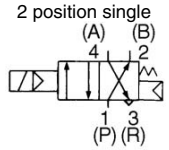
4 Port Solenoid Valve
Body Ported
Series VZ1000

How to Order

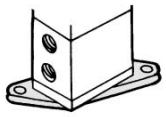
Non plug-in **VZ1120** — **5** (Rated voltage) **L** (Electrical entry) [ ] (Light/Surge voltage suppressor) — **M5** (Port size) — [ ] (Option)

Type of actuation

1	2 position single 

Option

F: With foot bracket



∗ Bracket is not mounted.

Port size

M5 x 0.8

Rated voltage

1	100 VAC, 50/60 Hz
2	200 VAC, 50/60 Hz
3∗	110 VAC, 50/60 Hz
4∗	220 VAC, 50/60 Hz
5	24 VDC
6∗	12 VDC
9∗	Other

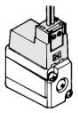
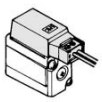
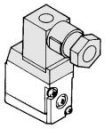
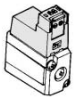
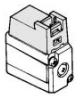
∗ Option

Light/Surge voltage suppressor

Nil	None
Z∗	With light/surge voltage suppressor
S	With surge voltage suppressor

∗ Not available for “GZ”, “HZ” and “DOZ”

Electrical entry

Grommet	L plug connector	M plug connector		DIN terminal
G: Lead wire length 300 mm	**L**: With lead wire (Length 300 mm)	**M**: With lead wire (Length 300 mm)	**MN**: Without lead wire	**D**: With connector
				
H: Lead wire length 600 mm	**LN**: Without lead wire	**LO**: Without connector	**MO**: Without connector	**DO**: Without connector
				

∗ Type “LN”, “MN”: with 2 sockets.

Refer to pages 3-3-13 to 3-3-16 for manifold use.

Option

Description	Part no.	Note
Foot bracket	DXT170-34-1B	With mounting screw (M3 x 8)

Applicable for cylinder actuation (up to ø16).

Compact size (Width: 15 mm)

Low power consumption: 1.8 W DC

Made to Order Specifications (For details, refer to page 3-3-85.)

Specifications

Valve configuration	Pilot type 4 port solenoid valve
Fluid	Air
Operating pressure range (MPa)	0.15 to 0.7
Ambient and fluid temperature (°C)	–10 to 50 (No freezing. Refer to page 3-13-4.)
Response time (ms) (at the pressure of 0.5 MPa) (1)	15 or less
Max. operating frequency (Hz)	15
Effective area	Refer to the table below.
Lubrication	Not required
Manual override	Non-locking push type
Exhaust throttle	Not available
Mounting orientation	Unrestricted
Shock/Vibration resistance (m/s²) (2)	300/50
Enclosure	Dustproof

Note 1) Based on dynamic performance test, JIS B 8375-1981. (Coil temperature: 20°C, at rated voltage, without surge suppressor)

Note 2) Impact resistance: No malfunction occurred when it is tested with a drop tester in the axial direction and at the right angles to the main valve and armature in both energized and de-energized states every once for each condition. (Values at the initial period)

Vibration resistance: No malfunction occurred in a one-sweep test between 45 and 1000 Hz. Test was performed at both energized and de-energized states in the axial direction and at the right angles to the main valve and armature. (Values at the initial period)

Solenoid Specifications

∗ Option

Electrical entry			Grommet (G)/(H), L plug connector (L), M plug connector (M), DIN terminal (D)
Coil rated voltage (V)	AC 50/60 Hz		100, 200, 24∗, 48∗, 110∗, 220∗
	DC		24, 6∗, 12∗, 48∗
Allowable voltage fluctuation (%)			–15 to +10% of rated voltage
Power consumption (W) Note) [Current mA]	DC		1.8 (With indicator light 2.1) [24 VDC: 75 (With indicator light 87.5)]
Apparent power (VA) Note) [Current mA]	AC	Inrush	4.5/50 Hz, 4.2/60 Hz [100 VAC: 45/50 Hz, 42/60 Hz; 200 VAC: 22.5/50 Hz, 21/60 Hz]
		Holding	3.5/50 Hz, 3/60 Hz [100 VAC: 35/50 Hz, 30/60 Hz; 200 VAC: 17.5/50 Hz, 15/60 Hz]
Surge voltage suppressor			DC: Diode, AC: ZNR
Indicator light			DC: LED (Red), AC: Neon bulb

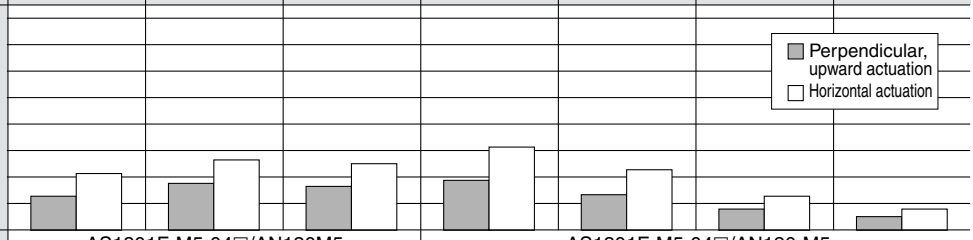
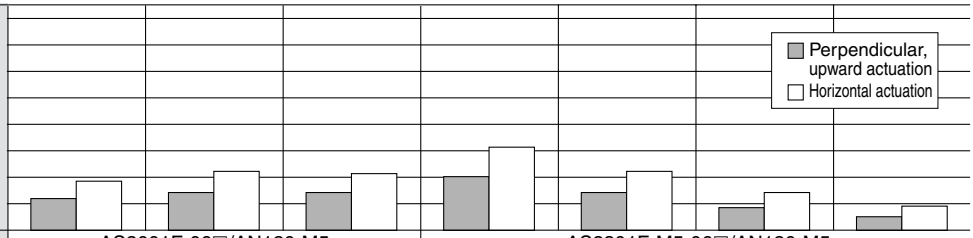
Note) At rated voltage

Effective Area/Weight

Valve model	Type of actuation	Effective area (mm²)		Port size	Weight (g)
VZ1120-□-M5	2 position single solenoid	1 → 4	0.6	M5 x 0.8	90
		2 → 3	1.5		
		1 → 2	1.0		
		4 → 3	0.9		

Cylinder Speed Chart

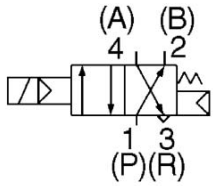
Use as a guide for selection.
Please confirm the actual conditions with SMC Sizing Program.

Series	Average speed (mm/s)	Bore size						
		Series CJ2 Pressure 0.5 MPa Load factor 50% Stroke 60 mm			Series CM2 Pressure 0.5 MPa Load factor 50% Stroke 300 mm			
		ø6	ø10	ø16	ø20	ø25	ø32	ø40
VZ1120-□□□-M5□ (Piping: ø4 x 1 m)	800 700 600 500 400 300 200 100							
Speed controller/Silencer		AS1301F-M5-04□/AN120M5			AS1301F-M5-04□/AN120-M5			
VZ1120-□□□-M5□ (Piping: ø6 x 1 m)	800 700 600 500 400 300 200 100							
Speed controller/Silencer		AS2001F-06□/AN120-M5			AS2301F-M5-06□/AN120-M5			

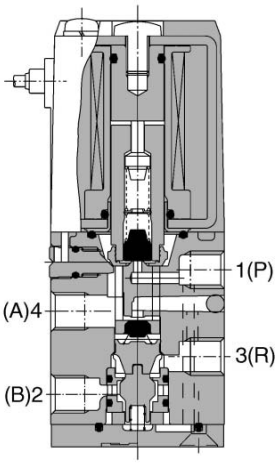
∗ It is when the cylinder is extending that is meter-out controlled by speed controller which is directly connected with cylinder, and its needle valve with being fully open.
∗ The average velocity of the cylinder is what the stroke is divided by the total stroke time.
∗ Load factor: ((Load weight x 9.8)/Theoretical force) x 100%

VK
VZ
VF
VFR
VP4
VZS
VFS
VS4
VQ7
EVS
VFN

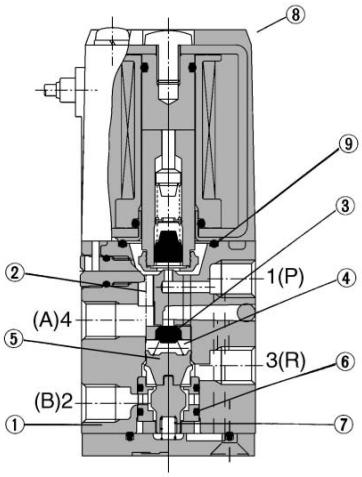
Construction



De-energized



Energized



Component Parts

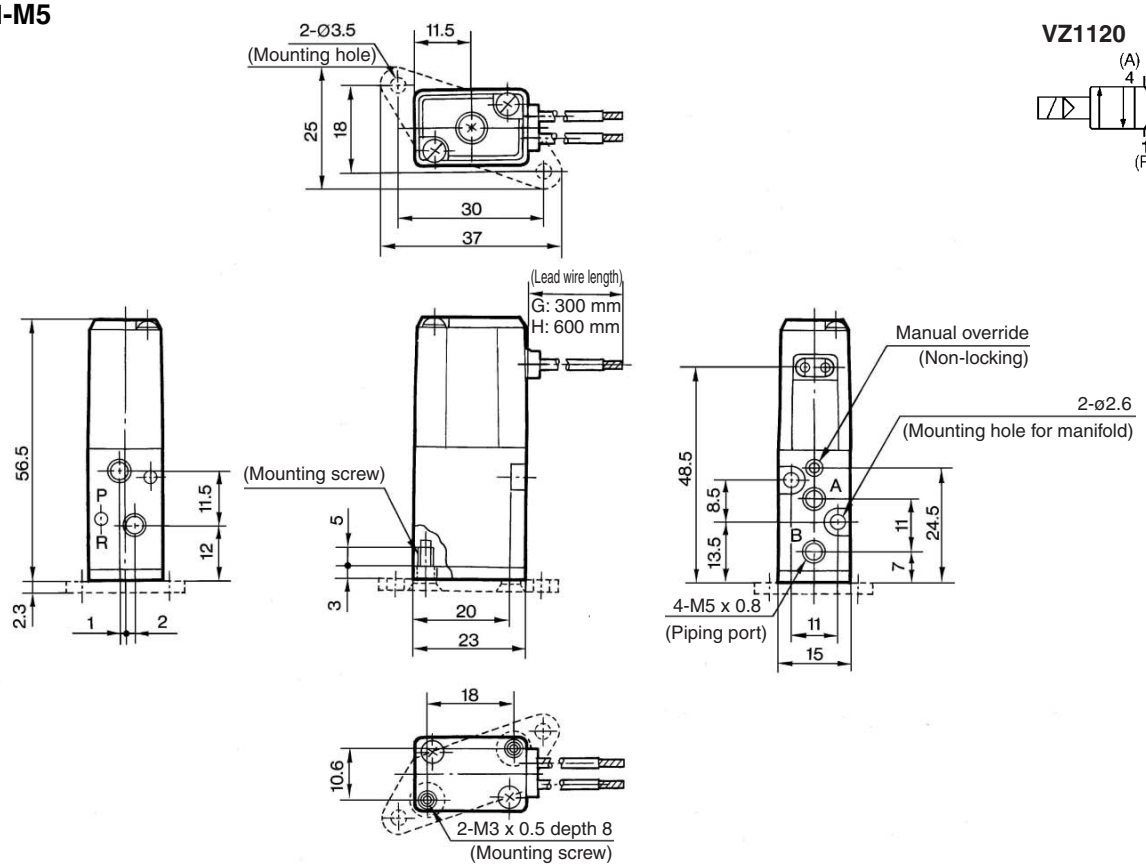
No.	Description	Material	Note
①	Body	ZDC	Platinum silver
②	Push rod	Resin	
③	EXH poppet	NBR	
④	Back up spring	Stainless steel	
⑤	V seal	FKM	
⑥	Retainer assembly	Brass, NBR	
⑦	Poppet spring	Stainless steel	

Replacement Parts

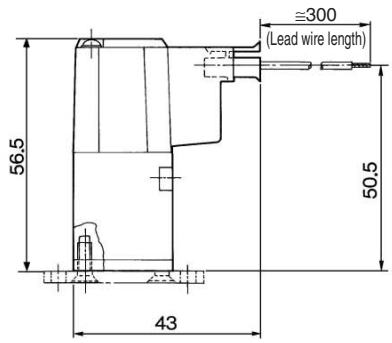
No.	Description	Material	Part no.	Note
⑧	Solenoid assembly	Epoxy/Stainless steel	DXT170-A-□□□	
⑨	O-ring	NBR	13 x 11 x 1	Common with Series VZ$^{3}_{5}$000

2 Position Single

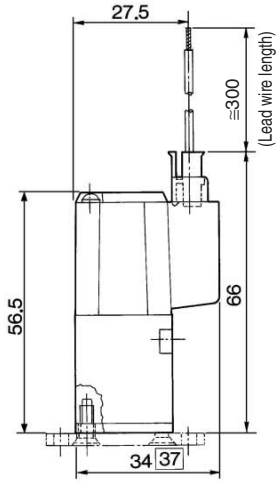
Grommet (G), (H)
VZ1120-□$^{G}_{H}$□-M5



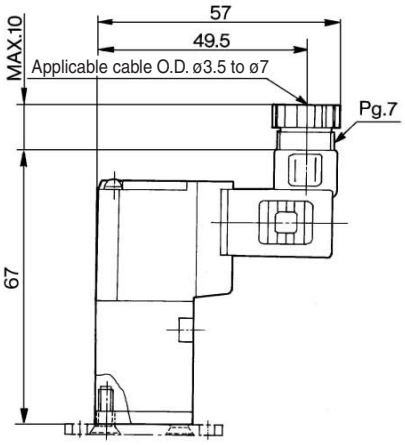
L plug connector (L)
VZ1120-□L□-M5



M plug connector (M)
VZ1120-□M□-M5



DIN terminal (D)
VZ1120-□D□-M5



□: With light/surge voltage suppressor

Made to Order Specifications:

Please contact SMC for detailed specifications, dimensions, and delivery.

2. Solenoid Valve: Special Manual Override

Applicable solenoid valve series

VZ3000
(Non plug-in type only)

Model no.

VZ3 □□□–□□□A(–□)

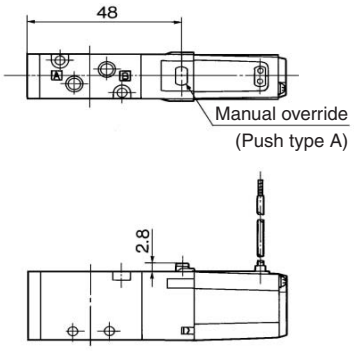
Entry is the same as standard products.

Manual override

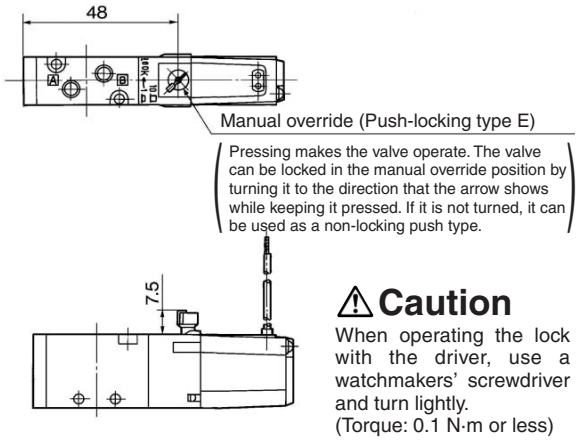
A	Push type A
E	Push-locking type E

Dimensions: Single

Push type A



Push-locking type E



⚠Caution

When operating the lock with the driver, use a watchmakers' screwdriver and turn lightly.
(Torque: 0.1 N·m or less)

Note) Because the manual override unit protrudes, the manual override could activate unintentionally if the protrusion is touched or an object falls on it. Therefore, take the proper preventative measures.

3. Solenoid Valve: Opposite Mount of Solenoid Assembly

Applicable solenoid valve series

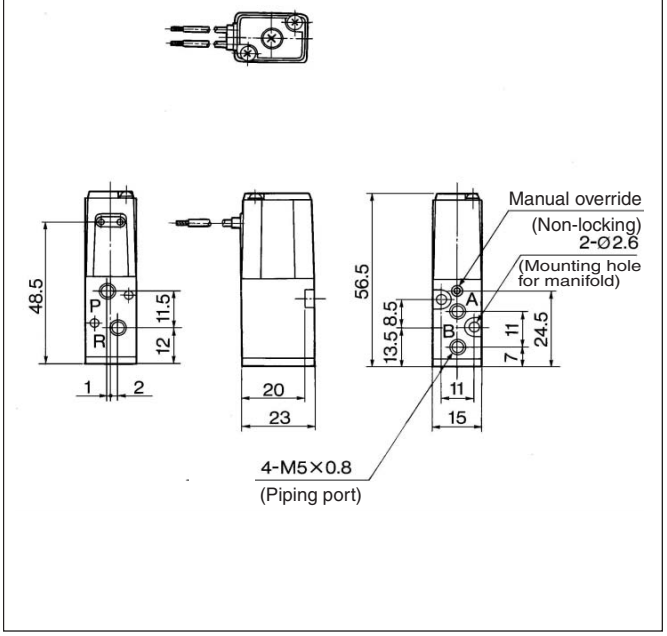
VZ1000/3000/5000
(Non plug-in type only)

Model no.

VZ1/3/5 □□□–□□□□(–□)–X1

Entry is the same as standard products.

Dimensions: VZ1120-□G-M5-X1



Made to Order Specifications:

Please contact SMC for detailed specifications, dimensions, and delivery.

5. DIN Rail Manifold

Applicable solenoid valve series

VZ1000

How to Order Applicable Solenoid Valves

Plug-in VZ1120 — 5 F Z (Note) — M5

Non plug-in VZ1120 — 5 L □ — M5

Same as page 3-3-9

Note) Please contact SMC in the case of without indicator light.

Manifold Specifications

Model		Type 25	Type 25F
Manifold type		Stacking type, non plug-in type	Stacking type, plug-in type
P(SUP), R(EXH)		Common SUP and EXH	
Valve stations		2 to 20 stations	2 to 20 stations
4(A), 2(B) port location		Valve	
Port size	1(P), 3/5(R) port	C6 (One-touch fitting for ø6)	
	4(A), 2(B) port	M5 x 0.8	
Valve effective [1] area (mm^2)	VZ1120	1 → 2: 0.48, 4 → 3: 0.85	
Connector		—	MIL-C-24308 Applicable for JIS-X-5101 D-sub connector
Internal wiring		—	COM specifications [2]

Note 1) Value at manifold base mounted, 2 position single operating
Note 2) It is available at +COM or –COM.

How to Order Manifold

Instruct by specifying the valves and blanking plate assembly to be mounted on the manifold along with the manifold base model no.

(Example) VV4Z1-25FD-06-00C····1 pc. (Manifold base)
∗VZ1120-5FZ-M5·····5 pcs. (Valve)
∗VZ1000-10-1A·····1 pc. (Blanking plate assembly)

└→The asterisk denotes the symbol for assembly. Prefix it to the part nos. of the solenoid valve, etc.