

# 4 Port Direct Operated Poppet Solenoid Valve

## Series VQD1000

### How to Order Valves

VQD11 5 1 [ ] 5 L [ ]

#### Body type

2	Body ported (Single unit)
3	Body ported (Manifold)
5	Base mounted

#### Valve option

Nil	Standard (2 W)
V	Vacuum (2 W)
U <sup>Note)</sup>	For large flow (3.2 W)
W <sup>Note)</sup>	For large flow, vacuum (3.2 W)

Note) Energy saving type

#### Rated voltage

5	24 VDC
6	12 VDC

Note) Please consult with SMC for other voltages.

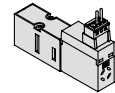
#### Port size

Body ported	M5	M5 thread
Base mounted	Nil	Without sub-plate (Manifold)
	M5	M5 thread

#### Electrical entry

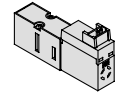
##### L: Plug lead type

L plug connector, With lead wire  
With light/surge voltage suppressor



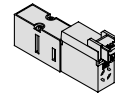
##### LO: Plug lead type

L plug connector, Without lead wire  
With light/surge voltage suppressor



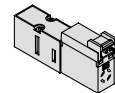
##### M: Plug lead type

M plug connector, With lead wire  
With light/ surge voltage suppressor



##### MO: Plug lead type

M plug connector, Without lead wire  
With light/surge voltage suppressor



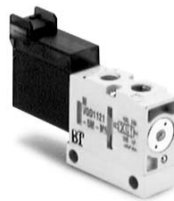
L plug connector  
Base mounted



L plug connector  
Body ported



M plug connector  
Base mounted



M plug connector  
Body ported

### Standard Specifications

Item		Type	Standard (2 W)	Large flow type (3.2 W, Energy saving type)
Valve specifications	Valve construction		4 port direct operated poppet valve	
	Fluid		Air/Inert gas	
	Maximum operating pressure		0.7 MPa	
	Minimum operating pressure/Vacuum		0 MPa/-100 kPa	
	Response time <sup>(1)</sup>		ON: 4 ms, OFF: 2 ms	
	Ambient and fluid temperature		-10 to 50°C <sup>(2)</sup>	
	Lubrication		Not required	
	Manual override		Non-locking push type	
	Shock/Vibration resistance <sup>(3)</sup>		150/30 m/s <sup>2</sup>	
	Mounting position		Unrestricted	
	Enclosure		Dust tight	
Electricity specifications	Weight		34 g (Without sub-plate)	
	Coil rated voltage	DC	24 V, 12 V	
	Allowable voltage fluctuation		±10% of rated voltage	
	Coil insulation type		Class B or equivalent	
	Power consumption	DC	2 W	3.2 W (Energy saving type) (Inrush: 3.2 W, Holding: 2.4 W)
Electrical entry		L plug connector, M plug connector (With indicator light and surge voltage suppressor)		



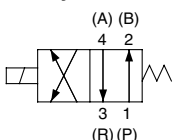
Note 1) Based on JIS B 8375-1981. Factor: With light/surge voltage suppressor (Use clean air). Dispersion accuracy: ±1 ms

Note 2) Operating the valve at low temperatures may cause condensate to form, therefore dry air must be used.

Note 3) 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 2000 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)

#### JIS Symbol



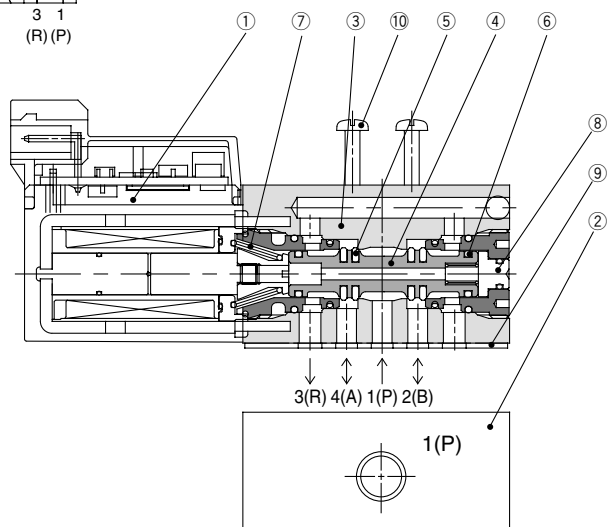
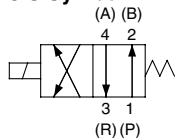
# 4 Port Direct Operated Poppet Solenoid Valve Series VQD1000

## Flow Characteristics

Valve model		Port size	Flow characteristics					
			1 → 4/2 (P → A/B)			4/2 → 5/3 (A/B → EA/EB)		
			C [dm <sup>3</sup> /(s·bar)]	b	Cv	C [dm <sup>3</sup> /(s·bar)]	b	Cv
Body ported	VQD1121-□ <sub>L</sub> -M5	M5 x 0.8	0.22	0.16	0.05	0.19	0.31	0.05
	VQD1121 <sup>U</sup> <sub>W</sub> -□ <sub>L</sub> -M5		0.27	0.24	0.07	0.28	0.28	0.07
Base mounted (With sub-plate)	VQD1151-□ <sub>L</sub> -M5		0.22	0.10	0.05	0.22	0.31	0.06
	VQD1151- <sup>U</sup> <sub>W</sub> -□ <sub>L</sub> -M5		0.27	0.25	0.07	0.27	0.28	0.07

## Construction

### JIS Symbol



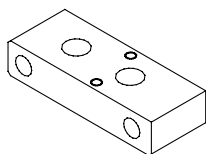
### Component Parts

No	Description	Material	Note
①	Solenoid coil assembly	—	
②	Sub-plate	Aluminum	VQD1000-S-M5 (Base mounted only)
③	Body	ZDC	
④	Spool valve	Aluminum	
⑤	Poppet	HNBR	
⑥	Guide ring	Resin	
⑦	Return spring	Stainless steel	
⑧	Manual override	Aluminum	
⑨	Gasket	HNBR	VQD1000-9-1H
⑩	Round head combination screw	Steel	AXT632-7-13 (M1.7 x 18)

Note) Body cannot be disassembled.

## Valve Single Unit Option

### Piping plate assembly VQD1000-20A



Manifold type (VQD1131) can be changed to single unit type (VQD1121) by mounting plate assembly.

Note) Plate should be mounted with manifold mounting screws (M1.7 x 20).  
Proper tightening torque of thread: 0.18 to 0.25 N·m

VQC

SQ

VQ0

VQ4

VQ5

VQZ

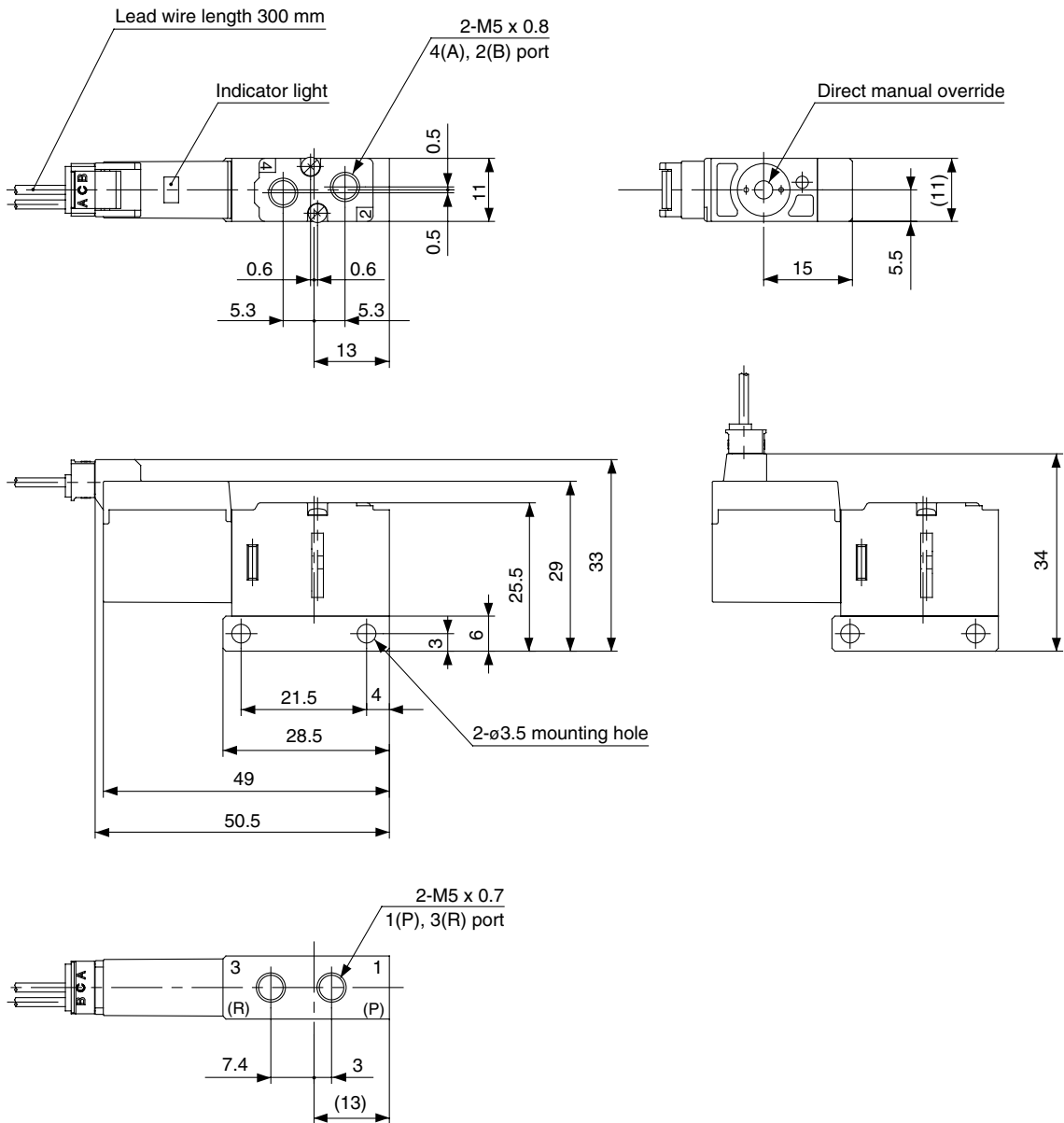
VQD

# Series VQD1000

## Dimensions

L plug connector: VQD1121□-□L-M5

M plug connector: VQD1121□-□M-M5

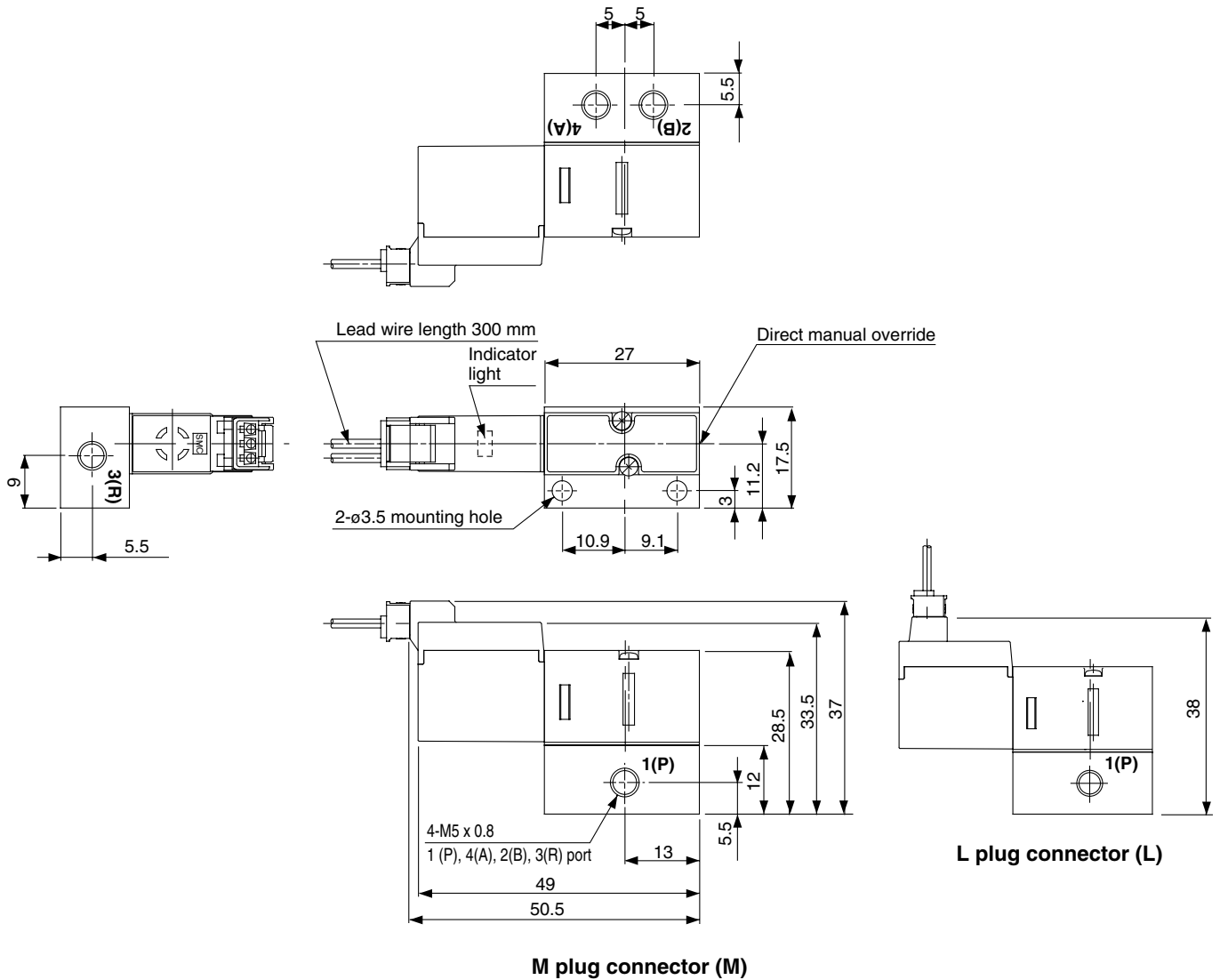


# 4 Port Direct Operated Poppet Solenoid Valve Series VQD1000

## Dimensions

L plug connector: VQD1151□-□L-M5

M plug connector: VQD1151□-□M-M5



- VQC
- SQ
- VQ0
- VQ4
- VQ5
- VQZ
- VQD**