

MVSC-260 series

SOLENOID VALVE



Features



Selection table



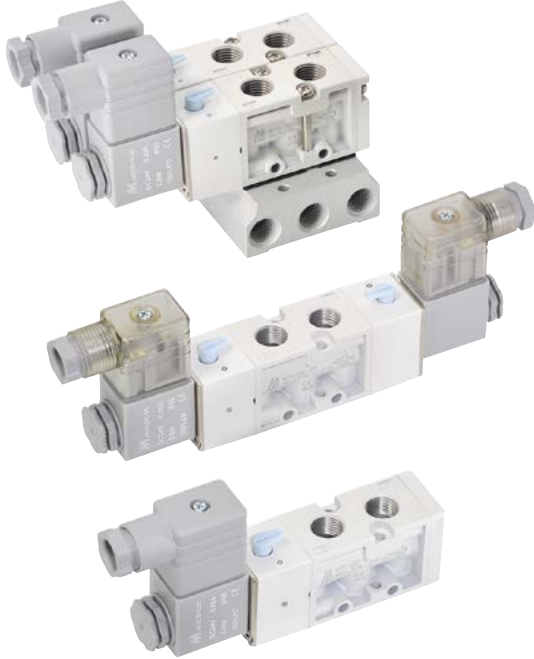
Blocking plate



Technical data



Caution for safety
(Read before installing)



Specification

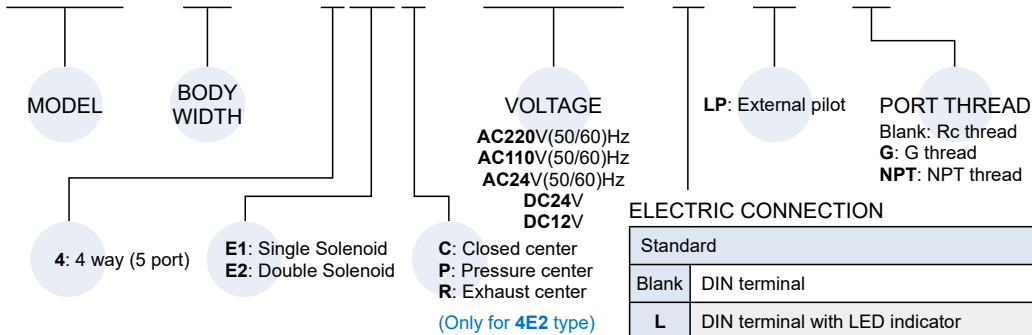
| Model | 4E1 | 4E2 | 4E2 C.P.R |
|---------------------------|---|--|-------------|
| Bore No. | 8A | | |
| Port size | 1/4 | | |
| No. of port | 5 | | |
| No. of position | 2 | 3 | |
| Medium | Air | | |
| Operating pressure range | 0.2~0.8 MPa | | 0.3~0.8 MPa |
| Operating pressure (LP) | 0~0.8 MPa | | |
| Pilot pressure range (LP) | (0.34×P ^(*1) +0.1)~0.5 MPa | | |
| Proof pressure | 1 MPa | | |
| Effective orifice | 18 mm ² | 16 mm ² | |
| Response time | 40 ms | | |
| Ambient temperature | -5~+50°C (No freezing) | | |
| Voltage | AC110V, 220V, 24V (50/60)Hz, DC24V, 12V | | |
| Power consumption | Standard | AC=4.8/4.4VA, 6/4.9VA, 6.7/5.4VA, DC=2W, 2.5W | |
| | Power saving | DC24V=Start: 2W ^(*2) Power saving: 0.5W | |
| Available voltage range | ±10% | | |
| Insulation class | F class | | |
| Weight (g) | Valve | 203 | 322 |
| | Manifold | 73n+51 (n: Stations) | |

*1. P: Operating pressure

*2. Power saving covert time 100ms.

Order example of valve

MVSC – 260 – 4E2C – AC110 – L – LP – G



ELECTRIC CONNECTION

| Standard | |
|--------------------------|--|
| Blank | DIN terminal |
| L | DIN terminal with LED indicator |
| E | Explosion protection (Table 1)(Black coil) |
| Power saving (for DC24V) | |
| KL | DIN terminal with LED indicator |

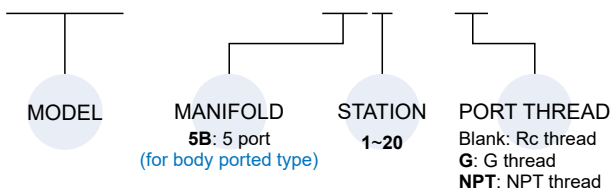
Table 1

Property for explosion-proof type

| | |
|-------------------------|-----------------------------------|
| Anti-explosion class | Ex mb IIC T4 Gb |
| Voltage | AC110V / 220V(50/60)Hz, DC24V |
| Power consumption | AC110V=4.5VA, AC220V=4.8VA, DC=5W |
| Available voltage range | ±10% |
| Insulation class | F class |
| Wire length | 3 m |

Order example of manifold

MVSC – 260 – 5B3 – G



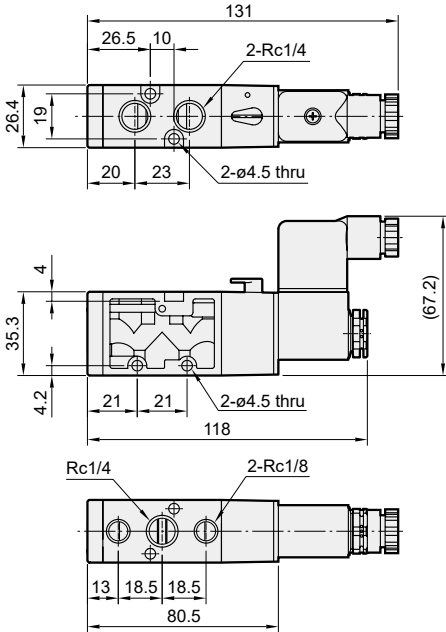
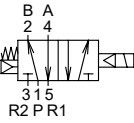
* Starting from 11 stations, manifolds are made to order.

MVSC-260 Dimensions

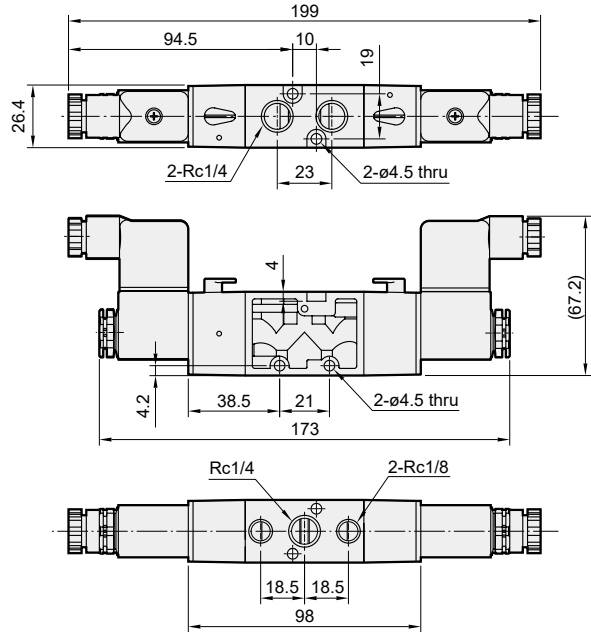
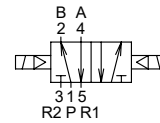
SOLENOID VALVE



MVSC-260-4E1

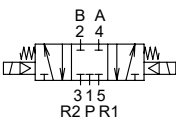


MVSC-260-4E2

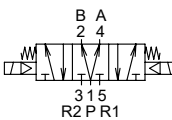


MVSC-260-4E2C.PR

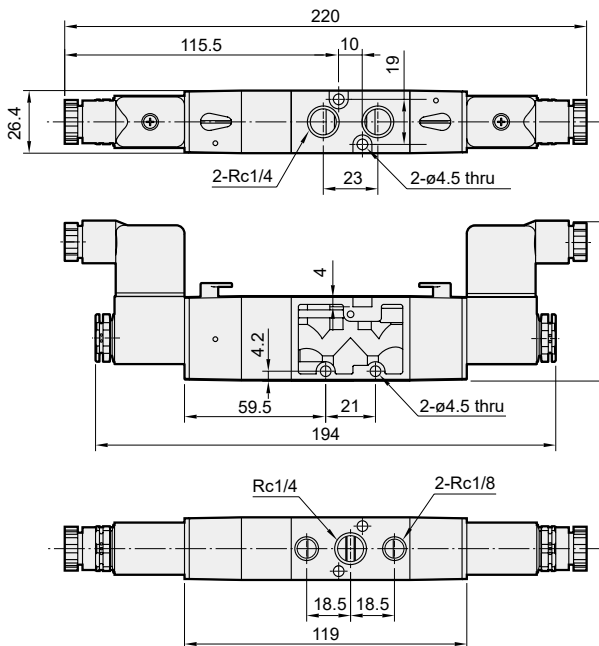
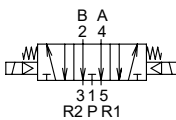
MVSC-260-4E2C



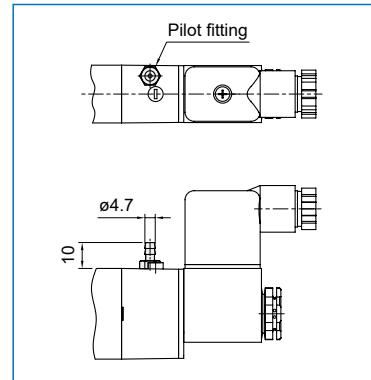
MVSC-260-4E2P



MVSC-260-4E2R

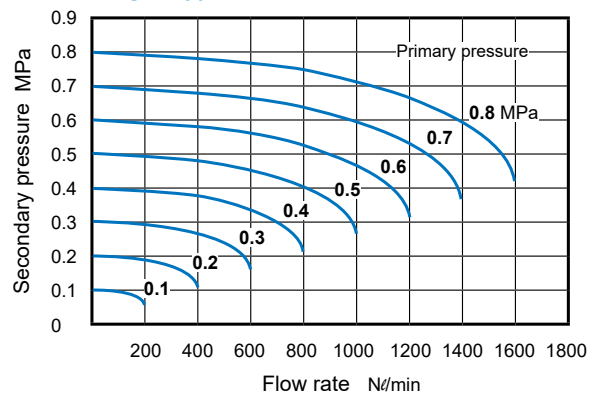


LP



Flow features

MVSC-260-4E1/4E2



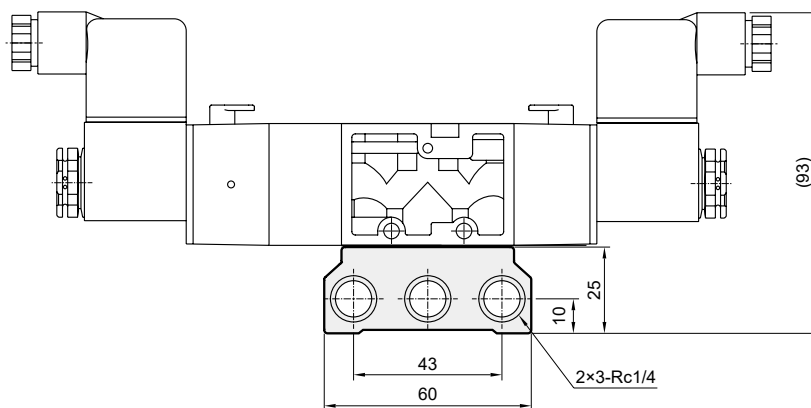
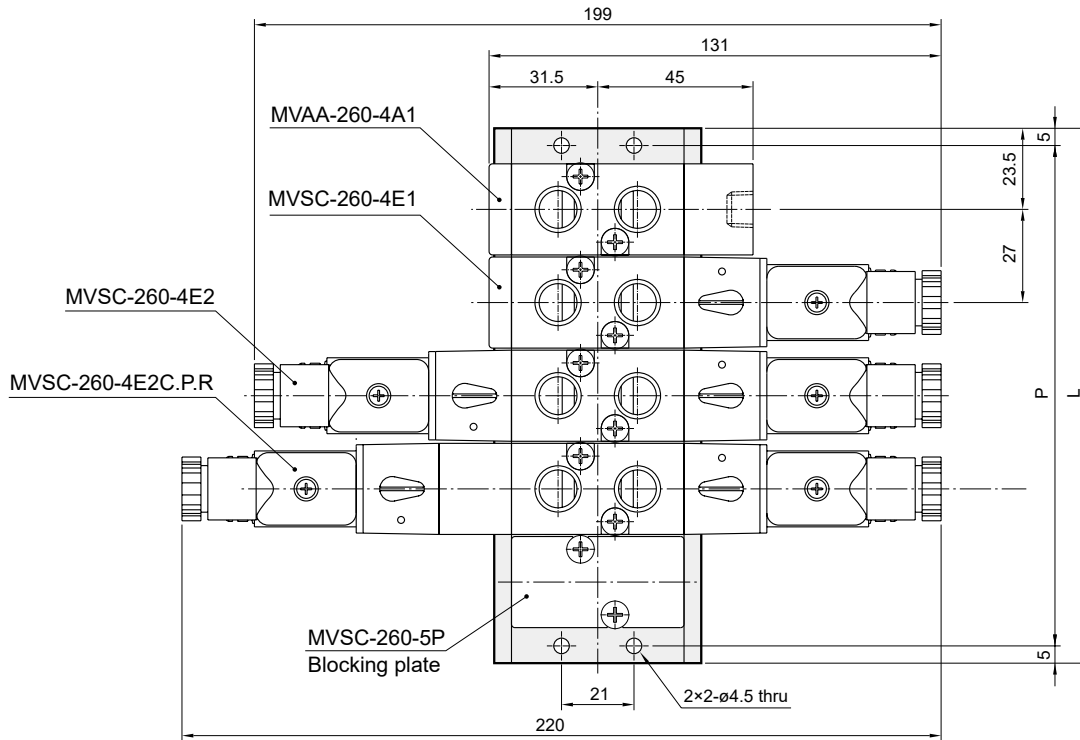
MVSC-260 Manifold

SOLENOID VALVE



MVSC-260-5B*

5 port (for body ported type)



| No. of stations | P | L |
|-----------------|-----|-----|
| 1 | 37 | 47 |
| 2 | 64 | 74 |
| 3 | 91 | 101 |
| 4 | 118 | 128 |
| 5 | 145 | 155 |
| 6 | 172 | 182 |
| 7 | 199 | 209 |
| 8 | 226 | 236 |
| 9 | 253 | 263 |
| 10 | 280 | 290 |

P: (No. of stations-1)×27+37
L: (No. of stations-1)×27+47

Product feature

Electric Connection

DIN terminal

DIN terminal with LED indicator

Explosion protection (ATEX Zone 2, 22)

- **Contact spring**
Contact spring makes wiring quick and easy. Also, it prevents wire damage.
- **Terminal material**
Material of terminal housing is PA6 which has good chemical resistance and weather resistance.
- **Manual override**
Drop-shaped manual override is easy for testing with one push or spin.
- **No leakage**
All products go through leakage test according to JIS regulation.
- **DISK seal and U-packing (NBR)**
High wear resistance, wide working temperature - 30 ~ +100°C , excellent sealability.
- **Coil**
Low power consumption, DC24V power 2W
- **Plunger material**
Resulfurized stainless steel with 17% chromium and 1.5% silicon. Provide a very low coercive magnetic field and a very high permeability.

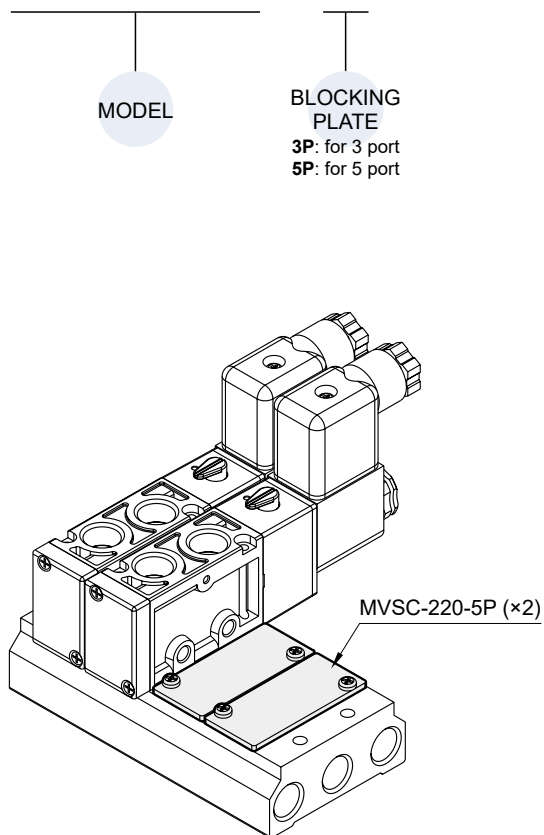
| | | |
|------------------|-------------|----------------|
| Insulation class | Coil | F class/ 155°C |
| | Copper wire | H class/ 180°C |

Product specification

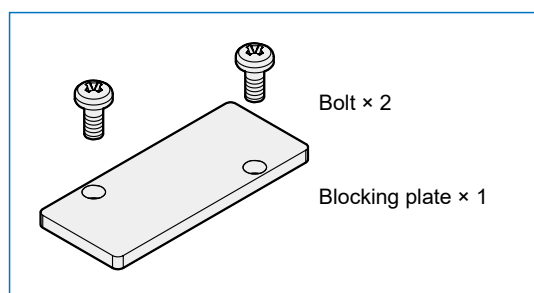
| | |
|-------------------------|--|
| Effective orifice | 18 mm ² |
| Max. operating pressure | 0.8 MPa (8 kgf/cm ²) |
| Ambient temperature | -5 ~ +50°C (No freezing) |
| Lifetime | 50 million cycles under normal service condition |

Order example

MVSC – 220 – 5P



Blocking plate parts



Blocking plate table

| Applicable model | Symbol for order | |
|------------------|-------------------|-------------------|
| | 3P: for 3 port | 5P: for 5 port |
| MVSC-220 | MVSC-220-3P | MVSC-220-5P |
| MVSC-260 | – | MVSC-260-5P |
| MVSC-300 | MVSC-300-3P | MVSC-300-5P |
| MVSC-460 | MVSC-460-3P | MVSC-460-5P |
| MVSC1-150 | – | MVSC1-150-5P |
| MVSC1-180 | MVSC1-180-3P | MVSC1-180-5P |
| MVSC1-220 | MVSC-220-3P (*1) | MVSC-220-5P (*1) |
| MVSD2-180 | – | MVSD1-180-5P (*4) |
| MVSE-260 | – | MVSC-260-5P (*1) |
| MVSE-300 | – | MVSE-300-5P |
| MVSE-500 | – | MVSC-460-5P (*1) |
| MVSG-180 | – | MVSG-180-5P |
| MVSP-156 | – | MVSY-156-5P (*2) |
| MVSP-188 | – | MVSY-188-5P (*2) |
| MVSY-100 | – | MVSY-100-5P |
| MVSY-156 | – | MVSY-156-5P |
| MVSY-188 | – | MVSY-188-5P |
| MVDY-100 | MVDY-100-3P | – |
| MVB-100 | – | MVSY-100-5P (*2) |
| MVB1-100 | – | MVSY-100-5P (*2) |
| MVB-156 | – | MVSY-156-5P (*2) |
| MVB-220 | MVSC-220-3P (*1) | MVSC-200-5P (*1) |
| MVE-100 | – | MVSY-100-5P (*2) |
| MVE-156 | – | MVSY-156-5P (*2) |
| MVE2-100 | – | MVSY-100-5P (*1) |
| MVE2-156 | – | MVSY-156-5P (*2) |
| MVE2-188 | – | MVSY-188-5P (*2) |
| MVE2-220 | – | MVSC-220-5P (*1) |
| MVJA-156 | – | MVJA-156-P |
| Pilot valve | 3P: for 3 port | 5P: for 5 port |
| MVAA-150 | – | MVSC1-150-5P (*3) |
| MVAA-180 | MVSC1-180-3P (*3) | MVSC1-180-5P (*3) |
| MVAA-220 | MVSC-220-3P (*1) | MVSC-220-5P (*1) |
| MVAA-260 | – | MVSC-260-5P (*1) |
| MVAA-300 | MVSC-300-3P (*1) | MVSC-300-5P (*1) |
| MVAA-460 | MVSC-460-3P (*1) | MVSC-460-5P (*1) |

*1. Use the same blocking plate with **MVSC**.

*2. Use the same blocking plate with **MVSY**.

*3. Use the same blocking plate with **MVSC1**.

*4. Use the same blocking plate with **MVSD1**.

| Model | Valve type | | | | | | | Body type | | *A, B port size & effective oriufice mm ² (Cv factor) | | | | | | | | Body width (mm) | Power consumption W (DC) | Working pressure range MPa (*) | Page |
|-----------|----------------------|--------------------|---------------|---------------|---------------|-----------------|----------------|------------------|---------------|--|------------|---------------|------------|-----------|------------|-----------|----|-----------------|--------------------------|--------------------------------|-------|
| | 3/2 | | 5/2 | | 5/3 | | | Body ported type | Manifold type | M3 | M5 | 1/8" | 1/4" | 3/8" | 1/2" | 3/4" | 1" | | | | |
| | Normally closed (NC) | Normally open (NO) | Single acting | Double acting | Closed center | Pressure center | Exhaust cneter | | | | | | | | | | | | | | |
| MVSC-220 | ● | ● | ● | | ● | ● | ● | ● | ● | | | 18 (1.00) | 18 (1.00) | | | | | 22 | 2 | 0.2~0.8 | 1-5 |
| MVSC-260 | | | ● | | ● | ● | ● | ● | | | | 18 (1.00) | | | | | | 26 | 2 | 0.2~0.8 | 1-10 |
| MVSC-300 | ● | ● | ● | | ● | ● | ● | ● | | | | | | 35 (1.94) | | | | 30 | 2 | 0.2~0.8 | 1-13 |
| MVSC-460 | ● | ● | ● | | ● | ● | ● | ● | | | | | | 50 (2.78) | | | | 30 | 2 | 0.2~0.8 | 1-17 |
| MVSC1-150 | | | ● | | | | | ● | ● | | 3.8 (0.21) | | | | | | | 15 | 0.95 | 0.15~0.8 | 1-22 |
| MVSC1-180 | ● | ● | ● | | ● | ● | ● | ● | | | | 12 (0.67) | | | | | | 18 | 0.95 | 0.15~0.8 | 1-24 |
| MVSC1-220 | ● | ● | ● | | ● | ● | ● | ● | ● | | | 18 (1.00) | 18 (1.00) | | | | | 22 | 0.95 | 0.2~0.8 | 1-28 |
| MVSD2-180 | | | ● | | ● | ● | ● | ● | | | | 12 (0.67) | | | | | | 18 | 0.95 | 0.15~0.8 | 1-33 |
| MVSE-260 | | | ● | | ● | ● | ● | ● | | | | 18 (1.00) | | | | | | 26 | 2 | 0.2~1.2 | 1-37 |
| MVSE-300 | | | ● | | ● | ● | ● | ● | | | | | | 35 (1.94) | | | | 30 | 2 | 0.2~1.2 | 1-40 |
| MVSE-500 | | | ● | | ● | ● | ● | ● | | | | | | 41 (2.28) | | | | 30 | 2 | 0.2~1.2 | 1-43 |
| MVSE-510 | | | ● | | ● | ● | ● | ● | | | | | | 65 (3.61) | | | | 68 | 10 | 0.2~0.7 | 1-45 |
| MVSE-600 | | | ● | | ● | ● | ● | ● | | | | | | | 115 (6.39) | 135 (7.5) | | 68 | 10 | 0.2~0.7 | 1-47 |
| MVSE2-300 | ● | ● | ● | | ● | ● | ● | ● | | | | 19.8 (1.1) | | | | | | 30 | 3 | 0.12~1 | 1-49 |
| MVSG-180 | | | ● | | ● | ● | ● | ● | | | | 10 (0.56) | | | | | | 18 | 1.6 | 0.15~0.7 | 1-52 |
| MVSI-260 | | | ● | | ● | ● | ● | | ● | | | 22 (1.22) | | | | | | 35 | 2 | 0.2~0.7 | 1-55 |
| MVSI-450 | | | ● | | ● | ● | ● | | ● | | | 27 (1.5) | | | | | | 45 | 2 | 0.2~0.7 | 1-57 |
| MVSI-510 | | | ● | | ● | ● | ● | | ● | | | | | 65 (3.61) | | | | 68 | 10 | 0.2~0.7 | 1-62 |
| MVSN-220 | | | ● | | ● | ● | ● | ● | | | | 18 (1.00) | 18 (1.00) | | | | | 22 | 2 | 0.2~0.7 | 1-64 |
| MVSN-300 | | | ● | | ● | ● | ● | ● | | | | 35 (1.94) | | | | | | 30 | 2 | 0.2~0.8 | 1-66 |
| MVSN2-300 | | | ● | | ● | ● | ● | ● | | | | 19.8 (1.1) | | | | | | 30 | 3 | 0.15~1 | 1-69 |
| MVSP-156 | | | ● | | ● | ● | ● | ● | ● | | | 11 (0.61) | | | | | | 15 | 0.95 | 0.15~0.7 | 1-71 |
| MVSP-188 | | | ● | | ● | ● | ● | ● | ● | | | 15 (0.83) | | | | | | 18 | 0.95 | 0.15~0.7 | 1-76 |
| MVSY-100 | | | ● | | ● | ● | ● | ● | ● | | 4.5 (0.25) | | | | | | | 10 | 0.55 | 0.2~0.8 | 1-80 |
| MVSY-156 | | | ● | | ● | ● | ● | ● | ● | | | 11 (0.61) | | | | | | 15 | 0.55 | 0.15~0.7 | 1-84 |
| MVSY-188 | | | ● | | ● | ● | ● | ● | ● | | | 15 (0.83) | | | | | | 18 | 0.55 | 0.15~0.7 | 1-90 |
| MVSV-220 | ● | ● | | | | | | ● | | | | 6.2 (0.34) | | | | | | 22 | 7→3 | -1.01~0.7 | 1-95 |
| MVDA-80 | ● | | | | | | | | ● | | | 0.612 (0.034) | | | | | | 8 | 0.5 | 0~0.8 | 1-97 |
| MVDA-120 | ● | | | | | | | ● | | | | 2.184 (0.121) | | | | | | 12 | 0.8 | 0~0.8 | 1-99 |
| MVDC-220 | ● | | | | | | | ● | | | | 0.8 (0.044) | | | | | | 22 | 2 | 0~0.7 | 1-101 |
| MVDC-300 | ● | | | | | | | ● | | | | 4.4 (0.244) | 4.6 (0.25) | | | | | 29.6 | 7→3 | -1.01~1 | 1-103 |
| MVDY-100 | ● | | | | | | | | ● | | | 0.28 (0.016) | | | | | | 10 | 0.55 | 0~0.9 | 1-105 |

● 2/2, 3/2 way N.C.

* The data is based on 5/2.

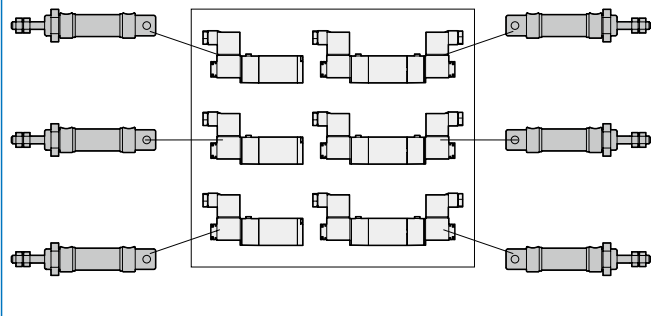
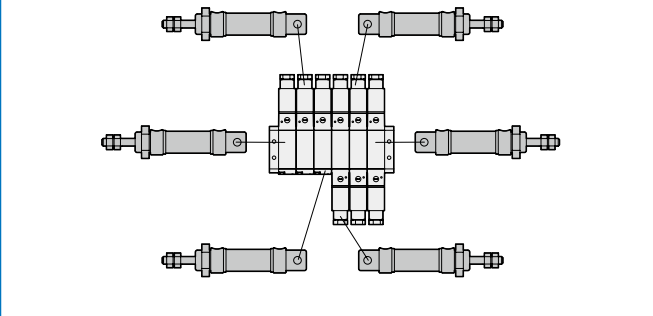
Pressure conversion chart

| Pa | kPa | MPa | bar | mbar | kgf/cm ² | cmH ² O | mmH ² O | mmHg | p.s.i. |
|---------|---------|------------|------------|---------|---------------------|--------------------|--------------------|---------|----------|
| 1 | 0.001 | 0.000001 | 0.00001 | 0.01 | 0.0000102 | 0.0102 | 0.10197 | 0.0075 | 0.000145 |
| 1000 | 1 | 0.001 | 0.01 | 10 | 0.0102 | 10.2 | 101.97 | 7.5 | 0.145 |
| 1000000 | 1000 | 1 | 10 | 10000 | 10.2 | 10200 | 101970 | 7500 | 145 |
| 100000 | 100 | 0.1 | 1 | 1000 | 1.02 | 1020 | 10200 | 750.06 | 14.5 |
| 100 | 0.1 | 0.0001 | 0.001 | 1 | 0.00102 | 1.02 | 10.2 | 0.75 | 0.0145 |
| 98066.5 | 98.07 | 0.09807 | 0.98 | 980.67 | 1 | 1000 | 10000 | 735.56 | 14.22 |
| 98.0665 | 0.9807 | 0.0009807 | 0.00098 | 0.98 | 0.001 | 1 | 10 | 0.74 | 0.01422 |
| 9.80665 | 0.09807 | 0.00009807 | 0.00009807 | 0.09807 | 0.0001 | 0.1 | 1 | 0.07356 | 0.00142 |
| 133.32 | 0.13332 | 0.00013332 | 0.00133 | 1.33 | 0.00136 | 1.36 | 13.6 | 1 | 0.01934 |
| 6895 | 6.895 | 0.006895 | 0.06895 | 68.95 | 0.07031 | 70.31 | 703.07 | 51.71 | 1 |

Flow rate conversion chart

| m ³ /s | l/s | cm ³ /s | m ³ /h | m ³ /min | l/h | l/min | ft ³ /min (scfm) | gallon min UK | gallon min USA |
|-------------------|---------|--------------------|-------------------|---------------------|---------|---------|-----------------------------|---------------|----------------|
| 1 | 1000 | 1000000 | 3600000 | 60 | 3600000 | 60000 | 2120 | 13200 | 15850 |
| 0.001 | 1 | 1000 | 3.6 | 0.06 | 3600 | 60 | 2.12 | 13.2 | 15.85 |
| 0.000001 | 0.001 | 1 | 0.0036 | 0.00006 | 3.6 | 0.06 | 0.0212 | 0.0132 | 0.01585 |
| 0.00028 | 0.28 | 280 | 1 | 0.1667 | 1000 | 16.67 | 0.59 | 3.67 | 4.4 |
| 0.01667 | 16.67 | 16670 | 60 | 1 | 60000 | 1000 | 35.31 | 219.97 | 264.17 |
| 0.00000028 | 0.00028 | 0.28 | 0.001 | 0.00001667 | 1 | 0.01667 | 0.00059 | 0.00367 | 0.0044 |
| 0.00001667 | 0.01667 | 16.67 | 0.06 | 0.001 | 60 | 1 | 0.03531 | 0.21997 | 0.264 |
| 0.00047 | 0.47 | 470 | 1.699 | 0.02832 | 1699 | 28.32 | 1 | 6.23 | 7.48 |
| 0.00007579 | 0.07577 | 75.77 | 0.273 | 0.00455 | 273 | 4.55 | 0.16 | 1 | 1.2 |
| 0.00006309 | 0.06309 | 63.09 | 0.227 | 0.00379 | 227 | 3.79 | 0.13 | 0.83 | 1 |

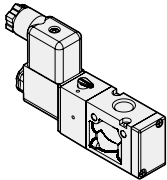
Intergrated connection system offers improvements on facilities

| Facilities with traditional connection system | Facilities applied with intergrated connection system |
|--|---|
| <ul style="list-style-type: none"> • Longer distance from the controlling valve to the operating unit. • Slower response time. • More air consumption. • Complicated connection arrangements. • Mass electric wiring and connections to controlling valves task. • Higher cost to run the facilities. • Higher pressure drop. | <ul style="list-style-type: none"> • Shorter distance from the controlling valve to the operating unit. • Quicker response time. • Less air consumption. • Simple connection arrangements. • Moderate electric wiring connections task. • Lower cost to run the facilities. • Lower pressure drop. |
|  |  |

SOLENOID VALVE

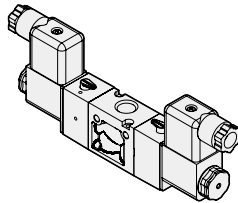
3E1

3 way / Single solenoid



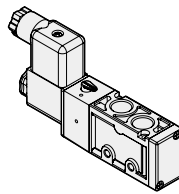
3E2

3 way / Double solenoid



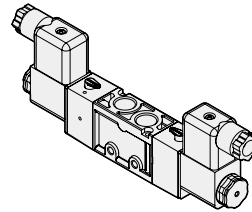
4E1

4 way / Single solenoid



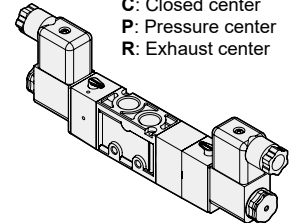
4E2

4 way / Double solenoid



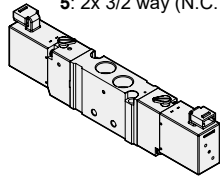
4E2C.P.R

4 way / Double solenoid
C: Closed center
P: Pressure center
R: Exhaust center

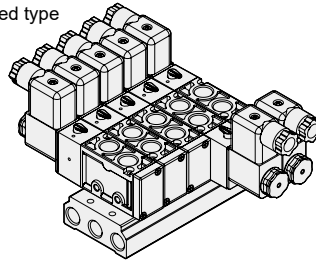


4E23.4.5

4 way / Double solenoid
3: 2x 3/2 way (N.C. / N.C.)
4: 2x 3/2 way (N.O. / N.O.)
5: 2x 3/2 way (N.C. / N.O.)

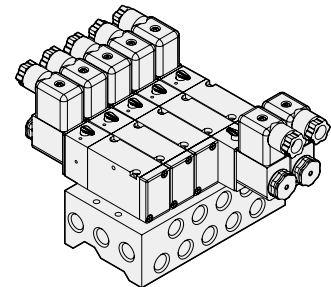


Body ported type

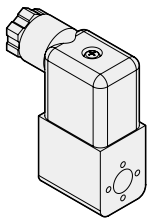


M

Manifold type

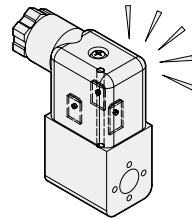


DIN connector



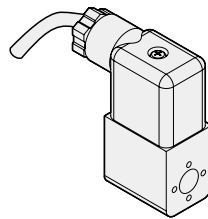
L LED indicator

KL Power saving LED indicator



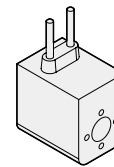
E

Explosion protection



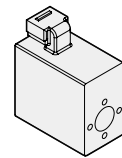
W

Lead wire



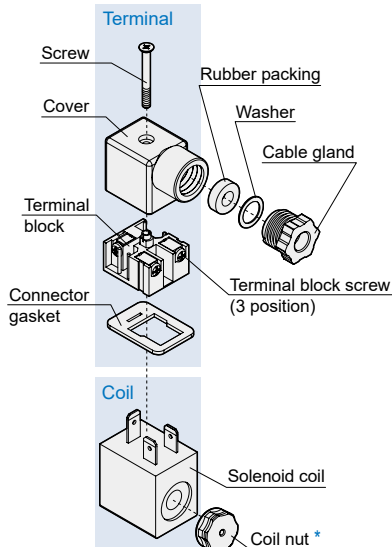
H

Horizontal connector
 With LED indicator



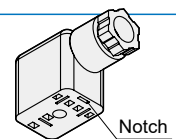
DIN connector

Recommended tightening torque
 Screw: 0.5 Nm
 Screw of terminal block: 0.5 Nm
 Cable gland: 1.65 ~ 2.5 Nm



Wiring steps

- Loosen the screw and remove the terminal from the coil.
- Insert a flathead screwdriver into the notch below the terminal block and gently pry it to separate from the cover.
- Loosen the terminal block screw, insert the wire, then tighten the screw to secure the wire.
- After wiring is completed, press the cover back onto the terminal block.
- Reinstall the terminal onto the solenoid coil and tighten the screw.



Procedure for changing wire outlet direction

Separate the terminal block from the cover. The cover can be rotated 180° for installation to adjust the wire outlet direction. (If the device is equipped with an indicator light, take care to avoid damage)

* Coil nut tightening torque

| Model | Spec. | Max. tightening torque (Nm) | Cable diameter (mm) | Model | Spec. | Max. tightening torque (Nm) | Cable diameter (mm) |
|-------------|-------|-----------------------------|---------------------|-------------|-------|-----------------------------|---------------------|
| MVSC-220 | M8 | 0.5 | ø5~ø7 | MVSE-600 | G1/4 | 0.6 | ø5~ø7 |
| MVSC-260 | M8 | 0.5 | | MVSI-260 | M8 | 0.5 | |
| MVSC-300 | M8 | 0.5 | | MVSI-450 | M8 | 0.5 | |
| MVSC-460 | M8 | 0.5 | | MVSI-510 | G1/4 | 0.6 | |
| MVSD2-180 | M7 | 0.5 | ø4~ø6 | MVSN-220 | M8 | 0.5 | |
| MVSE-260 | M8 | 0.5 | ø5~ø7 | MVSN(2)-300 | M8 | 0.5 | |
| MVSE(2)-300 | M8 | 0.5 | | MVSV-220 | M8 | 0.5 | |
| MVSE-500 | M8 | 0.5 | | MVDC-220 | M8 | 0.5 | |
| MVSE-510 | G1/4 | 0.6 | | MVDC-300 | M8 | 0.5 | |

Technical data



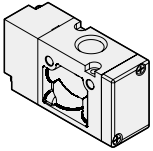
PILOT / MECHANICAL VALVE

mindman

PILOT VALVE

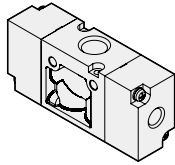
3A1

3/2 Single pilot



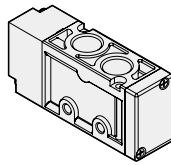
3A2

3/2 Double pilot



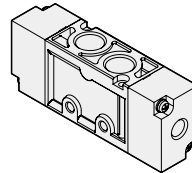
4A1

5/2 Single pilot



4A2

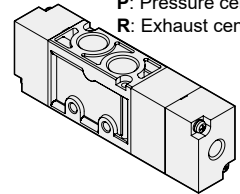
5/2 Double pilot



4A2(C.P.R)

5/3 Double pilot

C: Closed center
P: Pressure center
R: Exhaust center



MECHANICAL VALVE

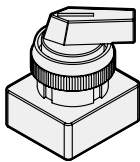
EB

Latching palm button



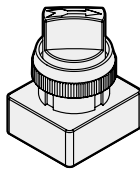
LB

Extended twist button



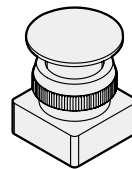
TB

Twist button



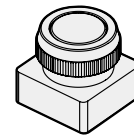
PB

Mushroom palm button



PP

Push button



R1

Roller lever

