



Intrinsically safe explosion-proof pilot operated
3, 5-port valve 4GD/E EJ Series
Catalog No. CC-1445A

Discrete valve
Body piping

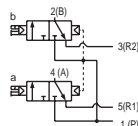
3GD1, 2/4GD1, 2, 3, 4*0EJ Series

● Applicable cylinder bore size: ø20 to ø140

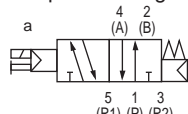


JIS symbol

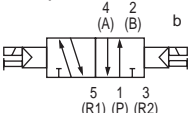
- Two 3-port valves integrated
(A side valve: NC, B side valve: NC)



- 5-port valve
2-position single

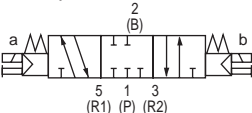


2-position double

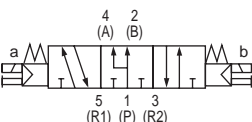
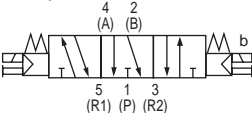


3-position

All ports closed



3-position A/B/R connection



Common specifications

Item	Description
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
Pilot exhaust method	Main valve/pilot valve common exhaust
Lubrication *1	Not required
Degree of protection *2	IP67
Vibration resistance cm/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 consumption W	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. * 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	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	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	
Weight g	2-position	Single	61 (54)	120 (90)	155 (112)	296 (303)		
		Double	81 (74)	140 (110)	176 (133)	329 (336)		
	3-position	A/B/R connection	84 (77)	148 (118)	187 (143)	361 (367)		

• Values in the () 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*0EJ 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

Clean air components
Speed controller

Pneumatic auxiliary components
Fitting
Auxiliary valve

Silencer
Tube

Gas generator

Fluid control components

Electric actuator
Motor specification
Motorless specifications

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

Discrete valve; Body piping

P4
Series

How to order (solenoid valve single unit)

● Single unit

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

A Model No.

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

A Model No.

B Solenoid position

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

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							
EJ	Japan Explosion-Proof Certified 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 (4) = Rc3/8 (5)=Rc1/2				
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)			●	●	●	
A	Ozone/coolant proof	●	●	●	●	●	●
F	Port A/B filter *5	●	●	●	●	●	●
G Voltage							
4	12 VDC	●	●	●	●	●	●

⚠ 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).

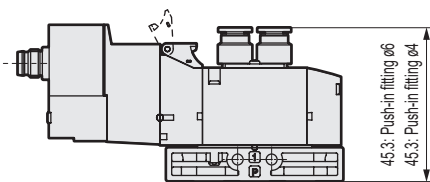
*5: A filter is built into port P as standard.

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

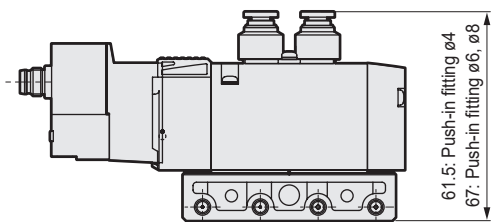
Dimensions

P4
Series

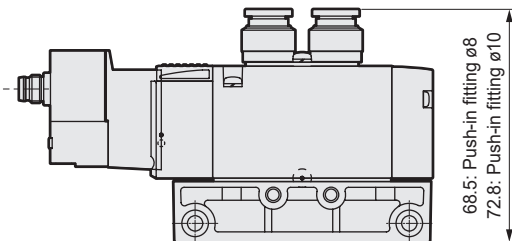
●4GD1*0EJ-P4



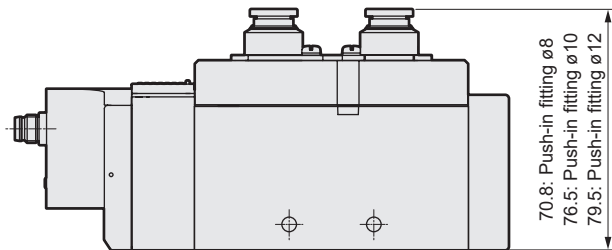
●4GD2*0EJ-P4



●4GD3*0EJ-P4

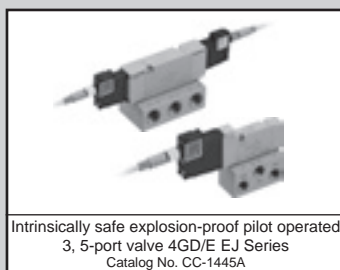


●4GD4*0EJ-P4



* 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 EJ Series (No.CC-1445A)" for other dimensions.

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		



Intrinsically safe explosion-proof pilot operated
3, 5-port valve 4GD/E EJ Series
Catalog No. CC-1445A

Discrete valve
Base piping

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

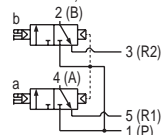
● Applicable cylinder bore size: ø20 to ø160

P4 compliant
as standard

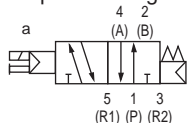


JIS symbol

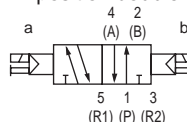
- Two 3-port valves integrated
(A side valve: NC, B side valve: NC)



- 5-port valve
2-position single

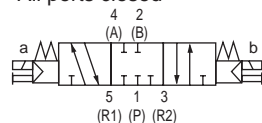


2-position double

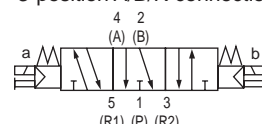


3-position

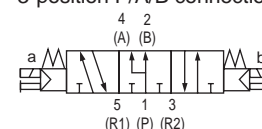
All ports closed



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 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	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

Solenoid specifications

Item	Description
Rated voltage V	12 DC
Voltage fluctuation range	+10% -20%
Rated current A	0.05
Power consumption W (*3)	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	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	35	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 the () 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*0EJ 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

*1: Formula to convert 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
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

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

Discrete valve; Base piping

P4
Series

How to order (solenoid valve single unit)

● Single unit

4GE1 1 0 EJ - 06 - RN - 4
3GE2 66 0 EJ - 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							
EJ	Japan Explosion-Proof Certified Product	●	●	●	●	●	●
D Port size [ports 4(A), 2(B)]							
Port	4(A)/2(B) port	Port P/R1/R2 (1) = M5 (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	●	●	●	●	●	●
A	Ozone/coolant proof	●	●	●	●	●	●
F	Port A/B filter *4	●	●	●	●	●	●
J	With indicator	●	●	●	●	●	●
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 EJ Series (No.CC-1445A)" for dimensions.

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



Intrinsically safe explosion-proof pilot operated
3, 5-port valve 4GD/E EJ Series
Catalog No. CC-1445A

Individual wiring manifold
Body piping
Direct mount/DIN rail mount

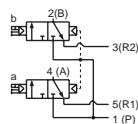
M3GD1, 2EJ-(D)/M4GD1, 2, 3, 4EJ-(D) Series

● Applicable cylinder bore size: ø20 to ø140

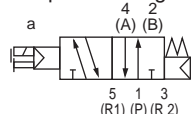


JIS symbol

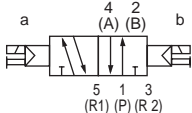
- Two 3-port valves integrated
(A side Valve NC, B side Valve NC)



- 5-port valve
2-position single

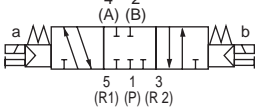


2-position double

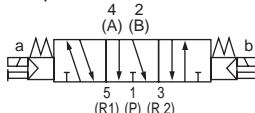


3-position

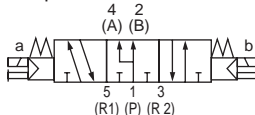
All ports closed



3-position A/B/R connection



3-position P/A/B connection



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	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

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

*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	200 mA
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	M3GD1/M4GD1		M3GD2/M4GD2		M4GD3		M4GD4
	Direct mount	DIN rail Mount	Direct mount	DIN rail Mount	Direct mount	DIN rail Mount	Direct mount
Max. station No.	20 stations	16 stations	20 stations	16 stations	20 stations	16 stations	15 stations
2, 4-port (port A/B)	Push-in fitting ø4 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)	Rc1/8		Rc1/4		Rc3/8		Rc1/2
Manifold base							
Weight calculation formula (n: station No.)	23n+52	25n+60	47n+64	49n+92	74n+88	76n+117	150n+199

Refer to "Cautions for mounting the DIN rail" and "Intrinsically safe explosion-proof pilot operated 3, 5-port valve 4GD/E EJ Series (No. CC-1445A)", and select the manifold. 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. M4GD4 is only compatible with direct mounting.

M3GD1, 2*EJ/M4GD1, 2, 3, 4*EJ 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

Clean air components

Pneumatic auxiliary components
Speed controller
Fitting
Auxiliary valve
Silencer
Tube

Gas generator

Fluid control components

Electric actuator
Motor specification
Motorless specifications

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

Individual wiring manifold; Body piping

P4
Series

How to order

Manifold model No.

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

3-port manifold model No.

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

Discrete valve for integrated base

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

3-port discrete valve for integrated base

3GD1 66 9 EJ - C6 - 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						
EJ	Japan Explosion-Proof Inspected 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)
00	Valve for base mounting	●	●	●	●	●

E Electrical connections						
RN	M8 connector without cable		●	●	●	●
R1	M8 connector Straight cable ^{*5}		●	●	●	●
R2	M8 connector L-type cable ^{*5}		●	●	●	●

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

G Mount type						
Blank	Direct mount		●	●	●	●
D	DIN rail mount ^{*10}		●	●	●	●

H Station No.						
2	2 stations					
to	to					
20	20 stations (Refer to page 380 for the max. station number)		●	●	●	2 to 15

I Voltage						
4	12 VDC		●	●	●	●

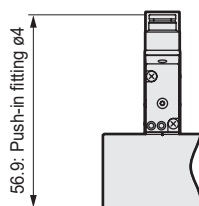
⚠ Precautions for model No. selection

- *1 M4GD*80EJ when using a mixture of 3, 5-port valves. Select M3GD*80EJ when mixing with 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 EJ Series (No.CC-1445A)" 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 4G4 cannot be selected for DIN rail mount (D).
- *11 Explosion-proof barrier sold separately. Select from page 409.

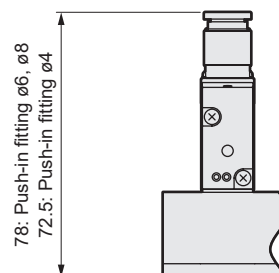
Dimensions

P4
Series

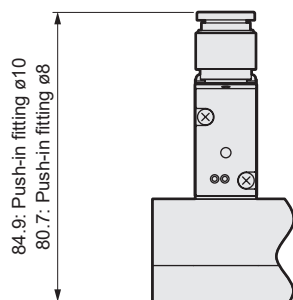
●M4GD1*0EJ-P4



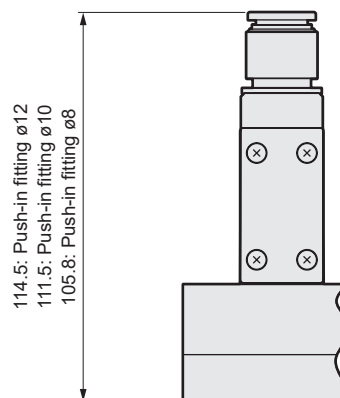
●M4GD2*0EJ-P4



●M4GD3*0EJ-P4



●M4GD4*0EJ-P4



*Fitting dimensions of P4 Series are different from the standard when mounted. Refer to "Cautions for mounting the DIN rail" and "Intrinsically safe explosion-proof pilot operated 3, 5-port valve 4GD/E EJ Series (No.CC-1445A)", and select the manifold.

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



Individual wiring manifold
Base piping
Direct mount/DIN rail mount

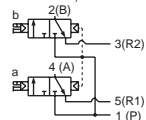
M3GE1, 2EJ/M4GE1, 2, 3, 4EJ-(D) Series

● Applicable cylinder bore size: ø20 to ø140



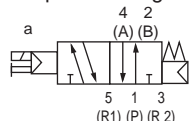
JIS symbol

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

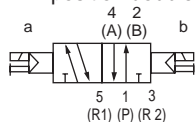


- 5-port valve

2-position single

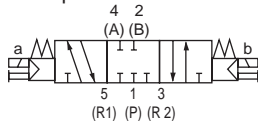


2-position double

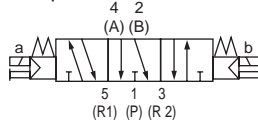


3-position

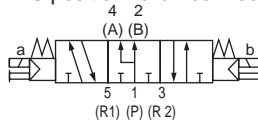
All ports closed



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

*2

Solenoid specifications

Item	Description
Rated voltage V	12 DC
Voltage fluctuation range	+10% -20%
Rated current A	0.05
Power consumption W (*3)	0.6
Thermal class	B

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

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	M3GE1/M4GE1		M3GE2/M4GE2		M4GE3		M4GE4	
	Direct mount	DIN rail Mount	Direct mount	DIN rail Mount	Direct mount	DIN rail Mount	Direct mount	
Max. station No.	20 stations	16 stations	20 stations	16 stations	20 stations	16 stations	15 stations	12 stations
2, 4-port (port A/B)	Push-in fitting ø4, ø6 M5		Push-in fitting ø4, ø6, ø8 Rc1/4		Push-in fitting ø8, ø10 Rc1/4		Push-in fitting ø8, ø10, ø12 Rc1/4, Rc3/8	
1, 3, 5-port (Port P/R1/R2)	Rc1/8		Rc1/8		Rc3/8		Rc3/8	Rc1/2
Manifold base Weight calculation formula (n: station No.) g	35n+61	36n+115	71n+106	73n+134	113n+170	115n+119	273n+329	391n+560

Cautions for mounting the DIN rail "Intrinsically safe explosion-proof pilot operated 3, 5-port valve 4GD/E EJ Series (No. CC-1445A)" before selection. 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. M4GE4 is only compatible with direct mounting.

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

Individual wiring manifold; Base piping

P4
Series

How to order

Manifold model No.

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

3-port manifold model No.

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

Discrete valve for integrated base

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

3-port discrete valve for integrated base

3GE1 66 9 EJ - 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.

3GE1	3GE2	4GE1	4GE2	4GE3	4GE4

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						
EJ	Japan Explosion-Proof Inspected 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)
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	●	●	●	●
A	Ozone/coolant proof		●	●	●	●
F	Port A/B filter	*6	●	●	●	●
J	With indicator		●	●	●	●
Z1	Air supply spacer	*7, *8	●	●	●	●
Z3	Exhaust spacer	*7, *8	●	●	●	●

G Mount type						
Blank	Direct mount	*9	●	●	●	●
D	DIN rail mount	*10	●	●	●	●

H Station No.						
2	2 stations					
to	to					
20	20 stations (Refer to page 384 for the max. station number)					

I Voltage						
4	12 VDC		●	●	●	●

⚠ Precautions for model No. selection

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

*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 EJ Series (No.CC-1445A)" 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 direct mount type of M4GE1EJ cannot be changed after purchase to the DIN rail mount type.

*10 4G4 cannot be selected for DIN rail mount (D).

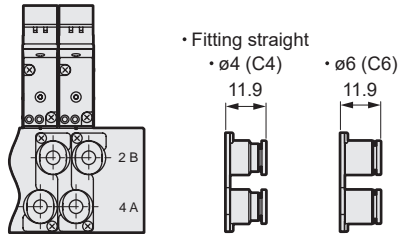
*11 The manifold max. station No. for port size 12 M4GE4 is 12.

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

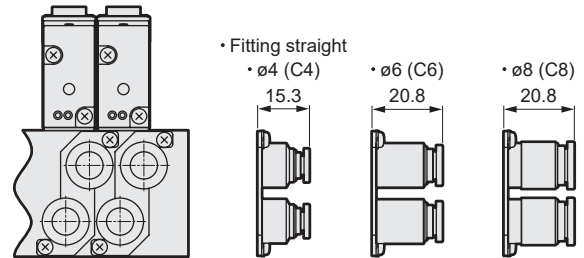
Dimensions

P4
Series

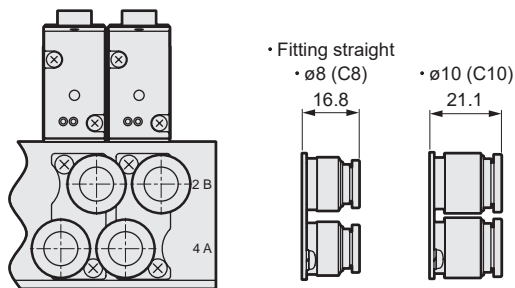
●M4GE1*0EJ-P4



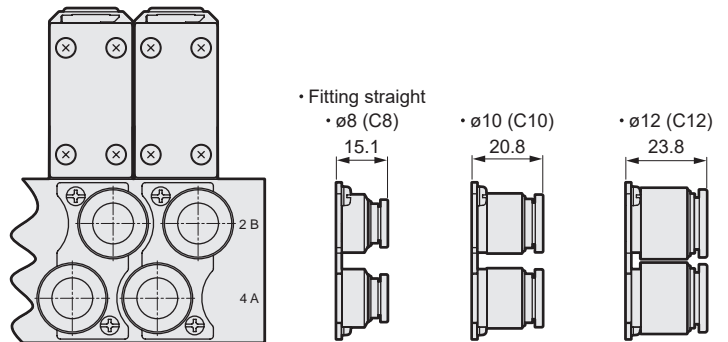
●M4GE2*0EJ-P4



●M4GE3*0EJ-P4



●M4GE4*0EJ-P4



* Fitting dimensions of P4 Series are different from the standard when mounted. Refer to "Cautions for mounting the DIN rail" and "Intrinsically safe explosion-proof pilot operated 3, 5-port valve 4GD/E EJ Series (No.CC-1445A)", and select the manifold.

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