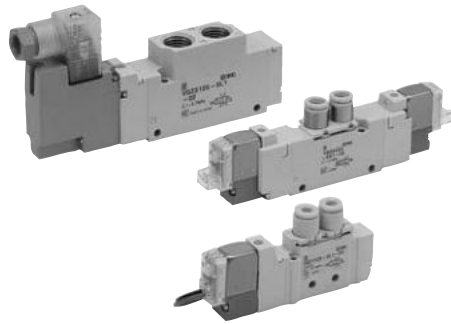


# Series VQZ1000/2000/3000



## Specifications

Type		Metal seal	Rubber seal
<b>Fluid</b>		Air, Inert gas	
<b>Max. operating pressure (MPa)</b>		0.7 (High pressure type: 1.0)	0.7
<b>Min. operating pressure (MPa)</b>	<b>2 position</b>	0.1	0.15
	<b>3 position</b>		0.2
<b>Ambient and fluid temperature (°C)</b>		-10 to 50 (No freezing)	
<b>Max. operating frequency (Hz)</b>	<b>2 position single, double</b>	20	5
	<b>3 position</b>	10	3
<b>Manual override</b>		Non-locking push type, Locking type (Tool required)	
<b>Pilot exhaust method</b>		Individual exhaust	
<b>Lubrication</b>		Not required	
<b>Mounting orientation</b>		Single: Free Double, 3 position: Main valve must be horizontal.	Free
<b>Impact/Vibration resistance (m/s<sup>2</sup>)</b> Note 1)		150/30	
<b>Enclosure*</b>		Dustproof (DIN terminal: IP65 Note 2))	

\* Based on IEC60529  
 Note 1) 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. (Value in the initial state)  
 Vibration resistance: No malfunction occurred in one sweep test between 45 and 2000 Hz. Test was performed to axis and right angle directions of the main valve and armature when pilot signal is ON and OFF. (Value in the initial state)  
 Note 2) When IP65 compliant DIN terminals are selected: VQZ□21□-□Y□□W1-□-□

## Options

High speed response type
High pressure type (Metal seal type only)
External pilot type (Except VQZ1000)*

\* For details on external pilot type, refer to page 933.



**Made to Order**  
(For details, refer to page 975.)

Symbol	Description
X30	Pilot valve common exhaust
X90	Main valve fluoro-rubber
X113	All fluoro-rubber

## Solenoid Specifications

Electrical entry		Grommet (G)		M-type plug connector (M)	
		L-type plug connector (L)		DIN terminal (Y)	
		G, L, M		Y	
<b>Coil rated voltage (V)</b>	<b>DC</b>	24, 12			
	<b>AC 50/60 Hz</b>	100, 110, 200, 220*			
<b>Allowable voltage fluctuation</b>		±10% of rated voltage			
<b>Power consumption (W)</b>	<b>DC</b>	<b>Standard</b>	0.35 [(With light: 0.4 (DIN terminal with light: 0.45)]		
		<b>High speed response, high pressure</b>	0.9 [(With light: 0.95 (DIN terminal with light: 1.0)]		
<b>Apparent power (VA)*</b>	<b>AC</b>	<b>100V</b>	0.78 (With light: 0.81)	0.78 (With light: 0.87)	
		<b>110V [115V]</b>	0.86 (With light: 0.89)	0.86 (With light: 0.87)	
		<b>200V</b>	1.18 (With light: 1.22)	1.15 (With light: 1.30)	
		<b>220V</b>	1.30 (With light: 1.34)	1.27 (With light: 1.46)	
		<b>[230V]</b>	1.42 (With light: 1.46)	1.39 (With light: 1.60)	
<b>Surge voltage suppressor</b>		Varistor			
<b>Indicator light</b>		LED (Neon light when AC with DIN terminal)			

\* In common between 110 VAC and 115 VAC, and between 220 VAC and 230 VAC.  
 \* For 115 VAC and 230 VAC, the allowable voltage is -15% to +5% of rated voltage.

## Flow Characteristics

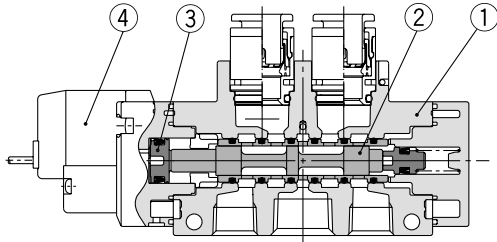
Series	Configuration		Model	Flow characteristics						Response time (ms) Note 1)				Note 2) Mass (g)	
				1→4/2 (P→A/B)			4/2→5/3 (A/B→EA/EB)			Standard: 0.35 W	High speed response: 0.9 W	High pressure: 0.9 W	AC		
				C [dm <sup>3</sup> /(s·bar)]	b	Cv	C [dm <sup>3</sup> /(s·bar)]	b	Cv						
VQZ1000	2 position	Single	Metal seal	VQZ1120	0.54	0.20	0.13	0.54	0.26	0.13	17 or less	12 or less	15 or less	29 or less	45
			Rubber seal	VQZ1121	0.90	0.40	0.26	0.71	0.40	0.19	17 or less	12 or less	—	34 or less	
	Double	Metal seal	VQZ1220	0.54	0.20	0.13	0.54	0.26	0.13	10 or less	10 or less	13 or less	13 or less	62	
		Rubber seal	VQZ1221	0.90	0.40	0.26	0.71	0.40	0.19	10 or less	10 or less	—	13 or less		
	3 position	Closed center	Metal seal	VQZ1320	0.55	0.29	0.13	0.50	0.25	0.08	25 or less	20 or less	26 or less	40 or less	65
			Rubber seal	VQZ1321	0.87	0.38	0.23	0.68	0.39	0.18	30 or less	25 or less	—	47 or less	
Exhaust center		Metal seal	VQZ1420	0.55	0.28	0.13	0.54	0.26	0.13	25 or less	20 or less	26 or less	40 or less		
Pressure center	Rubber seal	VQZ1421	0.87	0.38	0.23	0.71	0.40	0.19	30 or less	25 or less	—	47 or less			
VQZ2000	2 position	Single	Metal seal	VQZ2120	1.2	0.21	0.30	1.4	0.20	0.32	18 or less	14 or less	18 or less	34 or less	65
			Rubber seal	VQZ2121	1.7	0.39	0.45	1.6	0.35	0.44	20 or less	15 or less	—	36 or less	
	Double	Metal seal	VQZ2220	1.2	0.21	0.30	1.4	0.20	0.32	10 or less	10 or less	13 or less	13 or less	84	
		Rubber seal	VQZ2221	1.7	0.39	0.45	1.6	0.35	0.44	12 or less	12 or less	—	15 or less		
	3 position	Closed center	Metal seal	VQZ2320	1.1	0.21	0.26	1.1	0.24	0.26	28 or less	23 or less	30 or less	44 or less	91
			Rubber seal	VQZ2321	1.4	0.33	0.35	1.4	0.37	0.36	30 or less	25 or less	—	47 or less	
Exhaust center		Metal seal	VQZ2420	1.1	0.23	0.28	1.4	0.20	0.32	28 or less	23 or less	30 or less	44 or less		
		Rubber seal	VQZ2421	1.4	0.33	0.35	1.6	0.35	0.44	30 or less	25 or less	—	47 or less		
Pressure center	Metal seal	VQZ2520	1.3	0.28	0.34	1.2	0.27	0.30	28 or less	23 or less	30 or less	44 or less			
	Rubber seal	VQZ2521	1.7	0.34	0.44	1.4	0.37	0.36	30 or less	25 or less	—	47 or less			
VQZ3000	2 position	Single	Metal seal	VQZ3120	2.4	0.23	0.56	2.4	0.19	0.54	21 or less	17 or less	22 or less	34 or less	108
			Rubber seal	VQZ3121	3.1	0.34	0.79	3.2	0.38	0.81	33 or less	25 or less	—	57 or less	
	Double	Metal seal	VQZ3220	2.4	0.23	0.56	2.4	0.19	0.54	10 or less	10 or less	13 or less	13 or less	125	
		Rubber seal	VQZ3221	3.1	0.34	0.79	3.2	0.38	0.81	15 or less	15 or less	—	20 or less		
	3 position	Closed center	Metal seal	VQZ3320	2.3	0.19	0.54	2.1	0.21	0.54	33 or less	25 or less	33 or less	53 or less	136
			Rubber seal	VQZ3321	2.7	0.30	0.66	2.4	0.33	0.62	35 or less	30 or less	—	59 or less	
Exhaust center		Metal seal	VQZ3420	2.3	0.19	0.54	2.4	0.19	0.54	33 or less	25 or less	33 or less	53 or less		
		Rubber seal	VQZ3421	2.7	0.30	0.66	3.2	0.38	0.81	35 or less	30 or less	—	59 or less		
Pressure center	Metal seal	VQZ3520	2.5	0.25	0.60	2.1	0.18	0.47	33 or less	25 or less	33 or less	53 or less			
	Rubber seal	VQZ3521	3.2	0.38	0.82	2.4	0.33	0.62	35 or less	30 or less	—	59 or less			

Note 1) Based on JIS B 8375-1981 (Supply pressure: 0.5 MPa; with light/surge voltage suppressor: clean air)  
 Response time is null to the de-energized state.

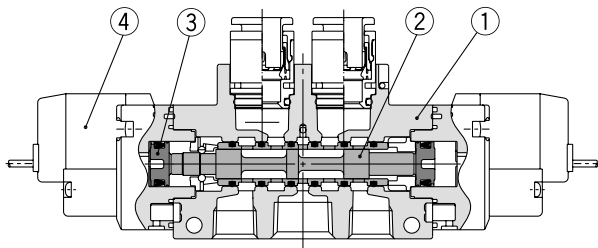
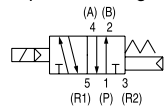
# Body Ported *Series VQZ1000/2000/3000*

## Construction: VQZ1000/2000/3000

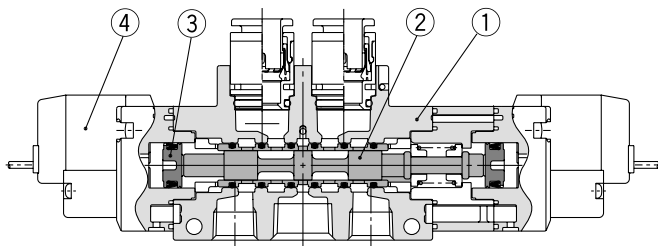
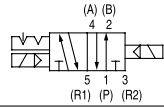
### Metal seal type



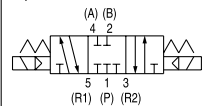
2 position single



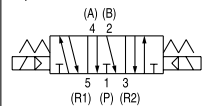
2 position double



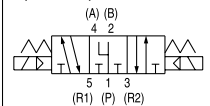
3 position closed center



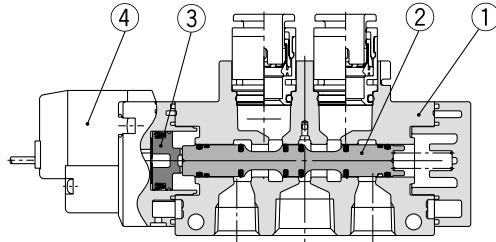
3 position exhaust center



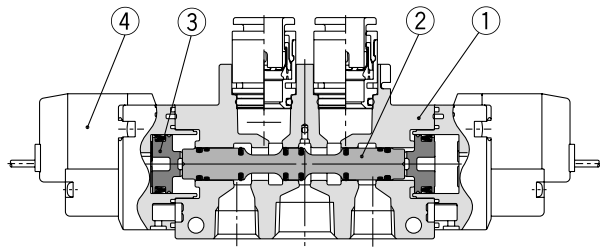
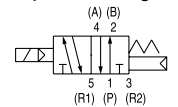
3 position pressure center



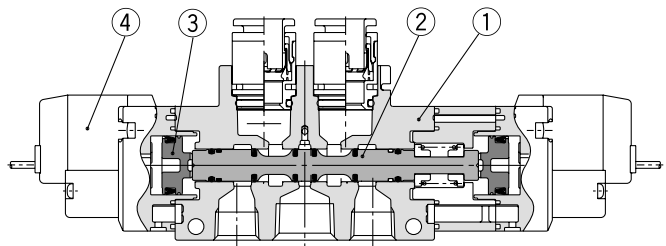
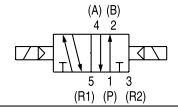
### Rubber seal type



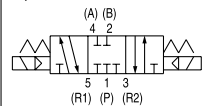
2 position single



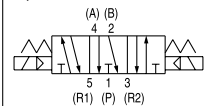
2 position double



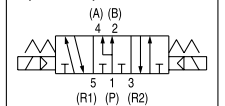
3 position closed center




3 position exhaust center



3 position pressure center



 Note) Except metal seal type of the VQZ1000.

SJ

SY

SV

SYJ

SZ

VP4

S0700

VQ

VQ4

VQ5

VQC

**VQZ**

SQ

VFS

VFR

VQ7

### Component Parts

No.	Description	Material	Note
1	<b>Body</b>	Aluminum die-casted	
2	<b>Spool, Sleeve</b>	Stainless steel	Metal seal
	<b>Spool valve</b>	Aluminum/HNBR	Rubber seal
3	<b>Piston</b>	Resin	
4	<b>Pilot valve assembly</b>	—	

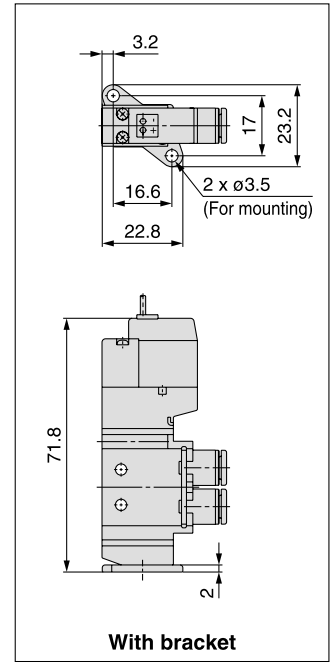
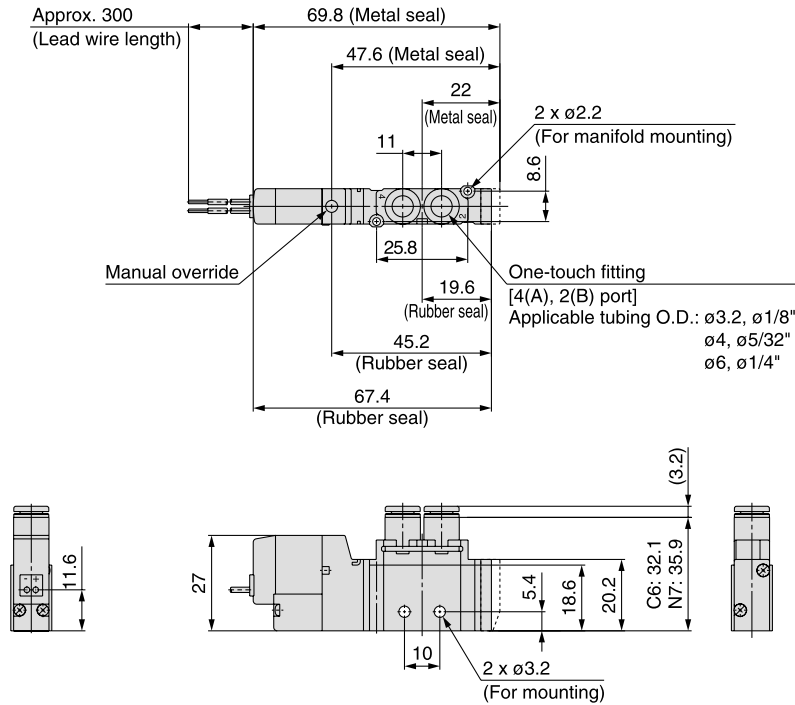
Note) For "How to Order Pilot Valve Assembly", refer to page 934.

# Series VQZ1000/2000/3000

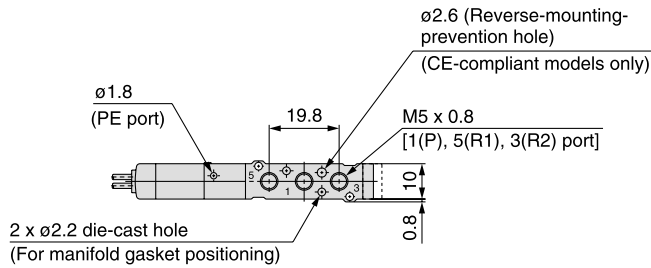
## Dimensions: VQZ1000

### 2 Position Single/3 Port for Mixture Mounting

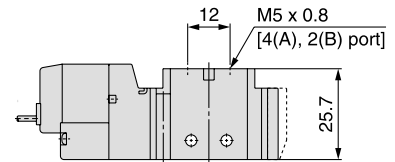
Grommet (G): VQZ1 $\frac{1}{8}$  2 $\frac{0}{1}$  -□G□1-C3, C4, C6



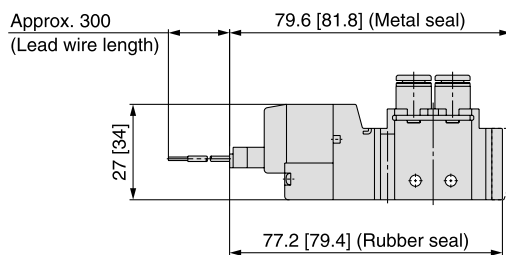
Note) For bracket assembly part no., refer to page 934.



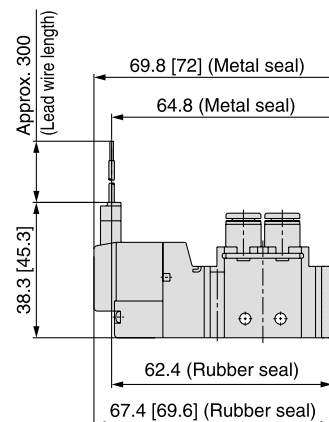
VQZ1 $\frac{1}{8}$  2 $\frac{0}{1}$  -□G□1-M5



L-type plug connector (L): VQZ1 $\frac{1}{8}$  2 $\frac{0}{1}$  -□L□1-C3, C4, C6



M-type plug connector (M): VQZ1 $\frac{1}{8}$  2 $\frac{0}{1}$  -□M□1-C3, C4, C6

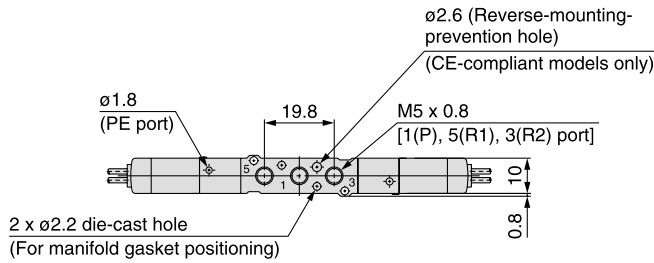
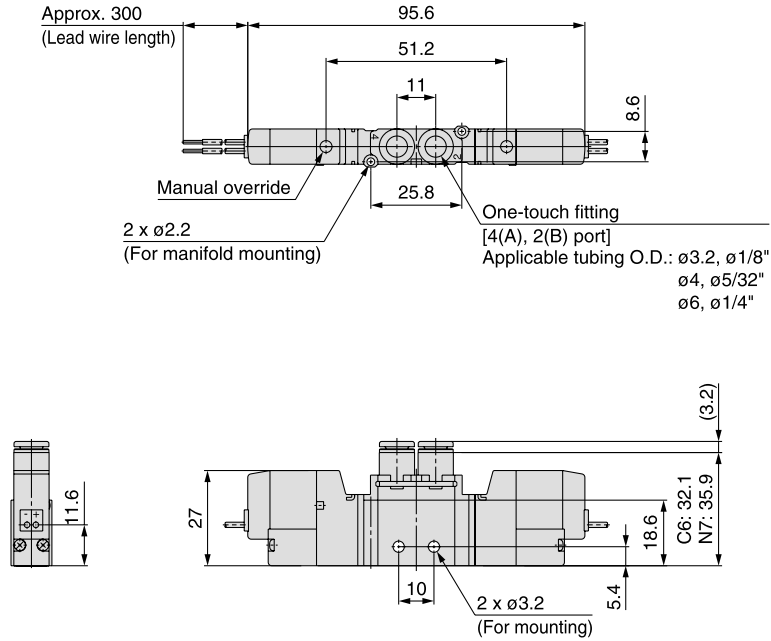


# Body Ported *Series VQZ1000/2000/3000*

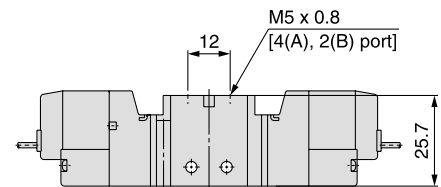
## Dimensions: VQZ1000

### 2 Position Double

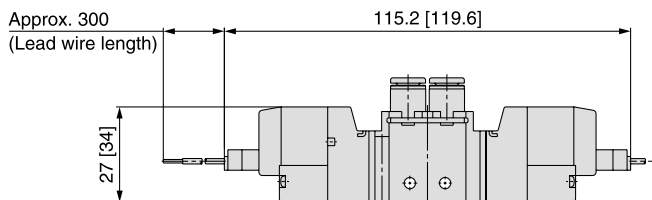
Grommet (G): VQZ122 <sup>0</sup>/<sub>1</sub> - □G□1-C3, C4, C6



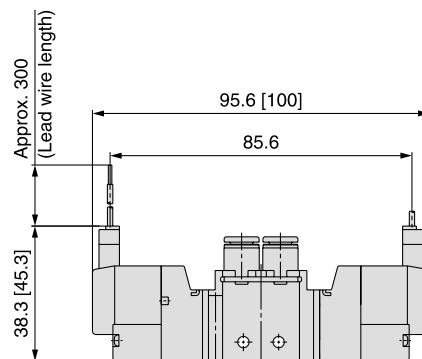
VQZ122 <sup>0</sup>/<sub>1</sub> - □G□1-M5



L-type plug connector (L): VQZ122 <sup>0</sup>/<sub>1</sub> - □L□1-C3, C4, C6



M-type plug connector (M): VQZ122 <sup>0</sup>/<sub>1</sub> - □M□1-C3, C4, C6



SJ

SY

SV

SYJ

SZ

VP4

S0700

VQ

VQ4

VQ5

VQC

**VQZ**

SQ

VFS

VFR

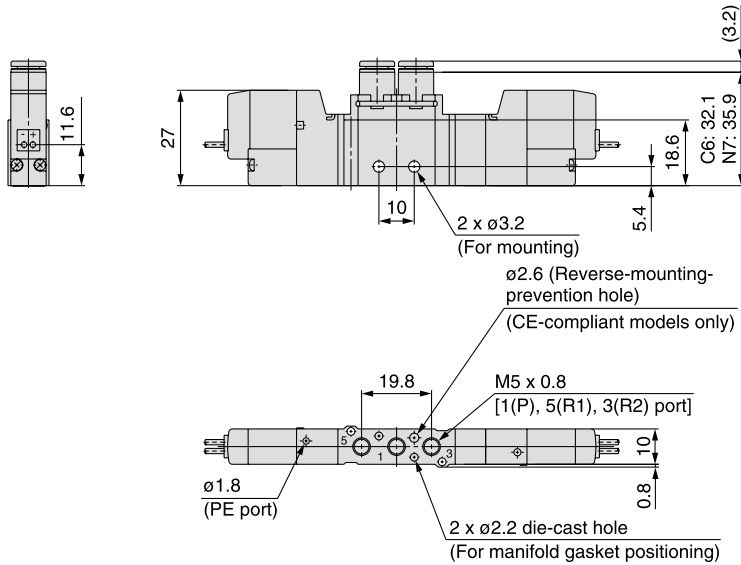
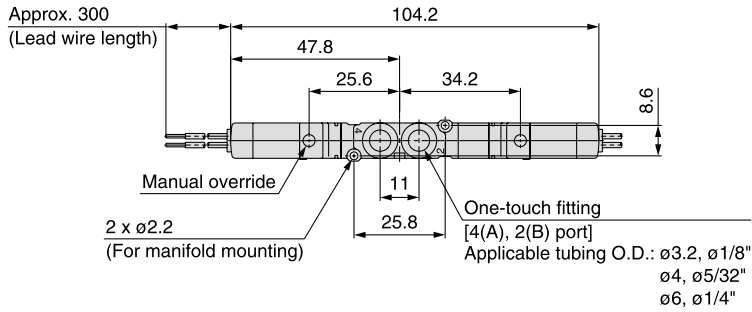
VQ7

# Series VQZ1000/2000/3000

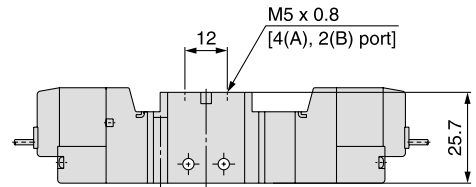
## Dimensions: VQZ1000

### 3 Position Closed Center/Exhaust Center/Pressure Center (Except Metal seal type)

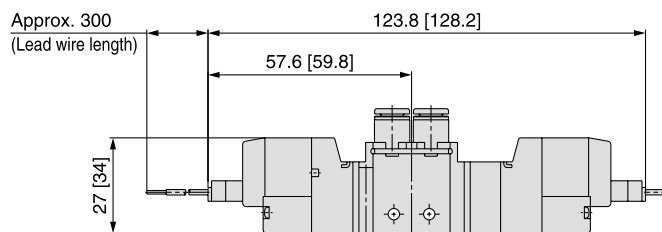
Grommet (G): VQZ1 $\frac{3}{5}$ 2 $\frac{0}{1}$ -□G□1-C3, C4, C6



VQZ1 $\frac{3}{5}$ 2 $\frac{0}{1}$ -□G□1-M5



L-type plug connector (L): VQZ1 $\frac{3}{5}$ 2 $\frac{0}{1}$ -□L□1-C3, C4, C6



M-type plug connector (M): VQZ1 $\frac{3}{5}$ 2 $\frac{0}{1}$ -□M□1-C3, C4, C6

