	●	●	●	●	●
K	External pilot *7	●	●	●	●	●
S	Surgeless *8	●	●	●	●	●
E	Low exoergic/energy saving circuit *8, *9	●	●	●	●	●
F	Port A/B filter built in *10	●	●	●	●	●
Z1	Air supply spacer *11	●	●	●	●	●
Z2	In-stop valve spacer *11, *12	●	●	●	●	●
Z3	Exhaust spacer *11	●	●	●	●	●

G Mount type						
Blank	Direct mount	●	●	●	●	●
D	DIN rail mount	●	●	●	●	●

H Station No.						
2	2 stations					
to	to	●	●	●	●	●
20	Refer to page 119 for the max. station number per model.					

I Voltage						
3	24 VDC	●	●	●	●	●
4	12 VDC	●	●	●	●	●

■ is not available.
○ indicates made to order.

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

Reduced wiring manifolds; Base piping

			A Model No.				
			3GB1	3GB2	4GB1	4GB2	4GB3
D Reduced wiring (lamp and surge suppressor provided as standard) 12, 24 VDC							
T10	Common terminal block (M3 thread)	Left-sided specifications	●	●	●	●	●
T10R		Right-sided specifications	●	●	●	●	●
T11	Common terminal block (clamping)	Left-sided specifications	●	●	●	●	●
T11R		Right-sided specifications	●	●	●	●	●
T30	D-sub-connector	Left-sided specifications	●	●	●	●	●
T30R		Right-sided specifications	●	●	●	●	●
T50	20-pin flat cable connector (with power supply terminal)	Left-sided specifications	●	●	●	●	●
T50R		Right-sided specifications	●	●	●	●	●
T51	20-pin flat cable connector (without power supply terminal)	Left-sided specifications	●	●	●	●	●
T51R		Right-sided specifications	●	●	●	●	●
T52	10-pin flat cable connector (without power supply terminal)	Left-sided specifications	●	●	●	●	●
T52R		Right-sided specifications	●	●	●	●	●
T53	26-pin flat cable connector (without power supply terminal)	Left-sided specifications	●	●	●	●	●
T53R		Right-sided specifications	●	●	●	●	●
D Serial transmission (lamp/surge suppressor provided as standard) 24 VDC							
T6G1	CC-Link	NPN 16 points	●	●	●	●	●
T8G1	CC-Link	NPN 16 points	●	●	●	●	●
T8G2		NPN 32 points	●	●	●	●	●
T8GP1		PNP 16 points	●	●	●	●	●
T8GP2		PNP 32 points	●	●	●	●	●
T8P1	PROFIBUS-DP	NPN 16 points	●	●	●	●	●
T8P2		NPN 32 points	●	●	●	●	●
T8PP1		PNP 16 points	●	●	●	●	●
T8PP2		PNP 32 points	●	●	●	●	●
T8EC1	EtherCAT	NPN 16 points	●	●	●	●	●
T8EC2		NPN 32 points	●	●	●	●	●
T8ECP1		PNP 16 points	●	●	●	●	●
T8ECP2		PNP 32 points	●	●	●	●	●
T8EN1	EtherNet/IP	NPN 16 points	●	●	●	●	●
T8EN2		NPN 32 points	●	●	●	●	●
T8ENP1		PNP 16 points	●	●	●	●	●
T8ENP2		PNP 32 points	●	●	●	●	●
T8D1	DeviceNet	NPN 16 points	●	●	●	●	●
T8D2		NPN 32 points	●	●	●	●	●
T8DP1		PNP 16 points	●	●	●	●	●
T8DP2		PNP 32 points	●	●	●	●	●
T8EF1	CC-Link IEF Basic	NPN 16 points	●	●	●	●	●
T8EF2		NPN 32 points	●	●	●	●	●
T8EFP1		PNP 16 points	●	●	●	●	●
T8EFP2		PNP 32 points	●	●	●	●	●
T8EB1	CC-Link IE Field	NPN 16 points	●	●	●	●	●
T8EB2		NPN 32 points	●	●	●	●	●
T8EBP1		PNP 16 points	●	●	●	●	●
T8EBP2		PNP 32 points	●	●	●	●	●
T8EP1	PROFINET	NPN 16 points	●	●	●	●	●
T8EP2		NPN 32 points	●	●	●	●	●
T8EPP1		PNP 16 points	●	●	●	●	●
T8EPP2		PNP 32 points	●	●	●	●	●
T8KC1	IO-Link	NPN 16 points	●	●	●	●	●
T8KC2		NPN 32 points	●	●	●	●	●
T8KCP1		PNP 16 points	●	●	●	●	●
T8KCP2		PNP 32 points	●	●	●	●	●
A2N	Without lead wire (without socket)	with surge suppressor and indicator lamp	●	●	●	●	●

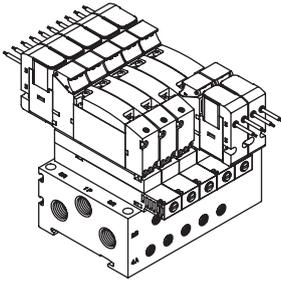
Electric actuator	Pneumatic cylinders	Assistive device	Pneumatic valves	FR/L Auxiliary Components Electronic Component	Vacuum components	Main line components	Fluid control valves	Main line components	Anti-bacterial/bacteria-removing filter	Vacuum components	Fluid control valves
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Refer to the M4GB1 to 3-T Series in "Pneumatic Valves (CB-023SA)" for dimensions.

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

Reduced wiring manifolds; Base piping

● In-stop valve spacer



Specifications

Model No.	P → A/B		A/B → R		Weight g
	C(dm ³ /(s·bar))	b	C(dm ³ /(s·bar))	b	
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 built-in.

*2: The effective cross-sectional area when discharging residual pressure is 1.0mm² (reference value).

*3: Effective Formula to calculate sonic conductance C from cross-sectional area S is $S \approx 5.0 \times C$. Accessories: PR check valve 2, body gasket 1 (for 4G*2 and 4G*3)

How to order discrete units

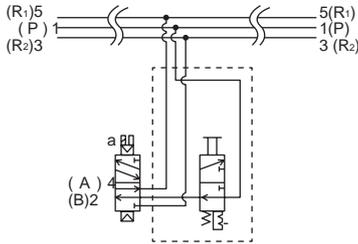
4G1R - IS - FP1

4G2R - IS - FP1

4G3R - IS - FP1

In-stop valve spacer

JIS symbol



⚠ 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