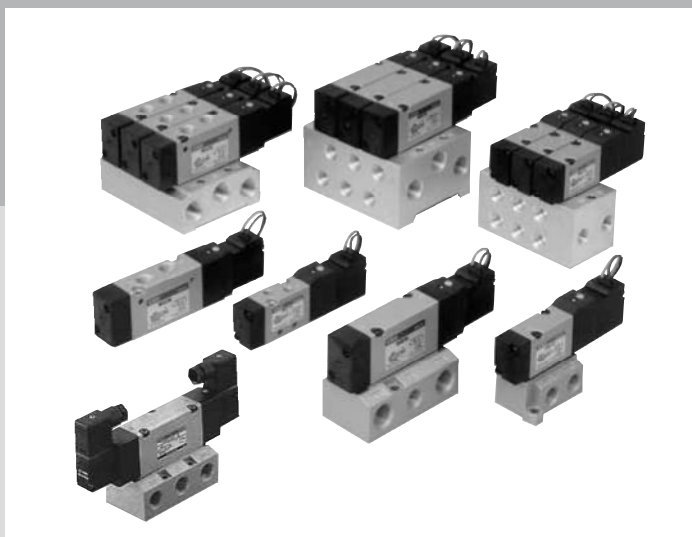


# 4KA/4KB

Pilot operated 3, 4, 5-port valve Pneumatic valve metal base



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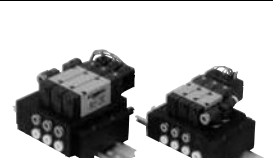
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|                          |
|--------------------------|
| 4GA/B                    |
| M4GA/B                   |
| MN4GA/B                  |
| 4GA/B (mastr)            |
| 4GD/E                    |
| M4GD/E                   |
| MN4GD/E                  |
| 4GA4/B4                  |
| MN3E<br>MN4E             |
| W4GA/B2                  |
| W4GB4                    |
| 4TB                      |
| 4L2-4/<br>LMF0           |
| MN3S0<br>MN4S0           |
| 4SA/B0                   |
| <b>4KA/B</b>             |
| <b>4KA/B (mastr)</b>     |
| 4F                       |
| 4F (mastr)               |
| PV5G<br>GMF              |
| PV5<br>GMF               |
| PV5S-0                   |
| 3QR<br>3QB               |
| MV3QR                    |
| 3MA/B0                   |
| 3PA/B                    |
| P/M/B                    |
| NP/NAP/<br>NVP           |
| 4F*0EX                   |
| 4F*0E                    |
| HMV<br>HSV               |
| 2QV<br>3QV               |
| SKH                      |
| PCD                      |
| Silencer                 |
| TotAirSys<br>(Total Air) |
| TotAirSys<br>(Gamma)     |
| Ending                   |

# Series variation

## 4KA/4KB Series

|                          |
|--------------------------|
| 4GA/B                    |
| M4GA/B                   |
| MN4GA/B                  |
| 4GA/B (mastr)            |
| 4GD/E                    |
| M4GD/E                   |
| MN4GD/E                  |
| 4GA4/B4                  |
| MN3E<br>MN4E             |
| W4GA/B2                  |
| W4GB4                    |
| 4TB                      |
| 4L2-4/<br>LMF0           |
| MN3S0<br>MN4S0           |
| 4SA/B0                   |
| <b>4KA/B</b>             |
| 4KA/B (mastr)            |
| 4F                       |
| 4F (mastr)               |
| PV5G<br>GMF              |
| PV5<br>GMF               |
| PV5S-0                   |
| 3QR<br>3QB               |
| MV3QR                    |
| 3MA/B0                   |
| 3PA/B                    |
| P/M/B                    |
| NP/NAP/<br>NVP           |
| 4F*0EX                   |
| 4F*0E                    |
| HMV<br>HSV               |
| 2QV<br>3QV               |
| SKH                      |
| PCD                      |
| Silencer                 |
| TotAirSys<br>(Total Air) |
| TotAirSys<br>(Gamma)     |
| Ending                   |

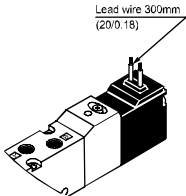
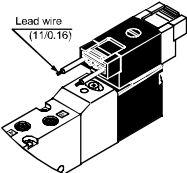
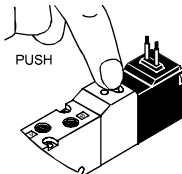
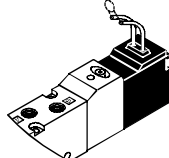
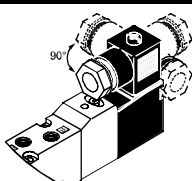
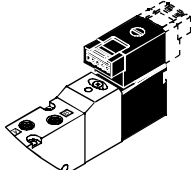
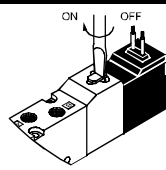
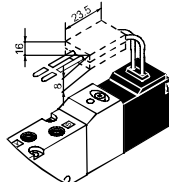
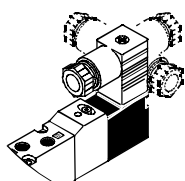
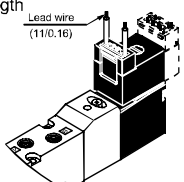
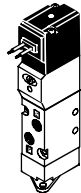
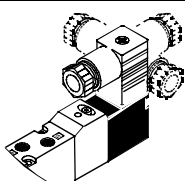
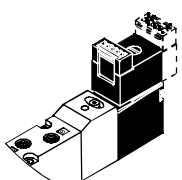
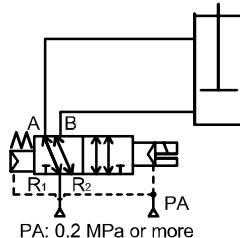
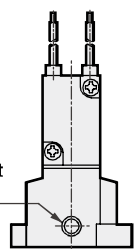
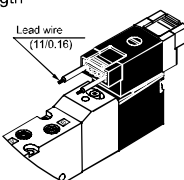
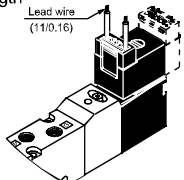
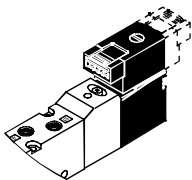
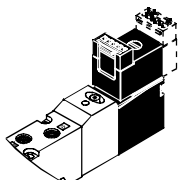
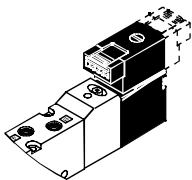
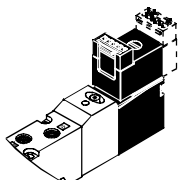
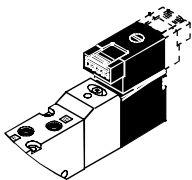
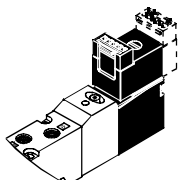
| Series external appearance |                  |                                                                                     | Model No.        |                                                                                     | Position<br>Number of<br>solenoids<br>JIS symbol                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Valve performance                                                |                                     | Voltage<br>(V)                      |              |
|----------------------------|------------------|-------------------------------------------------------------------------------------|------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|-------------------------------------|-------------------------------------|--------------|
|                            |                  |                                                                                     |                  |                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Flow<br>characteristics<br>C<br>[dm <sup>3</sup> /(s·bar)]<br>*1 | Applicable<br>cylinder<br>bore size |                                     |              |
| Single unit                | Body piping      |    | 3-port           | 3KA1                                                                                | <b>3KA1</b><br>● 2-position NC single<br><br>● 2-position NO single<br><br>● 2-position double<br><br><br><b>4KA1 to 4KA4<br/>4KB2 to 4KB4</b><br>● 2-position single<br><br>R1PR2<br>* 4KB1 only<br><br>● 2-position double<br><br>R1PR2<br>* 4KB1 only<br><br>● 3-position all ports closed<br><br>R1PR2<br>* 4KB1 only<br><br>● 3-position A/B/R connection<br><br>R1PR2<br>* 4KB1 only<br><br>● 3-position P/A/B connection<br><br>R1PR2<br>* 4KB1 only<br><br>● 3-position P/A/B connection<br><br>R1PR2<br>* 4KB1 only<br> | 0.65                                                             | φ20 to φ40                          | 100 AC<br>200 AC<br>24 DC           |              |
|                            |                  |                                                                                     | 5-port           | 4KA1                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 0.60 to 0.68                                                     |                                     |                                     |              |
|                            |                  |                                                                                     |                  | 4KA2                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 2.3 to 2.9                                                       | φ40 to φ80                          |                                     |              |
|                            |                  |                                                                                     |                  | 4KA3                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 4.1 to 5.6                                                       | φ63 to φ100                         |                                     |              |
|                            |                  |                                                                                     |                  | 4KA4                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 8.2 to 11                                                        | φ125 to φ160                        |                                     |              |
|                            | Sub-plate piping |  | 5-port           | 4KB1                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 0.63 to 1.2                                                      | φ20 to φ40                          | Option<br>110 AC<br>220 AC<br>12 DC |              |
|                            |                  |                                                                                     |                  | 4KB2                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 2.4 to 3.0                                                       | φ40 to φ80                          |                                     |              |
|                            |                  |                                                                                     |                  | 4KB3                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 5.6 to 6.6                                                       | φ63 to φ100                         |                                     |              |
|                            |                  |                                                                                     |                  | 4KB4                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 10 to 13                                                         | φ125 to φ160                        |                                     |              |
|                            |                  |                                                                                     | 3-port           | M3KA1                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 0.69                                                             | φ20 to φ40                          |                                     |              |
| Metal base                 | Body piping      |  | 5-port           | M4KA1                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 0.69 to 0.97                                                     | φ20 to φ40                          | 100 AC<br>200 AC<br>24 DC           |              |
|                            |                  |                                                                                     |                  | M4KA2                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 2.4 to 3.0                                                       | φ40 to φ80                          |                                     |              |
|                            |                  |                                                                                     |                  | M4KA3                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 4.1 to 5.9                                                       | φ63 to φ100                         |                                     |              |
|                            |                  |                                                                                     |                  | M4KA4                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 8.3 to 11                                                        | φ125 to φ160                        |                                     |              |
|                            |                  |                                                                                     | Sub-plate piping |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 4-port                                                           | M4KB1                               |                                     | 0.60 to 0.81 |
|                            | 5-port           | M4KB2                                                                               |                  |                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 1.8 to 2.1                                                       | φ40 to φ80                          |                                     |              |
|                            |                  | M4KB3                                                                               |                  |                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 4.3 to 4.8                                                       | φ63 to φ100                         |                                     |              |
|                            |                  | M4KB4                                                                               |                  |                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 8.6 to 9.4                                                       | φ125 to φ160                        |                                     |              |
|                            | 5-port           | MN4KB1                                                                              |                  |                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 0.60 to 0.80                                                     | φ20 to φ40                          | Option<br>110 AC<br>220 AC<br>12 DC |              |
|                            |                  | MN4KB2                                                                              |                  |                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 2.3 to 3.1                                                       | φ40 to φ80                          |                                     |              |
| Block manifold             | Sub-plate piping |  | 5-port           | MN4KB1                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 0.60 to 0.80                                                     | φ20 to φ40                          |                                     |              |
|                            |                  |                                                                                     |                  | MN4KB2                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 2.3 to 3.1                                                       | φ40 to φ80                          |                                     |              |

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

## Series variation

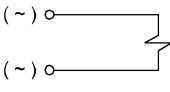
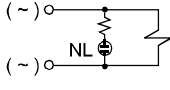
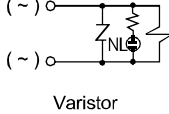
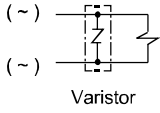
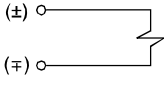
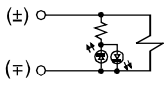
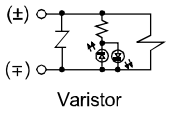
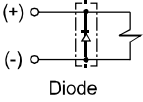
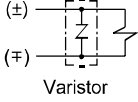
|                          |
|--------------------------|
| 4GA/B                    |
| M4GA/B                   |
| MN4GA/B                  |
| 4GA/B<br>(mastr)         |
| 4GD/E                    |
| M4GD/E                   |
| MN4GD/E                  |
| 4GA4/B4                  |
| MN3E<br>MN4E             |
| W4GA/B2                  |
| W4GB4                    |
| 4TB                      |
| 4L2-4/<br>LMF0           |
| MN3S0<br>MN4S0           |
| 4SA/B0                   |
| 4KA/B                    |
| 4KA/B<br>(mastr)         |
| 4F                       |
| 4F<br>(mastr)            |
| PV5G<br>GMF              |
| PV5<br>GMF               |
| PV5S-0                   |
| 3QR<br>3QB               |
| MV3QR                    |
| 3MA/B0                   |
| 3PA/B                    |
| P/M/B                    |
| NP/NAP/<br>NVP           |
| 4F*0EX                   |
| 4F*0E                    |
| HMV<br>HSV               |
| 2QV<br>3QV               |
| SKH                      |
| PCD                      |
| Silencer                 |
| TotAirSys<br>(Total Air) |
| TotAirSys<br>(Gamma)     |
| Ending                   |

# 3KA/4KA/4KB Series

|                          | Electrical connections                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                | Manual override                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Other options |  |
|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|--|
| 4GA/B                    | <b>Blank</b><br>Grommet lead wire<br><br>Lead wire 300mm (20/0.18)                                                                                                          | <b>C2</b> C type connector with lead wire with surge suppressor/lamp<br><br>● Lead wire length<br>C2 : 300 mm<br>C20 : 500 mm<br>C21 : 1000 mm<br>C22 : 2000 mm<br>C23 : 3000 mm<br><br>Lead wire (11/0.16)   | <b>Blank</b> Non-locking<br><br>PUSH<br><br>* : This will operate for as long as the switch is being pressed.               | <b>S</b> Surge suppressor attached<br><br>AC, DC (other than grommet lead wire)<br>                                                                                                                                                                                                                                                                                  |               |  |
| M4GA/B                   |                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                         |               |  |
| MN4GA/B                  |                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                         |               |  |
| 4GA/B (mastr)            |                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                         |               |  |
| 4GD/E                    |                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                         |               |  |
| M4GD/E                   | <b>B</b> Compact terminal box, without lead wire<br><br>90°<br><br>*: 4K <sub>B</sub> 3, 4K <sub>B</sub> 4 can only be rotated by 180°.                                     | <b>C3</b> C type connector without lead wire with surge suppressor/lamp<br>                                                                                                                                   | <b>M1</b> Locking<br><br>ON OFF<br><br>* : Operates in the ON direction. Note that normally this should be returned to OFF. | <b>DC</b> (grommet lead wire only)<br><br>(Suppression connector)                                                                                                                                                                                                                                                                                                    |               |  |
| MN3E<br>MN4E             |                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                         |               |  |
| W4GA/B2                  |                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                         |               |  |
| W4GB4                    |                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                         |               |  |
| 4TB                      |                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                         |               |  |
| 4L2-4/<br>LMF0           | <b>L</b> Compact terminal box with lamp<br><br>*: 4K <sub>B</sub> 3, 4K <sub>B</sub> 4 can only be rotated by 180°.                                                       | <b>D</b> D type connector lead wire<br><br>● Lead wire length<br>D : 300 mm<br>D00 : 500 mm<br>D01 : 1000 mm<br>D02 : 2000 mm<br>D03 : 3000 mm<br><br>Lead wire (11/0.16)                                   |                                                                                                                                                                                                               | <b>P</b> With mounting plate<br>                                                                                                                                                                                                                                                                                                                                   |               |  |
| MN3S0<br>MN4S0           |                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                         |               |  |
| 4SA/B0                   |                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                         |               |  |
| 4KA/B                    |                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                         |               |  |
| 4KA/B (mastr)            |                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                         |               |  |
| 4F                       | <b>LS</b> Compact terminal box, with surge suppressor/lamp<br><br>*: 4K <sub>B</sub> 3, 4K <sub>B</sub> 4 can only be rotated by 180°.                                    | <b>D1</b> D type connector without lead wire<br>                                                                                                                                                            |                                                                                                                                                                                                               | <b>K</b> External pilot<br><br>When using at low pressure (0.15 MPa or less) which is less than or equal to the min. working pressure, use the following external pilot. However, be sure to pressurize the PA port.<br><br>PA: 0.2 MPa or more<br><br>External pilot PA port |               |  |
| 4F (mastr)               |                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                         |               |  |
| PV5G<br>GMF              |                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                         |               |  |
| PV5<br>GMF               |                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                         |               |  |
| PV5S-0                   |                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                         |               |  |
| 3QR<br>3QB               | <b>C</b> C type connector lead wire<br><br>● Lead wire length<br>C : 300 mm<br>C00 : 500 mm<br>C01 : 1000 mm<br>C02 : 2000 mm<br>C03 : 3000 mm<br><br>Lead wire (11/0.16) | <b>D2</b> D type connector/with lead wire with surge suppressor/lamp<br><br>● Lead wire length<br>D2 : 300 mm<br>D20 : 500 mm<br>D21 : 1000 mm<br>D22 : 2000 mm<br>D23 : 3000 mm<br><br>Lead wire (11/0.16) |                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                         |               |  |
| MV3QR                    |                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                         |               |  |
| 3MA/B0                   |                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                         |               |  |
| 3PA/B                    |                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                         |               |  |
| P/M/B                    |                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                         |               |  |
| NP/NAP/<br>NVP           | <b>C1</b> C type connector without lead wire<br>                                                                                                                          | <b>D3</b> D type connector/without lead wire with surge suppressor/lamp<br>                                                                                                                                 |                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                         |               |  |
| 4F*0EX                   |                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                         |               |  |
| 4F*0E                    |                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                         |               |  |
| HMV<br>HSV               |                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                         |               |  |
| 2QV<br>3QV               |                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                         |               |  |
| SKH                      |                                                                                                                                                                           |                                                                                                                                                                                                             |                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                         |               |  |
| PCD                      |                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                         |               |  |
| Silencer                 |                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                         |               |  |
| TotAirSys<br>(Total Air) |                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                         |               |  |
| TotAirSys<br>(Gamma)     |                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                         |               |  |
| Ending                   |                                                                                                                                                                           |                                                                                                                                                                                                             |                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                         |               |  |
|                          |                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                         |               |  |
|                          |                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                         |               |  |
|                          |                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                         |               |  |
|                          |                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                         |               |  |



Electric connection circuit diagram

| Voltage type | Option                                   | Wiring circuit                                                                                                         | Wiring method                                                                                       |
|--------------|------------------------------------------|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|
| AC           | -                                        |                                       | Grommet lead wire<br>Terminal box (B)<br>C type connector (C/C0*/C1)<br>D type connector (D/D0*/D1) |
|              | With indicator lamp                      |                                       | Terminal box (L)                                                                                    |
|              | With surge suppressor and indicator lamp |                                       | Terminal box (LS)<br>C type connector (C2/C2*/C3)<br>D type connector (D2/D2*/D3)                   |
|              | Surge suppressor attached (Option)       |                                       | Surge suppressor attached (S)                                                                       |
| DC           | -                                        |                                     | Grommet lead wire<br>Terminal box (B)<br>C type connector (C/C0*/C1)<br>D type connector (D/D0*/D1) |
|              | With indicator lamp                      |                                     | Terminal box (L)<br>However, 4KA/B1 and 4KA/B2 come with surge suppressors and indicator lamps.     |
|              | With surge suppressor and indicator lamp |                                     | Terminal box (LS)<br>C type connector (C2/C2*/C3)<br>D type connector (D2/D2*/D3)                   |
|              | Surge suppressor attached (Option)       |  <p>* Diode has polarity.</p>       | Grommet lead wire (24 VDC or less)<br>Surge suppressor attached (S)                                 |
|              |                                          |  <p>* Varistor has no polarity.</p> | Surge suppressor attached (S)                                                                       |

|                       |
|-----------------------|
| 4GA/B                 |
| M4GA/B                |
| MN4GA/B               |
| 4GA/B (mastr)         |
| 4GD/E                 |
| M4GD/E                |
| MN4GD/E               |
| 4GA4/B4               |
| MN3E                  |
| MN4E                  |
| W4GA/B2               |
| W4GB4                 |
| 4TB                   |
| 4L2-4/LMF0            |
| MN3S0                 |
| MN4S0                 |
| 4SA/B0                |
| 4KA/B                 |
| 4KA/B (mastr)         |
| 4F                    |
| 4F (mastr)            |
| PV5G                  |
| GMF                   |
| PV5                   |
| GMF                   |
| PV5S-0                |
| 3QR                   |
| 3QB                   |
| MV3QR                 |
| 3MA/B0                |
| 3PA/B                 |
| P/M/B                 |
| NP/NAP/NVP            |
| 4F*0EX                |
| 4F*0E                 |
| HMV                   |
| HSV                   |
| 2QV                   |
| 3QV                   |
| SKH                   |
| PCD                   |
| Silencer              |
| TotAirSys (Total Air) |
| TotAirSys (Gamma)     |
| Ending                |

|                          |
|--------------------------|
| 4GA/B                    |
| M4GA/B                   |
| MN4GA/B                  |
| 4GA/B (mastr)            |
| 4GD/E                    |
| M4GD/E                   |
| MN4GD/E                  |
| 4GA4/B4                  |
| MN3E<br>MN4E             |
| W4GA/B2                  |
| W4GB4                    |
| 4TB                      |
| 4L2-4/<br>LMF0           |
| MN3S0<br>MN4S0           |
| 4SA/B0                   |
| 4KA/B                    |
| 4KA/B (mastr)            |
| 4F                       |
| 4F (mastr)               |
| PV5G<br>GMF              |
| PV5<br>GMF               |
| PV5S-0                   |
| 3QR<br>3QB               |
| MV3QR                    |
| 3MA/B0                   |
| 3PA/B                    |
| P/M/B                    |
| NP/NAP/<br>NVP           |
| 4F*0EX                   |
| 4F*0E                    |
| HMV<br>HSV               |
| 2QV<br>3QV               |
| SKH                      |
| PCD                      |
| Silencer                 |
| TotAirSys<br>(Total Air) |
| TotAirSys<br>(Gamma)     |
| Ending                   |



Single valve body piping  
Pilot operated 3, 5-port pneumatic valve

# 3KA1/4KA1/2/3/4 Series

● Cylinder bore size:  $\phi 20$  to  $\phi 160$



Refer to the Ending for details.



## JIS symbol

- 3-port valve  
2-position NC single
- 3-port valve  
2-position NO single
- 3-port valve  
2-position double
- 5-port valve  
2-position single
- 5-port valve  
2-position double
- 5-port valve  
3-position all ports closed
- 5-port valve  
3-position A/B/R connection
- 5-port valve  
3-position P/A/B connection

## Common specifications

| Descriptions                           | Content                                                                   |
|----------------------------------------|---------------------------------------------------------------------------|
| Valve and operation                    | Pilot operated soft spool valve                                           |
| Working fluid                          | Compressed air                                                            |
| Max. working pressure MPa              | 0.70 ( $\approx 100$ psi, 7 bar)                                          |
| Min. working pressure MPa              | Refer to Individual specifications listed below                           |
| Proof pressure MPa                     | 1.05 ( $\approx 150$ psi, 10.5 bar)                                       |
| Ambient temperature $^{\circ}\text{C}$ | -5 (23 $^{\circ}\text{F}$ ) to 50 (122 $^{\circ}\text{F}$ ) (no freezing) |
| Fluid temperature $^{\circ}\text{C}$   | 5 (41 $^{\circ}\text{F}$ ) to 50 (122 $^{\circ}\text{F}$ )                |
| Lubrication                            | Not required                                                              |
| Degree of protection                   | Dust-proof                                                                |
| Vibration resistance $\text{m/s}^2$    | 50 or less                                                                |
| Shock resistance $\text{m/s}^2$        | 300 or less                                                               |
| Atmosphere                             | Cannot be used in corrosive gas environment.                              |

## Electrical specifications

| Descriptions                                   | 3KA1, 4KA1/2 |                          | 4KA3/4                   |
|------------------------------------------------|--------------|--------------------------|--------------------------|
| Rated voltage<br>V                             | AC           | 100,200 ( 50 / 60 Hz )   |                          |
|                                                | DC           | 24                       |                          |
| Voltage fluctuation range                      |              | $\pm 10\%$               |                          |
| Starting current                               | AC 100 V     | 0.056/0.044              | 0.046/0.042              |
|                                                | A AC 200 V   | 0.028/0.022              | 0.023/0.021              |
| Holding current                                | AC 100 V     | 0.028/0.022              | 0.023/0.021              |
|                                                | A AC 200 V   | 0.014/0.011              |                          |
|                                                | DC 24 V      | 0.075                    |                          |
| Power consumption<br>W<br>( ) : With indicator | AC 100 V     | 1.8 / 1.4<br>(1.8 / 1.5) | 1.6 / 1.3<br>(1.8 / 1.5) |
|                                                | AC 200 V     | 1.8 / 1.4<br>(1.8 / 1.5) | 1.6 / 1.3<br>(1.8 / 1.5) |
|                                                | DC 24 V      | 1.8 (2.0)                |                          |
| Thermal class                                  |              | B (molded coil)          |                          |
| Temperature rise $^{\circ}\text{C}$            |              | 43                       | 30                       |

Reference: 100 VAC 50/60 Hz can be used with a rated voltage of 110 VAC 60 Hz and 200 VAC 50/60 Hz can be used with 220 VAC 60 Hz.

## Individual specifications

1 MPa  $\approx$  145.0 psi, 1 MPa = 10 bar

| Descriptions          |                |        | 3KA1                                         | 4KA1                                         | 4KA2                                            | 4KA3                                             | 4KA4                                              |
|-----------------------|----------------|--------|----------------------------------------------|----------------------------------------------|-------------------------------------------------|--------------------------------------------------|---------------------------------------------------|
| Min. working pressure | 2-position     | Single | 0.15                                         | 0.15                                         | 0.15                                            | 0.15                                             | 0.15                                              |
|                       |                | Double |                                              |                                              | 0.10                                            | 0.10                                             | 0.10                                              |
|                       | MPa 3-position |        | -                                            | 0.20                                         | 0.20                                            | 0.20                                             | 0.20                                              |
| Port size             | P/A/B port     |        | M5<br>Push-in fitting<br>$\phi 4$ , $\phi 6$ | M5<br>Push-in fitting<br>$\phi 4$ , $\phi 6$ | Rc1/8<br>Push-in fitting<br>$\phi 6$ , $\phi 8$ | Rc1/4<br>Push-in fitting<br>$\phi 8$ , $\phi 10$ | Rc3/8<br>Push-in fitting<br>$\phi 10$ , $\phi 12$ |
|                       | R1/R2 port     |        | M5                                           | M5                                           | Rc1/8                                           | Rc1/4                                            | Rc3/8                                             |
| Response time         | 2-position     |        | 30 or less                                   | 30 or less                                   | 30 or less                                      | 30 or less                                       | 30 or less                                        |
|                       | *2 3-position  |        | -                                            | 60 or less                                   | 60 or less                                      | 60 or less                                       | 60 or less                                        |
| Weight                | g 2-position   | Single | 70                                           | 70                                           | 115                                             | 214                                              | 325                                               |
|                       |                | Double | 110                                          | 110                                          | 155                                             | 315                                              | 435                                               |
|                       | 3-position     |        | -                                            | 120                                          | 170                                             | 354                                              | 505                                               |

\*1: As G and NPT threads can also be used for piping port screws, contact CKD for details.

\*2: The response time is the value at 0.5 MPa working pressure, with no lubrication, and with the power ON. It depends on the pressure and the lubricant quality.

## Flow characteristics

| Model No. | Solenoid position |                  | C[dm <sup>3</sup> /(s·bar)] | b    |
|-----------|-------------------|------------------|-----------------------------|------|
| 3KA1      | 2-position        |                  | 0.65                        | 0.37 |
| 4KA1      | 2-position        |                  | 0.65                        | 0.37 |
|           | 3-position        | All ports closed | 0.60                        | 0.32 |
|           |                   | A/B/R connection | 0.68                        | 0.39 |
|           |                   | P/A/B connection | 0.61                        | 0.36 |
| 4KA2      | 2-position        |                  | 2.6                         | 0.43 |
|           | 3-position        | All ports closed | 2.3                         | 0.43 |
|           |                   | A/B/R connection | 2.9                         | 0.34 |
|           |                   | P/A/B connection | 2.3                         | 0.42 |
| 4KA3      | 2-position        |                  | 5.6                         | 0.49 |
|           | 3-position        | All ports closed | 4.1                         | 0.60 |
|           |                   | A/B/R connection | 4.1                         | 0.62 |
|           |                   | P/A/B connection | 4.2                         | 0.68 |
| 4KA4      | 2-position        |                  | 9.8                         | 0.49 |
|           | 3-position        | All ports closed | 8.2                         | 0.54 |
|           |                   | A/B/R connection | 11                          | 0.50 |
|           |                   | P/A/B connection | 8.4                         | 0.54 |

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

\*2: Flow characteristics are values when the port size is M5 (3KA1, 4KA1), Rc1/8 (4KA2), Rc1/4 (4KA3), or Rc3/8 (4KA4).

## Ozone-proof specifications (Ending Page 5)

\*\* - Voltage - **P11**

## Coolant proof specifications (Catalog No.CC-N-375A)

- Special structure with outstanding oil and water resistance

\*\* - **A** - Voltage

## Copper and PTFE free specifications

- Copper- and PTFE-based materials are not used in the flow path.

\*\* - Voltage - **P6**

|               |
|---------------|
| 4GA/B         |
| M4GA/B        |
| MN4GA/B       |
| 4GA/B (mastr) |
| 4GD/E         |
| M4GD/E        |
| MN4GD/E       |
| 4GA4/B4       |
| MN3E          |
| MN4E          |
| W4GA/B2       |
| W4GB4         |
| 4TB           |
| 4L2-4/LMF0    |
| MN3S0         |
| MN4S0         |
| 4SA/B0        |
| 4KA/B         |
| 4KA/B (mastr) |
| 4F            |
| 4F (mastr)    |
| PV5G          |
| GMF           |
| PV5           |
| GMF           |
| PV5S-0        |
| 3QR           |
| 3QB           |
| MV3QR         |
| 3MA/B0        |
| 3PA/B         |
| P/M/B         |
| NP/NAP/       |
| NVP           |
| 4F*0EX        |
| 4F*0E         |
| HMV           |
| HSV           |
| 2QV           |
| 3QV           |
| SKH           |
| PCD           |
| Silencer      |
| TotAirSys     |
| (Total Air)   |
| TotAirSys     |
| (Gamma)       |
| Ending        |

# 3KA1/4KA1 to 4 Series

Single valve; body piping

## How to order

**4KA2** **1** **0** - **06** - **M1** **B** - **AC100V**

● Single solenoid valve for manifold

**4KA2** **1** **9** - **06** - **M1** **B** - **AC100V**

**A** Model No. **B** Solenoid position

**C** Port size

**D** Manual override

**E** Electrical connections  
\* Refer to page 1237 for the circuit diagram with surge suppressor/lamp.

[Table 1] Compact terminal box L/LS compatibility table

| Code | Content                              | 3KA1 | 4KA1 | 4KA2 | 4KA3 | 4KA4 | Surge suppressor |
|------|--------------------------------------|------|------|------|------|------|------------------|
| L    | Without lead wire                    | AC   | ●    | ●    | ●    | ●    |                  |
|      |                                      | DC   |      |      | ●    | ●    |                  |
|      | With surge suppressor/indicator lamp | AC   |      |      |      |      |                  |
|      |                                      | DC   | ●    | ●    | ●    |      | Integrated       |
| LS   | Without lead wire                    | AC   | ●    | ●    | ●    | ●    | Integrated       |
|      |                                      | DC   |      |      | ●    | ●    | Integrated       |

## ⚠ Precautions for model No. selection

\*1 : The compact terminal boxes of 3KA1, 4KA1, and 4KA2 and the DC voltage models of L, and LS are equipped with a surge suppressor.

\*2 : The surge suppressor for attachment is a suppression connector when the grommet lead wire is 24 VDC or less. (Refer to page 1236)

\*3 : The surge suppressor can only be selected when the grommet lead wire or compact terminal box "B" has been selected for the electrical connections.

\*4 : With regard to the printed model No., although the model No. when placing an order is "4KA□□9", the model No. listed on the product name plate will be "4KA□□0".

[Example of model No.]

**4KA210-06-M1BP-AC100V**

- A** Model : 4KA2  
**B** Solenoid position : 2-position single  
**C** Port size : Rc1/8  
**D** Manual override : Locking manual override  
**E** Electrical connections: Compact terminal box/without lead wire  
**F** Other options : With mounting plate  
**G** Voltage : 100 VAC 50/60 Hz

\* Gasket/mounting screw attached \*4

|                                        |                                                       |                                                         | A Model No.                                                   |      |      |      |      |
|----------------------------------------|-------------------------------------------------------|---------------------------------------------------------|---------------------------------------------------------------|------|------|------|------|
|                                        |                                                       |                                                         | 3KA1                                                          | 4KA1 | 4KA2 | 4KA3 | 4KA4 |
| * Gasket/mounting screw attached<br>*4 |                                                       |                                                         |                                                               |      |      |      |      |
| Code                                   |                                                       | Content                                                 |                                                               |      |      |      |      |
| B                                      | 1                                                     | 2-position single                                       |                                                               | ●    | ●    | ●    | ●    |
|                                        | 2                                                     | 2-position double                                       | ●                                                             | ●    | ●    | ●    | ●    |
|                                        | 3                                                     | 3-position all ports closed                             |                                                               | ●    | ●    | ●    | ●    |
|                                        | 4                                                     | 3-position A/B/R connection                             |                                                               | ●    | ●    | ●    | ●    |
|                                        | 5                                                     | 3-position P/A/B connection                             |                                                               | ●    | ●    | ●    | ●    |
| Solenoid position                      | 1                                                     | 2-position single normally closed                       | ●                                                             |      |      |      |      |
|                                        | 11                                                    | 2-position single normally open                         | ●                                                             |      |      |      |      |
| Port size C                            | Port                                                  | P/A/B port                                              | R1/R2 port<br>(1) = M5 (2) = Rc1/8<br>(3) = Rc1/4 (4) = Rc3/8 |      |      |      |      |
|                                        | M5                                                    | M5                                                      | (1)                                                           | (1)  |      |      |      |
|                                        | 06                                                    | Rc1/8                                                   |                                                               |      | (2)  |      |      |
|                                        | 08                                                    | Rc1/4                                                   |                                                               |      |      | (3)  |      |
|                                        | 10                                                    | Rc3/8                                                   |                                                               |      |      |      | (4)  |
|                                        | GS4                                                   | φ4 Push-in fitting                                      | (1)                                                           | (1)  |      |      |      |
|                                        | GS6                                                   | φ6 Push-in fitting                                      | (1)                                                           | (1)  | (2)  |      |      |
|                                        | GS8                                                   | φ8 Push-in fitting                                      |                                                               |      | (2)  | (3)  |      |
|                                        | GS10                                                  | φ10 Push-in fitting                                     |                                                               |      |      | (3)  | (4)  |
|                                        | GS12                                                  | φ12 Push-in fitting                                     |                                                               |      |      |      | (4)  |
| D                                      | Blank                                                 | Non-locking manual override                             | ●                                                             | ●    | ●    | ●    | ●    |
|                                        | M1                                                    | Locking manual override                                 | ●                                                             | ●    | ●    | ●    | ●    |
| Electrical connections E               | Grommet lead wire                                     |                                                         |                                                               |      |      |      |      |
|                                        | Blank                                                 | Grommet lead wire (300 mm)                              | ●                                                             | ●    | ●    | ●    | ●    |
|                                        | Compact terminal box                                  |                                                         |                                                               |      |      |      |      |
|                                        | B                                                     | Without lead wire                                       | ●                                                             | ●    | ●    | ●    | ●    |
|                                        | L                                                     | Without lead wire                                       | Refer to [Table 1] at left for details. *1                    |      |      |      |      |
|                                        | LS                                                    | No lead wire, with surge suppressor/lamp                |                                                               |      |      |      |      |
|                                        | C type connector (lead wire lateral direction)        |                                                         |                                                               |      |      |      |      |
|                                        | C                                                     | Lead wire length (300 mm)                               | ●                                                             | ●    | ●    | ●    | ●    |
|                                        | C00                                                   | Lead wire length (500 mm)                               | ●                                                             | ●    | ●    | ●    | ●    |
|                                        | C01                                                   | Lead wire length (1000 mm)                              | ●                                                             | ●    | ●    | ●    | ●    |
|                                        | C02                                                   | Lead wire length (2000 mm)                              | ●                                                             | ●    | ●    | ●    | ●    |
|                                        | C03                                                   | Lead wire length (3000 mm)                              | ●                                                             | ●    | ●    | ●    | ●    |
|                                        | C1                                                    | Without lead wire                                       | ●                                                             | ●    | ●    | ●    | ●    |
|                                        | C2                                                    | Lead wire length (300 mm) with surge suppressor/lamp    | ●                                                             | ●    | ●    | ●    | ●    |
|                                        | C20                                                   | Lead wire length (500 mm) with surge suppressor/lamp    | ●                                                             | ●    | ●    | ●    | ●    |
|                                        | C21                                                   | Lead wire length (1000 mm) with surge suppressor/lamp   | ●                                                             | ●    | ●    | ●    | ●    |
|                                        | C22                                                   | Lead wire length (2000 mm) with surge suppressor/lamp   | ●                                                             | ●    | ●    | ●    | ●    |
|                                        | C23                                                   | Lead wire length (3000 mm) with surge suppressor/lamp   | ●                                                             | ●    | ●    | ●    | ●    |
|                                        | C3                                                    | Without lead wire, with surge suppressor/lamp           | ●                                                             | ●    | ●    | ●    | ●    |
|                                        | D type connector (lead wire upward direction)         |                                                         |                                                               |      |      |      |      |
|                                        | D                                                     | Lead wire length (300 mm)                               | ●                                                             | ●    | ●    | ●    | ●    |
|                                        | D00                                                   | Lead wire length (500 mm)                               | ●                                                             | ●    | ●    | ●    | ●    |
|                                        | D01                                                   | Lead wire length (1000 mm)                              | ●                                                             | ●    | ●    | ●    | ●    |
|                                        | D02                                                   | Lead wire length (2000 mm)                              | ●                                                             | ●    | ●    | ●    | ●    |
|                                        | D03                                                   | Lead wire length (3000 mm)                              | ●                                                             | ●    | ●    | ●    | ●    |
|                                        | D1                                                    | Without lead wire                                       | ●                                                             | ●    | ●    | ●    | ●    |
|                                        | D2                                                    | Lead wire length (300 mm) with surge suppressor/lamp    | ●                                                             | ●    | ●    | ●    | ●    |
| D20                                    | Lead wire length (500 mm) with surge suppressor/lamp  | ●                                                       | ●                                                             | ●    | ●    | ●    |      |
| D21                                    | Lead wire length (1000 mm) with surge suppressor/lamp | ●                                                       | ●                                                             | ●    | ●    | ●    |      |
| D22                                    | Lead wire length (2000 mm) with surge suppressor/lamp | ●                                                       | ●                                                             | ●    | ●    | ●    |      |
| D23                                    | Lead wire length (3000 mm) with surge suppressor/lamp | ●                                                       | ●                                                             | ●    | ●    | ●    |      |
| D3                                     | Without lead wire, with surge suppressor/lamp         | ●                                                       | ●                                                             | ●    | ●    | ●    |      |
| F                                      | Blank                                                 | No option                                               | ●                                                             | ●    | ●    | ●    | ●    |
|                                        | P                                                     | Mounting plate (compatible only with 2-position single) | ●                                                             | ●    | ●    | ●    | ●    |
|                                        | S                                                     | Surge suppressor attached *2 *3                         | ●                                                             | ●    | ●    | ●    | ●    |
| Voltage G                              | AC100V                                                | 100 VAC 50/60 Hz                                        | Standard                                                      | ●    | ●    | ●    | ●    |
|                                        | AC200V                                                | 200 VAC 50/60 Hz                                        |                                                               | ●    | ●    | ●    | ●    |
|                                        | DC24V                                                 | 24 VDC                                                  |                                                               | ●    | ●    | ●    | ●    |
|                                        | DC12V                                                 | 12 VDC                                                  | Option                                                        | ●    | ●    | ●    | ●    |
|                                        | AC110V                                                | 110 VAC 50/60 Hz                                        |                                                               | ●    | ●    | ●    | ●    |
|                                        | AC220V                                                | 220 VAC 50/60 Hz                                        |                                                               | ●    | ●    | ●    | ●    |
| * Other custom order products          |                                                       |                                                         |                                                               |      |      |      |      |
| AC24V                                  |                                                       |                                                         | ●                                                             | ●    | ●    | ●    | ●    |
| AC115V                                 |                                                       |                                                         | ●                                                             | ●    | ●    | ●    | ●    |
| AC120V                                 |                                                       |                                                         | ●                                                             | ●    | ●    | ●    | ●    |

|                          |
|--------------------------|
| 4GA/B                    |
| M4GA/B                   |
| MN4GA/B                  |
| 4GA/B<br>(mastr)         |
| 4GD/E                    |
| M4GD/E                   |
| MN4GD/E                  |
| 4GA4/B4                  |
| MN3E<br>MN4E             |
| W4GA/B2                  |
| W4GB4                    |
| 4TB                      |
| 4L2-4/<br>LMF0           |
| MN3S0<br>MN4S0           |
| 4SA/B0                   |
| 4KA/B                    |
| 4KA/B<br>(mastr)         |
| 4F                       |
| 4F<br>(mastr)            |
| PV5G<br>GMF              |
| PV5<br>GMF               |
| PV5S-0                   |
| 3QR<br>3QB               |
| MV3QR                    |
| 3MA/B0                   |
| 3PA/B                    |
| P/M/B                    |
| NP/NAP/<br>NVP           |
| 4F*0EX                   |
| 4F*0E                    |
| HMV<br>HSV               |
| 2QV<br>3QV               |
| SKH                      |
| PCD                      |
| Silencer                 |
| TotAirSys<br>(Total Air) |
| TotAirSys<br>(Gamma)     |
| Ending                   |

# 3KA1/4KA1 Series

Single valve; body piping

## Internal structure and parts list

4GA/B

M4GA/B

MN4GA/B

4GA/B  
(mastr)

4GD/E

M4GD/E

MN4GD/E

4GA4/B4

MN3E  
MN4E

W4GA/B2

W4GB4

4TB

4L2-4/  
LMF0

MN3S0  
MN4S0

4SA/B0

4KA/B

4KA/B  
(mastr)

4F

4F  
(mastr)

PV5G  
GMF

PV5  
GMF

PV5S-0

3QR  
3QB

MV3QR

3MA/B0

3PA/B

P/M/B

NP/NAP/  
NVP

4F\*0EX

4F\*0E

HMV  
HSV

2QV  
3QV

SKH

PCD

Silencer

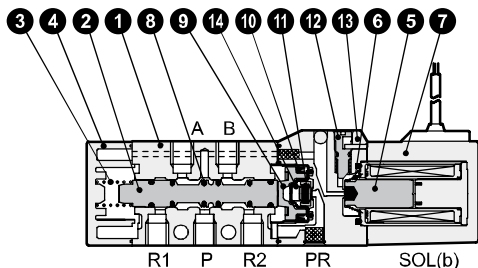
TotAirSys  
(Total Air)

TotAirSys  
(Gamma)

Ending

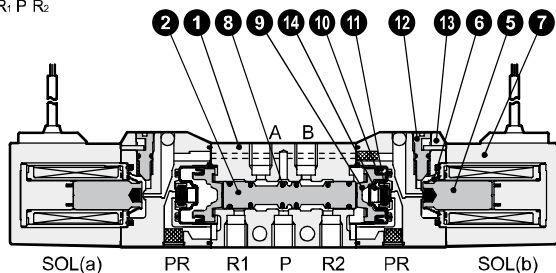
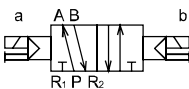
### 4KA110

- 2-position single



### 4KA120

- 2-position double



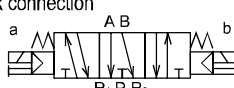
### 4KA130

- 3-position all ports closed



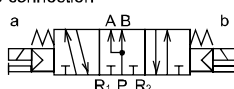
### 4KA140

- 3-position A/B/R connection



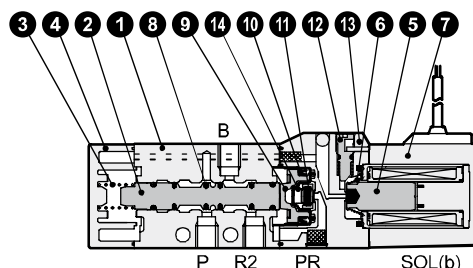
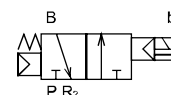
### 4KA150

- 3-position P/A/B connection



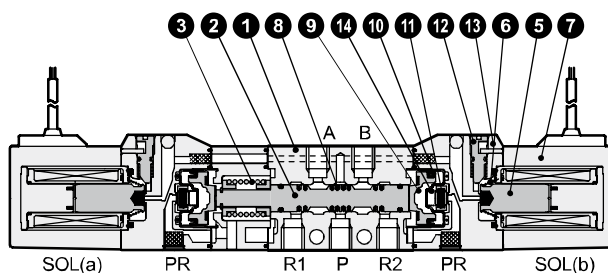
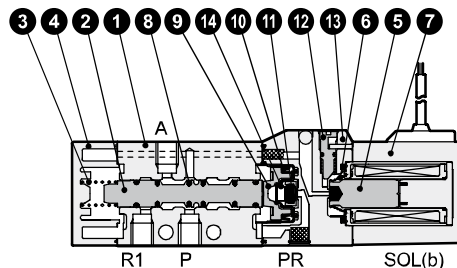
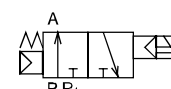
### 3KA110-NC

- 2-position single / NC



### 3KA1110-NO

- 2-position single / NO



## Main parts list

| No. | Part name               | Material                   |
|-----|-------------------------|----------------------------|
| 1   | Body                    | Aluminum alloy die-casting |
| 2   | Valving element (spool) | Aluminum                   |
| 3   | Valve spring            | Stainless steel            |
| 4   | Cap                     | Resin                      |
| 5   | Plunger                 | -                          |
| 6   | Plunger spring          | -                          |
| 7   | Coil assembly           | -                          |
| 8   | Spool packing           | Nitrile rubber             |
| 9   | Piston                  | Resin                      |
| 10  | Piston packing          | Nitrile rubber             |
| 11  | Valve seat              | Nitrile rubber             |
| 12  | Manual button           | Resin                      |
| 13  | Pilot valve             | Resin                      |
| 14  | Valve seat spring       | Stainless steel            |

## Repair parts list

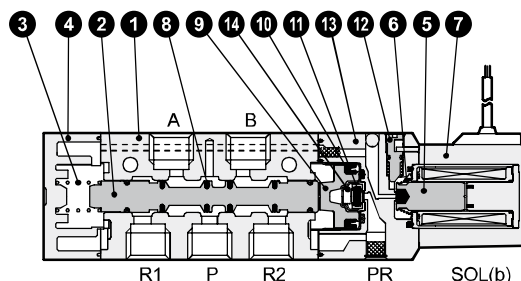
| No./part name | 2 8            | 9 10            | 5 6 7                                                                                          |
|---------------|----------------|-----------------|------------------------------------------------------------------------------------------------|
| Model No.     | Spool assembly | Piston assembly | Coil assembly *                                                                                |
| 3KA110        | 4K9-110        | 4K9-151         | 4K1L-  electrical connection option code-<br>Blank for grommet<br>lead wire<br>COIL -  Voltage |
| 3KA1110       | 4K9-110        | 4K9-151         |                                                                                                |
| 4KA110        | 4K9-110        | 4K9-151         |                                                                                                |
| 4KA120        | 4K9-118        | 4K9-151         |                                                                                                |
| 4KA130        | 4K9-111        | 4K9-152         | 4K9-152                                                                                        |
| 4KA140        | 4K9-112        | 4K9-152         |                                                                                                |
| 4KA150        | 4K9-113        | 4K9-152         |                                                                                                |

\* The compact terminal box and connector of the coil assembly will come assembled and included with the options of the descriptions indicated with model No. selection.

### Internal structure and parts list

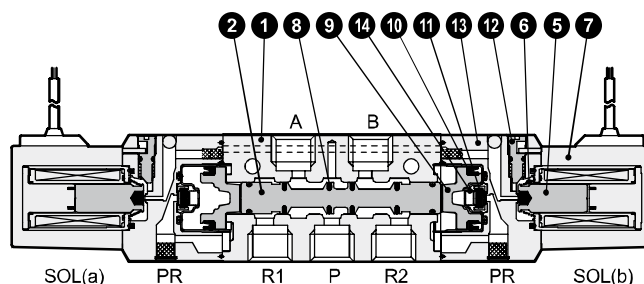
#### 4KA210

- 2-position single



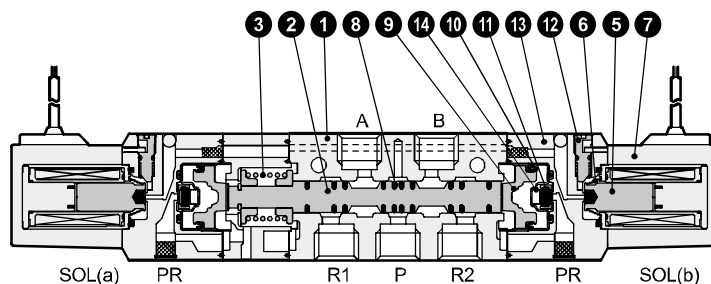
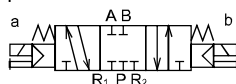
#### 4KA220

- 2-position double



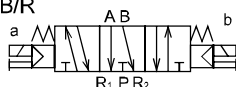
#### 4KA230

- 3-position all ports closed



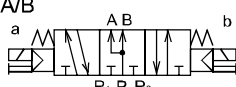
#### 4KA240

- 3-position A/B/R connection



#### 4KA250

- 3-position P/A/B connection



### Main parts list

| No. | Part name               | Material                   |
|-----|-------------------------|----------------------------|
| 1   | Body                    | Aluminum alloy die-casting |
| 2   | Valving element (spool) | Aluminum                   |
| 3   | Valve spring            | Stainless steel            |
| 4   | Cap                     | Resin                      |
| 5   | Plunger                 | -                          |
| 6   | Plunger spring          | -                          |
| 7   | Coil assembly           | -                          |
| 8   | Spool packing           | Nitrile rubber             |
| 9   | Piston                  | Resin                      |
| 10  | Piston packing          | Nitrile rubber             |
| 11  | Valve seat              | Nitrile rubber             |
| 12  | Manual button           | Resin                      |
| 13  | Pilot valve             | Resin                      |
| 14  | Valve seat spring       | Stainless steel            |

### Repair parts list

| No./part name | 2 8            | 9 10            | 5 6 7                                                                                     |
|---------------|----------------|-----------------|-------------------------------------------------------------------------------------------|
| Model No.     | Spool assembly | Piston assembly | Coil assembly *                                                                           |
| 4KA210        | 4K9-150        | 4K9-153         | 4K1L  electrical connection option code<br>Blank for grommet lead wire<br>COIL -  Voltage |
| 4KA220        | 4K9-126        |                 |                                                                                           |
| 4KA230        | 4K9-127        |                 |                                                                                           |
| 4KA240        | 4K9-128        | 4K9-154         |                                                                                           |
| 4KA250        | 4K9-129        |                 |                                                                                           |

\* The compact terminal box and connector of the coil assembly will come assembled and included with the options of the descriptions indicated with model No. selection.

|                       |
|-----------------------|
| 4GA/B                 |
| M4GA/B                |
| MN4GA/B               |
| 4GA/B (mastr)         |
| 4GD/E                 |
| M4GD/E                |
| MN4GD/E               |
| 4GA4/B4               |
| MN3E                  |
| MN4E                  |
| W4GA/B2               |
| W4GB4                 |
| 4TB                   |
| 4L2-4/ LMF0           |
| MN3S0                 |
| MN4S0                 |
| 4SA/B0                |
| <b>4KA/B</b>          |
| 4KA/B (mastr)         |
| 4F                    |
| 4F (mastr)            |
| PV5G                  |
| GMF                   |
| PV5                   |
| GMF                   |
| PV5S-0                |
| 3QR                   |
| 3QB                   |
| MV3QR                 |
| 3MA/B0                |
| 3PA/B                 |
| P/M/B                 |
| NP/NAP/ NVP           |
| 4F*0EX                |
| 4F*0E                 |
| HMV                   |
| HSV                   |
| 2QV                   |
| 3QV                   |
| SKH                   |
| PCD                   |
| Silencer              |
| TotAirSys (Total Air) |
| TotAirSys (Gamma)     |
| Ending                |



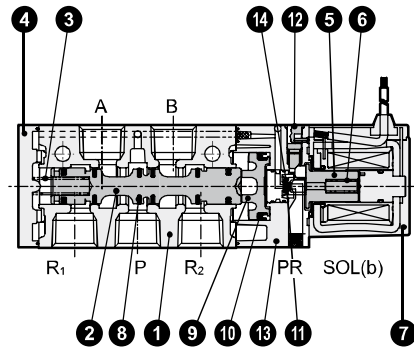
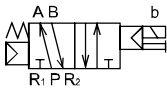
# 4KA3 Series

Single valve; body piping

## Internal structure and parts list

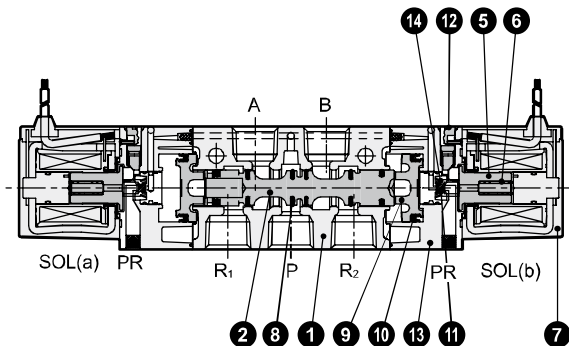
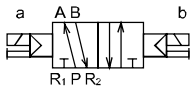
### 4KA310

● 2-position single



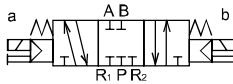
### 4KA320

● 2-position double



### 4KA330

● 3-position all ports closed



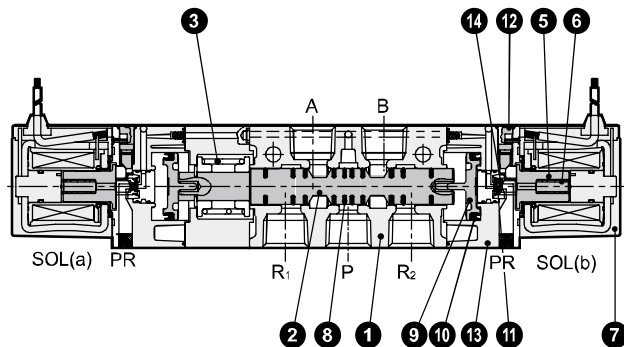
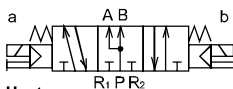
### 4KA340

● 3-position A/B/R connection



### 4KA350

● 3-position P/A/B connection



## Main parts list

| No. | Part name               | Material                   |
|-----|-------------------------|----------------------------|
| 1   | Body                    | Aluminum alloy die-casting |
| 2   | Valving element (spool) | Aluminum                   |
| 3   | Valve spring            | Stainless steel            |
| 4   | Cap                     | Resin                      |
| 5   | Plunger                 | -                          |
| 6   | Plunger spring          | -                          |
| 7   | Coil assembly           | -                          |
| 8   | Spool packing           | Nitrile rubber             |
| 9   | Piston                  | Resin                      |
| 10  | Piston packing          | Nitrile rubber             |
| 11  | Valve seat              | Nitrile rubber             |
| 12  | Manual button           | Resin                      |
| 13  | Pilot valve             | Resin                      |
| 14  | Valve seat spring       | Stainless steel            |

## Repair parts list

| No./part name | 2 8            | 9 10            | 5 6 7                                                                                          |
|---------------|----------------|-----------------|------------------------------------------------------------------------------------------------|
| Model No.     | Spool assembly | Piston assembly | Coil assembly *                                                                                |
| 4KA310        | 4K9-133        | 4K9-137         | 4K3-<br>E electrical connection option code<br>Blank for grommet lead wire<br>COIL - G Voltage |
| 4KA320        | 4K9-133        | 4K9-137         |                                                                                                |
| 4KA330        | 4K9-134        | 4K9-138         |                                                                                                |
| 4KA340        | 4K9-135        | 4K9-138         |                                                                                                |
| 4KA350        | 4K9-136        | 4K9-138         | 4K9-138                                                                                        |

\* The terminal box and connector of the coil assembly will come assembled and included with the options of the descriptions indicated with model No. selection.

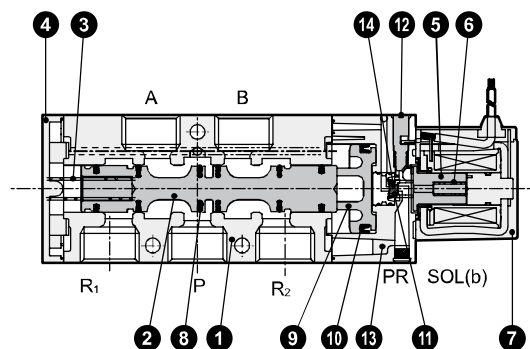
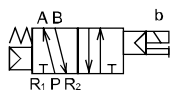
|                                                                                                |
|------------------------------------------------------------------------------------------------|
| 4K3-<br>E electrical connection option code<br>Blank for grommet lead wire<br>COIL - G Voltage |
|------------------------------------------------------------------------------------------------|

1244 CKD

## Internal structure and parts list

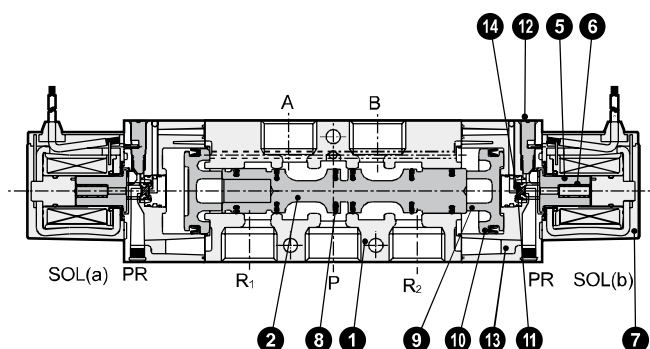
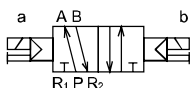
### 4KA410

- 2-position single



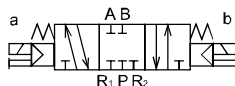
### 4KA420

- 2-position double



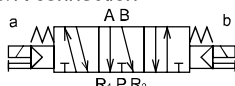
### 4KA430

- 3-position all ports closed



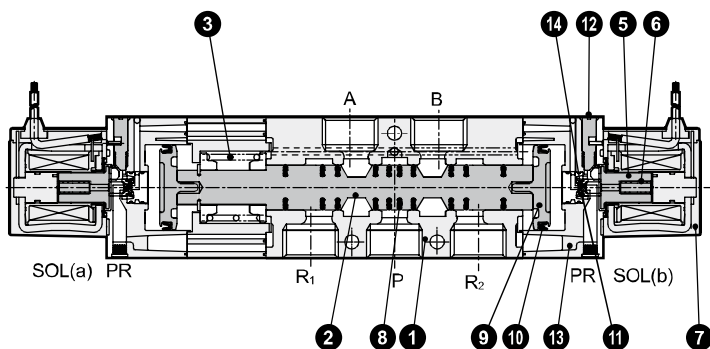
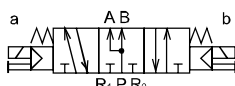
### 4KA440

- 3-position A/B/R connection



### 4KA450

- 3-position P/A/B connection



## Main parts list

| No. | Part name               | Material                   |
|-----|-------------------------|----------------------------|
| 1   | Body                    | Aluminum alloy die-casting |
| 2   | Valving element (spool) | Aluminum                   |
| 3   | Valve spring            | Stainless steel            |
| 4   | Cap                     | Resin                      |
| 5   | Plunger                 | -                          |
| 6   | Plunger spring          | -                          |
| 7   | Coil assembly           | -                          |
| 8   | Spool packing           | Nitrile rubber             |
| 9   | Piston                  | Resin                      |
| 10  | Piston packing          | Nitrile rubber             |
| 11  | Valve seat              | Nitrile rubber             |
| 12  | Manual button           | Resin                      |
| 13  | Pilot valve             | Resin                      |
| 14  | Valve seat spring       | Stainless steel            |

## Repair parts list

| No./part name | 2 8            | 9 10            | 5 6 7                                                                                                                                     |
|---------------|----------------|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| Model No.     | Spool assembly | Piston assembly | Coil assembly *                                                                                                                           |
| 4KA410        | 4K9-140        | 4K9-144         | <div>4K3-<div>E electrical connection option code</div><div>Blank for grommet lead wire</div><div>COIL - <div>G Voltage</div></div></div> |
| 4KA420        |                |                 |                                                                                                                                           |
| 4KA430        | 4K9-145        |                 |                                                                                                                                           |
| 4KA440        |                |                 |                                                                                                                                           |
| 4KA450        |                |                 |                                                                                                                                           |

\* The terminal box and connector of the coil assembly will come assembled and included with the options of the descriptions indicated with model No. selection.

|                       |
|-----------------------|
| 4GA/B                 |
| M4GA/B                |
| MN4GA/B               |
| 4GA/B (mastr)         |
| 4GD/E                 |
| M4GD/E                |
| MN4GD/E               |
| 4GA4/B4               |
| MN3E                  |
| MN4E                  |
| W4GA/B2               |
| W4GB4                 |
| 4TB                   |
| 4L2-4/ LMF0           |
| MN3S0                 |
| MN4S0                 |
| 4SA/B0                |
| 4KA/B                 |
| 4KA/B (mastr)         |
| 4F                    |
| 4F (mastr)            |
| PV5G                  |
| GMF                   |
| PV5                   |
| GMF                   |
| PV5S-0                |
| 3QR                   |
| 3QB                   |
| MV3QR                 |
| 3MA/B0                |
| 3PA/B                 |
| P/M/B                 |
| NP/NAP/ NVP           |
| 4F*0EX                |
| 4F*0E                 |
| HMV                   |
| HSV                   |
| 2QV                   |
| 3QV                   |
| SKH                   |
| PCD                   |
| Silencer              |
| TotAirSys (Total Air) |
| TotAirSys (Gamma)     |
| Ending                |

# 3KA1 Series

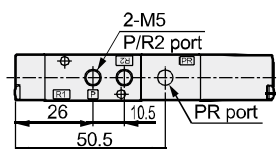
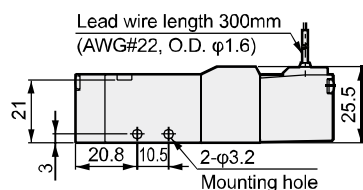
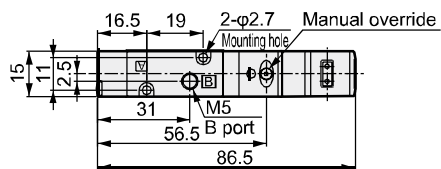
Single valve; body piping

## Dimensions

### 3KA110



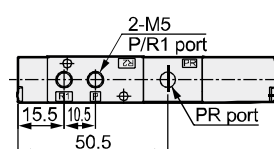
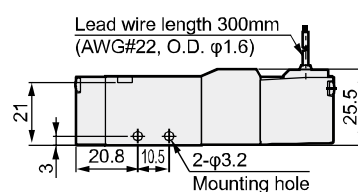
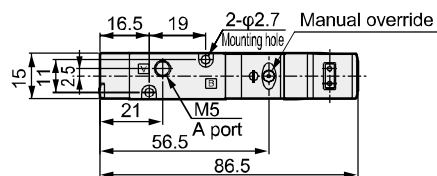
● 2 position NC single: grommet lead wire



### 3KA1110



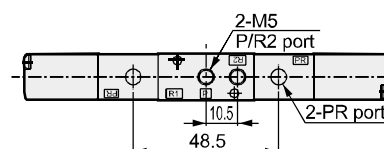
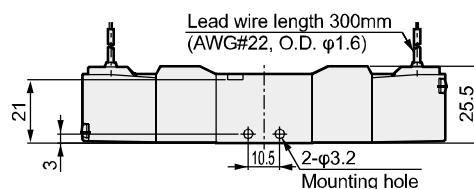
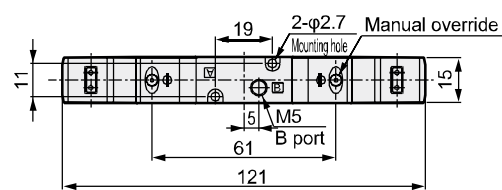
● 2 position NO single: grommet lead wire



### 3KA120

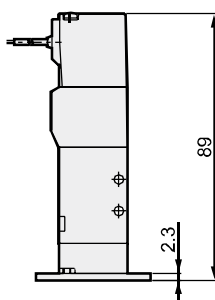
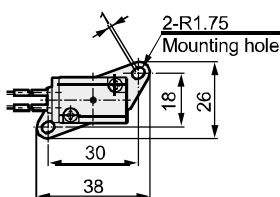


● 2 position NC double: grommet lead wire



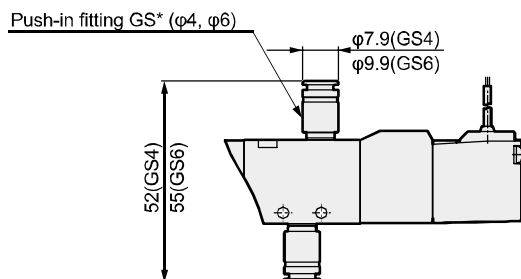
Material: Steel

Zinc chromate treatment



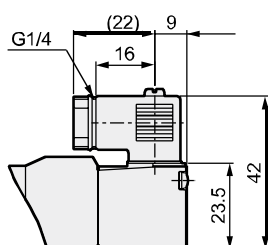
## Dimensions

- $\phi 4/\phi 6$  push-in fitting: (GS4/GS6)

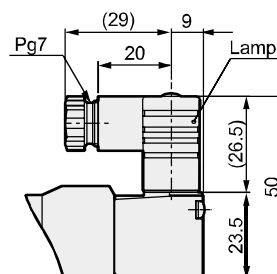


- Compact terminal box: (B [Without lamp]/L/LS [With lamp])

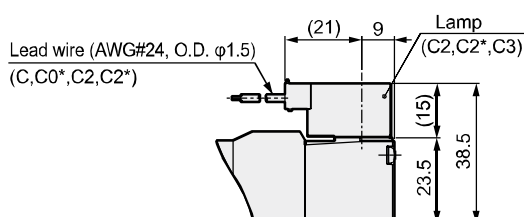
Without indicator lamp



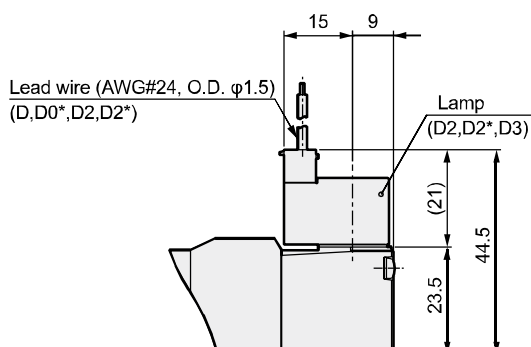
With indicator lamp



- C type connector: (C/C1/C0\*/C2/C2\*/C3)



- D type connector: (D/D1/D0\*/D2/D2\*/D3)



|                       |
|-----------------------|
| 4GA/B                 |
| M4GA/B                |
| MN4GA/B               |
| 4GA/B (mastr)         |
| 4GD/E                 |
| M4GD/E                |
| MN4GD/E               |
| 4GA4/B4               |
| MN3E                  |
| MN4E                  |
| W4GA/B2               |
| W4GB4                 |
| 4TB                   |
| 4L2-4/ LMF0           |
| MN3S0                 |
| MN4S0                 |
| 4SA/B0                |
| <b>4KA/B</b>          |
| <b>4KA/B (mastr)</b>  |
| 4F                    |
| 4F (mastr)            |
| PV5G                  |
| GMF                   |
| PV5                   |
| GMF                   |
| PV5S-0                |
| 3QR                   |
| 3QB                   |
| MV3QR                 |
| 3MA/B0                |
| 3PA/B                 |
| P/M/B                 |
| NP/NAP/ NVP           |
| 4F*0EX                |
| 4F*0E                 |
| HMV                   |
| HSV                   |
| 2QV                   |
| 3QV                   |
| SKH                   |
| PCD                   |
| Silencer              |
| TotAirSys (Total Air) |
| TotAirSys (Gamma)     |
| Ending                |

# 4KA1 Series

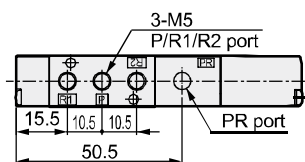
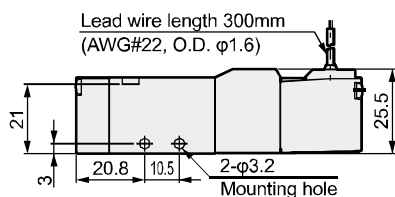
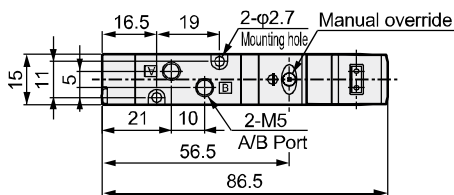
Single valve; body piping

## Dimensions

### 4KA110



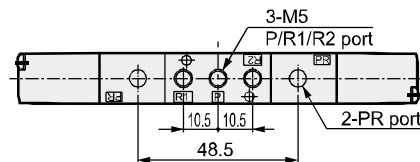
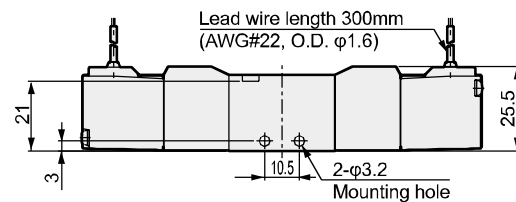
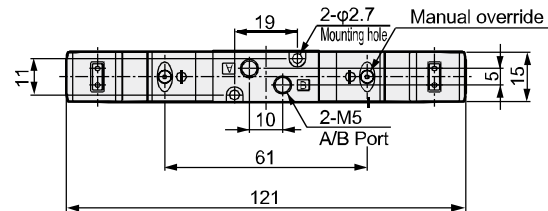
- 2-position single: grommet lead wire



### 4KA120



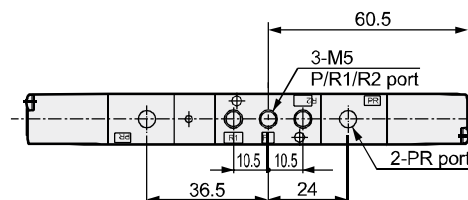
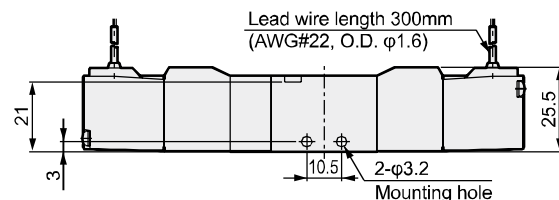
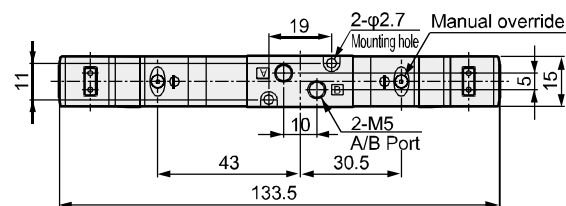
- 2-position double: grommet lead wire



### 4KA140<sup>3</sup><sub>5</sub>



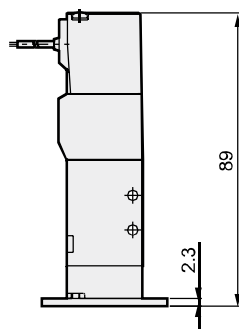
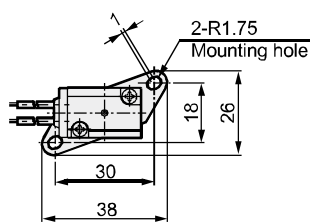
- 3-position: grommet lead wire



- Mounting plate: (P [2-position single only])

Material: Steel

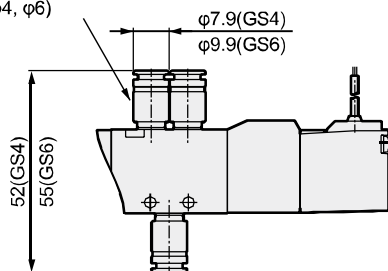
Zinc chromate treatment



## Dimensions

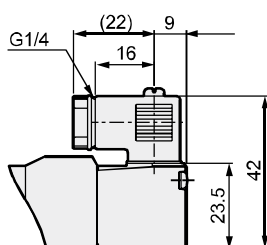
- $\phi 4/\phi 6$  push-in fitting: (GS4/GS6)

Push-in fitting GS\* ( $\phi 4$ ,  $\phi 6$ )

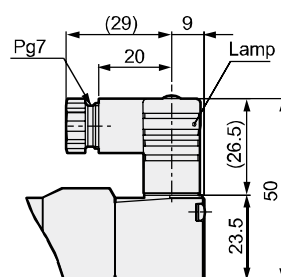


- Compact terminal box: (B [Without lamp]/L/LS [With lamp])

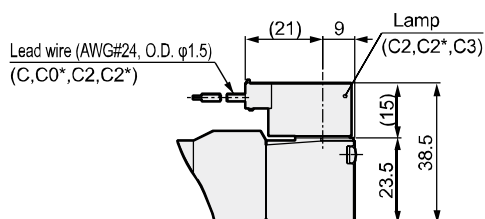
Without indicator lamp



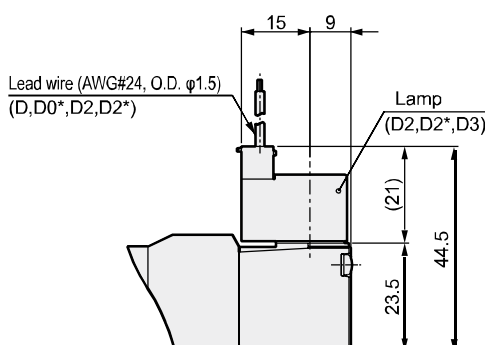
With indicator lamp



- C type connector: (C/C1/C0\*/C2/C2\*/C3)



- D type connector: (D/D1/D0\*/D2/D2\*/D3)



|                       |
|-----------------------|
| 4GA/B                 |
| M4GA/B                |
| MN4GA/B               |
| 4GA/B (mastr)         |
| 4GD/E                 |
| M4GD/E                |
| MN4GD/E               |
| 4GA4/B4               |
| MN3E                  |
| MN4E                  |
| W4GA/B2               |
| W4GB4                 |
| 4TB                   |
| 4L2-4/LMF0            |
| MN3S0                 |
| MN4S0                 |
| 4SA/B0                |
| <b>4KA/B</b>          |
| <b>4KA/B (mastr)</b>  |
| 4F                    |
| 4F (mastr)            |
| PV5G                  |
| GMF                   |
| PV5                   |
| GMF                   |
| PV5S-0                |
| 3QR                   |
| 3QB                   |
| MV3QR                 |
| 3MA/B0                |
| 3PA/B                 |
| P/M/B                 |
| NP/NAP/NVP            |
| 4F*0EX                |
| 4F*0E                 |
| HMV                   |
| HSV                   |
| 2QV                   |
| 3QV                   |
| SKH                   |
| PCD                   |
| Silencer              |
| TotAirSys (Total Air) |
| TotAirSys (Gamma)     |
| Ending                |

# 4KA2 Series

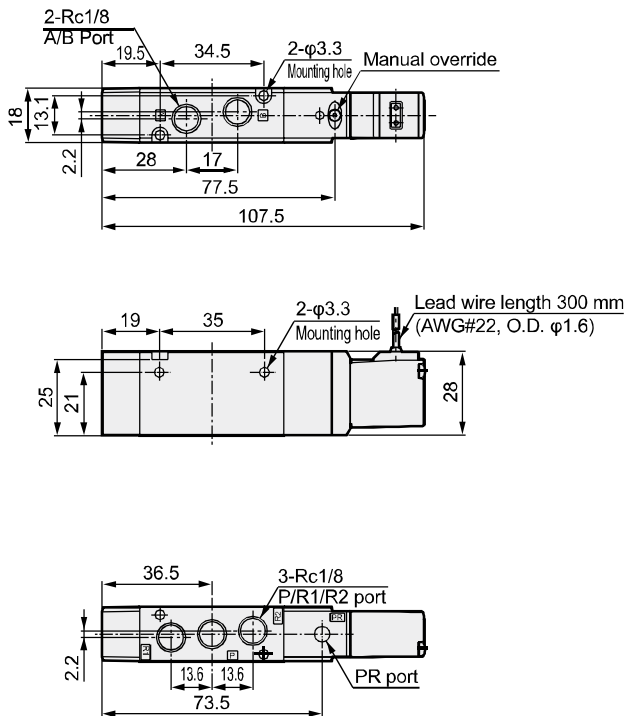
Single valve; body piping

## Dimensions

### 4KA210



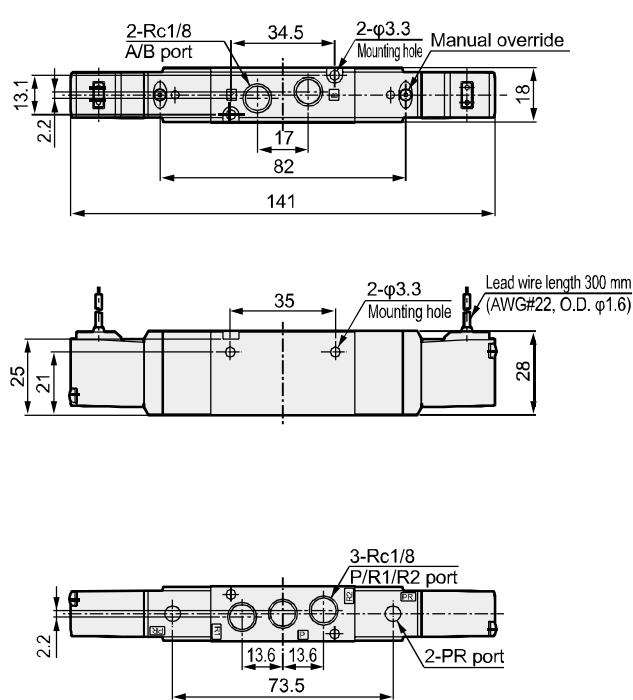
- 2-position single: grommet lead wire



### 4KA220



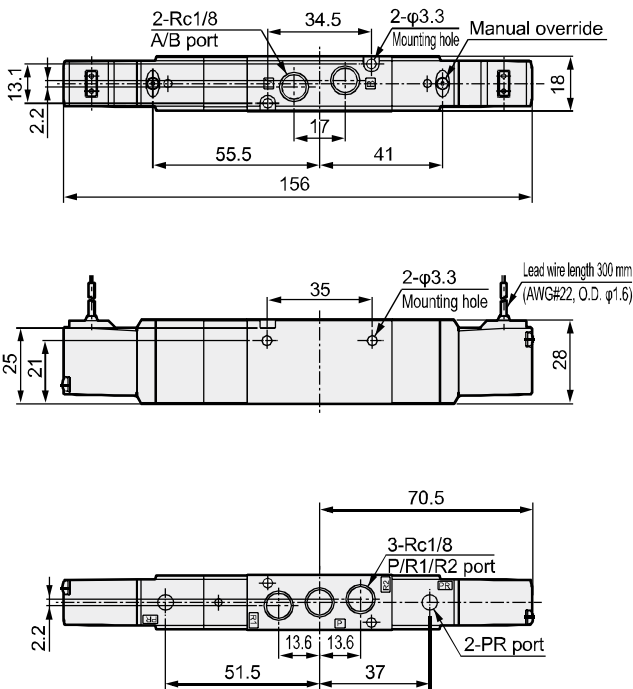
- 2-position double: grommet lead wire



### 4KA240

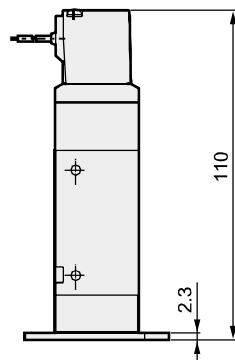
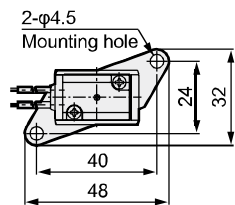


- 3-position: grommet lead wire



- Mounting plate: (P [2-position single only])

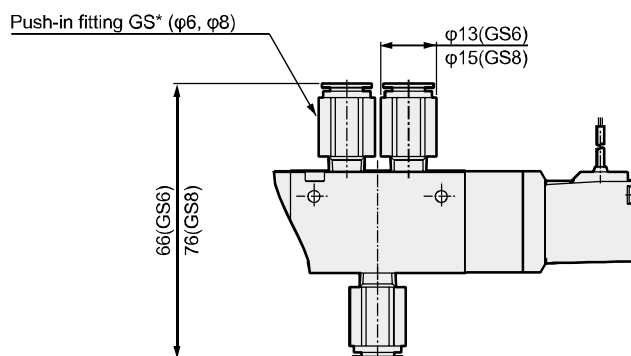
Material: Steel  
Zinc chromate treatment





### Dimensions

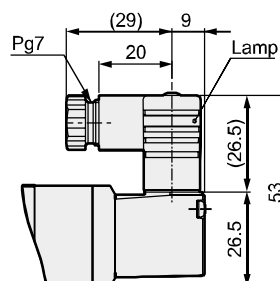
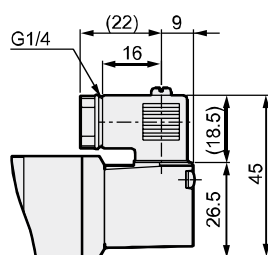
- $\phi 6/\phi 8$  push-in fitting: (GS6/GS8)



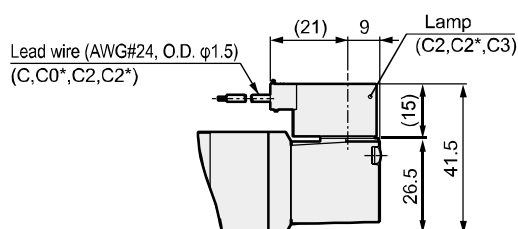
- Compact terminal box: (B [Without lamp]/L/LS [With lamp])

Without indicator lamp

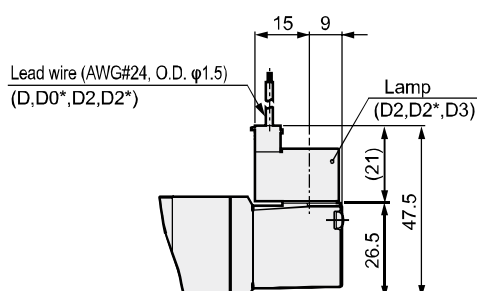
With indicator lamp



- C type connector: (C/C1/C0\*/C2/C2\*/C3)



- D type connector: (D/D1/D0\*/D2/D2\*/D3)



|                       |
|-----------------------|
| 4GA/B                 |
| M4GA/B                |
| MN4GA/B               |
| 4GA/B (mastr)         |
| 4GD/E                 |
| M4GD/E                |
| MN4GD/E               |
| 4GA4/B4               |
| MN3E                  |
| MN4E                  |
| W4GA/B2               |
| W4GB4                 |
| 4TB                   |
| 4L2-4/ LMF0           |
| MN3S0                 |
| MN4S0                 |
| 4SA/B0                |
| <b>4KA/B</b>          |
| <b>4KA/B (mastr)</b>  |
| 4F                    |
| 4F (mastr)            |
| PV5G                  |
| GMF                   |
| PV5                   |
| GMF                   |
| PV5S-0                |
| 3QR                   |
| 3QB                   |
| MV3QR                 |
| 3MA/B0                |
| 3PA/B                 |
| P/M/B                 |
| NP/NAP/ NVP           |
| 4F*0EX                |
| 4F*0E                 |
| HMV                   |
| HSV                   |
| 2QV                   |
| 3QV                   |
| SKH                   |
| PCD                   |
| Silencer              |
| TotAirSys (Total Air) |
| TotAirSys (Gamma)     |
| Ending                |

# 4KA3 Series

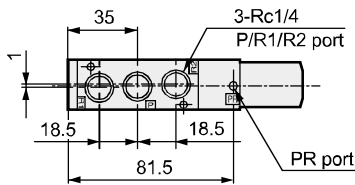
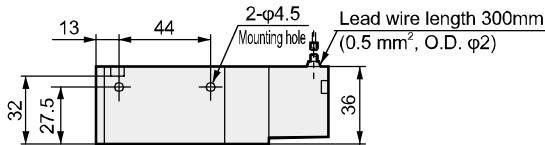
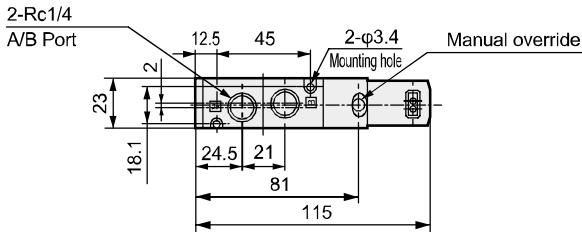
Single valve; body piping

## Dimensions

### 4KA310



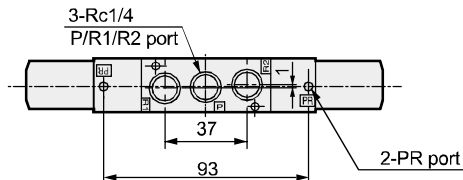
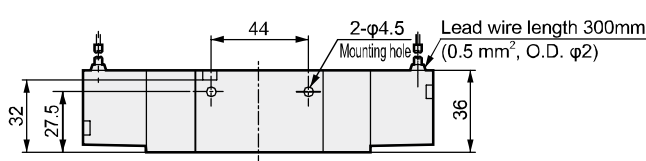
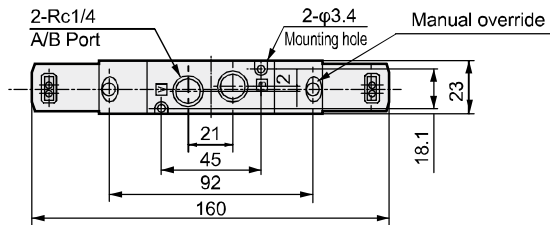
- 2-position single: grommet lead wire



### 4KA320



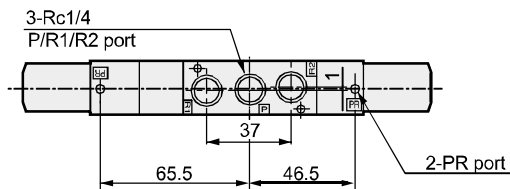
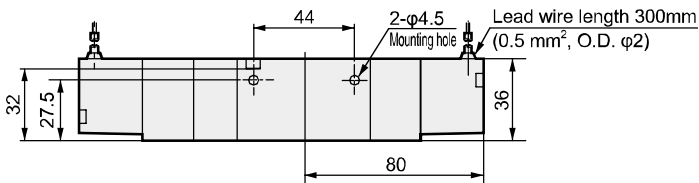
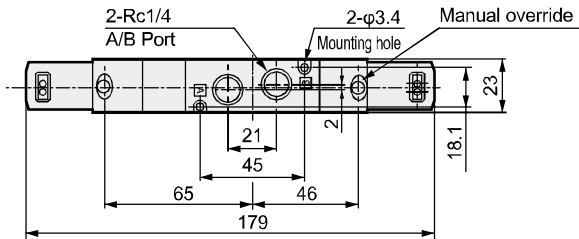
- 2-position double: grommet lead wire



### 4KA340



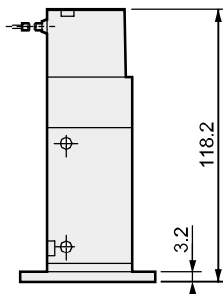
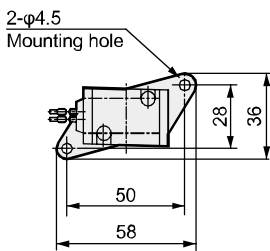
- 3-position: grommet lead wire



- Mounting plate: (P [2-position single only])

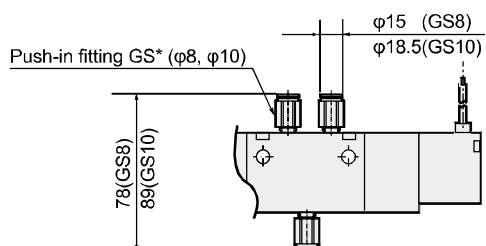
Material: Steel

Zinc chromate treatment

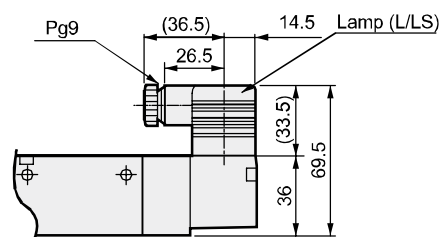


## Dimensions

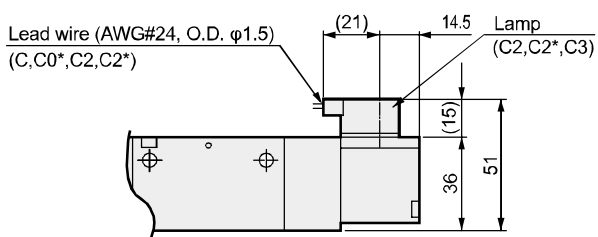
●  $\phi 8/\phi 10$  push-in fitting: (GS8/GS10)



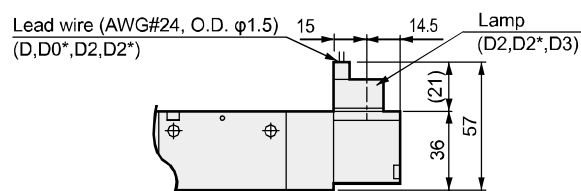
● Terminal box: (B/L/LS)



● C type connector: (C/C1/C0\*/C2/C2\*/C3)



● D type connector: (D/D1/D0\*/D2/D2\*/D3)



|                       |
|-----------------------|
| 4GA/B                 |
| M4GA/B                |
| MN4GA/B               |
| 4GA/B (mastr)         |
| 4GD/E                 |
| M4GD/E                |
| MN4GD/E               |
| 4GA4/B4               |
| MN3E                  |
| MN4E                  |
| W4GA/B2               |
| W4GB4                 |
| 4TB                   |
| 4L2-4/ LMF0           |
| MN3S0                 |
| MN4S0                 |
| 4SA/B0                |
| <b>4KA/B</b>          |
| <b>4KA/B (mastr)</b>  |
| 4F                    |
| 4F (mastr)            |
| PV5G                  |
| GMF                   |
| PV5                   |
| GMF                   |
| PV5S-0                |
| 3QR                   |
| 3QB                   |
| MV3QR                 |
| 3MA/B0                |
| 3PA/B                 |
| P/M/B                 |
| NP/NAP/ NVP           |
| 4F*0EX                |
| 4F*0E                 |
| HMV                   |
| HSV                   |
| 2QV                   |
| 3QV                   |
| SKH                   |
| PCD                   |
| Silencer              |
| TotAirSys (Total Air) |
| TotAirSys (Gamma)     |
| Ending                |

# 4KA4 Series

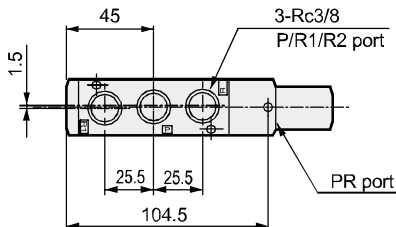
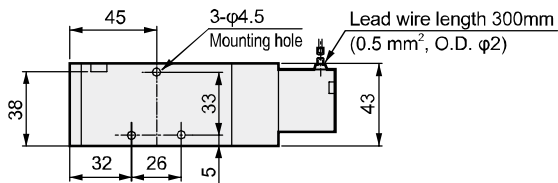
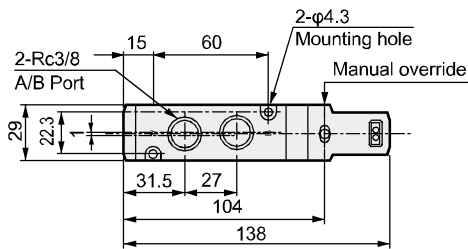
Single valve; body piping

## Dimensions

### 4KA410



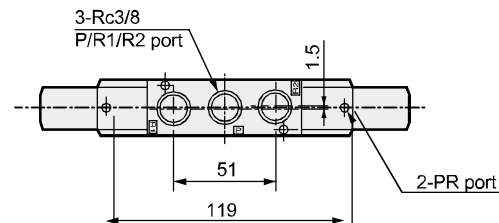
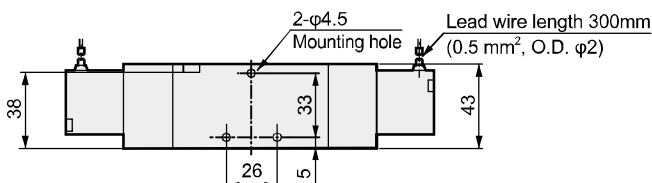
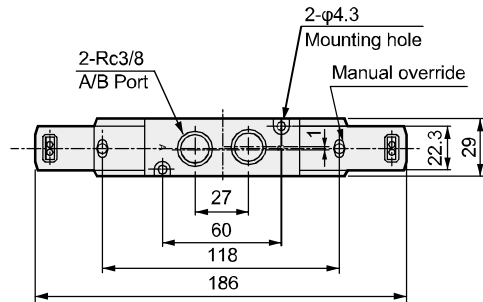
● 2-position single: grommet lead wire



### 4KA420



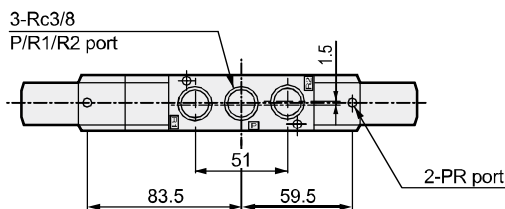
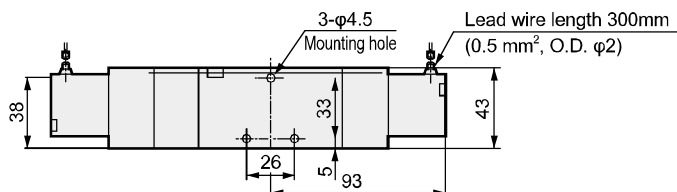
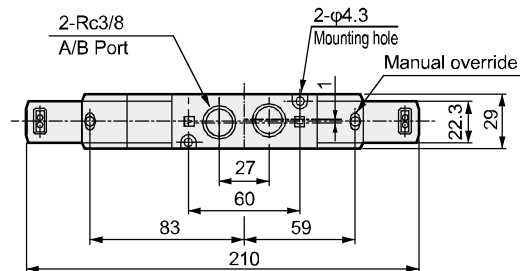
● 2-position double: grommet lead wire



### 4KA440<sup>3</sup>/<sub>5</sub>



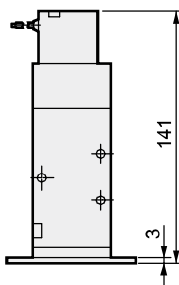
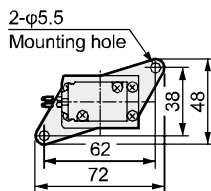
● 3-position: grommet lead wire



● Mounting plate: (P [2-position single only])

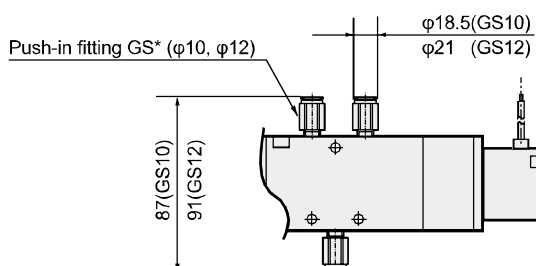
Material: Steel

Zinc chromate treatment

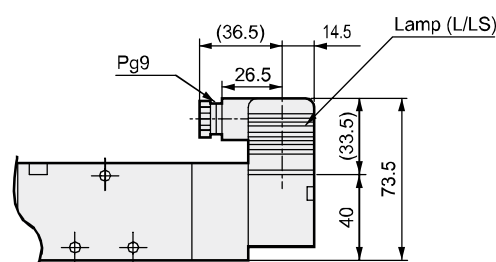


## Dimensions

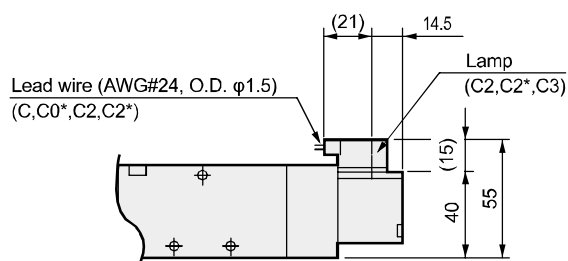
● With  $\phi 10/\phi 12$  push-in fitting: (GS10/GS12)



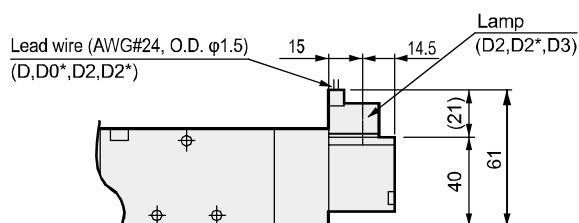
● Terminal box: (B/L/LS)



● C type connector: (C/C1/C0\*/C2/C2\*/C3)



● D type connector: (D/D1/D0\*/D2/D2\*/D3)



|                       |
|-----------------------|
| 4GA/B                 |
| M4GA/B                |
| MN4GA/B               |
| 4GA/B (mastr)         |
| 4GD/E                 |
| M4GD/E                |
| MN4GD/E               |
| 4GA4/B4               |
| MN3E                  |
| MN4E                  |
| W4GA/B2               |
| W4GB4                 |
| 4TB                   |
| 4L2-4/ LMF0           |
| MN3S0                 |
| MN4S0                 |
| 4SA/B0                |
| <b>4KA/B</b>          |
| <b>4KA/B (mastr)</b>  |
| 4F                    |
| 4F (mastr)            |
| PV5G                  |
| GMF                   |
| PV5                   |
| GMF                   |
| PV5S-0                |
| 3QR                   |
| 3QB                   |
| MV3QR                 |
| 3MA/B0                |
| 3PA/B                 |
| P/M/B                 |
| NP/NAP/ NVP           |
| 4F*0EX                |
| 4F*0E                 |
| HMV                   |
| HSV                   |
| 2QV                   |
| 3QV                   |
| SKH                   |
| PCD                   |
| Silencer              |
| TotAirSys (Total Air) |
| TotAirSys (Gamma)     |
| Ending                |

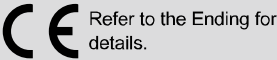
|                          |
|--------------------------|
| 4GA/B                    |
| M4GA/B                   |
| MN4GA/B                  |
| 4GA/B (mastr)            |
| 4GD/E                    |
| M4GD/E                   |
| MN4GD/E                  |
| 4GA4/B4                  |
| MN3E<br>MN4E             |
| W4GA/B2                  |
| W4GB4                    |
| 4TB                      |
| 4L2-4/<br>LMF0           |
| MN3S0<br>MN4S0           |
| 4SA/B0                   |
| 4KA/B                    |
| 4KA/B (mastr)            |
| 4F                       |
| 4F (mastr)               |
| PV5G<br>GMF              |
| PV5<br>GMF               |
| PV5S-0                   |
| 3QR<br>3QB               |
| MV3QR                    |
| 3MA/B0                   |
| 3PA/B                    |
| P/M/B                    |
| NP/NAP/<br>NVP           |
| 4F*0EX                   |
| 4F*0E                    |
| HMV<br>HSV               |
| 2QV<br>3QV               |
| SKH                      |
| PCD                      |
| Silencer                 |
| TotAirSys<br>(Total Air) |
| TotAirSys<br>(Gamma)     |
| Ending                   |



Single valve sub-plate piping  
Pilot operated 5-port pneumatic valve

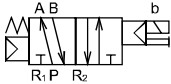
# 4KB1/2/3/4 Series

● Cylinder bore size:  $\phi 20$  to  $\phi 160$

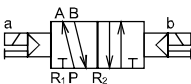


## JIS symbol

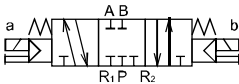
- 5-port valve  
2-position single



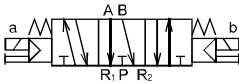
- 5-port valve  
2-position double



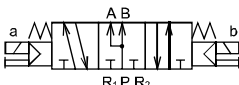
- 5-port valve  
3-position all ports closed



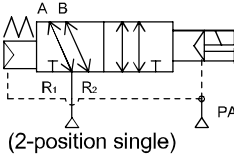
- 5-port valve  
3-position A/B/R connection



- 5-port valve  
3-position P/A/B connection



- External pilot



## Common specifications

| Descriptions                          | Content                                         |
|---------------------------------------|-------------------------------------------------|
| Valve and operation                   | Pilot operated soft spool valve                 |
| Working fluid                         | Compressed air                                  |
| Max. working press. MPa               | 0.70 (≈100 psi, 7 bar)                          |
| Min. working press. MPa               | Refer to Individual specifications listed below |
| Proof pressure MPa                    | 1.05 (≈150 psi, 10.5 bar)                       |
| Ambient temperature °C                | -5 (23°F) to 50 (122°F) (no freezing)           |
| Fluid temperature °C                  | 5 (41°F) to 50 (122°F)                          |
| Lubrication                           | Not required                                    |
| Degree of protection                  | Dust-proof                                      |
| Vibration resistance m/s <sup>2</sup> | 50 or less                                      |
| Shock resistance m/s <sup>2</sup>     | 300 or less                                     |
| Atmosphere                            | Cannot be used in corrosive gas environment.    |

\*1: The working pressure when the external pilot (option code: K) has been selected is 0 to 0.7 MPa.  
In addition, use the pilot with a pressure of 0.2 to 0.7 MPa.

## Electrical specifications

| Descriptions              |          | 4KB1/2                   | 4KB3/4                   |
|---------------------------|----------|--------------------------|--------------------------|
| Rated voltage V           | AC       | 100,200 ( 50 / 60 Hz )   |                          |
|                           | DC       | 24                       |                          |
| Voltage fluctuation range |          | ±10%                     |                          |
| Starting current A        | AC 100 V | 0.056/0.044              | 0.046/0.042              |
|                           | AC 200 V | 0.028/0.022              | 0.023/0.021              |
| Holding current A         | AC 100 V | 0.028/0.022              | 0.023/0.021              |
|                           | AC 200 V | 0.014/0.011              |                          |
|                           | DC 24 V  | 0.075                    |                          |
| Power consumption W       | AC 100 V | 1.8 / 1.4<br>(1.8 / 1.5) | 1.6 / 1.3<br>(1.8 / 1.5) |
|                           | AC 200 V | 1.8 / 1.4<br>(1.8 / 1.5) | 1.6 / 1.3<br>(1.8 / 1.5) |
|                           | DC 24 V  | 1.8(2.0)                 |                          |
| Thermal class             |          | B (molded coil)          |                          |
| Temperature rise °C       |          | 43                       | 30                       |

Reference: 100 VAC 50/60 Hz can be used with a rated voltage of 110 VAC 60 Hz and 200 VAC 50/60 Hz can be used with 220 VAC 60 Hz.

## Individual specifications

1 MPa ≈ 145.0 psi, 1 MPa = 10 bar

| Descriptions              |               | 4KB1       | 4KB2        | 4KB3        | 4KB4        |
|---------------------------|---------------|------------|-------------|-------------|-------------|
| Min. working pressure MPa | 2-position    | 0.15       | 0.15        | 0.15        | 0.15        |
|                           |               |            | 0.10        | 0.10        | 0.10        |
|                           | 3-position    | 0.20       | 0.20        | 0.20        | 0.20        |
| Port size                 | P/A/B port    | Rc1/8      | Rc1/8,Rc1/4 | Rc1/4,Rc3/8 | Rc3/8,Rc1/2 |
|                           | *1 R1/R2 port | Rc1/8      | Rc1/4       | Rc1/4,Rc3/8 | Rc3/8,Rc1/2 |
| Response time ms          | 2-position    | 30 or less | 30 or less  | 30 or less  | 30 or less  |
|                           | *2 3-position | 60 or less | 60 or less  | 60 or less  | 60 or less  |
| Weight g                  | 2-position    | 70         | 115         | 214         | 325         |
|                           |               | 110        | 155         | 315         | 435         |
|                           | 3-position    | 120        | 170         | 354         | 505         |

\*1: As G and NPT threads can also be used for piping port screws, contact CKD for details.

\*2: The response time is the value at 0.5 MPa working pressure, with no lubrication, and with the power ON. It depends on the pressure and the lubricant quality.

## Flow characteristics

| Model No. | Solenoid position |                  | C[dm <sup>3</sup> /(s·bar)] | b    |
|-----------|-------------------|------------------|-----------------------------|------|
| 4KB1      | 2-position        |                  | 0.89                        | 0.44 |
|           | 3-position        | All ports closed | 0.63                        | 0.50 |
|           |                   | A/B/R connection | 1.2                         | 0.29 |
|           |                   | P/A/B connection | 0.75                        | 0.39 |
| 4KB2      | 2-position        |                  | 2.7                         | 0.24 |
|           | 3-position        | All ports closed | 2.4                         | 0.29 |
|           |                   | A/B/R connection | 3.0                         | 0.27 |
|           |                   | P/A/B connection | 2.4                         | 0.34 |
| 4KB3      | 2-position        |                  | 6.3                         | 0.26 |
|           | 3-position        | All ports closed | 5.6                         | 0.27 |
|           |                   | A/B/R connection | 6.6                         | 0.20 |
|           |                   | P/A/B connection | 5.9                         | 0.27 |
| 4KB4      | 2-position        |                  | 12                          | 0.24 |
|           | 3-position        | All ports closed | 11                          | 0.27 |
|           |                   | A/B/R connection | 13                          | 0.21 |
|           |                   | P/A/B connection | 10                          | 0.22 |

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

## Ozone-proof specifications (Ending Page 5)

\*\* - Voltage - **P11**

## Coolant proof specifications (Catalog No.CC-N-375A)

● Special structure with outstanding oil and water resistance

\*\* - **A** - Voltage

## Copper and PTFE free specifications

● Copper- and PTFE-based materials are not used in the flow path.

\*\* - Voltage - **P6**

|                       |
|-----------------------|
| 4GA/B                 |
| M4GA/B                |
| MN4GA/B               |
| 4GA/B (mastr)         |
| 4GD/E                 |
| M4GD/E                |
| MN4GD/E               |
| 4GA4/B4               |
| MN3E                  |
| MN4E                  |
| W4GA/B2               |
| W4GB4                 |
| 4TB                   |
| 4L2-4/LMF0            |
| MN3S0                 |
| MN4S0                 |
| 4SA/B0                |
| 4KA/B                 |
| 4KA/B (mastr)         |
| 4F                    |
| 4F (mastr)            |
| PV5G                  |
| GMF                   |
| PV5                   |
| GMF                   |
| PV5S-0                |
| 3QR                   |
| 3QB                   |
| MV3QR                 |
| 3MA/B0                |
| 3PA/B                 |
| P/M/B                 |
| NP/NAP/NVP            |
| 4F*0EX                |
| 4F*0E                 |
| HMV                   |
| HSV                   |
| 2QV                   |
| 3QV                   |
| SKH                   |
| PCD                   |
| Silencer              |
| TotAirSys (Total Air) |
| TotAirSys (Gamma)     |
| Ending                |

# 4KB1 to 4 Series

Single valve; sub-plate piping

## How to order

**4KB2** **1** **0** - **06** - **M1** **B** - **AC100V**

● Single solenoid valve for manifold

**4KB1** **1** **9** - **00** - **M1** **B** - **AC100V**

\* Gasket/mounting screw attached

**A** Model No.

**B** Solenoid position

**C** Port size

**D** Manual override

**E** Electrical connections  
\* Refer to page 1237 for the circuit diagram with surge suppressor/lamp.

[Table 1] Compact terminal box L/LS compatibility table

| Code | Content           |                                      |    | 4KB1 | 4KB2 | 4KB3 | 4KB4 | Surge suppressor |
|------|-------------------|--------------------------------------|----|------|------|------|------|------------------|
| L    | Without lead wire | With indicator lamp                  | AC | ●    | ●    | ●    | ●    |                  |
|      |                   |                                      | DC |      |      | ●    | ●    |                  |
|      |                   | with surge suppressor/indicator lamp | AC |      |      |      |      |                  |
|      |                   |                                      | DC | ●    | ●    |      |      | integrated       |
| LS   | Without lead wire | with surge suppressor/indicator lamp | AC | ●    | ●    | ●    | ●    | integrated       |
|      |                   |                                      | DC |      |      | ●    | ●    | integrated       |

## ⚠ Precautions for model No. selection

- \*1 : The DC voltage models of the compact terminal box "L" of 4KB1, 4KB2 are equipped with a surge suppressor.
- \*2 : Consult with CKD when using a vacuum with the external pilot (K).
- \*3 : The surge suppressor for attachment is a suppression connector when the grommet lead wire is 24 VDC or less. (Refer to page 1236)
- \*4 : The surge suppressor can only be selected when the grommet lead wire or compact terminal box "B" has been selected for the electrical connections.

[Example of model No.]

**4KB210-06-M1BK-AC100V**

- A** Model : 4KB2
- B** Solenoid position : 2-position single
- C** Port size : Rc1/8
- D** Manual override : Locking manual override
- E** Electrical connections: Compact terminal box/without lead wire
- F** Other options : External pilot
- G** Voltage : 100 VAC 50/60 Hz

**G** Voltage

**A** Model No.

4KB1 4KB2 4KB3 4KB4

| Code                       | Content                              | 4KB1 | 4KB2 | 4KB3 | 4KB4 |
|----------------------------|--------------------------------------|------|------|------|------|
| <b>B</b> Solenoid position | <b>1</b> 2-position single           | ●    | ●    | ●    | ●    |
|                            | <b>2</b> 2-position double           | ●    | ●    | ●    | ●    |
|                            | <b>3</b> 3-position all ports closed | ●    | ●    | ●    | ●    |
|                            | <b>4</b> 3-position A/B/R connection | ●    | ●    | ●    | ●    |
|                            | <b>5</b> 3-position P/A/B connection | ●    | ●    | ●    | ●    |

| <b>C</b> Port size | Port      | P/A/B port | R1/R2 port<br>(1) = Rc1/8 (2) = Rc1/4<br>(3) = Rc3/8 (4) = Rc1/2 |     |     |     |
|--------------------|-----------|------------|------------------------------------------------------------------|-----|-----|-----|
|                    | <b>06</b> | Rc1/8      | (1)                                                              | (2) |     |     |
|                    | <b>08</b> | Rc1/4      |                                                                  | (2) | (2) |     |
|                    | <b>10</b> | Rc3/8      |                                                                  |     | (3) | (3) |
|                    | <b>15</b> | Rc1/2      |                                                                  |     |     | (4) |

|          |              |                             |   |   |   |   |
|----------|--------------|-----------------------------|---|---|---|---|
| <b>D</b> | <b>Blank</b> | Non-locking manual override | ● | ● | ● | ● |
|          | <b>M1</b>    | Locking manual override     | ● | ● | ● | ● |

|                                 |                      |                            |                                         |   |   |   |
|---------------------------------|----------------------|----------------------------|-----------------------------------------|---|---|---|
| <b>E</b> Electrical connections | Grommet lead wire    |                            |                                         |   |   |   |
|                                 | <b>Blank</b>         | Grommet lead wire (300 mm) | ●                                       | ● | ● | ● |
|                                 | Compact terminal box |                            |                                         |   |   |   |
|                                 | <b>B</b>             | Without lead wire          | ●                                       | ● | ● | ● |
|                                 | <b>L</b>             | Without lead wire          | Refer to [Table 1] at left for details. |   |   |   |

|              |                                                |                                                       |   |   |   |   |
|--------------|------------------------------------------------|-------------------------------------------------------|---|---|---|---|
| Electrical c | C type connector (lead wire lateral direction) |                                                       |   |   |   |   |
|              | C                                              | Lead wire length (300 mm)                             | ● | ● | ● | ● |
|              | C00                                            | Lead wire length (500 mm)                             | ● | ● | ● | ● |
|              | C01                                            | Lead wire length (1000 mm)                            | ● | ● | ● | ● |
|              | C02                                            | Lead wire length (2000 mm)                            | ● | ● | ● | ● |
|              | C03                                            | Lead wire length (3000 mm)                            | ● | ● | ● | ● |
|              | C1                                             | Without lead wire                                     | ● | ● | ● | ● |
|              | C2                                             | Lead wire length (300 mm) with surge suppressor/lamp  | ● | ● | ● | ● |
|              | C20                                            | Lead wire length (500 mm) with surge suppressor/lamp  | ● | ● | ● | ● |
|              | C21                                            | Lead wire length (1000 mm) with surge suppressor/lamp | ● | ● | ● | ● |
|              | C22                                            | Lead wire length (2000 mm) with surge suppressor/lamp | ● | ● | ● | ● |
|              | C23                                            | Lead wire length (3000 mm) with surge suppressor/lamp | ● | ● | ● | ● |
|              | C3                                             | Without lead wire, with surge suppressor/lamp         | ● | ● | ● | ● |
|              | D type connector (lead wire upward direction)  |                                                       |   |   |   |   |
|              | D                                              | Lead wire length (300 mm)                             | ● | ● | ● | ● |
|              | D00                                            | Lead wire length (500 mm)                             | ● | ● | ● | ● |
|              | D01                                            | Lead wire length (1000 mm)                            | ● | ● | ● | ● |
|              | D02                                            | Lead wire length (2000 mm)                            | ● | ● | ● | ● |
|              | D03                                            | Lead wire length (3000 mm)                            | ● | ● | ● | ● |
|              | D1                                             | Without lead wire                                     | ● | ● | ● | ● |
|              | D2                                             | Lead wire length (300 mm) with surge suppressor/lamp  | ● | ● | ● | ● |
|              | D20                                            | Lead wire length (500 mm) with surge suppressor/lamp  | ● | ● | ● | ● |
|              | D21                                            | Lead wire length (1000 mm) with surge suppressor/lamp | ● | ● | ● | ● |
|              | D22                                            | Lead wire length (2000 mm) with surge suppressor/lamp | ● | ● | ● | ● |
|              | D23                                            | Lead wire length (3000 mm) with surge suppressor/lamp | ● | ● | ● | ● |
|              | D3                                             | Without lead wire, with surge suppressor/lamp         | ● | ● | ● | ● |

|          |              |                                 |   |   |   |   |
|----------|--------------|---------------------------------|---|---|---|---|
| <b>F</b> | <b>Blank</b> | No option                       | ● | ● | ● | ● |
|          | <b>K</b>     | External pilot *2               | ● | ● | ● | ● |
|          | <b>S</b>     | Surge suppressor attached *3 *4 | ● | ● | ● | ● |

| <b>G</b> Voltage | Standard | AC100V | 100 VAC 50/60 Hz | ● | ● | ● | ● |
|------------------|----------|--------|------------------|---|---|---|---|
|                  |          | AC200V | 200 VAC 50/60 Hz | ● | ● | ● | ● |
|                  |          | DC24V  | 24 VDC           | ● | ● | ● | ● |
|                  | Option   | DC12V  | 12 VDC           | ● | ● | ● | ● |
|                  |          | AC110V | 110 VAC 50/60 Hz | ● | ● | ● | ● |
|                  |          | AC220V | 220 VAC 50/60 Hz | ● | ● | ● | ● |

|                                      |   |   |   |   |   |   |   |
|--------------------------------------|---|---|---|---|---|---|---|
| <b>* Other custom order products</b> |   |   |   |   |   |   |   |
| <b>AC24V</b>                         | ● | ● | ● | ● | ● | ● | ● |
| <b>AC115V</b>                        | ● | ● | ● | ● | ● | ● | ● |
| <b>AC120V</b>                        | ● | ● | ● | ● | ● | ● | ● |



|                          |
|--------------------------|
| 4GA/B                    |
| M4GA/B                   |
| MN4GA/B                  |
| 4GA/B<br>(mastr)         |
| 4GD/E                    |
| M4GD/E                   |
| MN4GD/E                  |
| 4GA4/B4                  |
| MN3E<br>MN4E             |
| W4GA/B2                  |
| W4GB4                    |
| 4TB                      |
| 4L2-4/<br>LMF0           |
| MN3S0<br>MN4S0           |
| 4SA/B0                   |
| 4KA/B                    |
| 4KA/B<br>(mastr)         |
| 4F                       |
| 4F<br>(mastr)            |
| PV5G<br>GMF              |
| PV5<br>GMF               |
| PV5S-0                   |
| 3QR<br>3QB               |
| MV3QR                    |
| 3MA/B0                   |
| 3PA/B                    |
| P/M/B                    |
| NP/NAP/<br>NVP           |
| 4F*0EX                   |
| 4F*0E                    |
| HMV<br>HSV               |
| 2QV<br>3QV               |
| SKH                      |
| PCD                      |
| Silencer                 |
| TotAirSys<br>(Total Air) |
| TotAirSys<br>(Gamma)     |
| Ending                   |

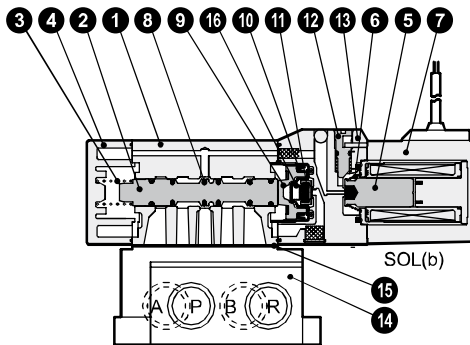
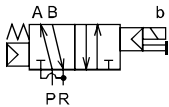
# 4KB1 Series

Single valve; sub-plate piping

## Internal structure and parts list

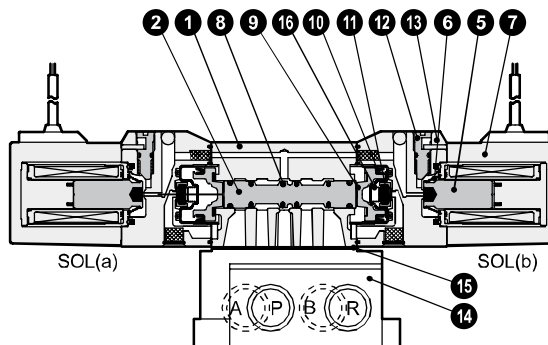
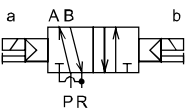
### 4KB110

● 2-position single



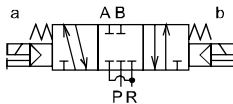
### 4KB120

● 2-position double



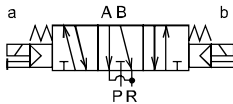
### 4KB130

● 3-position all ports closed



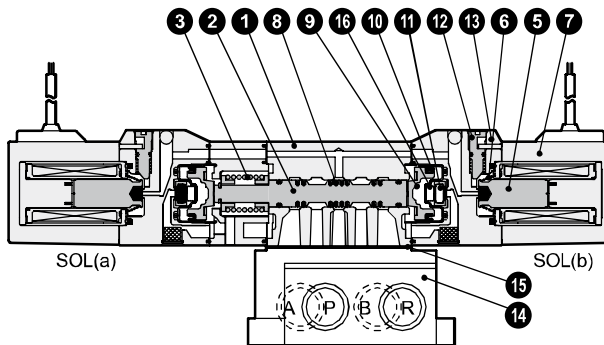
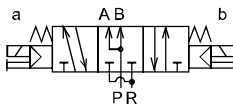
### 4KB140

● 3-position A/B/R connection



### 4KB150

● 3-position P/A/B connection



## Main parts list

| No. | Part name               | Material                   |
|-----|-------------------------|----------------------------|
| 1   | Body                    | Aluminum alloy die-casting |
| 2   | Valving element (spool) | Aluminum                   |
| 3   | Valve spring            | Stainless steel            |
| 4   | Cap                     | Resin                      |
| 5   | Plunger                 | -                          |
| 6   | Plunger spring          | -                          |
| 7   | Coil assembly           | -                          |
| 8   | Spool packing           | Nitrile rubber             |
| 9   | Piston                  | Resin                      |
| 10  | Piston packing          | Nitrile rubber             |
| 11  | Valve seat              | Nitrile rubber             |
| 12  | Manual button           | Resin                      |
| 13  | Pilot valve             | Resin                      |
| 14  | Sub-plate               | Aluminum alloy die-casting |
| 15  | Gasket                  | *2 Nitrile rubber          |
| 16  | Valve seat spring       | Stainless steel            |

## Main parts list

| No. | Component name | Model No.                                                          |
|-----|----------------|--------------------------------------------------------------------|
| 14  | Sub-plate kit  | 4KB110- <b>E</b> Port size - <b>F</b> Exterior Pilot -SUB-BASE-KIT |
| 15  |                |                                                                    |

\* Mounting screws are attached to the sub-plate kit.

## Repair parts list

| No./part name | 2 8            | 9 10            | 5 6 7           |
|---------------|----------------|-----------------|-----------------|
| Model No.     | Spool assembly | Piston assembly | Coil assembly * |
| 4KB110        | 4K9-110        |                 |                 |
| 4KB120        | 4K9-118        | 4K9-151         |                 |
| 4KB130        | 4K9-111        |                 |                 |
| 4KB140        | 4K9-112        | 4K9-152         |                 |
| 4KB150        | 4K9-113        |                 |                 |

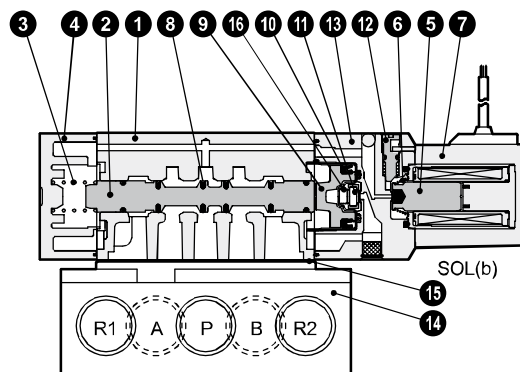
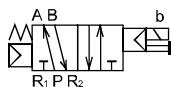
\*1: The compact terminal box and connector of the coil assembly will come assembled and attached with the options of the descriptions indicated with model No. selection.

\*2: Take care, as gasket **15** mounting has an orientation.

### Internal structure and parts list

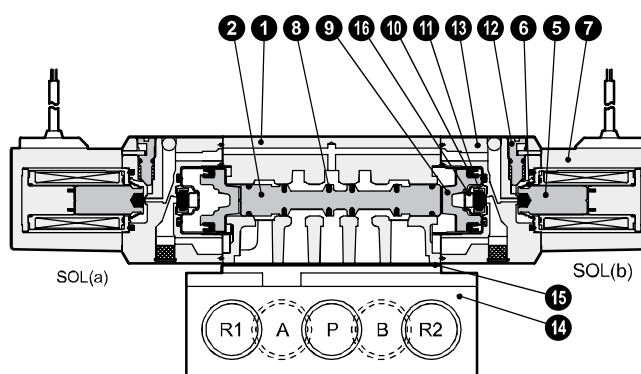
#### 4KB210

- 2-position single



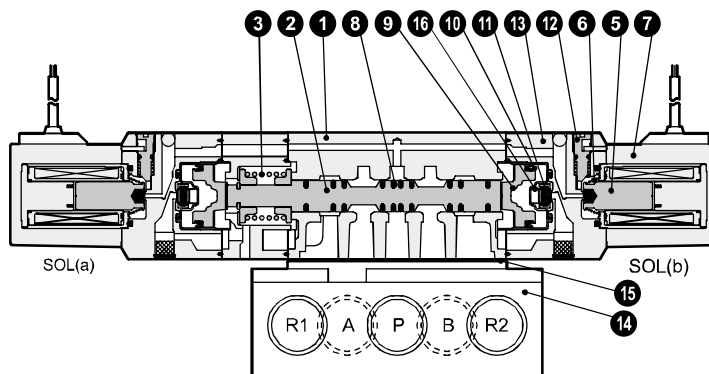
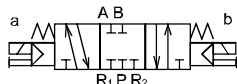
#### 4KB220

- 2-position double



#### 4KB230

- 3-position all ports closed



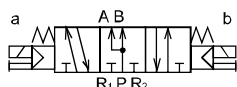
#### 4KB240

- 3-position A/B/R connection



#### 4KB250

- 3-position P/A/B connection



### Main parts list

| No. | Part name               | Material                   |
|-----|-------------------------|----------------------------|
| 1   | Body                    | Aluminum alloy die-casting |
| 2   | Valving element (spool) | Aluminum                   |
| 3   | Valve spring            | Stainless steel            |
| 4   | Cap                     | Resin                      |
| 5   | Plunger                 | -                          |
| 6   | Plunger spring          | -                          |
| 7   | Coil assembly           | -                          |
| 8   | Spool packing           | Nitrile rubber             |
| 9   | Piston                  | Resin                      |
| 10  | Piston packing          | Nitrile rubber             |
| 11  | Valve seat              | Nitrile rubber             |
| 12  | Manual button           | Resin                      |
| 13  | Pilot valve             | Resin                      |
| 14  | Sub-plate               | Aluminum alloy die-casting |
| 15  | Gasket                  | Nitrile rubber             |
| 16  | Valve seat spring       | Stainless steel            |

### Main parts list

| No. | Component name | Model No.                                                          |
|-----|----------------|--------------------------------------------------------------------|
| 14  | Sub-plate kit  | 4KB210- <b>B</b> Port size - <b>F</b> Exterior Pilot -SUB-BASE-KIT |
| 15  |                |                                                                    |

\* Mounting screws are attached to the sub-plate kit.

### Repair parts list

| No./part name | 2 8            | 9 10            | 5 6 7                                                                             |
|---------------|----------------|-----------------|-----------------------------------------------------------------------------------|
| Model No.     | Spool assembly | Piston assembly | Coil assembly *                                                                   |
| 4KB210        | 4K9-150        | 4K9-153         | 4K1L- <b>E</b> electrical connection option code -<br>Blank for grommet lead wire |
| 4KB220        | 4K9-126        | 4K9-153         |                                                                                   |
| 4KB230        | 4K9-127        | 4K9-154         |                                                                                   |
| 4KB240        | 4K9-128        | 4K9-154         |                                                                                   |
| 4KB250        | 4K9-129        | 4K9-154         | COIL - <b>G</b> Voltage                                                           |

\*1: The compact terminal box and connector of the coil assembly will come assembled and attached with the options of the descriptions indicated with model No. selection.

|                       |
|-----------------------|
| 4GA/B                 |
| M4GA/B                |
| MN4GA/B               |
| 4GA/B (mastr)         |
| 4GD/E                 |
| M4GD/E                |
| MN4GD/E               |
| 4GA4/B4               |
| MN3E                  |
| MN4E                  |
| W4GA/B2               |
| W4GB4                 |
| 4TB                   |
| 4L2-4/ LMF0           |
| MN3S0                 |
| MN4S0                 |
| 4SA/B0                |
| 4KA/B                 |
| 4KA/B (mastr)         |
| 4F                    |
| 4F (mastr)            |
| PV5G                  |
| GMF                   |
| PV5                   |
| GMF                   |
| PV5S-0                |
| 3QR                   |
| 3QB                   |
| MV3QR                 |
| 3MA/B0                |
| 3PA/B                 |
| P/M/B                 |
| NP/NAP/ NVP           |
| 4F*0EX                |
| 4F*0E                 |
| HMV                   |
| HSV                   |
| 2QV                   |
| 3QV                   |
| SKH                   |
| PCD                   |
| Silencer              |
| TotAirSys (Total Air) |
| TotAirSys (Gamma)     |
| Ending                |

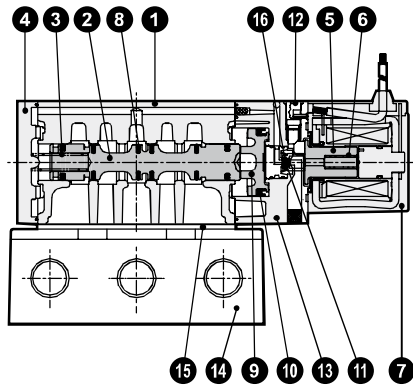
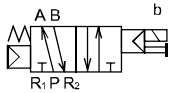
# 4KB3 Series

Single valve; sub-plate piping

## Internal structure and parts list

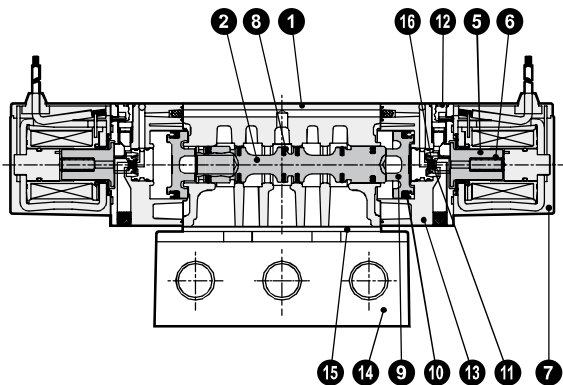
### 4KB310

● 2-position single



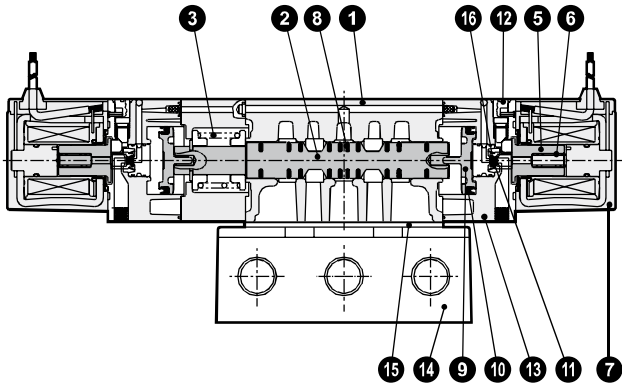
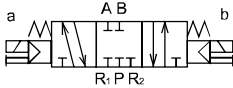
### 4KB320

● 2-position double



### 4KB330

● 3-position all ports closed



### 4KB340

● 3-position A/B/R connection



### 4KB350

● 3-position P/A/B connection



## Main parts list

| No. | Part name               | Material                   |
|-----|-------------------------|----------------------------|
| 1   | Body                    | Aluminum alloy die-casting |
| 2   | Valving element (spool) | Aluminum                   |
| 3   | Valve spring            | Stainless steel            |
| 4   | Cap                     | Resin                      |
| 5   | Plunger                 | -                          |
| 6   | Plunger spring          | -                          |
| 7   | Coil assembly           | -                          |
| 8   | Spool packing           | Nitrile rubber             |
| 9   | Piston                  | Resin                      |
| 10  | Piston packing          | Nitrile rubber             |
| 11  | Valve seat              | Nitrile rubber             |
| 12  | Manual button           | Resin                      |
| 13  | Pilot valve             | Resin                      |
| 14  | Sub-plate               | Aluminum alloy die-casting |
| 15  | Gasket *2               | Nitrile rubber             |
| 16  | Valve seat spring       | Stainless steel            |

## Main parts list

| No. | Component name | Model No.                                                          |
|-----|----------------|--------------------------------------------------------------------|
| 14  | Sub-plate kit  | 4KB310- <b>E</b> Port size - <b>F</b> External pilot -SUB-BASE-KIT |
| 15  |                |                                                                    |

\* Mounting screws are attached to the sub-plate kit.

## Repair parts list

| No./part name | 2 8            | 9 10            | 5 6 7                                                                                                                                                                                      |   |   |
|---------------|----------------|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|
| Model No.     | Spool assembly | Piston assembly | Coil assembly *1                                                                                                                                                                           |   |   |
| 4KB310        | 4K9-133        | 4K9-137         | 4K3- <table border="1"><tr><td>E</td></tr></table> electrical connection option code -<br>↑ Blank for grommet<br>lead wire<br>COIL - <table border="1"><tr><td>G</td></tr></table> Voltage | E | G |
| E             |                |                 |                                                                                                                                                                                            |   |   |
| G             |                |                 |                                                                                                                                                                                            |   |   |
| 4KB320        | 4K9-137        |                 |                                                                                                                                                                                            |   |   |
| 4KB330        | 4K9-134        | 4K9-138         |                                                                                                                                                                                            |   |   |
| 4KB340        | 4K9-135        |                 |                                                                                                                                                                                            |   |   |
| 4KB350        | 4K9-136        |                 |                                                                                                                                                                                            |   |   |

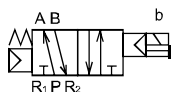
\* 1: The terminal box and connector of the coil assembly will come assembled and included with the options of the descriptions indicated with model No. selection.

\* 2: Take care, as gasket **15** mounting has an orientation.

### Internal structure and parts list

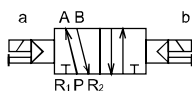
#### 4KB410

- 2-position single



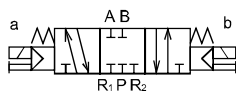
#### 4KB420

- 2-position double



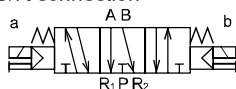
#### 4KB430

- 3-position all ports closed



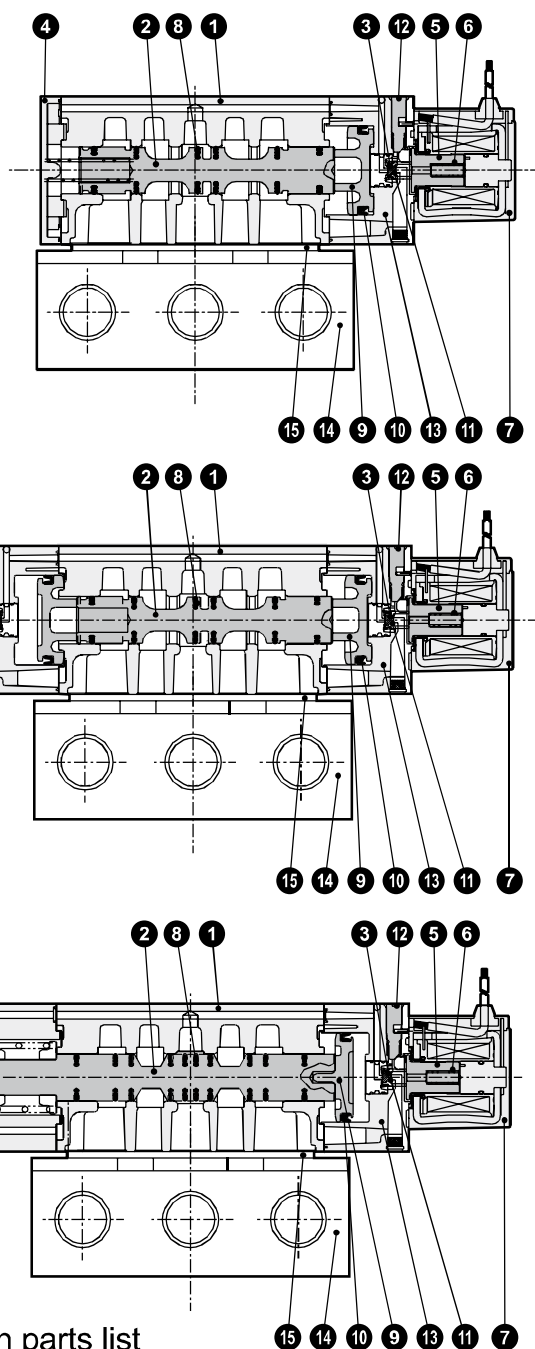
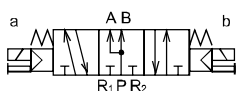
#### 4KB440

- 3-position A/B/R connection



#### 4KB450

- 3-position P/A/B connection



### Main parts list

| No. | Part name               | Material                   |
|-----|-------------------------|----------------------------|
| 1   | Body                    | Aluminum alloy die-casting |
| 2   | Valving element (spool) | Aluminum                   |
| 3   | Valve spring            | Stainless steel            |
| 4   | Cap                     | Resin                      |
| 5   | Plunger                 | -                          |
| 6   | Plunger spring          | -                          |
| 7   | Coil assembly           | -                          |
| 8   | Spool packing           | Nitrile rubber             |
| 9   | Piston                  | Resin                      |
| 10  | Piston packing          | Nitrile rubber             |
| 11  | Valve seat              | Nitrile rubber             |
| 12  | Manual button           | Resin                      |
| 13  | Pilot valve             | Resin                      |
| 14  | Sub-plate               | Aluminum alloy die-casting |
| 15  | Gasket                  | Nitrile rubber             |
| 16  | Valve seat spring       | Stainless steel            |

### Main parts list

| No. | Component name | Model No.                                                          |
|-----|----------------|--------------------------------------------------------------------|
| 14  | Sub-plate kit  | 4KB410- <b>B</b> Port size - <b>F</b> External pilot -SUB-BASE-KIT |
| 15  |                |                                                                    |

\* Mounting screws are attached to the sub-plate kit.

### Repair parts list

| No./part name | 2 8            | 9 10            | 5 6 7                                                                            |
|---------------|----------------|-----------------|----------------------------------------------------------------------------------|
| Model No.     | Spool assembly | Piston assembly | Coil assembly *                                                                  |
| 4KB410        | 4K9-140        | 4K9-144         | 4K3- <b>E</b> electrical connection option code -<br>Blank for grommet lead wire |
| 4KB420        | 4K9-141        | 4K9-145         | COIL - <b>G</b> Voltage                                                          |
| 4KB430        | 4K9-142        |                 |                                                                                  |
| 4KB440        | 4K9-143        |                 |                                                                                  |
| 4KB450        |                |                 |                                                                                  |

\* 1: The plunger assembly is attached with the coil assembly. As there are limitations with the combinations of coils and plungers, do not replace these.

\* 2: The terminal box and connector of the coil assembly will come assembled and included with the options of the descriptions indicated with model No. selection.

\* 3: When combining a coil assembly into a valve, contact CKD for precautions regarding the work.

|                       |
|-----------------------|
| 4GA/B                 |
| M4GA/B                |
| MN4GA/B               |
| 4GA/B (mastr)         |
| 4GD/E                 |
| M4GD/E                |
| MN4GD/E               |
| 4GA4/B4               |
| MN3E                  |
| MN4E                  |
| W4GA/B2               |
| W4GB4                 |
| 4TB                   |
| 4L2-4/ LMF0           |
| MN3S0                 |
| MN4S0                 |
| 4SA/B0                |
| 4KA/B                 |
| 4KA/B (mastr)         |
| 4F                    |
| 4F (mastr)            |
| PV5G                  |
| GMF                   |
| PV5                   |
| GMF                   |
| PV5S-0                |
| 3QR                   |
| 3QB                   |
| MV3QR                 |
| 3MA/B0                |
| 3PA/B                 |
| P/M/B                 |
| NP/NAP/ NVP           |
| 4F*0EX                |
| 4F*0E                 |
| HMV                   |
| HSV                   |
| 2QV                   |
| 3QV                   |
| SKH                   |
| PCD                   |
| Silencer              |
| TotAirSys (Total Air) |
| TotAirSys (Gamma)     |
| Ending                |

# 4KB1 Series

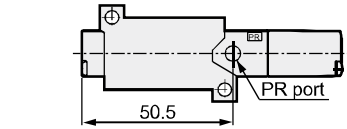
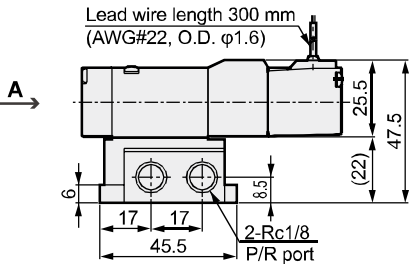
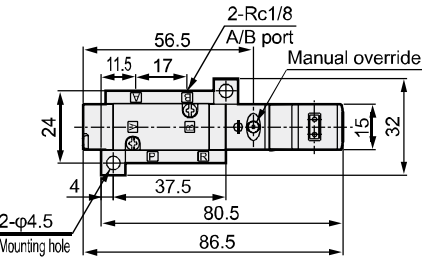
Single valve; sub-plate piping



## Dimensions

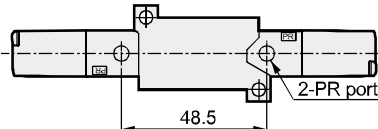
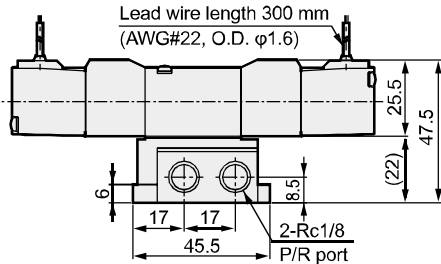
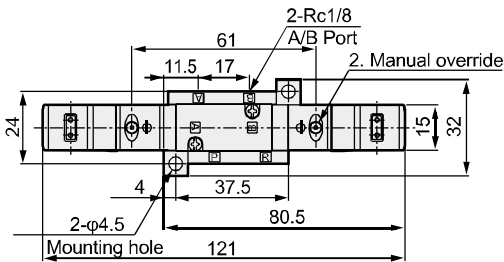
### 4KB110

- 2-position single: grommet lead wire



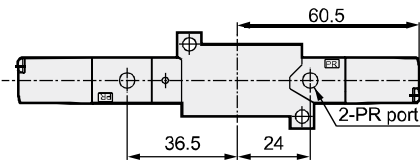
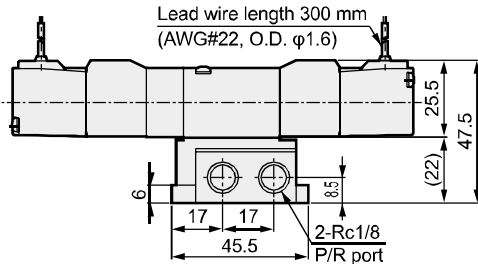
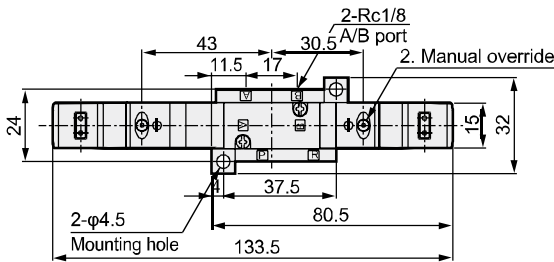
### 4KB120

- 2-position double: grommet lead wire



### 4KB140

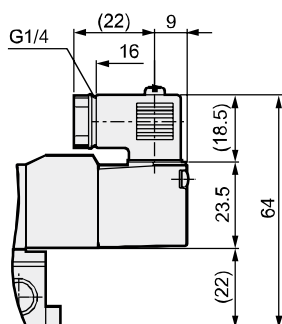
- 3-position: grommet lead wire



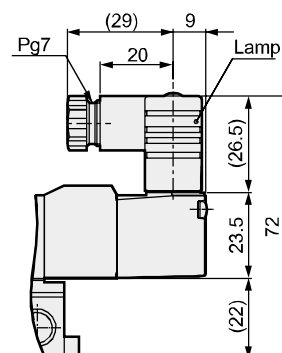
### Dimensions

- Compact terminal box: (B [Without lamp]/L/LS [With lamp])

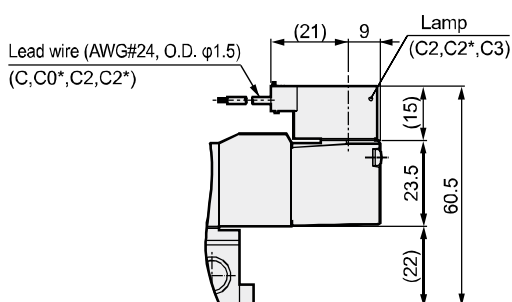
Without indicator lamp



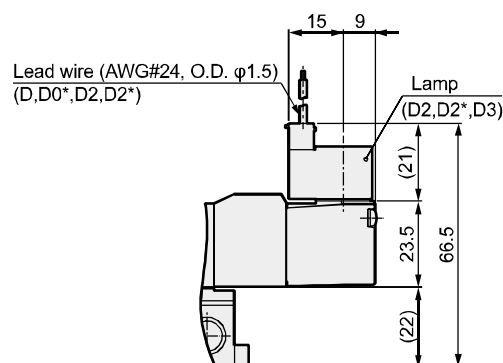
With indicator lamp



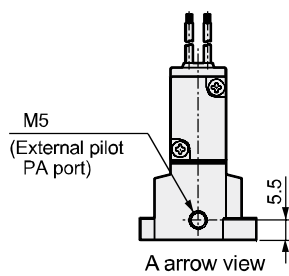
- C type connector: (C/C1/C0\*/C2/C2\*/C3)



- D type connector: (D/D1/D0\*/D2/D2\*/D3)



- External pilot: (K)



|                       |
|-----------------------|
| 4GA/B                 |
| M4GA/B                |
| MN4GA/B               |
| 4GA/B (mastr)         |
| 4GD/E                 |
| M4GD/E                |
| MN4GD/E               |
| 4GA4/B4               |
| MN3E                  |
| MN4E                  |
| W4GA/B2               |
| W4GB4                 |
| 4TB                   |
| 4L2-4/ LMF0           |
| MN3S0                 |
| MN4S0                 |
| 4SA/B0                |
| 4KA/B                 |
| 4KA/B (mastr)         |
| 4F                    |
| 4F (mastr)            |
| PV5G                  |
| GMF                   |
| PV5                   |
| GMF                   |
| PV5S-0                |
| 3QR                   |
| 3QB                   |
| MV3QR                 |
| 3MA/B0                |
| 3PA/B                 |
| P/M/B                 |
| NP/NAP/ NVP           |
| 4F*0EX                |
| 4F*0E                 |
| HMV                   |
| HSV                   |
| 2QV                   |
| 3QV                   |
| SKH                   |
| PCD                   |
| Silencer              |
| TotAirSys (Total Air) |
| TotAirSys (Gamma)     |
| Ending                |

# 4KB2 Series

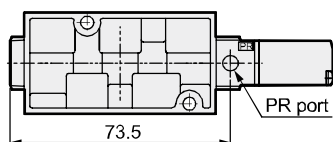
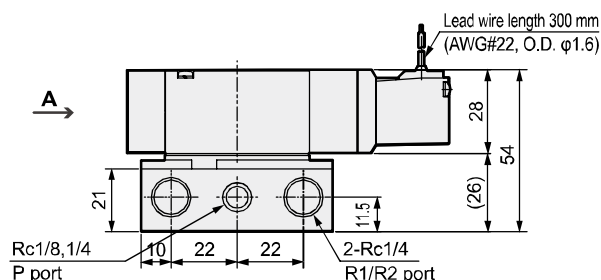
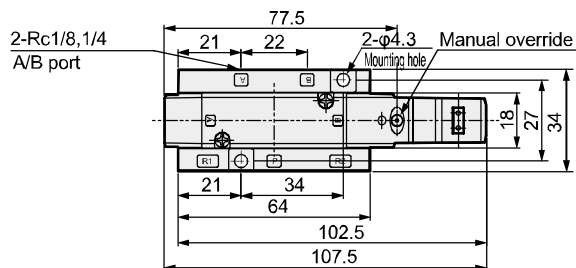
Single valve; sub-plate piping



## Dimensions

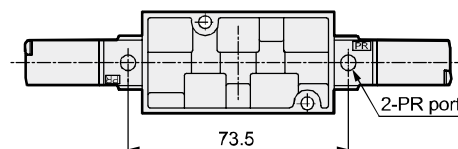
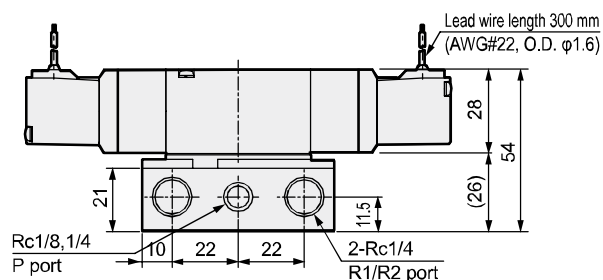
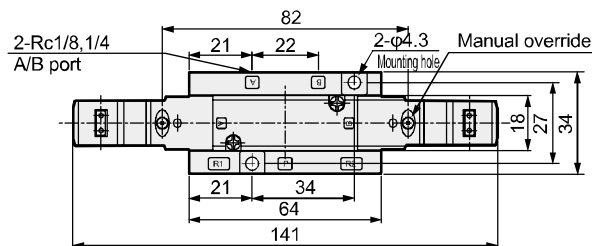
### 4KB210

- 2-position single: grommet lead wire



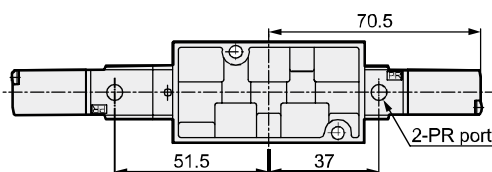
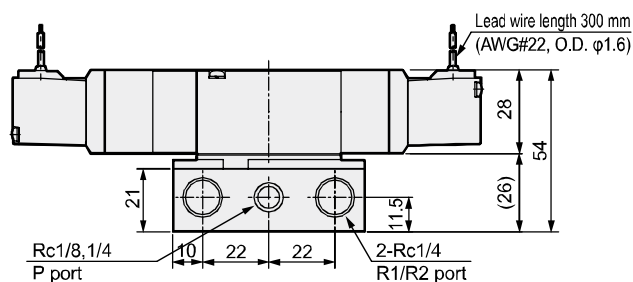
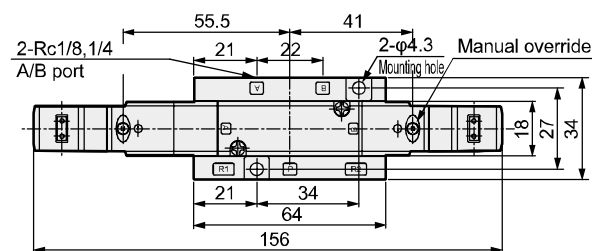
### 4KB220

- 2-position double: grommet lead wire



### 4KB240<sup>3</sup><sub>5</sub>

- 3-position: grommet lead wire

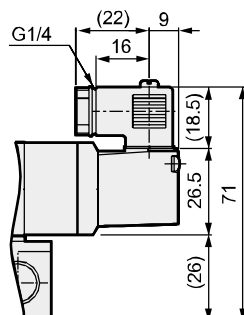




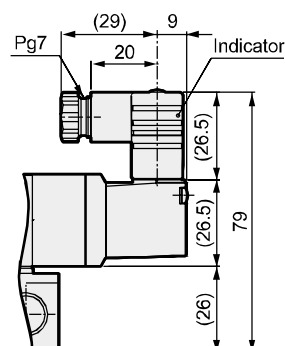
### Dimensions

- Compact terminal box: (B [Without lamp]/L/LS [With lamp])

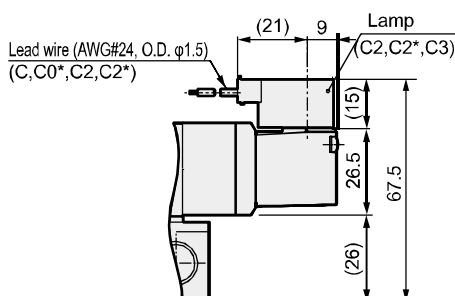
Without indicator lamp



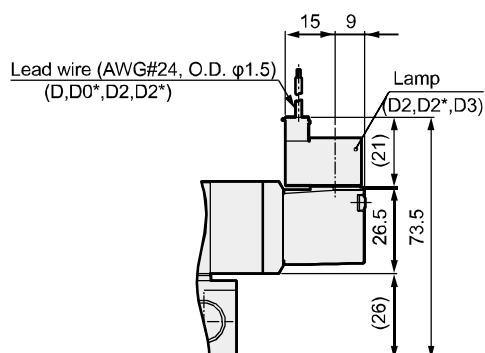
With indicator lamp



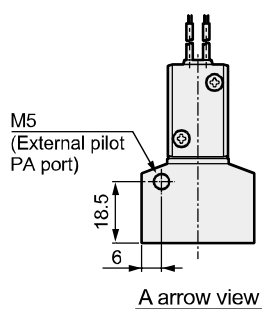
- C type connector: (C/C1/C0\*/C2/C2\*/C3)



- D type connector: (D/D1/D0\*/D2/D2\*/D3)



- External pilot: (K)



|                       |
|-----------------------|
| 4GA/B                 |
| M4GA/B                |
| MN4GA/B               |
| 4GA/B (mastr)         |
| 4GD/E                 |
| M4GD/E                |
| MN4GD/E               |
| 4GA4/B4               |
| MN3E                  |
| MN4E                  |
| W4GA/B2               |
| W4GB4                 |
| 4TB                   |
| 4L2-4/ LMF0           |
| MN3S0                 |
| MN4S0                 |
| 4SA/B0                |
| <b>4KA/B</b>          |
| <b>4KA/B (mastr)</b>  |
| 4F                    |
| 4F (mastr)            |
| PV5G                  |
| GMF                   |
| PV5                   |
| GMF                   |
| PV5S-0                |
| 3QR                   |
| 3QB                   |
| MV3QR                 |
| 3MA/B0                |
| 3PA/B                 |
| P/M/B                 |
| NP/NAP/ NVP           |
| 4F*0EX                |
| 4F*0E                 |
| HMV                   |
| HSV                   |
| 2QV                   |
| 3QV                   |
| SKH                   |
| PCD                   |
| Silencer              |
| TotAirSys (Total Air) |
| TotAirSys (Gamma)     |
| Ending                |

# 4KB3 Series

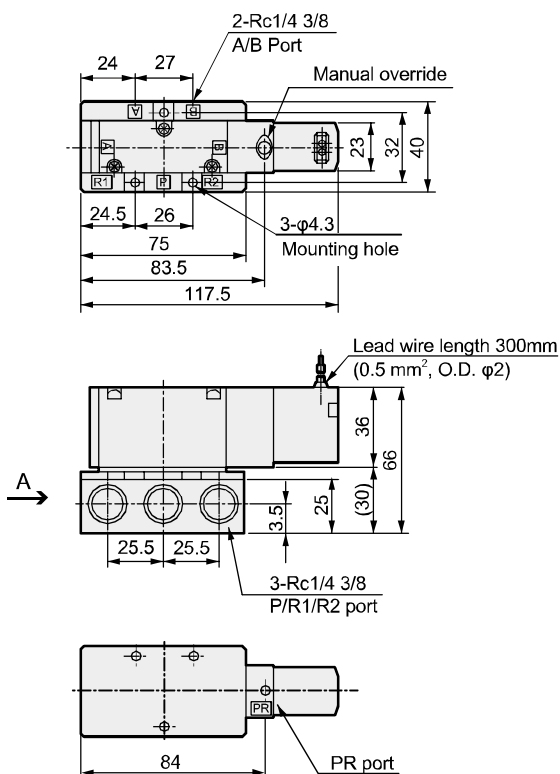
Single valve; sub-plate piping

Dimensions



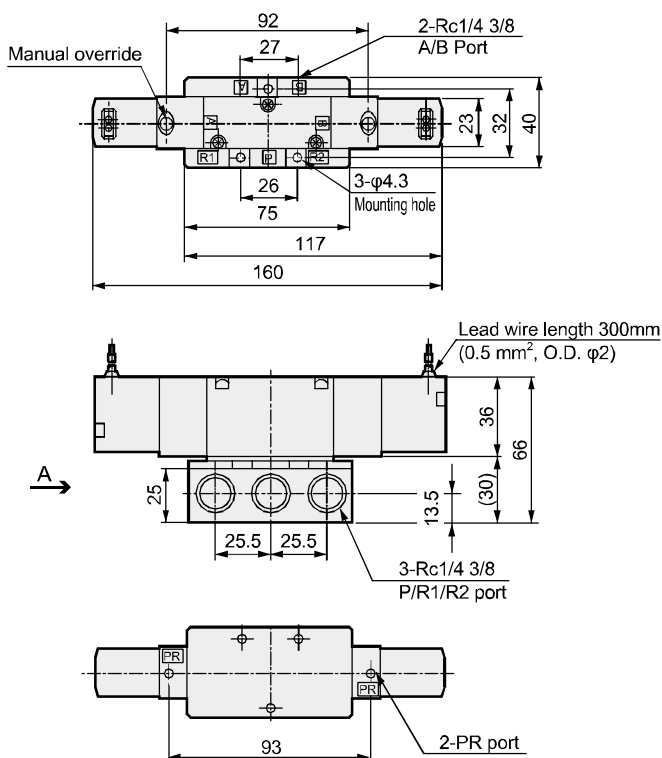
## 4KB310

- 2-position single: grommet lead wire



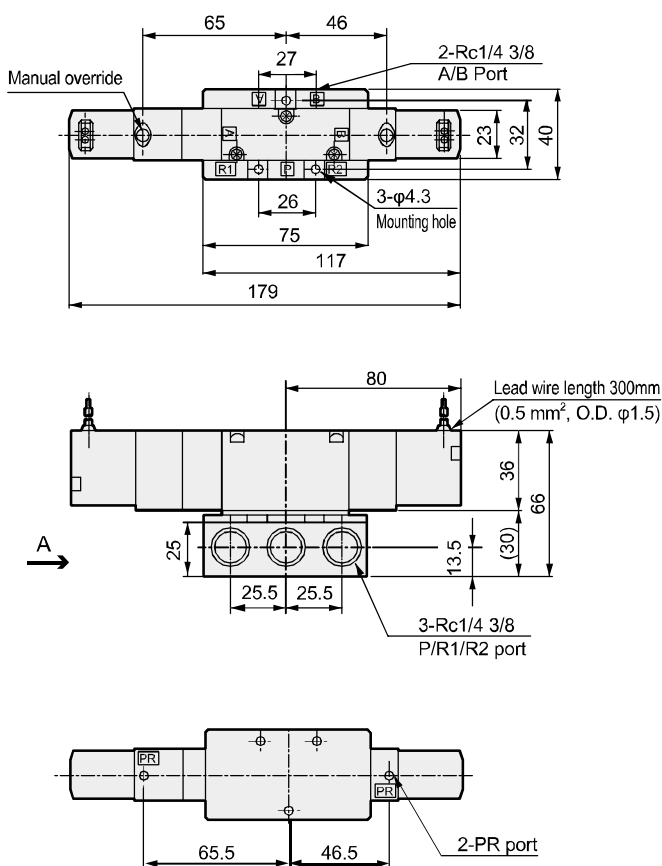
## 4KB320

- 2-position double: grommet lead wire



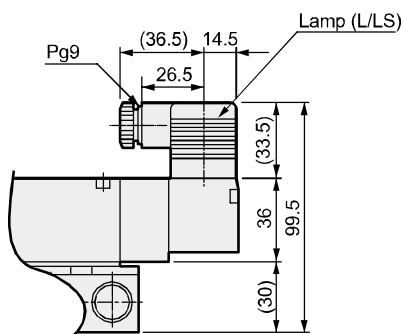
## 4KB340<sup>3</sup><sub>5</sub>

- 3-position: grommet lead wire

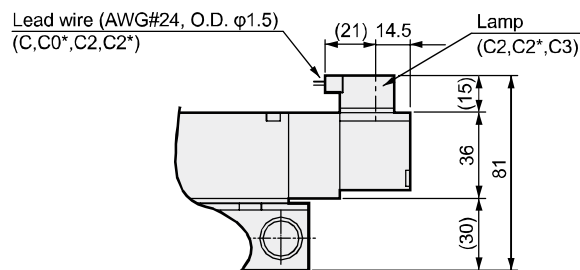


### Dimensions

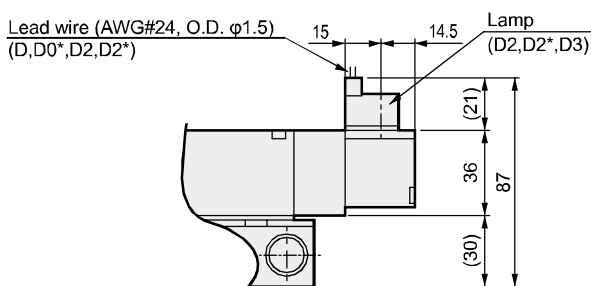
#### ● Terminal box: (B/L/LS)



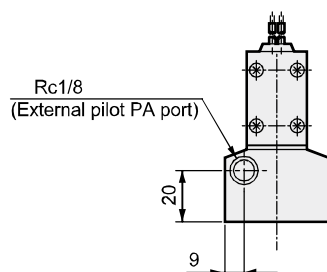
#### ● C type connector: (C/C1/C0\*/C2/C2\*/C3)



#### ● D type connector: (D/D1/D0\*/D2/D2\*/D3)



#### ● External pilot: (K)



A arrow view

|                       |
|-----------------------|
| 4GA/B                 |
| M4GA/B                |
| MN4GA/B               |
| 4GA/B (mastr)         |
| 4GD/E                 |
| M4GD/E                |
| MN4GD/E               |
| 4GA4/B4               |
| MN3E                  |
| MN4E                  |
| W4GA/B2               |
| W4GB4                 |
| 4TB                   |
| 4L2-4/ LMF0           |
| MN3S0                 |
| MN4S0                 |
| 4SA/B0                |
| <b>4KA/B</b>          |
| <b>4KA/B (mastr)</b>  |
| 4F                    |
| 4F (mastr)            |
| PV5G                  |
| GMF                   |
| PV5                   |
| GMF                   |
| PV5S-0                |
| 3QR                   |
| 3QB                   |
| MV3QR                 |
| 3MA/B0                |
| 3PA/B                 |
| P/M/B                 |
| NP/NAP/ NVP           |
| 4F*0EX                |
| 4F*0E                 |
| HMV                   |
| HSV                   |
| 2QV                   |
| 3QV                   |
| SKH                   |
| PCD                   |
| Silencer              |
| TotAirSys (Total Air) |
| TotAirSys (Gamma)     |
| Ending                |

# 4KB4 Series

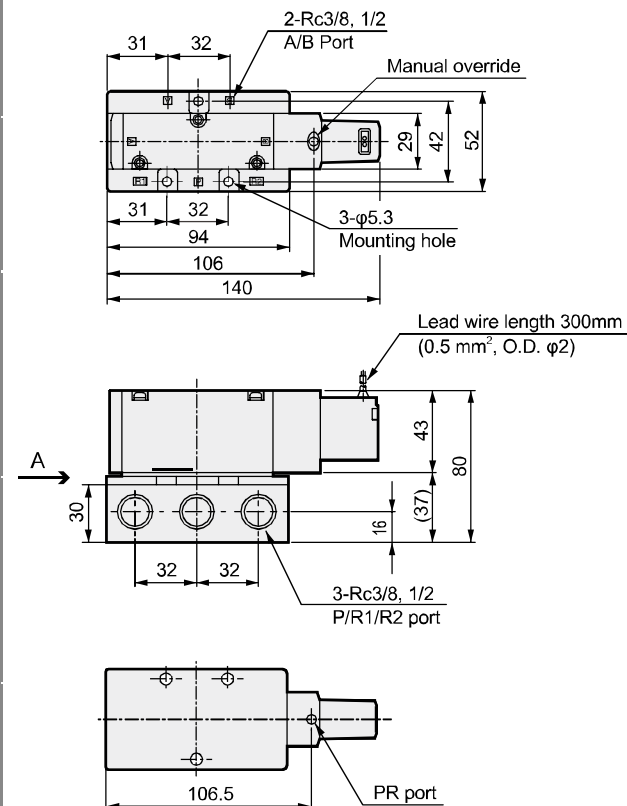
Single valve; sub-plate piping

Dimensions



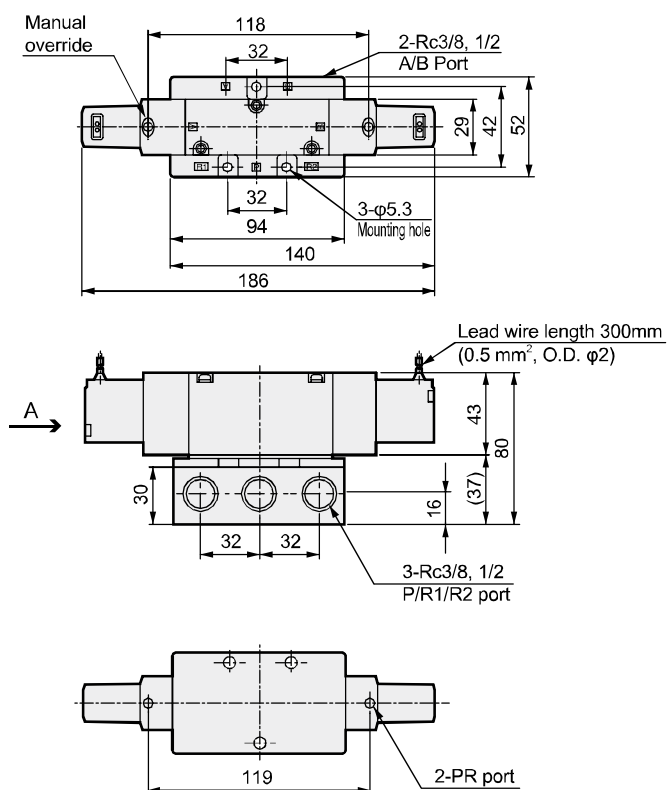
## 4KB410

● 2-position single: grommet lead wire



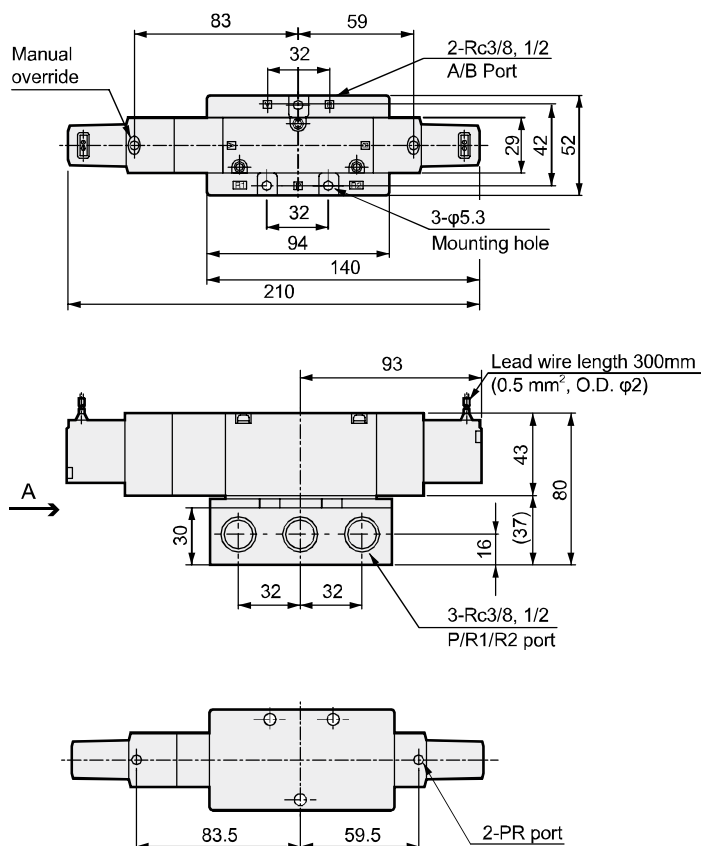
## 4KB420

● 2-position double: grommet lead wire



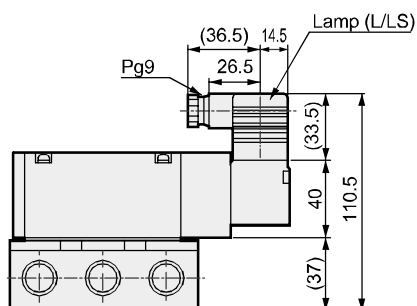
## 4KB4<sup>3</sup>/<sub>5</sub>

● 3-position: grommet lead wire

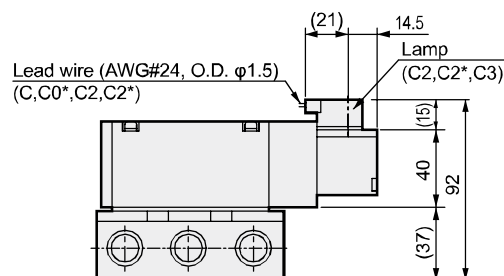


### Dimensions

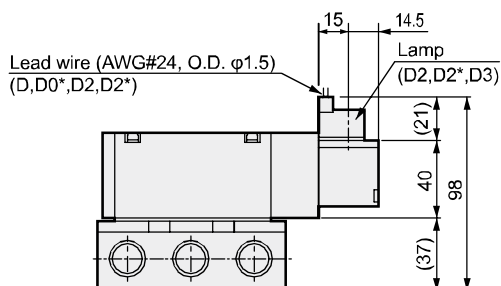
#### ● Terminal box: (B/L/LS)



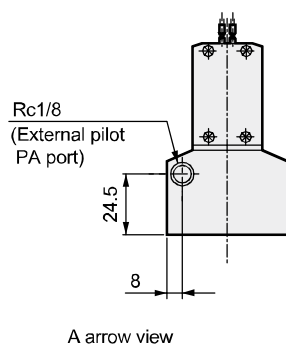
#### ● C type connector: (C/C1/C0\*/C2/C2\*/C3)



#### ● D type connector: (D/D1/D0\*/D2/D2\*/D3)

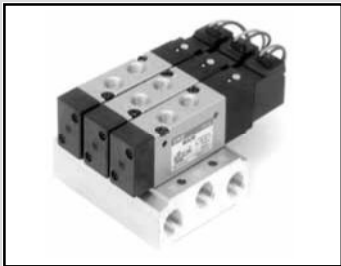


#### ● External pilot: (K)



|                       |
|-----------------------|
| 4GA/B                 |
| M4GA/B                |
| MN4GA/B               |
| 4GA/B (mastr)         |
| 4GD/E                 |
| M4GD/E                |
| MN4GD/E               |
| 4GA4/B4               |
| MN3E                  |
| MN4E                  |
| W4GA/B2               |
| W4GB4                 |
| 4TB                   |
| 4L2-4/ LMF0           |
| MN3S0                 |
| MN4S0                 |
| 4SA/B0                |
| <b>4KA/B</b>          |
| <b>4KA/B (mastr)</b>  |
| 4F                    |
| 4F (mastr)            |
| PV5G                  |
| GMF                   |
| PV5                   |
| GMF                   |
| PV5S-0                |
| 3QR                   |
| 3QB                   |
| MV3QR                 |
| 3MA/B0                |
| 3PA/B                 |
| P/M/B                 |
| NP/NAP/ NVP           |
| 4F*0EX                |
| 4F*0E                 |
| HMV                   |
| HSV                   |
| 2QV                   |
| 3QV                   |
| SKH                   |
| PCD                   |
| Silencer              |
| TotAirSys (Total Air) |
| TotAirSys (Gamma)     |
| Ending                |

|                          |
|--------------------------|
| 4GA/B                    |
| M4GA/B                   |
| MN4GA/B                  |
| 4GA/B (mastr)            |
| 4GD/E                    |
| M4GD/E                   |
| MN4GD/E                  |
| 4GA4/B4                  |
| MN3E<br>MN4E             |
| W4GA/B2                  |
| W4GB4                    |
| 4TB                      |
| 4L2-4/<br>LMF0           |
| MN3S0<br>MN4S0           |
| 4SA/B0                   |
| 4KA/B                    |
| 4KA/B (mastr)            |
| 4F                       |
| 4F (mastr)               |
| PV5G<br>GMF              |
| PV5<br>GMF               |
| PV5S-0                   |
| 3QR<br>3QB               |
| MV3QR                    |
| 3MA/B0                   |
| 3PA/B                    |
| P/M/B                    |
| NP/NA/<br>NVP            |
| 4F*0EX                   |
| 4F*0E                    |
| HMV<br>HSV               |
| 2QV<br>3QV               |
| SKH                      |
| PCD                      |
| Silencer                 |
| TotAirSys<br>(Total Air) |
| TotAirSys<br>(Gamma)     |
| Ending                   |



Individual wiring manifold body piping  
Pilot operated 3, 5-port pneumatic valve

# M3KA1/M4KA1/2/3/4 Series

● Cylinder bore size: φ20 to φ160

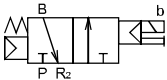


Refer to the Ending for details.

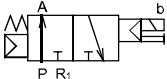


## JIS symbol

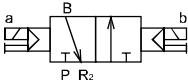
- 3-port valve  
2-position NC single



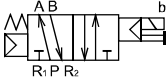
- 3-port valve  
2-position NO single



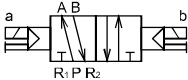
- 3-port valve  
2-position NC double



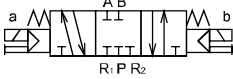
- 5-port valve  
2-position single



- 5-port valve  
2-position double



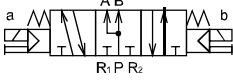
- 5-port valve  
3-position all ports closed



- 5-port valve  
3-position A/B/R connection



- 5-port valve  
3-position P/A/B connection



## Common specifications

| Descriptions                           | Content                                         |
|----------------------------------------|-------------------------------------------------|
| Manifold method                        | Manifold integrated                             |
| Manifold                               | Common supply, common exhaust                   |
| Station No.                            | *1: 2 to 20 stations                            |
| Valve and operation                    | Pilot operated soft spool valve                 |
| Working fluid                          | Compressed air                                  |
| Max. working press. MPa                | 0.70 (≈100 psi, 7 bar)                          |
| Min. working press. MPa                | Refer to Individual specifications listed below |
| Proof pressure. MPa                    | 1.05 (≈150 psi, 10.5 bar)                       |
| Ambient temperature. °C                | -5 (23°F) to 50 (122°F) (no freezing)           |
| Fluid temperature. °C                  | 5 (41°F) to 50 (122°F)                          |
| Lubrication                            | Not required                                    |
| Degree of protection                   | Dust-proof                                      |
| Vibration resistance. m/s <sup>2</sup> | 50 or less                                      |
| Shock resistance. m/s <sup>2</sup>     | 300 or less                                     |
| Atmosphere                             | Cannot be used in corrosive gas environment.    |

\*1: The max. station numbers for 4KA3/4 are 15 stations and 12 stations, respectively.

## Electrical specifications

| Descriptions                                  |    |          | 3KA1, 4KA1/2             | 4KA3/4                   |
|-----------------------------------------------|----|----------|--------------------------|--------------------------|
| Rated voltage                                 | AC |          | 100,200 ( 50 / 60 Hz )   |                          |
| V                                             | DC |          | 24                       |                          |
| Voltage fluctuation range                     |    |          | ±10%                     |                          |
| Starting current                              | AC | 100 V    | 0.056/0.044              | 0.046/0.042              |
|                                               | A  | AC 200 V | 0.028/0.022              | 0.023/0.021              |
| Holding current                               | AC | 100 V    | 0.028/0.022              | 0.023/0.021              |
|                                               | A  | AC 200 V | 0.014/0.011              | 0.014/0.011              |
|                                               | DC | 24 V     | 0.075                    |                          |
| Power consumption<br><br>( ) : With indicator | AC | 100 V    | 1.8 / 1.4<br>(1.8 / 1.5) | 1.6 / 1.3<br>(1.8 / 1.5) |
|                                               | W  | AC 200 V | 1.8 / 1.4<br>(1.8 / 1.5) | 1.6 / 1.3<br>(1.8 / 1.5) |
|                                               | DC | 24 V     | 1.8 (2.0)                |                          |
| Thermal class                                 |    |          | B (molded coil)          |                          |
| Temperature rise °C                           |    |          | 43                       | 30                       |

Reference: 100 VAC 50/60 Hz can be used with a rated voltage of 110 VAC 60 Hz and 200 VAC 50/60 Hz can be used with 220 VAC 60 Hz.

## Individual specifications

| Descriptions                                                 |              |        | 3KA1                      | 4KA1                      | 4KA2                      | 4KA3                       | 4KA4                        |               |
|--------------------------------------------------------------|--------------|--------|---------------------------|---------------------------|---------------------------|----------------------------|-----------------------------|---------------|
| Min. working pressure                                        | 2-position   | Single | 0.15                      | 0.15                      | 0.15                      | 0.15                       | 0.15                        |               |
|                                                              |              | Double |                           |                           | 0.10                      | 0.10                       | 0.10                        |               |
| MPa                                                          | 3-position   |        | -                         | 0.20                      | 0.20                      | 0.20                       | 0.20                        |               |
| Port size<br>*1                                              | A/B Port     |        | M5                        | M5                        | Rc1/8                     | Rc1/4                      | Rc3/8                       |               |
|                                                              |              |        | Push-in fitting<br>φ4, φ6 | Push-in fitting<br>φ4, φ6 | Push-in fitting<br>φ6, φ8 | Push-in fitting<br>φ8, φ10 | Push-in fitting<br>φ10, φ12 |               |
|                                                              | P/R1/R2 port |        | Rc1/8                     | Rc1/8                     | Rc1/4                     | Rc3/8                      | Rc1/2                       |               |
| Response time                                                | 2-position   |        | 30 or less                | 30 or less                | 30 or less                | 30 or less                 | 30 or less                  |               |
| *2<br>ms                                                     | 3-position   |        | -                         | 60 or less                | 60 or less                | 60 or less                 | 60 or less                  |               |
| Weight<br>(solenoid<br>valve only)                           | 2-position   | Single | 70                        | 70                        | 115                       | 214                        | 325                         |               |
|                                                              |              | Double | 110                       | 110                       | 155                       | 315                        | 435                         |               |
|                                                              | 3-position   |        | -                         | 120                       | 170                       | 354                        | 505                         |               |
| Manifold base<br>Weight calculation formula (n: station No.) |              |        | g                         | 60.5×n+58.5               | 60.5×n+58.5               | 62.5×n+65.0                | 105.5×n+97.0                | 194.5×n+185.5 |

\*1: As G and NPT threads can also be used for piping port screws, contact CKD for details.

\*2: The response time is the value at 0.5 MPa working pressure, with no lubrication, and with the power ON. It depends on the pressure and the lubricant quality.

# M3KA1/M4KA1 to 4 Series

Individual wiring manifold; body piping

## Flow characteristics

| Model No. | Solenoid position |                  | C[dm <sup>3</sup> /(s·bar)] | b    |
|-----------|-------------------|------------------|-----------------------------|------|
| 3KA1      | 2-position        |                  | 0.69                        | 0.29 |
| 4KA1      | 2-position        |                  | 0.69                        | 0.29 |
|           | 3-position        | All ports closed | 0.69                        | 0.29 |
|           |                   | A/B/R connection | 0.97                        | 0.31 |
|           |                   | P/A/B connection | 0.73                        | 0.30 |
| 4KA2      | 2-position        |                  | 2.6                         | 0.25 |
|           | 3-position        | All ports closed | 2.4                         | 0.32 |
|           |                   | A/B/R connection | 3.0                         | 0.16 |
|           |                   | P/A/B connection | 2.4                         | 0.31 |
| 4KA3      | 2-position        |                  | 5.6                         | 0.39 |
|           | 3-position        | All ports closed | 4.1                         | 0.51 |
|           |                   | A/B/R connection | 5.9                         | 0.37 |
|           |                   | P/A/B connection | 4.1                         | 0.56 |
| 4KA4      | 2-position        |                  | 9.7                         | 0.29 |
|           | 3-position        | All ports closed | 8.3                         | 0.40 |
|           |                   | A/B/R connection | 11                          | 0.30 |
|           |                   | P/A/B connection | 8.7                         | 0.46 |

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

\*2: Flow characteristics are values when the port size is M5 (3KA1, 4KA1), Rc1/8 (4KA2), Rc1/4 (4KA3), or Rc3/8 (4KA4).

## Ozone-proof specifications

(Ending Page 5)

\*\* - Voltage - **P11**

## Coolant proof specifications

(Catalog No.CC-N-375A)

- Special structure with outstanding oil and water resistance

\*\* - **A** - Station No. - Voltage

## Copper and PTFE free specifications

- Copper- and PTFE-based materials are not used in the flow path.

\*\* - Voltage - **P6**

|                       |
|-----------------------|
| 4GA/B                 |
| M4GA/B                |
| MN4GA/B               |
| 4GA/B (mastr)         |
| 4GD/E                 |
| M4GD/E                |
| MN4GD/E               |
| 4GA4/B4               |
| MN3E                  |
| MN4E                  |
| W4GA/B2               |
| W4GB4                 |
| 4TB                   |
| 4L2-4/LMF0            |
| MN3S0                 |
| MN4S0                 |
| 4SA/B0                |
| 4KA/B                 |
| 4KA/B (mastr)         |
| 4F                    |
| 4F (mastr)            |
| PV5G                  |
| GMF                   |
| PV5                   |
| GMF                   |
| PV5S-0                |
| 3QR                   |
| 3QB                   |
| MV3QR                 |
| 3MA/B0                |
| 3PA/B                 |
| P/M/B                 |
| NP/NAP/NVP            |
| 4F*0EX                |
| 4F*0E                 |
| HMV                   |
| HSV                   |
| 2QV                   |
| 3QV                   |
| SKH                   |
| PCD                   |
| Silencer              |
| TotAirSys (Total Air) |
| TotAirSys (Gamma)     |
| Ending                |

# M3KA1/M4KA1 to 4 Series

Individual wiring manifold; body piping

## How to order

- Single solenoid valve for manifold

**4KA1** **1** **9** - **06** - **M1** **B** **AC100V**

\* Gasket/mounting screw attached \*5

- Manifold

**M** **4KA2** **1** **0** - **06** - **M1** **B** **5** - **AC100V** **2 2 0 0 0 1**

Indicate the valve model based quantity display position when using a mix manifold. Refer to the following page.

**A** Model No. **B** Solenoid position

**C** Port size

**D** Manual override

**E** Electrical connections  
\* Refer to page 1237 for the circuit diagram with surge suppressor/lamp.

[Table 1] Compact terminal box L/LS compatibility table

| Code | Content                              | 3KA1 | 4KA1 | 4KA2 | 4KA3 | 4KA4 | Surge suppressor |
|------|--------------------------------------|------|------|------|------|------|------------------|
| L    | Without lead wire                    | AC   | ●    | ●    | ●    | ●    |                  |
|      |                                      | DC   |      |      | ●    | ●    |                  |
|      | With indicator lamp                  | AC   |      |      |      |      |                  |
|      |                                      | DC   | ●    | ●    | ●    |      | Integrated       |
| LS   | Without lead wire                    | AC   | ●    | ●    | ●    | ●    | Integrated       |
|      | With surge suppressor/indicator lamp | DC   |      |      | ●    | ●    | Integrated       |

## Precautions for model No. selection

- \*1 : When the solenoid position is mixed (8), indicate the content of the combination at the end of the model No. Refer to the following page.
- \*2 : The DC voltage models of the compact terminal box "L" of 3KA1, 4KA1, and 4KA2 are equipped with a surge suppressor.
- \*3 : The surge suppressor for attachment is a suppression connector when the grommet lead wire is 24 VDC or less. (Refer to page 1236)
- \*4 : The surge suppressor can only be selected when the grommet lead wire or compact terminal box "B" has been selected for the electrical connections.
- \*5 : With regard to the printed model No., although the model No. when placing an order is "4KA□□9", the model No. listed on the product name plate will be "4KA□□0".

[Example of model No.]

**M4KA210-06-M1B-2-AC100V**

- A** Model : 4KA2
- B** Solenoid position : 2-position single
- C** Port size : Rc1/8
- D** Manual override : Locking manual override
- E** Electrical connections: Compact terminal box/without lead wire
- F** Other options : None
- G** Station No. : 2 stations
- H** Voltage : 100 VAC 50/60 Hz

| Code      | Content                                                         | 3KA1 | 4KA1 | 4KA2 | 4KA3 | 4KA4 |
|-----------|-----------------------------------------------------------------|------|------|------|------|------|
| <b>1</b>  | 2-position single                                               |      | ●    | ●    | ●    | ●    |
| <b>2</b>  | 2-position double                                               | ●    | ●    | ●    | ●    | ●    |
| <b>3</b>  | 3-position all ports closed                                     |      | ●    | ●    | ●    | ●    |
| <b>4</b>  | 3-position A/B/R connection                                     |      | ●    | ●    | ●    | ●    |
| <b>5</b>  | 3-position P/A/B connection                                     |      | ●    | ●    | ●    | ●    |
| <b>11</b> | 2-position single normally closed                               | ●    |      |      |      |      |
| <b>11</b> | 2-position single normally open                                 | ●    |      |      |      |      |
| <b>8</b>  | Mix manifold *1<br>(when there are multiple solenoid positions) | ●    | ●    | ●    | ●    | ●    |

| Port        | A/B Port            | R1/R2 port<br>(1) = Rc1/8 (2) = Rc1/4 (3) = Rc3/8 (4) = Rc1/2 |     |     |         |
|-------------|---------------------|---------------------------------------------------------------|-----|-----|---------|
| <b>M5</b>   | M5                  | (1)                                                           | (1) |     |         |
| <b>06</b>   | Rc1/8               |                                                               |     | (2) |         |
| <b>08</b>   | Rc1/4               |                                                               |     |     | (3)     |
| <b>10</b>   | Rc3/8               |                                                               |     |     | (4)     |
| <b>GS4</b>  | φ4 push-in fitting  | (1)                                                           | (1) |     |         |
| <b>GS6</b>  | φ6 Push-in fitting  | (1)                                                           | (1) | (2) |         |
| <b>GS8</b>  | φ8 Push-in fitting  |                                                               |     | (2) | (3)     |
| <b>GS10</b> | φ10 Push-in fitting |                                                               |     |     | (3) (4) |
| <b>GS12</b> | φ12 Push-in fitting |                                                               |     |     | (4)     |

|          |              |                             |   |   |   |   |   |
|----------|--------------|-----------------------------|---|---|---|---|---|
| <b>D</b> | <b>Blank</b> | Non-locking manual override | ● | ● | ● | ● | ● |
|          | <b>M1</b>    | Locking manual override     | ● | ● | ● | ● | ● |

Electrical connections

E

|                                                |                                                       |                                |   |   |   |   |    |
|------------------------------------------------|-------------------------------------------------------|--------------------------------|---|---|---|---|----|
| Grommet lead wire                              |                                                       |                                |   |   |   |   |    |
| Blank                                          | Grommet lead wire (300 mm)                            |                                | ● | ● | ● | ● | ●  |
| Compact terminal box                           |                                                       |                                |   |   |   |   |    |
| B                                              | Without lead wire                                     |                                | ● | ● | ● | ● | ●  |
| L                                              | Without lead wire                                     | Refer to [Table 1] at left for |   |   |   |   |    |
| LS                                             | No lead wire, with surge suppressor/lamp              | details.                       |   |   |   |   | *2 |
| C type connector (lead wire lateral direction) |                                                       |                                |   |   |   |   |    |
| C                                              | Lead wire length (300 mm)                             |                                | ● | ● | ● | ● | ●  |
| C00                                            | Lead wire length (500 mm)                             |                                | ● | ● | ● | ● | ●  |
| C01                                            | Lead wire length (1000 mm)                            |                                | ● | ● | ● | ● | ●  |
| C02                                            | Lead wire length (2000 mm)                            |                                | ● | ● | ● | ● | ●  |
| C03                                            | Lead wire length (3000 mm)                            |                                | ● | ● | ● | ● | ●  |
| C1                                             | Without lead wire                                     |                                | ● | ● | ● | ● | ●  |
| C2                                             | Lead wire length (300 mm) with surge suppressor/lamp  |                                | ● | ● | ● | ● | ●  |
| C20                                            | Lead wire length (500 mm) with surge suppressor/lamp  |                                | ● | ● | ● | ● | ●  |
| C21                                            | Lead wire length (1000 mm) with surge suppressor/lamp |                                | ● | ● | ● | ● | ●  |
| C22                                            | Lead wire length (2000 mm) with surge suppressor/lamp |                                | ● | ● | ● | ● | ●  |
| C23                                            | Lead wire length (3000 mm) with surge suppressor/lamp |                                | ● | ● | ● | ● | ●  |
| C3                                             | Without lead wire, with surge suppressor/lamp         |                                | ● | ● | ● | ● | ●  |
| D type connector (lead wire upward direction)  |                                                       |                                |   |   |   |   |    |
| D                                              | Lead wire length (300 mm)                             |                                | ● | ● | ● | ● | ●  |
| D00                                            | Lead wire length (500 mm)                             |                                | ● | ● | ● | ● | ●  |
| D01                                            | Lead wire length (1000 mm)                            |                                | ● | ● | ● | ● | ●  |
| D02                                            | Lead wire length (2000 mm)                            |                                | ● | ● | ● | ● | ●  |
| D03                                            | Lead wire length (3000 mm)                            |                                | ● | ● | ● | ● | ●  |
| D1                                             | Without lead wire                                     |                                | ● | ● | ● | ● | ●  |
| D2                                             | Lead wire length (300 mm) with surge suppressor/lamp  |                                | ● | ● | ● | ● | ●  |
| D20                                            | Lead wire length (500 mm) with surge suppressor/lamp  |                                | ● | ● | ● | ● | ●  |
| D21                                            | Lead wire length (1000 mm) with surge suppressor/lamp |                                | ● | ● | ● | ● | ●  |
| D22                                            | Lead wire length (2000 mm) with surge suppressor/lamp |                                | ● | ● | ● | ● | ●  |
| D23                                            | Lead wire length (3000 mm) with surge suppressor/lamp |                                | ● | ● | ● | ● | ●  |
| D3                                             | Without lead wire, with surge suppressor/lamp         |                                | ● | ● | ● | ● | ●  |

|          |              |                                 |   |   |   |   |   |
|----------|--------------|---------------------------------|---|---|---|---|---|
| <b>F</b> | <b>Blank</b> | No option                       | ● | ● | ● | ● | ● |
|          | <b>S</b>     | Surge suppressor attached *3 *4 | ● | ● | ● | ● | ● |

|          |                |                           |   |   |   |   |   |
|----------|----------------|---------------------------|---|---|---|---|---|
| <b>G</b> | <b>2 to 12</b> | 2 stations to 12 stations |   |   |   |   | ● |
|          | <b>2 to 15</b> | 2 stations to 15 stations |   |   |   | ● |   |
|          | <b>2 to 20</b> | 2 stations to 20 stations | ● | ● | ● |   |   |

|          |               |                  |                 |   |   |   |   |   |
|----------|---------------|------------------|-----------------|---|---|---|---|---|
| <b>H</b> | <b>AC100V</b> | 100 VAC 50/60 Hz | Option Standard | ● | ● | ● | ● | ● |
|          | <b>AC200V</b> | 200 VAC 50/60 Hz |                 | ● | ● | ● | ● | ● |
|          | <b>DC24V</b>  | 24 VDC           |                 | ● | ● | ● | ● | ● |
|          | <b>DC12V</b>  | 12 VDC           |                 | ● | ● | ● | ● | ● |
|          | <b>AC110V</b> | 110 VAC 50/60 Hz |                 | ● | ● | ● | ● | ● |
|          | <b>AC220V</b> | 220 VAC 50/60 Hz |                 | ● | ● | ● | ● | ● |

|                                      |  |   |   |   |   |   |   |
|--------------------------------------|--|---|---|---|---|---|---|
| <b>* Other custom order products</b> |  |   |   |   |   |   |   |
| <b>AC24V</b>                         |  | ● | ● | ● | ● | ● | ● |
| <b>AC115V</b>                        |  | ● | ● | ● | ● | ● | ● |
| <b>AC120V</b>                        |  | ● | ● | ● | ● | ● | ● |



# M3KA1/M4KA1 to 4 Series

Individual wiring manifold; body piping

## How to order masking plate kit

**M 4KA180 - MP-KIT**

A Model No.

\* Gasket/mounting screw attached

| A Model No. |
|-------------|
| 4KA180      |
| 4KA280      |
| 4KA380      |
| 4KA480      |

## How to order mix manifold

• 3-port valve

**M 3KA1 8 0 - M5 - 4 - AC100V** - 

|     |     |     |    |
|-----|-----|-----|----|
| S10 | S11 | S20 | MP |
| 3   | 0   | 0   | 1  |

S10=1 to 3 MP=4

• 5-port valve

**M 4KA3 8 0 - 06 - 7 - AC100V** - 

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

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

Mix manifold "8"

\* For How to order other items, refer to the previous page.

## 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: 5-port valve 2-position single → S1

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

  
List the quantity

• 3-port valve

| Code | Function (solenoid position)      |
|------|-----------------------------------|
| S10  | 3-port valve 2-position single NC |
| S11  | 3-port valve 2-position single NO |
| S20  | 3-port valve 2-position double    |
| MP   | Masking plate                     |

• 5-port valve

| 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                |

- With a mix manifold, when using 10 or more actuators of the same model No., specify using the codes in the table below.

| Actuator quantity | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |
|-------------------|----|----|----|----|----|----|----|----|----|----|
| Code              | A  | B  | C  | D  | E  | F  | G  | H  | I  | J  |

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

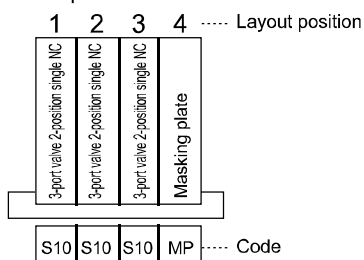
Solenoid position code = ○, ○th station (where the left side is the 1st station when the piping port is facing forward.)

Example: S10 = 1 to 3 (1st to 3rd stations are 3-port valve 2-position single NC)

Example: S1 = 1, 6 (1st, 6th stations are 5-port valve 2-position single)

[Example of model No. 1]

For 3-port valve 4 stations



3-port valve 2-position single (S10) : 3 units (1st to 3rd station)  
Masking plate (MP) : 1 unit (4th station)

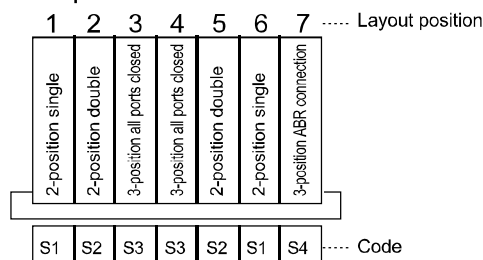
↓  
M3KA180-M5-4-AC100V - 

|     |     |     |    |
|-----|-----|-----|----|
| S10 | S11 | S20 | MP |
| 3   | 0   | 0   | 1  |

  
S10=1 to 3 MP=4

[Example of model No. 2]

For 5-port valve 7 stations



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) : 2 units (3rd station, 4th station)  
3-position ABR connection (S4) : 1 unit (7th station)

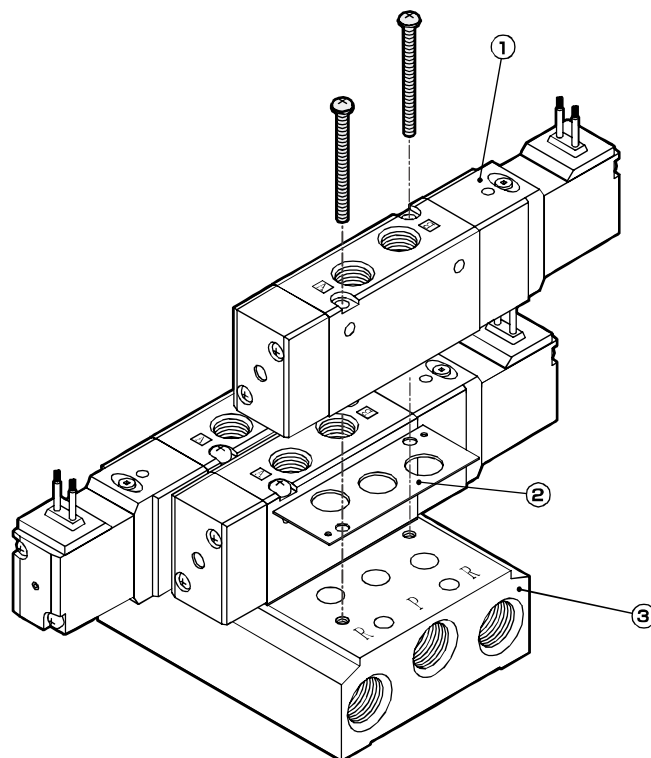
↓  
M4KA380-06-7-AC100V - 

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

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

Individual wiring manifold; body piping

## Manifold components explanation and parts



## Main parts list

| No. | Component name         | Model No. (example)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Content                                                                         |
|-----|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|
| 1   | Single solenoid valve  | <div style="display: flex; align-items: center;"> <div style="margin-right: 10px;"> <sup>3</sup><br/> <sup>4</sup> </div> <div>           KA□□9-□-□□□□□<br/> <span style="margin-left: 80px;">└ Voltage</span><br/> <span style="margin-left: 60px;">└ Option</span><br/> <span style="margin-left: 70px;">└ Electrical connections</span><br/> <span style="margin-left: 50px;">└ Manual override</span><br/> <span style="margin-left: 40px;">└ Bore size</span><br/> <span style="margin-left: 20px;">└ Solenoid position</span><br/> <span style="margin-left: 10px;">└ Series flow rate size</span> </div> </div> | Single solenoid valve<br>Mounting screws x 2<br>Gasket                          |
| 2   | Gasket kit             | M4KA□□0-GASKET-KIT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Gasket<br>Mounting screws x 2                                                   |
| 3   | Manifold sub-plate kit | <div style="display: flex; align-items: center;"> <div style="margin-right: 10px;"></div> <div>           M4KA□10-□-□-SUB-BASE-KIT<br/> <span style="margin-left: 60px;">└ Station No.</span><br/> <span style="margin-left: 40px;">└ Bore size</span><br/> <span style="margin-left: 20px;">└ Series flow rate size</span> </div> </div>                                                                                                                                                                                                                                                                              | Manifold sub-plate<br>Mounting screws x 2 x station No.<br>Gasket x station No. |

## Repair parts list

| No. | Part name      | Model No.                                                                | Compatibility     | No. | Part name       | Model No.                     | Compatibility                       |
|-----|----------------|--------------------------------------------------------------------------|-------------------|-----|-----------------|-------------------------------|-------------------------------------|
| -   | Coil assembly  | 4K1L- <input type="text"/> -COIL- <input type="text"/>                   | 3KA1              | -   | Piston assembly | 4K9- <input type="text"/> 151 | 3KA11(1)0, 4KA110<br>3KA120, 4KA120 |
|     |                | <input type="text"/> Electrical connections <input type="text"/> Voltage | 4KA1              |     |                 |                               |                                     |
|     |                |                                                                          | 4KA2              |     |                 | 152                           | 4KA130<br>4KA140<br>4KA150          |
|     |                | 4K3- <input type="text"/> -COIL- <input type="text"/>                    | 4KA3<br>4KA4      |     |                 | 153                           | 4KA210<br>4KA220                    |
| -   | Spool assembly | <input type="text"/> Electrical connections <input type="text"/> Voltage |                   |     |                 | 154                           | 4KA230<br>4KA240<br>4KA250          |
|     |                | 4K9- <input type="text"/> 110                                            | 3KA11(1)0, 4KA110 |     |                 | 137                           | 4KA310, 4KA320                      |
|     |                | 118                                                                      | 3KA120, 4KA120    |     |                 | 138                           | 4KA330<br>4KA340<br>4KA350          |
|     |                | 111                                                                      | 4KA130            |     |                 | 144                           | 4KA410, 4KA420                      |
|     |                | 112                                                                      | 4KA140            |     |                 | 145                           | 4KA430<br>4KA440<br>4KA450          |
|     |                | 113                                                                      | 4KA150            |     |                 |                               |                                     |
|     |                | 150                                                                      | 4KA210            |     |                 |                               |                                     |
|     |                | 126                                                                      | 4KA220            |     |                 |                               |                                     |
|     |                | 127                                                                      | 4KA230            |     |                 |                               |                                     |
|     |                | 128                                                                      | 4KA240            |     |                 |                               |                                     |
|     |                | 129                                                                      | 4KA250            |     |                 |                               |                                     |
|     |                | 133                                                                      | 4KA310, 4KA320    |     |                 |                               |                                     |
|     |                | 134                                                                      | 4KA330            |     |                 |                               |                                     |
|     |                | 135                                                                      | 4KA340            |     |                 |                               |                                     |
|     |                | 136                                                                      | 4KA350            |     |                 |                               |                                     |
|     |                | 140                                                                      | 4KA410, 4KA420    |     |                 |                               |                                     |
|     |                | 141                                                                      | 4KA430            |     |                 |                               |                                     |
|     |                | 142                                                                      | 4KA440            |     |                 |                               |                                     |
|     |                | 143                                                                      | 4KA450            |     |                 |                               |                                     |

|                          |
|--------------------------|
| 4GA/B                    |
| M4GA/B                   |
| MN4GA/B                  |
| 4GA/B<br>(mastr)         |
| 4GD/E                    |
| M4GD/E                   |
| MN4GD/E                  |
| 4GA4/B4                  |
| MN3E<br>MN4E             |
| W4GA/B2                  |
| W4GB4                    |
| 4TB                      |
| 4L2-4/<br>LMF0           |
| MN3S0<br>MN4S0           |
| 4SA/B0                   |
| 4KA/B                    |
| 4KA/B<br>(mastr)         |
| 4F                       |
| 4F<br>(mastr)            |
| PV5G<br>GMF              |
| PV5<br>GMF               |
| PV5S-0                   |
| 3QR<br>3QB               |
| MV3QR                    |
| 3MA/B0                   |
| 3PA/B                    |
| P/M/B                    |
| NP/NAP/<br>NVP           |
| 4F*0EX                   |
| 4F*0E                    |
| HMV<br>HSV               |
| 2QV<br>3QV               |
| SKH                      |
| PCD                      |
| Silencer                 |
| TotAirSys<br>(Total Air) |
| TotAirSys<br>(Gamma)     |
| Ending                   |

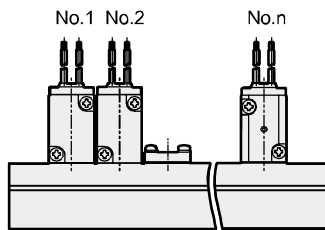
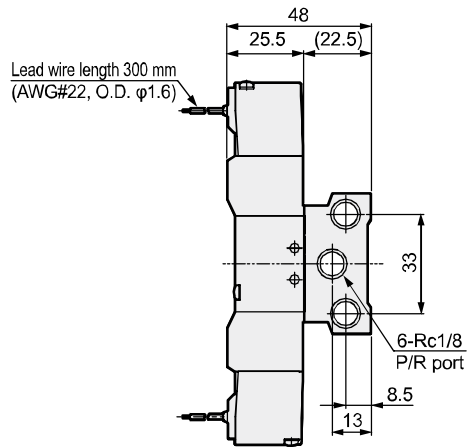
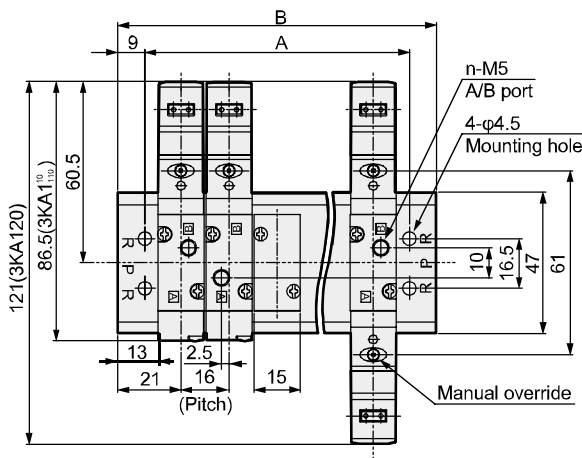
# M3KA1/M4KA1 Series

Individual wiring manifold; body piping

## Dimensions

### M3KA1-M5

● 3-port valve / port size M5: grommet lead wire

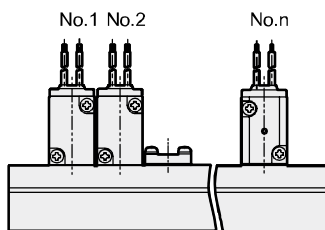
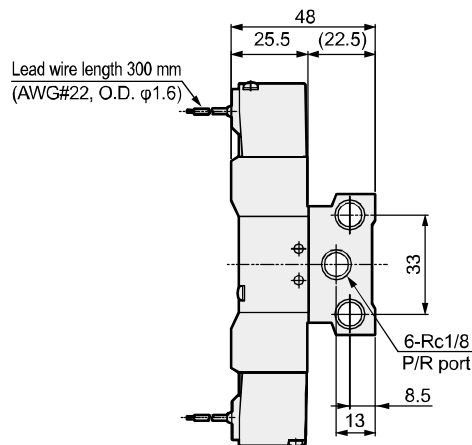
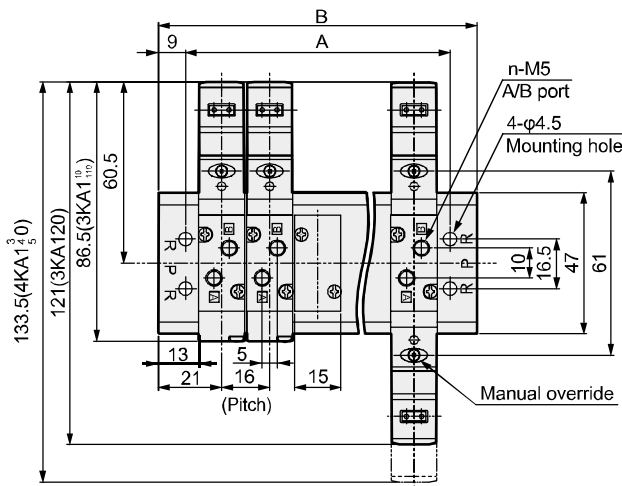


■ Single model No. for manifold  
**3KA1\*9-M5-option-voltage**

\* : When using 3KA119-M5, the B port will be the connection port.  
When using 3KA1119-M5, the A port will be the connection port.

### M4KA1-M5

● 5-port valve / port size M5: grommet lead wire



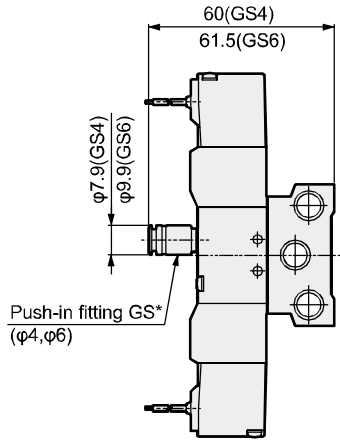
■ Single model No. for manifold  
**4KA1\*9-M5-option-voltage**

| Station No. | 2  | 3  | 4  | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20  |
|-------------|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| A           | 40 | 56 | 72 | 88  | 104 | 120 | 136 | 152 | 168 | 184 | 200 | 216 | 232 | 248 | 264 | 280 | 296 | 312 | 328 |
| B           | 58 | 74 | 90 | 106 | 122 | 138 | 154 | 170 | 186 | 202 | 218 | 234 | 250 | 266 | 282 | 298 | 314 | 330 | 346 |

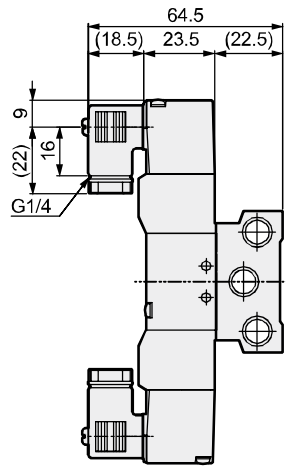
## Dimensions

### M3KA1 (3-port valve)

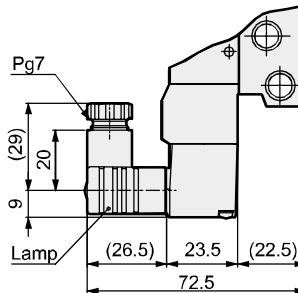
- $\phi 4/\phi 6$  push-in fitting (GS4/GS6)



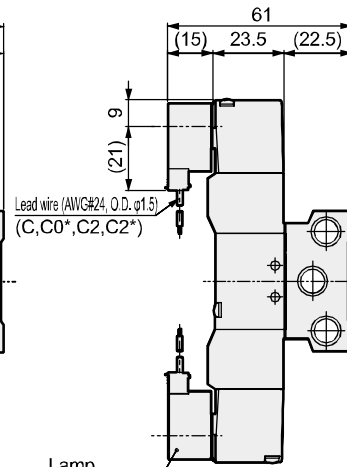
- Compact terminal box: (B/L/LS) Without indicator lamp



With indicator lamp

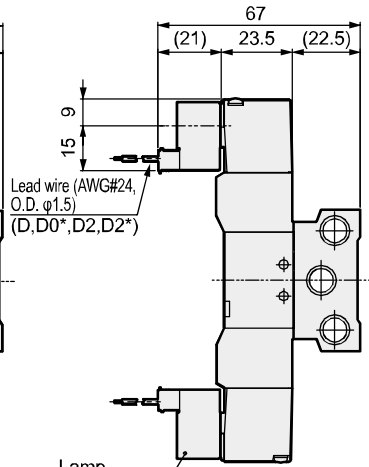


- C type connector: (C/C1/C0\*/C2/C2\*/C3)



Lamp (C2, C2\*, C3)

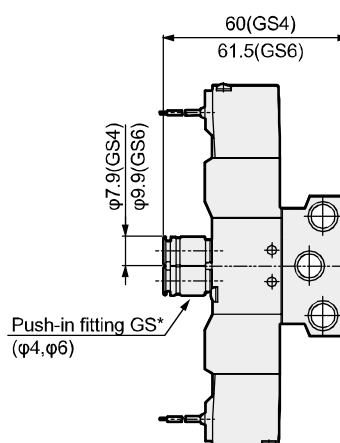
- D type connector: (D/D1/D0\*/D2/D2\*/D3)



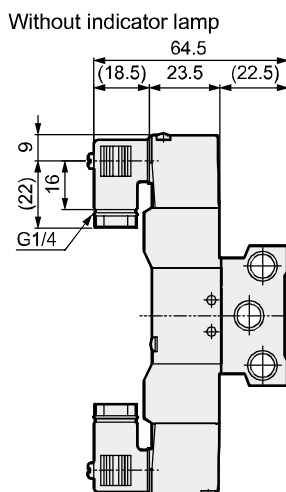
Lamp (D2, D2\*, D3)

### M4KA1 (5-port valve)

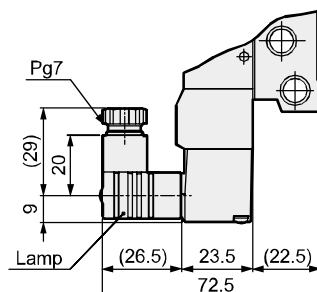
- $\phi 4/\phi 6$  push-in fitting (GS4/GS6)



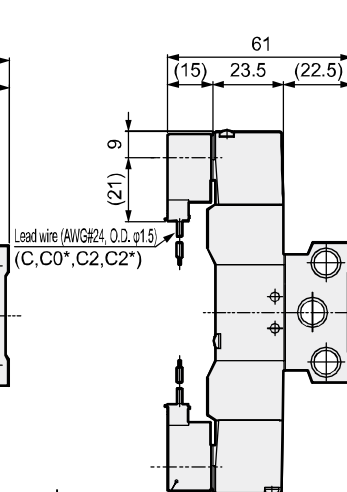
- Compact terminal box: (B/L/LS) Without indicator lamp



With indicator lamp

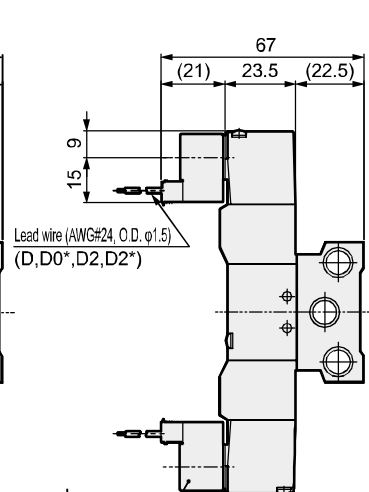


- C type connector: (C/C1/C0\*/C2/C2\*/C3)



Lamp (C2, C2\*, C3)

- D type connector: (D/D1/D0\*/D2/D2\*/D3)



Lamp (D2, D2\*, D3)

|                       |
|-----------------------|
| 4GA/B                 |
| M4GA/B                |
| MN4GA/B               |
| 4GA/B (mastr)         |
| 4GD/E                 |
| M4GD/E                |
| MN4GD/E               |
| 4GA4/B4               |
| MN3E                  |
| MN4E                  |
| W4GA/B2               |
| W4GB4                 |
| 4TB                   |
| 4L2-4/LMF0            |
| MN3S0                 |
| MN4S0                 |
| 4SA/B0                |
| <b>4KA/B</b>          |
| 4KA/B (mastr)         |
| 4F                    |
| 4F (mastr)            |
| PV5G                  |
| GMF                   |
| PV5                   |
| GMF                   |
| PV5S-0                |
| 3QR                   |
| 3QB                   |
| MV3QR                 |
| 3MA/B0                |
| 3PA/B                 |
| P/M/B                 |
| NP/NAP/NVP            |
| 4F*0EX                |
| 4F*0E                 |
| HMV                   |
| HSV                   |
| 2QV                   |
| 3QV                   |
| SKH                   |
| PCD                   |
| Silencer              |
| TotAirSys (Total Air) |
| TotAirSys (Gamma)     |
| Ending                |

# M4KA2/M4KA3 Series

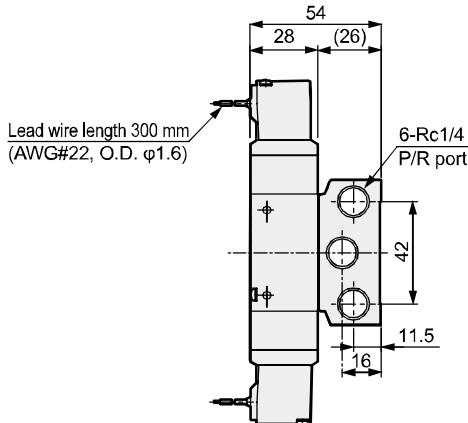
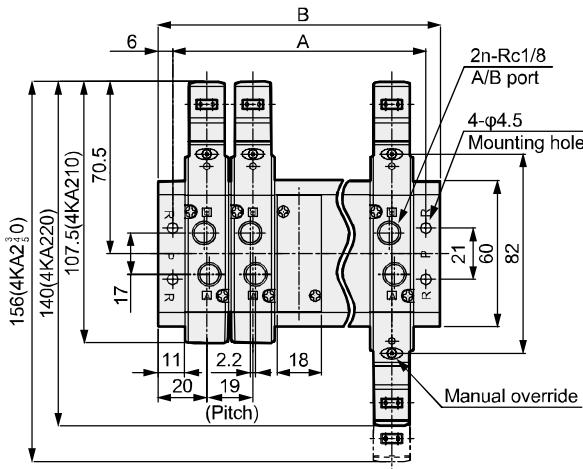
Individual wiring manifold; body piping

## Dimensions

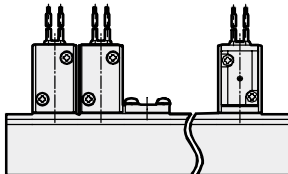


### M4KA2-06

● Port size Rc1/8: grommet lead wire



Station No. No.1 No.2 No.3 ... No.n

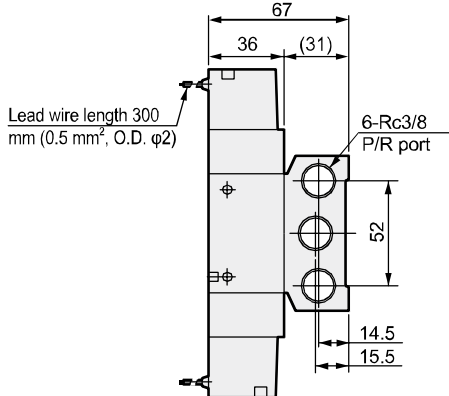
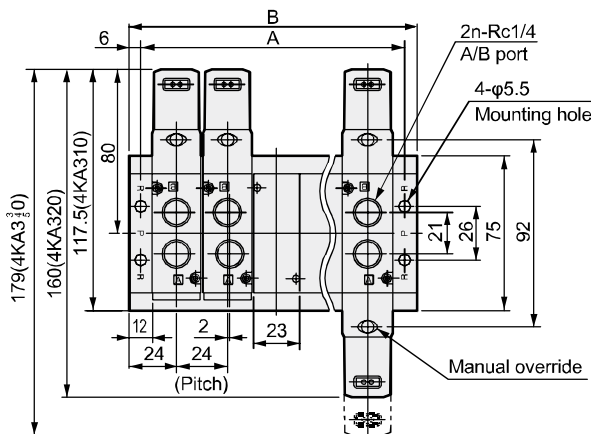


■ Single model No. for manifold  
**4KA2\*9-06-option-voltage**

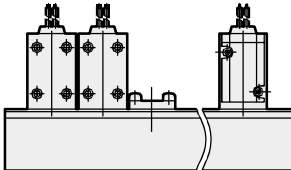
| Station No. | 2  | 3  | 4  | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20  |
|-------------|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| A           | 47 | 66 | 85 | 104 | 123 | 142 | 161 | 180 | 199 | 218 | 237 | 256 | 275 | 294 | 313 | 332 | 351 | 370 | 389 |
| B           | 59 | 78 | 97 | 116 | 135 | 154 | 173 | 192 | 211 | 230 | 249 | 268 | 287 | 306 | 325 | 344 | 363 | 382 | 401 |

### M4KA3-08

● Port size Rc1/4: grommet lead wire



No.1 No.2 No.3.....No.n



■ Single model No. for manifold  
**4KA3\*9-08-option-voltage**

| Station No. | 2  | 3  | 4   | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  | 14  | 15  |
|-------------|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| A           | 60 | 84 | 108 | 132 | 156 | 180 | 204 | 228 | 252 | 276 | 300 | 324 | 348 | 372 |
| B           | 72 | 96 | 120 | 144 | 168 | 192 | 216 | 240 | 264 | 288 | 312 | 336 | 360 | 384 |

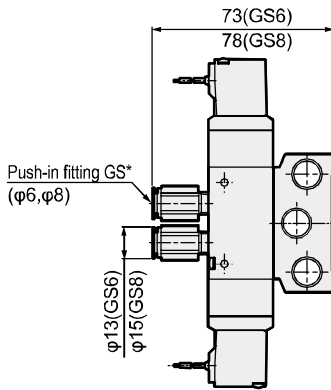
# M4KA2/M4KA3 Series

Individual wiring manifold; body piping

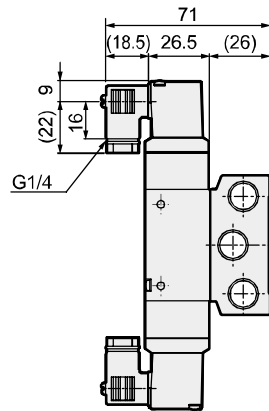
## Dimensions

### M4KA2

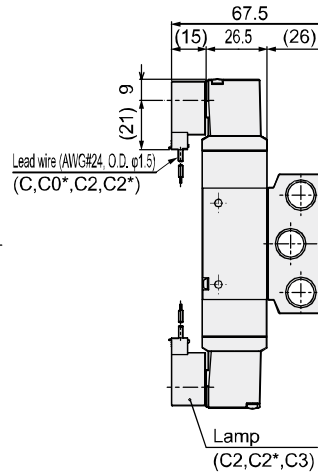
- $\phi 6/\phi 8$  push-in fitting: (GS6/GS8)



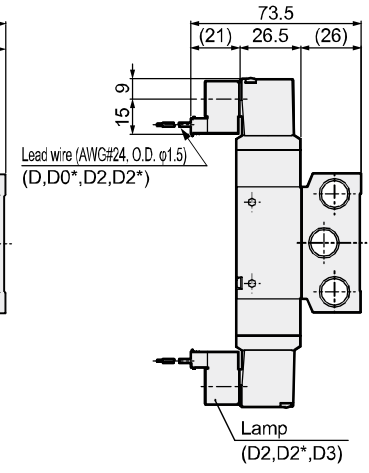
- Compact terminal box: (B/L/LS)  
Without indicator lamp



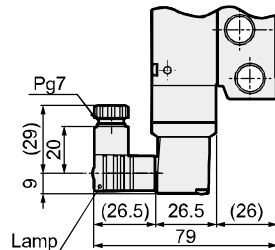
- C type connector: (C/C1/C0\*/C2/C2\*/C3)



- D type connector: (D/D1/D0\*/D2/D2\*/D3)

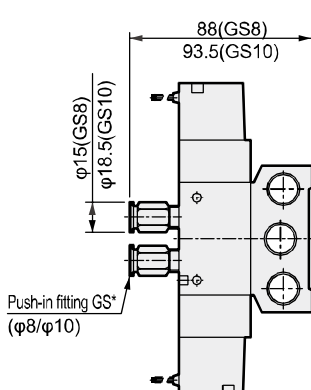


With indicator lamp

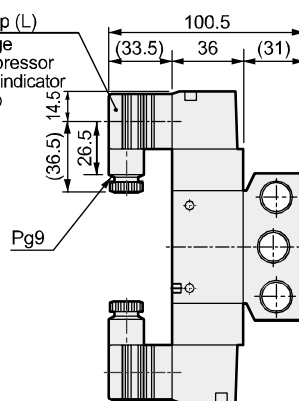


### M4KA3

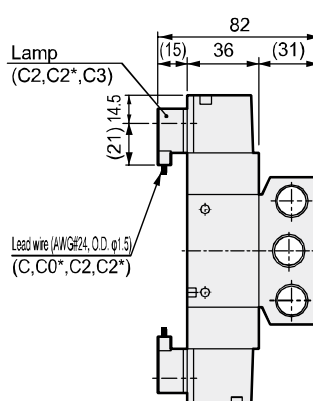
- $\phi 8/\phi 10$  push-in fitting: (GS8/GS10)



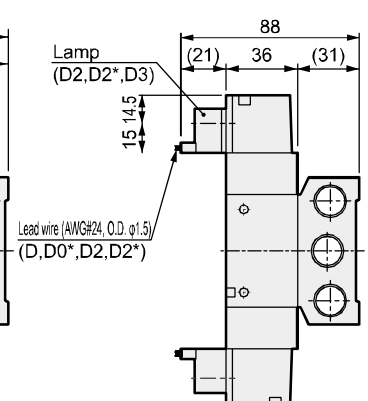
- Compact terminal box: (B/L/LS)



- C type connector: (C/C1/C0\*/C2/C2\*/C3)



- D type connector: (D/D1/D0\*/D2/D2\*/D3)



|                       |
|-----------------------|
| 4GA/B                 |
| M4GA/B                |
| MN4GA/B               |
| 4GA/B (mastr)         |
| 4GD/E                 |
| M4GD/E                |
| MN4GD/E               |
| 4GA4/B4               |
| MN3E                  |
| MN4E                  |
| W4GA/B2               |
| W4GB4                 |
| 4TB                   |
| 4L2-4/LMF0            |
| MN3S0                 |
| MN4S0                 |
| 4SA/B0                |
| <b>4KA/B</b>          |
| 4KA/B (mastr)         |
| 4F                    |
| 4F (mastr)            |
| PV5G                  |
| GMF                   |
| PV5                   |
| GMF                   |
| PV5S-0                |
| 3QR                   |
| 3QB                   |
| MV3QR                 |
| 3MA/B0                |
| 3PA/B                 |
| P/M/B                 |
| NP/NAP/NVP            |
| 4F*0EX                |
| 4F*0E                 |
| HMV                   |
| HSV                   |
| 2QV                   |
| 3QV                   |
| SKH                   |
| PCD                   |
| Silencer              |
| TotAirSys (Total Air) |
| TotAirSys (Gamma)     |
| Ending                |

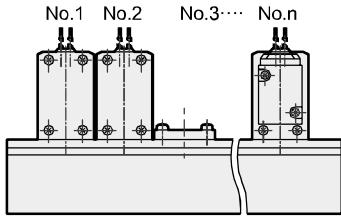
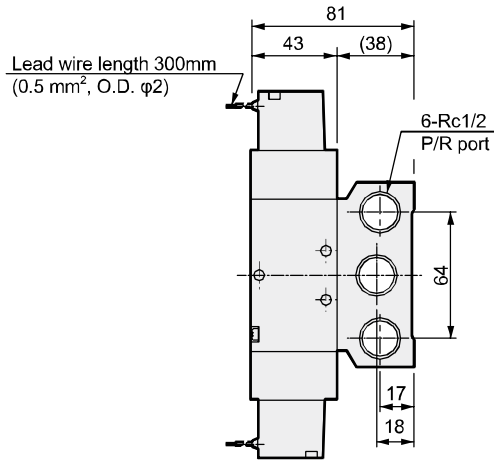
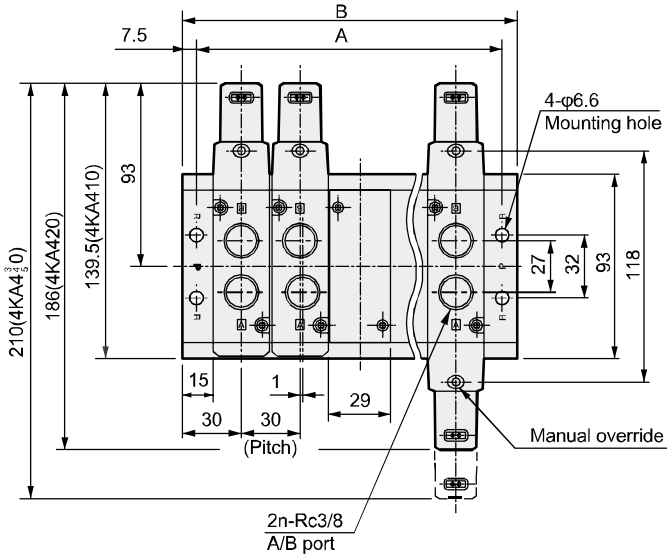
# M4KA4 Series

Individual wiring manifold; body piping

Dimensions 

## M4KA4-10

● Port size Rc3/8: grommet lead wire



■ Single model No. for manifold  
**4KA4\*9-10**-option-voltage

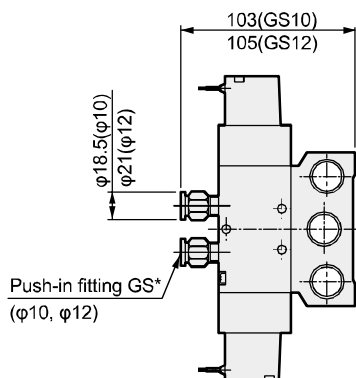
| Station No. | 2  | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  |
|-------------|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| A           | 75 | 105 | 135 | 165 | 195 | 225 | 255 | 285 | 315 | 345 | 375 |
| B           | 90 | 120 | 150 | 180 | 210 | 240 | 270 | 300 | 330 | 360 | 390 |



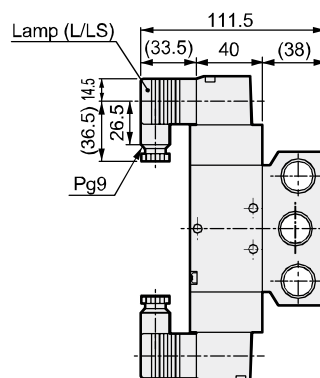
### Dimensions

#### M4KA4

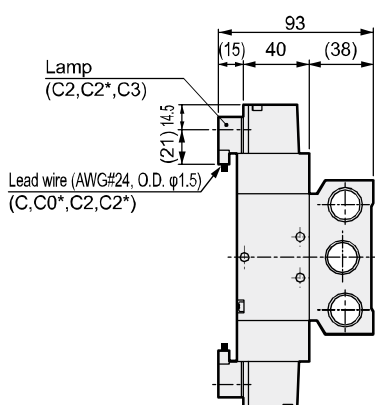
- $\phi 10/\phi 12$  push-in fitting:  
(GS10/GS12)



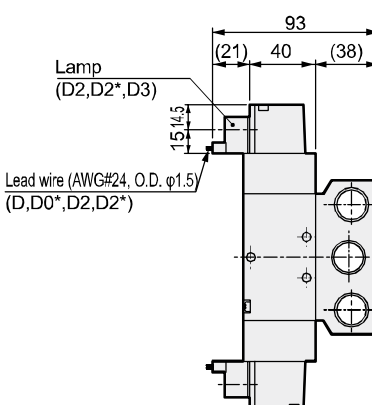
- Compact terminal box:  
(B/L/LS)



- C type connector:  
(C/C1/C0\*/C2/C2\*/C3)



- D type connector:  
(D/D1/D0\*/D2/D2\*/D3)



|                       |
|-----------------------|
| 4GA/B                 |
| M4GA/B                |
| MN4GA/B               |
| 4GA/B (mastr)         |
| 4GD/E                 |
| M4GD/E                |
| MN4GD/E               |
| 4GA4/B4               |
| MN3E                  |
| MN4E                  |
| W4GA/B2               |
| W4GB4                 |
| 4TB                   |
| 4L2-4/ LMF0           |
| MN3S0                 |
| MN4S0                 |
| 4SA/B0                |
| 4KA/B                 |
| 4KA/B (mastr)         |
| 4F                    |
| 4F (mastr)            |
| PV5G                  |
| GMF                   |
| PV5                   |
| GMF                   |
| PV5S-0                |
| 3QR                   |
| 3QB                   |
| MV3QR                 |
| 3MA/B0                |
| 3PA/B                 |
| P/M/B                 |
| NP/NAP/ NVP           |
| 4F*0EX                |
| 4F*0E                 |
| HMV                   |
| HSV                   |
| 2QV                   |
| 3QV                   |
| SKH                   |
| PCD                   |
| Silencer              |
| TotAirSys (Total Air) |
| TotAirSys (Gamma)     |
| Ending                |

|                          |
|--------------------------|
| 4GA/B                    |
| M4GA/B                   |
| MN4GA/B                  |
| 4GA/B (mastr)            |
| 4GD/E                    |
| M4GD/E                   |
| MN4GD/E                  |
| 4GA4/B4                  |
| MN3E<br>MN4E             |
| W4GA/B2                  |
| W4GB4                    |
| 4TB                      |
| 4L2-4/<br>LMF0           |
| MN3S0<br>MN4S0           |
| 4SA/B0                   |
| 4KA/B                    |
| 4KA/B (mastr)            |
| 4F                       |
| 4F (mastr)               |
| PV5G<br>GMF              |
| PV5<br>GMF               |
| PV5S-0                   |
| 3QR<br>3QB               |
| MV3QR                    |
| 3MA/B0                   |
| 3PA/B                    |
| P/M/B                    |
| NP/NAP/<br>NVP           |
| 4F*0EX                   |
| 4F*0E                    |
| HMV<br>HSV               |
| 2QV<br>3QV               |
| SKH                      |
| PCD                      |
| Silencer                 |
| TotAirSys<br>(Total Air) |
| TotAirSys<br>(Gamma)     |
| Ending                   |



Individual wiring manifold sub-plate piping  
Pilot operated 4, 5-port pneumatic valve

# M4KB1/2/3/4 Series

● Cylinder bore size:  $\phi 20$  to  $\phi 160$

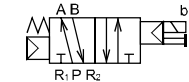


Refer to the Ending for details.

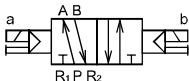


## JIS symbol

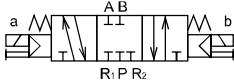
- 5-port valve  
2-position single



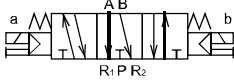
- 5-port valve  
2-position double



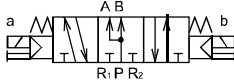
- 5-port valve  
3-position all ports closed



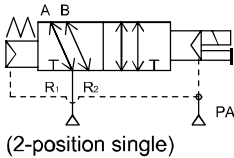
- 5-port valve  
3-position A/B/R connection



- 5-port valve  
3-position P/A/B connection



- External pilot



(2-position single)

## Common specifications

| Descriptions                           | Content                                         |
|----------------------------------------|-------------------------------------------------|
| Manifold method                        | Manifold integrated                             |
| Manifold                               | Common supply, common exhaust                   |
| Station No.                            | *1 2 to 20 stations                             |
| Valve and operation                    | Pilot operated soft spool valve                 |
| Working fluid                          | Compressed air                                  |
| Max. working press. MPa                | 0.70 ( $\approx 100$ psi, 7 bar)                |
| Min. working press. MPa                | Refer to Individual specifications listed below |
| Proof pressure. MPa                    | 1.05 ( $\approx 150$ psi, 10.5 bar)             |
| Ambient temperature. °C                | -5 (23°F) to 50 (122°F) (no freezing)           |
| Fluid temperature. °C                  | 5 (41°F) to 50 (122°F)                          |
| Lubrication                            | Not required                                    |
| Degree of protection                   | Dust-proof                                      |
| Vibration resistance. m/s <sup>2</sup> | 50 or less                                      |
| Shock resistance. m/s <sup>2</sup>     | 300 or less                                     |
| Atmosphere                             | Cannot be used in corrosive gas environment.    |

\*1: The max. station numbers for 4KB3/4 are 15 stations and 12 stations, respectively.

\*2: The working pressure when the external pilot (option code: K) has been selected is 0 to 0.7 MPa. In addition, use the pilot with a pressure of 0.2 to 0.7 MPa.

## Electrical specifications

| Descriptions              |                              | 4KB1/2                   | 4KB3/4                   |
|---------------------------|------------------------------|--------------------------|--------------------------|
| Rated voltage             | AC                           | 100,200 ( 50 / 60 Hz )   |                          |
|                           | DC                           | 24                       |                          |
| Voltage fluctuation range |                              | $\pm 10\%$               |                          |
| Starting current          | AC 100 V                     | 0.056/0.044              | 0.046/0.042              |
|                           | A AC 200 V                   | 0.028/0.022              | 0.023/0.021              |
| Holding current           | AC 100 V                     | 0.028/0.022              | 0.023/0.021              |
|                           | A AC 200 V                   | 0.014/0.011              |                          |
|                           | DC 24 V                      | 0.075                    |                          |
| Power consumption         | AC 100 V                     | 1.8 / 1.4<br>(1.8 / 1.5) | 1.6 / 1.3<br>(1.8 / 1.5) |
|                           | W AC 200 V                   | 1.8 / 1.4<br>(1.8 / 1.5) | 1.6 / 1.3<br>(1.8 / 1.5) |
|                           | ( : ) With indicator DC 24 V | 1.8 (2.0)                |                          |
| Thermal class             |                              | B (molded coil)          |                          |
| Temperature rise. °C      |                              | 43                       | 30                       |

Reference: 100 VAC 50/60 Hz can be used with a rated voltage of 110 VAC 60 Hz and 200 VAC 50/60 Hz can be used with 220 VAC 60 Hz.

## Individual specifications

1 MPa  $\approx$  145.0 psi, 1 MPa = 10 bar

| Descriptions                                              |                 | 4KB1                                  | 4KB2                                                | 4KB3                                                 | 4KB4                                                  |
|-----------------------------------------------------------|-----------------|---------------------------------------|-----------------------------------------------------|------------------------------------------------------|-------------------------------------------------------|
| Min. working pressure                                     | 2-position      | Single<br>Double                      | 0.15                                                | 0.15                                                 | 0.15                                                  |
|                                                           |                 |                                       | 0.10                                                | 0.10                                                 | 0.10                                                  |
|                                                           | MPa 3-position  | 0.20                                  | 0.20                                                | 0.20                                                 | 0.20                                                  |
| Port size                                                 | A/B port        | M5, Rc1/8<br>Push-in fitting $\phi 6$ | Rc1/8, Rc1/4<br>Push-in fitting $\phi 6$ , $\phi 8$ | Rc1/4, Rc3/8<br>Push-in fitting $\phi 8$ , $\phi 10$ | Rc3/8, Rc1/2<br>Push-in fitting $\phi 10$ , $\phi 12$ |
|                                                           | *1 P/R1/R2 port | Rc1/8                                 | Rc1/4                                               | Rc3/8                                                | Rc1/2                                                 |
| Response time                                             | 2-position      | 30 or less                            | 30 or less                                          | 30 or less                                           | 30 or less                                            |
|                                                           | *2 3-position   | 60 or less                            | 60 or less                                          | 60 or less                                           | 60 or less                                            |
| Weight (solenoid valve only)                              | g 2-position    | Single<br>Double                      | 70<br>110                                           | 115<br>155                                           | 214<br>315                                            |
|                                                           |                 | 3-position                            | 120                                                 | 170                                                  | 354                                                   |
|                                                           | 3-position      |                                       |                                                     |                                                      |                                                       |
| Manifold base weight calculation formula (n: station No.) |                 | g                                     | 52.0 $\times$ n+71.5                                | 105.5 $\times$ n+117                                 | 171.5 $\times$ n+311                                  |
|                                                           |                 |                                       |                                                     |                                                      | 326.0 $\times$ n+559.5                                |

\*1: As G and NPT threads can also be used for piping port screws, contact CKD for details.

\*2: The response time is the value at 0.5 MPa working pressure, with no lubrication, and with the power ON. It depends on the pressure and the lubricant quality.

### Flow characteristics

| Model No. | Solenoid position |                  | C[dm <sup>3</sup> /(s·bar)] | b    |
|-----------|-------------------|------------------|-----------------------------|------|
| 4KB1      | 2-position        |                  | 0.71                        | 0.25 |
|           | 3-position        | All ports closed | 0.60                        | 0.23 |
|           |                   | A/B/R connection | 0.81                        | 0.25 |
|           |                   | P/A/B connection | 0.67                        | 0.32 |
| 4KB2      | 2-position        |                  | 2.1                         | 0.13 |
|           | 3-position        | All ports closed | 1.8                         | 0.11 |
|           |                   | A/B/R connection | 2.0                         | 0.17 |
|           |                   | P/A/B connection | 1.8                         | 0.23 |
| 4KB3      | 2-position        |                  | 4.5                         | 0.11 |
|           | 3-position        | All ports closed | 4.4                         | 0.21 |
|           |                   | A/B/R connection | 4.8                         | 0.18 |
|           |                   | P/A/B connection | 4.3                         | 0.20 |
| 4KB4      | 2-position        |                  | 8.9                         | 0.22 |
|           | 3-position        | All ports closed | 8.9                         | 0.24 |
|           |                   | A/B/R connection | 9.4                         | 0.23 |
|           |                   | P/A/B connection | 8.6                         | 0.20 |

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

### Ozone-proof specifications (Ending Page 5)

\*\* - Voltage - **P11**

### Coolant proof specifications (Catalog No.CC-N-375A)

- Special structure with outstanding oil and water resistance

\*\* - **A** - Station No. - Voltage

### Copper and PTFE free specifications

- Copper- and PTFE-based materials are not used in the flow path.

\*\* - Voltage - **P6**

|                       |
|-----------------------|
| 4GA/B                 |
| M4GA/B                |
| MN4GA/B               |
| 4GA/B (mastr)         |
| 4GD/E                 |
| M4GD/E                |
| MN4GD/E               |
| 4GA4/B4               |
| MN3E                  |
| MN4E                  |
| W4GA/B2               |
| W4GB4                 |
| 4TB                   |
| 4L2-4/LMF0            |
| MN3S0                 |
| MN4S0                 |
| 4SA/B0                |
| 4KA/B                 |
| 4KA/B (mastr)         |
| 4F                    |
| 4F (mastr)            |
| PV5G                  |
| GMF                   |
| PV5                   |
| GMF                   |
| PV5S-0                |
| 3QR                   |
| 3QB                   |
| MV3QR                 |
| 3MA/B0                |
| 3PA/B                 |
| P/M/B                 |
| NP/NAP/NVP            |
| 4F*0EX                |
| 4F*0E                 |
| HMV                   |
| HSV                   |
| 2QV                   |
| 3QV                   |
| SKH                   |
| PCD                   |
| Silencer              |
| TotAirSys (Total Air) |
| TotAirSys (Gamma)     |
| Ending                |

# M4KB1 to 4 Series

Individual wiring manifold: sub-plate piping

## How to order

- Single solenoid valve for manifold

4KB1 1 9 - 00 - M1 B — AC100V

\* Gasket/mounting screw attached

- Manifold

\*6/\*7

M 4KB2 1 0 - 06 - M1 B - 5 - AC100V

Ⓐ Model No.

Ⓑ Solenoid position

Ⓒ Port size

Ⓓ Manual override

Ⓔ Electrical connections

Refer to page 1237 for the circuit diagram with surge suppressor/lamp

[Table 1] Compact terminal box L/LS compatibility table

| Code | Content           |                                      | 4KB1 | 4KB2 | 4KB3 | 4KB4 | Surge suppressor |            |
|------|-------------------|--------------------------------------|------|------|------|------|------------------|------------|
| L    | Without lead wire | With indicator lamp                  | AC   | ●    | ●    | ●    | ●                |            |
|      |                   |                                      | DC   |      |      | ●    | ●                |            |
|      |                   | With surge suppressor/indicator lamp | AC   |      |      |      |                  |            |
|      |                   |                                      | DC   | ●    | ●    |      |                  | Integrated |
| LS   | Without lead wire | With surge suppressor/indicator lamp | AC   | ●    | ●    | ●    | ●                | Integrated |
|      |                   |                                      | DC   |      |      | ●    | ●                | Integrated |



## Precautions for model No. selection

- \*1 : When the solenoid position is mixed (8), indicate the descriptions of the combination at the end of the model No. Refer to the following page.
- \*2 : When the CE symbol is added, the model will have a pilot common exhaust. (The max. station number is 10.)
- \*3 : The max. station number for the external pilot (K) is 10. In addition, contact CKD for use with vacuum.
- \*4 : The DC voltage models of the compact terminal box "L" of 4KB1, 4KB2 are equipped with a surge suppressor.
- \*5 : The surge suppressor for attachment is a suppression connector when the grommet lead wire is 24 VDC or less. (Refer to page 1236.)
- \*6 : With a single solenoid valve for CE manifolds, the port size will be "00CE".
- \*7 : With a discrete solenoid valve for 4KB1 rear piping manifolds, the port size will be "00Y".
- \*8 : The surge suppressor can only be selected when the grommet lead wire or compact terminal box "B" has been selected for the electrical connections.

## [Example of model No.]

M4KB210-06-M1B-2-AC100V

- Ⓐ Model : M4KB2
- Ⓑ Solenoid position : 2-position single
- Ⓒ Port size : Rc1/8
- Ⓓ Manual override : Locking manual override
- Ⓔ Electrical connections: Compact terminal box/without lead wire
- Ⓕ Other options : None
- Ⓖ Station No. : 2 stations
- Ⓗ Voltage : 100 VAC 50/60 Hz

|                               |                                                       | A Model No.                                                                                                      |                 |                                                                 |         |
|-------------------------------|-------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|-----------------|-----------------------------------------------------------------|---------|
|                               |                                                       | 4KB1                                                                                                             | 4KB2            | 4KB3                                                            | 4KB4    |
| 2 2 0 0 0 1                   |                                                       | Indicate the valve model based quantity display position when using a mix manifold. Refer to the following page. |                 |                                                                 |         |
| Code                          |                                                       | Content                                                                                                          |                 |                                                                 |         |
| B Solenoid position           | 1                                                     | 2-position single                                                                                                |                 |                                                                 |         |
|                               | 2                                                     | 2-position double                                                                                                |                 |                                                                 |         |
|                               | 3                                                     | 3-position all ports closed                                                                                      |                 |                                                                 |         |
|                               | 4                                                     | 3-position A/B/R connection                                                                                      |                 |                                                                 |         |
|                               | 5                                                     | 3-position P/A/B connection                                                                                      |                 |                                                                 |         |
|                               | 8                                                     | Mix manifold (when there are multiple solenoid positions) *1                                                     |                 |                                                                 |         |
| C Port size                   | Port                                                  | A/B Port                                                                                                         |                 | P/R1/R2 port<br>(1) = Rc1/8 (2) = Rc1/4 (3) = Rc3/8 (4) = Rc1/2 |         |
|                               | M5                                                    | M5                                                                                                               | (1)             |                                                                 |         |
|                               | 06                                                    | Rc1/8                                                                                                            | (1)             | (2)                                                             |         |
|                               | 08                                                    | Rc1/4                                                                                                            |                 | (2)                                                             | (3)     |
|                               | 10                                                    | Rc3/8                                                                                                            |                 |                                                                 | (3) (4) |
|                               | 15                                                    | Rc1/2                                                                                                            |                 |                                                                 | (4)     |
|                               | M5Y                                                   | M5 (rear)                                                                                                        | (1)             |                                                                 |         |
|                               | 06Y                                                   | Rc1/8 (rear)                                                                                                     |                 | (2)                                                             |         |
|                               | 08Y                                                   | Rc1/4 (rear)                                                                                                     |                 |                                                                 | (3)     |
|                               | 10Y                                                   | Rc3/8 (rear)                                                                                                     |                 |                                                                 | (4)     |
|                               | H6                                                    | φ6 Push-in fitting                                                                                               | (1)             | (2)                                                             |         |
|                               | H8                                                    | φ8 Push-in fitting                                                                                               |                 | (2)                                                             | (3)     |
|                               | H10                                                   | φ10 Push-in fitting                                                                                              |                 |                                                                 | (3) (4) |
|                               | H12                                                   | φ12 Push-in fitting                                                                                              |                 |                                                                 | (4)     |
|                               | M5CE                                                  | M5                                                                                                               | *2              | (1)                                                             |         |
|                               | 06CE                                                  | Rc1/8                                                                                                            | *2              | (1)                                                             |         |
|                               | H6CE                                                  | φ6 Push-in fitting                                                                                               | *2              | (1)                                                             |         |
| D                             | Blank                                                 | Non-locking manual override                                                                                      |                 |                                                                 |         |
|                               | M1                                                    | Locking manual override                                                                                          |                 |                                                                 |         |
| E Electrical connections      | Grommet lead wire                                     |                                                                                                                  |                 |                                                                 |         |
|                               | Blank                                                 | Grommet lead wire (300 mm)                                                                                       |                 |                                                                 |         |
|                               | Compact terminal box                                  |                                                                                                                  |                 |                                                                 |         |
|                               | B                                                     | Without lead wire                                                                                                |                 |                                                                 |         |
|                               | L                                                     | Without lead wire                                                                                                |                 | Refer to [Table 1] at left                                      |         |
|                               | LS                                                    | No lead wire, with surge suppressor/lamp                                                                         |                 | for details. *4                                                 |         |
|                               | C type connector (lead wire lateral direction)        |                                                                                                                  |                 |                                                                 |         |
|                               | C                                                     | Lead wire length (300 mm)                                                                                        |                 |                                                                 |         |
|                               | C00                                                   | Lead wire length (500 mm)                                                                                        |                 |                                                                 |         |
|                               | C01                                                   | Lead wire length (1000 mm)                                                                                       |                 |                                                                 |         |
|                               | C02                                                   | Lead wire length (2000 mm)                                                                                       |                 |                                                                 |         |
|                               | C03                                                   | Lead wire length (3000 mm)                                                                                       |                 |                                                                 |         |
|                               | C1                                                    | Without lead wire                                                                                                |                 |                                                                 |         |
|                               | C2                                                    | Lead wire length (300 mm) with surge suppressor/lamp                                                             |                 |                                                                 |         |
|                               | C20                                                   | Lead wire length (500 mm) with surge suppressor/lamp                                                             |                 |                                                                 |         |
|                               | C21                                                   | Lead wire length (1000 mm) with surge suppressor/lamp                                                            |                 |                                                                 |         |
|                               | C22                                                   | Lead wire length (2000 mm) with surge suppressor/lamp                                                            |                 |                                                                 |         |
|                               | C23                                                   | Lead wire length (3000 mm) with surge suppressor/lamp                                                            |                 |                                                                 |         |
|                               | C3                                                    | Without lead wire, with surge suppressor/lamp                                                                    |                 |                                                                 |         |
|                               | D type connector (lead wire upward direction)         |                                                                                                                  |                 |                                                                 |         |
|                               | D                                                     | Lead wire length (300 mm)                                                                                        |                 |                                                                 |         |
|                               | D00                                                   | Lead wire length (500 mm)                                                                                        |                 |                                                                 |         |
|                               | D01                                                   | Lead wire length (1000 mm)                                                                                       |                 |                                                                 |         |
|                               | D02                                                   | Lead wire length (2000 mm)                                                                                       |                 |                                                                 |         |
|                               | D03                                                   | Lead wire length (3000 mm)                                                                                       |                 |                                                                 |         |
|                               | D1                                                    | Without lead wire                                                                                                |                 |                                                                 |         |
| D2                            | Lead wire length (300 mm) with surge suppressor/lamp  |                                                                                                                  |                 |                                                                 |         |
| D20                           | Lead wire length (500 mm) with surge suppressor/lamp  |                                                                                                                  |                 |                                                                 |         |
| D21                           | Lead wire length (1000 mm) with surge suppressor/lamp |                                                                                                                  |                 |                                                                 |         |
| D22                           | Lead wire length (2000 mm) with surge suppressor/lamp |                                                                                                                  |                 |                                                                 |         |
| D23                           | Lead wire length (3000 mm) with surge suppressor/lamp |                                                                                                                  |                 |                                                                 |         |
| D3                            | Without lead wire, with surge suppressor/lamp         |                                                                                                                  |                 |                                                                 |         |
| F                             | Blank                                                 | No option                                                                                                        |                 |                                                                 |         |
|                               | K                                                     | External pilot (Compatible only when port size is Rc1/8) *3                                                      |                 |                                                                 |         |
|                               | S                                                     | Surge suppressor attached *5 *8                                                                                  |                 |                                                                 |         |
| G                             | 2 to 12                                               | 2 stations to 12 stations                                                                                        |                 |                                                                 |         |
|                               | 2 to 15                                               | 2 stations to 15 stations                                                                                        |                 |                                                                 |         |
|                               | 2 to 20                                               | 2 stations to 20 stations                                                                                        |                 |                                                                 |         |
| H Voltage                     | AC100V                                                | 100 VAC 50/60 Hz                                                                                                 | Option Standard |                                                                 |         |
|                               | AC200V                                                | 200 VAC 50/60 Hz                                                                                                 |                 |                                                                 |         |
|                               | DC24V                                                 | 24 VDC                                                                                                           |                 |                                                                 |         |
|                               | DC12V                                                 | 12 VDC                                                                                                           |                 |                                                                 |         |
|                               | AC110V                                                | 110 VAC 50/60 Hz                                                                                                 |                 |                                                                 |         |
|                               | AC220V                                                | 220 VAC 50/60 Hz                                                                                                 |                 |                                                                 |         |
| * Other custom order products |                                                       |                                                                                                                  |                 |                                                                 |         |
| AC24V                         |                                                       |                                                                                                                  |                 |                                                                 |         |
| AC115V                        |                                                       |                                                                                                                  |                 |                                                                 |         |
| AC120V                        |                                                       |                                                                                                                  |                 |                                                                 |         |

### How to order masking plate kit

**M 4KB180 - MP-KIT**

A Model No.

\* Gasket/mounting screw attached

| A Model No. |
|-------------|
| 4KB180      |
| 4KB280      |
| 4KB380      |
| 4KB480      |

### How to order mix manifold

· 5-port valve

**M 4KB3 8 0 - 08 - 7 - AC100V** - 

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

Mix manifold "8"

\* For How to order other items, refer to the previous page.

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

#### 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  | 2  | 1  | 0  | 0  |

  
List the quantity

- With a mix manifold, when using 10 or more actuators of the same model No., specify using the codes in the table below.

| Actuator quantity | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |
|-------------------|----|----|----|----|----|----|----|----|----|----|
| Code              | A  | B  | C  | D  | E  | F  | G  | H  | I  | J  |

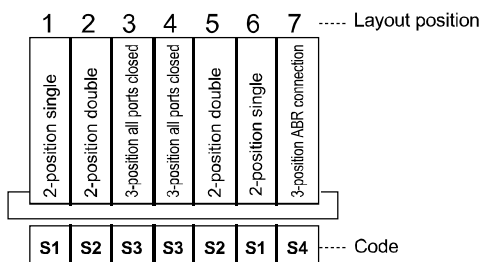
- (2) List the function (solenoid position) and layout position in the field for remarks.

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 5 port valve 2-position single)

#### [Example of model No.]

For 7 stations



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) : 2 units (3rd station, 4th station)  
 3-position ABR connection (S4) : 1 unit (7th station)

↓  
 M4KB380-08-7-AC100V - 

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

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

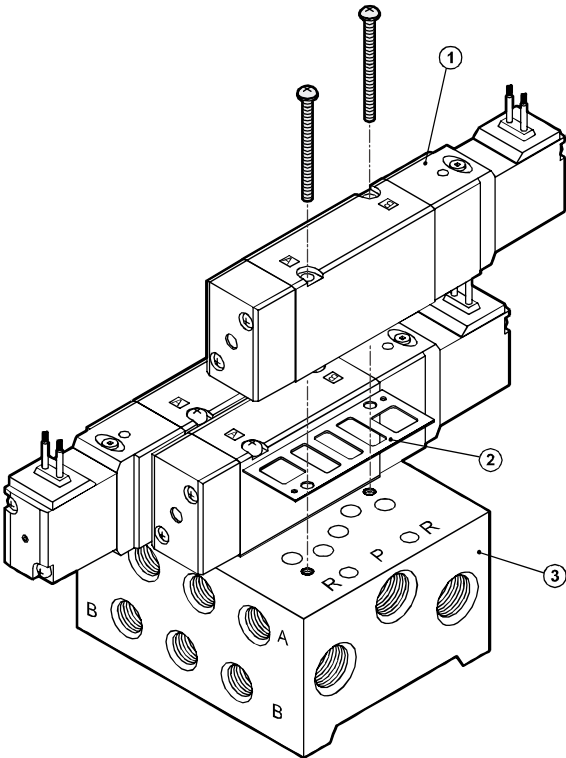
|                       |
|-----------------------|
| 4GA/B                 |
| M4GA/B                |
| MN4GA/B               |
| 4GA/B (mastr)         |
| 4GD/E                 |
| M4GD/E                |
| MN4GD/E               |
| 4GA4/B4               |
| MN3E                  |
| MN4E                  |
| W4GA/B2               |
| W4GB4                 |
| 4TB                   |
| 4L2-4/ LMF0           |
| MN3S0                 |
| MN4S0                 |
| 4SA/B0                |
| 4KA/B                 |
| 4KA/B (mastr)         |
| 4F                    |
| 4F (mastr)            |
| PV5G                  |
| GMF                   |
| PV5                   |
| GMF                   |
| PV5S-0                |
| 3QR                   |
| 3QB                   |
| MV3QR                 |
| 3MA/B0                |
| 3PA/B                 |
| P/M/B                 |
| NP/NAP/ NVP           |
| 4F*0EX                |
| 4F*0E                 |
| HMV                   |
| HSV                   |
| 2QV                   |
| 3QV                   |
| SKH                   |
| PCD                   |
| Silencer              |
| TotAirSys (Total Air) |
| TotAirSys (Gamma)     |
| Ending                |

# M4KB1 to 4 Series

Individual wiring manifold: sub-plate piping

## Manifold components explanation and parts list

|                          |
|--------------------------|
| 4GA/B                    |
| M4GA/B                   |
| MN4GA/B                  |
| 4GA/B<br>(mastr)         |
| 4GD/E                    |
| M4GD/E                   |
| MN4GD/E                  |
| 4GA4/B4                  |
| MN3E<br>MN4E             |
| W4GA/B2                  |
| W4GB4                    |
| 4TB                      |
| 4L2-4/<br>LMF0           |
| MN3S0<br>MN4S0           |
| 4SA/B0                   |
| 4KA/B                    |
| 4KA/B<br>(mastr)         |
| 4F                       |
| 4F<br>(mastr)            |
| PV5G<br>GMF              |
| PV5<br>GMF               |
| PV5S-0                   |
| 3QR<br>3QB               |
| MV3QR                    |
| 3MA/B0                   |
| 3PA/B                    |
| P/M/B                    |
| NP/NAP/<br>NVP           |
| 4F*0EX                   |
| 4F*0E                    |
| HMV<br>HSV               |
| 2QV<br>3QV               |
| SKH                      |
| PCD                      |
| Silencer                 |
| TotAirSys<br>(Total Air) |
| TotAirSys<br>(Gamma)     |
| Ending                   |



### Main parts list

| No. | Component name         | Model No. (example)                                                                                                                                     | Content                                                                         |
|-----|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|
| 1   | Single solenoid valve  | 4KB□□9-00-□□□□□<br>├── Voltage<br>├── Option<br>├── Electrical connections<br>├── Manual override<br>├── Solenoid position<br>└── Series flow rate size | Single solenoid valve<br>Mounting screws x 2<br>Gasket                          |
| 2   | Gasket kit             | M4KB□□0-GASKET-KIT                                                                                                                                      | Gasket<br>Mounting screws x 2                                                   |
| 3   | Manifold sub-plate kit | M4KB□10-□□-SUB-BASE-KIT<br>├── Station No.<br>├── Port size<br>└── Series flow rate size                                                                | Manifold sub-plate<br>Mounting screws x 2 x station No.<br>Gasket x station No. |

### Repair parts list

| No. | Part name      | Model No.                                                  | Compatibility  | No. | Part name       | Model No. | Compatibility              |
|-----|----------------|------------------------------------------------------------|----------------|-----|-----------------|-----------|----------------------------|
| -   | Coil assembly  | 4K1L-□-COIL-□<br>├── Electrical connections<br>└── voltage | 4KB1<br>4KB2   | -   | Piston assembly | 4K9-□151  | 4KB110<br>4KB120           |
| -   | Coil assembly  | 4K3-□-COIL-□<br>├── Electrical connections<br>└── Voltage  | 4KB3<br>4KB4   | -   | Piston assembly | 152       | 4KB130<br>4KB140<br>4KB150 |
| -   | Spool assembly | 4K9-□110                                                   | 4KB110         | -   | Piston assembly | 153       | 4KB210<br>4KB220           |
| -   | Spool assembly | 118                                                        | 4KB120         | -   | Piston assembly | 154       | 4KB230<br>4KB240<br>4KB250 |
| -   | Spool assembly | 111                                                        | 4KB130         | -   | Piston assembly | 137       | 4KB310, 4KB320             |
| -   | Spool assembly | 112                                                        | 4KB140         | -   | Piston assembly | 138       | 4KB330<br>4KB340<br>4KB350 |
| -   | Spool assembly | 113                                                        | 4KB150         | -   | Piston assembly | 144       | 4KB410, 4KB420             |
| -   | Spool assembly | 150                                                        | 4KB210         | -   | Piston assembly | 145       | 4KB430<br>4KB440<br>4KB450 |
| -   | Spool assembly | 126                                                        | 4KB220         | -   | Piston assembly |           |                            |
| -   | Spool assembly | 127                                                        | 4KB230         | -   | Piston assembly |           |                            |
| -   | Spool assembly | 128                                                        | 4KB240         | -   | Piston assembly |           |                            |
| -   | Spool assembly | 129                                                        | 4KB250         | -   | Piston assembly |           |                            |
| -   | Spool assembly | 133                                                        | 4KB310, 4KB320 | -   | Piston assembly |           |                            |
| -   | Spool assembly | 134                                                        | 4KB330         | -   | Piston assembly |           |                            |
| -   | Spool assembly | 135                                                        | 4KB340         | -   | Piston assembly |           |                            |
| -   | Spool assembly | 136                                                        | 4KB350         | -   | Piston assembly |           |                            |
| -   | Spool assembly | 140                                                        | 4KB410, 4KB420 | -   | Piston assembly |           |                            |
| -   | Spool assembly | 141                                                        | 4KB430         | -   | Piston assembly |           |                            |
| -   | Spool assembly | 142                                                        | 4KB440         | -   | Piston assembly |           |                            |
| -   | Spool assembly | 143                                                        | 4KB450         | -   | Piston assembly |           |                            |

|                          |
|--------------------------|
| 4GA/B                    |
| M4GA/B                   |
| MN4GA/B                  |
| 4GA/B<br>(mastr)         |
| 4GD/E                    |
| M4GD/E                   |
| MN4GD/E                  |
| 4GA4/B4                  |
| MN3E<br>MN4E             |
| W4GA/B2                  |
| W4GB4                    |
| 4TB                      |
| 4L2-4/<br>LMF0           |
| MN3S0<br>MN4S0           |
| 4SA/B0                   |
| 4KA/B                    |
| 4KA/B<br>(mastr)         |
| 4F                       |
| 4F<br>(mastr)            |
| PV5G<br>GMF              |
| PV5<br>GMF               |
| PV5S-0                   |
| 3QR<br>3QB               |
| MV3QR                    |
| 3MA/B0                   |
| 3PA/B                    |
| P/M/B                    |
| NP/NAP/<br>NVP           |
| 4F*0EX                   |
| 4F*0E                    |
| HMV<br>HSV               |
| 2QV<br>3QV               |
| SKH                      |
| PCD                      |
| Silencer                 |
| TotAirSys<br>(Total Air) |
| TotAirSys<br>(Gamma)     |
| Ending                   |

# M4KB1-M5/06 Series

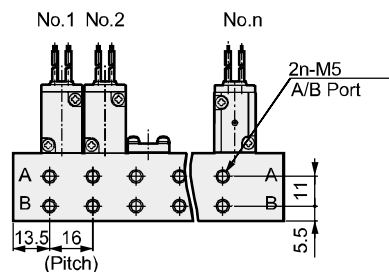
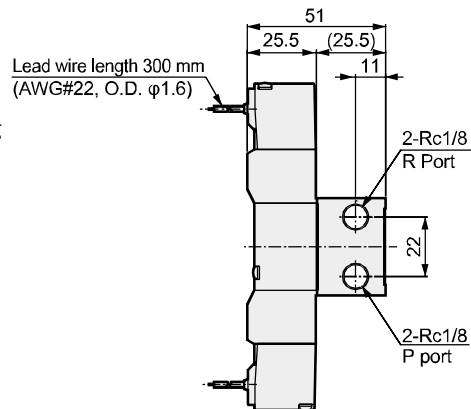
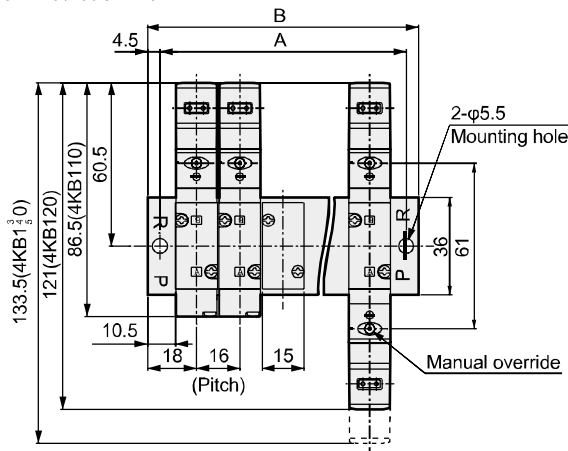
Individual wiring manifold: sub-plate piping

## Dimensions



### M4KB1-M5

● Port size M5: grommet lead wire

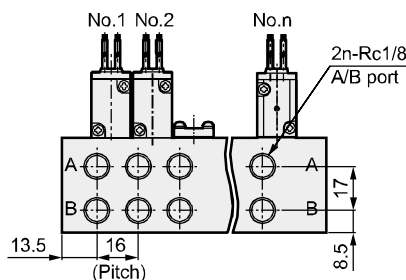
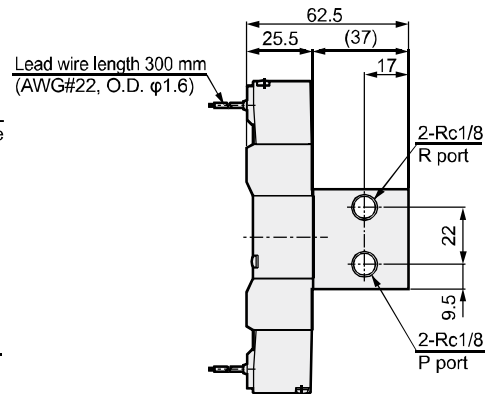
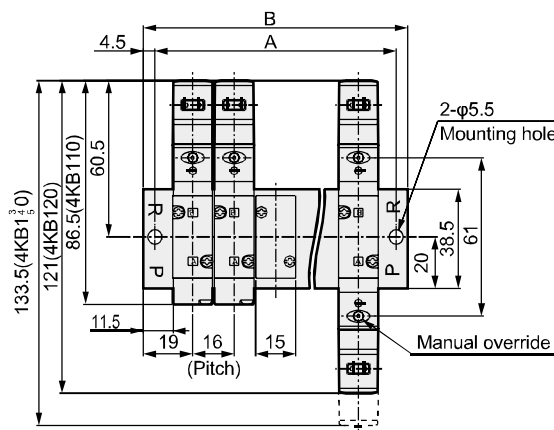


■ Single model No. for manifold  
4KB1\*9-00-option-voltage

| Station No. | 2  | 3  | 4  | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20  |
|-------------|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| A           | 43 | 59 | 75 | 91  | 107 | 123 | 139 | 155 | 171 | 187 | 203 | 219 | 235 | 251 | 267 | 283 | 299 | 315 | 331 |
| B           | 52 | 68 | 84 | 100 | 116 | 132 | 148 | 164 | 180 | 196 | 212 | 228 | 244 | 260 | 276 | 292 | 308 | 324 | 340 |

### M4KB1-06

● Port size Rc1/8: grommet lead wire



■ Single model No. for manifold  
4KB1\*9-00-option-voltage

| Station No. | 2  | 3  | 4  | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20  |
|-------------|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| A           | 45 | 61 | 77 | 93  | 109 | 125 | 141 | 157 | 173 | 189 | 205 | 221 | 237 | 253 | 269 | 285 | 301 | 317 | 333 |
| B           | 54 | 70 | 86 | 102 | 118 | 134 | 150 | 166 | 182 | 198 | 214 | 230 | 246 | 262 | 278 | 294 | 310 | 326 | 342 |

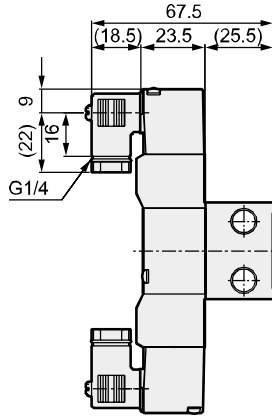


### Dimensions

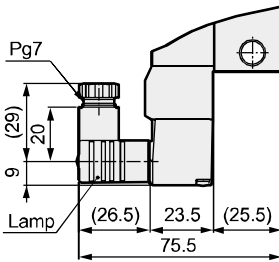
[For port size M5]

- Compact terminal box:  
(B/L/LS)

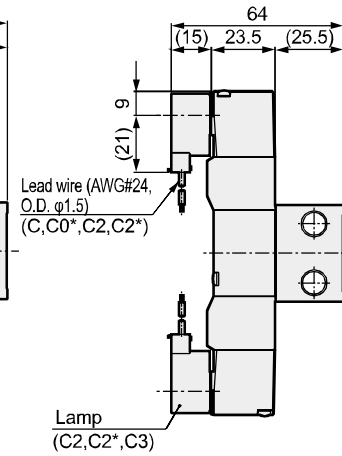
Without indicator lamp



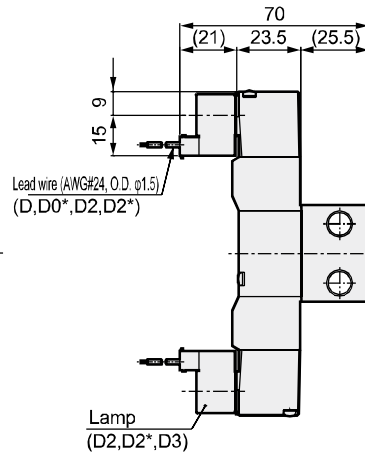
With indicator lamp



- C type connector:  
(C/C1/C0\*/C2/C2\*/C3)



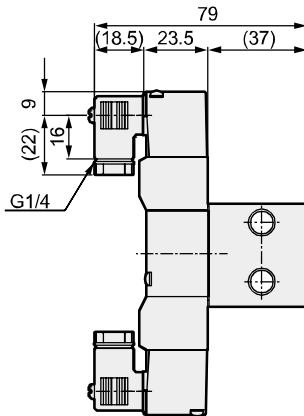
- D type connector:  
(D/D1/D0\*/D2/D2\*/D3)



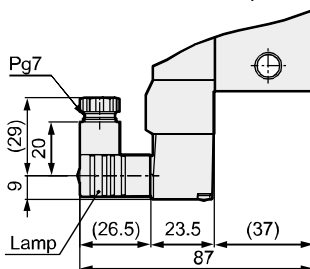
[For port size Rc1/8]

- Compact terminal box:  
(B/L/LS)

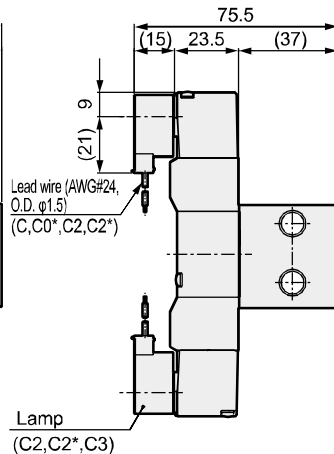
Without indicator lamp



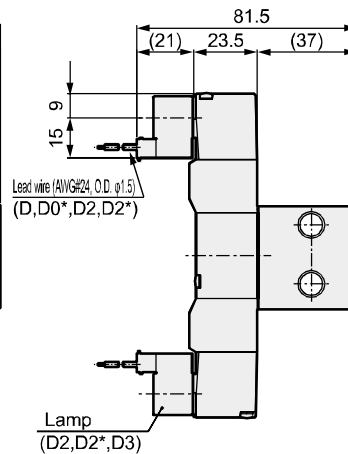
With indicator lamp



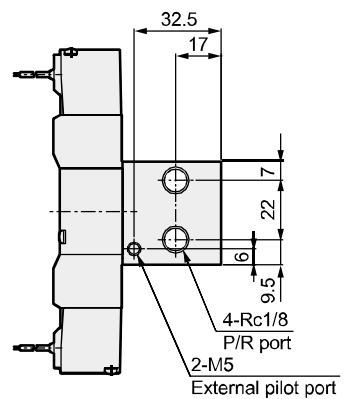
- C type connector:  
(C/C1/C0\*/C2/C2\*/C3)



- D type connector:  
(D/D1/D0\*/D2/D2\*/D3)



- External pilot: (K)  
(Port size Rc1/8, station No. 10 stations or less)



|                       |
|-----------------------|
| 4GA/B                 |
| M4GA/B                |
| MN4GA/B               |
| 4GA/B (mastr)         |
| 4GD/E                 |
| M4GD/E                |
| MN4GD/E               |
| 4GA4/B4               |
| MN3E                  |
| MN4E                  |
| W4GA/B2               |
| W4GB4                 |
| 4TB                   |
| 4L2-4/LMF0            |
| MN3S0                 |
| MN4S0                 |
| 4SA/B0                |
| 4KA/B                 |
| 4KA/B (mastr)         |
| 4F                    |
| 4F (mastr)            |
| PV5G                  |
| GMF                   |
| PV5                   |
| GMF                   |
| PV5S-0                |
| 3QR                   |
| 3QB                   |
| MV3QR                 |
| 3MA/B0                |
| 3PA/B                 |
| P/M/B                 |
| NP/NAP/NVP            |
| 4F*0EX                |
| 4F*0E                 |
| HMV                   |
| HSV                   |
| 2QV                   |
| 3QV                   |
| SKH                   |
| PCD                   |
| Silencer              |
| TotAirSys (Total Air) |
| TotAirSys (Gamma)     |
| Ending                |

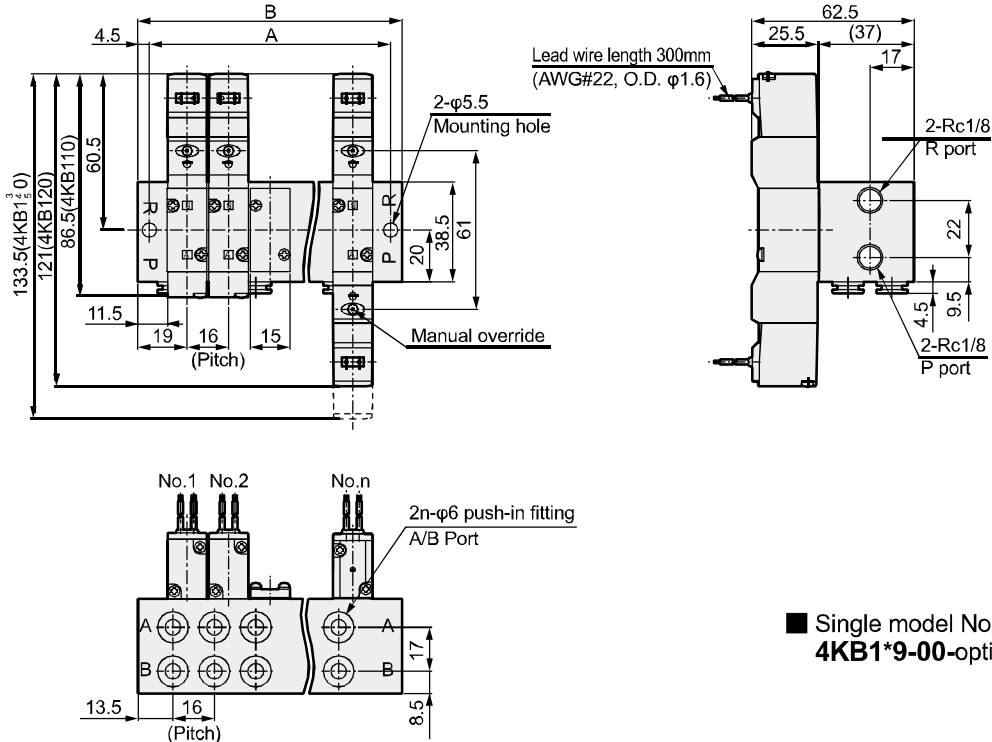
# M4KB1-H6/M5Y Series

Individual wiring manifold: sub-plate piping

## Dimensions

### M4KB1-H6

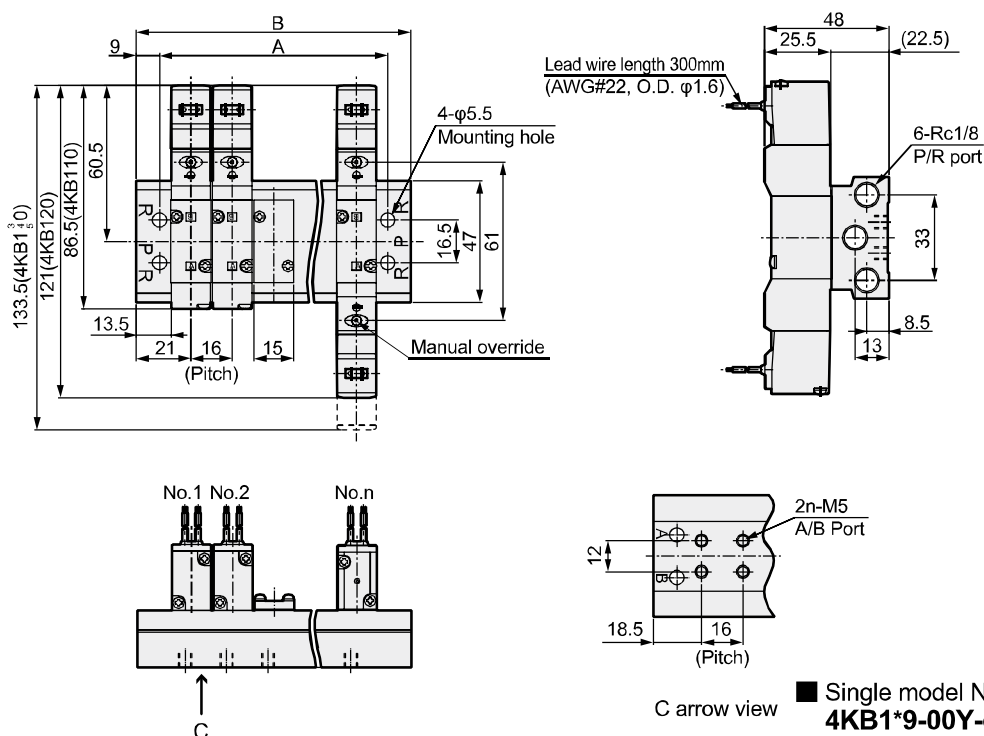
● Port size  $\phi 6$  push-in fitting: grommet lead wire



| Station No. | 2  | 3  | 4  | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20  |
|-------------|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| A           | 45 | 61 | 77 | 93  | 109 | 125 | 141 | 157 | 173 | 189 | 205 | 221 | 237 | 253 | 269 | 285 | 301 | 317 | 333 |
| B           | 54 | 70 | 86 | 102 | 118 | 134 | 150 | 166 | 182 | 198 | 214 | 230 | 246 | 262 | 278 | 294 | 310 | 326 | 342 |

### M4KB1-M5Y

● Port size M5 (rear piping): grommet lead wire



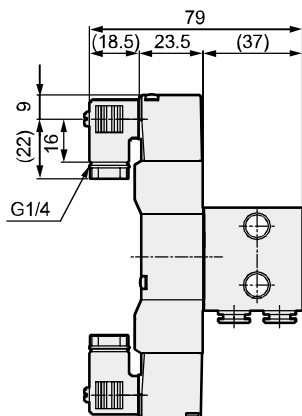
| Station No. | 2  | 3  | 4  | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20  |
|-------------|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| A           | 40 | 56 | 72 | 88  | 104 | 120 | 136 | 152 | 168 | 184 | 200 | 216 | 232 | 248 | 264 | 280 | 296 | 312 | 328 |
| B           | 58 | 74 | 90 | 106 | 122 | 138 | 154 | 170 | 186 | 202 | 218 | 234 | 250 | 266 | 282 | 298 | 314 | 330 | 346 |

## Dimensions

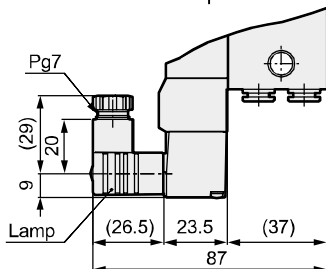
(With port size  $\phi 6$  push-in fitting)

● Compact terminal box: (B/L/LS)

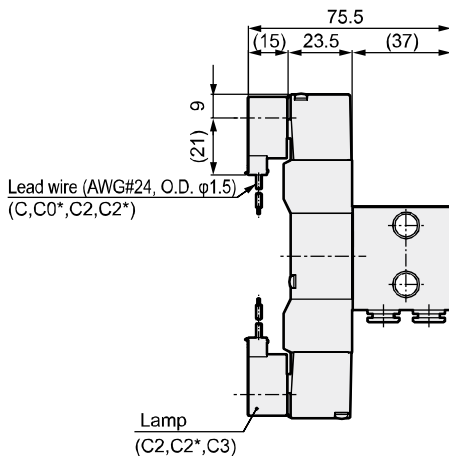
Without indicator lamp



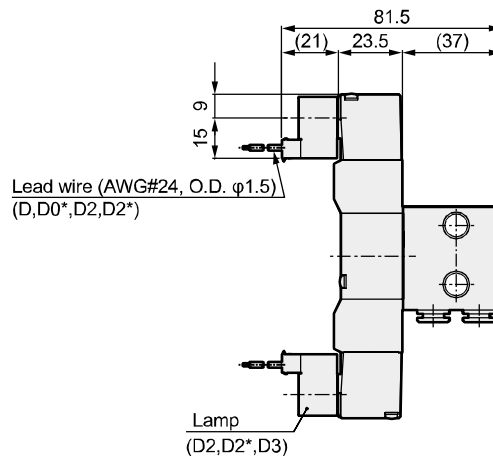
With indicator lamp



● C type connector:  
(C/C1/C0\*/C2/C2\*/C3)



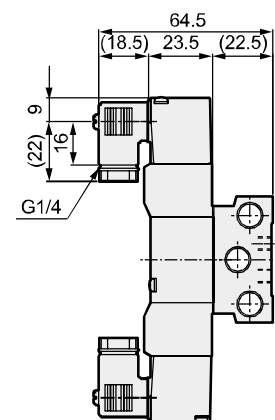
● D type connector:  
(D/D1/D0\*/D2/D2\*/D3)



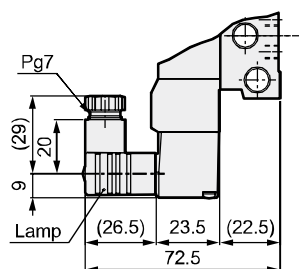
[When port size is M5 (rear piping)]

● Compact terminal box: (B/L/LS)

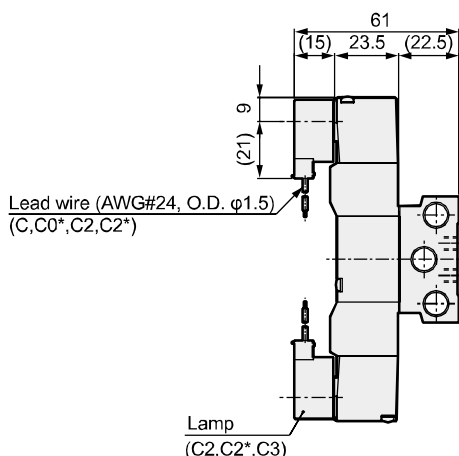
Without indicator lamp



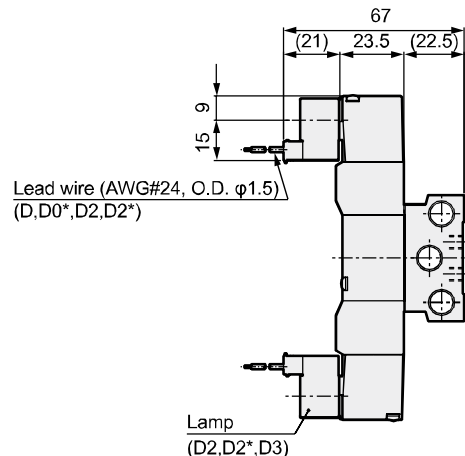
With indicator lamp



● C type connector:  
(C/C1/C0\*/C2/C2\*/C3)



● D type connector:  
(D/D1/D0\*/D2/D2\*/D3)



|                       |
|-----------------------|
| 4GA/B                 |
| M4GA/B                |
| MN4GA/B               |
| 4GA/B (mastr)         |
| 4GD/E                 |
| M4GD/E                |
| MN4GD/E               |
| 4GA4/B4               |
| MN3E                  |
| MN4E                  |
| W4GA/B2               |
| W4GB4                 |
| 4TB                   |
| 4L2-4/ LMF0           |
| MN3S0                 |
| MN4S0                 |
| 4SA/B0                |
| <b>4KA/B</b>          |
| <b>4KA/B (mastr)</b>  |
| 4F                    |
| 4F (mastr)            |
| PV5G                  |
| GMF                   |
| PV5                   |
| GMF                   |
| PV5S-0                |
| 3QR                   |
| 3QB                   |
| MV3QR                 |
| 3MA/B0                |
| 3PA/B                 |
| P/M/B                 |
| NP/NAP/ NVP           |
| 4F*0EX                |
| 4F*0E                 |
| HMV                   |
| HSV                   |
| 2QV                   |
| 3QV                   |
| SKH                   |
| PCD                   |
| Silencer              |
| TotAirSys (Total Air) |
| TotAirSys (Gamma)     |
| Ending                |

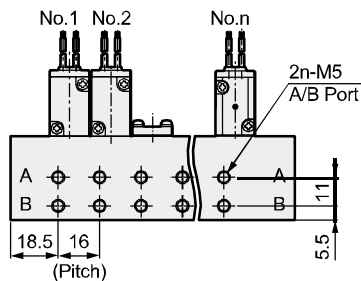
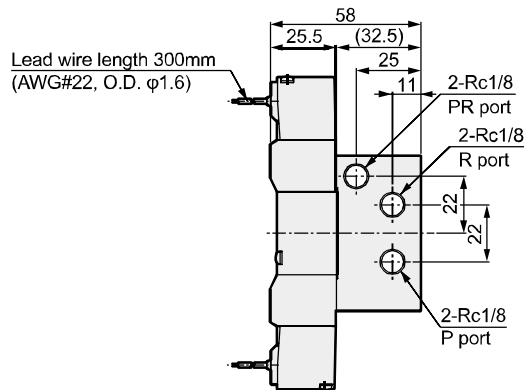
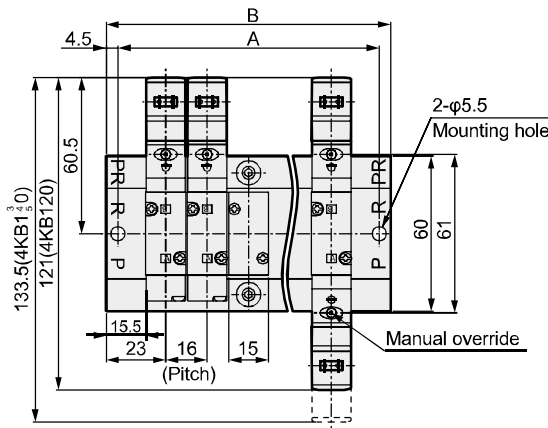
# M4KB1-\*CE Series

Individual wiring manifold: sub-plate piping (pilot common exhaust)

## Dimensions

### M4KB1-M5CE

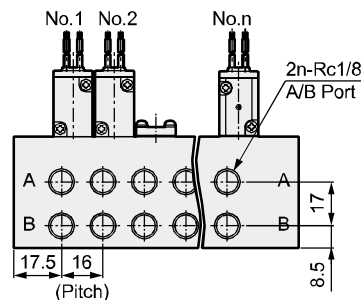
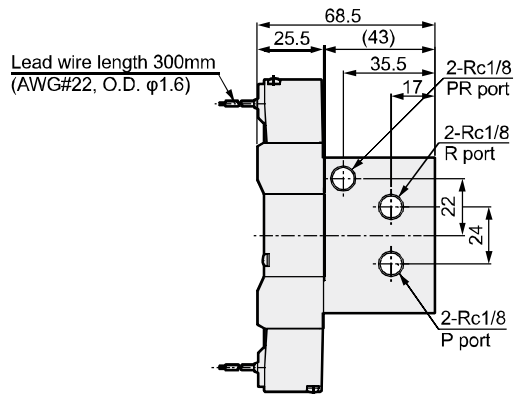
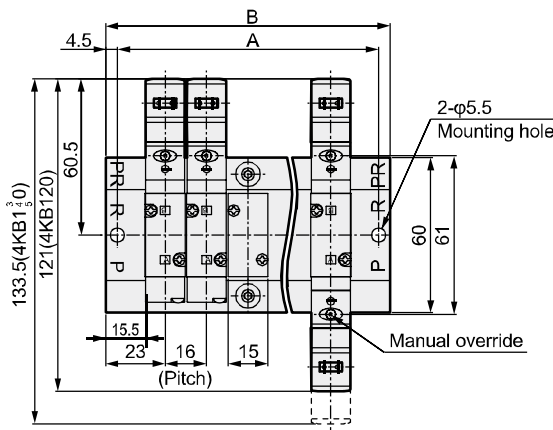
● Port size M5/pilot common exhaust: grommet lead wire



■ Single model No. for manifold  
**4KB1\*9-00CE**-option-voltage

### M4KB1-06CE

● Port size Rc1/8, pilot common exhaust: grommet lead wire



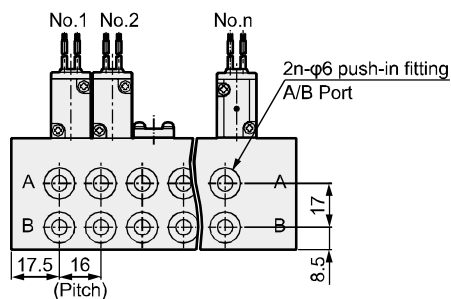
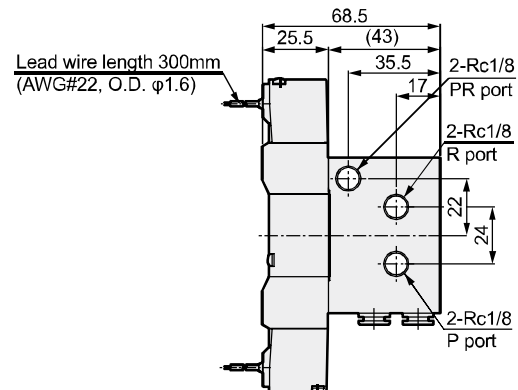
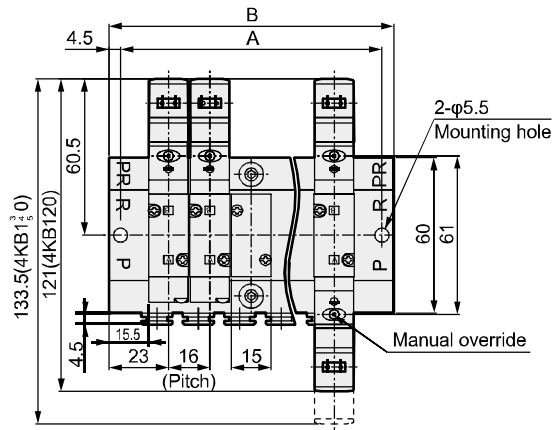
■ Single model No. for manifold  
**4KB1\*9-00CE**-option - voltage

| Station No. | 2  | 3  | 4  | 5   | 6   | 7   | 8   | 9   | 10  |
|-------------|----|----|----|-----|-----|-----|-----|-----|-----|
| A           | 53 | 69 | 85 | 101 | 117 | 133 | 149 | 165 | 181 |
| B           | 62 | 78 | 94 | 110 | 126 | 142 | 158 | 174 | 190 |

Individual wiring manifold: sub-plate piping (pilot common exhaust)



● Port size  $\phi 6$  push-in fitting/pilot common exhaust: grommet lead wire



■ Single model No. for manifold  
**4KB1\*9-00CE**-option - voltage

| Station No. | 2  | 3  | 4  | 5   | 6   | 7   | 8   | 9   | 10  |
|-------------|----|----|----|-----|-----|-----|-----|-----|-----|
| A           | 53 | 69 | 85 | 101 | 117 | 133 | 149 | 165 | 181 |
| B           | 62 | 78 | 94 | 110 | 126 | 142 | 158 | 174 | 190 |

|                          |
|--------------------------|
| 4GA/B                    |
| M4GA/B                   |
| MN4GA/B                  |
| 4GA/B<br>(mastr)         |
| 4GD/E                    |
| M4GD/E                   |
| MN4GD/E                  |
| 4GA4/B4                  |
| MN3E<br>MN4E             |
| W4GA/B2                  |
| W4GB4                    |
| 4TB                      |
| 4L2-4/<br>LMF0           |
| MN3S0<br>MN4S0           |
| 4SA/B0                   |
| <b>4KA/B</b>             |
| <b>4KA/B<br/>(mastr)</b> |
| 4F                       |
| 4F<br>(mastr)            |
| PV5G<br>GMF              |
| PV5<br>GMF               |
| PV5S-0                   |
| 3QR<br>3QB               |
| MV3QR                    |
| 3MA/B0                   |
| 3PA/B                    |
| P/M/B                    |
| NP/NAP/<br>NVP           |
| 4F*0EX                   |
| 4F*0E                    |
| HMV<br>HSV               |
| 2QV<br>3QV               |
| SKH                      |
| PCD                      |
| Silencer                 |
| TotAirSys<br>(Total Air) |
| TotAirSys<br>(Gamma)     |
| Ending                   |

# M4KB2 Series

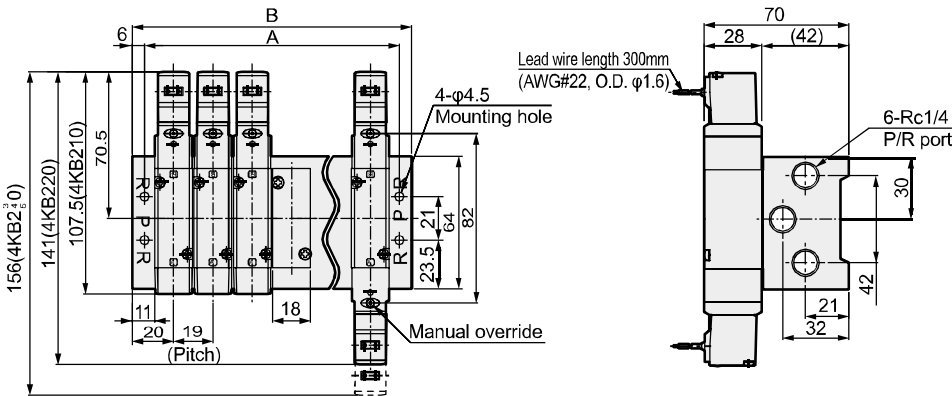
Individual wiring manifold: sub-plate piping

## Dimensions

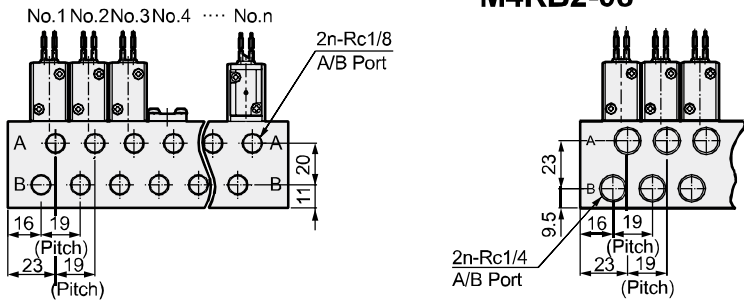


### M4KB2-06/08

● Port size Rc1/8, Rc1/4: grommet lead wire



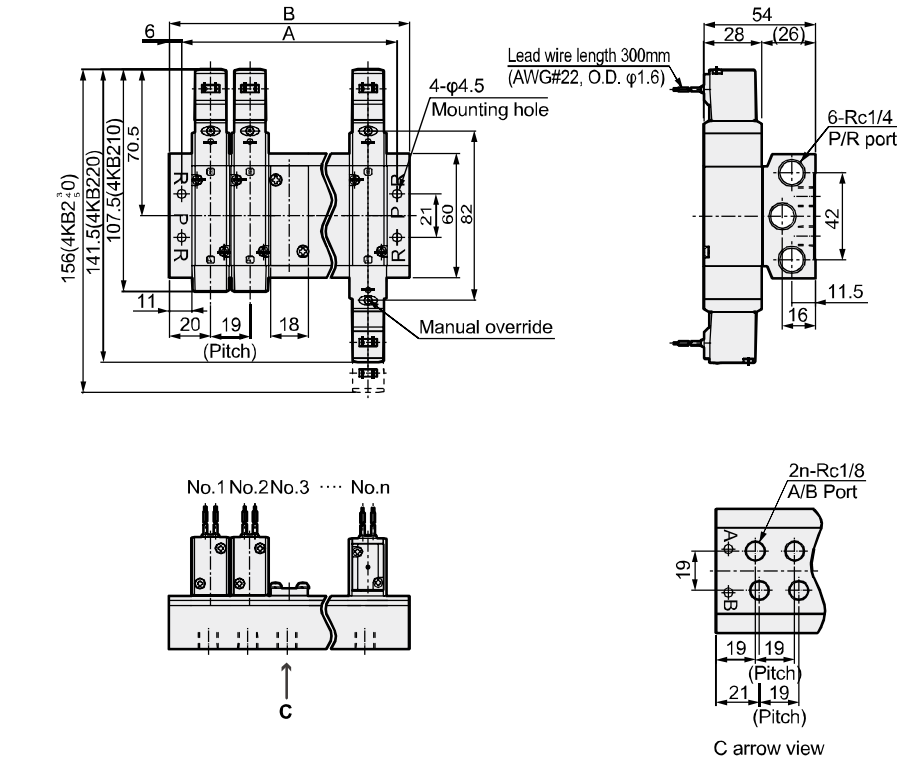
### M4KB2-08



■ Single model No. for manifold  
4KB2\*9-00-option - voltage

### M4KB2-06Y

● Port size Rc1/8 (rear piping): grommet lead wire

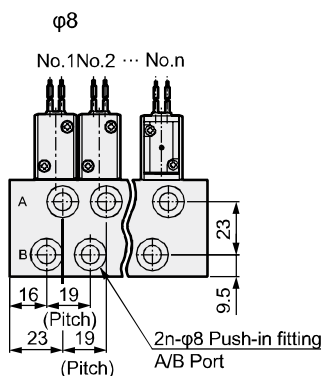
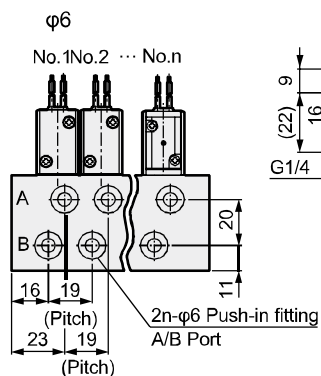


■ Single model No. for manifold  
4KB2\*9-00-option - voltage

| Station No. | 2  | 3  | 4  | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20  |
|-------------|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| A           | 47 | 66 | 85 | 104 | 123 | 142 | 161 | 180 | 199 | 218 | 237 | 256 | 275 | 294 | 313 | 332 | 351 | 370 | 389 |
| B           | 59 | 78 | 97 | 116 | 135 | 154 | 173 | 192 | 211 | 230 | 249 | 268 | 287 | 306 | 325 | 344 | 363 | 382 | 401 |

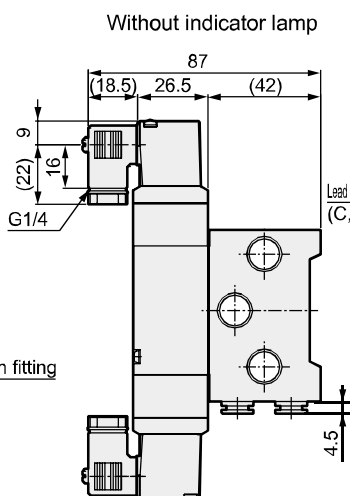
### Dimensions

- $\phi 6/\phi 8$  push-in fitting:  
(H6/H8)

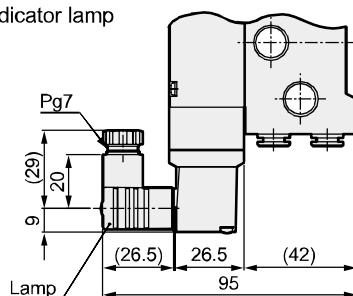


- Port size Rc1/8 (rear piping)

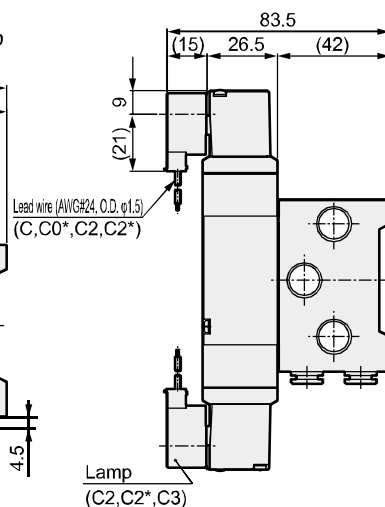
- Compact terminal box:  
(B/L/LS)



With indicator lamp

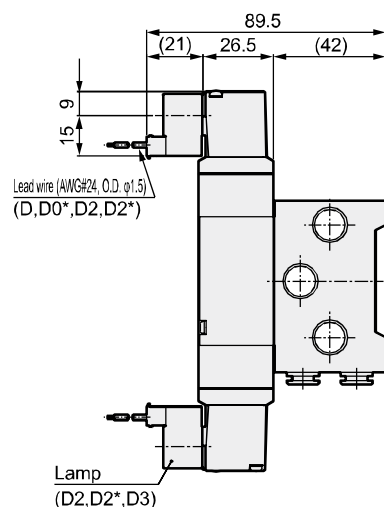


- C type connector:  
(C/C1/C0\*/C2/C2\*/C3)



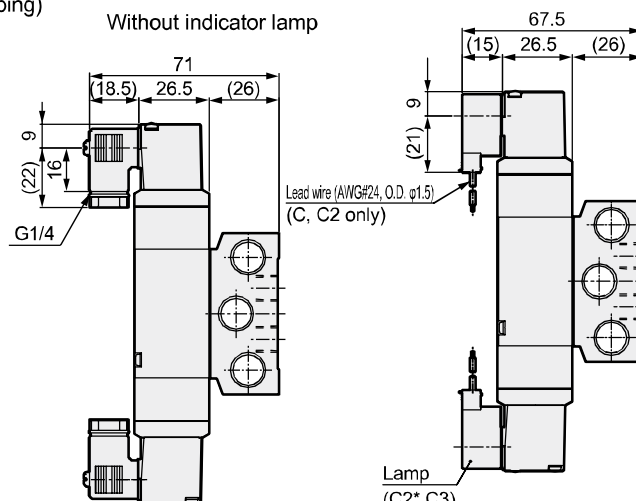
Lamp  
(C2, C2\*, C3)

- D type connector:  
(D/D1/D0\*/D2/D2\*/D3)

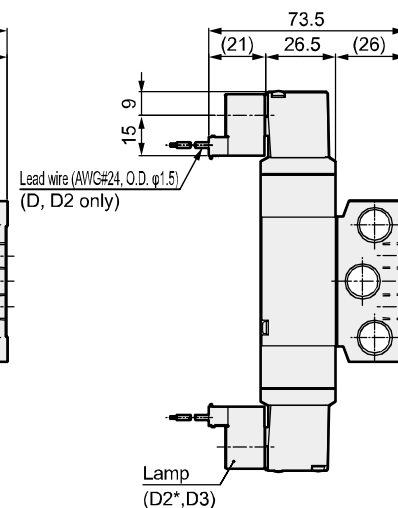
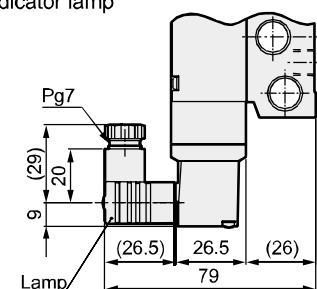


Lamp  
(D2, D2\*, D3)

Without indicator lamp



With indicator lamp



Lamp  
(D2\*, D3)

|                       |
|-----------------------|
| 4GA/B                 |
| M4GA/B                |
| MN4GA/B               |
| 4GA/B (mastr)         |
| 4GD/E                 |
| M4GD/E                |
| MN4GD/E               |
| 4GA4/B4               |
| MN3E                  |
| MN4E                  |
| W4GA/B2               |
| W4GB4                 |
| 4TB                   |
| 4L2-4/LMF0            |
| MN3S0                 |
| MN4S0                 |
| 4SA/B0                |
| <b>4KA/B</b>          |
| <b>4KA/B (mastr)</b>  |
| 4F                    |
| 4F (mastr)            |
| PV5G                  |
| GMF                   |
| PV5                   |
| GMF                   |
| PV5S-0                |
| 3QR                   |
| 3QB                   |
| MV3QR                 |
| 3MA/B0                |
| 3PA/B                 |
| P/M/B                 |
| NP/NAP/NVP            |
| 4F*0EX                |
| 4F*0E                 |
| HMV                   |
| HSV                   |
| 2QV                   |
| 3QV                   |
| SKH                   |
| PCD                   |
| Silencer              |
| TotAirSys (Total Air) |
| TotAirSys (Gamma)     |
| Ending                |

# M4KB3 Series

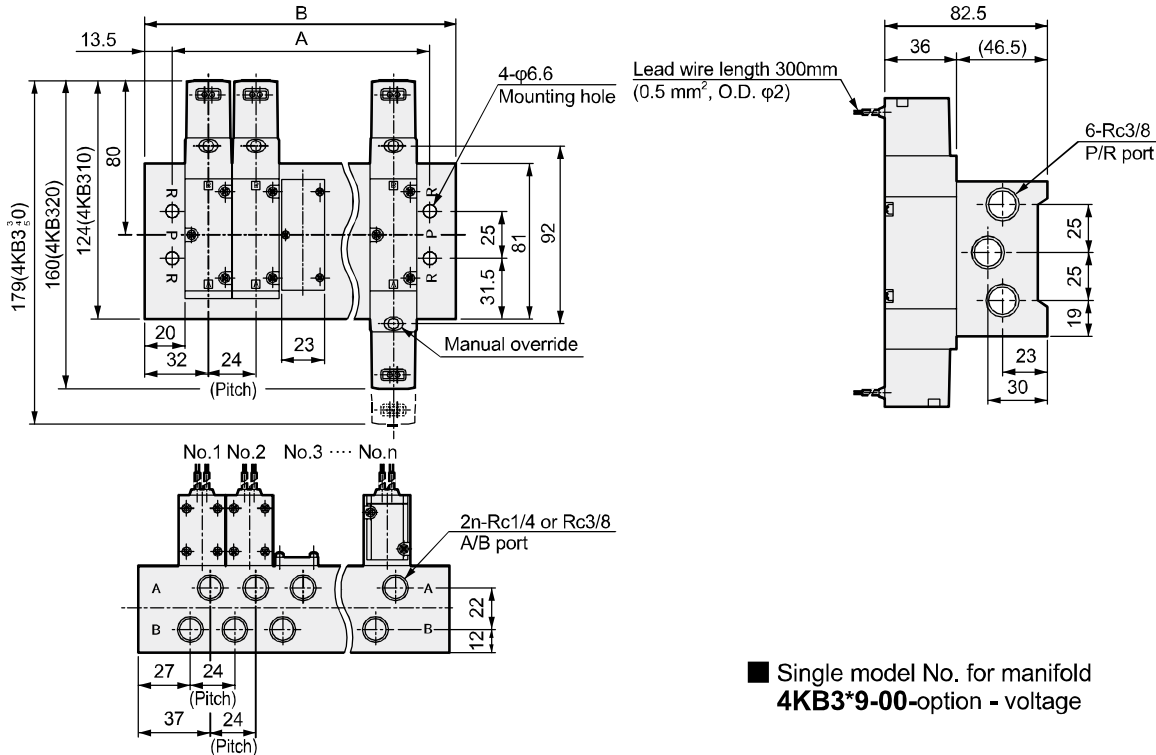
Individual wiring manifold: sub-plate piping

## Dimensions



### M4KB3-08/10

● Port size Rc1/4, Rc3/8: grommet lead wire

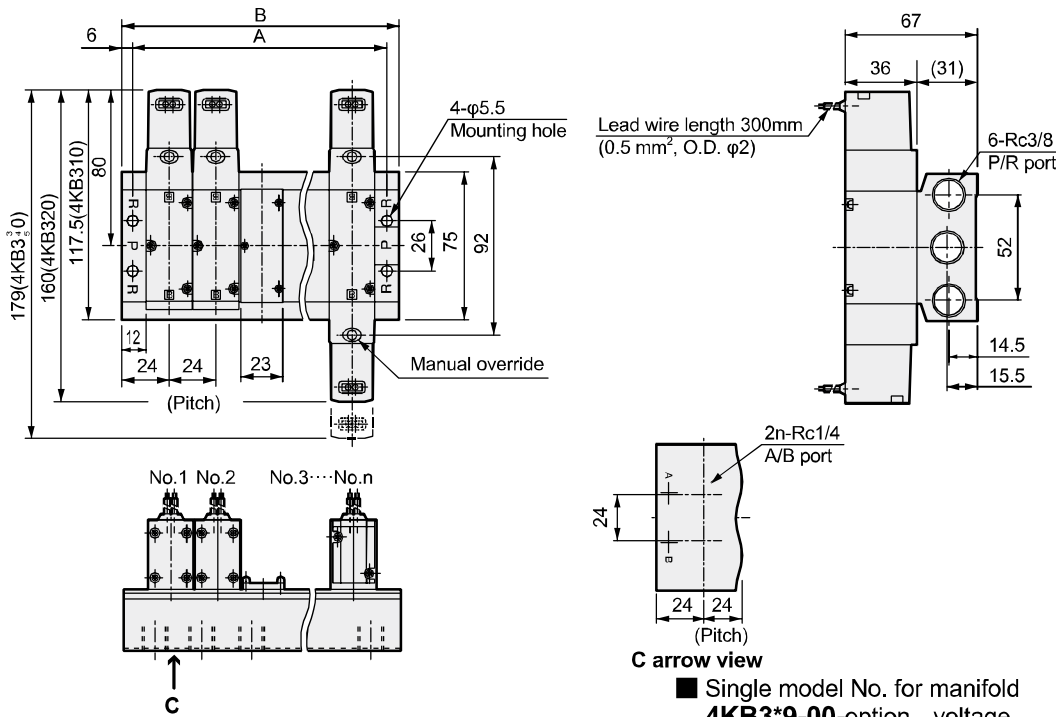


■ Single model No. for manifold  
4KB3\*9-00-option - voltage

| Station No. | 2  | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  | 14  | 15  |
|-------------|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| A           | 61 | 85  | 109 | 133 | 157 | 181 | 205 | 229 | 253 | 277 | 301 | 325 | 349 | 373 |
| B           | 88 | 112 | 136 | 160 | 184 | 208 | 232 | 256 | 280 | 304 | 328 | 352 | 376 | 400 |

### M4KB3-08Y

● Port size Rc1/4 (rear piping): grommet lead wire

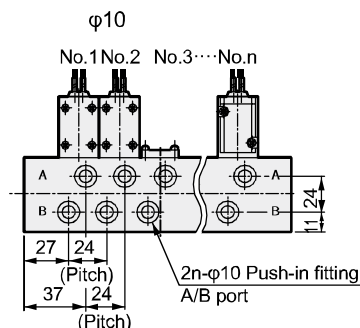
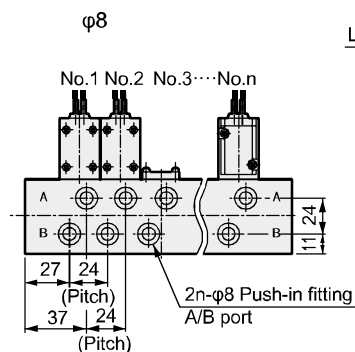


| Station No. | 2  | 3  | 4   | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  | 14  | 15  |
|-------------|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| A           | 60 | 84 | 108 | 132 | 156 | 180 | 204 | 228 | 252 | 276 | 300 | 324 | 348 | 372 |
| B           | 72 | 96 | 120 | 144 | 168 | 192 | 216 | 240 | 264 | 288 | 312 | 336 | 360 | 384 |

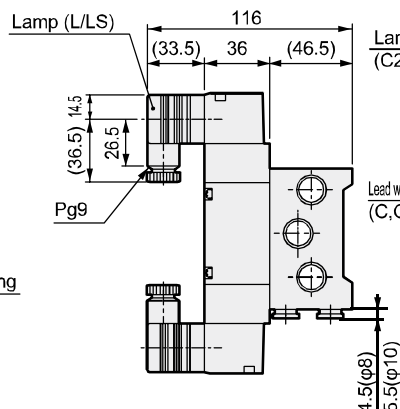


### Dimensions

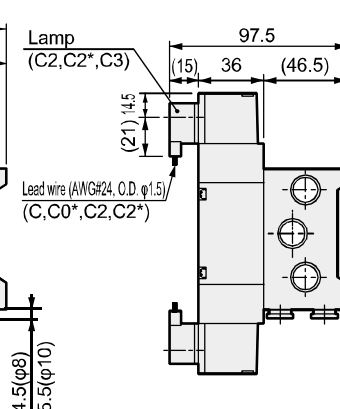
- $\phi 8/\phi 10$  push-in fitting:  
(H8/H10)



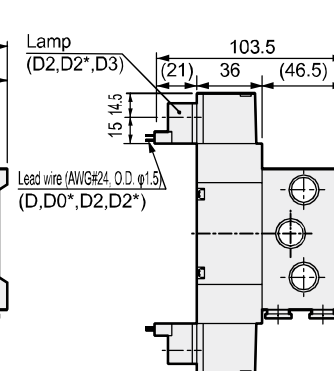
- Terminal box:  
(B/L/LS)



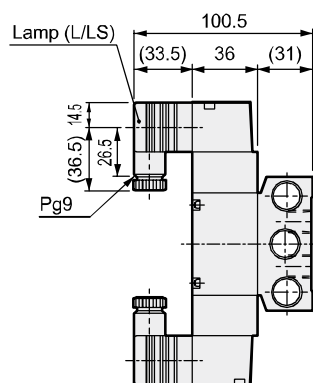
- C type connector:  
(C/C1/C0\*/C2/C2\*/C3)



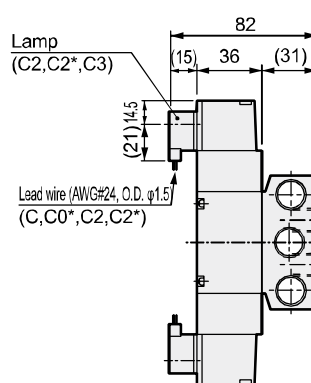
- D type connector:  
(D/D1/D0\*/D2/D2\*/D3)



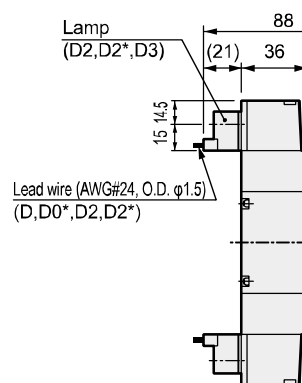
- Port size Rc1/4 (rear piping)



- Terminal box:  
(B/L/LS)



- C type connector:  
(C/C1/C0\*/C2/C2\*/C3)



- D type connector:  
(D/D1/D0\*/D2/D2\*/D3)

|                       |
|-----------------------|
| 4GA/B                 |
| M4GA/B                |
| MN4GA/B               |
| 4GA/B (mastr)         |
| 4GD/E                 |
| M4GD/E                |
| MN4GD/E               |
| 4GA4/B4               |
| MN3E                  |
| MN4E                  |
| W4GA/B2               |
| W4GB4                 |
| 4TB                   |
| 4L2-4/ LMF0           |
| MN3S0                 |
| MN4S0                 |
| 4SA/B0                |
| <b>4KA/B</b>          |
| <b>4KA/B (mastr)</b>  |
| 4F                    |
| 4F (mastr)            |
| PV5G                  |
| GMF                   |
| PV5                   |
| GMF                   |
| PV5S-0                |
| 3QR                   |
| 3QB                   |
| MV3QR                 |
| 3MA/B0                |
| 3PA/B                 |
| P/M/B                 |
| NP/NAP/ NVP           |
| 4F*0EX                |
| 4F*0E                 |
| HMV                   |
| HSV                   |
| 2QV                   |
| 3QV                   |
| SKH                   |
| PCD                   |
| Silencer              |
| TotAirSys (Total Air) |
| TotAirSys (Gamma)     |
| Ending                |

# M4KB4 Series

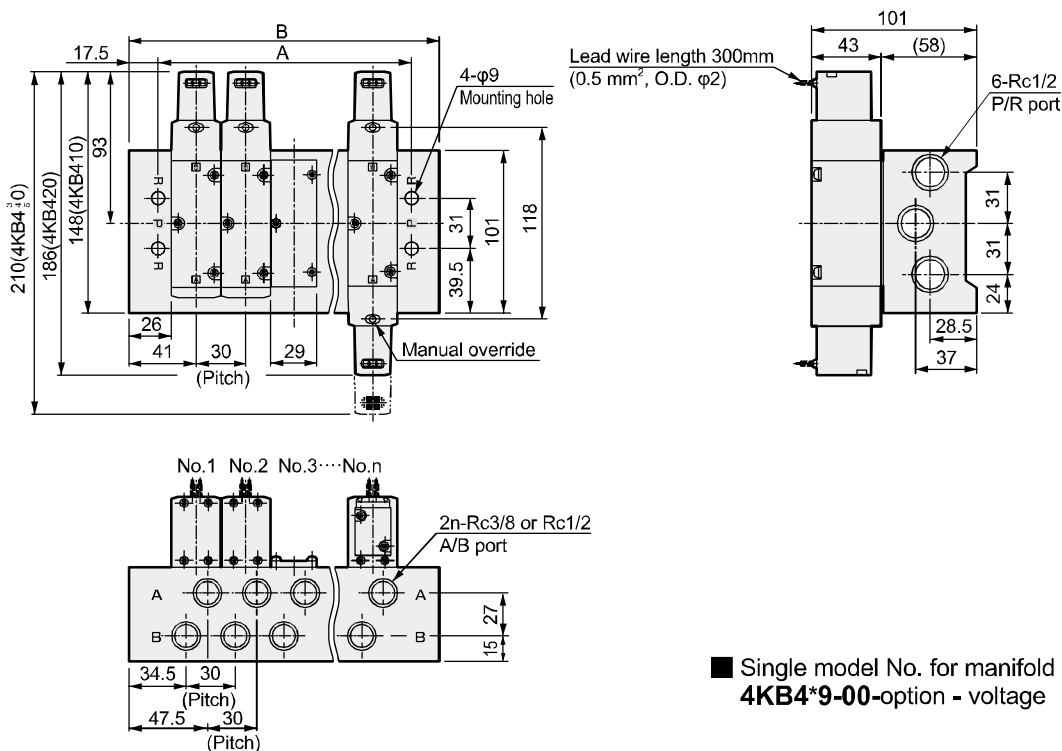
Individual wiring manifold: sub-plate piping

## Dimensions



### M4KB4-10/15

● Port size Rc3/8, 1/2: grommet lead wire

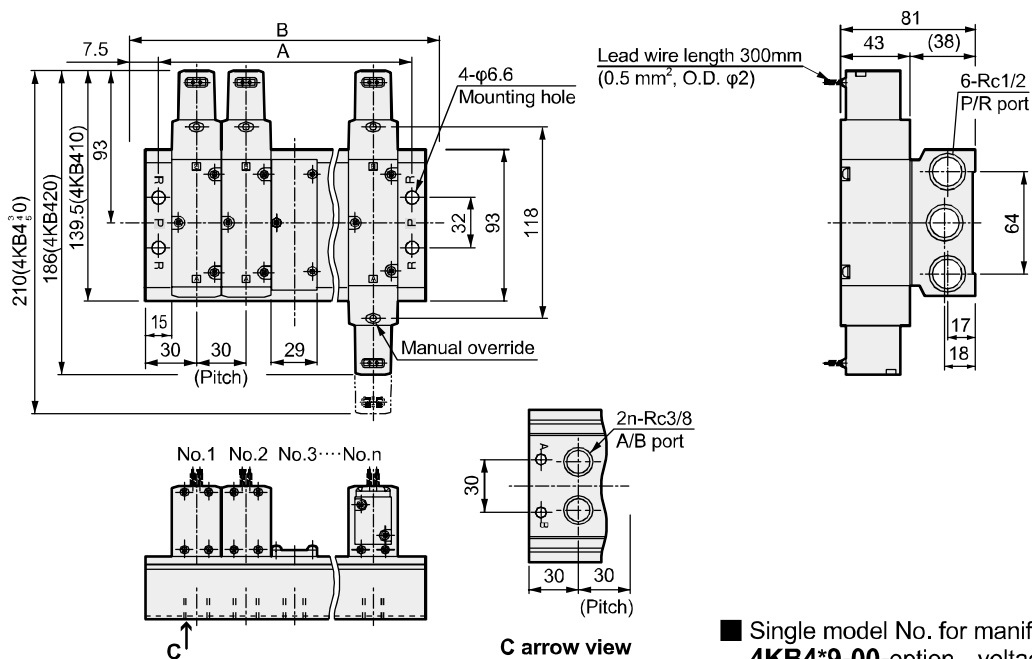


■ Single model No. for manifold  
4KB4\*9-00-option - voltage

| Station No. | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  |
|-------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| A           | 77  | 107 | 137 | 167 | 197 | 227 | 257 | 287 | 317 | 347 | 377 |
| B           | 112 | 142 | 172 | 202 | 232 | 262 | 292 | 322 | 352 | 382 | 412 |

### M4KB4-10Y

● Port size Rc3/8 (rear piping): grommet lead wire

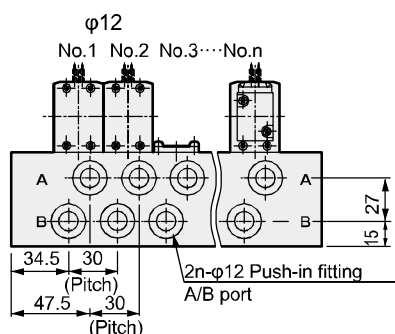
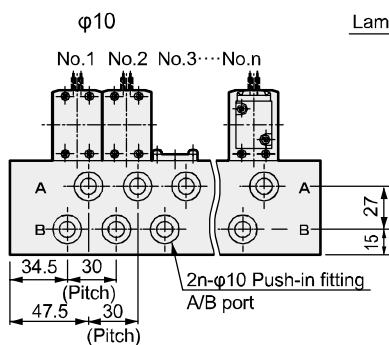


■ Single model No. for manifold  
4KB4\*9-00-option - voltage

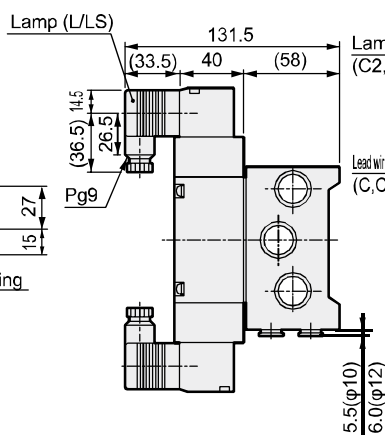
| Station No. | 2  | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  |
|-------------|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| A           | 75 | 105 | 135 | 165 | 195 | 225 | 255 | 285 | 315 | 345 | 375 |
| B           | 90 | 120 | 150 | 180 | 210 | 240 | 270 | 300 | 330 | 360 | 390 |

### Dimensions

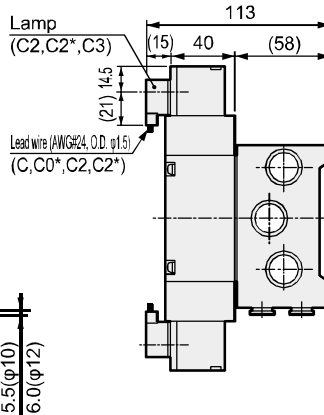
- $\phi 10/\phi 12$  push-in fitting:  
(H10/H12)



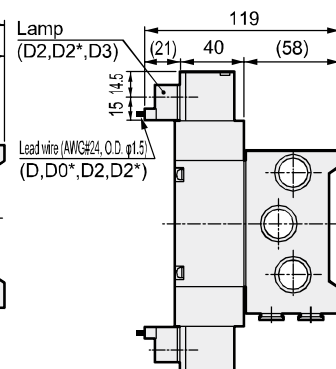
- Terminal box:  
(B/L/LS)



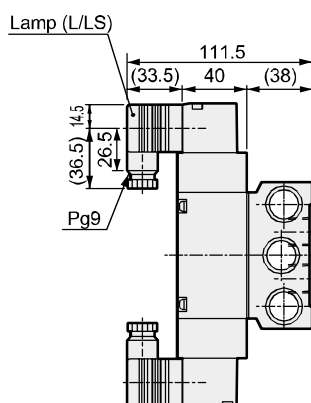
- C type connector:  
(C/C1/C0\*/C2/C2\*/C3)



- D type connector:  
(D/D1/D0\*/D2/D2\*/D3)

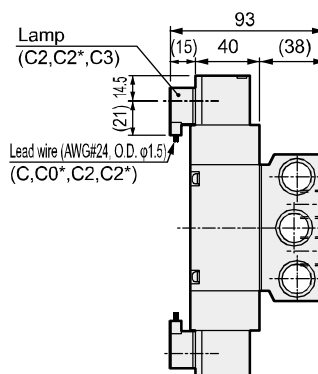


- Port size Rc3/8 (rear piping)

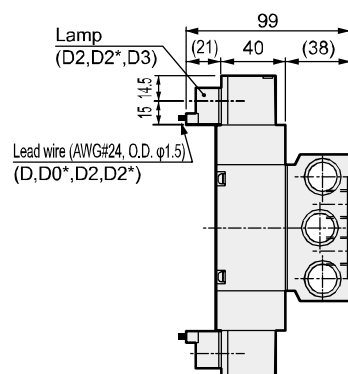


- Terminal box:  
(B/L/LS)

- C type connector:  
(C/C1/C0\*/C2/C2\*/C3)



- D type connector:  
(D/D1/D0\*/D2/D2\*/D3)



|                       |
|-----------------------|
| 4GA/B                 |
| M4GA/B                |
| MN4GA/B               |
| 4GA/B (mastr)         |
| 4GD/E                 |
| M4GD/E                |
| MN4GD/E               |
| 4GA4/B4               |
| MN3E                  |
| MN4E                  |
| W4GA/B2               |
| W4GB4                 |
| 4TB                   |
| 4L2-4/ LMF0           |
| MN3S0                 |
| MN4S0                 |
| 4SA/B0                |
| 4KA/B                 |
| 4KA/B (mastr)         |
| 4F                    |
| 4F (mastr)            |
| PV5G                  |
| GMF                   |
| PV5                   |
| GMF                   |
| PV5S-0                |
| 3QR                   |
| 3QB                   |
| MV3QR                 |
| 3MA/B0                |
| 3PA/B                 |
| P/M/B                 |
| NP/NAP/ NVP           |
| 4F*0EX                |
| 4F*0E                 |
| HMV                   |
| HSV                   |
| 2QV                   |
| 3QV                   |
| SKH                   |
| PCD                   |
| Silencer              |
| TotAirSys (Total Air) |
| TotAirSys (Gamma)     |
| Ending                |

4GA/B

M4GA/B

MN4GA/B

4GA/B (mastr)

4GD/E

M4GD/E

MN4GD/E

4GA4/B4

MN3E  
MN4E

W4GA/B2

W4GB4

4TB

4L2-4/  
LMF0

MN3S0  
MN4S0

4SA/B0

4KA/B

4KA/B (mastr)

4F

4F (mastr)

PV5G  
GMF

PV5  
GMF

PV5S-0

3QR  
3QB

MV3QR

3MA/B0

3PA/B

P/M/B

NP/NAP/  
NVP

4F\*0EX

4F\*0E

HMV  
HSV

2QV  
3QV

SKH

PCD

Silencer

TotAirSys  
(Total Air)

TotAirSys  
(Gamma)

Ending

# M4K<sup>A</sup>B1 to 4 Manifold specifications sheet

● Contact                      ● Quantity                      Set                      ● Delivery date                      /

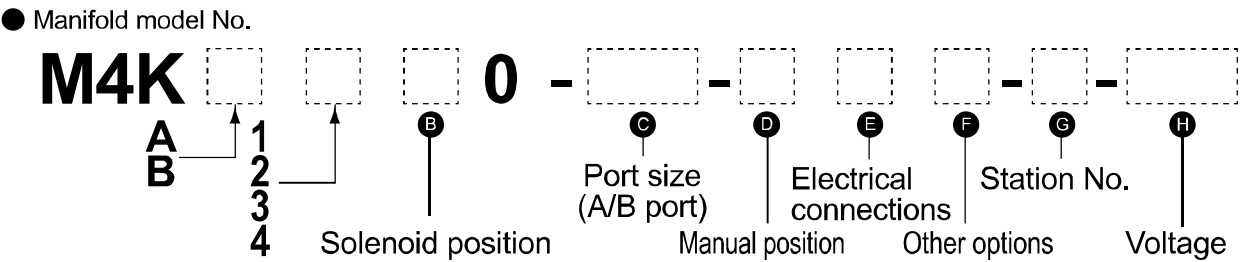
Slip No.                      Order No.

Issued                      /                      /

Your company name

Contact

Order No.

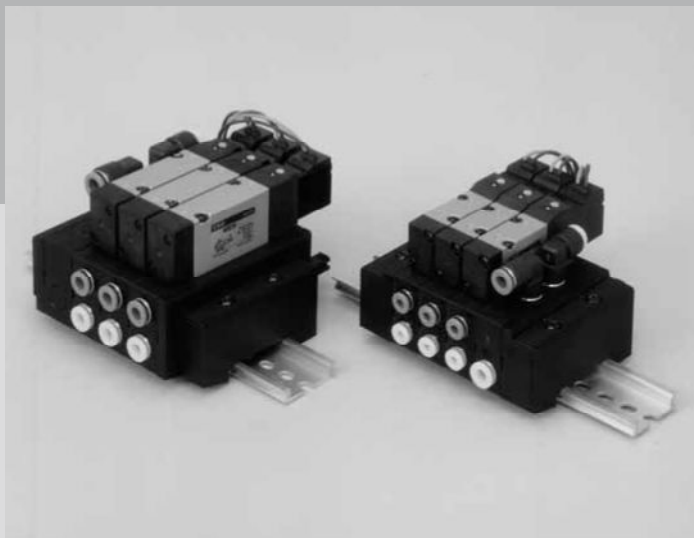


|      |               |           | Installation position No. |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|------|---------------|-----------|---------------------------|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Code | Model No.     | After use | 1                         | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 |
| S1   | 4KA219        |           |                           |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| S2   | 4KA229        |           |                           |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| S3   | 4KA239        |           |                           |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| S4   | 4KA249        |           |                           |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| S5   | 4KA259        |           |                           |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| MP   | Masking plate |           |                           |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |

# MN4KB

Pilot operated 5-port valve

## Pneumatic valve/block manifold



### CONTENTS

|                                                        |      |
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| <b>Block manifold</b>                                  |      |
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| ⚠ Safety precautions                                   | 1336 |

|                          |
|--------------------------|
| 4GA/B                    |
| M4GA/B                   |
| MN4GA/B                  |
| 4GA/B (mastr)            |
| 4GD/E                    |
| M4GD/E                   |
| MN4GD/E                  |
| 4GA4/B4                  |
| MN3E<br>MN4E             |
| W4GA/B2                  |
| W4GB4                    |
| 4TB                      |
| 4L2-4/<br>LMF0           |
| MN3S0<br>MN4S0           |
| 4SA/B0                   |
| <b>4KA/B</b>             |
| <b>4KA/B (mastr)</b>     |
| 4F                       |
| 4F (mastr)               |
| PV5G<br>GMF              |
| PV5<br>GMF               |
| PV5S-0                   |
| 3QR<br>3QB               |
| MV3QR                    |
| 3MA/B0                   |
| 3PA/B                    |
| P/M/B                    |
| NP/NAP/<br>NVP           |
| 4F*0EX                   |
| 4F*0E                    |
| HMV<br>HSV               |
| 2QV<br>3QV               |
| SKH                      |
| PCD                      |
| Silencer                 |
| TotAirSys<br>(Total Air) |
| TotAirSys<br>(Gamma)     |
| Ending                   |

|                          |
|--------------------------|
| 4GA/B                    |
| M4GA/B                   |
| MN4GA/B                  |
| 4GA/B (mastr)            |
| 4GD/E                    |
| M4GD/E                   |
| MN4GD/E                  |
| 4GA4/B4                  |
| MN3E<br>MN4E             |
| W4GA/B2                  |
| W4GB4                    |
| 4TB                      |
| 4L2-4/<br>LMF0           |
| MN3S0<br>MN4S0           |
| 4SA/B0                   |
| 4KA/B                    |
| 4KA/B (mastr)            |
| 4F                       |
| 4F (mastr)               |
| PV5G<br>GMF              |
| PV5<br>GMF               |
| PV5S-0                   |
| 3QR<br>3QB               |
| MV3QR                    |
| 3MA/B0                   |
| 3PA/B                    |
| P/M/B                    |
| NP/NAP/<br>NVP           |
| 4F*0EX                   |
| 4F*0E                    |
| HMV<br>HSV               |
| 2QV<br>3QV               |
| SKH                      |
| PCD                      |
| Silencer                 |
| TotAirSys<br>(Total Air) |
| TotAirSys<br>(Gamma)     |
| Ending                   |



Block manifold sub-plate piping  
Pilot operated 5-port pneumatic valve

# MN4KB1/2 Series

● Cylinder bore size:  $\phi 20$  to  $\phi 80$



Refer to the Ending for details.



## JIS symbol

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

## Common specifications

| Descriptions                           | Content                                                    |
|----------------------------------------|------------------------------------------------------------|
| Manifold method                        | Block manifold system (DIN rail mount)                     |
| Manifold *1                            | Common air supply (P)<br>Common exhaust (R)                |
| Station No.                            | 2 to 25 stations                                           |
| Valve and operation                    | Pilot operated soft spool valve                            |
| Working fluid                          | Compressed air                                             |
| Max. working pressure MPa              | 0.70 ( $\approx 100$ psi, 7 bar)                           |
| Min. working pressure MPa              | Refer to Individual specifications listed below            |
| Proof pressure MPa                     | 1.05 ( $\approx 150$ psi, 10.5 bar)                        |
| Ambient temperature $^{\circ}\text{C}$ | 5 ( $41^{\circ}\text{F}$ ) to 50 ( $122^{\circ}\text{F}$ ) |
| Fluid temperature $^{\circ}\text{C}$   | 5 ( $41^{\circ}\text{F}$ ) to 50 ( $122^{\circ}\text{F}$ ) |
| Lubrication                            | Not required                                               |
| Degree of protection                   | Dust-proof                                                 |
| Vibration resistance $\text{m/s}^2$    | 50 or less                                                 |
| Shock resistance $\text{m/s}^2$        | 300 or less                                                |
| Atmosphere                             | Cannot be used in corrosive gas environment.               |

\*1: Configured with a pilot common exhaust.  
(However, with the exception of the pilot exhaust for 3-position.)

## Electrical specifications

| Descriptions                                  | 4KB1/2          |                        |
|-----------------------------------------------|-----------------|------------------------|
| Rated voltage<br>V                            | AC              | 100,200 ( 50 / 60 Hz ) |
|                                               | DC              | 24                     |
| Voltage fluctuation range                     | $\pm 10\%$      |                        |
| Starting current                              | AC 100 V        | 0.056/0.044            |
|                                               | A AC 200 V      | 0.028/0.022            |
| Holding current                               | AC 100 V        | 0.028/0.022            |
|                                               | AC 200 V        | 0.014/0.011            |
|                                               | A DC 24 V       | 0.075                  |
| Power consumption<br>W<br>( ): With indicator | AC 100 V        | 1.8 / 1.4 (1.8 / 1.5)  |
|                                               | AC 200 V        | 1.8 / 1.4 (1.8 / 1.5)  |
|                                               | DC 24 V         | 1.8 (2.0)              |
| Thermal class                                 | B (molded coil) |                        |
| Temperature rise $^{\circ}\text{C}$           | 43              |                        |

Reference: Rated 100 VAC 50/60 Hz can be used with 110 VAC 60 Hz and 200 VAC 50/60 Hz can be used with 220 VAC 60 Hz.

## Applicable solenoid valve individual specifications

| Descriptions                     |                         |                  | 4KB1                     | 4KB2                       |
|----------------------------------|-------------------------|------------------|--------------------------|----------------------------|
| Min. working pressure<br><br>MPa | 2-position              | Single           | 0.15 (≈22 psi, 1.5 bar)  | 0.15 (≈22 psi, 1.5 bar)    |
|                                  |                         | Double           |                          | 0.10 (≈15 psi, 1 bar)      |
|                                  | 3-position              | All ports closed | 0.20 (≈29 psi, 2 bar)    | 0.20 (≈29 psi, 2 bar)      |
|                                  |                         | A/B/R connection |                          |                            |
|                                  |                         | P/A/B connection |                          |                            |
| Port size                        | Cylinder port A/B       |                  | φ4/φ6/φ8 Push-in fitting | φ6/φ8/φ10 Push-in fitting  |
|                                  | Supply/exhaust port P/R |                  | φ6/φ8 Push-in fitting    | φ8/φ10/φ12 Push-in fitting |
|                                  | Pilot exhaust port PR   |                  | φ6/φ8 Push-in fitting    | -                          |
| Response time                    | 2-position              |                  | 30 or less               | 30 or less                 |
| *2 ms                            | 3-position              |                  | 60 or less               | 60 or less                 |
| Weight (solenoid valve only)     | 2-position              | Single           | 70                       | 115                        |
|                                  |                         | Double           | 110                      | 155                        |
|                                  | 3-position              |                  | 120                      | 170                        |
| End block                        |                         | g                | 54.3                     | 62.3                       |
| Supply and exhaust block         |                         | g                | 59.2                     | 106.6                      |
| Valve block                      |                         | g                | 29.7                     | 51.5                       |
| Partition block                  |                         | g                | 11.6                     | 19.3                       |

\*2: The response time is the value at 0.5 MPa working pressure, with no lubrication, and with the power ON. It depends on the pressure and the lubricant quality.

## Flow characteristics

| Model No. | Solenoid position |                  | C[dm <sup>3</sup> /(s·bar)] | b    |
|-----------|-------------------|------------------|-----------------------------|------|
| 4KB1      | 2-position        | Single           | 0.70                        | 0.32 |
|           |                   | Double           |                             |      |
|           | 3-position        | All ports closed | 0.60                        | 0.27 |
|           |                   | A/B/R connection | 0.80                        | 0.21 |
|           |                   | P/A/B connection | 0.64                        | 0.27 |
| 4KB2      | 2-position        | Single           | 2.6                         | 0.30 |
|           |                   | Double           |                             |      |
|           | 3-position        | All ports closed | 2.4                         | 0.31 |
|           |                   | A/B/R connection | 3.1                         | 0.27 |
|           |                   | P/A/B connection | 2.3                         | 0.25 |

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

## Ozone-proof specifications (Ending Page 5)

\*\* - Voltage - **P11**

## Coolant proof specifications (Catalog No.CC-N-375A)

- Special structure with outstanding oil and water resistance

\*\* - **A** - Station No. - Voltage

## Copper and PTFE free specifications

- Copper- and PTFE-based materials are not used in the flow path.

\*\* - Voltage - **P6**

|                       |
|-----------------------|
| 4GA/B                 |
| M4GA/B                |
| MN4GA/B               |
| 4GA/B (mastr)         |
| 4GD/E                 |
| M4GD/E                |
| MN4GD/E               |
| 4GA4/B4               |
| MN3E                  |
| MN4E                  |
| W4GA/B2               |
| W4GB4                 |
| 4TB                   |
| 4L2-4/LMF0            |
| MN3S0                 |
| MN4S0                 |
| 4SA/B0                |
| 4KA/B                 |
| 4KA/B (mastr)         |
| 4F                    |
| 4F (mastr)            |
| PV5G                  |
| GMF                   |
| PV5                   |
| GMF                   |
| PV5S-0                |
| 3QR                   |
| 3QB                   |
| MV3QR                 |
| 3MA/B0                |
| 3PA/B                 |
| P/M/B                 |
| NP/NAP/NVP            |
| 4F*0EX                |
| 4F*0E                 |
| HMV                   |
| HSV                   |
| 2QV                   |
| 3QV                   |
| SKH                   |
| PCD                   |
| Silencer              |
| TotAirSys (Total Air) |
| TotAirSys (Gamma)     |
| Ending                |

# MN4KB1/2 Series

Block manifold; sub-plate piping

## How to order

● Single solenoid valve for block manifold

**N** **4KB1** **1** **9** **A** - **00** - **M1** **B** **AC100V**

\* Gasket/mounting screw attached

**N** **4KB2** **1** **9** **00** - **M1** **B** **AC100V**

\* Gasket/mounting screw attached

● Block manifold

**MN** **4KB1** **1** **0** **A** - **H6** - **M1** **B** **5** - **AC100V** - **2** **3** **0** **0** **0**

\* Be sure to fill in the "manifold specifications sheet" (pages 1320, 1321).

**MN** **4KB2** **1** **0** **H6** - **M1** **B** **5** - **AC100V** - **2** **3** **0** **0** **0**

**A** Model No.

**B** Solenoid position

**C** Port size

**D** Manual override

**E** Electrical connections

\* Refer to page 1237 for the circuit diagram with surge suppressor/lamp.

[Table 1] Compact terminal box L/LS compatibility table

| Code | Content             | 4KB1 | 4KB2 | Surge suppressor |
|------|---------------------|------|------|------------------|
| L    | Without lead wire   | AC   | ●    | ●                |
|      | With indicator lamp | DC   | ●    | ●                |
| LS   | Without lead wire   | AC   | ●    | ●                |
|      | With indicator lamp | DC   | ●    | ●                |
| LS   | Without lead wire   | AC   | ●    | ●                |
|      | With indicator lamp | DC   | ●    | ●                |

## ⚠ Precautions for model No. selection

Note Be sure to fill in the "block manifold specifications sheet" on pages 1320, 1321.

\*1: When the solenoid position is mixed (8), indicate the descriptions of the combination at the end of the model No. Refer to the following page.

\*2: The DC voltage models of the compact terminal box "L" of 4KB1, 4KB2 are equipped with a surge suppressor.

\*3: The surge suppressor for attachment is a suppression connector when the grommet lead wire is 24 VDC or less.

\*4: The surge suppressor can only be selected when the grommet lead wire or compact terminal box "B" has been selected for the electrical connections.

[Example of model No.]

**MN4KB210-H6-M1B-2-AC100V**

**A** Model : MN4KB2

**B** Solenoid position : 2-position single

**C** Port size : φ6 Push-in fitting

**D** Manual override : Locking manual override

**E** Electrical connections : Compact terminal box/without lead wire

**F** Other options : None

**G** Station No. : 2 stations

**H** Voltage : 100 VAC50/60 Hz

**F** Other options

**G** Station No.

**H** Voltage

| 100V - 2 3 0 0 0                              |                                                       | A Model No.                                                    |                  |                                            |      |  |
|-----------------------------------------------|-------------------------------------------------------|----------------------------------------------------------------|------------------|--------------------------------------------|------|--|
| Code                                          |                                                       | Content                                                        |                  | 4KB1                                       | 4KB2 |  |
| B Solenoid position                           | 1                                                     | 2-position single                                              |                  | ●                                          | ●    |  |
|                                               | 2                                                     | 2-position double                                              |                  | ●                                          | ●    |  |
|                                               | 3                                                     | 3-position all ports closed                                    |                  | ●                                          | ●    |  |
|                                               | 4                                                     | 3-position A/B/R connection                                    |                  | ●                                          | ●    |  |
|                                               | 5                                                     | 3-position P/A/B connection                                    |                  | ●                                          | ●    |  |
|                                               | 8                                                     | Mix manifold<br>(when there are multiple solenoid positions)*1 |                  | ●                                          | ●    |  |
| C Port size                                   | H4                                                    | φ4 push-in fitting                                             |                  | ●                                          |      |  |
|                                               | H6                                                    | φ6 push-in fitting                                             |                  | ●                                          | ●    |  |
|                                               | H8                                                    | φ8 push-in fitting                                             |                  | ●                                          | ●    |  |
|                                               | H10                                                   | φ10 Push-in fitting                                            |                  |                                            | ●    |  |
|                                               | HX                                                    | Mix/push-in fitting                                            |                  | ●                                          | ●    |  |
| D                                             | Blank                                                 | Non-locking manual override                                    |                  | ●                                          | ●    |  |
|                                               | M1                                                    | Locking manual override                                        |                  | ●                                          | ●    |  |
| E Electrical connections                      | Grommet lead wire                                     |                                                                |                  |                                            |      |  |
|                                               | Blank                                                 | Grommet lead wire (300 mm)                                     |                  | ●                                          | ●    |  |
|                                               | Compact terminal box                                  |                                                                |                  |                                            |      |  |
|                                               | B                                                     | Without lead wire                                              |                  | ●                                          | ●    |  |
|                                               | L                                                     | Without lead wire                                              |                  | Refer to [Table 1] at left for details. *2 |      |  |
|                                               | LS                                                    | No lead wire, with surge suppressor/lamp                       |                  |                                            |      |  |
|                                               | C type connector (lead wire lateral direction)        |                                                                |                  |                                            |      |  |
|                                               | C                                                     | Lead wire length (300 mm)                                      |                  | ●                                          | ●    |  |
|                                               | C00                                                   | Lead wire length (500 mm)                                      |                  | ●                                          | ●    |  |
|                                               | C01                                                   | Lead wire length (1000 mm)                                     |                  | ●                                          | ●    |  |
|                                               | C02                                                   | Lead wire length (2000 mm)                                     |                  | ●                                          | ●    |  |
|                                               | C03                                                   | Lead wire length (3000 mm)                                     |                  | ●                                          | ●    |  |
|                                               | C1                                                    | Without lead wire                                              |                  | ●                                          | ●    |  |
|                                               | C2                                                    | Lead wire (300 mm), surge suppressor, indicator lamp           |                  | ●                                          | ●    |  |
|                                               | C20                                                   | Lead wire (500 mm), surge suppressor, indicator lamp           |                  | ●                                          | ●    |  |
|                                               | C21                                                   | Lead wire (1000 mm), surge suppressor, indicator lamp          |                  | ●                                          | ●    |  |
|                                               | C22                                                   | Lead wire (2000 mm), surge suppressor, indicator lamp          |                  | ●                                          | ●    |  |
| C23                                           | Lead wire (3000 mm), surge suppressor, indicator lamp |                                                                | ●                | ●                                          |      |  |
| C3                                            | No lead wire, with surge suppressor/indicator lamp    |                                                                | ●                | ●                                          |      |  |
| D type connector (lead wire upward direction) |                                                       |                                                                |                  |                                            |      |  |
| D                                             | Lead wire length (300 mm)                             |                                                                | ●                | ●                                          |      |  |
| D00                                           | Lead wire length (500 mm)                             |                                                                | ●                | ●                                          |      |  |
| D01                                           | Lead wire length (1000 mm)                            |                                                                | ●                | ●                                          |      |  |
| D02                                           | Lead wire length (2000 mm)                            |                                                                | ●                | ●                                          |      |  |
| D03                                           | Lead wire length (3000 mm)                            |                                                                | ●                | ●                                          |      |  |
| D1                                            | Without lead wire                                     |                                                                | ●                | ●                                          |      |  |
| D2                                            | Lead wire (300 mm), surge suppressor, indicator lamp  |                                                                | ●                | ●                                          |      |  |
| D20                                           | Lead wire (500 mm), surge suppressor, indicator lamp  |                                                                | ●                | ●                                          |      |  |
| D21                                           | Lead wire (1000 mm), surge suppressor, indicator lamp |                                                                | ●                | ●                                          |      |  |
| D22                                           | Lead wire (2000 mm), surge suppressor, indicator lamp |                                                                | ●                | ●                                          |      |  |
| D23                                           | Lead wire (3000 mm), surge suppressor, indicator lamp |                                                                | ●                | ●                                          |      |  |
| D3                                            | No lead wire, with surge suppressor/indicator lamp    |                                                                | ●                | ●                                          |      |  |
| F                                             | Blank                                                 | No option                                                      |                  | ●                                          | ●    |  |
|                                               | S                                                     | Surge suppressor attached *3 *4                                |                  | ●                                          | ●    |  |
| G                                             | 2                                                     | 2 stations                                                     |                  | ●                                          | ●    |  |
|                                               | to                                                    | to                                                             |                  | ●                                          | ●    |  |
|                                               | 25                                                    | 25 stations                                                    |                  | ●                                          | ●    |  |
| H Voltage                                     | AC100V                                                | Standard<br>option<br>O                                        | 100 VAC 50/60 Hz | ●                                          | ●    |  |
|                                               | AC200V                                                |                                                                | 200 VAC 50/60 Hz | ●                                          | ●    |  |
|                                               | DC24V                                                 |                                                                | 24 VDC           | ●                                          | ●    |  |
|                                               | DC12V                                                 |                                                                | 12 VDC           | ●                                          | ●    |  |
|                                               | AC110V                                                |                                                                | 110 VAC 50/60 Hz | ●                                          | ●    |  |
|                                               | AC220V                                                |                                                                | 220 VAC 50/60 Hz | ●                                          | ●    |  |
| * Other custom order products                 |                                                       |                                                                |                  |                                            |      |  |
| AC24V                                         |                                                       |                                                                | ●                | ●                                          |      |  |
| AC115V                                        |                                                       |                                                                | ●                | ●                                          |      |  |
| AC120V                                        |                                                       |                                                                | ●                | ●                                          |      |  |



## [Mix manifold]

### ● How to list combination contents

When selecting a combination manifold (listing 8 in **B**), list the quantity used for each function of single solenoid valves after the normal model No. display.

In addition, list the code for required functions (refer to table below) and the arrangement No. (numbering up to specified station No. with left side as 1) after the model No. as shown in the example.

| Code      | Function                    |
|-----------|-----------------------------|
| <b>S1</b> | 2-position single           |
| <b>S2</b> | 2-position double           |
| <b>S3</b> | 3-position all ports closed |
| <b>S4</b> | 3-position A/B/R connection |
| <b>S5</b> | 3-position P/A/B connection |

### ● With a mix manifold, when using 10 or more actuators of the same model No., specify using the codes in the table below.

| Actuator quantity | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |
|-------------------|----|----|----|----|----|----|----|----|----|----|
| Code              | A  | B  | C  | D  | E  | F  | G  | H  | I  | J  |

## How to order masking plate kit

**MN 4KB180 A -MP-KIT- S**

\* Gasket/mounting screw attached

**A** Model No.

List only for 4KB180

**B** Type

| <b>A Model No.</b> |                                 |
|--------------------|---------------------------------|
| 4KB180             |                                 |
| 4KB280             |                                 |
| <b>B Type</b>      |                                 |
| S                  | For single solenoid             |
| D                  | For double solenoid, 3-position |

|                       |
|-----------------------|
| 4GA/B                 |
| M4GA/B                |
| MN4GA/B               |
| 4GA/B (mastr)         |
| 4GD/E                 |
| M4GD/E                |
| MN4GD/E               |
| 4GA4/B4               |
| MN3E                  |
| MN4E                  |
| W4GA/B2               |
| W4GB4                 |
| 4TB                   |
| 4L2-4/LMF0            |
| MN3S0                 |
| MN4S0                 |
| 4SA/B0                |
| 4KA/B                 |
| 4KA/B (mastr)         |
| 4F                    |
| 4F (mastr)            |
| PV5G                  |
| GMF                   |
| PV5                   |
| GMF                   |
| PV5S-0                |
| 3QR                   |
| 3QB                   |
| MV3QR                 |
| 3MA/B0                |
| 3PA/B                 |
| P/M/B                 |
| NP/NAP/NVP            |
| 4F*0EX                |
| 4F*0E                 |
| HMV                   |
| HSV                   |
| 2QV                   |
| 3QV                   |
| SKH                   |
| PCD                   |
| Silencer              |
| TotAirSys (Total Air) |
| TotAirSys (Gamma)     |
| Ending                |

# MN4KB1/MN4KB2 Series

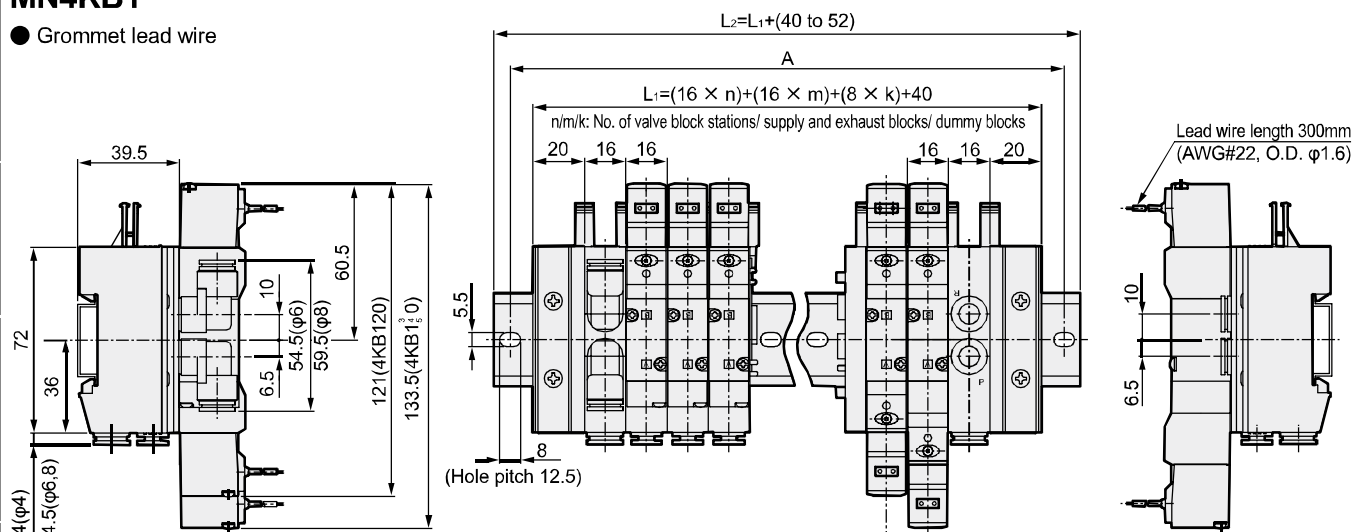
Block manifold; sub-plate piping

## Dimensions



### MN4KB1

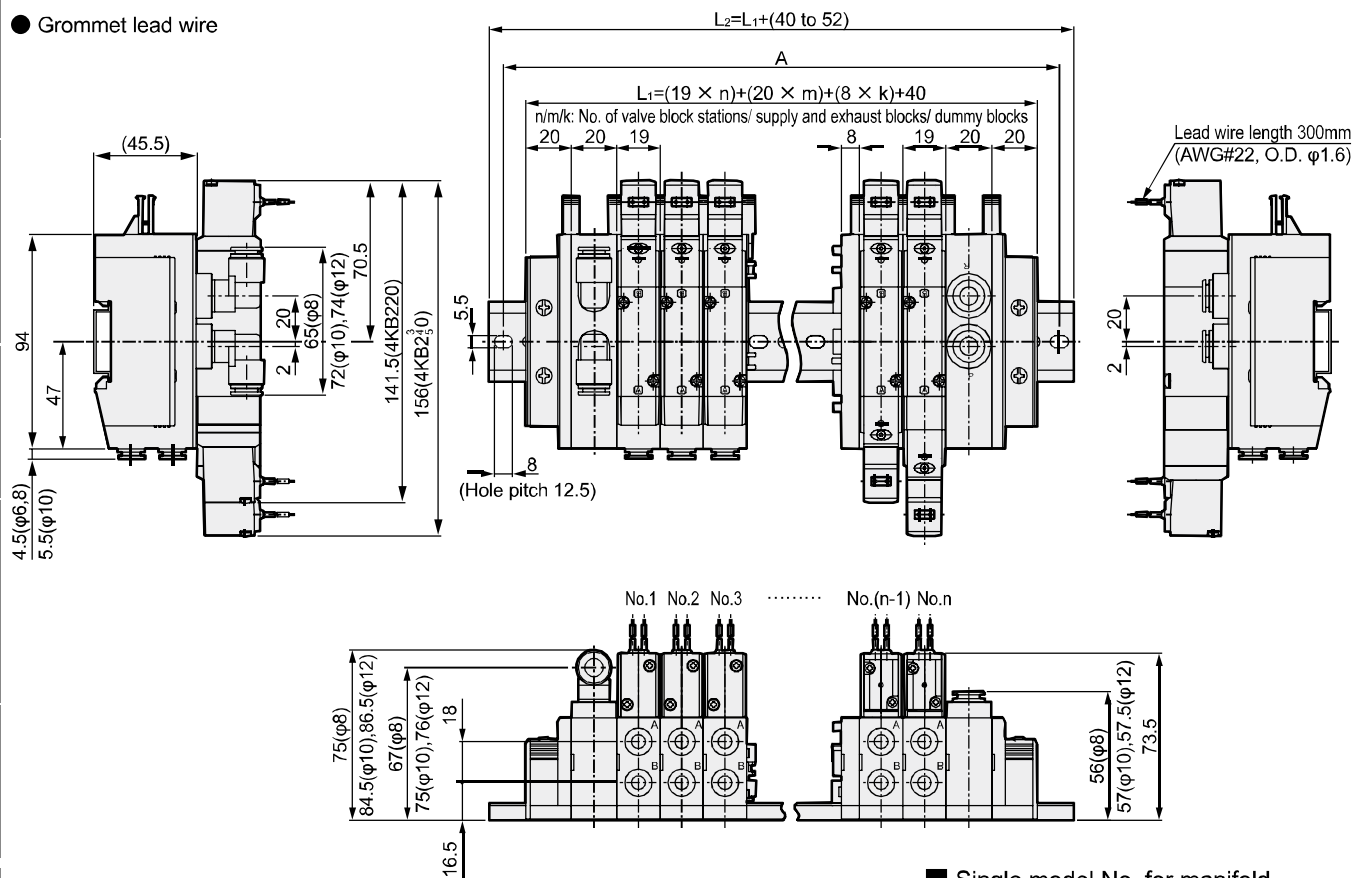
● Grommet lead wire



■ Single model No. for manifold  
N4KB1\*9A-00- option - voltage

### MN4KB2

● Grommet lead wire



■ Single model No. for manifold  
N4KB2\*9-00-option - voltage

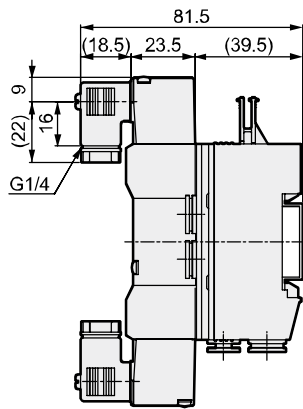
# MN4KB1/MN4KB2 Series

Block manifold; sub-plate piping

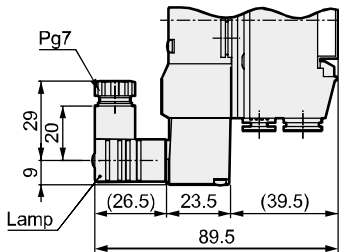
## Dimensions

### MN4KB1

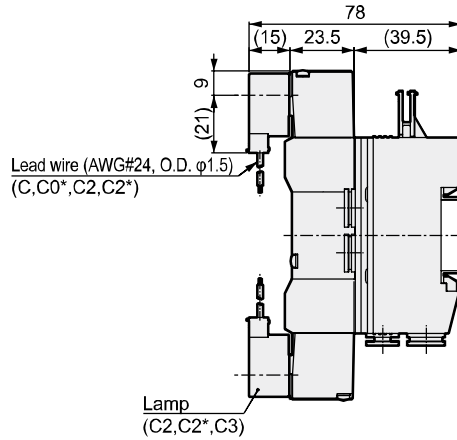
- Compact terminal box: (B/L/LS)  
Without indicator lamp



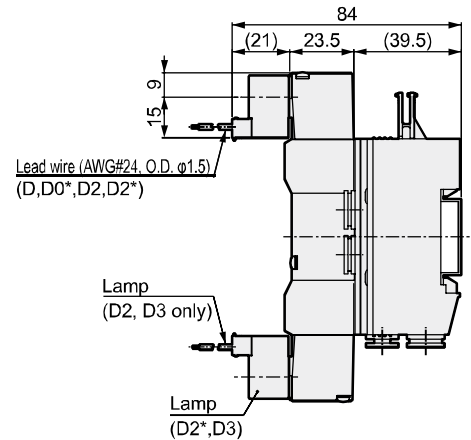
With indicator lamp



- C type connector:  
(C/C1/C0\*/C2/C2\*/C3)

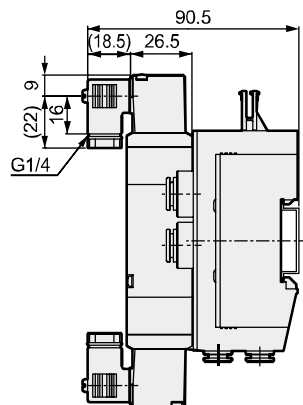


- D type connector:  
(D/D1/D0\*/D2/D2\*/D3)

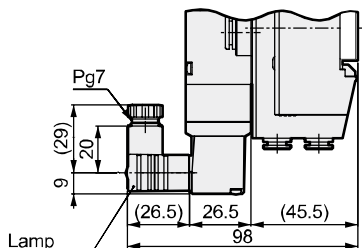


### MN4KB2

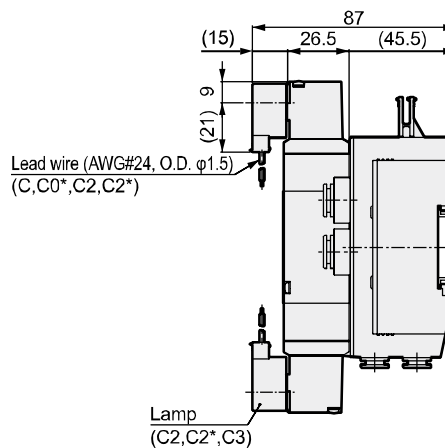
- Compact terminal box: (B/L/LS)  
Without indicator lamp



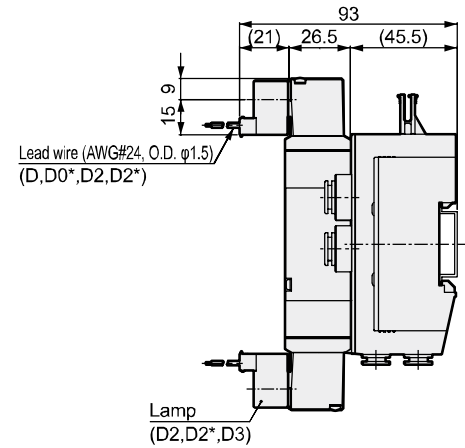
With indicator lamp



- C type connector:  
(C/C1/C0\*/C2/C2\*/C3)



- D type connector:  
(D/D1/D0\*/D2/D2\*/D3)



|                       |
|-----------------------|
| 4GA/B                 |
| M4GA/B                |
| MN4GA/B               |
| 4GA/B (mastr)         |
| 4GD/E                 |
| M4GD/E                |
| MN4GD/E               |
| 4GA4/B4               |
| MN3E                  |
| MN4E                  |
| W4GA/B2               |
| W4GB4                 |
| 4TB                   |
| 4L2-4/ LMF0           |
| MN3S0                 |
| MN4S0                 |
| 4SA/B0                |
| <b>4KA/B</b>          |
| <b>4KA/B (mastr)</b>  |
| 4F                    |
| 4F (mastr)            |
| PV5G                  |
| GMF                   |
| PV5                   |
| GMF                   |
| PV5S-0                |
| 3QR                   |
| 3QB                   |
| MV3QR                 |
| 3MA/B0                |
| 3PA/B                 |
| P/M/B                 |
| NP/NAP/ NVP           |
| 4F*0EX                |
| 4F*0E                 |
| HMV                   |
| HSV                   |
| 2QV                   |
| 3QV                   |
| SKH                   |
| PCD                   |
| Silencer              |
| TotAirSys (Total Air) |
| TotAirSys (Gamma)     |
| Ending                |

# MN4KB1/2 Series

## Block manifold: Block configuration

As units can be freely assembled, it is easy to change the number of stations, perform maintenance, etc.

### ● Valve block with solenoid valve

The types of solenoid valve required will be arranged on a DIN rail at the number of stations required.

### ● Supply and exhaust/supply/exhaust blocks

Units can be freely arranged at the adjacent parts of each valve block.

However, the supply and exhaust block is basically arranged on the right side of the valve block when the A/B ports are facing forward.

In addition the supply and exhaust/exhaust block H12 alone cannot be arranged between valve blocks.

Supply/exhaust blocks can be added as necessary.

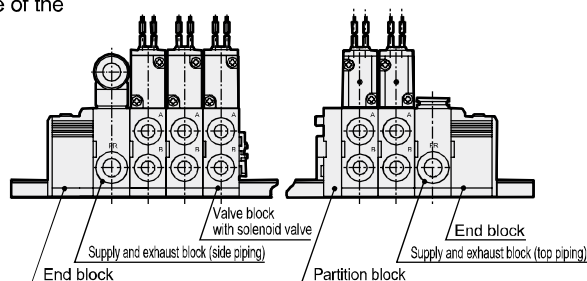
### ● End block

One each must be arranged on both sides of the valve block and supply and exhaust block.

### ● Mounting rail

The mounting rail will require 40 to 52.5 mm space for installation.

Configuration image



Block manifold configuration

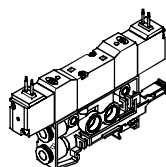
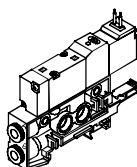
Piping

Related products

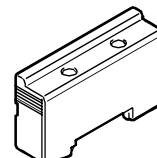
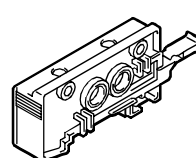
Piping block

Related products

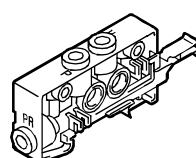
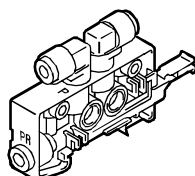
A Discrete valve block with solenoid valve



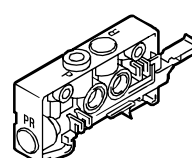
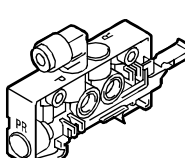
B End block



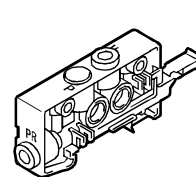
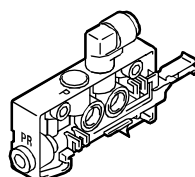
C Supply and exhaust block



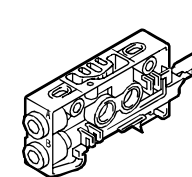
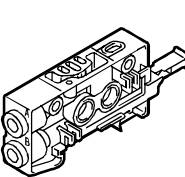
D Supply block



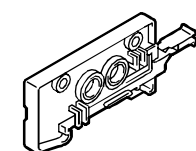
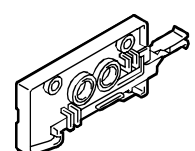
E Exhaust block



F Discrete valve block



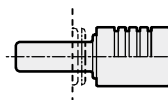
G Partition block



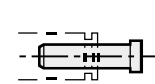
H Mounting rail



H Silencer



H Blanking plug



# MN4KB1/2 Series

Block manifold; piping block

**A** Discrete valve block with solenoid valve (N4KB1) This type is a set version of the solenoid valve 4KB1 Series.

**Solenoid valve operation classification**

**A Solenoid valve switching class**

| Code | Content                     |
|------|-----------------------------|
| 1    | 2-position single           |
| 2    | 2-position double           |
| 3    | 3-position all ports closed |
| 4    | 3-position ABR connection   |
| 5    | 3-position PAB connection   |

**B Port size**

| Code | Content            |
|------|--------------------|
| H4   | φ4 push-in fitting |
| H6   | φ6 push-in fitting |
| H8   | φ8 push-in fitting |

**C Manual override**

| Code  | Content                 |
|-------|-------------------------|
| Blank | No lock manual override |
| M1    | Locking manual override |

**D Display/protection circuit**

| Code  | Content                                                         | Lead wire length |
|-------|-----------------------------------------------------------------|------------------|
| Blank | Grommet lead wire                                               | 300 mm           |
| B     | Compact terminal box                                            | None             |
| L     | Compact terminal box (with lamp)                                | None             |
| LS    | Compact terminal box (with surge suppressor and indicator lamp) | None             |
| C     | C type connector                                                | 300 mm           |
| C00   |                                                                 | 500 mm           |
| C01   |                                                                 | 1000 mm          |
| C02   |                                                                 | 2000 mm          |
| C03   |                                                                 | 3000 mm          |
| C1    |                                                                 | None             |
| C2    |                                                                 | 300 mm           |
| C20   |                                                                 | 500 mm           |
| C21   |                                                                 | 1000 mm          |
| C22   |                                                                 | 2000 mm          |
| C23   |                                                                 | 3000 mm          |
| C3    |                                                                 | None             |
| D     | D type connector                                                | 300 mm           |
| D00   |                                                                 | 500 mm           |
| D01   |                                                                 | 1000 mm          |
| D02   |                                                                 | 2000 mm          |
| D03   |                                                                 | 3000 mm          |
| D1    |                                                                 | None             |
| D2    |                                                                 | 300 mm           |
| D20   |                                                                 | 500 mm           |
| D21   |                                                                 | 1000 mm          |
| D22   |                                                                 | 2000 mm          |
| D23   |                                                                 | 3000 mm          |
| D3    |                                                                 | None             |

**E Other options**

| Code  | Content                   |
|-------|---------------------------|
| Blank | None                      |
| S     | Surge suppressor attached |

● The surge suppressor for attachment is a suppression connector for 24 VDC or less.

\* With DC voltage, L is equipped with a surge suppressor

**F Voltage**

| Code   | Content          |
|--------|------------------|
| AC100V | 100 VAC 50/60 Hz |
| AC200V | 200 VAC 50/60 Hz |
| DC24V  | 24 VDC           |
| AC110V | 110 VAC 50/60 Hz |
| AC220V | 220 VAC 50/60 Hz |
| DC12V  | 12 VDC           |

● 100/200 VAC coil is available for 110/220 VAC (60 Hz).

**A** Discrete valve block with solenoid valve (N4KB2) This type is a set version of the solenoid valve 4KB2 Series.

**Solenoid valve operation classification**

**A Solenoid valve switching class**

| Code | Content                     |
|------|-----------------------------|
| 1    | 2-position single           |
| 2    | 2-position double           |
| 3    | 3-position all ports closed |
| 4    | 3-position ABR connection   |
| 5    | 3-position PAB connection   |

**B Port size**

| Code | Content             |
|------|---------------------|
| H6   | φ6 push-in fitting  |
| H8   | φ8 push-in fitting  |
| H10  | φ10 push-in fitting |

**C Manual override**

| Code  | Content                 |
|-------|-------------------------|
| Blank | No lock manual override |
| M1    | Locking manual override |

**D Display/protection circuit**

| Code  | Content                                                         | Lead wire length |
|-------|-----------------------------------------------------------------|------------------|
| Blank | Grommet lead wire                                               | 300 mm           |
| B     | Compact terminal box                                            | None             |
| L     | Compact terminal box (with lamp)                                | None             |
| LS    | Compact terminal box (with surge suppressor and indicator lamp) | None             |
| C     | C type connector                                                | 300 mm           |
| C00   |                                                                 | 500 mm           |
| C01   |                                                                 | 1000 mm          |
| C02   |                                                                 | 2000 mm          |
| C03   |                                                                 | 3000 mm          |
| C1    |                                                                 | None             |
| C2    |                                                                 | 300 mm           |
| C20   |                                                                 | 500 mm           |
| C21   |                                                                 | 1000 mm          |
| C22   |                                                                 | 2000 mm          |
| C23   |                                                                 | 3000 mm          |
| C3    |                                                                 | None             |
| D     | D type connector                                                | 300 mm           |
| D00   |                                                                 | 500 mm           |
| D01   |                                                                 | 1000 mm          |
| D02   |                                                                 | 2000 mm          |
| D03   |                                                                 | 3000 mm          |
| D1    |                                                                 | None             |
| D2    |                                                                 | 300 mm           |
| D20   |                                                                 | 500 mm           |
| D21   |                                                                 | 1000 mm          |
| D22   |                                                                 | 2000 mm          |
| D23   |                                                                 | 3000 mm          |
| D3    |                                                                 | None             |

**E Other options**

| Code  | Content                   |
|-------|---------------------------|
| Blank | None                      |
| S     | Surge suppressor attached |

● The surge suppressor for attachment is a suppression connector for 24 VDC or less.

\* With DC voltage, L is equipped with a surge suppressor

**F Voltage**

| Code   | Content         |
|--------|-----------------|
| AC100V | AC100V 50/60 Hz |
| AC200V | AC200V 50/60 Hz |
| DC24V  | DC24V           |
| AC110V | AC110V 50/60 Hz |
| AC220V | AC220V 50/60 Hz |
| DC12V  | DC12V           |

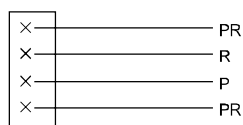
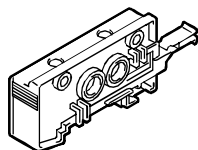
● 100/200 VAC coil is available for 110/220 VAC (60 Hz).

# MN4KB1 Series

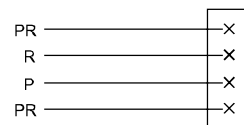
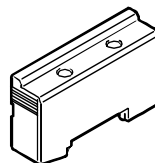
Block manifold; block

4GA/B  
M4GA/B  
MN4GA/B  
4GA/B (mastr)  
4GD/E  
M4GD/E  
MN4GD/E  
4GA4/B4  
MN3E  
MN4E  
W4GA/B2  
W4GB4  
4TB  
4L2-4/  
LMF0  
MN3S0  
MN4S0  
4SA/B0  
4KA/B  
4KA/B (mastr)  
4F  
4F (mastr)  
PV5G  
GMF  
PV5  
GMF  
PV5S-0  
3QR  
3QB  
MV3QR  
3MA/B0  
3PA/B  
P/M/B  
NP/NAP/  
NVP  
4F\*0EX  
4F\*0E  
HNV  
HSV  
2QV  
3QV  
SKH  
PCD  
Silencer  
TotAirSys  
(Total Air)  
TotAirSys  
(Gamma)  
Ending

## B End block (NE)

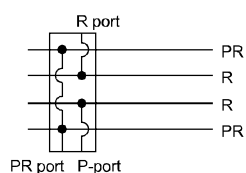
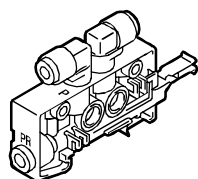


| Model No.         | Content                                                                 |
|-------------------|-------------------------------------------------------------------------|
| <b>N4KB1A-NE1</b> | End block on left side with the A/B port of the manifold facing forward |

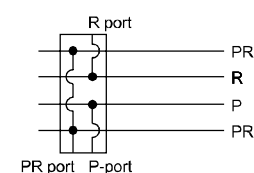
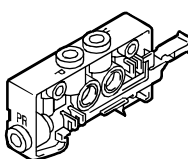


| Model No.         | Content                                                                  |
|-------------------|--------------------------------------------------------------------------|
| <b>N4KB1A-NE2</b> | End block on right side with the A/B port of the manifold facing forward |

## C Supply and exhaust block (NQ)

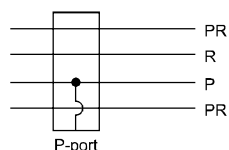
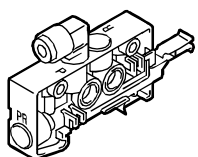


| Model No.             | P-port | R port | PR port |
|-----------------------|--------|--------|---------|
| <b>N4KB1A-NQSH8</b>   | φ8     | φ8     | φ8      |
| <b>N4KB1A-NQSH886</b> | φ8     | φ8     | φ6      |
| <b>N4KB1A-NQSH686</b> | φ6     | φ8     | φ6      |
| <b>N4KB1A-NQSH6</b>   | φ6     | φ6     | φ6      |

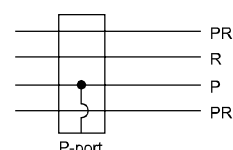
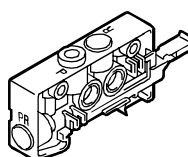


| Model No.             | P-port | R port | PR port |
|-----------------------|--------|--------|---------|
| <b>N4KB1A-NQUH8</b>   | φ8     | φ8     | φ8      |
| <b>N4KB1A-NQUH886</b> | φ8     | φ8     | φ6      |
| <b>N4KB1A-NQUH686</b> | φ6     | φ8     | φ6      |
| <b>N4KB1A-NQUH6</b>   | φ6     | φ6     | φ6      |

## D Supply block (NP)

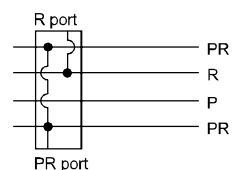
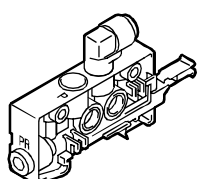


| Model No.           | P-port |
|---------------------|--------|
| <b>N4KB1A-NPSH8</b> | φ8     |
| <b>N4KB1A-NPSH6</b> | φ6     |

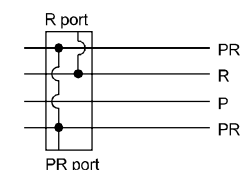
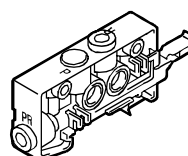


| Model No.           | P-port |
|---------------------|--------|
| <b>N4KB1A-NPUH8</b> | φ8     |
| <b>N4KB1A-NPUH6</b> | φ6     |

## E Exhaust block (NR)



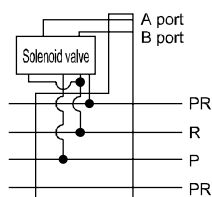
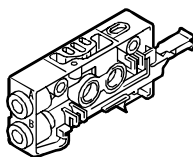
| Model No.            | R port | PR port |
|----------------------|--------|---------|
| <b>N4KB1A-NRSH8</b>  | φ8     | φ8      |
| <b>N4KB1A-NRSH86</b> | φ8     | φ6      |
| <b>N4KB1A-NRSH6</b>  | φ6     | φ6      |



| Model No.            | R port | PR port |
|----------------------|--------|---------|
| <b>N4KB1A-NRUH8</b>  | φ8     | φ8      |
| <b>N4KB1A-NRUH86</b> | φ8     | φ6      |
| <b>N4KB1A-NRUH6</b>  | φ6     | φ6      |

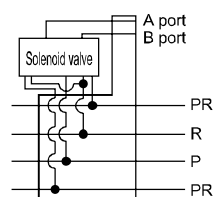
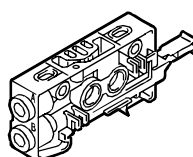
### F Discrete valve block (NS)

#### ● For N4KB110A



| Model No.     | A/B port |
|---------------|----------|
| N4KB1A-NS1SH8 | φ8       |
| N4KB1A-NS1SH6 | φ6       |
| N4KB1A-NS1SH4 | φ4       |

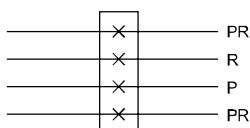
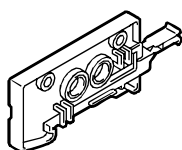
#### ● For N4KB120A to N4KB150A



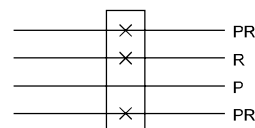
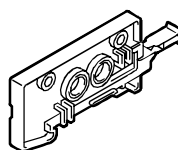
| Model No.     | A/B port |
|---------------|----------|
| N4KB1A-NS2SH8 | φ8       |
| N4KB1A-NS2SH6 | φ6       |
| N4KB1A-NS2SH4 | φ4       |

● As the NS is dedicated for each solenoid position (A), exchange the NS when changing the solenoid positions.

### G Partition block (NC)



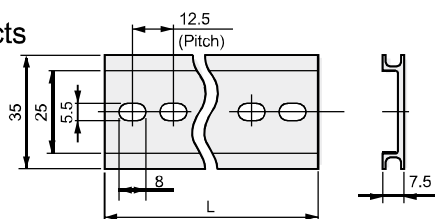
| Model No.  | Content             |
|------------|---------------------|
| N4KB1A-NC1 | All passages closed |



| Model No.  | Content                 |
|------------|-------------------------|
| N4KB1A-NC2 | Exhaust passages closed |

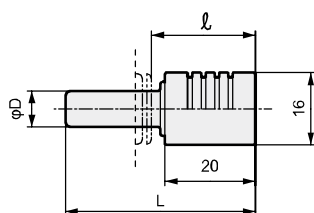
### H Related products

#### ● Mounting rail



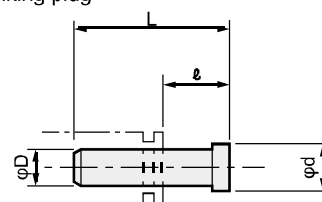
| Model No. | L    |
|-----------|------|
| BAA 500   | 500  |
| BAA1000   | 1000 |

#### ● Silencer



| Model No. | D  | L  | l    |
|-----------|----|----|------|
| SLW-H6    | φ6 | 41 | 23.5 |
| SLW-H8    | φ8 | 42 | 23   |

#### ● Blanking plug



| Model No. | D  | L  | l    | d  |
|-----------|----|----|------|----|
| GWP4-B    | φ4 | 27 | 11   | 6  |
| GWP6-B    | φ6 | 29 | 11.5 | 8  |
| GWP8-B    | φ8 | 33 | 14   | 10 |

#### ● New urethane tube

NU- 04

#### ● Soft nylon tube

F-15 04

#### ● Urethane tube

U-95 04

| A Compatible tube O.D. size |    |
|-----------------------------|----|
| 04                          | φ4 |
| 06                          | φ6 |
| 08                          | φ8 |

|                       |
|-----------------------|
| 4GA/B                 |
| M4GA/B                |
| MN4GA/B               |
| 4GA/B (mastr)         |
| 4GD/E                 |
| M4GD/E                |
| MN4GD/E               |
| 4GA4/B4               |
| MN3E                  |
| MN4E                  |
| W4GA/B2               |
| W4GB4                 |
| 4TB                   |
| 4L2-4/ LMF0           |
| MN3S0                 |
| MN4S0                 |
| 4SA/B0                |
| 4KA/B                 |
| 4KA/B (mastr)         |
| 4F                    |
| 4F (mastr)            |
| PV5G                  |
| GMF                   |
| PV5                   |
| GMF                   |
| PV5S-0                |
| 3QR                   |
| 3QB                   |
| MV3QR                 |
| 3MA/B0                |
| 3PA/B                 |
| P/M/B                 |
| NP/NAP/ NVP           |
| 4F*0EX                |
| 4F*0E                 |
| HMV                   |
| HSV                   |
| 2QV                   |
| 3QV                   |
| SKH                   |
| PCD                   |
| Silencer              |
| TotAirSys (Total Air) |
| TotAirSys (Gamma)     |
| Ending                |

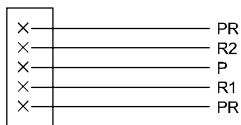
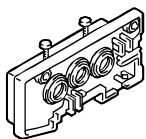


# MN4KB2 Series

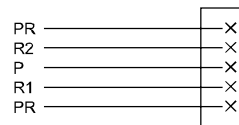
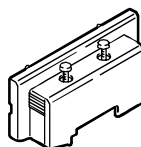
Block manifold; block

4GA/B  
M4GA/B  
MN4GA/B  
4GA/B (mastr)  
4GD/E  
M4GD/E  
MN4GD/E  
4GA4/B4  
MN3E  
MN4E  
W4GA/B2  
W4GB4  
4TB  
4L2-4/  
LMF0  
MN3S0  
MN4S0  
4SA/B0  
4KA/B  
4KA/B (mastr)  
4F  
4F (mastr)  
PV5G  
GMF  
PV5  
GMF  
PV5S-0  
3QR  
3QB  
MV3QR  
3MA/B0  
3PA/B  
P/M/B  
NP/NAP/  
NVP  
4F\*0EX  
4F\*0E  
HNV  
HSV  
2QV  
3QV  
SKH  
PCD  
Silencer  
TotAirSys  
(Total Air)  
TotAirSys  
(Gamma)  
Ending

## B End block (NE)

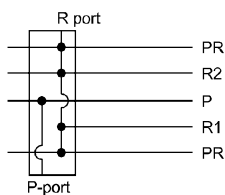
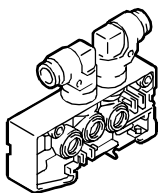


| Model No.         | Content                                                                 |
|-------------------|-------------------------------------------------------------------------|
| <b>N4KB2-2NE1</b> | End block on left side with the A/B port of the manifold facing forward |

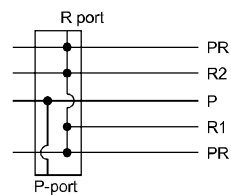
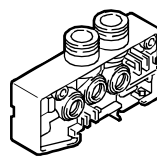


| Model No.         | Content                                                                  |
|-------------------|--------------------------------------------------------------------------|
| <b>N4KB2-2NE2</b> | End block on right side with the A/B port of the manifold facing forward |

## C Supply and exhaust block (NQ)

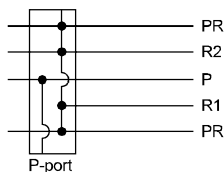
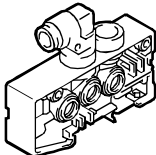


| Model No.            | P-port | R port |
|----------------------|--------|--------|
| <b>N4KB2-2NQSH12</b> | φ12    | φ12    |
| <b>N4KB2-2NQSH10</b> | φ10    | φ10    |
| <b>N4KB2-2NQSH8</b>  | φ 8    | φ 8    |

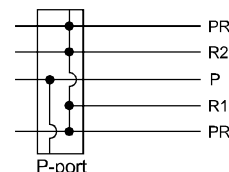
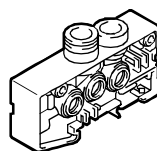


| Model No.            | P-port | R port |
|----------------------|--------|--------|
| <b>N4KB2-2NQUH12</b> | φ12    | φ12    |
| <b>N4KB2-2NQUH10</b> | φ10    | φ10    |
| <b>N4KB2-2NQUH8</b>  | φ 8    | φ 8    |

## D Supply block (NP)

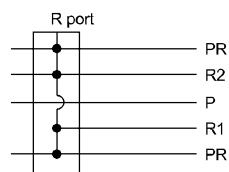
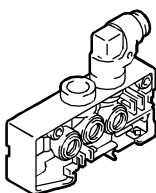


| Model No.            | P-port |
|----------------------|--------|
| <b>N4KB2-2NPSH12</b> | φ12    |
| <b>N4KB2-2NPSH10</b> | φ10    |
| <b>N4KB2-2NPSH8</b>  | φ 8    |

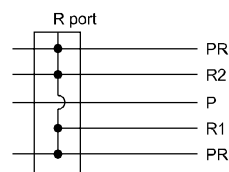
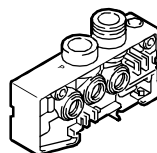


| Model No.            | P-port |
|----------------------|--------|
| <b>N4KB2-2NPUH12</b> | φ12    |
| <b>N4KB2-2NPUH10</b> | φ10    |
| <b>N4KB2-2NPUH8</b>  | φ 8    |

## E Exhaust block (NR)



| Model No.            | R port |
|----------------------|--------|
| <b>N4KB2-2NRSH12</b> | φ12    |
| <b>N4KB2-2NRSH10</b> | φ10    |
| <b>N4KB2-2NRSH8</b>  | φ 8    |



| Model No.            | R port |
|----------------------|--------|
| <b>N4KB2-2NRUH12</b> | φ12    |
| <b>N4KB2-2NRUH10</b> | φ10    |
| <b>N4KB2-2NRUH8</b>  | φ 8    |

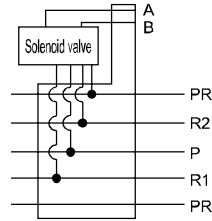
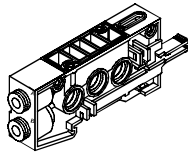


# MN4KB2 Series

Block manifold; block

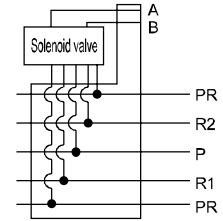
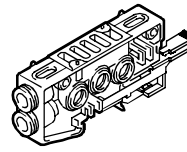
## F Discrete valve block (NS)

● For N4KB210



| Model No.      | A/B port |
|----------------|----------|
| N4KB2-2NS1SH10 | φ10      |
| N4KB2-2NS1SH8  | φ 8      |
| N4KB2-2NS1SH6  | φ 6      |

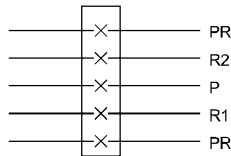
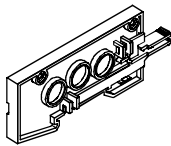
● N4KB220 to N4KB250



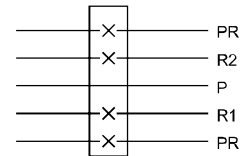
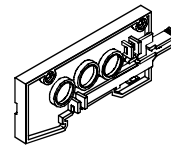
| Model No.      | A/B port |
|----------------|----------|
| N4KB2-2NS2SH10 | φ10      |
| N4KB2-2NS2SH8  | φ 8      |
| N4KB2-2NS2SH6  | φ 6      |

● As the NS is dedicated for each solenoid position (A), exchange the NS when changing the solenoid positions.

## G Partition block (NC)



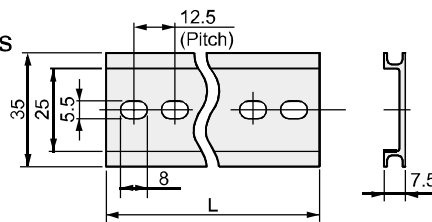
| Model No.  | Content             |
|------------|---------------------|
| N4KB2-2NC1 | All passages closed |



| Model No.  | Content                 |
|------------|-------------------------|
| N4KB2-2NC2 | Exhaust passages closed |

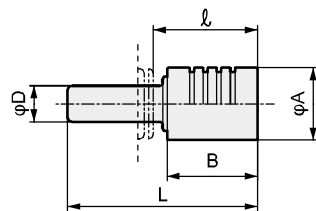
## H Related products

● Mounting rail



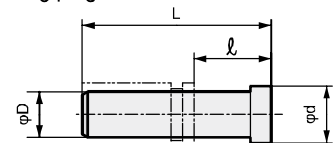
| Model No. | L    |
|-----------|------|
| BAA 500   | 500  |
| BAA1000   | 1000 |

● Silencer



| Model No. | D   | L  | ℓ    | B  | A  |
|-----------|-----|----|------|----|----|
| SLW-H8    | φ 8 | 42 | 23   | 20 | 16 |
| SLW-H10   | φ10 | 53 | 31.5 | 27 | 20 |
| SLW-H12   | φ12 | 66 | 43   | 37 | 25 |

● Blanking plug



| Model No. | D   | L  | ℓ    | d  |
|-----------|-----|----|------|----|
| GWP6-B    | φ 6 | 29 | 11.5 | 8  |
| GWP8-B    | φ 8 | 33 | 14   | 10 |
| GWP10-B   | φ10 | 40 | 18.5 | 12 |
| GWP12-B   | φ12 | 43 | 20   | 14 |

● New urethane tube

NU- 06

● Soft nylon tube

F-15 06

● Urethane tube

U-95 06

A Compatible tube O.D. size

| 06 | φ 6 |
|----|-----|
| 08 | φ 8 |
| 10 | φ10 |
| 12 | φ12 |

4GA/B  
M4GA/B  
MN4GA/B  
4GA/B (mastr)  
4GD/E  
M4GD/E  
MN4GD/E  
4GA4/B4  
MN3E  
MN4E  
W4GA/B2  
W4GB4  
4TB  
4L2-4/  
LMF0  
MN3S0  
MN4S0  
4SA/B0  
4KA/B  
4KA/B (mastr)  
4F  
4F (mastr)  
PV5G  
GMF  
PV5  
GMF  
PV5S-0  
3QR  
3QB  
MV3QR  
3MA/B0  
3PA/B  
P/M/B  
NP/NAP/  
NVP  
4F\*0EX  
4F\*0E  
HNV  
HSV  
2QV  
3QV  
SKH  
PCD  
Silencer  
TotAirSys  
(Total Air)  
TotAirSys  
(Gamma)  
Ending

|                          |
|--------------------------|
| 4GA/B                    |
| M4GA/B                   |
| MN4GA/B                  |
| 4GA/B (mastr)            |
| 4GD/E                    |
| M4GD/E                   |
| MN4GD/E                  |
| 4GA4/B4                  |
| MN3E<br>MN4E             |
| W4GA/B2                  |
| W4GB4                    |
| 4TB                      |
| 4L2-4/<br>LMF0           |
| MN3S0<br>MN4S0           |
| 4SA/B0                   |
| 4KA/B                    |
| 4KA/B (mastr)            |
| 4F                       |
| 4F (mastr)               |
| PV5G<br>GMF              |
| PV5<br>GMF               |
| PV5S-0                   |
| 3QR<br>3QB               |
| MV3QR                    |
| 3MA/B0                   |
| 3PA/B                    |
| P/M/B                    |
| NP/NAP/<br>NVP           |
| 4F*0EX                   |
| 4F*0E                    |
| HMV<br>HSV               |
| 2QV<br>3QV               |
| SKH                      |
| PCD                      |
| Silencer                 |
| TotAirSys<br>(Total Air) |
| TotAirSys<br>(Gamma)     |
| Ending                   |

### How to disassemble/assemble

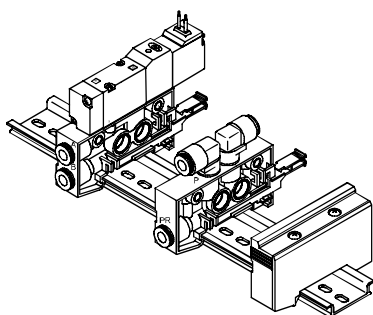


### CAUTION:

Be sure to turn power OFF and release pressure before increasing or decreasing the number of manifold stations.

#### Assembling the block manifold

- (1) Fix the DIN rail.
- (2) Mount the necessary number of stations of end blocks, supply and exhaust blocks, and valve blocks in order on the rail and connect between the blocks with the connecting key.
- (3) Fasten the screws on the end blocks on both sides and fix onto the rail.
- (4) Mount the solenoid valve on the valve block. (The solenoid valve is mounted on the valve block at shipment)
- (5) Perform piping of tubes and wiring to complete the task.

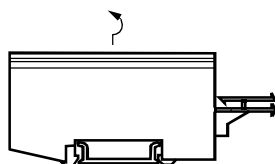


#### Mounting the end block

- (1) Upon confirming that the mounting screws have been loosened, press from the top and hook the movable claws onto the rail.
- (2) Lift the block to confirm that the claws have been secured.
- (3) After mounting all of the blocks, fasten with the two screws. The appropriate tightening torque is 1.4 N·m.

#### Removing the end block

- (1) Loosen the screws 6 or 7 turns to pinch and pull out the connecting key.
- (2) Shift the end block by 4 mm or more and pull in the direction of the arrow in the following drawing to remove.

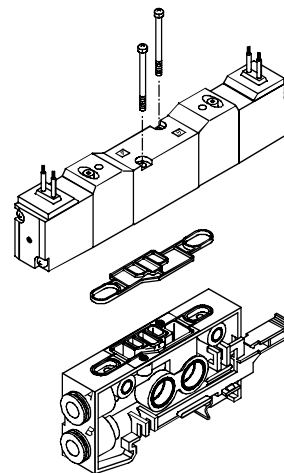


#### Mounting the supply and exhaust block and valve block

- (1) Hook the fixation claws on the rail first and press down on the movable claws from the top.
- (2) Slide until there are no gaps between the blocks and push in the connecting key.

#### Mounting the solenoid valve

- (1) Fit the dedicated gasket in the valve block.
- (2) Fasten the solenoid valve with 2 screws. The appropriate tightening torque is 0.32 N·m for N4KB1 and 0.6 N·m for N4KB2.



#### Removing the supply and exhaust block and valve block

- (1) Remove the end block.
- (2) Pinch and pull out the connecting key.
- (3) Shift the blocks by 4 mm or more and then pull up on the side with the movable claws to remove.

|                          |
|--------------------------|
| 4GA/B                    |
| M4GA/B                   |
| MN4GA/B                  |
| 4GA/B<br>(mastr)         |
| 4GD/E                    |
| M4GD/E                   |
| MN4GD/E                  |
| 4GA4/B4                  |
| MN3E<br>MN4E             |
| W4GA/B2                  |
| W4GB4                    |
| 4TB                      |
| 4L2-4/<br>LMF0           |
| MN3S0<br>MN4S0           |
| 4SA/B0                   |
| 4KA/B                    |
| 4KA/B<br>(mastr)         |
| 4F                       |
| 4F<br>(mastr)            |
| PV5G<br>GMF              |
| PV5<br>GMF               |
| PV5S-0                   |
| 3QR<br>3QB               |
| MV3QR                    |
| 3MA/B0                   |
| 3PA/B                    |
| P/M/B                    |
| NP/NAP/<br>NVP           |
| 4F*0EX                   |
| 4F*0E                    |
| HMV<br>HSV               |
| 2QV<br>3QV               |
| SKH                      |
| PCD                      |
| Silencer                 |
| TotAirSys<br>(Total Air) |
| TotAirSys<br>(Gamma)     |
| Ending                   |

# MN4KB1/2 Series

## How to fill out block manifold specifications sheet

### ● Manifold model No. (example)

**MN4KB1 1 0A - HX - M1 C2 - 7 - 100 VAC**

B Solenoid valve
C Port size
D Manual position
E Electrical connections
F Other options
G Solenoid valve station No.2 to 25
H Voltage

| Part name                                     | Model No.         | Installation position No. |                       |                       |                       |   |                       |                       |                       |   |                       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | Quantity                                                                                            |
|-----------------------------------------------|-------------------|---------------------------|-----------------------|-----------------------|-----------------------|---|-----------------------|-----------------------|-----------------------|---|-----------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----------------------------------------------------------------------------------------------------|
|                                               |                   | 1                         | 2                     | 3                     | 4                     | 5 | 6                     | 7                     | 8                     | 9 | 10                    | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 |                                                                                                     |
| End block (1)                                 | NE1               | <input type="radio"/>     |                       |                       |                       |   |                       |                       |                       |   |                       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1                                                                                                   |
| End block (2)                                 | NE2               |                           |                       |                       |                       |   |                       |                       |                       |   | <input type="radio"/> |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1                                                                                                   |
| Supply and exhaust block                      | NQSH : 8          | <input type="radio"/>     |                       |                       |                       |   |                       |                       |                       |   |                       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 1                                                                                                   |
|                                               | NQUH              |                           |                       |                       |                       |   |                       |                       |                       |   |                       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                                                                                     |
| Supply block                                  | NPSH              |                           |                       |                       |                       |   |                       |                       |                       |   |                       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                                                                                     |
|                                               | NPUH              |                           |                       |                       |                       |   |                       |                       |                       |   |                       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                                                                                     |
| Exhaust block                                 | NRSH              |                           |                       |                       |                       |   |                       |                       |                       |   |                       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                                                                                     |
|                                               | NRUH              |                           |                       |                       |                       |   |                       |                       |                       |   |                       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                                                                                     |
| Valve block with solenoid valve               | N4KB1: 1 "0A" H 4 |                           | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |   |                       |                       |                       |   |                       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 4                                                                                                   |
|                                               | N4KB1: 1 "0A" H 6 |                           |                       |                       |                       |   | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |   |                       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | 3                                                                                                   |
|                                               |                   |                           |                       |                       |                       |   |                       |                       |                       |   |                       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                                                                                     |
|                                               |                   |                           |                       |                       |                       |   |                       |                       |                       |   |                       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                                                                                     |
| Partition block (1) (all passages closed)     | NC1               |                           |                       |                       |                       |   |                       |                       |                       |   |                       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                                                                                     |
| Partition block (2) (exhaust passages closed) | NC2               |                           |                       |                       |                       |   |                       |                       |                       |   |                       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                                                                                     |
| Silencer (for φ6 push-in)                     | SLW-H6            |                           |                       |                       |                       |   |                       |                       |                       |   |                       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | List the number of units to be used in the field on the left                                        |
| Silencer (for φ8 push-in)                     | SLW-H8            |                           |                       |                       |                       |   |                       |                       |                       |   |                       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                                                                                     |
| Plug (for φ4 push-in)                         | GWP4-B            |                           |                       |                       |                       |   |                       |                       |                       |   |                       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                                                                                     |
| Plug (for φ6 push-in)                         | GWP6-B            |                           |                       |                       |                       |   |                       |                       |                       |   |                       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | List the number of units to be used in the field on the left                                        |
| Plug (for φ8 push-in)                         | GWP8-B            |                           |                       |                       |                       |   |                       |                       |                       |   |                       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |                                                                                                     |
| Mounting rail length                          | L <sub>2</sub> =  |                           |                       |                       |                       |   |                       |                       |                       |   |                       |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    | Fill in L <sub>2</sub> from the next page when a length other than the standard length is required. |

\* A simplified circuit diagram for the above specification example is shown on the next page. Use for reference.

### Preparing manifold specifications sheet

- Complete from the left end, with the piping port facing forward.  
(Write the block model numbers and positions you determined referring to the block configurations (pages 1310 to 1315).)
- Write the total number of blocks specified in the quantity field at the table far right.
- Indicate the mounting rail length.  
(Fill in only when a length other than the standard length is required.)
- As there are manifold specifications sheets for each of the various series, fill in the form for the corresponding specifications.
  - MN4KB1 ..... page 1320
  - MN4KB2 ..... page 1321

# MN4KB1/2 Series

4GA/B

M4GA/B

MN4GA/B

4GA/B (mastr)

4GD/E

M4GD/E

MN4GD/E

4GA4/B4

MN3E

MN4E

W4GA/B2

W4GB4

4TB

4L2-4/

LMF0

MN3S0

MN4S0

4SA/B0

4KA/B

4KA/B (mastr)

4F

4F (mastr)

PV5G

GMF

PV5

GMF

PV5S-0

3QR

3QB

MV3QR

3MA/B0

3PA/B

P/M/B

NP/NAP/

NVP

4F\*0EX

4F\*0E

HNV

HSV

2QV

3QV

SKH

PCD

Silencer

TotAirSys

(Total Air)

TotAirSys

(Gamma)

Ending

## How to determine the length of the manifold

### ● How to calculate the manifold length

$$\text{Manifold length (L}_1\text{)} = (\text{A} \times n) + (\text{B} \times m) + (\text{C} \times l) + 40$$

Valve block    Supply and exhaust block    Partition block

$$\text{Mounting rail length (L}_2\text{)} = L_1' \times 12.5$$

$$L_2' = \frac{L_1 + 40}{12.5} \rightarrow \text{round up to integer}$$

$$\text{Rail mounting pitch (L}_3\text{)} = L_2 - 12.5$$

n, m and l show usage per block.

n: valve blocks    m: supply and exhaust blocks    l: partition blocks

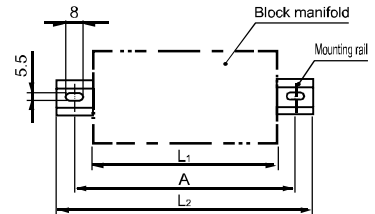
A, B, and C indicate the length (width) of each block.

Block length (width) dimensions table (mm)

|   |                          | MN4KB1 | MN4KB2 |
|---|--------------------------|--------|--------|
| A | Valve block              | 16     | 19     |
| B | Supply and exhaust block | 16     | 20     |
| C | Partition block          | 8      | 8      |

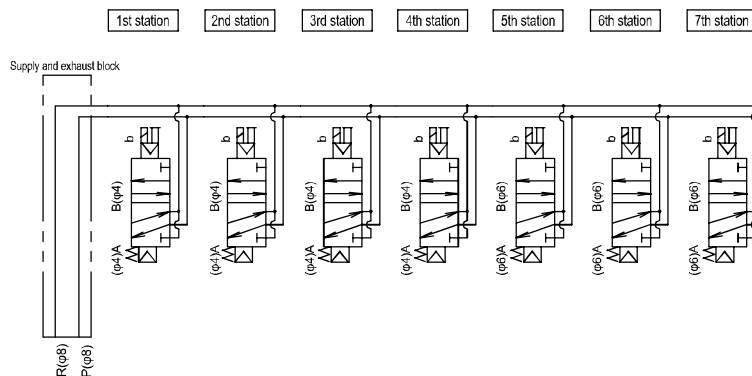
| L <sub>1</sub> : Manifold length | L <sub>2</sub> : Rail length | A: Mounting pitch | L <sub>1</sub> : Manifold length | L <sub>2</sub> : Rail length | A: Mounting pitch |
|----------------------------------|------------------------------|-------------------|----------------------------------|------------------------------|-------------------|
| 72.5 or less                     | 112.5                        | 110               | Over 285                         | 297.5 or less                | 337.5             |
| Over 72.5                        | 85 or less                   | 125               | 297.5                            | 310                          | 350               |
| 85                               | 97.5                         | 137.5             | 310                              | 322.5                        | 362.5             |
| 97.5                             | 110                          | 150               | 322.5                            | 335                          | 375               |
| 110                              | 122.5                        | 162.5             | 335                              | 347.5                        | 387.5             |
| 122.5                            | 135                          | 175               | 347.5                            | 360                          | 400               |
| 135                              | 147.5                        | 187.5             | 360                              | 372.5                        | 412.5             |
| 147.5                            | 160                          | 200               | 372.5                            | 385                          | 425               |
| 160                              | 172.5                        | 212.5             | 385                              | 397.5                        | 437.5             |
| 172.5                            | 185                          | 225               | 397.5                            | 410                          | 450               |
| 185                              | 197.5                        | 237.5             | 410                              | 422.5                        | 462.5             |
| 197.5                            | 210                          | 250               | 422.5                            | 435                          | 475               |
| 210                              | 222.5                        | 262.5             | 435                              | 447.5                        | 487.5             |
| 222.5                            | 235                          | 275               | 447.5                            | 460                          | 500               |
| 235                              | 247.5                        | 287.5             | 460                              | 472.5                        | 512.5             |
| 247.5                            | 260                          | 300               | 472.5                            | 485                          | 525               |
| 260                              | 272.5                        | 312.5             | 485                              | 497.5                        | 537.5             |
| 272.5                            | 285                          | 325               | 497.5                            | 510 *                        | 550               |

\* If the length exceeds 510, calculate using a multiple of 12.5.



### Reference circuit diagram

The simplified circuit diagram of the manifold model No. (example) on the previous page is shown below.



- The manifold station numbers and installation position numbers are set in order from the left with the piping port facing forward. (The supply and exhaust blocks, partition block, and end block are not included in the manifold station No.)
- Select the model No. from block configurations (pages 1310 to 1315) and the page for model numbers of each of the specifications.

4GA/B

M4GA/B

MN4GA/B

4GA/B (mastr)

4GD/E

M4GD/E

MN4GD/E

4GA4/B4

MN3E  
MN4E

W4GA/B2

W4GB4

4TB

4L2-4/  
LMF0

MN3S0  
MN4S0

4SA/B0

4KA/B

4KA/B (mastr)

4F

4F (mastr)

PV5G  
GMF

PV5  
GMF

PV5S-0

3QR  
3QB

MV3QR

3MA/B0

3PA/B

P/M/B

NP/NAP/  
NVP

4F\*0EX

4F\*0E

HMV  
HSV

2QV  
3QV

SKH

PCD

Silencer

TotAirSys  
(Total Air)

TotAirSys  
(Gamma)

Ending

# 4KB1 block manifold specifications sheet

Issued / /

Your company name

Contact

Order No.

● Contact

● Quantity

set(s)

● Delivery date /

Slip No.

Order No.

● Manifold model No.

MN4KB1 - - - - -

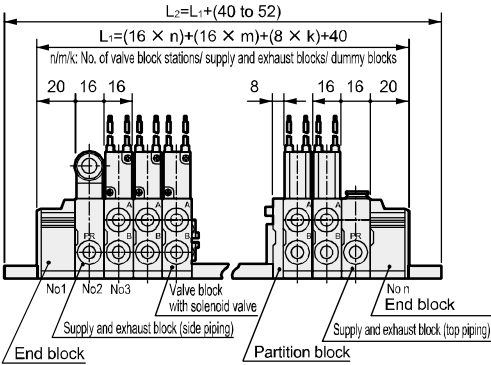
Solenoid valve  
Port size  
Manual override  
Electrical connections  
Other options  
Solenoid valve station No. 2 to 25  
Voltage

| B Solenoid position |                             | C Port size |                     |
|---------------------|-----------------------------|-------------|---------------------|
| Code                | Content                     | Code        | Content             |
| 1                   | 2-position single           | H4          | φ4 push-in fitting  |
| 2                   | 2-position double           | H6          | φ6 push-in fitting  |
| 3                   | 3-position all ports closed | H8          | φ8 push-in fitting  |
| 4                   | 3-position A/B/R connection | HX          | Mix/push-in fitting |
| 5                   | 3-position P/A/B connection |             |                     |
| 8                   | Mix manifold                |             |                     |

| D Manual override |                         |
|-------------------|-------------------------|
| Code              | Content                 |
| Blank             | No lock manual override |
| M1                | Locking manual override |

| E Electrical connections |                                                                                   |                  | F Other options |                                                    |
|--------------------------|-----------------------------------------------------------------------------------|------------------|-----------------|----------------------------------------------------|
| Code                     | Content                                                                           | Lead wire length | Code            | Content                                            |
| Blank                    | Grommet lead wire                                                                 | 300 mm           | Blank           | None                                               |
| B                        | Compact terminal box                                                              | None             | S               | Surge suppressor attached (grommet lead wire only) |
| L                        | Compact terminal box (DC voltage, with indicator lamp, surge suppressor equipped) | None             |                 |                                                    |
| LS                       | Compact terminal box (with surge suppressor and indicator lamp)                   | None             |                 |                                                    |
| C                        | C type connector                                                                  | 300 mm           |                 |                                                    |
| C00                      |                                                                                   | 500 mm           |                 |                                                    |
| C01                      |                                                                                   | 1000 mm          |                 |                                                    |
| C02                      |                                                                                   | 2000 mm          |                 |                                                    |
| C03                      |                                                                                   | 3000 mm          |                 |                                                    |
| C1                       | C type connector (with surge suppressor/lamp)                                     | None             |                 |                                                    |
| C2                       |                                                                                   | 300 mm           |                 |                                                    |
| C20                      |                                                                                   | 500 mm           |                 |                                                    |
| C21                      |                                                                                   | 1000 mm          |                 |                                                    |
| C22                      |                                                                                   | 2000 mm          |                 |                                                    |
| C23                      | D type connector                                                                  | 3000 mm          |                 |                                                    |
| C3                       |                                                                                   | None             |                 |                                                    |
| D                        |                                                                                   | 300 mm           |                 |                                                    |
| D00                      |                                                                                   | 500 mm           |                 |                                                    |
| D01                      |                                                                                   | 1000 mm          |                 |                                                    |
| D02                      | D type connector (with surge suppressor/lamp)                                     | 2000 mm          |                 |                                                    |
| D03                      |                                                                                   | 3000 mm          |                 |                                                    |
| D1                       |                                                                                   | None             |                 |                                                    |
| D2                       |                                                                                   | 300 mm           |                 |                                                    |
| D20                      |                                                                                   | 500 mm           |                 |                                                    |
| D21                      |                                                                                   | 1000 mm          |                 |                                                    |
| D22                      |                                                                                   | 2000 mm          |                 |                                                    |
| D23                      |                                                                                   | 3000 mm          |                 |                                                    |
| D3                       |                                                                                   | None             |                 |                                                    |

| H Voltage |                 | Option<br>Standard |
|-----------|-----------------|--------------------|
| Code      | Content         |                    |
| AC100V    | 100 VAC50/60 Hz |                    |
| AC200V    | 200 VAC50/60 Hz |                    |
| DC24V     | 24 VDC          |                    |
| DC12V     | 12 VDC          |                    |
| AC110V    | 110 VAC50/60 Hz | Option             |
| AC220V    | 220 VAC50/60 Hz |                    |



· When filling in this field, select the model No. from "Block configurations" (pages 1310 to 1313) and specify the details in the space.

Specify the installation position numbers from the left side when viewing the figure above right. Mark instructions with a circle inside.

| Part name                                                     | (Page)      | Model No. | Installation position No. |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | Quantity |
|---------------------------------------------------------------|-------------|-----------|---------------------------|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----------|
|                                                               |             |           | 1                         | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24       |
| End block (1)                                                 | (Page 1312) | NE1       | ○                         |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |          |
| End block (2)                                                 | (Page 1312) | NE2       |                           |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |          |
| Supply and exhaust block                                      | (Page 1312) | NQSH      |                           |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |          |
|                                                               |             | NQUH      |                           |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |          |
| Supply block                                                  | (Page 1312) | NPSH      |                           |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |          |
|                                                               |             | NPUH      |                           |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |          |
| Exhaust block                                                 | (Page 1312) | NRSH      |                           |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |          |
|                                                               |             | NRUH      |                           |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |          |
| Valve block with solenoid valve                               | (Page 1311) | N4KB1     |                           |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |          |
|                                                               |             | N4KB1     |                           |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |          |
|                                                               |             |           |                           |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |          |
|                                                               |             |           |                           |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |          |
| Partition block (1) (all passages closed)                     | (Page 1313) | NC1       |                           |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |          |
| Partition block (2) (exhaust passages closed)                 | (Page 1313) | NC2       |                           |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |          |
| Silencer (for φ6 push-in)                                     | (Page 1313) | SLW-H6    |                           |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |          |
| Silencer (for φ8 push-in)                                     | (Page 1313) | SLW-H8    |                           |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |          |
| Plug (for φ4 push-in)                                         | (Page 1313) | GWP4-B    |                           |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |          |
| Plug (for φ6 push-in)                                         | (Page 1313) | GWP6-B    |                           |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |          |
| Plug (for φ8 push-in)                                         | (Page 1313) | GWP8-B    |                           |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |          |
| Mounting rail length (How to determine the length: page 1319) |             | L2=       |                           |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |          |

Mark instructions inside

# 4KB2 block manifold specifications sheet

Issued      /      /

Your company name

Contact

Order No.

● Contact

● Quantity

set(s)

● Delivery date      /

|          |           |
|----------|-----------|
| Slip No. | Order No. |
|----------|-----------|

● Manifold model No.

## MN4KB2

|                      |                      |                      |                      |                      |                      |                      |                      |
|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|

B Solenoid valve

C Port size

D

E Electrical connections

F

G Solenoid valve station

No. 2 to 25

H

Voltage

Solenoid position

Manual override

Other options

Voltage

| B Solenoid position |                             | C Port size |                     |
|---------------------|-----------------------------|-------------|---------------------|
| Code                | Content                     | Code        | Content             |
| 1                   | 2-position single           | H6          | φ6 Push-in fitting  |
| 2                   | 2-position double           | H8          | φ8 Push-in fitting  |
| 3                   | 3-position all ports closed | H10         | φ10 Push-in fitting |
| 4                   | 3-position A/B/R connection | HX          | Mix/push-in fitting |
| 5                   | 3-position P/A/B connection |             |                     |
| 8                   | Mix manifold                |             |                     |

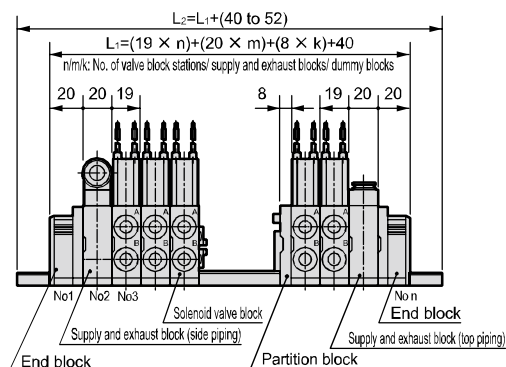
| D Manual override |                         |
|-------------------|-------------------------|
| Code              | Content                 |
| Blank             | No lock manual override |
| M1                | Locking manual override |

| E Electrical connections |                                                                 |                  |
|--------------------------|-----------------------------------------------------------------|------------------|
| Code                     | Content                                                         | Lead wire length |
| Blank                    | Grommet lead wire                                               | 300 mm           |
| B                        | Compact terminal box                                            | None             |
| L                        | Compact terminal box (with indicator lamp)                      | None             |
| LS                       | Compact terminal box (with surge suppressor and indicator lamp) | None             |
| C                        | C type connector                                                | 300 mm           |
| C00                      |                                                                 | 500 mm           |
| C01                      |                                                                 | 1000 mm          |
| C02                      |                                                                 | 2000 mm          |
| C03                      |                                                                 | 3000 mm          |
| C1                       | C type connector (with surge suppressor/ lamp)                  | None             |
| C2                       |                                                                 | 300 mm           |
| C20                      |                                                                 | 500 mm           |
| C21                      |                                                                 | 1000 mm          |
| C22                      |                                                                 | 2000 mm          |
| C23                      | D type connector                                                | None             |
| C3                       |                                                                 | 300 mm           |
| D                        |                                                                 | 500 mm           |
| D00                      |                                                                 | 1000 mm          |
| D01                      |                                                                 | 2000 mm          |
| D02                      | D type connector (with surge suppressor/ lamp)                  | 3000 mm          |
| D03                      |                                                                 | None             |
| D1                       |                                                                 | 300 mm           |
| D2                       |                                                                 | 500 mm           |
| D20                      |                                                                 | 1000 mm          |
| D21                      | D type connector (with surge suppressor/ lamp)                  | 2000 mm          |
| D22                      |                                                                 | 3000 mm          |
| D23                      |                                                                 | None             |

| F Other options |                                                    |
|-----------------|----------------------------------------------------|
| Code            | Content                                            |
| Blank           | None                                               |
| S               | Surge suppressor attached (grommet lead wire only) |

| H Voltage |                 |
|-----------|-----------------|
| Code      | Content         |
| AC100V    | 100 VAC50/60 Hz |
| AC200V    | 200 VAC50/60 Hz |
| DC24V     | 24 VDC          |
| DC12V     | 12 VDC          |
| AC110V    | 110 VAC50/60 Hz |
| AC220V    | 220 VAC50/60 Hz |

Standard Option



\*When filling in this field, select the model No. from "Block configurations" (pages 1310, 1311, 1314, 1315) and specify the details in the space.

Specify the installation position numbers from the left side when viewing the figure above right. Mark instructions with a circle inside.

| Part name                                                     | (Page)      | Model No. | Installation position No. |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    | Quantity |
|---------------------------------------------------------------|-------------|-----------|---------------------------|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----------|
|                                                               |             |           | 1                         | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24       |
| End block (1)                                                 | (Page 1314) | 2NE1      | ○                         |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |          |
| End block (2)                                                 | (Page 1314) | 2NE2      |                           |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |          |
| Supply and exhaust block                                      | (Page 1314) | 2NQSH     |                           |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |          |
|                                                               |             | 2NQUH     |                           |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |          |
| Supply block                                                  | (Page 1314) | 2NPSH     |                           |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |          |
|                                                               |             | 2NPUH     |                           |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |          |
| Exhaust block                                                 | (Page 1314) | 2NRSH     |                           |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |          |
|                                                               |             | 2NRUH     |                           |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |          |
| Valve block with solenoid valve                               | (Page 1311) | N4KB2     | ○                         |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |          |
|                                                               |             | N4KB2     | ○                         |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |          |
| Partition block (1) (all passages closed)                     | (Page 1315) | 2NC1      |                           |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |          |
| Partition block (2) (exhaust passages closed)                 | (Page 1315) | 2NC2      |                           |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |          |
| Silencer (for φ8 push-in)                                     | (Page 1315) | SLW-H8    |                           |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |          |
| Silencer (for φ10 push-in)                                    | (Page 1315) | SLW-H10   |                           |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |          |
| Silencer (for φ12 push-in)                                    | (Page 1315) | SLW-H12   |                           |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |          |
| Plug (for φ6 push-in)                                         | (Page 1315) | GWP6-B    |                           |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |          |
| Plug (for φ8 push-in)                                         | (Page 1315) | GWP8-B    |                           |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |          |
| Plug (for φ10 push-in)                                        | (Page 1315) | GWP10-B   |                           |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |          |
| Plug (for φ12 push-in)                                        | (Page 1315) | GWP12-B   |                           |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |          |
| Mounting rail length (How to determine the length: page 1319) |             | L2=       |                           |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |          |

Mark instructions inside.

4GA/B

M4GA/B

MN4GA/B

4GA/B (mastr)

4GD/E

M4GD/E

MN4GD/E

4GA4/B4

MN3E

MN4E

W4GA/B2

W4GB4

4TB

4L2-4/

LMF0

MN3S0

MN4S0

4SA/B0

4KA/B

4KA/B (mastr)

4F

4F (mastr)

PV5G

GMF

PV5

GMF

PV5S-0

3QR

3QB

MV3QR

3MA/B0

3PA/B

P/M/B

NP/NAP/

NVP

4F\*0EX

4F\*0E

H MV

HSV

2QV

3QV

SKH

PCD

Silencer

TotAirSys

(Total Air)

TotAirSys

(Gamma)

Ending



# 3KA/4KA/4KB Series

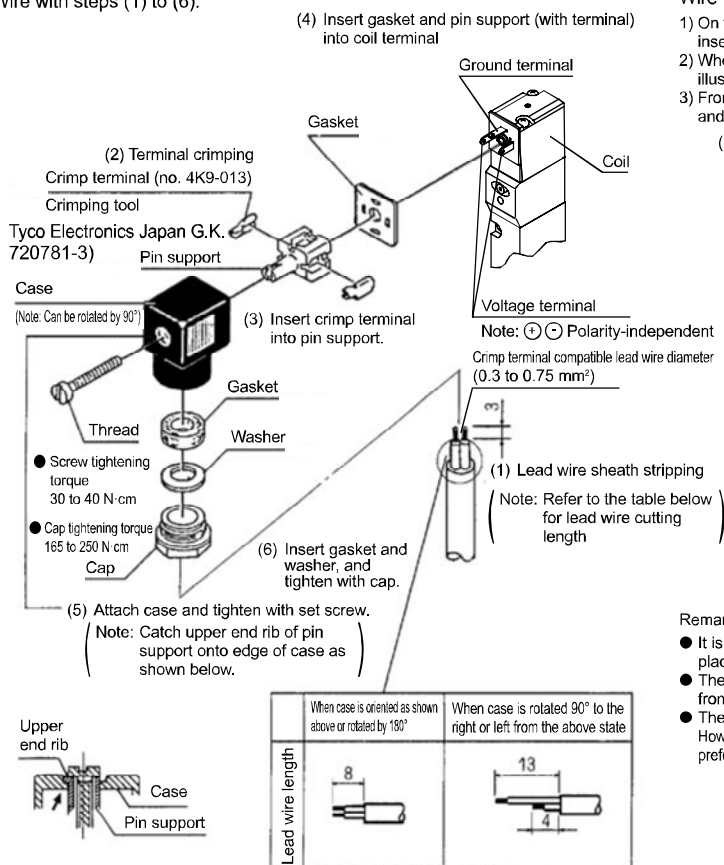
## Technical data ① Terminal box wiring/connector connection method

### Terminal box wiring/connector connection method

Refer to the figures below when wiring the compact terminal box or the C- and D-connectors.

#### Compact terminal box wiring method (compatible model: 3KA1/4KA<sup>A</sup> 1/4KB<sup>A</sup> 2)

Wire with steps (1) to (6).

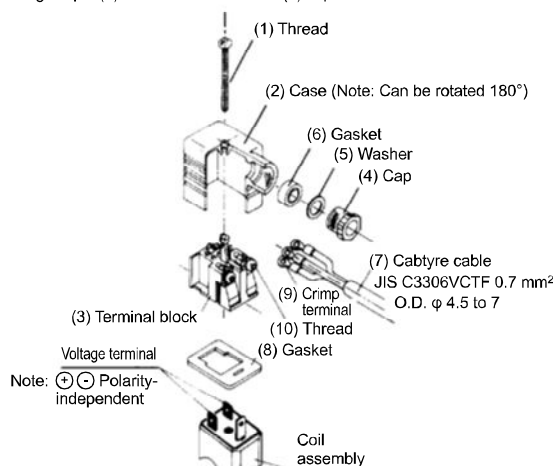


#### Terminal box wiring method (compatible model: 4KA<sup>A</sup> 3/4KB<sup>A</sup> 4)

Wire the terminal box with steps (1) to (3) referring to the figure below.

- On the cabtyre cable (7), put the cap (4), washer (5) and gasket (6) in the order, and insert this into the case (2).
- When using a crimp terminal, prepare the cabtyre cable (7) at an appropriate length as illustrated and crimp the crimp terminal (9) on the end.
- From the terminal block (3), remove the screw (10), position the crimp terminal (9) (loosen and crimp when using a Y type terminal), and fasten the screw (10) again.

(Note) Tightening torque (1) screws 50 to 60 N·cm (4) cap 250 to 375 N·cm



Remarks:

- It is possible to wire the terminals with bare wires. In this case, loosen the screw (10), place the lead wire in the bracket, and fasten the screw again.
- The orientation of the cable lead out port can be changed by pulling out the terminal block from the case, rotating it by 180°, and placing the block back into the case.
- The crimp terminals (9) listed in the table below can be used. However, since the terminals in the table below are bare terminals, insulation treatment should be preformed for them. Or use the covered terminals equivalent to the terminals listed in the table below.

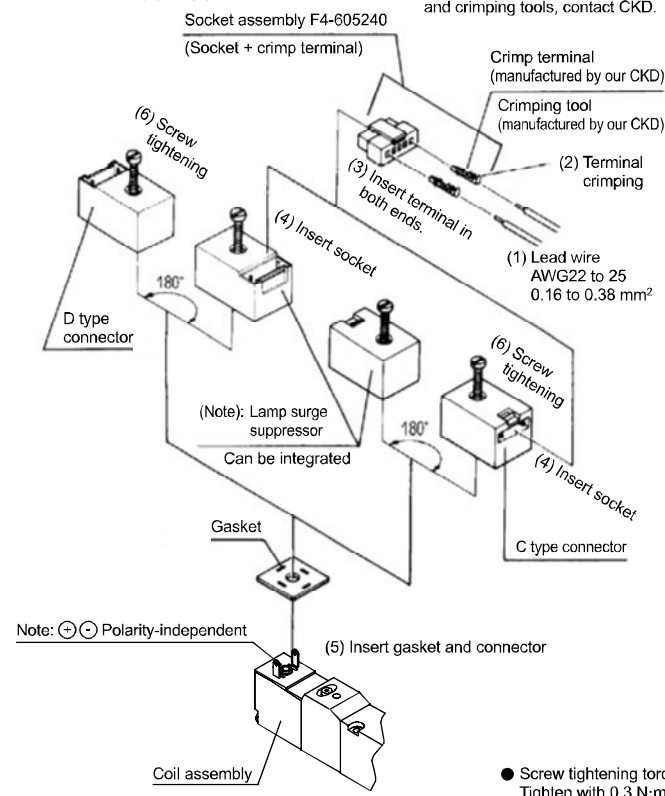
| Nichifu Terminal Industries Co., Ltd. |            |  | Fuji Terminal Industry Co., Ltd. |             | J.S.T. Mfg Co., Ltd. |            |
|---------------------------------------|------------|--|----------------------------------|-------------|----------------------|------------|
| O terminal                            | Y terminal |  | O terminal                       | Y terminal  | O terminal           | Y terminal |
| 0.3-3                                 | 0.3-3      |  | 1.25-3                           | 1.25-YAS3   | 0.5-3                | 0.25-B3A   |
| 1.25-3                                | 1.25Y-3    |  | 1.25Y-3                          | 1.25-YAS3.5 | 1.25-3               | 1.25-C3A   |
| 1.25-3S                               | 1.25Y-3.5  |  |                                  |             |                      |            |

When using a product of a different manufacturer, be sure to use an equivalent item.

#### C- and D-connector wiring method (compatible model: 3KA1/4KA<sup>A</sup> Series)

Wire with steps (1) to (6).

\* For the details of crimp terminals and crimping tools, contact CKD.



#### Compact terminal box with lamp wiring method (compatible model: 3KA1/4KA<sup>A</sup> 1/4KB<sup>A</sup> 2)

Wire with steps (1) to (5).

(3) Insert gasket and terminal block into voltage terminal and ground terminal

