

Discrete valve
Body piping

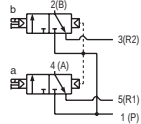
3GD1/2/4GD1/ 2/3 / 4*0EJ Series

● Applicable cylinder bore size: ø20 to ø140

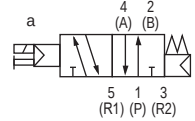


JIS symbol

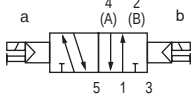
- Two 3-port valves integrated
(A side valve: NC, B side valve: NC)



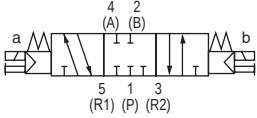
- 5-port valve
2 position single



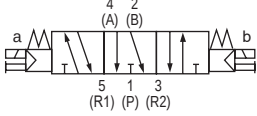
2-position double



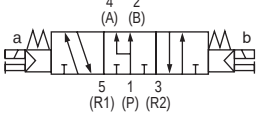
3-position
All ports closed



3-position A/B/R connection



3-position P/A/B connection



Common specifications

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

Solenoid specifications

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

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

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

Intrinsic safety explosion-proof specifications

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

Individual specifications

Port size	3GD1/4GD1	3GD2/4GD2	4GD3	4GD4
2, 4-port (port A/B)	Push-in fitting ø1.8, ø4, ø6 M5	Push-in fitting ø4, ø6, ø8 Rc1/8	Push-in fitting ø6, ø8, ø10 Rc1/4	Push-in fitting ø8, ø10, ø12 Rc3/8
1, 3, 5-port (Port P/R1/R2)	M5	Rc1/8	Rc1/4	Rc1/4

Performance/characteristics by model

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

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

Weight

Item	4GD1	4GD2	4GD3	4GD4
Weight g	2-position Single	61 (54)	120 (90)	155 (112)
	Double	81 (74)	140 (110)	176 (133)
	3Position ABR connection	84 (77)	148 (118)	187 (143)

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

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

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

3GD*0EJ
4GD*0EJ

3GE*0EJ
4GE*0EJ

M3GD*0EJ
M4GD*0EJ

M3GE*0EJ
M4GE*0EJ

Related products

Manifold
specifications sheet

Safety precautions

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

Discrete valve; Body piping

How to order (solenoid valve single unit)

● Discrete

4GD1 1 0 EJ - M5 - RN - 4
3GD1 66 0 EJ - C4 - RN - 4

A Model No.

B Solenoid position

C Explosion-proof Series

D Port size

E Electrical connections

F Option

G Voltage

A Model No.

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

Code	Description	3GD1	3GD2	4GD1	4GD2	4GD3	4GD4
B Solenoid position							
1	2 position single			●	●	●	●
2	2-position double			●	●	●	●
3	3-position all ports closed			●	●	●	●
4	3-position ABR connection			●	●	●	●
5	3-position PAB connection			●	●	●	●
66	3-port valve Two valves integrated *1	●	●				
	A valve side: Normally Closed B valve side: Normally Closed						
C Explosion-proof Series							
EJ	Japan Explosion-Proof Certified Product	●	●	●	●	●	●
D Port size [ports 4(A), 2(B)]							
Port	4(A)/2(B) port	Port P/R1/R2 (1) = M5, (2) = Rc1/8, (3) = Rc1/4 (4) = Rc3/8 (5)=Rc1/2					
C18	ø1.8 push-in fitting	(1)	(1)				
C4	ø4 push-in fitting	(1)	(2)	(1)	(2)		
C6	ø6 push-in fitting	(1)	(2)	(1)	(2)	(3)	
C8	ø8 push-in fitting		(2)		(2)	(3)	(3)
C10	ø10 push-in fitting					(3)	(3)
C12	ø12 push-in fitting						(3)
M5	M5	(1)		(1)			
06	Rc1/8		(2)		(2)		
08	Rc1/4					(3)	
10	Rc3/8						(3)
E Electrical connections *2							
RN	M8 connector without cable	●	●	●	●	●	●
R 1	M8 connector straight cable	●	●	●	●	●	●
R 2	M8 connector L-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)			●	●	●	
A	Ozone/coolant proof	●	●	●	●	●	●
F	Port A/B filter *4	●	●	●	●	●	●
G Voltage							
4	12 VDC	●	●	●	●	●	●

⚠ Precautions for model No. selection

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

*2: M8 connector length is 300mm. Select other lengths from page 65 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.

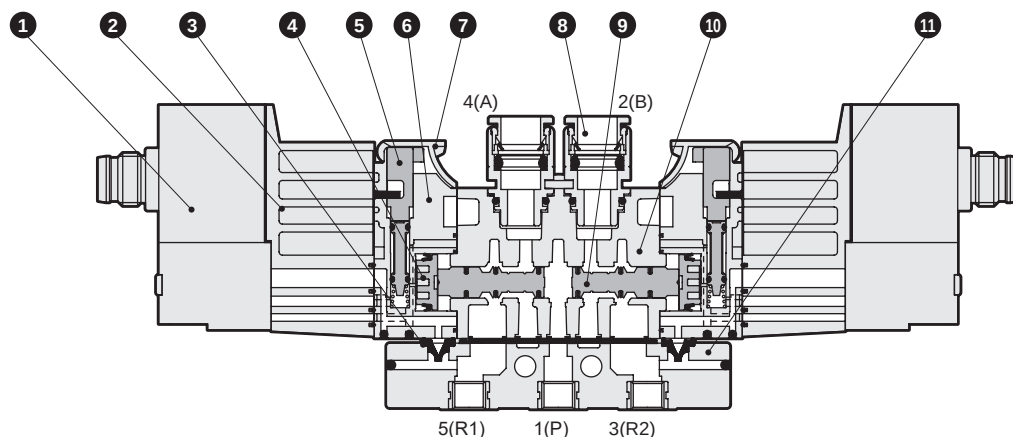
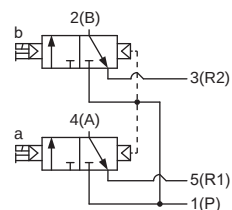
*5: Explosion-proof barrier sold separately. Select from page 69.

Internal structure diagram and parts list

3GD1 660EJ

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

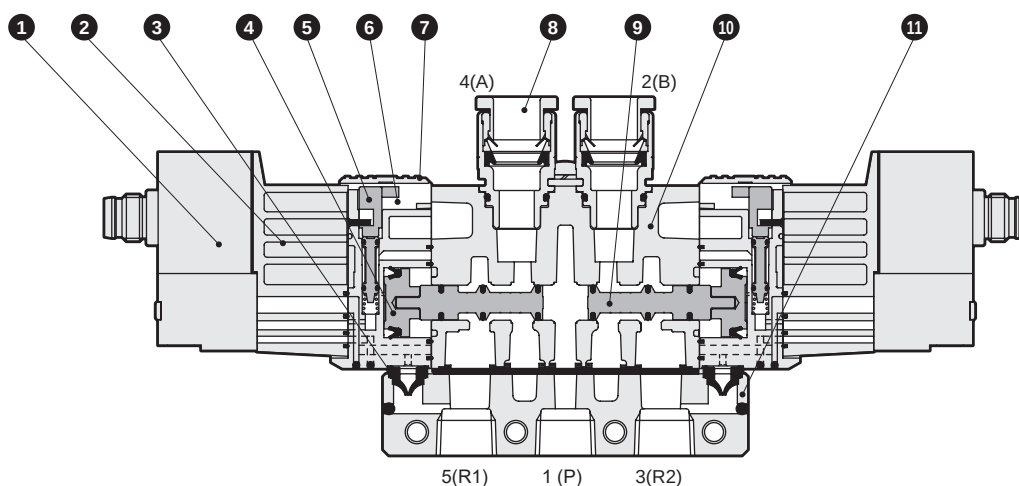
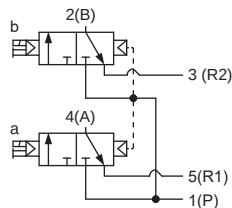
A side valve: Normally Closed,
B side valve: Normally Closed



3GD 2660EJ

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

A side valve: Normally Closed,
B side valve: Normally Closed



Main parts list

Part 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	Pipe adaptor	Resin

Parts list

Part No.	Part name	Model No.
8	Cartridge push-in fitting and related parts	ø1.8 straight 4G1R-JOINT-C18
		ø4 straight 4G1R-JOINT-C4
		ø6 straight 4G1R-JOINT-C6
		Plug cartridge 4G1R-JOINT-CPG

3GD*0EJ
4GD*0EJ

3GE*0EJ
4GE*0EJ

M3GD*0EJ
M4GD*0EJ

M3GE*0EJ
M4GE*0EJ

Related products

Manifold
specifications sheet

Safety precautions

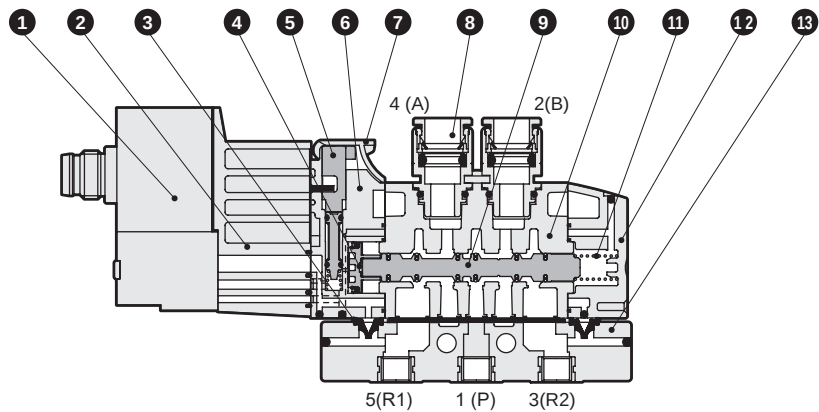
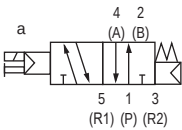
4GD1*0EJ Series

Discrete valve; Body piping

Internal structure diagram and parts list

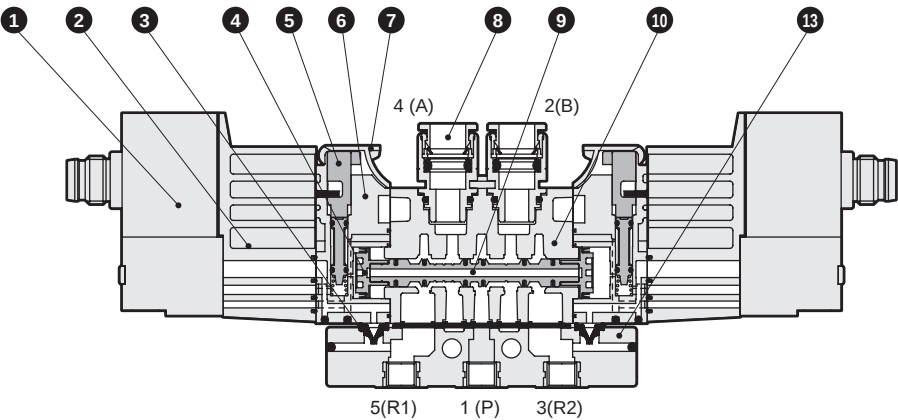
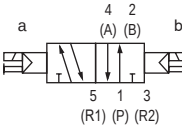
4GD110EJ

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



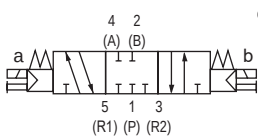
4GD120EJ

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

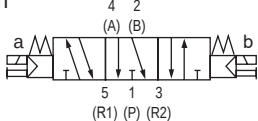


4GD130EJ

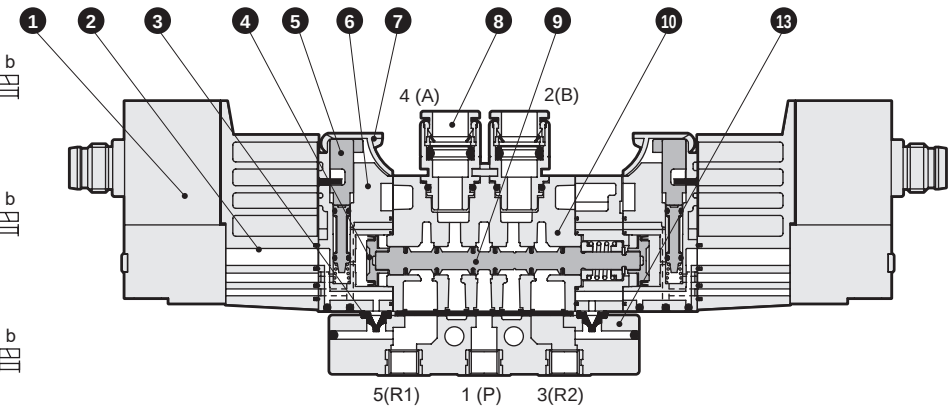
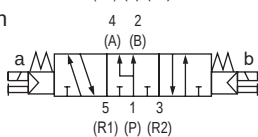
- 3-position
- M8 connector without cable (RN)
- All ports closed



A/B/R connection



P/A/B connection



Main parts list

Part 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	Pipe adaptor	Resin

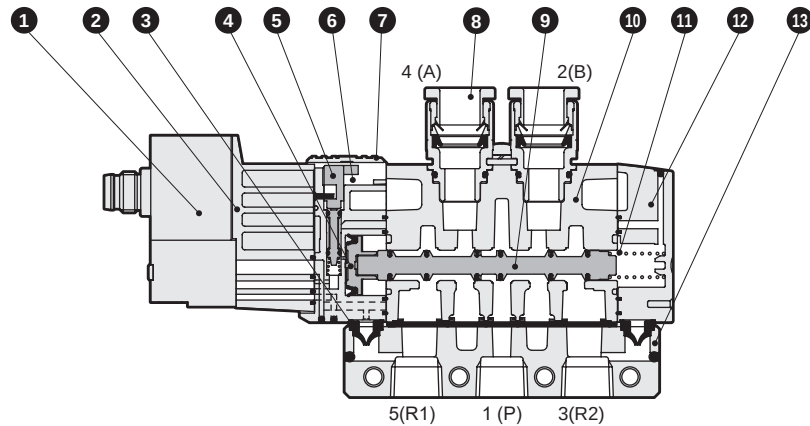
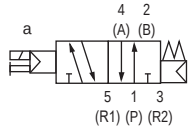
Parts list

Part No.	Part name	Model No.
8	Cartridge push-in fitting and related parts	ø1.8 straight 4G1R-JOINT-C18
		ø4 straight 4G1R-JOINT-C4
		ø6 straight 4G1R-JOINT-C6
		Plug cartridge 4G1R-JOINT-CPG

Internal structure diagram and parts list

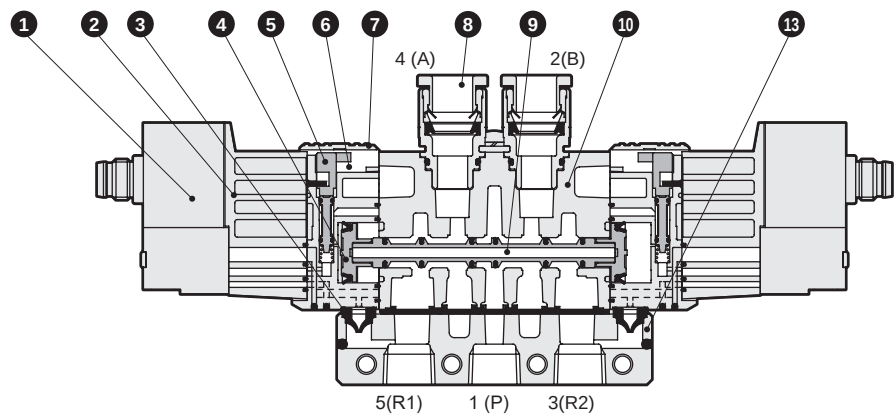
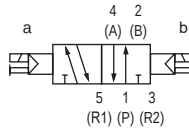
4GD210EJ/4GD310EJ

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



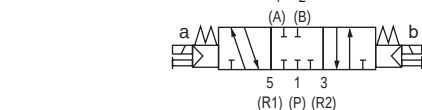
4GD220EJ/4GD320EJ

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

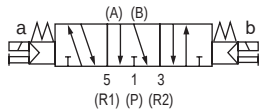


4GD 2³/₄0EJ/4GD3³/₄0EJ

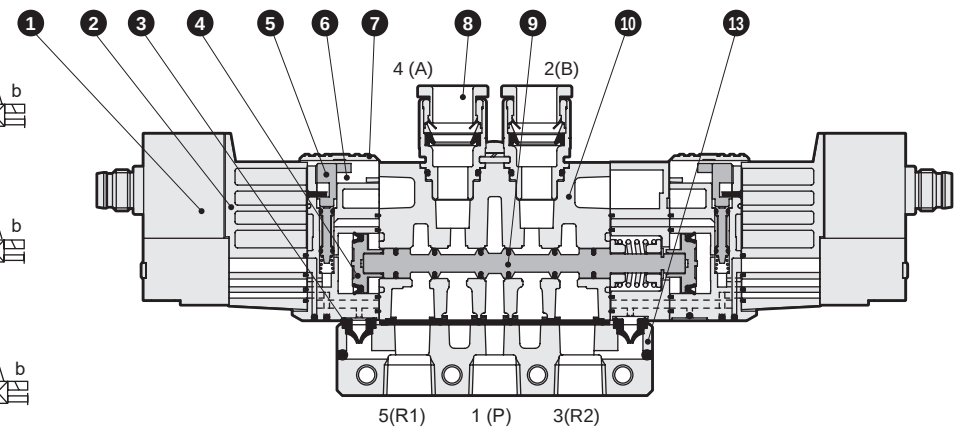
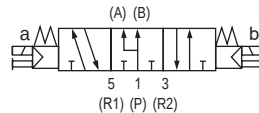
- 3-position
- M8 connector without cable (RN)
- All ports closed



A/B/R connection



P/A/B connection



Main parts list

Part 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	Pipe adaptor	Aluminum alloy die-casting

Parts list

Part No.	Part name	Model No.
8	Cartridge push-in fitting and related parts	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

3GD*0EJ
4GD*0EJ

3GE*0EJ
4GE*0EJ

M3GD*0EJ
M4GD*0EJ

M3GE*0EJ
M4GE*0EJ

Related products

Manifold
specifications sheet

Safety precautions

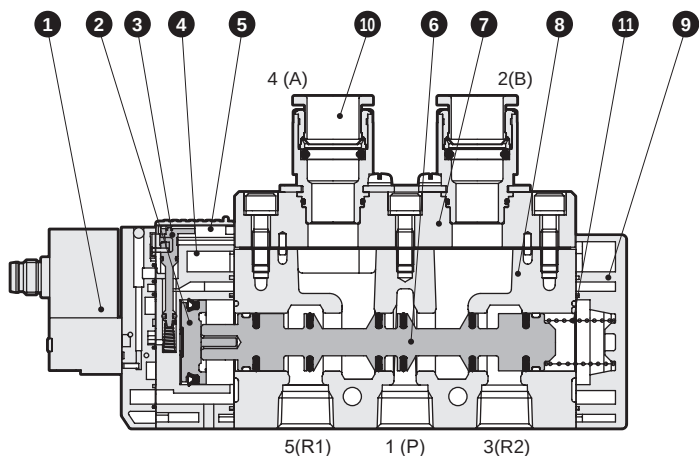
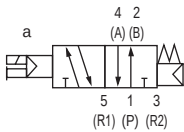
4GD4*0EJ Series

Discrete valve; Body piping

Internal structure diagram and parts list

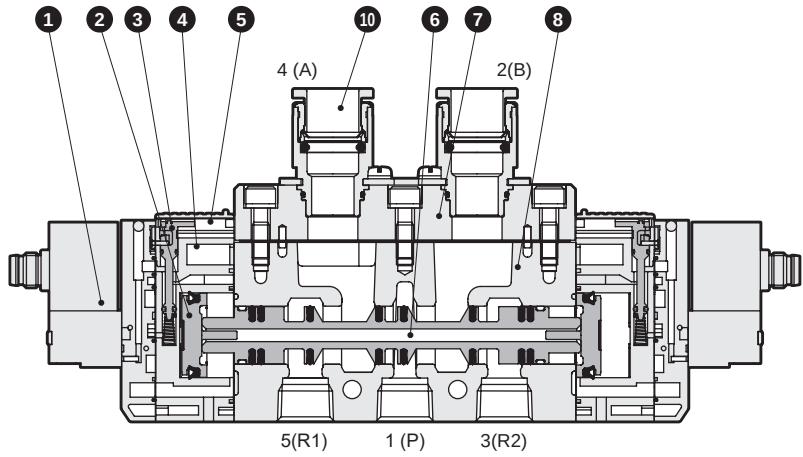
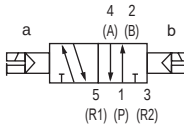
4GD410EJ

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



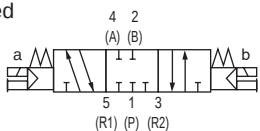
4GD420EJ

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

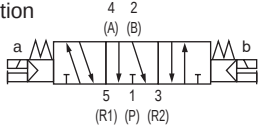


4GD430EJ

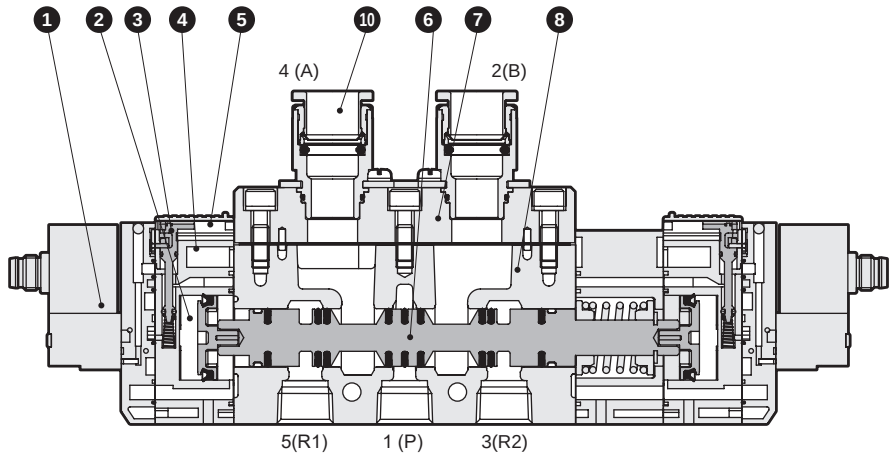
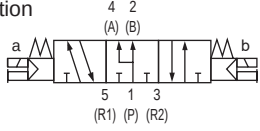
- 3-position
- M8 connector without cable (RN)
- All ports closed



A/B/R connection



P/A/B connection



Main parts list

Part 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

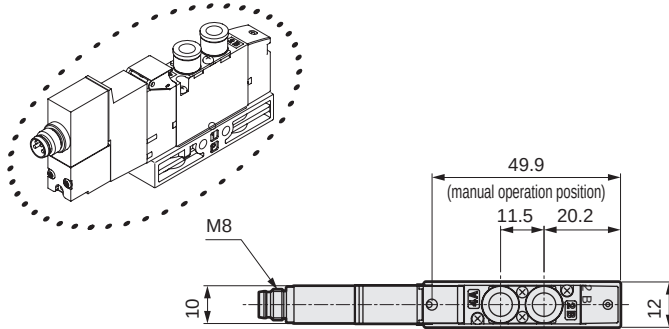
Parts list

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

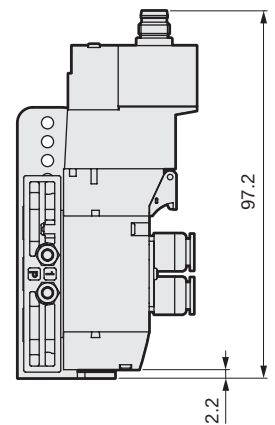
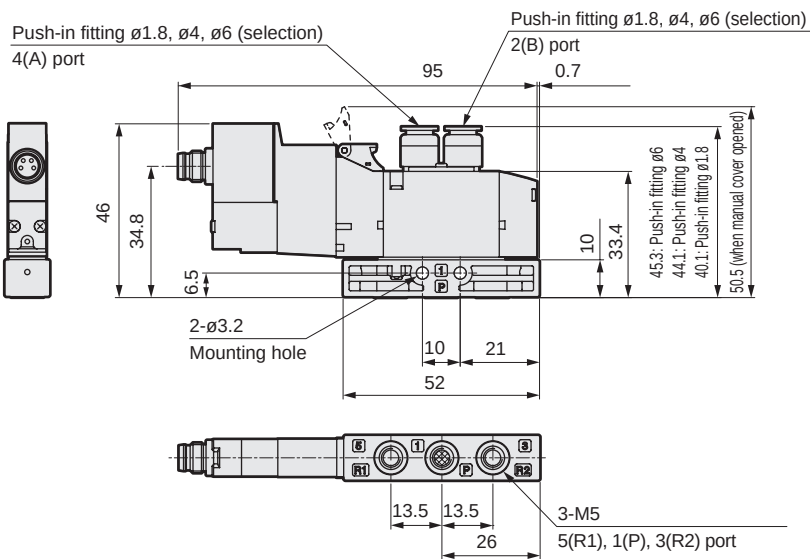
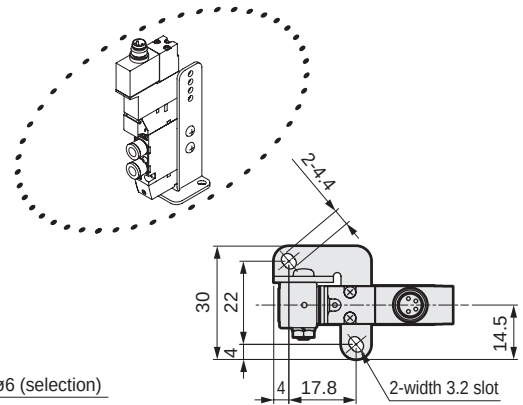
Dimensions

4GD110EJ

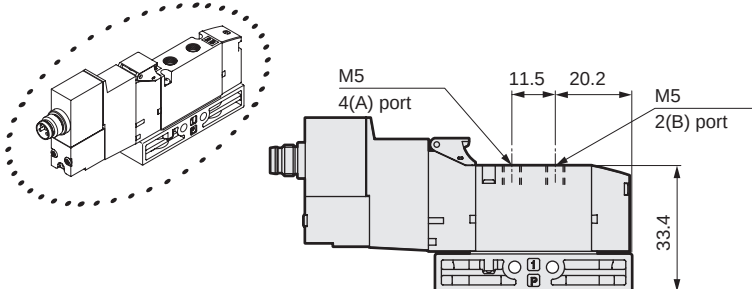
- 2-position single without connector (RN)



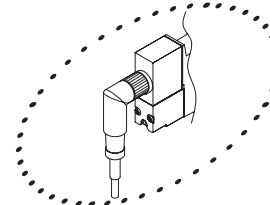
- Mounting plate (P)



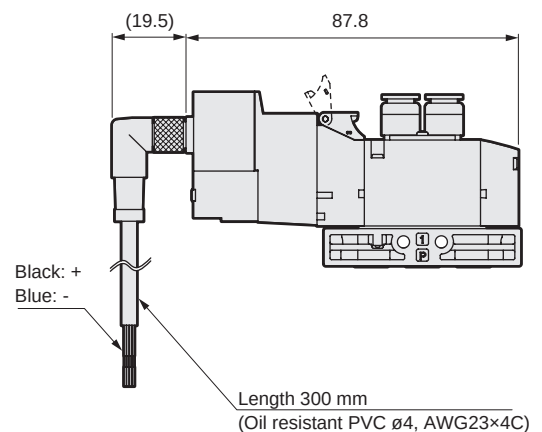
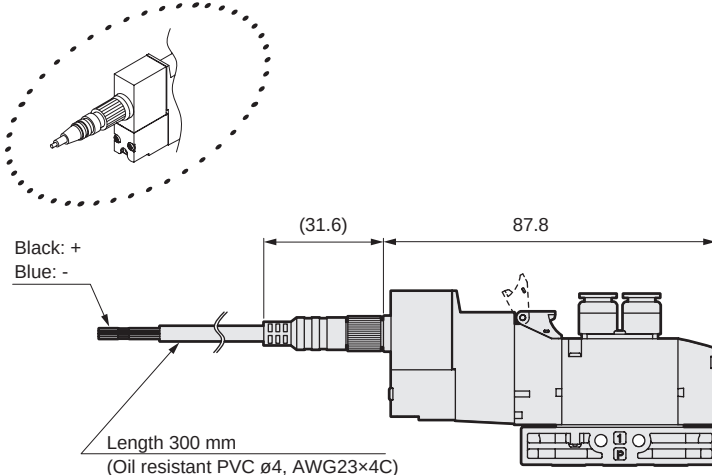
- M5 female thread (M5)



- M8 connector/L-cable (R2)



- M8 connector/straight cable (R1)



4GD1*0EJ Series

Discrete valve; Body piping

Dimensions

4GD120EJ

- 2-position double without connector (RN)

3GD1660EJ

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

3GD*0EJ
4GD*0EJ

3GE*0EJ
4GE*0EJ

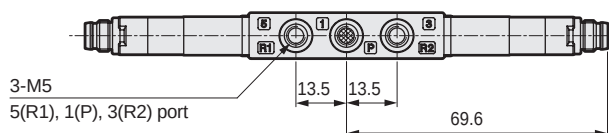
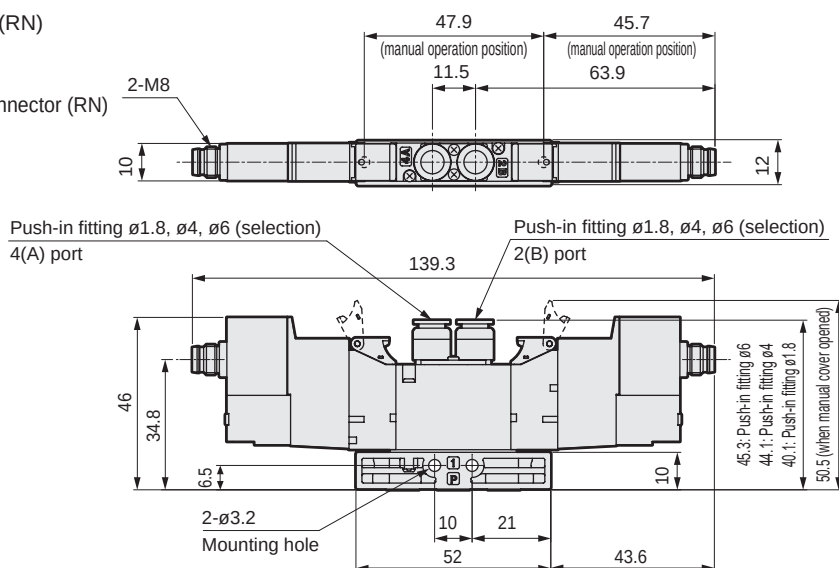
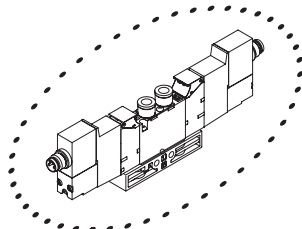
M3GD*0EJ
M4GD*0EJ

M3GE*0EJ
M4GE*0EJ

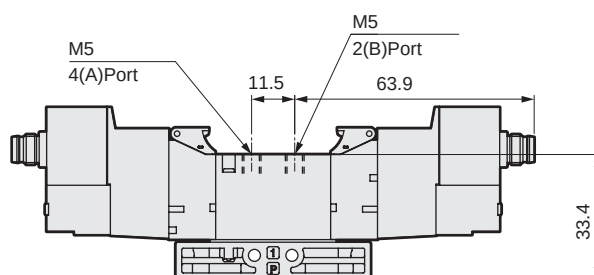
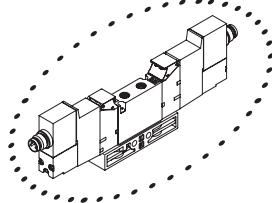
Related products

Manifold
specifications sheet

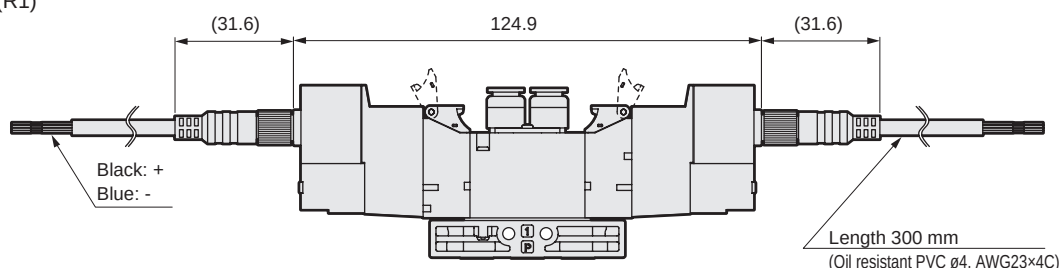
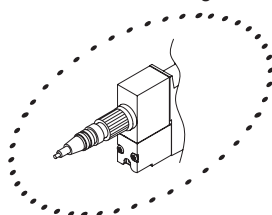
Safety precautions



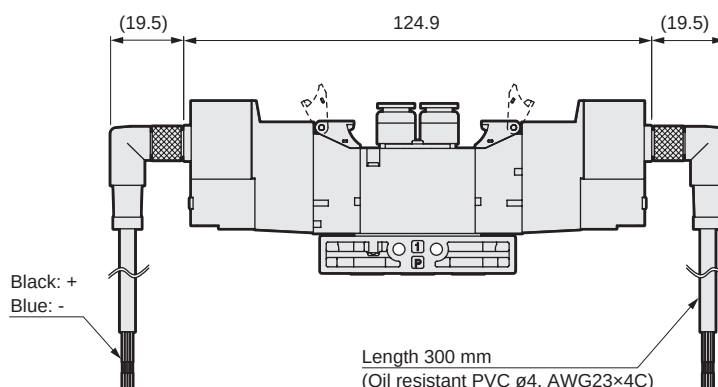
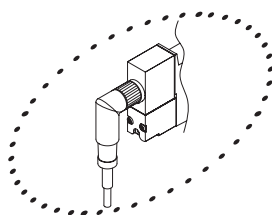
- M5 female thread (M5)



- M8 connector/straight cable (R1)



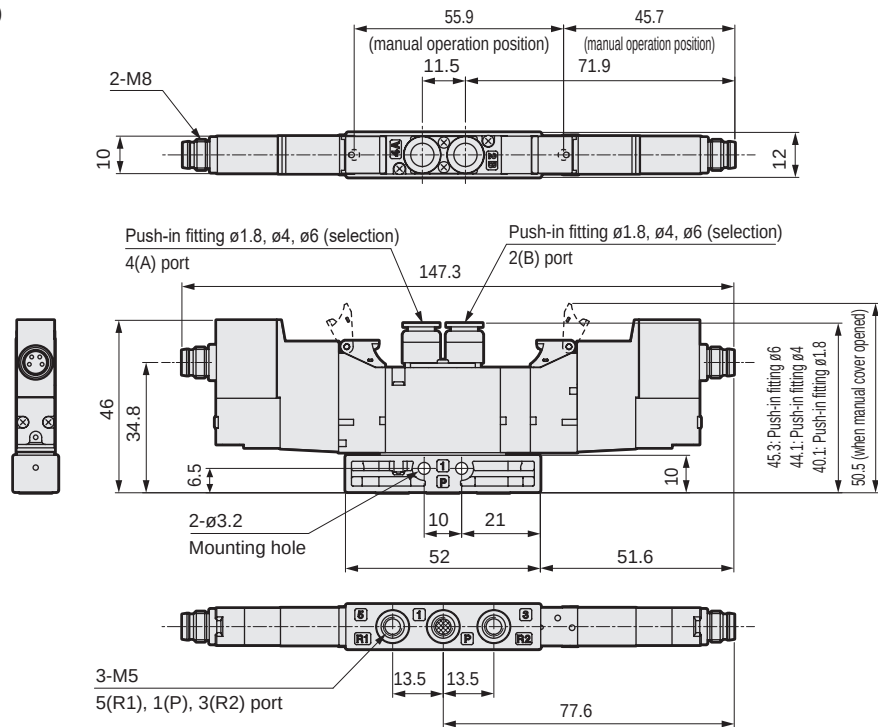
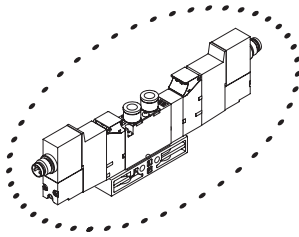
- M8 connector/L-cable (R2)



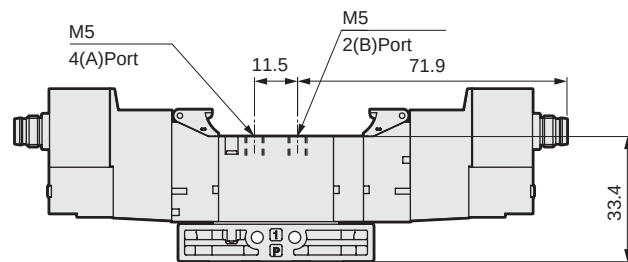
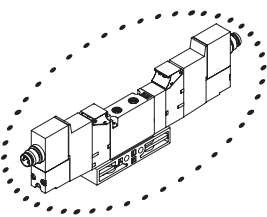
Dimensions

4GD1*0EJ

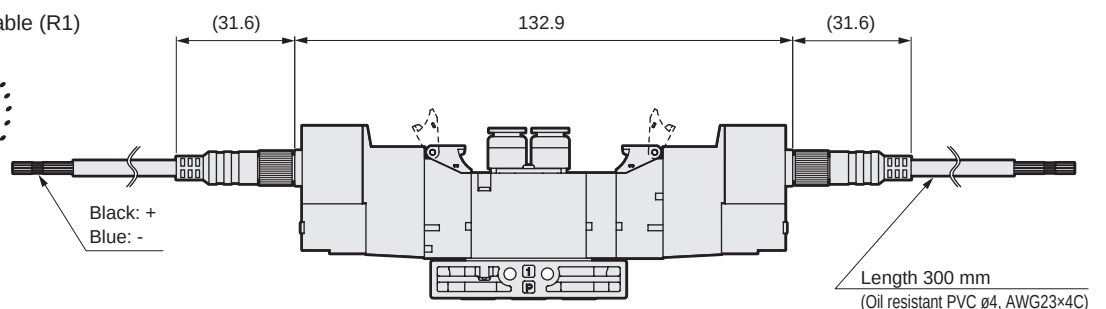
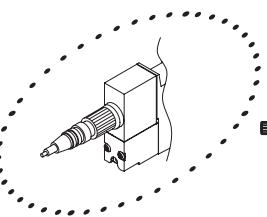
- 3-position without connector (RN)



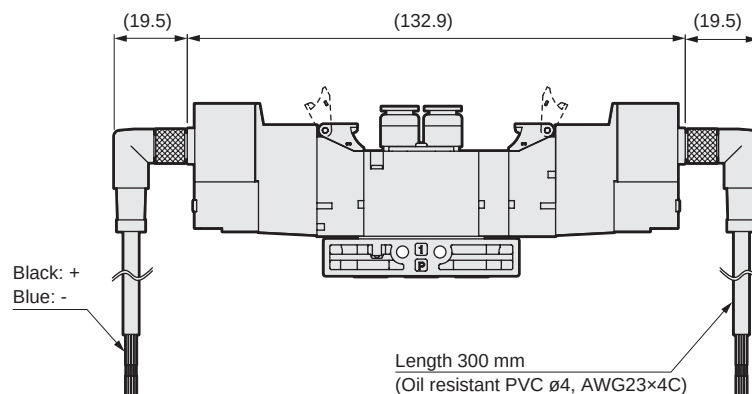
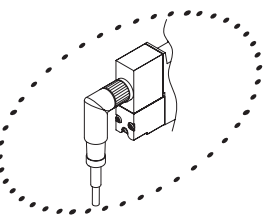
- M5 female thread (M5)



- M8 connector/straight cable (R1)



- M8 connector/L-cable (R2)



3GD*0EJ
4GD*0EJ

3GE*0EJ
4GE*0EJ

M3GD*0EJ
M4GD*0EJ

M3GE*0EJ
M4GE*0EJ

Related products

Manifold
specifications sheet

Safety precautions

4GD2*0EJ Series

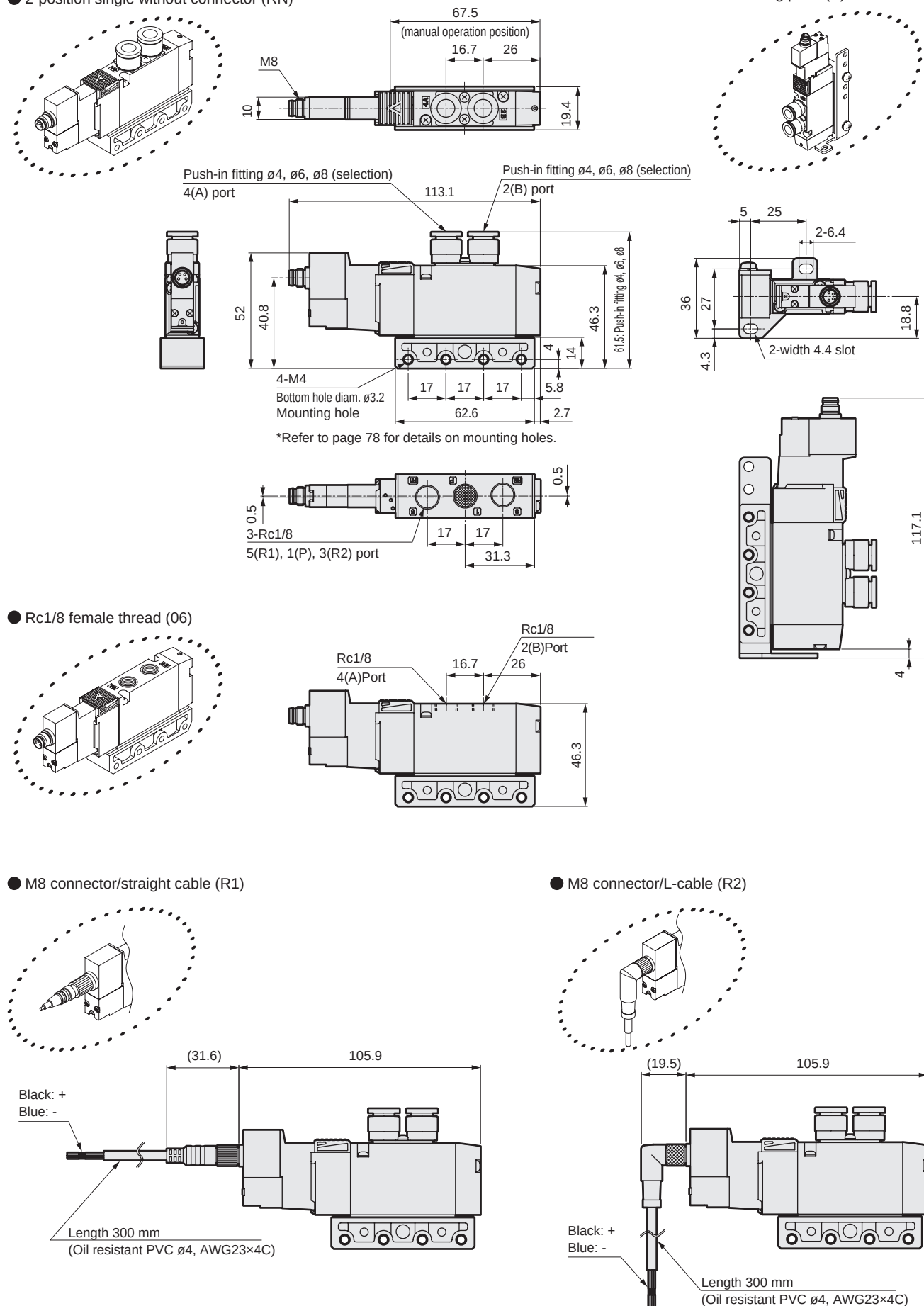
Discrete valve; Body piping

Dimensions

4GD210EJ

● 2-position single without connector (RN)

● Mounting plate (P)



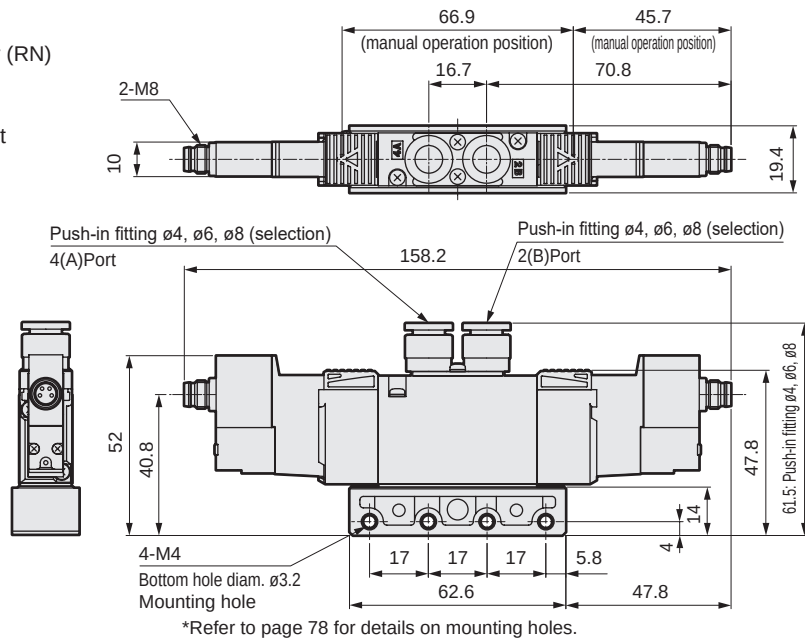
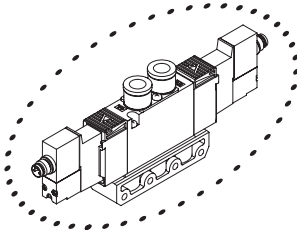
Dimensions

4GD220EJ

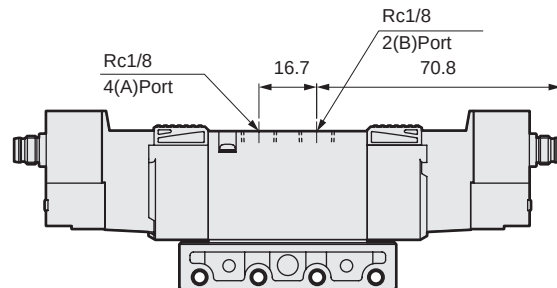
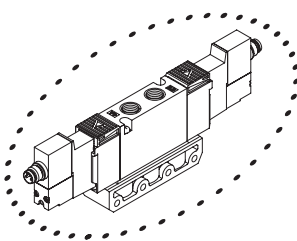
- 2-position double without connector (RN)

3GD2660EJ

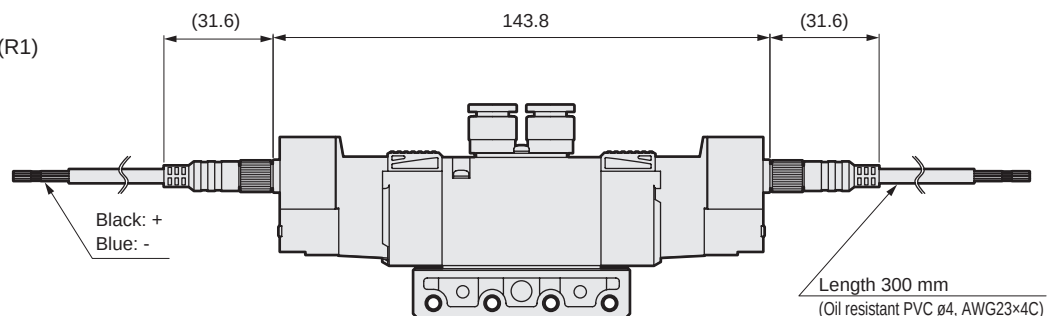
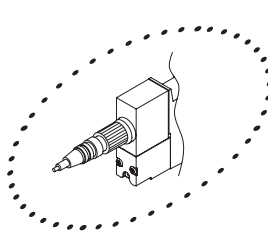
- Two 3-port valves integrated without connector (RN)



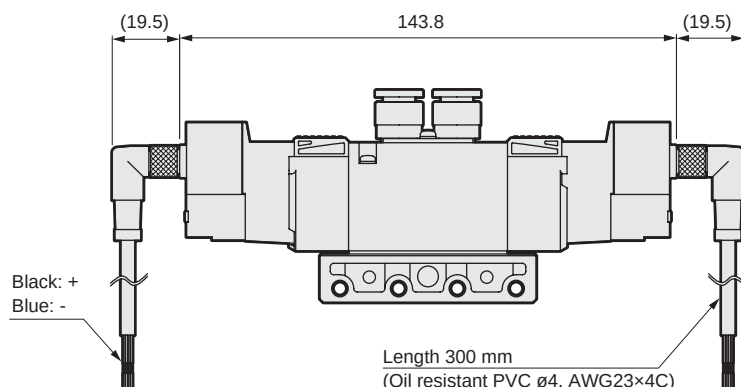
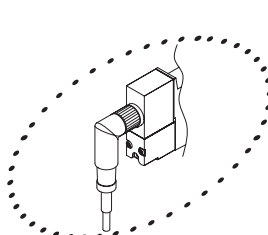
- Rc1/8 female thread (06)



- M8 connector/straight cable (R1)



- M8 connector/L-cable (R2)



3GD*0EJ
4GD*0EJ

3GE*0EJ
4GE*0EJ

M3GD*0EJ
M4GD*0EJ

M3GE*0EJ
M4GE*0EJ

Related products

Manifold
specifications sheet

Safety precautions

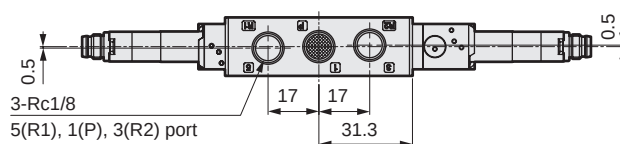
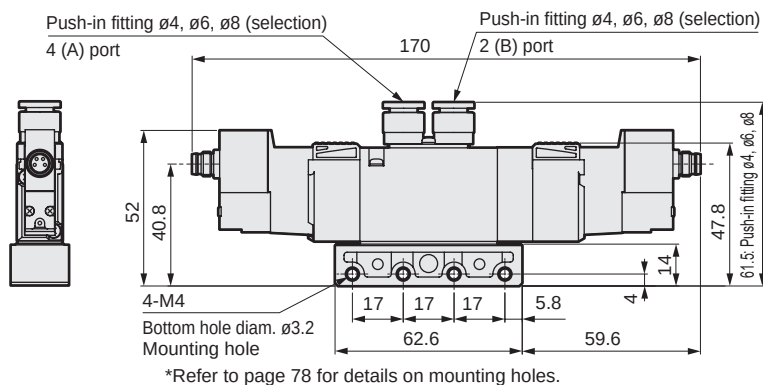
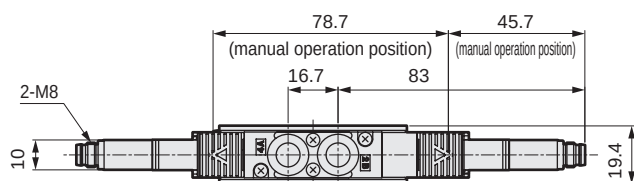
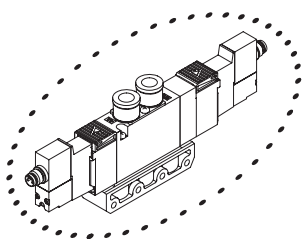
4GD2*0EJ Series

Discrete valve; Body piping

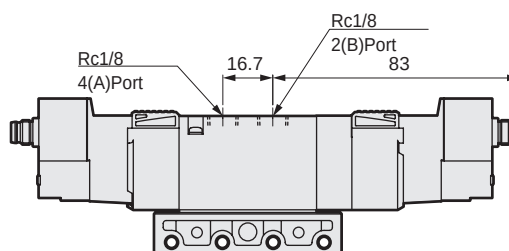
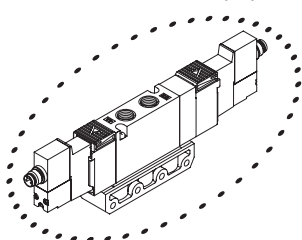
Dimensions

4GD2 0EJ

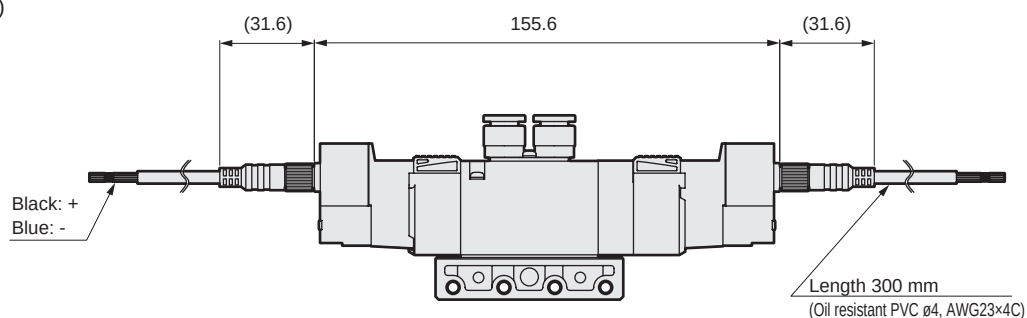
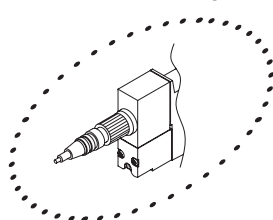
- 3-position without connector (RN)



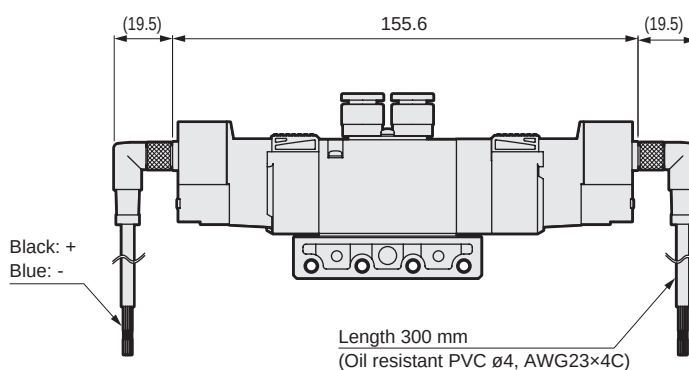
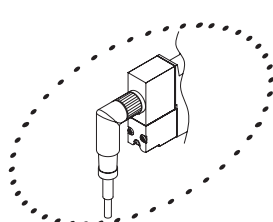
- Rc1/8 female thread (06)



- M8 connector/straight cable (R1)



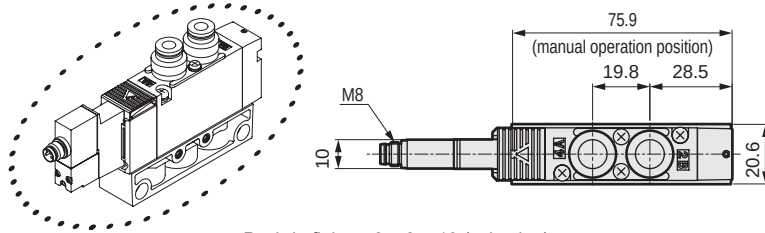
- M8 connector/L-cable (R2)



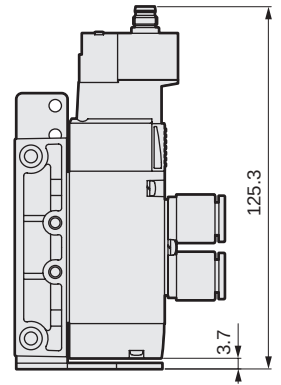
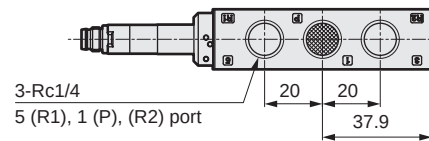
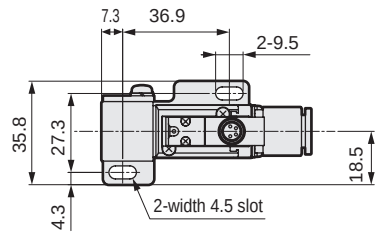
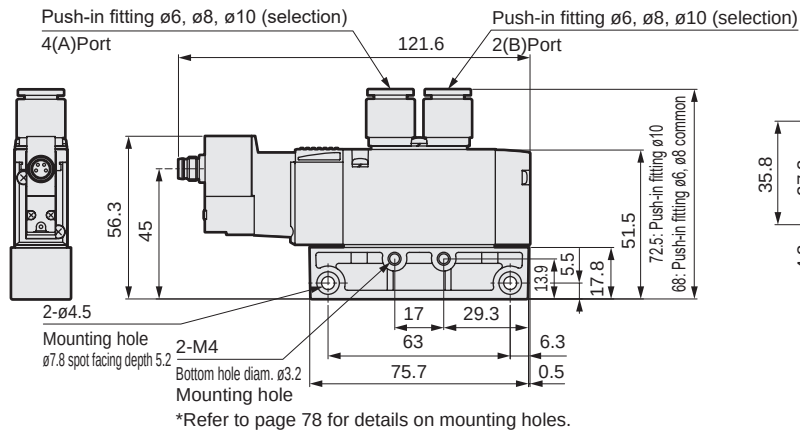
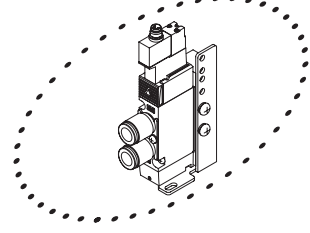
Dimensions

4GD310EJ

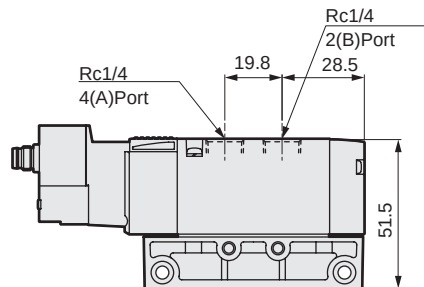
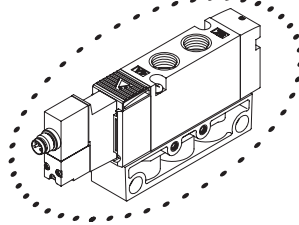
- 2-position single without connector (RN)



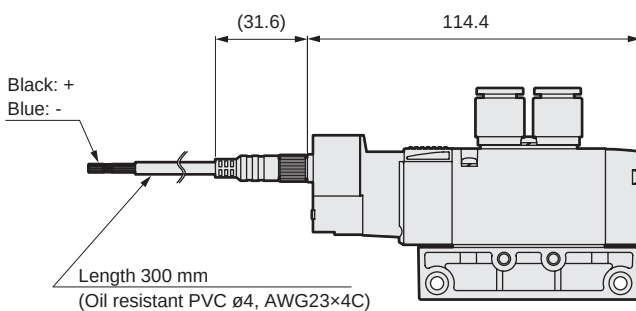
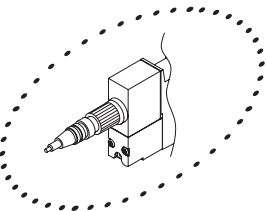
- Mounting plate (P)



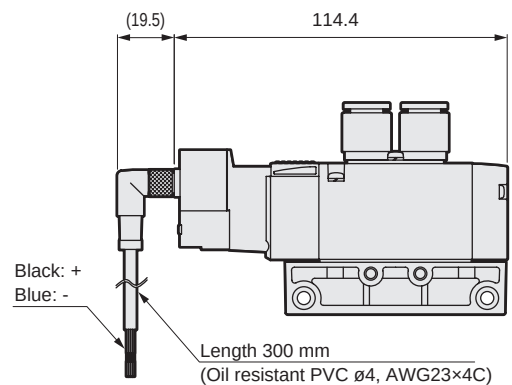
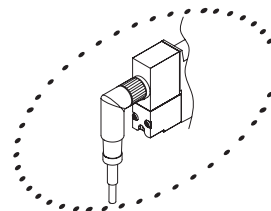
- Rc1/4 female thread (08)



- M8 connector/straight cable (R1)



- M8 connector/L-cable (R2)



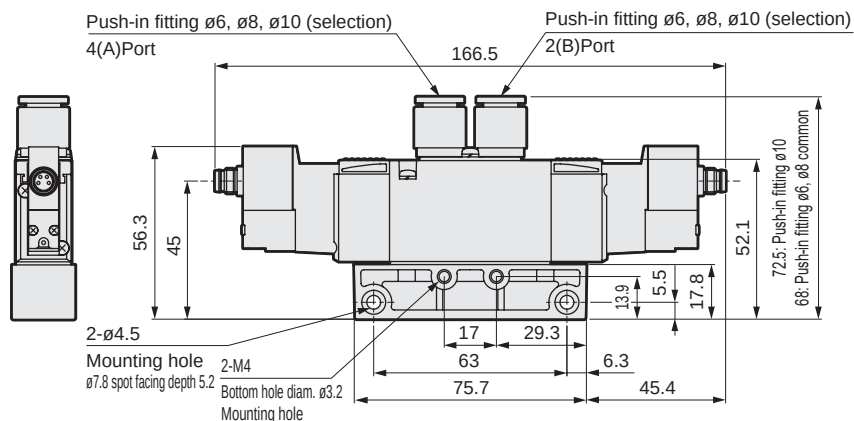
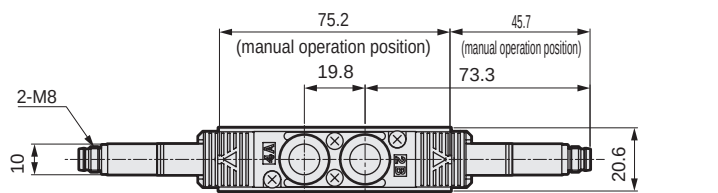
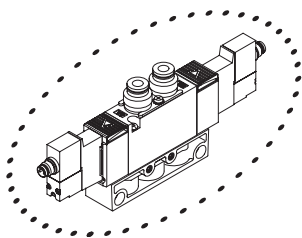
4GD3*0EJ Series

Discrete valve; Body piping

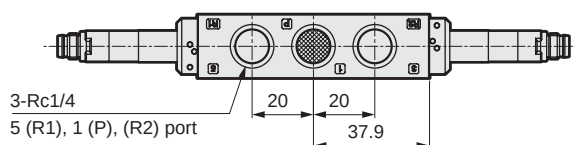
Dimensions

4GD320EJ

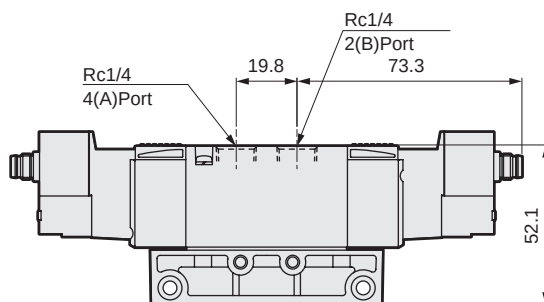
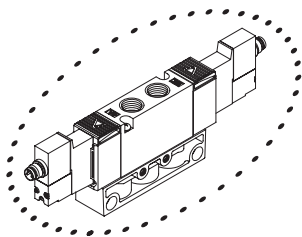
- 2-position double without connector (RN)



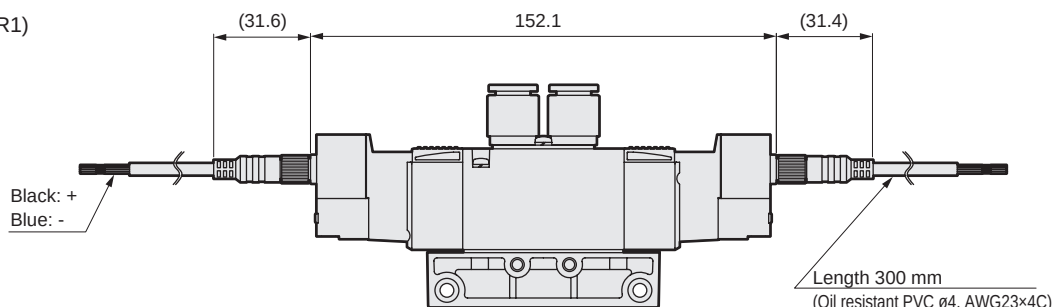
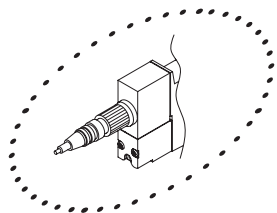
*Refer to page 78 for details on mounting holes.



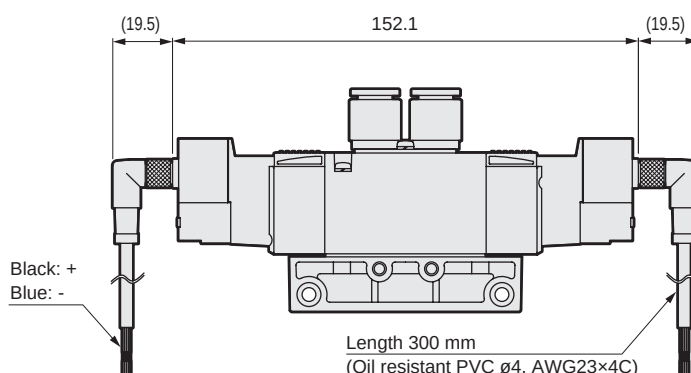
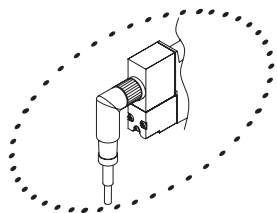
- Rc1/4 female thread (08)



- M8 connector/straight cable (R1)



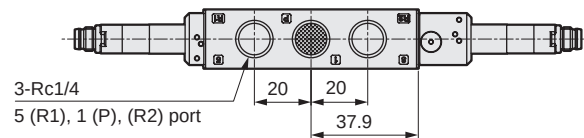
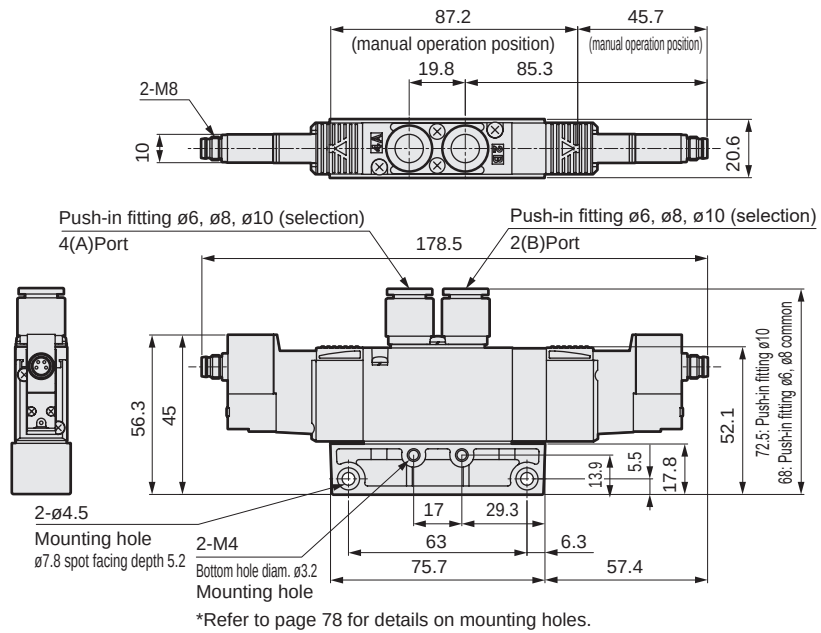
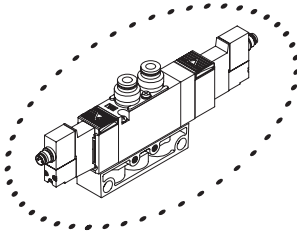
- M8 connector/L-cable (R2)



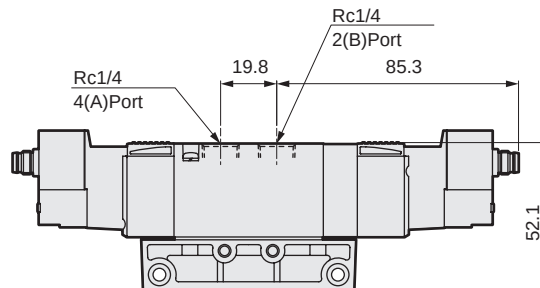
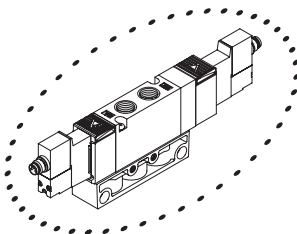
Dimensions

4GD3³/₅0EJ

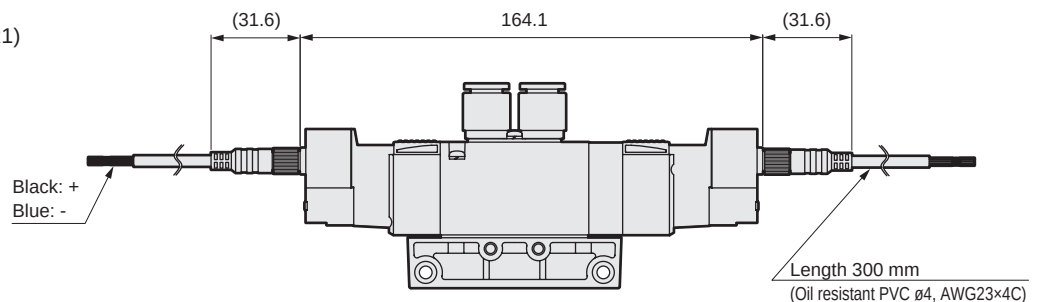
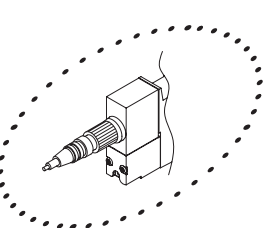
- 3-position without connector (RN)



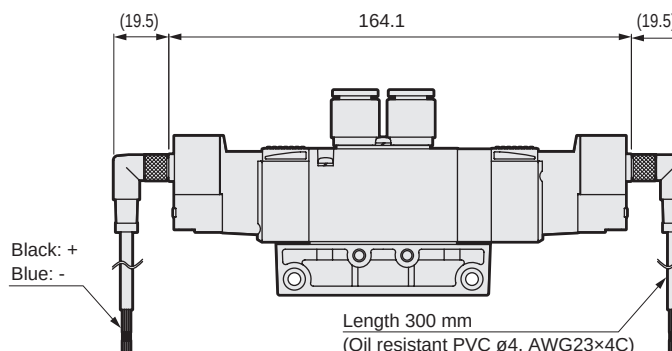
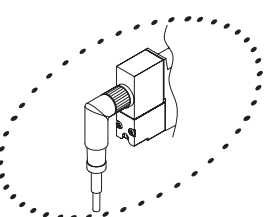
- Rc1/4 female thread (08)



- M8 connector/straight cable (R1)



- M8 connector/L-cable (R2)



3GD*0EJ
4GD*0EJ

3GE*0EJ
4GE*0EJ

M3GD*0EJ
M4GD*0EJ

M3GE*0EJ
M4GE*0EJ

Related products

Manifold
specifications sheet

Safety precautions

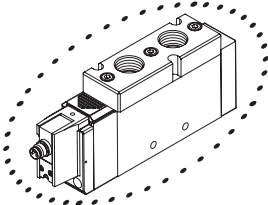
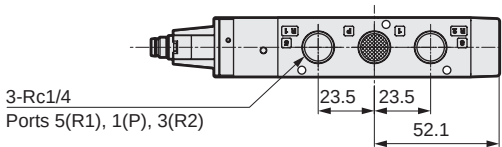
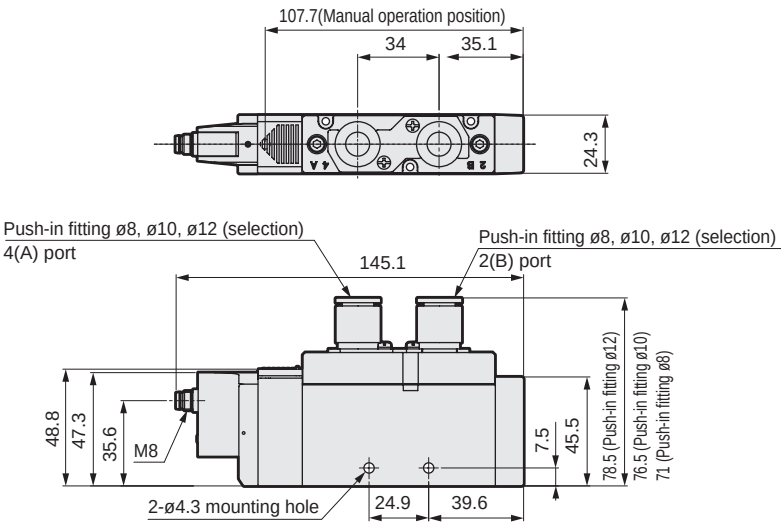
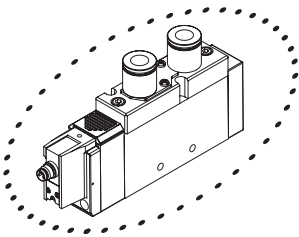
4GD4*0EJ Series

Discrete valve; Body piping

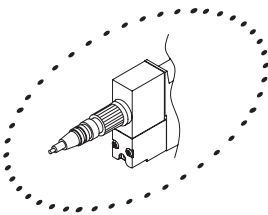
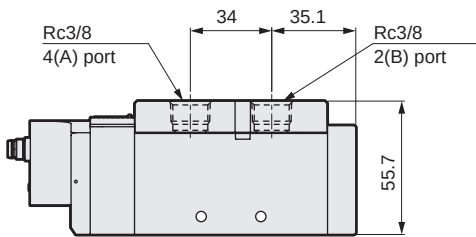
Dimensions

4GD410EJ

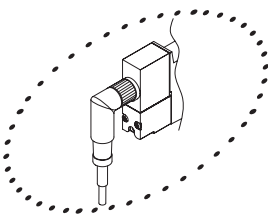
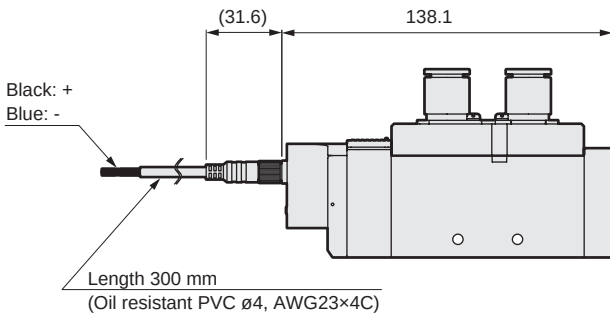
- 2-position single without connector (RN)



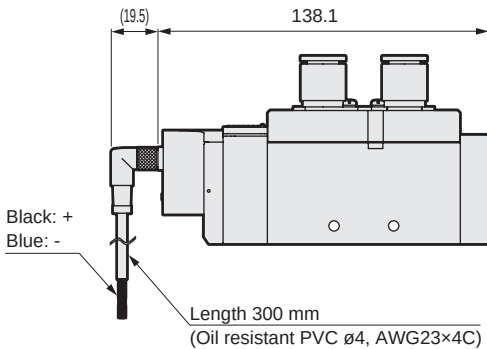
- Rc3/8 female thread (10)



- M8 connector/straight cable (R1)



- M8 connector/L-cable (R2)



3GD*0EJ
4GD*0EJ

3GE*0EJ
4GE*0EJ

M3GD*0EJ
M4GD*0EJ

M3GE*0EJ
M4GE*0EJ

Related products

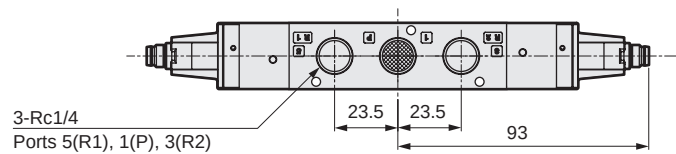
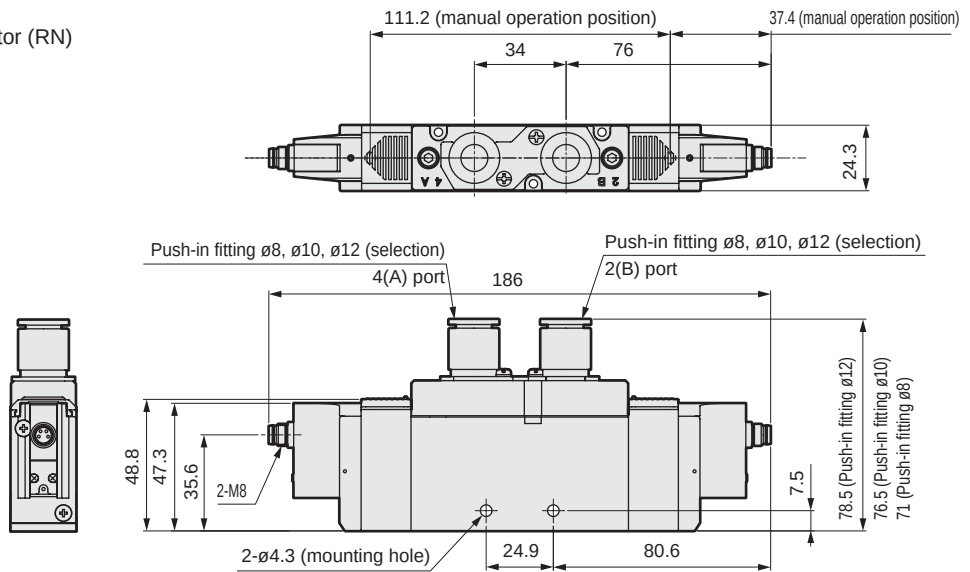
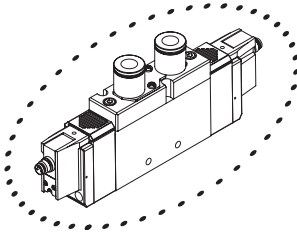
Manifold
Specifications sheet

Safety precautions

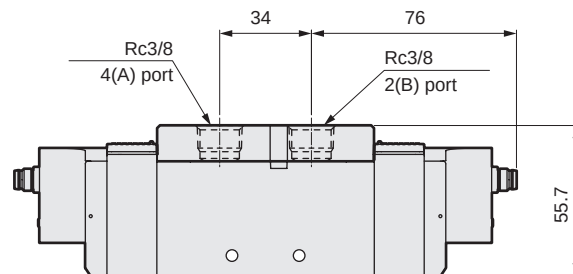
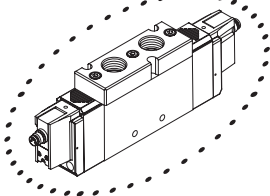
Dimensions

4GD420EJ

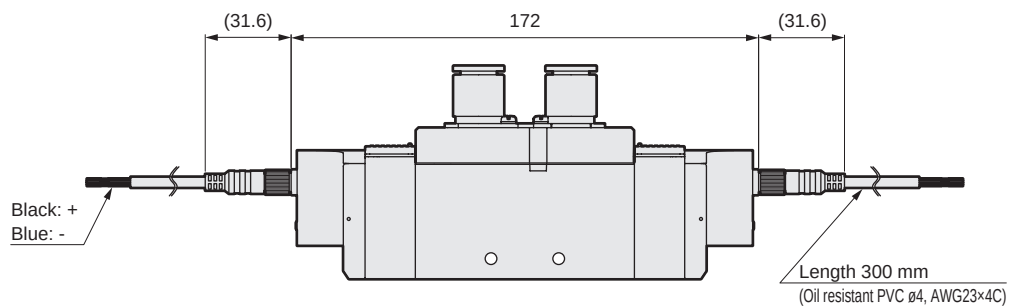
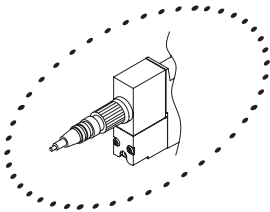
- 2-position double without connector (RN)



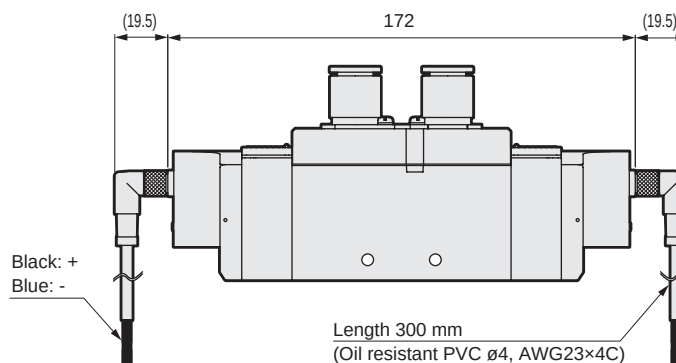
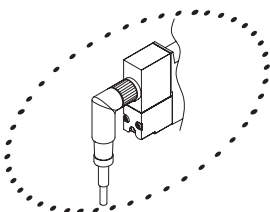
- Rc3/8 female thread (10)



- M8 connector/straight cable (R1)



- M8 connector/L-cable (R2)



3GD*0EJ
4GD*0EJ

3GE*0EJ
4GE*0EJ

M3GD*0EJ
M4GD*0EJ

M3GE*0EJ
M4GE*0EJ

Related products

Manifold
Specifications sheet

Safety precautions

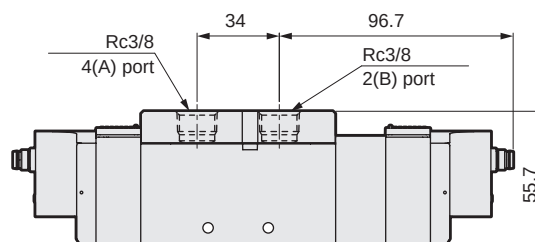
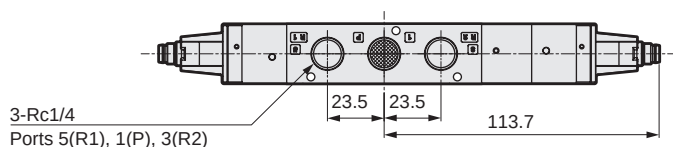
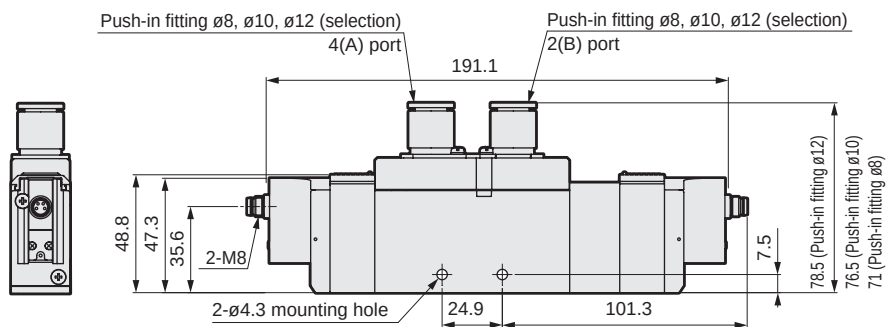
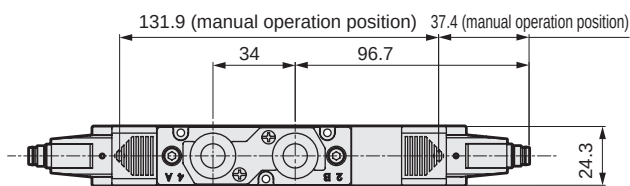
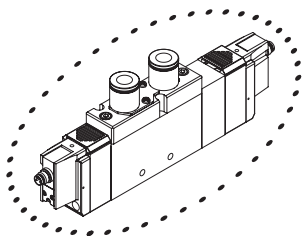
4GD4*0EJ Series

Discrete valve; Body piping

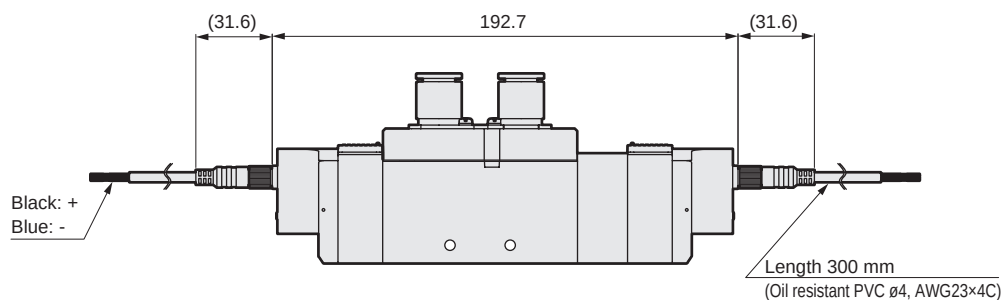
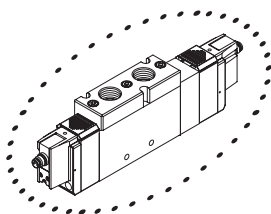
Dimensions

4GD4³/₅0EJ

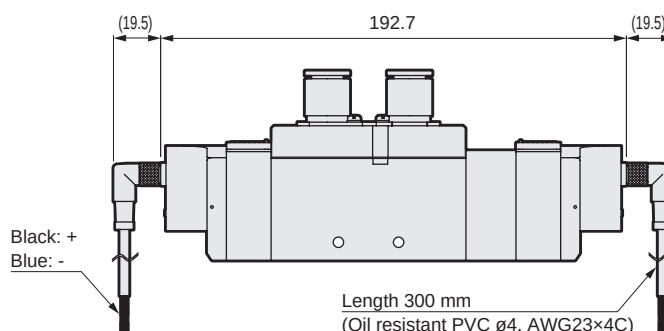
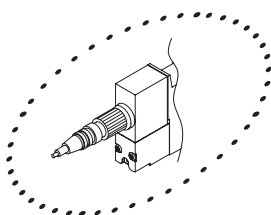
- 3-position without connector (RN)



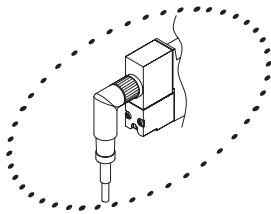
- Rc3/8 female thread (10)



- M8 connector/straight cable (R1)



- M8 connector/L-cable (R2)



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



Discrete valve
Base piping

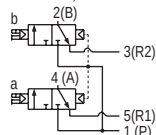
3GE1/2/4GE1/ 2/3 / 4*0EJ Series

● Applicable cylinder bore size: ø20 to ø160

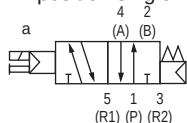


JIS symbol

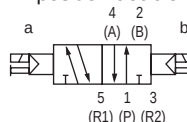
- Two 3-port valves integrated
(A side valve: NC, B side valve: NC)



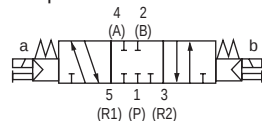
- 5-port valve
2-position single



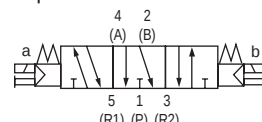
2-position double mounting



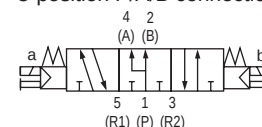
3-position
All ports closed



3-position A/B/R connection



3-position P/A/B connection



Common specifications

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

Solenoid specifications

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

*1 Use turbine oil Class 1 ISOVG32 for lubrication. Excessive or intermittent lubrication results in unstable operation.

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

Intrinsic safety explosion-proof specifications

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

Individual specifications

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

Performance/characteristics by model

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

Item			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 pipe adaptor. These values include the M8 connector (straight).

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

Flow Rate Characteristics

Model No.	Solenoid position		P → A/B		A/B → R1/R2	
			C[dm ³ /(s·bar)]	b	C[dm ³ /(s·bar)]	b
3GE1 4GE1	Two 3-port valves integrated		0.92	0.08	1.1	0.26
	2-position		1.3	0.27	1.2	0.22
	3-position	All ports closed	1.1	0.31	1.1	0.27
		ABR connection	1.1	0.31	1.3	0.29
		PAB connection	1.4	0.30	1.1	0.26
3GE2 4GE2	Two 3-port valves integrated		1.7	0.42	2.1	0.26
	2-position		2.6	0.20	2.6	0.19
	3-position	All ports closed	2.3	0.32	2.2	0.22
		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: Formula to convert effective cross-sectional area S and sonic conductance C is $S \approx 5.0 \times C$.

3GD*0EJ
4GD*0EJ

3GE*0EJ
4GE*0EJ

M3GD*0EJ
M4GD*0EJ

M3GE*0EJ
M4GE*0EJ

Related products

Manifold
specifications sheet

Safety precautions

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

Discrete valve; Base piping

How to order (solenoid valve single unit)

● Single unit

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

A Model No.

B Solenoid position

C Explosion-proof Series

D Port size

E Electrical connections

F Option

G Voltage

A Model No.

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

Code	Description	3GE1	3GE2	4GE1	4GE2	4GE3	4GE4
B Solenoid position							
1	2 position single			●	●	●	●
2	2-position double			●	●	●	●
3	3-position all ports closed			●	●	●	●
4	3-position ABR connection			●	●	●	●
5	3-position PAB connection			●	●	●	●
66	3-port valve Two valves integrated *1	●	●				
	A valve side: Normally Closed B valve side: Normally Closed						
C Explosion-proof Series							
EJ	Japan Explosion-Proof Certified Product	●	●	●	●	●	●
D Port size [ports 4(A), 2(B)]							
Port	4(A)/2(B) port	Port P/R1/R2 (1) = M5 (2) = Rc1/8 (3) = Rc1/4 (4) = Rc3/8 (5)=Rc1/2					
06	Rc1/8	(2)	(2)				
08	Rc1/4		(3)	(3)	(3)		
10	Rc3/8				(4)	(4)	
15	Rc1/2					(5)	
00	Valve for base mounting	●	●	●	●	●	●
E Electrical connections *2							
RN	M8 connector without cable	●	●	●	●	●	●
R1	M8 connector straight cable	●	●	●	●	●	●
R2	M8 connector L-cable	●	●	●	●	●	●
F Option							
Blank	Manual override of non-locking/locking common (standard)	●	●	●	●	●	●
H	With exhaust check valve *3	●	●	●	●	●	●
A	Ozone/coolant proof	●	●	●	●	●	●
F	Port A/B filter *4	●	●	●	●	●	●
J	With indicator	●	●	●	●	●	●
G Voltage							
4	12 VDC	●	●	●	●	●	●

⚠ Precautions for model No. selection

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

*2: M8 connector length is 300mm. Select other lengths from page 65 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.

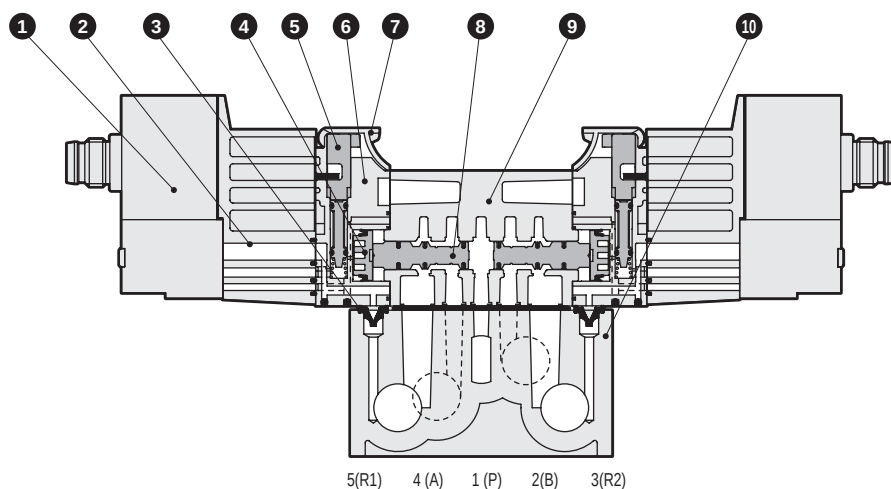
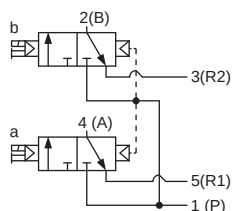
*5: Explosion-proof barrier sold separately. Select from page 69.

Internal structure diagram and parts list

3GE1660EJ

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

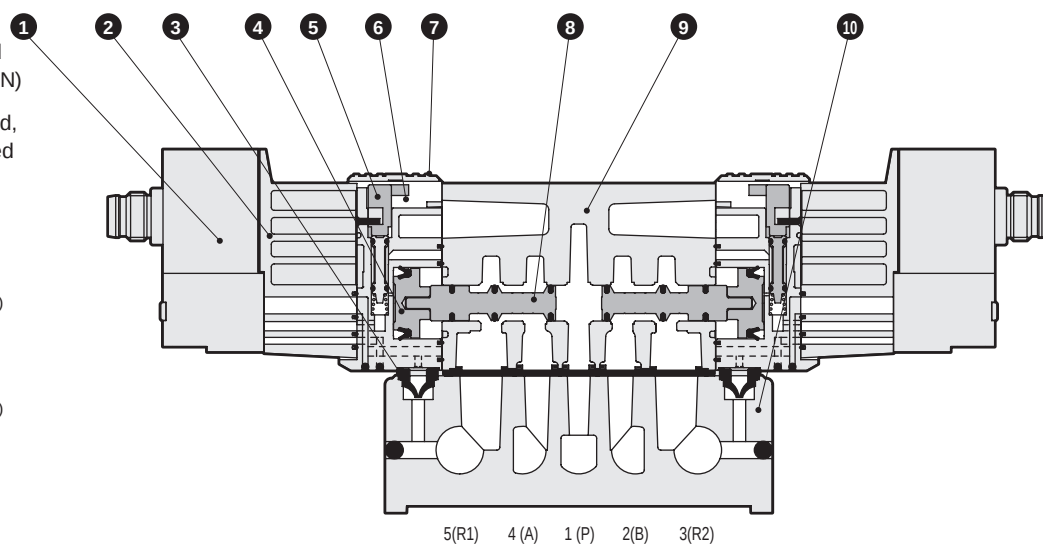
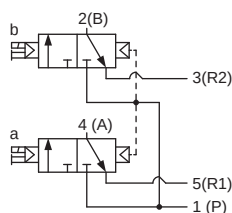
A side valve: Normally Closed,
B side valve: Normally Closed
NC/NC



3GE2 660EJ

- 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

Part No.	Part name	Material	Part 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*0EJ
4GD*0EJ

3GE*0EJ
4GE*0EJ

M3GD*0EJ
M4GD*0EJ

M3GE*0EJ
M4GE*0EJ

Related products

Manifold
specifications sheet

Safety precautions

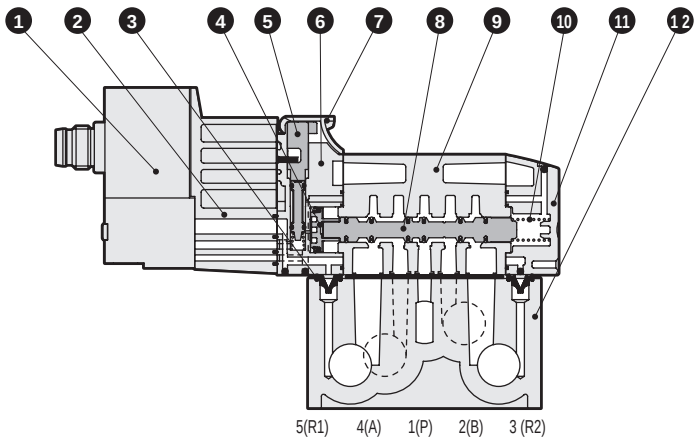
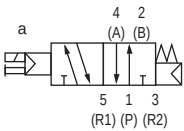
4GE1*0EJ Series

Discrete valve; Base piping

Internal structure diagram and parts list

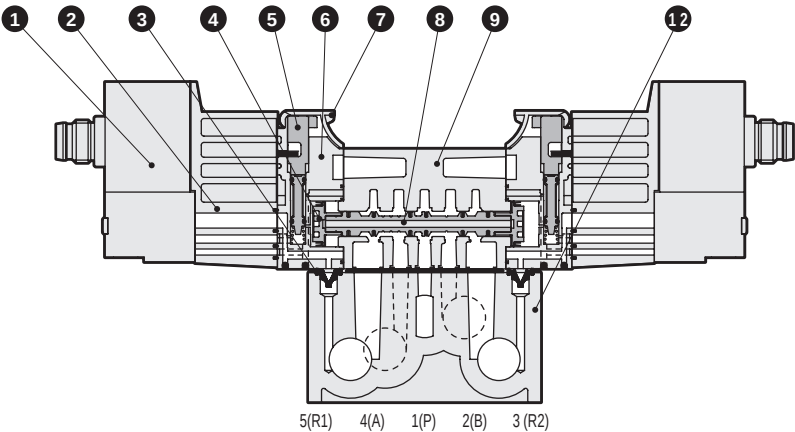
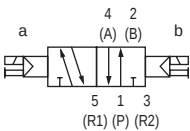
4GE110EJ

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



4GE120EJ

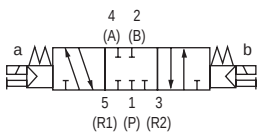
- 2-position double
- M8 connector without cable (RN)



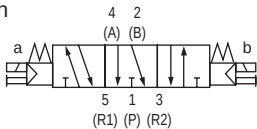
4GE1 3 0EJ

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

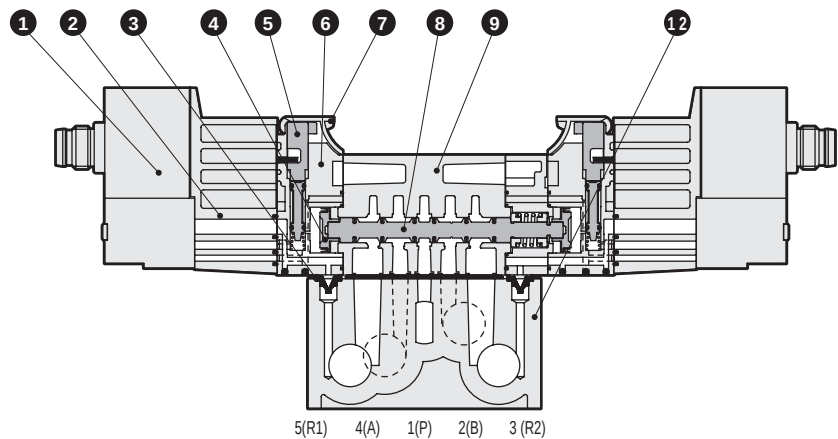
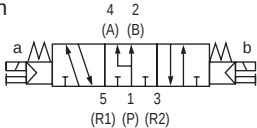
All ports closed



A/B/R connection



P/A/B connection



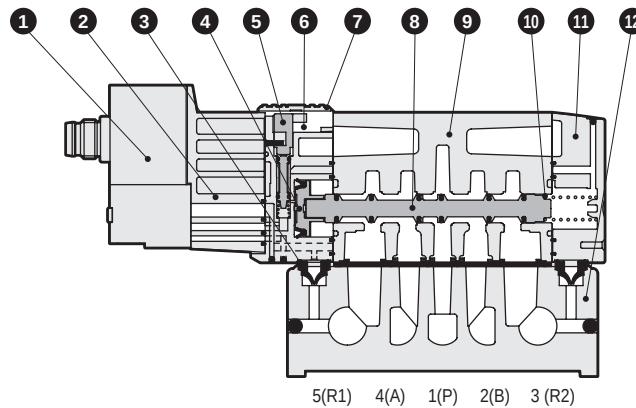
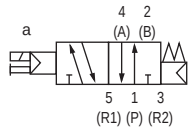
Main parts list

Part No.	Part name	Material	Part 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

Internal structure diagram and parts list

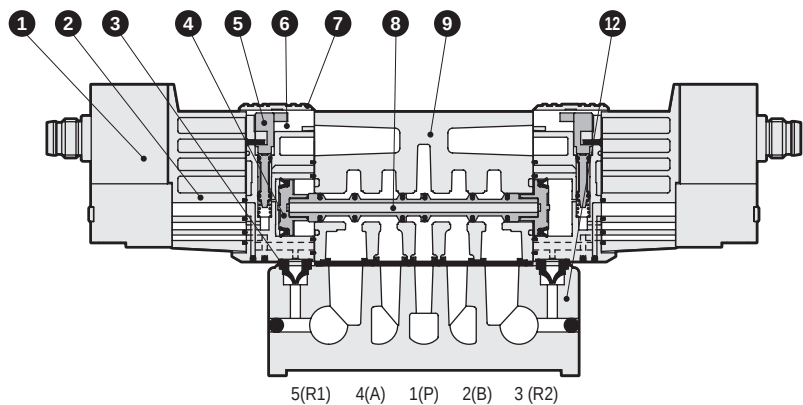
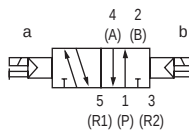
4GE210EJ/4GE310EJ

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



4GE220EJ/4GE320EJ

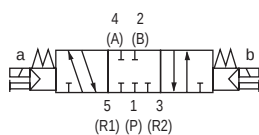
- 2-position double
- M8 connector without cable (RN)



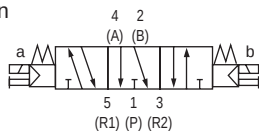
4GE2³0EJ/4GE3³0EJ

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

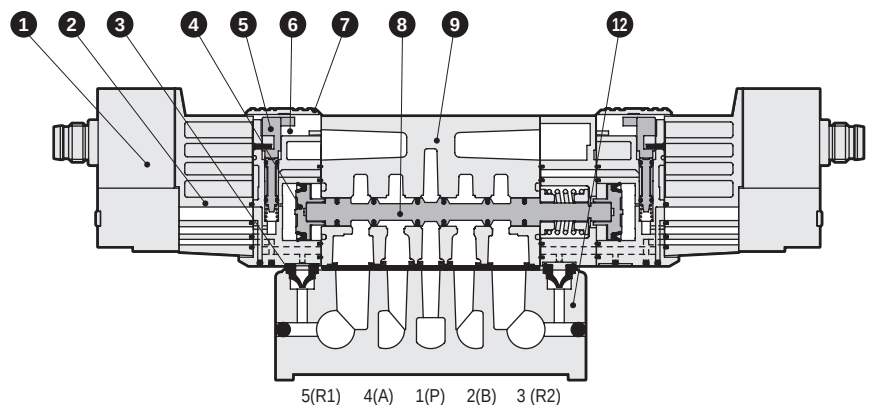
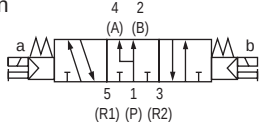
All ports closed



A/B/R connection



P/A/B connection



Main parts list

Part No.	Part name	Material	Part 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

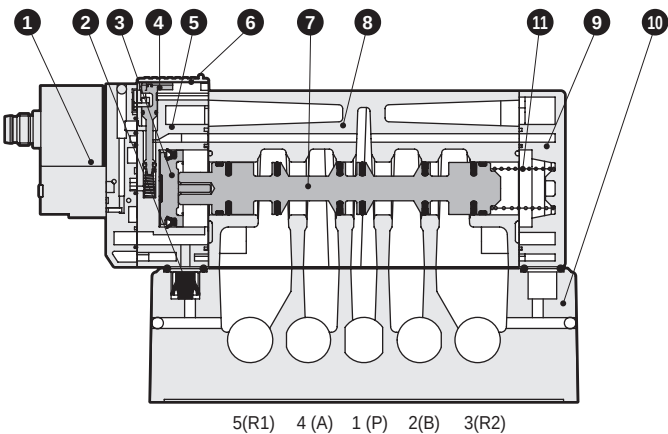
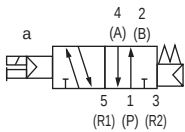
4GE4*0EJ Series

Discrete valve; Base piping

Internal structure diagram and parts list

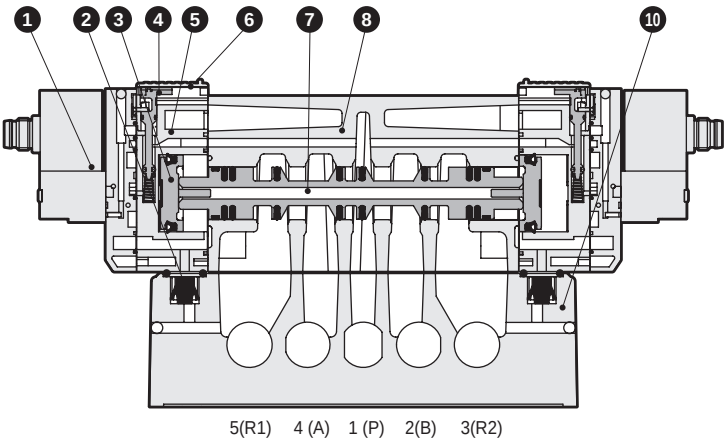
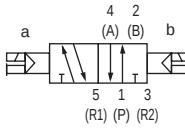
4GE410EJ

- 2 position single
M8 connector without cable (RN)



4GE420EJ

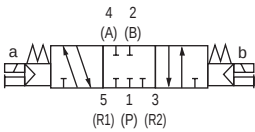
- 2-position double
M8 connector without cable (RN)



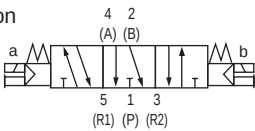
4GE4³0EJ

- 3-position
M8 connector without cable (RN)

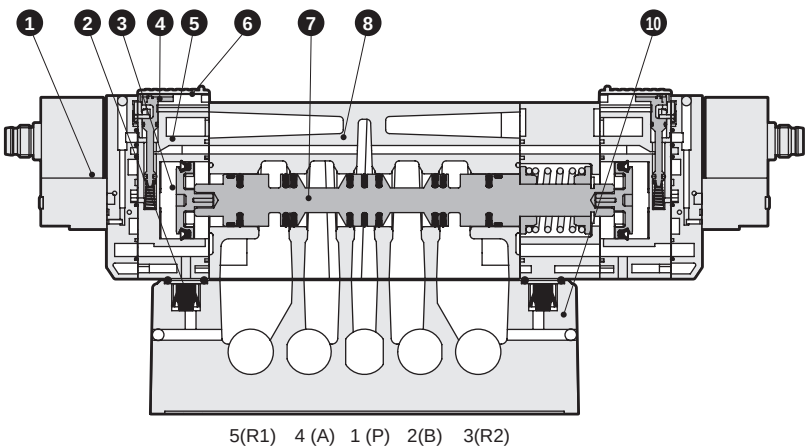
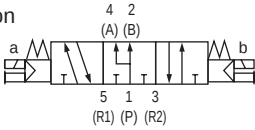
All ports closed



A/B/R connection



P/A/B connection



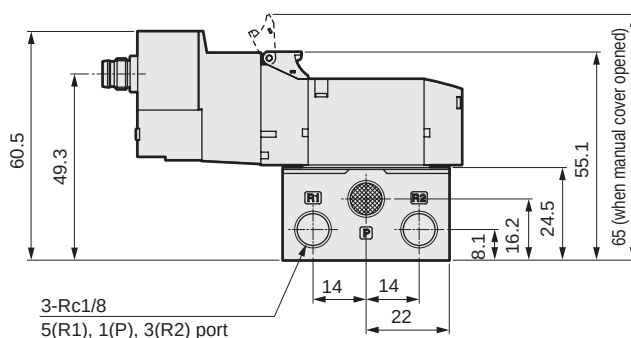
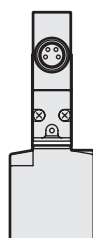
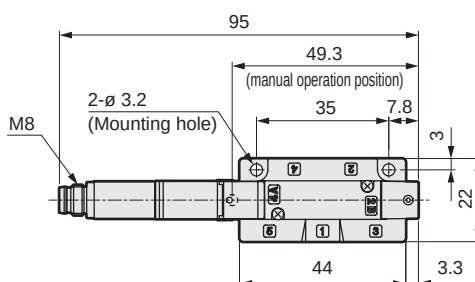
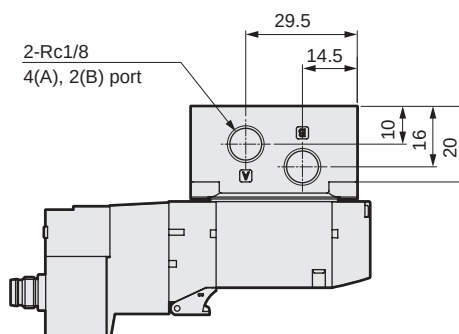
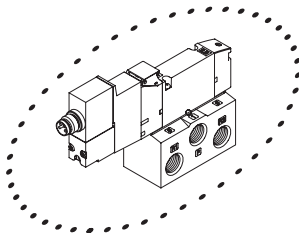
Main parts list

Part No.	Part name	Material	Part 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

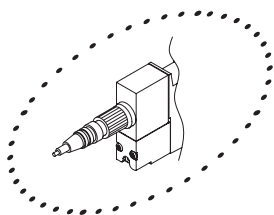
Dimensions

4GE110EJ

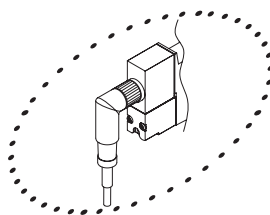
- 2-position single without connector (RN)



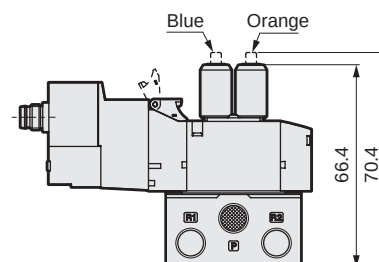
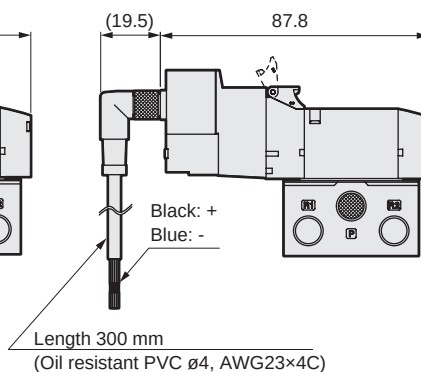
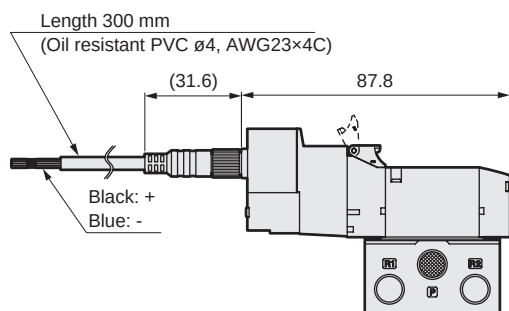
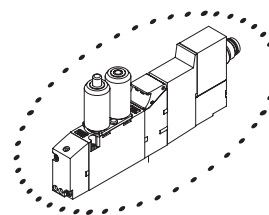
- M8 connector/straight cable (R1)



- M8 connector/L-cable (R2)



- With indicator (J)



3GD*0EJ
4GD*0EJ

3GE*0EJ
4GE*0EJ

M3GD*0EJ
M4GD*0EJ

M3GE*0EJ
M4GE*0EJ

Related products

Manifold
specifications sheet

Safety precautions

4GE1*0EJ Series

Discrete valve; Base piping

Dimensions

4GE120EJ

- 2-position double without connector (RN)

3GE1660EJ

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

3GD*0EJ
4GD*0EJ

3GE*0EJ
4GE*0EJ

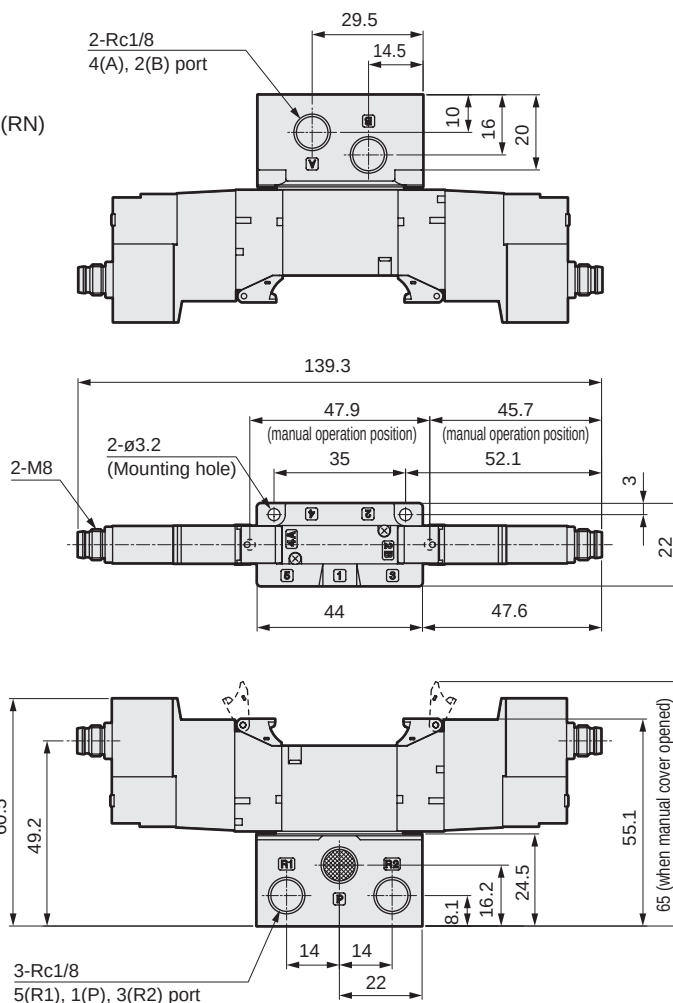
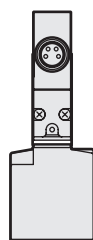
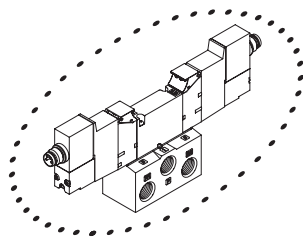
M3GD*0EJ
M4GD*0EJ

M3GE*0EJ
M4GE*0EJ

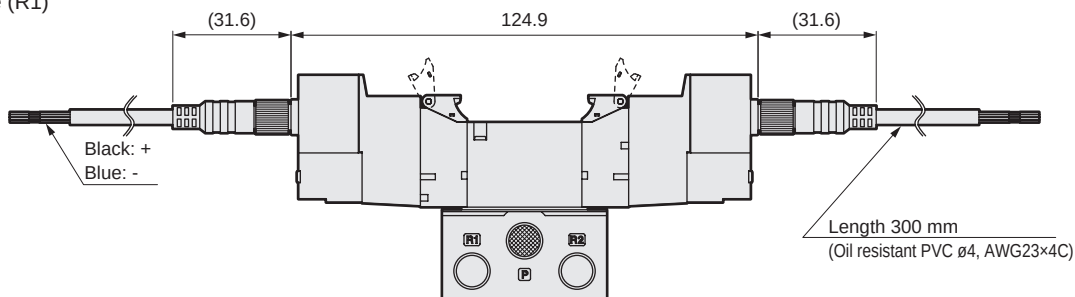
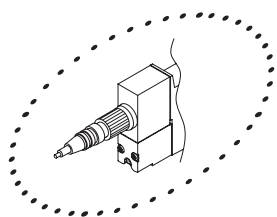
Related products

Manifold
specifications sheet

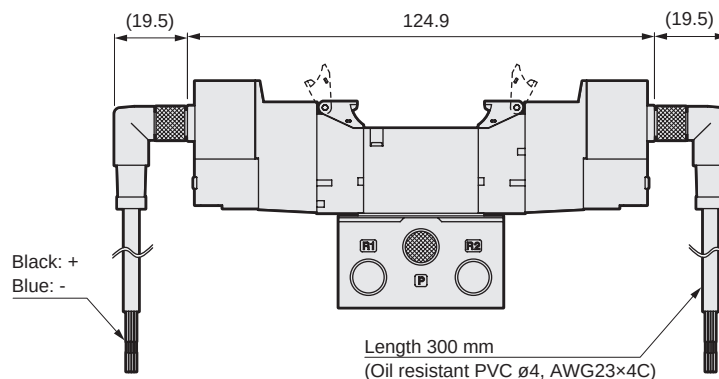
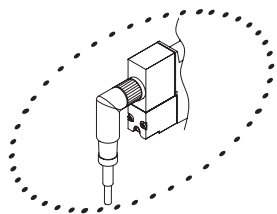
Safety precautions



- M8 connector/straight cable (R1)



- M8 connector/L-cable (R2)

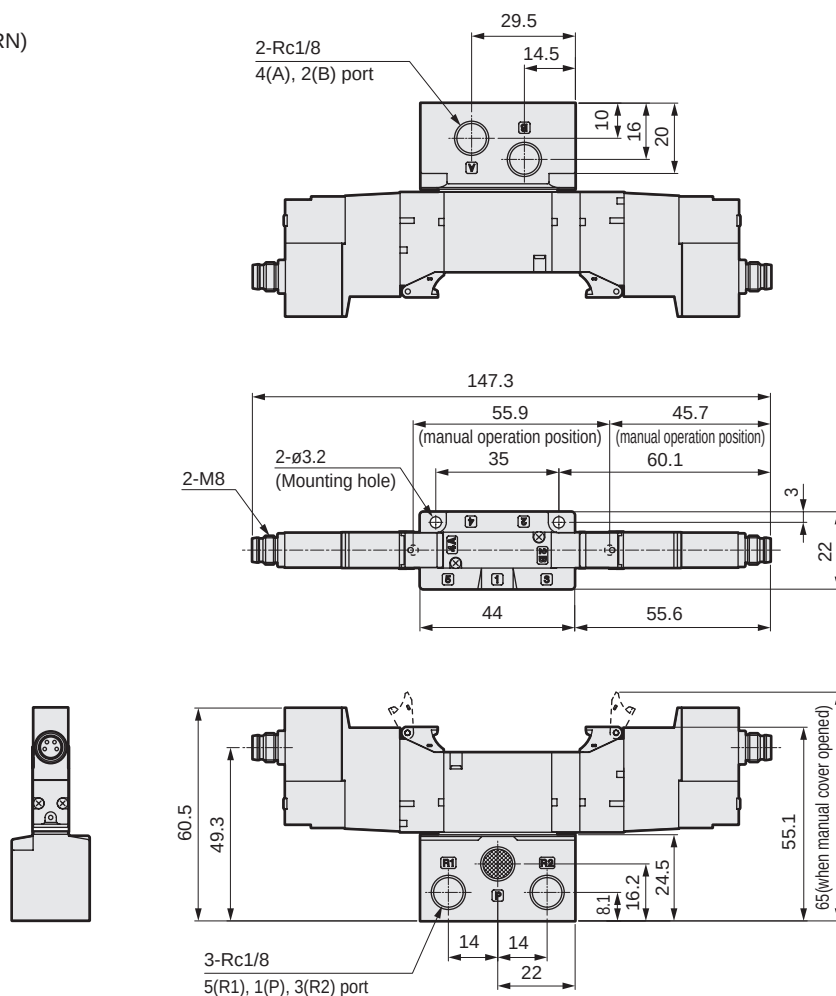
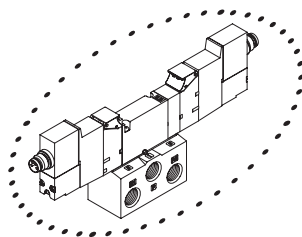


*For dimensions with indicator (J), refer to page 28.

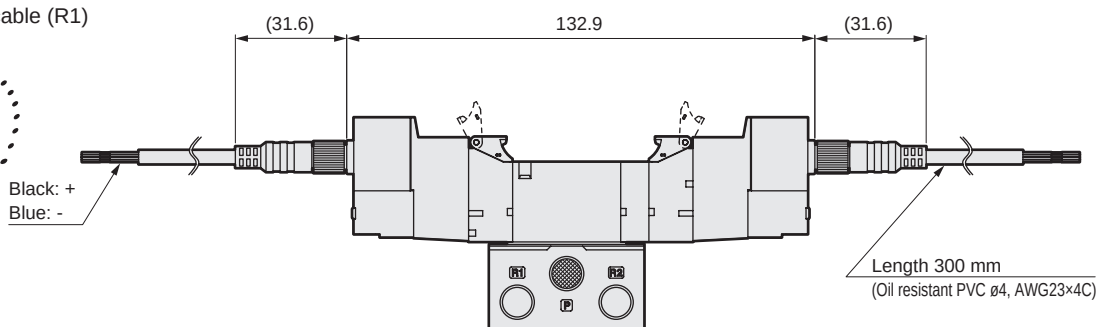
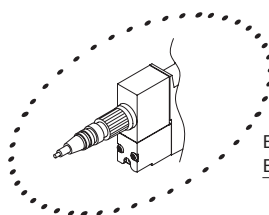
Dimensions

4GE1³/₅0EJ

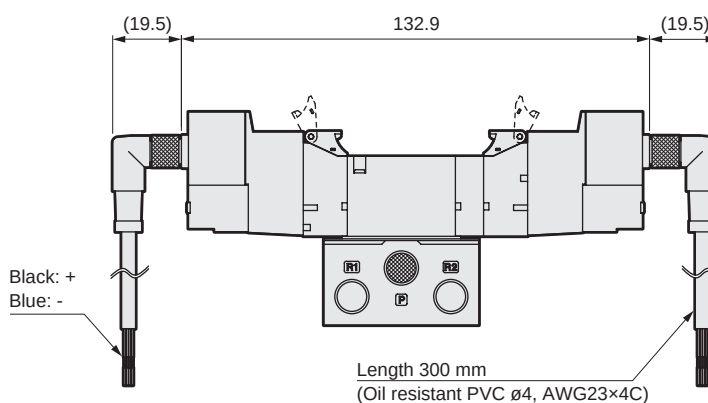
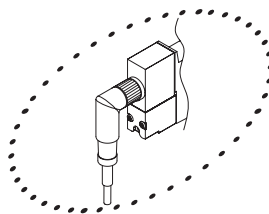
- 3-position without connector (RN)



- M8 connector/straight cable (R1)



- M8 connector/L-cable (R2)



*For dimensions with indicator (J), refer to page 28.

3GD*0EJ
4GD*0EJ

3GE*0EJ
4GE*0EJ

M3GD*0EJ
M4GD*0EJ

M3GE*0EJ
M4GE*0EJ

Related products

Manifold
specifications sheet

Safety precautions

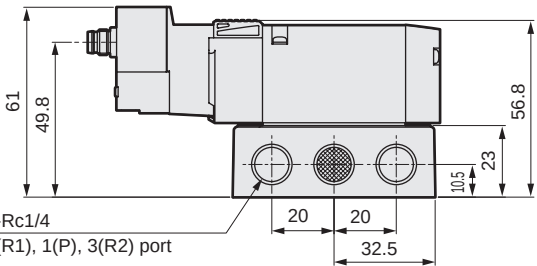
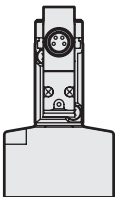
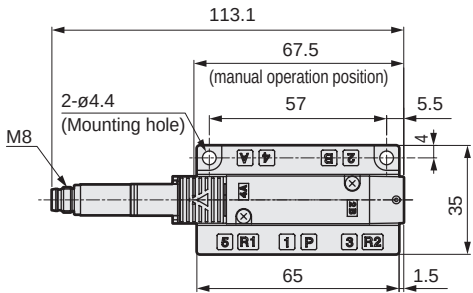
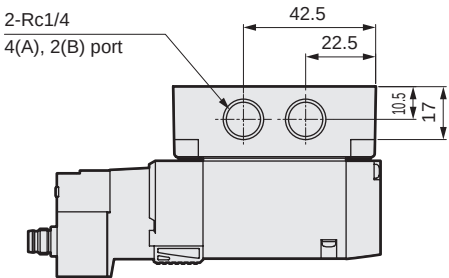
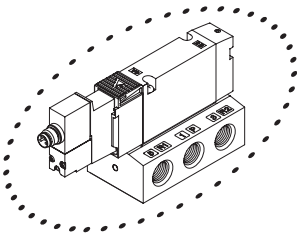
4GE2*0EJ Series

Discrete valve; Base piping

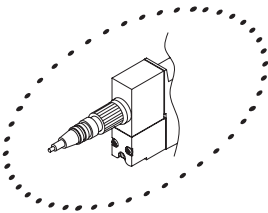
Dimensions

4GE210EJ

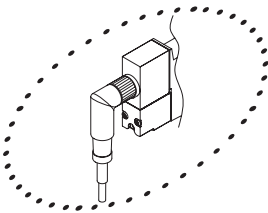
● 2-position single without connector (RN)



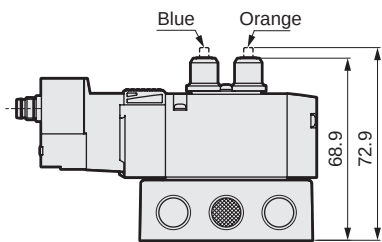
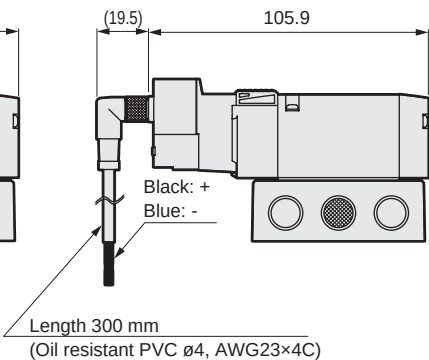
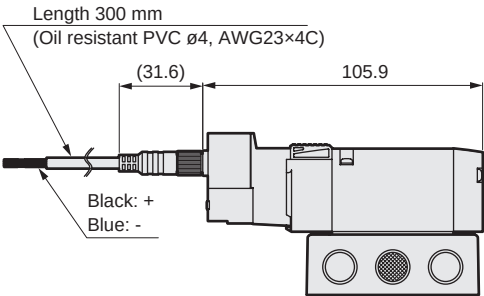
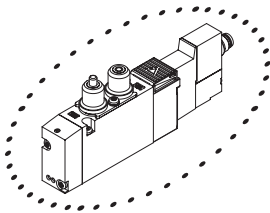
● M8 connector/straight cable (R1)



● M8 connector/L-cable (R2)



● With indicator (J)



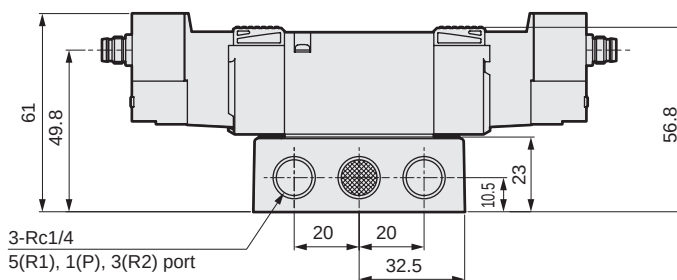
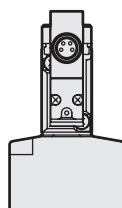
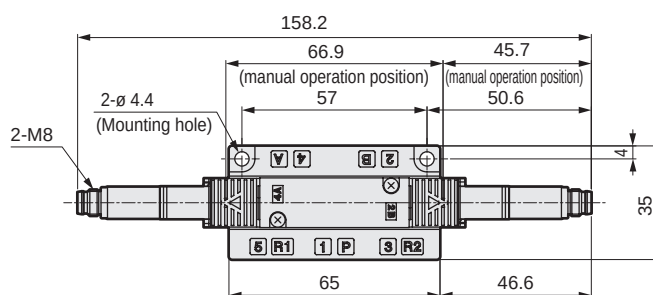
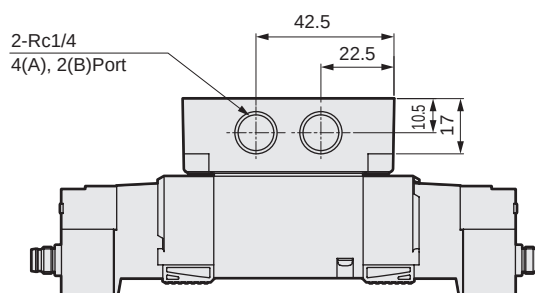
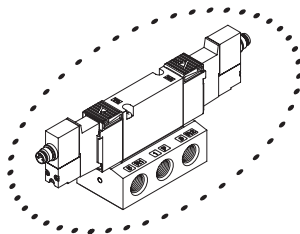
Dimensions

4GE220EJ

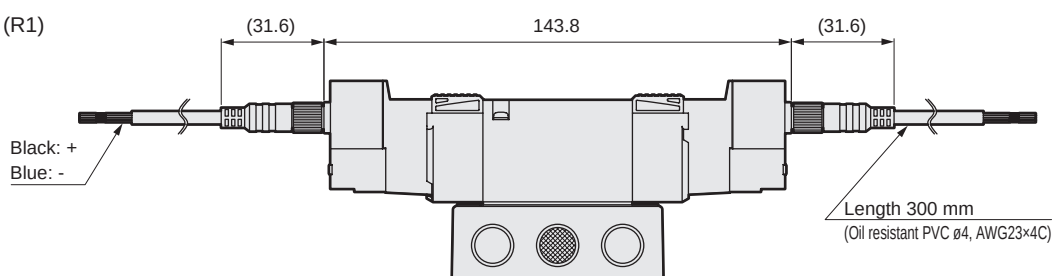
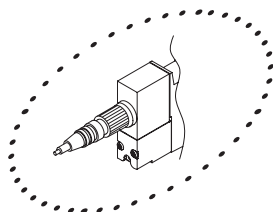
- 2-position double without connector (RN)

3GE2660EJ

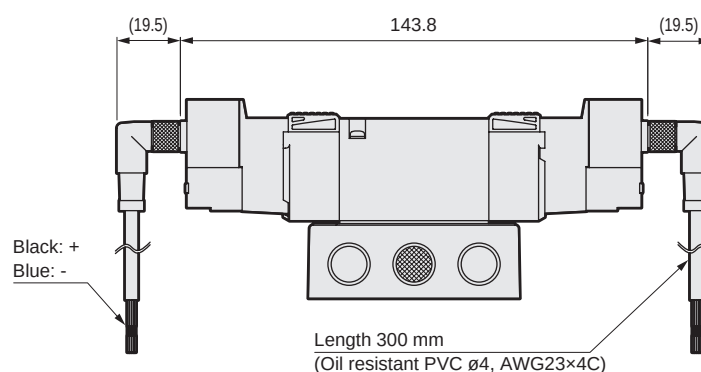
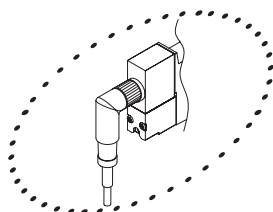
- Two 3-port valves integrated without connector (RN)



- M8 connector/straight cable (R1)



- M8 connector/L-cable (R2)



*For dimensions with indicator (J), refer to page 31.

3GD*0EJ
4GD*0EJ

3GE*0EJ
4GE*0EJ

M3GD*0EJ
M4GD*0EJ

M3GE*0EJ
M4GE*0EJ

Related products

Manifold
specifications sheet

Safety precautions

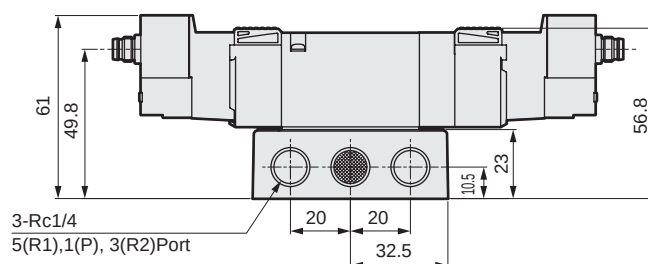
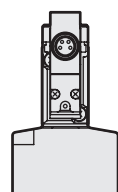
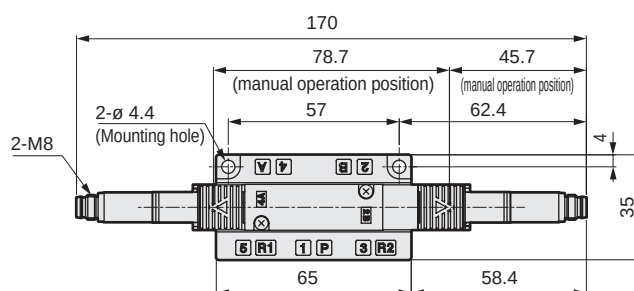
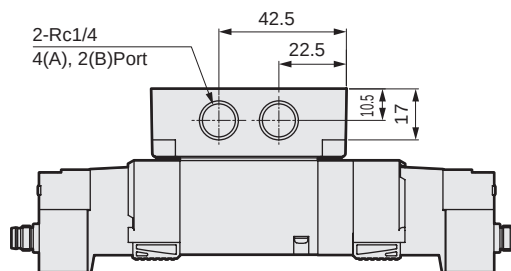
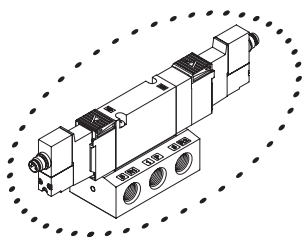
4GE2*0EJ Series

Discrete valve; Base piping

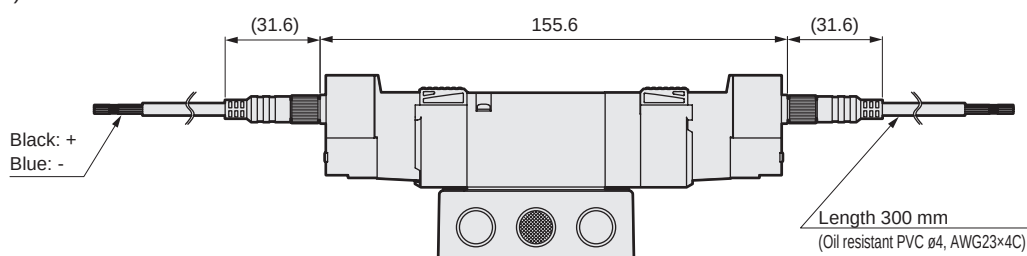
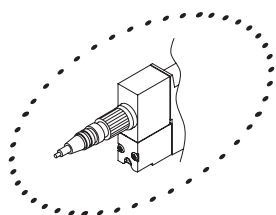
Dimensions

4GE2*0EJ

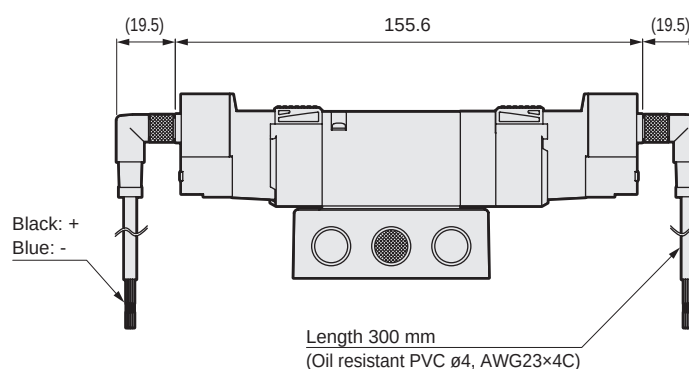
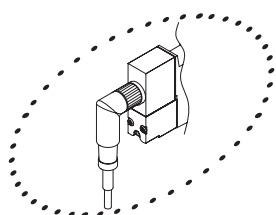
● 3-position without connector (RN)



● M8 connector/straight cable (R1)



● M8 connector/L-cable (R2)

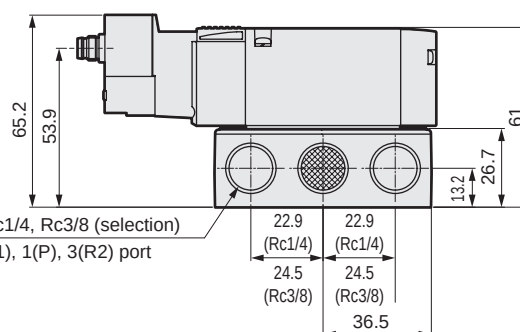
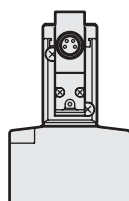
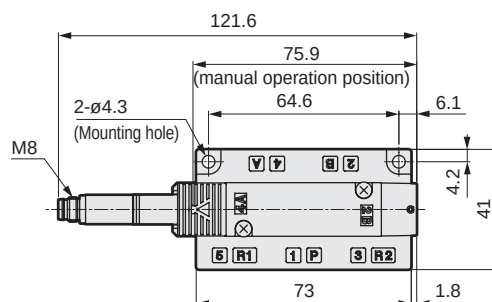
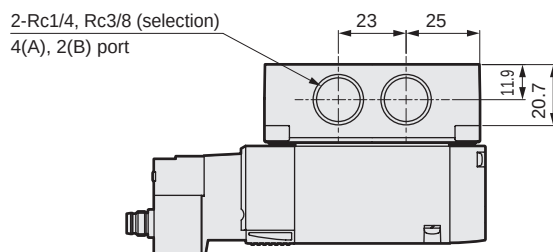
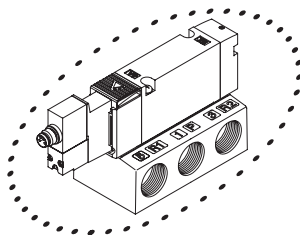


*For dimensions with indicator (J), refer to page 31.

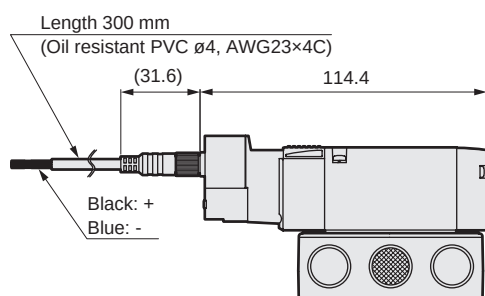
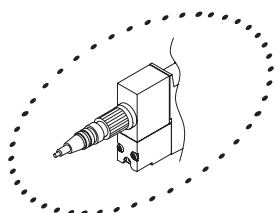
Dimensions

4GE310EJ

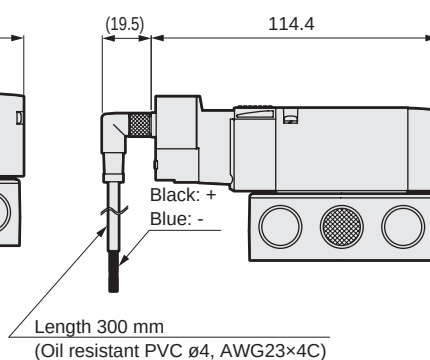
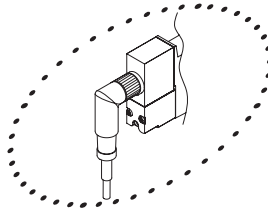
- 2-position single without connector (RN)



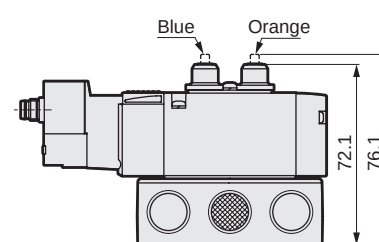
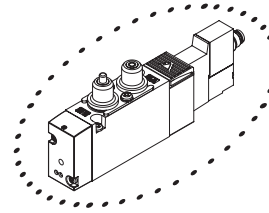
- M8 connector/straight cable (R1)



- M8 connector/L-cable (R2)



- With indicator (J)



3GD*0EJ
4GD*0EJ

3GE*0EJ
4GE*0EJ

M3GD*0EJ
M4GD*0EJ

M3GE*0EJ
M4GE*0EJ

Related products

Manifold
specifications sheet

Safety precautions

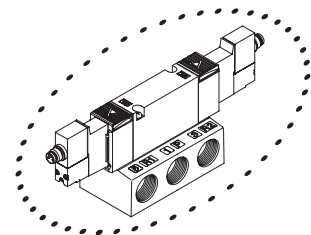
4GE3*0EJ Series

Discrete valve; Base piping

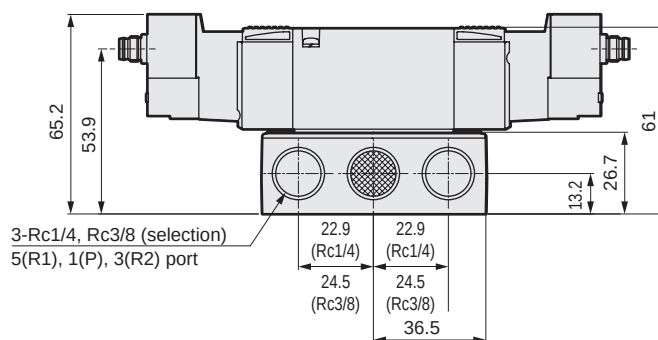
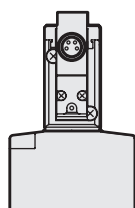
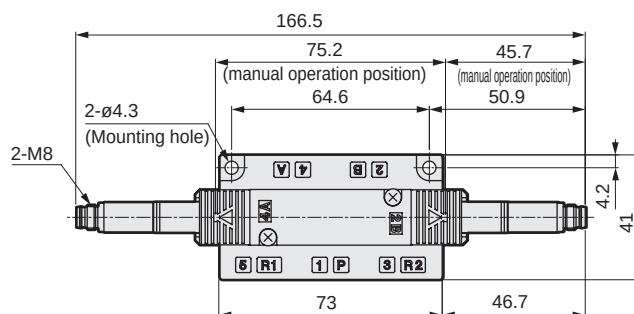
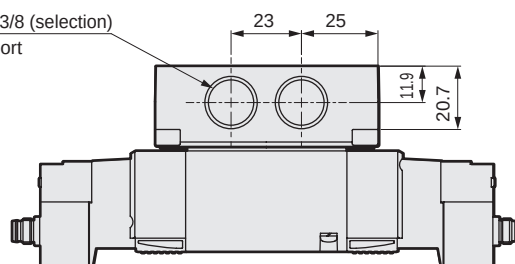
Dimensions

4GE320EJ

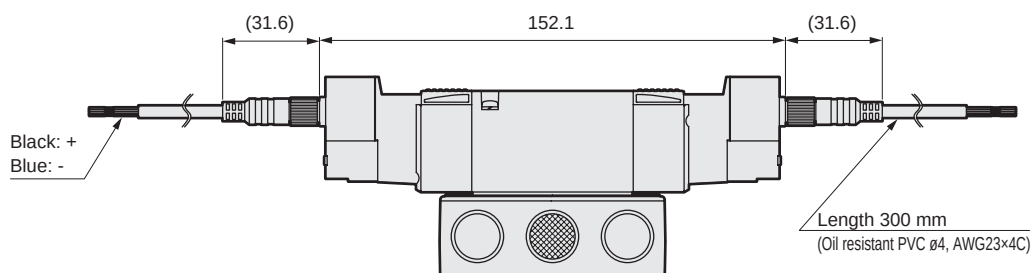
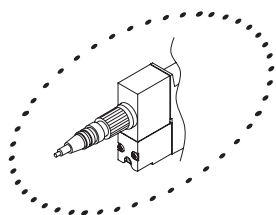
- 2-position double without connector (RN)



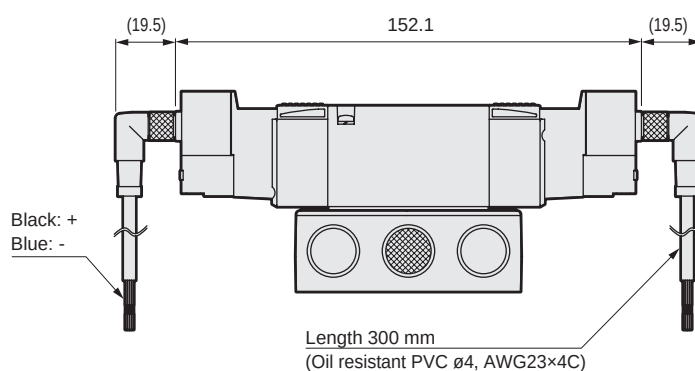
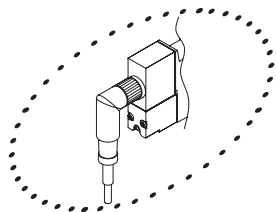
2-Rc1/4, Rc3/8 (selection)
4(A), 2(B) port



- M8 connector/straight cable (R1)



- M8 connector/L-cable (R2)

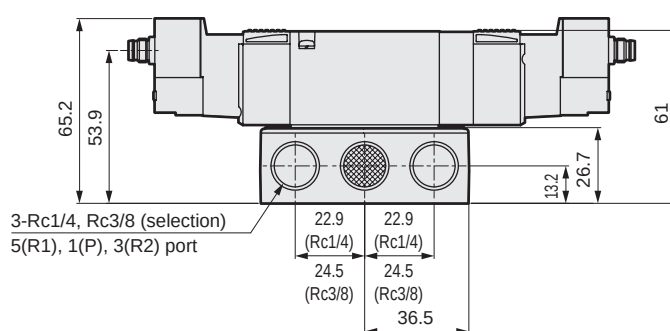
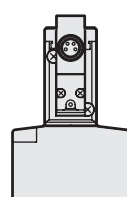
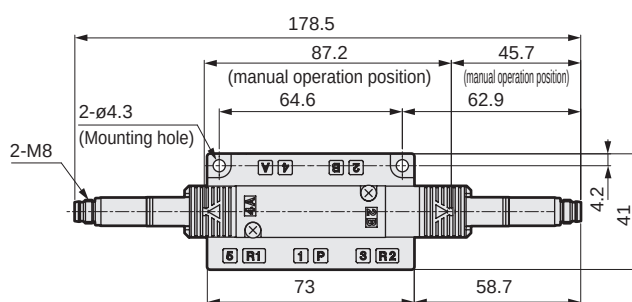
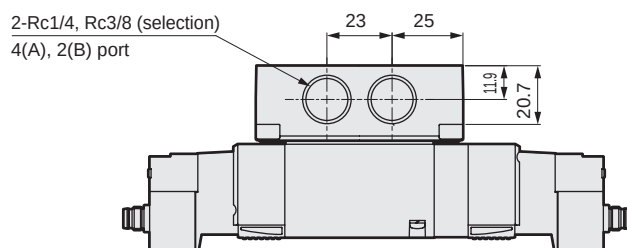
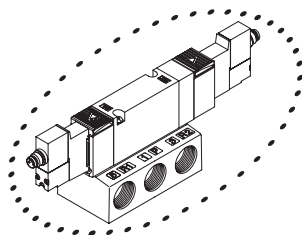


*For dimensions with indicator (J), refer to page 34.

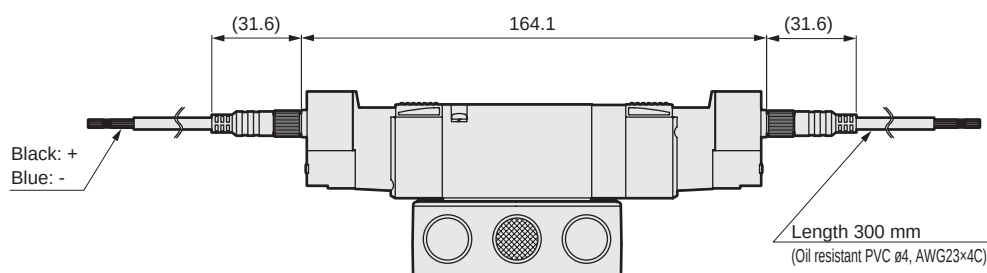
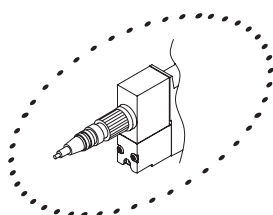
Dimensions

4GE3³0EJ

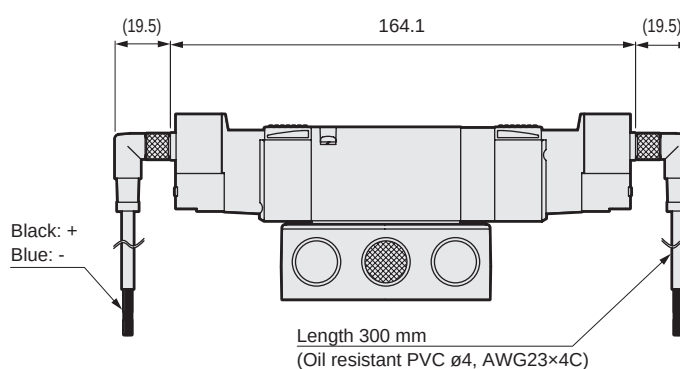
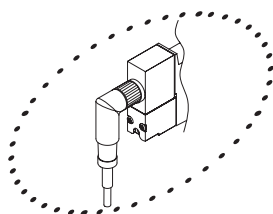
- 3-position without connector (RN)



- M8 connector/straight cable (R1)



- M8 connector/L-cable (R2)



*For dimensions with indicator (J), refer to page 34.

3GD*0EJ
4GD*0EJ

3GE*0EJ
4GE*0EJ

M3GD*0EJ
M4GD*0EJ

M3GE*0EJ
M4GE*0EJ

Related products

Manifold
specifications sheet

Safety precautions

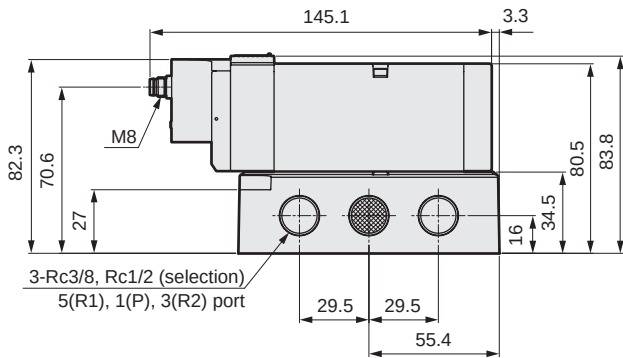
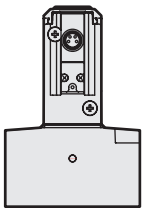
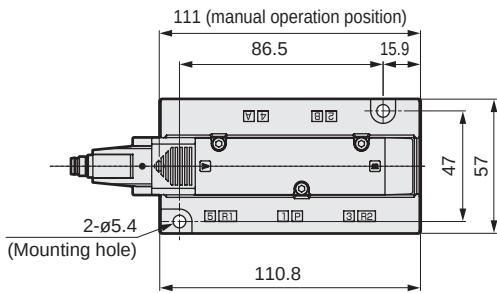
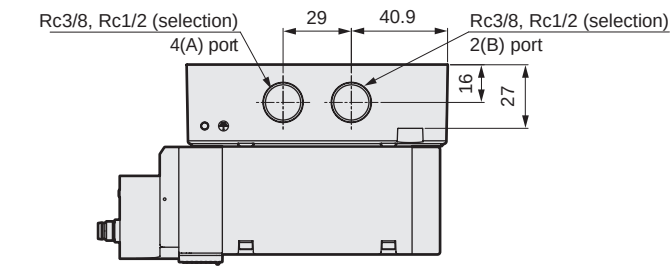
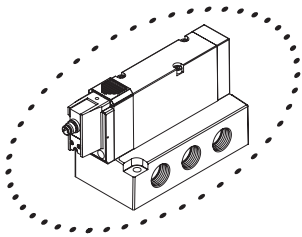
4GE4*0EJ Series

Discrete valve; Base piping

Dimensions

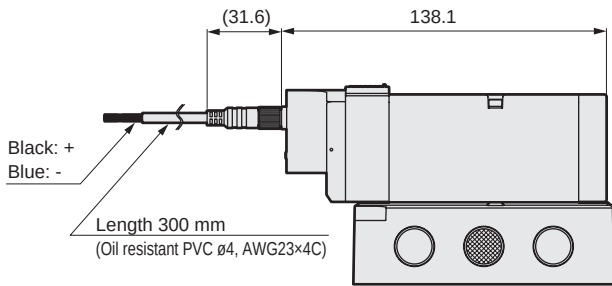
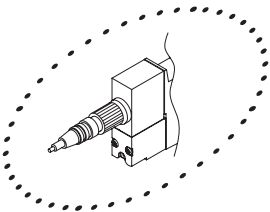
4GE410EJ

- 2 position single without connector (RN)



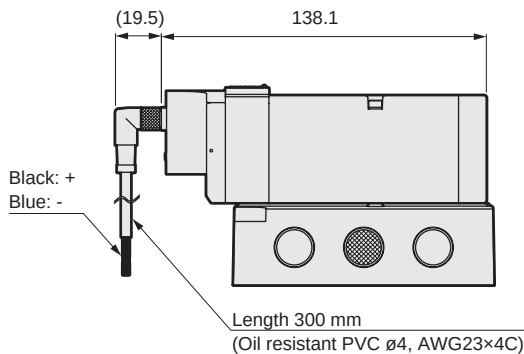
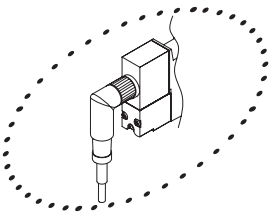
Related products

- M8 connector/straight cable (R1)



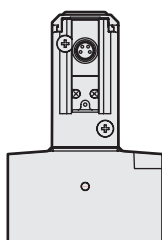
Manifold specifications sheet

- M8 connector/L-cable (R2)

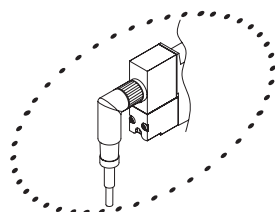


4GE420EJ

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- A 3D perspective drawing of a mechanical part, likely a bracket or support. The part has a rectangular base with two circular holes. A vertical plate is attached to the top of the base. A dashed circle highlights a specific feature on the vertical plate, which appears to be a small rectangular protrusion or a hole.



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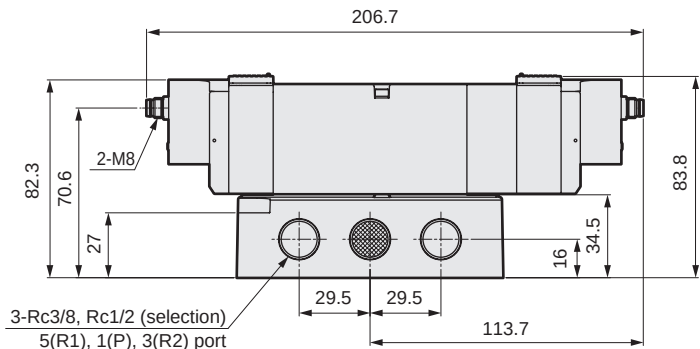
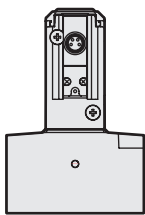
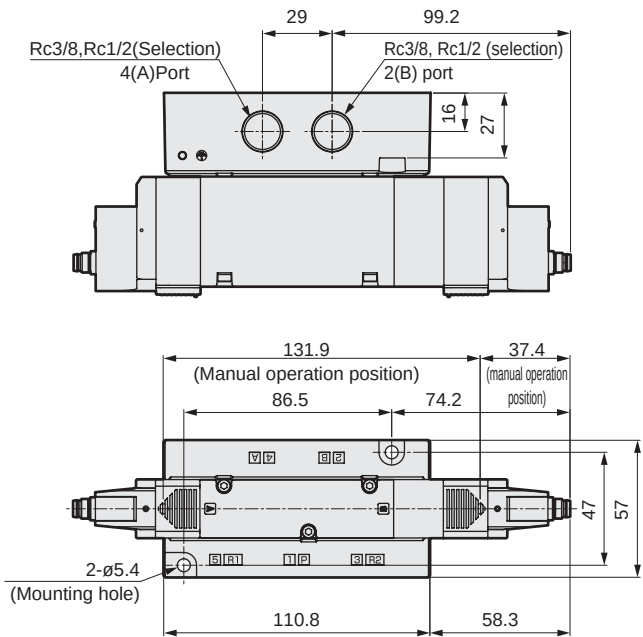
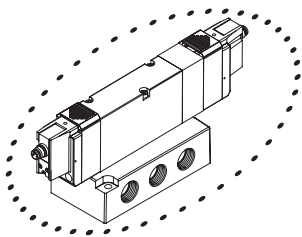
4GE4*0EJ Series

Discrete valve; Base piping

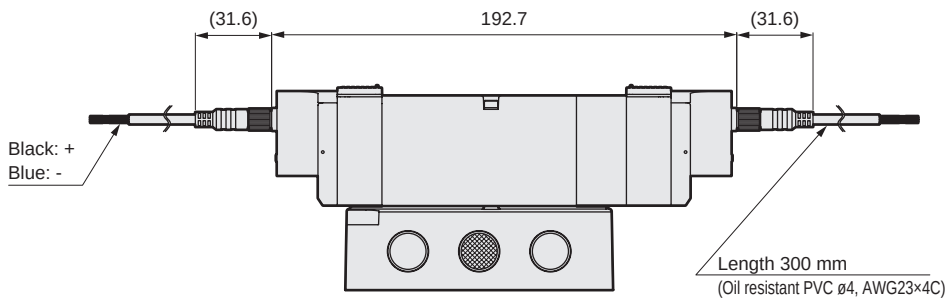
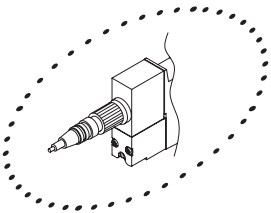
Dimensions

4GE4³₄⁰₅EJ

- 3-position without connector (RN)



- M8 connector/straight cable (R1)



- M8 connector/L-cable (R2)

