

ATEX Compliant

Pilot Operated 3-Port Solenoid Valve

50-VPE500/700-X60 Series


 II 2G Ex db IIC T5 Gb Ta: -10°C TO +50°C
 II 2G Ex db IIC T6 Gb Ta: -10°C TO +40°C
 II 2D Ex tb IIIC T100°C Db Ta: -10°C TO +50°C
 II 2D Ex tb IIIC T85°C Db Ta: -10°C TO +50°C
 IP6X
 [Certification no. KEMA09ATEX0024X]

Specifications

Fluid	Air		
Type of actuation	N.C. or N.O. (Convertible)		
Pilot type	Internal pilot	External pilot	
Operating pressure range	0.2 to 0.8 MPa	Supply pressure	-101.2 kPa to 0.8 MPa
		External pilot pressure	0.2 to 0.8 MPa
Ambient and fluid temperatures	T5: -10°C to 50°C T6: -10°C to 40°C		
Response time	45 ms or less (at 0.5 MPa)*1		
Max. operating frequency	1 Hz		
Lubrication	Not required		
Manual override	Non-locking push type		
	Push-turn locking type D		
Mounting orientation	Unrestricted		

*1 Based on dynamic performance test, JIS B 8419: 2010. (0.5 MPa, at rated voltage.)

Solenoid Specifications

External wiring connection		Flameproof threaded-joint metal conduit	
Coil rated voltage	AC (% Hz)	100, 200, 12, 24, 48, 110, 220, 240 V	
	DC	24, 6, 12, 48, 110 V	
Allowable voltage fluctuation		-15% to +10% of rated voltage	
Coil Insulation type		Class B	
Apparent power	AC	Starting	9.1 VA (50 Hz) 7.8 VA (60 Hz)
		Holding	6.2 VA (50 Hz) 4.6 VA (60 Hz)
Power consumption	DC	3.5 W (Coil rated voltage: 6, 12, 24 V)*2	

*2 The other voltage: 4 W

Option

Description	Part no.	Applicable
Bracket (With mounting screw)	VP500-27-3A	50-VPE542
	VP700-27-2A	50-VPE742

Flow Rate Characteristics

Piping	Model	Port size	Flow rate characteristics												Weight ^{*3} kg
			1 → 2 (P → A)			2 → 3 (A → R)			3 → 2 (R → A)			2 → 1 (A → P)			
			C [dm ³ /(s·bar)]	b	Cv	C [dm ³ /(s·bar)]	b	Cv	C [dm ³ /(s·bar)]	b	Cv	C [dm ³ /(s·bar)]	b	Cv	
Body ported	50-VPE542-□□-02-03-X60	1/4	6.6	0.35	1.6	7.4	0.41	2.0	6.9	0.34	1.7	7.5	0.42	2.0	1.0
		3/8	9.1	0.42	2.4	9	0.43	2.4	8.8	0.36	2.2	9.3	0.43	2.5	
	50-VPE742-□□-03-04-X60	3/8	12	0.29	2.9	12	0.36	3.1	12	0.31	3.1	13	0.36	3.4	1.28
		1/2	15	0.23	3.8	14	0.25	3.8	15	0.22	3.7	16	0.29	4	

*3 Weight for the flameproof threaded-joint metal conduit type

Pilot Air Exhaust Port (PE Port)

There is a pilot air exhaust port (PE port) at the bottom of all pilot valves, excluding the common exhaust type. Please refrain from blocking this port as failure to do so may result in valve malfunction. In addition, if there is a possibility that the hazard classification will change due to the exhaust air, be sure to connect piping to this port and exhaust it to a safe location.

Explosion Proof Precautions

- The zones of this valve are as follows.
Gas: Zone 1 or 2
Dust: Zone 21 or 22
- The external ground cable has a 4 to 6.64 mm² conductor cross section, so be sure to protect it from bending or excessive force.
- When using a cable gland, be sure to use a product with ATEX certification.
- Be sure to implement measures to prevent static electricity from charging the non-metal parts on the external surface of the valve.
- As air is also exhausted from the valve PE port (pilot valve exhaust passage), be sure to confirm whether this will affect the ambient environment before use.
- Be sure to either use antistatic fittings or to implement static electricity prevention measures.

How to Order

50-VPE 5 4 2 - 5 T D M - 02 A - F - X60

● **Explosion-proof**

50	Flameproof, dustproof construction
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● **Body type**

Symbol	Body type, Applicable series	
	50-VFE500	50-VFE700
5	●	—
7	—	●

● **Type of valve actuation**

4	In common between N.C. and N.O. (Pilot type)
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● **Body model**

2	Body ported
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● **Body option**

Nil	Standard (Internal pilot)
R	External pilot

● **Rated voltage**

AC (50/60 Hz)		DC	
1	100 VAC	5	24 VDC
2	200 VAC	6	12 VDC
3	110 VAC	V	6 VDC
4	220 VAC	Y	48 VDC
7	240 VAC	Z	110 VDC
8	48 VAC		
A	12 VAC		
B	24 VAC		

● **Symbol**

Type	N.C.	N.O.
Internal pilot (Standard)		
External pilot	Universal 	

● **Option**

Nil	None
F	With bracket

* The bracket will be shipped unattached.

● **Symbol**

A	Normally closed
B	Normally open

● **Thread type (Port size)**

Nil	Rc
F	G
N	NPT
T	NPTF

● **Port size (P, A, B)**

Symbol	Port size	Applicable series	
		50-VFE500	50-VFE700
02	1/4	●	—
03	3/8	●	●
04	1/2	—	●

● **Electrical connection port**

Symbol	Thread type
M	M20 x 1.5
N	NPT1/2

● **Manual override**

Nil	Non-locking push type
D	Push-turn locking type D (slotted type)

● **External wire connection**

T	Metal conduit threaded type Flameproof enclosure cable gland (not supplied) type*1
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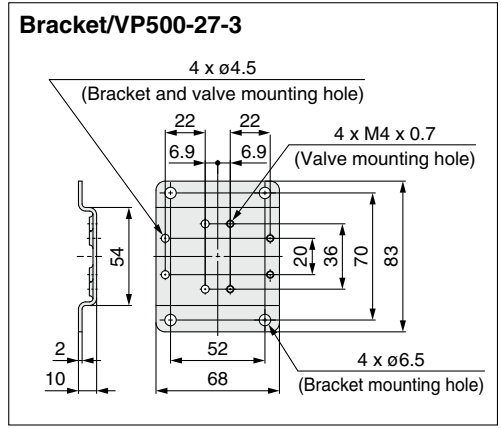
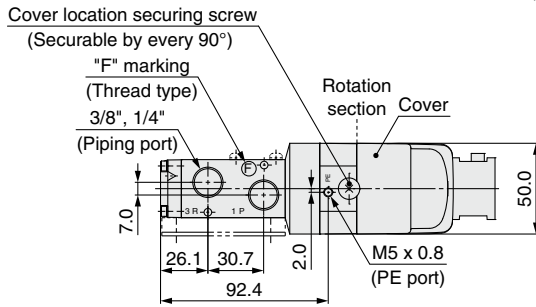
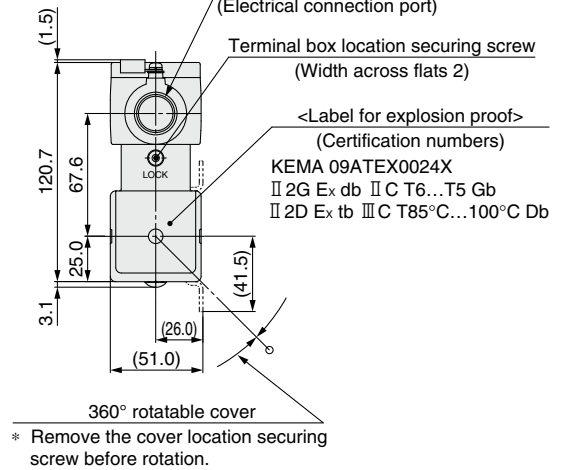
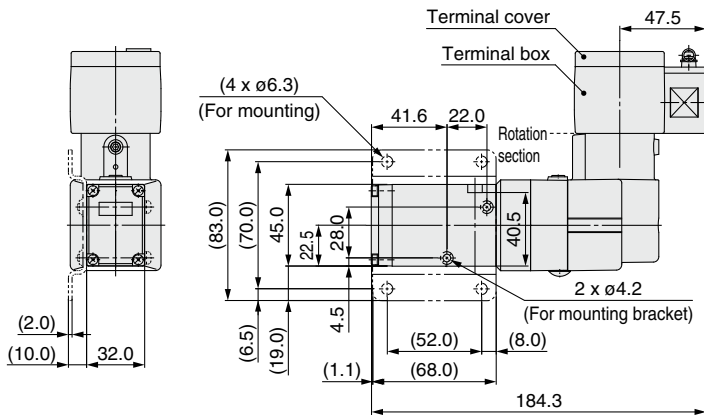
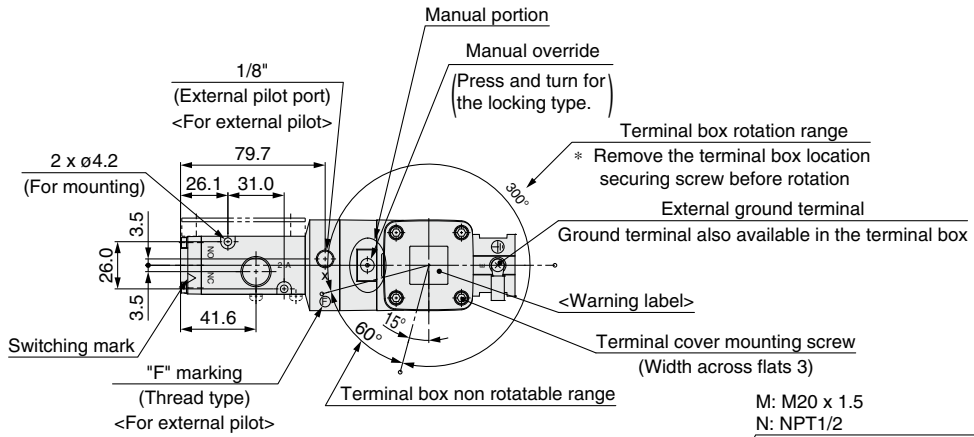
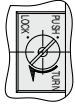
*1 Please use a commercially available cable gland with ATEX certification if a product is used as a flameproof enclosure cable gland type.

50-VPE500/700-X60 Series

Body Ported/50-VPE500

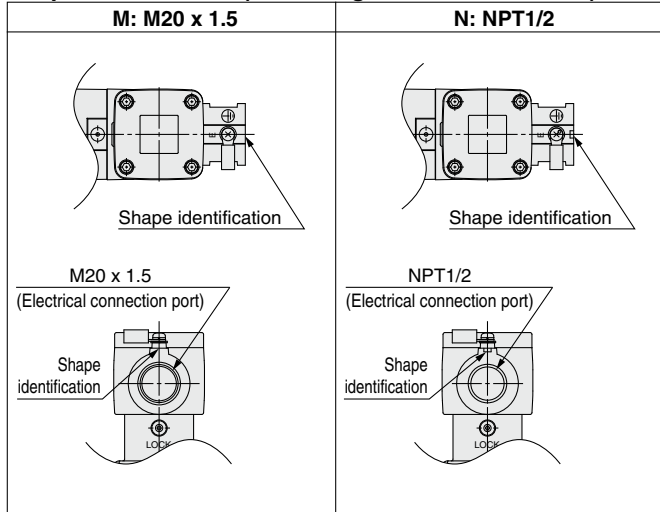
Metal conduit threaded type/50-VPE542(R)-□T(M, N)-□□(-F)-X60

Details of Manual Portion Type D



Screw part number: AC00031 (M4 x 38, With spring washer)

Shape identification (External ground terminal area)

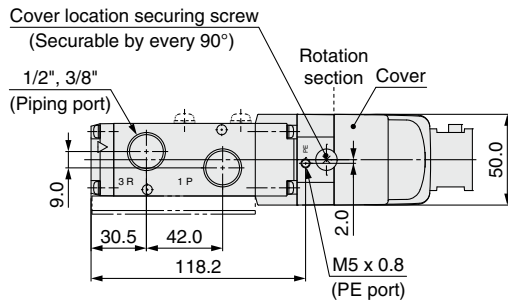
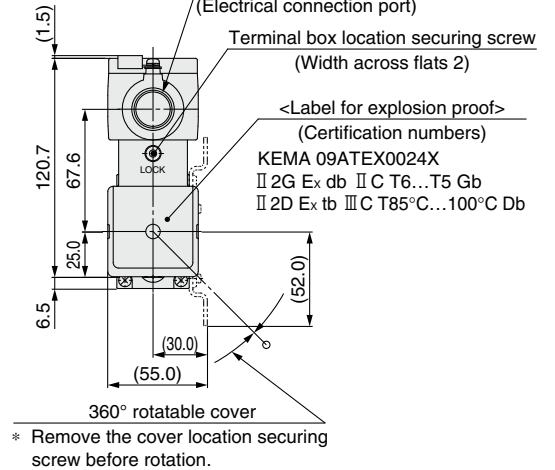
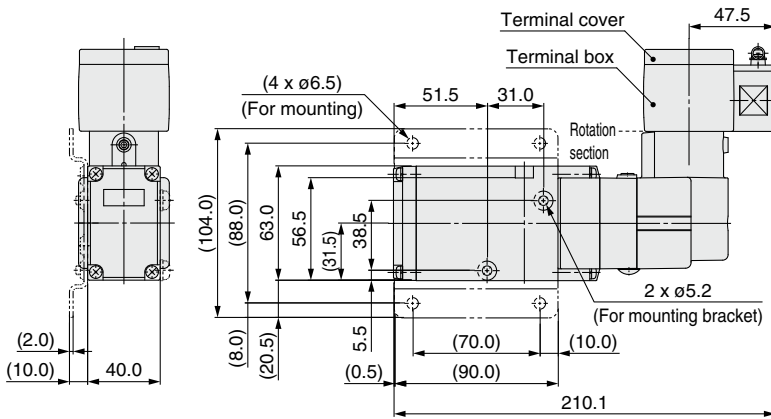
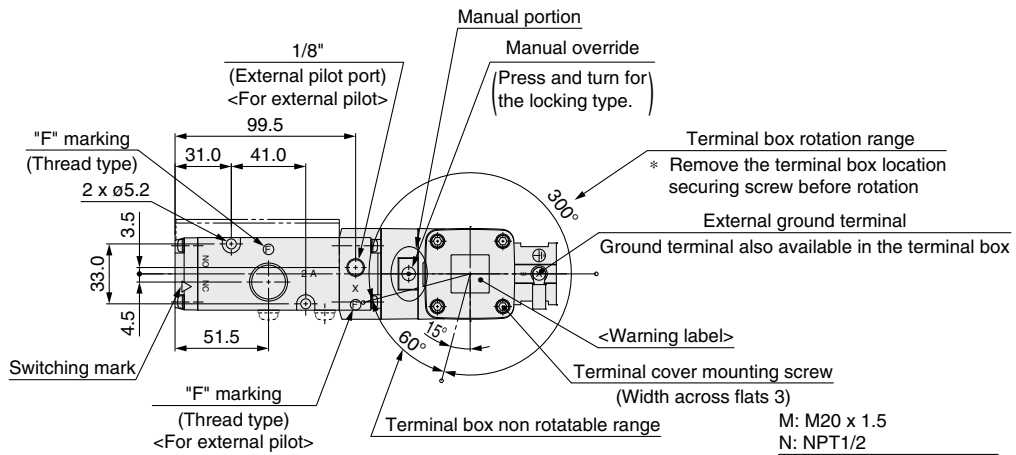


* The shape identification is the same for the 50-VPE500 and 700.

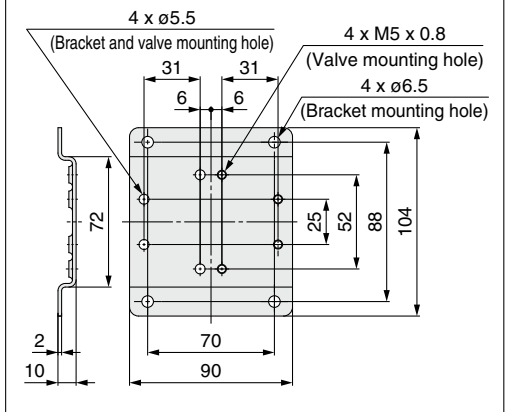
Body Ported/50-VPE700

Metal conduit threaded type/50-VPE742(R)-□T(M, N)-□□(-F)-X60

Details of Manual Portion Type D



Bracket/VP700-27-2



Screw part number: AA00115 (M5 x 48, With spring washer)

Specific Product Precautions

Precautions on 50-VPE500/50-VPE700

Piping

If the P port size of this valve is excessively reduced, a malfunction may occur due to the resulting pressure drop. We recommend using a size 10 or larger (fitting inner diameter) for the 50-VPE542 and a size 12 or larger (fitting inner diameter) for the 50-VPE742, with a piping length of 3 m or less. In addition, when the P port size is reduced, please use an external pilot type valve.

Special Applications

It can't be used in special applications such as using as a non-leakage valve.

External Pilot

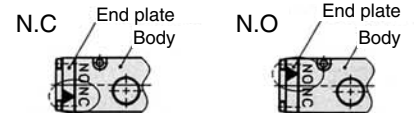
Use external pilot type in the following cases:

- For vacuum or for low pressure 0.2 MPa or less
- When having P port downsized in diameter
- When using A port as the atmospheric releasing port, e.g. air blower

Change of Actuation

It is possible to switch this valve between normally closed (N.C.) and normally open (N.O.).

Body ported



When changing the actuation from normally closed type to normally open type, remove the body from the sub-plate and reset the "▼" mark on the body corresponding to the "NO" mark on the sub-plate as shown in the above. Refer to the following table for piping.

	Port		
Actuation	P	A	R
N.C	Inlet	Outlet	Exhaust side
N.O	Exhaust side	Outlet	Inlet