

# 3 Port Solenoid Valve Direct Operated Poppet Type

New



[Option]

RoHS

Power consumption

**4 w**

Standard type

(Existing product: 4.8 W)

**1.8 w**

Energy-saving type

(Existing product: 2 W)

Vacuum applications

**-101.2**  
kPa

**A single valve with  
various valve functions**

(Universal porting type)

N.C. valve

N.O. valve

Divider valve

Selector valve

etc.

**Low concentration ozone resistant**

Rubber seal material: HNBR for main valve

Mounting dimensions are

**interchangeable** with existing product



Body ported type



Manifold type



**Series VT307**



CAT.ES11-107A

# 3 Port Solenoid Valve Direct Operated Poppet Type Series VT307

## Rubber Seal



RoHS

[Option]  
Note) CE compliant: Electrical entry is applicable only for the DIN terminal.



### How to Order

V T 307     - 5 G   1 - 01   - F -  

#### Body type

T	Body ported
O	For manifold

#### Valve option

Nil	Standard type
E*	Continuous duty type
Y*	Energy-saving type
V*	Vacuum specification type
W*	Energy-saving type, Vacuum specification type

\* Semi-standard

#### Pressure specifications

Nil	Standard type (0.7 MPa)
K*	High-pressure type (1 MPa)

\* Semi-standard

#### 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
7*	240 VAC, 50/60 Hz

\* Semi-standard

#### Electrical entry

Grommet	DIN terminal
 <b>G:</b> 300 mm lead wire <b>H:</b> 600 mm lead wire	 <b>D:</b> With connector   <b>DO:</b> Without connector

#### CE-compliant

Nil	None
Q	CE-compliant*

\* Electrical entry and light/surge voltage suppressor: D/DO/DZ/DOZ only

#### Bracket

Nil	None
F	With bracket

#### Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

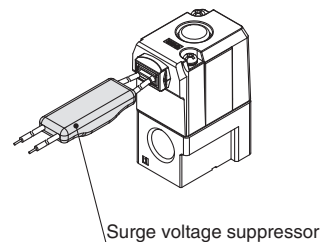
#### Port size

Nil	Without port (For manifold)
01	1/8 (6A)
02	1/4 (8A)

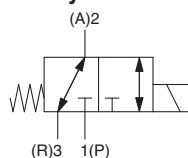
#### Light/Surge voltage suppressor

Nil	None
S	With surge voltage suppressor (Grommet type only)
Z	With light/surge voltage suppressor (DIN terminal type only)

#### With surge voltage suppressor



#### JIS Symbol



#### Manifold

Model	Applicable manifold type	Accessories
VO307□(-Q)	Common or individual exhaust	Function plate (DXT152-14-1A) <sup>Note)</sup> Mounting screw (NXT013-3)

Note) It is not applicable to the continuous duty type. Refer to the accessories on page 5.

#### Option

Description	Part no.
Bracket	DXT152-25-1A (With screw)

## ⚠ Caution

Make sure that dust and/or other foreign materials do not enter the valve from the unused port (e.g. exhaust port).

## Standard Specifications

Type of actuation	Direct operated type 2 position single solenoid	
Fluid	Air	
Operating pressure range	0 to 1 MPa (High-pressure type), 0 to 0.7 MPa (Standard type)	
Ambient and fluid temperature	-10 to 50°C (No freezing)	
Response time <sup>Note 1)</sup>	20 ms or less (at 0.5 MPa)	
Max. operating frequency	10 Hz	
Lubrication	Not required (Use turbine oil Class 1 ISO VG32, if lubricated.)	
Manual override	Non-locking push type	
Mounting orientation	Unrestricted	
Impact/Vibration resistance <sup>Note 2)</sup>	150/50 m/s <sup>2</sup>	
Enclosure	Dustproof	
Electrical entry	Grommet, DIN terminal	
Coil rated voltage (V)	AC (50/60 Hz)	100, 200, 110*, 220*, 240*
	DC	24, 12*
Allowable voltage fluctuation	-15 to +10% of rated voltage	
Apparent power <sup>Note 3) Note 4)</sup>	AC	Inrush 12.7 VA (50 Hz), 10.7 VA (60 Hz)
		Holding 7.6 VA (50 Hz), 5.4 VA (60 Hz)
Power consumption <sup>Note 3) Note 4)</sup>	DC	Without indicator light: 4 W, With indicator light: 4.2 W
Light/Surge voltage suppressor (DIN terminal type only)	AC	Varistor, LED
	DC	Diode, LED

\* Semi-standard

Note 1) Based on dynamic performance test, JIS B 8374-1981. (Coil temperature: 20°C, at rated voltage, without surge voltage 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)

Note 3) At rated voltage

Note 4) The value is different for continuous duty type (VT307E), and energy-saving type (VT307Y/W).

Refer to "Valve Options" shown below.

## Flow-rate Characteristics/Weight

Valve model	Port size	Flow-rate characteristics												Weight
		1 → 2 (P → A)			2 → 3 (A → R)			3 → 2 (R → A)			2 → 1 (A → P)			
		C[dm³/(s·bar)]	b	Cv	C[dm³/(s·bar)]	b	Cv	C[dm³/(s·bar)]	b	Cv	C[dm³/(s·bar)]	b	Cv	Grommet
VT307	1/8	0.71	0.35	0.18	0.68	0.27	0.17	0.65	0.36	0.17	0.63	0.35	0.17	0.15 kg
VT307V (Vacuum spec. type)														
VT307E (Continuous duty type)		0.41	0.26	0.10	0.44	0.35	0.11	0.48	0.27	0.12	0.35	0.33	0.10	
VT307Y (Energy-saving type)														
VT307W (Energy-saving, Vacuum spec. type)														
VT307	1/4	0.71	0.31	0.19	0.71	0.25	0.17	0.68	0.33	0.17	0.71	0.26	0.18	
VT307V (Vacuum spec. type)														
VT307E (Continuous duty type)														
VT307Y (Energy-saving type)		0.49	0.20	0.12	0.44	0.34	0.11	0.48	0.17	0.12	0.46	0.28	0.11	
VT307W (Energy-saving, Vacuum spec. type)														

Note) Values for a single valve unit. It is not applicable to the manifold. Refer to the manifold specifications on page 5.

## Valve Options

### Continuous duty type: VT307E

Exclusive use of VT307E is recommended for continuous duty with long time loading.

## ⚠ Caution

1. This model is for continuous duty, not for high cycle rates. But even in low cycle rates, if energizing the valve more than once a day, please consult with SMC.
2. Energizing solenoid should be done at least once in 30 days.

Specifications different from standard are as follows.

Apparent power/AC	Inrush	7.9 VA (50 Hz), 6.2 VA (60 Hz)
	Holding	5.8 VA (50 Hz), 3.5 VA (60 Hz)
Power consumption/DC	1.8 W, With indicator light: 2 W	
Response time <sup>Note)</sup>	30 ms or less (at 0.5 MPa)	

Note) Refer to Note 1) of the standard specifications.

### Energy-saving type: VT307Y (VT307W)

If low power consumption is required for electronic control, "VT307Y(W)" (1.8 W) is recommended.

Specifications different from standard are as follows.

Power consumption/DC	1.8 W, With indicator light: 2 W
Response time <sup>Note)</sup>	25 ms or less (at 0.5 MPa)

Note) Refer to Note 1) of the standard specifications.

### Vacuum spec. type: VT307V (VT307W)

This vacuum model has less air leakage than the standard model under low pressure. It is recommended for vacuum application.

## ⚠ Caution

Since this valve has slight air leakage, it can not be used for vacuum holding (including positive pressure holding) in the pressure container.

Specifications different from standard are as follows.

Operating pressure range	-101.2 kPa to 0.1 MPa
--------------------------	-----------------------