

5 Port Pilot Operated Solenoid Valve Metal Seal, Plug-in/Non Plug-in

Series VFS2000



Model

Type of actuation		Model		Port size Rc	Flow characteristics						Max. ⁽¹⁾ operating cycle cpm	Response time (ms)	Mass ⁽³⁾ (kg)
		Plug-in	Non plug-in		1 → 4/2(P → A/B)			4/2 → 5/3(A/B → R1/R2)					
					C [dm³/(s·bar)]	b	Cv	C [dm³/(s·bar)]	b	Cv			
2 position	Single	VFS2100	VFS2110	1/8	2.4	0.16	0.55	2.8	0.20	0.65	1200	15 or less	0.34
				1/4	2.5	0.18	0.58	2.8	0.21	0.65			
	Double	VFS2200	VFS2210	1/8	2.4	0.16	0.55	2.8	0.20	0.65	1200	13 or less	0.42
				1/4	2.5	0.18	0.58	2.8	0.21	0.65			
3 position	Closed center	VFS2300	VFS2310	1/8	2.3	0.14	0.53	2.6	0.20	0.61	600	20 or less	0.43
				1/4	2.5	0.18	0.58	2.6	0.23	0.62			
	Exhaust center	VFS2400	VFS2410	1/8	2.4	0.15	0.54	2.7	0.25	0.63	600	20 or less	0.43
				1/4	2.5	0.20	0.60	2.7	0.24	0.63			
	Pressure center	VFS2500	VFS2510	1/8	2.5	0.11	0.55	2.7	0.20	0.62	600	20 or less	0.43
				1/4	2.8	0.17	0.63	2.7	0.22	0.63			
	Double check	VFS2600	VFS2610	1/8	1.2	—	—	1.3	—	—	600	25 or less	0.6
				1/4	1.2	—	—	1.3	—	—			

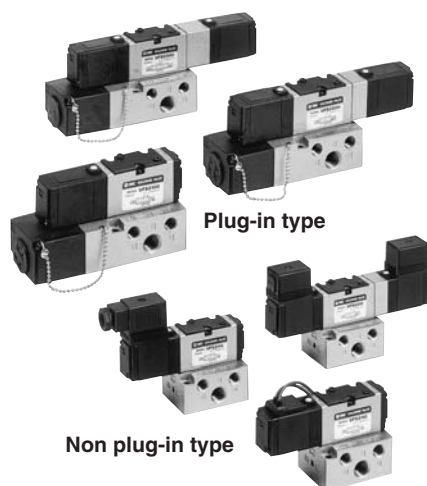
Note 1) Based on JIS B 8375 (Once per 30 days) for the minimum operating frequency. Note 2) Based on JIS B 8375-1981 (The value at supply press. 0.5 MPa).
Note 3) Values for VFS2□00-□FZ-01. Note 4) Factors of "Note 1)" and "Note 2)" are ones achieved in controlled clean air.

Compact yet provides a large flow capacity
1/4: C: 2.8 dm³/(s·bar)

Low power consumption: 1.8 W DC

Easy maintenance

2 types of sub-plates:
Plug-in and non plug-in



JIS Symbol

2 position	3 position
Single	Closed center
Double	Exhaust center
	Pressure center
	Double check

Standard Specifications

Valve specifications	Fluid		Air/Inert gas	
	Maximum operating pressure		1.0 MPa	
	Min. operating pressure	2 position	0.1 MPa	
		3 position	0.15 MPa	
	Proof pressure		1.5 MPa	
	Ambient and fluid temperature		-10 to 60°C ⁽¹⁾	
	Lubrication		Non-lube ⁽²⁾	
	Pilot valve manual override		Non-locking push type (Flush)	
	Shock/Vibration resistance		150/50 m/s ² ⁽³⁾	
	Enclosure		Type G, E: Dustproof (Class 0), Type F, T, D: Splashproof (Class 4) ⁽⁴⁾	
Electricity specifications	Coil rated voltage		100, 200 VAC, 50/60 Hz; 24 VDC	
	Allowable voltage fluctuation		-15 to +10% of rated voltage	
	Coil insulation type		Class B or equivalent (130°C) ⁽⁵⁾	
	Apparent power (Power consumption) AC	Inrush	5.6 VA/50 Hz, 5.0 VA/60 Hz	
		Holding	3.4 VA (2.1 W)/50 Hz, 2.3 VA (1.5 W)/60 Hz	
	Power consumption DC		1.8 W (2.04 W: With light/surge voltage suppressor)	
	Electrical entry		Plug-in type	Conduit terminal
			Non plug-in type	Grommet terminal, DIN terminal

Note 1) Use dry air at low temperatures.
Note 2) Use turbine oil Class 1 (ISO VG32), if lubricated.
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)
Note 4) Based on JIS C 920. Note 5) Based on JIS C 4003.

Option Specifications

Pilot type	External pilot ^(Note)
Manual override	Non-locking push type (Extended), Locking type (Tool required), Locking type (Lever)
Coil rated voltage	110 to 120, 220, 240 VAC, 50/60 Hz 12, 100 VDC
Porting specifications	Bottom ported
Option	With light/surge voltage suppressor

Note) Operating pressure: 0 to 1.0 MPa
Pilot pressure 2 position: 0.1 to 1.0 MPa 3 position: 0.15 to 1.0 MPa

Compact, lightweight type sub-plate

Compared with the standard type, this is the sub-plate having the reduced external dimensions and lighter weight. But, use caution that Cv factor or piping port position is different from the standards. For details, refer to page 1161.

Sub-plate	L (mm)	Mass (kg)	Sonic conductance * C [dm ³ /(s·bar)]
Standard type	31.0	0.2	2.2
Compact type	25.5	0.13	2.8

* 2 position single Rc 1/4

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How to Order



With attachment plug lead wire



With terminal block

Porting specifications

Nil	Side ported
B*	Bottom ported

* Option

Option

Nil	None
Z	With light/surge voltage suppressor

Body type

O: Plug-in type sub-plate

Electrical entry

F: Plug-in type

Port size

Nil	Without sub-plate
01	Rc 1/8 Plug-in type conduit terminal (With terminal block) Standard type
02	Rc 1/4 Plug-in type grommet (With attachment plug lead wire) Compact type

Note) Please note Cv factor and piping port location of compact sub-plate is different from standard. Refer to page 1161 for details.

Thread type

Nil	Rc
N*	NPT
T*	NPTF
F*	G

* Option

Plug-in

VFS2 2 00 - 5 F - 01

Non plug-in

VFS2 2 10 - 1 E - 02

Symbol

1	2 position single
2	2 position double
3	3 position closed center
4	3 position exhaust center
5	3 position pressure center
6	3 position double check

Body type

1: Non plug-in type sub-plate

Pilot type

Nil	Internal pilot
R*	External pilot

* Option: External pilot is possible only to the one with sub-plate.

Coil rated voltage

1	100 VAC, 50/60 Hz
2	200 VAC, 50/60 Hz
3*	110 to 120 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

Pilot valve manual override

Nil: Non-locking push type (Flush)	B*: Locking type (Tool required)
A*: Non-locking push type (Extended)	C*: Locking type (Lever)

* Option

Option

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

* Grommet type is available only w/ surge voltage suppressor, not w/ indicator light.

Electrical entry

G: Grommet	E: Grommet terminal	T: Conduit terminal	D, Y: DIN terminal
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How to Order Pilot Valve Assembly

SF4 - 1 DZ - 20

Coil rated voltage

1	100 VAC, 50/60 Hz
2	200 VAC, 50/60 Hz
3*	110 to 120 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, Light/Surge voltage suppressor

F	Plug-in	Plug-in
G	Grommet	Non plug-in
GS	Grommet with surge voltage suppressor	
D	DIN terminal	
DZ	DIN terminal with light/surge voltage suppressor	
DO	DIN terminal*	
DOZ	DIN terminal with light/surge voltage suppressor*	
Y	DIN terminal	
YZ	DIN terminal with light/surge voltage suppressor	

Manual override

Nil	Non-locking push type (Flush)
A*	Non-locking push type (Extended)
B*	Locking type (Tool required)
C*	Locking type (Lever)

* Option

YO DIN terminal*

YOZ DIN terminal with light/surge voltage suppressor*

T Conduit terminal

TZ Conduit terminal with light/surge voltage suppressor

E Grommet terminal

EZ Grommet terminal with light/surge voltage suppressor

* DIN connector is not attached.
** Refer to page 1223 for voltage conversion.
D: Conforming to DIN43650 standard;
Y: Conforming to DIN43650B standard