Large Size 3 Port Solenoid Valve

Series VP3145/3165/3185

Rubber Seal

CE

[Option]

Large flow capacity, small exhaust resistance

(Refer to "Flow Characteristic" table.)

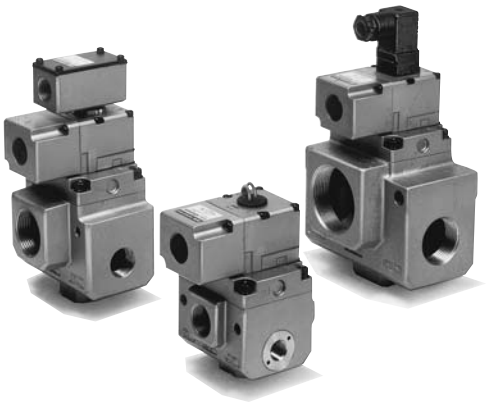
Easy conversion to N.C. or N.O.

Function plate makes it possible to use as a N.C. or N.O. valve with the port unchanged.

Possible to use in vacuum or under low pressures

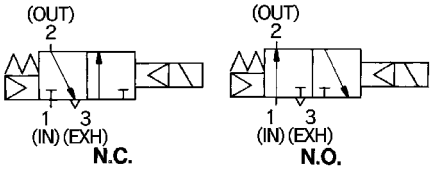
Vacuum: Up to 101.2 kPa
Low pressure: 0 to 0.2 MPa

Free mounting orientation

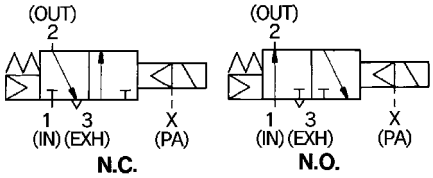


JIS Symbol

Internal pilot
<Standard>



External pilot



Note) N.O. valve operates properly only when appropriate pressure is applied to the pilot.

How to Order

VP3 1 4 5 ☐ - 04 1 G A ☐ - ☐ - ☐

Series VP 3 port solenoid valve

Number of solenoids

1	Single

Body size

4	1/2
6	1
8	1 1/2

Body type

5	Body ported

Valve option

Nil	For general
V	For vacuum/low pressure

Port size (IN, OUT port)

Symbol	Port size Rc (Nominal size)	VP3145	VP3165	VP3185
03	3/8 (10A)	●		
04	1/2 (15A)	●		
06	3/4 (20A)	●	●	
10	1 (25A)		●	
12	1 1/4 (32A)		●	●
14	1 1/2 (40A)			●
20	2 (50A)			●

Coil 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
9*	Other

* Option

Electrical entry

G	Grommet
T	Conduit terminal
D	DIN terminal
TL*	Conduit terminal with indicator light
TS*	Conduit terminal with surge voltage suppressor
TZ*	Conduit terminal with light/surge voltage suppressor
DL*	DIN terminal with indicator light
DS*	DIN terminal with surge voltage suppressor
DZ*	DIN terminal with light/surge voltage suppressor

* Option

Type of actuation

A	N.C. (Normally closed)
B	N.O. (Normally open)

Pilot option

Nil	Standard (Internal pilot)
1	External pilot

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

CE-compliant

Nil	—
Q	CE-compliant*

* Electrical entry: D/DL/DS/DZ only

How to Order Pilot Valve Assembly

VT3113 – 00 1 G - ☐

Coil rated voltage

1	100 VAC, 50/60 Hz
2	200 VAC, 50/60 Hz
3*	110 VAC, 50/60 Hz
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* Option

CE-compliant

Nil	—
Q	CE-compliant*

* Electrical entry: D/DL/DS/DZ only

Made to Order

Made to Order
(Refer to pages 1501 to 1503 for details.)

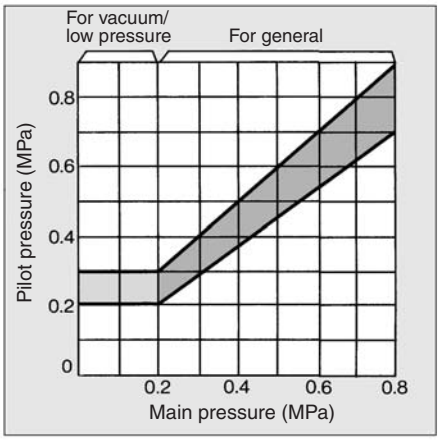
External Pilot

Use external pilot model in the following cases.

- Vacuum or low pressure (0.2 MPa or less): Vacuum/Low pressure type
- Using the valve with supply port external throttle: General type
- Air pressure of supply port is slow: General type
- Resistance in outlet side is small in case of air blowing or filling an air tank: General type

Note 1) Keep external pilot pressure within the pressure range below.

Note 2) Conversion of internal pilot and external pilot can not be done.



Specifications

Fluid		Air					
Type of actuation		N.C. or N.O. (Convertible)					
Pilot type		Internal pilot	External pilot				
		For general	For vacuum/low pressure	For general			
Operating pressure range (MPa)	**Main pressure**	0.2 to 0.8	−101.2 kPa to 0.2	0.2 to 0.8			
	Pilot pressure		0.2 to 0.3	Refer to the graph left.			
Ambient and fluid temperature (°C)		0 (No freezing) to 60					
Response time (ms) (1) **(at the pressure of 0.5 MPa)**		ON	AC	30 or less	OFF	AC	30 or less
			DC	40 or less		DC	30 or less
Max. operating frequency (Hz)		3					
Lubrication (2)		Required (Equivalent to turbine oil Class1 ISO VG32)					
Manual override		Yes (Non-locking)					
Mounting orientation		Unrestricted					
Shock/Vibration resistance (m/s²) (3)		150/50					

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

Note 2) This solenoid valve requires lubrication. Use turbine oil Class 1 (ISO VG32).

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 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

Electrical entry	**Standard**		Grommet (G), Conduit terminal (T) DIN terminal (D)
	Option		Conduit terminal with indicator light (TL), Conduit terminal with surge voltage suppressor (TS), Conduit terminal with light/surge voltage suppressor (TZ), DIN terminal with indicator light (DL), DIN terminal with surge voltage suppressor (DS), DIN terminal with light/surge voltage suppressor (DZ)
Coil rated voltage (V)	**AC (50/60 Hz)**		100, 200, 110 *, 220 *, 240 *
	DC		12 *, 24
Allowable voltage fluctuation			−15 to +10% of rated voltage
Apparent power Note)	**AC**	**Inrush**	73 VA (50 Hz), 58 VA (60 Hz)
		Holding	28 VA (50 Hz), 17 VA (60 Hz)
Power consumption Note)	**DC**		12 W

* Option

Note) At rated voltage

Flow Characteristics/Mass

Valve model	Port size		Flow characteristics						Mass * (kg)
			1 → 2 (IN → OUT)			2 → 3 (OUT → EXH)			
	1(IN), 2(OUT)	3(EXH)	C [dm³/(s·bar)]	b	Cv	C [dm³/(s·bar)]	b	Cv	Grommet
VP3145	3/8	3/4	19	0.43	5.5	18	0.47	5.4	1.5
	1/2		23	0.32	6.2	21	0.39	5.8	
	3/4		28	0.36	7.6	26	0.35	7.0	

Valve model	Port size		Effective area (mm²)		Mass * (kg)
	1 (IN), 2 (OUT)	3(EXH)	1 → 2 (IN → OUT)	2 → 3 (OUT → EXH)	Grommet
VP3165	3/4	1 1/4	230	280	2.0
	1		280	310	
	1 1/4		310	330	
VP3185	1 1/4	2	570	650	2.8
	1 1/2		650	670	
	2		650	670	

* For grommet

Conduit terminal··· +0.2 kg