

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

Series VFS3000



Model

Type of actuation		Model		Port size Rc	Flow characteristics						Max. ⁽¹⁾ operating cycle cpm	Response ⁽²⁾ 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	VFS3100	VFS3110	1/4	6.0	0.15	1.4	5.8	0.12	1.3	1200	20 or less	0.31
				3/8	7.3	0.23	1.8	6.8	0.12	1.6			
	Double	VFS3200	VFS3210	1/4	6.0	0.15	1.4	5.8	0.12	1.3	1500	15 or less	0.41
				3/8	7.3	0.23	1.8	6.8	0.12	1.6			
3 position	Closed center	VFS3300	VFS3310	1/4	5.8	0.21	1.4	5.4	0.14	1.2	600	40 or less	0.43
				3/8	6.8	0.22	1.7	6.3	0.12	1.5			
	Exhaust center	VFS3400	VFS3410	1/4	6.1	0.23	1.4	5.0	0.14	1.2	600	40 or less	0.43
				3/8	7.4	0.20	1.8	5.6	0.18	1.3			
	Pressure center	VFS3500	VFS3510	1/4	6.0	0.22	1.5	5.8	0.16	1.3	600	40 or less	0.43
				3/8	7.2	0.19	1.8	7.1	0.18	1.8			
	Double check	VFS3600	VFS3610	1/4	4.0	—	—	3.5	—	—	600	50 or less	0.91
				3/8	4.0	—	—	3.7	—	—			

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) The figures in the above list are for without sub-plate. In the case of with plug-in sub-plate and with non plug-in sub-plate, add 0.30 kg and 0.27 kg respectively.
Note 4) "Note 1)" and "Note 2)" are with controlled clean air.

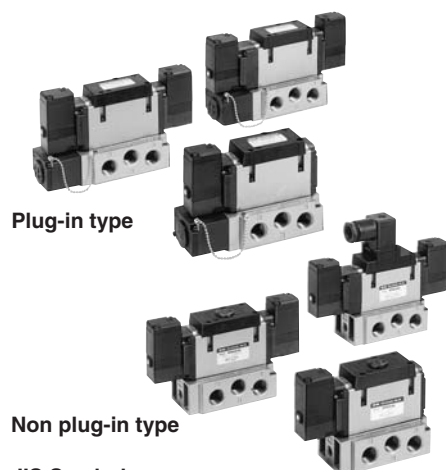
Compact yet provides a large flow capacity
3/8: C: 5.8 dm³/(s·bar)

Low power consumption: 1.8 W DC

Easy maintenance

2 types of sub-plates:

Plug-in and non plug-in



Non plug-in type

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
	Minimum operating pressure		0.1 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 E: Dustproof (Level 0), Type F: Dripproof (Level 2), Type D: Splashproof (Level 4) ⁽⁴⁾
	Coil rated voltage		100, 200 VAC, 50/60 Hz; 24 VDC
Electricity specifications	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
			DIN terminal, Grommet 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 0920. Note 5) Based on JIS C 4003.

Option

Pilot type		External pilot ^{Note)}
Manual override	Main valve	Direct manual override type
	Pilot valve	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: 0.1 to 1.0 MPa

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How to Order



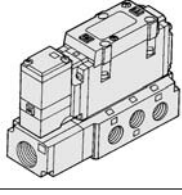
Plug-in



Non plug-in

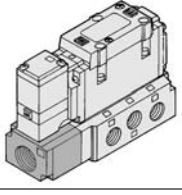
Body type

O: Plug-in type sub-plate



Electrical entry

F: Plug-in type conduit terminal



Porting specifications

Nil	Side ported
B*	Bottom ported

* Option

Port size

Nil	Without sub-plate
02	Rc 1/4
03	Rc 3/8

* For bottom ported, Rc 1/4 is only available.

Thread type

Nil	Rc
N*	NPT
T*	NPTF
F*	G

* Option

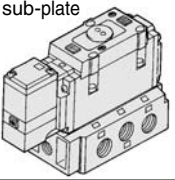
Symbol

1	2 position single (A/B) 4 2 (R1)(P)(R2)	5	3 position pressure center (A/B) 4 2 (R1)(P)(R2)
2	2 position double (A/B) 4 2 (R1)(P)(R2)	6	3 position double check (A/B) 4 2 (R1)(P)(R2)
3	3 position closed center (A/B) 4 2 (R1)(P)(R2)		
4	3 position exhaust center (A/B) 4 2 (R1)(P)(R2)		

* Reverse pressure: Can be used by external pilot specifications.

Body type

1: Non plug-in type sub-plate



Body Option

0	Standard
1*	Direct manual override

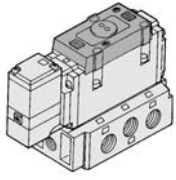
* Option

Option

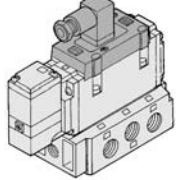
Nil	None
Z	With light/surge voltage suppressor

Electrical entry

E: Grommet terminal



D: DIN terminal



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

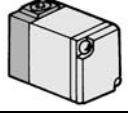
Pilot type

Nil	Internal pilot
R*	External pilot

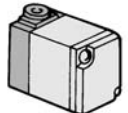
* Option

Pilot valve Manual override

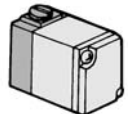
Nil: Non-locking push type (Flush)



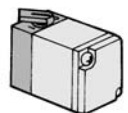
A*: Non-locking push type (Extended)



B*: Locking type (Tool required)



C*: Locking type (Lever)



* Option

SJ
SY
SV
SYJ
SZ
VP4
S0700
VQ
VQ4
VQ5
VQC
VQZ
SQ
VFS
VFR
VQ7

How to Order Pilot Valve Assembly

SF4 - 1 F - 30

Coil rated voltage		Manual override	
Symbol	Rated voltage	Symbol	Manual override
1	100 VAC, 50/60 Hz	Nil	Non-locking push type (Flush)
2	200 VAC, 50/60 Hz	A*	Non-locking push type (Extended)
3*	110 to 120 VAC, 50/60 Hz	B*	Locking type (Tool required)
4*	220 VAC, 50/60 Hz	C*	Locking type (Lever)
5	24 VDC		
6*	12 VDC		
7*	240 VAC, 50/60 Hz		
9*	Other		

* Option

* Option



* Refer to page 1224 for voltage conversion.