



Pressure-resistant and Explosion proof 3, 5 port solenoid valve

ATEX compliant product for Europe

50-VFE3000/5000-X60

50-VPE500/700-X60

SMC CORPORATION
4-14-1, SOTO-KANDA,
CHIYODA-KU,
TOKYO 101-0021, JAPAN
URL: <http://www.smcworld.com>

Features:

- Certified for explosion proof in Europe
CE 0344 II 2G Ex d II C T5 Gb
II 2D Ex td III C T100°C Db IP66
- Certified by European Certification Authority, DEKRA (KEMA)
[Certification no: KEMA09ATEX0024X]



Magnified: ID label

Compliant with NAMUR (50-VFE3*90)

Specifications:

50-VFE3000/5000-X60、50-VFE3□90-X60

Fluid	Air	
Operating pressure range	2 position single · 3 position	0.15~0.9MPa
	2 position double	0.1~0.9MPa
Ambient and fluid temperature	-10 to 50°C (Note1) (No freezing)	
Response Time (Note2)	2 position single · double	45ms or less
	3 position	50-VFE3000: 60ms or less 50-VFE5000: 70ms or less
Maximum operating frequency	2 position single · double	5Hz
	3 position	2Hz
Lubrication	Not required	
Manual operation	Non-locking push type、Push-turn locking D type	
Mounting orientation	Unrestricted	

Note 1: Please note that this temperature range is different from the certified range for explosion proof.

Note 2: Based on dynamic performance test JIS B8375-1981 (0.5 MPa, at rated voltage)

50-VPE542/742-X60

Fluid	Air		
Type of actuation	N.C. or N.O. (changeable)		
Pilot type	Internal pilot	External Pilot	
Operating pressure range	0.2 ~ 0.8 MPa	Supply pressure	-101.2kPa to 0.8MPa
		External pilot pressure	0.2 to 0.8MPa
Ambient and fluid temperature	-10 to 50°C ^(Note1) (No freezing)		
Response Time ^(Note2)	45ms or less ^(Note)		
Maximum operating frequency	5Hz		
Lubrication	Not required		
Manual operation	Non-locking push type, Push-turn locking D type		
Mounting orientation	Unrestricted		

Note 1: Based on dynamic performance test JIS B8374-1981 (0.5 MPa, at rated voltage)

Note 2: Please note that this temperature range is different from the certified range for explosion proof.

Solenoid Specifications

* : Semi-standard

Rated voltage	AC (50/60Hz)		100V、200V、12V*、24V*、32V*、48V*、 110V*、120V*、220V*、240V*、	
	DC		24V、6V*、12V*	
Allowable voltage fluctuation	-15 to +10% of rated voltage			
Apparent power	AC	Start-up	9.1VA(50Hz) 7.8VA(60Hz)	
		Energized	6.2VA(50Hz) 4.6VA(60Hz)	
Power consumption	DC		3.5W	
Explosion-proof construction	Explosion proof			
External wiring connection	Flameproof threaded-joint metal conduit			
Electrical entry	Conduit terminal			
Coil insulation type	Class B (130°C)			

Flow-rate characteristics

50-VFE3000-X60

Port sizes	Type of actuation	Flow-rate characteristics					
		1→4/2 (P→A/B)			4/2→5/3 (A/B→EA/EB)		
		C [dm ³ /(s·bar)]	b	Cv	C [dm ³ /(s·bar)]	b	Cv
1/8	Single solenoid	3.0	0.38	0.78	2.8	0.30	0.67
1/4		4.0	0.36	1.0	3.1	0.32	0.75
1/8	Double solenoid	3.0	0.38	0.78	2.8	0.30	0.67
1/4		4.0	0.36	1.0	3.1	0.32	0.75
1/8	Closed center	2.4	0.31	0.64	1.8	0.37	0.46
1/4		2.4	0.45	0.68	1.9	0.37	0.47
1/8	Exhaust center	2.6	0.37	0.70	3.0(2.5)	0.32(0.28)	0.76(0.62)
1/4		3.0	0.42	0.82	3.1(2.7)	0.36(0.29)	0.79(0.66)
1/8	Pressure center	3.0(1.4)	0.42(0.44)	0.83(0.39)	2.4	0.27	0.59
1/4		5.5(1.4)	0.37(0.50)	1.4(0.40)	2.6	0.32	0.64

Note (): Normal position

[Please confirm flow characteristics of 50-VPE3*90-X60 separately]

50-VFE5000-X60

Port sizes	Type of actuation	Flow-rate characteristics					
		1→4/2 (P→A/B)			4/2→5/3 (A/B→EA/EB)		
		C [dm ³ /(s·bar)]	b	Cv	C [dm ³ /(s·bar)]	b	Cv
1/4	Single solenoid	7.1	0.46	1.9	7.7	0.51	2.2
3/8		8.8	0.44	2.4	10	0.49	2.9
1/4	Double solenoid	7.1	0.46	1.9	7.7	0.51	2.2
3/8		8.8	0.44	2.4	10.0	0.49	2.9
1/4	Closed center	6.7	0.46	1.8	6.6	0.41	1.8
3/8		7.5	0.43	2.0	7.5	0.38	1.9
1/4	Exhaust center	7.1	0.42	1.9	8.0(7.4)	0.45(0.47)	2.2(2.1)
3/8		8.3	0.40	2.2	10(8.7)	0.48(0.46)	3.0(2.4)
1/4	Pressure center	6.8(2.7)	0.51(0.50)	2.0(0.78)	5.7	0.37	1.4
3/8		9.2(3.0)	0.50(0.49)	2.6(0.85)	6.1	0.35	1.6

Note (): Normal position

50-VPE500-X60

Port sizes	Flow-rate characteristics				
		1→2 (P→A)	2→3 (A→R)	3→2 (R→A)	2→1 (A→P)
1/4	C [dm ³ /(s·bar)]	6.6	7.4	6.9	7.5
	B	0.35	0.41	0.34	0.42
	Cv	1.6	2.0	1.7	2.0
3/8	C [dm ³ /(s·bar)]	9.1	9.0	8.8	9.3
	B	0.42	0.43	0.36	0.43
	Cv	2.4	2.4	2.2	2.5

50-VPE700-X60

Port sizes	Flow-rate characteristics				
		1→2 (P→A)	2→3 (A→R)	3→2 (R→A)	2→1 (A→P)
3/8	C [dm ³ /(s·bar)]	12	12	12	13
	b	0.29	0.36	0.31	0.36
	Cv	2.9	3.1	3.1	3.4
1/2	C [dm ³ /(s·bar)]	15	14	15	16
	b	0.23	0.25	0.22	0.29
	Cv	3.8	3.8	3.7	4.0

How to Order

50-VFE3000/5000-X60 Series

50-VFE ①②③④ - ⑤⑥⑦ - ⑧⑨ - ⑩ - X60

● Explosion-proof
 50- Pressure-resistant and Explosion proof

① Body size

Symbol	Body saize, Applicable series	
	50-VFE3000-X60	50-VFE5000-X60
3	●	-
5	-	●

② Type

Symbol	Type of actuation
1	Single
2	Double
3	Closed center
4	Exhaust center
5	Pressure center

③ Body type

Symbol	Body type	Applicable series	
		50-VFE3000-X60	50-VFE5000-X60
2	Body Ported (Type 20 manifold)	-	●
3	Body Ported (Type 30 manifold)	●	-
4	Base Ported (Type 40 manifold)	●	●
5	Type 50 manifold	●	-

④ Body Option

Symbol	Body Option	Applicable series	
		50-VFE3000-X60	50-VFE5000-X60
0	Standard	50-VFE3□30-X60 50-VFE3□40-X60 50-VFE3□50-X60	50-VFE5□20-X60
*3	Main/Pilot valve common exhaust	50-VFE3□33-X60 50-VFE3□43-X60	-
4	Common pilot exhaust	-	50-VFE5□44-X60

*Semi-standard

⑤ Rated voltage

Symbol	voltage	Symbol	voltage
1	AC100V 50/60Hz	*8	AC48V 50/60Hz
2	AC200V 50/60Hz	*A	AC12V 50/60Hz
*3	AC110V 50/60Hz	*B	AC24V 50/60Hz
*4	AC220V 50/60Hz	*F	AC32V 50/60Hz
5	DC24V	*V	DC6V
*6	DC12V	*16	AC120V 50/60Hz
*7	AC240V 50/60Hz		

*Semi-standard

⑥ External wire connection

Symbol	External wire connection
T	Electric conduit pressure-resistant screw connection

⑦ Manual override

Symbol	Manual override
Nil	Push type
D	Push-turn locking slotted type

⑧ Port size

Symbol	Port size	Applicable series	
		50-VFE3000-X60	50-VFE5000-X60
Nil	—	50-VFE3□40-X60 50-VFE3□43-X60 50-VFE3□50-X60	50-VFE5□44-X60
01	1/8"	50-VFE3□30-X60 50-VFE3□33-X60	-
02	1/4"	50-VFE3□30-X60 50-VFE3□33-X60	50-VFE5□20-X60
03	3/8"	-	50-VFE5□20-X60

⑨ Thread type

Symbol	Thread type
Nil	Rc
F	G
N	NPT
T	NPTF

⑩ Opution

Symbol	Opution
Nil	—
F	Bracket

Available only for 50-VFE3*30/33 or 50-VFE5*20.
 (The bracket will be shipped unattached.)

5 port solenoid valve compliant with NAMUR

50-VFE3□90-X60 Series

50-VFE 3 ① 9 0 - ②③④ - ⑤ - ⑥⑦ - X60

● Explosion-proof

50-	Pressure-resistant and Explosion proof
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①Type

Symbol	Type of actuation
1	Single
2	Double

②Rated voltage

Symbol	voltage	Symbol	voltage
1	AC100V 50/60Hz	*8	AC48V 50/60Hz
2	AC200V 50/60Hz	*A	AC12V 50/60Hz
*3	AC110V 50/60Hz	*B	AC24V 50/60Hz
*4	AC220V 50/60Hz	*F	AC32V 50/60Hz
5	DC24V	*V	DC6V
*6	DC12V	*16	AC120V 50/60Hz
*7	AC240V 50/60Hz		

*Semi-standard

③External wire connection

Symbol	External wire connection
T	Electric conduit pressure-resistant screw connection

④Manual override

Symbol	Manual override
Nil	Push type
D	Push-turn locking D type (slotted type)

⑤Thread type

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

⑥Pilot valve mounting position (single only)

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

⑦Option

Symbol	Option
Nil	Without spacer assembly
1	With spacer assembly

50-VFE3000-X60 Series Manifold How to Order

Please indicate the part numbers of the valves and blanking plate assembly with the manifold part number.

(Example) 50-VV5FE3-30-05-X60 ... 1set (Manifold)
 50-VFE3130-1T-02-X60 ... 2set (Valve)
 50-VFE3230-1T-02-X60 ... 2set (Valve)
 VF3000-13-1A ... 1set (Blanking plate Ass'y)

Common SUP·EXH

Note) Supply pressure to 1(P) ports and exhaust pressure from 3(R1) on both sides for 8 stations or more.

30 type

50-VV5FE3-30--X60

● Manifold stations

02	2stations
∫	∫
10	10stations

Applicable solenoid valve
50-VFE3□3□-X60

Applicable blanking plate Ass'y
VF3000-13-1A

Note) Max. number of stations is 10.

40 type

50-VV5FE3-40--02-X60

● Manifold stations

02	2stations
∫	∫
10	10stations

Note) Max. number of stations is 10.

● Thread type

Symbol	Thread type
Nil	Rc
F	G
N	NPT
T	NPTF

Applicable solenoid valve
50-VFE3□4□-X60

Applicable blanking plate Ass'y
VF3000-13-1A

● Port size for base mounted type ports 4(A), 2(B)

02	1/4"
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50 type

50-VV5FE3-50--02-X60

● Manifold stations

02	2stations
∫	∫
10	10stations

Note) Max. number of stations is 10.

● Thread type

Symbol	Thread type
Nil	Rc
F	G
N	NPT
T	NPTF

Applicable solenoid valve
50-VFE3□50-X60

Applicable blanking plate Ass'y
VF3000-13-1A

● Port size for base mounted type ports 4(A), 2(B)

02	1/4"
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50-VFE5000-X60 Series Manifold How to Order

Please indicate the part numbers of the valves and blanking plate assembly with the manifold part number.

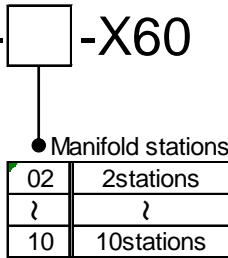
(Example) 50-VV5FE5-20-05-X60 ... 1set (Manifold)
 50-VFE5120-1T-02-X60 ... 2set (Valve)
 50-VFE5220-1T-02-X60 ... 2set (Valve)
 VF5000-4-1A ... 1set (Blanking plate Ass'y)

Common SUP·EXH

Note) Supply pressure to 1(P) ports and exhaust pressure from 3(R1), 5(R2) on both sides for 5 stations or more for 20 and 40 types and 8 stations or more for 21 type.

20 Type

50-VV5FE5-20--X60



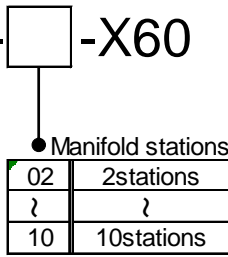
Note) Max. number of stations is 10.

Applicable solenoid valve
50-VFE520-X60

Applicable blanking plate Ass'y
VF5000-4-1A

21 Type

50-VV5FE5-21--X60



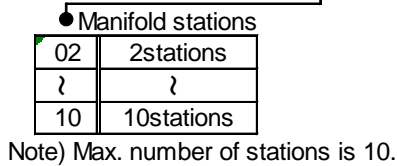
Note) Max. number of stations is 10.

Applicable solenoid valve
50-VFE520-X60

Applicable blanking plate Ass'y
VF5000-4-1A

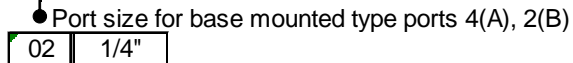
40 Type

50-VV5FE5-40--02-X60



● Thread type

Symbol	Thread type
Nil	Rc
F	G
N	NPT
T	NPTF



Applicable solenoid valve
50-VFE544-X60

Applicable blanking plate Ass'y
VF5000-4-1A

50-VPE500/700-X60 series

50-VPE ①②③④ - ⑤⑥⑦ - ⑧⑨⑩ - ⑪ - X60

●Explosion-proof

50-	Pressure-resistant and Explosion proof
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①Body size

Symbol	Body saize,Applicable series	
	50-VPE500-X60	50-VPE700-X60
5	●	-
7	-	●

②Type of actuation

Symbol	Type of actuation
4	NC/NO common(Pilot type)

③Body type

Symbol	Body type
2	Body Ported

④Valve option

Symbol	Body option
Nil	Standard (For internal pilot)
*R	For external pilot

*Semi-standard

⑤Rated voltage

Symbol	voltage	Symbol	voltage
1	AC100V 50/60Hz	*8	AC48V 50/60Hz
2	AC200V 50/60Hz	*A	AC12V 50/60Hz
*3	AC110V 50/60Hz	*B	AC24V 50/60Hz
*4	AC220V 50/60Hz	*F	AC32V 50/60Hz
5	DC24V	*V	DC6V
*6	DC12V	*16	AC120V 50/60Hz
*7	AC240V 50/60Hz		

*Semi-standard

⑥External wire connection

Symbol	External wire connection
T	Electric conduit pressure-resistant screw connection

⑦Manual override

Symbol	Manual override
Nil	Push type
D	Push-turn locking D type (slotted type)

⑧Port size

Symbol	Port size	,Applicable series	
		50-VPE500-X60	50-VPE700-X60
02	1/4"	●	-
03	3/8"	●	●
04	1/2"	-	●

⑨Thread type

Symbol	Thread type
Nil	Rc
F	G
N	NPT
T	NPTF

⑩Type

Symbol	Type of actuation
A	Normal close
B	Normal open

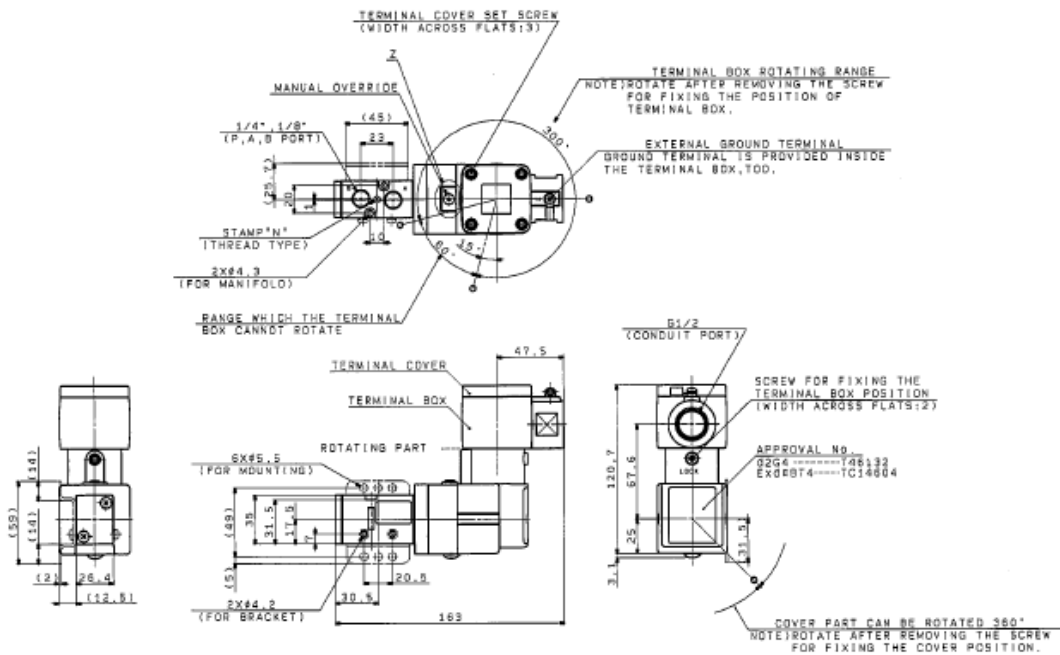
⑪Opution

Symbol	Opution
Nil	—
F	Bracket

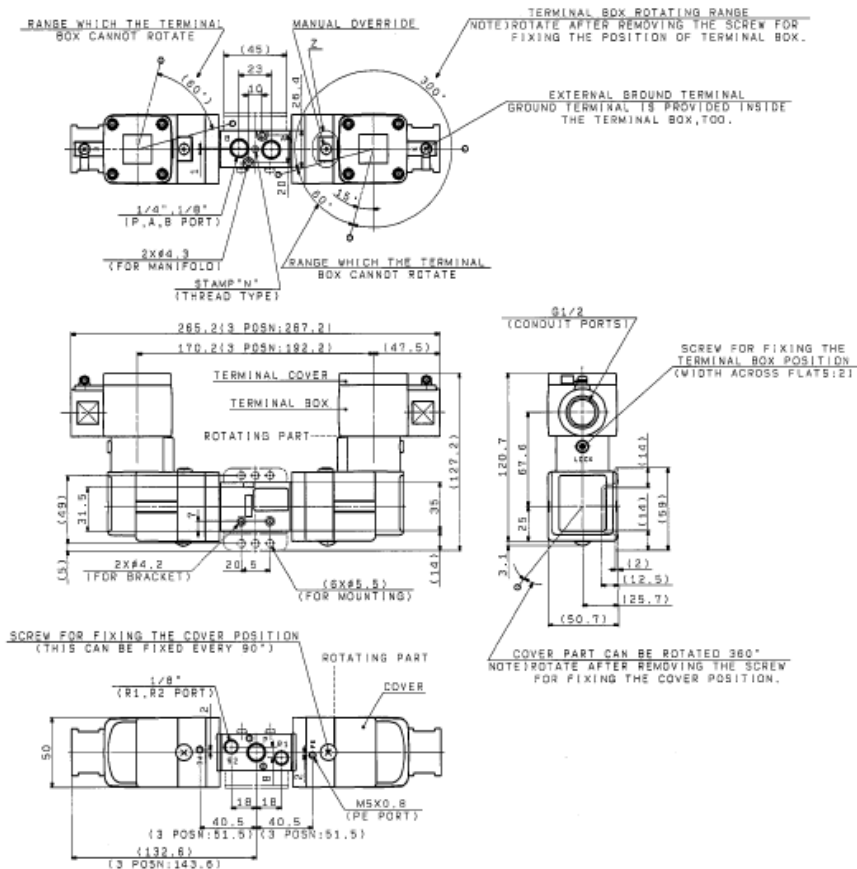
The bracket will be shipped unattached .

Dimensions: mm

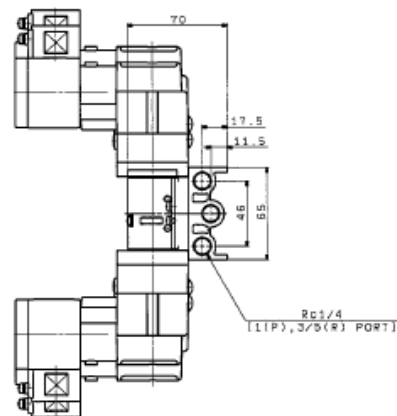
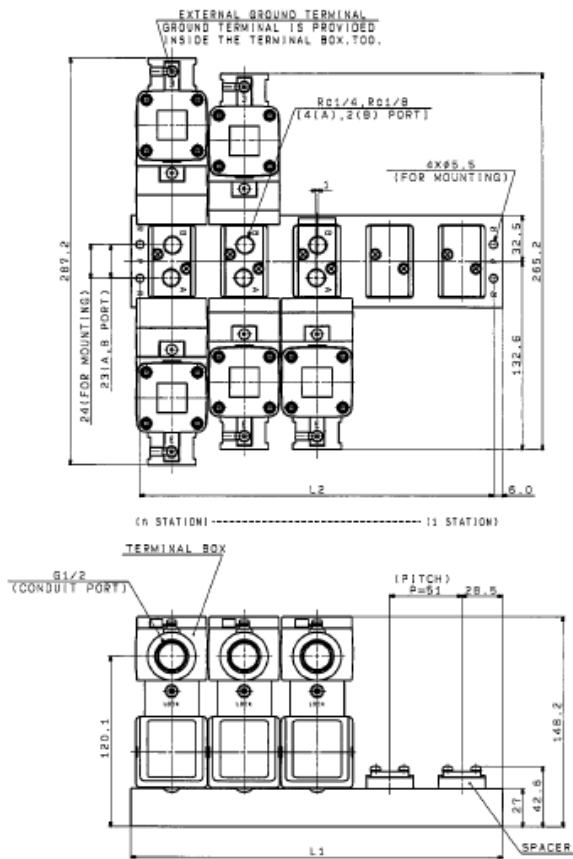
50-VFE3130-*T*(-F) -X60



50-VFE3*30-*T*(-F) -X60



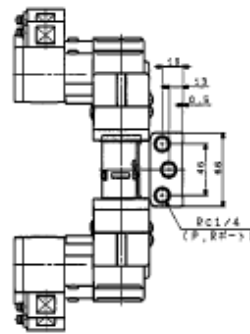
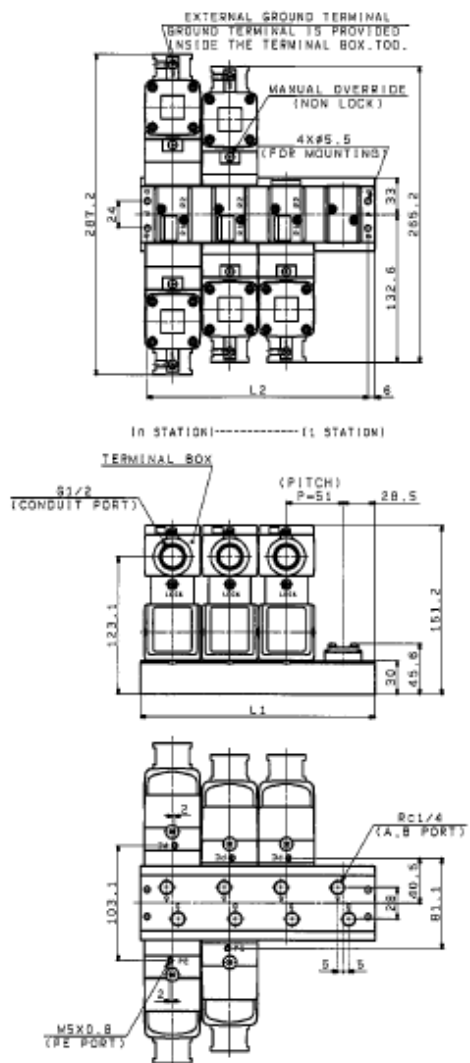
50-VV5FE3-30-**-X60



L: DIMENSIONS n: STATIONS

L \ n	2	3	4	5	6	7	8	9	10
L1	108	159	210	261	312	363	414	465	516
L2	96	147	198	249	300	351	402	453	504
**	02	03	04	05	06	07	08	09	10

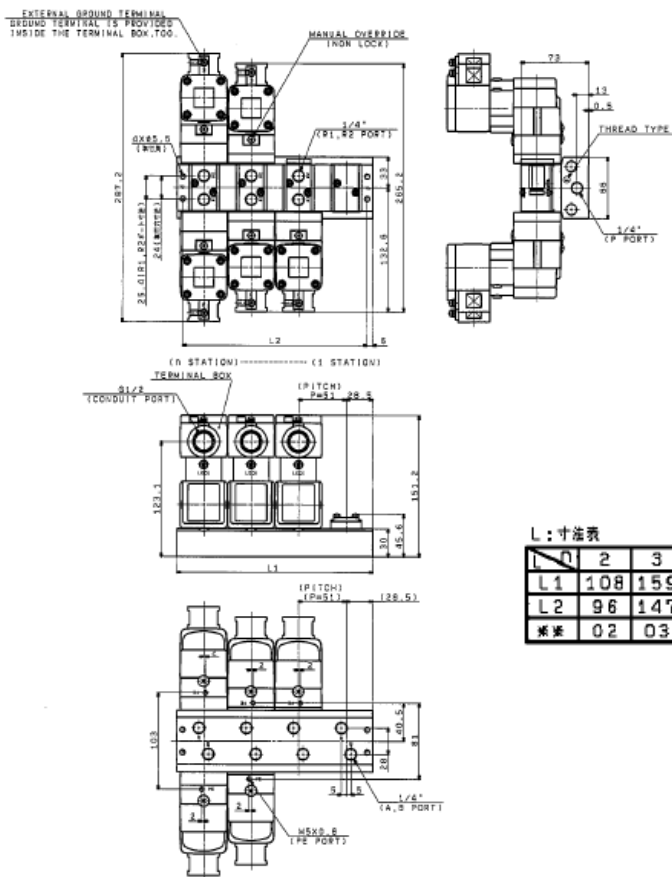
50-VV5FE3-40-**-02-X60



L:寸法表 n:連数

L \ n	2	3	4	5	6	7	8	9	10
L1	108	159	210	261	312	363	414	465	516
L2	96	147	198	249	300	351	402	453	504
**	02	03	04	05	06	07	08	09	10

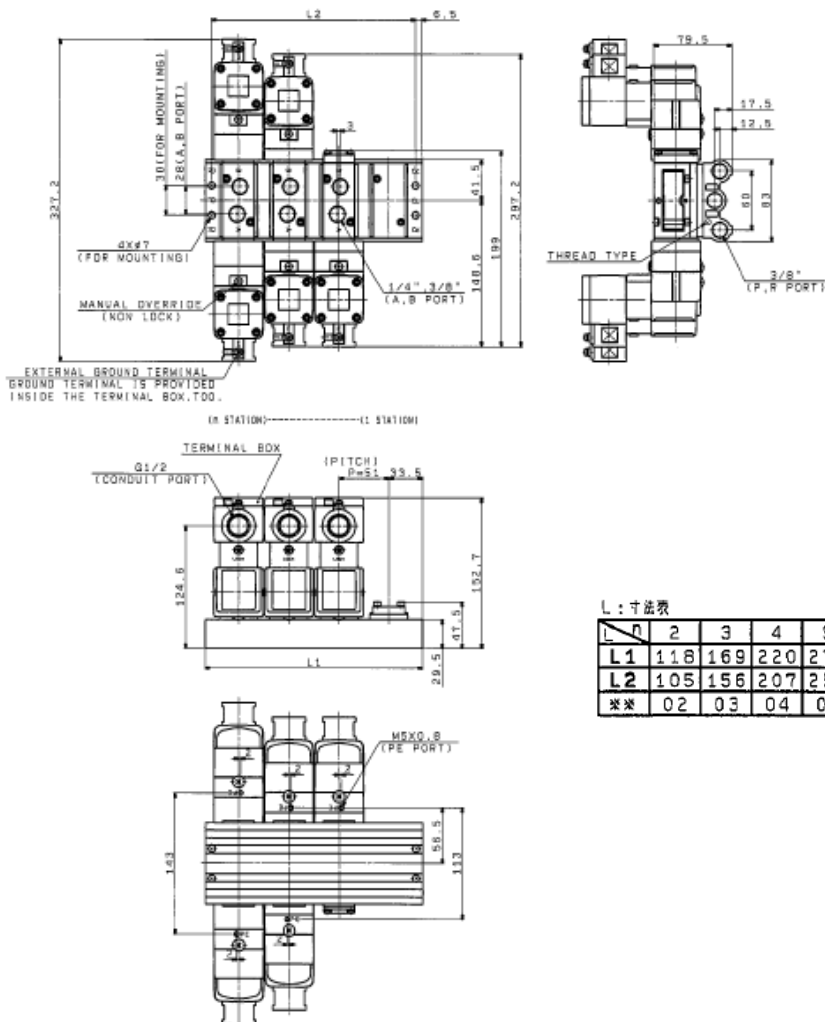
50-VV5FE3-50-**-02-X60



L:寸法表 n:道数

L \ n	2	3	4	5	6	7	8	9	10
L1	108	159	210	261	312	363	414	465	516
L2	96	147	198	249	300	351	402	453	504
**	02	03	04	05	06	07	08	09	10

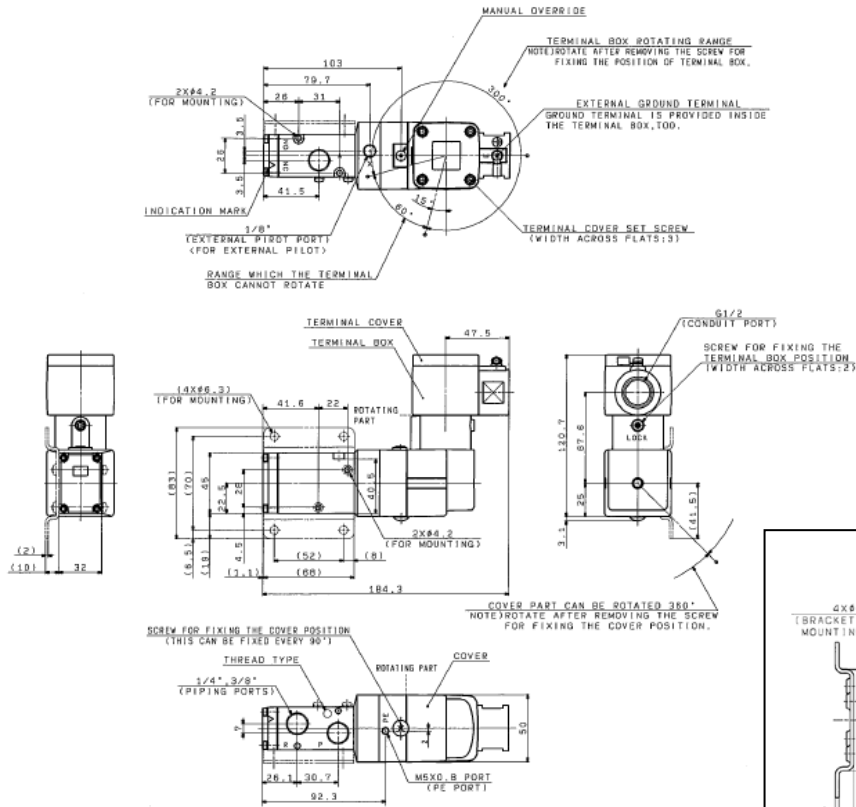
50-VV5FE5-20-**-X60



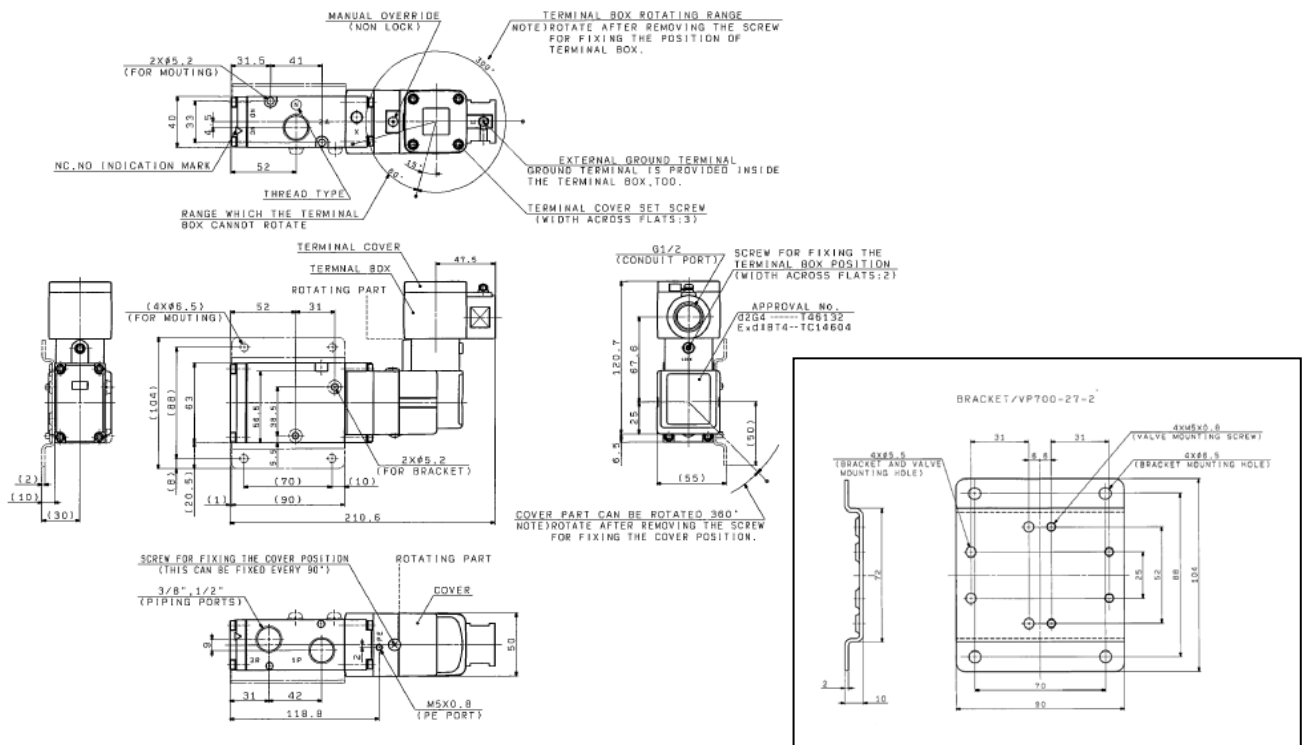
L:寸法表 n:道数

L \ n	2	3	4	5	6	7	8	9	10
L1	118	169	220	271	322	373	424	475	526
L2	105	156	207	258	309	360	411	462	513
**	02	03	04	05	06	07	08	09	10

50-VPE542-X60



50-VPE742-X60



Caution To ensure the safest possible operation of this product, please be sure to thoroughly read the "Safety Instructions" in our "Best Pneumatics" catalog before use.