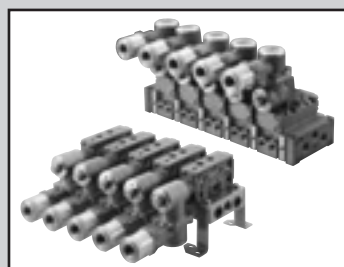


Individual wiring manifold
Pilot operated explosion-proof 5-port valve pneumatic valve

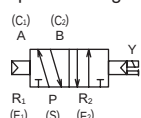
M4F**0EX Series

- Pressure and explosion proof construction ExdIIBT4 (group IIB/temperature class T4)
- Japan Conformity Certificate No. TC20523
- Korea Conformity Certificate No. 15-AV4BO-0389
- Taiwan Conformity Certificate No. ITRI (2015) No. 00216X
- China Conformity Certificate No. (CCC) 2020322307002070
- China explosion-proof type (NEPSI) GYB20.2251X
- Cylinder bore size: $\phi 63$ to $\phi 250$

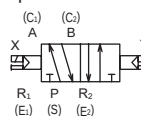


JIS symbol

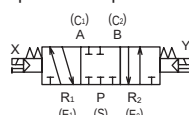
2-position/single



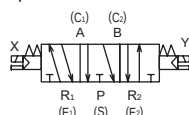
2-position/double



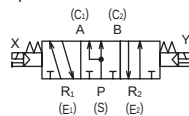
3-position/all ports closed



3-position/ABR connection



3-position/PAB connection



Common specifications

Item	Description
Manifold method	Manifold integrated
Manifold	Common exhaust Individual exhaust (M4F3)
Station No.	2 to 10 stations
Valve and operation	Pilot operated soft spool valve
Working fluid	Compressed air
Max. working pressureMPa	1.0
Min. working pressureMPa	Refer to Individual specifications listed below
Proof pressure MPa	1.5
Ambient temperature°C (*1)	-10 to 60(no freezing)
Fluid temperature °C	5 to 60
Lubrication	Not required (use turbine oil ISO VG32 if necessary for lubrication)
Explosion-proof performance (*2)	ExdIIBT4X
Manual override	Locking
Vibration resistance cm/s^2	50 or less
Shock resistance cm/s^2	300 or less
Atmosphere	Cannot be used in corrosive gas environment.

*1: The ambient temperature indicates the temperature for storage and upon installation, which will differ from the fluid temperature during operation.

*2: The display of "X" of explosion-proof performance Exd IIB T4X on products with "A2-70 bolt strength category (bolts used in actuator assembly only)" and "allowable cable temperature of 85°C or more" has been omitted.

*X is not indicated on the certification by regulations.

Individual specifications

Item			M4F3	M4F4	M4F5	M4F6	M4F7
Min. working pressure MPa	2-position	Single	0.1	0.1	0.1	0.15	0.15
		Double					
	3-position	All ports closed	0.15	0.15	0.15		
		A/B/R connection					
		P/A/B connection					
Connection	Common exhaust method	Cylinder port C	Rp1/4,Rp3/8	Rc1/4	Rc3/8	Rc1/2	Rc3/4
		Exhaust port E	Rc1/2	Rc3/8	Rc1/2	Rc3/4	Rc3/4
		Air supply port S	Rc1/2	Rc3/8	Rc1/2	Rc3/4	Rc1
Bore size	Individual exhaust method	Cylinder port C	Rp1/4,Rp3/8	Rc1/4	Rc3/8	Rc1/2	Rc3/4
		Exhaust port E	Rc1/4,Rc3/8	Rc1/4	Rc3/8	Rc1/2	Rc1/2
		Air supply port S	Rc1/2	Rc3/8	Rc1/2	Rc3/4	Rc1
(*)							

*1: NPT threads can also be used for 4F3 to 7 piping ports. Contact CKD for details.

(However, the external wire inlet is G1/2. Consult with CKD regarding NPT threads.)

Performance/characteristics by model

Item	M4F3	M4F4	M4F5	M4F6	M4F7
Response time ms (*1)	100	120	140	400	600

*1: The response times are values with working pressure of 0.5 MPa, without lubrication, and with the power ON. They depend on the pressure and the lubricant quality.

Weight

Item		M4F3	M4F4	M4F5	M4F6	M4F7
Weight calculation formula	kg	2-position	Single	1.27×n+0.98	1.52×n+0.47	1.85×n+0.77
		Double	1.83×n+0.98	2.10×n+0.47	2.46×n+0.77	4.15×n+1.79
	(n: Station No.)	3-position	2.04×n+0.98	2.27×n+0.47	2.72×n+0.77	4.53×n+1.79
						6.46×n+1.79

Flow characteristics

Model No.	Solenoid position		Port size	C[dm³/(s·bar)]	b	S(mm²)	
4F3	2-position	Single	Rp1/4	3.9	0.42	-	
		Double					
	3-position	All ports closed		4.0	0.35		
		A/B/R connection		4.5	0.42		
		P/A/B connection		4.0	0.35		
	2-position	Single	Rp3/8	5.8	0.42		
		Double					
	3-position	All ports closed		4.4	0.42		
		A/B/R connection		5.1	0.46		
		P/A/B connection		4.4	0.42		
4F4	2-position	Single	Rc1/4	5.0	0.21	-	
		Double					
	3-position	All ports closed		4.7	0.24		
		A/B/R connection		5.3	0.29		
		P/A/B connection		5.3	0.29		
4F5	2-position	Single	Rc3/8	10.0	0.32	-	
		Double					
	3-position	All ports closed		9.7	0.28		
		A/B/R connection		9.8	0.25		
		P/A/B connection					
4F6	2-position	Single	Rc1/2	18.0	0.31	-	
		Double					
	3-position	All ports closed		15.0	0.23		
		A/B/R connection					
		P/A/B connection					
4F7	2-position	Single	Rc3/4	-	-	160	
		Double					
	3-position	All ports closed					
		A/B/R connection					
		P/A/B connection					

*1: Effective cross-sectional area S and sonic conductance C are converted as $S \approx 5.0 \times C$.

4GA/B
M4GA/B
MN4GA/B
4GA/B (master)
4GB With sensor
4GD/E
M4GD/E
MN4GD/E
4GA4/B4
MN3E
MN4E
W4GA/B2
W4GB4
MN3S0
MN4S0
4SA/B0
4KA/B
4KA/B (master)
4F
4F (master)
PV5G
GMF
PV5
GMF
PV5S-0
3Q
MV3QR
3MA/B0
3PA/B
P/M/B
NP/NAP
NVP
4G*0EJ
4F*0EX
4F*0E
HMV
HSV
2QV
3QV
SKH
Silencer
TotAirSys (Total Air)
TotAirSys (Gamma)
Ending

M4F**0EX Series

Individual wiring manifold

How to order

- Single solenoid valve for manifold (4F3)

4F3 1 0 EX - 08 - G 10 - N — AC100V

*Purchase M4F3-GASKET-KIT together.

*For 4F3 NPT thread, refer to *5.

- Single solenoid valve for manifold (4F4 to 7)

4F4 1 9 EX - 00 - G 10 — AC100V

- Manifold

M 4F3 1 0 EX - 08 - G 10 - N - 9 - C L — AC100V

S1 S2 S3 S4 S5 MP

List the number of solenoid valves to be used when using a mix manifold (Example: Page 1797.)

A Model No.

B Solenoid position

C Port size

D Applicable cable O.D. (*1)

E Option

F Station No.

G Exhaust method

! Precautions for model No. selection

*1: J For Explosion-proof certification institution "KR" and "TW", "9" will be ø8.5 to ø9.5. In addition, "13" cannot be selected.

*2: "When "KR""TW" is selected, the voltage code is shown in the table below.

Code	Description	Code	Description
1	100 VAC	9	110 VDC
2	200 VAC	A	12 VDC
3	24 VDC	B	125 VDC
4	115 VAC	C	24 VAC
5	110 VAC	E	240 VAC
6	220 VAC	G	230 VAC
7	48 VDC	H	120 VAC
8	100 VDC	L	380 VAC

*3 : Any explosion-proof certified voltage other than the listed voltage 220 VDC is a made to order supported.

*4 : Consult with CKD when using vacuum with the external pilot (K), cylinder pressurizing and exhaust pressurizing.

*5 : Solenoid valve for manifold Discrete 4F3For the NPT thread of, the bore size is N2.
(Example) 4F310EX-08N2-G9-AC100V

[Example of model No.]

M4F310EX-08-G9-N-7-CL-AC100V

- A Model : Pilot operated explosion-proof 5-port valve, manifold
- B Solenoid position : 2-position single
- C Port size : Rp1/4
- D Applicable cable O.D. : ø7.5 to ø9.5
- E Option : plug included
- F Station No. : 7 stations
- G Exhaust method : common exhaust
- H Installation feet : L-bracket
- I Voltage : 100 VAC

Code	Description	4F3	4F4	4F5	4F6	4F7
B Solenoid position						
1	2 position single	●	●	●	●	●
2	2-position double	●	●	●	●	●
3	3-position all ports closed	●	●	●	●	●
4	3-position ABR connection	●	●	●	●	●
5	3-position PAB connection	●	●	●	●	●
8	Mix manifold (when there are multiple solenoid positions)	●	●	●	●	●
C Port size						
08	Rp1/4(For M4F3), Rc1/4	●	●			
10	Rp3/8(For M4F3), Rc3/8	●		●		
15	Rc1/2				●	
20	Rc3/4					●
08N	NPT1/4	●	●			
10N	NPT3/8	●		●		
08N2	NPT1/4(Solenoid valve Discrete for manifold)	●				
10N2	NPT3/8(Solenoid valve Discrete for manifold)	●				
15N	NPT1/2				●	
20N	NPT3/4					●
08G	G1/4	●	●			
10G	G3/8	●		●		
15G	C1/2				●	
20G	G3/4					●
D Applicable cable O.D.						
9	ø7.5 to ø9.5	●	●	●	●	●
10	ø9.5 to ø10.5	●	●	●	●	●
11	ø10.5 to ø11.5	●	●	●	●	●
13	ø11.5 to ø13.5	●	●	●	●	●
E Option						
Blank	No option	●	●	●	●	●
N	Plug included (for 3-port valve)	●	●	●	●	●
R	Position change of manual override	●				
NC	3-port valve specifications plug assembly (C1:A, E1:R1 assembly)	●	●	●	●	●
NO	3-port valve specifications plug assembly (C2:B, E2:R2 assembly)	●	●	●	●	●
F Station No.						
2	2					
to	to	●	●	●	●	●
10	10 stations					
G Exhaust method						
C	Common exhaust	●	●	●	●	●
I	Individual exhaust	●				
H Installation feet						
L	L-bracket(Dedicated for single)	●				
U	U-bracket	●				
I Voltage						
AC100V	100 VAC (50/60 Hz)	●	●	●	●	●
AC200V	200 VAC (50/60 Hz)	●	●	●	●	●
DC24V	24 VDC	●	●	●	●	●
DC12V	12 VDC	●	●	●	●	●
AC110V	110 VAC (50/60Hz)	●	●	●	●	●
AC220V	220 VAC (50/60 Hz)	●	●	●	●	●
* Other made-to-order products						
[AC voltage]						
12V,24V,48V,115V,120V,125V		●	●	●	●	●
127V,210V,230V,240V,250V,380V						
[DC voltage]						
45V,48V,80V,100V,110V,125V		●	●	●	●	●
J Organizations for explosive-proof certification (*2)						
Blank	Japan certification (TIIS)	●	●	●	●	●
KR	Korea certification (KOSHA)	●	●	●	●	●
TW	Taiwan certification (ITRI)	●	●	●	●	●
CN	China certification (CCC)	●	●	●	●	●

How to order masking plate kit

M4F3 - 08 - MP-KIT

* Gasket attached (M4F3)
Gasket/set screw attached (M4F4 to M4F7)

A Model No.

A Model No.
M4F3
M4F4
M4F5
M4F6
M4F7

B Port size

Code	Description	Model No.
08	Rp1/4	M4F3
10	Rp3/8	M4F3
Blank	Rc1/4	M4F4
Blank	Rc3/8	M4F5
D15	Rc1/2	M4F6
E20	Rc3/4	M4F7

How to order mix manifold

M 4F3 8 0EX - 08 - G 9 - N - 7 - C U - AC100V -

Mix manifold "8"

*For How to order other items, refer to page 1796.

S1	S2	S3	S4	S5	MP
2	2	1	1	1	0

S1=1, 6 S2=2, 5
S3=3 S4=7
S5=4

How to fill in form for ordering a mix manifold

- (1) List the quantity for each function (solenoid position) at the end of How to order. The functions and codes are as shown below.

Example: 2-position single → S1

Code	Function (solenoid position)
S1	2-position single
S2	2-position double
S3	3-position all ports closed
S4	3-position A/B/R connection
S5	3-position P/A/B connection
MP	Masking plate

S1 S2 S3 S4 S5 MP

2	2	1	1	1	0
---	---	---	---	---	---

List the quantity

- (2) List the function (solenoid position) and layout position in the field for remarks.

Solenoid position code = ○, ○th station (where the left side is the 1st station when the piping port is facing forward.)

Example: S1 = 1, 6 (1st, 6th stations are 2-position single)

[Example of model No.]

For 7 stations

1 2 3 4 5 6 7 Layout position

2-position single	2-position double	3-position all ports closed	3-position P/A/B connection	2-position double	2-position single	3-position A/B/R connection
-------------------	-------------------	-----------------------------	-----------------------------	-------------------	-------------------	-----------------------------

S1 S2 S3 S5 S2 S1 S4 Code

2-position single (S1) : 2 units (1st station, 6th station)
 2-position double (S2) : 2 units (2nd station, 5th station)
 3-position all ports closed (S3) : 1 unit (3rd station)
 3-position ABR connection (S4) : 1 unit (7th station)
 3-position PAB connection (S5) : 1 unit (4th station)

↓

M4F380EX-08-G9-N-7-CU-AC100V -

S1	S2	S3	S4	S5	MP
2	2	1	1	1	0

S1=1, 6 S2=2, 5 S3=3
S4=7 S5=4

*Create a manifold specifications sheet.

4GA/B
M4GA/B
MN4GA/B
4GA/B (master)
4GB With sensor
4GD/E
M4GD/E
MN4GD/E
4GA4/B4
MN3E MN4E
W4GA/B2
W4GB4
MN3S0 MN4S0
4SA/B0
4KA/B
4KA/B (master)
4F
4F (master)
PV5G GMF
PV5 GMF
PV5S-0
3Q
MV3QR
3MA/B0
3PA/B
P/M/B
NP/NAP NVP
4G*0EJ
4F*0EX
4F*0E
HMV HSV
2QV 3QV
SKH
Silencer
TotAirSys (Total Air)
TotAirSys (Gamma)
Ending

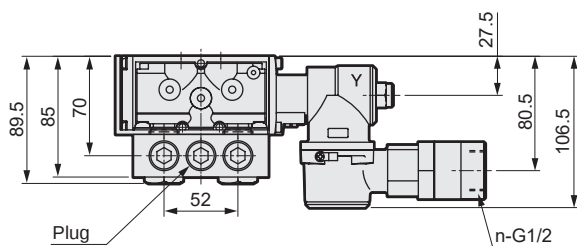
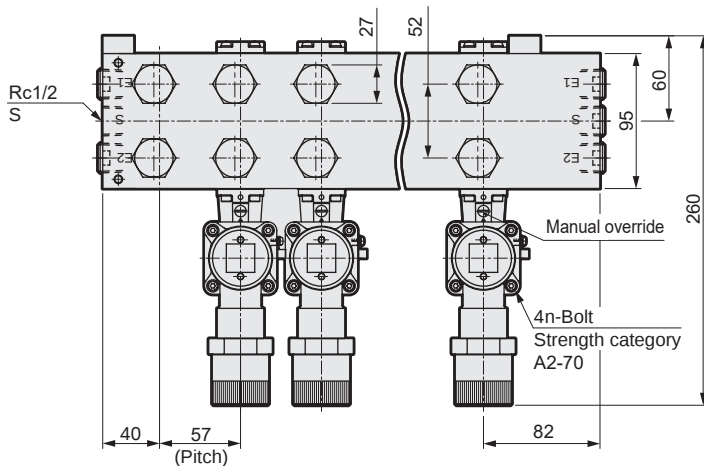
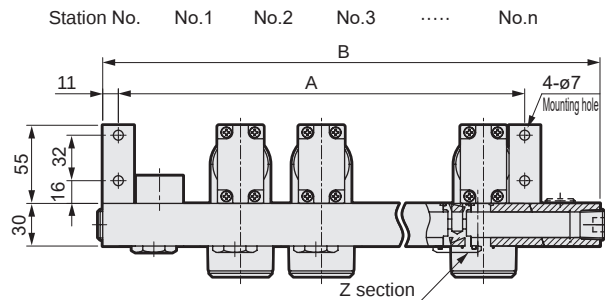
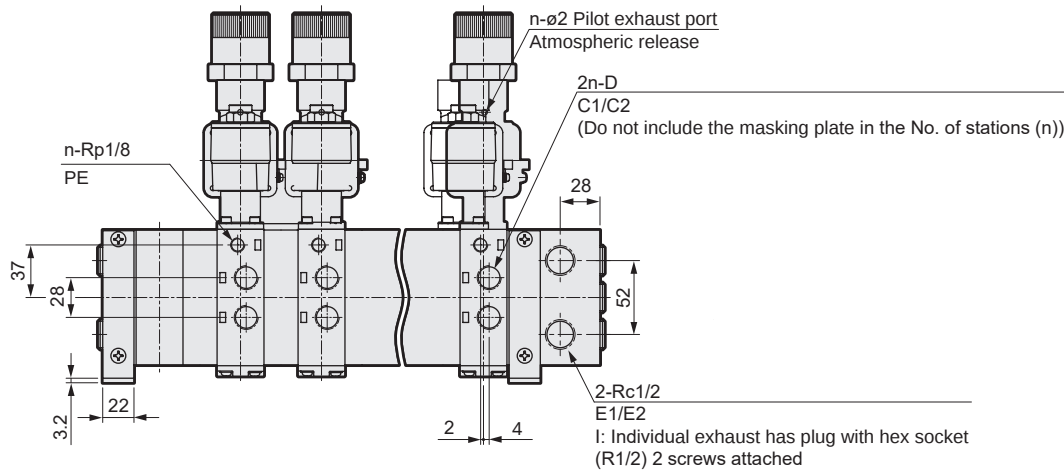
M4F3*0EX Series

Individual wiring manifold; body piping

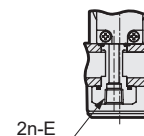
Dimensions

M4F310EX-⁰⁸/₁₀-G*-CL (common exhaust)
IL (individual exhaust)

● With L-bracket



I: Z section with individual exhaust



Station No.	2	3	4	5	6	7	8	9	10
A	115	172	229	286	343	400	457	514	571
B	179	236	293	350	407	464	521	578	635

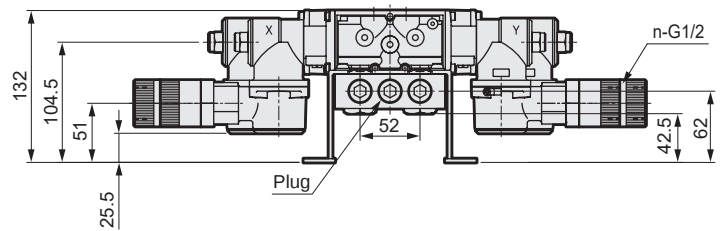
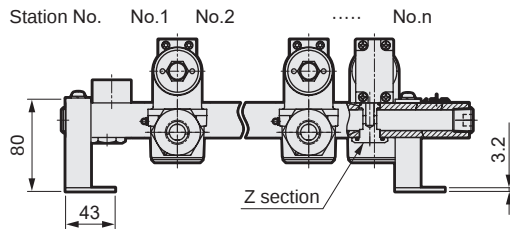
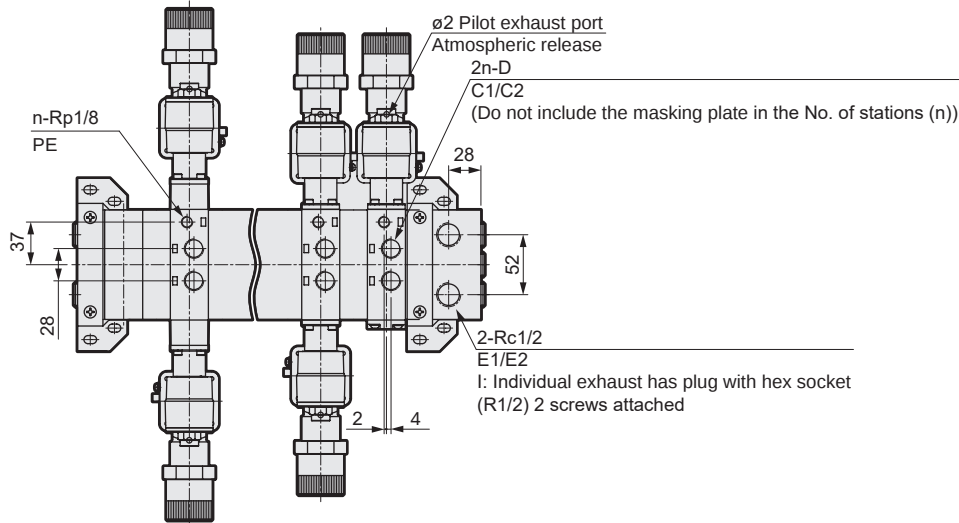
Model No.	D	E	Discrete model No. for manifold
4F310EX-08	Rp1/4	Rc1/4	4F310EX 4F320EX 4F330EX 4F340EX 4F350EX
4F320EX-08			
4F330EX-08			
4F340EX-08			
4F350EX-08			
4F310EX-10	Rp3/8	Rc3/8	
4F320EX-10			
4F330EX-10			
4F340EX-10			
4F350EX-10			

M4F3*0EX Series

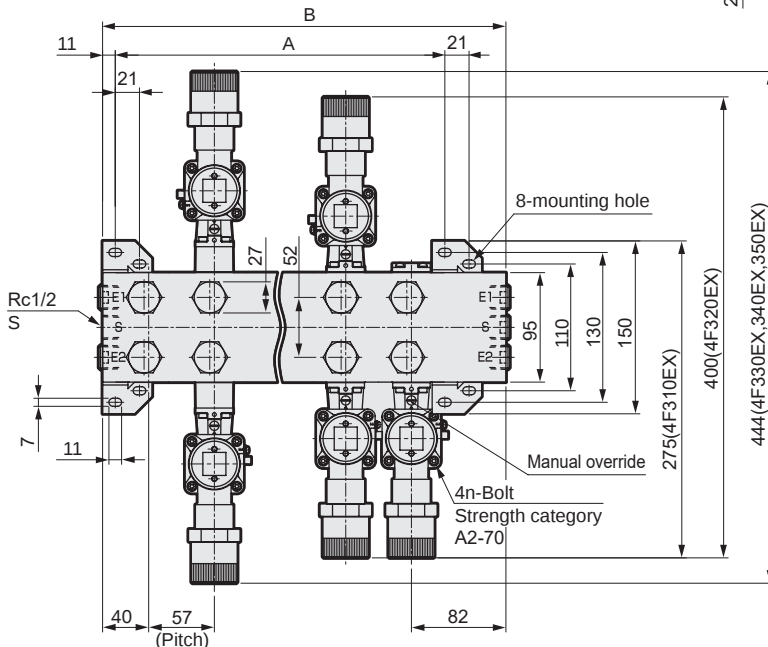
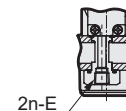
Individual wiring manifold; body piping

Dimensions

M4F3*0EX-⁰⁸₁₀-G*-CU (common exhaust)
IU (individual exhaust)
 ● With U-bracket



I: Z section with individual exhaust



Station No.	2	3	4	5	6	7	8	9	10
A	115	172	229	286	343	400	457	514	571
B	179	236	293	350	407	464	521	578	635

Model No.	D	E	Discrete model No. for manifold
4F310EX-08	Rp1/4	Rc1/4	4F310EX 4F320EX 4F330EX 4F340EX 4F350EX
4F320EX-08			
4F330EX-08			
4F340EX-08			
4F350EX-08			
4F310EX-10	Rp3/8	Rc3/8	
4F320EX-10			
4F330EX-10			
4F340EX-10			
4F350EX-10			

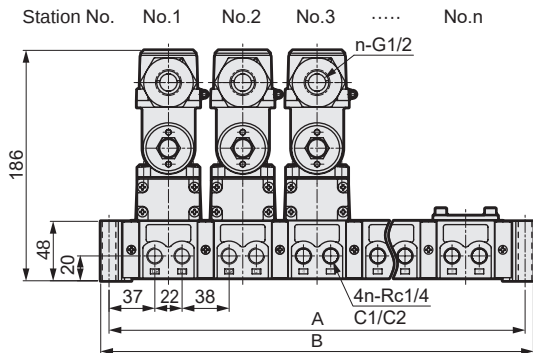
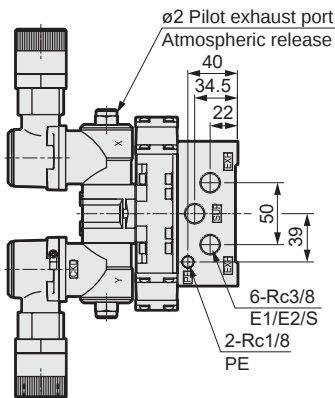
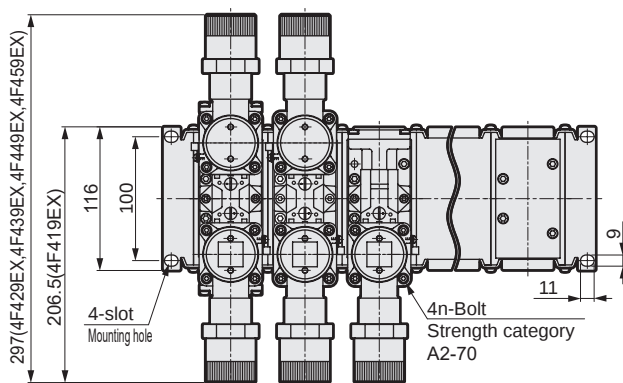
4GA/B
M4GA/B
MN4GA/B
4GA/B (master)
4GB With sensor
4GD/E
M4GD/E
MN4GD/E
4GA4/B4
MN3E MN4E
W4GA/B2
W4GB4
MN3S0 MN4S0
4SA/B0
4KA/B
4KA/B (master)
4F
4F (master)
PV5G GMF
PV5 GMF
PV5S-0
3Q
MV3QR
3MA/B0
3PA/B
P/M/B
NP/NAP NVP
4G*0EJ
4F*0EX
4F*0E
HMV HSV
2QV 3QV
SKH
Silencer
TotAirSys (Total Air)
TotAirSys (Gamma)
Ending

M4F4*0EX/M4F5*0EX Series

Individual wiring manifold: sub-plate piping

Dimensions

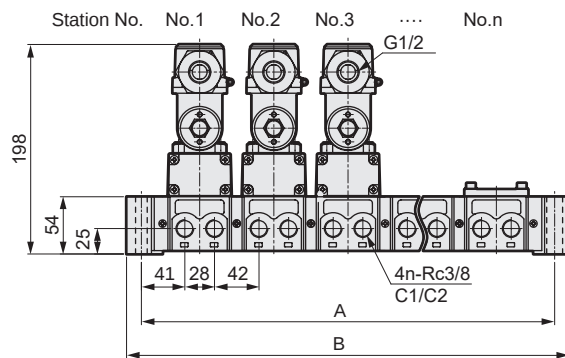
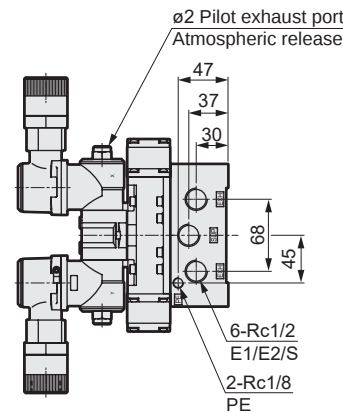
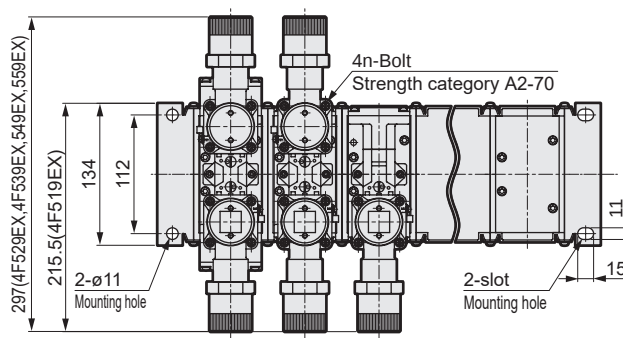
M4F4*0EX-08-G*-*-C



Station No.	2	3	4	5	6	7	8	9	10
A	156	216	276	336	396	456	516	576	636
B	169.4	229.4	289.4	349.4	409.4	469.4	529.4	589.4	649.4

Discrete model No. for manifold	
Solenoid valve	4F419EX, 4F429EX, 4F439EX 4F449EX, 4F459EX

M4F5*0EX-10-G*-*-C



Station No.	2	3	4	5	6	7	8	9	10
A	180	250	320	390	460	530	600	670	740
B	208	278	348	418	488	558	628	698	768

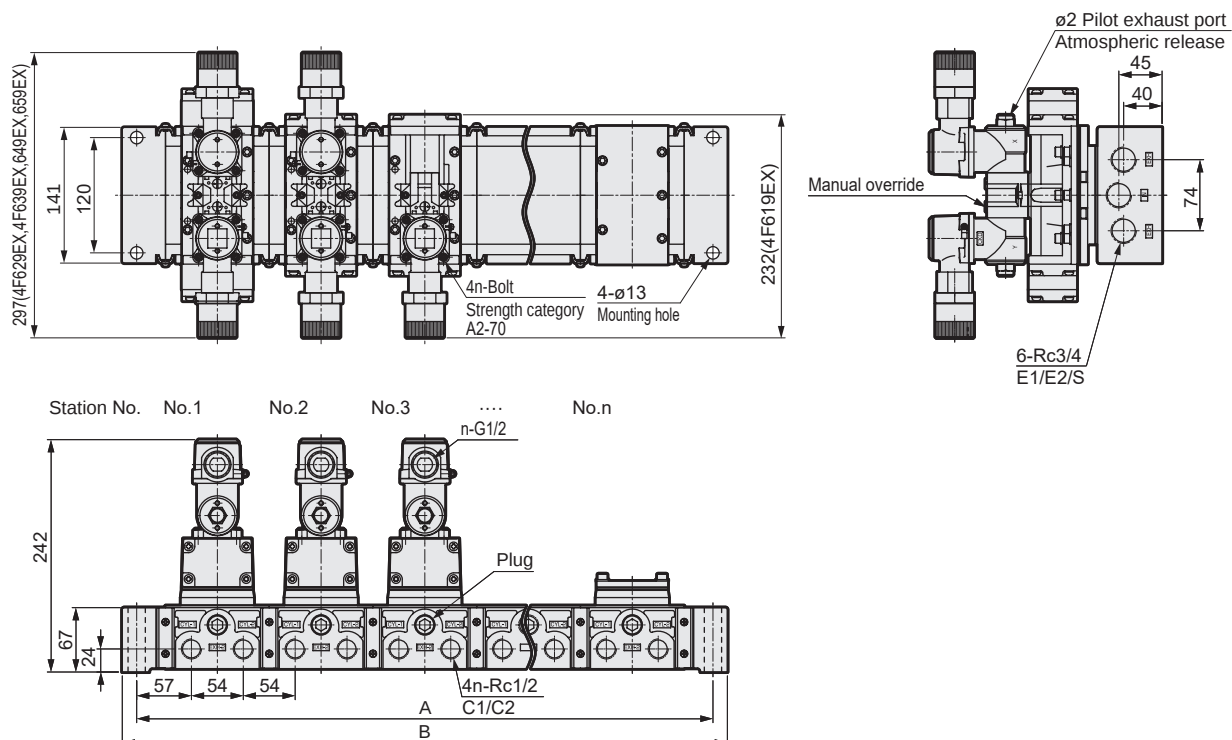
Discrete model No. for manifold	
Solenoid valve	4F519EX, 4F529EX, 4F539EX 4F549EX, 4F559EX

M4F6*0EX/M4F7*0EX Series

Individual wiring manifold: sub-plate piping

Dimensions

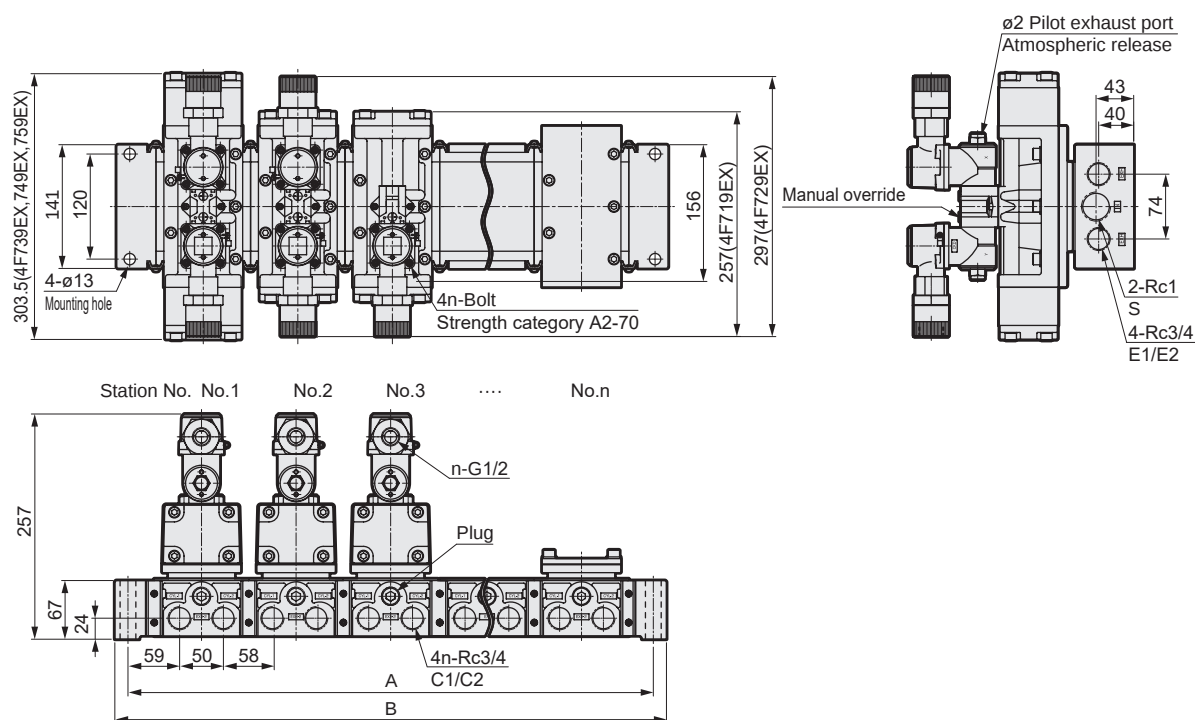
M4F6*0EX-15-G*-C



Station No.	2	3	4	5	6	7	8	9	10
A	276	384	492	600	708	816	924	1032	1140
B	306	414	522	630	738	846	954	1062	1170

Discrete model No. for manifold	
Solenoid valve	4F619EX, 4F629EX, 4F639EX 4F649EX, 4F659EX

M4F7*0EX-20-G*-C



Station No.	2	3	4	5	6	7	8	9	10
A	276	384	492	600	708	816	924	1032	1140
B	306	414	522	630	738	846	954	1062	1170

Discrete model No. for manifold	
Solenoid valve	4F719EX, 4F729EX, 4F739EX 4F749EX, 4F759EX

4GA/B
M4GA/B
MN4GA/B
4GA/B (master)
4GB With sensor
4GD/E
M4GD/E
MN4GD/E
4GA4/B4
MN3E
MN4E
W4GA/B2
W4GB4
MN3S0
MN4S0
4SA/B0
4KA/B
4KA/B (master)
4F
4F (master)
PV5G
GMF
PV5
GMF
PV5S-0
3Q
MV3QR
3MA/B0
3PA/B
P/M/B
NP/INAP
NVP
4G*0EX
4F*0EX
4F*0E
HMV
HSV
2QV
3QV
SKH
Silencer
TotAirSys (Total Air)
TotAirSys (Gamma)
Ending