

Intrinsically safe explosion-proof
pilot operated 3, 5-port valve

4GD/E EA Series



Smallest, Explosion-proof

Intrinsically safe explosion-proof solenoid valves starting from valve widths of 10mm

4GD/E1 to 4

Explosion-proof performance: II 2G Ex ib II C T4 Gb

 IBE_xU 19ATEX1035



Smallest, Explosion-proof Intrinsically safe explosion-proof solenoid valves starting 4GD/E1 to 4 Series

Space saving/lightweight

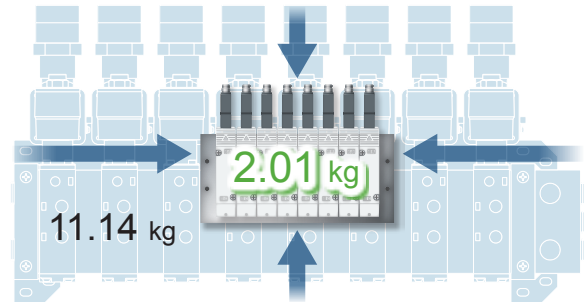
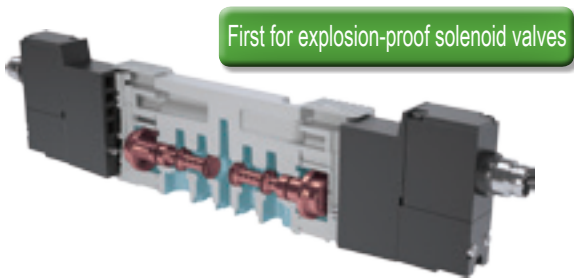
Ideal for narrow explosion-proof areas.

Footprint	Ultra-lightweight
84% Smaller	82% Lighter

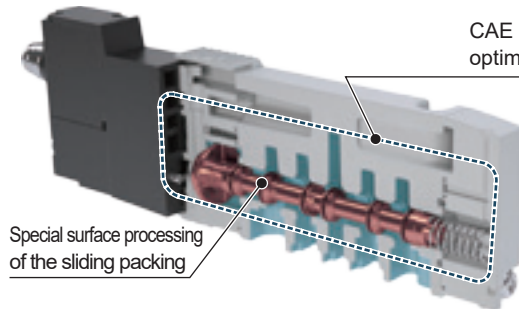
*Conventional 8-station model comparison

Product featuring two 3-port valves at single-unit size

4GE3/4F3 footprint, weight comparison

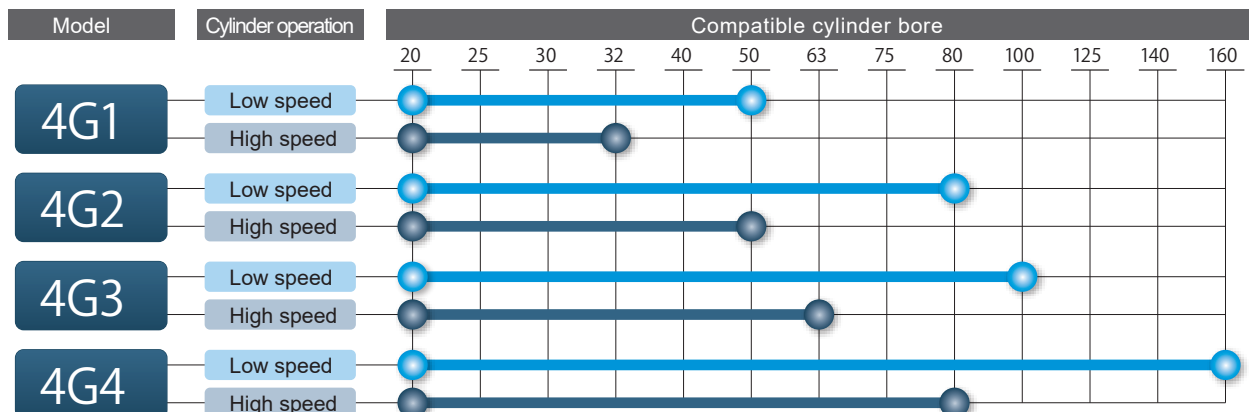


High durability



Durability count
50 million
cycles

Wide-range lineup



*Table is a guideline only. Varies according to piping conditions, load factor, etc.
Refer to the system selection in "Pneumatic Valves" (No. CB-023S) for details on component selection.

from valve widths of 10mm

Explosion-proof performance: II 2G Ex ib IIC T4 Gb

IBExU 19ATEX1035

Degree of protection

IP67

High environmental performance, reliability and ease of use

Prevents manual misoperation

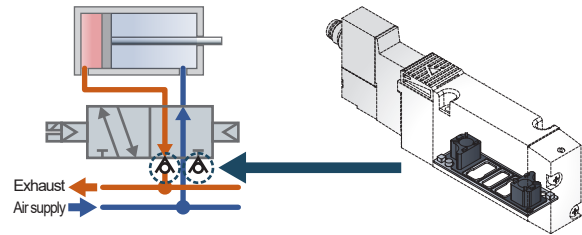
Manual override has a protective cover.



Helps prevent misoperation problems

[Exhaust check valve]

Equipped as standard with both metal base and resin block. (4G*1 to 4G*3 EA compatible)



2-direction wiring plug



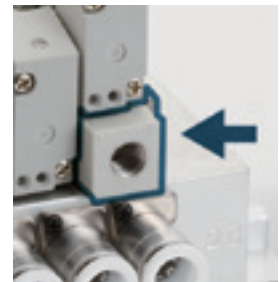
Air Supply/Exhaust Spacer

[Air supply spacer]

The spacer can regulate the pressure for each valve to supply air. Ideal for increasing and decreasing the pressure of individual valves to control cylinder forces.

[Exhaust spacer]

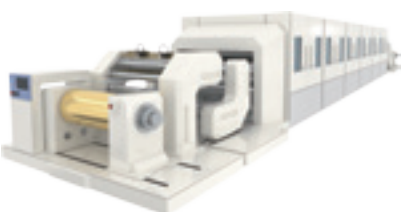
The spacer can independently exhaust air, preventing false triggering of single acting cylinders.



Applications

 Ideal explosion-proof specifications for narrow spaces

Coating equipment



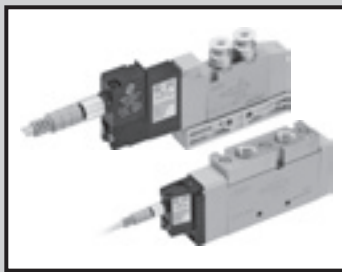
Liquid conditioning equipment



Analysis systems



The space occupied by solenoid valves can be significantly reduced when an intrinsically safe explosion-free structure is required.



Discrete valve
Body piping

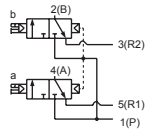
3GD1/2 / 4GD1/2/3/4*0EA Series

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



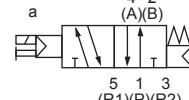
JIS symbol

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

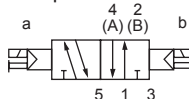


- 5-port valve

2-position single

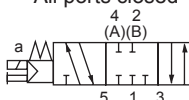


2-position double

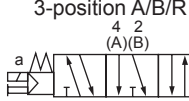


3-position

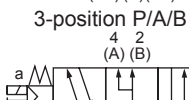
All ports closed



3-position A/B/R connection



3-position P/A/B connection



3GD*0EA
4GD*0EA

3GE*0EA
4GE*0EA

M3GD*0EA
M4GD*0EA

M3GE*0EA
M4GE*0EA

Related products

Manifold
Specifications sheet

Safety precautions

Common specifications

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

Solenoid specifications

Descriptions	Content
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

Descriptions	Content
Types of explosion-proof structures	Intrinsic safety explosion-proof structure (ib)
Target gas or above listed ignitability and flame-proof grade	II 2G Ex ib IIC T4 Gb
Barrier input voltage	24V DC
Intrinsic safety circuit allowable voltage U _i	30V DC
Intrinsic safety circuit allowable current I _i	200 mA
Intrinsic safety circuit allowable power P _i	0.68W
Internal inductance L _i	Negligible value
Internal capacitance C _i	Negligible value

Individual specifications

Port size	3GD1/4GD1	3GD2/4GD2	4GD3	4GD4
2, 4-port (port A/B)	Push-in fitting $\varnothing 4, \varnothing 6$ M5	Push-in fitting $\varnothing 4, \varnothing 6, \varnothing 8$ G1/8	Push-in fitting $\varnothing 6, \varnothing 8, \varnothing 10$ G1/4	Push-in fitting $\varnothing 8, \varnothing 10, \varnothing 12$ G3/8
1,3,5-port (port P/R1/R2)	M5	G1/8	G1/4	G1/4

Performance/characteristics by model

Descriptions	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														
ms	2-position	Single	-	-	-	-	15	35	20	40	25	60	100	110	
		Double	-	-	-	-	25	25	30	30	35	35	110	110	
	3-position	ABR connection		-	-	-	-	20	40	25	45	35	60	100	160

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

Weight

Descriptions	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	ABR connection	84(77)	148(118)	187(143)	361(367)

· Values in () do not include the piping adapter. 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*0EA 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
		ABR connection	1.1	0.33	0.72	0.34
		PAB 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
		ABR connection	2.3	0.26	2.8	0.27
		PAB 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
		ABR connection	3.1	0.33	4.1	0.20
		PAB 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
		ABR connection	6.9	0.38	8.4	0.34
		PAB connection	8.9	0.37	7.6	0.27

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

3GD*0EA
4GD*0EA

3GE*0EA
4GE*0EA

M3GD*0EA
M4GD*0EA

M3GE*0EA
M4GE*0EA

Related products

Manifold
Specifications sheet

Safety precautions

3GD1/2 / 4GD1·2·3·4*0EA Series

Discrete valve; body piping

How to order (solenoid valve single unit)

● Single unit



A Model No.					
3GD1	3GD2	4GD1	4GD2	4GD3	4GD4

Code	Content	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	Two 3-port valves integrated *1	●	●				
	A valve side: Normally closed						
	B valve side: Normally closed						
C Explosion-proof Series							
EA	Product compliant to ATEX Directive	●	●	●	●	●	●
D Port size {ports 4(A), 2(B)}							
Port	4(A)/2(B) port	Port P/R1/R2 (1) = M5 (2) = G1/8 (3) = G1/4					
C4G	ø4 push-in fitting	(1)	(2)	(1)	(2)		
C6G	ø6 push-in fitting	(1)	(2)	(1)	(2)	(3)	
C8G	ø8 push-in fitting		(2)		(2)	(3)	(3)
C10G	ø10 push-in fitting					(3)	(3)
C12G	ø12 push-in fitting						(3)
M5G	M5	(1)		(1)			
06G	G1/8		(2)		(2)		
08G	G1/4					(3)	
10G	G3/8						(3)
E Electrical connections *2							
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	●	●	●	●	●	●
P	Mounting plate attached (for 2-position single only)			●	●	●	●
F	A/B port filter *4	●	●	●	●	●	●
G Voltage							
4	12V DC	●	●	●	●	●	●

⚠ Precautions for model No. selection

- *1 Dimensions are the same as the respective 2-position double solenoid.
- *2 M8 connector length is 300 mm. Select other lengths from page 63 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 67.

3GD*0EA
4GD*0EA

3GE*0EA
4GE*0EA

M3GD*0EA
M4GD*0EA

M3GE*0EA
M4GE*0EA

Related products

Manifold
Specifications sheet

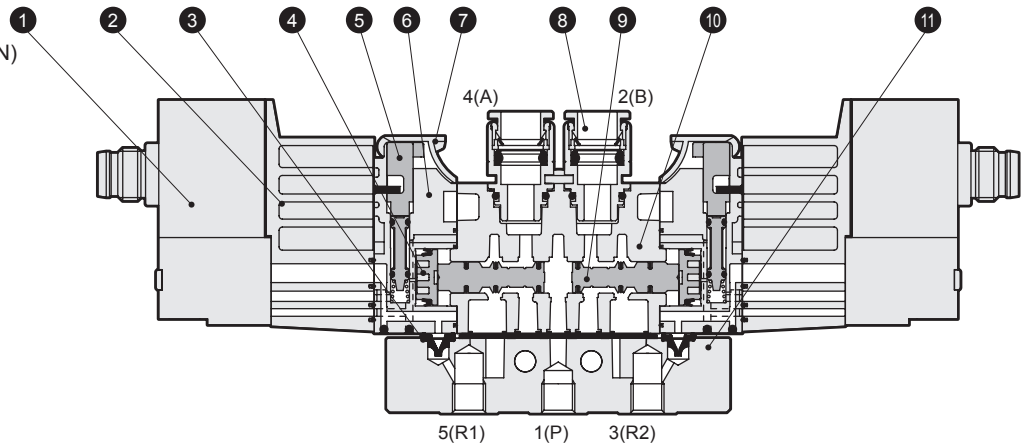
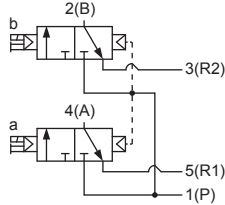
Safety precautions

Internal structure diagram and parts list

3GD1660EA

- Two 3-port valves integrated M8 connector without cable (RN)

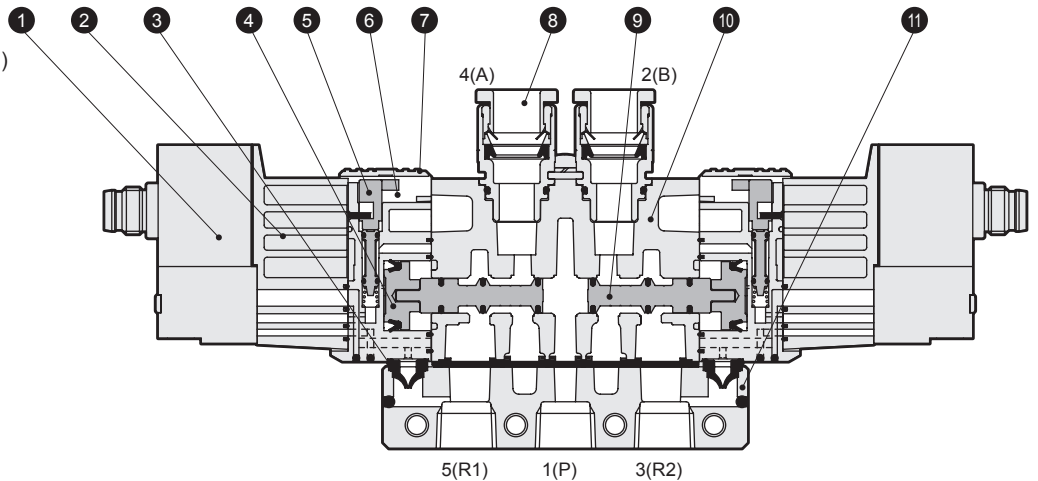
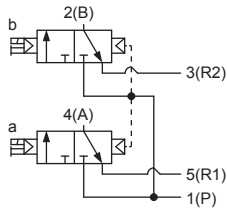
A side valve: Normally closed,
B side valve: Normally closed



3GD2660EA

- Two 3-port valves integrated M8 connector without cable (RN)

A side valve: Normally closed,
B side valve: Normally closed



Main parts list

No.	Part name	Material
1	Coil assembly	-
2	Adapter	Resin
3	Pilot exhaust check valve	Hydrogenated nitrile rubber
4	Piston D assembly	-
5	Manual override	Resin
6	Piston chamber	Resin
7	Manual protection cover	Resin
8	Cartridge push-in fitting	-
9	Spool assembly	-
10	Body	Aluminum alloy die-casting
11	Piping adapter	Aluminum alloy die-casting

Parts list

No.	Part name	No.
8	Cartridge push-in fittings and related parts	ø4 straight 4G1R-JOINT-C4
		ø6 straight 4G1R-JOINT-C6
		Plug cartridge 4G1R-JOINT-CPG

3GD*0EA
4GD*0EA

3GE*0EA
4GE*0EA

M3GD*0EA
M4GD*0EA

M3GE*0EA
M4GE*0EA

Related products

Manifold
Specifications sheet

Safety precautions

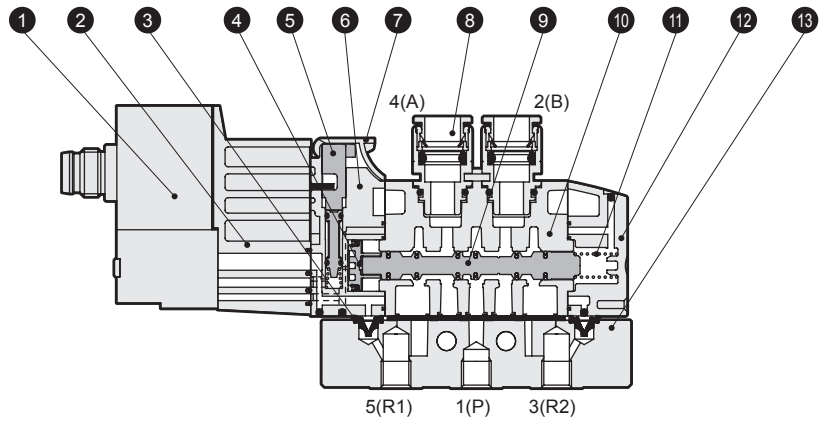
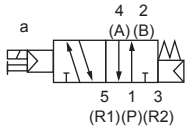
4GD1*0EA Series

Discrete valve; body piping

Internal structure diagram and parts list

4GD110EA

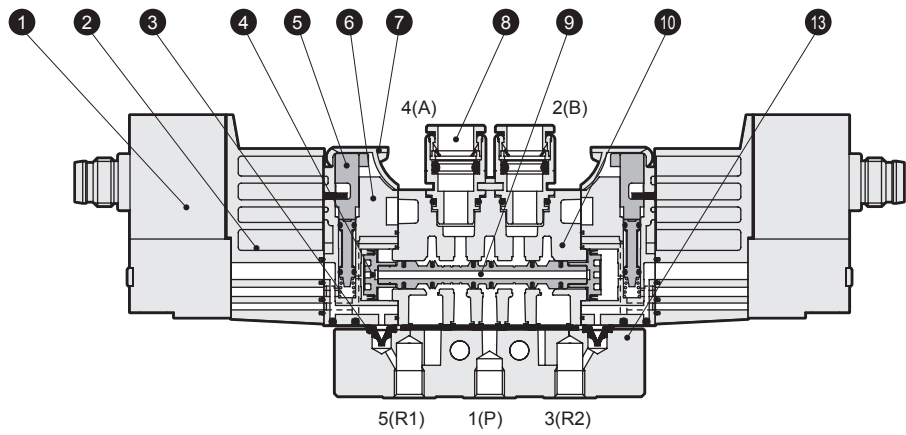
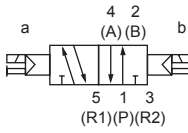
- 2-position single
- M8 connector without cable (RN)



3GD*0EA
4GD*0EA

4GD120EA

- 2-position double
- M8 connector without cable (RN)

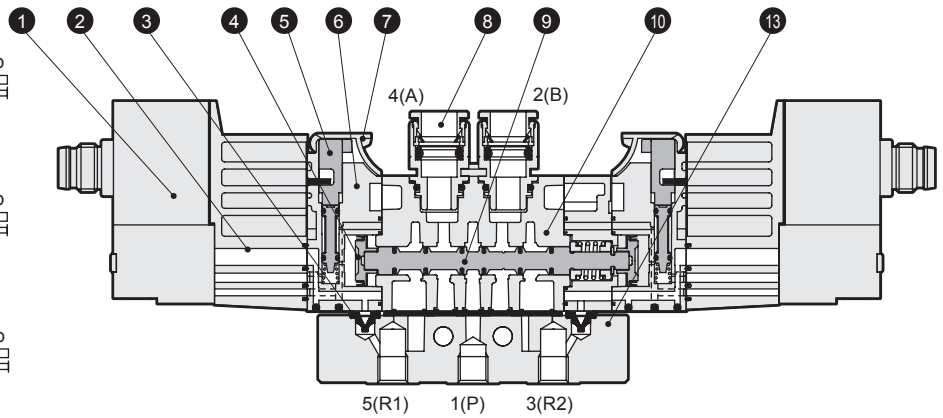
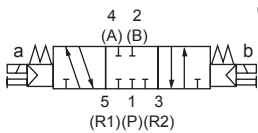


3GE*0EA
4GE*0EA

M3GD*0EA
M4GD*0EA

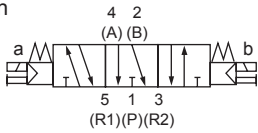
4GD1³/₄/₅0EA

- 3-position
- M8 connector without cable (RN)
- All ports closed

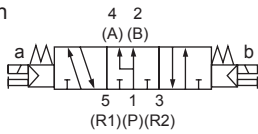


M3GE*0EA
M4GE*0EA

A/B/R connection



P/A/B connection



Related products

Manifold
Specifications sheet

Main parts list

No.	Part name	Material
1	Coil assembly	-
2	Adapter	Resin
3	Pilot exhaust check valve	Hydrogenated nitrile rubber
4	Piston D assembly	-
5	Manual override	Resin
6	Piston chamber	Resin
7	Manual protection cover	Resin
8	Cartridge push-in fitting	-
9	Spool assembly	-
10	Body	Aluminum alloy die-casting
11	Spool spring	Stainless steel
12	Cap	Resin
13	Piping adapter	Aluminum alloy die-casting

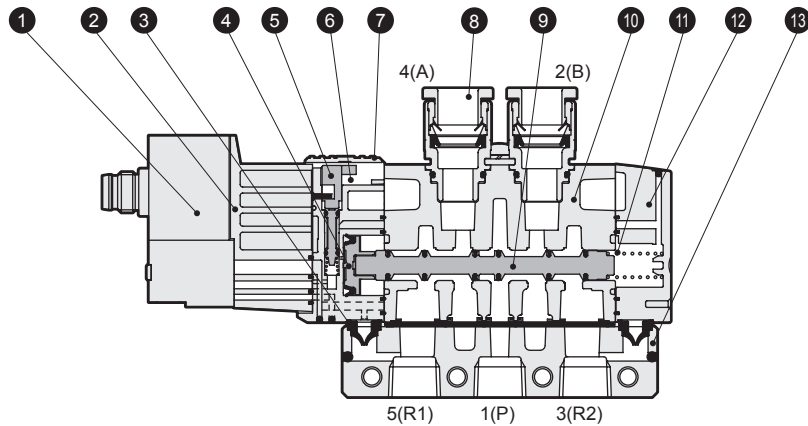
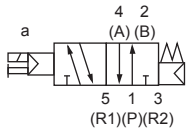
Parts list

No.	Part name	No.
8	Cartridge push-in fittings and related parts	ø4 straight 4G1R-JOINT-C4
		ø6 straight 4G1R-JOINT-C6
		Plug cartridge 4G1R-JOINT-CPG

Internal structure diagram and parts list

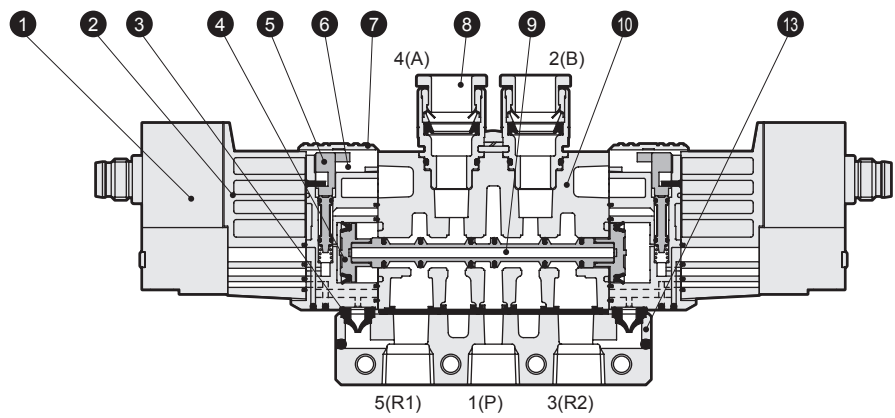
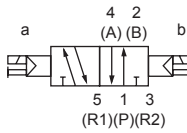
4GD210EA/4GD310EA

- 2-position single
- M8 connector without cable (RN)



4GD220EA/4GD320EA

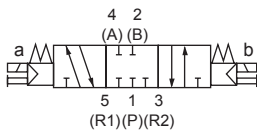
- 2-position double
- M8 connector without cable (RN)



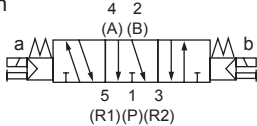
4GD2³/₄0EA/4GD3³/₅0EA

- 3-position
- M8 connector without cable (RN)

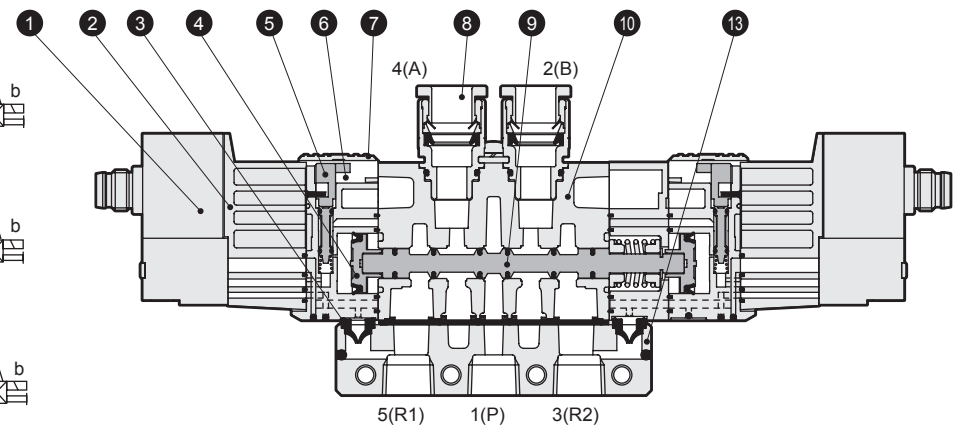
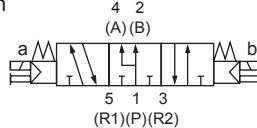
All ports closed



A/B/R connection



P/A/B connection



Main parts list

No.	Part name	Material
1	Coil assembly	-
2	Adapter	Resin
3	Pilot exhaust check valve	Hydrogenated nitrile rubber
4	Piston D assembly	-
5	Manual override	Resin
6	Piston chamber	Resin
7	Manual protection cover	Resin
8	Cartridge push-in fitting	-
9	Spool assembly	-
10	Body	Aluminum alloy die-casting
11	Spool spring	Stainless steel
12	Cap	Resin
13	Piping adapter	Aluminum alloy die-casting

Parts list

No.	Part name	No.	
8	Cartridge push-in fittings and related parts	ø4 straight	4G2R-JOINT-C4
		ø6 straight	4G2R-JOINT-C6
		ø8 straight	4G2R-JOINT-C8
		ø6 straight	4G3R-JOINT-C6
		ø8 straight	4G3R-JOINT-C8
		ø10 straight	4G3R-JOINT-C10

3GD*0EA
4GD*0EA

3GE*0EA
4GE*0EA

M3GD*0EA
M4GD*0EA

M3GE*0EA
M4GE*0EA

Related products

Manifold
Specifications sheet

Safety precautions

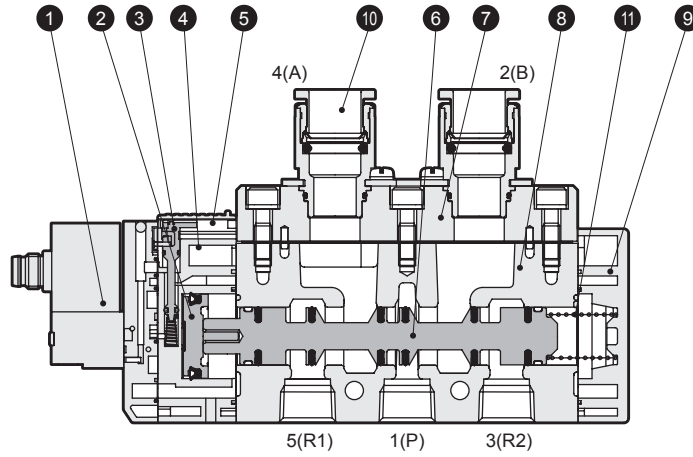
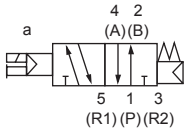
4GD4*0EA Series

Discrete valve; body piping

Internal structure diagram and parts list

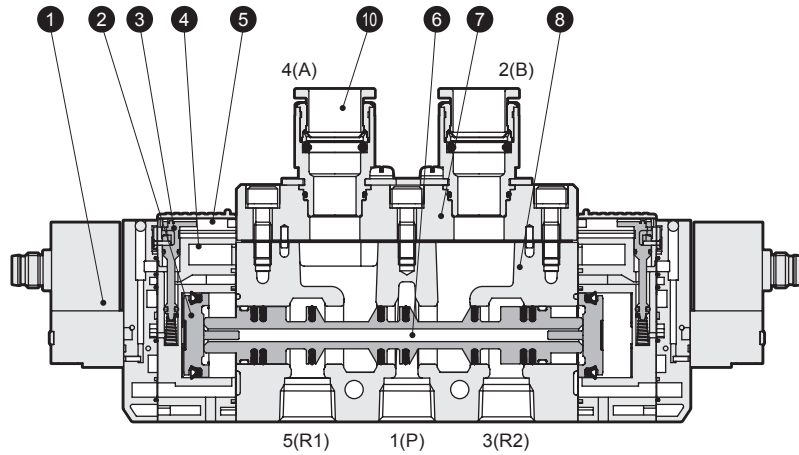
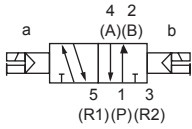
4GD410EA

- 2-position single
- M8 connector without cable (RN)



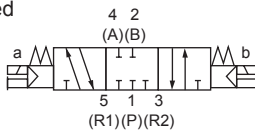
4GD420EA

- 2-position double
- M8 connector without cable (RN)

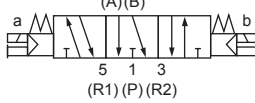


4GD4³0EA

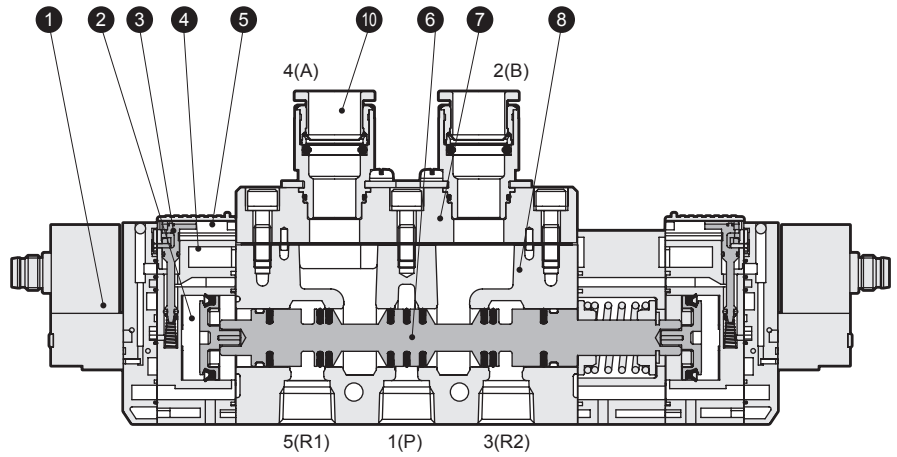
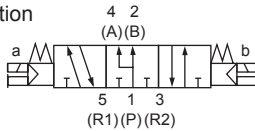
- 3-position
- M8 connector without cable (RN)
- All ports closed



A/B/R connection



P/A/B connection



Main parts list

No.	Part name	Material
1	Coil assembly	-
2	Piston assembly	-
3	Manual override	Resin
4	Piston chamber	Resin
5	Manual protection cover	Resin
6	Spool assembly	-
7	Fitting adapter	Aluminum
8	Body	Aluminum alloy die-casting
9	Cap	Resin
10	Cartridge push-in fitting	-
11	Spool spring	Stainless steel

Parts list

No.	Part name	No.
-	Cartridge	4G4-JOINT-C8
-	push-in fittings	4G4-JOINT-C10
-	and related parts	4G4-JOINT-C12

3GD*0EA
4GD*0EA

3GE*0EA
4GE*0EA

M3GD*0EA
M4GD*0EA

M3GE*0EA
M4GE*0EA

Related products

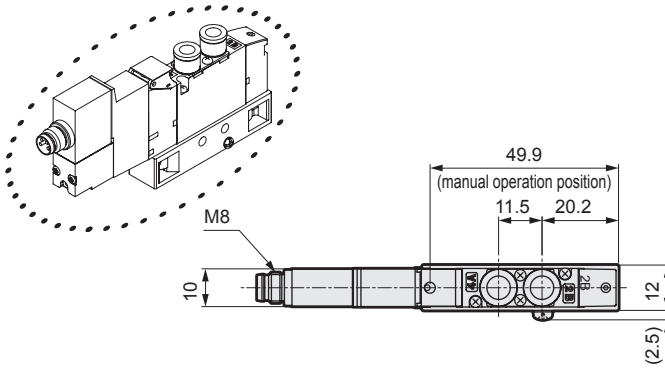
Manifold
Specifications sheet

Safety precautions

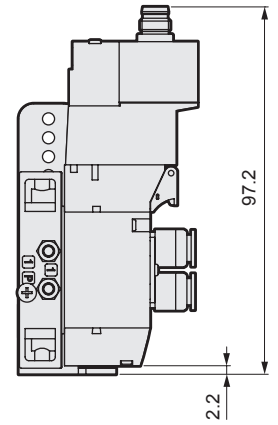
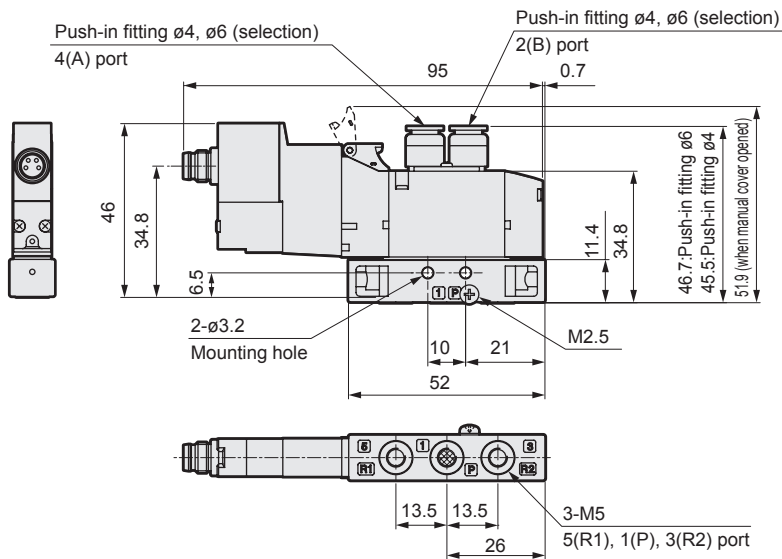
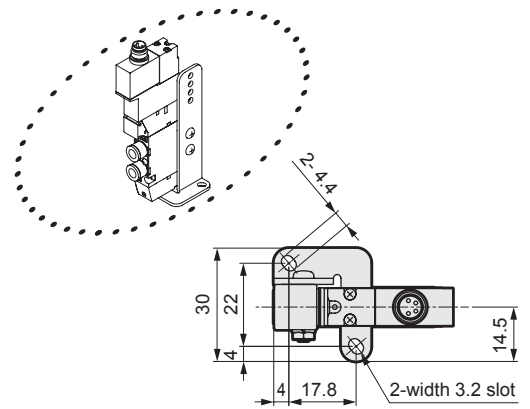
Dimensions

4GD110EA

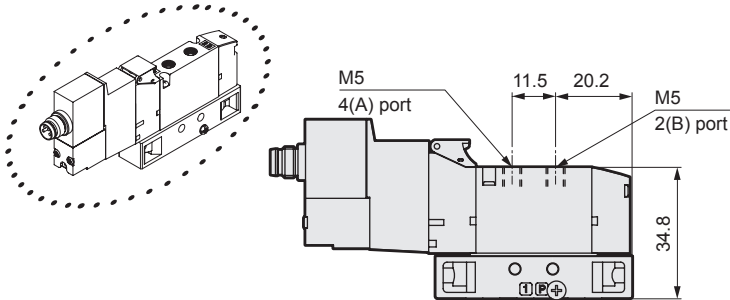
● 2-position single without connector (RN)



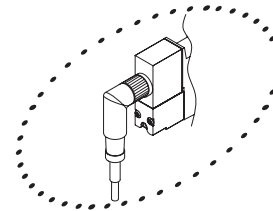
● Mounting plate (P)



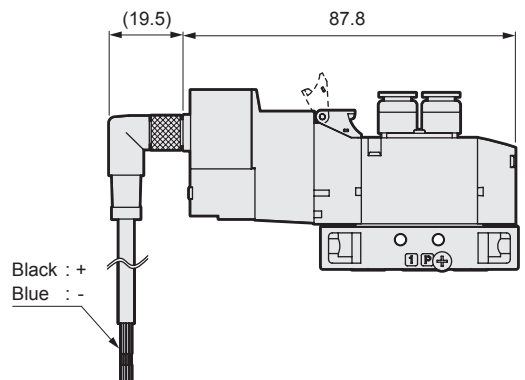
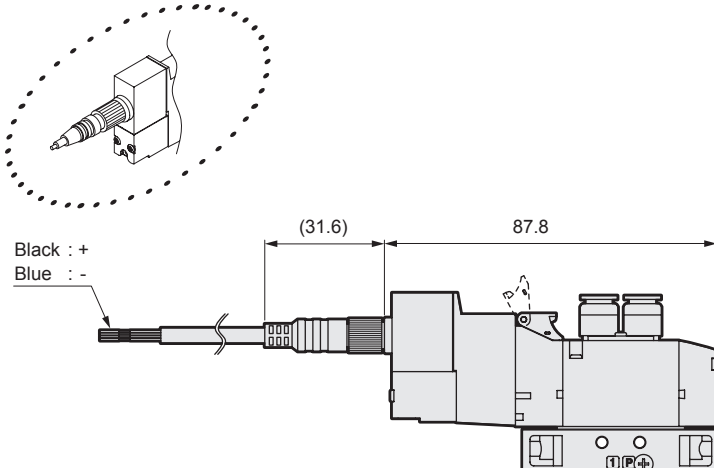
● M5 female thread (M5G)



● M8 connector/L-type cable (R2)



● M8 connector/straight cable (R1)



3GD*0EA
4GD*0EA

3GE*0EA
4GE*0EA

M3GD*0EA
M4GD*0EA

M3GE*0EA
M4GE*0EA

Related products

Manifold
Specifications sheet

Safety precautions

4GD1*0EA Series

Discrete valve; body piping

Dimensions

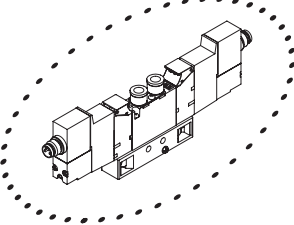
4GD120EA

- 2-position double without connector (RN)

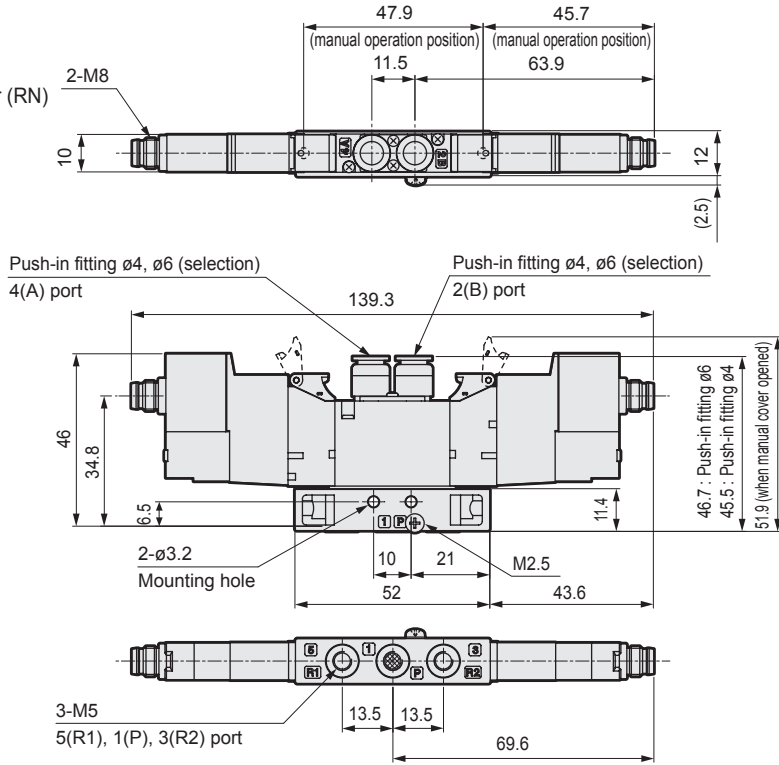
3GD1660EA

- Two 3-port valves integrated without connector (RN)

3GD*0EA
4GD*0EA

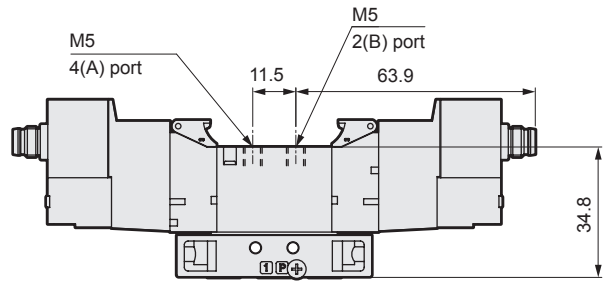
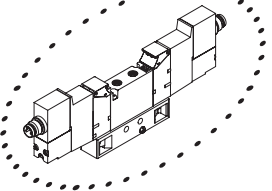


3GE*0EA
4GE*0EA



M3GD*0EA
M4GD*0EA

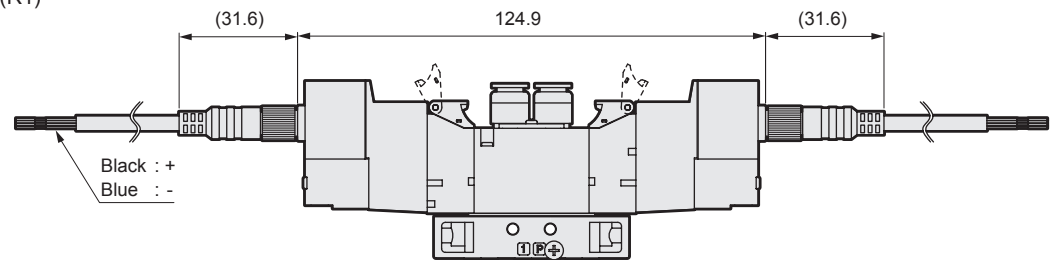
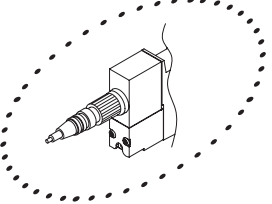
- M5 female thread (M5G)



M3GE*0EA
M4GE*0EA

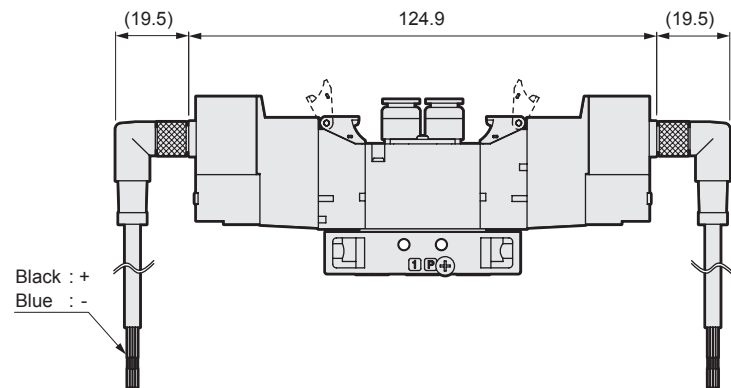
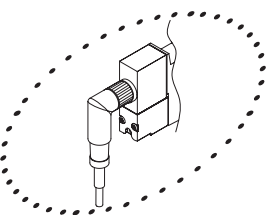
Related products

- M8 connector/straight cable (R1)



Manifold Specifications sheet

- M8 connector/L-type cable (R2)

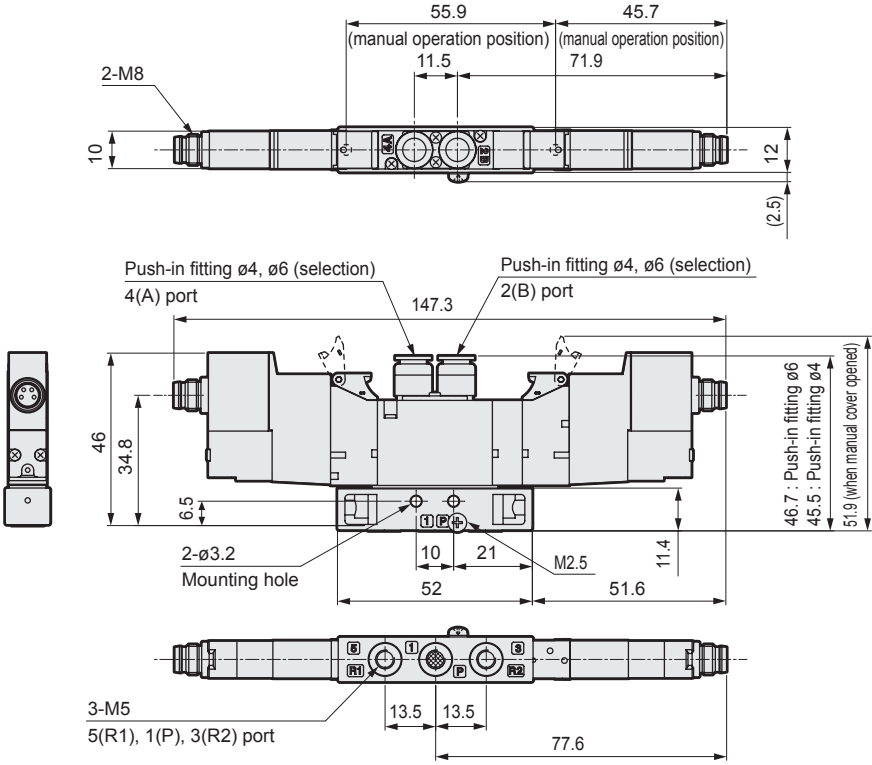
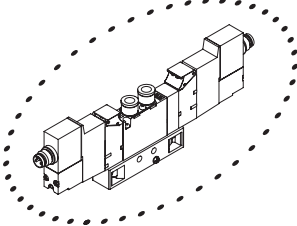


Safety precautions

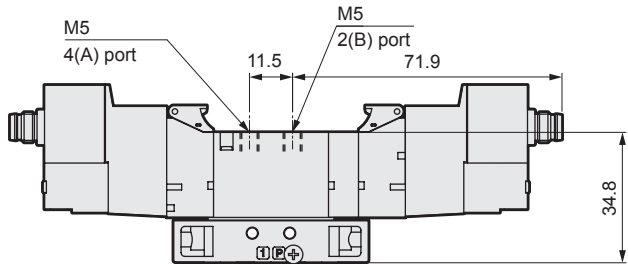
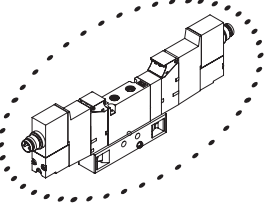
Dimensions

4GD1*0EA

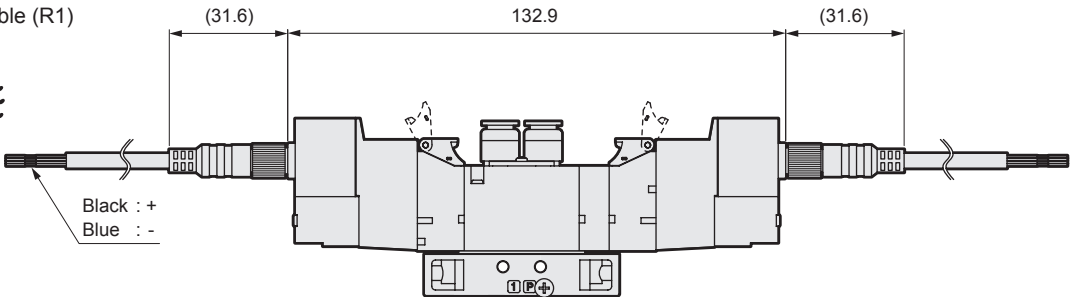
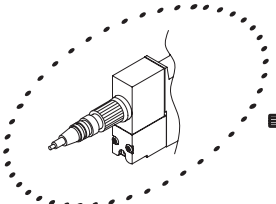
- 3-position without connector (RN)



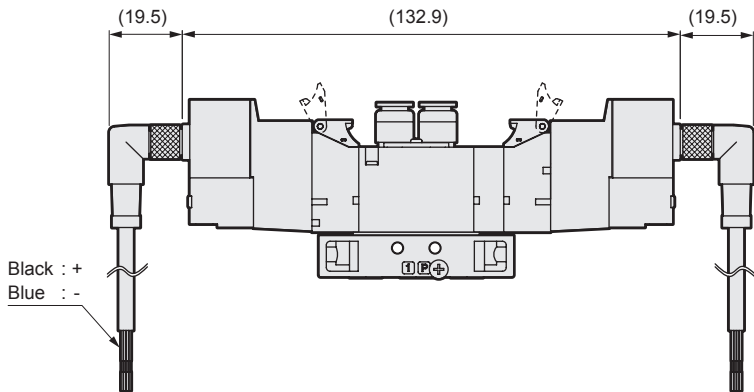
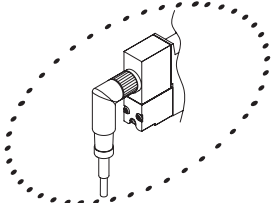
- M5 female thread (M5G)



- M8 connector/straight cable (R1)



- M8 connector/L-type cable (R2)



3GD*0EA
4GD*0EA

3GE*0EA
4GE*0EA

M3GD*0EA
M4GD*0EA

M3GE*0EA
M4GE*0EA

Related products

Manifold
Specifications sheet

Safety precautions

4GD2*0EA Series

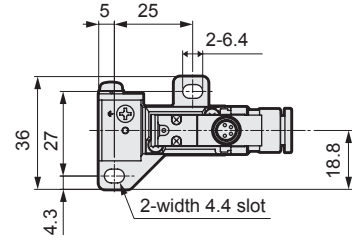
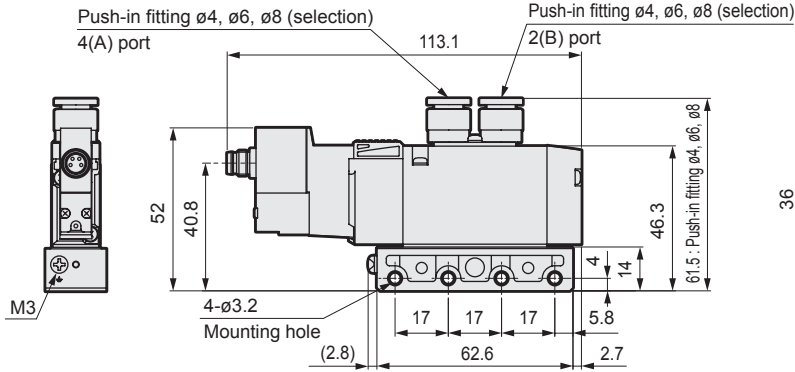
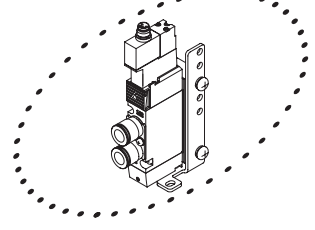
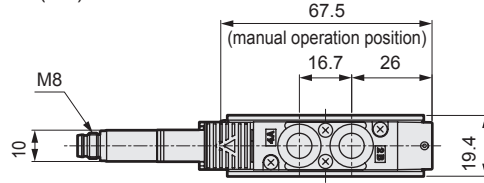
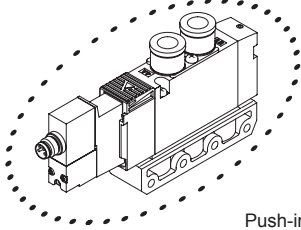
Discrete valve; body piping

Dimensions

4GD210EA

● 2-position single without connector (RN)

● Mounting plate (P)



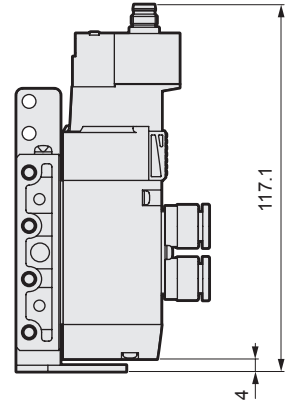
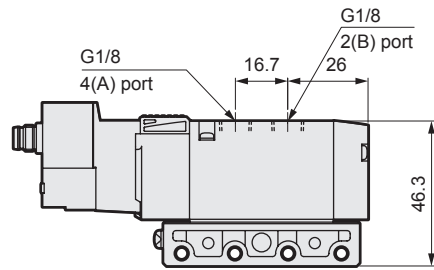
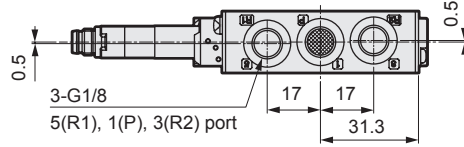
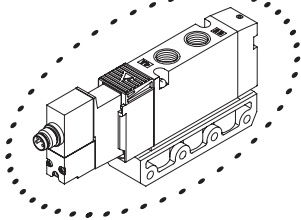
3GD*0EA
4GD*0EA

3GE*0EA
4GE*0EA

M3GD*0EA
M4GD*0EA

M3GE*0EA
M4GE*0EA

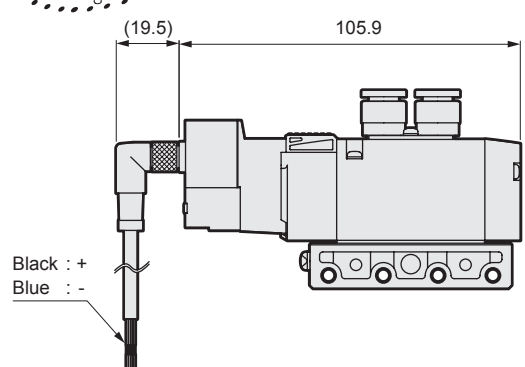
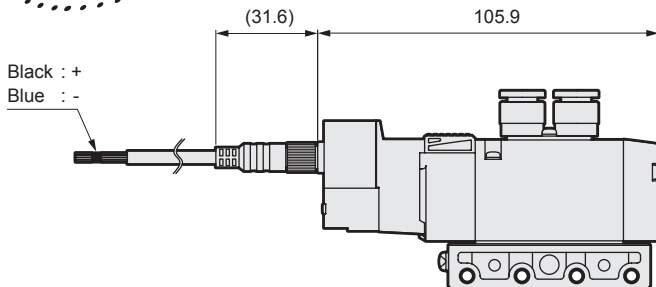
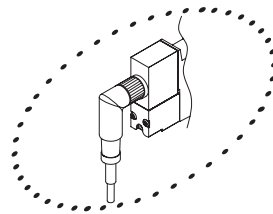
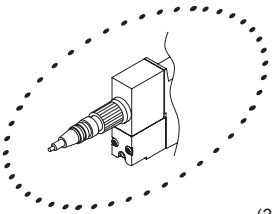
● G1/8 female thread (06G)



Related products

● M8 connector/straight cable (R1)

● M8 connector/L-type cable (R2)



Manifold
Specifications sheet

Safety precautions

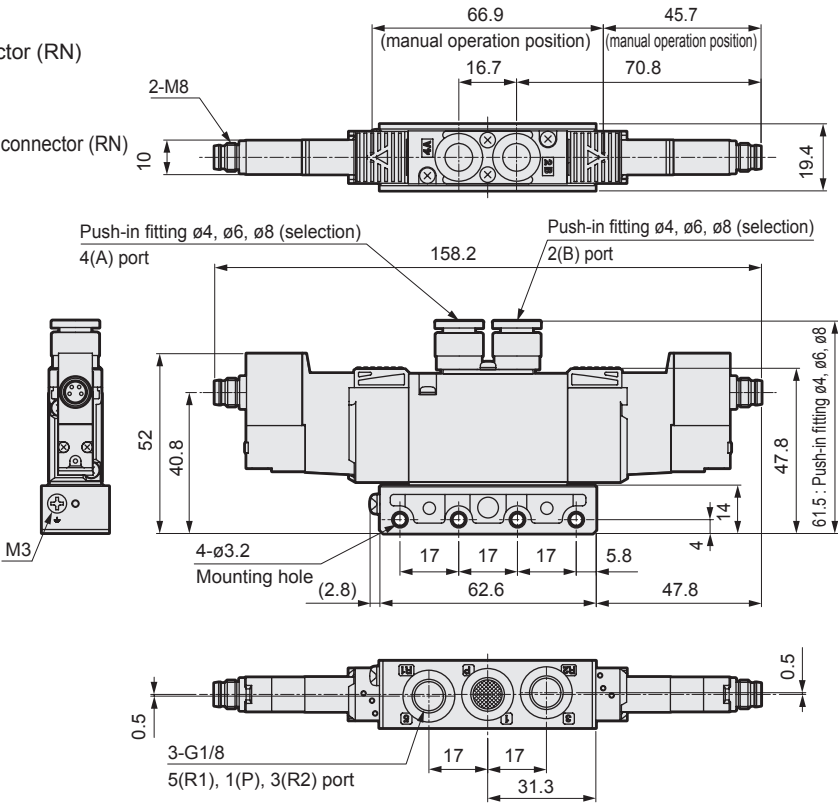
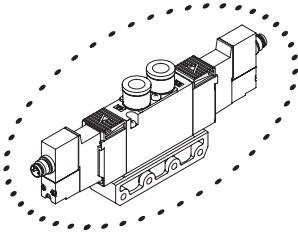
Dimensions

4GD220EA

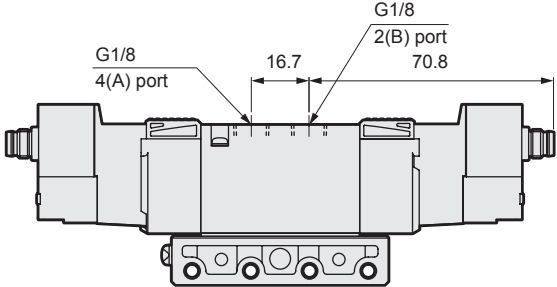
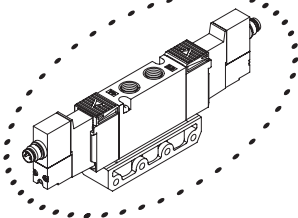
- 2-position double without connector (RN)

3GD2660EA

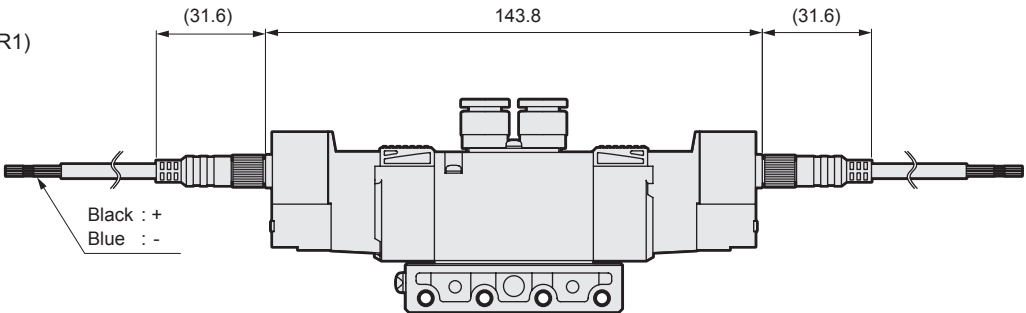
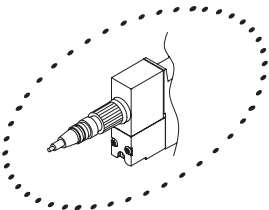
- Two 3-port valves integrated without connector (RN)



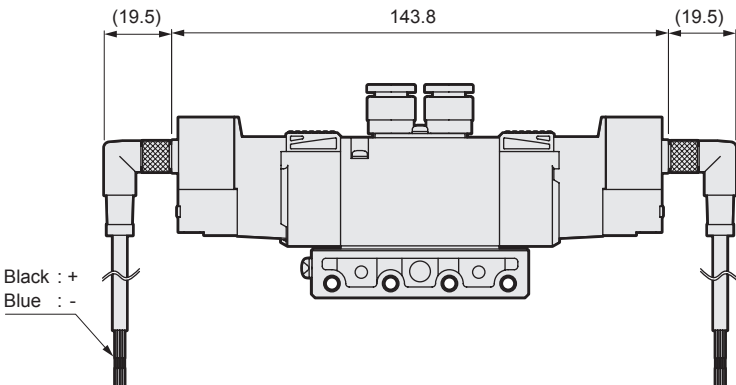
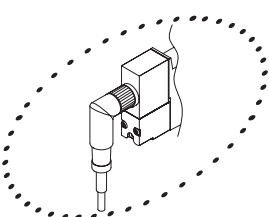
- G1/8 female thread (06G)



- M8 connector/straight cable (R1)



- M8 connector/L-type cable (R2)



3GD*0EA
4GD*0EA

3GE*0EA
4GE*0EA

M3GD*0EA
M4GD*0EA

M3GE*0EA
M4GE*0EA

Related products

Manifold
Specifications sheet

Safety precautions

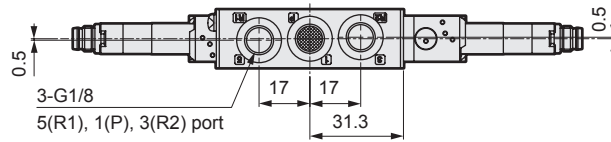
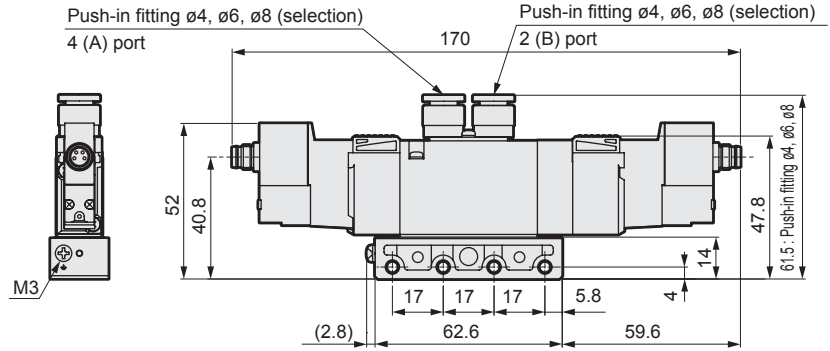
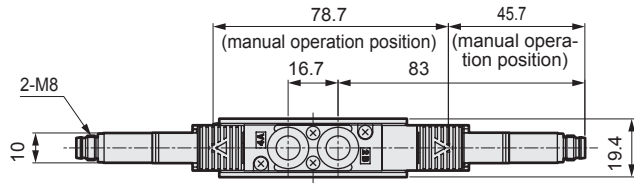
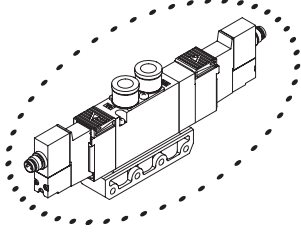
4GD2*0EA Series

Discrete valve; body piping

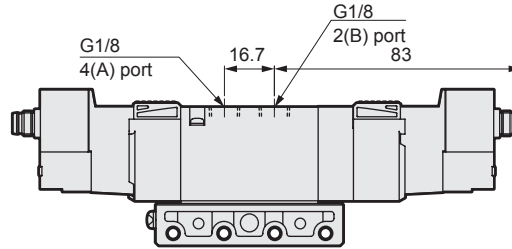
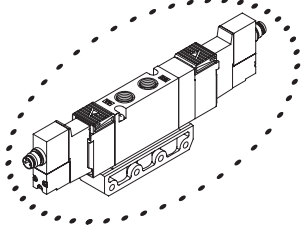
Dimensions

4GD2*0EA

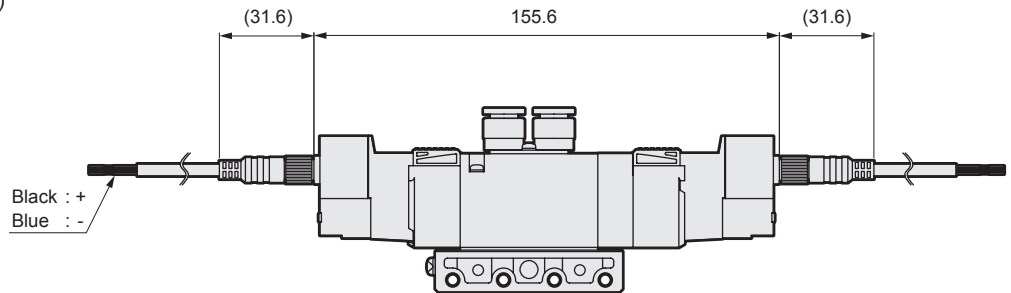
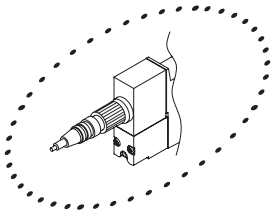
- 3-position without connector (RN)



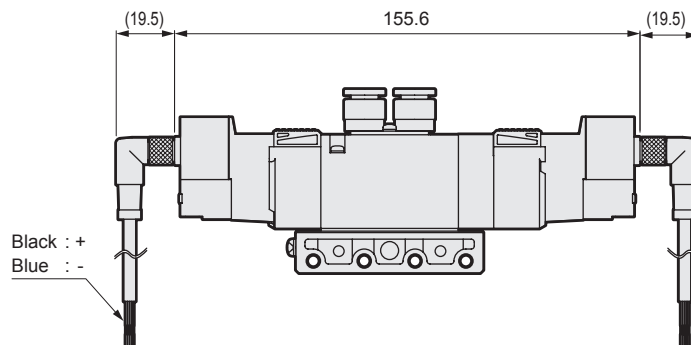
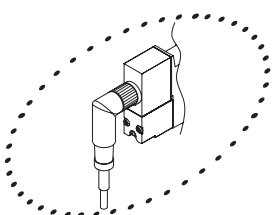
- G1/8 female thread (06G)



- M8 connector/straight cable (R1)



- M8 connector/L-type cable (R2)



3GD*0EA
4GD*0EA

3GE*0EA
4GE*0EA

M3GD*0EA
M4GD*0EA

M3GE*0EA
M4GE*0EA

Related products

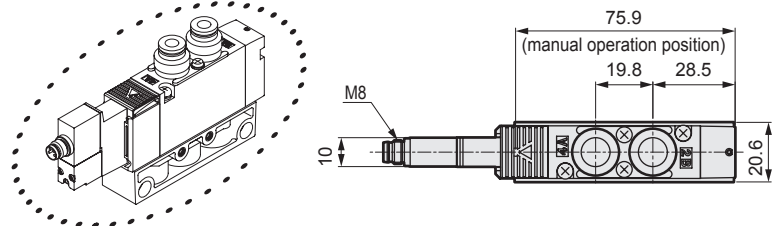
Manifold
Specifications sheet

Safety precautions

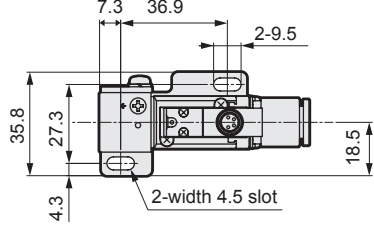
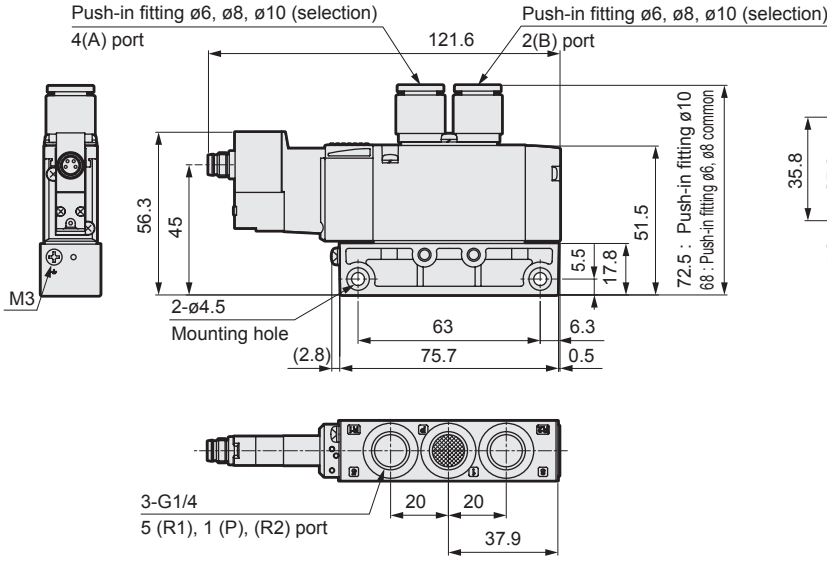
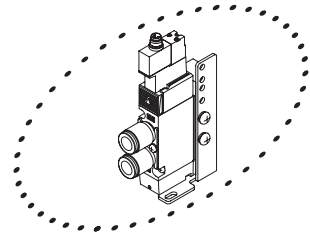
Dimensions

4GD310EA

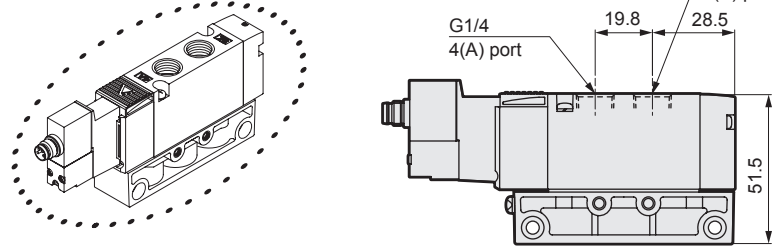
● 2-position single without connector (RN)



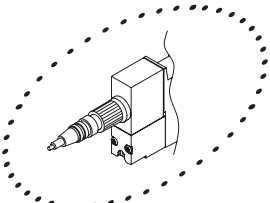
● Mounting plate (P)



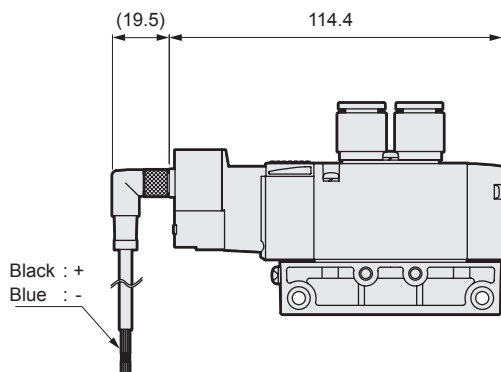
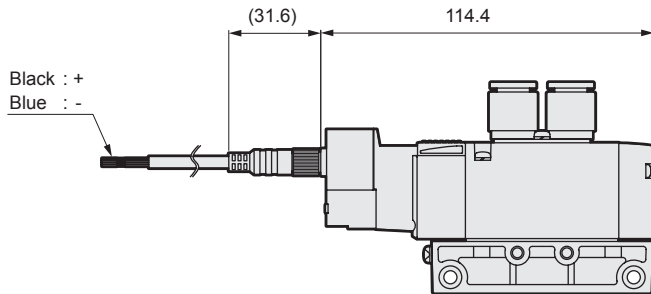
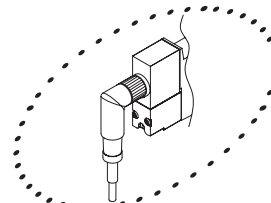
● G1/4 female thread (08G)



● M8 connector/straight cable (R1)



● M8 connector/L-type cable (R2)



3GD*0EA 4GD*0EA	3GE*0EA 4GE*0EA	M3GD*0EA M4GD*0EA	M3GE*0EA M4GE*0EA	Related products	Manifold Specifications sheet	Safety precautions
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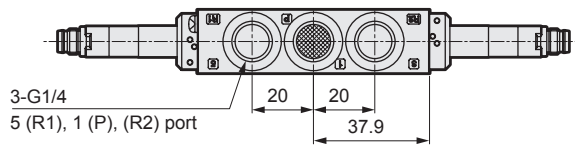
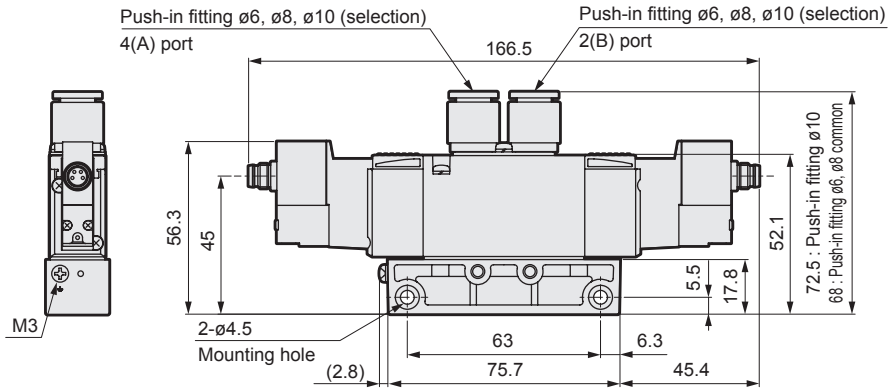
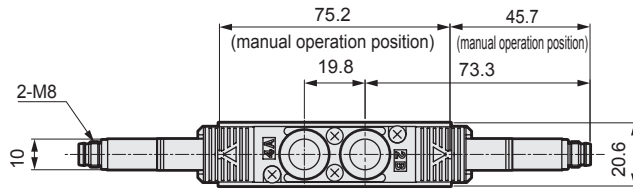
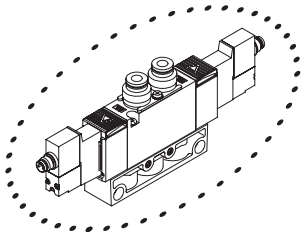
4GD3*0EA Series

Discrete valve; body piping

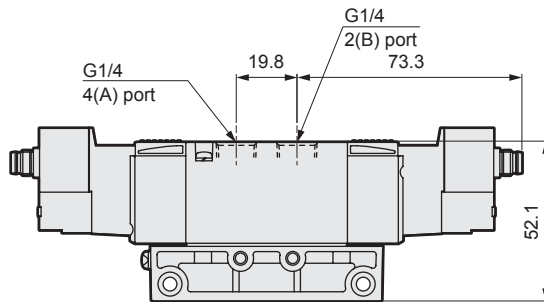
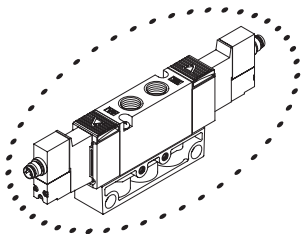
Dimensions

4GD320EA

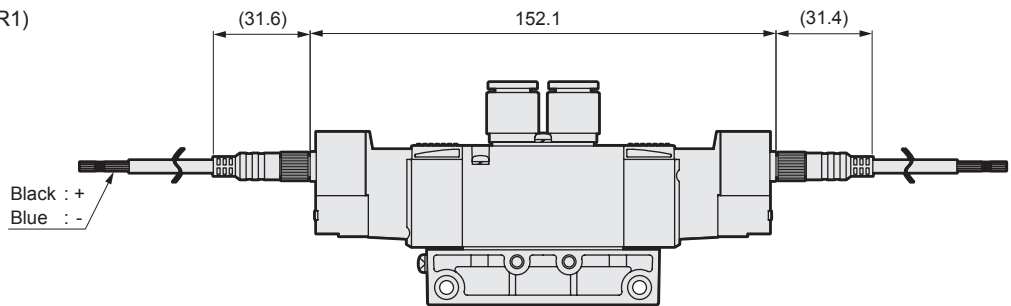
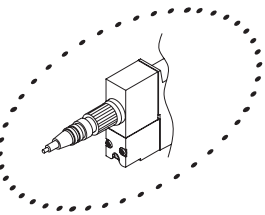
- 2-position double without connector (RN)



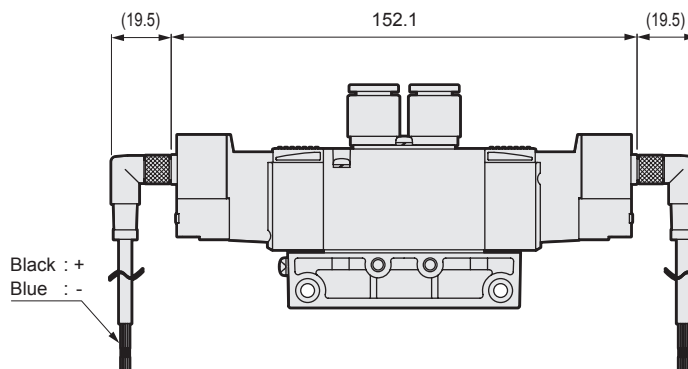
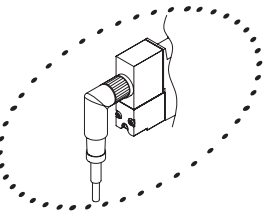
- G1/4 female thread (08G)



- M8 connector/straight cable (R1)



- M8 connector/L-type cable (R2)



3GD*0EA
4GD*0EA

3GE*0EA
4GE*0EA

M3GD*0EA
M4GD*0EA

M3GE*0EA
M4GE*0EA

Related products

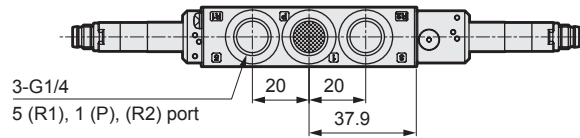
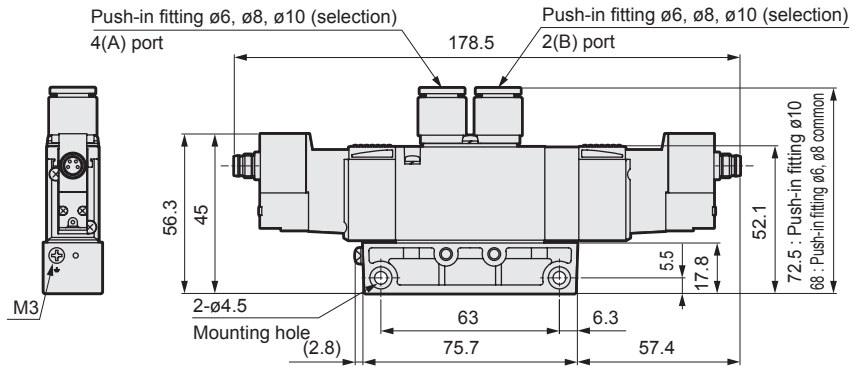
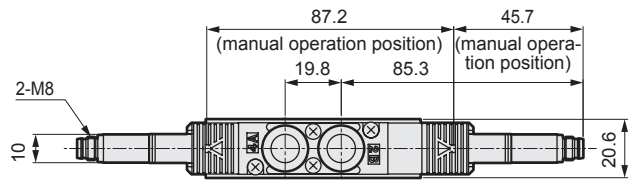
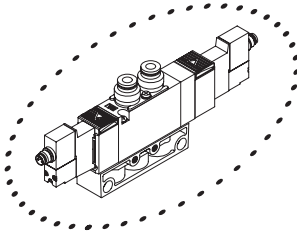
Manifold
Specifications sheet

Safety precautions

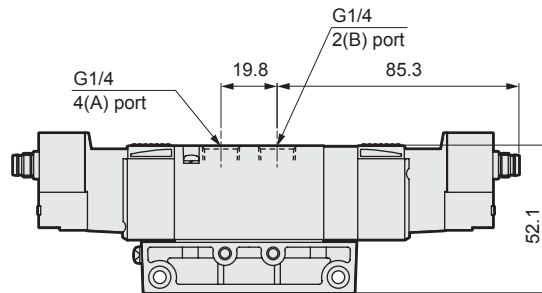
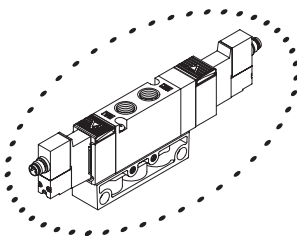
Dimensions

4GD3^{3/4}0EA

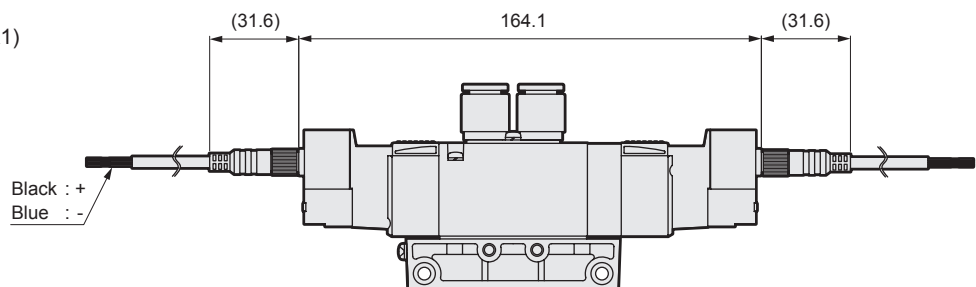
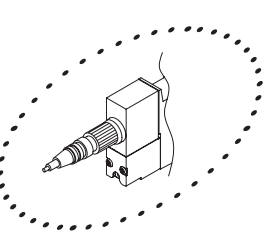
- 3-position without connector (RN)



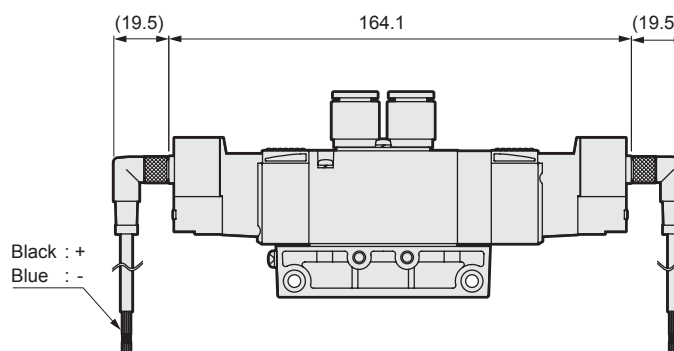
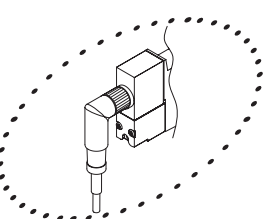
- G1/4 female thread (08G)



- M8 connector/straight cable (R1)



- M8 connector/L-type cable (R2)



3GD*0EA
4GD*0EA

3GE*0EA
4GE*0EA

M3GD*0EA
M4GD*0EA

M3GE*0EA
M4GE*0EA

Related products

Manifold
Specifications sheet

Safety precautions

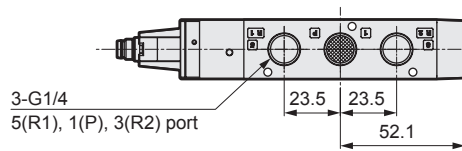
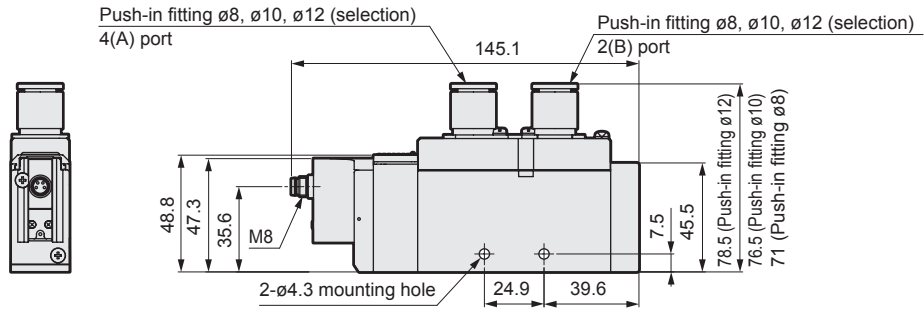
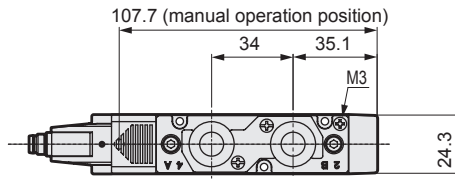
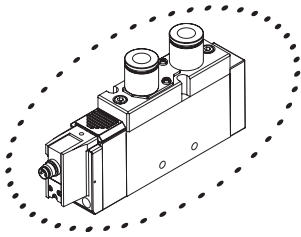
4GD4*0EA Series

Discrete valve; body piping

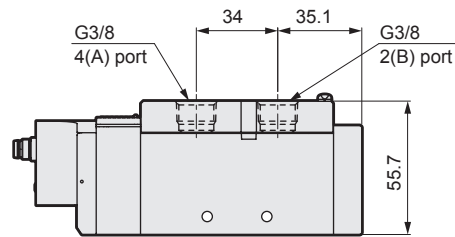
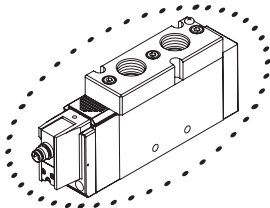
Dimensions

4GD410EA

- 2-position single without connector (RN)

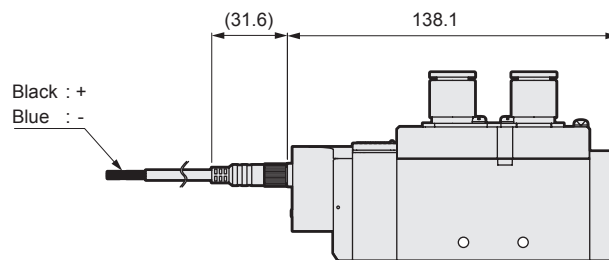
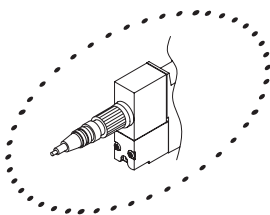


- G3/8 female thread (10G)



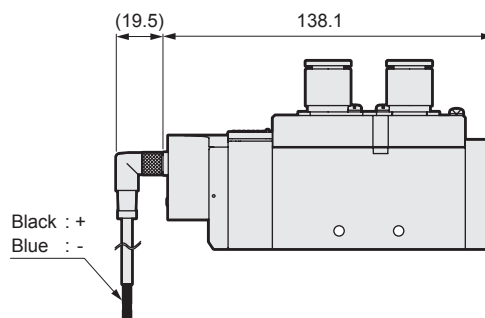
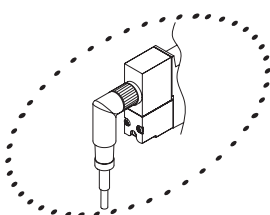
Related products

- M8 connector/straight cable (R1)



Manifold Specifications sheet

- M8 connector/L-type cable (R2)



Safety precautions

3GD*0EA
4GD*0EA

3GE*0EA
4GE*0EA

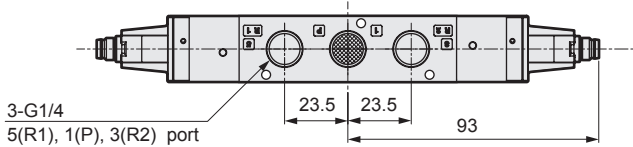
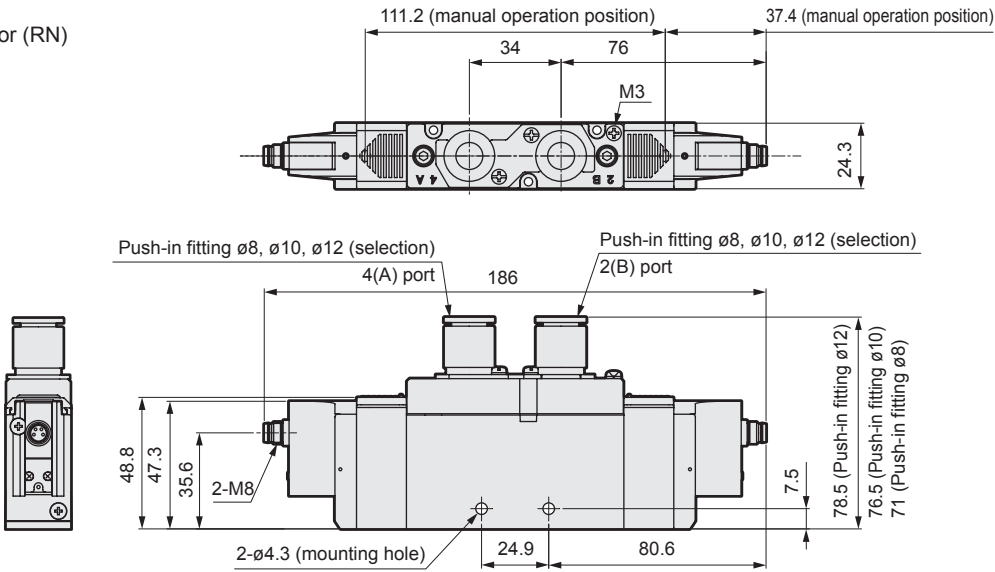
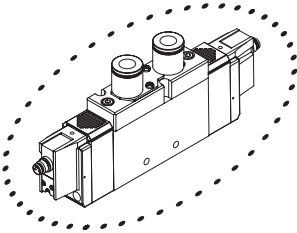
M3GD*0EA
M4GD*0EA

M3GE*0EA
M4GE*0EA

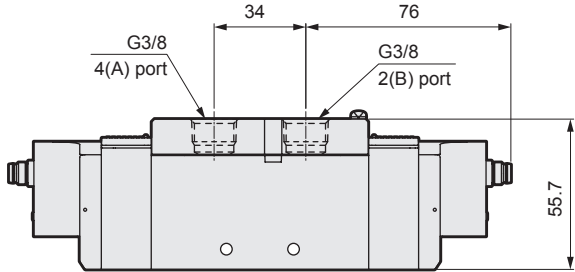
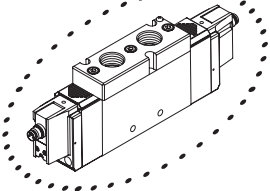
Dimensions

4GD420EA

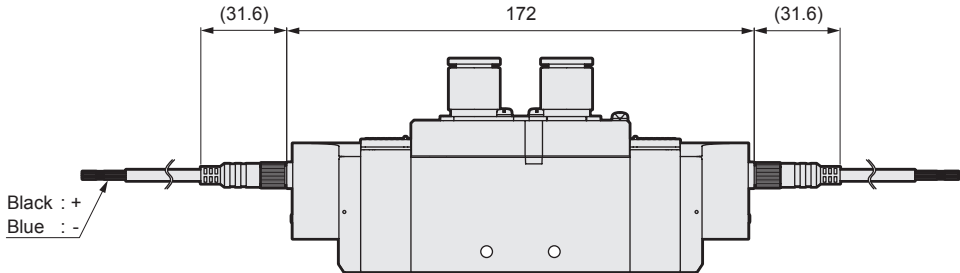
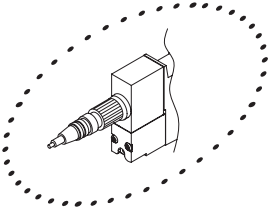
- 2-position double without connector (RN)



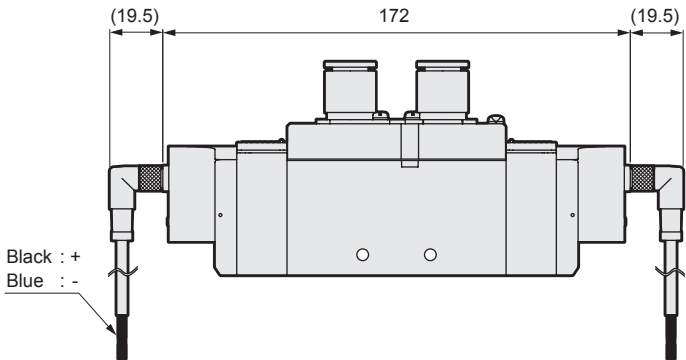
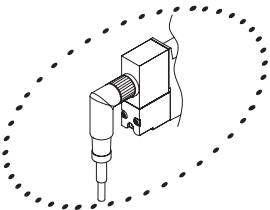
- G3/8 female thread (10G)



- M8 connector/straight cable (R1)



- M8 connector/L-type cable (R2)



3GD*0EA 4GD*0EA	3GE*0EA 4GE*0EA	M3GD*0EA M4GD*0EA	M3GE*0EA M4GE*0EA	Related products	Manifold Specifications sheet	Safety precautions
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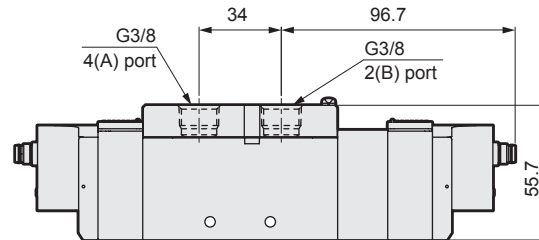
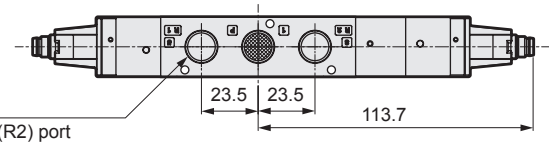
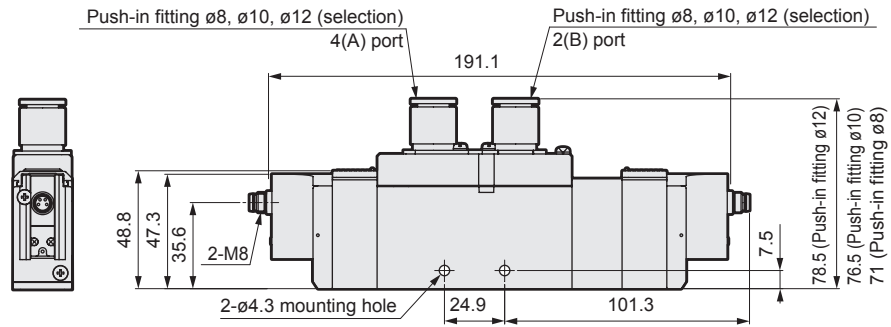
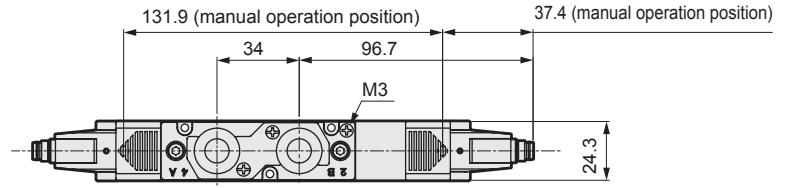
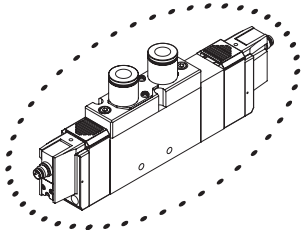
4GD4*0EA Series

Discrete valve; body piping

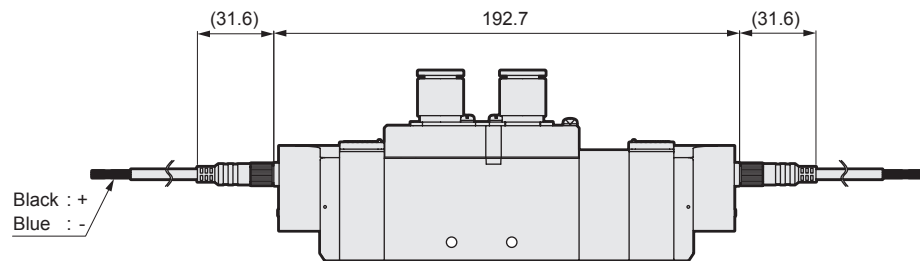
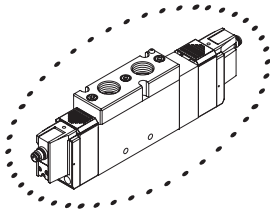
Dimensions

4GD4³/₄/₅0EA

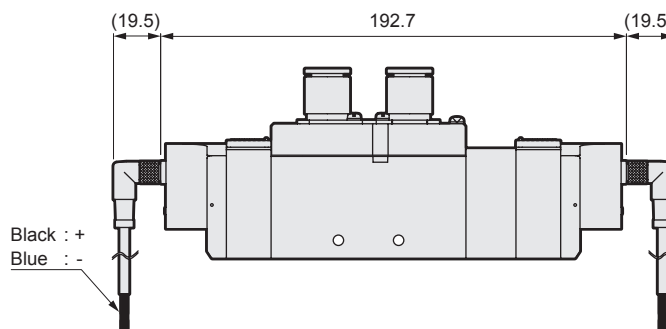
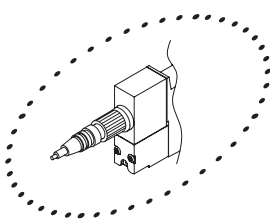
- 3-position without connector (RN)



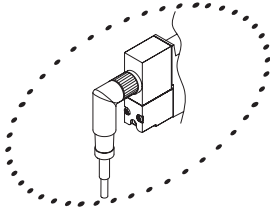
- G3/8 female thread (10G)



- M8 connector/straight cable (R1)



- M8 connector/L-type cable (R2)



3GD*0EA
4GD*0EA

3GE*0EA
4GE*0EA

M3GD*0EA
M4GD*0EA

M3GE*0EA
M4GE*0EA

Related products

Manifold
Specifications sheet

Safety precautions

3GD*0EA
4GD*0EA

3GE*0EA
4GE*0EA

M3GD*0EA
M4GD*0EA

M3GE*0EA
M4GE*0EA

Related products

Manifold
Specifications sheet

Safety precautions



Discrete valve
Base piping

3GE1/2 / 4GE1/2/3/4*0EA Series

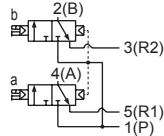
● Applicable cylinder bore size: $\varnothing 20$ to $\varnothing 160$



3GD*0EA
4GD*0EA

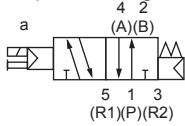
JIS symbol

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



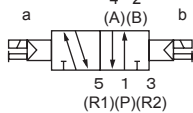
3GE*0EA
4GE*0EA

- 5-port valve
2-position single



M3GD*0EA
M4GD*0EA

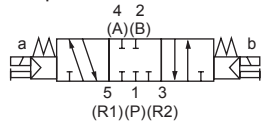
- 2-position double



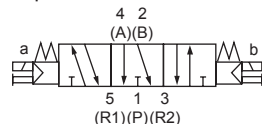
M3GE*0EA
M4GE*0EA

- 3-position

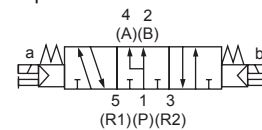
All ports closed



- 3-position A/B/R connection



- 3-position P/A/B connection



Common specifications

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

Solenoid specifications

Descriptions	Content
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. Counter-measures 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

Descriptions	Content
Types of explosion-proof structures	Intrinsic safety explosion-proof structure (ib)
Target gas or above listed ignitability and flame-proof grade	II 2G Ex ib IIC T4 Gb
Barrier input voltage	24V DC
Intrinsic safety circuit allowable voltage U _i	30V DC
Intrinsic safety circuit allowable current I _i	200 mA
Intrinsic safety circuit allowable power P _i	0.68W
Internal inductance L _i	Negligible value
Internal capacitance C _i	Negligible value

Individual specifications

Port size	3GE1/4GE1	3GE2/4GE2	4GE3	4GE4
2, 4-port (port A/B)	G1/8	G1/4	G1/4, G3/8	G3/8, G1/2
1,3,5-port (port P/R1/R2)	G1/8	G1/4	G1/4, G3/8	G3/8, G1/2

Performance/characteristics by model

Descriptions	3GE1		3GE2		4GE1		4GE2		4GE3		4GE4			
	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF		
Response time	Two 3-port valves integrated													
ms	2-position	Single	-	-	-	-	15	35	20	40	25	60	100	110
		Double	-	-	-	-	25	25	30	30	35	35	110	110
	3-position	ABR 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

Descriptions	4GE1	4GE2	4GE3	4GE4		
Weight g	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 piping adapter. 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.

Related products

Manifold Specifications sheet

Safety precautions

3GE1/2 / 4GE1/2/3/4*0EA 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		0.8	0.20	1.0	0.13
	2-position		1.1	0.16	1.1	0.10
	3-position	All ports closed	1.0	0.15	1.1	0.10
		ABR connection	1.0	0.15	1.2	0.09
PAB connection		1.2	0.20	1.1	0.10	
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
		ABR connection	2.2	0.23	2.6	0.16
PAB 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
		ABR connection	3.3	0.36	4.2	0.18
		PAB 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
		ABR connection	8.8	0.28	13.9	0.25
		PAB connection	10.0	0.06	12.0	0.24

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

3GD*0EA
4GD*0EA

3GE*0EA
4GE*0EA

M3GD*0EA
M4GD*0EA

M3GE*0EA
M4GE*0EA

Related products

Manifold
Specifications sheet

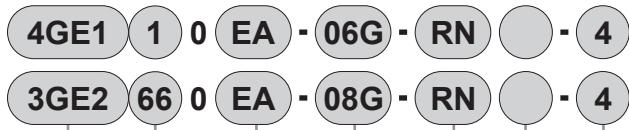
Safety precautions

3GE1/2 / 4GE1/2/3/4*0EA Series

Discrete valve; base piping

How to order (solenoid valve single unit)

● Single unit



A Model No.					
3GE1	3GE2	4GE1	4GE2	4GE3	4GE4

3GD*0EA
4GD*0EA

3GE*0EA
4GE*0EA

M3GD*0EA
M4GD*0EA

M3GE*0EA
M4GE*0EA

Related products

Manifold
Specifications sheet

Safety precautions

Code	Content	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	Two 3-port valves integrated *1 A valve side: Normally closed B valve side: Normally closed	●	●				
C Explosion-proof Series							
EA	Product compliant to ATEX Directive	●	●	●	●	●	●
D Port size {ports 4(A), 2(B)}							
Port	4(A)/2(B) port	Port P/R1/R2 (2) = G1/8 (3) = G1/4 (4) = G3/8 (5) = G1/2					
06G	G1/8	(2)	(2)				
08G	G1/4		(3)	(3)	(3)		
10G	G3/8				(4)	(4)	
15G	G1/2					(5)	
00	Valve for base mounting	●	●	●	●	●	●
E Electrical connections *2							
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	A/B port filter *4	●	●	●	●	●	●
G Voltage							
4	12V DC	●	●	●	●	●	●

⚠ Precautions for model No. selection

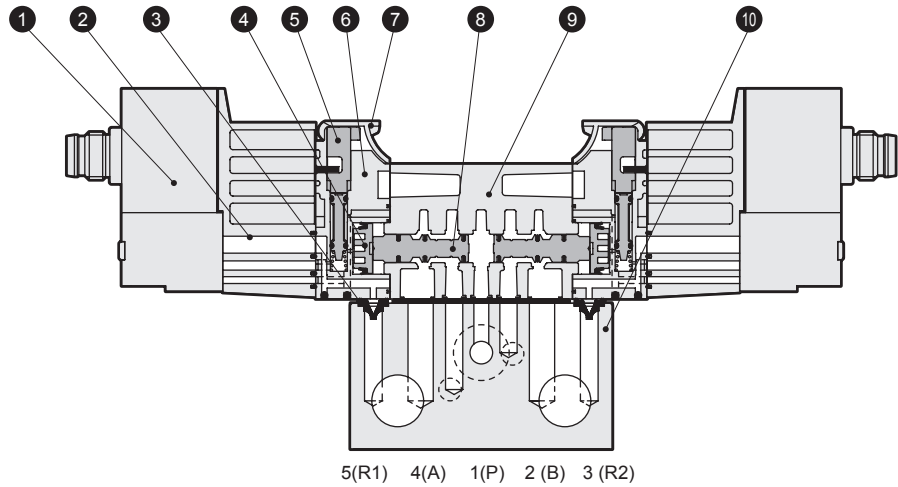
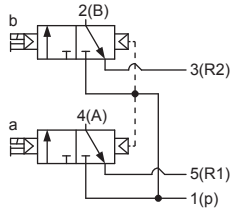
- *1 Dimensions are the same as the respective 2-position double solenoid.
- *2 M8 connector length is 300 mm. Select other lengths from page 63 as needed.
- *3 3-position all ports closed and PAB connection are not provided with exhaust check valve specifications (H).
- *4 A filter is built into port P as standard.
- *5 Explosion-proof barrier sold separately. Select from page 67.

Internal structure diagram and parts list

3GE1660EA

- Two 3-port valves integrated
M8 connector without cable (RN)

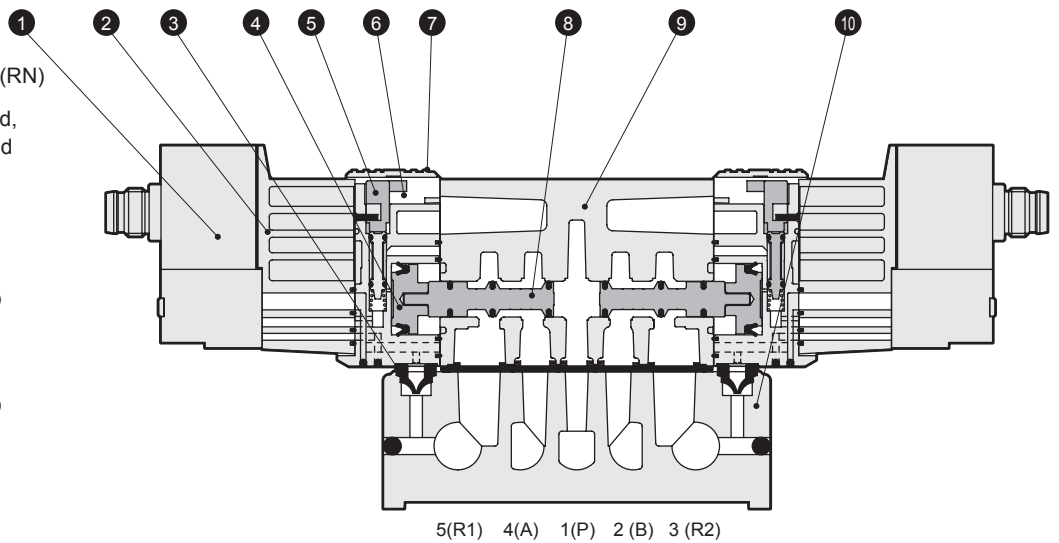
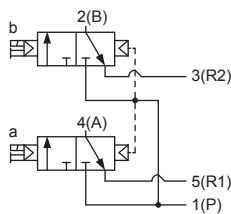
A side valve: Normally closed,
B side valve: Normally closed
NC/NC



3GE2660EA

- Two 3-port valves integrated
M8 connector without cable (RN)

A side valve: Normally closed,
B side valve: Normally closed
NC/NC



Main parts list

No.	Part name	Material	No.	Part name	Material
1	Coil assembly	-	6	Piston chamber	Resin
2	Adapter	Resin	7	Manual protection cover	Resin
3	Pilot exhaust check valve	Hydrogenated nitrile rubber	8	Spool assembly	-
4	Piston assembly	-	9	Body	Aluminum alloy die-casting
5	Manual override	Resin	10	Sub-plate	Aluminum alloy die-casting

3GD*0EA
4GD*0EA

3GE*0EA
4GE*0EA

M3GD*0EA
M4GD*0EA

M3GE*0EA
M4GE*0EA

Related products

Manifold
Specifications sheet

Safety precautions

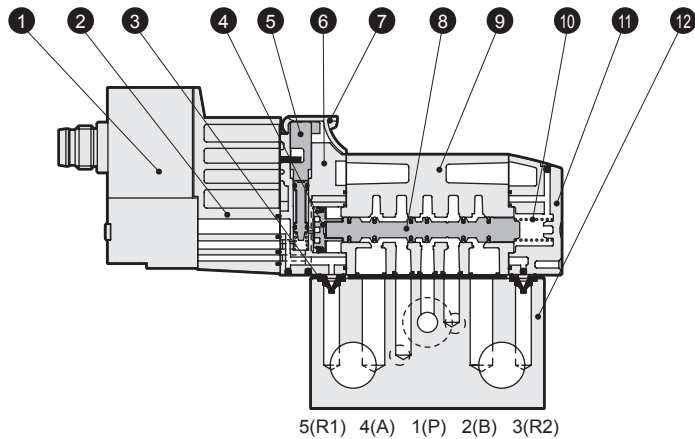
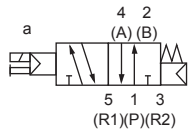
4GE1*0EA Series

Discrete valve; base piping

Internal structure diagram and parts list

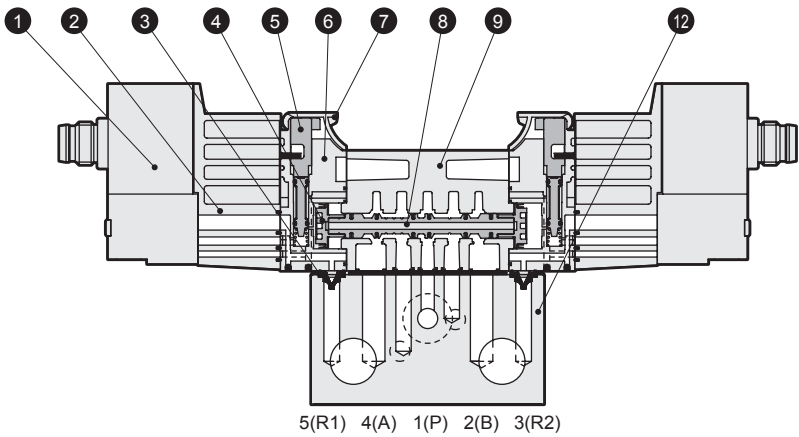
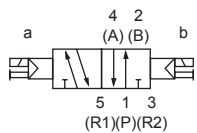
4GE110EA

- 2-position single
- M8 connector without cable (RN)



4GE120EA

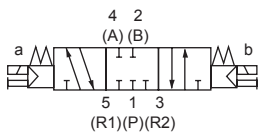
- 2-position double
- M8 connector without cable (RN)



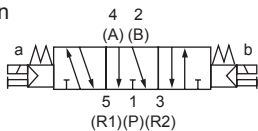
4GE1³0EA

- 3-position
- M8 connector without cable (RN)

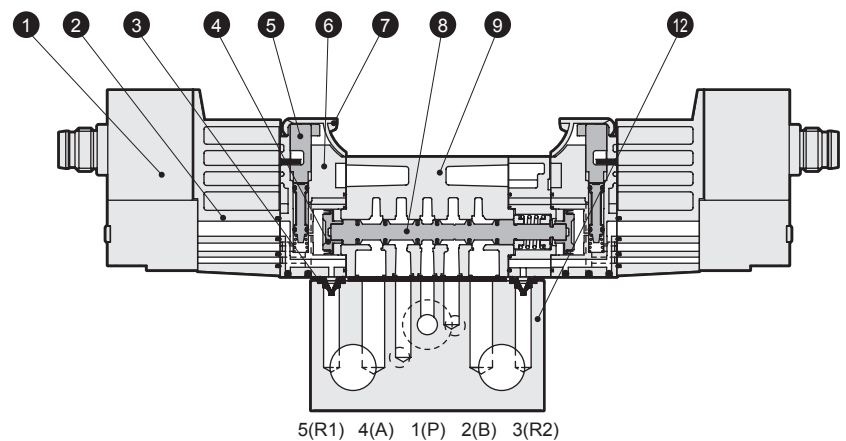
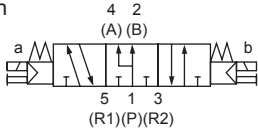
All ports closed



A/B/R connection



P/A/B connection



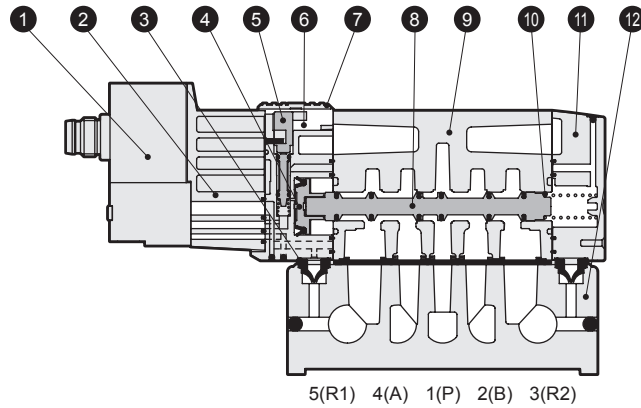
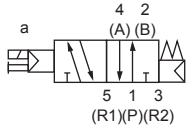
Main parts list

No.	Part name	Material	No.	Part name	Material
1	Coil assembly	-	7	Manual protection cover	Resin
2	Adapter	Resin	8	Spool assembly	-
3	Pilot exhaust check valve	Hydrogenated nitrile rubber	9	Body	Aluminum alloy die-casting
4	Piston D assembly	-	10	Spool spring	Stainless steel
5	Manual override	Resin	11	Cap	Resin
6	Piston chamber	Resin	12	Sub-plate	Aluminum alloy

Internal structure diagram and parts list

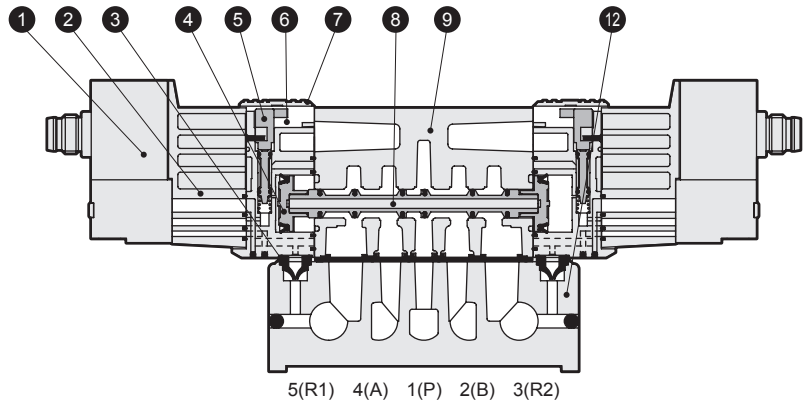
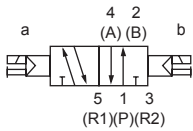
4GE210EA/4GE310EA

- 2-position single
- M8 connector without cable (RN)



4GE220EA/4GE320EA

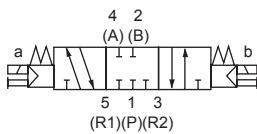
- 2-position double
- M8 connector without cable (RN)



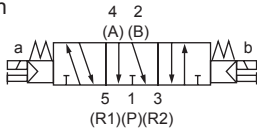
4GE2³₄0EA/4GE3³₅0EA

- 3-position
- M8 connector without cable (RN)

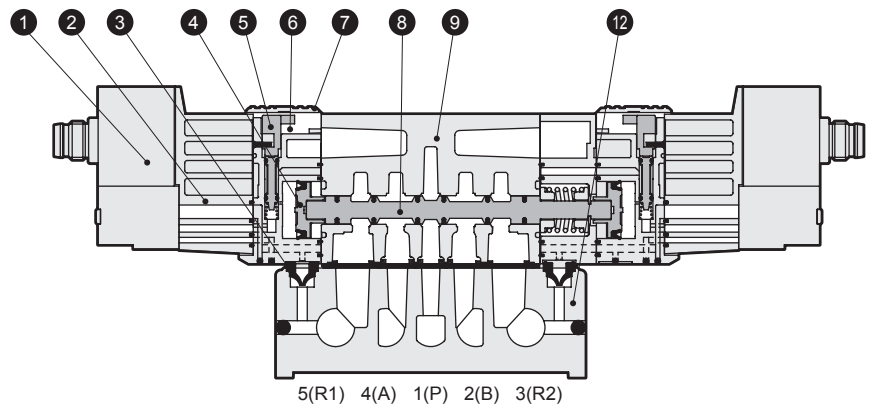
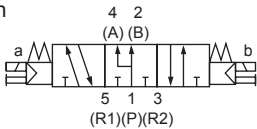
All ports closed



A/B/R connection



P/A/B connection



Main parts list

No.	Part name	Material	No.	Part name	Material
1	Coil assembly	-	7	Manual protection cover	Resin
2	Adapter	Resin	8	Spool assembly	-
3	Pilot exhaust check valve	Hydrogenated nitrile rubber	9	Body	Aluminum alloy die-casting
4	Piston D assembly	-	10	Spool spring	Stainless steel
5	Manual override	Resin	11	Cap	Resin
6	Piston chamber	Resin	12	Sub-plate	Aluminum alloy die-casting

3GD*0EA
4GD*0EA

3GE*0EA
4GE*0EA

M3GD*0EA
M4GD*0EA

M3GE*0EA
M4GE*0EA

Related products

Manifold
Specifications sheet

Safety precautions

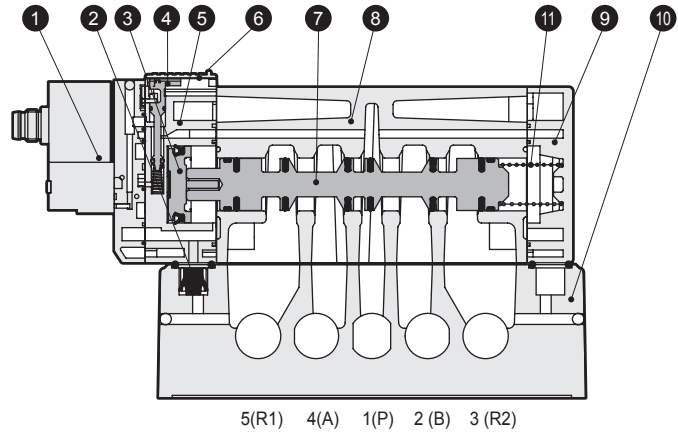
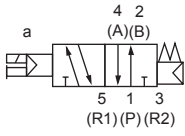
4GE4*0EA Series

Discrete valve; base piping

Internal structure diagram and parts list

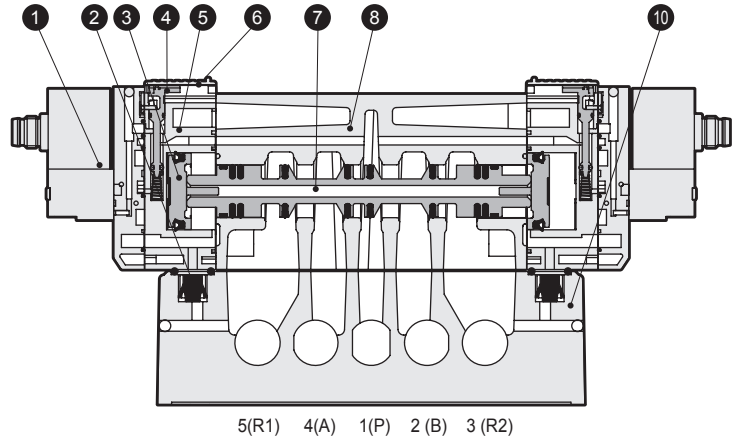
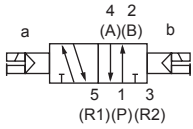
4GE410EA

- 2-position single
- M8 connector without cable (RN)



4GE420EA

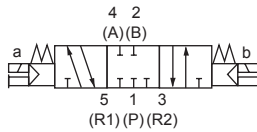
- 2-position double
- M8 connector without cable (RN)



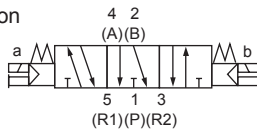
4GE4³0EA

- 3-position
- M8 connector without cable (RN)

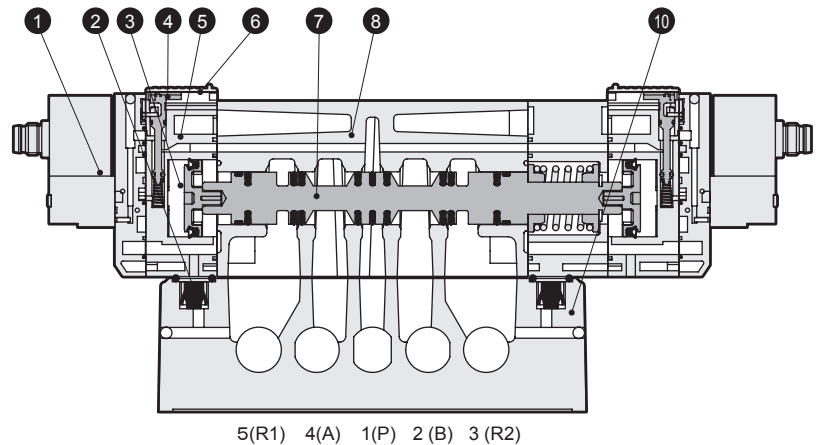
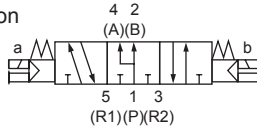
All ports closed



A/B/R connection



P/A/B connection



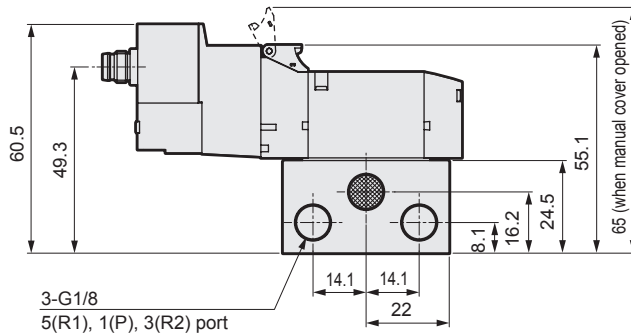
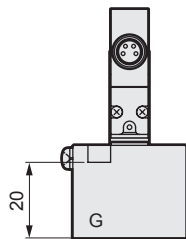
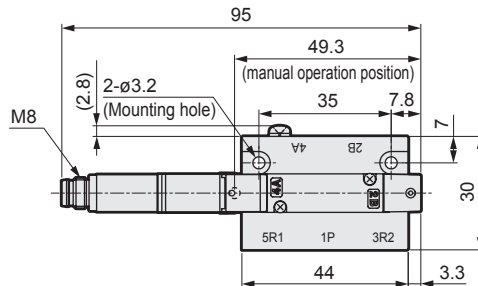
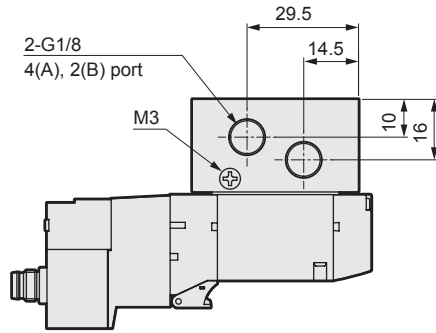
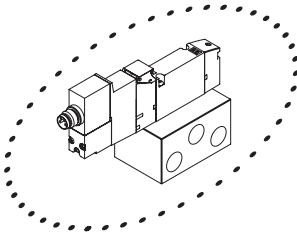
Main parts list

No.	Part name	Material	No.	Part name	Material
1	Coil assembly	-	6	Manual protection cover	Resin
2	Check valve	Hydrogenated nitrile rubber	7	Spool assembly	-
3	Piston assembly	-	8	Body	Aluminum alloy die-casting
4	Manual override	Resin	9	Cap	Resin
5	Piston chamber	Resin	10	Discrete sub-plate	Aluminum alloy die-casting
			11	Spool spring	Stainless steel

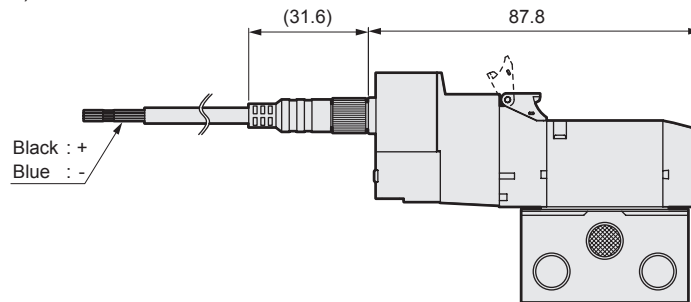
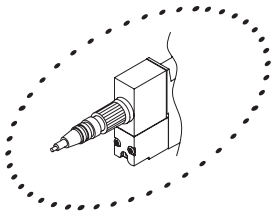
Dimensions

4GE110EA

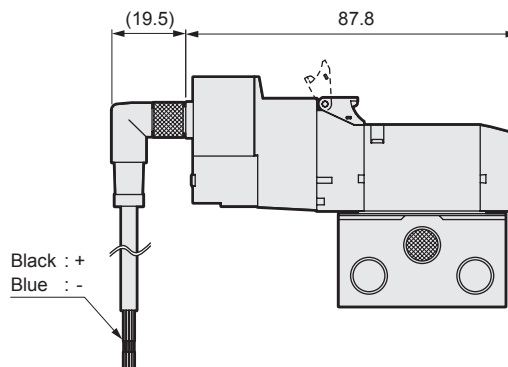
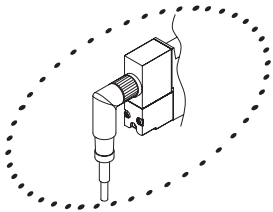
- 2-position single without connector (RN)



- M8 connector/straight cable (R1)



- M8 connector/L-type cable (R2)



3GD*0EA
4GD*0EA

3GE*0EA
4GE*0EA

M3GD*0EA
M4GD*0EA

M3GE*0EA
M4GE*0EA

Related products

Manifold
Specifications sheet

Safety precautions

4GE1*0EA Series

Discrete valve; base piping

Dimensions

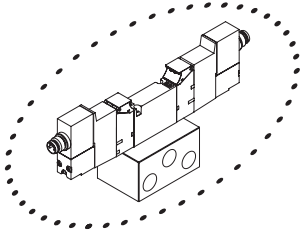
4GE120EA

- 2-position double without connector (RN)

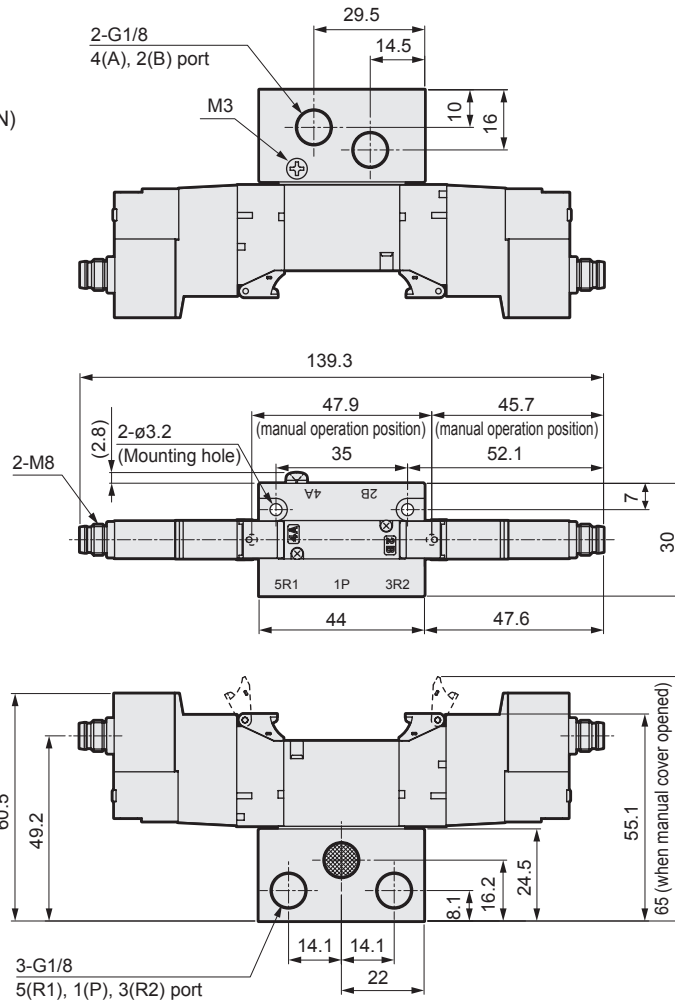
3GE1660EA

- Two 3-port valves integrated without connector (RN)

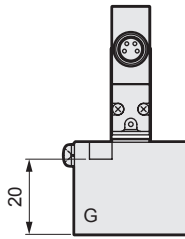
3GD*0EA
4GD*0EA



3GE*0EA
4GE*0EA



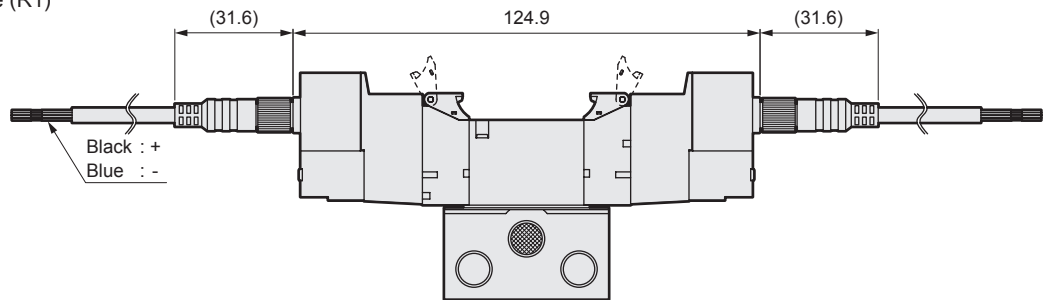
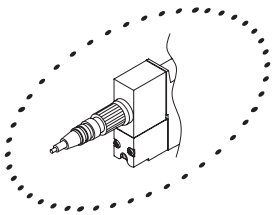
M3GD*0EA
M4GD*0EA



M3GE*0EA
M4GE*0EA

- M8 connector/straight cable (R1)

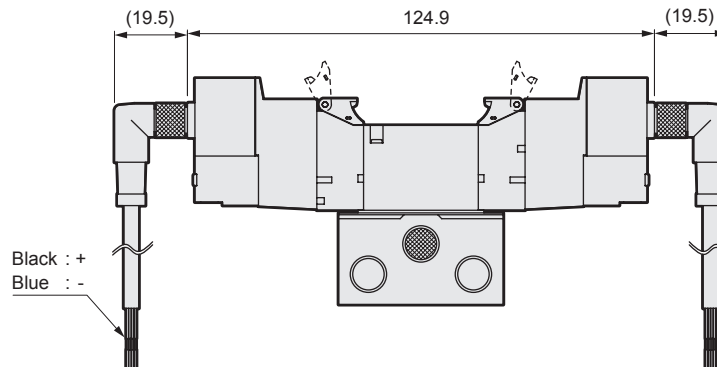
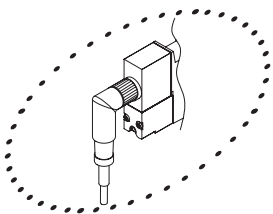
Related products



Manifold Specifications sheet

- M8 connector/L-type cable (R2)

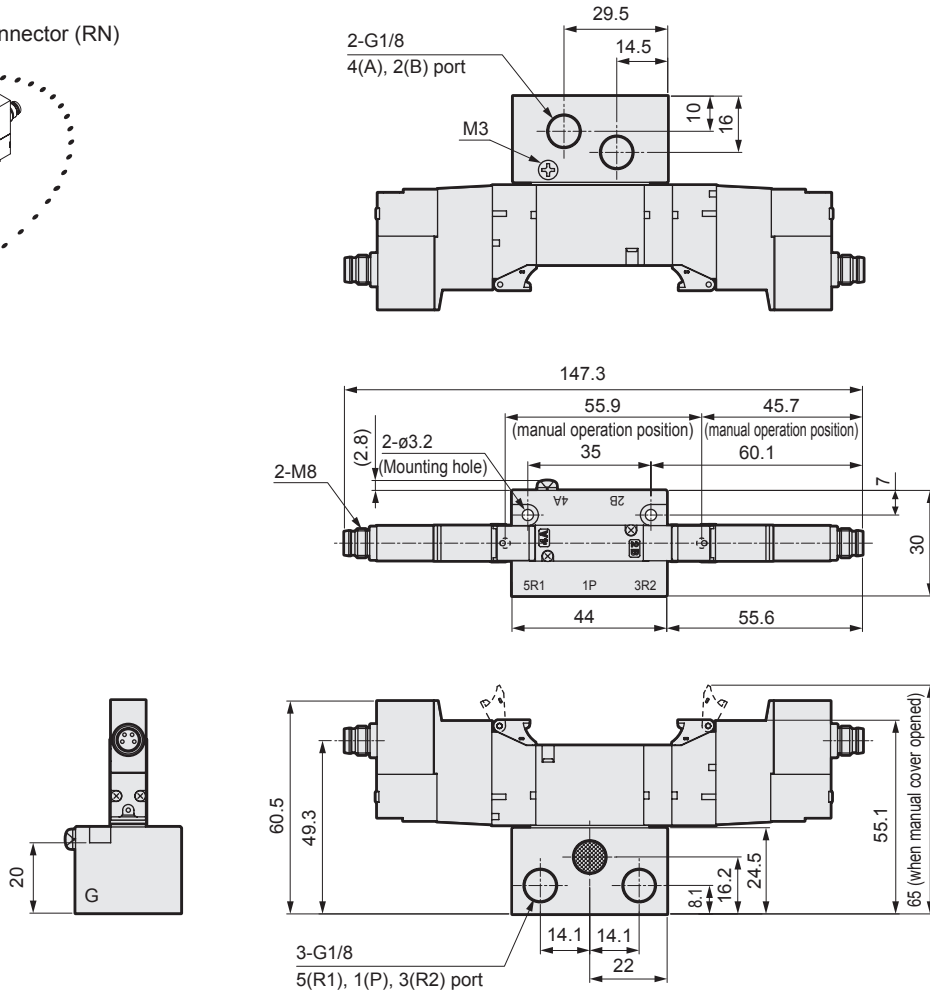
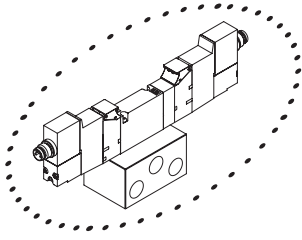
Safety precautions



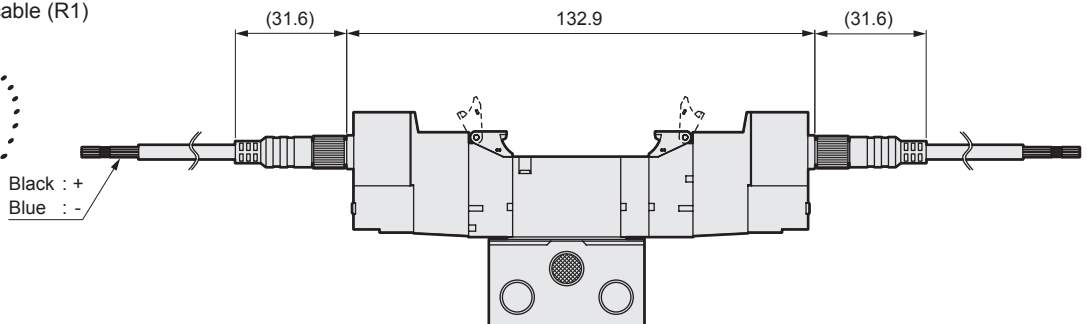
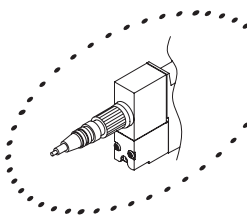
Dimensions

4GE1_{3/4}0EA

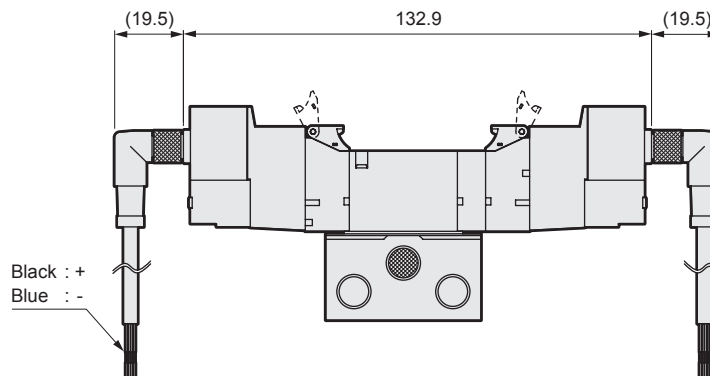
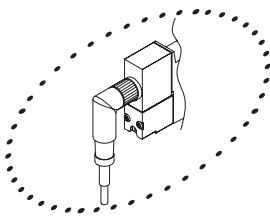
- 3-position without connector (RN)



- M8 connector/straight cable (R1)



- M8 connector/L-type cable (R2)



3GD*0EA
4GD*0EA

3GE*0EA
4GE*0EA

M3GD*0EA
M4GD*0EA

M3GE*0EA
M4GE*0EA

Related products

Manifold
Specifications sheet

Safety precautions

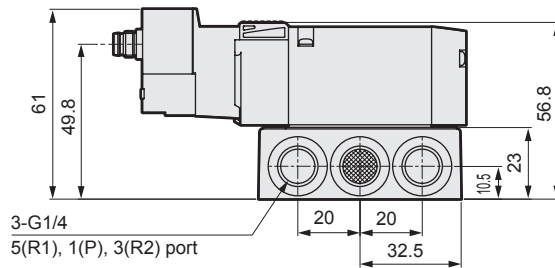
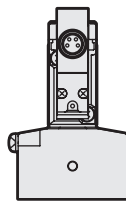
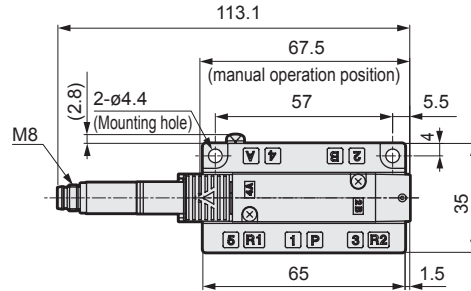
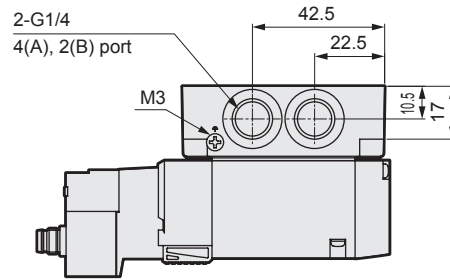
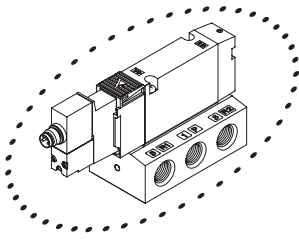
4GE2*0EA Series

Discrete valve; base piping

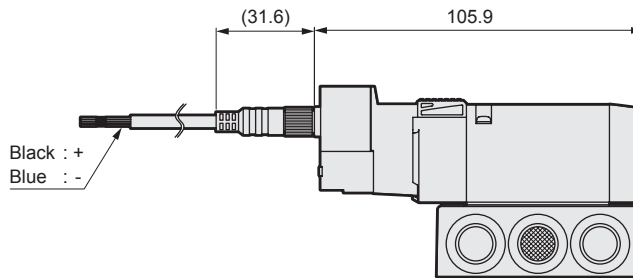
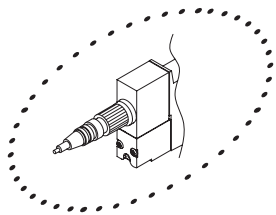
Dimensions

4GE210EA

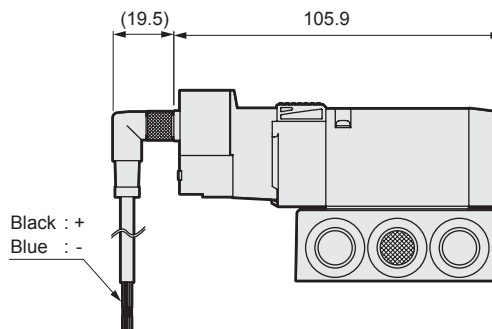
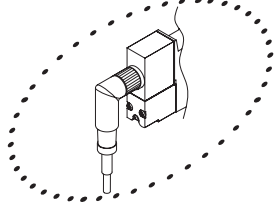
- 2-position single without connector (RN)



- M8 connector/straight cable (R1)



- M8 connector/L-type cable (R2)



3GD*0EA
4GD*0EA

3GE*0EA
4GE*0EA

M3GD*0EA
M4GD*0EA

M3GE*0EA
M4GE*0EA

Related products

Manifold
Specifications sheet

Safety precautions

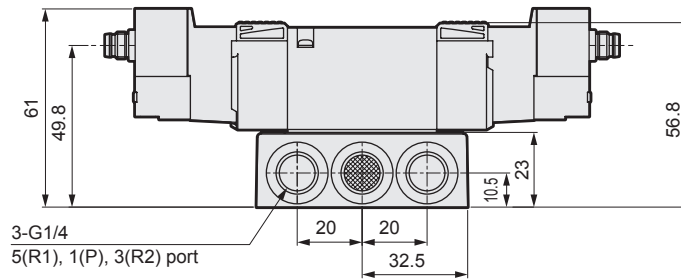
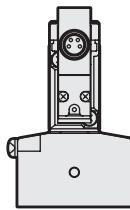
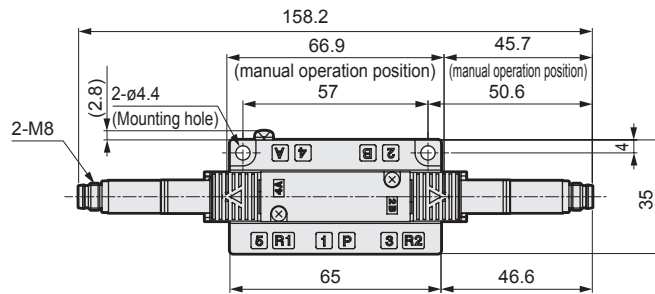
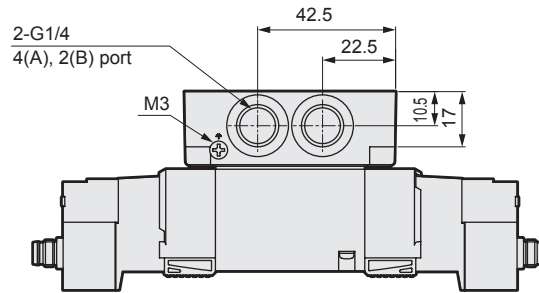
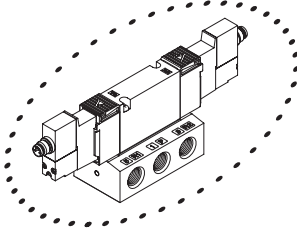
Dimensions

4GE220EA

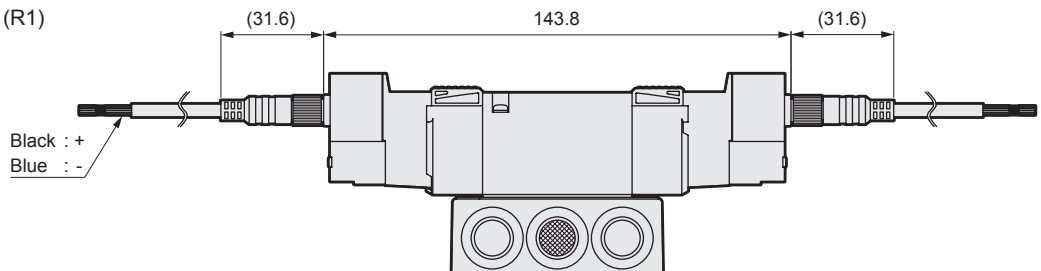
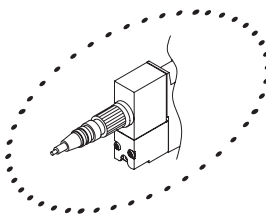
- 2-position double without connector (RN)

3GE2660EA

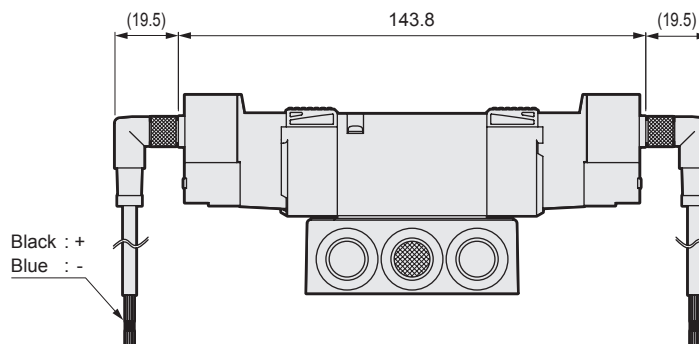
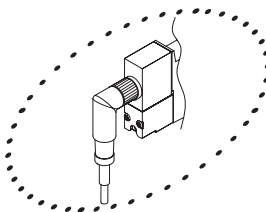
- Two 3-port valves integrated without connector (RN)



- M8 connector/straight cable (R1)



- M8 connector/L-type cable (R2)



3GD*0EA
4GD*0EA

3GE*0EA
4GE*0EA

M3GD*0EA
M4GD*0EA

M3GE*0EA
M4GE*0EA

Related products

Manifold
Specifications sheet

Safety precautions

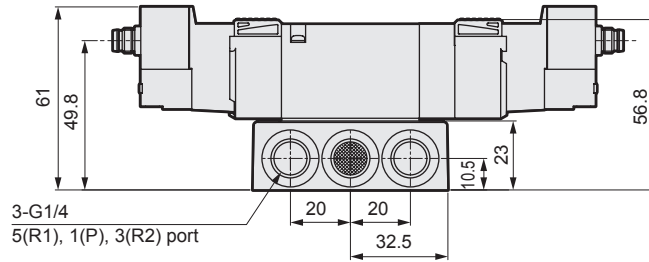
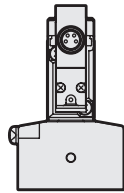
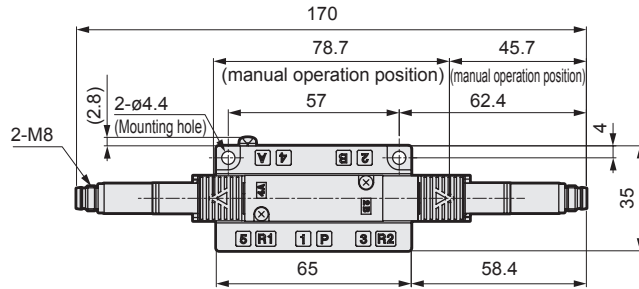
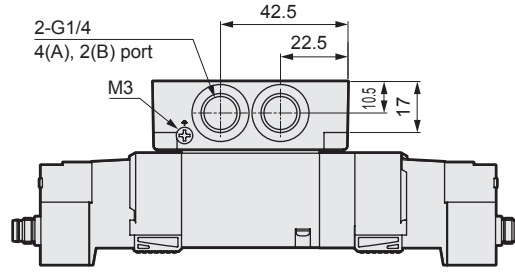
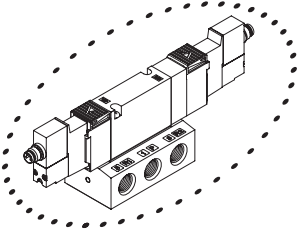
4GE2*0EA Series

Discrete valve; base piping

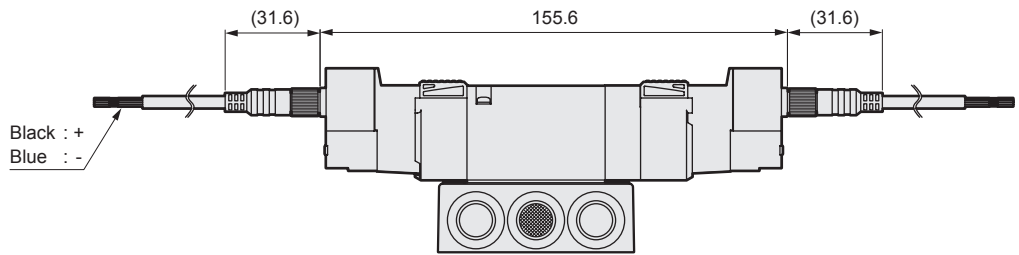
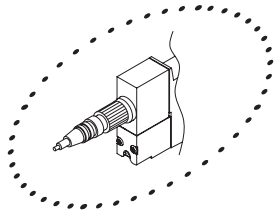
Dimensions

4GE2*0EA

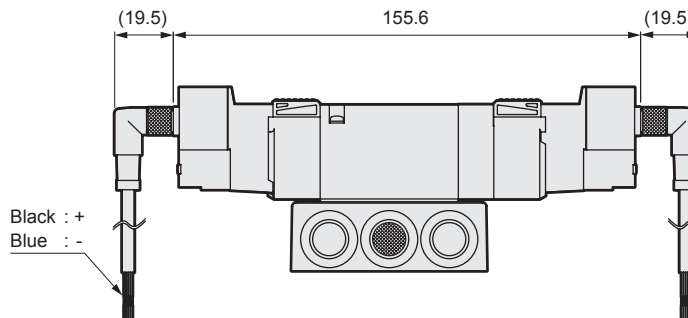
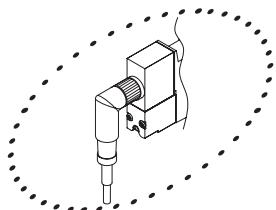
- 3-position without connector (RN)



- M8 connector/straight cable (R1)



- M8 connector/L-type cable (R2)



3GD*0EA
4GD*0EA

3GE*0EA
4GE*0EA

M3GD*0EA
M4GD*0EA

M3GE*0EA
M4GE*0EA

Related products

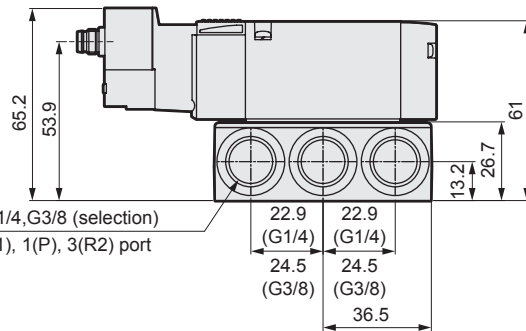
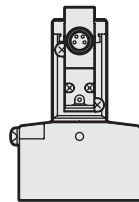
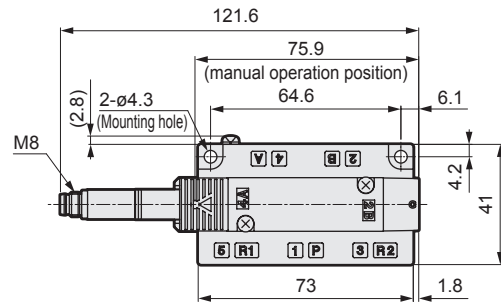
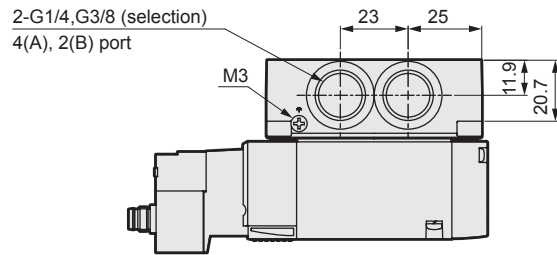
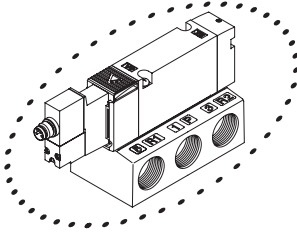
Manifold
Specifications sheet

Safety precautions

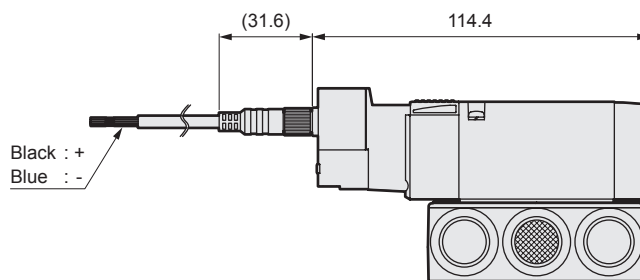
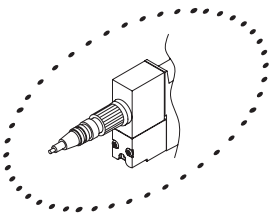
Dimensions

4GE310EA

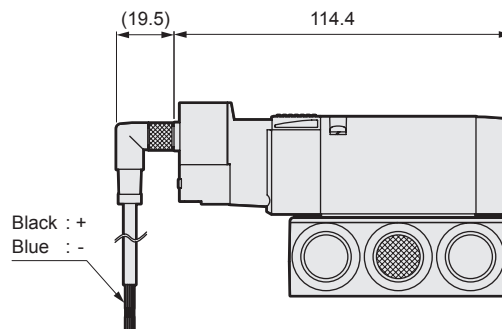
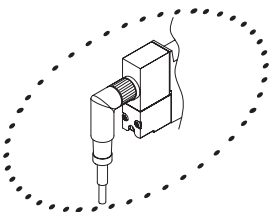
- 2-position single without connector (RN)



- M8 connector/straight cable (R1)



- M8 connector/L-type cable (R2)



3GD*0EA
4GD*0EA

3GE*0EA
4GE*0EA

M3GD*0EA
M4GD*0EA

M3GE*0EA
M4GE*0EA

Related products

Manifold
Specifications sheet

Safety precautions

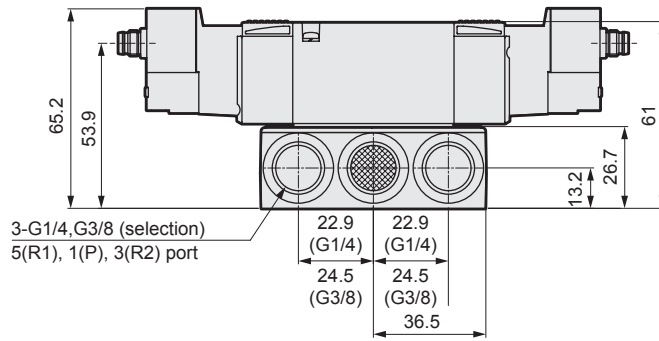
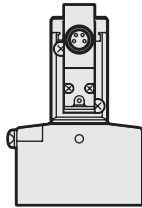
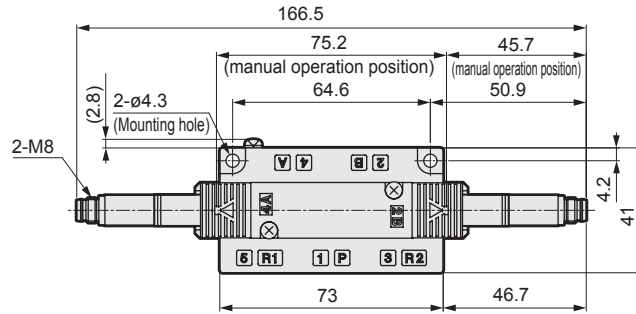
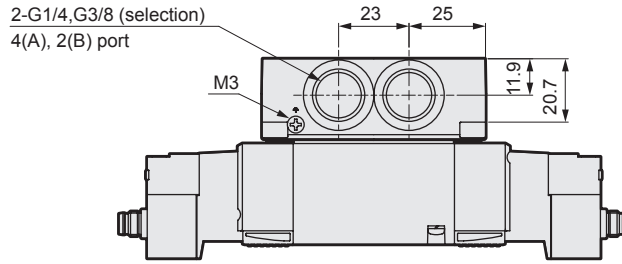
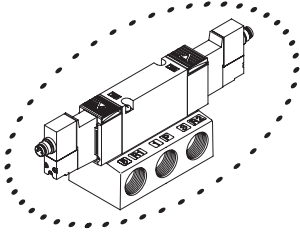
4GE3*0EA Series

Discrete valve; base piping

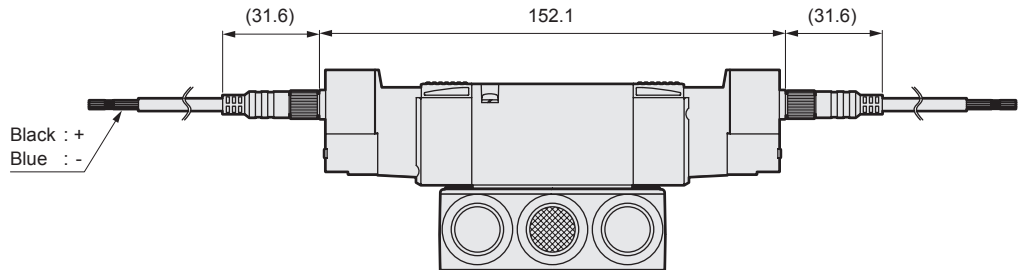
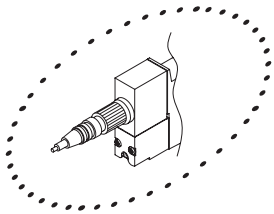
Dimensions

4GE320EA

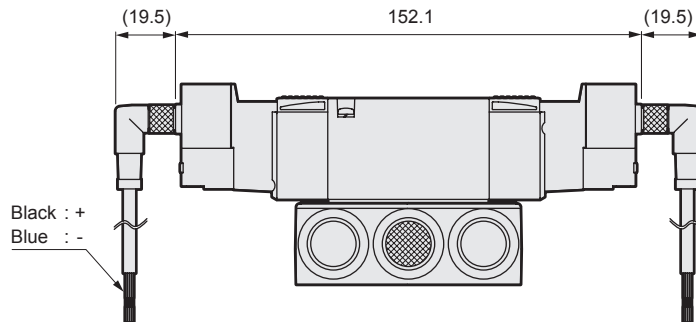
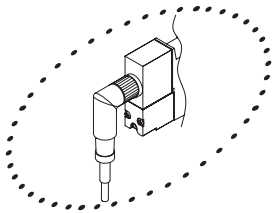
- 2-position double without connector (RN)



- M8 connector/straight cable (R1)



- M8 connector/L-type cable (R2)



3GD*0EA
4GD*0EA

3GE*0EA
4GE*0EA

M3GD*0EA
M4GD*0EA

M3GE*0EA
M4GE*0EA

Related products

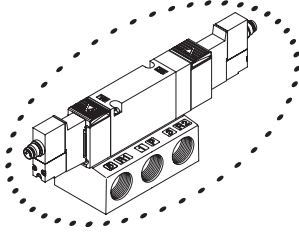
Manifold
Specifications sheet

Safety precautions

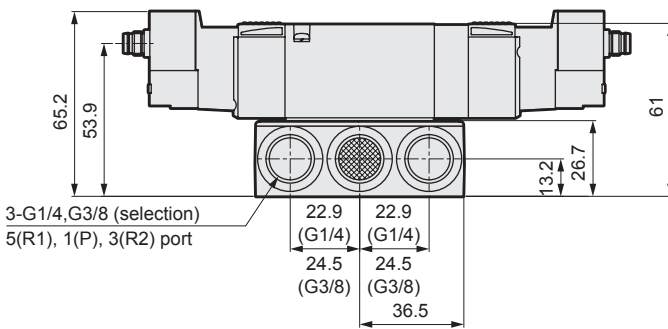
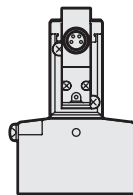
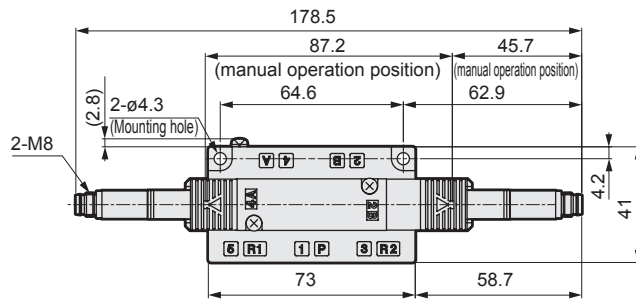
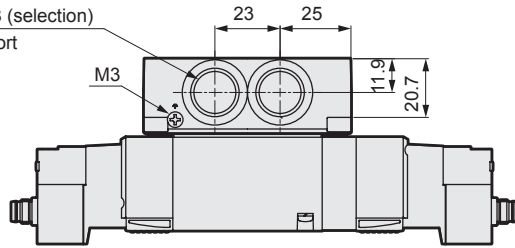
Dimensions

4GE3³/₅0EA

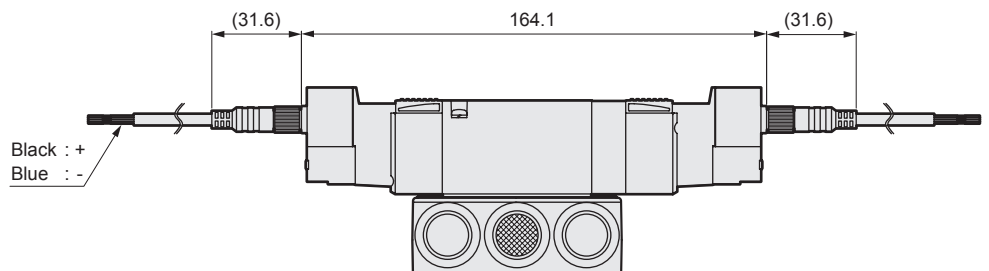
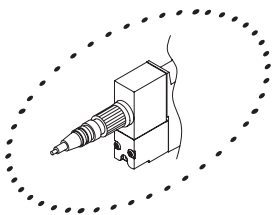
- 3-position without connector (RN)



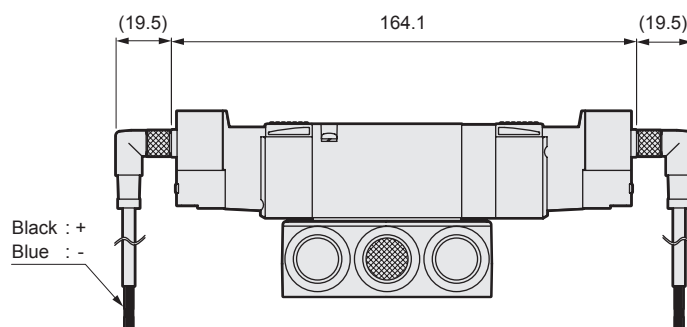
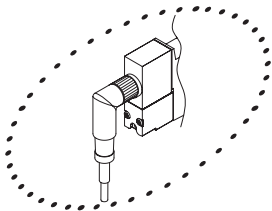
2-G1/4, G3/8 (selection)
4(A), 2(B) port



- M8 connector/straight cable (R1)



- M8 connector/L-type cable (R2)



3GD*0EA
4GD*0EA

3GE*0EA
4GE*0EA

M3GD*0EA
M4GD*0EA

M3GE*0EA
M4GE*0EA

Related products

Manifold
Specifications sheet

Safety precautions

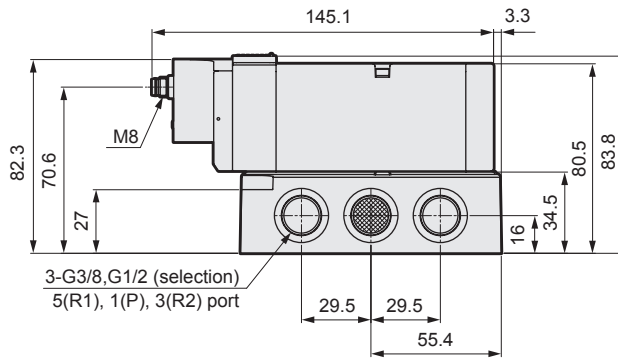
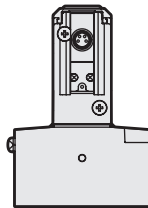
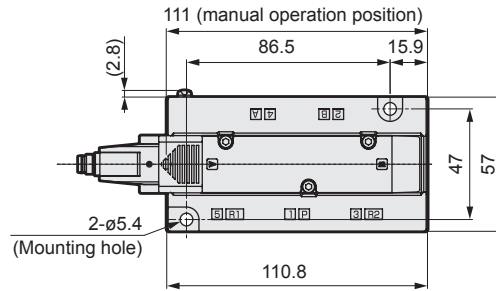
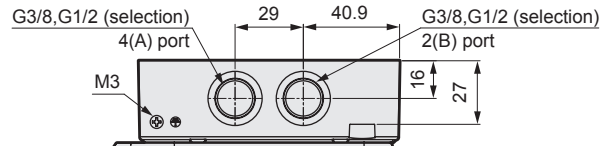
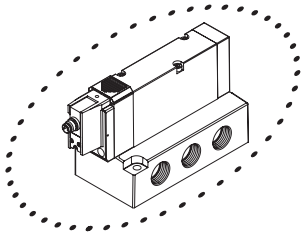
4GE4*0EA Series

Discrete valve; base piping

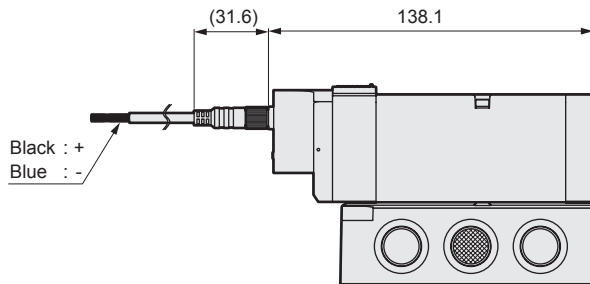
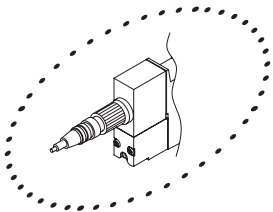
Dimensions

4GE410EA

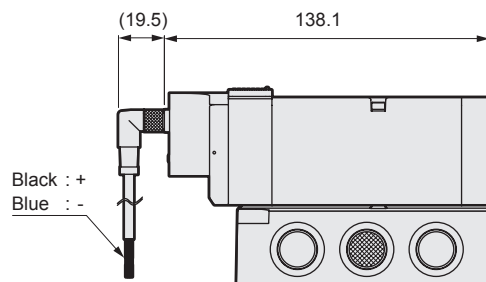
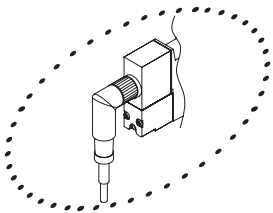
- 2-position single without connector (RN)



- M8 connector/straight cable (R1)



- M8 connector/L-type cable (R2)



3GD*0EA
4GD*0EA

3GE*0EA
4GE*0EA

M3GD*0EA
M4GD*0EA

M3GE*0EA
M4GE*0EA

Related products

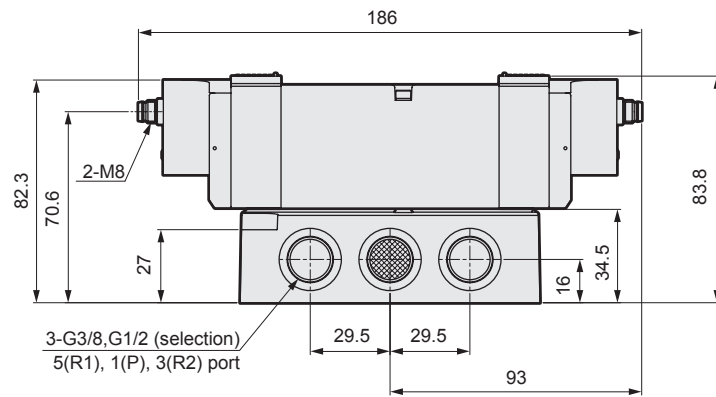
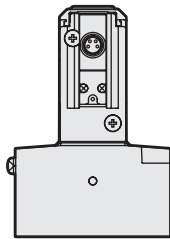
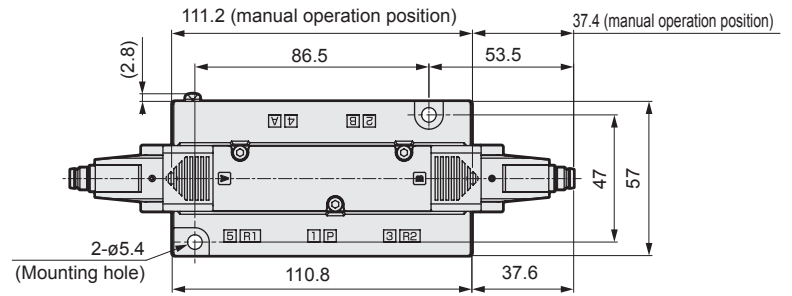
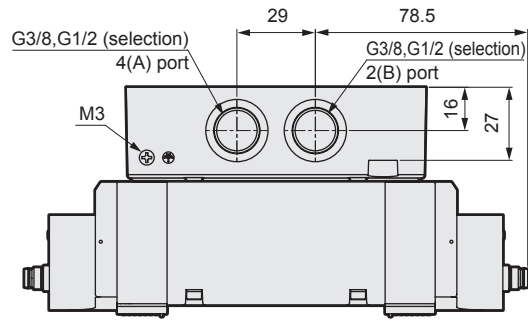
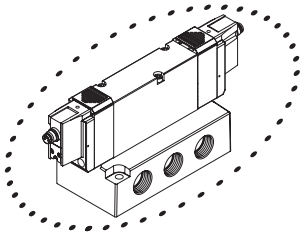
Manifold
Specifications sheet

Safety precautions

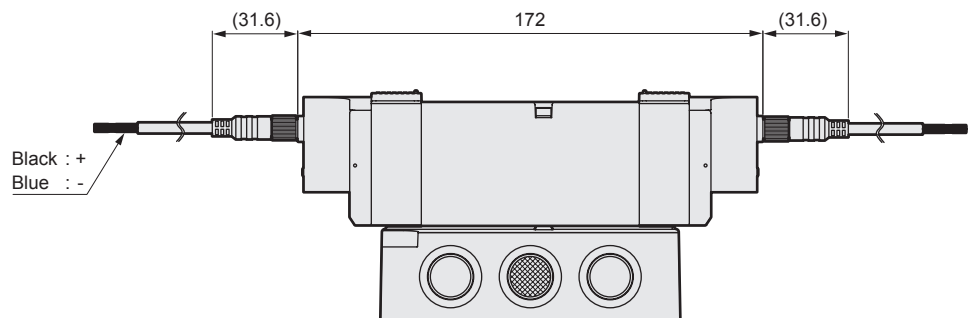
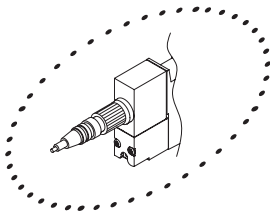
Dimensions

4GE420EA

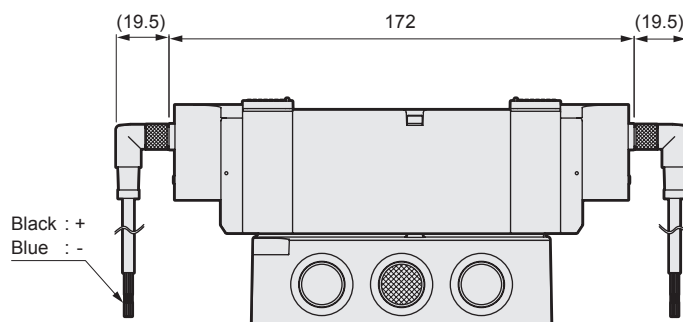
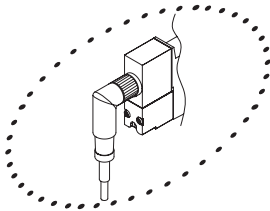
- 2-position double without connector (RN)



- M8 connector/straight cable (R1)



- M8 connector/L-type cable (R2)



3GD*0EA
4GD*0EA

3GE*0EA
4GE*0EA

M3GD*0EA
M4GD*0EA

M3GE*0EA
M4GE*0EA

Related products

Manifold
Specifications sheet

Safety precautions

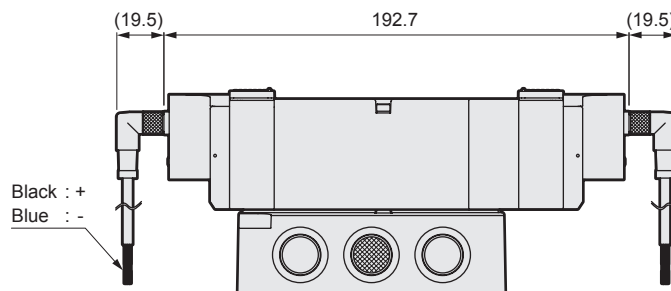
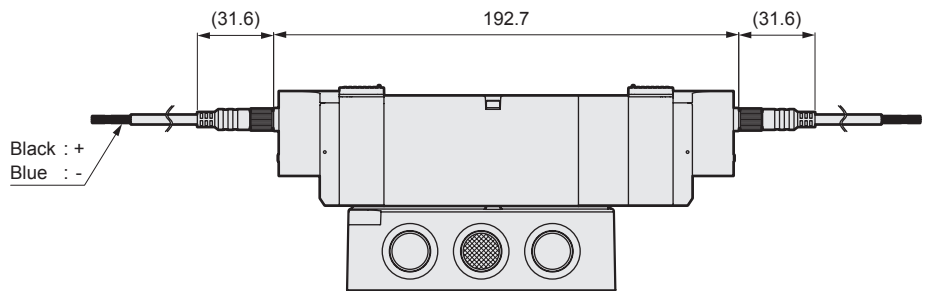
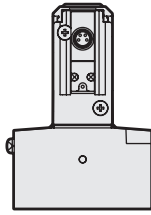
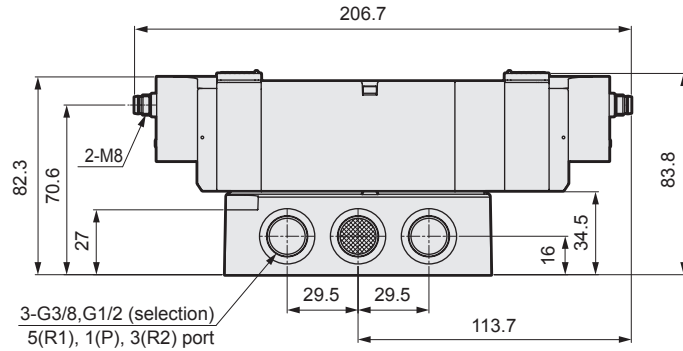
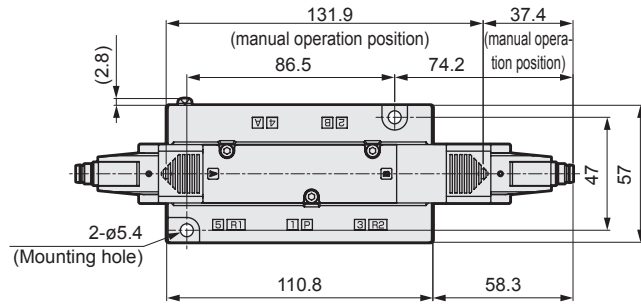
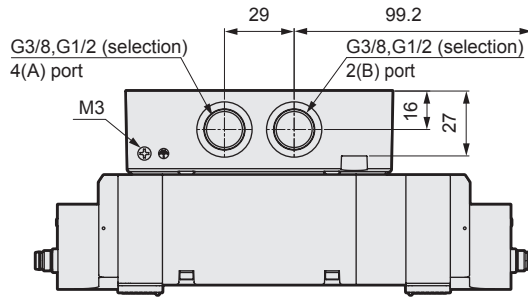
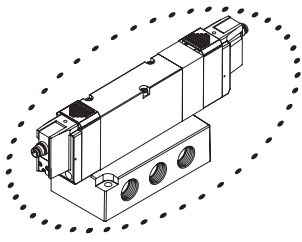
4GE4*0EA Series

Discrete valve; base piping

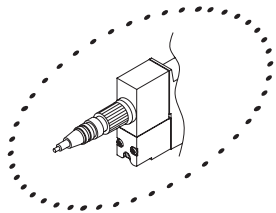
Dimensions

4GE4³/₄/₅0EA

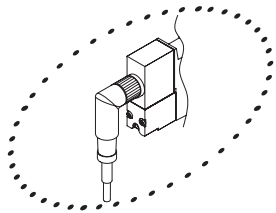
● 3-position without connector (RN)



● M8 connector/straight cable (R1)



● M8 connector/L-type cable (R2)



3GD*0EA
4GD*0EA

3GE*0EA
4GE*0EA

M3GD*0EA
M4GD*0EA

M3GE*0EA
M4GE*0EA

Related products

Manifold
Specifications sheet

Safety precautions

3GD*0EA
4GD*0EA

3GE*0EA
4GE*0EA

M3GD*0EA
M4GD*0EA

M3GE*0EA
M4GE*0EA

Related products

Manifold
Specifications sheet

Safety precautions



Individual wiring manifold
Body piping
Direct mount

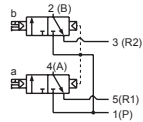
M3GD1/2EA / M4GD1/2/3/4EA Series

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

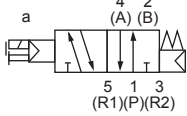


JIS symbol

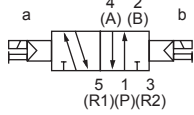
- Two 3-port valves integrated
(A side valve: NC, B side valve: NC)



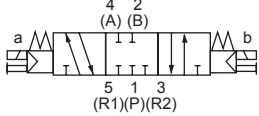
- 5-port valve
2-position single



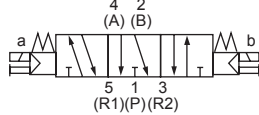
- 2-position double



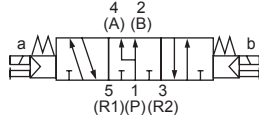
- 3-position
All ports closed



- 3-position A/B/R connection



- 3-position P/A/B connection



Manifold common specifications

Descriptions	Content
Manifold	Integrated base
Mounting method	Direct mount
Air supply and exhaust method	Common supply/common exhaust
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
Vibration resistance m/s ²	50 or less
Impact 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

Descriptions	Content
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 $\varnothing 4, \varnothing 6$ M5	Push-in fitting $\varnothing 4, \varnothing 6, \varnothing 8$ G1/8	Push-in fitting $\varnothing 6, \varnothing 8, \varnothing 10$ G1/4	Push-in fitting $\varnothing 8, \varnothing 10, \varnothing 12$ G3/8
1, 3, 5-port (port P/R1/R2)	G1/8	G1/4	G3/8	G1/2
Manifold base weight calculation formula (n: station No.) g	23n+52	47n+64	74n+88	150n+199

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

3GD*0EA
4GD*0EA

3GE*0EA
4GE*0EA

M3GD*0EA
M4GD*0EA

M3GE*0EA
M4GE*0EA

Related products

Manifold
Specifications sheet

Safety precautions

M3GD1/2*EA / M4GD1/2/3/4*EA 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 —
		ABR connection	0.93	0.18	1.3 (0.70)	0.23 (0.02)
		PAB 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 —
		ABR connection	2.2	0.37	2.9 (1.8)	0.32 (0.29)
		PAB 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 —
		ABR connection	3.0	0.34	3.8 (2.6)	0.12 (0.27)
		PAB 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 —
		ABR connection	6.3	0.33	8.9 —	0.26 —
		PAB 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.

3GD*0EA
4GD*0EA

3GE*0EA
4GE*0EA

M3GD*0EA
M4GD*0EA

M3GE*0EA
M4GE*0EA

Related products

Manifold
Specifications sheet

Safety precautions

M3GD1/2*EA / M4GD1/2/3/4*EA Series

Individual wiring manifold; body piping

How to order

Manifold model No.

M 4GD1 1 0 EA - C4G RN H - 6 - 4

3-port manifold model No.

M 3GD1 66 0 EA - M5G RN H - 2 - 4

Discrete valve for integrated base

4GD1 1 9 EA - C6G RN H - 4

3-port discrete valve for integrated base

3GD1 66 9 EA - M5G RN H - 4

A Model No.

B Solenoid position

C Explosion-proof Series

D Port size

E Electrical connections

F Option

G Mount type

H Station No.

I Voltage

A Model No.

3 G D 1	3 G D 2	4 G D 1	4 G D 2	4 G D 3	4 G D 4
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Code	Content	3 G D 1	3 G D 2	4 G D 1	4 G D 2	4 G D 3	4 G D 4
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	Two 3-port 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							
EA	Product compliant to ATEX Directive	●	●	●	●	●	●

D Port size {2(B), 4(A) port}							
Port	4(A)/2(B) port	Port P/R1/R2 (2) = G1/8 (3) = G1/4 (4) = G3/8 (5) = G1/2					
C4G	ø4 push-in fitting	(2)	(3)	(2)	(3)		
C6G	ø6 push-in fitting	(2)	(3)	(2)	(3)	(4)	
C8G	ø8 push-in fitting		(3)		(3)	(4)	(5)
C10G	ø10 push-in fitting					(4)	(5)
C12G	ø12 push-in fitting						(5)
CX	Push-in fitting mix *3	(2)	(3)	(2)	(3)	(4)	(5)
M5G	M5	(2)		(2)			
06G	G1/8		(3)		(3)		
08G	G1/4					(4)	
10G	G3/8						(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 *5/7	●	●	●	●	●	●
F	A/B port filter *6	●	●	●	●	●	●
Z1	Air supply spacer *7/8	●	●	●	●	●	●
Z3	Exhaust spacer *7/8	●	●	●	●	●	●

G Mount type							
Blank	Direct mount	●	●	●	●	●	●

H Station No.							
2	2 stations						
to	to	●	●	●	●	●	2 to 15
20	20 stations (Refer to page 41 for the max. station No.)						

I Voltage							
4	12V DC	●	●	●	●	●	●

⚠️ Precautions for model No. selection

- *1 Select M4GD*80EA when mixing with 3, 5-port valves. Select M3GD*80EA when mixing with masking plate.
- *2 Dimensions are the same as the respective 2-position double solenoid.
- *3 The push-in fitting cannot be mixed with the discrete valve's 4(A) or 2(B) port.
- *4 M8 connector length is 300 mm. Select other lengths from page 63 as needed.
- *5 3-position all ports closed and PAB connection are not provided with exhaust check specifications (H). Refer to page 73 for details on the exhaust check valve.
- *6 A filter is built into port P as standard.
- *7 For 4G4, selection of exhaust check valves (H), air supply spacers (Z1), or exhaust spacers (Z3) is not available.
- *8 Specify the spacer mounting position and quantity on the manifold specifications sheet. Stacking of spacers is not possible. Combination with the masking plate is not supported. Refer to pages 58 to 61 for details.
- *9 Explosion-proof barrier sold separately. Select from page 67.

3GD*0EA
4GD*0EA

3GE*0EA
4GE*0EA

M3GD*0EA
M4GD*0EA

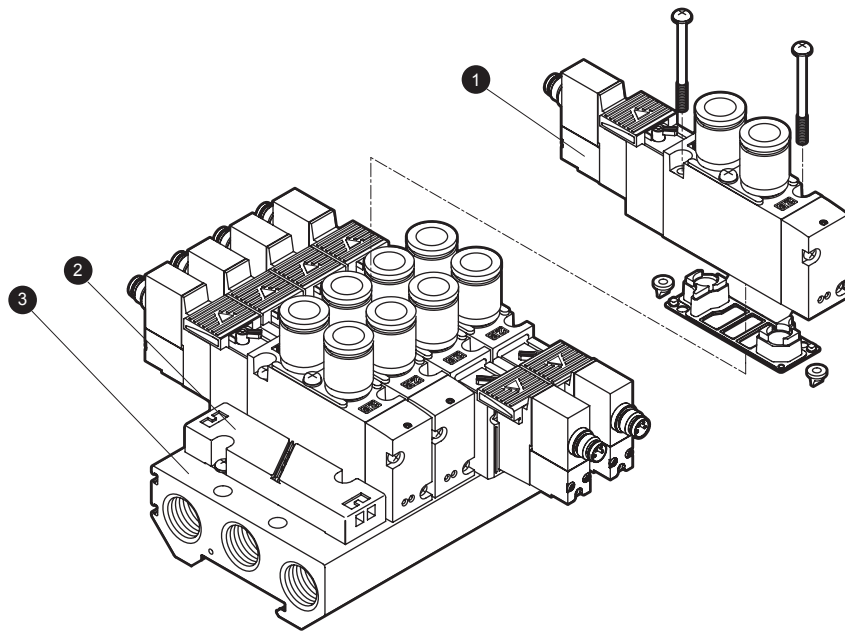
M3GE*0EA
M4GE*0EA

Related products

Manifold
Specifications sheet

Safety precautions

Manifold configuration explanation and parts list



3GD*0EA
4GD*0EA

3GE*0EA
4GE*0EA

M3GD*0EA
M4GD*0EA

M3GE*0EA
M4GE*0EA

Main parts list

No.	Component name	Model No.	Content	Remarks
1	Discrete valve for integrated base	4GD□□9EA - <div style="display: flex; justify-content: space-around; font-size: small;"> Port size Electrical connections Option Voltage </div> <div style="margin-left: 20px;"> Solenoid position Series flow rate size </div>	Discrete valve Gasket 2 mounting screws (2 PR check valves)	Details on page 43
2	Masking plate	3G1/4G1 4G1R-MP 3G2/4G2 4G2R-MP 4G3 4G3R-MP 4G4 4G4A-MP	Masking plate Gasket 2 mounting screws	* 4G3/4G4 have two PR check valves attached.
3	Manifold base assembly	M4GA□R-00G- Option - station No. <div style="margin-left: 20px;"> Series flow rate size </div>	Manifold base	

Related products

Parts list

No.	Part name	No.	No.	Part name	No.
-	M8 connector cable	4GEX-M8CC- Direction - Length *Details on page 63	-	Cartridge push-in fitting and related parts	4G1 ø4 straight 4G1R-JOINT-C4
					4G1 ø6 straight 4G1R-JOINT-C6
					4G2 ø4 straight 4G2R-JOINT-C4
					4G2 ø6 straight 4G2R-JOINT-C6
					4G2 ø8 straight 4G2R-JOINT-C8
					4G3 ø6 straight 4G3R-JOINT-C6
					4G3 ø8 straight 4G3R-JOINT-C8
					4G3 ø10 straight 4G3R-JOINT-C10
					4G4 ø8 straight 4G4-JOINT-C8
					4G4 ø10 straight 4G4-JOINT-C10
					4G4 ø12 straight 4G4-JOINT-C12

*Refer to page 67 for details on explosion-proof barriers.

Manifold Specifications sheet

Safety precautions

M4GD1*0EA Series

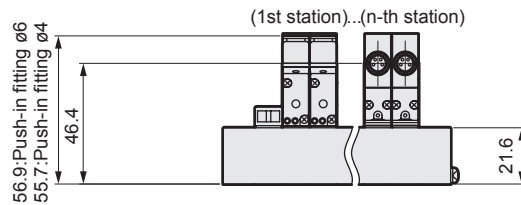
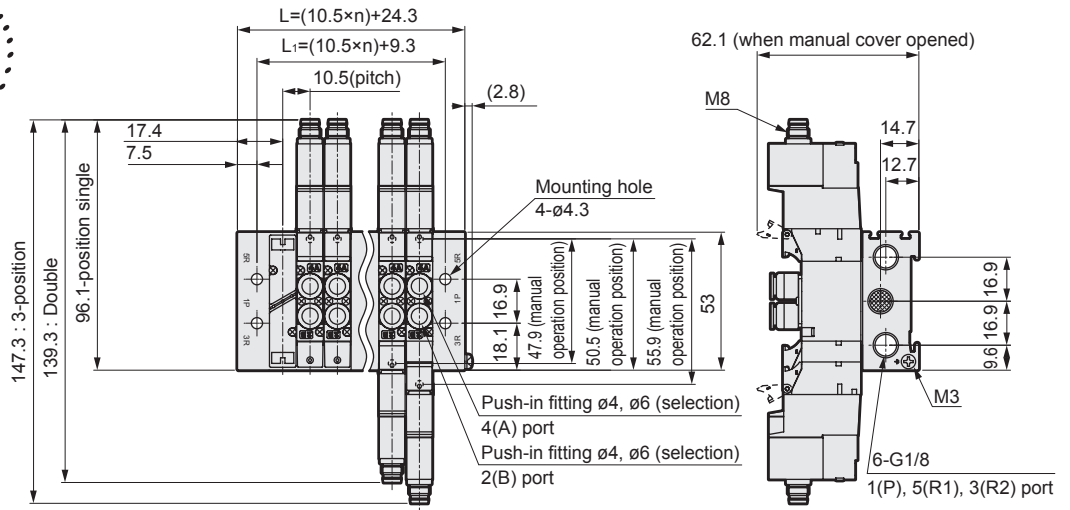
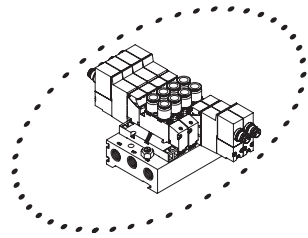
Individual wiring manifold; body piping

Dimensions

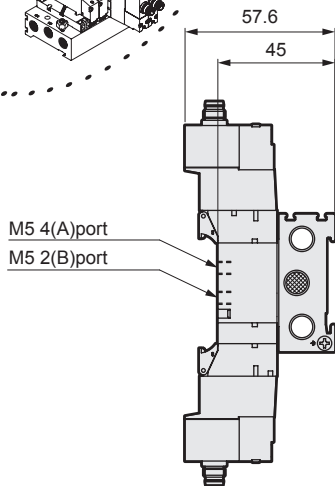
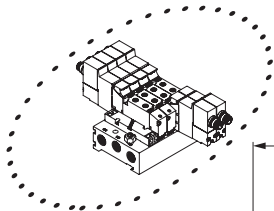
M4GD1*0EA

● Without connector (RN)

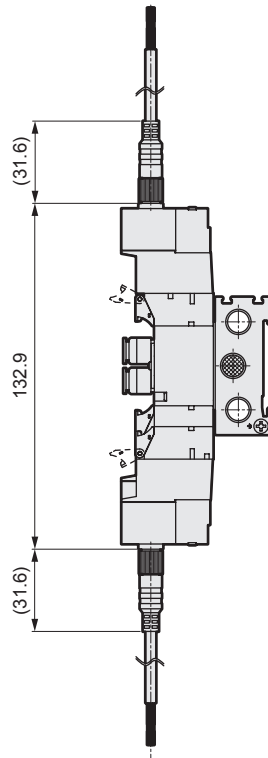
* The weight of the two 3-port valves integrated type is the same as that of 2-position double.



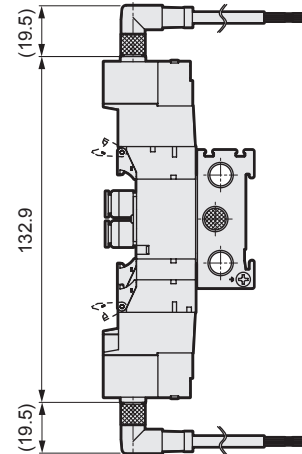
● M5 female thread (M5G)



● M8 connector/straight cable (R1)



● M8 connector/L-type cable (R2)



Station No.	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L	45.3	55.8	66.3	76.8	87.3	97.8	108.3	118.8	129.3	139.8	150.3	160.8	171.3	181.8	192.3	202.8	213.3	223.8	234.3
L ₁	30.3	40.8	51.3	61.8	72.3	82.8	93.3	103.8	114.3	124.8	135.3	145.8	156.3	166.8	177.3	187.8	198.3	208.8	219.3

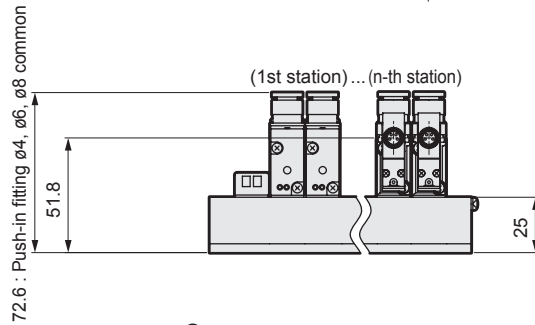
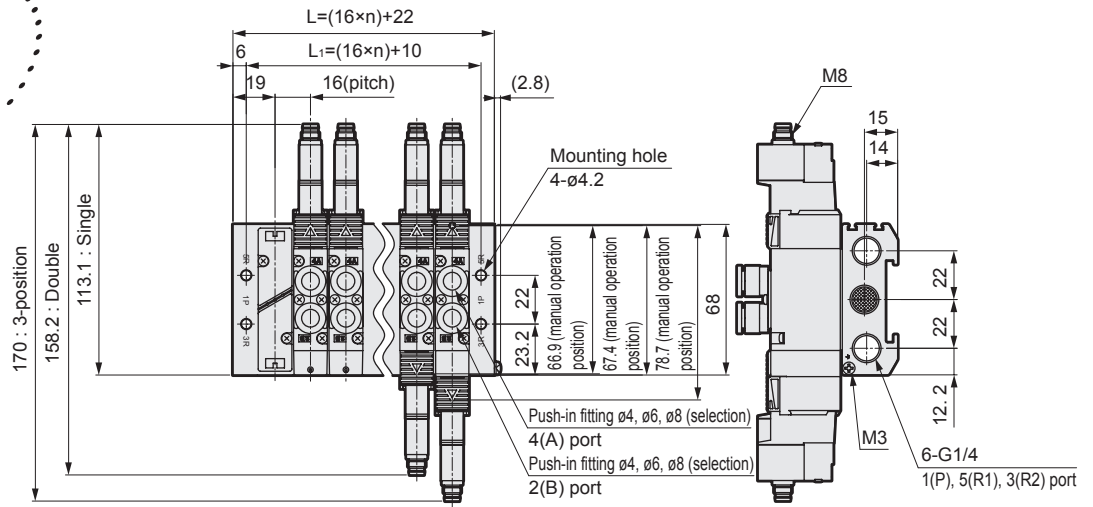
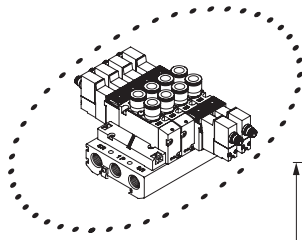
3GD*0EA
 4GD*0EA
 3GE*0EA
 4GE*0EA
 M3GD*0EA
 M4GD*0EA
 M3GE*0EA
 M4GE*0EA
 Related products
 Manifold Specifications sheet
 Safety precautions

Dimensions

M4GD2*0EA

- Without connector (RN)

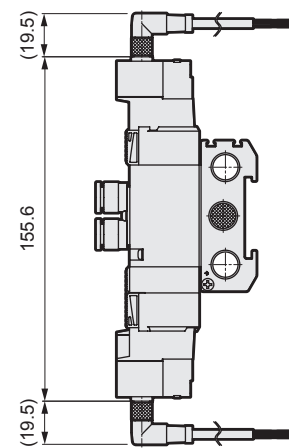
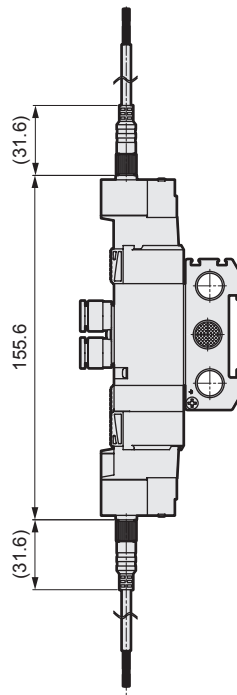
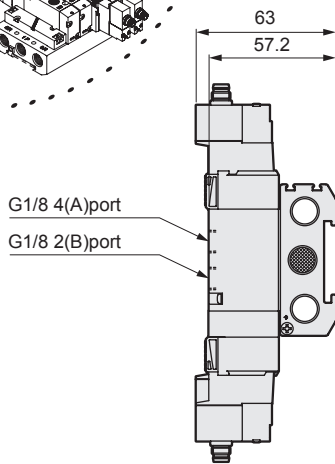
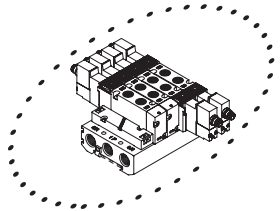
* The weight of the two 3-port valves integrated type is the same as that of 2-position double.



- G1/8 female thread (06G)

- M8 connector/straight cable (R1)

- M8 connector/L-type cable (R2)



Station No.	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L	54.0	70.0	86.0	102.0	118.0	134.0	150.0	166.0	182.0	198.0	214.0	230.0	246.0	262.0	278.0	294.0	310.0	326.0	342.0
L ₁	42.0	58.0	74.0	90.0	106.0	122.0	138.0	154.0	170.0	186.0	202.0	218.0	234.0	250.0	266.0	282.0	298.0	314.0	330.0

3GD*0EA
4GD*0EA

3GE*0EA
4GE*0EA

M3GD*0EA
M4GD*0EA

M3GE*0EA
M4GE*0EA

Related products

Manifold
Specifications sheet

Safety precautions

M4GD3*0EA Series

Individual wiring manifold; body piping

Dimensions

M4GD3*0EA

● Without connector (RN)

3GD*0EA
4GD*0EA

3GE*0EA
4GE*0EA

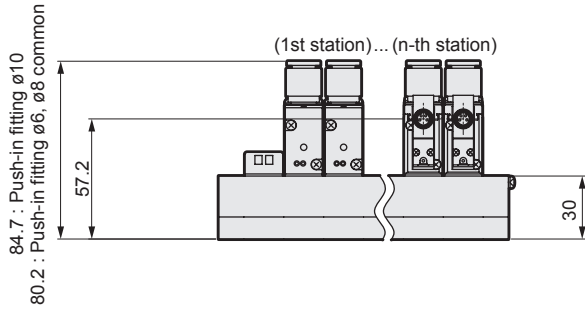
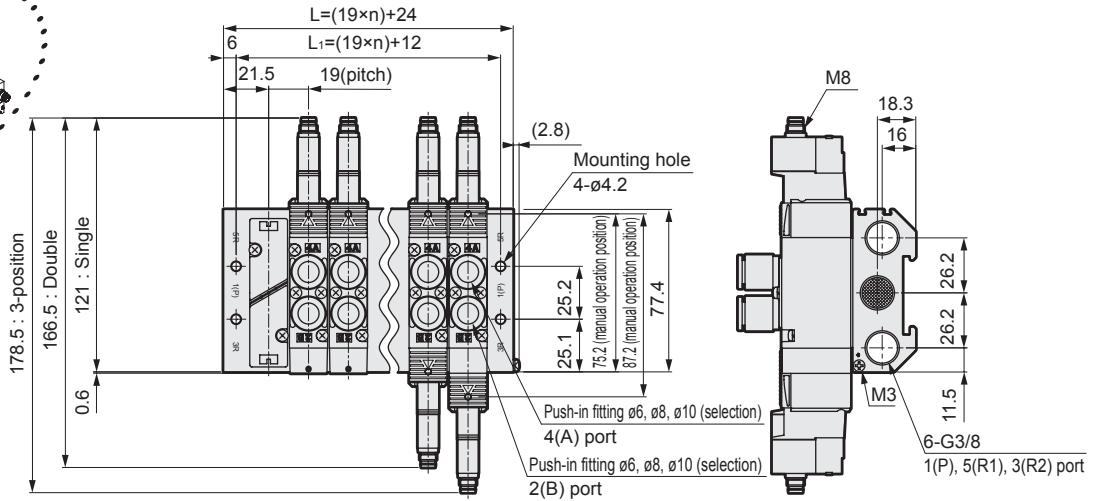
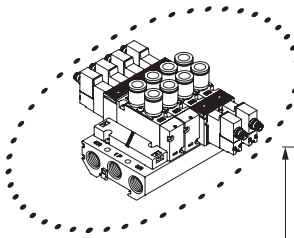
M3GD*0EA
M4GD*0EA

M3GE*0EA
M4GE*0EA

Related products

Manifold
Specifications sheet

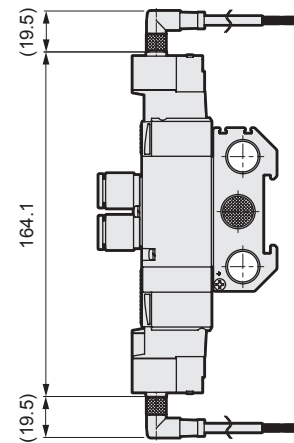
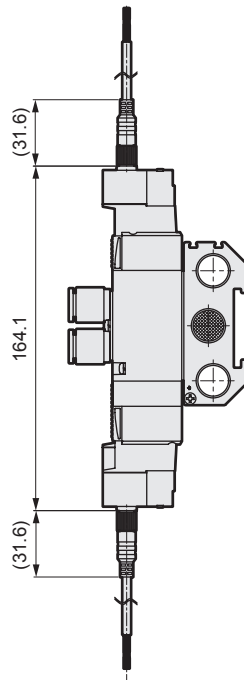
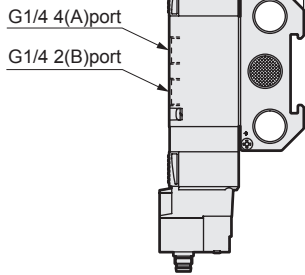
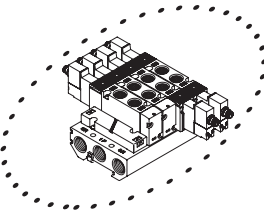
Safety precautions



● G1/4 female thread (08G)

● M8 connector/straight cable (R1)

● M8 connector/L-type cable (R2)

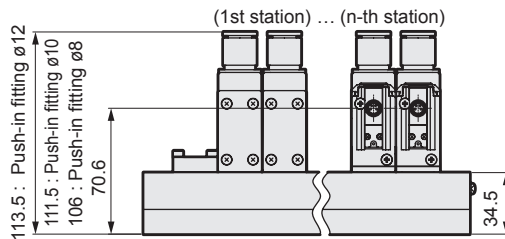
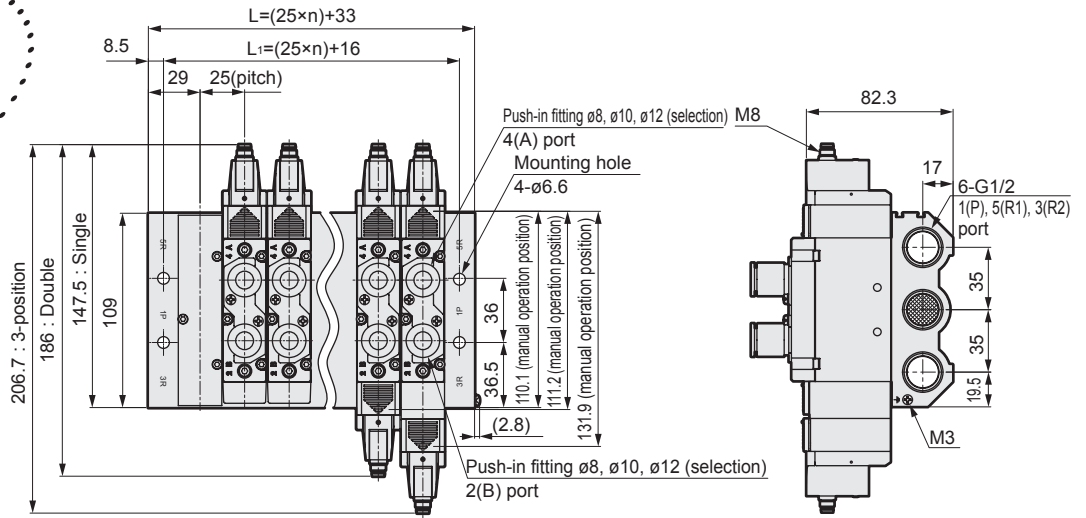
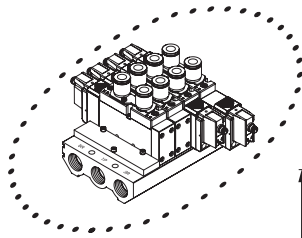


Station No.	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L	62.0	81.0	100.0	119.0	138.0	157.0	176.0	195.0	214.0	233.0	252.0	271.0	290.0	309.0	328.0	347.0	366.0	385.0	404.0
L ₁	50.0	69.0	88.0	107.0	126.0	145.0	164.0	183.0	202.0	221.0	240.0	259.0	278.0	297.0	316.0	335.0	354.0	373.0	392.0

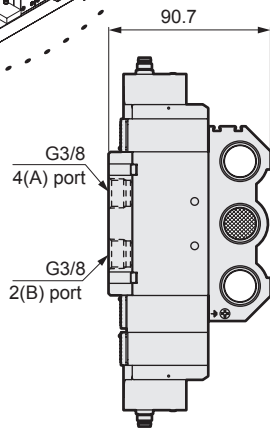
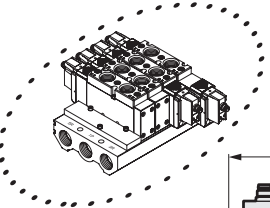
Dimensions

M4GD4*0EA

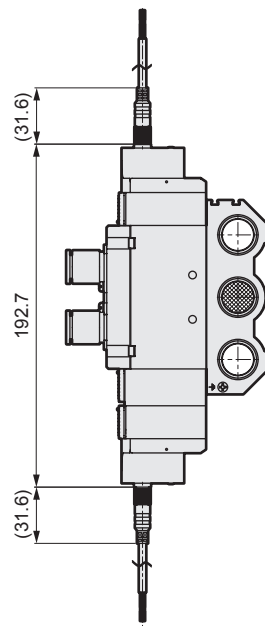
- Without connector (RN)



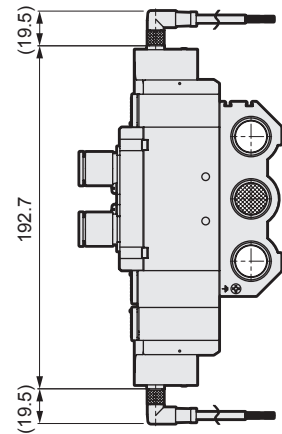
- G1/8 female thread (10G)



- M8 connector/straight cable (R1)



- M8 connector/L-type cable (R2)



Station No.	2	3	4	5	6	7	8	9	10	11	12	13	14	15
L	83	108	133	158	183	208	233	258	283	308	333	358	383	408
L ₁	66	91	116	141	166	191	216	241	266	291	316	341	366	391

3GD*0EA
4GD*0EA

3GE*0EA
4GE*0EA

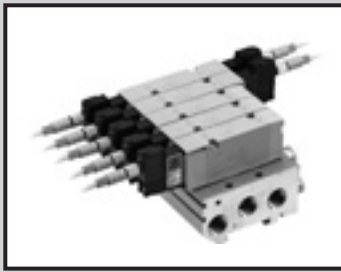
M3GD*0EA
M4GD*0EA

M3GE*0EA
M4GE*0EA

Related products

Manifold
Specifications sheet

Safety precautions



Individual wiring manifold
Base piping
Direct mount

M3GE1/2EA / M4GE1/2/3/4EA Series

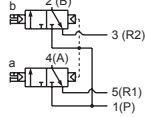
● Applicable cylinder bore size: $\varnothing 20$ to $\varnothing 140$



3GD*0EA
4GD*0EA

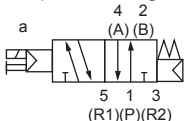
JIS symbol

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

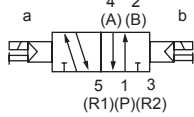


3GE*0EA
4GE*0EA

- 5-port valve
2-position single



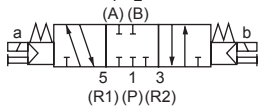
- 2-position double



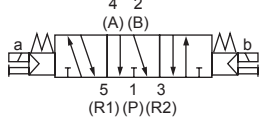
M3GD*0EA
M4GD*0EA

- 3-position

All ports closed

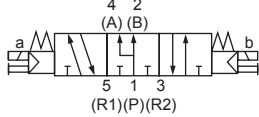


- 3-position A/B/R connection



M3GE*0EA
M4GE*0EA

- 3-position P/A/B connection



Related products

Manifold
Specifications sheet

Safety precautions

Manifold common specifications

Descriptions	Content
Manifold	Integrated base
Mounting method	Direct mount
Air supply and exhaust method	Common supply/common exhaust
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
Impact 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

Descriptions	Content
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	
				G1/4 G3/8	G1/2
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 $\varnothing 4, \varnothing 6, \varnothing 8$ G1/8	Push-in fitting $\varnothing 6, \varnothing 8, \varnothing 10$ G1/4	Push-in fitting $\varnothing 8, \varnothing 10, \varnothing 12$ G1/4, G3/8	G1/2
1, 3, 5-port (port P/R1/R2)	G1/8	G1/4	G3/8	G3/8	G1/2
Manifold base weight calculation formula (n: station No.)	35n+61	71n+106	113n+170	273n+329	391n+560

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

M3GE1/2 / M4GE1/2/3/4*EA 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	—
		ABR connection	0.97	0.35	1.3	(0.68)	0.22	(0.24)
		PAB 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	—
		ABR connection	2.2	0.34	2.8	(1.8)	0.24	(0.27)
		PAB 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	—
		ABR connection	3.0	0.30	3.8	(2.7)	0.11	(0.22)
		PAB connection	3.6	0.36	3.3	—	0.28	—
M4GE4 1-port size G3/8	2-position		6.4	0.42	6.9	—	0.12	—
	3-position	All ports closed	6.0	0.37	6.8	—	0.12	—
		ABR connection	6.0	0.31	7.1	—	0.11	—
		PAB connection	6.0	0.37	6.8	—	0.13	—
M4GE4 1-port size G1/2	2-position		8.3	0.23	9.0	—	0.21	—
	3-position	All ports closed	7.4	0.15	8.8	—	0.19	—
		ABR connection	7.5	0.28	9.4	—	0.17	—
		PAB 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.

3GD*0EA
4GD*0EA

3GE*0EA
4GE*0EA

M3GD*0EA
M4GD*0EA

M3GE*0EA
M4GE*0EA

Related products

Manifold
Specifications sheet

Safety precautions

M3GE1/2 / M4GE1/2/3/4*0EA Series

Individual wiring manifold; base piping

How to order

Manifold model No.

M 4GE1 1 0 EA - C4G RN H - 6 - 4

3-port manifold model No.

M 3GE1 66 0 EA - M5G RN H - 2 - 4

Discrete valve for integrated base

4GE1 1 9 EA - 00 RN H - 4

3-port discrete valve for integrated base

3GE1 66 9 EA - 00 RN H - 4

A Model No.

B Solenoid position

C Explosion-proof Series

D Port size

E Electrical connections

F Option

G Mount type

H Station No.

I Voltage

A Model No.

3 G E 1	3 G E 2	4 G E 1	4 G E 2	4 G E 3	4 G E 4
------------------	------------------	------------------	------------------	------------------	------------------

Code	Content	3 G E 1	3 G E 2	4 G E 1	4 G E 2	4 G E 3	4 G E 4
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	Two 3-port 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							
EA	Product compliant to ATEX Directive	●	●	●	●	●	●
D Port size {2(B), 4(A) port}							
Port	4(A)/2(B) port	Port P/R1/R2 (2) = G1/8 (3) = G1/4 (4) = G3/8 (5) = G1/2					
C4G	ø4 push-in fitting	(2)	(3)	(2)	(3)		
C6G	ø6 push-in fitting	(2)	(3)	(2)	(3)	(4)	
C8G	ø8 push-in fitting		(3)		(3)	(4)	(4)
C10G	ø10 push-in fitting					(4)	(4)
C12G	ø12 push-in fitting						(4)
CXG	Push-in fitting mix	(2)	(3)	(2)	(3)	(4)	(4)
M5G	M5	(2)		(2)			
06G	G1/8		(3)		(3)		
08G	G1/4					(4)	(4)
10G	G3/8						(4)
12G	G1/2						(5)
00	Valve for base mounting	●	●	●	●	●	●
E Electrical connections							
RN	M8 connector without cable	●	●	●	●	●	●
R1	M8 connector straight cable *3	●	●	●	●	●	●
R2	M8 connector L-type cable *3	●	●	●	●	●	●
F Option							
Blank	Manual override of non-locking/locking common (standard)	●	●	●	●	●	●
H	With exhaust check valve *4/6	●	●	●	●	●	●
F	A/B port filter *5	●	●	●	●	●	●
Z1	Air supply spacer *6/7	●	●	●	●	●	●
Z3	Exhaust spacer *6/7	●	●	●	●	●	●
G Mount type							
Blank	Direct mount *8	●	●	●	●	●	●
H Station No. No. *8							
2 to 20	2 stations to 20 stations (Refer to page 49 for the max. station No.)	●	●	●	●	●	2 to 15
I Voltage							
4	12V DC	●	●	●	●	●	●

⚠ Precautions for model No. selection

- *1 Select M4GE*80EA when mixing with 3, 5-port valves. Further, select M3GE*80EA when mixing with masking plate.
- *2 Dimensions are the same as the respective 2-position double solenoid.
- *3 M8 connector length is 300 mm. Select other lengths from page 63 as needed.
- *4 3-position all ports closed and PAB connection are not provided with exhaust check valve specifications (H). Refer to page 73 for details on the exhaust check valve.
- *5 A filter is built into port P as standard.
- *6 For 4G4, selection of exhaust check valves (H), air supply spacers (Z1), or exhaust spacers (Z3) is not available.
- *7 Specify the spacer mounting position and quantity on the manifold specifications sheet. Stacking of spacers is not possible. Combination with the masking plate is not supported. Refer to pages 58 to 61 for details.
- *8 The manifold max. station No. for port size 12 M4GE4 is 12.
- *9 Explosion-proof barrier sold separately. Select from page 67.

3GD*0EA
4GD*0EA

3GE*0EA
4GE*0EA

M3GD*0EA
M4GD*0EA

M3GE*0EA
M4GE*0EA

Related products

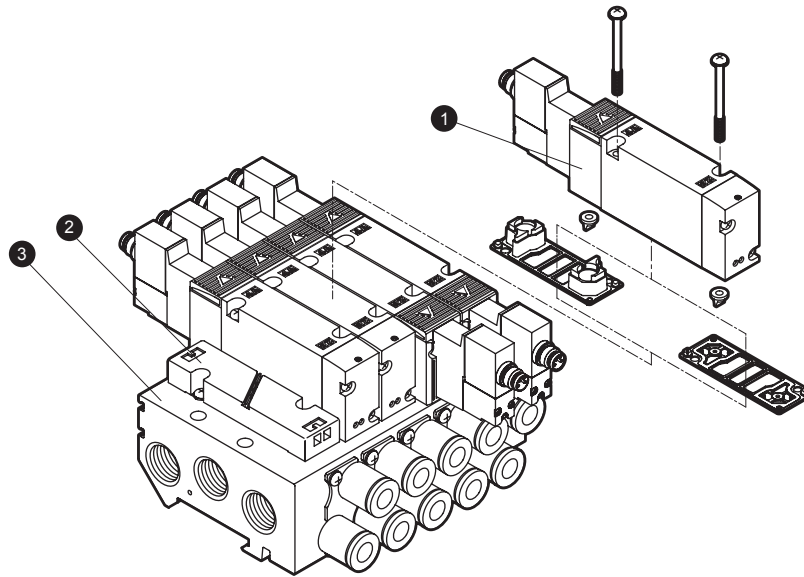
Manifold
Specifications sheet

Safety precautions

M4GE1/2/3/4*0EA Series

Individual wiring manifold; base piping

Manifold configuration explanation and parts list



Main parts list

No.	Component name	Model No.	Content	Remarks
1	Discrete valve for integrated base	4GE □ □ 9EA -00 <small>Electrical connections - Option - Voltage</small> <small>Solenoid position</small> <small>Series flow rate size</small>	Discrete valve Gasket 2 mounting screws (2 PR check valves)	Details on page 51
2	Masking plate	3G1/4G1 4G1R-MP 3G2/4G2 4G2R-MP 4G3 4G3R-MP 4G4 4GB4-MP	Masking plate Gasket 2 mounting screws	* 4G3/4G4 have two PR check valves attached.
3	Manifold base assembly	M4GB □ R - <small>Electrical connections</small> - <small>Option</small> - <small>Station No.</small> <small>Series flow rate size</small>	Manifold base	

Parts list

No.	Part name	No.	No.	Part name	No.
-	M8 connector cable	4GEX-M8CC- <small>Direction</small> - <small>Length</small> *Details on page 65	-	Cartridge push-in fitting and related parts	4G1 <small>ø4 straight</small> 4G1R-JOINT-C4
*Refer to page 67 for details on explosion-proof barriers.	Explosion-proof barrier	D5048S			4G1 <small>ø6 straight</small> 4G1R-JOINT-C6
					4G1 Plug cartridge 4G1R-JOINT-CPG
					4G2 <small>ø4 straight</small> 4G2R-JOINT-C4
					4G2 <small>ø6 straight</small> 4G2R-JOINT-C6
					4G2 <small>ø8 straight</small> 4G2R-JOINT-C8
					4G2 Plug cartridge 4G2R-JOINT-CPG
					4G3 <small>ø6 straight</small> 4G3R-JOINT-C6
					4G3 <small>ø8 straight</small> 4G3R-JOINT-C8
					4G3 <small>ø10 straight</small> 4G3R-JOINT-C10
					4G3 Plug cartridge 4G3R-JOINT-CPG
					4G4 <small>ø8 straight</small> 4G4-JOINT-C8
4G4 <small>ø10 straight</small> 4G4-JOINT-C10					
4G4 <small>ø12 straight</small> 4G4-JOINT-C12					

3GD*0EA
4GD*0EA

3GE*0EA
4GE*0EA

M3GD*0EA
M4GD*0EA

M3GE*0EA
M4GE*0EA

Related products

Manifold
Specifications sheet

Safety precautions

M4GE1*0EA Series

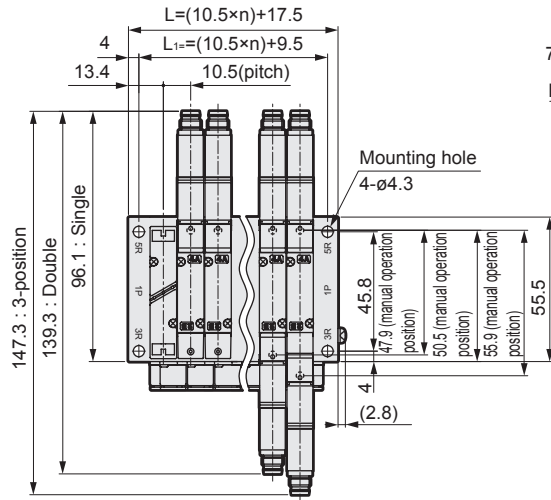
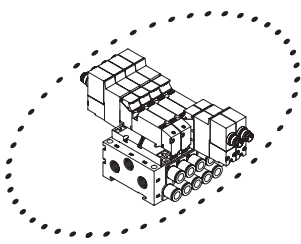
Individual wiring manifold; base piping

Dimensions

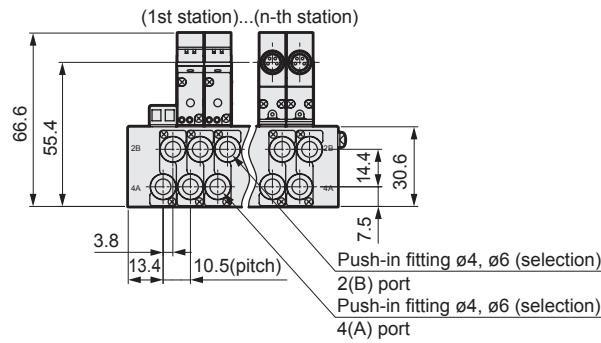
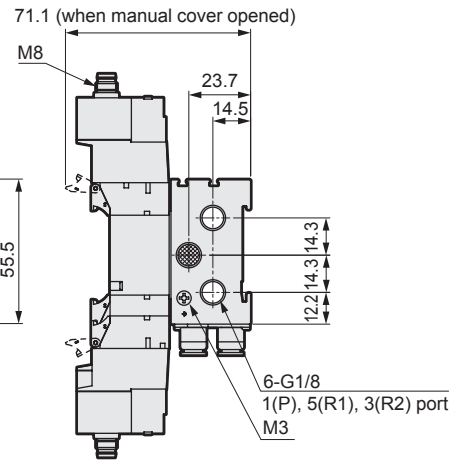
M4GE1*0EA

- Direct mount

Without connector (RN)

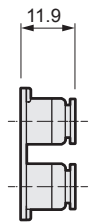
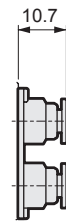


* The weight of the two 3-port valves integrated type is the same as that of 2-position double.



● ø4 (C4)

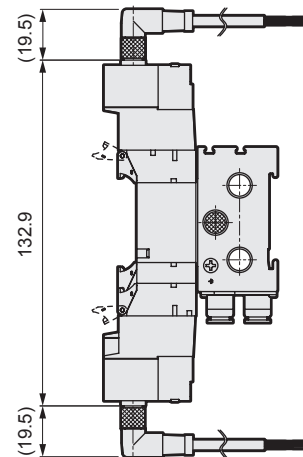
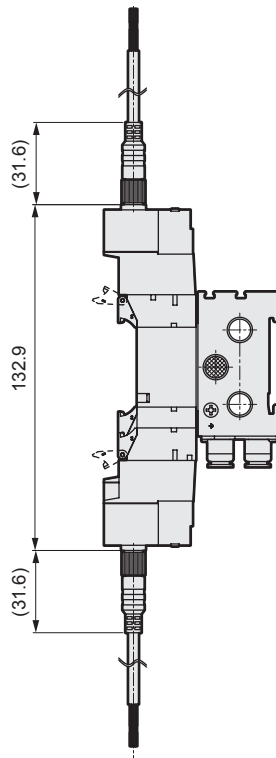
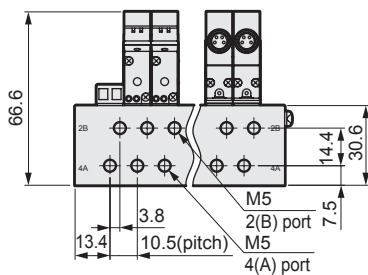
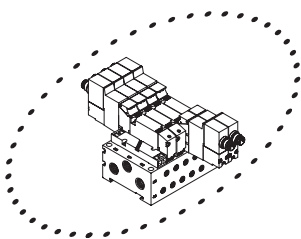
● ø6 (C6)



- M5 female thread (M5G)

- M8 connector/straight cable (R1)

- M8 connector/L-type cable (R2)



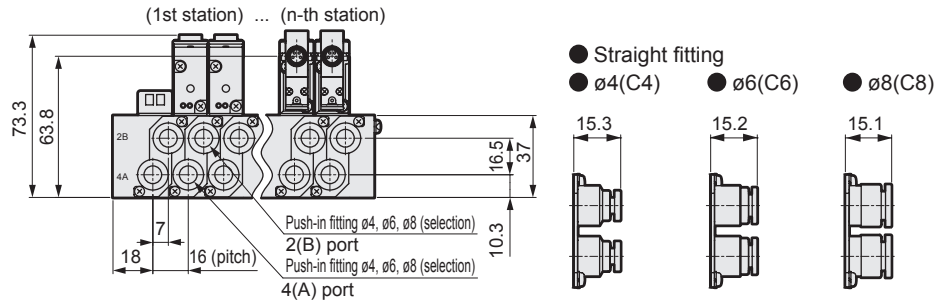
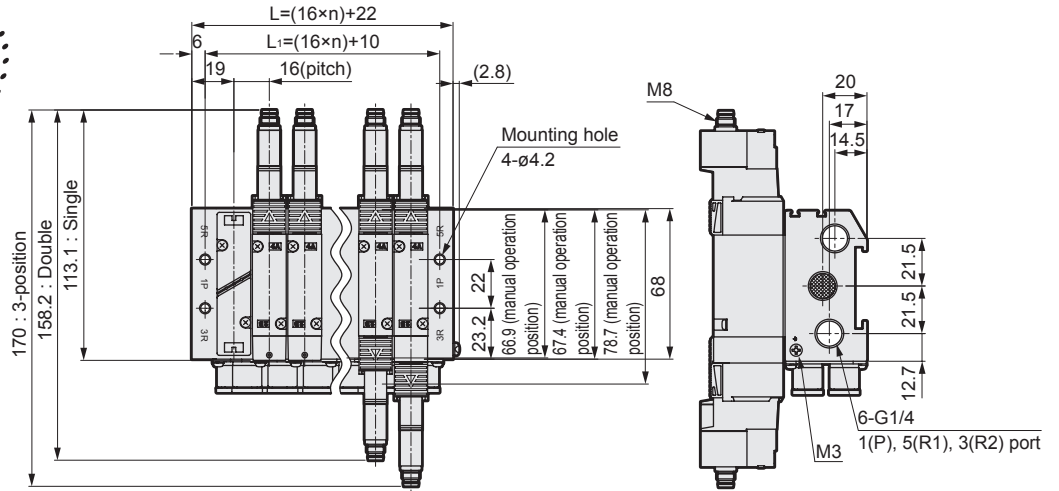
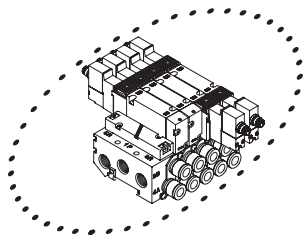
Station No.	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L	38.5	49.0	59.5	70.0	80.5	91.0	101.5	112.0	122.5	133.0	143.5	154.0	164.5	175.0	185.5	196.0	206.5	217.0	227.5
L ₁	30.5	41.0	51.5	62.0	72.5	83.0	93.5	104.0	114.5	125.0	135.5	146.0	156.5	167.0	177.5	188.0	198.5	209.0	219.5

Dimensions

M4GE2*0EA

- Without connector (RN)

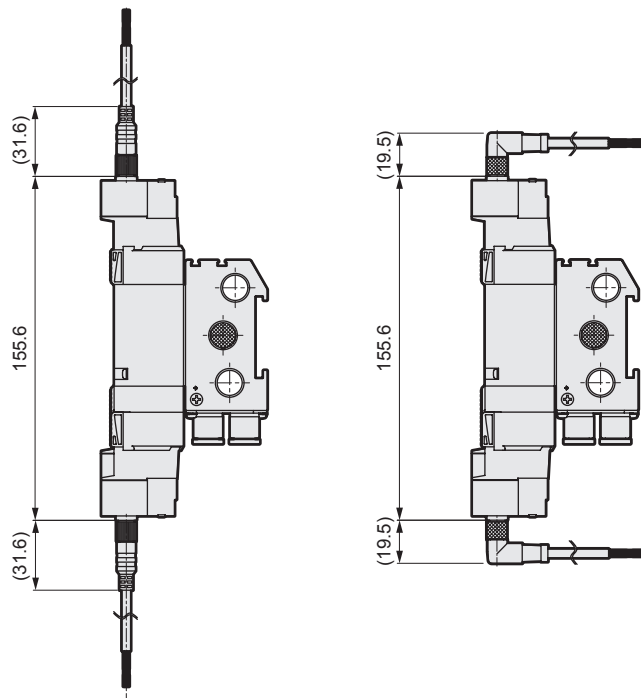
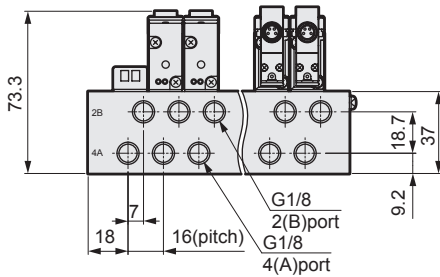
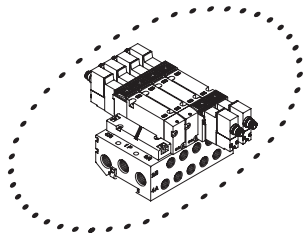
*2 The weight of the two 3-port valves integrated type is the same as that of 2-position double.



- G1/8 female thread (06G)

- M8 connector/straight cable (R1)

- M8 connector/L-type cable (R2)



Station No.	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L	54.0	70.0	86.0	102.0	118.0	134.0	150.0	166.0	182.0	198.0	214.0	230.0	246.0	262.0	278.0	294.0	310.0	326.0	342.0
L ₁	42.0	58.0	74.0	90.0	106.0	122.0	138.0	154.0	170.0	186.0	202.0	218.0	234.0	250.0	266.0	282.0	298.0	314.0	330.0

M4GE3*0EA Series

Individual wiring manifold; base piping

Dimensions

M4GE3*0EA

● Without connector (RN)

3GD*0EA
4GD*0EA

3GE*0EA
4GE*0EA

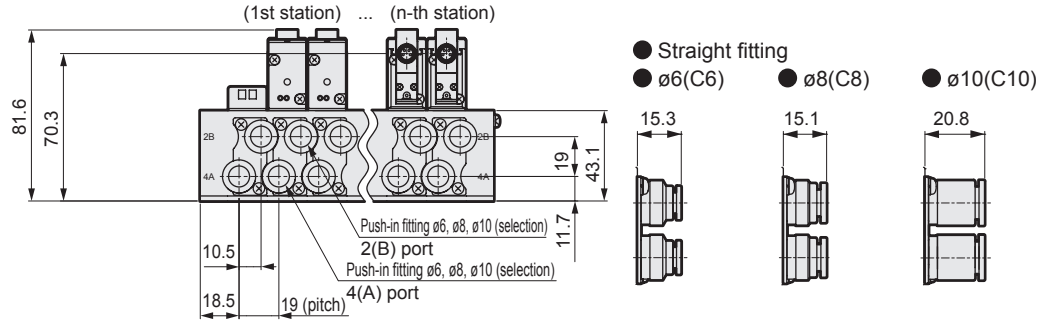
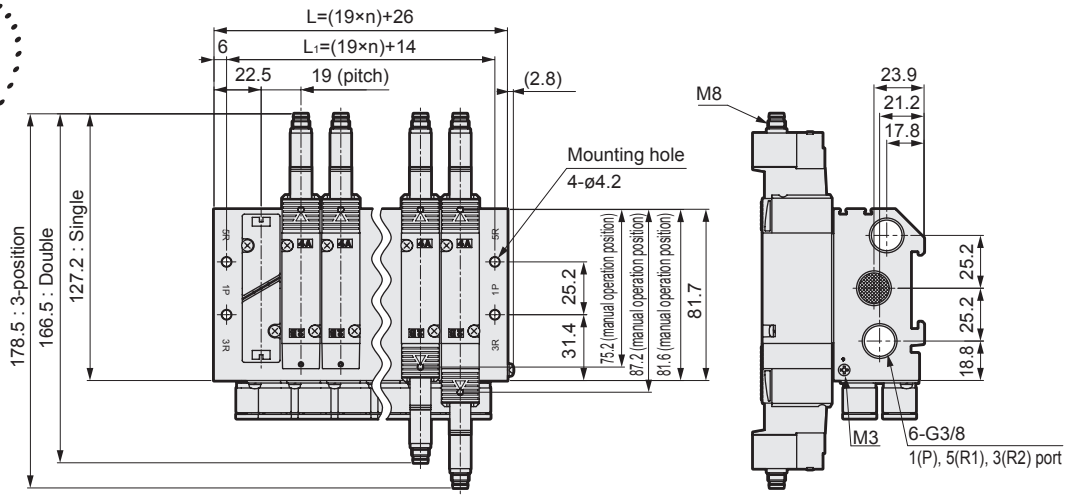
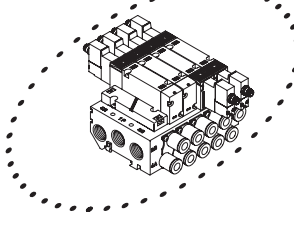
M3GD*0EA
M4GD*0EA

M3GE*0EA
M4GE*0EA

Related products

Manifold
Specifications sheet

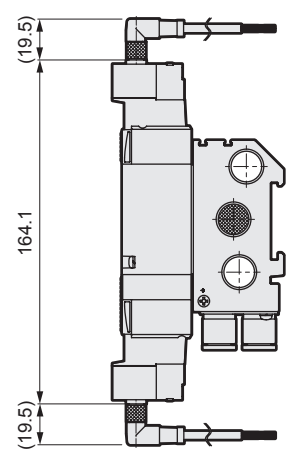
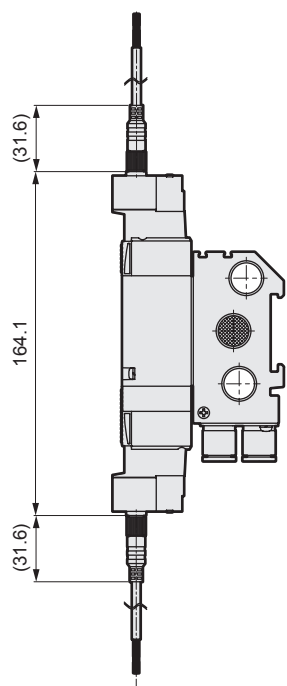
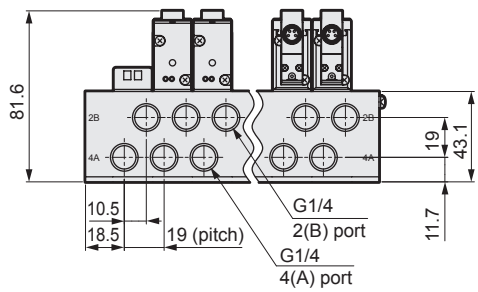
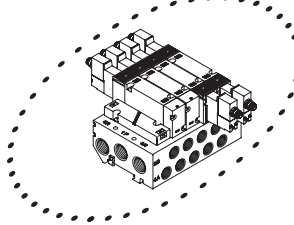
Safety precautions



● G1/4 female thread (08G)

● M8 connector/straight cable (R1)

● M8 connector/L-type cable (R2)

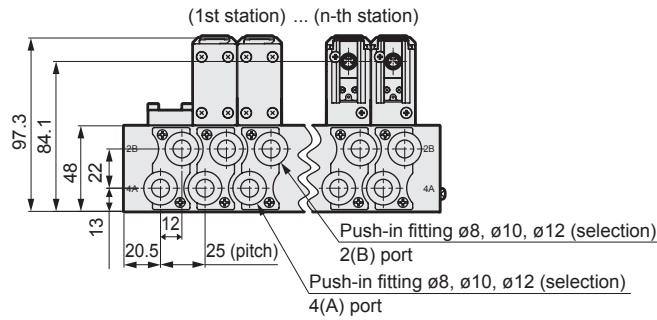
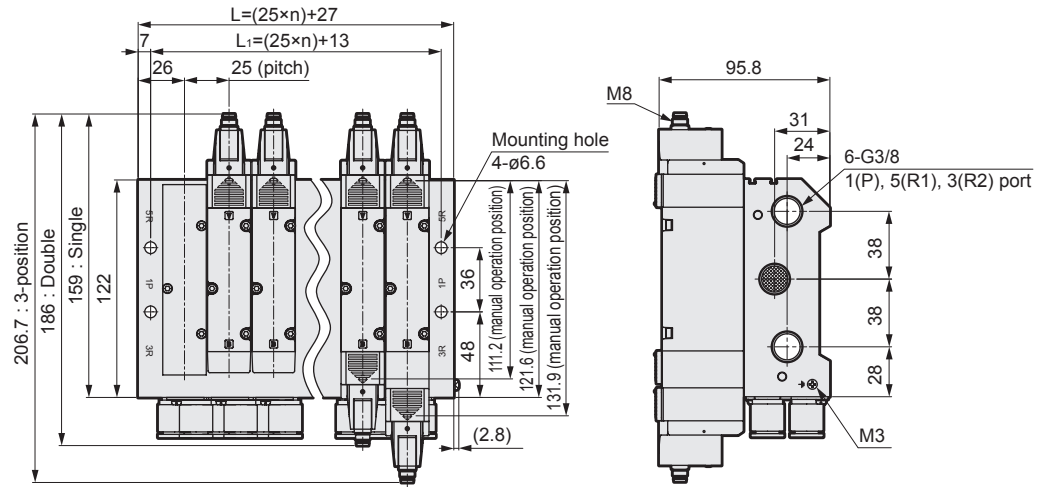
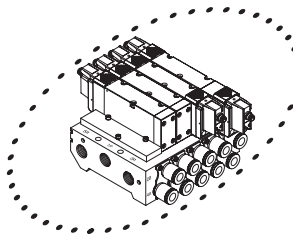


Station No.	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L	64.0	83.0	102.0	121.0	140.0	159.0	178.0	197.0	216.0	235.0	254.0	273.0	292.0	311.0	330.0	349.0	368.0	387.0	406.0
L ₁	52.0	71.0	90.0	109.0	128.0	147.0	166.0	185.0	204.0	223.0	242.0	261.0	280.0	299.0	318.0	337.0	356.0	375.0	394.0

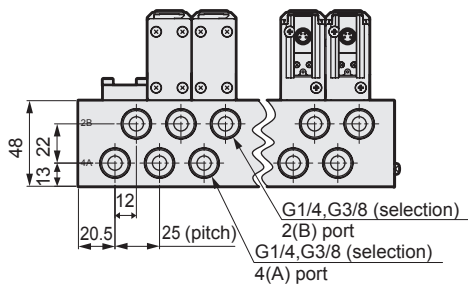
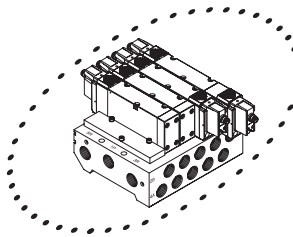
Dimensions

M4GE4*0EA

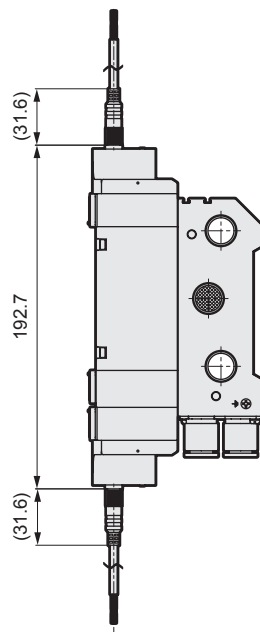
- Without connector (RN)



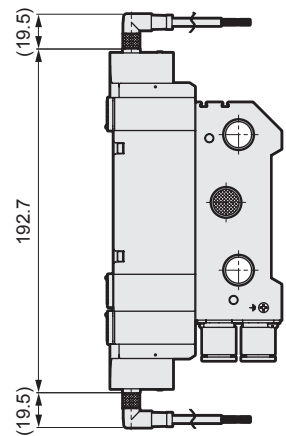
- G1/4, G3/8 female thread (08G, 10G)



- M8 connector/straight cable (R1)



- M8 connector/L-type cable (R2)



Station No.	2	3	4	5	6	7	8	9	10	11	12	13	14	15
L	77	102	127	152	177	202	227	252	277	302	327	352	377	402
L ₁	63	88	113	138	163	188	213	238	263	288	313	338	363	388

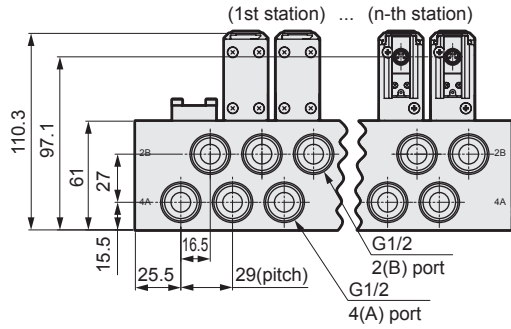
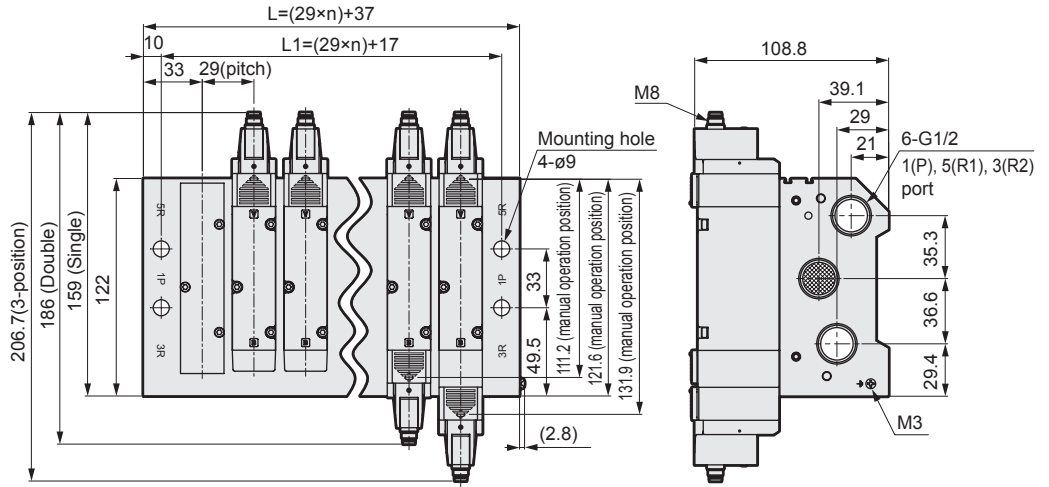
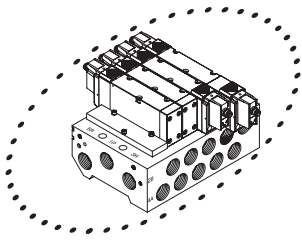
M4GE4*0EA Series

Individual wiring manifold; base piping

Dimensions

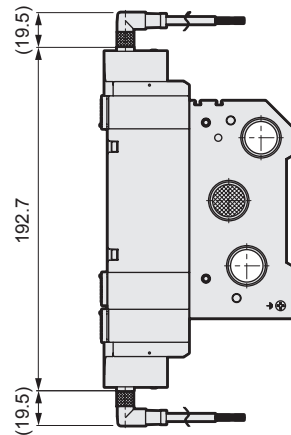
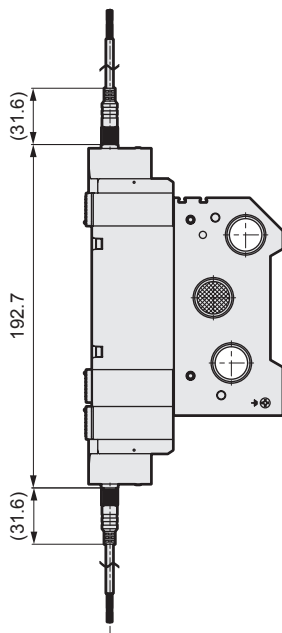
M4GE4*0EA

- G1/2 female thread (15G)
Without connector (RN)



- M8 connector/straight cable (R1)

- M8 connector/L-type cable (R2)

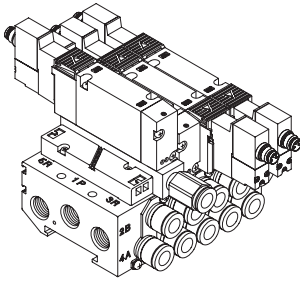


Station No.	2	3	4	5	6	7	8	9	10	11	12
L	95	124	153	182	211	240	269	298	327	356	385
L ₁	75	104	133	162	191	220	249	278	307	336	365

3GD*0EA
4GD*0EA
3GE*0EA
4GE*0EA
M3GD*0EA
M4GD*0EA
M3GE*0EA
M4GE*0EA
Related products
Manifold Specifications sheet
Safety precautions

Related products

● Air supply 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	0.70	0.23	0.93	0.16	8
4G2	1.6	0.17	1.8	0.16	35
4G3	2.6	0.22	3.1	0.14	56

*1: Values are when a valve is mounted.

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

How to order discrete units

● Air supply spacer

Air supply spacer model No.

4G **3** **E - P** - **GWS10**

A Air supply spacer model No.

B Port size *1

		Valve model No.		
		4G1	4G2	4G3
Code	Content			
A Air supply spacer model No.				
1	For 4G1	●		
2	For 4G2		●	
3	For 4G3			●
B Port size				
Blank	M5	●		
06G	G1/8		●	
08G	G1/4			●
GWS4	ø4 fitting	●		
GWS6	ø6 fitting	●	●	
GWS8	ø8 fitting		●	●
GWS10	ø10 fitting			●

□ is not available.

Included: 2 mounting screws, 2 PR check valves,
1 body gasket

⚠ Precautions for model No. selection

*1 Specify the air supply spacer mounting position and quantity on the manifold specifications sheet of each catalog.

*2 Combination with the masking plate is not supported.

*3 4G4 air supply spacers are made-to-order products. Contact CKD for details.

3GD*0EA
4GD*0EA

3GE*0EA
4GE*0EA

M3GD*0EA
M4GD*0EA

M3GE*0EA
M4GE*0EA

Related products

Manifold
Specifications sheet

Safety precautions

M4GD1-3·M4GE1-3*0EA Series

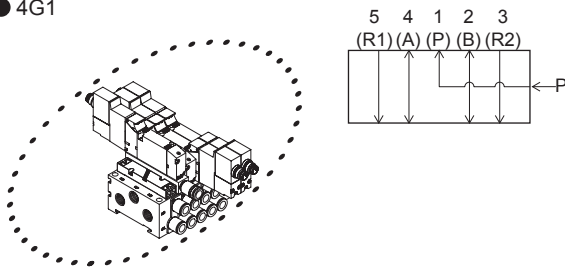
Related products

Related products

● Air supply spacer

Dimensions

● 4G1



3GD*0EA
4GD*0EA

3GE*0EA
4GE*0EA

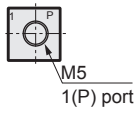
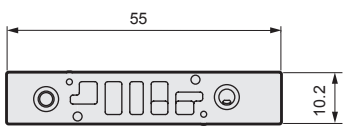
M3GD*0EA
M4GD*0EA

M3GE*0EA
M4GE*0EA

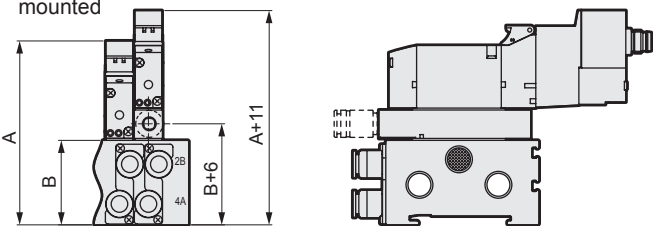
Related products

Manifold
Specifications sheet

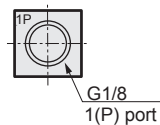
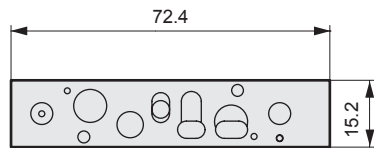
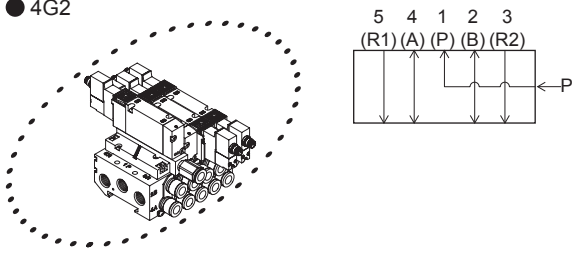
Safety precautions



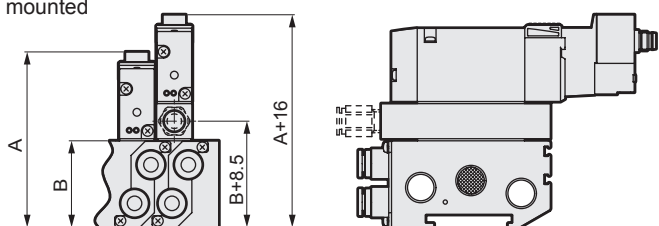
Dimensions when mounted



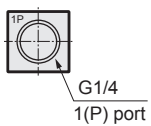
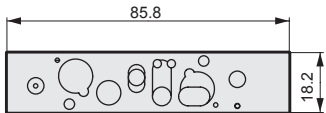
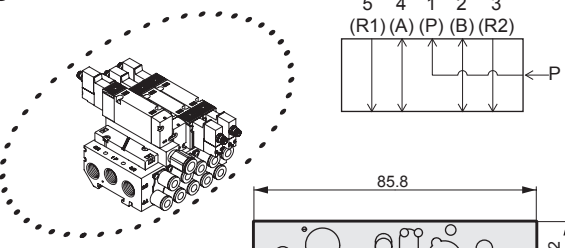
● 4G2



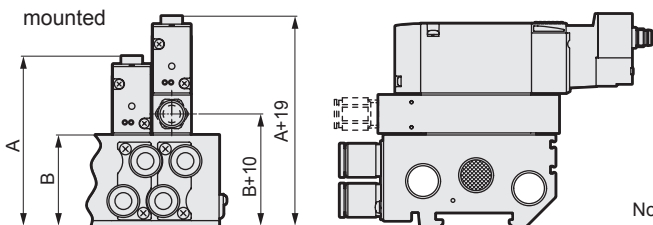
Dimensions when mounted



● 4G3



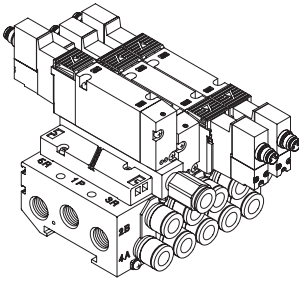
Dimensions when mounted



Note: For A and B dimensions, check the dimensions of the respective specifications.

Related products

- Exhaust 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	0.94	0.28	0.68	0.33	7
4G2	1.5	0.24	1.9	0.24	34
4G3	3.4	0.21	2.9	0.27	58

*1: Values are when a valve is mounted.

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

How to order discrete units

- Exhaust spacer

Exhaust spacer model No.

4G **3** **E** - **R** - **GWS10**

A Exhaust spacer model No.

B Port size
*1

Code		Content		Valve model No.		
				4G1	4G2	4G3
A Exhaust spacer model No.						
1		For 4G1	●			
2		For 4G2		●		
3		For 4G3			●	
B Port size						
Blank		M5	●			
06G		G1/8		●		
08G		G1/4			●	
GWS4		ø4 fitting	●			
GWS6		ø6 fitting	●	●		
GWS8		ø8 fitting		●	●	
GWS10		ø10 fitting			●	

is not available.

Included: 2 mounting screws (*2), 2 PR check valves,
1 body gasket

⚠ Precautions for model No. selection

*1 Specify the exhaust spacer mounting position and quantity on the manifold specifications sheet of each catalog.

*2 Combination with the masking plate is not supported.

*3 4G4 exhaust spacers are made-to-order products. Contact CKD for details.

3GD*0EA
4GD*0EA

3GE*0EA
4GE*0EA

M3GD*0EA
M4GD*0EA

M3GE*0EA
M4GE*0EA

Related products

Manifold
Specifications sheet

Safety precautions

M4GD1-3-M4GE1-3*0EA Series

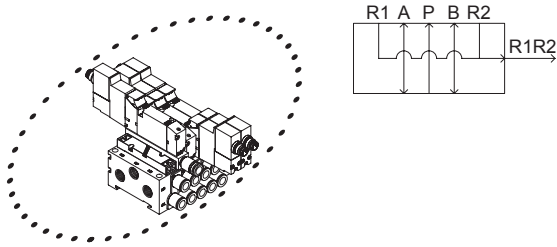
Related products

Related products

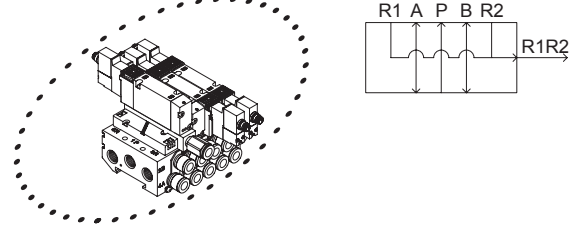
● Exhaust spacer

Dimensions

● 4G1



● 4G2

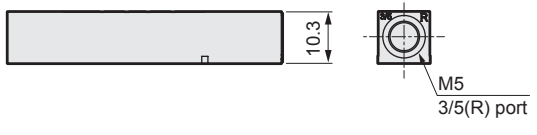
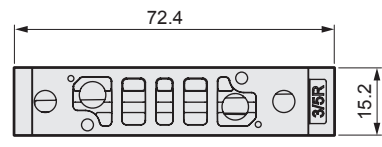
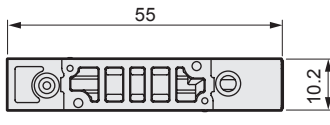


3GD*0EA
4GD*0EA

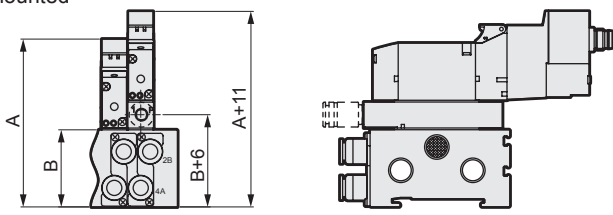
3GE*0EA
4GE*0EA

M3GD*0EA
M4GD*0EA

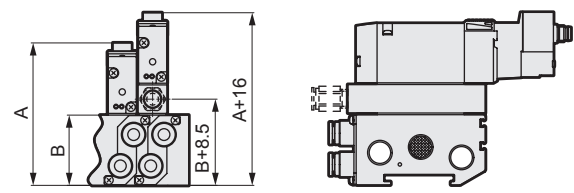
M3GE*0EA
M4GE*0EA



Dimensions when mounted

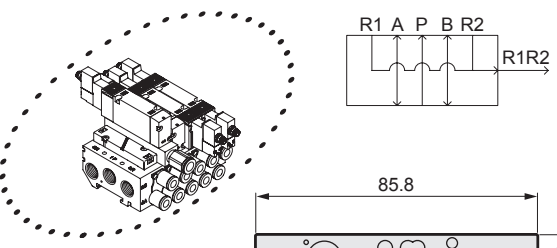


Dimensions when mounted

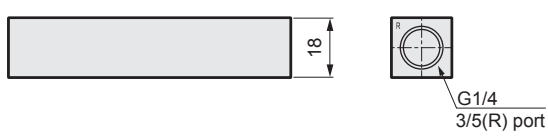
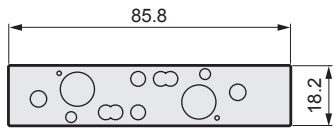


Related products

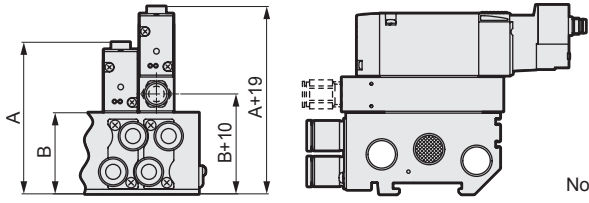
● 4G3



Manifold
Specifications sheet






Dimensions when mounted



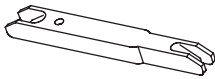
Note: For A and B dimensions, check the dimensions of the respective specifications.

Related products

● Plug types

Part name	Model No.	Compatible bore size	Appearance
Blanking plug	GWP4-B	ø4	
	GWP6-B	ø6	
	GWP8-B	ø8	
	GWP10-B	ø10	
	GWP12-B	ø12	
Threaded plug	4G1R-M5P	M5	 (FPL-M5)
	4G2R-06GP	G1/8	 Hexagon socket plug
	4G3R-08GP	G1/4	
	4G3R-10GP	G3/8	
	4G4-15GP	G1/2	

- Push-in fitting tube remover
For ø4/ø6 push-in fittings
4GR-EOT4-6



3GD*0EA
4GD*0EA

3GE*0EA
4GE*0EA

M3GD*0EA
M4GD*0EA

M3GE*0EA
M4GE*0EA

Related products

Manifold
Specifications sheet

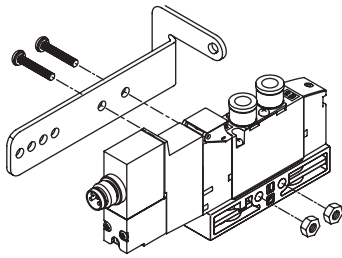
Safety precautions

M4GD1-4·M4GE1-4*0EA Series

Related parts

Related parts

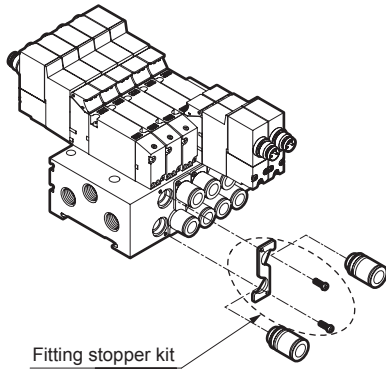
(1) Mounting plate (P) kit



Mounting (P) kit

Model	Kit model No.	Set parts
4GD1	4G1R-MOUNT-PLATE-KIT	Mounting plate, 2 mounting screws, 2 nuts
4GD2	4G2R-MOUNT-PLATE-KIT	Mounting plate, 2 mounting screws
4GD3	4G3R-MOUNT-PLATE-KIT	Mounting plate, 2 mounting screws

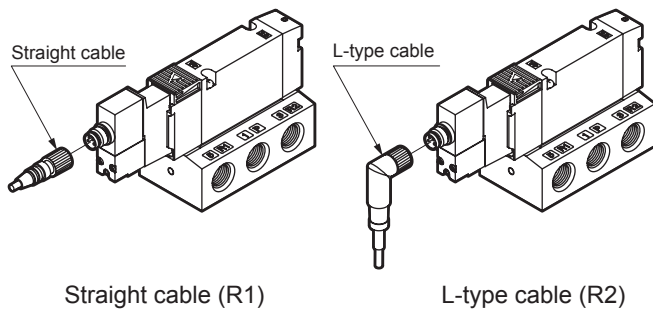
(2) Single cartridge push-in fitting related part



Fitting stopper plate kit

Model	Kit model No.
M4G1	4G1R-JNT-STP-PLATE-KIT
M4G2	4G2R-JNT-STP-PLATE-KIT
M4G3	4G3R-JNT-STP-PLATE-KIT
M4G4	4GB4-JNT-STP-PLATE-KIT

(3) M8 connector cable



4GEX - M8CC - R1 - 300

A Direction **B** Length

A Direction	
R1	Straight cable
R2	L-type cable

B Length	
300	Cable length 300mm
500	Cable length 500mm
1000	Cable length 1000mm
3000	Cable length 3000mm

3GD*0EA
4GD*0EA

3GE*0EA
4GE*0EA

M3GD*0EA
M4GD*0EA

M3GE*0EA
M4GE*0EA

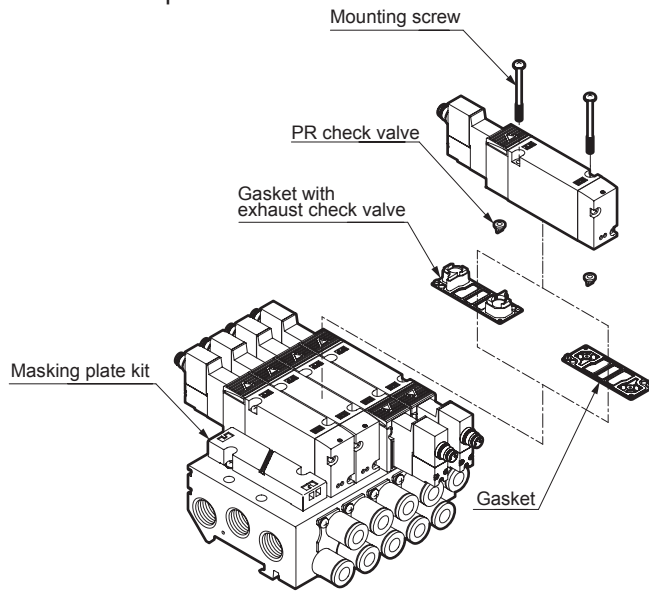
Related products

Manifold
Specifications sheet

Safety precautions

Related parts

(4) Manifold related parts



Masking plate kit

Model	Model No.	Content	Remarks
M3G1/M4G1	4G1R-MP	Masking plate Gasket 2 mounting screws	4G3/4G4 have two PR check valves attached.
M3G2/M4G2	4G2R-MP		
M4G3	4G3R-MP		
M4GD4	4GA4-MP		
M4GE4	4GB4-MP		

Gasket

Model	Part model No.
3G1/4G1	4G1R-GASKET
3G1/4G1 (For masking plate)	4G1R-MP-GASKET
3G2/4G2	4G2R-GASKET
3G2/4G2 (For masking plate)	4G2R-MP-GASKET
4G3	4G3R-GASKET
4GD4	4GA4-GASKET
4GE4	4GB4-GASKET

Gasket with exhaust check valve

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

Note: For 4G4, there is no Gasket exhaust check valve.

PR check valve kit (2 per set)

Model	Kit model No.
3G1/4G1	4G1R-PR
3G2/4G2	4G2R-PR
4G3	4G3R-PR
4G4	4G4-PR

Mounting screw (10 per set)

Model	Part model No.
3G1/4G1	4G1R-SET-SCREW
3G2/4G2	4G2R-SET-SCREW
4G3	4G3R-SET-SCREW
4G4	4G4-SET-SCREW

3GD*0EA
4GD*0EA

3GE*0EA
4GE*0EA

M3GD*0EA
M4GD*0EA

M3GE*0EA
M4GE*0EA

Related products

Manifold
Specifications sheet

Safety precautions

M4GD1-4·M4GE1-4*0EA Series

Related parts

Related parts

(5) Sub-plate

How to order

● 4GD piping adapter

4G1 R-ADAPTOR-**M5G** - ●

A Model No.

		A Model No.				
		3 G 1	3 G 2	4 G 1	4 G 2	4 G 3
Code	Content					
B Port size (Port P/R1/R2)						
M5G	M5	●		●		
06G	G1/8		●		●	
08G	G1/4					●

C Option						
P	With mounting plate (included)	●	●	●	●	●

is not available.

Note: For 4G4, there is no piping adapter.

● 4GE discrete sub-plate

4G1 R-SUB-BASE - **06G** - ●

A Model No.

		A Model No.					
		3 G 1	3 G 2	4 G 1	4 G 2	4 G 3	4 G 4
Code	Content						
B Port size (Port A/B/P/R1/R2)							
06G	G1/8	●		●			
08G	G1/4		●		●	●	
10G	G3/8					●	●
15G	G1/2						●

C Option					
F	A/B port filter integrated *1	●	●	●	●

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

is not available.

3GD*0EA
4GD*0EA

3GE*0EA
4GE*0EA

M3GD*0EA
M4GD*0EA

M3GE*0EA
M4GE*0EA

Related products

Manifold
Specifications sheet

Safety precautions

Related parts

(6) Manifold sub-plate kit individual wiring

● M4GD Sub-plate

M4GD1 R-00G-2

● A Model No.

Code	Content
A Model No.	
M4GD1	Metal base, 4G1 size, body piping
M4GD2	Metal base, 4G2 size, body piping
M4GD3	Metal base, 4G3 size, body piping
M4GD4	Metal base, 4G4 size, body piping
D Station No.	
2	2 stations
to	to
20	Refer to the specifications page for the max. station number.

● M4GE1 sub-plate

M4GE1R-C4G- - -2

● A Port size

● B Option

● C Mount type

● D Station No.

Code	Content	Port P/R1/R2
A Port size		
Port	4(A)/2(B) port	G1/8
C4G	ø4 push-in fitting	
C6G	ø6 push-in fitting	
M5G	M5	
B Option		
Blank		
F	A/B port filter integrated *1	
C Mount type		
Blank	Direct mount	
D Station No.		
2	2 stations	
to	to	
20	Refer to the specifications page for the max. station number.	

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

● M4GE2/3 sub-plate

M4GE2 R-C4G- -2

● A Model No.

● B Port size

● C Option

● D Station No.

Code	Content	A Model No.	
B Port size		M	M
Port		4	4
C4G		G	G
C6G		E	E
C8G		2	3
C10G			
06G			
08G			
Port P/R1/R2			
(1)=G1/4 (2)=G3/8			
C4G	ø4 push-in fitting	(1)	
C6G	ø6 push-in fitting	(1)	(2)
C8G	ø8 push-in fitting	(1)	(2)
C10G	ø10 push-in fitting		(2)
06G	G1/8	(1)	
08G	G1/4		(3)
C Option			
Blank			
F	A/B port filter integrated *1		
D Station No.			
2	2 stations		
to	to		
20	Refer to the specifications page for the max. station number.		

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

3GD*0EA
4GD*0EA

3GE*0EA
4GE*0EA

M3GD*0EA
M4GD*0EA

M3GE*0EA
M4GE*0EA

Related products

Manifold
Specifications sheet

Safety precautions

Explosion-proof barrier dimensions

Model No.: D5048S



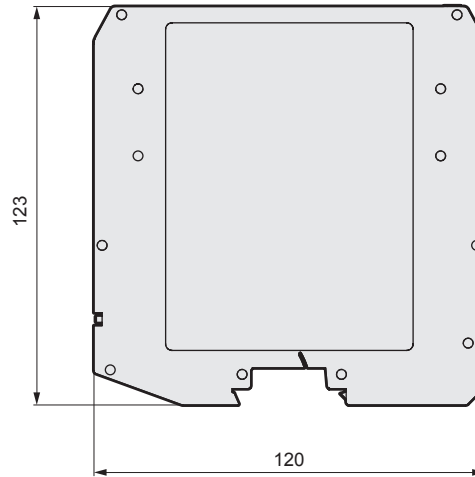
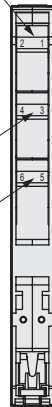
3GD*0EA 4GD*0EA
3GE*0EA 4GE*0EA
M3GD*0EA M4GD*0EA
M3GE*0EA M4GE*0EA
Related products
Manifold Specifications sheet
Safety precautions



Terminal No. display (non-dangerous zone side)
Terminal: No. 1 : +
Terminal: No. 2 : - } Barrier:24V DC ±10%

(Terminal:No. 3 and 4 are for malfunction output.)

(Terminal:No. 5 and 6 are for prioritized input.)



Terminal No. display (dangerous zone side)

Terminal : No. 8 : +
Terminal : No. 10 : -

*Avoid the use of terminals No. 7 and 9, which do not satisfy the working voltage and intrinsic safety parameters in combination with CKD solenoids.



Manufacturer: IDEC Co., Ltd. (G.M.I)
Refer to the IDEC or G.M.I catalog for details.

Barrier intrinsic safety parameters

Descriptions	Between terminals No. 8-10
Intrinsic safety circuit max. voltage U ₀	24.8V
Intrinsic safety circuit max. current I ₀	108mA
Intrinsic safety circuit max. power P ₀	667mW
Intrinsic safety circuit allowable capacitance C ₀	0.113 μF
Intrinsic safety circuit allowable inductance L ₀	1.42 mH
Operating ambient temperature range	-40 to 70°C

- *1. Always use valves in combination with a barrier.
- *2. Connection terminals are polarized. Take care to prevent incorrect wiring.
- *3. Applicable wire cross section is 0.25 to 2.5 mm².
- *4. Recommended terminal tightening torque is 0.5 to 0.6 N·m.
- *5. Barrier degree of protection is IP20.

3GD*0EA 4GD*0EA	3GE*0EA 4GE*0EA	M3GD*0EA M4GD*0EA	M3GE*0EA M4GE*0EA	Related products	Manifold Specifications sheet	Safety precautions
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M4G¹/₂/₃ Individual wiring

M4G¹/₂/₃ ^D/_E Manifold specifications sheet

Date issued / /

Company _____

Contact _____

Order No. _____

● Contact ● Quantity set(s) ● Delivery date /

Slip No. _____ Order No. _____

● Manifold model No.

M **G** ^D/_E **0EA** - - - -

Solenoid valve Solenoid position Port size Electrical connections Other options Mount type Station No. Voltage

Solenoid valve model No.	Fitting CX		Valve installation position																								Quantity
	A	B	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
4G <input type="text"/> 9EA-																											
4G <input type="text"/> 9EA-																											
4G <input type="text"/> 9EA-																											
4G <input type="text"/> 9EA-																											
4G <input type="text"/> 9EA-																											
3G <input type="text"/> 9EA-																											
3G <input type="text"/> 9EA-																											
Masking plate 4G <input type="text"/> R-MP-																											
Air supply spacer 4G <input type="text"/> E-P-																											
Exhaust spacer 4G <input type="text"/> E-R-																											
Included parts	Blanking plug																	For M <input type="text"/> G ^D / _E <input type="text"/> 1 <input type="text"/> 0EA									
	GWP4-B				GWP6-B				GWP8-B				GWP10-B				Push-in fitting tube remover (standard)										
	Threaded plug																								□ Not required (check the box)		
	4G1R-M5P				4G2R-06GP				4G3R-08GP																		

3GD*0EA
4GD*0EA

3GE*0EA
4GE*0EA

M3GD*0EA
M4GD*0EA

M3GE*0EA
M4GE*0EA

Related products

Manifold Specifications sheet

Safety precautions

M4G4 individual wiring

M4G4 ^D/_E Manifold specifications sheet

Date issued / /

Company

● Contact ● Quantity set(s) ● Delivery date /

Slip No.	Order No.
----------	-----------

Contact

Order No.

● Manifold model No.

M4G_E^D 4 **0EA** - - -

Solenoid valve Port size Electrical connections Other options Mount type Station No. Voltage

Solenoid valve model No.	Fitting CX		Valve installation position																								Quantity							
	A	B	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24								
4G _E 4 9EA-																																		
4G _E 4 9EA-																																		
4G _E 4 9EA-																																		
4G _E 4 9EA-																																		
Masking plate 4G _E 4-MP																																		
Included parts	Blanking plug												Threaded plug																					
	GWP8-B		GWP10-BB-B			GWP12-B			4G4-08GP				4G4-10GP				4G4-15GP																	

3GD*0EA
4GD*0EA

3GE*0EA
4GE*0EA

M3GD*0EA
M4GD*0EA

M3GE*0EA
M4GE*0EA

Related products

Manifold
Specifications sheet

Safety precautions



Safety Precautions

Always read this section before use.

When designing and manufacturing a device using CKD products, the manufacturer is obligated to check that device safety mechanism, pneumatic control circuit, or water control circuit and the system operated by electrical control that controls the devices is secured.

It is important to select, use, handle and maintain the product appropriately to ensure that the CKD product is used safely.

Observe warnings and precautions to ensure device safety.

Check that device safety is ensured, and manufacture a safe device.

WARNING

1 This product is designed and manufactured as a general industrial machine part. It must be handled by an operator having sufficient knowledge and experience in handling.

2 Use this product in accordance with specifications.

This product must be used within its stated specifications. In addition, never modify or additionally machine this product.

This product is intended for use in general industrial machinery equipment or parts. It is not intended for use outdoors (except for products with outdoor specifications) or for use under the following conditions or environments.

(Note that this product can be used when CKD is consulted prior to its usage and the customer consents to CKD product specifications. The customer should provide safety measures to avoid danger in the event of problems.)

- ① Use for applications requiring safety, including nuclear energy, railways, aircraft, marine vessels, vehicles, medical devices, devices or applications in contact with beverages or foodstuffs, amusement devices, emergency cutoff circuits, press machines, brake circuits, or safety devices or applications.
- ② Use for applications where life or assets could be significantly affected, and special safety measures are required.

3 Observe organization standards and regulations, etc. related to the safety of device design and control, etc.

ISO4414, JIS B 8370 (General rules for pneumatic systems)

JFPS2008 (Principles for pneumatic cylinder selection and use)


Including High Pressure Gas Safety Act, Industrial Safety and Health Act, other safety rules, body standards and regulations, etc.


4 Do not handle, pipe, or remove devices before confirming safety.


- ① Inspect and service the machine and devices after confirming safety of all systems related to this product.
- ② Note that there may be hot or charged sections even after operation is stopped.
- ③ When inspecting or servicing the device, turn OFF the energy source (air supply or water supply), and turn OFF power to the facility. Discharge any compressed air from the system, and pay attention to possible water leakage and leakage of electricity.
- ④ When starting or restarting a machine or device that incorporates pneumatic components, make sure that the system safety, such as pop-out prevention measures, is secured.

5 Observe warnings and cautions in the following pages to prevent accidents.

- The precautions are ranked as "DANGER", "WARNING" and "CAUTION" in this section.

 DANGER: When a dangerous situation may occur if handling is mistaken leading to fatal or serious injuries, and when there is a high degree of emergency to a warning.

 WARNING: If handled incorrectly, a dangerous situation may occur, resulting in death or serious injury.

 CAUTION: When a dangerous situation may occur if handling is mistaken leading to minor injuries or physical damage.

Note that some items described as "CAUTION" may lead to serious results depending on the situation.

Every item provides important information and must be observed.

Limited warranty and disclaimer

1 Warranty period

This warranty shall be valid for one year after delivery to the customer's designated site.

2 Scope of warranty

If any faults, found to be the responsibility of CKD, occur during the above warranty term, the product shall be replaced, the required replacement parts provided free of charge, or shall be repaired at the CKD factory free of charge.

This Limited Warranty will not apply to:

- (1) Failures due to use outside the conditions and environments set forth in the catalog or these specifications.
- (2) Failures resulting from factors other than this product.
- (3) Failures caused by improper use of the product.
- (4) Failures resulting from modifications or repairs made without CKD consent.
- (5) Failures caused by matters that could not be predicted with the technologies in practice when the product was delivered.
- (6) Failures resulting from natural disasters or accidents for which CKD is not liable.

The warranty covers the actually delivered product, and does not cover any damage resulting from losses induced by faults in the delivered product.

3 Compatibility check

The customer is responsible for confirming the compatibility of CKD products with the customer's systems, machines and equipment.

3GD*0EA
4GD*0EA

3GE*0EA
4GE*0EA

M3GD*0EA
M4GD*0EA

M3GE*0EA
M4GE*0EA

Related products

Manifold
Specifications sheet

Safety precautions



Safety Precautions

Be sure to read this section before use.

Refer to "Pneumatic Valves (No.CB-023SA)" for general precautions on valves.

Product-specific cautions: Pilot operated explosion-proof 3, 5-port valve 4G*/M4G*EA Series

Design/selection

⚠ WARNING

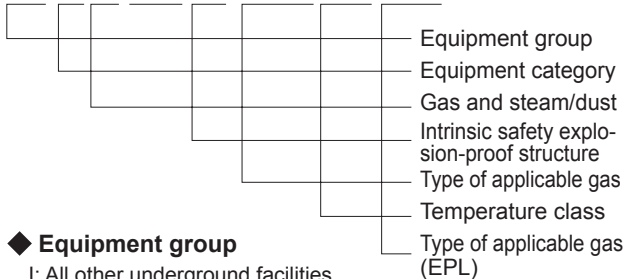
- Although this product may be usable in Class 1 and 2 danger zones (Zones 1 and 2) where there is combustible gas or steam, it cannot be used in Class 0 special danger zone.
- Explosion-proof performance is II 2G Ex ib IIC T4 Gb.
- Use in combination with a barrier. Valves cannot be used independently in dangerous zones.

⚠ CAUTION

■ Classification of explosion protection

According to the ATEX Directive, the equipment group, category, gas/dust, explosion-proof structure, type of applicable gas, temperature class, and protection level of equipment must be indicated on the electrical components of explosion-proof structures. For example, explosion-proof solenoid valve II 2G Ex ib II C T4 Gb means classification as follows.

II 2G Ex ib IIC T4 Gb



◆ Equipment group

- I: All other underground facilities
- II: All other underground facilities

◆ Equipment category

- 1: Equipment available at Zone 0 and Zone 20
- 2: Equipment available at Zone 1 and Zone 21
- 3: Equipment available at Zone 2 and Zone 22

◆ Type of applicable gas and temperature class

Based on IEC60079-20-1 classification of gases, it is indicated that gases of the II C type of applicable gas with the danger level of up to the T4 temperature class are usable. Less dangerous gases are also listed that are guaranteed to be explosion-proof.

Types of applicable gases show the danger level of fire coming outside through small gaps and the types are classified into the following groups by considering usage and gaps

- Group I: For coal mine
- Group II: Gas and steam other than for coal mine
- Group III: Dust other than for coal mine

Also, Group II is broken down by II A, II B, and II C of the following table depending on the degree of likelihood of ignition/propagation.

Table 1: Type of applicable gas

	Gas, steam classification	Minimum ignition Current ratio (*1)	Max. safety clearance (Unit: mm) (*2)
High risk ↓	II A	Over 0.8	0.9 or more
	II B	0.45 - 0.8	0.5 - less than 0.9
	II C	Less than 0.45	0.5 or less

(*1) MIC: Minimum ignition current
Ignition current ratio when minimum ignition current of methane is 1.
(*2) MESG: Maximum Experimental Safe Gap
Maximum gap for not igniting when the depth of the gap is 25 mm.

- The temperature class refers to the degree of ignition risk, and is classified into six classes according to the ignition point. It defines the maximum surface temperature of the device corresponding to each class (Table 2). Higher numbers indicate a higher risk that the gas will ignite at low igniting temperatures.

Table 2: Temperature class

Descriptions	Code	Provision
Temp. class	T1	Max. surface temperature 450°C
	T2	300°C
	T3	200°C
	T4	135°C
	T5	100°C
	T6	85°C

■ Dangerous zones

Situations where explosive gases and air mix at a high enough level to cause an explosion or fire are called "dangerous zones". The ATEX directive classifies them as shown in the following table.

Zone	Gas and steam/dust	EPL	Descriptions of dangerous zones classification
Zone 0	Gas	Ga	An area where an explosive environment exists continuously or for a long time
Zone 1	Gas	Gb	An area where an explosive environment may be generated when a plant, etc. is under normal operation
Zone 2	Gas	Gc	An area where an explosive environment may not be generated when a plant, etc. is under normal operation, and if it is generated, it exists only for a short time
Zone 20	steam/dust	Da	An area where an explosive environment exists continuously or for a long time
Zone 21	steam/dust	Db	An area where an explosive environment may be generated when a plant, etc. is under normal operation
Zone 22	steam/dust	Dc	An area where an explosive environment may not be generated when a plant, etc. is under normal operation, and if it is generated, it exists only for a short time

1. Prohibition of disassembly and modification

⚠ WARNING

- Disassembly of pilot valves or barriers not only leads to the risk of decreased explosion-proof performances but may also cause accidents. Accordingly, customers are asked not to disassemble or modify their units.

2. Intrinsic safety explosion-proof circuit wiring

⚠ WARNING

- The intrinsic safety explosion-proof circuit wiring should not be mixed with other circuitry, nor should it be installed so as to be affected by static induction or electromagnetic induction from other circuits.

3GD*0EA
4GD*0EA

3GE*0EA
4GE*0EA

M3GD*0EA
M4GD*0EA

M3GE*0EA
M4GE*0EA

Related products

Manifold
Specifications sheet

Safety precautions

3. When using the product in combination with low friction cylinders

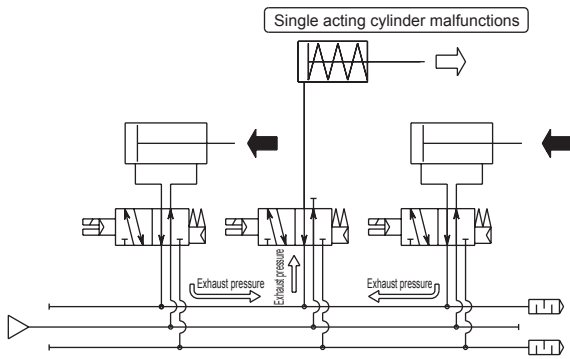
- Malfunctions could occur because of the exhaust pressure. Contact CKD.

5. Exhaust check valve

CAUTION: The exhaust check valve is a check valve. If the cylinder rod is manually operated directly without pressurization, the check valve opens and the air flow is shut off, preventing cylinder rod adjustment.

Generally, the double acting cylinder connected at the manifold to direct acting cylinders or ABR connection valves may malfunction when adversely affected by the exhaust pressure led in by operation of other cylinders. For the manifold of 4G Series, the "exhaust check valve" integrated to prevent this malfunction can be selected, except for all ports closed valves and PAB connection valves. However, with components that are affected by a small amount of leakage or pressure of low friction cylinders, etc., the functions may not operate properly. Moreover, 4G4 is not compatible with check valves.

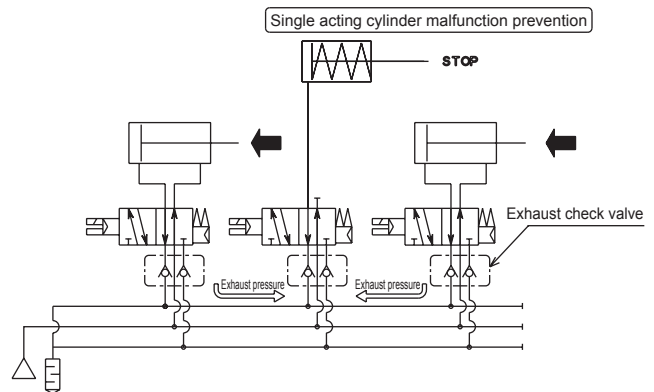
Example of pneumatic pressure system that may malfunction



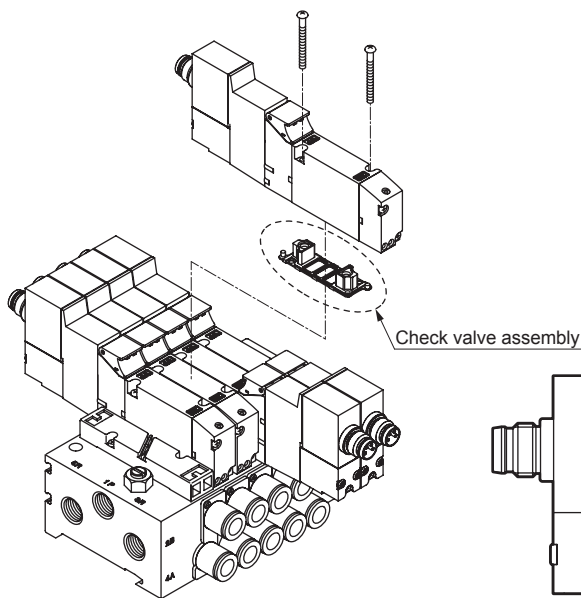
4. Degree of protection IP67

- Note that while the 4GD/E*EA Series supports IP67 as standard so that the unit is protected from dust and water, it cannot be immersed in water. Countermeasures such as a protective cover for the unit should also be taken if using in environments where it will be constantly exposed to dust or water.
- Barrier degree of protection of D5048S is IP20.

4G Series pneumatic pressure system



Internal structure

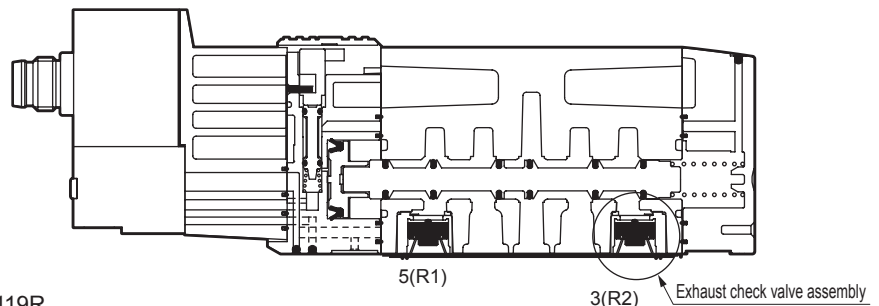


This figure is for 4GE119R

Standard specifications of check valve

Model No.	Flow path switching	Option (H) selection
3G _E ^D *669EA	Two 3-port valves integrated NC/NC	Yes
4G _E ^D *19EA	2-position single	Yes
4G _E ^D *29EA	2-position double	Yes
4G _E ^D *39EA	3-position all ports closed	No
4G _E ^D *49EA	3-position ABR connection	Yes
4G _E ^D *59EA	3-position PAB connection	No

Note: Because 3-position all ports closed type and PAB connection type are not adversely affected by the exhaust pressure led in from other cylinders at the neutral position, installation of a check valve is not required.



3GD*0EA
4GD*0EA

3GE*0EA
4GE*0EA

M3GD*0EA
M4GD*0EA

M3GE*0EA
M4GE*0EA

Related products

Manifold Specifications sheet

Safety precautions

Mounting, installation and adjustment

1. Body piping (D) single installation method

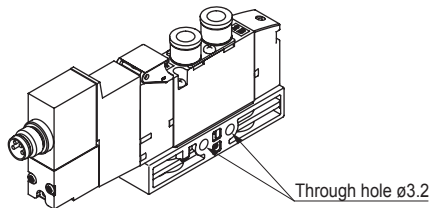
CAUTION

When directly installing the manifold

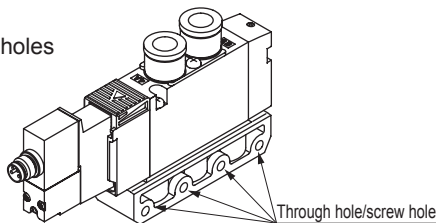
- The discrete body piping 4GD Series can be installed using the (a) through hole or (b) screw hole. When using the screw holes, be careful of the tightening torque.

Screw hole Tightening torque 0.7 to 1.2 N·m

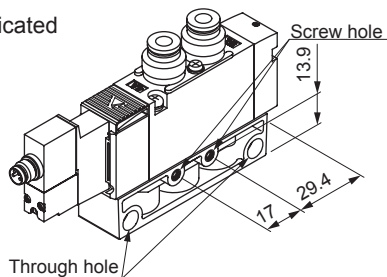
4GD1Series
(a) 2 through holes



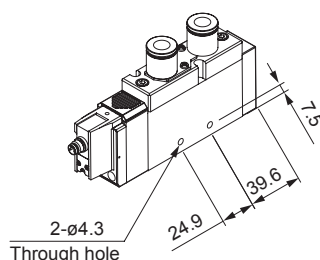
4GD2Series
(a) Through hole
(b) 4 common screw holes



4GD3Series
(a) Through hole
(b) 2 places each, dedicated for screws



4GD4Series
(a) 2 through holes



Mounting hole shape

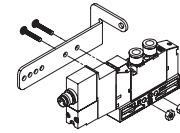
	4GD2		4GD3	
	(a) Common use	(b) Common use	(a) Through hole	(b) Screw hole
Sectional view of mounting hole				

When installing the manifold with mounting plate (P)

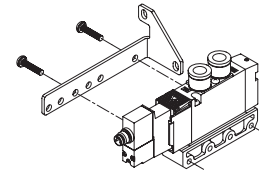
- Be careful of the mounting direction and orientation, as damage may result from incorrect mounting of body piping single mounting plate (P).

How to mount mounting plate (P)

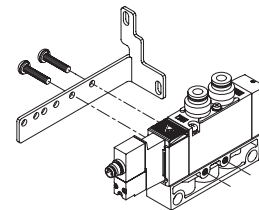
4GD1



4GD2



4GD3



Mounting plate (P) kit

	Kit model No.	Set parts
4GD1	4G1R-MOUNT-PLATE-KIT	Mounting plate, 2 mounting screws, 2 nuts
4GD2	4G2R-MOUNT-PLATE-KIT	Mounting plate, 2 mounting screws
4GD3	4G3R-MOUNT-PLATE-KIT	Mounting plate, 2 mounting screws

*Mounting plates are only compatible with single types. Moreover, 4G4 is not compatible.

2. How to install manifold (Metal base 4G_E Series)

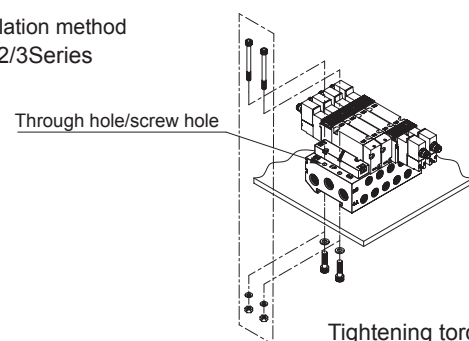
CAUTION

When directly installing the manifold

- For installation of the M4G2/3 Series, there are 2 methods of tightening the manifolds with bolts: after passing them through the upper side of the manifold base or after inserting them from the back side.

When using a female thread as shown in the table below, check the thread depth, select a mounting bolt with 10 screw-in threads or more, and be careful with the tightening torque. The screw could be damaged if incorrectly installed.

Installation method
M4G2/3Series

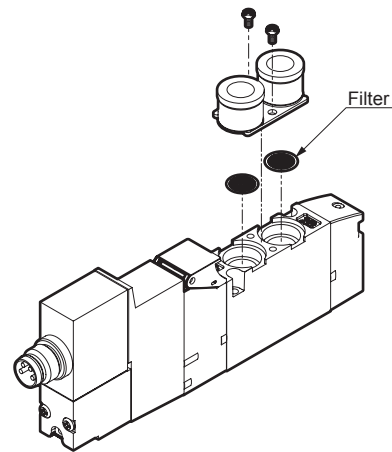
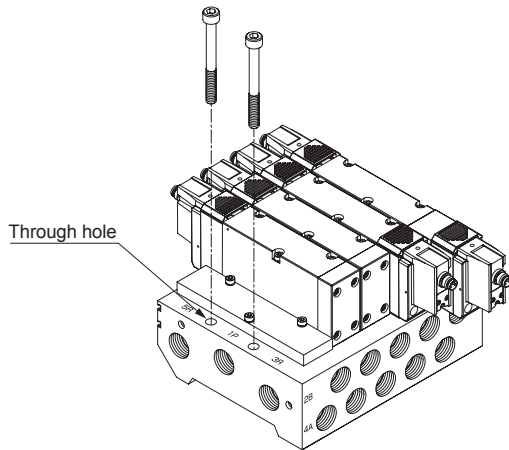


Tightening torque
1 to 1.5 N·m

Mounting, installation and adjustment

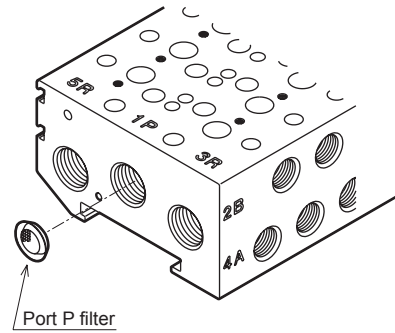
M4G4 Series

- For installation of M4G $\frac{E}{4}$ Series, tighten the manifold with bolts after passing them through the upper side of the manifold base.



Example of A/B port filter option combination

M4G Series



Port P filter (standard) example of embedding

Mounting hole shape (sectional view)

	Manifold	
	M4GD (Body piping)	M4GE (Base piping)
M4G2		
M4G3		

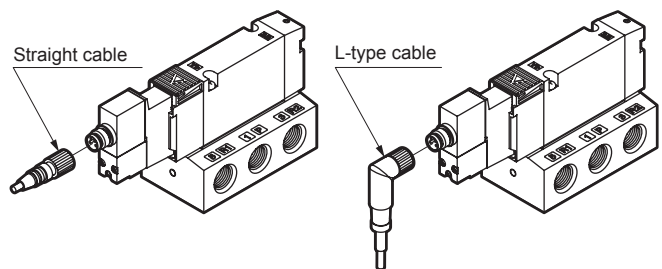
3. Port filter

CAUTION

- The port filter prevents the entry of foreign matter, and prevents problems from occurring in the valve. As this does not improve the quality of the compressed air, read Warnings and Precautions on the Intro pages of "Pneumatic Valves (No. CB-023SA)," then mount, install, and adjust accordingly. Do not detach or press down the port filter forcibly. The filter could deform, causing problems. If contaminants and foreign matter are found on the filter surface, blow them off lightly with air, or remove them with tweezers, etc.

4. M8 connector cable

M8 connector tightening torque is 0.38 to 0.42 N·m. The degree of protection (IP67) will not be upheld if not tightened to the appropriate torque.



Straight cable

L-type cable

Wire the attached M8 connector cable as below.

- Black: 12 V
- Blue: 0 V
- Brown and white: Not used.

3GD*0EA
4GD*0EA
3GE*0EA
4GE*0EA
M3GD*0EA
M4GD*0EA
M3GE*0EA
M4GE*0EA
Related products
Manifold
Specifications sheet
Safety precautions

Use/maintenance

1. Continuous energizing

CAUTION

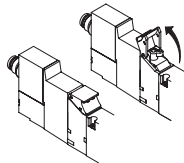
- If a valve is used in a continuously energized state for long periods, the valve performance may deteriorate more quickly. Furthermore, use caution under the following working conditions likewise.
 - When the energized time exceeds non-energized time in intermittent operation
 - When one energizing session exceeds 30 minutes in intermittent operation
- Give sufficient consideration to heat dissipation when installing the product.

2. Manual override

WARNING

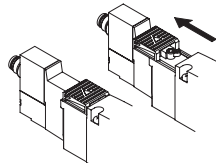
- The 4G Series is an internal pilot solenoid valve. If air is not supplied to port P, the main valve will not be switched even if the manual override is operated.
- A manual protection cover is provided as standard. The manual protection cover is closed when shipped. Therefore, the manual override device cannot be seen when delivered. Open the protective cover to operate the manual override. Note that the protective cover will not close unless the locking manual override is released.
- Manual override is used for both non-locking and locking. Holding down and turning the button locks the valve. For locking, be sure to press down and turn. If manual override is turned without being pressed down, it could be damaged or air could leak.
- Opening and closing the manual protection cover
Do not excessively force the manual protection cover when opening and closing it. Excessive external force could cause failures. (Below 5 N)

4G1 Series



Rotary

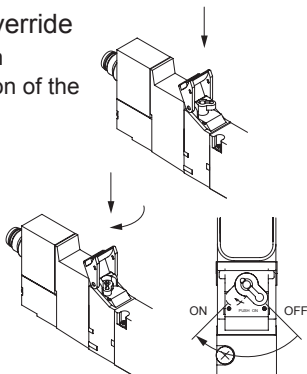
4G2 to 4 Series



Sliding

How to operate manual override

- Push non-locking operation
Push straight in the direction of the arrow until it stops. Release to cancel.
- Push locking operation
Push and hold the button and turn it 90° in the direction of the arrow. The function is not canceled even when the button is released.



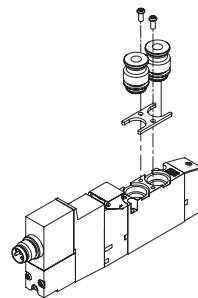
- When conducting manual operations, make sure that there are no people near the operating cylinder.

3. How to replace cartridge fitting

CAUTION

- Check procedures before changing the push-in fitting size. If installed incorrectly, or if the tightening of the mounting screw is insufficient, air leakage could occur.

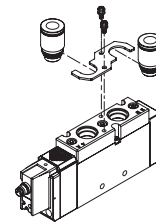
- Body piping (D)
4 G 1, 2, 3



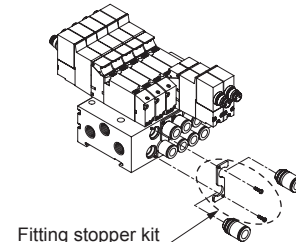
- ① Remove the mounting screw.
- ② Pull out the stopper plate and fitting together.
- ③ Align the groove of the replacement fitting with the stopper plate and assemble them temporarily.
- ④ Assemble the stopper plate with the fitting, and tighten the mounting screw. Pull on the fitting to confirm that it is properly installed.

	Size	Tightening torque (N·m)
4G1	M1.7	0.18 to 0.22
4G2	M2.5	0.25 to 0.30
4G3	M3	0.6 to 0.7
4G4	M3	0.6 to 0.7

4 G 4



Base piping (E)



Fitting stopper kit

- ① Remove the mounting screw.
- ② Pull out the stopper plate and fitting together.
- ③ Align the groove of the replacement fitting with the stopper plate and assemble them temporarily.
- ④ Assemble the stopper plate with the fitting, and tighten the mounting screw. Pull on the fitting to confirm that it is properly installed.

Model No. of cartridge push-in fitting

Model	Part name	Model No.
4G1	ø4 straight	4G1R-JOINT-C4
	ø6 straight	4G1R-JOINT-C6
	Plug cartridge	4G1R-JOINT-CPG
4G2	ø4 straight	4G2R-JOINT-C4
	ø6 straight	4G2R-JOINT-C6
	ø8 straight	4G2R-JOINT-C8
	Plug cartridge	4G2R-JOINT-CPG
4G3	ø6 straight	4G3R-JOINT-C6
	ø8 straight	4G3R-JOINT-C8
	ø10 straight	4G3R-JOINT-C10
	Plug cartridge	4G3R-JOINT-CPG
4G4	ø8 straight	4G4-JOINT-C8
	ø10 straight	4G4-JOINT-C10
	ø12 straight	4G4-JOINT-C12

3GD*0EA
4GD*0EA

3GE*0EA
4GE*0EA

M3GD*0EA
M4GD*0EA

M3GE*0EA
M4GE*0EA

Related products

Specifications sheet

Safety precautions

Safety precautions	Manifold Specifications sheet	Related products	M3GE*0EA M4GE*0EA	M3GD*0EA M4GD*0EA	3GE*0EA 4GE*0EA	3GD*0EA 4GD*0EA
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3GD*0EA 4GD*0EA	3GE*0EA 4GE*0EA	M3GD*0EA M4GD*0EA	M3GE*0EA M4GE*0EA	Related products	Manifold Specifications sheet	Safety precautions
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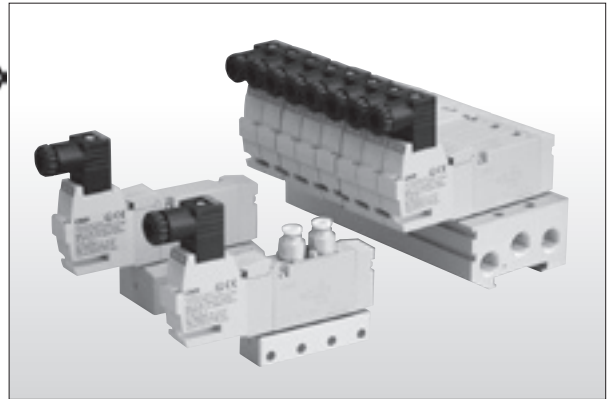
Safety precautions	Manifold Specifications sheet	Related products	M3GE*0EA M4GE*0EA	M3GD*0EA M4GD*0EA	3GE*0EA 4GE*0EA	3GD*0EA 4GD*0EA
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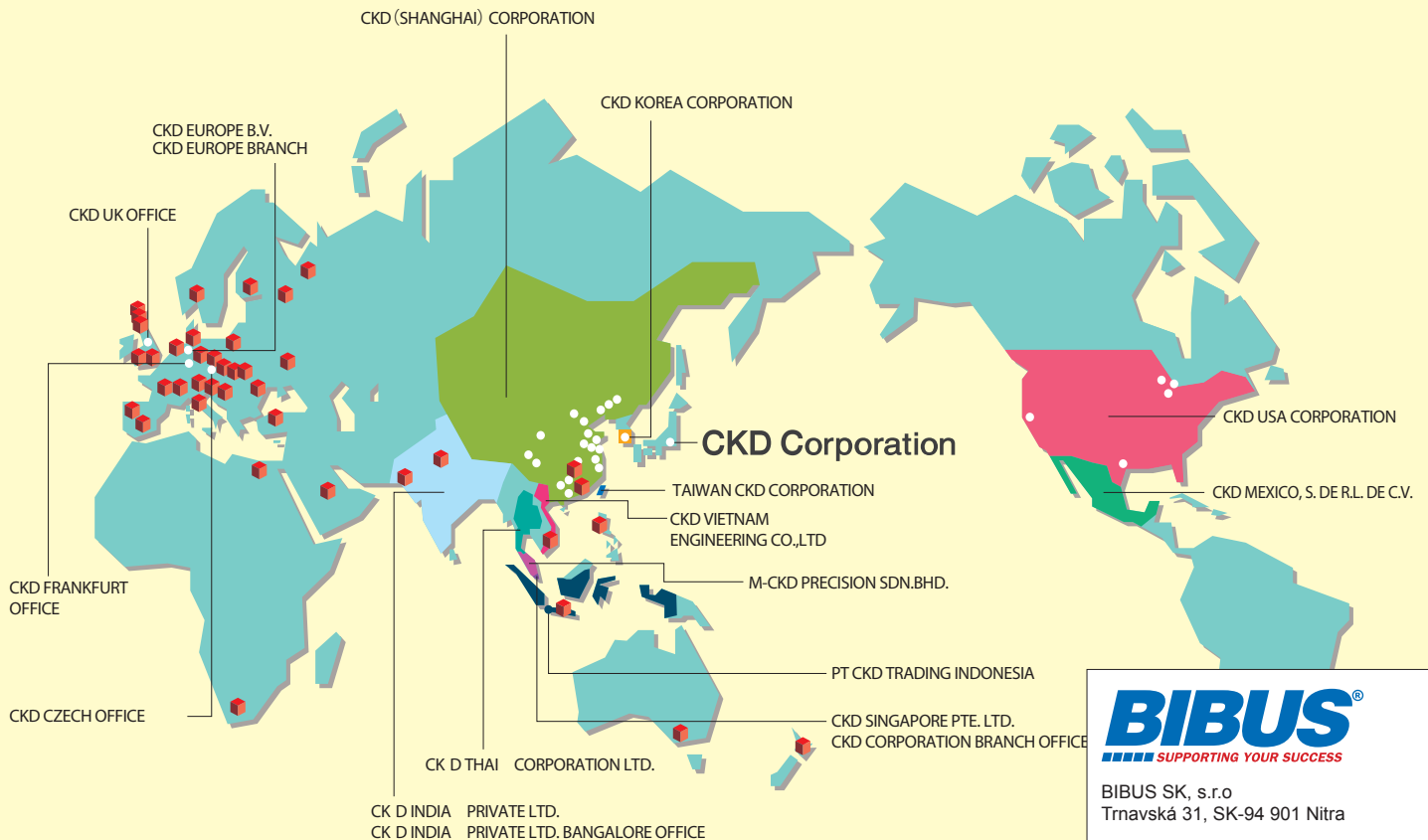
Related products

Compliant to ATEX Directive 4GD/E2*0EB Series

E-CC-1460A

- Explosion-proof performance: II 3G Ex ec II c T5 GcX
Increased safety explosion-proof type
- ATEX category 3





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