

Intrinsically safe explosion-proof pilot operated
3, 5-port valve 4GD/E EX Series
Catalog No. CC-1459A

Discrete valve
Body piping

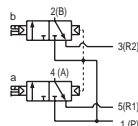
3GD1, 2/4GD1, 2, 3, 4*0EX Series

● Applicable cylinder bore size: ø20 to ø140

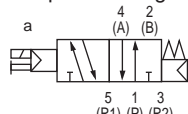


JIS symbol

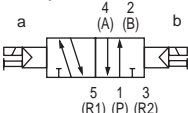
- Two 3-port valves integrated
(A side valve: NC, B side valve: NC)



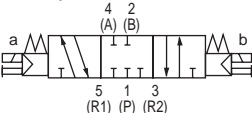
- 5-port valve
2-position single



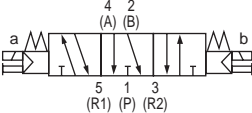
2-position double



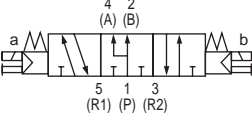
3-position
All ports closed



3-position A/B/R connection



3-position P/A/B connection



Common specifications

Item	Description
Valve and operation	Pilot operated soft spool valve
Working fluid	Compressed air
Max. working pressureMPa	0.7
Min. working pressureMPa	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
Pilot exhaust method	Main valve/pilot valve common exhaust
Lubrication *1	Not required
Degree of protection*2	IP67
Vibration resistancecm/s ²	50 or less
Shock resistance m/s ²	300 or less
Atmosphere	Cannot be used in corrosive gas environments

Solenoid specifications

Item	Description
Rated voltage V	12 DC
Voltage fluctuation range	+10% -20%
Rated current A	0.05
Power consumptionW	0.6
Thermal class	B

*1 Use turbine oil Class 1 ISO VG32 for lubrication. Excessive or intermittent lubrication results in unstable operation.

*2 Tested according to the test method for IP67 (IEC60529) standards. Note that while the unit is protected from dust and water, it cannot be used immersed in water. Countermeasures such as covering the unit should also be taken if using in environments where it will be constantly exposed to dust or water.

Intrinsic safety explosion-proof specifications

Item	Description
Types of explosion-proof structures	Intrinsic safety explosion-proof structure (ib)
Target gas or above listed ignitability and flame-proof grade	Ex ib IIC T4 Gb
Barrier input voltage	24 VDC
Intrinsic safety circuit allowable voltage Ui	30V DC
Intrinsic safety circuit allowable current Ii	200mA
Intrinsic safety circuit allowable power Pi	0.68 W
Internal inductance Li	Value that can be ignored
Internal capacitance Ci	Value that can be ignored

Individual specifications

Port size	3GD1/4GD1	3GD2/4GD2	4GD3	4GD4
2, 4-port (port A/B)	Push-in fitting ø4, ø6 M5	Push-in fitting ø4, ø6, ø8 Rc1/8	Push-in fitting ø8, ø10 Rc1/4	Push-in fitting ø8, ø10, ø12 Rc3/8
1, 3, 5-port (Port P/R1/R2)	M5	Rc1/8	Rc1/4	Rc1/4

Performance/characteristics by model

Item		3GD1		3GD2		4GD1		4GD2		4GD3		4GD4	
		ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF
Response time ms	Two 3-port valves integrated		15	35	20	50	-	-	-	-	-	-	-
	2-position	Single	-	-	-	-	15	35	20	40	25	60	100
			-	-	-	-	25	25	30	30	35	110	110
	3-position	A/B/R connection	-	-	-	-	20	40	25	45	35	60	100

The response times are values under continuous operation at supply pressure of 0.5 MPa, at rated voltage and at 20°C without lubrication. They depend on the pressure and the lubricant quality.

Weight

Item	4GD1		4GD2		4GD3		4GD4	
Weightg	2-position	Single	61 (54)	120 (90)	155 (112)	296 (303)		
		Double	81 (74)	140 (110)	176 (133)	329 (336)		
	3-position	ABR connection	84 (77)	148 (118)	187 (143)	361 (367)		

• Values in () do not include the pipe adaptor. These values include the M8 connector (straight).

• The weight of the two 3-port valves integrated type is the same as that of 2-position double.

3GD1, 2/4GD1, 2, 3, 4*0EX Series

Discrete valve; 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
3GD1 4GD1	Two 3-port valves integrated		0.98	0.45	0.71	0.34
	2-position		1.2	0.47	0.72	0.37
	3-position	All ports closed	1.1	0.39	0.70	0.34
		A/B/R connection	1.1	0.33	0.72	0.34
		P/A/B connection	1.3	0.61	0.72	0.36
3GD2 4GD2	Two 3-port valves integrated		1.8	0.29	2.3	0.32
	2-position		2.4	0.33	2.8	0.30
	3-position	All ports closed	2.2	0.28	2.5	0.28
		A/B/R connection	2.3	0.26	2.8	0.27
		P/A/B connection	2.5	0.38	2.4	0.30
4GD3	2-position		3.4	0.29	4.0	0.24
	3-position	All ports closed	3.1	0.27	3.4	0.28
		A/B/R connection	3.1	0.33	4.1	0.20
		P/A/B connection	3.5	0.43	3.4	0.32
4GD4	2-position		8.1	0.4	8.0	0.31
	3-position	All ports closed	6.9	0.37	7.5	0.42
		A/B/R connection	6.9	0.38	8.4	0.34
		P/A/B connection	8.9	0.37	7.6	0.27

*1 : Formula for converting effective cross-sectional area S and sonic conductance C is $S=5.0 \times C$.

P4
Series

Pneumatic actuator
Pneumatic cylinders
Hand/Chuck
Related products

Vacuum components
Cylinder Switch

Pneumatic valves

Pneumatic auxiliary components
Clean air components
Speed controller
Fitting
Auxiliary valve
Silencer
Tube

Gas generator

Fluid control components

Electric actuator
Motor specification
Motorless specifications

3GD1, 2/4GD1, 2, 3, 4*0EX Series

Discrete valve; Body piping

P4
Series

How to order (solenoid valve single unit)

● Single unit

4GD1 1 0 EX - C4 - RN - 4 - P4
3GD1 66 0 EX - C4 - RN - 4 - P4

A Model No.

3GD1 3GD2 4GD1 4GD2 4GD3 4GD4

Code	Description	3GD1	3GD2	4GD1	4GD2	4GD3	4GD4
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	●	●				
	A valve side: Normally Closed B valve side: Normally Closed						
C Explosion-proof Series							
EX	CCC and NEPSI certification (China) IECEX certified (international) KCs (South Korea), TS (Taiwan) compliant product	●	●	●	●	●	●
D Port size [ports 4(A), 2(B)]							
Port	4(A)/2(B) port	*2	Port P/R1/R2 (1) = M5, (2) = Rc1/8, (3) = Rc1/4				
C4	ø4 push-in fitting	○	(1)	(2)	(1)	(2)	
C6	ø6 push-in fitting	○	(1)	(2)	(1)	(2)	
C8	ø8 push-in fitting	○		(2)		(2)	(3)
C10	ø10 push-in fitting	○					(3)
C12	ø12 push-in fitting	○					(3)
M5	M5	●	(1)		(1)		
06	Rc1/8	●		(2)		(2)	
08	Rc1/4	●					(3)
10	Rc3/8	●					(3)
E Electrical connections							
RN	M8 connector without cable	●	●	●	●	●	●
R1	M8 connector straight cable	●	●	●	●	●	●
R2	M8 connector L-type cable	●	●	●	●	●	●
F Option							
Blank	Manual override of non-locking/locking common (standard)	●	●	●	●	●	●
H	With exhaust check valve *4	●	●	●	●	●	
P	Mounting plate attached (for 2-position single only)			●	●	●	
F	Port A/B filter *5	●	●	●	●	●	●
G Voltage							
4	12 VDC	●	●	●	●	●	●

B Solenoid position

A Model No.

C Explosion-proof Series

D Port size

*2
The port size of "●" is a standard product and equivalent to P4 specifications. It is not necessary to add "-P4" to the model No.

E Electrical connections

F Option

G Voltage

⚠ Precautions for model No. selection

*1: Dimensions are the same as the respective 2-position double solenoid.

*3: M8 connector length is 300mm. Select other lengths from page 406 as needed.

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

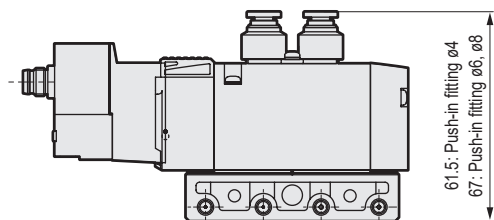
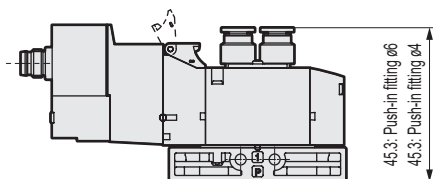
*5: A filter is built into port P as standard.

*6: Explosion-proof barrier sold separately. Select from page 409.

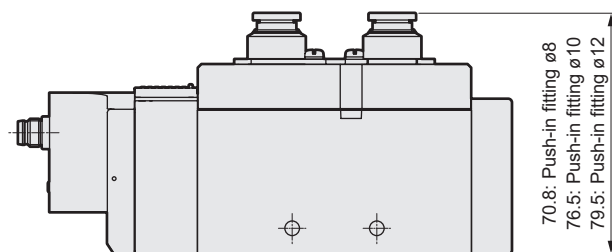
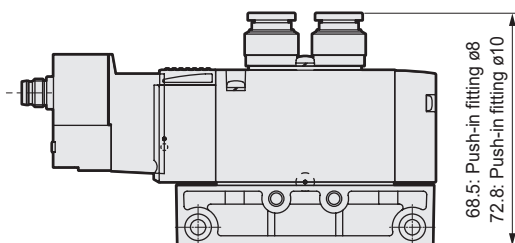
Dimensions

* Fitting dimensions of P4 Series differ from the standard when mounted.

●4GD2*0EX-P4



●4GD4*0EX-P4



*Fitting dimensions of P4 Series are different from the standard when mounted. Refer to the 4GD1 to 4 Series of "Intrinsically safe explosion-proof pilot operated 3, 5-port valve 4GD/E EX Series (No.CC-1459A)" for other dimensions.



Discrete valve
Base piping

3GE1, 2/4GE1, 2, 3, 4*0EX Series

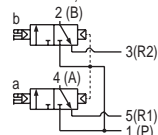
● Applicable cylinder bore size: $\varnothing 20$ to $\varnothing 160$

P4 compliant
as standard

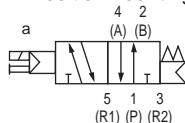


JIS symbol

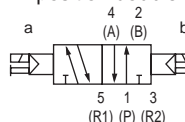
- Two 3-port valves integrated
(A side valve: NC, B side valve: NC)



- 5-port valve
2PositionMounting single

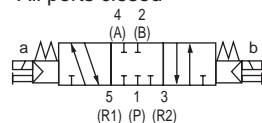


2-position double mounting

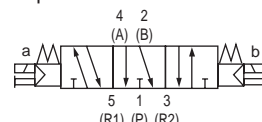


3-position

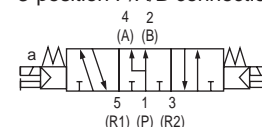
All ports closed



3-position A/B/R connection



3-position P/A/B connection



Common specifications

Item	Description
Valve and operation	Pilot operated soft spool valve
Working fluid	Compressed air
Max. working pressureMPa	0.7
Min. working pressureMPa	0.2
Proof pressure MPa	1.05
Ambient temperature°C	-5 to 55 (no freezing)
Fluid temperature °C	5 to 55
Manual override	NNlock/lock common (standard)
Pilot exhaust method	Internal pilot Main valve/pilot valve common exhaust
Lubrication	*1 Not required
Degree of protection*2	IP67
Vibration resistance m/s ²	50 or less
Shock resistance m/s ²	300 or less
Atmosphere	Cannot be used in corrosive gas environments

Intrinsic safety explosion-proof specifications

Item	Description
Types of explosion-proof structures	Intrinsic safety explosion-proof structure (ib)
Target gas or above listed ignitability and flame-proof grade	Ex ib IIC T4 Gb
Barrier input voltage	24 VDC
Intrinsic safety circuit allowable voltage Ui	30 VDC
Intrinsic safety circuit allowable current Ii	200mA
Intrinsic safety circuit allowable power Pi	0.68 W
Internal inductance Li	Value that can be ignored
Internal capacitance Ci	Value that can be ignored

Individual specifications

Port size	3GE1/4GE1	3GE2/4GE2	4GE3	4GE4
2, 4-port (port A/B)	Rc1/8	Rc1/4	Rc1/4, Rc3/8	Rc3/8, Rc1/2
1, 3, 5-port (Port P/R1/R2)	Rc1/8	Rc1/4	Rc1/4, Rc3/8	Rc3/8, Rc1/2

Performance/characteristics by model

Item		3GE1		3GE2		4GE1		4GE2		4GE3		4GE4	
		ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF
Response time ms	Two 3-port valves integrated	15	35	20	50	-	-	-	-	-	-	-	-
	2-position	Single	-	-	-	15	35	20	40	25	60	100	110
			-	-	-	25	25	30	30	35	110	110	110
	3-position	A/B/R connection	-	-	-	20	40	25	45	35	60	100	160

The response times are values under continuous operation at supply pressure of 0.5 MPa, at rated voltage and at 20°C without lubrication. They depend on the pressure and the lubricant quality.

Weight

Item			4GE1	4GE2	4GE3	4GE4
Weightg	2-position	Single	97 (54)	173 (91)	246 (117)	551 (241)
		Double	118 (74)	194 (112)	267 (138)	584 (275)
	3-position	ABR connection	120 (77)	202 (120)	277 (148)	616 (306)

• Values in () do not include the pipe adaptor. These values include the M8 connector (straight).

• The weight of the two 3-port valves integrated type is the same as that of 2-position double.

3GE1, 2/4GE1, 2, 3, 4*0EX Series

Discrete valve; 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
3GE1 4GE1	Two 3-port valves integrated		0.92	0.08	1.1	0.26
	2-position		1.3	0.27	1.2	0.22
	3-position	All ports closed	1.1	0.31	1.1	0.27
		A/B/R connection	1.1	0.31	1.3	0.29
		P/A/B connection	1.4	0.30	1.1	0.26
3GE2 4GE2	Two 3-port valves integrated		1.7	0.42	2.1	0.26
	2-position		2.6	0.20	2.6	0.19
	3-position	All ports closed	2.3	0.32	2.2	0.22
		A/B/R connection	2.2	0.23	2.6	0.16
		P/A/B connection	2.4	0.10	2.4	0.22
4GE3	2-position		4.3	0.24	4.2	0.24
	3-position	All ports closed	3.3	0.40	3.4	0.27
		A/B/R connection	3.3	0.36	4.2	0.18
		P/A/B connection	4.5	0.28	3.4	0.30
4GE4	2-position		11.0	0.19	13.0	0.19
	3-position	All ports closed	9.1	0.11	12.0	0.27
		A/B/R connection	8.8	0.28	13.9	0.25
		P/A/B connection	10.0	0.06	12.0	0.24

Note1: Formula for converting effective cross-sectional area S and sonic conductance C is $S \approx 5.0 \times C$.

P4
Series

Pneumatic actuator
Pneumatic cylinders
Hand/Chuck
Related products

Vacuum components
Cylinder Switch

Pneumatic valves

Pneumatic auxiliary components
Clean air components
Speed controller

Fitting
Auxiliary valve
Silencer
Tube

Gas generator

Fluid control components

Electric actuator
Motor specification
Motorless specifications

3GE1, 2/4GE1, 2, 3, 4*0EX Series

Discrete valve; Base piping

P4
Series

How to order (solenoid valve single unit)

● Single unit

4GE1 1 0 EX - 06 - RN - 4
3GE2 66 0 EX - 08 - RN - 4

A Model No.

B Solenoid position

C Explosion-proof Series

D Port size

E Electrical connections

F Option

G Voltage

P4 compliant
as standard

A Model No.

Code	Description	3GE1	3GE2	4GE1	4GE2	4GE3	4GE4
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	●	●				
	A valve side: Normally Closed B valve side: Normally Closed						
C Explosion-proof Series							
EX	CCC and NEPSI certification (China) IECEEx certified (international) KCs (South Korea), TS (Taiwan) compliant product	●	●	●	●	●	●
D Port size [ports 4(A), 2(B)]							
Port	4(A)/2(B) port	Port P/R1/R2 (2) = Rc1/8 (3) = Rc1/4 (4) = Rc3/8 (5)=Rc1/2					
06	Rc1/8	(2)	(2)				
08	Rc1/4		(3)	(3)	(3)		
10	Rc3/8				(4)	(4)	
15	Rc1/2					(5)	
00	Valve for base mounting	●	●	●	●	●	●
E Electrical connections							
RN	M8 connector without cable	●	●	●	●	●	●
R1	M8 connector straight cable	●	●	●	●	●	●
R2	M8 connector L-type cable	●	●	●	●	●	●
F Option							
Blank	Manual override of non-locking/locking common (standard)	●	●	●	●	●	●
H	With exhaust check valve *3	●	●	●	●	●	●
F	Port A/B filter *4	●	●	●	●	●	●
G Voltage							
4	12 VDC	●	●	●	●	●	●

⚠ Precautions for model No. selection

*1: Dimensions are the same as the respective 2-position double solenoid.

*2: M8 connector length is 300mm. Select other lengths from page 406 as needed.

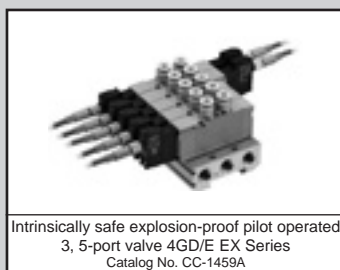
*3: 3-position all ports closed and PAB connection are not provided with exhaust check valve specifications (H).

*4: A filter is built into port P as standard.

*5: Explosion-proof barrier sold separately. Select from page 409.

Refer to the 4GE1 to 4 Series of "Intrinsically safe explosion-proof pilot operated 3, 5-port valve 4GD/E EX Series (No.CC-1459A)" for dimensions.

MEMO



Intrinsically safe explosion-proof pilot operated
3, 5-port valve 4GD/E EX Series
Catalog No. CC-1459A

Individual wiring manifold
Body piping
Direct mount

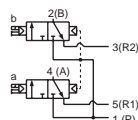
M3GD1, 2EX/M4GD1, 2, 3, 4EX Series

● Applicable cylinder bore size: $\varnothing 20$ to $\varnothing 140$

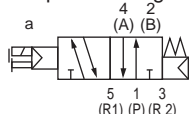


JIS symbol

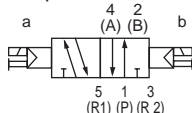
- Two 3-port valves integrated
(A side valve NC, B side valve NC)



- 5-port valve
2-position single

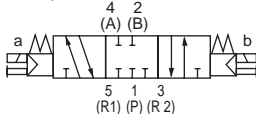


2-position double

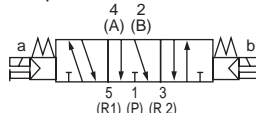


3-position

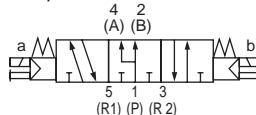
All ports closed



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
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
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
Lubrication *1	Not required
Degree of protection *2	IP67
Resistance Vibration m/s ²	50 or less
Resistance Impact m/s ²	300 or less
Atmosphere	Cannot be used in corrosive gas environments

- *1 Use turbine oil Class 1 ISO VG32 for lubrication. Excessive or intermittent lubrication results in unstable operation.
- *2 Tested according to the test method for IP67 (IEC60529) standards. Note that while the unit is protected from dust and water, it cannot be used immersed in water. Countermeasures such as covering the unit should also be taken if using in environments where it will be constantly exposed to dust or water.

Solenoid Specifications

Item	Description
Rated voltage V	12 DC
Voltage fluctuation range	+10% -20%
Rated current A	0.05
Power consumption W	0.6
Thermal class	B

Individual specifications

Port size	M3GD1/M4GD1	M3GD2/M4GD2	M4GD3	M4GD4
Max. station No.	20 stations	20 stations	20 stations	15 stations
2, 4-port (port A/B)	Push-in fitting $\varnothing 4$ M5	Push-in fitting $\varnothing 4, \varnothing 6, \varnothing 8$ Rc1/8	Push-in fitting $\varnothing 8, \varnothing 10$ Rc1/4	Push-in fitting $\varnothing 8, \varnothing 10, \varnothing 12$ Rc3/8
1, 3, 5-port (Port P/R1/R2)	Rc1/8	Rc1/4	Rc3/8	Rc1/2
Manifold base Weight calculation formula (n: station No.) g	23n+52	47n+64	74n+88	150n+199

For 10 or more manifold station No. (5 stations for 4G3 and 4G4), use ports on both sides for air supply and exhaust. The manifold base weight is the value for screw specifications.

M3GD1, 2*EX/M4GD1, 2, 3, 4*EX 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
M3GD1 M4GD1	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 —
		A/B/R connection	0.93	0.18	1.3 (0.70)	0.23 (0.02)
		P/A/B connection	1.1	0.28	1.1 —	0.23 —
M3GD2 M4GD2	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 —
		A/B/R connection	2.2	0.37	2.9 (1.8)	0.32 (0.29)
		P/A/B connection	2.4	0.34	2.5 —	0.33 —
M4GD3	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 —
		A/B/R connection	3.0	0.34	3.8 (2.6)	0.12 (0.27)
		P/A/B connection	3.3	0.30	3.3 —	0.32 —
M4GD4	2-position		7.3	0.12	9.0 —	0.17 —
	3-position	All ports closed	6.4	0.15	8.2 —	0.22 —
		A/B/R connection	6.3	0.33	8.9 —	0.26 —
		P/A/B connection	8.0	0.08	8.3 —	0.22 —

*1: Effective cross-sectional area S and sonic conductance C use the conversion formula $S \approx 5.0 \times C$.

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

P4
Series

Pneumatic actuator
Pneumatic cylinders
Hand/Chuck
Related products
Cylinder Switch

Vacuum components

Pneumatic valves

Pneumatic auxiliary components
Clean air components
Speed controller
Fitting
Auxiliary valve
Silencer
Tube

Gas generator

Fluid control components

Electric actuator
Motor specification
Motorless specifications

M3GD1, 2*EX/M4GD1, 2, 3, 4*EX Series

Individual wiring manifold; Body piping

P4
Series

How to order

Manifold model No.

M 4GD1 1 0 EX - C4 - RN H - 6 - 4 - P4

3-port manifold model No.

M 3GD1 66 0 EX - C4 - RN H - 2 - 4 - P4

Discrete valve for integrated base

4GD1 1 9 EX - C6 - RN H - 4 - P4

3-port discrete valve for integrated base

3GD1 66 9 EX - C4 - RN H - 4 - P4

A Model No.

B Solenoid position

C Explosion-proof Series

D Port size

*3
The port size of "●" is a standard product and equivalent to P4 specifications. It is not necessary to add "-P4" to the model No.

E Electrical connections

F Option

G Mount type

H Station No.

I Voltage

A Model No.

3GD1	3GD2	4GD1	4GD2	4GD3	4GD4

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	●	●	
8	Mix manifold (when there are multiple solenoid positions)			●	●	●

C Explosion-proof Series						
EX	CCC and NEPSI certification (China) IECEX certified (international) KCs (South Korea), TS (Taiwan) compliant product	●	●	●	●	●

D Port size [2(B), 4(A) port]						
Port	4(A)/2(B) port	*3	Port P/R1/R2 (2) = Rc1/8 (3) = Rc1/4 (4) = Rc3/8 (5)=Rc1/2			
C4	ø4 push-in fitting	○	(2)	(3)	(2)	(3)
C6	ø6 push-in fitting	○		(3)	(2)	(3)
C8	ø8 push-in fitting	○		(3)		(4) (5)
C10	ø10 push-in fitting	○				(4) (5)
C12	ø12 push-in fitting	○				(5)
CX	Push-in fitting mix	*4	○	(2)	(3)	(2) (3) (4) (5)
M5	M5	●	(2)		(2)	
06	Rc1/8	●		(3)		(3)
08	Rc1/4	●				(4)
10	Rc3/8	●				(5)

E Electrical connections						
RN	M8 connector without cable		●	●	●	●
R1	M8 connector straight cable	*4	●	●	●	●
R2	M8 connector L-type cable	*4	●	●	●	●

F Option						
Blank	Manual override of non-locking/locking common (standard)		●	●	●	●
H	With exhaust check valve	*6, *8	●	●	●	●
F	Port A/B filter	*7	●	●	●	●
Z1	Air supply spacer	*8, *9	●	●	●	●
Z3	Exhaust spacer	*8, *9	●	●	●	●

G Mount type						
Blank	Direct mount		●	●	●	●

H Station No.						
2	2 stations					
to	to	●	●	●	●	2
20	20 stations (Refer to page 396 for the max. station No.)					to 15

I Voltage						
4	12 VDC		●	●	●	●

⚠ Precautions for model No. selection

- *1 M4GD*80EX when using a mixture of 3, 5-port valves. M3GD*80EX when used mixed with a masking plate.
- *2 Dimensions are the same as the respective 2-position double solenoid.
- *4 The push-in fitting cannot be mixed with the single valve's 4(A) or 2(B) port.
- *5 M8 connector length is 300mm. Select other lengths from page 406 as needed.
- *6 3-position all ports closed and PAB connection are not provided with exhaust check specifications (H). Refer to "Intrinsically safe explosion-proof pilot operated 3, 5-port valve 4GD/E EX Series (No.CC-1459A)" for details on the exhaust check valve.
- *7 A filter is built into port P as standard.
- *8 4G4 cannot be selected for exhaust check valves (H), air supply spacers (Z1), or exhaust spacers (Z3).
- *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 pages 404 to 405 for details.
- *10 Explosion-proof barrier sold separately. Select from page 409.

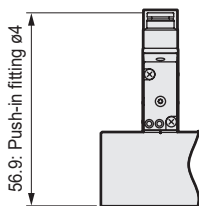
M3GD1, 2*EX/M4GD1, 2, 3, 4*EX Series

Dimensions

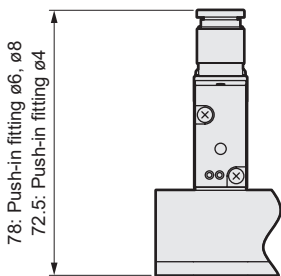
Dimensions (individual wiring manifold: body piping)

P4
Series

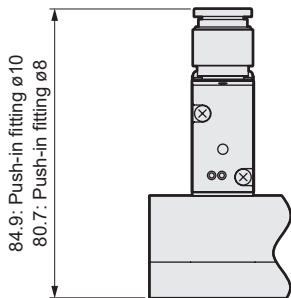
●M4GD1*0EX-P4



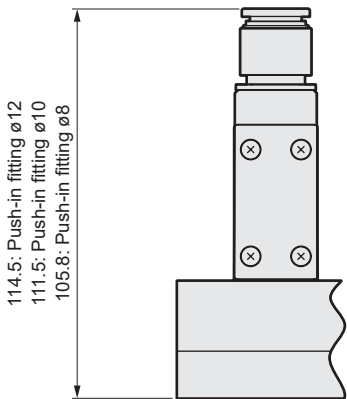
●M4GD2*0EX-P4



●M4GD3*0EX-P4



●M4GD4*0EX-P4



*Fitting dimensions of P4 Series are different from the standard when mounted. Refer to the M4GD1 to 4 Series of "Intrinsically safe explosion-proof pilot operated 3, 5-port valve 4GD/E EX Series (No.CC-1459A)" for other dimensions.

Pneumatic cylinders	Pneumatic actuator				Vacuum components	Pneumatic valves	Pneumatic auxiliary components	Gas generator	Fluid control components	Electric actuator			
	Hand/Chuck	Related products	Cylinder Switch										
				Clean air components	Speed controller	Fitting					Auxiliary valve	Silencer	Tube



Individual wiring manifold
Base piping
Direct mount

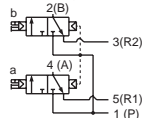
M3GE1, 2EX/M4GE1, 2, 3, 4EX Series

● Applicable cylinder bore size: $\varnothing 20$ to $\varnothing 140$



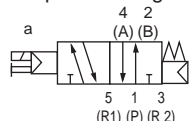
JIS symbol

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

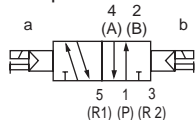


- 5-port valve

2-position single

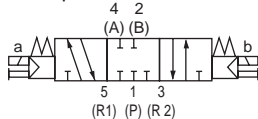


2-position double

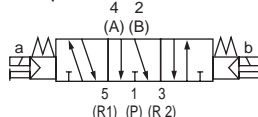


3-position

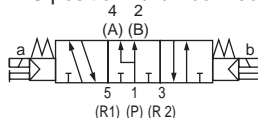
All ports closed



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 (Standard) (Pilot exhaust check valve built-in)
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
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
Lubrication *1	Not required
Degree of protection *2	IP67
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 Use turbine oil Class 1 ISO VG32 for lubrication. Excessive or intermittent lubrication results in unstable operation.

*2 Tested according to the test method for IP67 (IEC60529) standards. Note that while the unit is protected from dust and water, it cannot be used immersed in water. Countermeasures such as covering the unit should also be taken if using in environments where it will be constantly exposed to dust or water.

Solenoid specifications

Item	Description
Rated voltage V	12 DC
Voltage fluctuation range	+10% -20%
Holding current A	0.05
Power consumption W	0.6
Thermal class	B

Individual specifications

Port size	M3GE1/M4GE1	M3GE2/M4GE2	M4GE3	M4GE4	
				Rc1/4 Rc3/8	Rc1/2
Max. station No.	20 stations	20 stations	20 stations	15 stations	12 stations
2, 4-port (port A/B)	Push-in fitting $\varnothing 4, \varnothing 6$ M5	Push-in fitting $\varnothing 4, \varnothing 6, \varnothing 8$ Rc1/8	Push-in fitting $\varnothing 8, \varnothing 10$ Rc1/4	Push-in fitting $\varnothing 8, \varnothing 10, \varnothing 12$ Rc1/4, Rc3/8	Rc1/2
1, 3, 5-port (Port P/R1/R2)	Rc1/8	Rc1/4	Rc3/8	Rc3/8	Rc1/2
Manifold base					
Weight calculation formula (n: station No.) g	35n+61	71n+106	113n+170	273n+329	391n+560

For 10 or more manifold station No. (5 stations for 4G3 and 4G4), use ports on both sides for air supply and exhaust. The manifold base weight is the value for screw specifications.

M3GE1, 2/M4GE1, 2, 3, 4*EX 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
M3GE1 M4GE1	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	All ports closed	0.98	0.22	1.1 —	0.24 —
		A/B/R connection	0.97	0.35	1.3 (0.68)	0.22 (0.24)
		P/A/B connection	1.1	0.38	1.1 —	0.21 —
M3GE2 M4GE2	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	All ports closed	2.2	0.34	2.4 —	0.29 —
		A/B/R connection	2.2	0.34	2.8 (1.8)	0.24 (0.27)
		P/A/B connection	2.4	0.29	2.4 —	0.29 —
M4GE3	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 —
		A/B/R connection	3.0	0.30	3.8 (2.7)	0.11 (0.22)
		P/A/B connection	3.6	0.36	3.3 —	0.28 —
M4GE4 1-port size Rc3/8	2-position		6.4	0.42	6.9 —	0.12 —
	3-position	All ports closed	6.0	0.37	6.8 —	0.12 —
		A/B/R connection	6.0	0.31	7.1 —	0.11 —
		P/A/B connection	6.0	0.37	6.8 —	0.13 —
M4GE4 1-port size Rc1/2	2-position		8.3	0.23	9.0 —	0.21 —
	3-position	All ports closed	7.4	0.15	8.8 —	0.19 —
		A/B/R connection	7.5	0.28	9.4 —	0.17 —
		P/A/B connection	7.7	0.21	8.7 —	0.18 —

*1: Effective cross-sectional area S and sonic conductance C use the conversion formula $S \approx 5.0 \times C$.

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

P4
Series

Pneumatic actuator
Pneumatic cylinders
Hand/Chuck
Related products
Cylinder Switch

Vacuum components

Pneumatic valves

Pneumatic auxiliary components
Clean air components
Speed controller
Fitting
Auxiliary valve

Silencer
Tube

Gas generator

Fluid control components

Electric actuator
Motor specification
Motorless specifications

M3GE1, 2/M4GE1, 2, 3, 4*0EX Series

Individual wiring manifold; Base piping

P4
Series

How to order

Manifold model No.

M 4GE1 1 0 EX - C4 - RN H - 6 - 4 - P4

3-port manifold model No.

M 3GE1 66 0 EX - C4 - RN H - 2 - 4 - P4

Discrete valve for integrated base

4GE1 1 9 EX - 00 - RN H - 4 - P4

3-port discrete valve for integrated base

3GE1 66 9 EX - 00 - RN H - 4 - P4

A Model No.

B Solenoid position

C Explosion-proof Series

D Port size

*3
The port size of "●" is a standard product and equivalent to P4 specifications. It is not necessary to add "-P4" to the model No.

E Electrical connections

F Option

G Mount type

H Station No.

I Voltage

A Model No.

3 GE 1	3 GE 2	4 GE 1	4 GE 2	4 GE 3	4 GE 4
--------------	--------------	--------------	--------------	--------------	--------------

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	●	●		
8	Mix manifold (when there are multiple solenoid positions)			●	●	●	●

C Explosion-proof Series							
EX	CCC and NEPSI certification (China) IECEX certified (international) KCs (South Korea), TS (Taiwan) compliant product	●	●	●	●	●	●

D Port size [2(B), 4(A) port]							
Port	4(A)/2(B) port	*3	Port P/R1/R2 (2) = Rc1/8 (3) = Rc1/4 (4) = Rc3/8 (5)=Rc1/2				
C4	ø4 push-in fitting	○	(2)	(3)	(2)	(3)	
C6	ø6 push-in fitting	○	(2)	(3)	(2)	(3)	
C8	ø8 push-in fitting	○		(3)		(3)	(4)
C10	ø10 push-in fitting	○					(4)
C12	ø12 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)
10	Rc3/8	●					(4)
12	Rc1/2	●					(5)
00	Valve for base mounting	●	●	●	●	●	●

E Electrical connections							
RN	M8 connector without cable		●	●	●	●	●
R1	M8 connector straight cable	*4	●	●	●	●	●
R2	M8 connector L-type cable	*4	●	●	●	●	●

F Option							
Blank	Manual override of non-locking/locking common (standard)		●	●	●	●	●
H	With exhaust check valve	*5, *7	●	●	●	●	●
F	Port A/B filter	*6	●	●	●	●	●
Z1	Air supply spacer	*7, *8	●	●	●	●	●
Z3	Exhaust spacer	*7, *8	●	●	●	●	●

G Mount type							
Blank	Direct mount	*9	●	●	●	●	●

H Station No.							
2	2 stations						2
to	to	●	●	●	●	●	to
20	20 stations (Refer to page 400 for the max. station number)						15

I Voltage							
4	12 VDC		●	●	●	●	●

⚠ Precautions for model No. selection

*1 M4GE*80EX when using a mixture of 3, 5-port valves. When using a mixture with the masking plate, M3GE*80EX.

*2 Dimensions are the same as the respective 2-position double solenoid.

*4 M8 connector length is 300mm. Select other lengths from page 406 as needed.

*5 3-position all ports closed and PAB connection are not provided with exhaust check valve specifications (H). Refer to "Intrinsically safe explosion-proof pilot operated 3, 5-port valve 4GD/E EX Series (No.CC-1459A)" for details on the exhaust check valve.

*6 A filter is built into port P as standard.

*7 4G4 cannot be selected for exhaust check valves (H), air supply spacers (Z1), or exhaust spacers (Z3).

*8 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 pages 404 to 405 for details.

*9 The manifold max. station No. for port size 12 M4GE4 is 12.

*10Explosion-proof barrier sold separately. Select from page 409.

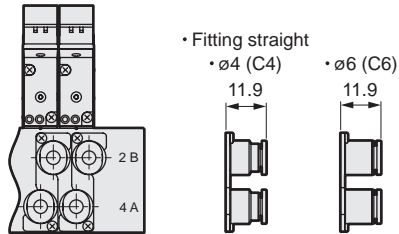
M3GE1, 2/M4GE1, 2, 3, 4*0EX Series

Dimensions

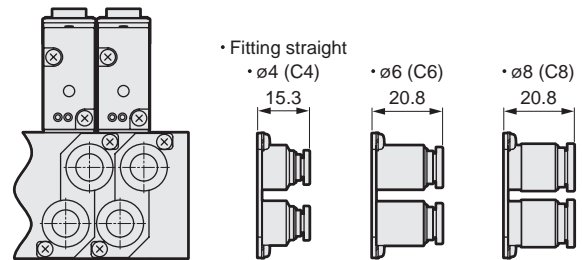
Dimensions

* Fitting dimensions of P4 Series differ from the standard when mounted.

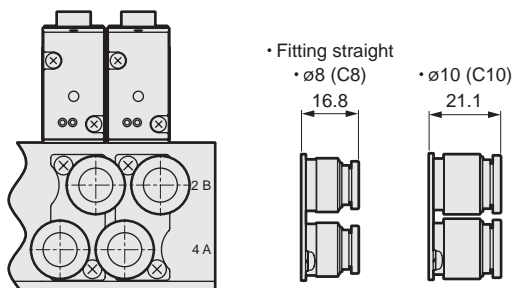
●M4GE1*0EX-P4



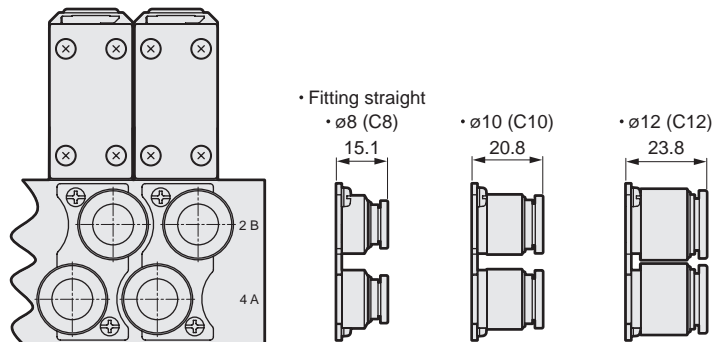
●M4GE2*0EX-P4



●M4GE3*0EX-P4



●M4GE4*0EX-P4



*Fitting dimensions of P4 Series are different from the standard when mounted. Refer to the M4GD1 to 4 Series of "Intrinsically safe explosion-proof pilot operated 3, 5-port valve 4GD/E EX Series (No.CC-1459A)" for other dimensions.

Pneumatic cylinders	Hand/Chuck	Related products	Cylinder Switch
Vacuum components			
Pneumatic valves			
Clean air components	controller		
Pneumatic auxiliary components	Speed	Fitting	Auxiliary valve
Gas generator	Silencer	Tube	
Fluid control components			
Electric actuator	Motor specification	Motorless specifications	