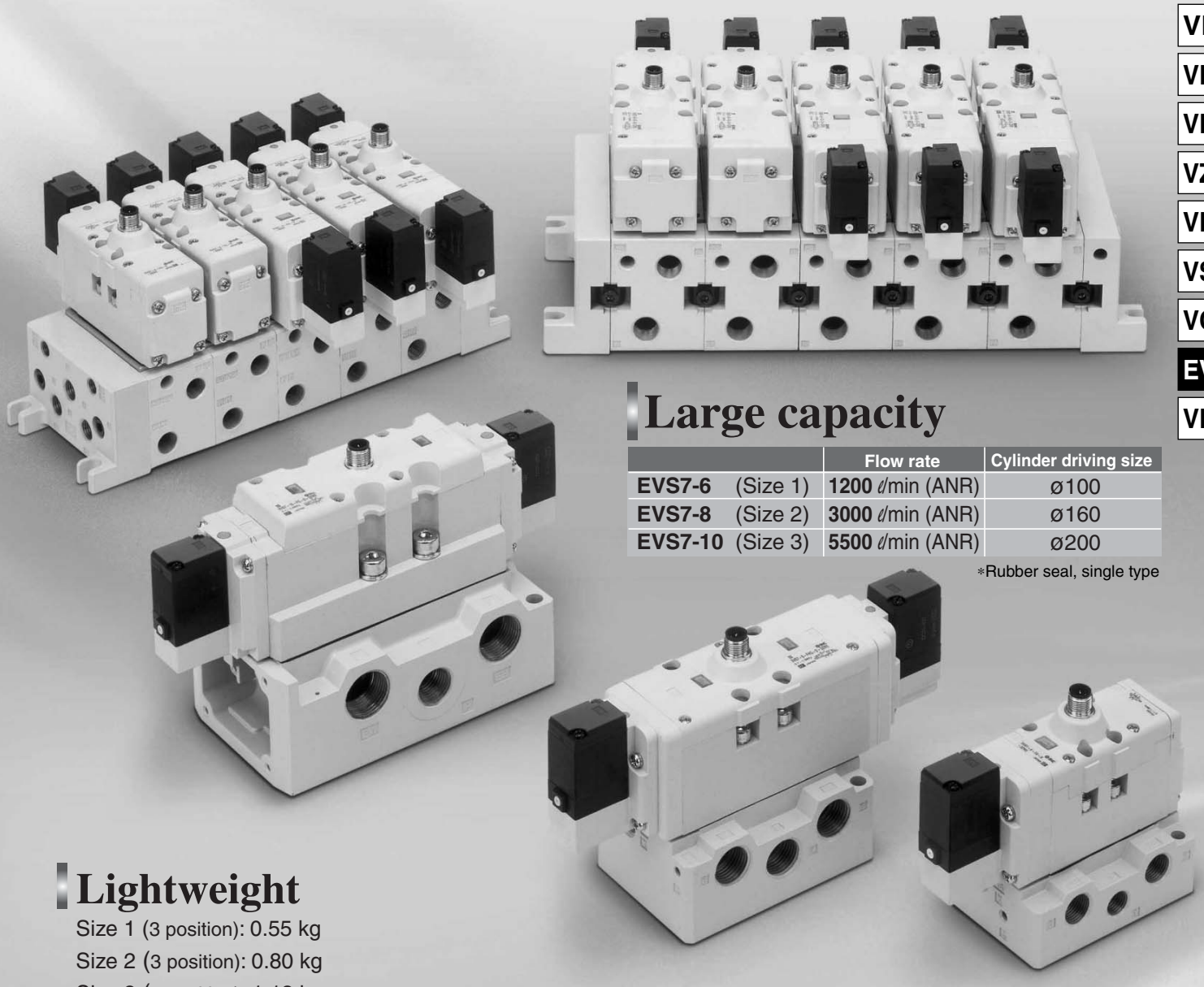
Conforming to ISO Standard Solenoid Valve (with M12 Connector)

Series EVS7-6/7-8/7-10

(Size 1) (Size 2) (Size 3)



Large capacity

		Flow rate	Cylinder driving size
EVS7-6	(Size 1)	**1200** ℓ/min (ANR)	ø100
EVS7-8	(Size 2)	**3000** ℓ/min (ANR)	ø160
EVS7-10	(Size 3)	**5500** ℓ/min (ANR)	ø200

∗Rubber seal, single type

Lightweight

Size 1 (3 position): 0.55 kg
Size 2 (3 position): 0.80 kg
Size 3 (3 position): 1.13 kg

Interface conforms to ISO standard

Size 1 **(EVS7-6),** Size 2 **(EVS7-8),** and Size 3 **(EVS7-10)**
Conform to ISO5599/1

Reduced installation space

Up to 7% reduction in square area installation (compared to Series EVS7 for Cnomo)
Up to 35% reduction in cubic area installation

Accommodates enclosure IP65

Dust/Splashproof type

Wide variety of manifold option

ISO Standard Solenoid Valve
Size 1, 2, 3/Single Unit
Series EVS7-6/7-8/7-10

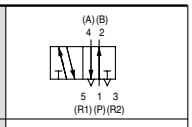
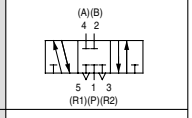
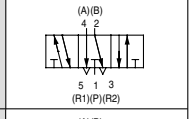
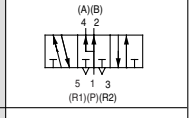
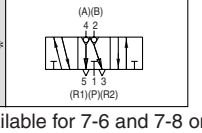
How to Order

Valve EVS7 — 6 — FG — S — 3 □ □ □ □ M0

Size

6	Size 1
8	Size 2
10	Size 3

Passage symbol

FG	
FHG	
FJG	
FIG	
FPG*	

* Available for 7-6 and 7-8 only

Number of solenoids

S	Single
D	Double

Rated coil voltage

3	24 VDC
4	12 VDC
9	Voltage other than above (50 VDC or less)

Option

Nil	None
Z	Light/Surge voltage suppressor

Sealing type

Nil	Metal seal
R	Rubber seal

Port size

Symbol	Piping specifications	Size 1	Size 2	Size 3
Nil	Without sub-plate	○	○	○
A02	Side-ported 1/4	○		
A03	Side-ported 3/8	○	○	
A04	Side-ported 1/2		○	○
A06	Side-ported 3/4		○	○
A10	Side-ported 1			○
B02	Bottom-ported 1/4	○		
B03	Bottom-ported 3/8	○	○	
B04	Bottom-ported 1/2		○	○
B06	Bottom-ported 3/4		○	○

Thread type

Nil	Rc
F	G
T	NPTF

Sub-plate VS7 — 1 — A02 □

Size

1	Size 1
2	Size 2
3	Size 3

Port size

Symbol	Piping specifications	Size 1	Size 2	Size 3
A02	Side-ported 1/4	○		
A03	Side-ported 3/8	○	○	
A04	Side-ported 1/2		○	○
A06	Side-ported 3/4		○	○
A10	Side-ported 1			○
B02	Bottom-ported 1/4	○		
B03	Bottom-ported 3/8	○	○	
B04	Bottom-ported 1/2		○	○
B06	Bottom-ported 3/4		○	○

Thread type

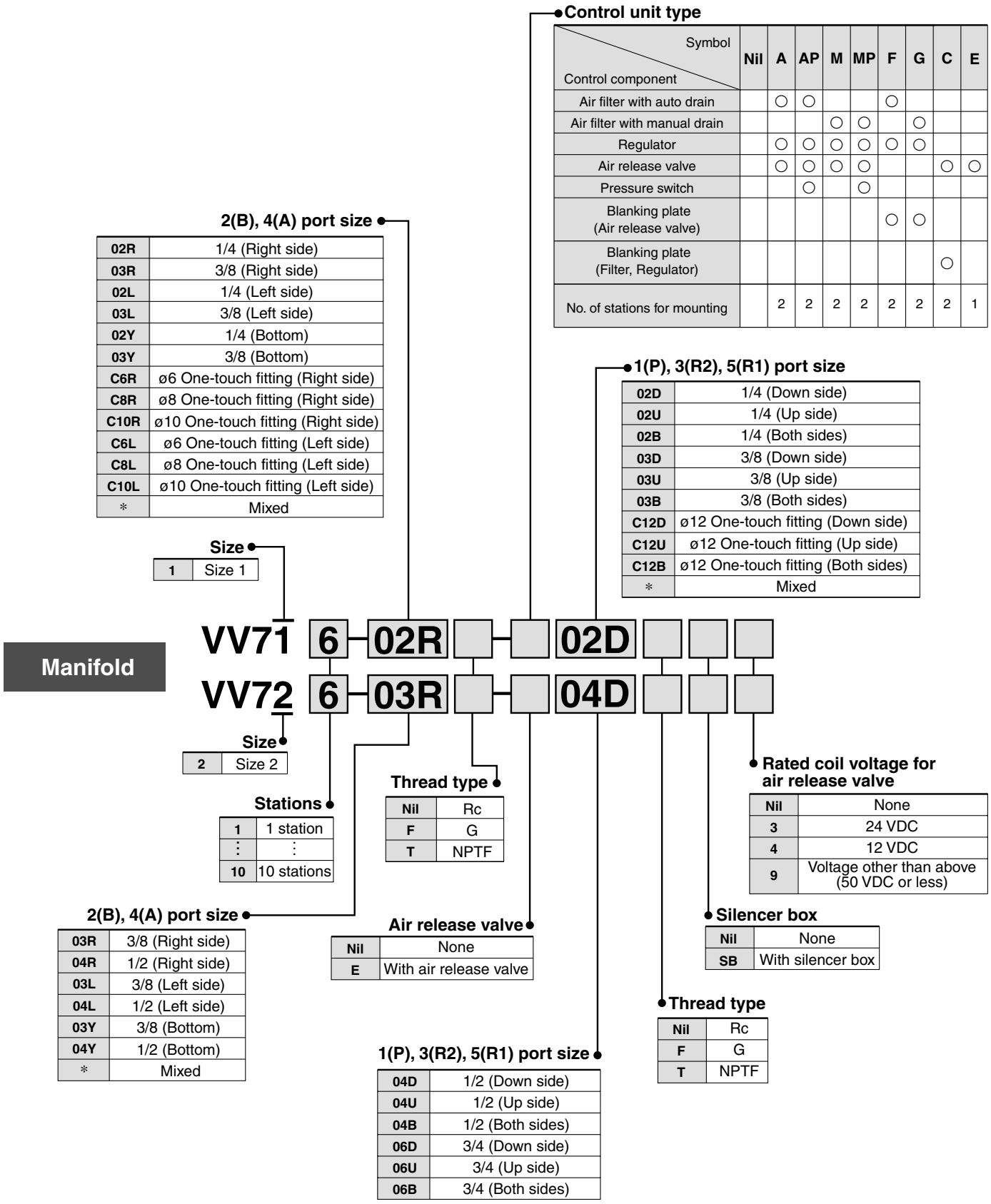
Nil	Rc
F	G
T	NPTF

Specifications

Model	Piping specifications			Weight (kg)
	Piping direction	Port size for 1(P), 2(B), 4(A)	Port size for 3(R2), 5(R1)	
VS7-1-A02	Horizontal	1/4	3/8	0.37
VS7-1-A03		3/8		
VS7-1-B02	Bottom	1/4	3/8	
VS7-1-B03		3/8		
VS7-2-A03	Horizontal	3/8		0.68
VS7-2-A04		1/2		
VS7-2-A06		3/4		1.29
VS7-2-B03	Bottom	3/8		0.68
VS7-2-B04		1/2		
VS7-2-B06		3/4		1.29
VS7-3-A04	Horizontal	1/2	3/4	1.50
VS7-3-A06		3/4		
VS7-3-A10		1	3/4	
VS7-3-B04	Bottom	1/2		
VS7-3-B06		3/4		

Series EVS7-□
Manifold Specifications

How to Order



Series EVS7-□

Model

Series EVS7-6

Positions			Bore size	Flow characteristics					
				1 → 4, 2 (P → A, B)			4, 2 → 5, 3 (A, B → EA, EB)		
				C	b	Cv	C	b	Cv
2 position	Single	Metal seal	1/4	4.1	0.10	0.9	5.2	0.07	1.1
		Rubber seal		5.0	0.13	1.1	6.0	0.11	1.4
	Double	Metal seal		4.1	0.10	0.9	5.2	0.07	1.1
		Rubber seal		5.0	0.13	1.1	6.0	0.11	1.4
3 position	Closed center	Metal seal		4.1	0.10	0.9	5.2	0.10	1.1
		Rubber seal		5.0	0.13	1.1	5.6	0.20	1.3
	Exhaust center	Metal seal		4.1	0.10	0.9	5.2	0.10	1.1
		Rubber seal		4.8	0.16	1.1	6.0	0.17	1.4
	Pressure center	Metal seal		4.1	0.10	0.9	5.2	0.08	1.1
		Rubber seal		5.6	0.15	1.2	5.9	0.08	1.3
	Perfect type	Metal seal		1.4	—	—	3.1	—	—
		Rubber seal		1.4	—	—	3.1	—	—

Series EVS7-8

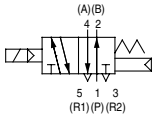
Positions			Bore size	Flow characteristics					
				1 → 4, 2 (P → A, B)			4, 2 → 5, 3 (A, B → EA, EB)		
				C	b	Cv	C	b	Cv
2 position	Single	Metal seal	3/8	10	0.18	2.4	12	0.24	3.0
		Rubber seal		12	0.24	3.0	13	0.27	3.3
	Double	Metal seal		10	0.18	2.4	12	0.24	3.0
		Rubber seal		12	0.24	3.0	13	0.27	3.3
3 position	Closed center	Metal seal		10	0.28	2.4	10	0.24	2.4
		Rubber seal		11	0.25	2.8	11	0.27	2.8
	Exhaust center	Metal seal		10	0.16	2.4	10	0.20	2.4
		Rubber seal		11	0.26	2.8	13	0.27	3.3
	Pressure center	Metal seal		10	0.26	2.4	11	0.25	2.8
		Rubber seal		13	0.27	3.3	12	0.29	3.0
	Perfect type	Metal seal		7.2	–	–	7.0	–	–
		Rubber seal		7.2	–	–	7.0	–	–

Series EVS7-10

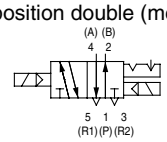
Positions			Bore size	Flow characteristics					
				1 → 4, 2 (P → A, B)			4, 2 → 5, 3 (A, B → EA, EB)		
				C	b	Cv	C	b	Cv
2 position	Single	Metal seal	1/2	13	0.10	3.0	18	0.10	4.0
		Rubber seal		16	0.20	4.0	18	0.20	4.4
	Double	Metal seal		13	0.10	3.0	18	0.10	4.0
		Rubber seal		16	0.20	4.0	18	0.20	4.4
3 position	Closed center	Metal seal		13	0.10	3.0	18	0.10	4.0
		Rubber seal		15	0.20	3.5	15	0.20	3.7
	Exhaust center	Metal seal		13	0.10	3.0	18	0.10	4.0
		Rubber seal		16	0.20	4.0	16	0.20	4.0
	Pressure center	Metal seal		13	0.10	3.0	18	0.10	4.0
		Rubber seal		15	0.20	3.8	19	0.10	4.4

JIS Symbol

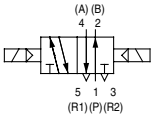
2 position single



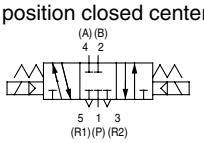
2 position double (metal)



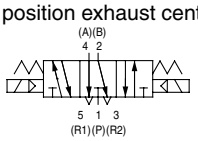
2 position double (rubber)



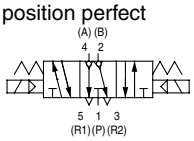
3 position closed center



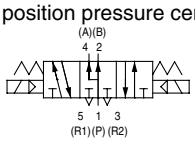
3 position exhaust center



3 position perfect



3 position pressure center



Standard Specifications

Valve specifications	Valve type		Metal seal	Rubber seal
	Fluid		Air, Inert gas	
	Maximum operating pressure		1.0 MPa	
	Minimum operating pressure	Single	0.1 MPa	0.1 MPa
		Double	0.1 MPa	0.1 MPa
		3 position	0.1 MPa	0.1 MPa: Size 1 0.15 MPa: Size 2, 3
	Ambient and fluid temperature		–10° to 60°C (1)	–5° to 60°C (1)
	Lubrication		None	
	Manual override		Push type (Tool required)	
	Impact resistance/ Vibration resistance		150/50 m/s² (2)	
	Enclosure		IP65 (Dust/Splashproof type)	
Electric specifications	Rated coil voltage		12 VDC, 24 VDC	
	Allowable voltage fluctuation		–15 to +10% of rated voltage	
	Type of coil insulation		Equivalent to Class B	
	Power consumption	24 VDC	1.8 W DC (75 mA)	
		12 VDC	1.8 W DC (150 mA)	

Note 1) Use dry air to prevent condensation at low temperatures.

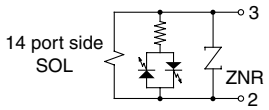
Note 2) Impact resistance: No malfunction resulted during on the impact test using a drop impact tester. The test was performed one time each in the axial and right angle directions of the main valve and armature for both energized and de-energized conditions.

Vibration resistance: No malfunction resulted during a one-sweep test between 8.3 and 2000 Hz. The test was performed in the axial and right angle directions of the main valve and armature for both energized and de-energized conditions.

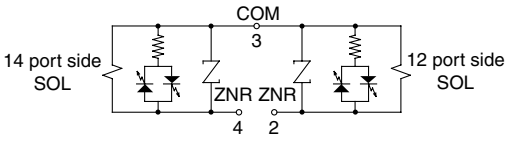
⚠ Precautions

⚠ Caution

Internal Wiring Specifications

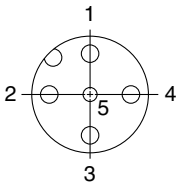


DC: Single



DC: Double

M12 connector: Wiring specifications



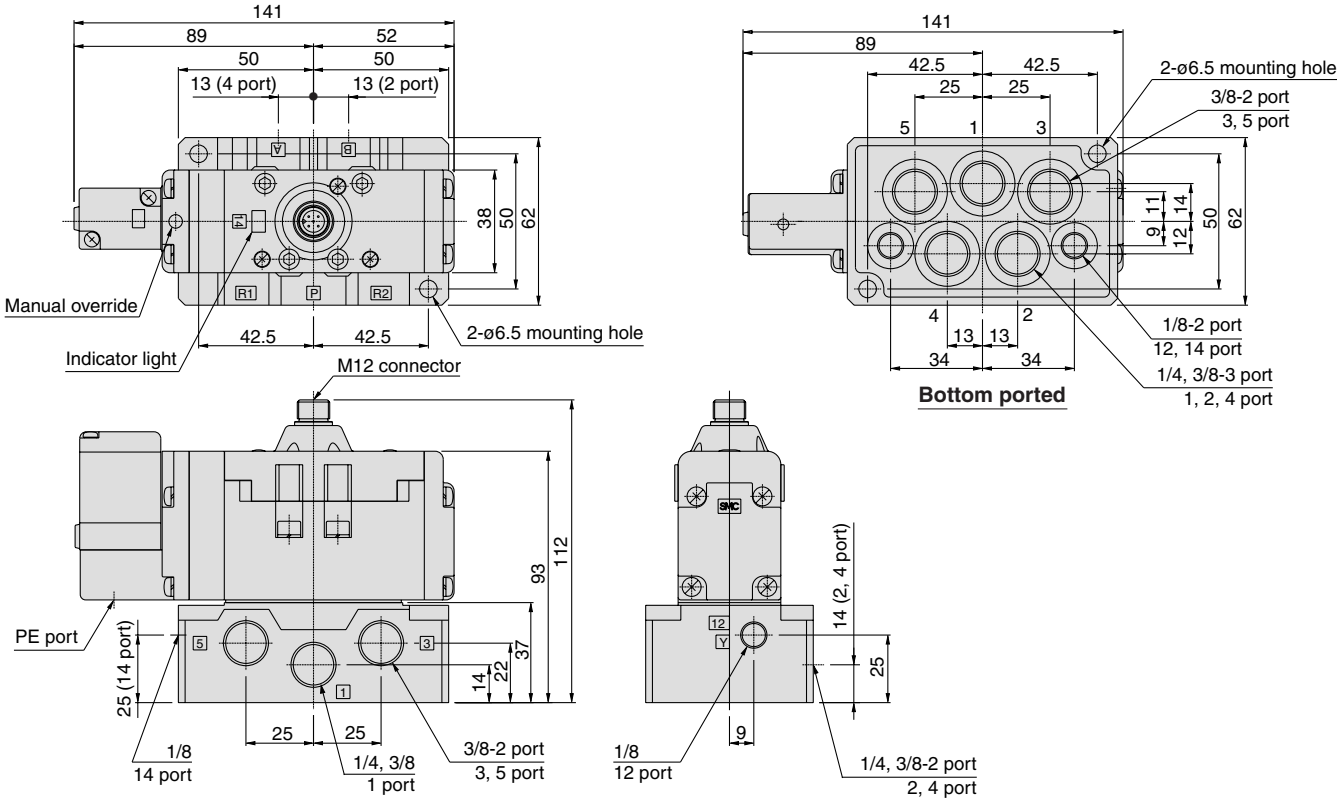
Pin no.
1: Open
2: 12 port side SOL (+)
3: COM (-)
4: 14 port side SOL (+)
5: Ground

VK
VZ
VF
VFR
VP4
VZS
VFS
VS4
VQ7
EVS
VFN

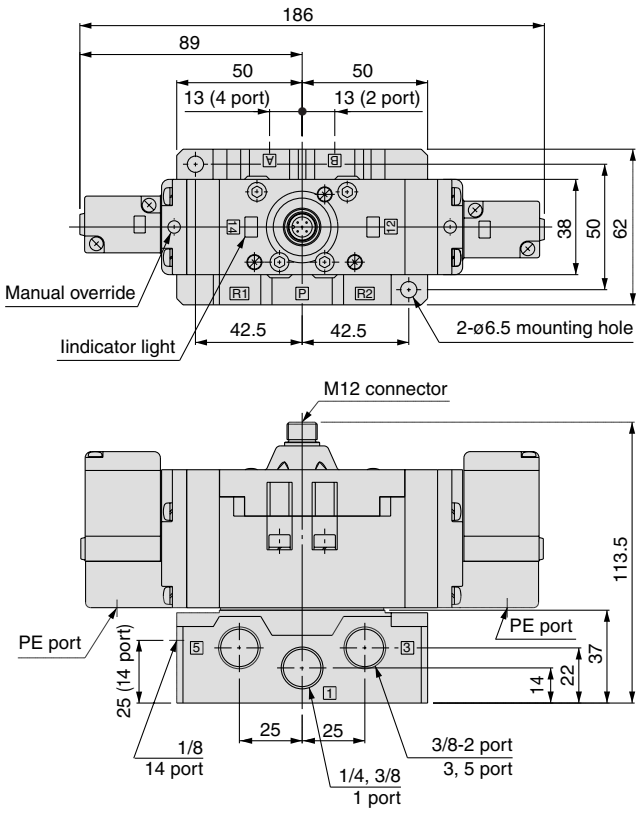
Series EVS7-□

Dimensions

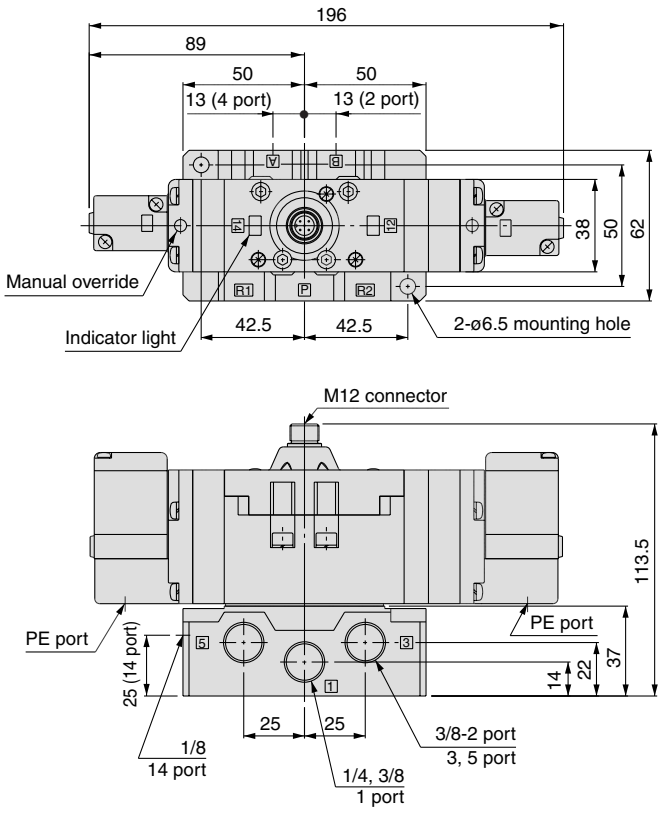
EVS7-6-FG-S-□□M0



EVS7-6-FG-D-□□M0

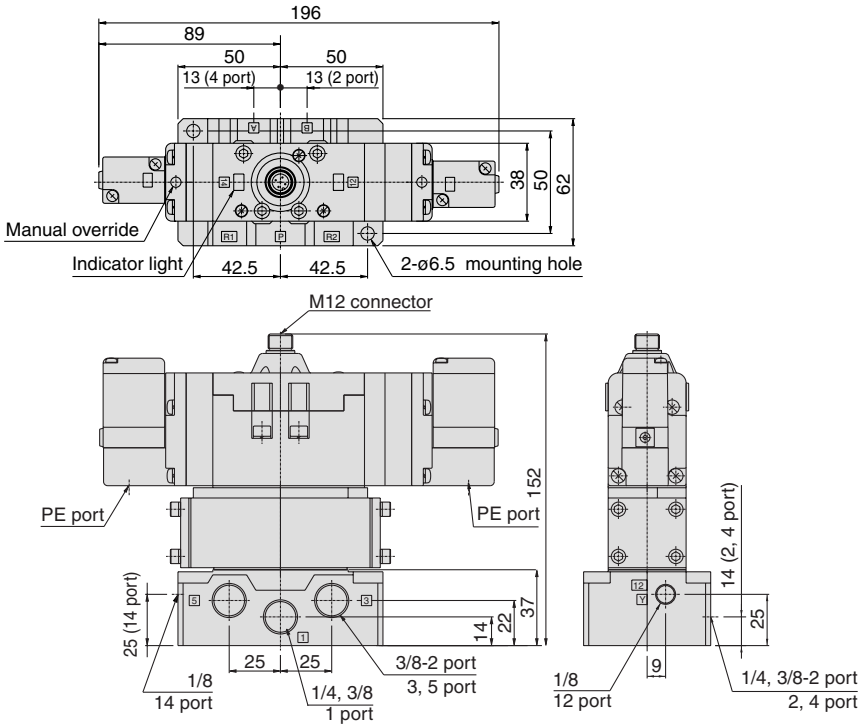


EVS7-6-F$^{H}_{J}_{I}$G-D-□□M0

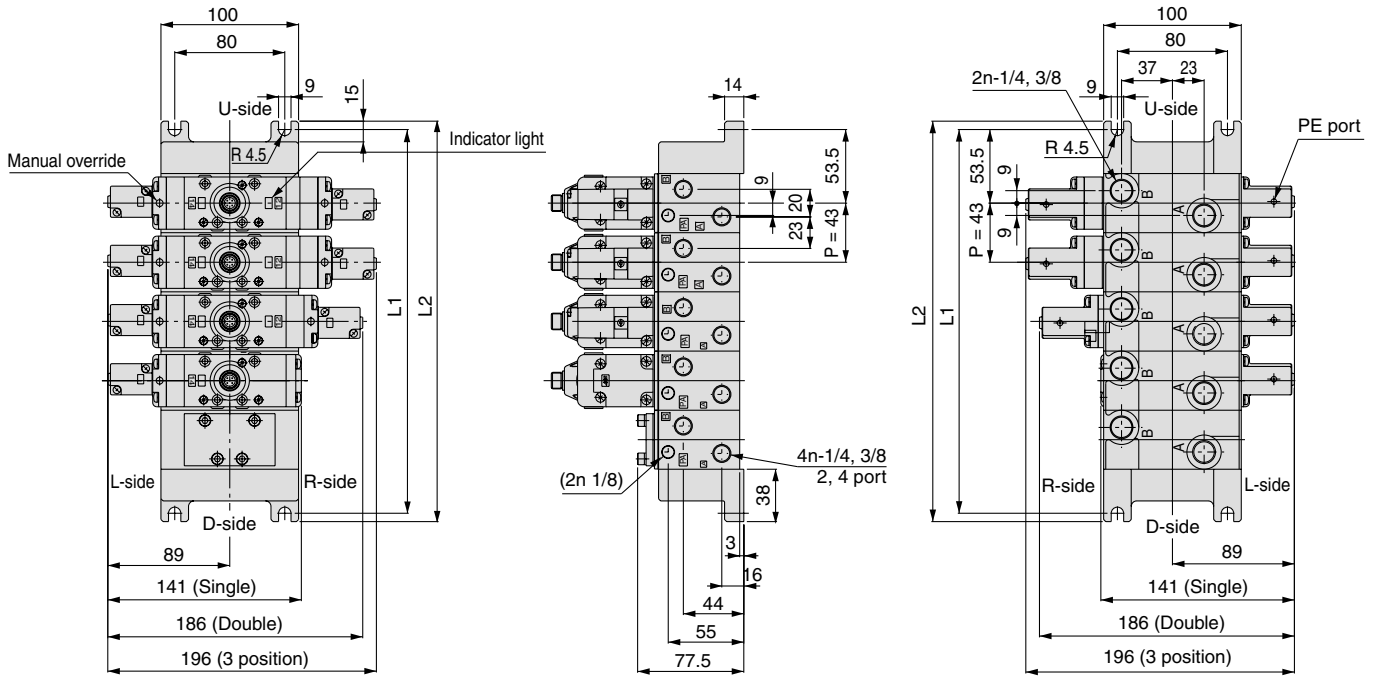


Dimensions

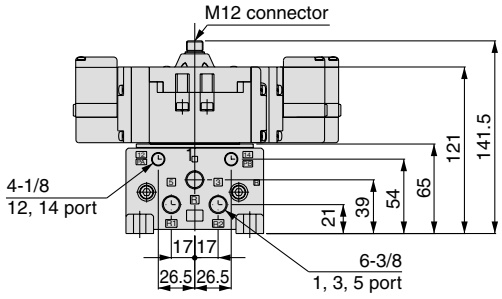
EVS7-6-FPG-D-□□M0



VV71□-□-□□□
(M Connector type)



Bottom ported



L: Dimensions

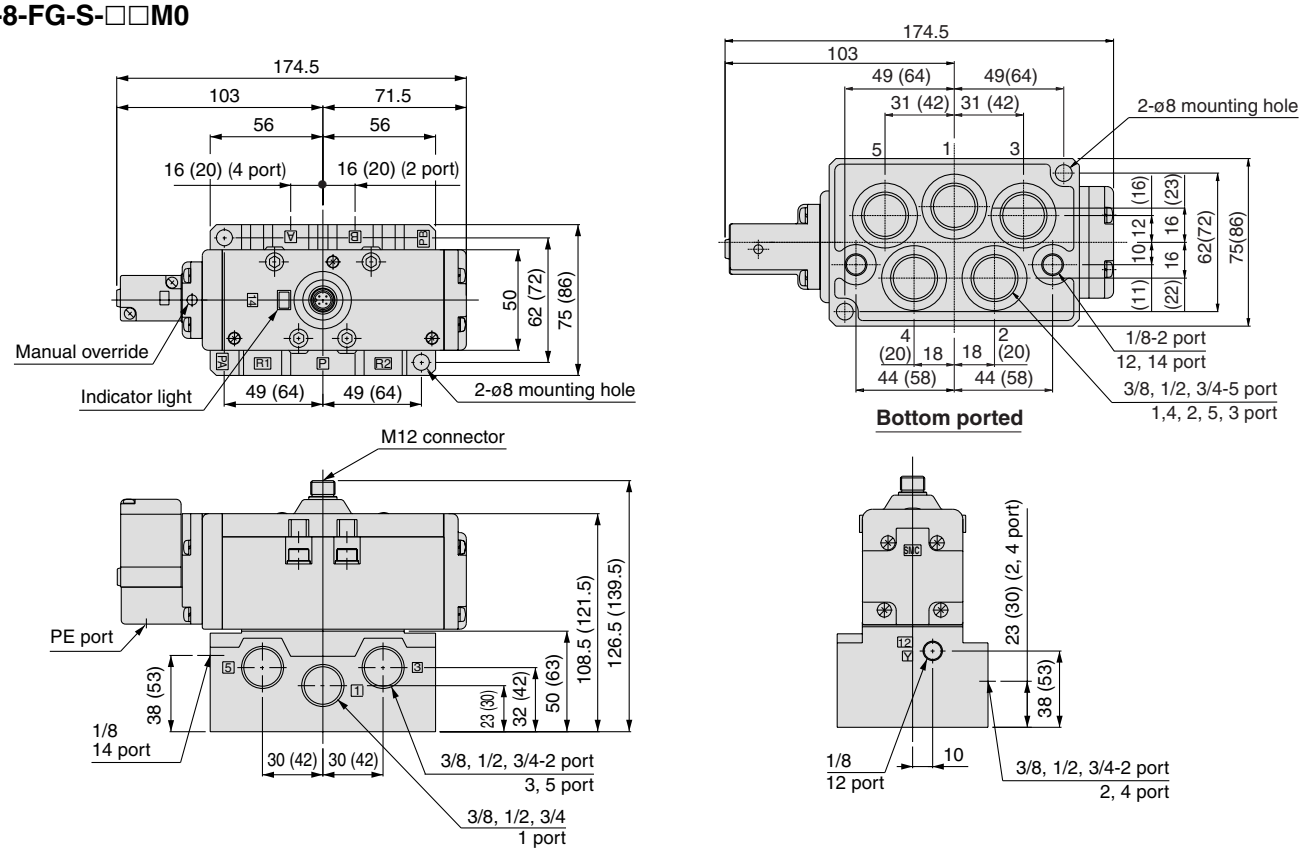
n: Stations

L \ n	1	2	3	4	5	6	7	8	9	10	Formula
L1	107	150	193	236	279	322	365	408	451	494	L1 = 43n + 64
L2	119	162	205	248	291	334	377	420	463	506	L2 = 43n + 76

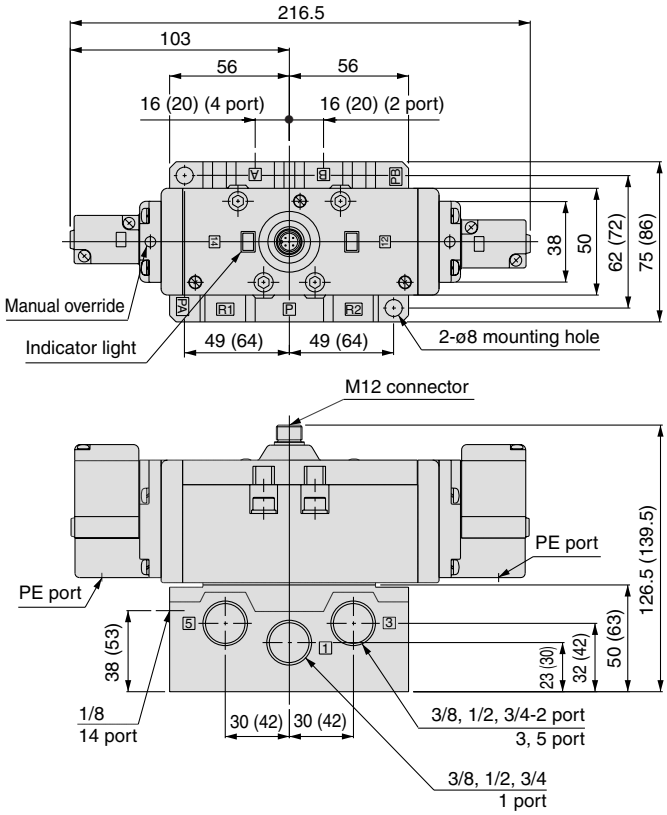
Series EVS7-□

Dimensions

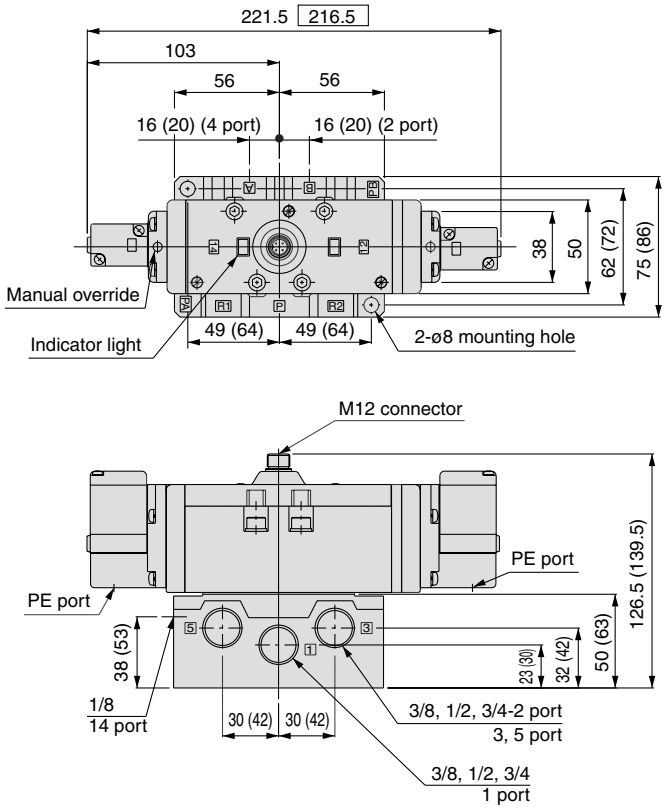
EVS7-8-FG-S-□□M0



EVS7-8-FG-D-□□M0



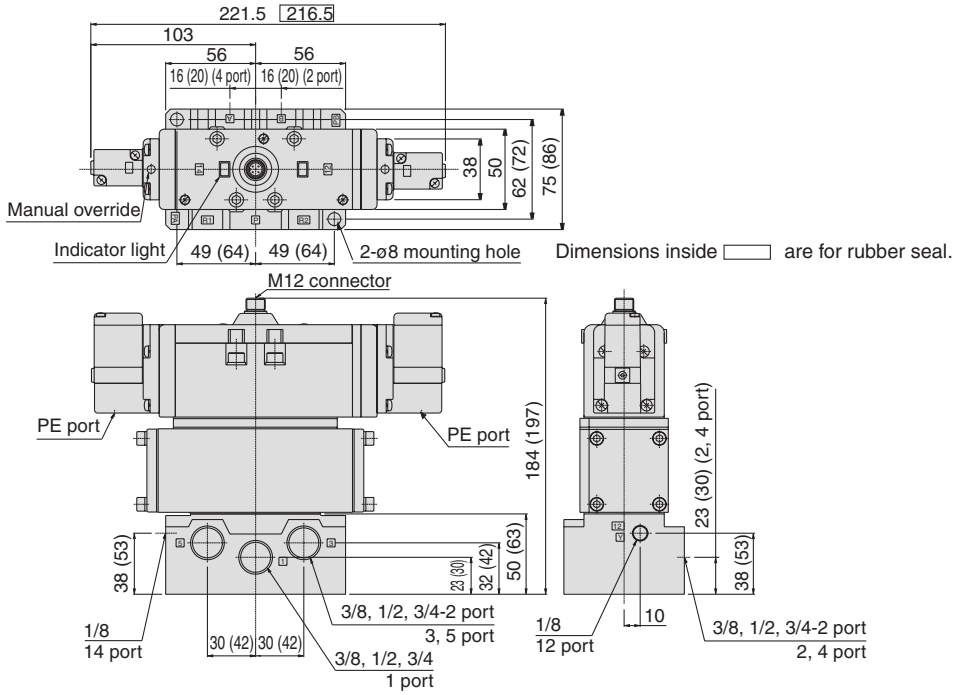
EVS7-8-F $^{H}_{J}$G-D-□□M0



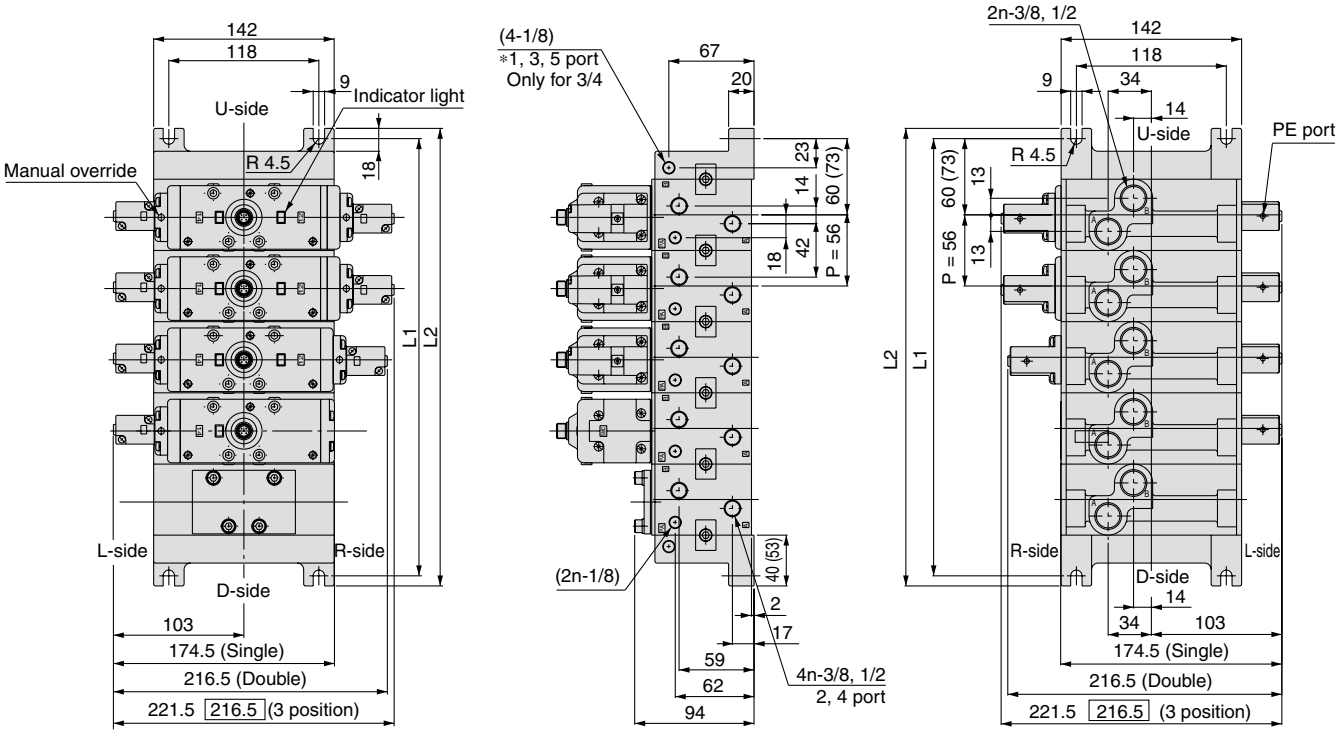
Dimension inside [ ] is for rubber seal.
Dimensions inside ( ) are for Sub-plate.

Dimensions

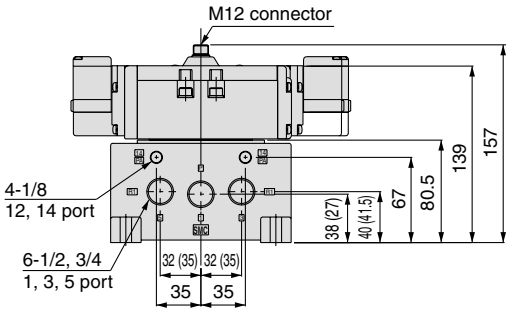
EVS7-8-FPG-D-□□M0



VV72□-□-□□□
(M connector type)



Bottom ported



L: Dimensions

n: Stations

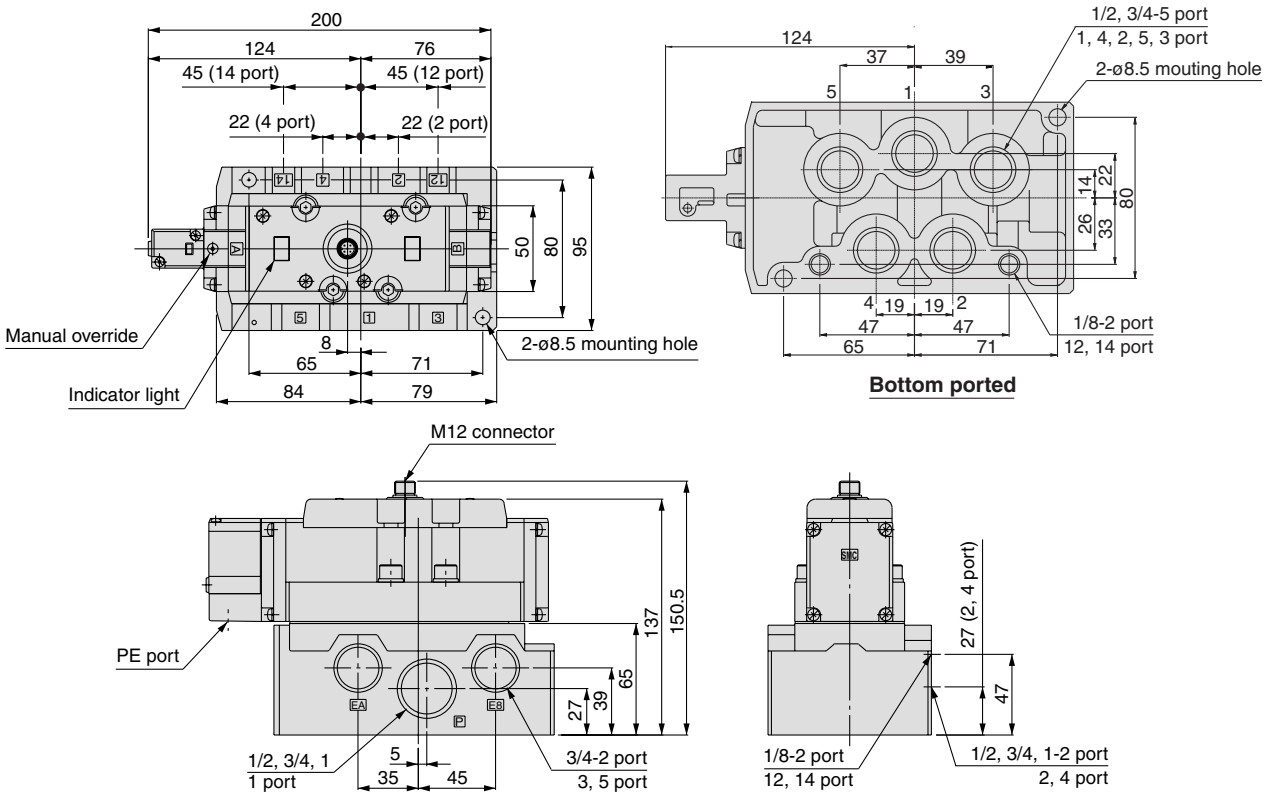
P, R1, R2 port	n / L	1	2	3	4	5	6	7	8	9	10	Formulas
Rc 1/2	L1	120	176	232	288	344	400	456	512	568	624	L1 = 56n + 64
	L2	136	192	248	304	360	416	472	528	584	640	L2 = 56n + 80
Rc 3/4	L1	146	202	258	314	370	426	482	538	594	650	L1 = 56n + 90
	L2	162	218	247	330	386	442	498	554	610	666	L2 = 56n + 106

Dimensions inside ( ) are for Rc 3/4.
Dimensions inside ▭ are for rubber seal.

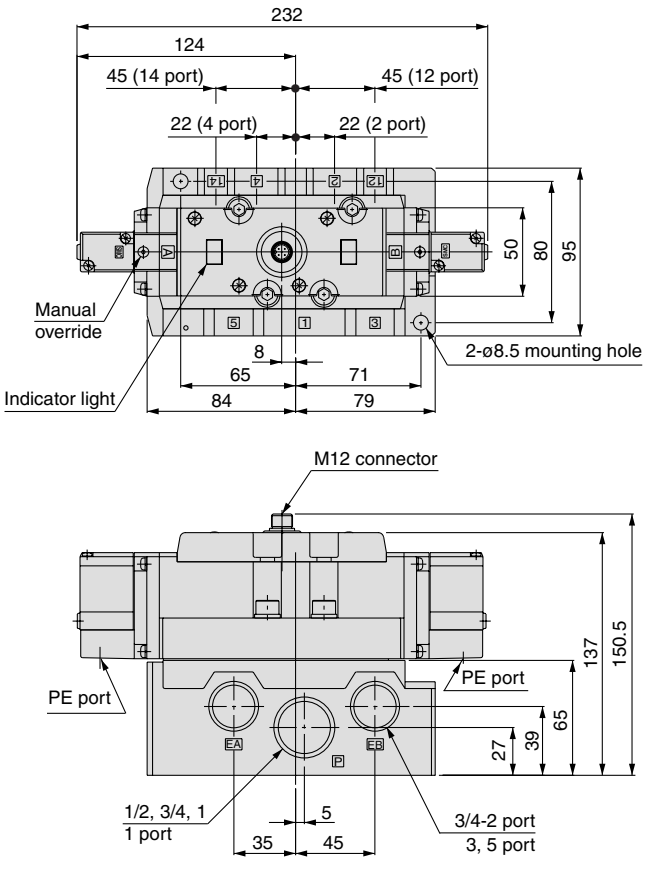
Series EVS7-□

Dimensions

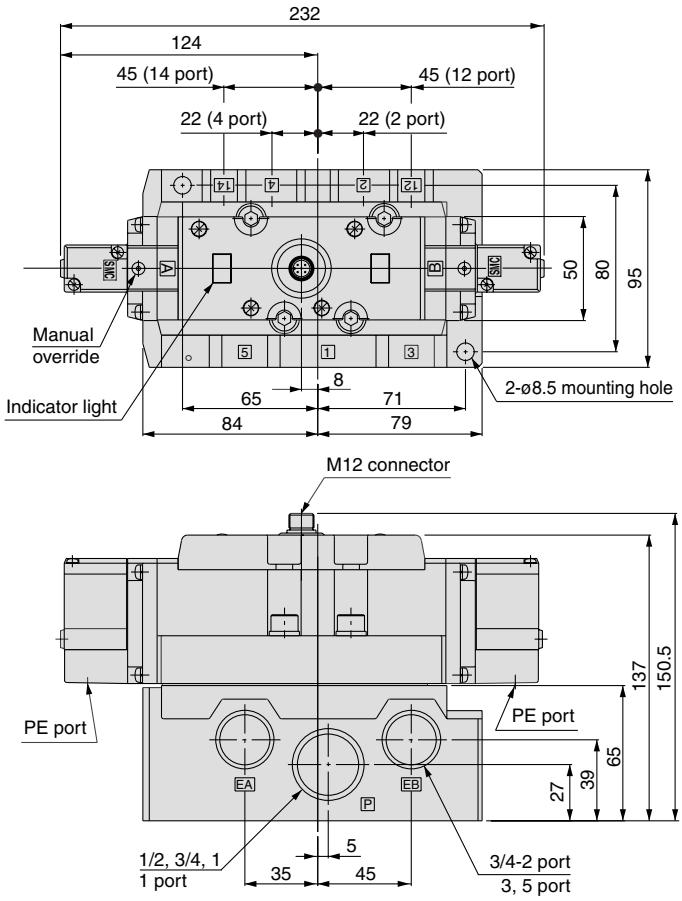
EVS7-10-FG-S-□□M0



EVS7-10-FG-D-□□M0



EVS7-10-F$^{H}_{J}$G-D-□□M0



Conforming to ISO Standard Solenoid Valve (with M Connector)

Series EVS1-01/1-02

(Size 1) (Size 2)

Large capacity

	Flow rate	Cylinder driving size
EVS1-01 (Size: 01)	1000 ℓ/min (ANR)	ø100
EVS1-02 (Size: 02)	400 ℓ/min (ANR)	ø80

Lightweight

Size 01 (3 position): 0.26 kg
Size 02 (3 position): 0.18 kg

ISO 15407-1 Interface

Size 01 **(EVS1-01)** and Size 02 **(EVS1-02)**
Interface conforms to ISO 15407-1

Accommodates enclosure IP65

Dust/Splashproof type

ISO Standard Solenoid Valve
Size 1,2/Single Unit
Series EVS1-01/1-02

How to Order

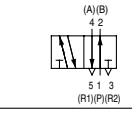
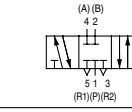
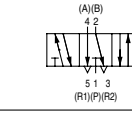
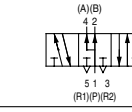
Valve

EVS1 — 01 — FG — S — 3 □ □ □ □ M0

Size

01	Size 01
02	Size 02

Passage symbol

FG	
FHG	
FJG	
FIG	

Number of solenoids

S	Single
D	Double

Rated coil voltage

3	24 VDC
4	12 VDC
9	Voltage other than above (50 VDC or less)

Option

Nil	None
Z	Light/Surge voltage suppressor

Sealing type

Nil	Metal seal
R	Rubber seal

Port size

Symbol	Piping specifications	Size 01	Size 02
Nil	Without sub-plate	○	○
A01	Side ported 1/8	○	○
A02	Side ported 1/4	○	—

Thread type

Nil	Rc
F	G
T	NPTF

Sub-plate

VS1 — 01 — A02 □

Size

01	Size 01
02	Size 02

Port size

Symbol	Piping specifications	Size 01	Size 02
A01	Side ported 1/8	○	○
A02	Side ported 1/4	○	—

Thread type

Nil	Rc
F	G
T	NPTF

Specifications

Model	Piping specifications			Weight (kg)
	Piping direction	Port size for 1(P), 2(B), 4(A)	Port size for 3(R2), 5(R1)	
VS1-01-A01	Horizontal	1/8		0.14
VS1-01-A02		1/4		
VS1-02-A01	Horizontal	1/8		0.07

Model

Series EVS1-01

Positions			Flow characteristics					
			1 → 4, 2 (P → A, B)			4, 2 → 5, 3 (A, B → EA, EB)		
			C	b	Cv	C	b	Cv
2 position	Single	Metal seal	3.10	0.10	0.60	3.40	0.10	0.70
		Rubber seal	3.60	0.28	0.90	4.20	0.20	1.00
	Double	Metal seal	3.10	0.10	0.60	3.40	0.10	0.70
		Rubber seal	3.60	0.28	0.90	4.20	0.20	1.00
3 position	Closed center	Metal seal	3.10	0.10	0.60	3.20	0.10	0.60
		Rubber seal	3.20	0.34	0.80	4.20	0.30	1.00
	Exhaust center	Metal seal	2.70	0.10	0.60	3.30	0.10	0.70
		Rubber seal	3.10	0.26	0.80	4.00	0.25	1.10
	Pressure center	Metal seal	3.20	0.10	0.70	3.20	0.10	0.60
		Rubber seal	4.40	0.25	1.00	3.60	0.25	1.00

Series EVS1-02

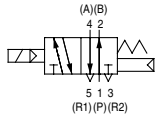
Positions			Flow characteristics					
			1 → 4, 2 (P → A, B)			4, 2 → 5, 3 (A, B → EA, EB)		
			C	b	Cv	C	b	Cv
2 position	Single	Metal seal	1.50	0.10	0.30	1.70	0.10	0.30
		Rubber seal	2.20	0.20	0.50	2.20	0.10	0.50
	Double	Metal seal	1.50	0.10	0.30	1.70	0.10	0.30
		Rubber seal	2.20	0.20	0.50	2.20	0.10	0.50
3 position	Closed center	Metal seal	1.50	0.10	0.30	1.60	0.10	0.30
		Rubber seal	2.10	0.20	0.50	2.10	0.10	0.40
	Exhaust center	Metal seal	1.30	0.10	0.20	1.60	0.10	0.20
		Rubber seal	2.00	0.16	0.50	2.10	0.10	0.40
	Pressure center	Metal seal	1.60	0.10	0.20	1.50	0.10	0.20
		Rubber seal	2.20	0.20	0.50	2.10	0.10	0.40

Note) Values for 2 position single from the cylinder port to the exhaust (from 2 to 3 and from 4 to 5) C (Sonic conductance) and b (Critical pressure ration) are subject to ISO 6358/JIS B 8390. Cv (Flow coefficient) is subject to ANSI/CNFPA T3.21.3.

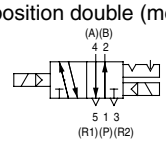
Series EVS1-01/1-02

JIS Symbol

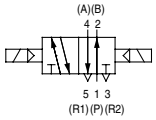
2 position single



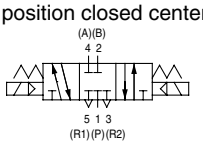
2 position double (metal)



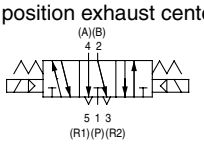
2 position double (rubber)



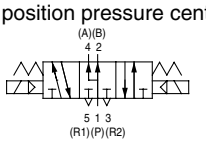
3 position closed center



3 position exhaust center



3 position pressure center



Standard Specifications

Valve specifications	Valve type		Metal seal	Rubber seal
	Fluid		Air, Inert gas	
	Maximum operating pressure		1.0 MPa	
	Minimum operating pressure	Single	0.1 MPa	0.15 MPa
		Double	0.1 MPa	0.1 MPa
		3 position	0.15 MPa	0.2 MPa
	Ambient and fluid temperature		–10° to 60°C (1)	–5° to 60°C (1)
	Lubrication		Not required (Non-lube type)	
	Manual override		Push type (Tool required)	
	Impact resistance/Vibration resistance		150, 30m/s² (2)	
	Enclosure		IP65 (Dust/Splashproof type)	
Electric specifications	Rated coil voltage		12 VDC, 24 VDC	
	Allowable voltage fluctuation		±10% of rated voltage	
	Type of coil insulation		Equivalent to class B	
	Power consumption (Current)	24 VDC	1 W DC (42 mA)	
		12 VDC	1 W DC (83 mA)	

Note 1) Use dry air to prevent condensation at low temperatures.

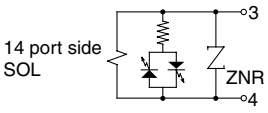
Note 2) Impact resistance: No malfunction resulted during an impact test using a drop impact tester. The test was performed one time each in the axial and right angle directions of the main valve and armature for both energized and de-energized conditions.

Vibration resistance: No malfunction resulted during an one-sweep test between 8.3 and 2000 Hz. The test was performed in the axial and right angle directions of the main valve and armature for both energized an de-energized conditions.

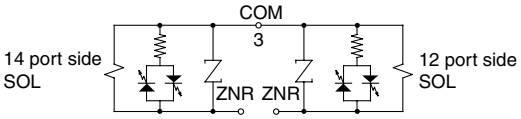
⚠Precautions

⚠Caution

Internal Wiring Specifications

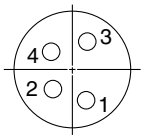


DC: Single



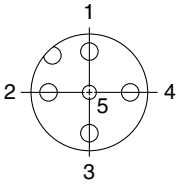
DC: Double

M8 Connector: Wiring specifications (EVS1-02)



Pin no.
1: Open
2: 12 port side SOL (+)
3: COM (–)
4: 14 port side SOL (+)

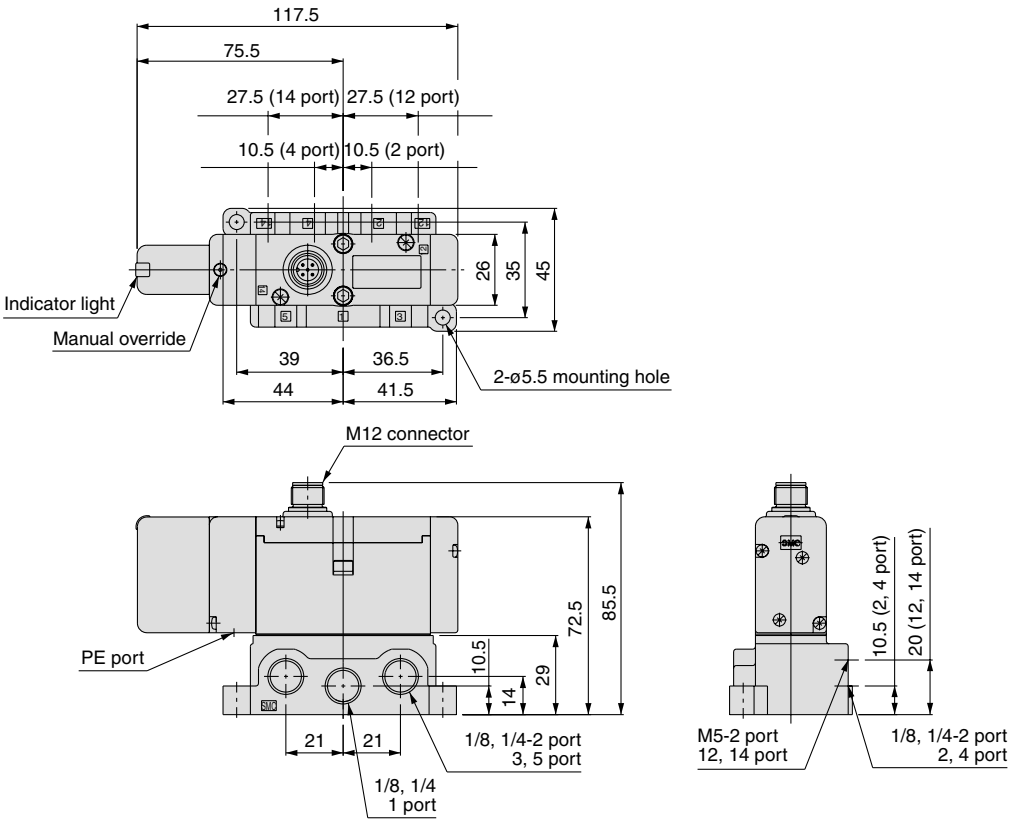
M12 Connector: Wiring specifications (EVS1-01)



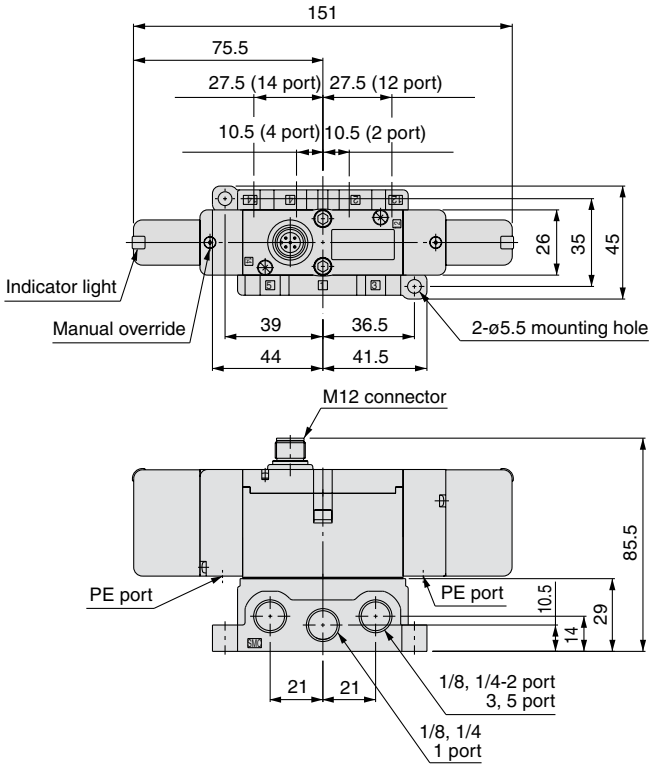
Pin no.
1: Open
2: 12 port side SOL (+)
3: COM (–)
4: 14 port side SOL (+)
5: Ground

Dimensions

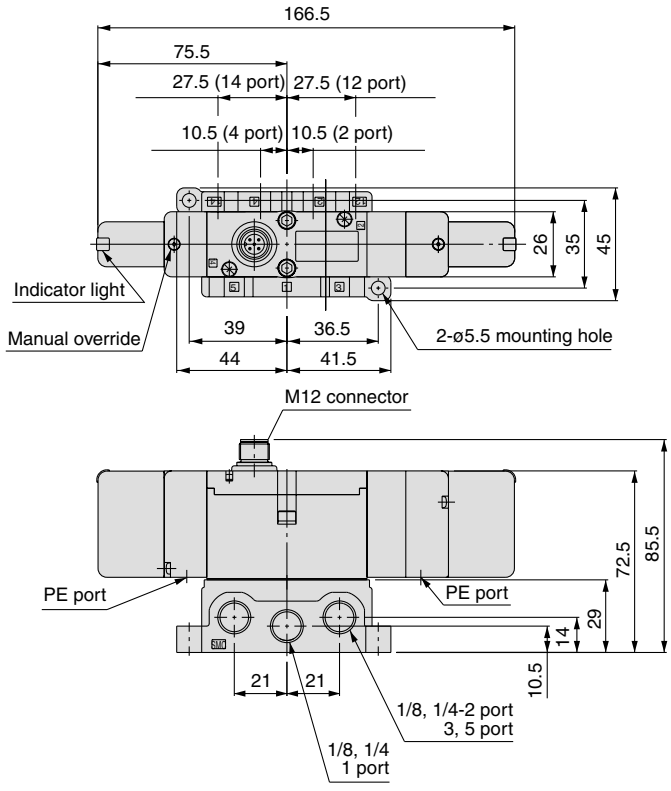
EVS1-01-FG-S-□□M0



EVS1-01-FG-D-□□M0



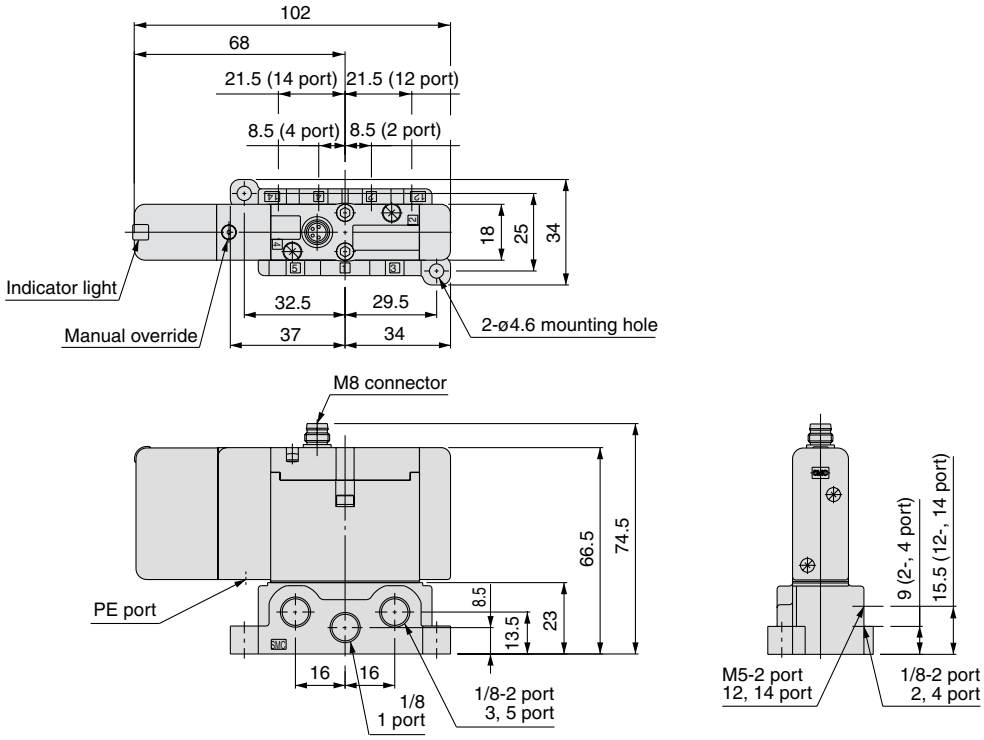
EVS1-01-F$^{H}_{J}$G-D-□□M0



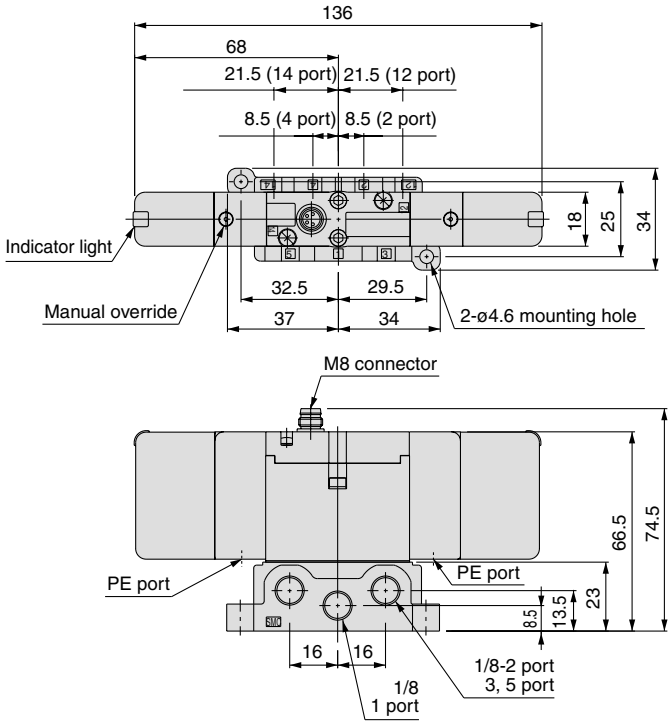
Series EVS1-01/1-02

Dimensions

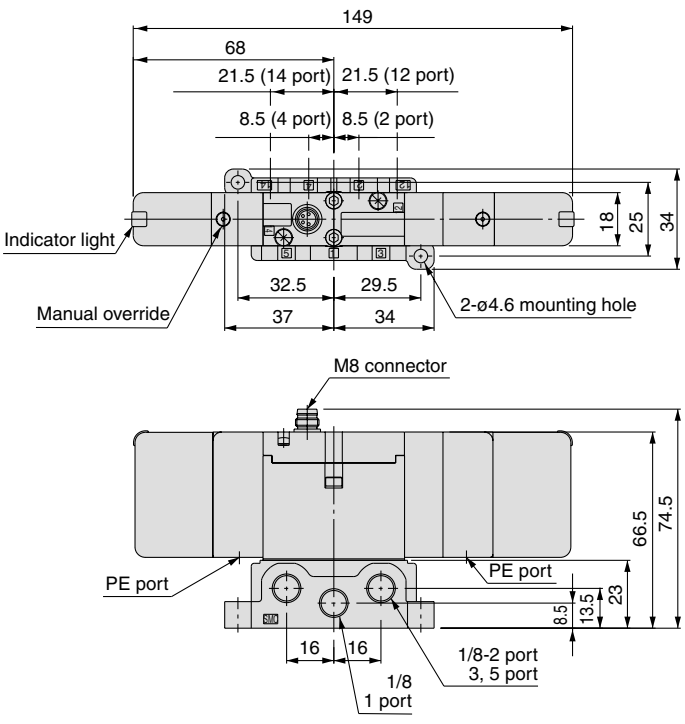
EVS1-02-FG-S-□□M0



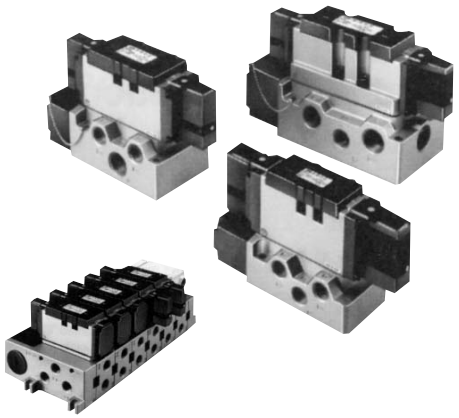
EVS1-02-FG-D-□□M0



EVS1-02-F$^{H}_{J}_{I}$G-D-□□M0



Product Profile:
ISO Interface Solenoid Valve, ISO 5599/II
Rubber Seal/Metal Seal
Series VSR8/VSS8



Choice of seals for maximum flexibility
Available in either high flow rubber seal (model VSR) or matched ground spool and sleeve (model VSS).

Low power consumption 1.8 W DC
Available in 2 or 3 position, single or double solenoid pilot configuration.

Long service life
- Rubber seal: 30 million cycles or more
- Metal seal: 50 million cycles or more

∗ Subject to SMC's own test data using clean and dry air.

Lightweight
- Size 1: 552 g (1.21 lb)
- Size 2: 824 g (1.81 lb)
- Size 3: 1,000 g (2.21 lb)

Top mounted manual override
Easy access for trouble shooting the circuit

Model

Size	Model	Seal	Effective area (Cv) (1)	Response time m (sec) (2)			Weight (3) g (lb)	Port size
				Single	Double	3 position		
1	VSR8-6	Rubber	36 (2.0)	30	30	50	551 (1.21)	1/4, 3/8, 1/2
	VSS8-6	Metal	32 (1.8)	25	20	45		
2	VSR8-8	Rubber	72 (4.0)	50	50	70	824 (1.81)	3/8, 1/2, 3/4
	VSS8-8	Metal	65 (3.6)	40	20	55		
3	VSR8-10	Rubber	97 (5.4)	80	50	95	1000 (2.21)	1/2, 3/4, 1
	VSS8-10	Metal	90 (5.0)	50	25	60		

Note 1) With port size 1/2 for VSR/VSS8-6, 3/4 for VSR/VSS8-8, 1 for VSR/VSS8-10.
Note 2) Subject to JIS B 8375-1981. At 0.5 MPa (71 psi)
Note 3) Single solenoid type without base.

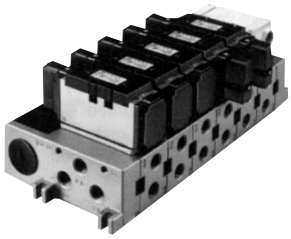
Specifications

			Rubber seal	Metal seal
Valve operation			Pilot operated, 5 port	
Fluid			Air, Inert gas	
Operating pressure range MPa (psi)			0.1 to 1.0 (14.5 to 145)	0.1 to 1.6 (14.5 to 230) Note)
Proof pressure MPa (psi)			1.5 (217)	2.4 (348)
Ambient and fluid temperature °C (°F) (2)			–5 to +50 (+23 to +122)	–20 to +60 (–4 to +140)
Max. operating frequency (cycle/sec)			8-6: 5; 8-8: 5, 8-10: 5	8-6: 20; 8-8: 15, 8-10: 10
			8-6: 3; 8-8: 3, 8-10: 2	8-6: 10; 8-8: 10, 8-10: 20
Lubrication			Not required	
Manual override			Non-locking push type	
Enclosure			Dusttight	
Coil rated voltage			100 VAC, 110 VAC, 200 VAC, 220 VAC, 24 VDC	
Allowable voltage range (%)			–15 to +10% of rated voltage	
Coil insulation			Class B or equivalent	
Apparent power (VA)	Inrush	50 Hz	5.6	
		60 Hz	5.0	
	Holding	50 Hz	3.4	
		60 Hz	2.3	
Power consumption (W)			1.8	
Surge voltage suppressor and indicator light			Available as option	

Note 1) Pilot pressure range should be 0.1 to 1 MPa (14.5 to 145 psi).
Note 2) Use dry air to prevent dew condensation when operating at low temperature.
Note 3) Subject to JIS B 8375-1975.

For details, please contact SMC.

Manifold Specifications



Standard Specifications

Maniflod block size		ISO Size 1	ISO Size 2	ISO Size 1
Applicable solenoid valve		VSR/S8-6	VSR/S8-8	VSR/S8-6
Number of stations		1 to 10		
Port size	A, B port	1/4, 3/8, 1/2, 3/4, 1		
	P, EA, PB port	1/4, 3/8, 1/2, 3/4, 1		
Individual SUP spacer		VV81-P-02/03/04□	VV82-P-03/04/06□	—
Individual EXH spacer		VV81-R-02/03/04□	VV82-R-03/04/06□	—
Interface speed control		VV8060-22A	VV8080-22A	—
Interface regulator		ARB250-00-□-1 NARB250-N0-□-1	ARB350-00-□-1 NARB350-N0-□-1	—
Blanking plate assembly		VVS8060-11A	VVS8080-11A	VVS8060-11A

How to Order Manifold

VV8 [1] [5] – [02] – [ ] [03] [D] [T]

Size

1	Size 1
2	Size 2
3	Size 3

Number of stations

1	1 station
⋮	⋮
10	10 stations

Note) "SU" and "TBU" require one station.

Location and size of A, B port

02	Side 1/4
03	Side 3/8
04	Side 1/2
06	Side 3/4
10	SIde 1
02B	Bottom 1/4
03B	Bottom 3/8
04B	Bottom 1/2

Option

Nil	None
TBU	With terminal box
SU	With SI unit
W	Splash proof

Size of P, EA, EB port

02	1/4
03	3/8
04	1/2
06	3/4
10	1

Location of P, EA, EB port

D	Bottom
U	Top

Port thread

Nil	Rc
T	NPTF
F	G