

# Solenoid valve(5/2 way)

## 4M(NAMUR) Series



### Symbol



### Product feature

1. Internally piloted structure.
2. Structure in sliding column mode: good tightness and sensitive reaction.
3. Double control solenoid valves have memory function.
4. Internal hole adopts special processing technology which has little attrition friction, low start pressure and long service life.
5. No need to add oil for lubrication.
6. Install in the side plate with the surface upward, which can be used by directly connecting with the actuators.
7. Affiliated manual devices are equipped to facilitate installation and debugging.
8. Several standard voltage grades are optional.

### Flow chart

Please refer to the same types of 4V series solenoid valves.

### Specification

| Model                       | 4M110-M5<br>4M120-M5                               | 4M110-06<br>4M120-06                               | 4M210-06<br>4M220-06                                | 4M210-08<br>4M220-08 | 4M310-08<br>4M320-08 | 4M310-10<br>4M320-10 |
|-----------------------------|----------------------------------------------------|----------------------------------------------------|-----------------------------------------------------|----------------------|----------------------|----------------------|
| Fluid                       | Air(to be filtered by 40 μm filter element)        |                                                    |                                                     |                      |                      |                      |
| Acting                      | Internal pilot                                     |                                                    |                                                     |                      |                      |                      |
| Port size [Note1]           | In=Out=M5                                          | In=Out=1/8"                                        | In=Out=1/8"                                         | In=1/4"<br>Out=1/8"  | In=Out=1/4"          | In=3/8"<br>Out=1/4"  |
| Orifice size(Cv)<br>[Note4] | 4M110-06,4M120-06:<br>10.2mm <sup>2</sup> (Cv=0.6) | 4M210-08,4M220-08:<br>17.0mm <sup>2</sup> (Cv=1.0) | 4M310-10,4M320-10:<br>28.0mm <sup>2</sup> (Cv=1.65) |                      |                      |                      |
| Valve type                  | 5 port 2 position                                  |                                                    |                                                     |                      |                      |                      |
| Operating pressure          | 0.15~0.8MPa(21~114psi)                             |                                                    |                                                     |                      |                      |                      |
| Proof pressure              | 1.2MPa(175psi)                                     |                                                    |                                                     |                      |                      |                      |
| Temperature                 | -20~70°C                                           |                                                    |                                                     |                      |                      |                      |
| Material of body            | Aluminum alloy                                     |                                                    |                                                     |                      |                      |                      |
| Lubrication [Note2]         | Not required                                       |                                                    |                                                     |                      |                      |                      |
| Max.frequency[Note3]        | 5 cycle/sec                                        |                                                    |                                                     |                      | 4 cycle/sec          |                      |
| Weight (g)                  | 4M110:120                                          | 4M120:175                                          | 4M210:220                                           | 4M220:320            | 4M310:310            | 4M320:400            |

[Note1] G thread is available.

[Note2] Once lubricated air is used, continue with same medium to optimise valve life span. Lubricants like ISO VG32 or equivalent are recommended.

[Note3] The maximum actuation frequency is in the no-load state.

[Note4] Equivalent orifice S and Cv are all calculated from the flow rate data.

### Coil specification

| Item                       | 4M110              |        | 4M120 |       | 4M210    |        | 4M220  |       | 4M310 |       | 4M320 |  |
|----------------------------|--------------------|--------|-------|-------|----------|--------|--------|-------|-------|-------|-------|--|
| Standard voltage           | AC220V             | AC110V | AC24V | DC24V | DC12V    | AC220V | AC110V | AC24V | DC24V | DC12V |       |  |
| Scope of voltage           | AC: ±15%           |        |       |       | DC: ±10% |        |        |       |       |       |       |  |
| Power consumption          | 3.5VA              | 3.5VA  | 4.0VA | 2.5W  | 2.5W     | 4.5VA  | 4.5VA  | 5.0VA | 3.0W  | 3.0W  |       |  |
| Protection                 | IP65(DIN40050)     |        |       |       |          |        |        |       |       |       |       |  |
| Temperature classification | B Class            |        |       |       |          |        |        |       |       |       |       |  |
| Electrical entry           | Terminal, Grommet  |        |       |       |          |        |        |       |       |       |       |  |
| Activating time            | 0.05 sec and below |        |       |       |          |        |        |       |       |       |       |  |

### Ordering code

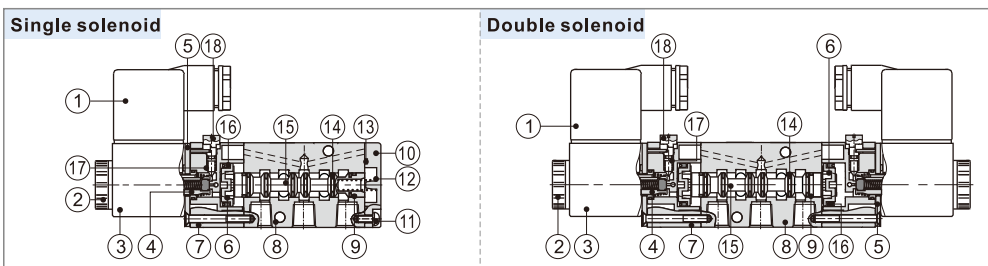
4M 3 10 10 A □ G



| ① Model                                    | ② Code        | ③ Valve type                               | ④ Port size                                  | ⑤ Voltage                                                  | ⑥ Electrical entry                  | ⑦ Thread type |
|--------------------------------------------|---------------|--------------------------------------------|----------------------------------------------|------------------------------------------------------------|-------------------------------------|---------------|
| 4M: Solenoid valve<br>(5/2 way NAMUR type) | 1: 100 Series | 10: Single solenoid<br>20: Double solenoid | M5: M5                                       | A: AC220V<br>B: DC24V<br>C: AC110V<br>E: AC24V<br>F: DC12V | Blank: Terminal<br>I: Grommet[Note] | No this code  |
|                                            | 2: 200 Series |                                            | 06: 1/8"                                     |                                                            |                                     | G: G Thread   |
|                                            | 3: 300 Series |                                            | 06: 1/8"<br>08: 1/4"<br>08: 1/4"<br>10: 3/8" |                                                            |                                     |               |

[Note] The wire length is 0.5m.

### Inner structure



| No. | Item        | No. | Item                |
|-----|-------------|-----|---------------------|
| 1   | Connector   | 10  | Bottom cover        |
| 2   | Coil net    | 11  | Fixed screw         |
| 3   | Coil        | 12  | Spool spring        |
| 4   | Armature    | 13  | Bottom cover gasket |
| 5   | Fixed plate | 14  | Spool O-ring        |
| 6   | Piston      | 15  | Spool               |
| 7   | Pilot kit   | 16  | Piston O-ring       |
| 8   | Body        | 17  | Override spring     |
| 9   | Wear ring   | 18  | Manual override     |



## Manifold



## Specification

| Item/Manifold Model      | 100M                                         | 200M         | 300M         |
|--------------------------|----------------------------------------------|--------------|--------------|
| Fluid                    | Air(to be filtered by 40 μ m filter element) |              |              |
| Temperature              | -20~70°C                                     |              |              |
| Adaptable valve's series | 3V100 Series                                 | 3V200 Series | 3V300 Series |

## Product feature

1. It is available to integrate the direction control valves of the same series to form valve group to save space and cost.
2. It is easy to examine when there are faults owing to the unified air intake and exhaust and unified wiring.
3. Flexible combination and strong expansion capability can make any combination or expansion of the numbers of direction control valves that are connected.

## Ordering code

### Ordering code for manifold

**3V100M 5F G**

① ② ③

| ① Model                     | ② Number of stations | ③ Thread type |
|-----------------------------|----------------------|---------------|
| 3V100M: 100 Series manifold | 1F: 1 station        | G: G Thread   |
| 3V200M: 200 Series manifold | 2F: 2 station        |               |
| 3V300M: 300 Series manifold | 3F: 3 station        |               |
| .....                       | .....                |               |
|                             | 16F: 16 station      |               |

### Ordering code for blank plate

**P-3V100M-R2**

① ② ③

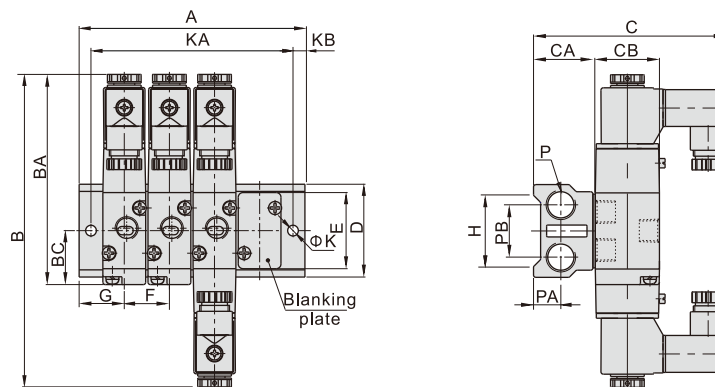
| ① Kits  | ② Model                                                                                | ③ Code                       |
|---------|----------------------------------------------------------------------------------------|------------------------------|
| P: Kits | 3V100M: 100Series manifold<br>3V200M: 200Series manifold<br>3V300M: 300Series manifold | R2: Blank plate for manifold |

[Note] 1. Ordering code contains the two parts of the manifold's and the blank plate's;

2. Manifold kits contains manifold, seal and screw.
3. Blank plate kits contains blank plate and screw.

## Dimensions

### With 3V solenoid valve

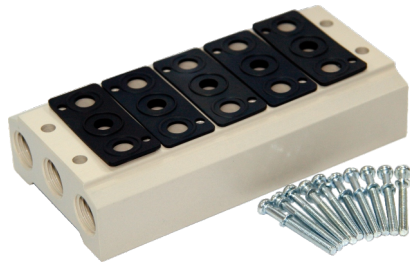


| Model/Item | B     | BA   | BC   | C    | CA | CB | D  | E  | F  | G  | H  | K   | KB | P    | PA   | PB |
|------------|-------|------|------|------|----|----|----|----|----|----|----|-----|----|------|------|----|
| 3V100M     | 131.5 | 88.5 | 22.7 | 81   | 26 | 27 | 39 | 32 | 19 | 19 | 30 | 4.5 | 5  | 1/4" | 11.5 | 22 |
| 3V200M     | 162.5 | 109  | 27.7 | 92.5 | 26 | 35 | 45 | 40 | 23 | 23 | 35 | 4.5 | 6  | 1/4" | 11.5 | 25 |
| 3V300M     | 175   | 120  | 32.5 | 99   | 30 | 40 | 52 | 47 | 28 | 27 | 42 | 4.5 | 6  | 3/8" | 13.5 | 28 |

| Model/Item | A  |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|------------|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|            | 1F | 2F | 3F  | 4F  | 5F  | 6F  | 7F  | 8F  | 9F  | 10F | 11F | 12F | 13F | 14F | 15F | 16F |
| 3V100M     | 38 | 57 | 76  | 95  | 114 | 133 | 152 | 171 | 190 | 209 | 228 | 247 | 266 | 285 | 304 | 323 |
| 3V200M     | 46 | 69 | 92  | 115 | 138 | 161 | 184 | 207 | 230 | 253 | 276 | 299 | 322 | 345 | 368 | 391 |
| 3V300M     | 54 | 82 | 110 | 138 | 166 | 194 | 222 | 250 | 278 | 306 | 334 | 362 | 390 | 418 | 446 | 474 |

| Model/Item | KA |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |
|------------|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|            | 1F | 2F | 3F | 4F  | 5F  | 6F  | 7F  | 8F  | 9F  | 10F | 11F | 12F | 13F | 14F | 15F | 16F |
| 3V100M     | 28 | 47 | 66 | 85  | 104 | 123 | 142 | 161 | 180 | 199 | 218 | 237 | 256 | 275 | 294 | 313 |
| 3V200M     | 34 | 57 | 80 | 103 | 126 | 149 | 172 | 195 | 218 | 241 | 264 | 287 | 310 | 333 | 356 | 379 |
| 3V300M     | 42 | 70 | 98 | 126 | 154 | 182 | 210 | 238 | 266 | 294 | 322 | 350 | 378 | 406 | 434 | 462 |

## Manifold



### Specification

| Item\Manifold Model      | 100M                                        | 200M         | 300M         | 400M         |
|--------------------------|---------------------------------------------|--------------|--------------|--------------|
| Fluid                    | Air(to be filtered by 40 μm filter element) |              |              |              |
| Temperature              | -20~70℃                                     |              |              |              |
| Adaptable valve's series | 4V100 Series                                | 4V200 Series | 4V300 Series | 4V400 Series |

### Product feature

1. It is available to integrate the direction control valves of the same series to form valve group to save space and cost.
2. It is easy to examine when there are faults owing to the unified air intake and exhaust and unified wiring.
3. Flexible combination and strong expansion capability can make any combination or expansion of the numbers of direction control valves that are connected.

### Ordering code

#### Ordering code for manifold

**100M 5F G**

①    ②    ③

| ① Model                                                                                                      | ② Number of stations [Note1]                                                | ③ Thread type |
|--------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|---------------|
| 100M:100 Series manifold<br>200M:200 Series manifold<br>300M:300 Series manifold<br>400M:400 Series manifold | 1F: 1 Station<br>2F: 2 Station<br>3F: 3 Station<br>.....<br>16F: 16 Station | G: G Thread   |

#### Ordering code for blank plate

**P-100M-R2**

①    ②    ③

| ① Kits model | ② Model                                                                                                          | ③ Code                       |
|--------------|------------------------------------------------------------------------------------------------------------------|------------------------------|
| P: Kits      | 100M: 100 Series manifold<br>200M: 200 Series manifold<br>300M: 300 Series manifold<br>400M: 400 Series manifold | R2: Blank plate for manifold |

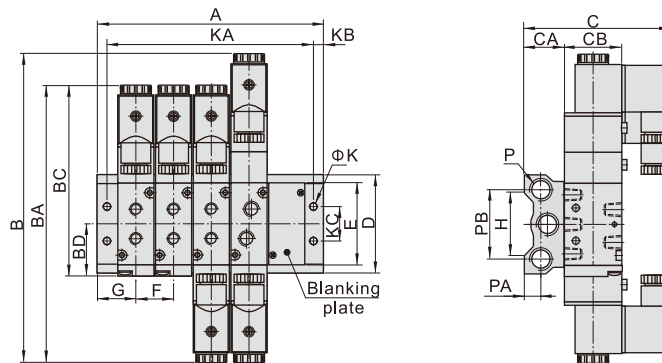
[Note1] 100M, 200M series have a maximum of 16 stations ; 300M series have a maximum of 12 stations; 400M series have a maximum of 8 stations.

[Note] 1. Ordering code contains the two parts of the manifold's and the blank plate's.    2. Manifold kits contains manifold, seal and screw.

3. Blank plate kits contains blank plate and screw.

### Dimensions

#### With 4V solenoid valve



| Model\Item | B     | BA    | BC    | BD   | C   | CA | CB | D    | E  | F  | G    | H  | K   | KB | KC | P    | PA   | PB |
|------------|-------|-------|-------|------|-----|----|----|------|----|----|------|----|-----|----|----|------|------|----|
| 100M□F     | 154.5 | 142.5 | 99.5  | 28   | 77  | 22 | 27 | 57.5 | 43 | 19 | 19   | 36 | 4.5 | 5  | 20 | 1/4" | 10   | 40 |
| 200M□F     | 189   | 171   | 117   | 31.7 | 91  | 24 | 35 | 60   | 52 | 23 | 22   | 38 | 4.5 | 5  | 21 | 1/4" | 10   | 42 |
| 300M□F     | 208   | 190   | 135   | 40   | 97  | 28 | 40 | 75   | 64 | 28 | 26   | 54 | 4.5 | 5  | 26 | 3/8" | 13.5 | 53 |
| 400M□F     | 243   | 223   | 168.5 | 57   | 107 | 33 | 50 | 100  | 94 | 35 | 30.5 | 75 | 5.5 | 6  | 32 | 1/2" | 15   | 68 |

| Model\Item | A  |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|------------|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|            | 1F | 2F | 3F  | 4F  | 5F  | 6F  | 7F  | 8F  | 9F  | 10F | 11F | 12F | 13F | 14F | 15F | 16F |
| 100M□F     | 38 | 57 | 76  | 95  | 114 | 133 | 152 | 171 | 190 | 209 | 228 | 247 | 266 | 285 | 304 | 323 |
| 200M□F     | 44 | 67 | 90  | 113 | 136 | 159 | 182 | 205 | 228 | 251 | 274 | 297 | 320 | 343 | 366 | 389 |
| 300M□F     | 52 | 80 | 108 | 136 | 164 | 192 | 220 | 248 | 276 | 304 | 332 | 360 | -   | -   | -   | -   |
| 400M□F     | 61 | 96 | 131 | 166 | 201 | 236 | 271 | 306 | -   | -   | -   | -   | -   | -   | -   | -   |

| Model\Item | KA |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|------------|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|            | 1F | 2F | 3F  | 4F  | 5F  | 6F  | 7F  | 8F  | 9F  | 10F | 11F | 12F | 13F | 14F | 15F | 16F |
| 100M□F     | 28 | 47 | 66  | 85  | 104 | 123 | 142 | 161 | 180 | 199 | 218 | 237 | 256 | 275 | 294 | 313 |
| 200M□F     | 34 | 57 | 80  | 103 | 126 | 149 | 172 | 195 | 218 | 241 | 264 | 287 | 310 | 333 | 356 | 379 |
| 300M□F     | 42 | 70 | 98  | 126 | 154 | 182 | 210 | 238 | 266 | 294 | 322 | 350 | -   | -   | -   | -   |
| 400M□F     | 49 | 84 | 119 | 154 | 189 | 224 | 259 | 294 | -   | -   | -   | -   | -   | -   | -   | -   |