


# ATEX Compliant

## Pilot Operated 5-Port Solenoid Valve

# 50-VFE3000-X60 Series

# 50-VFE5000-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

Series	50-VFE3000-X60	50-VFE5000-X60
Fluid	Air	
Operating pressure range	2-position single/3-position	0.15 to 0.9 MPa
	2-position double	0.1 to 0.9 MPa
Ambient and fluid temperatures	T5: -10°C to 50°C T6: -10°C to 40°C	
Response time	2-position single/double	45 ms or less*1
	3-position	60 ms or less*1
Max. operating frequency	2-position single/double	1 Hz
	3-position	1 Hz
Lubrication	Not required	
Manual override	Non-locking push type, Push-turn locking type D	
Mounting orientation	Unrestricted	
Pilot valve exhaust method	Individual exhaust,	Individual exhaust
	Main/Pilot valve common exhaust	Pilot common exhaust

\*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	
Apparent power	AC	Starting Holding
		9.1 VA (50 Hz) 7.8 VA (60 Hz)
Power consumption	DC	6.2 VA (50 Hz) 4.6 VA (60 Hz)
Coil Insulation type	3.5 W (Coil rated voltage: 6, 12, 24 V)*2	
	Class B	

\*2 The other voltage: 4 W

### Option

Description	Part no.	Applicable
Bracket (With mounting screw)	VF3000-16-1A	50-VFE3□□3□
	VF5000-7-1A	50-VFE5□□20

### Option

Valve model*4	Type of actuation	Port size		Flow rate characteristics*3						Weight*5 kg	
		1, 4, 2 (P, A, B)	5, 3 (R1, R2)	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		
50-VFE3□□30-01-X60	2-position	1/8	1/8	Single	3.0	0.38	0.78	2.8	0.30	0.67	0.85
				Double	3.0	0.38	0.78	2.8	0.30	0.67	1.58
	3-position			Closed center	2.4	0.31	0.64	1.8	0.37	0.46	1.67
				Exhaust center	2.6	0.37	0.70	3.0 [2.5]	0.32 [0.28]	0.76 [0.62]	
50-VFE3□□30-02-X60	2-position	1/4	1/8	Pressure center	3.0 [1.4]	0.42 [0.44]	0.83 [0.39]	2.4	0.27	0.59	0.85
				Single	4.0	0.36	1.0	3.1	0.32	0.75	
	3-position			Double	4.0	0.36	1.0	3.1	0.32	0.75	1.58
				Closed center	2.4	0.45	0.68	1.9	0.37	0.47	1.67
3-position	Exhaust center	3.0	0.42	0.82	3.1 [2.7]	0.36 [0.29]	0.79 [0.66]				
	Pressure center	5.5 [1.4]	0.37 [0.50]	1.4 [0.40]	2.6	0.32	0.64				
50-VFE5□□20-02-X60	2-position	1/4	1/4	Single	7.1	0.46	1.9	7.7	0.51	2.2	1.01
				Double	7.1	0.46	1.9	7.7	0.51	2.2	1.7
	3-position			Closed center	6.7	0.46	1.8	6.6	0.41	1.8	1.84
				Exhaust center	7.1	0.42	1.9	8.0 [7.4]	0.45 [0.47]	2.2 [2.1]	
Pressure center	6.8 [2.7]	0.51 [0.50]	2.0 [0.78]	5.7	0.37	1.4					
50-VFE5□□20-03-X60	2-position	3/8	3/8	Single	8.8	0.44	2.4	10.0	0.49	2.9	1.01
				Double	8.8	0.44	2.4	10.0	0.49	2.9	1.7
	3-position			Closed center	7.5	0.43	2.0	7.5	0.38	1.9	1.84
				Exhaust center	8.3	0.40	2.2	10.0 [8.7]	0.48 [0.46]	3.0 [2.4]	
Pressure center	9.2 [3.0]	0.50 [0.49]	2.6 [0.85]	6.1	0.35	1.6					

\*3 [ ]: denotes the normal position.

\*4 For the main/pilot valve common exhaust type, select 50-VFE3□□3□.

\*5 Weight for the flameproof threaded-joint metal conduit type

\* As the product is body ported, it can be connected to a manifold base as is.

### 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 mm<sup>2</sup> 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.

## Manifold

Model	Manifold type			
	Type	EXH type	A/B(CYL) port piping	
50-VFE3□30-□□-□□ <sup>01</sup> / <sub>02</sub> -X60	B mount	Type 30	Common	Valve
50-VFE3□40-□□-□□-X60		Type 40	Common	Base
50-VFE3□50-□□-□□-X60		Type 50	Individual	Base
50-VFE3□90-□□-□□-X60	NAMUR Interface	Type 90	Individual	Base
50-VFE5□20-□□-□□ <sup>03</sup> / <sub>03</sub> -X60	B mount	Type 20	Common	Valve
		Type 21	Common	Valve
		Type 40	Common	Base
50-VFE5□44-□□-□□-X60				

\* Select 50-VFE3□33 or 50-VFE3□43 for the main/pilot valve common exhaust type.

## How to Order

50 - VFE 3 1 3 0 - 5 T M - 02 - F - X60

**Explosion-proof**

50	Flameproof, dustproof construction
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**Body type**

Symbol	Body type, Applicable series	
	50-VFE3000	50-VFE5000
3	●	—
5	—	●

**Symbol**

1	Single solenoid
2	Double solenoid
3	Closed center
4	Exhaust center
5	Pressure center

**Body model**

Symbol	Body model	Applicable series	
		50-VFE3000	50-VFE5000
2	Body ported (For manifold type 20)	—	●
3	Body ported (For manifold type 30)	●	—
4	Base mounted (For manifold type 40)	●	●
5	For manifold type 50	●	—

**Body option**

Symbol	Body model	Applicable series	
		50-VFE3000	50-VFE5000
0	Standard	50-VFE3□ <sup>30</sup> / <sub>40</sub> / <sub>50</sub>	50-VFE5□20
3*1	Common exhaust type for main and pilot valve	50-VFE3□ <sup>33</sup> / <sub>43</sub>	—
4	Centralized piping type for pilot exhaust	—	50-VFE5□44

\*1 Semi-standard

**AC (50/60 Hz)**

1	100 VAC
2	200 VAC
3	110 VAC
4	220 VAC
7	240 VAC
8	48 VAC
A	12 VAC
B	24 VAC

**Rated voltage DC**

5	24 VDC
6	12 VDC
V	6 VDC
Y	48 VDC
Z	110 VDC

**Option**

Nil	None
F	With bracket

\* Available only for 50-VFE3□30/33 or 50-VFE□5□20 (The bracket will be shipped unattached.)

**Thread type (Port size)**

Nil	Rc
F	G
N	NPT
T	NPTF

**Port size (P, A, B)**

Symbol	Port size	Applicable series	
		50-VFE3000	50-VFE5000
Nil	None	50-VFE3□ <sup>40</sup> / <sub>43</sub> / <sub>50</sub>	50-VFE5□44
01	1/8	50-VFE3□ <sup>30</sup> / <sub>33</sub>	—
02	1/4	50-VFE3□ <sup>30</sup> / <sub>33</sub>	50-VFE5□20
03	3/8	—	50-VFE5□20

**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*2
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\*2 Please use a commercially available cable gland with ATEX certification if a product is used as a flameproof enclosure cable gland type.

**Symbol**

2-position		3-position	
Single	50-VFE3130-3133	Closed center	50-VFE3330-3333
Single	50-VFE3140-3143-3150 50-VFE5120-5144	Closed center	50-VFE3340-3343-3350 50-VFE5320-5344
Double	50-VFE3230-3233	Exhaust center	50-VFE3430-3433
Double	50-VFE3240-3243-3250 50-VFE5220-5244	Exhaust center	50-VFE3440-3443-3450 50-VFE5240-5244
		Pressure center	50-VFE3530-3533
		Pressure center	50-VFE3540-3543-3550 50-VFE5520-5544

# 50-VFE3000/5000-X60 Series

## NAMUR Interface 5-Port Solenoid Valve How to Order

### 50 - VFE3 1 90 - 5 T M - 00F - - - X60

**Explosion-proof**

50	Flameproof, dustproof construction
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**Symbol**

1	Single solenoid
2	Double solenoid

**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		

**Option**

Symbol	Option
Nil	Without spacer assembly
1	With spacer assembly

**Pilot valve mounting position (Single only)**

Symbol	Pilot valve mounting position
Nil	Standard
R	Port 2(B) side

**Thread type**

Symbol	Thread type
Nil	Rc
00F	G
00N	NPT
00T	NPTF

**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.

**Electrical connection port**

Symbol	Thread type
M	M20 x 1.5
N	NPT1/2

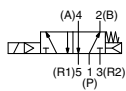
**Manual override**

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

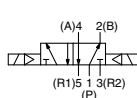
### Symbol

#### 2-position

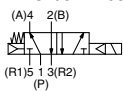
Single  
50-VFE3190-X60



Double  
50-VFE3290-X60

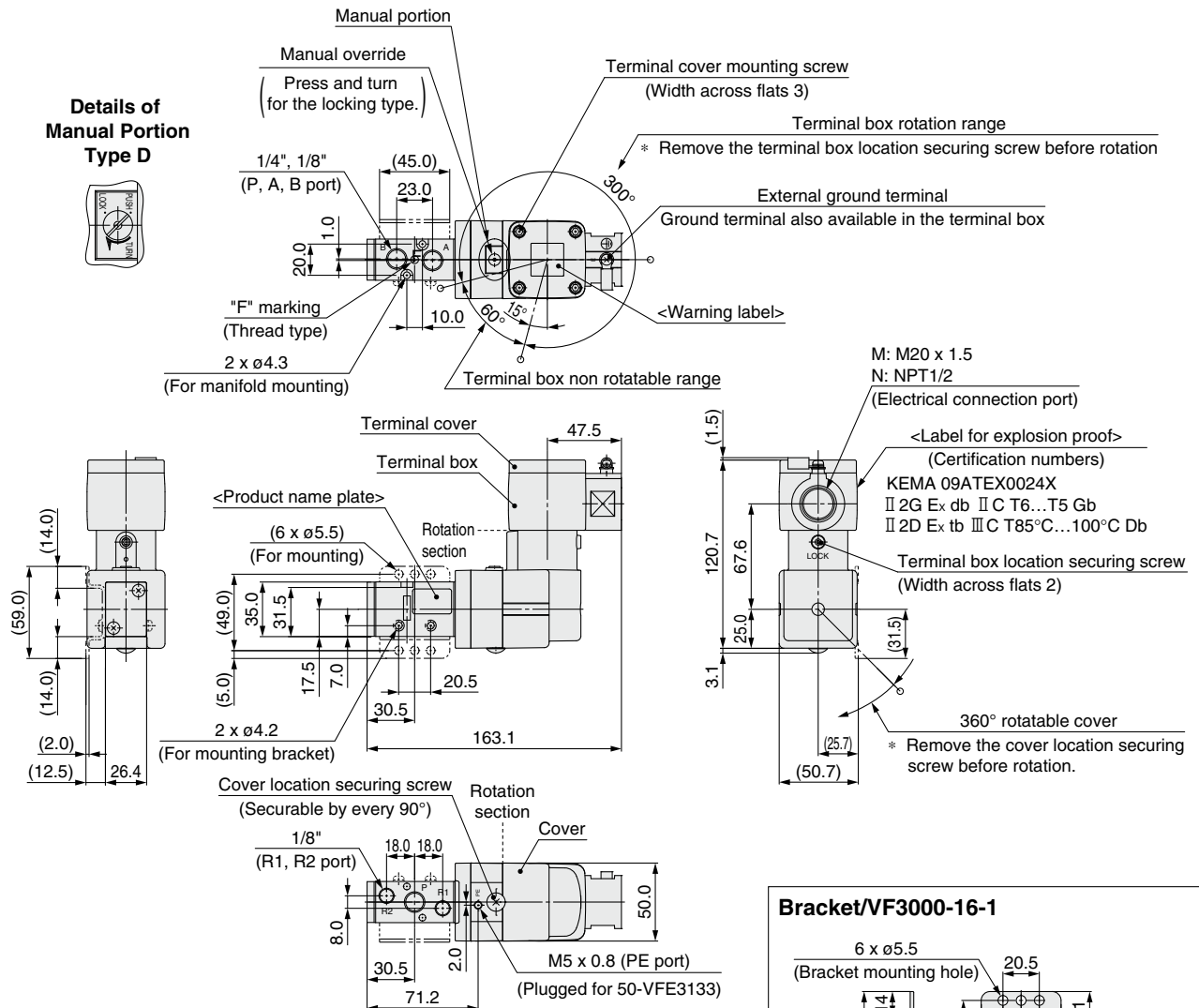


50-VFE3190-R-X60

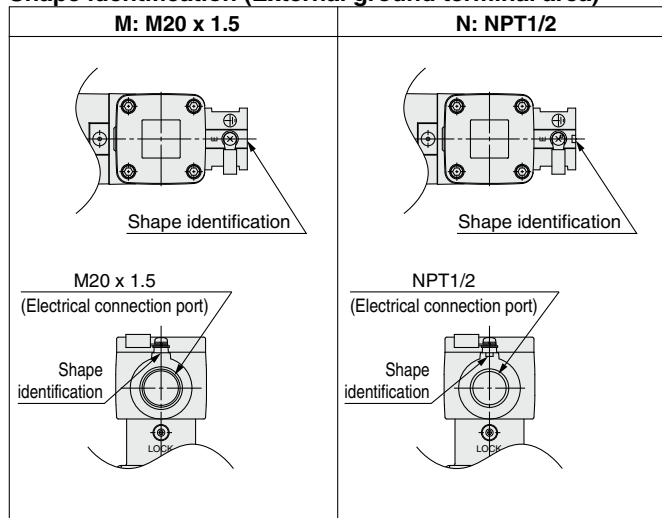


**50-VFE3000 Body Ported/2-Position Single**

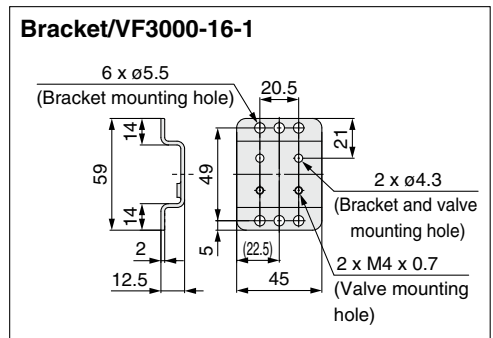
**Metal conduit threaded type/50-VFE3130-□T(M, N)-□□(-F)-X60**



**Shape identification (External ground terminal area)**



\* The shape identification is the same for the 50-VFE3000 and 5000.

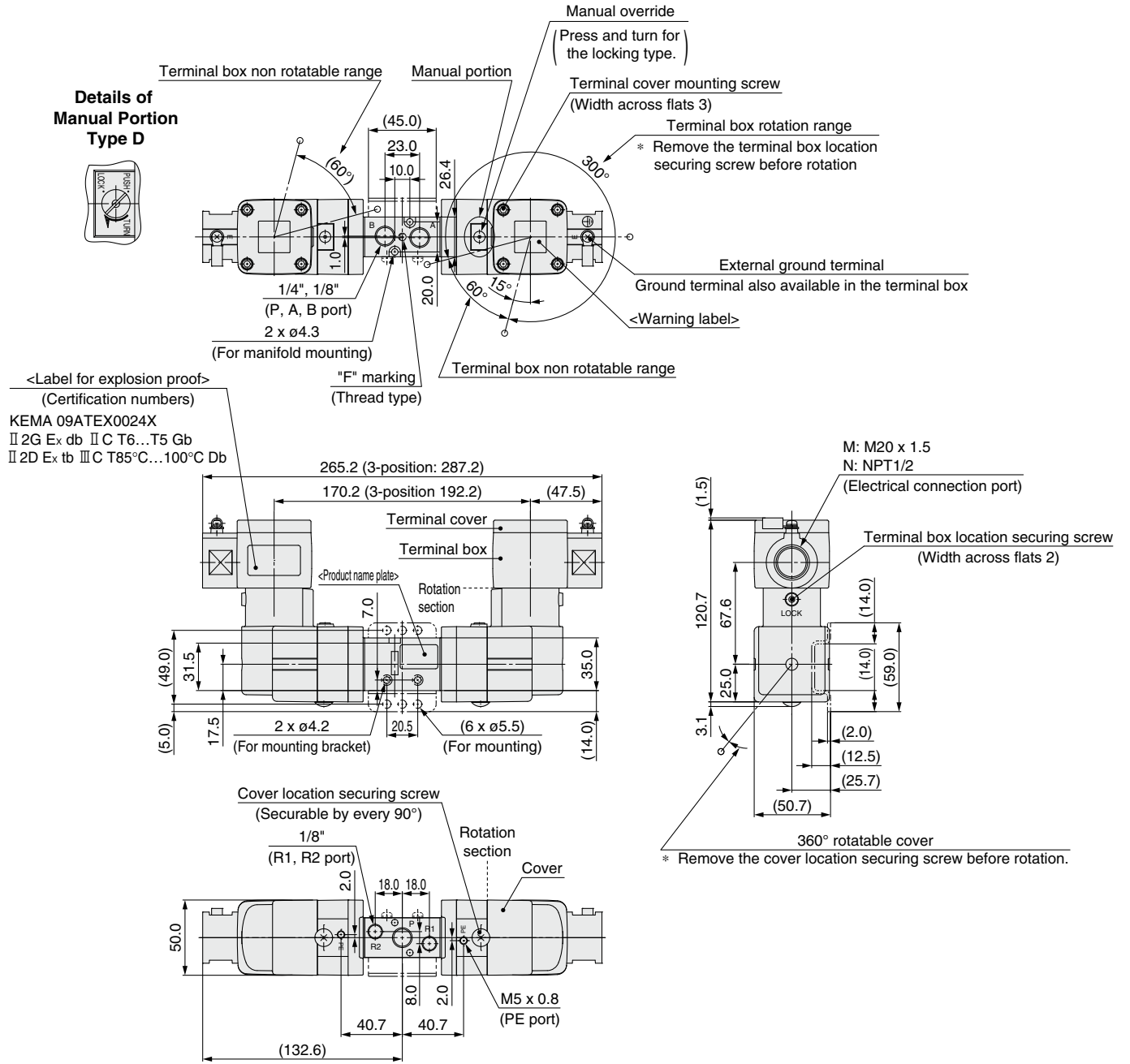


Screw part number: AC00297 (M4 x 32, With spring washer)

# 50-VFE3000/5000-X60 Series

## 50-VFE3000 Body Ported/2-Pposition Double, 3-Position Closed Center, Exhaust Center, Pressure Center

### Metal conduit threaded type/50-VFE3□30-□T(M, N)-□□(-F)-X60





# 50-VFE3000/5000-X60 Series

## 50-VFE5000 Body Ported/2-Position Single

### Metal conduit threaded type/50-VFE5120-□T(M, N)-□□(-F)-X60

