

Discrete valve
Body piping

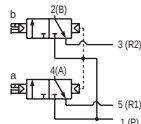
3GD1, 2/4GD1, 2, 3, 4*0EX Series

● Cylinder bore size: ø20 to ø140

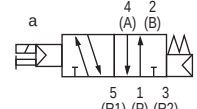


JISCode

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



- 5-port valve
2-position single

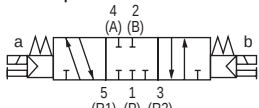


2-position double

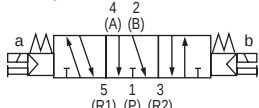


3-position

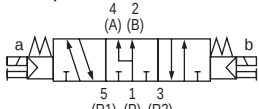
All ports closed



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	Not required
Degree of protection *2	IP67
Vibration resistance cm/s ²	50 or less
Shock resistance m/s ²	300 or less
Atmosphere	Cannot be used in corrosive gas environments

Solenoid specifications

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

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

*2 Tested according to the test method for IP67 (IEC60529) standards. 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 U _i	30 VDC
Intrinsic safety circuit allowable current I _i	200 mA
Intrinsic safety circuit allowable power P _i	0.68 W
Internal inductance L _i	Value that can be ignored
internal capacitance C _i	Value that can be ignored

Individual specifications

Port size	3GD1/4GD1	3GD2/4GD2	4GD3	4GD4
2, 4-port (Port A/B)	Push-in fitting ø4, ø6 M5	Push-in fitting ø4, ø6, ø8 Rc1/8	Push-in fitting 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	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

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

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

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

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

Discrete valve; Body piping

Flow characteristics

Model No.	Solenoid position		P → A/B		A/B → R1/R2	
			C[dm ³ /(s·bar)]	b	C[dm ³ /(s·bar)]	b
3GD1 4GD1	Two 3-port valves integrated		0.98	0.45	0.71	0.34
	2-position		1.2	0.47	0.72	0.37
	3-position	All ports closed	1.1	0.39	0.70	0.34
		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*0EX
4GD*0EX

3GE*0EX
4GE*0EX

M3GD*0EX
M4GD*0EX

M3GE*0EX
M4GE*0EX

Related products

Manifold
specifications sheet

Precautions for use

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

Discrete valve; Body piping

How to order (solenoid valve single unit)

● Single unit

4GD1 1 0 EX - M5 - RN - 4
3GD1 66 0 EX - 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	Two 3-port valves integrated *1 A side valve: Normally Closed B side valve: Normally Closed	●	●				
C Explosion-proof Series							
EX	CCC and NEPSI certification (China) IECEx certified (international) KCs (South Korea), TS (Taiwan) compliant product	●	●	●	●	●	●
D Port size[4(A),2(B)Port]							
Port	4(A)/2(B)Port	Port P/R1/R2 (1)=M5 (2)= Rc1/8 (3)=Rc1/4					
C4	ø4 push-in fitting	(1)	(2)	(1)	(2)		
C6	ø6 push-in fitting	(1)	(2)	(1)	(2)	(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 Without connector cable	●	●	●	●	●	●
R1	M8 connector straight cable	●	●	●	●	●	●
R2	M8 L-type connector cable	●	●	●	●	●	●
F Option							
Blank	Manual override of non-locking/locking common (standard)	●	●	●	●	●	●
H	With exhaust check valve *3	●	●	●	●	●	
P	Mounting plate included (2-position single only)			●	●	●	
F	Port A/B filter *4	●	●	●	●	●	●
G Voltage							
4	12 VDC	●	●	●	●	●	●

⚠ Precautions for model No. selection

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

*2: M8 connector length is 300mm. Select other lengths from page 64 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.

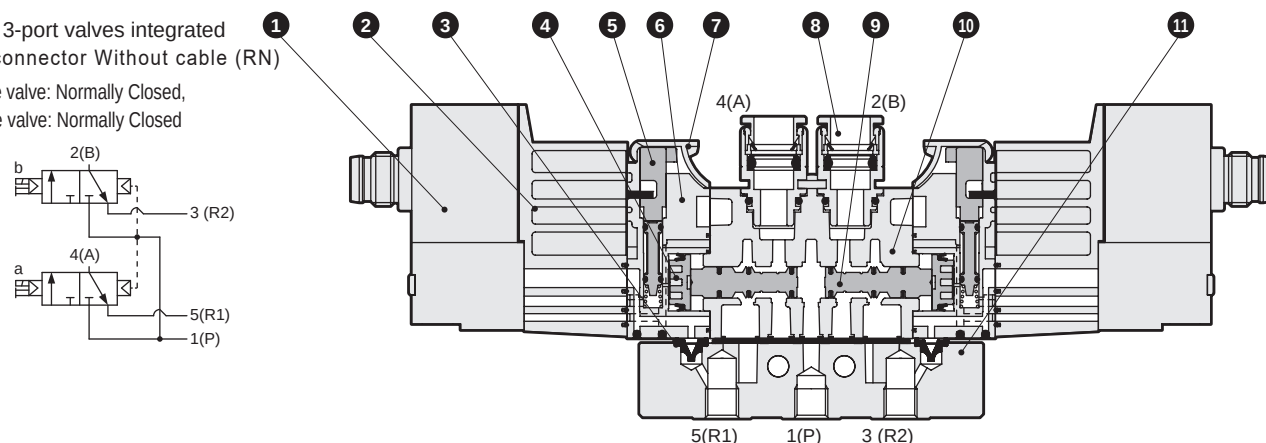
*5: Explosion-proof barrier sold separately. Select from page 69.

Internal structure diagram and parts list

3GD1660EX

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

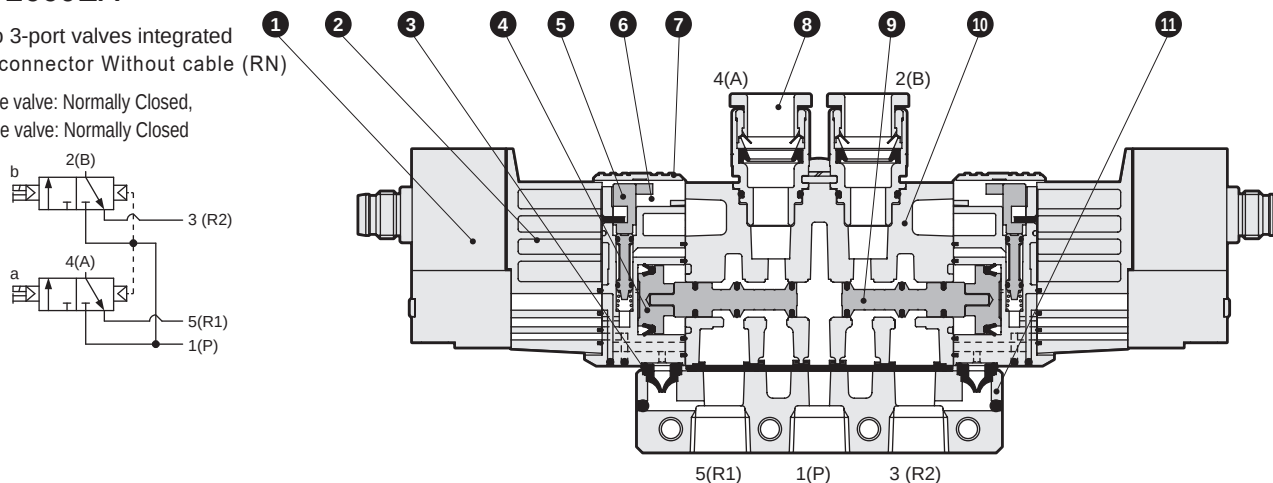
A side valve: Normally Closed,
B side valve: Normally Closed



3GD2660EX

- 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	PistonDAssembly	-
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	Aluminum alloy die-casting

Parts list

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

3GD*0EX
4GD*0EX

3GE*0EX
4GE*0EX

M3GD*0EX
M4GD*0EX

M3GE*0EX
M4GE*0EX

Related products

Manifold
specifications sheet

Precautions for use

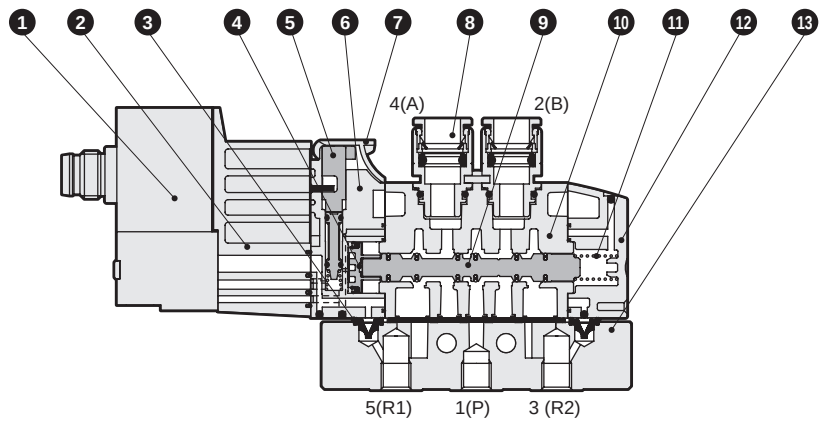
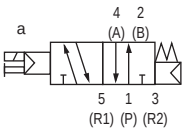
4GD1*0EX Series

Discrete valve; Body piping

Internal structure diagram and parts list

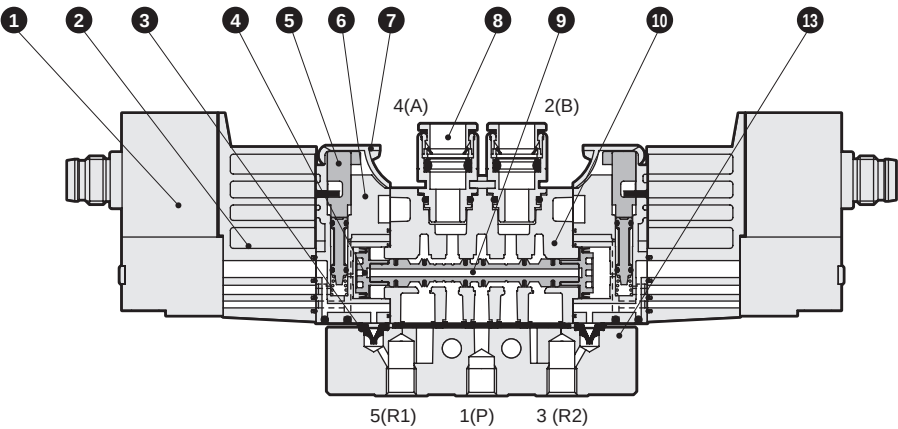
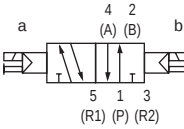
4GD110EX

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



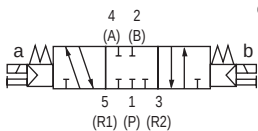
4GD120EX

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

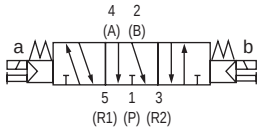


4GD130EX

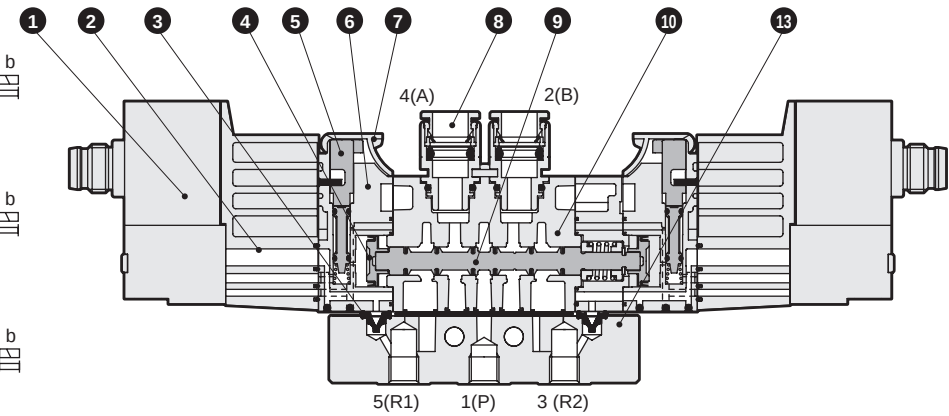
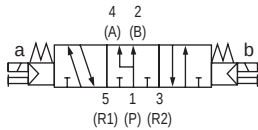
- 3-position
- M8 connector Without cable (RN)
- All ports closed



ABR connection



PAB 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

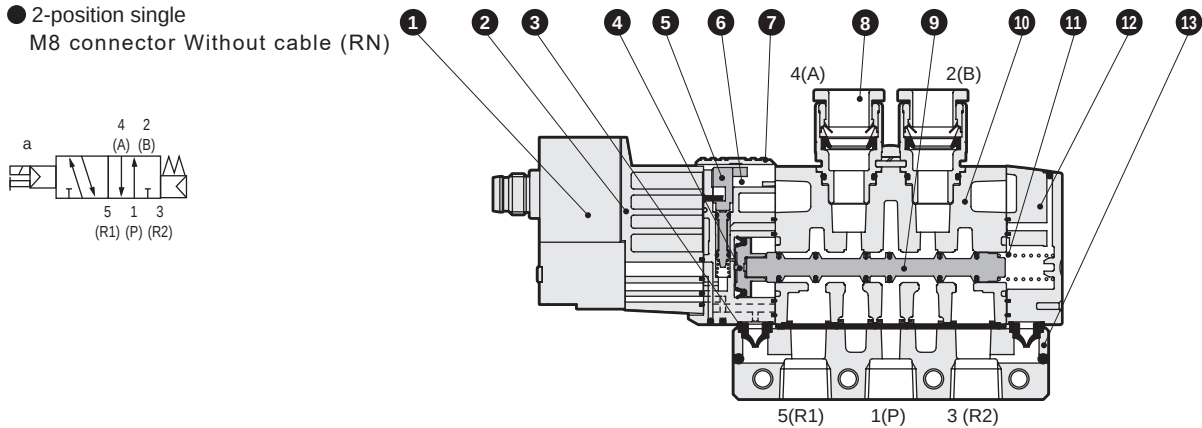
Parts list

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

Internal structure diagram and parts list

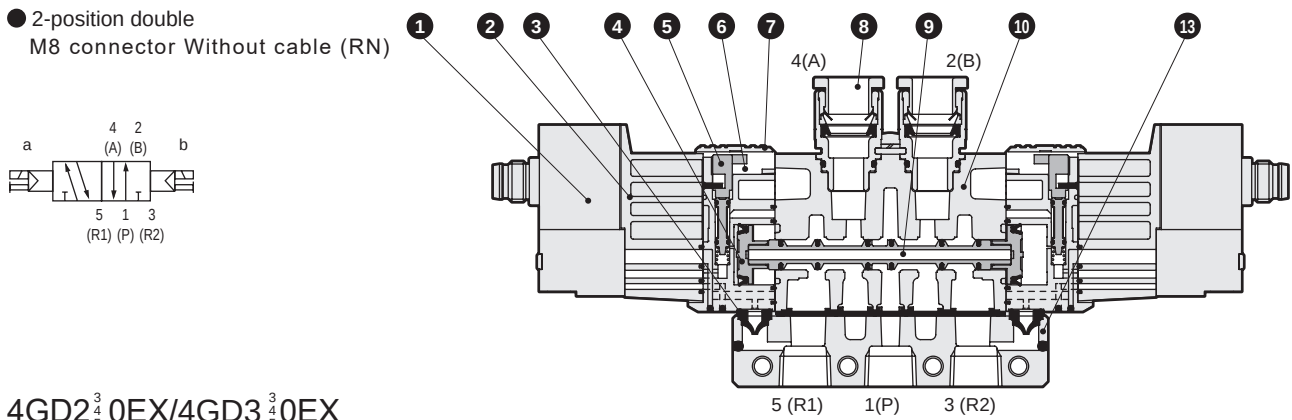
4GD210EX/4GD310EX

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



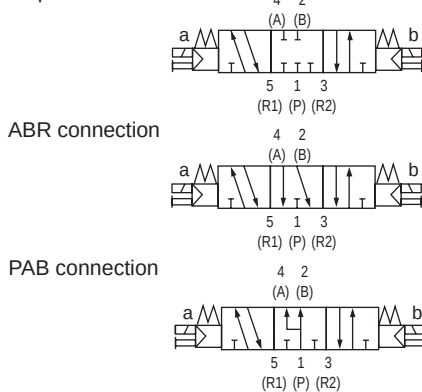
4GD220EX/4GD320EX

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



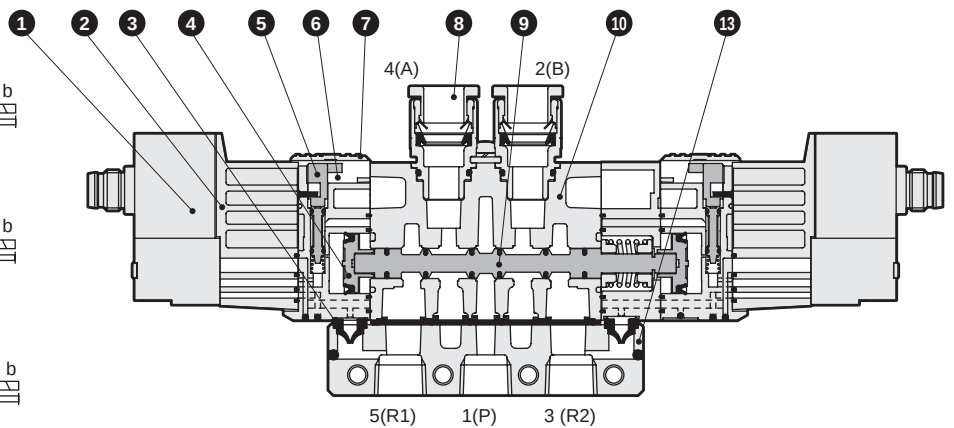
4GD2³0EX/4GD3³0EX

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



ABR connection

PAB 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*0EX
4GD*0EX

3GE*0EX
4GE*0EX

M3GD*0EX
M4GD*0EX

M3GE*0EX
M4GE*0EX

Related products

Manifold
specifications sheet

Precautions for use

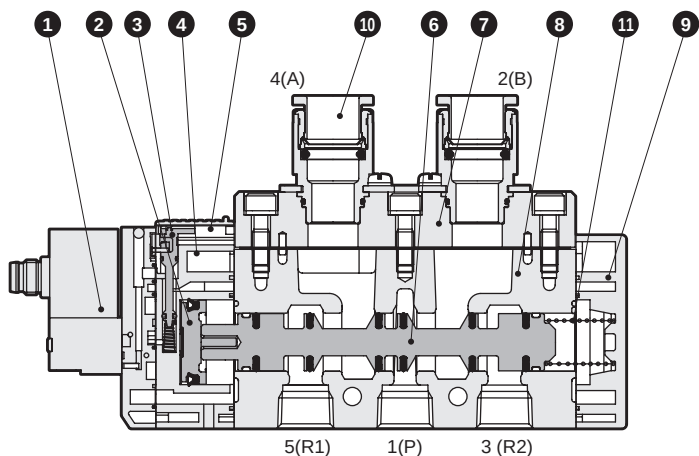
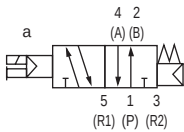
4GD4*0EX Series

Discrete valve; Body piping

Internal structure diagram and parts list

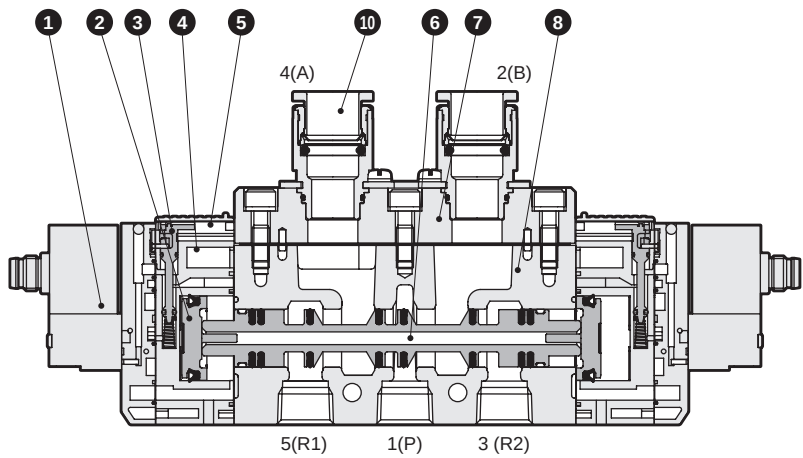
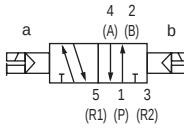
4GD410EX

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



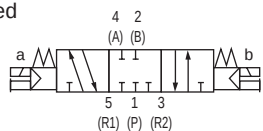
4GD420EX

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

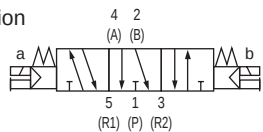


4GD4³0EX

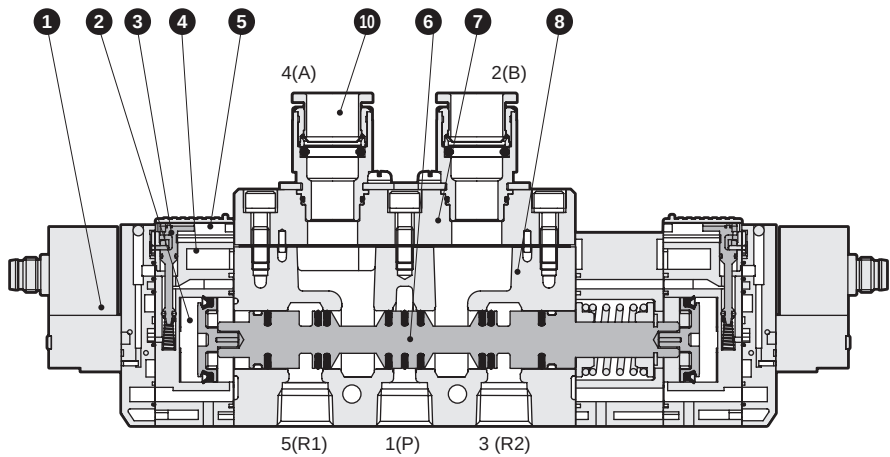
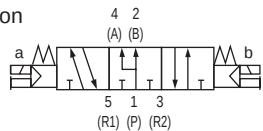
- 3-position
- M8 connector Without cable (RN)
- All ports closed



ABR connection



PAB 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

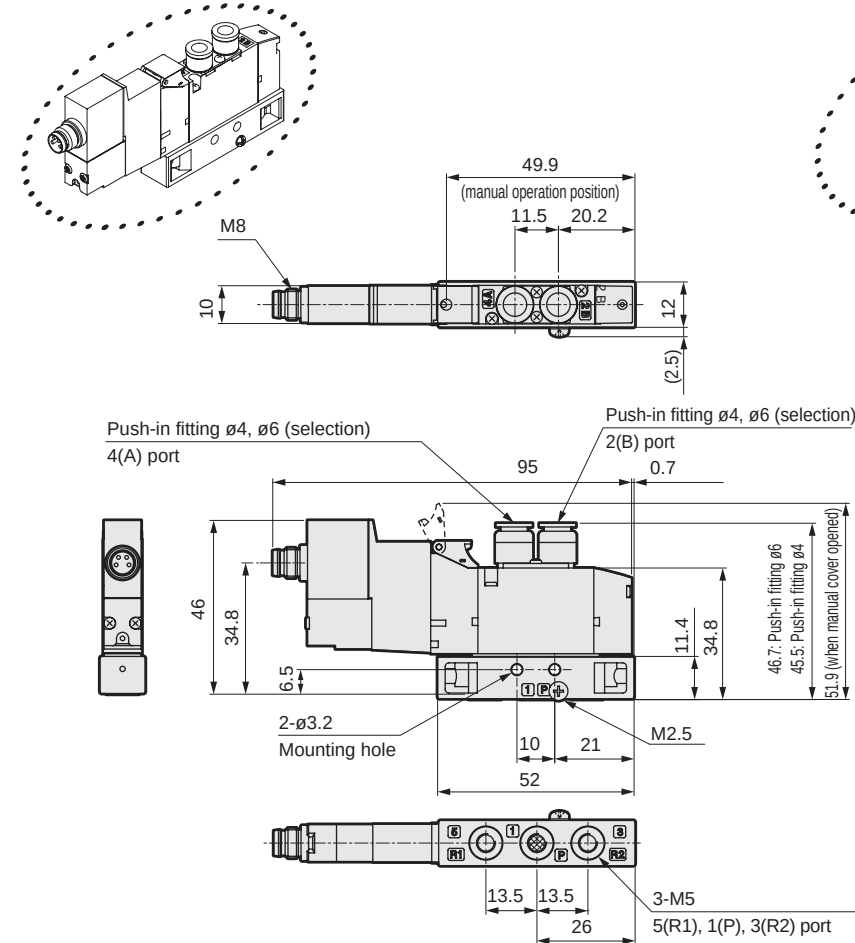
Parts list

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

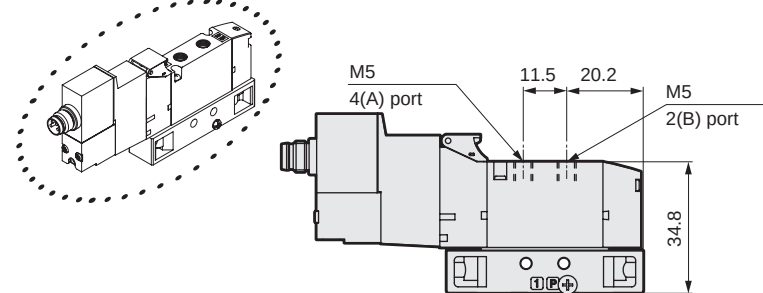
Dimensions

4GD110EX

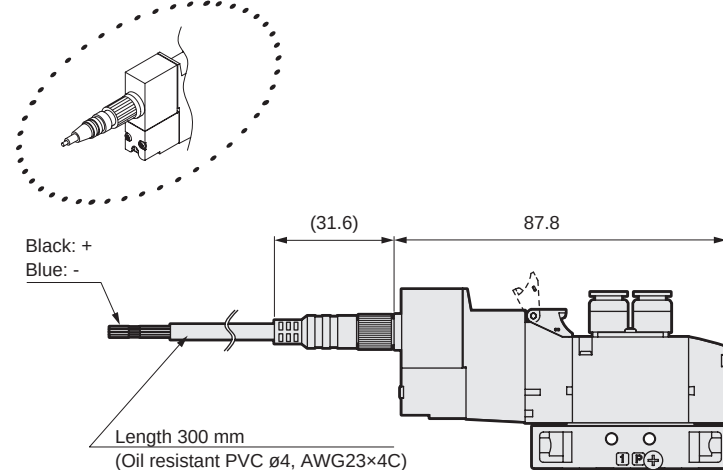
● 2-position single without connector (RN)



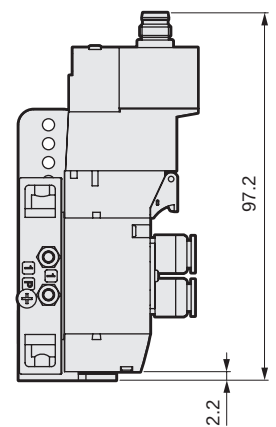
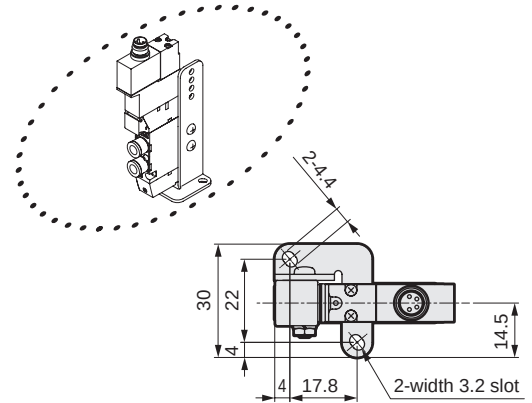
● M5 female thread (M5)



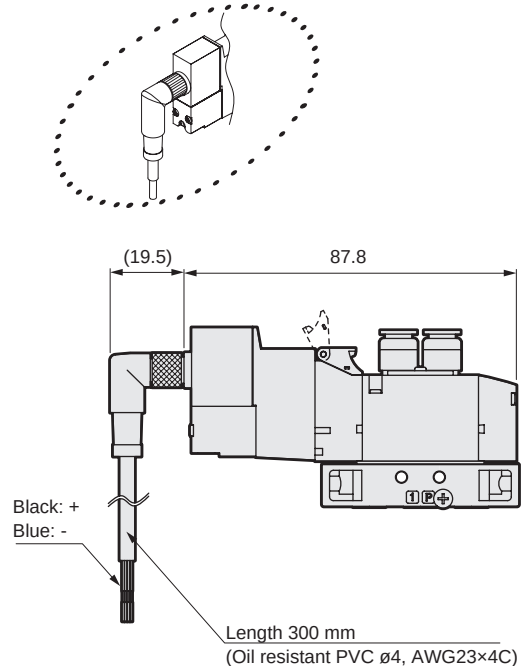
● M8 connector/straight cable (R1)



● Mounting plate (P)



● M8 connector/L-type cable (R2)



3GD*0EX
4GD*0EX

3GE*0EX
4GE*0EX

M3GD*0EX
M4GD*0EX

M3GE*0EX
M4GE*0EX

Related products

Manifold
specifications sheet

Precautions for use

4GD1*0EX Series

Discrete valve; Body piping

Dimensions

4GD120EX

- 2-position double without connector (RN)

3GD1660EX

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

3GD*0EX
4GD*0EX

3GE*0EX
4GE*0EX

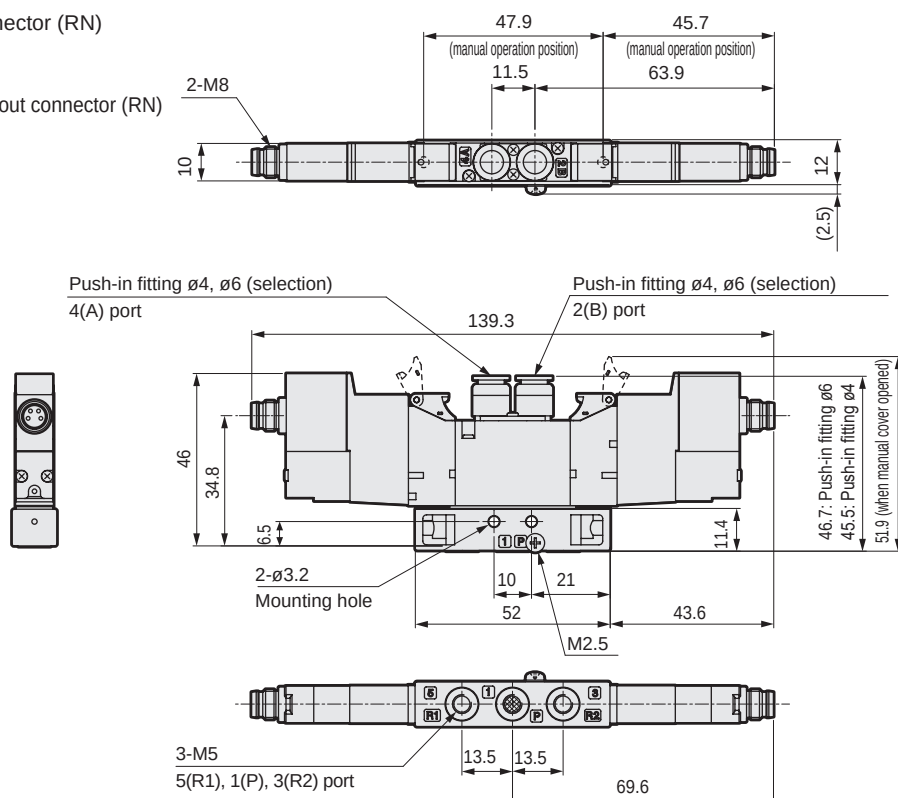
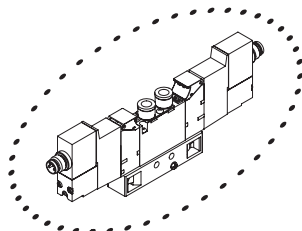
M3GD*0EX
M4GD*0EX

M3GE*0EX
M4GE*0EX

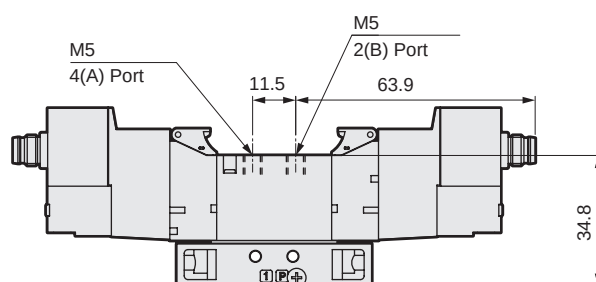
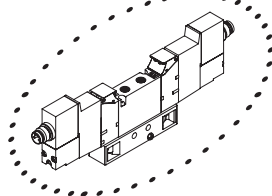
Related products

Manifold
specifications sheet

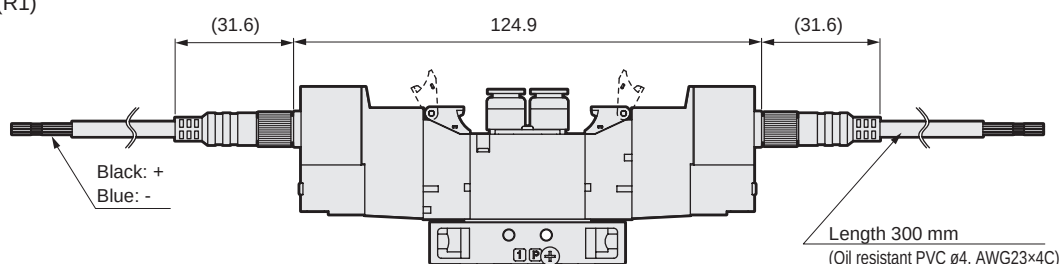
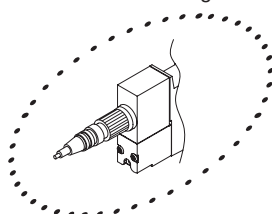
Precautions for use



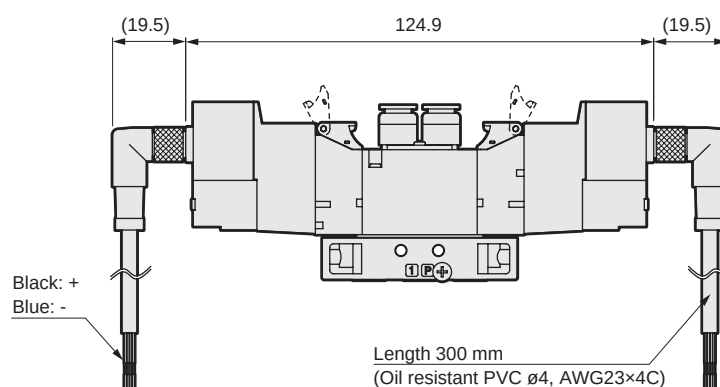
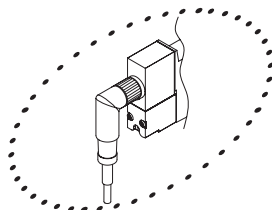
- M5 female thread (M5)



- M8 connector/straight cable (R1)



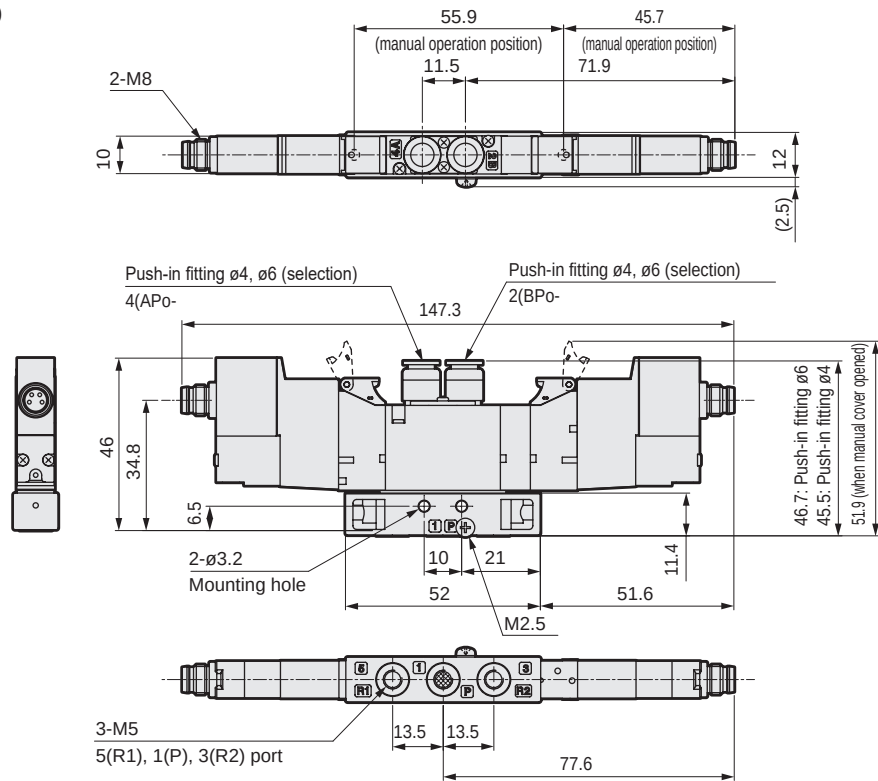
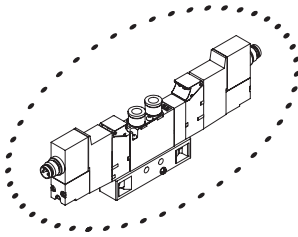
- M8 connector/L-type cable (R2)



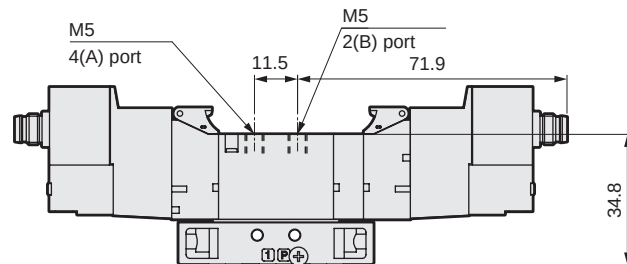
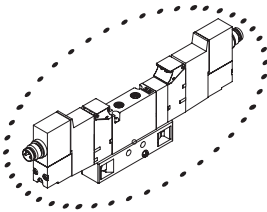
Dimensions

4GD1^{EX}

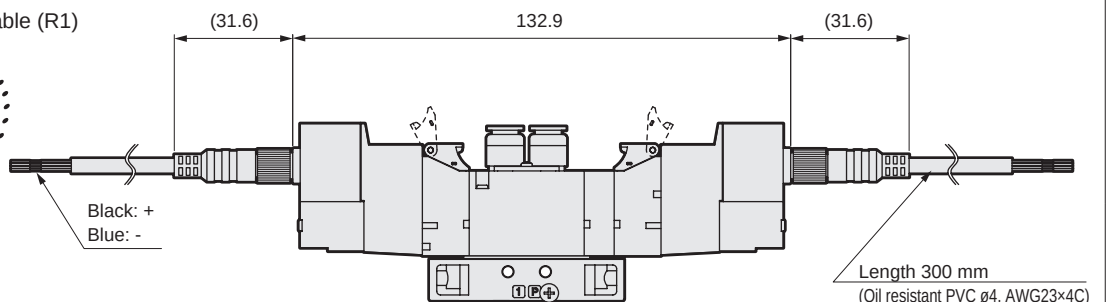
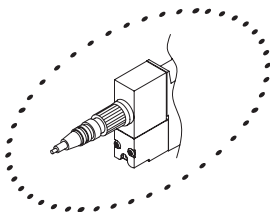
- 3-position without connector (RN)



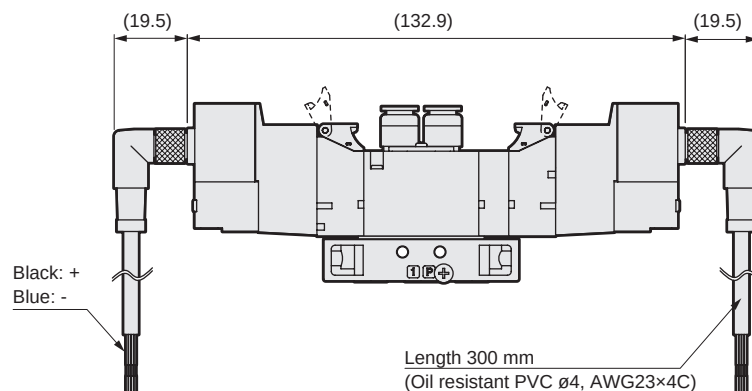
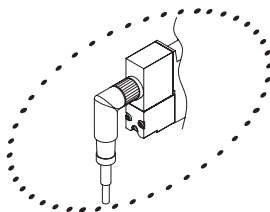
- M5 female thread (M5)



- M8 connector/straight cable (R1)



- M8 connector/L-type cable (R2)



3GD*0EX
4GD*0EX

3GE*0EX
4GE*0EX

M3GD*0EX
M4GD*0EX

M3GE*0EX
M4GE*0EX

Related products

Manifold
specifications sheet

Precautions for use

4GD2*0EX Series

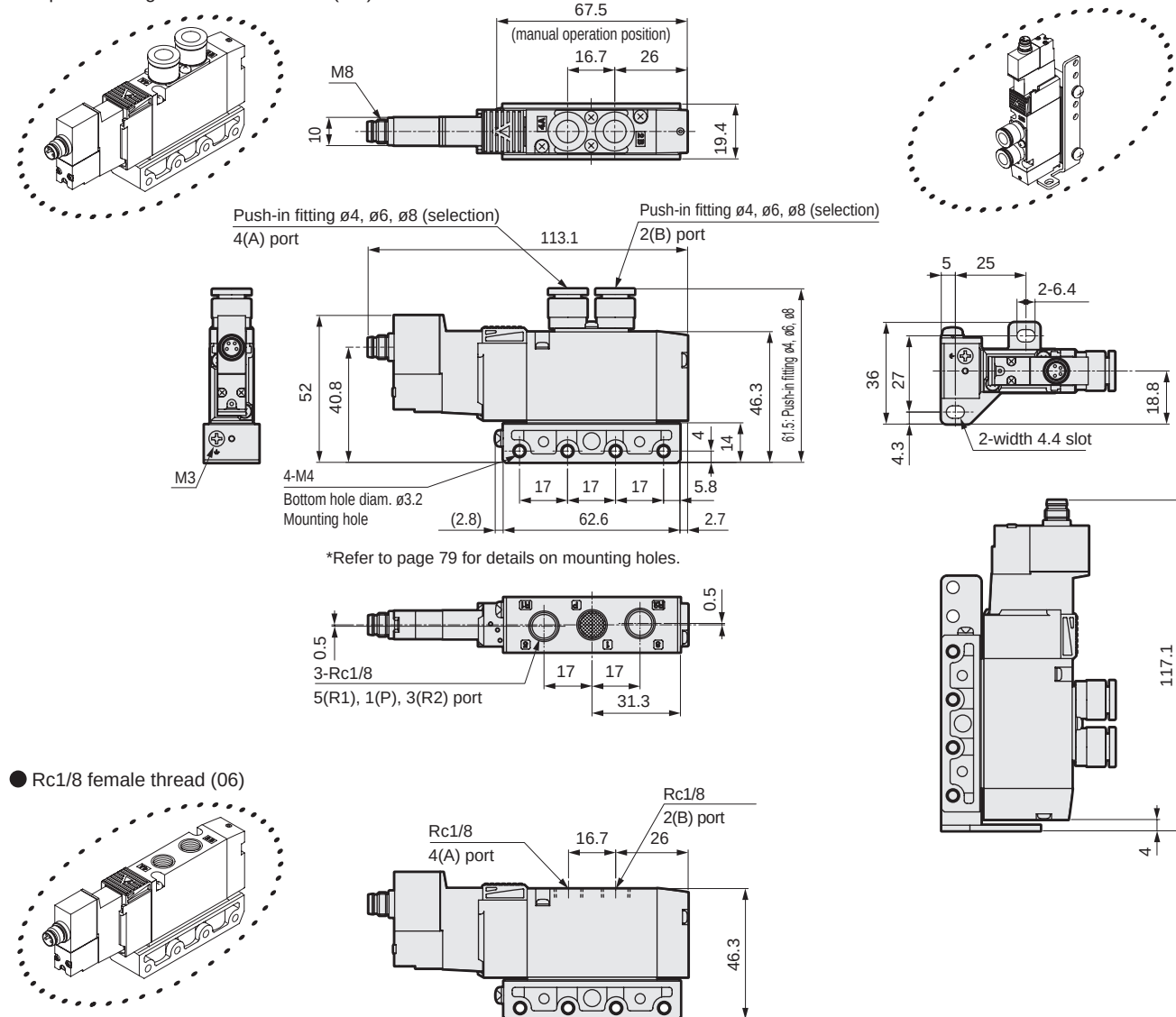
Discrete valve; Body piping

Dimensions

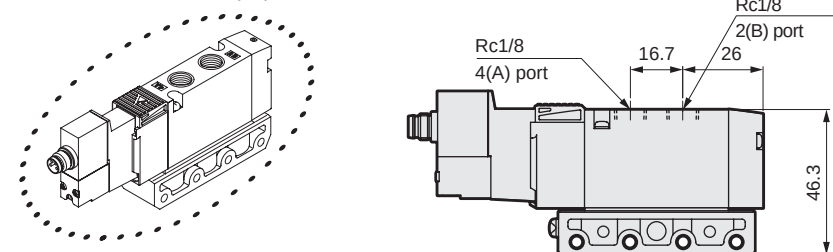
4GD210EX

● 2-position single without connector (RN)

● Mounting plate (P)

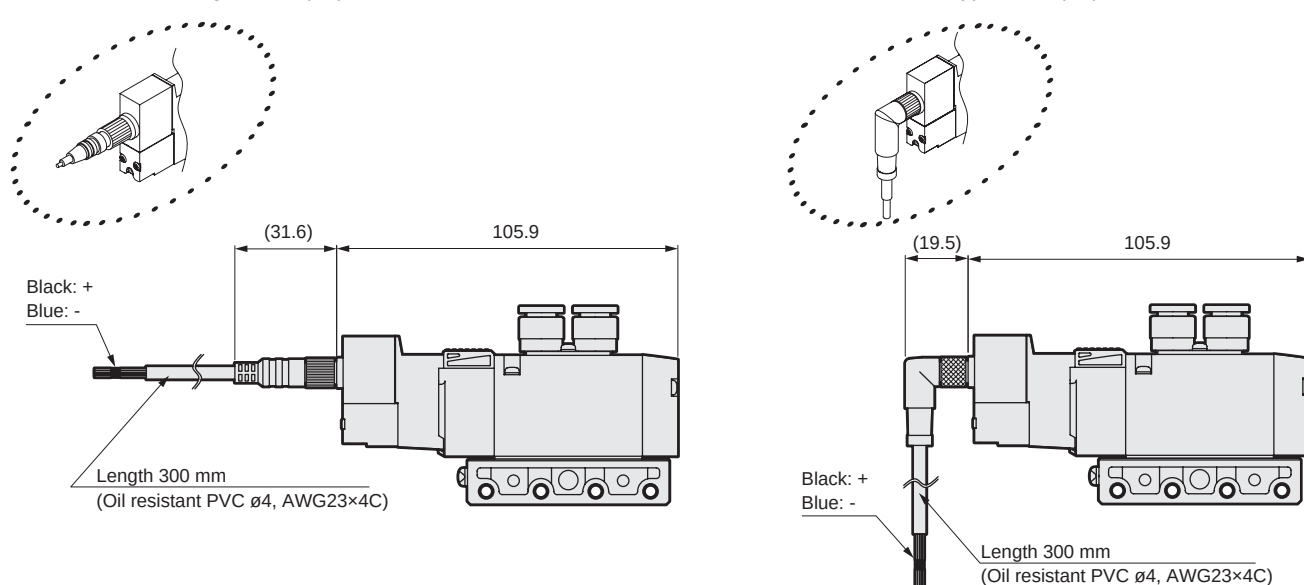


● Rc1/8 female thread (06)



● M8 connector/straight cable (R1)

● M8 connector/L-type cable (R2)



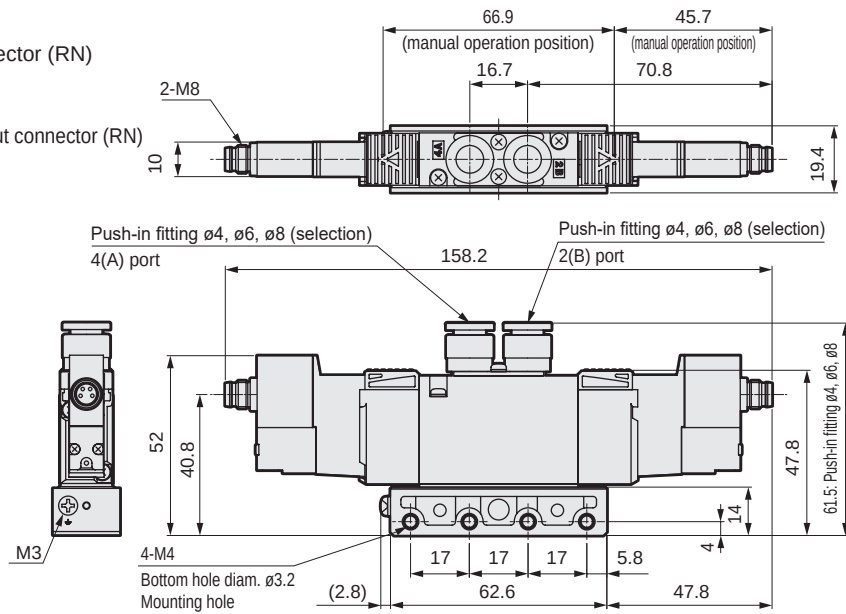
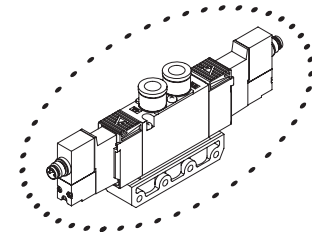
Dimensions

4GD220EX

- 2-position double without connector (RN)

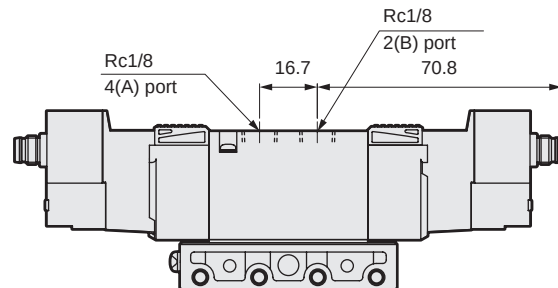
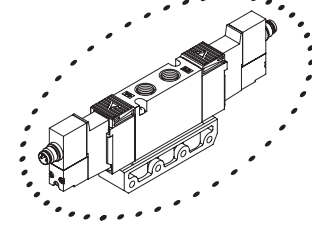
3GD2660EX

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

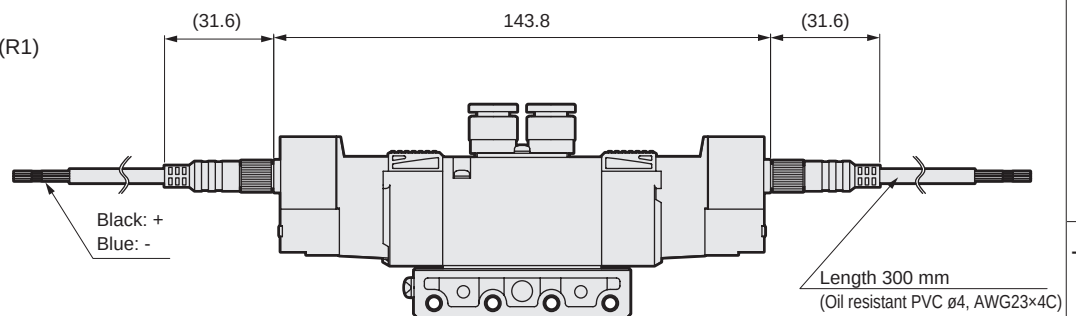
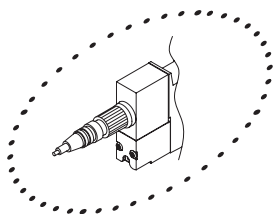


*Refer to page 79 for details on mounting holes.

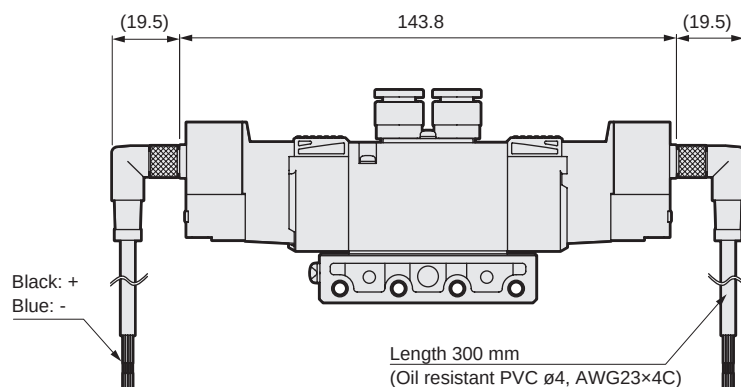
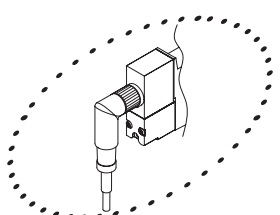
- Rc1/8 female thread (06)



- M8 connector/straight cable (R1)



- M8 connector/L-type cable (R2)



3GD*0EX
4GD*0EX

3GE*0EX
4GE*0EX

M3GD*0EX
M4GD*0EX

M3GE*0EX
M4GE*0EX

Related products

Manifold
specifications sheet

Precautions for use

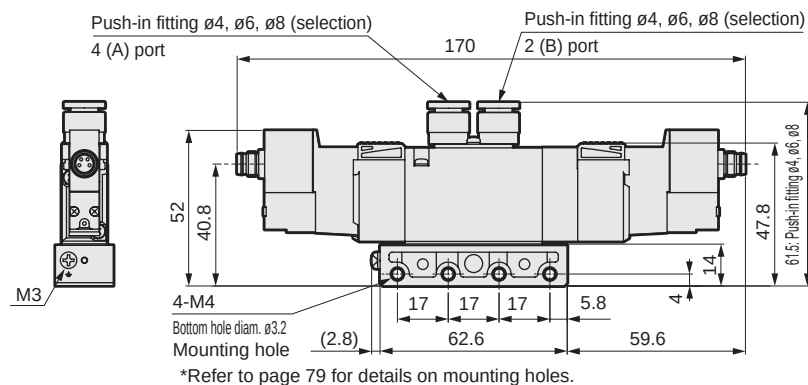
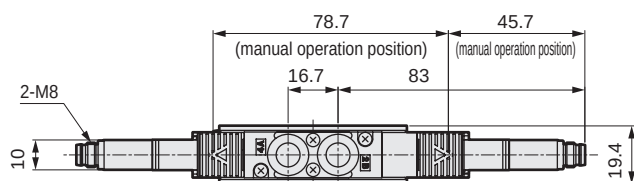
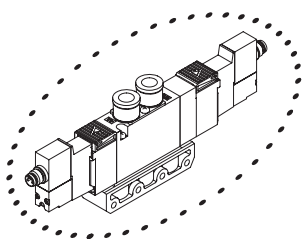
4GD2*0EX Series

Discrete valve; Body piping

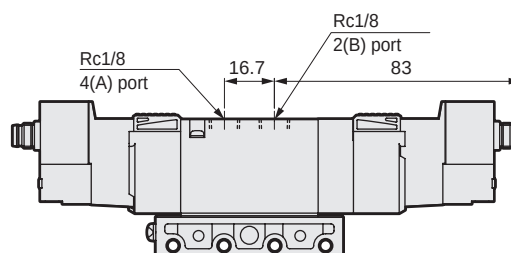
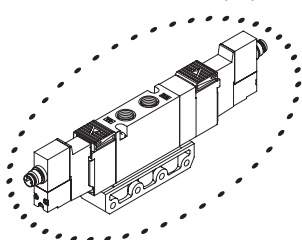
Dimensions

4GD2*0EX

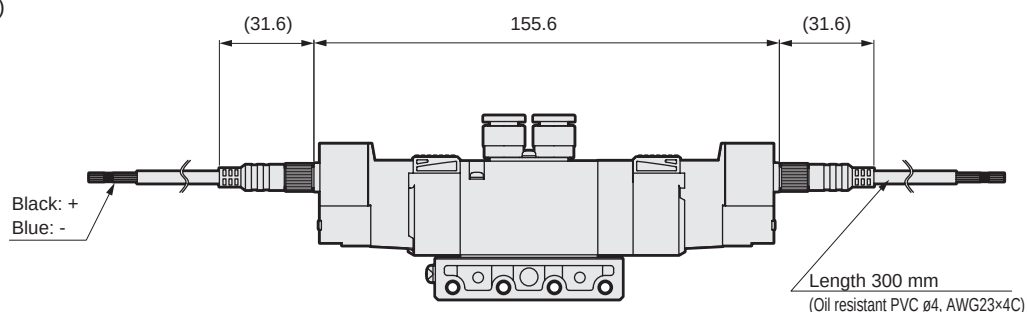
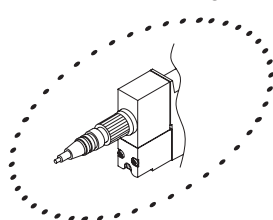
- 3-position without connector (RN)



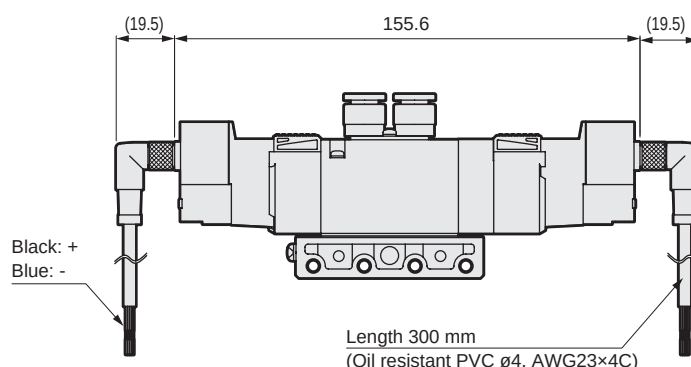
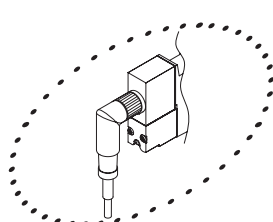
- Rc1/8 female thread (06)



- M8 connector/straight cable (R1)



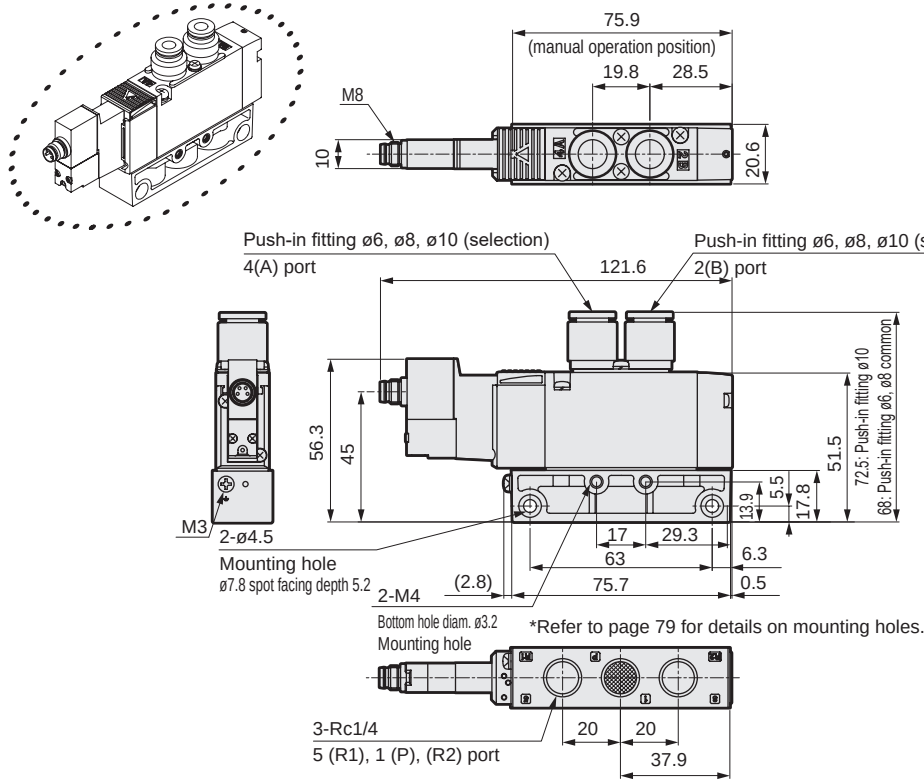
- M8 connector/L-type cable (R2)



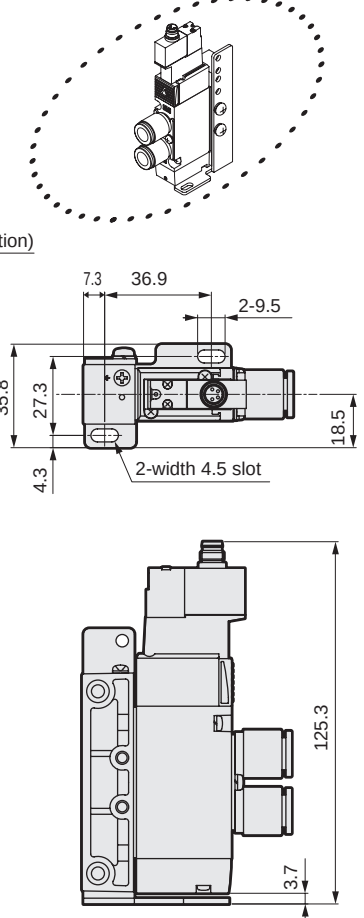
Dimensions

4GD310EX

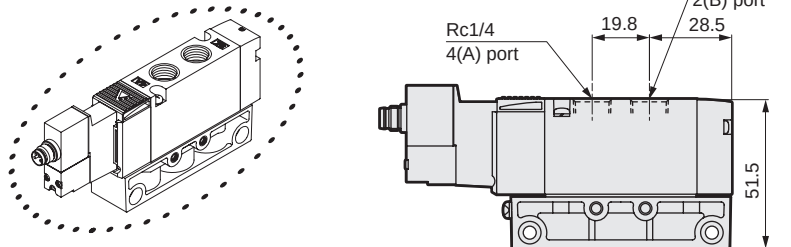
- 2-position single without connector (RN)



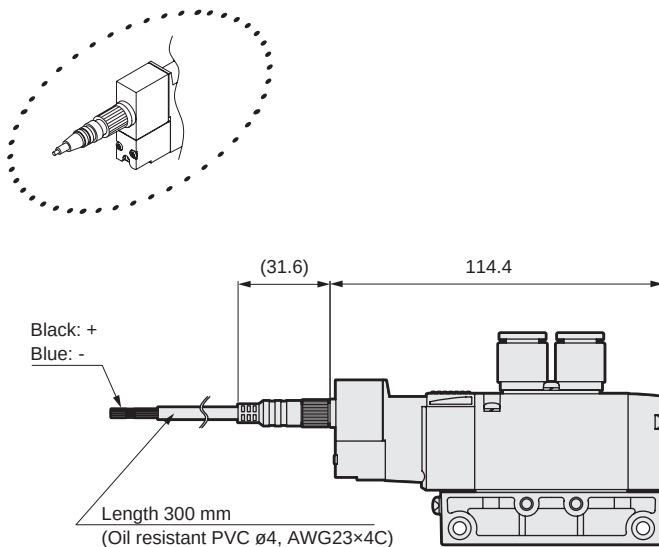
- Mounting plate (P)



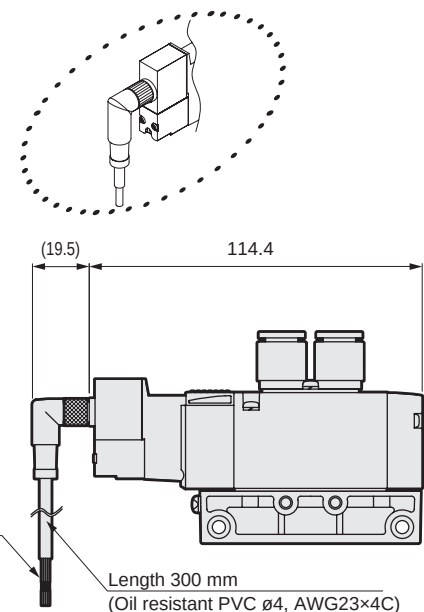
- Rc1/4 female thread (08)



- M8 connector/straight cable (R1)



- M8 connector/L-type cable (R2)



3GD*0EX
4GD*0EX

3GE*0EX
4GE*0EX

M3GD*0EX
M4GD*0EX

M3GE*0EX
M4GE*0EX

Related products

Manifold
specifications sheet

Precautions for use

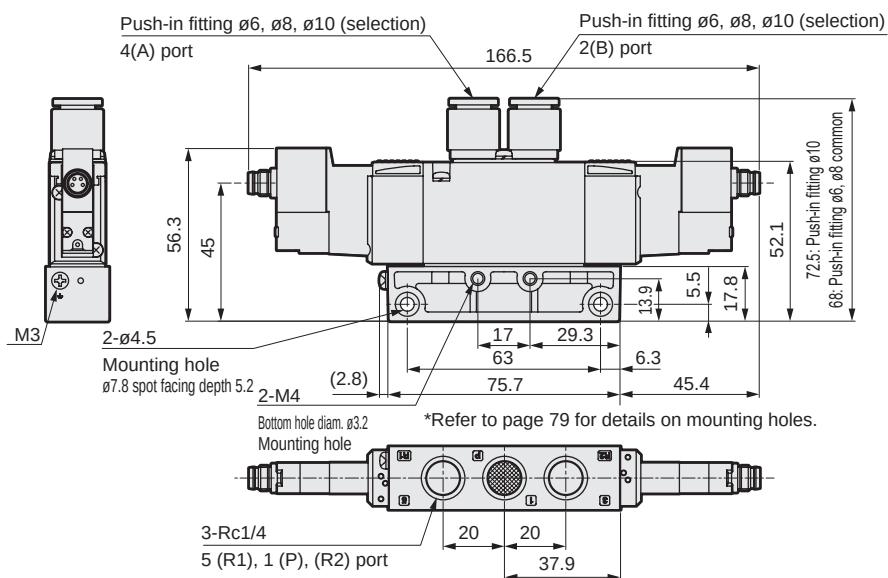
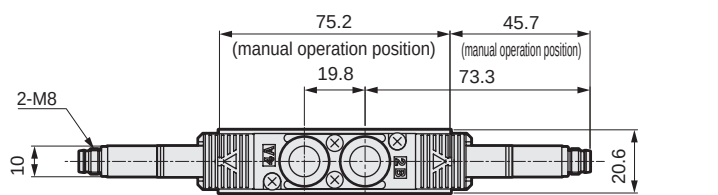
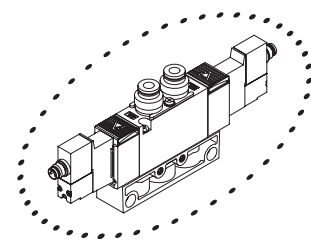
4GD3*0EX Series

Discrete valve; Body piping

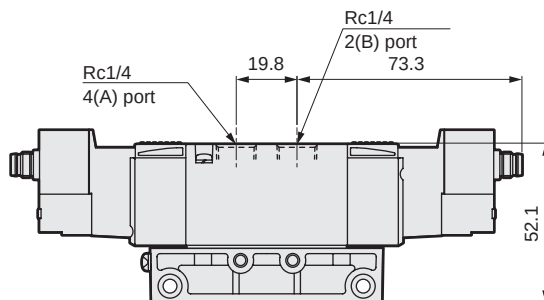
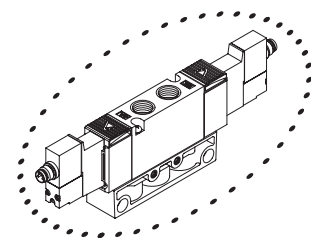
Dimensions

4GD320EX

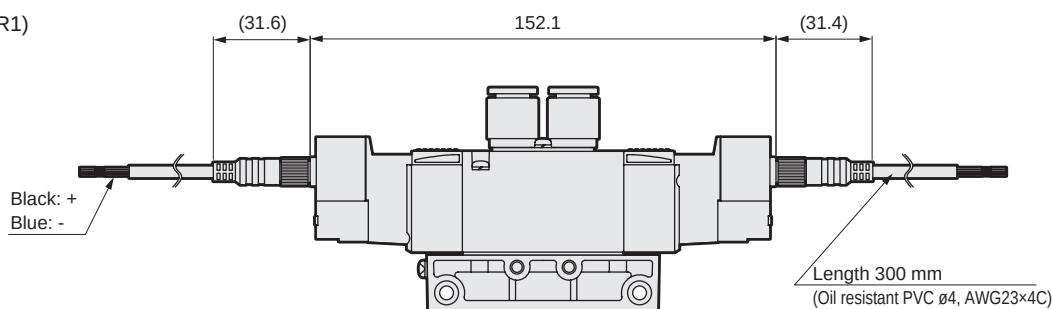
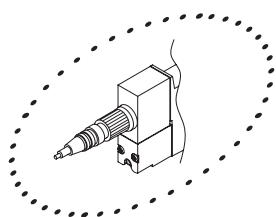
- 2-position double without connector (RN)



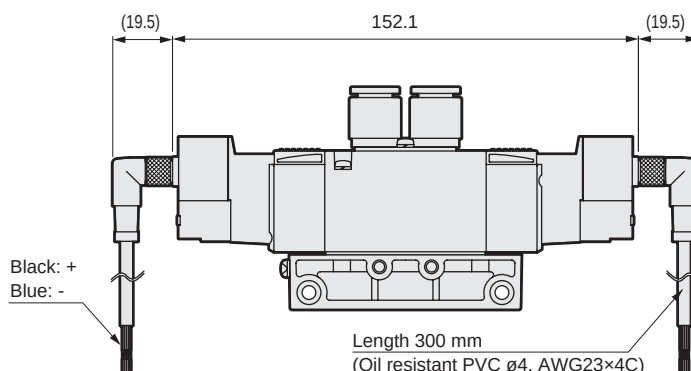
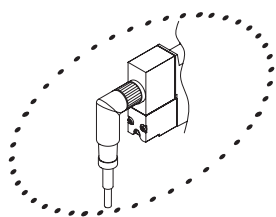
- Rc1/4 female thread (08)



- M8 connector/straight cable (R1)



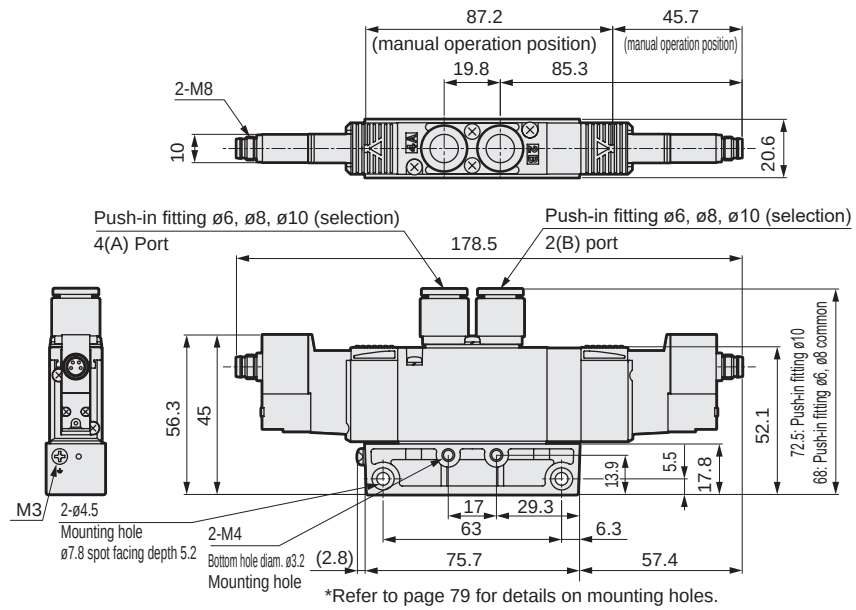
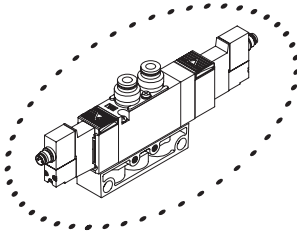
- M8 connector/L-type cable (R2)



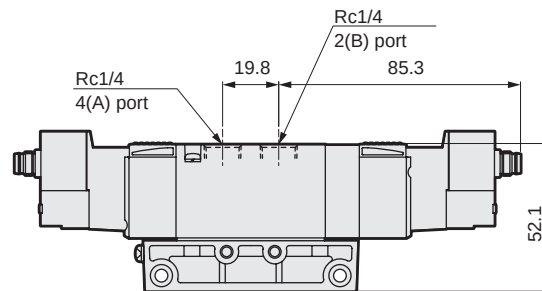
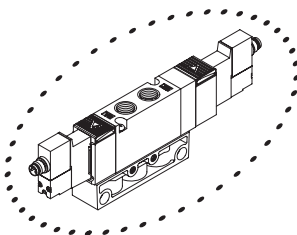
Dimensions

4GD3*0EX

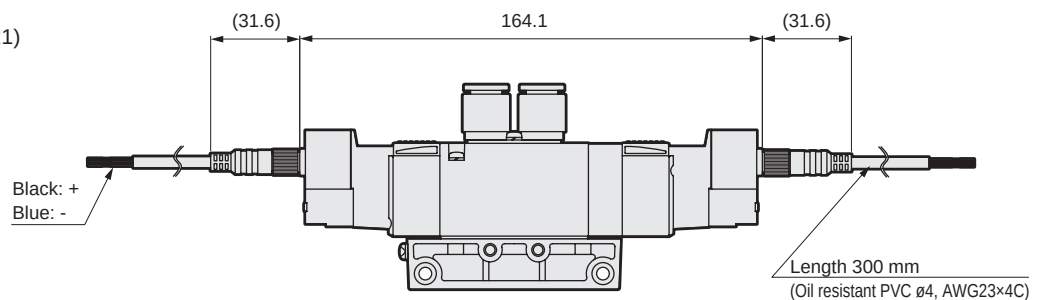
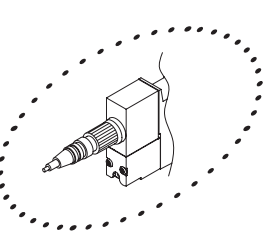
- 3-position without connector (RN)



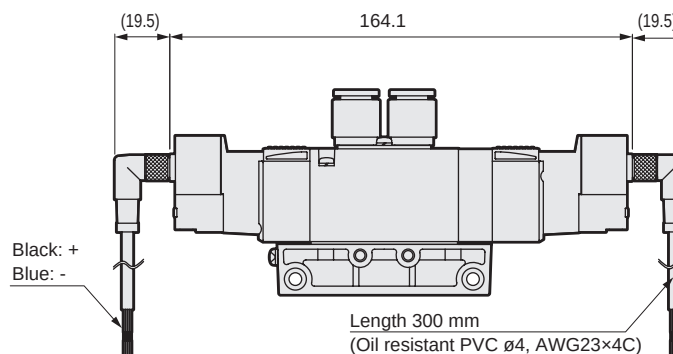
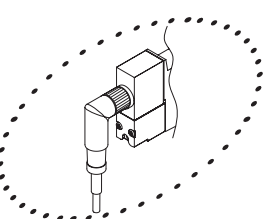
- Rc1/4 female thread (08)



- M8 connector/straight cable (R1)



- M8 connector/L-type cable (R2)



3GD*0EX
4GD*0EX

3GE*0EX
4GE*0EX

M3GD*0EX
M4GD*0EX

M3GE*0EX
M4GE*0EX

Related products

Manifold
specifications sheet

Precautions for use

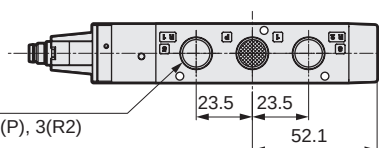
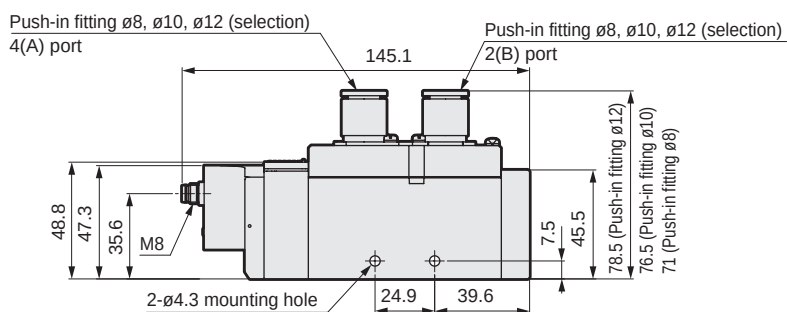
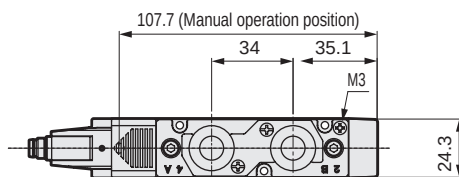
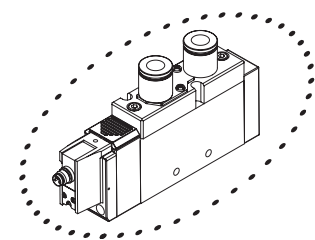
4GD4*0EX Series

Discrete valve; Body piping

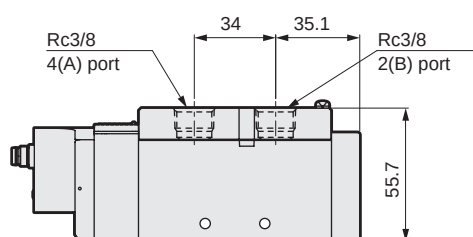
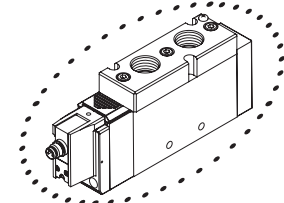
Dimensions

4GD410EX

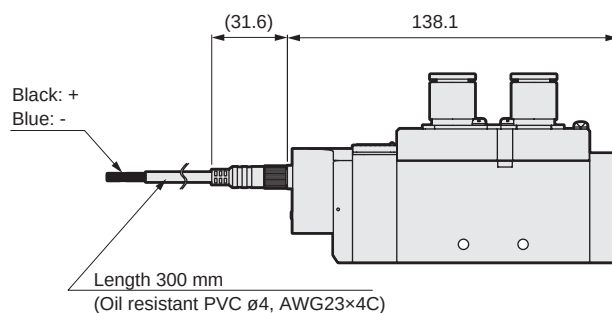
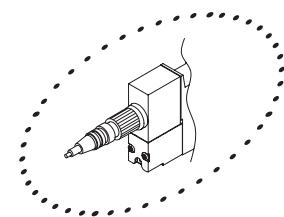
● 2-position single Without connector (RN)



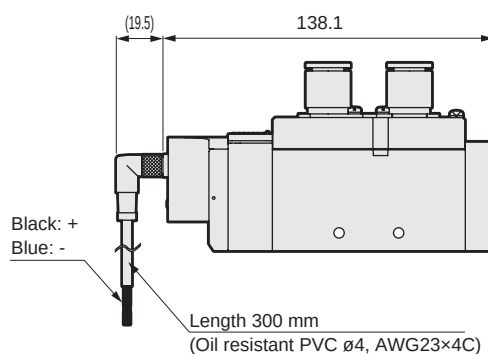
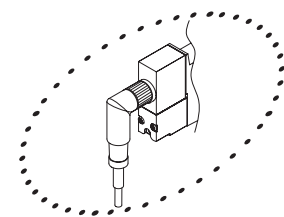
● Rc3/8 female thread (10)



● M8 connector/straight cable (R1)



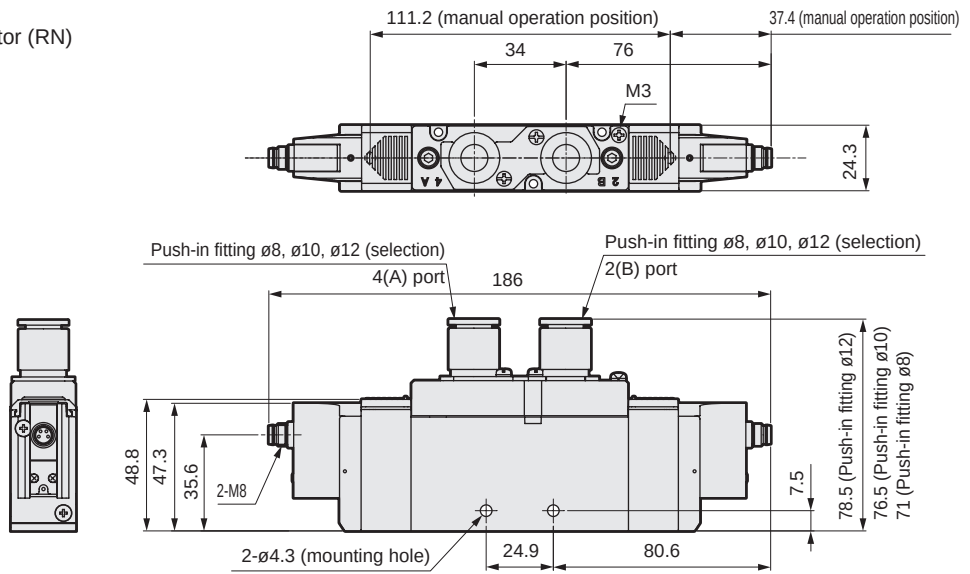
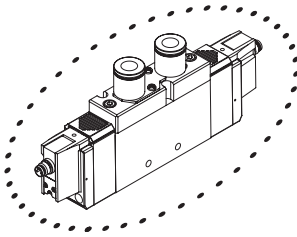
● M8 connector/L-type cable (R2)



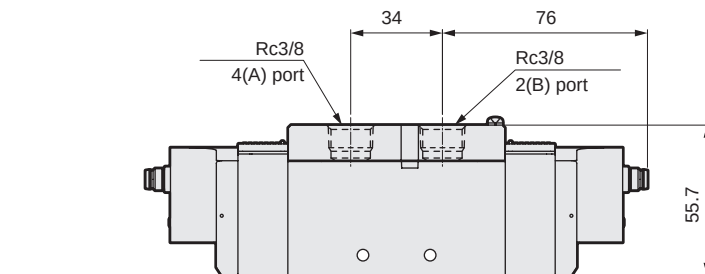
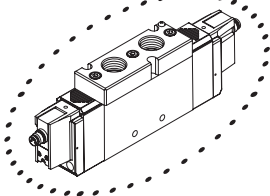
Dimensions

4GD420EX

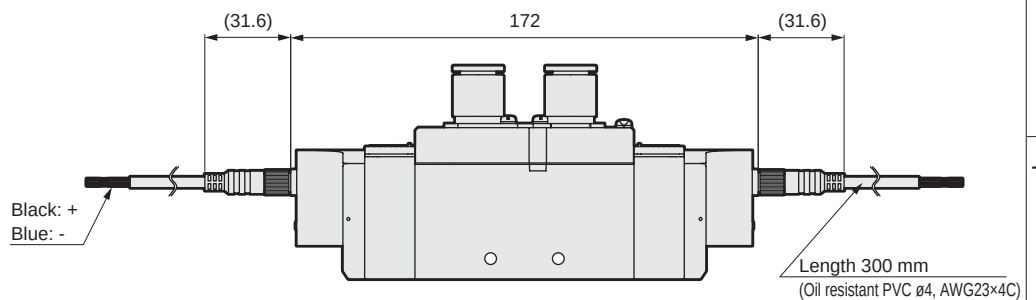
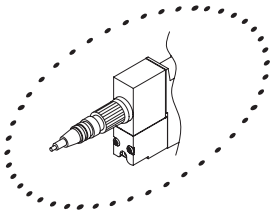
- 2-position double without connector (RN)



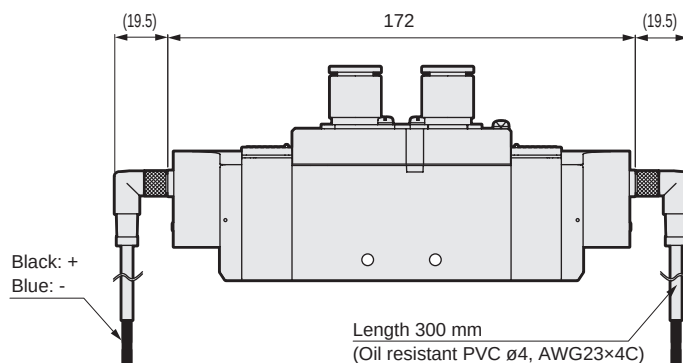
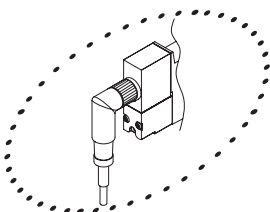
- Rc3/8 female thread (10)



- M8 connector/straight cable (R1)



- M8 connector/L-type cable (R2)



3GD*0EX
4GD*0EX

3GE*0EX
4GE*0EX

M3GD*0EX
M4GD*0EX

M3GE*0EX
M4GE*0EX

Related products

Manifold
specifications sheet

Precautions for use

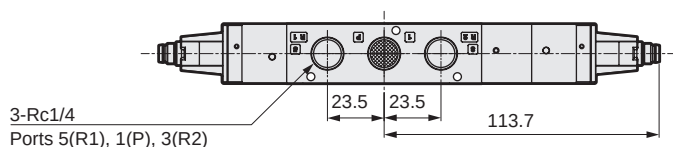
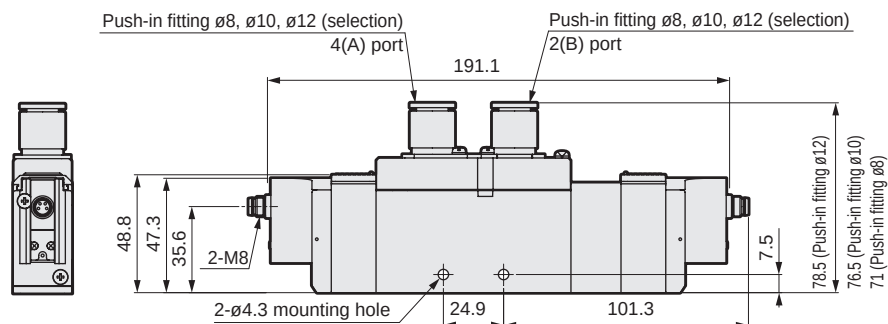
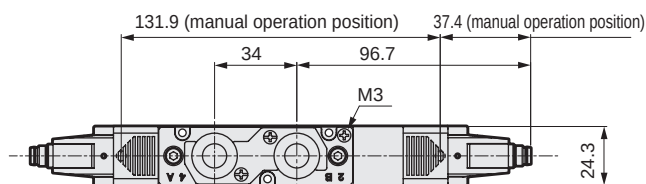
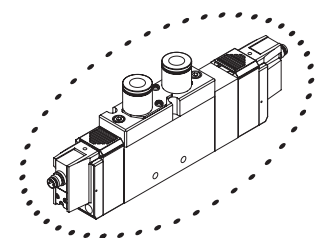
4GD4*0EX Series

Discrete valve; Body piping

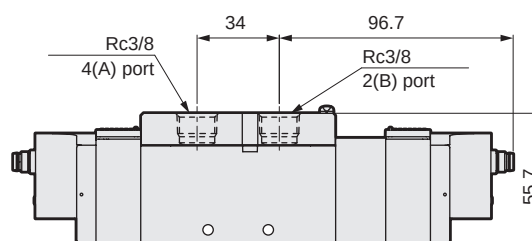
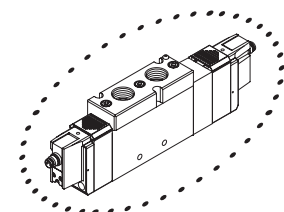
Dimensions

4GD4³/₅0EX

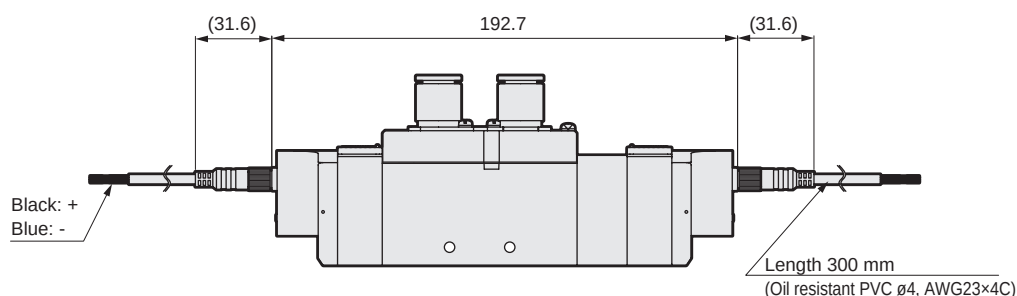
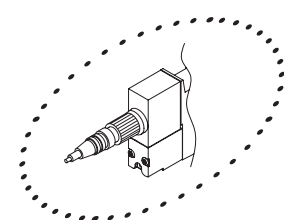
● 3-position Without connector (RN)



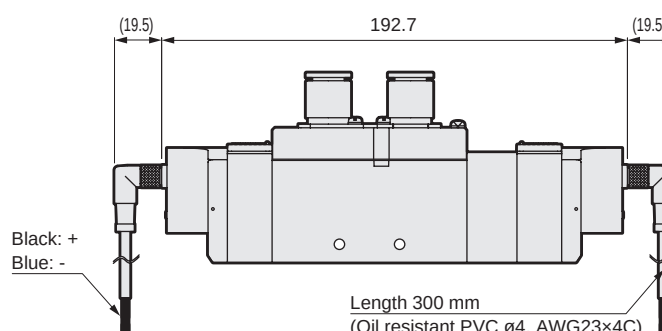
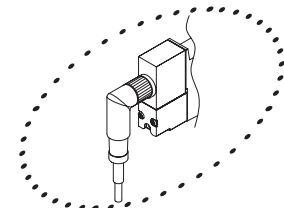
● Rc3/8 female thread (10)



● M8 connector/straight cable (R1)



● M8 connector/L-type cable (R2)



3GD*0EX 4GD*0EX	3GE*0EX 4GE*0EX	M3GD*0EX M4GD*0EX	M3GE*0EX M4GE*0EX	Related products	Manifold specifications sheet	Precautions for use
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MEMO



Discrete valve
Base piping

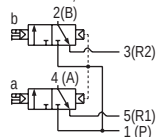
3GE1, 2/4GE1, 2, 3, 4*0EX Series

● Applicable cylinder bore size: ø20 to ø160

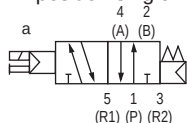


JIS symbol

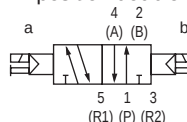
- Two 3-port valves integrated
(A side valve: NC, B side valve: NC)



- 5-port valve
2 position single

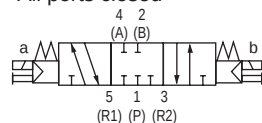


2-position double mounting

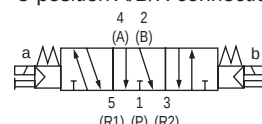


3-position

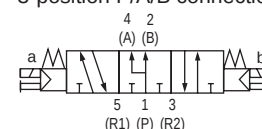
All ports closed



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	Non-locking/locking common (standard)
Pilot exhaust method	Internal pilot
Lubrication	*1 Not required
Degree of protection *2	IP67
Vibration resistance m/s ²	50 or less
Shock resistance m/s ²	300 or less
Atmosphere	Cannot be used in corrosive gas environments

Solenoid specifications

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

*1 Use turbine oil Class 1 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	200 mA
Intrinsic safety circuit allowable power Pi	0.68 W
Internal inductance Li	Value that can be ignored
Internal capacitance Ci	Value that can be ignored

Individual specifications

Port size	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	Two 3-port valves integrated		15	35	20	50	-	-	-	-	-	-	-
	2-position	Single	-	-	-	-	15	35	20	40	25	60	100
			-	-	-	-	25	25	30	30	35	110	110
	3-position	A/B/R connection		-	-	-	-	20	40	25	45	35	60

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).

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

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

Discrete valve; Base piping

Flow characteristics

Model No.	Solenoid position		P → A/B		A/B → R1/R2	
			C[dm ³ /(s·bar)]	b	C[dm ³ /(s·bar)]	b
3GE1 4GE1	Two 3-port valves integrated		0.92	0.08	1.1	0.26
	2-position		1.3	0.27	1.2	0.22
	3-position	All ports closed	1.1	0.31	1.1	0.27
		A/B/R connection	1.1	0.31	1.3	0.29
		P/A/B connection	1.4	0.30	1.1	0.26
3GE2 4GE2	Two 3-port valves integrated		1.7	0.42	2.1	0.26
	2-position		2.6	0.20	2.6	0.19
	3-position	All ports closed	2.3	0.32	2.2	0.22
		A/B/R connection	2.2	0.23	2.6	0.16
		P/A/B connection	2.4	0.10	2.4	0.22
4GE3	2-position		4.3	0.24	4.2	0.24
	3-position	All ports closed	3.3	0.40	3.4	0.27
		A/B/R connection	3.3	0.36	4.2	0.18
		P/A/B connection	4.5	0.28	3.4	0.30
4GE4	2-position		11.0	0.19	13.0	0.19
	3-position	All ports closed	9.1	0.11	12.0	0.27
		A/B/R connection	8.8	0.28	13.9	0.25
		P/A/B connection	10.0	0.06	12.0	0.24

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

3GD*0EX
4GD*0EX

3GE*0EX
4GE*0EX

M3GD*0EX
M4GD*0EX

M3GE*0EX
M4GE*0EX

Related products

Manifold
specifications sheet

Precautions for use

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

Discrete valve; Base piping

How to order (solenoid valve single unit)

● Single unit

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

A Model No.

B Solenoid position

C Explosion-proof Series

D Port size

E Electrical connections

F Option

G Voltage

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	Two 3-port valves integrated *1 A side valve: Normally Closed B side valve: Normally Closed	●	●				
C Explosion-proof Series							
EX	CCC and NEPSI certification (China) IECEx certified (international) KCs (South Korea), TS (Taiwan) compliant product	●	●	●	●	●	●
D Port size [ports 4(A), 2(B)]							
Port	4(A)/2(B) port	Port P/R1/R2 (2) = Rc1/8 (3) = Rc1/4 (4) = Rc3/8 (5)=Rc1/2					
06	Rc1/8	(2)	(2)				
08	Rc1/4		(3)	(3)	(3)		
10	Rc3/8				(4)	(4)	
15	Rc1/2					(5)	(5)
00	Valve for base mounting	●	●	●	●	●	●
E Electrical connections *2							
RN	M8 connector without cable	●	●	●	●	●	●
R1	M8 connector straight cable	●	●	●	●	●	●
R 2	M8 connector L-type cable	●	●	●	●	●	●
F Option							
Blank	Manual override of non-locking/locking common (standard)	●	●	●	●	●	●
H	With exhaust check valve *3	●	●	●	●	●	●
F	Port A/B filter *4	●	●	●	●	●	●
G Voltage							
4	12 VDC	●	●	●	●	●	●

⚠ Precautions for model No. selection

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

*2: M8 connector length is 300mm. Select other lengths from page 64 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.

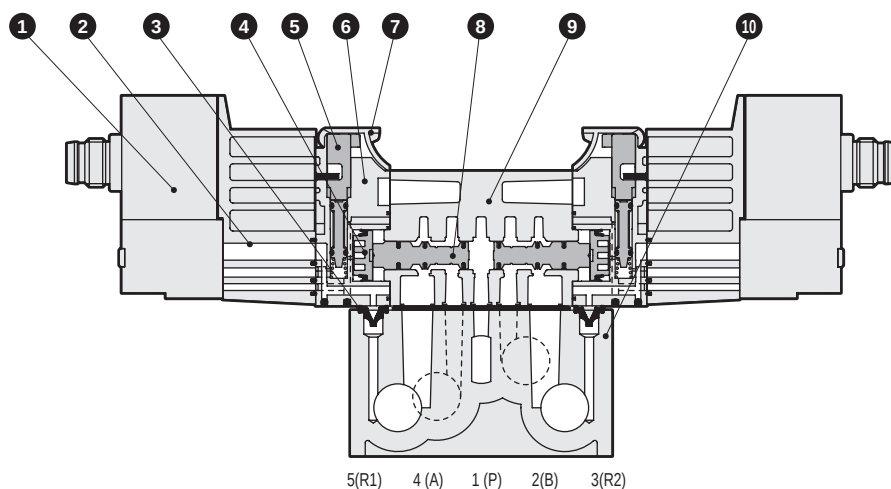
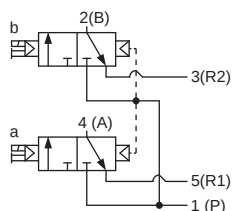
*5: Explosion-proof barrier sold separately. Select from page 69.

Internal structure diagram and parts list

3GE1660EX

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

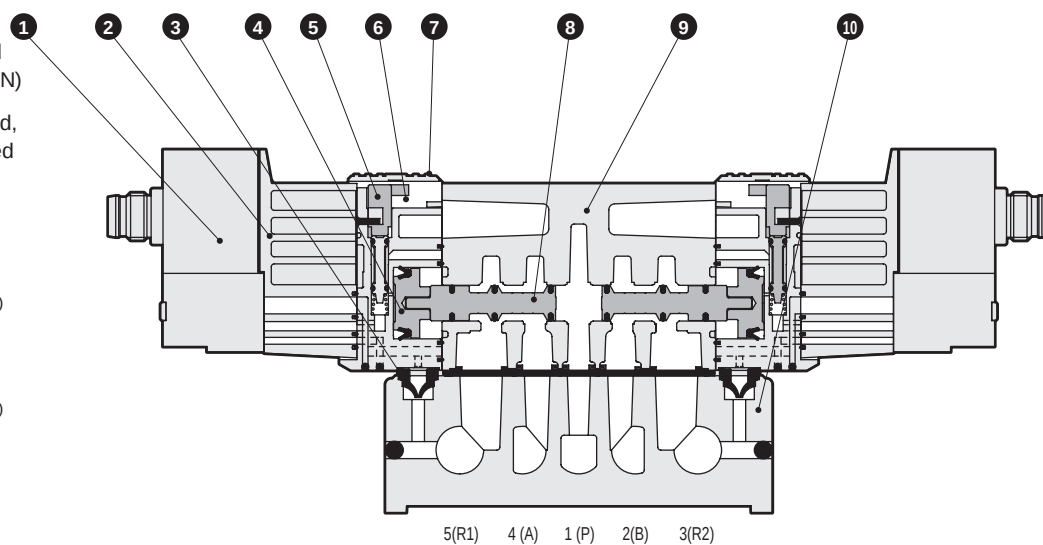
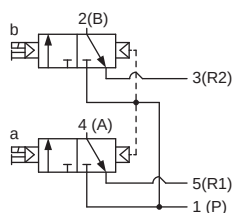
A side valve: Normally Closed,
B side valve: Normally Closed
NC/NC



3GE2660EX

- 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*0EX
4GD*0EX

3GE*0EX
4GE*0EX

M3GD*0EX
M4GD*0EX

M3GE*0EX
M4GE*0EX

Related products

Manifold
specifications sheet

Precautions for use

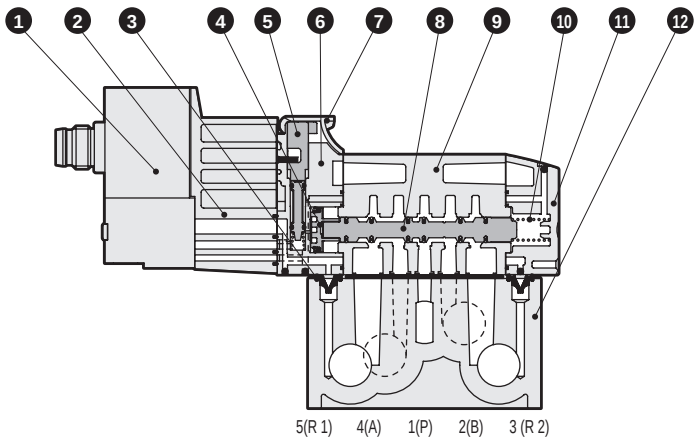
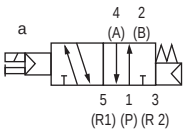
4GE1*0EX Series

Discrete valve; Base piping

Internal structure diagram and parts list

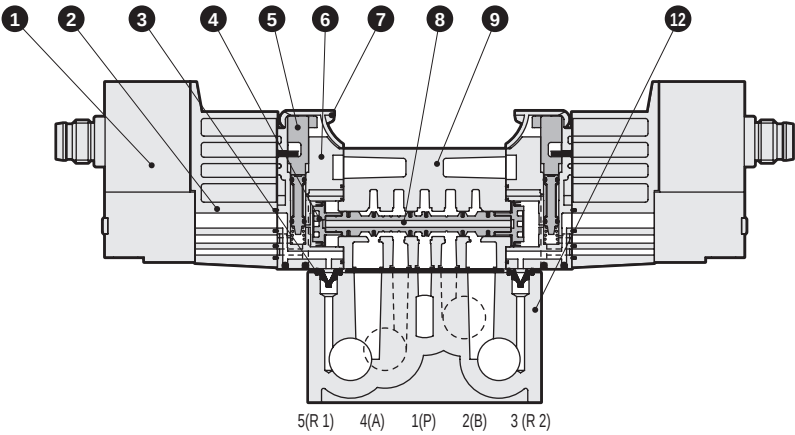
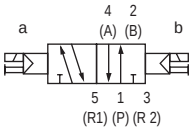
4GE110EX

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



4GE120EX

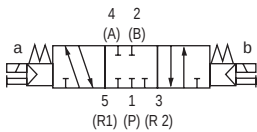
- 2-position double
- M8 connector without cable (RN)



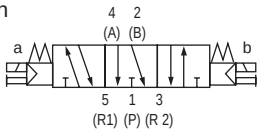
4GE1³0EX

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

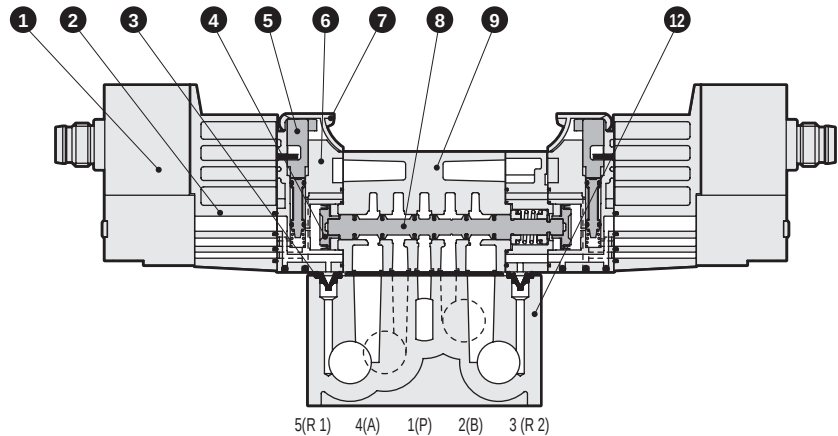
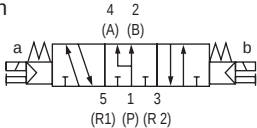
All ports closed



A/B/R connection



P/A/B connection



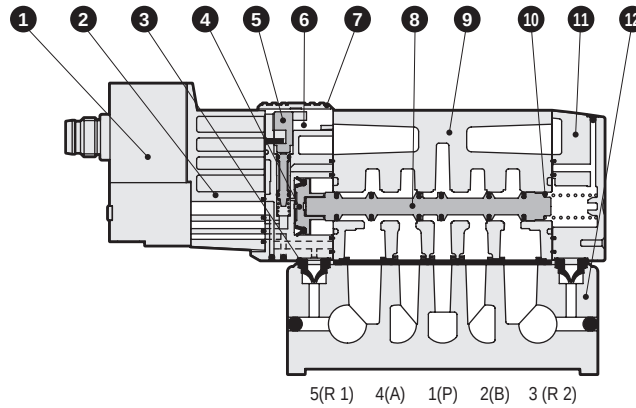
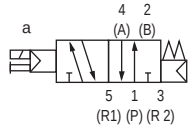
Main parts list

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

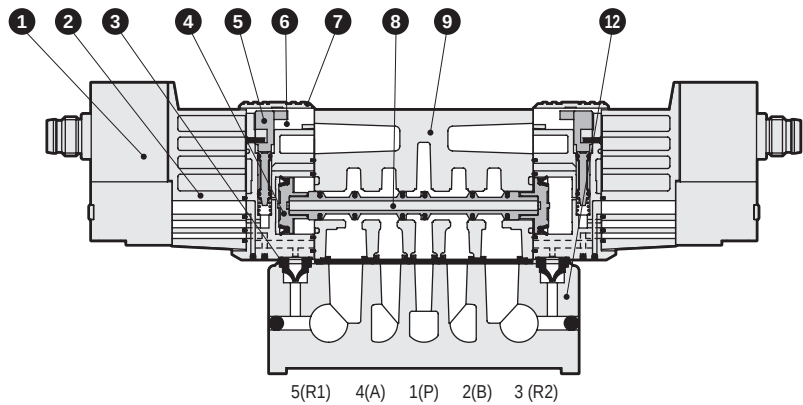
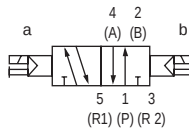
4GE210EX/4GE310EX

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



4GE220EX/4GE320EX

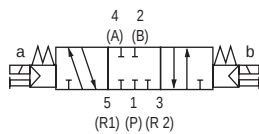
- 2-position double
- M8 connector without cable (RN)



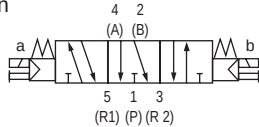
4GE2³0EX/4GE3³0EX

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

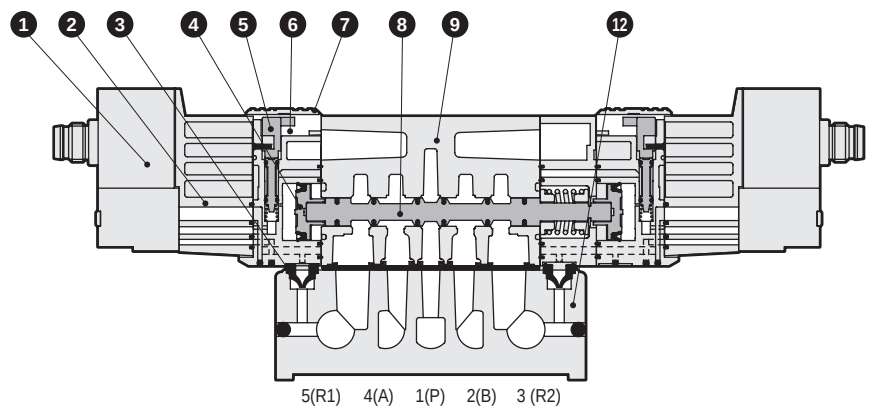
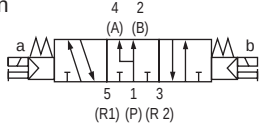
All ports closed



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

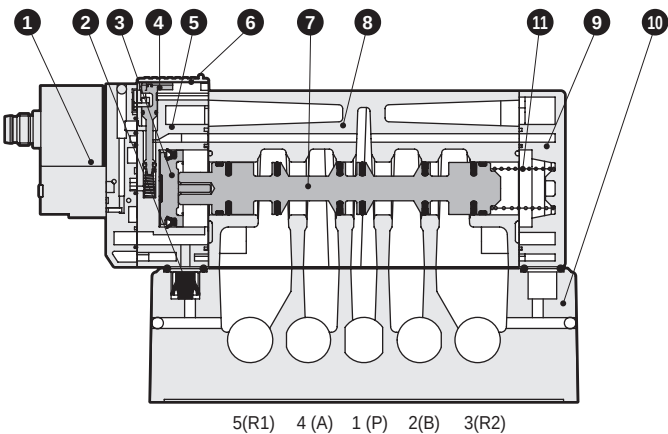
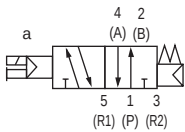
4GE4*0EX Series

Discrete valve; Base piping

Internal structure diagram and parts list

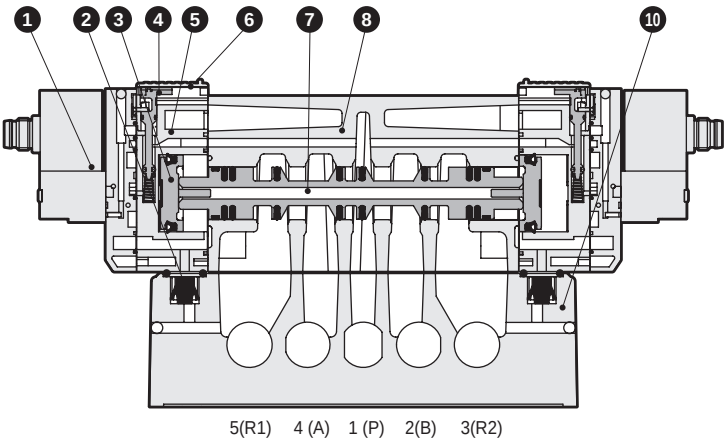
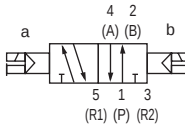
4GE410EX

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



4GE420EX

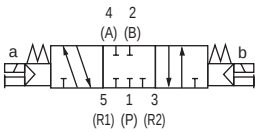
- 2-position double
- M8 connector without cable (RN)



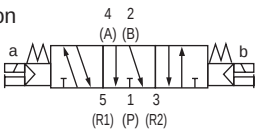
4GE430EX

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

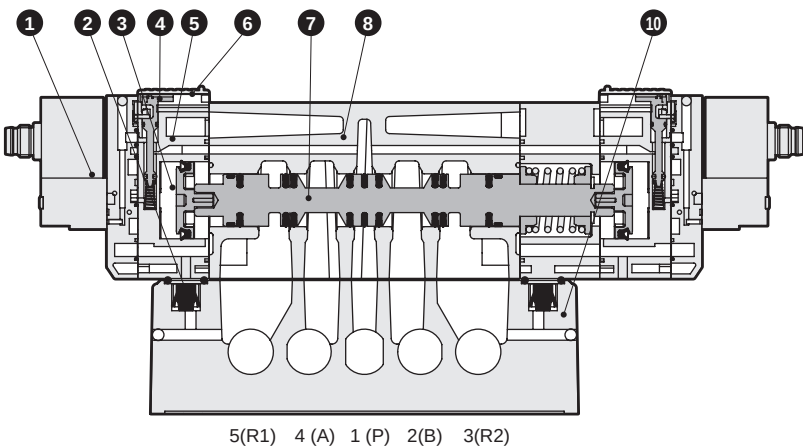
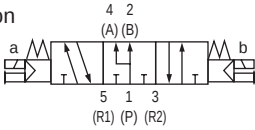
All ports closed



A/B/R connection



P/A/B connection



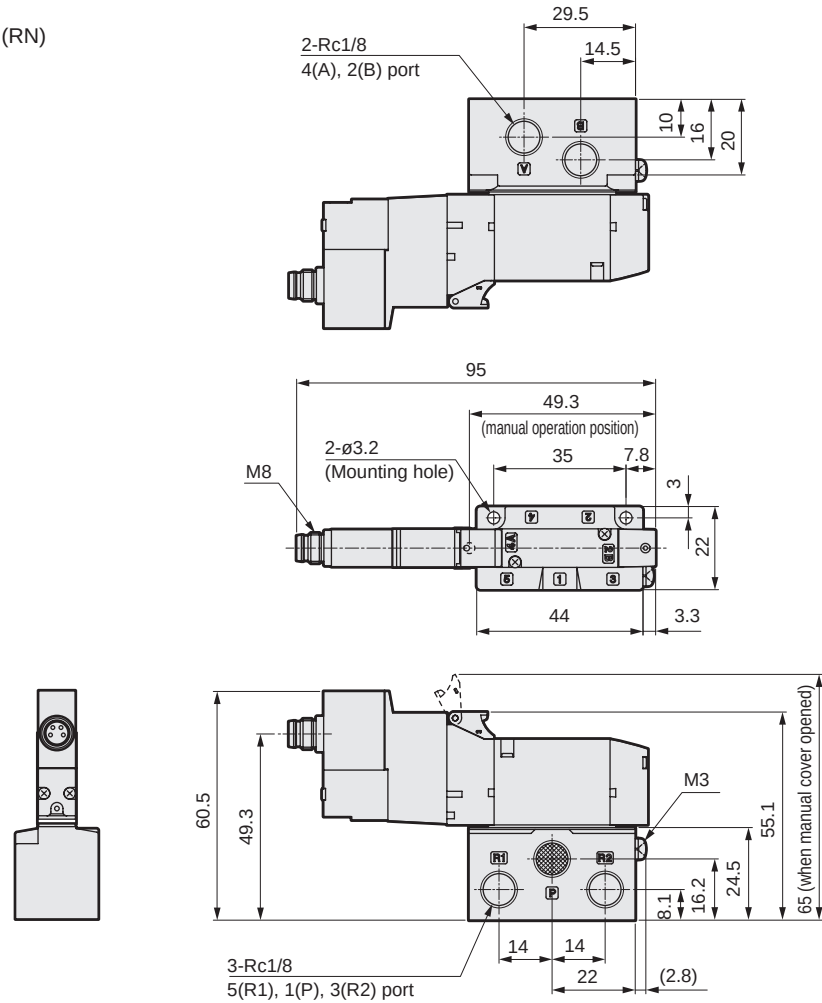
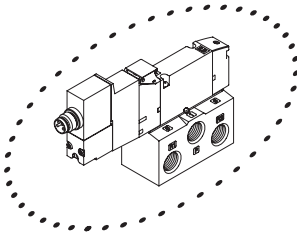
Main parts list

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

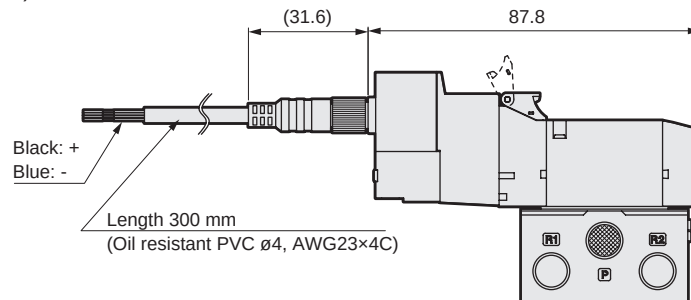
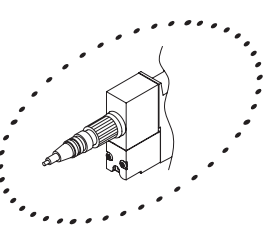
Dimensions

4GE110EX

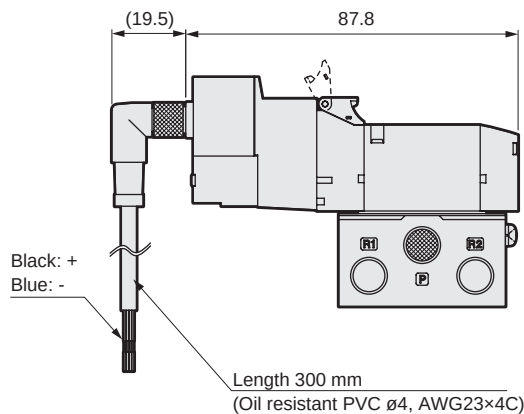
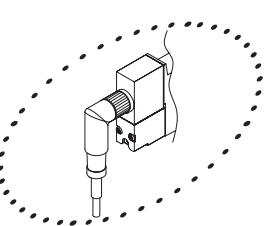
- 2-position single without connector (RN)



- M8 connector/straight cable (R1)



- M8 connector/L-type cable (R2)



3GD*0EX
4GD*0EX

3GE*0EX
4GE*0EX

M3GD*0EX
M4GD*0EX

M3GE*0EX
M4GE*0EX

Related products

Manifold
specifications sheet

Precautions for use

4GE1*0EX Series

Discrete valve; Base piping

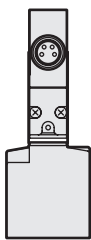
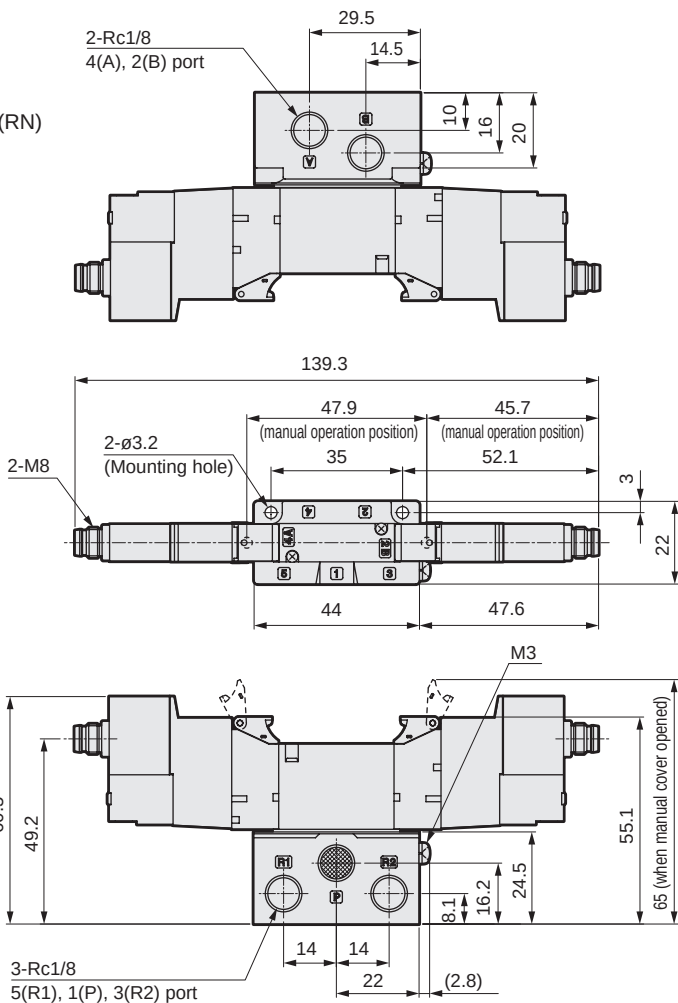
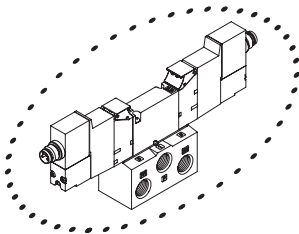
Dimensions

4GE120EX

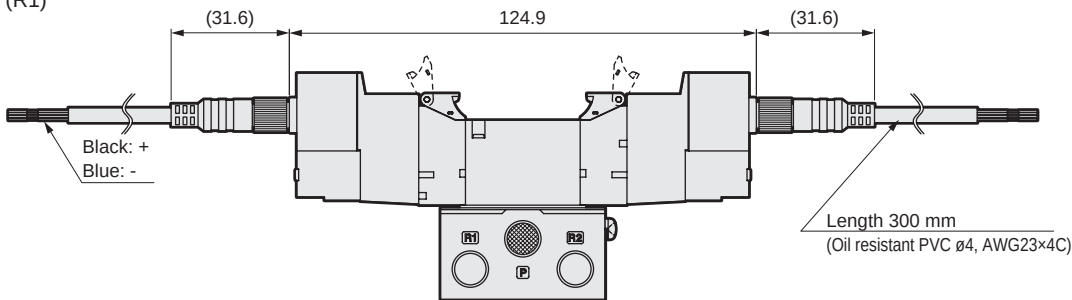
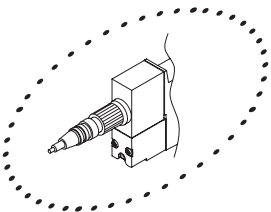
- 2-position double without connector (RN)

3GE1660EX

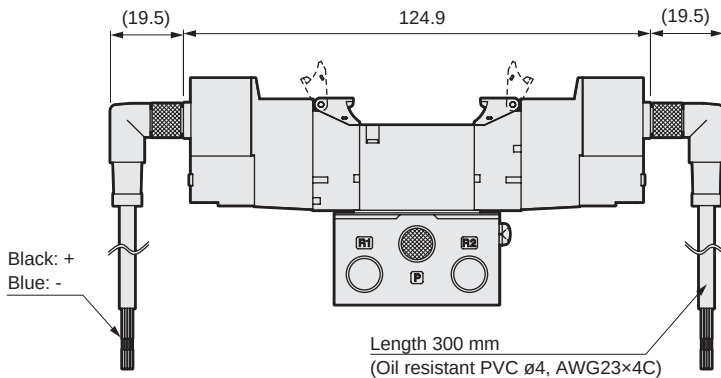
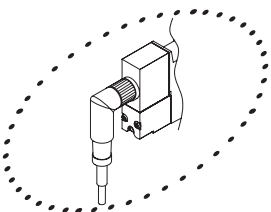
- Two 3-port valves integrated without connector (RN)



- M8 connector/straight cable (R1)



- M8 connector/L-type cable (R2)



3GD*0EX
4GD*0EX

3GE*0EX
4GE*0EX

M3GD*0EX
M4GD*0EX

M3GE*0EX
M4GE*0EX

Related products

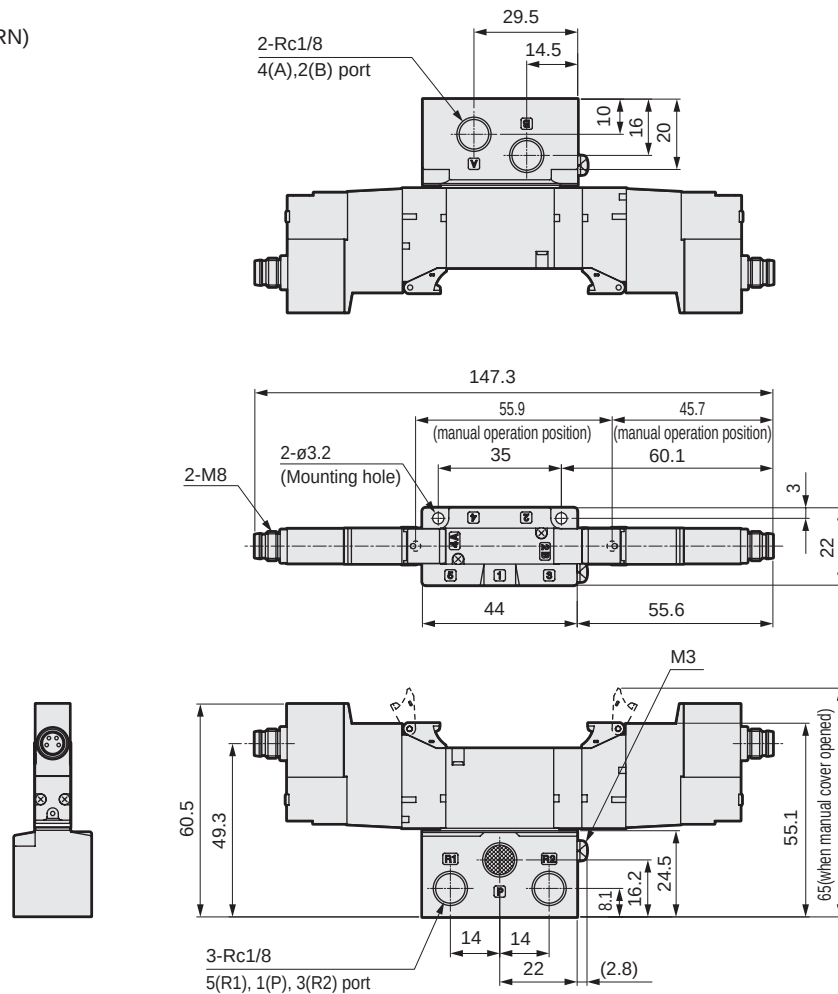
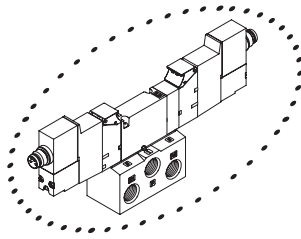
Manifold specifications sheet

Precautions for use

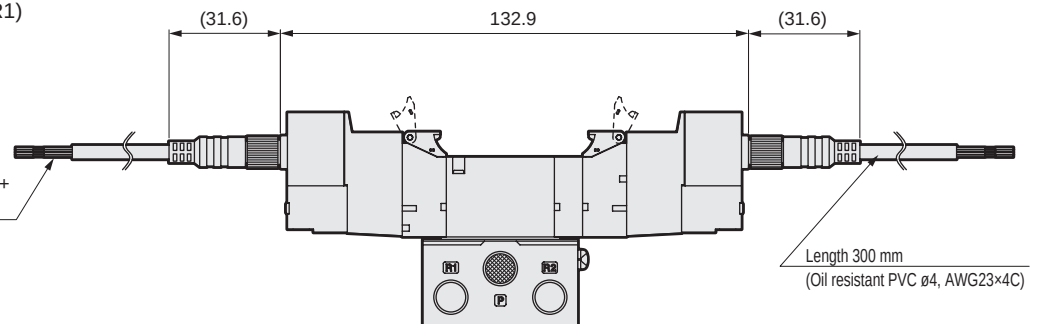
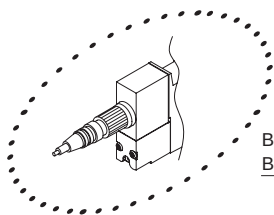
Dimensions

4GE1³/₅0EX

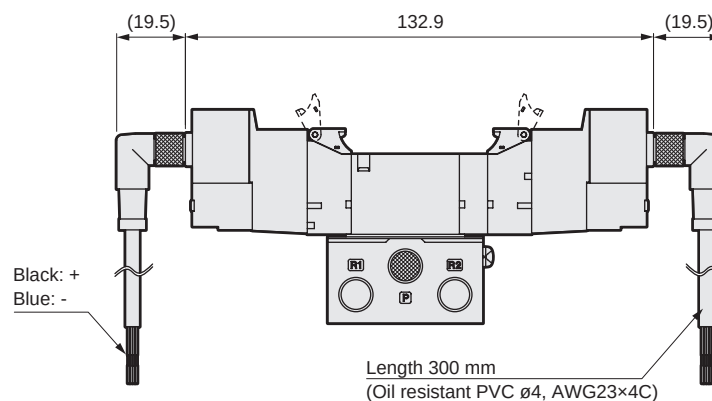
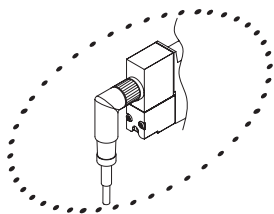
- 3-position without connector (RN)



- M8 connector/straight cable (R1)



- M8 connector/L-type cable (R2)



3GD*0EX
4GD*0EX

3GE*0EX
4GE*0EX

M3GD*0EX
M4GD*0EX

M3GE*0EX
M4GE*0EX

Related products

Manifold
specifications sheet

Precautions for use

4GE2*0EX Series

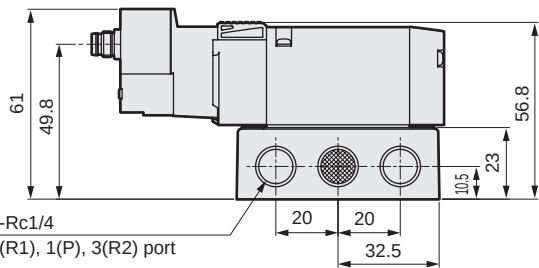
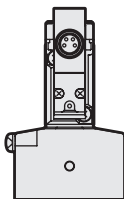
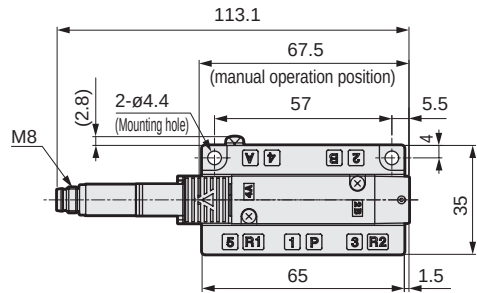
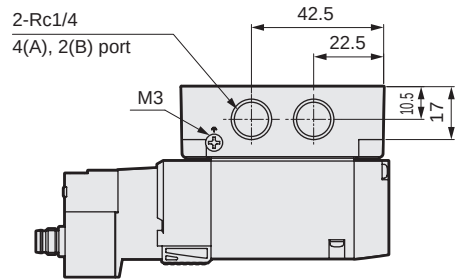
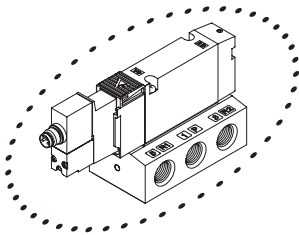
Discrete valve; Base piping

Dimensions

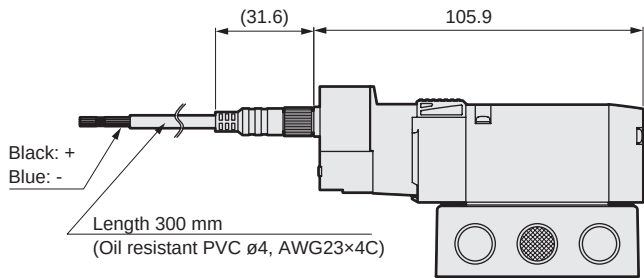
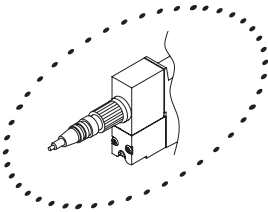
4GE210EX

- 2-position single without connector (RN)

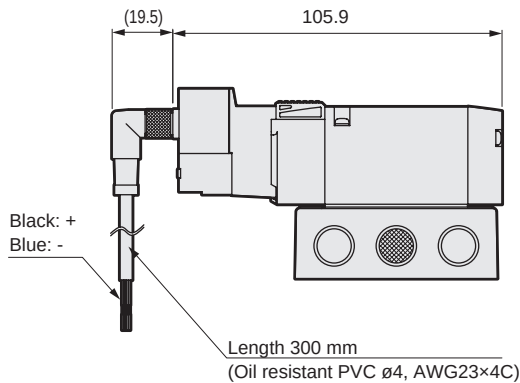
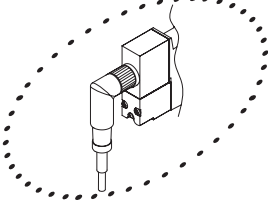
3GD*0EX 4GD*0EX
3GE*0EX 4GE*0EX
M3GD*0EX M4GD*0EX
M3GE*0EX M4GE*0EX
Related products
Manifold specifications sheet
Precautions for use



- M8 connector/straight cable (R1)



- M8 connector/L-type cable (R2)



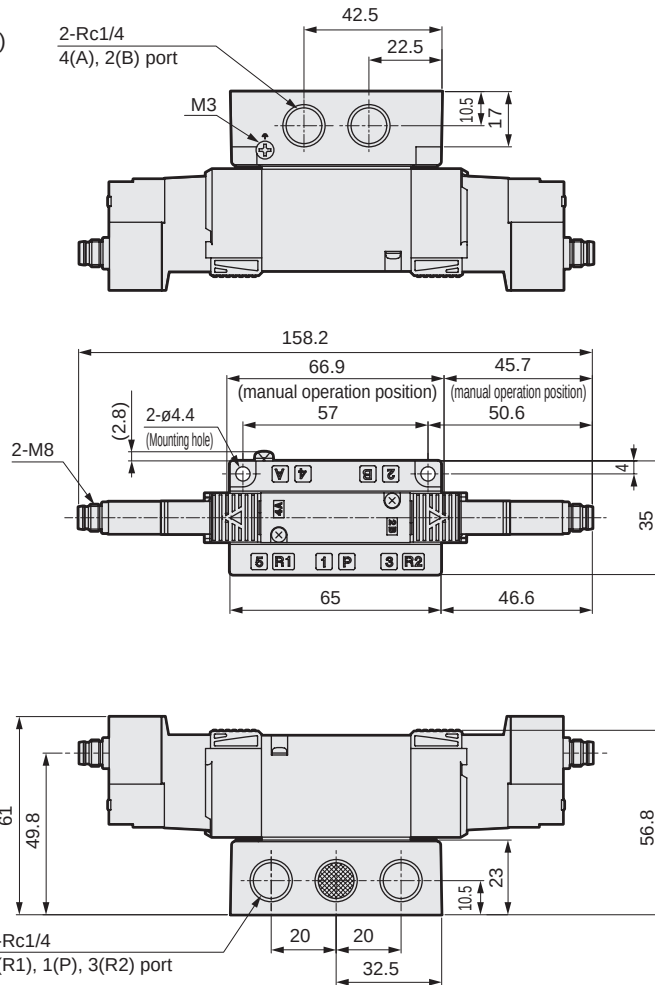
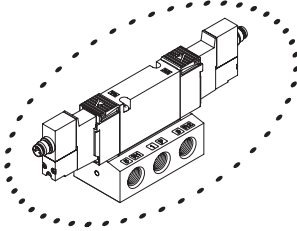
Dimensions

4GE220EX

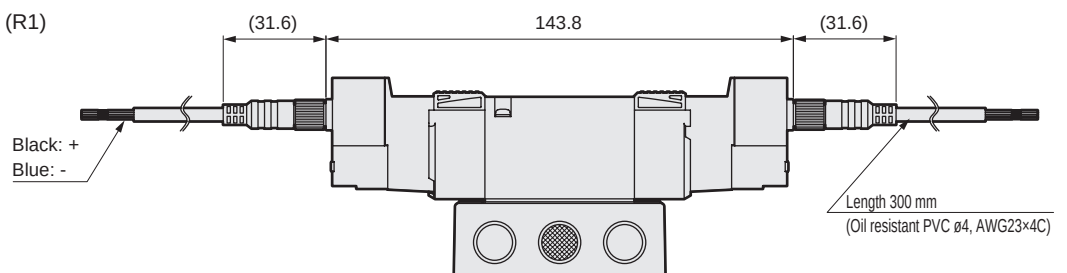
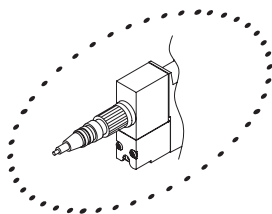
- 2-position double without connector (RN)

3GE2660EX

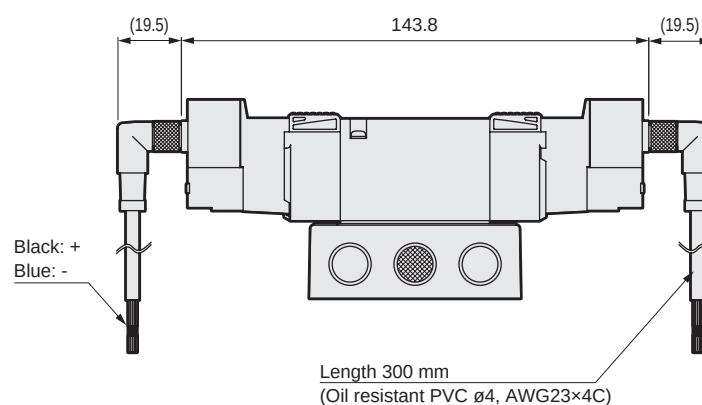
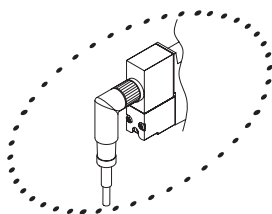
- Two 3-port valves integrated without connector (RN)



- M8 connector/straight cable (R1)



- M8 connector/L-type cable (R2)



3GD*0EX
4GD*0EX

3GE*0EX
4GE*0EX

M3GD*0EX
M4GD*0EX

M3GE*0EX
M4GE*0EX

Related products

Manifold
specifications sheet

Precautions for use

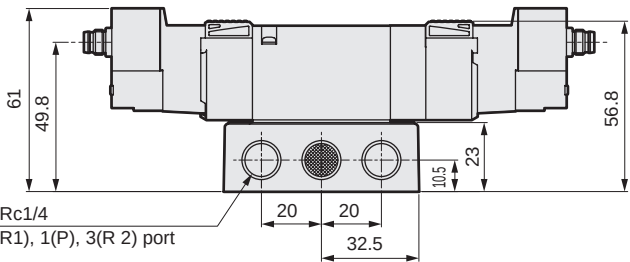
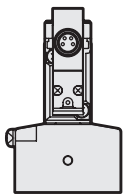
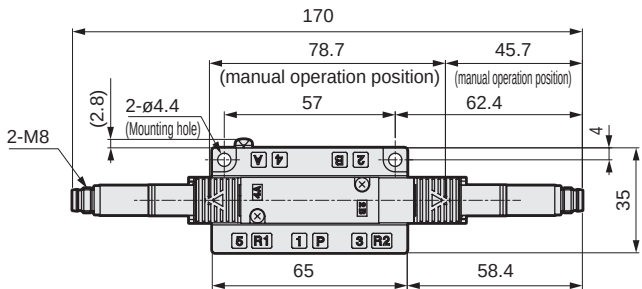
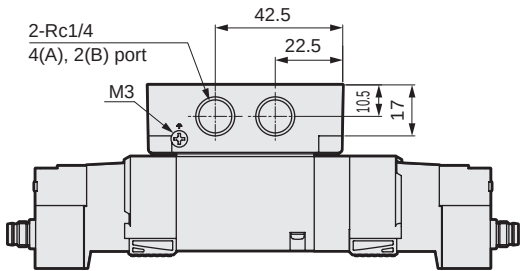
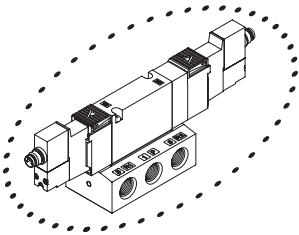
4GE2*0EX Series

Discrete valve; Base piping

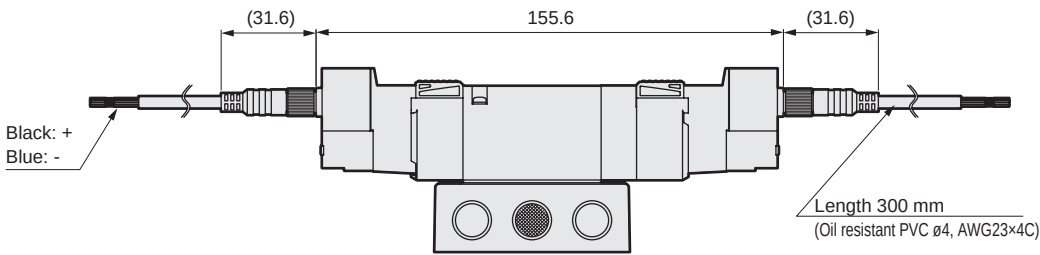
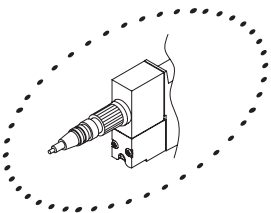
Dimensions

4GE20EX

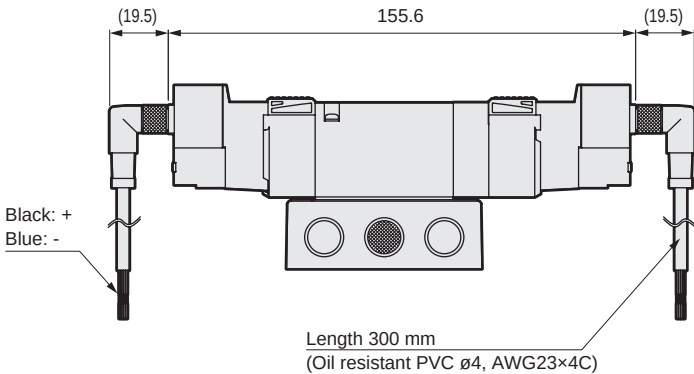
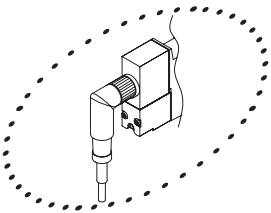
● 3-position without connector (RN)



● M8 connector/straight cable (R1)



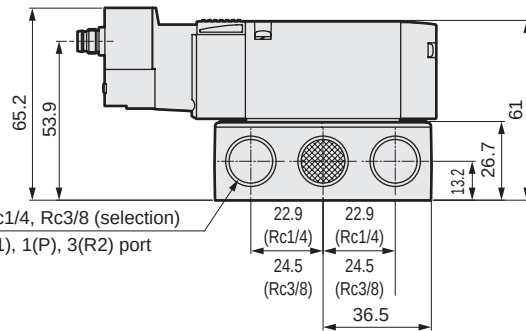
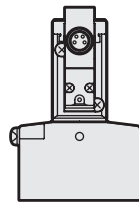
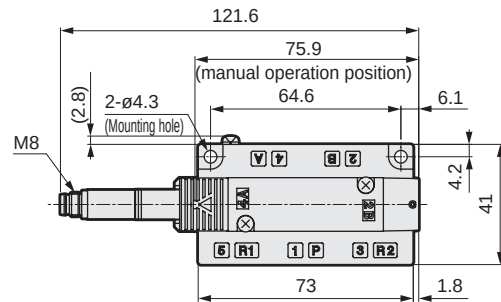
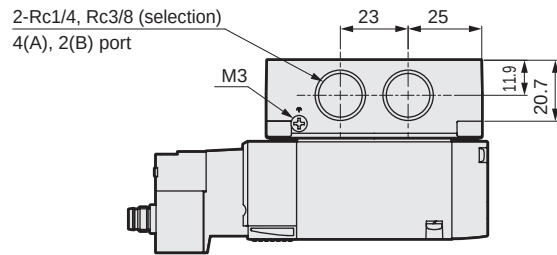
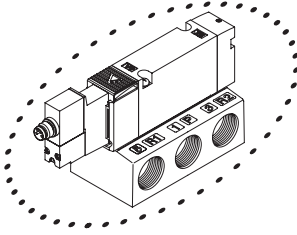
● M8 connector/L-type cable (R2)



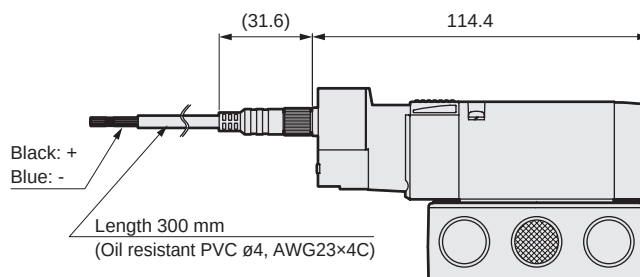
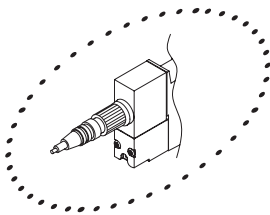
Dimensions

4GE310EX

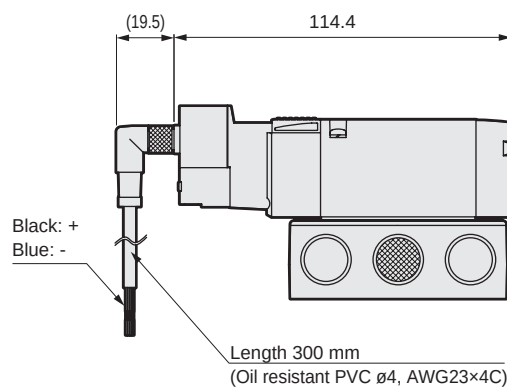
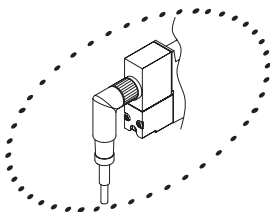
- 2-position single without connector (RN)



- M8 connector/straight cable (R1)



- M8 connector/L-type cable (R2)



3GD*0EX
4GD*0EX

3GE*0EX
4GE*0EX

M3GD*0EX
M4GD*0EX

M3GE*0EX
M4GE*0EX

Related products

Manifold
specifications sheet

Precautions for use

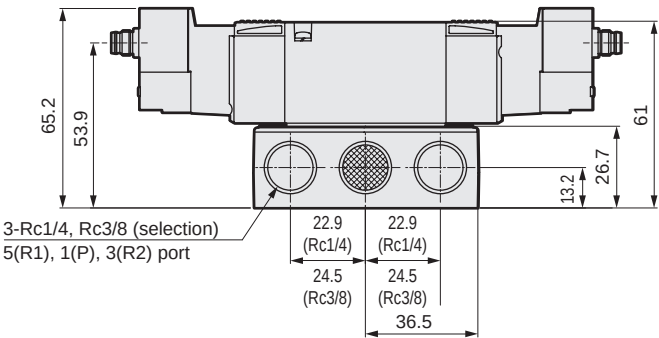
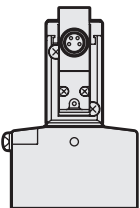
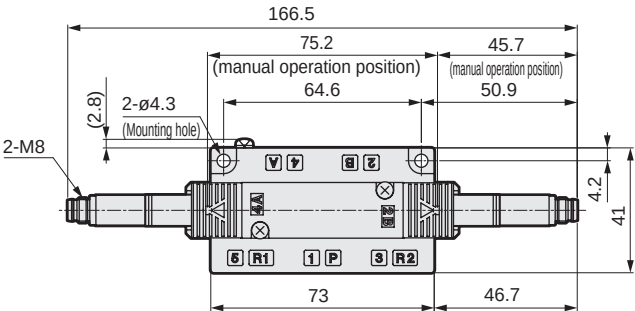
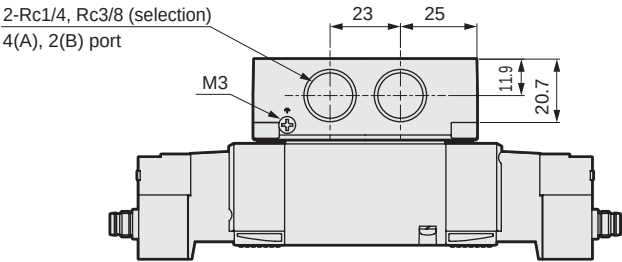
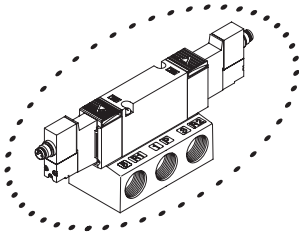
4GE3*0EX Series

Discrete valve; Base piping

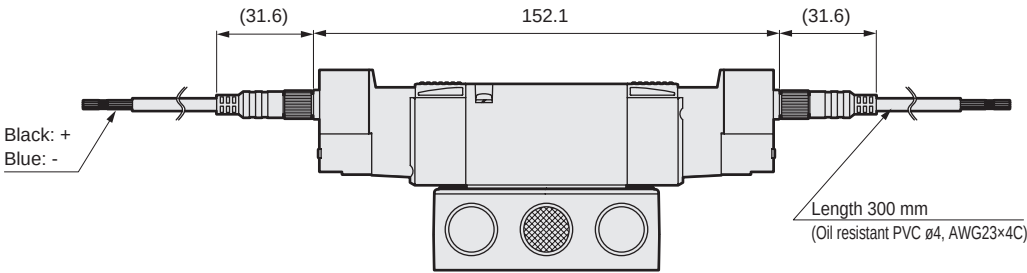
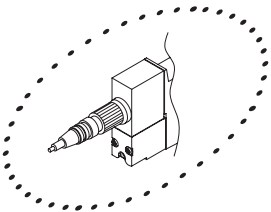
Dimensions

4GE320EX

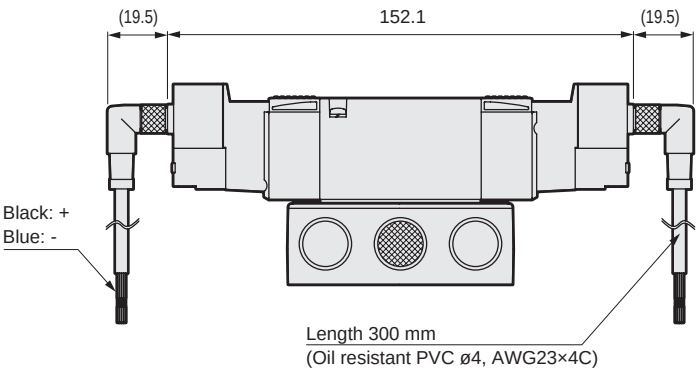
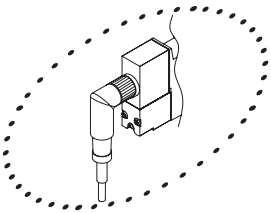
- 2-position double without connector (RN)



- M8 connector/straight cable (R1)



- M8 connector/L-type cable (R2)



3GD*0EX
4GD*0EX

3GE*0EX
4GE*0EX

M3GD*0EX
M4GD*0EX

M3GE*0EX
M4GE*0EX

Related products

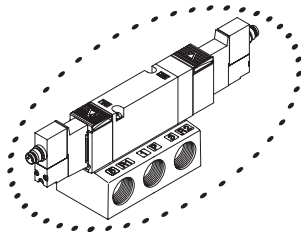
Manifold
specifications sheet

Precautions for use

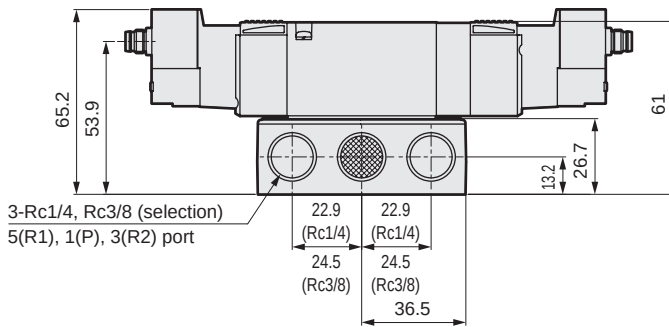
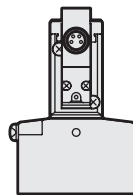
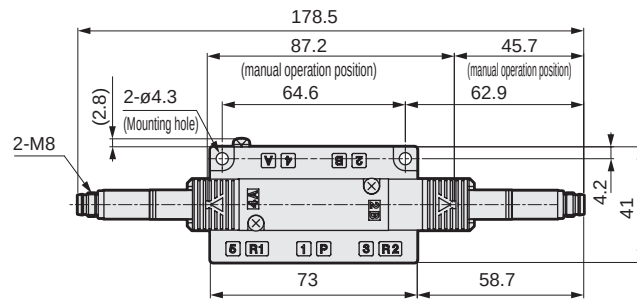
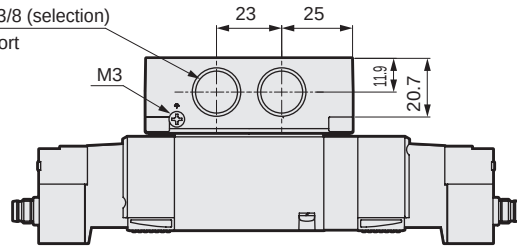
Dimensions

4GE3₃0EX

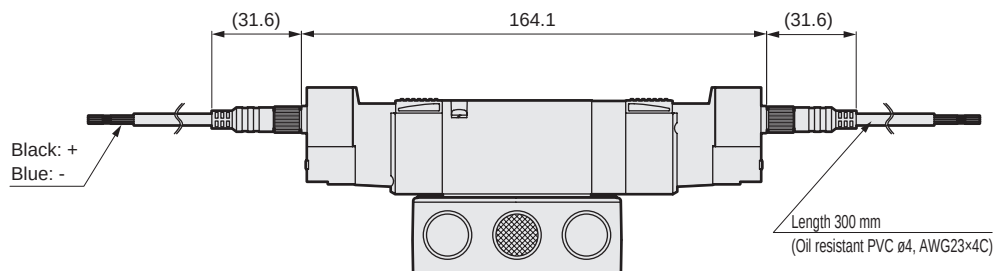
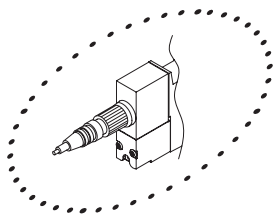
- 3-position without connector (RN)



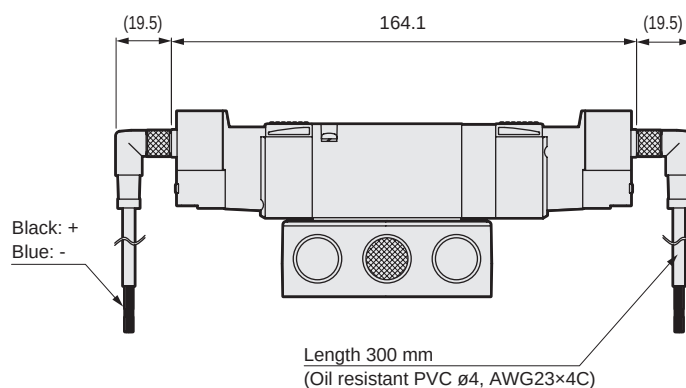
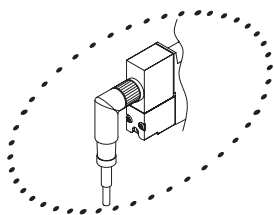
2-Rc1/4, Rc3/8 (selection)
4(A), 2(B) port



- M8 connector/straight cable (R1)



- M8 connector/L-type cable (R2)



3GD*0EX
4GD*0EX

3GE*0EX
4GE*0EX

M3GD*0EX
M4GD*0EX

M3GE*0EX
M4GE*0EX

Related products

Manifold
specifications sheet

Precautions for use

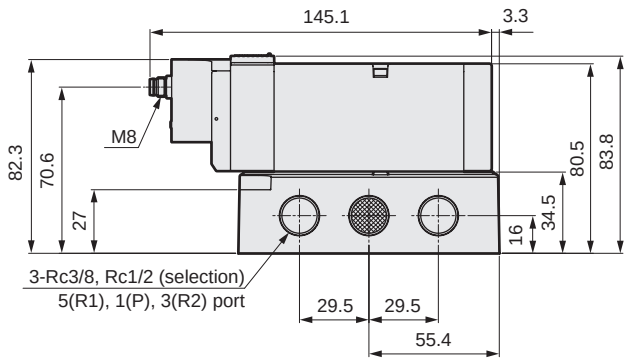
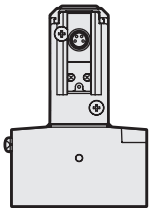
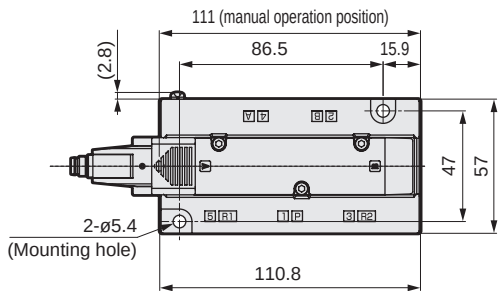
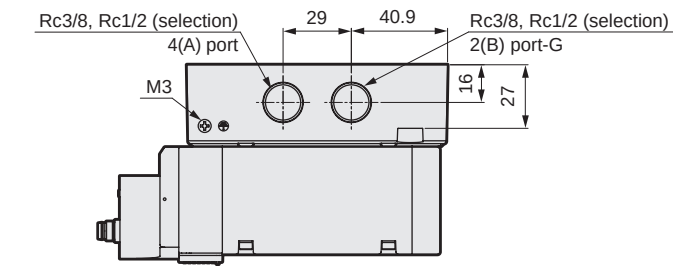
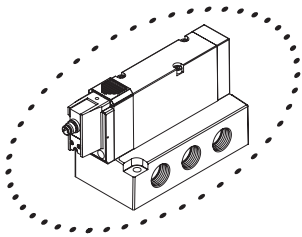
4GE4*0EX Series

Discrete valve; Base piping

Dimensions

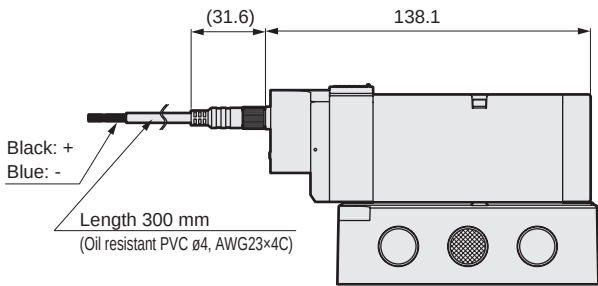
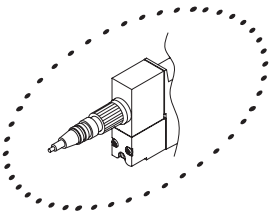
4GE410EX

● 2 position single Without connector (RN)



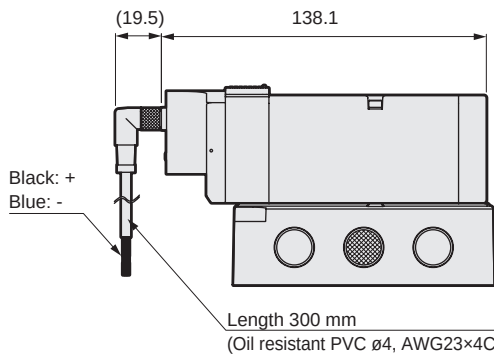
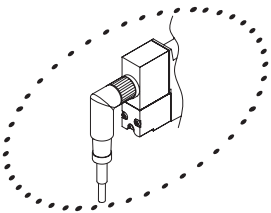
Related products

● M8 connector/straight cable (R1)



Manifold specifications sheet

● M8 connector/L-type cable (R2)

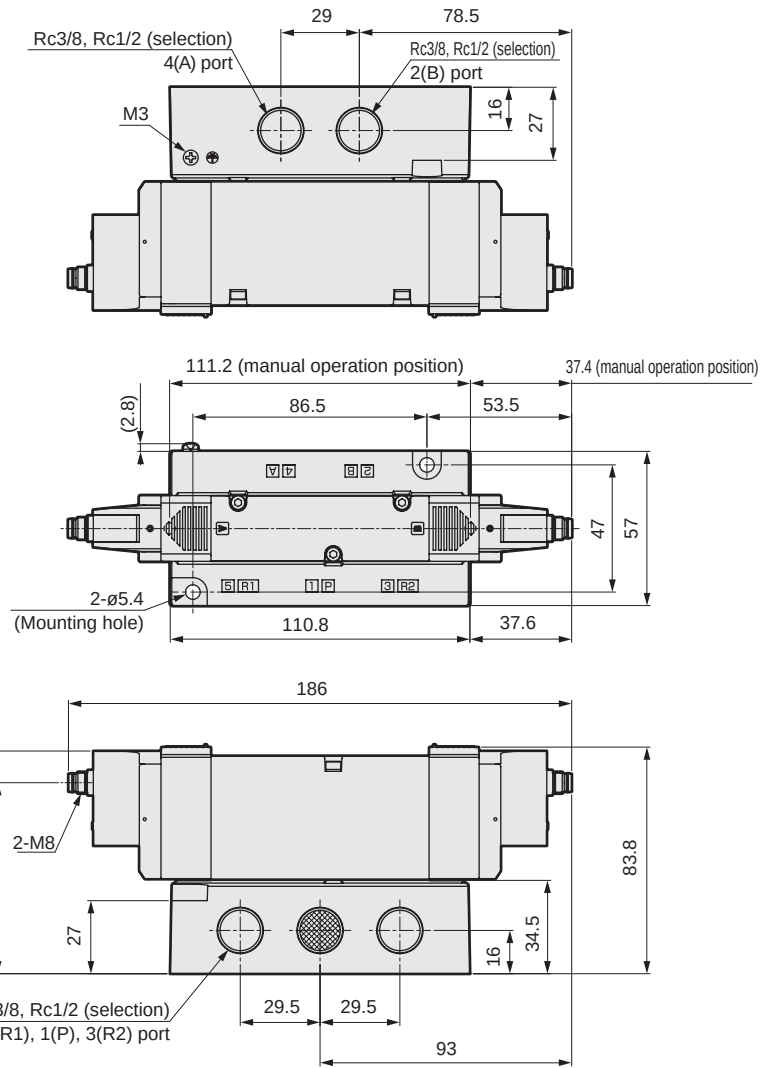
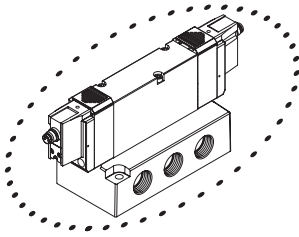


Precautions for use

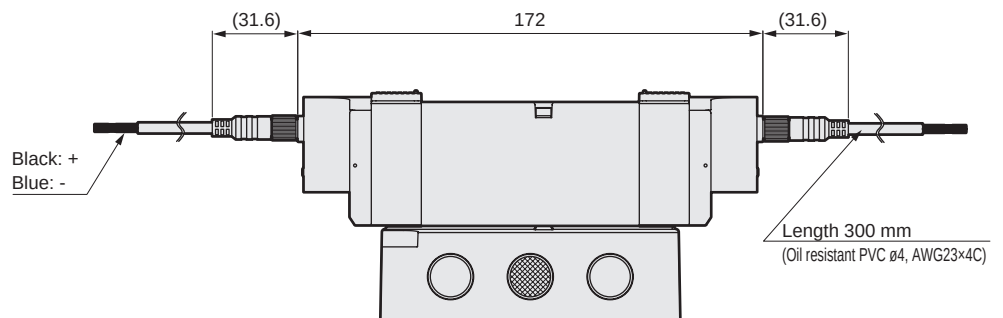
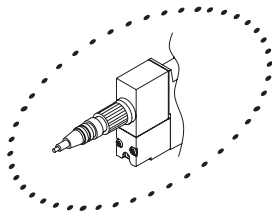
Dimensions

4GE420EX

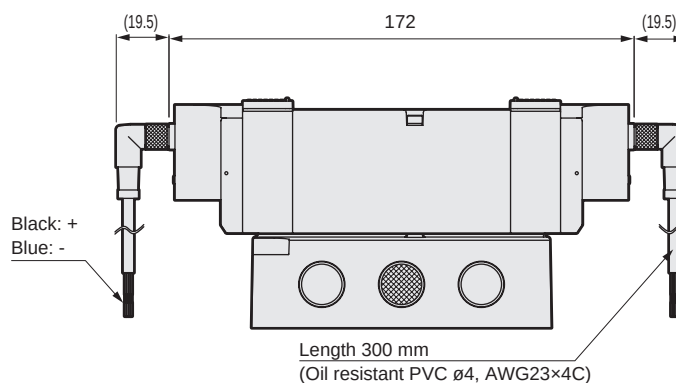
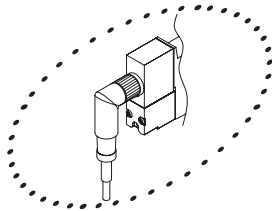
- 2-position double without connector (RN)



- M8 connector/straight cable (R1)



- M8 connector/L-type cable (R2)



3GD*0EX
4GD*0EX

3GE*0EX
4GE*0EX

M3GD*0EX
M4GD*0EX

M3GE*0EX
M4GE*0EX

Related products

Manifold
specifications sheet

Precautions for use

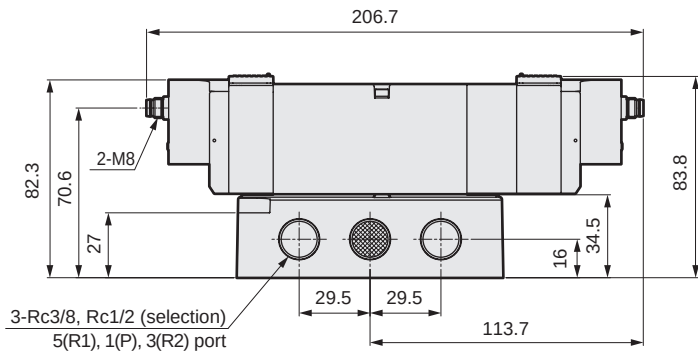
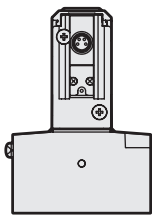
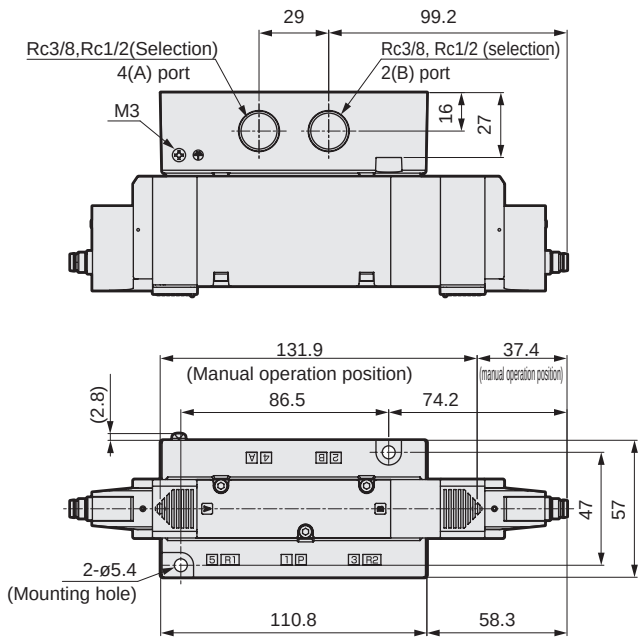
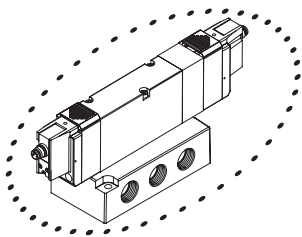
4GE4*0EX Series

Discrete valve; Base piping

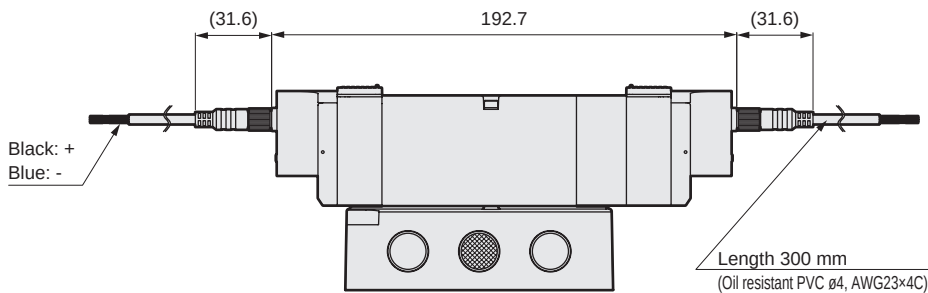
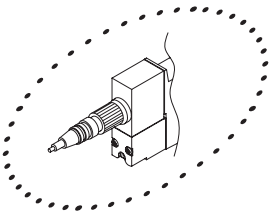
Dimensions

4GE4³₄⁰₅EX

● 3-position Without connector (RN)



● M8 connector/straight cable (R1)



● M8 connector/L-type cable (R2)

