

5 Port Pilot Operated Solenoid Valve

VFS1000/2000/3000/4000/5000/6000 Series

Metal Seal

Series Variations

Series	Sonic conductance C [dm ³ /s·bar] 4/2 → 5/3(A/B → R1/R2)		Type of actuation	Voltage	Electrical entry		With light/surge voltage suppressor (Option)	Manual override	
	Single Double	3 position							
Body Ported	VFS1000 (P.1114)	1.8	1.8	2 position single 	(Standard) 100 VAC, 50/60 Hz 200 VAC, 50/60 Hz 24 VDC	Grommet (G) 	Grommet terminal (E) 	<input type="checkbox"/> With light/surge voltage suppressor • Grommet terminal (EZ) • Conduit terminal (TZ) • DIN terminal (DZ)	Non-locking push type (Flush)
	VFS2000 (P.1122)	3.4	3.4	2 position double 3 position closed center 3 position exhaust center 	(Option) 110 to 120 VAC, 50/60 Hz 220 VAC, 50/60 Hz 240 VAC, 50/60 Hz 12 VDC 100 VDC	Conduit terminal (T) 	DIN terminal (D) 	<input type="checkbox"/> With surge voltage suppressor • Grommet (GS) Note) • Indicator light is not available for grommet type. Only surge voltage suppressor can be equipped on the middle of lead wire. • DC: There is polarity. (Lead wire Red: +, Black: -)	Non-locking push type (Extended) Locking type (Tool required)
	VFS3000 (P.1130)	6.8	6.5	3 position pressure center 					Locking type* (Lever)
Base Mounted	VFS2000 Plug-in type Non plug-in type (P.1138)	2.8	2.7	2 position single 2 position double 3 position closed center 3 position exhaust center 	(Standard) 100 VAC, 50/60 Hz 200 VAC, 50/60 Hz 24 VDC	Plug-in Conduit terminal (F) 	Non plug-in Grommet terminal (E) 	<input type="checkbox"/> With light/surge voltage suppressor • Plug-in type Conduit terminal (FZ) • Non plug-in type Grommet terminal (EZ) Conduit terminal (TZ) DIN terminal (DZ) <input type="checkbox"/> With surge voltage suppressor • Non plug-in type Grommet (GS) Note) • Indicator light is not available for grommet type. Only surge voltage suppressor can be equipped on the middle of lead wire. • DC: There is polarity. (Lead wire Red: +, Black: -)	Non-locking push type (Flush) Non-locking push type (Extended)
	VFS3000 Plug-in type Non plug-in type (P.1162)	5.8	5.4	3 position pressure center 	(Option) 110 to 120 VAC, 50/60 Hz 220 VAC, 50/60 Hz 240 VAC, 50/60 Hz 12 VDC 100 VDC	Plug-in Conduit terminal (F) 		<input type="checkbox"/> With light/surge voltage suppressor • Plug-in type Conduit terminal (FZ) • Non plug-in type Grommet terminal (EZ) DIN terminal (DZ)	Locking type (Tool required) Locking type (Lever)
	VFS4000 Plug-in type Non plug-in type (P.1182)	12	11	3 position double check 		Non plug-in Grommet terminal (E) 	DIN terminal (D) 		
	VFS5000 Plug-in type Non plug-in type (P.1202)	20	17			Plug-in Conduit terminal (F) 			
	VFS6000 Plug-in type Non plug-in type (P.1218)	38	—	2 position single 2 position double 		Plug-in Conduit terminal (F) 	Non plug-in Grommet terminal (E) 	DIN terminal (D) 	Non-locking push type (Flush)

* Locking type (lever) is not available for body ported Series VFS2000/3000.

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

5 Port Pilot Operated Solenoid Valve Metal Seal, Body Ported

Series VFS1000

Model

Type of actuation		Model		Port size	Flow characteristics						Max. operating cycle (cpm) ⁽¹⁾	Response time (ms) ⁽²⁾	Mass (kg) ⁽³⁾
		Plug-in	Non plug-in		1 → 4/2 (P → A/B)			4/2 → 5/3 (A/B → R1/R2)					
					C [dm ³ /(s·bar)]	b	Cv	C [dm ³ /(s·bar)]	b	Cv			
2 position	Single	VFS1120	VFS1130	1/8	1.7	0.22	0.38	1.8	0.19	0.40	1200	15 or less	0.18
	Double	VFS1220	VFS1230	1/8	1.7	0.22	0.39	1.8	0.19	0.40	1200	13 or less	0.26
3 position	Closed center	VFS1320	VFS1330	1/8	1.6	0.20	0.37	1.8	0.20	0.41	600	20 or less	0.27
	Exhaust center	VFS1420	VFS1430	1/8	1.7	0.18	0.38	1.9	0.19	0.44	600	20 or less	0.27
	Pressure center	VFS1520	VFS1530	1/8	1.7	0.24	0.40	1.6	0.18	0.37	600	20 or less	0.27

- Note 1) Based on JIS B 8375 (once per 30 days) for the minimum operating frequency.
 Note 2) According to JIS B 8375-1981. (The value at supply pressure 0.5 MPa.)
 Note 3) In the case of grommet type
 Note 4) "Note 1)" and "Note 2)" are with controlled clean air.

Compact yet provides a large flow capacity
C: 1.8 dm³/(s·bar)

Low power consumption:
1.8 W DC



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		Dustproof (Degrees of protection 0) ⁽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		Grommet, Grommet terminal, Conduit 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 0920. Note 5) Based on JIS C 4003.

JIS Symbol

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

Option Specifications

Pilot valve 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
Option	With light/surge voltage suppressor ^{Note)}
Foot bracket (With screw)	Part No.: AXT626-10A, VFS1120 (single) only

- Note) Grommet type is available only w/ surge voltage suppressor (which is directly connected with lead wire).

Manifold

Body type	Applicable manifold base (Pilot EXH)
VFS1□20	Bar manifold (Individual EXH)
VFS1□30	Bar manifold (Common EXH base side)

- Note) VFS1□30: Manifold only. Cannot be used as a single unit.

5 Port Pilot Operated Solenoid Valve Metal Seal, Body Ported *Series VFS1000*

How to Order

VFS1 1 20 - 1 G - 01 -

Symbol

1 2 position single

2 2 position double

3 3 position closed center

4 3 position exhaust center

5 3 position pressure center

Port size

01	Rc 1/8
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Thread type

Nil	Rc
N*	NPT
T*	NPTF
F*	G

* Option

Manual override

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

Light/Surge voltage suppressor

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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Option

F: With foot bracket

* Mountable only for VFS1120.

Body (Pilot exhaust)

20: Individual EXH

30*: Common EXH

* Manifold only

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

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

How to Order Pilot Valve Assembly

SF4 - 1 DZ - 21

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

G	Grommet
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
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

* D: Conforming to DIN43650 standard; Y: Conforming to DIN43650B standard
** DIN connector is not attached.

Manual override

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

* Option

Applicable model

21	For VFS1□20	Individual pilot exhaust
22	For VFS1□30	Common pilot exhaust