5 Port Solenoid Valve
SV1000/2000/3000/4000 Series

Connector Type Manifold
The use of multi-pin connectors to replace wiring inside manifold blocks provides flexibility when adding stations or changing manifold configuration.

The SV Series employs a multi-connector instead of the current lead wires for internal. By connecting each block with a connector, changes to manifold stations are greatly simplified.

**Connector wiring diagram**
For both serial and parallel wiring, additional manifold blocks are sequentially assigned pins on the connector. This makes it completely unnecessary to disassemble the connector unit.

**Cassette base type manifold**
(For SV1000/2000)
Cassette base type manifolds offer the ultimate in flexibility. Manifold sections can be added using a simple release mechanism.

**Tie-rod base manifold**
(For SV1000/2000/3000/4000)
Current tie-rod base type manifolds are also available. 34 pins connector allows up to 16 stations with double solenoids. (Refer to the tie-rod base manifold exploded view on page 116.)

**A relay output module control of devices up is available for to 110 VAC, 3 A.**
The standard product is CE-compliant and UL-standard.

EX500 Series: Gateway-type, serial transmission system
- IP67 compliant (Gateway unit and input manifold are compliant with IP65.)
- No. of input/output point: 128 points (Output 64 points, Input 64 points)
- Controls up to 4 branches with 32 I/O per branch
- A single cable from the gateway provides both signal and power for each branch, eliminating the need for separate power connections for each manifold.

EX250 Series: Integrated-type (for I/O), serial transmission system
- IP67 compliant (compliant with IP40.)
- No. of input/output point: 64 points (Output 32 points, Input 32 points)
- Double solenoid allows up to 16 stations (up to 32 solenoids).

Interface regulator SV1000, 2000, 3000, 4000 series
- P port regulation, A port regulation and B port regulation are selectable, depending on an application.
  Able to set the pressure arbitrarily for each station of the manifold just by inserting between manifold base and valve.

Increased moisture and dust resistance.
- Enclosure against foreign matters and water is conforming to IP67 *.
  Can be used in an atmosphere where the valve or manifold is exposed by water, etc. directly.
  (* Based on IEC60529)
  (Refer to the catalog contents for details, as some types of connectors do not meet these standards.)

4 position dual 3 port valves available for the SV1000/2000 series
- Two 3 port valves built into a single valve body.
- A and B ports can be individually controlled.
- Three combinations are available: [N.C./N.C.], [N.O./N.O.], and [N.C./N.O.].
- Mixed mounting with 5 port valves is also possible.
- Labels are attached to indicate A and B side functions, using the same color as the manual override.

* External pilot specifications is not available for 4 position dual 3 port valves.
INDEX
SV Series Manifold Variations

Serial Wiring

Valve Manifold Common Specifications

EX500 Gateway Decentralized System 2
Manifold specifications
P. 22
IP67 compliant
Applicable series
Tie-rod base manifold
SV1000/SV2000/SV3000
• Number of output points: 32 points • Connected to the SI unit of the EX500

EX500 Gateway Decentralized System
IP67 compliant
Applicable series
Cassette base manifold
SV1000/SV2000
Tie-rod base manifold
SV1000/SV2000/SV3000/SV4000
• Number of output points: 16 points • Connected to the SI unit of the EX500

EX250 Integrated-type (For I/O) Serial Transmission System
IP67 (partly IP40) compliant
Applicable series
Tie-rod base manifold
SV1000/SV2000/SV3000
• Number of input/output points: Each 32 points

EX600 Integrated-type (For I/O) Serial Transmission System
IP67 compliant
Applicable series
Tie-rod base manifold
SV1000/SV2000/SV3000
• Digital input/output: Max. 144 inputs/144 outputs
• Analog input: Max. 16 channels
• Valve output: 32 outputs

EX260 Integrated-type (For Output) Serial Transmission System
IP67 (partly IP40) compliant
Applicable series
Tie-rod base manifold
SV1000/SV2000/SV3000
• Number of output points: 16 points

EX126 Integrated-type (For Output) Serial Transmission System
IP67 compliant
Applicable series
Tie-rod base manifold
SV1000/SV2000/SV3000
• Number of output points: 16, 32 points

Parallel Wiring

For Circular Connector
IP67 compliant
Applicable series
Cassette base manifold
SV1000/SV2000
Tie-rod base manifold
SV1000/SV2000/SV3000/SV4000
• Number of output points: 16 points

D-sub Connector
IP67 compliant
Applicable series
Cassette base manifold
SV1000/SV2000
Tie-rod base manifold
SV1000/SV2000/SV3000/SV4000
• Number of connectors: 26 pins

Flat Ribbon Cable Connector
Applicable series
Cassette base manifold
SV1000/SV2000
Tie-rod base manifold
SV1000/SV2000/SV3000/SV4000
• Number of connectors: 26, 20, 10 pins • With strain relief Conforming to MIL-C-83503

Flat Ribbon Cable PC Wiring
Applicable series
Cassette base manifold
SV1000/SV2000
Tie-rod base manifold
SV1000/SV2000/SV3000/SV4000
• Number of connectors: 26 pins • Conforming to MIL-C-83503

Manifold Exploded View/Manifold Options
P.112

Single Valve/Sub-plate [IP67 compliant]
P.128
IP67 compliant
Applicable series
SV1000/SV2000/SV3000/SV4000
• With waterproof M12 connector

Made to Order Specifications
P.136
Valve Manifold
Common Specifications
SV Series

## Cassette base manifold

- Changing the number of stations can be easily done by lever operation.

## Tie-rod base manifold

- 34 pins connector allows up to 16 stations with double solenoids.

### Manifold Specifications

<table>
<thead>
<tr>
<th>Applicable series</th>
<th>SV1000</th>
<th>SV2000</th>
<th>SV3000</th>
<th>SV4000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manifold type</td>
<td>Stacking type cassette base manifold</td>
<td>Tie-rod base manifold</td>
<td>Common SUP, EXH</td>
<td>Tie-rod base manifold</td>
</tr>
<tr>
<td>Valve stations (maximum)</td>
<td>18 stations</td>
<td>20 stations</td>
<td>20 stations</td>
<td>32 points</td>
</tr>
<tr>
<td>Port size</td>
<td>1(P), 3/5(E) port</td>
<td>C8, N9</td>
<td>C8, N9</td>
<td>C8, N9</td>
</tr>
<tr>
<td></td>
<td>4(A), 2(B) port</td>
<td>C3, C4, C6</td>
<td>C4, C6, C8</td>
<td>C4, C6, C8</td>
</tr>
</tbody>
</table>

### Flow Rate Characteristics

<table>
<thead>
<tr>
<th>Model</th>
<th>Port size</th>
<th>Flow rate characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1, 5, 3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(P, EA, EB)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4, 2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(A, B)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1−4/2 (P−A/B)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>C[dm³/(s·bar)]</td>
<td>b</td>
</tr>
<tr>
<td>SSV5V1-16</td>
<td>C8</td>
<td>0.89</td>
</tr>
<tr>
<td>SSV5V2-16</td>
<td>C10</td>
<td>2.3</td>
</tr>
</tbody>
</table>

Note: The value is for manifold base with 5 stations and individually operated 2 position type.

### Manifold Specifications

<table>
<thead>
<tr>
<th>Applicable series</th>
<th>SV1000</th>
<th>SV2000</th>
<th>SV3000</th>
<th>SV4000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manifold type</td>
<td>Tie-rod base manifold</td>
<td>Common SUP, EXH</td>
<td>Tie-rod base manifold</td>
<td>Tie-rod base manifold</td>
</tr>
<tr>
<td>Valve stations (maximum)</td>
<td>20 stations</td>
<td>20 stations</td>
<td>20 stations</td>
<td>32 points</td>
</tr>
<tr>
<td>Max. number of solenoids</td>
<td>18 points</td>
<td>20 points</td>
<td>26 points</td>
<td>32 points</td>
</tr>
<tr>
<td>Port size</td>
<td>1(P), 3/5(E) port</td>
<td>C8, N9</td>
<td>C10, N11</td>
<td>C12, N11, 03</td>
</tr>
<tr>
<td></td>
<td>4(A), 2(B) port</td>
<td>C3, C4, C6</td>
<td>C4, C6, C8</td>
<td>C4, C6, C8</td>
</tr>
</tbody>
</table>

### Flow Rate Characteristics

<table>
<thead>
<tr>
<th>Model</th>
<th>Port size</th>
<th>Flow rate characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1, 5, 3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(P, EA, EB)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4, 2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(A, B)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1−4/2 (P−A/B)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>C[dm³/(s·bar)]</td>
<td>b</td>
</tr>
<tr>
<td>SSV5V1-10</td>
<td>C8</td>
<td>0.98</td>
</tr>
<tr>
<td>SSV5V2-10</td>
<td>C10</td>
<td>2.1</td>
</tr>
<tr>
<td>SSV5V3-10</td>
<td>C12</td>
<td>4.2</td>
</tr>
</tbody>
</table>

Note: The value is for manifold base with 5 stations and individually operated 2 position type.

### Enclosure of Manifold Variations (Common for cassette base and tie-rod base)

<table>
<thead>
<tr>
<th>Series</th>
<th>Enclosure (Based on IEC60529)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EX500 (Gateway Decentralized System 2 (128 points)) Serial Transmission System</td>
<td>IP67 (Note 1)</td>
</tr>
<tr>
<td>EX500 (Gateway Decentralized System (64 points)) Serial Transmission System</td>
<td>IP67 (Note 2)</td>
</tr>
<tr>
<td>EX250 Serial Transmission System</td>
<td>IP67</td>
</tr>
<tr>
<td>EX600 Serial Transmission System</td>
<td>IP67</td>
</tr>
<tr>
<td>EX260 Serial Transmission System</td>
<td>IP67</td>
</tr>
<tr>
<td>EX126 Serial Transmission System</td>
<td>IP67</td>
</tr>
<tr>
<td>EX120 Serial Transmission System</td>
<td>IP20</td>
</tr>
<tr>
<td>Circular connector</td>
<td>IP67</td>
</tr>
<tr>
<td>D-sub connector</td>
<td>Dusttight (IP40)</td>
</tr>
<tr>
<td>Flat ribbon cable</td>
<td>Dusttight (IP40)</td>
</tr>
</tbody>
</table>

Note 1) Enclosure of a gateway unit is IP65.
Note 2) Enclosure of a gateway unit and input manifold is IP65.
SV Series Solenoid Valve Specifications

Symbol

<table>
<thead>
<tr>
<th>SV1000/2000/3000/4000</th>
<th>SV4000</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 position single solenoid (A4/2(B))</td>
<td>(A4/2(B))</td>
</tr>
<tr>
<td>2 position double solenoid (A4/2(B))</td>
<td>(A4/2(B))</td>
</tr>
</tbody>
</table>

SV1000/2000/3000

| 3 position closed center (A4/2(B)) | (A4/2(B)) |
| 3 position exhaust center (A4/2(B)) | (A4/2(B)) |
| 3 position pressure center (A4/2(B)) | (A4/2(B)) |

SV1000

| 4 position dual 3 port valve (N.C./N.C.) | 2 position single 4 position dual 3 port valve |
| 2 position double 3 position | (A4/2(B)) |
| | (A4/2(B)) |
| | (A4/2(B)) |

SV2000

| N.C./N.C. | 4 position dual 3 port valve |
| 2 position single 4 position dual 3 port valve |
| 2 position double 3 position | (A4/2(B)) |
| (A4/2(B)) |
| (A4/2(B)) |

Fluid

| Internal pilot Operating pressure range (MPa) | Air |
| Operating pressure range | 0.15 to 0.7 |
| 2 position single 4 position dual 3 port valve | 2 position double |
| 0.1 to 0.7 | 0.2 to 0.7 |
| 3 position | 0.2 to 0.7 |
| External pilot Operating pressure range (MPa) | -100 kPa to 0.7 |
| Operating pressure range | 2 position single, double 3 position |
| -100 kPa to 0.7 | 0.25 to 0.7 |

Ambient and fluid temperature (°C)

| Max. operating frequency (Hz) | -10 to 50 (No freezing,) |
| 2 position single, double 4 position dual 3 port valve | 5 |
| 3 position | 3 |

Manual override

| Symbol | Non-locking push type |
| Internally pilot | Push-turn locking slotted type |
| EXternal pilot | Common exhaust type for main and pilot valve |
| SV | Pilot valve individual exhaust |

Lubrication

| Not required |

Mounting orientation

| Not restricted |

Impact/Vibrational resistance (ms²)

| 150/30 |

Enclosure

| IP67 (Based on IEC60529) |

Coil rated voltage

| 24 VDC, 12 VDC |

Allowable voltage fluctuation

| ±10% of rated voltage |

Power consumption

| 0.6 (With indicator light: 0.65) |

Surge voltage suppressor

| Zener diode |

Indicator light

| LED |

Note) Weight of solenoid valve only.

Response Time

<table>
<thead>
<tr>
<th>Type of actuation</th>
<th>Response time (ms) (at the pressure of 0.5 MPa)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SV1000</td>
<td>SV2000</td>
</tr>
<tr>
<td>2 position single</td>
<td>11 or less</td>
</tr>
<tr>
<td>2 position double</td>
<td>10 or less</td>
</tr>
<tr>
<td>3 position</td>
<td>18 or less</td>
</tr>
<tr>
<td>4 position dual 3 port valve</td>
<td>15 or less</td>
</tr>
</tbody>
</table>

Note) Made to Order Specifications (For details, refer to page 136.)

SV Series Valve Manifold

Common Specifications

Made to Order Specifications

For details, refer to page 136.

* SV3000 and 4000 are not available with 4 position dual 3 port valve.

Weight

<table>
<thead>
<tr>
<th>Series</th>
<th>Type of actuation</th>
<th>Weight (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SV1000</td>
<td>Single solenoid</td>
<td>66</td>
</tr>
<tr>
<td></td>
<td>Double solenoid</td>
<td>71</td>
</tr>
<tr>
<td></td>
<td>3 position</td>
<td>73</td>
</tr>
<tr>
<td></td>
<td>4 position dual 3 port</td>
<td>71</td>
</tr>
<tr>
<td>SV2000</td>
<td>Single solenoid</td>
<td>74</td>
</tr>
<tr>
<td></td>
<td>Double solenoid</td>
<td>78</td>
</tr>
<tr>
<td></td>
<td>3 position</td>
<td>83</td>
</tr>
<tr>
<td></td>
<td>4 position dual 3 port</td>
<td>78</td>
</tr>
<tr>
<td>SV3000</td>
<td>Single solenoid</td>
<td>99</td>
</tr>
<tr>
<td></td>
<td>Double solenoid</td>
<td>102</td>
</tr>
<tr>
<td></td>
<td>3 position</td>
<td>110</td>
</tr>
<tr>
<td>SV4000</td>
<td>Single solenoid</td>
<td>186</td>
</tr>
<tr>
<td></td>
<td>Double solenoid</td>
<td>190</td>
</tr>
<tr>
<td></td>
<td>3 position</td>
<td>211</td>
</tr>
</tbody>
</table>

Note) Based on dynamic performance test, JIS B 8419: 2010. ( Coil temperature: 20°C, at rated voltage.)
Gateway-type Serial Transmission System

**EX500 Series**

**IP67 compliant**

**EX500 Gateway Decentralized System 2**

<table>
<thead>
<tr>
<th>Applicable series</th>
<th>Tie-rod base manifold</th>
<th>SV1000/SV2000/SV3000</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Number of output points: 32 points</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Connected to the SI unit of the EX500</td>
<td></td>
</tr>
</tbody>
</table>

**EX500 Gateway Decentralized System**

<table>
<thead>
<tr>
<th>Applicable series</th>
<th>Cassette base manifold</th>
<th>SV1000/SV2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tie-rod base manifold</td>
<td>SV1000/SV2000/SV3000/SV4000</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Number of output points: 16 points</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Connected to the SI unit of the EX500</td>
<td></td>
</tr>
</tbody>
</table>
EX500 (Gateway Decentralized System 2 (128 Points))
Serial Transmission System

SV Series

How to Order Manifold

- Tie-rod base

SS5V ▶ W 10 S1 ▶ A3N ▶ D ▶ 05 ▶ U ▶ ▶ ▶

1 Series
1. SV1000
2. SV2000
3. SV3000

2 SI unit (Number of outputs, Output polarity, Max. number of valve stations, Protocol)

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Series</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A3N</td>
<td>32 outputs (Note 1)/, Negative common, 1 to 16 stations (20 stations (Note 2)), EtherNet/IP™, PROFINET</td>
<td></td>
</tr>
</tbody>
</table>

Note 1) 16 outputs can be set by switching the built-in setting switch.
Note 2) ( ): Mixed single and double wiring.

3 Valve stations

<table>
<thead>
<tr>
<th>Port</th>
<th>Stations</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>02</td>
<td>2 stations</td>
<td>Double wiring (Note 1)</td>
</tr>
<tr>
<td>16</td>
<td>16 stations</td>
<td></td>
</tr>
<tr>
<td>02</td>
<td>2 stations</td>
<td>Mixed wiring, Specified layout (Note 2)</td>
</tr>
<tr>
<td>20</td>
<td>20 stations</td>
<td></td>
</tr>
</tbody>
</table>

Note 1) Double wiring: single, double, 3-position and 4-position valves can be used on all manifold stations.
Use of a single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.
Note 2) Specified layout: Indicate the wiring specifications on the manifold specification sheet. (Note that double, 3-position and 4-position valves cannot be used where single wiring has been specified.)

4 P, E port entry

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>U</td>
<td>U side (2 to 10 stations)</td>
</tr>
<tr>
<td>D</td>
<td>D side (2 to 10 stations)</td>
</tr>
<tr>
<td>B</td>
<td>Both sides (2 to 20 stations)</td>
</tr>
</tbody>
</table>

5 SUP/EXH block assembly

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nil</td>
<td>Internal pilot</td>
</tr>
<tr>
<td>S</td>
<td>Internal pilot, Built-in silencer (Note)</td>
</tr>
<tr>
<td>R</td>
<td>External pilot</td>
</tr>
<tr>
<td>RS</td>
<td>External pilot, Built-in silencer (Note)</td>
</tr>
</tbody>
</table>

Note) When the built-in silencer type is used, keep the exhaust port from coming in direct contact with water or other liquids.

6 A, B port size

<table>
<thead>
<tr>
<th>Symbol</th>
<th>A, B port</th>
<th>P, E port</th>
<th>Applicable series</th>
</tr>
</thead>
<tbody>
<tr>
<td>C3</td>
<td>ø3.2 One-touch fitting</td>
<td>ø8</td>
<td>SV1000</td>
</tr>
<tr>
<td>C4</td>
<td>ø4 One-touch fitting</td>
<td>One-touch fitting</td>
<td></td>
</tr>
<tr>
<td>C6</td>
<td>ø6 One-touch fitting</td>
<td>One-touch fitting</td>
<td></td>
</tr>
<tr>
<td>C8</td>
<td>ø8 One-touch fitting</td>
<td>One-touch fitting</td>
<td></td>
</tr>
<tr>
<td>C10</td>
<td>ø10 One-touch fitting</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Symbol</th>
<th>A, B port</th>
<th>P, E port</th>
<th>Applicable series</th>
</tr>
</thead>
<tbody>
<tr>
<td>N1</td>
<td>ø1/8” One-touch fitting</td>
<td>ø5/16”</td>
<td>SV1000</td>
</tr>
<tr>
<td>N3</td>
<td>ø5/32” One-touch fitting</td>
<td>One-touch fitting</td>
<td></td>
</tr>
<tr>
<td>N7</td>
<td>ø1/4” One-touch fitting</td>
<td>One-touch fitting</td>
<td></td>
</tr>
<tr>
<td>N9</td>
<td>ø5/16” One-touch fitting</td>
<td>One-touch fitting</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Symbol</th>
<th>A, B port</th>
<th>P, E port</th>
<th>Applicable series</th>
</tr>
</thead>
<tbody>
<tr>
<td>T1</td>
<td>ø3/8” One-touch fitting</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note) Indicate the sizes on the manifold specification sheet.
- The X and PE port size of external pilot type [R, RS] are ø4 (mm) or ø5/32” (inch) for the SV1000/2000 series, and ø6 (mm) or ø1/4” (inch) for the SV3000 series.

7 Mounting

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nil</td>
<td>Direct mounting</td>
</tr>
<tr>
<td>D</td>
<td>With DIN bracket, DIN rail with standard length</td>
</tr>
<tr>
<td>D0</td>
<td>With DIN bracket, without DIN rail</td>
</tr>
<tr>
<td>D3</td>
<td>With DIN bracket, DIN rail for 3 stations</td>
</tr>
<tr>
<td>D20</td>
<td>With DIN bracket, DIN rail for 20 stations</td>
</tr>
</tbody>
</table>

Note) Specify a longer rail than the length of valve stations.
- If the DIN rail must be mounted without an SI unit, select “D0” and order the DIN rail separately. Refer to L3 of the dimensions for the DIN rail length. For the DIN rail part number, refer to page 125.

SI unit part no.

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Compatible protocol</th>
<th>SI unit part no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>A3N</td>
<td>EtherNet/IP™, PROFINET</td>
<td>EX500-S103</td>
</tr>
</tbody>
</table>

* A separate GW unit and communication cable are required.

For details about the EX500 series, refer to Best Pneumatics No. 1-1.
How to Order Manifold Assembly

Example

![Diagram of Manifold Assembly]

2-position single
2-position double
Manifold base

SSSV1-W10S1A3ND-04B-C6——1 set (Manifold base part number)
* SV1100-SFU——2 sets (2-position single part number)
* SV1200-SFU——2 sets (2-position double part number)

The asterisk denotes the symbol for assembly.
Prefix it to the part numbers of the valve etc.

- The valve arrangement is numbered as the 1st station from the D side.
- Under the manifold base part number, state the valves to be mounted in order from the 1st station as shown in the figure above. If the arrangement becomes complicated, specify on the manifold specification sheet.

The symbol for assembly is applied to the part numbers of the valve etc.

How to Order Valves

<table>
<thead>
<tr>
<th>A</th>
<th>Series</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>SV1000</td>
</tr>
<tr>
<td>2</td>
<td>SV2000</td>
</tr>
<tr>
<td>3</td>
<td>SV3000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>B</th>
<th>Type of actuation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2-position single</td>
</tr>
<tr>
<td>2</td>
<td>2-position double</td>
</tr>
<tr>
<td>3</td>
<td>3-position closed center</td>
</tr>
<tr>
<td>4</td>
<td>3-position exhaust center</td>
</tr>
<tr>
<td>5</td>
<td>3-position pressure center</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>C</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>4-position dual 3-port valve (N.C./N.C.)</td>
</tr>
<tr>
<td>B</td>
<td>4-position dual 3-port valve (N.O./N.O.)</td>
</tr>
<tr>
<td>C</td>
<td>4-position dual 3-port valve (N.C./N.O.)</td>
</tr>
</tbody>
</table>

- Select the internal pilot type for the 4-position dual 3-port valve.

<table>
<thead>
<tr>
<th>D</th>
<th>Back pressure check valve</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nil</td>
<td>None</td>
</tr>
<tr>
<td>K</td>
<td>Built-in</td>
</tr>
</tbody>
</table>

- Built-in back pressure check valve type is applicable to the SV1000 series only.
- The product with a back pressure check valve is not available for 3-position valves.

Note) Refer to Specific Product Precautions 2 on page 138.

<table>
<thead>
<tr>
<th>E</th>
<th>Rated voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>24 VDC</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>F</th>
<th>Light/surge voltage suppressor</th>
</tr>
</thead>
<tbody>
<tr>
<td>U</td>
<td>With light/surge voltage suppressor</td>
</tr>
<tr>
<td>R</td>
<td>Without light, with surge voltage suppressor</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>G</th>
<th>Manual override</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nil</td>
<td>Non-locking push</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>H</th>
<th>Manifold block</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nil</td>
<td>—</td>
</tr>
<tr>
<td>X90</td>
<td>Main valve fluororubber specification</td>
</tr>
</tbody>
</table>

(For details, refer to page 136.)
Dimensions: SV1000 Series for EX500 Gateway Decentralized System 2 (128 points)

**Tie-rod base manifold**

![Diagram showing dimensions]

<table>
<thead>
<tr>
<th>L: DIN Rail Overall Length</th>
<th>n: Stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>L1</td>
<td>135.5</td>
</tr>
<tr>
<td>L2</td>
<td>125</td>
</tr>
<tr>
<td>L3</td>
<td>102.2</td>
</tr>
<tr>
<td>L4</td>
<td>16.5</td>
</tr>
<tr>
<td>L5</td>
<td>63</td>
</tr>
</tbody>
</table>

**Notes:**

1. External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.
2. When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.
Dimensions: SV2000 Series for EX500 Gateway Decentralized System 2 (128 Points)

**Tie-rod base manifold**

- Manual override
  - 4(A) port side: Orange
  - 2(B) port side: Green
- Light/surge voltage suppressor
- One-touch fitting
  - [X: External pilot port] Note 1)
  - Applicable tube O.D. C4: ø4 (SMC)
  - N3: ø5/32" (SMC)
- One-touch fitting
  - [1(P), 3/5(E) port] Note 2)
  - Applicable tube O.D. C10: ø10 (SMC)
  - N11: ø3/8" (SMC)
- One-touch fitting
  - [4(A), 2(B) port]
  - Applicable tube O.D. C4: ø4 (SMC)
  - C6: ø6 (SMC)
  - C8: ø8 (SMC)
  - N3: ø5/32" (SMC)
  - N7: ø1/4" (SMC)
  - N9: ø5/16" (SMC)
- One-touch fitting
  - [PE: Pilot EXH port]
  - Applicable tube O.D. C4: ø4 (SMC)
  - N3: ø5/32" (SMC)

Note 1) External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.
Note 2) When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.

---

### L: DIN Rail Overall Length

| L   | 0 | 1  | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|-----|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| L1  | 148 | 160.5 | 185.5 | 198 | 210.5 | 235.5 | 248 | 260.5 | 273 | 298 | 310.5 | 323 | 335.5 | 360.5 | 373 | 385.5 | 410.5 | 423 | 435.5 |
| L2  | 137.5 | 150 | 175 | 187.5 | 200 | 225 | 237.5 | 250 | 262.5 | 287.5 | 300 | 312.5 | 325 | 350 | 362.5 | 375 | 400 | 412.5 | 425 |
| L3  | 120.2 | 136.2 | 152.2 | 168.2 | 184.2 | 200.2 | 216.2 | 232.2 | 248.2 | 264.2 | 280.2 | 296.2 | 312.2 | 328.2 | 344.2 | 360.2 | 376.2 | 392.2 | 408.2 |
| L4  | 14 | 12 | 16.5 | 15 | 13 | 17.5 | 16 | 14 | 12.5 | 17 | 15 | 13.5 | 11.5 | 16 | 14.5 | 12.5 | 17 | 15.5 | 13.5 |
| L5  | 80 | 96 | 112 | 128 | 144 | 160 | 176 | 192 | 208 | 224 | 240 | 256 | 272 | 288 | 304 | 320 | 336 | 352 | 368 |
Dimensions: SV3000 Series for EX500 Gateway Decentralized System 2 (128 points)

- Tie-rod base manifold

![Diagram of SV Series SV3000 Series for EX500 Gateway Decentralized System 2]

**L: DIN Rail Overall Length**

<table>
<thead>
<tr>
<th>n</th>
<th>Stations</th>
<th>L1</th>
<th>L2</th>
<th>L3</th>
<th>L4</th>
<th>L5</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td>173</td>
<td>162.5</td>
<td>139.7</td>
<td>16.5</td>
<td>97</td>
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<tr>
<td>1</td>
<td></td>
<td>185.5</td>
<td>200</td>
<td>201.2</td>
<td>12.5</td>
<td>117.5</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>210.5</td>
<td>225</td>
<td>201.2</td>
<td>15</td>
<td>138</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>235.5</td>
<td>225</td>
<td>211.7</td>
<td>15</td>
<td>158.5</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>248</td>
<td>225</td>
<td>242.2</td>
<td>17</td>
<td>158.5</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>273</td>
<td>225</td>
<td>262.7</td>
<td>17</td>
<td>179</td>
</tr>
<tr>
<td>6</td>
<td></td>
<td>298</td>
<td>225</td>
<td>283.2</td>
<td>17</td>
<td>199.5</td>
</tr>
<tr>
<td>7</td>
<td></td>
<td>310.5</td>
<td>225</td>
<td>303.7</td>
<td>16</td>
<td>220</td>
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<tr>
<td>8</td>
<td></td>
<td>335.5</td>
<td>225</td>
<td>324.2</td>
<td>16</td>
<td>240.5</td>
</tr>
<tr>
<td>9</td>
<td></td>
<td>348</td>
<td>225</td>
<td>344.7</td>
<td>14</td>
<td>261</td>
</tr>
<tr>
<td>10</td>
<td></td>
<td>373</td>
<td>225</td>
<td>365.2</td>
<td>14</td>
<td>281.5</td>
</tr>
<tr>
<td>11</td>
<td></td>
<td>398</td>
<td>225</td>
<td>385.7</td>
<td>13</td>
<td>302</td>
</tr>
<tr>
<td>12</td>
<td></td>
<td>410.5</td>
<td>225</td>
<td>406.2</td>
<td>12</td>
<td>322.5</td>
</tr>
<tr>
<td>13</td>
<td></td>
<td>435.5</td>
<td>225</td>
<td>426.7</td>
<td>12</td>
<td>343</td>
</tr>
<tr>
<td>14</td>
<td></td>
<td>460.5</td>
<td>225</td>
<td>447.2</td>
<td>11</td>
<td>363.5</td>
</tr>
<tr>
<td>15</td>
<td></td>
<td>473</td>
<td>225</td>
<td>467.7</td>
<td>11</td>
<td>384</td>
</tr>
<tr>
<td>16</td>
<td></td>
<td>498</td>
<td>225</td>
<td>488.2</td>
<td>10</td>
<td>404.5</td>
</tr>
<tr>
<td>17</td>
<td></td>
<td>523</td>
<td>225</td>
<td>508.7</td>
<td>10</td>
<td>425</td>
</tr>
<tr>
<td>18</td>
<td></td>
<td>535.5</td>
<td>225</td>
<td>445.5</td>
<td>9</td>
<td>445.5</td>
</tr>
<tr>
<td>19</td>
<td></td>
<td>512.5</td>
<td>225</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td></td>
<td>525</td>
<td>225</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
EX500 (Gateway Decentralized System (64 Points))
Serial Transmission System

**SV Series**

### How to Order Manifold

#### Series
- **1** SV1000
- **2** SV2000
- **3** SV3000
- **4** SV4000

#### Tie-rod base
- **SS5V 1-W 10S A2W D-05 U**

#### Cassette base
- **SS5V 1-W 16S A2W D-05 U**

**Enclosure**
- IP67 specifications

**SI unit (Number of outputs, Output polarity, Max. number of valve stations, Protocol)**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Stations</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>16 outputs, Positive common, 1 to 8 stations</td>
<td>(1) Maximum number of stations for mixed single and double wiring.</td>
</tr>
<tr>
<td>2W</td>
<td>Through SI unit part no.</td>
<td>DIN rail specifications (Note) DeviceNet™/PROFIBUS DP/EtherNet/IP™</td>
</tr>
</tbody>
</table>

**Note** (1): When the built-in silencer type is used, keep the exhaust port from coming in direct contact with water or other liquids.

#### Valve stations
- **A, B port**
- **P, E port**
- **Applicable series**

#### SUP/EXH block assembly specifications
- **N** Internal pilot
- **S** Internal pilot/Built-in silencer
- **R** External pilot
- **RS** External pilot/Built-in silencer

**Supplementary**
- **Port sizes of X, PE port for external pilot specifications (R, RS) are ø4 (inch), ø5/32” (inch) for SV1000/2000 and ø6 (inch) for SV3000/4000.**

### Mounting
- **Nil** Direct mounting
- **D** DIN rail mounting (With DIN rail) (Specify a longer rail than the standard length.)
- **D0** DIN rail mounting (Without DIN rail) (Specify a longer rail than the standard length.)
- **D16** DIN rail mounting (With DIN rail) (Specify a longer rail than the standard length.)

**Note** (1): Maximum number of stations for mixed single and double wiring.

**Port sizes of X, PE port for external pilot specifications (R, RS) are ø4 (inch), ø5/32” (inch) for SV1000/2000 and ø6 (inch) for SV3000/4000.**

#### DIN rail length specified
- **Nil** Standard length
- **3** For 3 stations
- **16** For 16 stations


### Notes:
- **A, B ports mixed**
- **A, B ports**

---

* A separate GW unit and communication cable are required.

---

**For 16 stations**
- DIN rail mounting (With DIN rail) (Specify a longer rail than the standard length.)
- DIN rail mounting (Without DIN rail) (Specify a longer rail than the standard length.)
- DIN rail mounting (With DIN rail) (Specify a longer rail than the standard length.)

---

* In the case of mixed specifications (M), indicate separately on the manifold specification sheet.
* Port sizes of X, PE port for external pilot specifications (R, RS) are ø4 (metric), ø5/32" (inch) for SV1000/2000 and ø6 (metric) and ø1/4" (inch) for SV3000/4000.
How to Order Manifold Assembly

Ordering example (SV1000)

Manifold
SSSY1-W16SA2WD-06B-C6 (1 set)

Double solenoid
SV1200-5FU (2 sets)

Single solenoid
SV1100-5FU (4 sets)

SSSY1-W16SA2WD-06B-C6-----1 set (Manifold part no.)
  * SV1100-5FU-----4 sets (Single solenoid part no.)
  * SV1200-5FU-----2 sets (Double solenoid part no.)

How to Order Valve

SV 1 1 0 0 [ ] [ ] 5 F [ ] [ ] [ ] [ ]

Series

1 SV1000
2 SV2000
3 SV3000
4 SV4000

Type of actuation

1 2 position single
2 2 position double
3 3 position closed center
4 3 position exhaust center
5 3 position pressure center
A 4 position dual 3 port valve: N.C./N.C.
B 4 position dual 3 port valve: N.O./N.O.
C 4 position dual 3 port valve: N.C./N.O.

* 4 position dual 3 port valves are applicable to the SV1000 and SV2000 series only.

Pilot type

Nil Internal pilot
R External pilot

Back pressure check valve

Nil None
K Built-in

* External pilot specifications is not available for 4 position dual 3 port valves.

* Built-in back pressure check valve type is applicable to the SV1000 series only.
* Back pressure check valve is not available for 3 position valve.

Made to Order

Nil
X90 Main valve flange/brake [Refer to page 136].

Note) Available with manifold block for station additions. Refer to pages 115 and 121.

Manual override

Nil: Non-locking push type
D: Push-turn locking slotted type

Light/Surge voltage suppressor

U With light/surge voltage suppressor
R With surge voltage suppressor

Rated voltage

5 24 VDC

Note) Refer to Specific Product Precautions 2 on page 138.
Dimensions: SV1000 Series for EX500 Gateway Decentralized System (64 points)

- Cassette base manifold: SS5V1-W16SA2WD

- When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.
- External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.

With External Pilot Specifications

- One-touch fitting
  - [1(P), 3/5(E) port]
  - Applicable tubing O.D.: ø8, ø5/16”

- One-touch fitting
  - [4(A), 2(B) port]
  - Applicable tubing O.D.: ø3.2, ø1/8”, ø4, ø5/32”, ø6, ø1/4”

- With option

- Light/Surge voltage suppressor

- Block separation lever

<table>
<thead>
<tr>
<th>L Dimension</th>
<th>n: Stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>2 3 4 5 6 7 8 9 10 11 12 13 14 15 16</td>
</tr>
<tr>
<td>L1</td>
<td>135.5 148 160.5 173 173 185.5 196 210.5 223 235.5 248 260.5 273 285.5</td>
</tr>
<tr>
<td>L2</td>
<td>125 137.5 150 162.5 162.5 175 187.5 200 212.5 225 225 237.5 250 262.5 275</td>
</tr>
<tr>
<td>L3</td>
<td>106.5 117 127.5 138 148.5 159 169.5 180 190.5 201 211.5 222 232.5 243 253.5</td>
</tr>
<tr>
<td>L4</td>
<td>14.5 15.5 16.5 17.5 12.5 13.5 14.5 15.5 16.5 17.5 12 13 14 15 16</td>
</tr>
</tbody>
</table>

Dimensions are the ones for SV1300-□□□□.
Dimensions: SV2000 Series for EX500 Gateway Decentralized System (64 points)

- Cassette base manifold: SS5V2-W16SA2WD-[Stations] U (S, R, RS)
  - When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.
  - External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.

With External Pilot Specifications

**L Dimension**

<table>
<thead>
<tr>
<th>n</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>148</td>
<td>173</td>
<td>185.5</td>
<td>198</td>
<td>210.5</td>
<td>235.5</td>
<td>248</td>
<td>260.5</td>
<td>285.5</td>
<td>298</td>
<td>310.5</td>
<td>323</td>
<td>348</td>
<td>360.5</td>
<td>373</td>
</tr>
<tr>
<td>L2</td>
<td>137.5</td>
<td>162.5</td>
<td>175</td>
<td>187.5</td>
<td>200</td>
<td>225</td>
<td>237.5</td>
<td>250</td>
<td>275</td>
<td>287.5</td>
<td>300</td>
<td>312.5</td>
<td>337.5</td>
<td>350</td>
<td>362.5</td>
</tr>
<tr>
<td>L3</td>
<td>122.5</td>
<td>138.5</td>
<td>154.5</td>
<td>170.5</td>
<td>186.5</td>
<td>202.5</td>
<td>218.5</td>
<td>234.5</td>
<td>250.5</td>
<td>266.5</td>
<td>282.5</td>
<td>298.5</td>
<td>314.5</td>
<td>330.5</td>
<td>346.5</td>
</tr>
<tr>
<td>L4</td>
<td>13</td>
<td>17.5</td>
<td>15.5</td>
<td>14</td>
<td>12</td>
<td>16.5</td>
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<td>13</td>
<td>17.5</td>
<td>16</td>
<td>14</td>
<td>12.5</td>
<td>17</td>
<td>15</td>
<td>13.5</td>
</tr>
</tbody>
</table>

**With option**

- Interface regulator
- Individual SUP spacer
- Individual EXH spacer

**Light/Surge voltage suppressor**

**Block separation lever**

**DIN rail holding screw**

**Manual override**

(Station n) - . . . . . . .(Station 1)

**Silencer (Air discharge port)**

(Built-in silencer specifications)

**When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.**
Dimensions: SV1000 Series for EX500 Gateway Decentralized System (64 points)

- Tie-rod base manifold: SS5V1-W10SA2WD-(Stations) (L1) (S, R, RS) (L5) (D)

When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.

External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.

With External Pilot Specifications

One-touch fitting
[1(P), 3/5(E) port]
Applicable tubing O.D.: ø8 ø5/16"

One-touch fitting
[4(A), 2(B) port]
Applicable tubing O.D.: ø3.2, ø1/8" ø4, ø5/32" ø6, ø1/4"  

U side
D side

DIN rail holding screw
(For DIN rail mounting)

Slit unit

Manual override
(Press and turn for the locking type.)
4(A) port side: Orange
2(B) port side: Green

Silencer / Air discharge port
(Built-in silencer specifications)

(U side)
(D side)

Light/Surge voltage suppressor

Interface regulator

Individual EXH spacer

Individual SUP spacer

Dimensions are the ones for SV1300-□□□□.

With option

Dimensions are the ones for SV1300-□□□□.

<table>
<thead>
<tr>
<th>L Dimension</th>
<th>1</th>
<th>2</th>
<th>3</th>
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Dimensions: SV2000 Series for EX500 Gateway Decentralized System (64 points)

- **Tie-rod base manifold: SS5V2-W10SA2WD-(Stations) (S, R, RS)-(D)**
  - When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.
  - External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.

**With External Pilot Specifications**

- **One-touch fitting**
  - [P(E): Pilot EXH port]
  - Applicable tubing O.D.: ø4, ø5/32"  
  - [X: External pilot port]
  - Applicable tubing O.D.: ø4, ø5/32"  
  - [1(P), 3/5(E) port]
  - Applicable tubing O.D.: ø10, ø3/8"  
  - [4(A), 2(B) port]
  - Applicable tubing O.D.: ø4, ø5/32", ø6, ø1/4", ø8, ø5/16"

**With option**

- **Light/Surge voltage suppressor**
- **Individual EXH spacer**
- **Individual SUP spacer**
- **Interface regulator**

**L Dimension**

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Dimensions: SV3000 Series for EX500 Gateway Decentralized System (64 Points)

- Tie-rod base manifold: SS5V3-W10SA2WD- Stations (S, R, RS, CR, ND) (-D)

  - When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.
  - External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.

With External Pilot Specifications

- One-touch fitting [X: External pilot port]
  - Applicable tubing O.D.: ø6, ø1/4", ø8, ø5/16", ø10, ø3/8"

- One-touch fitting [PE: Pilot EXH port]
  - Applicable tubing O.D.: ø6, ø1/4"

- U side
  - DIN rail holding screw (For DIN rail mounting)
  - SI unit (Pitch: Rail mounting hole pitch: 12.5)

- D side
  - Manual override (Press and turn for the locking type.)
    - 4(A) port side: Orange
    - 2(B) port side: Green

- Light/Surge voltage suppressor

- One-touch fitting [1(P), 3/5(E) port]
  - Applicable tubing O.D.: ø12, ø3/8"

- One-touch fitting [4(A), 2(B) port]
  - Applicable tubing O.D.: ø6, ø1/4", ø8, ø5/16", ø10, ø3/8"

- One-touch fitting [X: External pilot port]
  - Applicable tubing O.D.: ø6, ø1/4"

- With option

  - Individual SUP spacer
  - Individual EXH spacer
  - Interface regulator
  - Interface regulator
  - SV Series EX500 (Gateway Decentralized System (64 points)) Serial Transmission System

L Dimension

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Dimensions: SV4000 Series for EX500 Gateway Decentralized System (64 points)

- Tie-rod base manifold: SS5V4-W10SA2WD-Station (S, R, RS) (-D)

- When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.
- External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.

With External Pilot Specifications

- One-touch fitting [1(P), 3/5(E) port]
  - Applicable tubing O.D.: ø12, ø3/8
- One-touch fitting [4(A), 2(B) port]
  - Applicable tubing O.D.: ø8, ø5/16" ø10, ø3/8 ø12

With option

- One-touch fitting [X: External pilot port]
  - Applicable tubing O.D.: ø6 ø1/4"

With option

- One-touch fitting [PE: Pilot EXH port]
  - Applicable tubing O.D.: ø1/4"

- Manual override (Press and turn for the locking type.)
  - 4(A) port side: Orange 2(B) port side: Green

- Silencer (Air discharge port)
  - Built-in silencer specifications

L Dimension

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</table>

- DIN rail holding screw (For DIN rail mounting)
- (For mounting)
- (Rail mounting hole pitch: 12.5)
- (For DIN rail mounting)
- (For mounting)

- Light/Surge voltage suppressor
- Interface regulator
- Interface regulator
- Interface regulator
- Interface regulator

- Station n: Stations
- (Station 1)
Integrated-type (For I/O) Serial Transmission System

**EX250 Series**

- **Tie-rod base**
- **Applicable series**
  - Tie-rod base manifold
  - SV1000/SV2000/SV3000

- Number of inputs/outputs points: 32 points each

**IP67 (partly IP40) compliant**

**Tie-rod base manifolds**

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<th>Applicable series</th>
<th>Tie-rod base manifold</th>
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<tbody>
<tr>
<td>SV1000/SV2000/SV3000</td>
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</tbody>
</table>

- Number of inputs/outputs points: 32 points each
### EX250 Integrated-type (For I/O) Serial Transmission System

**SV Series**

#### How to Order Manifold

**Tie-rod base**

**SS5V 1-W10S1 QW D-05 U**

**Enclosure**

- IP67

**SI unit**

- Symbol: W
- Protocol type: DeviceNet
- PNP sensor input (Positive common) or without input block

**Input block specifications**

- Nil: Internal pilot
- Q: Internal pilot/Built-in silencer
- NW: External pilot
- NW: External pilot/Built-in silencer

**Note**

1. There is a limit to the supply current to the input block:
   - When the DIN rail is included without an SI unit, the DIN rail length will accommodate an SI unit and one input block.
   - Use of a single solenoid will result in an unused control signal.
   - AS Interface compliant, the maximum number of solenoids is as shown below, so please be careful of the number of solenoids.
   - Use of a single solenoid will result in an unused control signal.

**Input block stations**

- Nil: None
- 1: 1 station
- 8: 8 stations

**Input block type**

- Nil: Without SI unit
- 1: M12: 2 inputs
- 2: M12: 4 inputs
- 3: M8: 4 inputs

**Input block specifications**

- Nil: PNP sensor input (Positive common) or without input block
- N: NPN sensor input (Negative common)

**Valve stations**

- Note) When the built-in silencer type is used, keep the exhaust port from coming in contact with water or other liquids.

**SUP/EXH block assembly specifications**

- Nil: Direct mounting
- D: DIN rail mounting (With DIN rail)
- D0: DIN rail mounting (Without DIN rail)
- D3: To 3 stations
- D20: To 20 stations

**Mounting**

- Nil: Direct mounting
- D: DIN rail mounting (With DIN rail)
- D0: DIN rail mounting (Without DIN rail)
- D3: To 3 stations
- D20: To 20 stations

**P, E port location**

- U: U port (2 to 20 stations)
- D: D port (2 to 10 stations)
- B: Both sides (2 to 20 stations)

#### Valve stations

- Nil: Double wiring specifications
- D: Specified layout

**Note**

1. Double wiring specifications: Single, double, 3 position and 4 position solenoids can be used on all manifold stations. Use of a single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.

**Input block specifications**

- Nil: PNP sensor input (Positive common) or without input block
- N: NPN sensor input (Negative common)

**Input block type**

- Nil: Without SI unit
- 1: M12: 2 inputs
- 2: M12: 4 inputs
- 3: M8: 4 inputs

**Note**

1. There is a limit to the supply current to the input block:
   - When the DIN rail is included without an SI unit, the DIN rail length will accommodate an SI unit and one input block.
   - Use of a single solenoid will result in an unused control signal.
   - AS Interface compliant, the maximum number of solenoids is as shown below, so please be careful of the number of solenoids.
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**Input block stations**

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**Input block type**

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- 1: M12: 2 inputs
- 2: M12: 4 inputs
- 3: M8: 4 inputs

**Input block specifications**

- Nil: PNP sensor input (Positive common) or without input block
- N: NPN sensor input (Negative common)

**Si Unit Part No.**

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<td>PROFIBUS DP</td>
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**A, B port size (metric)**

- Symbol | A, B port | P, E port | Applicable series |
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**A, B port size (inch)**

- Symbol | A, B port | P, E port | Applicable series |
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</table>

**Note**

1. In the case of mixed specifications (M), indicate separately on the manifold specification sheet.
2. Port sizes of X, PE port for external pilot specifications (R, RS) are ø4 (metric), ø5/32" (inch) for SV1000/2000 and ø6 (metric) and ø1/4" (inch) for SV3000.

Refer to Best Pneumatics No. 1-1 and the Operation Manual for the details of EX250 Integrated-type Serial Transmission System.

How to Order Manifold Assembly

Ordering example (SV1000)

Manifold
SSSV1-W10S1QW11ND-05B-C6 (1 set)

SSSV1-W10S1QW11ND-05B-C6······1 set (manifold part no.)
* SV1100-5FU······2 sets (Single solenoid part no.)
* SV1200-5FU······3 sets (Double solenoid part no.)

How to Order Valve

SV 1 1 0 0 [ ] [ ] F [ ] [ ] [ ]

Series

1 SV1000
2 SV2000
3 SV3000

Type of actuation

1 2 position single
2 2 position double
3 3 position closed center
4 3 position exhaust center
5 3 position pressure center
A 4 position dual 3 port valve: N.C./N.C.
B 4 position dual 3 port valve: N.O./N.O.
C 4 position dual 3 port valve: N.C./N.O.

* 4 position dual 3 port valves are applicable to the SV1000 and SV2000 series only.

Pilot type

Nil Internal pilot
R External pilot

* External pilot specifications is not available for 4 position dual 3 port valves.

Back pressure check valve

Nil None
K Built-in

* Built-in back pressure check valve type is applicable to the SV1000 series only.
* Back pressure check valve is not available for 3 position valve.

Light/Surge voltage suppressor

U With light/surge voltage suppressor
R With surge voltage suppressor

* Rated voltage

5 24 VDC

Note) Available with manifold block for station additions. Refer to page 121.

Made to Order

Nil
X90 Main valve fluororubber (Refer to page 136.)

Manual override

Nil: Non-locking push type
D: Push-turn locking slotted type

Note) Refer to Specific Product Precautions 2 on page 138.
Dimensions: SV1000 Series for EX250 Integrated-type (For I/O) Serial Transmission System

- Tie-rod base manifold: SS5V1-W10S1[D/D]-[Stations U (S, R, RS)] C3, N1 (-D) C6, N7
  - When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.
  - External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.

(With 2 input blocks)

With External Pilot Specifications

L1: DIN Rail Overall Length
Dimensions: SV2000 Series for EX250 Integrated-type (For I/O) Serial Transmission System

- **Dimensions**:
  - **L1**: DIN Rail Overall Length
  - **n2**: Valve stations
  - **n1**: Input block stations

**With External Pilot Specifications**

- **One-touch fitting**
  - [P], [E] ports
  - Applicable tubing O.D.: ø4, ø5/32" [1(P), 3/5(E) port]

**Applicable tubing O.D.:**
- ø4, ø5/32"

**External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.**

**Built-in silencer specifications**
- [P], [E] ports
- Applicable tubing O.D.: ø4, ø5/32"

**Individual SUP spacer**
- [P], [E] ports

**Individual EXH spacer**
- [P], [E] ports

**With option**

- L2 = L1 - 10.5
- L3 = 16 x n1 + 60
- L4 = L3 + 81 + 21 x n2
- L5 = (L1 – L4) / 2
- L6 = 16 x n1 + 48
- L7 = 21 x n2 + 81.5

**L1: DIN Rail Overall Length**

<table>
<thead>
<tr>
<th>Base station</th>
<th>2</th>
<th>3</th>
<th>4</th>
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</table>

**Notes:**
- When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.
- External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.
Dimensions: SV3000 Series for EX250 Integrated-type (For I/O) Serial Transmission System

- Tie-rod base manifold: SS5V3-W10S1 [Stations U, R, RS] (S, R, N1, (-D))

(With 2 input blocks)

- When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.
- External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.

With External Pilot Specifications

Applicable tubing O.D.: \( \phi 6 \) for DIN rail mounting

With option

Individual SUP spacer

Individual EXH space

Interface regulator

SV3000-□□

Interface regulator

SV3000-□□

L1: DIN Rail Overall Length

<table>
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<tr>
<th>Station (n1)</th>
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<td>650.5</td>
<td>673</td>
<td>698</td>
<td>723</td>
<td>755</td>
<td>785</td>
</tr>
</tbody>
</table>

\( n_1 = \text{Valve stations} \)

\( n_2 = \text{Input block stations} \)
Integrated-type (For I/O) Serial Transmission System

EX600 Series

- Digital input/output: Max. 144 inputs/144 outputs
- Analog input: Max. 18 channels
- Valve output: 32 outputs

Applicable series

<table>
<thead>
<tr>
<th>Tie-rod base manifold</th>
<th>SV1000/SV2000/SV3000</th>
</tr>
</thead>
</table>

- IP67 compliant
- Tie-rod base
When I/O Unit EX600-D□□□□E or EX600-D□□□□F are selected, enclosure is IP40. Refer to page 142 for details.

**Note 2)** When “Without SI Unit” is specified, the valve plate to connect the manifold and SI unit is not mounted.

**Note 3)** When I/O unit is selected, it is shipped separately.

**Note 1)** Without SI Unit, the symbol is nil.

### How to Order

#### Tie-rod Base

<table>
<thead>
<tr>
<th>SS5V1</th>
<th>10S6Q</th>
<th>D-05U</th>
<th>C6</th>
<th></th>
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</thead>
</table>

#### Enclosure

<table>
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<tr>
<th>Series</th>
<th>VA 1 Q D U 0510S6</th>
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</thead>
<tbody>
<tr>
<td>0</td>
<td>Without SI Unit</td>
</tr>
<tr>
<td>Q</td>
<td>DeviceNet™ type (Version A)</td>
</tr>
<tr>
<td>N</td>
<td>PROFIBUS DP type (Version A)</td>
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<td>V</td>
<td>CC-Link type</td>
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<tr>
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<td>EtherNet/IP™ (1 port)</td>
</tr>
<tr>
<td>EA</td>
<td>EtherNet/IP™ (2 port)</td>
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<td>F</td>
<td>PROFINET type</td>
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<tr>
<td>D</td>
<td>EtherCAT type</td>
</tr>
<tr>
<td>WE</td>
<td>EtherNet/IP™ compatible wireless master</td>
</tr>
<tr>
<td>WS</td>
<td>Wireless slave</td>
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</table>

**Note 1)** I/O units cannot be chosen without SI Unit.

**Note 2)** When “Without SI Unit” is specified, the valve plate to connect the manifold and SI unit is not mounted.

**Note 3)** For mounting method, refer to Specific Product Precautions on page 843 of Best Pneumatics No. 1-1.

### End plate type

**End plate type**

- **Nil**: No end plate
- **2**: M12 connector power supply (Max. supply current 2A)
- **3**: 7/8 inch connector power supply (Max. supply current 8A)
- **4**: M12 connector power supply: (IN/OUT pin arrangement 1)
- **5**: M12 connector power supply: (IN/OUT pin arrangement 2)

**SI Unit COM.**

**Note 1)** Without SI Unit, the symbol is nil.

### I/O unit sta. number

<table>
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<tr>
<th>VA 1 Q D U 0510S6</th>
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<tbody>
<tr>
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<tr>
<td>None</td>
</tr>
<tr>
<td>1 stb.</td>
</tr>
<tr>
<td>9 stb.</td>
</tr>
</tbody>
</table>

**Note 1)** Without SI Unit, the symbol is nil.

**Note 2)** When I/O unit is selected, it is shipped separately, and assembled by customer. Refer to the attached operation manual for mounting method.

### SUP/EXH block assembly

**Nil**: Internal pilot

**S** (Note): Internal pilot, Built-in silencer

**R**: External pilot

**RS** (Note): External pilot, Built-in silencer

**Valve stations**

**Symbol Stations**

| 02 | 2 stb. |
| 03 | 8 stb. |
| 16 | 16 stb. |
| 02 | 2 stb. |
| 16 | 16 stb. |
| 20 | 20 stb. |

**Note 1)** Double wiring specifications: Single, double, 3 position and 4 position solenoid valves can be used at all of the manifold stations. When single solenoid is used, control signal which is not assigned to any number is made. If empty signal is not wanted, please order with signal layout specified.

**Note 2)** Specified layout: Indicate wiring specifications with the manifold specification sheet. (Note that double, 3 position and 4 position valves cannot be used where single solenoid wiring has been specified.)

### A, B port size (Metric)

<table>
<thead>
<tr>
<th>Symbol</th>
<th>A, B port</th>
<th>P, E port</th>
<th>Applicable series</th>
</tr>
</thead>
<tbody>
<tr>
<td>C3</td>
<td>ø3.2 One-touch fitting</td>
<td>ø8 One-touch fitting</td>
<td>SV1000</td>
</tr>
<tr>
<td>C4</td>
<td>ø4 One-touch fitting</td>
<td>ø8 One-touch fitting</td>
<td>SV2000</td>
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<td>C6</td>
<td>ø6 One-touch fitting</td>
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<td>C8</td>
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<tr>
<td>M</td>
<td>A, B port mixed</td>
<td>A, B port mixed</td>
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</table>

**Note 1)** In the case of Mixed specifications (M), indicate separately with the manifold specification sheet.

**Note 2)** Regarding the X and PE port size of External pilot type (R), and X port size of External pilot/Built-in silencer type (RS), ø4 (mm) and ø5/32” (inch) for the SV1000/2000 series, ø6 (mm) and ø1/4” (inch) for the SV3000 series.
How to Order Manifold Assembly (Example)

Example (SS5V1)
Manifold
Power supply with M12 connector

For the I/O unit part number mounted, refer to page 815 in Best Pneumatics No. 1-1.
- Digital Input Unit
- Digital Output Unit
- Digital Input/Output Unit
- Analog Input Unit
- Analog Output Unit
- Analog Input/Output Unit

Digital Input Unit
EX600-DXPD
End Plate (Note) EX600-ED2

Digital Output Unit
EX600-DYPB

SI Unit (Note)
EX600-SDN1

2 position single
SV1100-5FU

2 position double
SV1200-5FU

Serial transmission kit
SSSV1-W1056Q2N2D-05B-C6 ... 1 set
SSV1000F-U ... 3 sets
SSV1200F-U ... 2 sets
SSV1000F ... 3 sets
SSV1200F ... 2 sets
SSV1000 ... 1 set
SSV1200 ... 1 set
SSV3000 ...

Manifold base part number

Enter order starting from the first station on the D side.
When entry of part numbers becomes complicated, indicate with the manifold specification sheet.

Valve part number (Stations 1 to 3)
Enter order starting from the first station on the D side.
When entry of part numbers becomes complicated, indicate with the manifold specification sheet.

Note) Do not enter the SI Unit part number and the End Plate part number together.

I/O unit part number (Station 1)
I/O unit part number (Station 2)

The asterisk denotes the symbol for assembly.
Prefix it to the part nos. of the solenoid valve, etc.

How to Order Valves

SV 1100 5 FU

Series
1
2
3
SV1000
SV2000
SV3000

Type of actuation
1
2
3
4
5
2 position single solenoid
2 position double solenoid
3 position closed center
3 position exhaust center
3 position pressure center

A
B
C
4 position dual 3 port valve: N.C./N.C.
4 position dual 3 port valve: N.O./N.O.
4 position dual 3 port valve: N.C./N.O.

* 4 position dual 3 port valves are applicable to the SV1000/2000 series only.

Pilot specifications

Nil
R
External pilot
Internal pilot

* External pilot specification is not available for 4 position dual 3 port valves.

Back pressure check valve
Nil
K
Built-in

* Built-in back pressure check valve type is applicable to the SV1000 series only.

* The 3 position valve is not available with the back pressure check valve.

Made to Order

Nil
X90
Fluororubber specification

Manual override

Nil: Non-locking push type
D: Push-turn locking slotted type

Light/Surge voltage suppressor

U
With light/surge voltage suppressor
R
With surge voltage suppressor

Coil voltage

5
24 VDC
Dimensions: SV1000 Series

Power supply with M12 connector

Manual override
Press and turn for the locking type
4(A) port side: Orange
2(B) port side: Green

Light/surge voltage suppressor

One-touch fitting
[4(A), 2(B) port]
Applicable tubing O.D.: ø3.2, ø1/8"
ø4, ø5/32"
ø6, ø1/4"

Applicable tubing O.D.: ø8, ø5/16"

FE terminal
DIN rail holding screw
(For DIN rail mounting)

Input connector
Output connector

L1: DIN Rail Overall Length

| I/O unit stations (n1) | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  | 14  | 15  | 16  | 17  | 18  | 19  | 20  |
|----------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 0                    | 185.5 | 198 | 210.5 | 210.5 | 223 | 235.5 | 248 | 260.5 | 273 | 273 | 285.5 | 285.5 | 298 | 310.5 | 323 | 335.5 | 348 | 348 | 360.5 | 373 |
| 1                    | 235.5 | 248 | 260.5 | 273 | 285.5 | 298 | 310.5 | 323 | 335.5 | 348 | 348 | 360.5 | 373 | 373 | 385.5 | 398 | 401.5 | 423 |
| 2                    | 273 | 285.5 | 298 | 310.5 | 323 | 335.5 | 348 | 360.5 | 373 | 373 | 385.5 | 385.5 | 398 | 410.5 | 423 | 435.5 | 448 | 460.5 | 473 |
| 3                    | 323 | 335.5 | 348 | 360.5 | 373 | 373 | 385.5 | 398 | 410.5 | 423 | 435.5 | 448 | 460.5 | 473 | 473 | 485.5 | 498 | 498 | 510.5 | 510.5 |
| 4                    | 373 | 385.5 | 398 | 410.5 | 423 | 435.5 | 448 | 460.5 | 473 | 473 | 485.5 | 498 | 510.5 | 523 | 535.5 | 548 | 560.5 | 573 | 573 | 585.5 | 598 |
| 5                    | 423 | 435.5 | 448 | 460.5 | 473 | 485.5 | 498 | 510.5 | 510.5 | 523 | 535.5 | 548 | 560.5 | 573 | 573 | 585.5 | 598 | 598 | 610.5 | 610.5 |
| 6                    | 460.5 | 473 | 485.5 | 498 | 510.5 | 523 | 535.5 | 548 | 560.5 | 573 | 585.5 | 598 | 610.5 | 623 | 635.5 | 648 | 660.5 | 673 | 673 | 698 | 698 |
| 7                    | 510.5 | 523 | 535.5 | 548 | 560.5 | 573 | 585.5 | 598 | 610.5 | 623 | 635.5 | 648 | 660.5 | 673 | 673 | 698 | 698 | 723 | 723 | 723 | 748 |
| 8                    | 560.5 | 573 | 585.5 | 598 | 610.5 | 623 | 635.5 | 648 | 660.5 | 673 | 685.5 | 698 | 710.5 | 723 | 723 | 735.5 | 748 | 748 |
| 9                    | 610.5 | 623 | 623 | 635.5 | 648 | 660.5 | 673 | 685.5 | 698 | 710.5 | 723 | 735.5 | 748 | 760.5 | 760.5 | 773 | 785.5 | 798 |
Dimensions: SV1000 Series

Power supply with 7/8 inch connector

Manual override
Press and turn for the locking type
4(A) port side: Orange
2(B) port side: Green

Light/surge voltage suppressor

End Plate  Marker groove

Digital Input Unit  Digital Output Unit

Valve Plate

Power connector  FE terminal

One-touch fitting
[4(A), 2(B) port]

Applicable tubing O.D.: ø3.2, ø1/8”

L2 = L1 – 10.5
L3 = 10.5 x n1 + 53
L4 = L3 + 97.5 + 47 x n2
L5 = (L1 – L4)/2
L6 = 10.5 x n1 + 42
L7 = 47 x n2 + 81

L1: DIN Rail Overall Length

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Dimensions: SV2000 Series

Power supply with M12 connector

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**L1: DIN Rail Overall Length**

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Dimensions: SV2000 Series

Power supply with 7/8 inch connector

![Diagram of power supply with 7/8 inch connector]

- **End Plate**
- **Marker groove**
- **Manual override**
- **Press and turn for the locking type**
- **Orange**
- **Light/surge voltage suppressor**
- **4 x ø5.3**
- **(For mounting)**

**Settings and Measurements**

- **L1: DIN Rail Overall Length**
  - **L2 = L1 – 10.5**
  - **L3 = 16 x n1 + 60**
  - **L4 = L3 + 97.5 + 47 x n2**
  - **L5 = (L1 – L4)/2**
  - **L6 = 16 x n1 + 48**
  - **L7 = 47 x n2 + 81.5**

**Valve Plate**

- **Digital Input Unit**
- **DIN rail holding screw**
- **(For DIN rail mounting)**

**Connectors**

- **Power connector**
- **DIN rail holding screw**
- **(For DIN rail mounting)**

**Applicable Tubing O.D.**

- ø10, ø3/8"
- ø4, ø5/32"
- ø6, ø1/4"
- ø8, ø5/16"

**Valve Plate**

- **For DIN rail mounting**
- **DIN rail holding screw**

**One-touch fitting**

- **[1(P), 3/5(E) port]**
- **Applicable tubing O.D.: ø10, ø3/8"**

**One-touch fitting**

- **[4(A), 2(B) port]**
- **Applicable tubing O.D.: ø4, ø5/32", ø6, ø1/4", ø8, ø5/16"**

**For DIN rail mounting hole pitch: 12.5**

**Dimensions:**

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Dimensions: SV3000 Series

Power supply with M12 connector

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Dimensions: SV3000 Series

Power supply with M12 connector

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Dimensions: SV3000 Series

Power supply with 7/8 inch connector

Manual override
Press and turn for the locking type
4(A) port side: Orange
2(B) port side: Green

Light/surge voltage suppressor
(Station 1) (Station n)
D side
U side

One-touch fitting
[4(A), 2(B) port]
Applicable tubing O.D.: ø6, ø1/4”
ø8, ø5/16”
ø10, ø3/8”

One-touch fitting
[1(P), 3/5(E) port]

Valve Plate
FE terminal
Input connector
Output connector
SI Unit
Connector for Handheld Terminal
Digital Input Unit
Digital Output Unit
Communication connector

L5 = L1 – 10.5
L3 = 20.5 x n1 + 70.5
L4 = L3 + 97.5 + 47 x n2
L5 = (L1 – L4)/2
L6 = 20.5 x n1 + 56
L7 = 47 x n2 + 83.5

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Integrated-type (For Output) Serial Transmission System

**EX260 Series**

**Tie-rod base**

**Applicable series**

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<td>SQ</td>
<td>VFS</td>
<td>VFR</td>
<td>VQ7</td>
<td></td>
</tr>
</tbody>
</table>

**Tie-rod base manifold**

SV1000/SV2000/SV3000

- Number of outputs points: 16, 32 points each

**IP67 (partly IP40) compliant**
The port sizes of X, PE ports for external pilot specifications (R, Rs) are ø4 (millimeters) or ø5/32" (inches) for the SV1000/2000 series, and ø6 (millimeters) or ø1/4" (inches) for the SV3000 series.

Note 4) For SI unit part number, refer to the table below.

### SI Unit specifications (output polarity, protocol, number of outputs, communication connector)

<table>
<thead>
<tr>
<th>Symbol (output polarity)</th>
<th>Protocol</th>
<th>Number of outputs</th>
<th>Communication connector</th>
</tr>
</thead>
<tbody>
<tr>
<td>QA</td>
<td>GAN</td>
<td>32</td>
<td>M12</td>
</tr>
<tr>
<td>NA</td>
<td>N9N</td>
<td>32</td>
<td>M12</td>
</tr>
<tr>
<td>NC</td>
<td>NCN</td>
<td>32</td>
<td>Note 2) Note 2)</td>
</tr>
<tr>
<td>ND</td>
<td>NDN</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>VA</td>
<td>VAN</td>
<td>32</td>
<td>M12</td>
</tr>
<tr>
<td>VB</td>
<td>VBN</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>DA</td>
<td>DNB</td>
<td>32</td>
<td>M12</td>
</tr>
<tr>
<td>FA</td>
<td>FAN</td>
<td>32</td>
<td>M12</td>
</tr>
<tr>
<td>EA</td>
<td>EAN</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>EB</td>
<td>EBN</td>
<td>32</td>
<td>M12</td>
</tr>
</tbody>
</table>

Note 1) DIN rail cannot be mounted without SI Unit. Note 2) Positive common (NPN) type is not applicable. Note 3) IP40 for the D-sub applicable communication connector specification.

The manifod part number is “SSSV-10S1N/D NC/ND”. Note 4) For SI unit part number, refer to the table below.

### A, B port size (Metric size)

<table>
<thead>
<tr>
<th>Symbol</th>
<th>A, B port</th>
<th>P, E port</th>
<th>Applicable series</th>
</tr>
</thead>
<tbody>
<tr>
<td>C3</td>
<td>ø3.2</td>
<td>ø8</td>
<td>SV1000</td>
</tr>
<tr>
<td>C4</td>
<td>ø4</td>
<td>One-touch fitting</td>
<td>SV1000</td>
</tr>
<tr>
<td>C6</td>
<td>ø6</td>
<td>One-touch fitting</td>
<td>SV1000</td>
</tr>
<tr>
<td>C8</td>
<td>ø8</td>
<td>One-touch fitting</td>
<td>SV2000</td>
</tr>
<tr>
<td>C10</td>
<td>ø10</td>
<td>One-touch fitting</td>
<td>SV3000</td>
</tr>
<tr>
<td>M</td>
<td>A, B ports mixed</td>
<td>P, E port</td>
<td>Applicable series</td>
</tr>
</tbody>
</table>

### Valve stations

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Stations</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>QA</td>
<td>02</td>
<td>16</td>
</tr>
<tr>
<td>NA</td>
<td>02</td>
<td>16</td>
</tr>
<tr>
<td>NC</td>
<td>02</td>
<td>16</td>
</tr>
<tr>
<td>ND</td>
<td>02</td>
<td>16</td>
</tr>
<tr>
<td>VA</td>
<td>02</td>
<td>16</td>
</tr>
<tr>
<td>VB</td>
<td>02</td>
<td>16</td>
</tr>
</tbody>
</table>

Note 1) Double wiring: single, double, 3-position and 4-position solenoid valves can be used on all manifold stations. Use of a single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.

Note 2) Specified layout: Indicate the wiring specifications with the manifold specification sheet. (Note that double, 3-position and 4-position valves cannot be used where single solenoid wiring has been specified.)

### A, B port size (Inch size)

<table>
<thead>
<tr>
<th>Symbol</th>
<th>A, B port</th>
<th>P, E port</th>
<th>Applicable series</th>
</tr>
</thead>
<tbody>
<tr>
<td>QA</td>
<td>ø3/16</td>
<td>One-touch fitting</td>
<td>SV1000</td>
</tr>
<tr>
<td>QN</td>
<td>ø5/32</td>
<td>One-touch fitting</td>
<td>SV1000</td>
</tr>
<tr>
<td>NC</td>
<td>ø1/4</td>
<td>One-touch fitting</td>
<td>SV2000</td>
</tr>
<tr>
<td>ND</td>
<td>ø5/32</td>
<td>One-touch fitting</td>
<td>SV2000</td>
</tr>
<tr>
<td>VA</td>
<td>ø5/16</td>
<td>One-touch fitting</td>
<td>SV3000</td>
</tr>
<tr>
<td>VB</td>
<td>ø5/16</td>
<td>One-touch fitting</td>
<td>SV3000</td>
</tr>
<tr>
<td>M</td>
<td>A, B ports mixed</td>
<td>P, E port</td>
<td>Applicable series</td>
</tr>
</tbody>
</table>

### Mounting

#### EX260 SI unit part no.

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Protocol</th>
<th>Number of inputs</th>
<th>SI unit part no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>QA</td>
<td>DeviceNet™</td>
<td>32</td>
<td>EX260-SDN2</td>
</tr>
<tr>
<td>QB</td>
<td>PROFIBUS</td>
<td>16</td>
<td>EX260-SDN4</td>
</tr>
<tr>
<td>NC</td>
<td>PROFIBUS</td>
<td>32</td>
<td>EX260-SPR8</td>
</tr>
<tr>
<td>ND</td>
<td>CC-Link</td>
<td>32</td>
<td>EX260-SMJ2</td>
</tr>
<tr>
<td>VA</td>
<td>M12</td>
<td>32</td>
<td>EX260-SPR3</td>
</tr>
<tr>
<td>VB</td>
<td>M12</td>
<td>32</td>
<td>EX260-SPR5</td>
</tr>
<tr>
<td>VA</td>
<td>M12</td>
<td>32</td>
<td>EX260-SMJ4</td>
</tr>
</tbody>
</table>

### EX260 SI unit part no.

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Protocol</th>
<th>Number of inputs</th>
<th>SI unit part no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>DA</td>
<td>EtherCAT</td>
<td>32</td>
<td>EX260-SEC2</td>
</tr>
<tr>
<td>DB</td>
<td>Ethernet</td>
<td>16</td>
<td>EX260-SEC4</td>
</tr>
<tr>
<td>EA</td>
<td>Ethernet</td>
<td>32</td>
<td>EX260-SPN4</td>
</tr>
<tr>
<td>EB</td>
<td>Ethernet</td>
<td>16</td>
<td>EX260-SPN2</td>
</tr>
<tr>
<td>GA</td>
<td>POWERLINK</td>
<td>32</td>
<td>EX260-SPN3</td>
</tr>
<tr>
<td>GB</td>
<td>POWERLINK</td>
<td>16</td>
<td>EX260-SPN1</td>
</tr>
</tbody>
</table>

* In the case of mixed specifications (M), indicate separately on the manifold specification sheet.

* The port sizes of X, PE ports for external pilot specifications (R, Rs) are ø4 (millimeters) or ø5/32" (inches) for the SV1000/2000 series, and ø6 (millimeters) or ø1/4" (inches) for the SV3000 series.
### How to Order Manifold Assembly

**Example (SV1000)\(^*\)**

<table>
<thead>
<tr>
<th>Manifold</th>
<th>SS5V1-W10S1NAND-04B-C6 (1 set)</th>
</tr>
</thead>
</table>

![Manifold Assembly Diagram](image_url)

**How to Order Manifold Assembly**

1. **Double solenoid**
   - SS5V1-W10S1NAND-04B-C6 (1 set)
2. **Single solenoid**
   - SS1100-5FU (2 sets)
   - SS1200-5FU (2 sets)

**Tie-rod Base:**
- EX260 Integrated-type (For Output) Serial Transmission System

\(^*\) SS5V1-W10S1NAND-04B-C6 — 1 set (Manifold part no.)
- SV1100-5FU —— 2 sets (Single solenoid part no.)
- SV1200-5FU —— 2 sets (Double solenoid part no.)

### How to Order Valves

#### SV Series

<table>
<thead>
<tr>
<th>Series</th>
<th>1</th>
<th>SV1000</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2</td>
<td>SV2000</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>SV3000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type of actuation</th>
<th>1</th>
<th>2-position single</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2</td>
<td>2-position double</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>3-position closed center</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>3-position exhaust center</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>3-position pressure center</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pilot type</th>
<th>Nill</th>
<th>Internal pilot</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>R</td>
<td>External pilot</td>
</tr>
</tbody>
</table>

* 4-position dual 3-port valves are applicable to the SV1000 and SV2000 series only.

<table>
<thead>
<tr>
<th>Back pressure check valve</th>
<th>Nill</th>
<th>None</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>K</td>
<td>Built-in</td>
</tr>
</tbody>
</table>

+ Built-in back pressure check valve type is applicable to the SV1000 series only.
+ Back pressure check valve is not available for 3-position valve.

Note) Refer to Specific Product Precautions 2 on page 138.

<table>
<thead>
<tr>
<th>Rated voltage</th>
<th>24 VDC</th>
</tr>
</thead>
</table>

**Light/Surge voltage suppressor**

<table>
<thead>
<tr>
<th>Type of actuation</th>
<th>U</th>
<th>With light/surge voltage suppressor</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>R</td>
<td>With surge voltage suppressor</td>
</tr>
</tbody>
</table>

**Manual override**

<table>
<thead>
<tr>
<th>Nil</th>
<th>Non-locking push type</th>
</tr>
</thead>
<tbody>
<tr>
<td>D</td>
<td>Push-turn locking slotted type</td>
</tr>
</tbody>
</table>

Note) Available with manifold block for station additions. Refer to page 121.

\(\text{SV1000 SV2000 SV3000 Nil K None Built-in Made to Order} 24 \text{ VDC With light/surge voltage suppressor With surge voltage suppressor Manual override Nil D}\)

\(\text{SV1000 SV2000 SV3000 Nil K None Built-in Made to Order} 24 \text{ VDC With light/surge voltage suppressor With surge voltage suppressor Manual override Nil D}\)

**Ref: SV1000 and SV2000 series only.**

- External pilot specifications is not available for 4-position dual 3-port valves.

**Ref:**
- Refer to page 794 in Best Pneumatics No. 1-1 for the dimensions of single SI unit.
- Refer to the technical operation manual for details of SI unit.
Dimensions: SV1000 Series for EX260 Integrated-type (For Output) Serial Transmission System

- Tie-rod base manifold: SS5V1-W10S1□□D- Stations U/D (S, R, RS)- C3, N1 C6, N7

  - When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.
  - External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.

---

**L: DIN Rail Overall Length**

<table>
<thead>
<tr>
<th>n</th>
<th>L1</th>
<th>L2</th>
<th>L3</th>
<th>L4</th>
<th>L5</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>135.5</td>
<td>125</td>
<td>102.2</td>
<td>16.5</td>
<td>63</td>
</tr>
<tr>
<td>3</td>
<td>148</td>
<td>137.5</td>
<td>112.7</td>
<td>17.5</td>
<td>73.5</td>
</tr>
<tr>
<td>4</td>
<td>148</td>
<td>137.5</td>
<td>112.7</td>
<td>17.5</td>
<td>84</td>
</tr>
<tr>
<td>5</td>
<td>160.5</td>
<td>150</td>
<td>133.2</td>
<td>15.5</td>
<td>94.5</td>
</tr>
<tr>
<td>6</td>
<td>173</td>
<td>162.5</td>
<td>137.1</td>
<td>14.5</td>
<td>105</td>
</tr>
<tr>
<td>7</td>
<td>185.5</td>
<td>175</td>
<td>142.4</td>
<td>13.5</td>
<td>115.5</td>
</tr>
<tr>
<td>8</td>
<td>198</td>
<td>187.5</td>
<td>154.7</td>
<td>12.5</td>
<td>126</td>
</tr>
<tr>
<td>9</td>
<td>210.5</td>
<td>200</td>
<td>165.2</td>
<td>11.5</td>
<td>136.5</td>
</tr>
<tr>
<td>10</td>
<td>210.5</td>
<td>200</td>
<td>165.2</td>
<td>11.5</td>
<td>147</td>
</tr>
<tr>
<td>11</td>
<td>223</td>
<td>225</td>
<td>175.7</td>
<td>10.5</td>
<td>157.5</td>
</tr>
<tr>
<td>12</td>
<td>235.5</td>
<td>225</td>
<td>186.2</td>
<td>9.5</td>
<td>161</td>
</tr>
<tr>
<td>13</td>
<td>248</td>
<td>225</td>
<td>196.7</td>
<td>8.5</td>
<td>168</td>
</tr>
<tr>
<td>14</td>
<td>260.5</td>
<td>225</td>
<td>207.2</td>
<td>7.5</td>
<td>175.5</td>
</tr>
<tr>
<td>15</td>
<td>273</td>
<td>225</td>
<td>217.7</td>
<td>6.5</td>
<td>183</td>
</tr>
<tr>
<td>16</td>
<td>273</td>
<td>225</td>
<td>228.2</td>
<td>5.5</td>
<td>191</td>
</tr>
<tr>
<td>17</td>
<td>285.5</td>
<td>225</td>
<td>238.7</td>
<td>4.5</td>
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</tr>
<tr>
<td>18</td>
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<td>225</td>
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<td>3.5</td>
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<tr>
<td>19</td>
<td>298</td>
<td>225</td>
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<td>2.5</td>
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<td>310.5</td>
<td>225</td>
<td>270.2</td>
<td>1.5</td>
<td>226.5</td>
</tr>
</tbody>
</table>

**SI unit**

- C3: ø3.2 (SMC)
- C4: ø4 (SMC)
- C6: ø6 (SMC)
- N1: ø1/8" (SMC)
- N3: ø5/32" (SMC)
- N7: ø1/4" (SMC)

**Silencer (Air discharge port)**

- Built-in silencer specifications

**Manual override part**

- Press and turn for the locking type.

**Light/Surge voltage suppressor**

- SOL.a: Orange
- SOL.b: Green

**Manual override**

- Press and turn for the locking type.

**One-touch fitting**

- PE: Pilot EXH port

**Applicable tubing O.D.**

- C3: ø3.2 (SMC)
- C4: ø4 (SMC)
- C6: ø6 (SMC)
- N1: ø1/8" (SMC)
- N3: ø5/32" (SMC)
- N7: ø1/4" (SMC)
Dimensions: SV2000 Series for EX260 Integrated-type (For Output) Serial Transmission System

- **Tie-rod base manifold:** SS5V2-W10S1 [D] Stations [U (S, R, RS)] [B (C3, N3)]

  - When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.
  - External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.

---

**Communication connector D-sub**

- [Station 1] ------------------ [Station n]
Dimensions: SV3000 Series for EX260 Integrated-type (For Output) Serial Transmission System

- Tie-rod base manifold: SS5V3-W10S1-D- [Stations U \( \frac{\text{D}}{\text{B}} \)] (S, R, RS)-C6, N7, C10, N11 (-D)
  - When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.
  - External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.

**L: DIN Rail Overall Length**

<table>
<thead>
<tr>
<th>Station</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
<th>17</th>
<th>18</th>
<th>19</th>
<th>20</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>173</td>
<td>185.5</td>
<td>210.5</td>
<td>235.5</td>
<td>248</td>
<td>273</td>
<td>298</td>
<td>310.5</td>
<td>335.5</td>
<td>348</td>
<td>373</td>
<td>398</td>
<td>410.5</td>
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<td>460.5</td>
<td>473</td>
<td>498</td>
<td>523</td>
<td>535.5</td>
</tr>
<tr>
<td>L2</td>
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<td>225</td>
<td>237.5</td>
<td>262.5</td>
<td>287.5</td>
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<td>325</td>
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<td>404.5</td>
<td>425</td>
<td>445.5</td>
<td>466</td>
</tr>
</tbody>
</table>

SI unit

[DIN rail]
Integrated-type (For Output) Serial Transmission System

**EX126 Series**

- **IP67 compliant**

**Applicable series**

- **Tie-rod base manifold**
  - SV1000/SV2000/SV3000

  - Number of outputs points: 16 points
Refer to Best Pneumatics No. 1-1 and the Operation Manual for the details of the EX126 Integrated-type (For Output) Serial Transmission System.


How to Order

**Series**

- **SS5V1** - W 10S4 D 05 U

**Valve stations**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Stations</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>02</td>
<td>2 stations</td>
<td>(1) Double wiring specifications</td>
</tr>
<tr>
<td>08</td>
<td>8 stations</td>
<td></td>
</tr>
<tr>
<td>02</td>
<td>2 stations</td>
<td>(2) Specified layout (up to 16 solenoids possible)</td>
</tr>
<tr>
<td>16</td>
<td>16 stations</td>
<td></td>
</tr>
</tbody>
</table>

**Valve size**

- **SV1000**
- **SV2000**
- **SV3000**

**Mounting**

- **D** DIN rail mounting (With DIN rail)
- **D0** DIN rail mounting (Without DIN rail)
- **D3** For 3 stations when a longer DIN rail is desired than the specified stations. (Specify a longer rail than the standard length.)
- **D16** For 16 stations when a longer DIN rail is desired than the specified stations. (Specify a longer rail than the standard length.)

**SI Unit Part No.**

- **Symbol**: VW
- **Protocol type**: CC-Link
- **SI unit part no.:** EX126D-SMJ1

**P, E port location**

- **U**: U side (2 to 10 stations)
- **D**: D side (2 to 10 stations)
- **B**: Both sides (2 to 16 stations)

**SI Unit Part No.**

- **Symbol**: VW
- **Protocol type**: CC-Link
- **SI unit part no.:** EX126D-SMJ1

**Sup/EXH block assembly specifications**

- **Nil**: Internal pilot
- **S**: Internal pilot/Built-in silencer
- **R**: External pilot
- **RS**: External pilot/Built-in silencer

**P, E port size (Metric)**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>A, B port size</th>
<th>P, E port</th>
<th>Applicable series</th>
</tr>
</thead>
<tbody>
<tr>
<td>C3</td>
<td>One-touch fitting for ø3.2</td>
<td>One-touch fitting for ø8</td>
<td>SV1000</td>
</tr>
<tr>
<td>C4</td>
<td>One-touch fitting for ø4</td>
<td>One-touch fitting for ø8</td>
<td>SV1000</td>
</tr>
<tr>
<td>C5</td>
<td>One-touch fitting for ø6</td>
<td>One-touch fitting for ø10</td>
<td>SV2000</td>
</tr>
<tr>
<td>C6</td>
<td>One-touch fitting for ø4</td>
<td>One-touch fitting for ø8</td>
<td>SV2000</td>
</tr>
<tr>
<td>C8</td>
<td>One-touch fitting for ø6</td>
<td>One-touch fitting for ø10</td>
<td>SV3000</td>
</tr>
<tr>
<td>C10</td>
<td>One-touch fitting for ø10</td>
<td>One-touch fitting for ø12</td>
<td>SV3000</td>
</tr>
<tr>
<td>M</td>
<td>A, B ports mixed</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**A, B port size (Inch)**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>A, B port size</th>
<th>P, E port</th>
<th>Applicable series</th>
</tr>
</thead>
<tbody>
<tr>
<td>N1</td>
<td>One-touch fitting for 1/8&quot;</td>
<td></td>
<td>SV1000</td>
</tr>
<tr>
<td>N3</td>
<td>One-touch fitting for 5/32&quot;</td>
<td></td>
<td>SV1000</td>
</tr>
<tr>
<td>N7</td>
<td>One-touch fitting for 1/4&quot;</td>
<td></td>
<td>SV2000</td>
</tr>
<tr>
<td>N9</td>
<td>One-touch fitting for 5/16&quot;</td>
<td></td>
<td>SV2000</td>
</tr>
<tr>
<td>N11</td>
<td>One-touch fitting for 3/8&quot;</td>
<td></td>
<td>SV3000</td>
</tr>
<tr>
<td>M</td>
<td>A, B ports mixed</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* In the case of mixed specifications (M), indicate separately on the manifold specification sheet.
* Port sizes of X, PE port for external pilot specification (R, RS) are ø4 (Metric), ø5/32" (Inch) for SV1000/2000 and ø6 (Metric) and ø1/4" (Inch) for SV3000.

Note: When the built-in silencer type is used, keep the exhaust port from coming in direct contact with water or other liquids.
How to Order Manifold Assembly
Ordering example (SV1000)
Manifold
SSSV1-W10S4VWD-05B-C6 (1 set)

How to Order Valve

SV 1 1 0 0 [ ] [ ] [ ] [ ] - 5 F [ ] [ ] [ ]

Type of actuation
1 2 position single
2 2 position double
3 3 position closed center
4 3 position exhaust center
5 3 position pressure center
A 4 position dual 3 port valve: N.C./N.C.
B 4 position dual 3 port valve: N.O./N.O.
C 4 position dual 3 port valve: N.C./N.O.

Pilot type
Nil Internal pilot
R External pilot

Back pressure check valve
Nil None
K Built-in

Manual override
Nil: Non-locking push type
D: Push-turn locking slotted type

Light/Surge voltage suppressor
U: With light/surge voltage suppressor
R: With surge voltage suppressor

Rated voltage
5 24 VDC

Note) Available with manifold block for station additions. Refer to page 121.

Made to Order
X90 Main valve fluororubber (Refer to page 136.)

Note) External pilot specifications is not available for 4 position dual 3 port valves.

Note) Built-in back pressure check valve type is applicable to the SV1000 series only.

Note) Built-in back pressure check valve is not available for 3 position valve.

Note) Refer to Specific Product Precautions 2 on page 138.
Dimensions: SV1000 Series for EX126 Integrated-type (For Output) Serial Transmission System

- Tie-rod base manifold: SS5V1-W10S4D-\text{[Stations]}^\text{(U)}(\text{S, R, RS})-\text{[Stations]}^\text{(L)}\text{[C3, N1, C4, N3, C6, N7]}^\text{(-D)}

One-touch fitting

1(P), 3/5(E) port
Applicable tubing O.D.: C8: ø8 (SMC)
N9: ø5/16" (SMC)

One-touch fitting

4(A), 2(B) port
Applicable tubing O.D.: C3: ø3.2 (SMC)
C4: ø4 (SMC)
C6: ø6 (SMC)
N1: ø1/8" (SMC)
N3: ø5/32" (SMC)
N7: ø1/4" (SMC)

---

**Manifold block internal wiring specifications**

Light/Surge voltage suppressor

Manifold block internal wiring specifications

S: Single wiring
D: Double wiring

Note: Use the dropproof plug assembly (AXT100-B04A) for the unused signal and power supply outlet port (G1/2).
Dimensions: SV2000 Series for EX126 Integrated-type (For Output) Serial Transmission System

● Tie-rod base manifold: SS5V2-W10S4[D-(Stations)U (S, R, RS)-(C4,N3,C6,N7,C8,N9)](-D)

One-touch fitting

4 x ø5.3
(For mounting)

DIN rail holding screw
(For DIN rail mounting)

DIN rail holding screw
(For DIN rail mounting)

Light/Surge voltage suppressor

Manifold block internal wiring specifications

S: Single wiring
D: Double wiring

<table>
<thead>
<tr>
<th>L Dimension</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>210.5</td>
<td>223</td>
<td>248</td>
<td>260.5</td>
<td>273</td>
<td>285.5</td>
<td>310.5</td>
<td>323</td>
<td>335.5</td>
<td>348</td>
<td>373</td>
<td>385.5</td>
<td>398</td>
<td>423</td>
<td>435.5</td>
</tr>
<tr>
<td>L2</td>
<td>200</td>
<td>212.5</td>
<td>237.5</td>
<td>250</td>
<td>262.5</td>
<td>275</td>
<td>300</td>
<td>312.5</td>
<td>325</td>
<td>337.5</td>
<td>362.5</td>
<td>375</td>
<td>387.5</td>
<td>412.5</td>
<td>425</td>
</tr>
<tr>
<td>L3</td>
<td>180.8</td>
<td>196.8</td>
<td>212.8</td>
<td>228.8</td>
<td>244.8</td>
<td>260.8</td>
<td>276.8</td>
<td>292.8</td>
<td>308.8</td>
<td>324.8</td>
<td>340.8</td>
<td>356.8</td>
<td>372.8</td>
<td>388.8</td>
<td>404.8</td>
</tr>
<tr>
<td>L4</td>
<td>15</td>
<td>13</td>
<td>17.5</td>
<td>16</td>
<td>14</td>
<td>12.5</td>
<td>17</td>
<td>15</td>
<td>13.5</td>
<td>11.5</td>
<td>16</td>
<td>14.5</td>
<td>12.5</td>
<td>17</td>
<td>15.5</td>
</tr>
</tbody>
</table>
| L5          | 80  | 98  | 112 | 128 | 144 | 160 | 176 | 192 | 208 | 224 | 240 | 256 | 272 | 288 | 304

Note) Use the dropproof plug assembly (AXT100-B04A) for the unused signal and power supply outlet port (G1/2).
**SV Series**

**Dimensions: SV3000 Series for EX126 Integrated-type (For Output) Serial Transmission System**

- **Tie-rod base manifold**: SS5V3-W10S4 [D, Stations C6, N7, C8, N9, C10, N11] (-D)

---

**One-touch fitting**

1. (P), 3/5(E) port
   - Applicable tubing O.D.: C12: ø12 (SMC), N11: ø3/8" (SMC)

2. (A), 2(B) port
   - Applicable tubing O.D.: C6: ø6 (SMC), C8: ø8 (SMC), C10: ø10 (SMC), N7: ø1/4" (SMC), N9: ø5/16" (SMC), N11: ø3/8" (SMC)

---

**Manual override**

- Press and turn for the locking type.
  - 4(A) port side: Orange
  - 2(B) port side: Green

---

**Light/Surge voltage suppressor**

- Station n: (Station 1)

---

**Manifold block internal wiring specifications**

- B: Single wiring
- D: Double wiring

---

**Dimensions**

<table>
<thead>
<tr>
<th>L Dimension</th>
<th>n: Stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>235.5 248 273 285.5 310.5 335.5 348 373 398 410.5 435.5 460.5 473 498 510.5</td>
</tr>
<tr>
<td>L2</td>
<td>225 237.5 262.5 275 300 325 337.5 362.5 387.5 400 425 450 462.5 487.5 500</td>
</tr>
<tr>
<td>L3</td>
<td>200.3 220.8 241.3 261.8 282.3 302.8 323.3 343.8 364.3 384.8 405.3 425.8 446.3 466.8 487.3</td>
</tr>
<tr>
<td>L4</td>
<td>17.5 13.5 16 12 14 16.5 12.5 14.5 17 13 19 17.5 13.5 15.5 11.5</td>
</tr>
<tr>
<td>L5</td>
<td>97 117.5 138 158.5 179 199.5 220 240.5 261 281.5 302 322.5 343 363.5 384</td>
</tr>
</tbody>
</table>

---

**Note**

- Use the droopproof plug assembly (AXT100-B04A) for the unused signal and power supply outlet port (G1/2).
# Integrated-type (For Output) Serial Transmission System

## EX120 Series

### Applicable series

- **Cassette base manifold**
  - SV1000/SV2000

- **Tie-rod base manifold**
  - SV1000/SV2000/SV3000/SV4000

- Number of outputs points: 16 points
# EX120 Integrated-type (For Output) Serial Transmission System

## SV Series

### How to Order Manifold

#### Tie-rod base

**SS5V**

- **Series 1**
  - 1 SV1000
  - 2 SV2000

#### Cassette base

**SS5V**

- **Series 1**
  - 1 SV1000
  - 2 SV2000

### SI Unit Part No.

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Protocol type</th>
<th>SI unit part no.</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td>NKE Corp.: Fieldbus H System</td>
<td>EX120-SHU1</td>
<td>—</td>
</tr>
<tr>
<td>Q</td>
<td>DeviceNet</td>
<td>EX120-SDN1</td>
<td>—</td>
</tr>
<tr>
<td>R1</td>
<td>OMRON Corp.: CompoBus/S (16 output points)</td>
<td>EX120-SCS1</td>
<td>—</td>
</tr>
<tr>
<td>R2</td>
<td>OMRON Corp.: CompoBus/S (8 output points)</td>
<td>EX120-SCS2</td>
<td>—</td>
</tr>
<tr>
<td>V</td>
<td>CC-LINK</td>
<td>EX120-SCM1</td>
<td>—</td>
</tr>
<tr>
<td>ZB</td>
<td>CompoNet™ (Positive common)</td>
<td>EX120-SCM2</td>
<td>—</td>
</tr>
<tr>
<td>ZBN</td>
<td>CompoNet™ (Negative common)</td>
<td>EX120-SCM3</td>
<td>—</td>
</tr>
</tbody>
</table>

Note: Communication connector (for the opposite side) is not provided, order it separately.

### Valve stations

- **Note** Double wiring specifications
- **Note** Specified layout

### P, E port location

- **U** U side (2 to 10 stations)
- **D** D side (2 to 10 stations)
- **B** Both sides (2 to 16 stations)

### A, B port size (Metric)

<table>
<thead>
<tr>
<th>Symbol</th>
<th>A, B port</th>
<th>P, E port</th>
<th>A, B port size (Metric)</th>
</tr>
</thead>
<tbody>
<tr>
<td>C3</td>
<td>One-touch fitting for ø3.2</td>
<td>—</td>
<td>SV1000</td>
</tr>
<tr>
<td>C4</td>
<td>One-touch fitting for ø4</td>
<td>—</td>
<td>SV2000</td>
</tr>
<tr>
<td>C5</td>
<td>One-touch fitting for ø6</td>
<td>—</td>
<td>SV3000</td>
</tr>
<tr>
<td>C6</td>
<td>One-touch fitting for ø8</td>
<td>—</td>
<td>SV4000</td>
</tr>
<tr>
<td>C7</td>
<td>One-touch fitting for ø10</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>C8</td>
<td>One-touch fitting for ø12</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>C9</td>
<td>One-touch fitting for ø14</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>C10</td>
<td>One-touch fitting for ø16</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>C11</td>
<td>One-touch fitting for ø18</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>C12</td>
<td>One-touch fitting for ø20</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>O2</td>
<td>Rc 1/4</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>O3</td>
<td>Rc 3/8</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>O2F</td>
<td>G 1/4</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>O3F</td>
<td>G 3/8</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

### A, B port size (Inch)

<table>
<thead>
<tr>
<th>Symbol</th>
<th>A, B port</th>
<th>P, E port</th>
<th>A, B port size (Inch)</th>
</tr>
</thead>
<tbody>
<tr>
<td>N1</td>
<td>One-touch fitting for 1/8&quot;</td>
<td>—</td>
<td>SV1000</td>
</tr>
<tr>
<td>N2</td>
<td>One-touch fitting for 5/32&quot;</td>
<td>—</td>
<td>SV2000</td>
</tr>
<tr>
<td>N3</td>
<td>One-touch fitting for 1/16&quot;</td>
<td>—</td>
<td>SV3000</td>
</tr>
<tr>
<td>N4</td>
<td>One-touch fitting for 5/64&quot;</td>
<td>—</td>
<td>SV4000</td>
</tr>
</tbody>
</table>

---

* In the case of mixed specifications (M), indicate separately on the manifold specification sheet.
* Port sizes of X, PE port for external pilot specification (R, RS) are ø4 (metric), ø5/32” (inch) for SV1000/2000 and ø6 (metric) for SV3000/4000.

---

How to Order Manifold Assembly

Ordering example (SV1000)

Manifold
SSSV1-16S3-06B-C6 (1 set)

![Manifold Assembly Diagram]

Double solenoid
SV1200-5FU (2 sets)

Single solenoid
SV1100-5FU (4 sets)

How to Order Solenoid Valves

SV 1 1 0 0 - 5 F

Series
1 SV1000
2 SV2000
3 SV3000
4 SV4000

Type of actuation
1 2 position single
2 2 position double
3 3 position closed center
4 3 position exhaust center
5 3 position pressure center
A 4 position dual 3 port valve: N.C./N.C.
B 4 position dual 3 port valve: N.O./N.O.
C 4 position dual 3 port valve: N.C./N.O.

* 4 position dual 3 port valves are applicable to the SV1000 and SV2000 series only.

Pilot type
Nil Internal pilot
R External pilot

* External pilot specifications is not available for 4 position dual 3 port valves.

Rated voltage
5 24 VDC

* Nil: Non-locking push type
* D: Push-turn locking slotted type

Features
Internal pilot
Nil
External pilot
R

Manual override
Nil
X90 Main valve fluoro rubber (Refer to page 136.)

Made to Order

Nil

Light/Surge voltage suppressor
U With light/surge voltage suppressor
R With surge voltage suppressor

Back pressure check valve
Nil None
K Built-in

* Built-in back pressure check valve type is applicable to the SV1000 series only.
* Back pressure check valve is not available for 3 position Valve.

Note) Available with manifold block for station additions. Refer to pages 115 and 121.

Note) Made to Order Nil

Main valve fluoro rubber (Refer to page 136.)

Note) Refer to Specific Product Precautions 2 on page 138.
**Dimensions: SV1000 Series for EX120 Integrated-type (For Output) Serial Transmission System**

- Cassette base manifold: SS5V1-16S3- D-[Stations (S, R, RS)-]

- When P,E port outlets are indicated on the U side or D side, the P,E ports on the opposite side are plugged.
- External pilot port positions and silencer discharge port positions are the same as P,E port outlet positions.

### With External Pilot Specifications

- Applicable tubing O.D.: ø4, ø5/32"
- Applicable tubing O.D.: ø6, ø1/4"
- Applicable tubing O.D.: ø8, ø5/16"
- Applicable tubing O.D.: ø10, ø3/8"
- Applicable tubing O.D.: ø12, ø1/2"

### L Dimension

<table>
<thead>
<tr>
<th>n</th>
<th>Stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>2</td>
</tr>
<tr>
<td>L2</td>
<td>148</td>
</tr>
<tr>
<td>L3</td>
<td>92.9</td>
</tr>
<tr>
<td>L4</td>
<td>13</td>
</tr>
</tbody>
</table>

**Dimensions are the ones for SV1300-**
Dimensions: SV2000 Series for EX120 Integrated-type (For Output) Serial Transmission System

● Cassette base manifold: SS5V2-16S3 □ D- [Stations] [L1, L2, L3, L4]

When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.

External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.

With External Pilot Specifications

L Dimension

<table>
<thead>
<tr>
<th>n</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
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<th>9</th>
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<tr>
<td>L1</td>
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<td>210.5</td>
<td>220</td>
<td>235.5</td>
<td>248</td>
<td>260.5</td>
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<td>288</td>
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<td>323</td>
<td>348</td>
<td>360.5</td>
<td>373</td>
<td>385.5</td>
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</tr>
<tr>
<td>L2</td>
<td>162.5</td>
<td>175</td>
<td>187.5</td>
<td>200</td>
<td>225</td>
<td>237.5</td>
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<td>262.5</td>
<td>287.5</td>
<td>300</td>
<td>312.5</td>
<td>337.5</td>
<td>350</td>
<td>362.5</td>
<td>375</td>
<td></td>
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</tr>
<tr>
<td>L3</td>
<td>108.9</td>
<td>124.9</td>
<td>140.9</td>
<td>156.9</td>
<td>172.9</td>
<td>188.9</td>
<td>204.9</td>
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<td>236.9</td>
<td>252.9</td>
<td>268.9</td>
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<td>300.9</td>
<td>316.9</td>
<td>332.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>L4</td>
<td>17.5</td>
<td>16</td>
<td>14</td>
<td>12.5</td>
<td>17</td>
<td>15</td>
<td>13.5</td>
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<td>17</td>
<td>16.5</td>
<td>13.5</td>
<td>12</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Dimensions: SV1000 Series for EX120 Integrated-type (For Output) Serial Transmission System**

- **Tie-rod base manifold**: SS5V1-10S3□(S, R, RS) -D-
  - U side
  - D side
  - C3, N1
  - C4, N3
  - C6, N7 (S, R, RS)

- When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.
- External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.

### With External Pilot Specifications

**DIN rail holding screw**

(FOR DIN rail mounting)

4 x ø4.3

(For mounting)

**Manual override**

Press and turn for the locking type.
- 4(A) port side: Orange
- 2(B) port side: Green

**Silencer (Air discharge port)**

(Built-in silencer specifications)

**Light/Surge voltage suppressor**

### L Dimension

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**Dimensions are the ones for SV1300□-□**
Dimensions: SV2000 Series for EX120 Integrated-type (For Output) Serial Transmission System

● Tie-rod base manifold: SS5V2-10S3-D-[Stations] U, (S, R, RS)-C4, N3-D-U (D)

- When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.
- External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.

With External Pilot Specifications

- [PE: Pilot EXH port]
  - One-touch fitting
  - Applicable tubing O.D.: ø10 ø3/8”
- [X: External pilot port]
  - One-touch fitting
  - Applicable tubing O.D.: ø4 ø5/32”
  - ø6, ø1/4”
  - ø8, ø5/16”

- DIN rail holding screw
- (For DIN rail mounting)

Silencer (Air discharge port)
(Built-in silencer specifications)

Manual override
- Press and turn for the locking type.
  - 4(A) port side: Orange
  - 2(B) port side: Green

With option

- Individual SUP spacer
- Individual EXH spacer
- Interface regulator
  - SV2000- M1
  - SV2000-00

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**Dimensions: SV3000 Series for EX120 Integrated-type (For Output) Serial Transmission System**

- Tie-rod base manifold: SS5V3-10S3□-D- (Stations) U (S, R, RS) (-D)

  - When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.
  - External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.

**With External Pilot Specifications**

- Manual override
  - Press and turn for the locking type.
  - 4(A) port side: Orange
  - 2(B) port side: Green

**With option**

- Individual SUP spacer
- Individual EXH spacer

**L Dimension**

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Dimensions: SV4000 Series for EX120 Integrated-type (For Output) Serial Transmission System

- Tie-rod base manifold: SS5V4-10S3 □ D-[Stations] (S, R, RS)-□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□圈

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<td>421</td>
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<td>445</td>
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</tbody>
</table>
Circular Connector

- **Applicable series**
  - Cassette base manifold
    - SV1000/SV2000
  - Tie-rod base manifold
    - SV1000/SV2000/SV3000/SV4000

- Number of connectors: 26 pins

- **IP67 compliant**
Circular Connector  
SV Series

How to Order Manifold

**Series**

- Cassette base
  - SS5V
- Tie-rod base
  - SS5V

**Valve stations**

**Type 16: SV1000 series**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Stations</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>02</td>
<td>2 stations</td>
<td>Double wiring specifications (1)</td>
</tr>
<tr>
<td>09</td>
<td>9 stations</td>
<td>Specified layout (2) (Up to 18 solenoids possible.)</td>
</tr>
<tr>
<td>02</td>
<td>2 stations</td>
<td>Double wiring specifications (1)</td>
</tr>
<tr>
<td>18</td>
<td>18 stations</td>
<td>Specified layout (2) (Up to 18 solenoids possible.)</td>
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**Type 16: SV2000 series**

<table>
<thead>
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<th>Stations</th>
<th>Note</th>
</tr>
</thead>
<tbody>
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<td>2 stations</td>
<td>Double wiring specifications (1)</td>
</tr>
<tr>
<td>12</td>
<td>12 stations</td>
<td>Specified layout (2) (Up to 24 solenoids possible.)</td>
</tr>
<tr>
<td>02</td>
<td>2 stations</td>
<td>Double wiring specifications (1)</td>
</tr>
<tr>
<td>20</td>
<td>20 stations</td>
<td>Specified layout (2) (Up to 24 solenoids possible.)</td>
</tr>
</tbody>
</table>

**Note**

1) Double wiring specifications: Single, double, 3 position and 4 position solenoid valves can be used at all of the manifold stations. Use of a single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.

2) Specified layout: Indicate wiring specifications on the manifold specification sheet. (Note that double, 3 and 4 position valves cannot be used where single solenoid wiring has been specified.)

**Mounting**

- Direct mounting: Nil
- DIN rail mounting: (With DIN rail)
  - D0: DIN rail mounting (Without DIN rail)
  - D3: For 3 stations
  - D20: For 20 stations

**DIN rail length specification**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Standard length</th>
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</thead>
<tbody>
<tr>
<td>3</td>
<td>For 3 stations</td>
</tr>
<tr>
<td>20</td>
<td>For 20 stations</td>
</tr>
</tbody>
</table>

**Note**

Able to specify the length for 3 stations up to 18 stations for SV1000, which is available with 18 stations at the maximum.

**A, B port size (Metric)**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Specifications</th>
<th>P, E port</th>
<th>Applicable series</th>
</tr>
</thead>
<tbody>
<tr>
<td>C3</td>
<td>One-touch fitting for ø3/8&quot;</td>
<td>One-touch fitting for ø8&quot;</td>
<td>SV1000</td>
</tr>
<tr>
<td>C4</td>
<td>One-touch fitting for ø4&quot;</td>
<td>One-touch fitting for ø10&quot;</td>
<td>SV1000</td>
</tr>
<tr>
<td>C5</td>
<td>One-touch fitting for ø5/16&quot;</td>
<td>One-touch fitting for ø12&quot;</td>
<td>SV1000</td>
</tr>
<tr>
<td>C6</td>
<td>One-touch fitting for ø5/8&quot;</td>
<td>One-touch fitting for ø14&quot;</td>
<td>SV1000</td>
</tr>
<tr>
<td>C8</td>
<td>One-touch fitting for ø6&quot;</td>
<td>One-touch fitting for ø16&quot;</td>
<td>SV1000</td>
</tr>
<tr>
<td>A10</td>
<td>One-touch fitting for ø7/8&quot;</td>
<td>One-touch for ø18&quot;</td>
<td>SV1000</td>
</tr>
<tr>
<td>A12</td>
<td>One-touch fitting for ø8&quot;</td>
<td>One-touch fitting for ø20&quot;</td>
<td>SV1000</td>
</tr>
<tr>
<td>02C</td>
<td>G 1/4</td>
<td>G 3/8</td>
<td>SV1000</td>
</tr>
<tr>
<td>03F</td>
<td>G 3/8</td>
<td></td>
<td>SV1000</td>
</tr>
</tbody>
</table>

**A, B port size (inch)**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Specifications</th>
<th>P, E port</th>
<th>Applicable series</th>
</tr>
</thead>
<tbody>
<tr>
<td>N1</td>
<td>One-touch fitting for ø1/8&quot;</td>
<td>One-touch fitting for ø5/16&quot;</td>
<td>SV1000</td>
</tr>
<tr>
<td>N3</td>
<td>One-touch fitting for ø5/32&quot;</td>
<td>One-touch fitting for ø5/16&quot;</td>
<td>SV1000</td>
</tr>
<tr>
<td>N7</td>
<td>One-touch fitting for ø1/4&quot;</td>
<td>One-touch fitting for ø5/32&quot;</td>
<td>SV1000</td>
</tr>
<tr>
<td>N9</td>
<td>One-touch fitting for ø5/16&quot;</td>
<td>One-touch fitting for ø5/32&quot;</td>
<td>SV1000</td>
</tr>
<tr>
<td>N10</td>
<td>One-touch fitting for ø1/16&quot;</td>
<td>One-touch fitting for ø5/16&quot;</td>
<td>SV1000</td>
</tr>
<tr>
<td>N11</td>
<td>One-touch fitting for ø1/16&quot;</td>
<td>One-touch fitting for ø5/16&quot;</td>
<td>SV1000</td>
</tr>
<tr>
<td>N2N</td>
<td>NPT 1/4</td>
<td>NPT 3/8</td>
<td>SV3000</td>
</tr>
<tr>
<td>03N</td>
<td>NPT 3/8</td>
<td></td>
<td>SV3000</td>
</tr>
<tr>
<td>02T</td>
<td>NPTF 1/4</td>
<td>NPTF 3/8</td>
<td>SV4000</td>
</tr>
<tr>
<td>03T</td>
<td>NPTF 3/8</td>
<td></td>
<td>SV4000</td>
</tr>
</tbody>
</table>

**SUP/EXH block assembly specifications**

- NIL Internal pilot
- S* Internal pilot/Built-in silencer
- R* External pilot
- RS* External pilot/Built-in silencer

**Note**

- When the built-in silencer type is used, keep the exhaust port from coming in direct contact with water or other liquids.
How to Order Manifold Assembly

Ordering example (SV1000)

Manifold
SS5V1-W16CD-06B-C6 (1 set)

How to Order Solenoid Valves

Series
1 SV1000
2 SV2000
3 SV3000
4 SV4000

Type of actuation

1 2 position single
2 2 position double
3 3 position closed center
4 3 position exhaust center
5 3 position pressure center
A 4 position dual 3 port valve: N.C./N.C.
B 4 position dual 3 port valve: N.O./N.O.
C 4 position dual 3 port valve: N.C./N.O.

Pilot type

Nil Internal pilot
R External pilot

Back pressure check valve

Nil None
K Built-in

Note) Available with manifold block for station additions. Refer to pages 115 and 121.

Made to Order

Nil

X90 Main valve fluororubber (Refer to page 136.)

Manual override

Nil: Non-locking push type
D: Push-turn locking slotted type

Light/Surge voltage suppressor

U With light/surge voltage suppressor
R With surge voltage suppressor

Rated voltage

5 24 VDC
6 12 VDC

Note) Refer to Specific Product Precautions 2 on page 138.
### Manifold Electrical Wiring

#### 10C/16C Circular Connector Type (26 pins)

<table>
<thead>
<tr>
<th>Terminal no.</th>
<th>Polarity</th>
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<tr>
<td>Station 1</td>
<td>(+) (-)</td>
</tr>
<tr>
<td>Station 2</td>
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<tr>
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<td>Station 10</td>
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<td>Station 11</td>
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<tr>
<td>Station 12</td>
<td>(+) (-)</td>
</tr>
<tr>
<td>COM</td>
<td>(+) (-)</td>
</tr>
</tbody>
</table>

• This circuit has double wiring specifications for up to 12 stations. Since the usable number of solenoids differs depending on the manifold type, refer to the table below. In the case of single solenoids, connect to SOL A. Furthermore, when wiring is specified on a manifold specification sheet, connections are made without skipping any connectors, and connections are made without skipping any connectors, and signals A for single and A, B for double are in order 1 → 2 → 3 → 4, etc.

• Stations are counted from D side (connector side) as the 1st.

• Since solenoid valves do not have polarity, either the +COM or –COM can be used.

#### Usable No. of Solenoids

<table>
<thead>
<tr>
<th>Model</th>
<th>Max. no. of solenoids</th>
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</thead>
<tbody>
<tr>
<td>Tie-rod base type 10 SV1000 to SV4000</td>
<td>24</td>
</tr>
<tr>
<td>Cassette base type 16 SV1000 SV2000</td>
<td>18 24</td>
</tr>
</tbody>
</table>
Dimensions: SV1000 Series for Circular Connector

- Cassette base manifold: SS5V1-W16CD (S, R, RS)
- When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.
- External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.

With External Pilot Specifications

- One-touch fitting
  - [1(P), 3/5(E) port]
  - Applicable tubing O.D.: ø8, ø5/16"
- One-touch fitting
  - [4(A), 2(B) port]
  - Applicable tubing O.D.: ø4, ø5/32", ø6, ø1/4"

DIN rail holding screw

- Press and turn for the locking type.
- 4(A) port side: Orange
- 2(B) port side: Green

Silencer (Air discharge port)

- Built-in silencer specifications
- 4(A) port side: Orange
- 2(B) port side: Green

L Dimension

<table>
<thead>
<tr>
<th>n</th>
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<th>15</th>
<th>16</th>
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<tbody>
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<td>15</td>
<td>16</td>
<td>17</td>
<td>11.5</td>
</tr>
</tbody>
</table>

Dimensions are the ones for SV1300-CL.

With option

- Individual EXH spacer
- Individual SUP spacer

Interface regulator

- SV1100-06
- SV1100-05

Min. bending radius 20 mm

Press and turn for the locking type.

Notch

(To align connector position)

(DIN rail dimension)

(DIN rail holding screw)

Light/Surge voltage suppressor

(Station n) - (Station 1)

With option

- Dimensions are the ones for SV1300-CL.
### Dimensions: SV2000 Series for Circular Connector

**Cassette base manifold:** SS5V2-W16CD

- **Legend:**
  - Stations 1-20
  - U: Upper side
  - B: Lower side
  - D: D side

- **Notes:**
  - When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.
  - External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.

#### With External Pilot Specifications

- **External Pilot Specifications**
  - One-touch fitting [PE: Pilot EXH port]
  - Applicable tubing O.D.: ø4, ø5/32", ø6, ø1/4", ø8, ø5/16" (Pitch)
  - Rail mounting hole pitch: 12.5

- **Manual override**
  - Press and turn for the locking type.

- **Silencer (Air discharge port)**
  - (Built-in silencer specifications)
  - 4(A) port side: Orange
  - 2(B) port side: Green

#### L Dimension

<table>
<thead>
<tr>
<th>n</th>
<th>Stations</th>
<th>2</th>
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<th>4</th>
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<td>13</td>
<td>17.5</td>
<td>16</td>
<td>14</td>
<td>12.5</td>
</tr>
</tbody>
</table>
Dimensions: SV1000 Series for Circular Connector

- **Tie-rod base manifold: SS5V1-W10CD**
  - Stations (S, R, RS) - CS, N1
  - C6, N7 (-D)

- When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.
- External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.

**With External Pilot Specifications**

- One-touch fitting
  - [1(P), 3/5(E) port]
  - Applicable tubing O.D.: ø10
  - ø5/16"

- One-touch fitting
  - [4(A), 2(B) port]
  - Applicable tubing O.D.: ø3.2, ø1/8"
  - ø6, ø1/4"

- One-touch fitting
  - [X: External pilot port]
  - PE: Pilot EXH port
  - Applicable tubing O.D.: ø4
  - ø5/32"

- One-touch fitting
  - [X: External pilot port]
  - Built-in silencer specifications
  - Applicable tubing O.D.: ø4
  - ø5/32"

- One-touch fitting
  - [X: External pilot port]
  - External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.

**With option**

- DIN rail holding screw
  - (For DIN rail mounting)
  - Rail mounting hole pitch: 12.5

- Silencer (Air discharge port)
  - (Built-in silencer specifications)

- Manual override
  - Press and turn for the locking type.
  - 4(A) port side: Orange
  - 2(B) port side: Green

- Light/Surge voltage suppressor
  - SV1000 Series
  - SV

**L Dimension**

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**Dimensions**

- Dimensions are the ones for SV1300 and SV1000.
- SV1300
  - SV
  - SYJ
  - SZ
  - VF
  - VP4
  - VQ 1/2
  - VQ 4/5
  - VQC 1/2
  - VQC 4/5
  - VQZ
  - SQ
  - VFS
  - VFR
  - VQ 7
Dimensions: SV2000 Series for Circular Connector


- When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.

- External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.

### With External Pilot Specifications

- **One-touch fitting**
  - [1(P), 3/5(E) port]
  - Applicable tubing O.D.: ø10 ø3/8"
  - [4(A), 2(B) port]
  - Applicable tubing O.D.: ø4, ø3/32" ø6, ø1/4" ø8, ø5/16"
  - [PE: Pilot EXH port]
  - Applicable tubing O.D.: ø4 ø5/32"
  - [X: External pilot port]
  - Applicable tubing O.D.: ø4 ø5/32"

### Dimensions: SV Series for Circular Connector

#### L Dimension

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Dimensions: SV3000 Series for Circular Connector

- **Tie-rod base manifold:** SS5V3-W10CD-(S, R, RS)-C6, N7 (-D)
- **C8, N9**
- **C10, N11**

- When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.
- External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.

### With External Pilot Specifications

- **Silencer (Air discharge port)**
  - (Built-in silencer specifications)
  - DIN rail holding screw (For DIN rail mounting)
  - (For mounting)
  - Manual override
    - Press and turn for the locking type.
    - 4(A) port side: Orange
    - 2(B) port side: Green
    - D side
    - U side
    - Notch (To align connector position)
    - (To align connector position)
  - Light/Surge voltage suppressor (Cable assembly)
    - Min. bending radius 20 mm
    - (When circular connector is mounted)

### L Dimension

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Dimensions: SV4000 Series for Circular Connector

- Tie-rod base manifold: SS5V4-W10CD-(Stations) U B (S, R, RS)

- When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.

- External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.

**With External Pilot Specifications**

- One-touch fitting
  - [4(A), 2(B) port] Applicable tubing O.D.: ø8, ø5/16, ø10, ø3/8, ø12

- One-touch fitting
  - [Rc 3/8] [1(P), 3(E) port]
  - [Rc 1/4, 3/8] [4(A), 2(B) port]

**With option**

- Individual EXH spacer
- Individual SUP spacer
- SV4000-M1
- Interface regulator
- Interface regulator

**L Dimension**

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## D-sub Connector

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<td><strong>SV1000/SV2000</strong></td>
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<tr>
<td>Tie-rod base manifold</td>
<td><strong>SV1000/SV2000/SV3000/SV4000</strong></td>
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- Number of connectors: 25 pins
- MIL-C-24308
- Conforming to JIS-X-5101
D-sub Connector

SV Series

How to Order Manifold

Valve stations

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<td>Specified layout (2) (Up to 18 solenoids possible.)</td>
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Mounting

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P, E port location

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<td>D side (2 to 10 stations)</td>
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A, B port size (metric)

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<td>03F</td>
<td>G 1/4</td>
<td>G 3/8</td>
<td>SV4000</td>
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</table>

A, B port size (inch)

<table>
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<tr>
<th>Symbol</th>
<th>A, B port</th>
<th>P, E port</th>
<th>Applicable series</th>
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<tr>
<td>N1</td>
<td>One-touch fitting for ø1/8&quot;</td>
<td>One-touch fitting for ø5/32&quot;</td>
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<tr>
<td>N2</td>
<td>One-touch fitting for ø3/8&quot;</td>
<td>One-touch fitting for ø5/32&quot;</td>
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<td>One-touch fitting for ø1/4&quot;</td>
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<td>One-touch fitting for ø5/32&quot;</td>
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<td>One-touch fitting for ø3/8&quot;</td>
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<td>D2N</td>
<td>NPT 1/4</td>
<td>NPT 3/8</td>
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<td>D3N</td>
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<td>D2T</td>
<td>NPTF 1/4</td>
<td>NPTF 3/8</td>
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<td>D3T</td>
<td>NPTF 3/8</td>
<td>NPTF 3/8</td>
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<tr>
<td>M</td>
<td>A, B ports mixed</td>
<td>M</td>
<td>M</td>
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Notes:
- Double wiring specifications: Single, double, 3 position and 4 position solenoid valves can be used at all of the manifold stations. Use of a single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.
- Specified layout: Indicate wiring specifications on the manifold specification sheet. (Note that double, 3 and 4 position valves cannot be used where single solenoid wiring has been specified.)
- In the case of mixed specifications (M), indicate separately on the manifold specification sheet.
- Port sizes of X, PE port for external pilot specifications (R, RS) are ø4 (metric), ø5/32" (inch) for SV1000/2000 and ø6 (metric) and ø1/4" (inch) for SV3000/4000.
How to Order Manifold Assembly

Ordering example (SV1000)

Manifold
SSSV1-16FD1-06B-C6 (1 set)

Double solenoid
SV1200-5FU (2 sets)

Single solenoid
SV1100-5FU (4 sets)

SSSV1-16FD1-06B-C6---------1 set (Manifold part no.)
* SV1100-5FU---------4 sets (Single solenoid part no.)
* SV1200-5FU---------2 sets (Double solenoid part no.)

How to Order Solenoid Valves

SV 1 1 0 0 [ ] [ ] [ ] [ ] 5 F [ ] [ ] [ ] [ ] 1 1 2 3 4

Series
1 SV1000
2 SV2000
3 SV3000
4 SV4000

Type of actuation
1 2 position single
2 2 position double
3 3 position closed center
4 3 position exhaust center
5 3 position pressure center
A 4 position dual 3 port valve: N.C./N.C.
B 4 position dual 3 port valve: N.O./N.O.
C 4 position dual 3 port valve: N.C./N.O.

* 4 position dual 3 port valves are applicable to the SV1000 and SV2000 series only.

Pilot type
Nil Internal pilot
R External pilot

* External pilot specifications is not available for 4 position dual 3 port valves.

Made to Order
Nil
X90 Main valve fluororubber (Refer to page 136.)

Manual override
Nil: Non-locking push type
D: Push-turn locking slotted type

Light/Surge voltage suppressor
U With light/surge voltage suppressor
R With surge voltage suppressor

Rated voltage
5 24 VDC
6 12 VDC

Back pressure check valve
Nil None
K Built-in

* Built-in back pressure check valve type is applicable to the SV1000 series only.
* Back pressure check valve is not available for 3 position valve.

Note) Available with manifold block for station additions. Refer to pages 115 and 121.

Note) Refer to Specific Product Precautions 2 on page 138.
SV Series

Manifold Electrical Wiring

### 10F/16F D-sub Connector Type (25 pins)

- **Common**
- **SOL.b**
- **SOL.a**

Station 1:
- Station 1
- Station 2

- **Common**
- **SOL.b**
- **SOL.a**

Station 11:
- Station 11

- **Common**
- **SOL.b**
- **SOL.a**

**Usable No. of Solenoids**

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<tr>
<th>Model</th>
<th>Max. no. of solenoids</th>
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<tr>
<td>Tie-rod base type 10</td>
<td>SV1000 to SV4000</td>
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<td>Cassette base type 16</td>
<td>SV1000</td>
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<tr>
<td></td>
<td>SV2000</td>
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</table>

- This circuit has double wiring specifications for up to 11 stations. Since the usable number of solenoids differs depending on the manifold type, refer to the table below.
- In the case of single solenoids, connect to SOL.A. Furthermore, when wiring is specified on the manifold specification sheet, connections are made without skipping any connectors, and signals A for single and A, B for double are in order 1 → 14 → 2 → 15, etc.
- Stations are counted from D side (connector side) as the 1st.
- Since solenoid valves do not have polarity, either the +COM or –COM can be used.
Dimensions: SV1000 Series for D-sub Connector

- Cassette base manifold: SS5V1-16FD
  - Stations U (S, R, RS)

- When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.
- External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.

With External Pilot Specifications

One-touch fitting

[1(P), 3/5(E) port]
Applicable tubing O.D.: ø8, ø5/16" (Pitch)

[4(A), 2(B) port]
Applicable tubing O.D.: ø3.2, ø1/8" (Lateral connector entry)

Silencer (Air discharge port) (Built-in silencer specifications)

External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.

Applicable tubing O.D.: ø4, ø1/4" (e5/32"

[PE: Pilot EXH port]
Applicable tubing O.D.: ø4, ø5/32"

[1(P), 3/5(E) port]
Applicable tubing O.D.: ø8, ø5/16"

[4(A), 2(B) with inch size ports]
Applicable tubing O.D.: ø3.2, ø1/8", ø4, ø5/32"

DIN rail holding screw

[4(A), 2(B) with inch size ports]
Applicable tubing O.D.: ø3.2, ø1/8", ø4, ø5/32"

One-touch fitting

[4(A), 2(B) port]
Applicable tubing O.D.: ø3.2, ø1/8", ø4, ø5/32"

DIN rail holding screw

[4(A), 2(B) with inch size ports]
Applicable tubing O.D.: ø3.2, ø1/8", ø4, ø5/32"

External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.

Applicable tubing O.D.: ø4, ø5/32"

[1(P), 3/5(E) port]
Applicable tubing O.D.: ø8, ø5/16"

[4(A), 2(B) port]
Applicable tubing O.D.: ø3.2, ø1/8", ø4, ø5/32"

DIN rail holding screw

[4(A), 2(B) with inch size ports]
Applicable tubing O.D.: ø3.2, ø1/8", ø4, ø5/32"

One-touch fitting

[4(A), 2(B) port]
Applicable tubing O.D.: ø3.2, ø1/8", ø4, ø5/32"

DIN rail holding screw

[4(A), 2(B) with inch size ports]
Applicable tubing O.D.: ø3.2, ø1/8", ø4, ø5/32"
**SV Series**

**Dimensions: SV2000 Series for D-sub Connector**

- **Cassette base manifold:** SS5V2-16FD

- **Stations:**
  - U (S, R, RS)
  - B (L1, L2, L3, L4, L)

- **Dimensions:**
  - L1
  - L2
  - L3
  - L4
  - L Dimension

- **With External Pilot Specifications**

- **When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.**

- **External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.**

---

**With option**

- **Individual SUP spacer**
- **Individual EXH spacer**
- **Interface regulator SV2000-M1**
- **Interface regulator SV2000-M9**

---

**Table:**

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<tr>
<th>L Dimension</th>
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**Note:**

- L Dimension: L1, L2, L3, L4
- Stations: U (S, R, RS), B (L1, L2, L3, L4, L)
- Equivalent to applicable D-sub connector
- DIN rail holding screw
- Manual override
- Press and turn for the locking type.
Dimensions: SV1000 Series for D-sub Connector

- Tie-rod base manifold: SS5V1-10FD
  - Stations: U, B (S, R, RS) - C₃, N₁, C₄, N₂ (-D)
  - When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.
  - External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.

With External Pilot Specifications

- [1(P), 3/5(E) port]
- Applicable tubing O.D.: ø8, ø5/16”
- [4(A), 2(B) port]
- Applicable tubing O.D.: ø3.2, ø1/8”, ø4, ø5/32”, ø6, ø1/4”

With option

- [PE: Pilot EXH port]
- Applicable tubing O.D.: ø4, ø5/32”

DIN rail holding screw
(For DIN rail mounting)

Manual override
Press and turn for the locking type.
4(A) port side: Orange
2(B) port side: Green

Equivalent to applicable D-sub connector

SV1000 Series

L Dimension

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</table>

Dimensions are the ones for SV1300-C. C.

[Dimensions are the ones for SV1000 Series for D-sub Connector]
Dimensions: SV2000 Series for D-sub Connector

- Tie-rod base manifold: SS5V2-10FΩ^1 \( \frac{1}{2} \) (S, R, RS) - C4, N3 (-D) [Stations U B (S, R, RS) - C6, N7 (-D)]

- When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.

- External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.

With External Pilot Specifications

- One-touch fitting [PE: Pilot EXH port]
  - Applicable tubing O.D.: ø4, ø5/32" ø6, ø1/4" ø8, ø5/16"

- One-touch fitting [X: External pilot port]
  - Applicable tubing O.D.: ø4, ø5/32"

With option

- Light/Surge voltage suppressor

L Dimension

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Dimensions: SV3000 Series for D-sub Connector

- Tie-rod base manifold: SS5V3-10FD
- When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.
- External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.

With External Pilot Specifications

- Applicable tubing O.D.: ø12
- One-touch fitting

With option

- Individual SUP spacer
- Individual EXH spacer

L Dimension

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<td>470.5</td>
<td>491</td>
</tr>
<tr>
<td>L4</td>
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<td>L5</td>
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<td>384</td>
<td>404.5</td>
<td>425</td>
<td>445.5</td>
<td>466</td>
</tr>
</tbody>
</table>

D-sub Connector SV Series

VQ

SV

SYJ

SZ

VF

VP4

VQ

VQ/4

VQC

VQC/4

VQZ

SQ

VFS

VFR

VQ7

Dimensions: SV3000 Series for D-sub Connector
Dimensions: SV4000 Series for D-sub Connector

- **Tie-rod base manifold:** SS5V4-10FD
- **Stations:** U
  - (S, R, RS)
  - C8
  - C10
  - C12
  - N9
  - N11

- When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.
- External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.

### With External Pilot Specifications

- **External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.**

### With option

- **Interface regulator**
  - SV4000-01/M1
- **Individual SUP output**
  - Individual EH solenoid

### Light/Surge voltage suppressor

- **(Station n) (Station 1)**

### Equivalent to applicable D-sub connector

- **JS-X-5101**
  - MIL-C-24308

### Dimensions

**L Dimension**

| L1 | L2 | L3 | L4 | L5 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|----|----|----|----|----|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| 173 | 198 | 223 | 248 | 273 | 298 | 310.5 | 335.5 | 360.5 | 385.5 | 410.5 | 435.5 | 460.5 | 485.5 | 510.5 | 535.5 | 560.5 | 585.5 | 610.5 |
| 162.5 | 187.5 | 212.5 | 237.5 | 262.5 | 287.5 | 300 | 325 | 350 | 375 | 400 | 425 | 450 | 475 | 500 | 525 | 550 | 575 | 600 |
| 137 | 161 | 185 | 209 | 233 | 257 | 281 | 305 | 329 | 353 | 377 | 401 | 425 | 449 | 473 | 497 | 521 | 545 | 569 |
| 21 | 21.5 | 22 | 22.5 | 23 | 23.5 | 18 | 18.5 | 19 | 19.5 | 20 | 20.5 | 21 | 21.5 | 22 | 22.5 | 23 | 23.5 | 24 |
| 109 | 133 | 157 | 181 | 205 | 229 | 253 | 277 | 301 | 325 | 349 | 373 | 397 | 421 | 445 | 469 | 493 | 517 | 541 |

**Notes:**

- DIN rail holding screw
- (For DIN rail mounting)
- Equivalent to applicable D-sub connector
- Press and turn for the locking type.
- 4(A) port side: Orange
- 2(B) port side: Green
- Pitch
- Lateral connector entry
- [1(P), 3(E) port]
- [1(P), 3/5(E) port]
- [4(A), 2(B) port]
- [4(A), 2(B) with inch size ports]
- One-touch fitting
- Applicable tubing O.D.: ø12
- ø10, ø3/8"
Flat Ribbon Cable Connector

Applicable series

<table>
<thead>
<tr>
<th>Cassette base manifold</th>
<th>SV1000/SV2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tie-rod base manifold</td>
<td>SV1000/SV2000/SV3000/SV4000</td>
</tr>
</tbody>
</table>

- Number of connectors: 26, 20, 10 pins
- With strain relief
- Conforming to MIL-C-83503
**Flat Ribbon Cable Connector**

**SV Series**

## How to Order Manifold

### Valve stations

**SV1000 series**

<table>
<thead>
<tr>
<th>Connector type</th>
<th>P: Flat ribbon cable 26 pins</th>
<th>PH: Flat ribbon cable 10 pins</th>
</tr>
</thead>
<tbody>
<tr>
<td>P</td>
<td>Double wiring (1) specifications</td>
<td>Double wiring (1) specifications</td>
</tr>
<tr>
<td>PG</td>
<td>Specified layout (2) (Up to 18 solenoids possible.)</td>
<td>Specified layout (2) (Up to 8 solenoids possible.)</td>
</tr>
<tr>
<td>PH</td>
<td>Double wiring (1) specifications</td>
<td>Double wiring (1) specifications</td>
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</table>

**SV2000 series**

<table>
<thead>
<tr>
<th>Connector type</th>
<th>P: Flat ribbon cable 26 pins</th>
<th>PH: Flat ribbon cable 10 pins</th>
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<tr>
<td>P</td>
<td>Double wiring (1) specifications</td>
<td>Double wiring (1) specifications</td>
</tr>
<tr>
<td>PG</td>
<td>Specified layout (2) (Up to 18 solenoids possible.)</td>
<td>Specified layout (2) (Up to 8 solenoids possible.)</td>
</tr>
</tbody>
</table>

### Mounting

- **Direct mounting**
- **DIN rail mounting** (With DIN rail)
  - **D0** DIN rail mounting (Without DIN rail)
  - **D3** DIN rail mounting (With DIN rail and a longer rail than the specified stations. Specify a longer rail than the standard length.)
  - **D20** For 20 stations

### DIN rail length specified

- **Nil**
- **Standard length**
- **3** For 3 stations
- **20** For 25 stations

### Pilot type

- **Nil** Internal pilot
- **S** Internal pilot/Built-in silencer
- **R** External pilot
- **RS** External pilot/Built-in silencer

### Series

**SS5V** 10 P D 05 U

**Series**

1. **SV1000**
2. **SV2000**
3. **SV3000**
4. **SV4000**

### Connector entry direction

1. **Upward**
2. **Lateral**

### Tie-rod base

- **SV1000 series**
  - **SS5V 1 - 10 P D 05 U**

### Cassette base

- **SV2000 series**
  - **SS5V 1 - 16 P D 05 U**

### Note 1)

Double wiring specifications: Single, double, 3 and 4 position solenoid valves can be used on all manifold stations. Use of a single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.

### Note 2)

Specified layout: Indicate wiring specifications on a manifold specification sheet. (Note that double, 3 and 4 position valves cannot be used where single solenoid wiring has been specified.)
How to Order Valve Manifold Assembly

Ordering example (SV1000)

Manifold
SSSV1-16PD1-06B-C6 (1 set)

Double solenoid
SV1200-5FU (2 sets)

Single solenoid
SV1100-5FU (4 sets)

SSSV1-16PD1-06B-C6……1 set (manifold part no.)
- SV1100-5FU……4 sets (Single solenoid part no.)
- SV1200-5FU……2 sets (Double solenoid part no.)

A, B port size (Metric)

<table>
<thead>
<tr>
<th>Symbol</th>
<th>A, B port</th>
<th>P, E port</th>
<th>Applicable series</th>
</tr>
</thead>
<tbody>
<tr>
<td>C3</td>
<td>One-touch fitting for ø3.2</td>
<td>One-touch fitting for ø8</td>
<td>SV1000</td>
</tr>
<tr>
<td>C4</td>
<td>One-touch fitting for ø4</td>
<td>One-touch fitting for ø10</td>
<td>SV2000</td>
</tr>
<tr>
<td>C6</td>
<td>One-touch fitting for ø6</td>
<td>One-touch fitting for ø12</td>
<td>SV3000</td>
</tr>
<tr>
<td>C8</td>
<td>One-touch fitting for ø8</td>
<td>One-touch fitting for ø12</td>
<td>SV4000</td>
</tr>
<tr>
<td>C10</td>
<td>One-touch fitting for ø10</td>
<td>One-touch fitting for ø12</td>
<td>SV3000</td>
</tr>
<tr>
<td>C11</td>
<td>One-touch fitting for ø10</td>
<td>One-touch fitting for ø12</td>
<td>SV4000</td>
</tr>
<tr>
<td>C12</td>
<td>One-touch fitting for ø12</td>
<td>One-touch fitting for ø12</td>
<td>SV4000</td>
</tr>
<tr>
<td>02</td>
<td>Rc 1/4</td>
<td>Rc 3/8</td>
<td>SV1000</td>
</tr>
<tr>
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<td>Rc 3/8</td>
<td>Rc 3/8</td>
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<td>SV1000</td>
</tr>
<tr>
<td>03F</td>
<td>G 3/8</td>
<td>G 3/8</td>
<td>SV1000</td>
</tr>
</tbody>
</table>

A, B port size (Inch)

<table>
<thead>
<tr>
<th>Symbol</th>
<th>A, B port</th>
<th>P, E port</th>
<th>Applicable series</th>
</tr>
</thead>
<tbody>
<tr>
<td>N1</td>
<td>One-touch fitting for ø1/8”</td>
<td>One-touch fitting for ø5/16”</td>
<td>SV1000</td>
</tr>
<tr>
<td>N3</td>
<td>One-touch fitting for ø5/32”</td>
<td>One-touch fitting for ø5/16”</td>
<td>SV2000</td>
</tr>
<tr>
<td>N7</td>
<td>One-touch fitting for ø1/4”</td>
<td>One-touch fitting for ø5/32”</td>
<td>SV3000</td>
</tr>
<tr>
<td>N9</td>
<td>One-touch fitting for ø5/16”</td>
<td>One-touch fitting for ø5/16”</td>
<td>SV3000</td>
</tr>
<tr>
<td>N11</td>
<td>One-touch fitting for ø3/8”</td>
<td>One-touch fitting for ø5/8”</td>
<td>SV4000</td>
</tr>
<tr>
<td>N2N</td>
<td>NPT 1/4</td>
<td>NPT 3/8</td>
<td>NPT 3/8</td>
</tr>
<tr>
<td>03N</td>
<td>NPT 3/8</td>
<td>NPT 3/8</td>
<td>NPT 3/8</td>
</tr>
<tr>
<td>02T</td>
<td>NPTF 1/4</td>
<td>NPTF 3/8</td>
<td>NPTF 3/8</td>
</tr>
<tr>
<td>03T</td>
<td>NPTF 3/8</td>
<td>NPTF 3/8</td>
<td>NPTF 3/8</td>
</tr>
<tr>
<td>M</td>
<td>A, B ports mixed</td>
<td>A, B ports mixed</td>
<td>SV3000/4000</td>
</tr>
</tbody>
</table>

- In the case of mixed specifications (M), indicate separately on the manifold specification sheet.
- Port sizes of X, PE port for external pilot specification (R, RS) are ø4 (metric), ø5/32” (inch) for SV1000/2000 and ø6(metric) and ø1/4” (inch) for SV3000/4000.
How to Order Manifold

- **Series**
  - 1: SV1000
  - 2: SV2000
  - 3: SV3000
  - 4: SV4000

- **Mounting**
  - Nil
  - Direct mounting
  - D: DIN rail mounting (With DIN rail)
  - D0: DIN rail mounting (Without DIN rail)
  - D3: For 3 stations
  - D16: For 16 stations

- **SS5V**
- **10GD**
- **05 U**

- **Cassette base**
- **SS5V**
- **16GD**
- **05 U**

- **Valve stations**
  - Symbol: C3, C4, C6, C8, C4, C6, C8, C10, C12
  - A, B port size (metric)
  - Symbol: N1, N3, N7, N3, N7, N9, N11, N9, N11, N11
  - A, B port size (inch)

- **DIN rail length specified**
  - Nil
  - Standard length
  - 3: For 3 stations
  - 16: For 16 stations

- **SU/H block assembly specifications**
  - Nil
  - Internal pilot
  - Internal pilot/Built-in silencer
  - External pilot
  - External pilot/Built-in silencer

- **Mounting**
  - Nil
  - Direct mounting
  - D: DIN rail mounting (With DIN rail)
  - D0: DIN rail mounting (Without DIN rail)
  - D3: For 3 stations
  - D16: For 16 stations

- **SUP/EXH block assembly specifications**
  - Nil
  - Internal pilot
  - Internal pilot/Built-in silencer
  - External pilot
  - External pilot/Built-in silencer

- **Note**
  - Double wiring specifications: Single, double, 3 position and 4 position solenoid valves can be used on all manifold stations. Use of a single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.
  - Specified layout: Indicate wiring specifications on the manifold specification sheet. (Note that double, 3 position and 4 position valves cannot be used where single solenoid wiring has been specified.)

- **Tabulation**
  - Symbol: C3, C4, C6, C8, C10, C12
  - A, B port size (metric)
  - Symbol: N1, N3, N7, N9, N11
  - A, B port size (inch)

- **Flat Ribbon Cable PC Wiring**

- **SV Series**

- **Note**
  - In the case of mixed specifications (M), indicate separately on the manifold specification sheet.
  - Port sizes of X, PE port for external pilot specification (R, RS) are ø4 (metric), ø5/32" (inch) for SV1000/2000 and ø6 (metric) and ø1/4" (inch) for SV3000/4000.
How to Order Valve

**SV Series**

### Series
- 1: SV1000
- 2: SV2000
- 3: SV3000
- 4: SV4000

### Type of actuation
- 1: 2 position single
- 2: 2 position double
- 3: 3 position closed center
- 4: 3 position exhaust center
- 5: 3 position pressure center

- A: 4 position dual 3 port valve: N.C./N.C.
- B: 4 position dual 3 port valve: N.O./N.O.
- C: 4 position dual 3 port valve: N.C./N.O.

### Made to Order
- Nil
- X90 (Main valve fluoro rubber, refer to page 136)

### Manual override
- Nil
- Non-locking push type
- D: Push-turn locking slotted type

### Light/ Surge voltage suppressor
- Nil
- With light/surge voltage suppressor
- U
- With surge voltage suppressor

### Rated voltage
- 5: 24 VDC

### Pilot type
- Nil: Internal pilot
- R: External pilot

### Back pressure check valve
- Nil: None
- K: Built-in

* 4 position dual 3 port valves are applicable to the SV1000 and SV2000 series only.

* External pilot specifications is not available for 4 position dual 3 port valves.

* Built-in back pressure check valve type is applicable to the SV1000 series only.

* Back pressure check valve is not available for 3 position valve.
• Since solenoid valves do not have polarity, either the +COM or –COM can be used.
• Since terminal numbers are not indicated on the flat cable, use the triangle mark as a reference for wiring.
• Stations are counted from D side (connector side) as the 1st one.

### Usable No. of Solenoids

<table>
<thead>
<tr>
<th>Model</th>
<th>Max. no. of solenoids</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tie-rod base type 10</td>
<td>SV1000 to SV4000</td>
</tr>
<tr>
<td>Cassette base type 16</td>
<td>SV1000 SV2000</td>
</tr>
</tbody>
</table>

### 10GD/16GD Flat Ribbon Cable Type (PC Wiring)

• This circuit has double wiring specifications for up to 8 stations. Since the usable number of solenoids differs depending on the manifold type, refer to the table below. In the case of single solenoids, connect to SOL A. Furthermore, when wiring is specified on a manifold specification sheet, connections are made without skipping any connectors, and signals A for single and A, B for double are in order 1 → 2 → 3 → 4, etc.
• Stations are counted from D side (connector side) as the 1st one.
• Since terminal numbers are not indicated on the flat cable, use the triangle mark as a reference for wiring.
• Since solenoid valves do not have polarity, either the +COM or –COM can be used.

### Usable No. of Solenoids

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</tr>
<tr>
<td>Cassette base type 16</td>
<td>SV1000 SV2000</td>
</tr>
</tbody>
</table>
Dimensions: SV1000 Series for Flat Ribbon Cable

- Cassette base manifold: SS5V1-16
- When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.
- External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.

With External Pilot Specifications

Refer to page 87 (compliant for D-sub connector) for dimensions with interface regulator and individual SUP/EXH spacer.
Dimensions: SV2000 Series for Flat Ribbon Cable

- Cassette base manifold: SS5V2-16
- DIN rail holding screw
- Connector case
- Release lever (Both sides)
- Lateral connector entry
- One-touch fitting
  - [X: External pilot port]
  - Applicable tubing O.D.: ø4
  - ø5/32"
  - [PE: Pilot EXH port]
  - Applicable tubing O.D.: ø4
  - ø5/32"
  - [1(P), 3/5(E) port]
  - Applicable tubing O.D.: ø10
  - ø3/8"
  - [4(A), 2(B) port]
  - Applicable tubing O.D.: ø4, ø5/32"
  - ø6, ø1/4"
  - ø8, ø5/16"

- Manual override
  - Press and turn for the locking type.
  - (4(A) port side: Orange
  - 2(B) port side: Green

- Light/Surge voltage suppressor
- Block separation lever
- One-touch fitting
  - [PE: Pilot EXH port]
  - Applicable tubing O.D.: ø4
  - ø5/32"

- With External Pilot Specifications

- Connector case
  - Release lever (Both sides)
  - Silencer (Air discharge port)
    - Built-in silencer specifications

- Applicable connector: 26 pins MIL type
  - Conforming to MIL-C-83503

- Applicable connector: 20 pins MIL type
  - Conforming to MIL-C-83503

- Applicable connector: 10 pins MIL type
  - Conforming to MIL-C-83503

- Triangular mark positions

- Refer to page 87 (compliant for D-sub connector) for dimensions with interface regulator and individual SUP/EXH spacer.

<table>
<thead>
<tr>
<th>L Dimension</th>
<th>n: Stations</th>
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<tbody>
<tr>
<td>L1</td>
<td>2</td>
</tr>
<tr>
<td>L2</td>
<td>3</td>
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<tr>
<td>L3</td>
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<tr>
<td>L4</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Dimensions: SV1000 Series for Flat Ribbon Cable**

- **Tie-rod base manifold**: SS5V1-10 (D) - Stations (S, R, RS) - (D)
  - When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.
  - External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.

**With External Pilot Specifications**

- **Applicable connector**: 20 pins MIL type (Conforming to MIL-C-83503)
- **Applicable connector**: 10 pins MIL type (Conforming to MIL-C-83503)
- **Applicable tubing O.D.**: ø8, ø5/16", ø4, ø5/32", ø6, ø1/4"

**Light/Surge voltage suppressor**

- Refer to page 87 (compliant for D-sub connector) for dimensions with interface regulator and individual SUP/EXH spacer.

---

**L Dimension**

<table>
<thead>
<tr>
<th></th>
<th>2</th>
<th>3</th>
<th>4</th>
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</table>
Dimensions: SV2000 Series for Flat Ribbon Cable

- **Tie-rod base manifold**: SS5V2-10
- **Dimensions**: (S, R, RS) (D - Stations)
- **External pilot port specifications**: P, E port positions and silencer discharge port positions are the same as P, E port outlet positions.

### L Dimension

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Flat Ribbon Cable Connector  **SV Series**

**Dimensions: SV3000 Series for Flat Ribbon Cable**

- **Tie-rod base manifold:** SS5V3-10
- **Dimensions:** SV3000 Series for Flat Ribbon Cable
- **Stations:** L1, L2, L3, L4, L5, L n

### L Dimension

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**Notes:**
- When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.
- External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions. 

**With External Pilot Specifications**

- Applicable connector: 26 pins MIL type (Conforming to MIL-C-83503)
- Applicable connector: 20 pins MIL type (Conforming to MIL-C-83503)
- Applicable connector: 10 pins MIL type (Conforming to MIL-C-83503)

Refer to page 91 (compliant for D-sub connector) for dimensions with interface regulator and individual SUP/EXH spacer.
Dimensions: SV4000 Series for Flat Ribbon Cable

- Tie-rod base manifold: SS5V4-10D - Stations \((S, R, RS)\) \(\text{L}_1 \text{L}_2 \text{L}_3 \text{L}_4 \text{L}_5 \text{L}_n\) \((-D)\)
  - When \(P, E\) port outlets are indicated on the \(U\) side or \(D\) side, the \(P, E\) ports on the opposite side are plugged.
  - External pilot port positions and silencer discharge port positions are the same as \(P, E\) port outlet positions.

With External Pilot Specifications

- One-touch fitting
  - \(1(P), 3/5(E)\) port
    - Applicable tubing O.D.: \(\phi 12\) \(\phi 3/8\)
  - \(4(A), 2(B)\) port
    - Applicable tubing O.D.: \(\phi 8, \phi 5/16\) \(\phi 10, \phi 3/8\) \(\phi 12\)

- Connector case
  - Release lever (Both sides)
  - Triangle mark position

- Applicable connector: 26 pins MIL type
  - (Conforming to MIL-C-83503)

- Applicable connector: 20 pins MIL type
  - (Conforming to MIL-C-83503)

- Applicable connector: 10 pins MIL type
  - (Conforming to MIL-C-83503)

- Manual override
  - Press and turn for the locking type.
  - \(4(A)\) port side: Orange
  - \(2(B)\) port side: Green

- Silencer (Air discharge port)
  - (Built-in silencer specifications)
  - (Lateral connector entry)

- Applicable connector: 20 pins MIL type
  - Refer to page 92 (compliant for D-sub connector) for dimensions with interface regulator and individual SUP/EXH spacer.

**L Dimension**

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</table>
**Flat Ribbon Cable Connector**

**SV Series**

**Dimensions: SV1000 Series for PC Wiring**

- **Cassette base manifold:** SS5V1-16GD-[Stations] (S, R, RS)

  - When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.
  - External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.

**With External Pilot Specifications**

- **One-touch fitting**
  - [1(P), 3/5(E) port]
  - Applicable tubing O.D.: φ8
  - φ5/16"

- **One-touch fitting**
  - [4(A), 2(B) port]
  - Applicable tubing O.D.: φ1.2, φ1/8"
  - φ4, φ5/32"
  - φ6, φ1/4"

**Applicable connector:** 20 pins MIL type

- [Conforming to MIL-C-83503]

**Manual override**

- Press and turn for the locking type.
  - (4(A) port side: Orange
  - 2(B) port side: Green)

**Connector case**

- Release lever (Both sides)

**Silencer (Air discharge port)**

- (Built-in silencer specifications)

**L Dimension**

<table>
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<th>L Dimension</th>
<th>n : Stations</th>
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<td>L4</td>
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</table>

Refer to page 87 (compliant for D-sub connector) for dimensions with interface regulator and individual SUP/EXH spacer.
### Dimensions: SV1000 Series for PC Wiring

- **Tie-rod base manifold**: SS5V1-10GD (Stations: S, R, RS) (-D)

  - When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.
  - External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.

#### With External Pilot Specifications

**When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.**

**External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.**

---

### Table: SV Series

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*Refer to page 89 (compliant for D-sub connector) for dimensions with interface regulator and individual SUP/EXH spacer.*
Dimensions: SV2000 Series for PC Wiring

- Cassette base manifold: SS5V2-16GD

- When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.
- External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.

With External Pilot Specifications

- One-touch fitting (1(P), 3(5(E) port)
  Applicable tubing O.D.: ø10 ø3/8"

- One-touch fitting (4(A), 2(B) port)
  Applicable tubing O.D.: ø4, ø5/32" ø6, ø1/4" ø8, ø5/16"

- PE: Pilot EXH port
  Applicable tubing O.D.: ø4 ø5/32"

- X: External pilot port
  Applicable tubing O.D.: ø4 ø5/32"

- 1(P), 3/5(E) port
  Applicable tubing O.D.: ø10 ø3/8"

- 4(A), 2(B) port
  Applicable tubing O.D.: ø4, ø5/32" ø6, ø1/4" ø8, ø5/16"

- U side
  Applicable connector: 20 pins MIL type (Conforming to MIL-C-83503)

- (Lateral connector entry)
  Connector case
  Release lever (Both sides)

- Manual override
  Press and turn for the locking type. (4(A) port side: Orange 2(B) port side: Green)

- Silencer (Air discharge port)
  Built-in silencer specifications

- DIN rail holding screw
  (Rail mounting hole pitch: 12.5)

- Light/Surge voltage suppressor

- Block separation lever

Refer to page 88 (compliant for D-sub connector) for dimensions with interface regulator and individual SUP/EXH spacer.
### Dimensions: SV2000 Series for PC Wiring

#### Tie-rod base manifold: SS5V2-10G1\(^{-}\) (Stations)\(^{[C4, N3]}(S, R, RS)\(^{-}\) (-D)

- When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.
- External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.

#### With External Pilot Specifications

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<td>304</td>
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</table>

Refer to page 90 (compliant for D-sub connector) for dimensions with interface regulator and individual SUP/EXH spacer.
Dimensions: SV3000 Series for PC Wiring

- Tie-rod base manifold: SS5V3-10GD\(^n\) (S, R, RS) \(-\) (S, N7, C18, N11\(^\text{-D}\))

- When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.
- External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.

With External Pilot Specifications

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<td>VQ</td>
<td>4/5</td>
<td>VQC</td>
</tr>
<tr>
<td>VQ</td>
<td>1/2</td>
<td>VQ</td>
<td>4/5</td>
<td></td>
</tr>
<tr>
<td>VQZ</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SQ</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VFS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VFR</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VQ7</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Light/Surge voltage suppressor</th>
</tr>
</thead>
</table>

Refer to page 91 (compliant for D-sub connector) for dimensions with interface regulator and individual SUP/EXH spacer.

### L Dimension

<table>
<thead>
<tr>
<th>L Dimension</th>
<th>n: Stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>L1</td>
<td>160.5</td>
</tr>
<tr>
<td>L2</td>
<td>150</td>
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<tr>
<td>L3</td>
<td>122</td>
</tr>
<tr>
<td>L4</td>
<td>22.5</td>
</tr>
<tr>
<td>L5</td>
<td>97</td>
</tr>
</tbody>
</table>
Dimensions: SV4000 Series for PC Wiring

- Tie-rod base manifold: SS5V4-10GD- (Stations S, R, RS) -

  - When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.
  - External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.

With External Pilot Specifications

- One-touch fitting
  - [P, 3(5)](E) port
    - Applicable tubing O.D.: ø12
      - ø3/8"

- One-touch fitting
  - [4(A), 2(B)] port
    - Applicable tubing O.D.: ø6, ø5/16" to ø12

- When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.

- External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.

- One-touch fitting
  - [X: External port]
    - Applicable tubing O.D.: ø6 to ø1/4"

- One-touch fitting
  - [PE: Pilot EXH port]
    - Applicable tubing O.D.: ø6 to ø1/4"

- Rc 1/4, 3/8
  - [4(A), 2(B) port]
    - Applicable tubing O.D.: ø12 to ø3/8"

- [1(P), 3/5(E) port]
  - Applicable tubing O.D.: ø12 to ø3/8"

- Manual override
  - Prass and turn for the (locking type).
  - 4(A) port side: Orange
  - 2(B) port side: Green

- Silencer (Air discharge port)
  - Built-in silencer specifications

- (Station n) - (Station 1)

- Light/Surge voltage suppressor
  - DIN rail holding screw (For DIN rail mounting)
  - Connector case
  - Release lever (Both sides)
  - Triangle mark position
  - (Lateral connector entry)
    - Applicable connector: 20 pins
      - MIL type
        - Conforming to MIL-C-83503

- SV Series

Refer to page 92 (compliant for D-sub connector) for dimensions with interface regulator and individual SUP/EXH spacer.

L Dimension

<table>
<thead>
<tr>
<th>L</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>185.5</td>
<td>210.5</td>
<td>235.5</td>
<td>260.5</td>
<td>285.5</td>
<td>310.5</td>
<td>335.5</td>
<td>348</td>
<td>373</td>
<td>398</td>
<td>423</td>
<td>448</td>
<td>473</td>
<td>498</td>
<td>523</td>
</tr>
<tr>
<td>L2</td>
<td>175</td>
<td>200</td>
<td>225</td>
<td>250</td>
<td>275</td>
<td>300</td>
<td>325</td>
<td>337.5</td>
<td>362.5</td>
<td>367.5</td>
<td>412.5</td>
<td>437.5</td>
<td>462.5</td>
<td>487.5</td>
<td>512.5</td>
</tr>
<tr>
<td>L3</td>
<td>137</td>
<td>161</td>
<td>185</td>
<td>209</td>
<td>233</td>
<td>257</td>
<td>281</td>
<td>305</td>
<td>329</td>
<td>353</td>
<td>377</td>
<td>401</td>
<td>425</td>
<td>449</td>
<td>473</td>
</tr>
<tr>
<td>L4</td>
<td>31.5</td>
<td>31.5</td>
<td>31.5</td>
<td>31.5</td>
<td>31.5</td>
<td>31.5</td>
<td>31.5</td>
<td>31.5</td>
<td>31.5</td>
<td>31.5</td>
<td>31.5</td>
<td>31.5</td>
<td>31.5</td>
<td>31.5</td>
<td>31.5</td>
</tr>
<tr>
<td>L5</td>
<td>109</td>
<td>133</td>
<td>157</td>
<td>181</td>
<td>205</td>
<td>229</td>
<td>253</td>
<td>277</td>
<td>301</td>
<td>325</td>
<td>349</td>
<td>373</td>
<td>397</td>
<td>421</td>
<td>445</td>
</tr>
</tbody>
</table>
**Caution**

**Mounting Screw Tightening Torques**

- M2: 0.15 N·m
- M3: 0.6 N·m
- M4: 1.4 N·m

Unless otherwise indicated, tighten mounting screws to the torques shown above.

---

**SUP/EXH block assembly**

- **EX500 (Type 16SA2W)**
- **EX120 (Type 16S3□)**
- **Circular connector (Type 16C)**
- **D-sub connector (Type 16F□)**
- **For Flat ribbon cable connector (Type 16P□)**
1. **Manifold Block Assembly Part No.**

<table>
<thead>
<tr>
<th>Series</th>
<th>Wiring specifications</th>
<th>Manifold block assembly part no.</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>SV1000</td>
<td>Single</td>
<td>SV1000-50-3A-□□</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Double</td>
<td>SV1000-50-4A-□□</td>
<td></td>
</tr>
<tr>
<td>SV2000</td>
<td>Single</td>
<td>SV2000-50-3A-□□</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Double</td>
<td>SV2000-50-4A-□□</td>
<td></td>
</tr>
</tbody>
</table>

2. **SUP/EXH end block assembly**

3. **SUP/EXH block assembly**

<table>
<thead>
<tr>
<th>Series</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>SV1000</td>
</tr>
<tr>
<td>2</td>
<td>SV2000</td>
</tr>
</tbody>
</table>

**Connector entry direction (D-sub, flat types only)**

- 1: Upward
- 2: Lateral

**SUP/EXH block assembly specifications**

- 30: For EX500 (decentralized serial)
- 32: For circular connector
- 33: D-sub connector
- 34: For flat ribbon cable connector (26 pins)
- 35: For flat ribbon cable connector (20 pins)
- 36: For flat ribbon cable connector (10 pins)
- 37: For flat ribbon cable PC wiring
- 38: For EX120 (dedicated output serial)

Note 1) "00" (Plug) is not available for S, R and RS types.

Note 2) "00U" is available only for D-sub connectors and the lock bracket size is in inches.

**P, E port size**

- C8: One-touch fitting for ø8
- N9: One-touch fitting for ø5/16" (All series)
- C10: One-touch fitting for ø10
- N11: One-touch fitting for ø3/8" (All series)
- 00: Plug

**Pilot specifications**

- Nil: Internal pilot specifications
- S: Internal pilot/Built-in silencer
- R: External pilot specifications
- RS: External pilot/Built-in silencer

* Since EX500 and EX120 type SI units are not included, order them separately.

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Part no.</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>EX500 series SI unit</td>
<td>EX500-S0001</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>EX120 series SI unit</td>
<td>Refer to page 64.</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Gasket</td>
<td>SX3000-57-4</td>
<td>SX5000-57-6</td>
</tr>
<tr>
<td>7</td>
<td>Connector gasket</td>
<td>SX3000-146-2</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>DIN rail</td>
<td>VZ1000-11-1-□□</td>
<td>Refer to DIN rail dimension tables on page 125.</td>
</tr>
<tr>
<td>9</td>
<td>Round head combination screw</td>
<td>SX3000-22-2</td>
<td>SV2000-21-1</td>
</tr>
<tr>
<td></td>
<td>Tightening torque: 0.16 N·m</td>
<td></td>
<td>Tightening torque: 0.8 N·m</td>
</tr>
</tbody>
</table>
**Type 16: Cassette Base Manifold**

**How to increase manifold bases (Type 16)**

1. Loosen the screws (2 pcs. on one side) that hold the manifold base onto the DIN rail.
   
   (When removing the manifold base from the DIN rail, loosen the holding screws at four locations.)

2. Using a flat head screwdriver, etc., pull the lever forward on the manifold block assembly where a station is to be added, and disconnect the manifold block assemblies.

3. Attach the manifold block assembly to be added to the DIN rail as shown in the figure.

4. Connect the block assemblies by pressing them together, and push the lever firmly until it stops.
   
   Then secure them to the DIN rail by tightening the screws (a) .

⚠️ **Caution** (Tightening torque: 1.4 N·m)

---

**Caution**

**Fitting assembly replacement**

By replacing manifold fitting assemblies, it is possible to change the size of the A, B ports and P, E ports. To replace them, Remove the clip with a flat head screwdriver, etc., and pull out the fitting assembly. Mount the new fitting assembly by inserting it and then replacing the clip to its fully inserted position.

**Fitting Assembly Part No.**

<table>
<thead>
<tr>
<th>Port size</th>
<th>SV1000</th>
<th>SV2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>One-touch fitting for ø3.2</td>
<td>VVQ1000-50A-C3</td>
<td>—</td>
</tr>
<tr>
<td>One-touch fitting for ø4</td>
<td>VVQ1000-50A-C4</td>
<td>VVQ1000-51A-C4</td>
</tr>
<tr>
<td>One-touch fitting for ø6</td>
<td>VVQ1000-50A-C6</td>
<td>VVQ1000-51A-C6</td>
</tr>
<tr>
<td>One-touch fitting for ø8</td>
<td>—</td>
<td>VVQ1000-51A-C8</td>
</tr>
<tr>
<td>One-touch fitting for ø1/8&quot;</td>
<td>VVQ1000-50A-N1</td>
<td>—</td>
</tr>
<tr>
<td>One-touch fitting for ø5/32&quot;</td>
<td>VVQ1000-50A-N3</td>
<td>VVQ1000-51A-N3</td>
</tr>
<tr>
<td>One-touch fitting for ø1/4&quot;</td>
<td>VVQ1000-50A-N7</td>
<td>VVQ1000-51A-N7</td>
</tr>
<tr>
<td>One-touch fitting for ø5/16&quot;</td>
<td>—</td>
<td>VVQ1000-51A-N9</td>
</tr>
<tr>
<td>One-touch fitting for ø8</td>
<td>VVQ1000-51A-C8</td>
<td>—</td>
</tr>
<tr>
<td>One-touch fitting for ø10</td>
<td>—</td>
<td>VVQ2000-51A-C10</td>
</tr>
<tr>
<td>One-touch fitting for ø5/16&quot;</td>
<td>VVQ1000-51A-N9</td>
<td>—</td>
</tr>
<tr>
<td>One-touch fitting for ø3/8&quot;</td>
<td>—</td>
<td>VVQ2000-51A-N11</td>
</tr>
</tbody>
</table>

**Note 1)** Be careful to avoid damage or contamination of O-rings, as this can cause air leakage.

**Note 2)** When removing a fitting assembly from a valve, after removing the clip, attach tubing or a plug (KQ2P-C) to the One-touch fitting, and pull it out while holding the tubing (or plug). If it is pulled out while holding the release button of the fitting assembly (resin part), the release button may be damaged.

**Note 3)** Be sure to shut off the power and air supplies before disassembly. Furthermore, since air may remain inside the actuator, piping and manifold, confirm that the air is completely exhausted before performing any work.
How to order cassette base type 16 solenoid valves with manifold block

[SV1000/SV2000 Series]

- Type with manifold block is used when adding stations, etc.

### SV Series

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>SV1000</td>
<td>SV2000</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Type of actuation

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 position single</td>
<td>2 position double</td>
<td>3 position closed center</td>
<td>3 position exhaust center</td>
<td>3 position pressure center</td>
</tr>
<tr>
<td>A</td>
<td>B</td>
<td>C</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Pilot type

- Nil: Internal pilot
- R: External pilot

*External pilot specifications is not available for 4 position dual 3 port valves.

### Back pressure check valve

- Nil: None
- K: Built-in

*Back pressure check valve is not available for 3 position valve.

*Built-in back pressure check valve type is applicable to the SV1000 series only.

Note) Refer to Specific Product Precautions 2 on page 138.

### Made to Order

- Nil: Main valve fluororubber (Refer to page 136)
- X90: Cassette base type 16 with manifold block

### A, B port size

Refer to “How to Order” on pages 27, 64, 84 and 95.

### Manifold wiring specifications

- Nil: Double wiring
- S: Single wiring

### Manifold block type

- C: Cassette base type 16 with manifold block

### Manual override

- Nil: Non-locking push type
- D: Push-turn locking slotted type

### Light/Surge voltage suppressor

- U: With light/surge voltage suppressor
- R: With surge voltage suppressor

### Rated voltage

<table>
<thead>
<tr>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>24 VDC</td>
<td>12 VDC</td>
</tr>
</tbody>
</table>

*Note that serial wiring manifolds (EX250, EX260, EX120, EX126, EX500, EX600) and PC wiring are only available with 24 VDC.

Example (SV1000)

SV1200-5FU-C-C6
Type 10: Tie-rod Base Manifold Exploded View

SV Series

Caution

Mounting Screw Tightening Torques

- M2: 0.15 N·m
- M3: 0.6 N·m
- M4: 1.4 N·m
- M5: 2.9 N·m

Unless otherwise indicated, tighten mounting screws to the torques shown above.

Note) Included only with the DIN rail mounting type.

(Tightening torque of DIN rail holding screw: 0.5 N·m)

EX600 (Type 10S6D)

Note) Included only with the DIN rail mounting type.

(Tightening torque of DIN rail holding screw: 0.5 N·m)

EX500 (Type 10S1D)

Note) Included only with the DIN rail mounting type.

SV3000, SV4000 series

DIN rail holding screw tightening torque: 1.4 N·m

For the SV2000 series, mounting orientation onto DIN rail gets reversed.

EX260 (Type 10S1D)

Note) Included only with the DIN rail mounting type

SV3000, SV4000 series

DIN rail holding screw tightening torque: 1.4 N·m

For the SV2000 series, mounting orientation onto DIN rail gets reversed.

EX500 (Type 10SAW)

Note) Included only with the DIN rail mounting type

SV2000 series

DIN rail holding screw tightening torque: 1.4 N·m

For the SV2000 series, mounting orientation onto DIN rail gets reversed.

EX250 (Type 10S1W)

Note) Included only with the DIN rail mounting type

SV2000 series

DIN rail holding screw tightening torque: 1.4 N·m

For the SV2000 series, mounting orientation onto DIN rail gets reversed.

Circular connector (Type 10C)

D-sub connector (Type 10F)

Note) Included only with the SUP/EXH block assembly.

Mounting Screw Tightening Torques

- M2: 0.15 N·m
- M3: 0.6 N·m
- M4: 1.4 N·m
- M5: 2.9 N·m

Unless otherwise indicated, tighten mounting screws to the torques shown above.

Note) Included only with the DIN rail mounting type.

(Tightening torque of DIN rail holding screw: 0.5 N·m)

EX600 (Type 10S6D)

Note) Included only with the DIN rail mounting type.

(Tightening torque of DIN rail holding screw: 0.5 N·m)

EX500 (Type 10S1D)

Note) Included only with the DIN rail mounting type.

SV3000, SV4000 series

DIN rail holding screw tightening torque: 1.4 N·m

For the SV2000 series, mounting orientation onto DIN rail gets reversed.

EX260 (Type 10S1D)

Note) Included only with the DIN rail mounting type

SV3000, SV4000 series

DIN rail holding screw tightening torque: 1.4 N·m

For the SV2000 series, mounting orientation onto DIN rail gets reversed.

EX500 (Type 10SAW)

Note) Included only with the DIN rail mounting type

SV2000 series

DIN rail holding screw tightening torque: 1.4 N·m

For the SV2000 series, mounting orientation onto DIN rail gets reversed.

EX250 (Type 10S1W)

Note) Included only with the DIN rail mounting type

SV2000 series

DIN rail holding screw tightening torque: 1.4 N·m

For the SV2000 series, mounting orientation onto DIN rail gets reversed.

Circular connector (Type 10C)

D-sub connector (Type 10F)

Note) Included only with the SUP/EXH block assembly.
1. Manifold Block Assembly Part No.

<table>
<thead>
<tr>
<th>Series</th>
<th>Wiring specifications</th>
<th>Manifold block assembly part no.</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>SV1000</td>
<td>Single</td>
<td>SV1000-50-1A-□□</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Double</td>
<td>SV1000-50-2A-□□</td>
<td></td>
</tr>
<tr>
<td>SV2000</td>
<td>Single</td>
<td>SV2000-50-1A-□□</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Double</td>
<td>SV2000-50-2A-□□</td>
<td></td>
</tr>
<tr>
<td>SV3000</td>
<td>Single</td>
<td>SV3000-50-1A-□□</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Double</td>
<td>SV3000-50-2A-□□</td>
<td></td>
</tr>
<tr>
<td>SV4000</td>
<td>Single</td>
<td>SV4000-50-1A-□□</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Double</td>
<td>SV4000-50-2A-□□</td>
<td></td>
</tr>
</tbody>
</table>

2. SUP/EXH end block assembly

<table>
<thead>
<tr>
<th>Series</th>
<th>Connector entry direction (D-sub, flat types only)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 SV1000</td>
<td>Upward</td>
</tr>
<tr>
<td>2 SV2000</td>
<td>Lateral</td>
</tr>
<tr>
<td>3 SV3000</td>
<td></td>
</tr>
<tr>
<td>4 SV4000</td>
<td></td>
</tr>
</tbody>
</table>

3. SUP/EXH block assembly

- **Mounting**
  - Nil: Direct mounting
  - DO: DIN rail mounting

P, E port size

<table>
<thead>
<tr>
<th>Pilot type</th>
<th>C8</th>
<th>C10</th>
<th>N11</th>
<th>C12</th>
<th>SV1000</th>
<th>SV2000</th>
<th>SV3000</th>
<th>SV4000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nil</td>
<td>8</td>
<td>10</td>
<td>3</td>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S</td>
<td>5/16” One-touch fitting</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R</td>
<td>3/8” One-touch fitting</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RS</td>
<td>1/4” One-touch fitting</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note 1) "00" (Plug) is not available for S, R and RS types.
Note 2) "00U" is available only for D-sub connectors and the lock bracket size is in inches.
## Type 10: Tie-rod Base Manifold Exploded View

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Part no.</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>EX500 series SI unit</td>
<td>SV1000 - Refer to page 22, SV2000 - Refer to page 27, SV3000, SV4000 - Gateway Decentralized System 2 (128 points)</td>
<td>Gateway Decentralized System 64 points</td>
</tr>
<tr>
<td>5</td>
<td>EX600 series SI unit</td>
<td>SV1000 - Refer to page 22, SV2000 - —, SV3000, SV4000 - —</td>
<td>—</td>
</tr>
<tr>
<td>6</td>
<td>EX600 series digital input unit</td>
<td>SV1000, SV2000 - —, SV3000, SV4000 - —</td>
<td>—</td>
</tr>
<tr>
<td>7</td>
<td>End plate for EX600 series</td>
<td>SV1000, SV2000 - —, SV3000, SV4000 - —</td>
<td>—</td>
</tr>
<tr>
<td>8</td>
<td>Clamp assembly for EX600</td>
<td>SV1000-78A</td>
<td>For mounting EX126 SI unit</td>
</tr>
<tr>
<td>9</td>
<td>Valve assembly for EX600</td>
<td>SV1000, SV2000 - —, SV3000, SV4000 - —</td>
<td>—</td>
</tr>
<tr>
<td>10</td>
<td>EX250 series SI unit</td>
<td>SV1000-78A</td>
<td>—</td>
</tr>
<tr>
<td>11</td>
<td>EX250 series input block</td>
<td>SV250-1E2 - M12, 4 inputs, SV250-1E3 - M8, 4 inputs (3 pins)</td>
<td>—</td>
</tr>
<tr>
<td>12</td>
<td>EX250 series end plate assembly</td>
<td>SV250-1E2, SV250-1E3</td>
<td>—</td>
</tr>
<tr>
<td>13</td>
<td>For EX250 clamp assembly</td>
<td>SV1000-78A</td>
<td>—</td>
</tr>
<tr>
<td>14</td>
<td>EX260 series SI unit</td>
<td>SV1000-78A</td>
<td>Refer to page 52.</td>
</tr>
<tr>
<td>15</td>
<td>EX126 series SI unit</td>
<td>SV1000-78A</td>
<td>Refer to page 58.</td>
</tr>
<tr>
<td>16</td>
<td>Terminal block plate</td>
<td>VVQ1000-74A-2</td>
<td>—</td>
</tr>
<tr>
<td>17</td>
<td>EX120 series SI unit</td>
<td>SV1000-78A</td>
<td>Refer to page 64.</td>
</tr>
<tr>
<td>18</td>
<td>Gasket</td>
<td>SX3000-57-4, SX5000-57-6, SX7000-57-5, SY9000-11-2</td>
<td>—</td>
</tr>
<tr>
<td>19</td>
<td>Connector gasket</td>
<td>SX3000-146-2, SX3000-146-2, SX3000-146-2, SX3000-146-2</td>
<td>—</td>
</tr>
<tr>
<td>20</td>
<td>Manifold block gasket</td>
<td>SX3000-181-1, SX3000-181-1, SV3000-65-1, SV4000-65-2</td>
<td>—</td>
</tr>
<tr>
<td>21</td>
<td>Tie-rod</td>
<td>SV1000-55-1-1, SV2000-55-1-1, SV3000-55-1-1, SV4000-55-1-1</td>
<td>—</td>
</tr>
<tr>
<td>23</td>
<td>Round head combination screw (Valve mounting screw)</td>
<td>SX3000-22-2, SX3000-22-2, SX2000-21-1, SX2000-21-1</td>
<td>—</td>
</tr>
<tr>
<td>24</td>
<td>DIN rail</td>
<td>VZ1000-11-1, VZ1000-11-1</td>
<td>Refer to DIN rail dimensions tables on page 125.</td>
</tr>
</tbody>
</table>

### Notes:

1. Two pieces of (tie-rod) are required for the SV1000 series, and three pieces are required for the SV2000, 3000 and 4000 series.
2. Two pieces of (valve mounting screw) are required for the SV1000, 2000 and 3000 series, and three pieces are required for the SV4000 series.
3. The wireless system is suitable for use only in a country where it is in accordance with the Radio Act and regulations of that country.
Type 10: Tie-rod Base Manifold

How to increase manifold bases (Type 10)

1. Loosen the U side screws, and remove the SUP/EXH end block assembly.

2. Screw in the tie-rods for station addition.
   (Screw them in until there is no gap between the tie-rods.)

3. Connect the manifold assembly and supply/exhaust end block assembly to be added, and tighten the screws.

⚠️ Caution
   Tightening torques:
   - SV1000, SV2000: 0.6 N·m
   - SV3000: 1.4 N·m
   - SV4000: 2.9 N·m

Note: When eliminating manifold stations, the appropriate tie-rods for the desired change should be ordered separately. (When equipped with a DIN rail, be sure to tighten the DIN rail holding screws after tightening the tension bolts.)

⚠️ Caution

Fitting Assembly Replacement

By replacing manifold fitting assemblies, it is possible to change the size of the A, B ports and P, E ports. To replace them, remove the clip with a flat head screwdriver, etc., and pull out the fitting assembly. Mount the new fitting assembly by inserting it and then replacing the clip to its fully inserted position.

### Fitting Assembly Part No.

<table>
<thead>
<tr>
<th>Port size</th>
<th>SV1000</th>
<th>SV2000</th>
<th>SV3000</th>
<th>SV4000</th>
</tr>
</thead>
<tbody>
<tr>
<td>A, B Port</td>
<td>One-touch fitting for ø3.2</td>
<td>VVQ1000-50A-C3</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>One-touch fitting for ø4</td>
<td>VVQ1000-50A-C4</td>
<td>VVQ1000-51A-C4</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>One-touch fitting for ø6</td>
<td>VVQ1000-50A-C6</td>
<td>VVQ1000-51A-C6</td>
<td>VVQ2000-51A-C6</td>
</tr>
<tr>
<td></td>
<td>One-touch fitting for ø8</td>
<td>—</td>
<td>VVQ1000-51A-C8</td>
<td>VVQ2000-51A-C8</td>
</tr>
<tr>
<td></td>
<td>One-touch fitting for ø10</td>
<td>—</td>
<td>—</td>
<td>VVQ2000-51A-C10</td>
</tr>
<tr>
<td></td>
<td>One-touch fitting for ø12</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>One-touch fitting for ø1/8&quot;</td>
<td>VVQ1000-50A-N1</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>One-touch fitting for ø5/32&quot;</td>
<td>VVQ1000-50A-N3</td>
<td>VVQ1000-51A-N3</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>One-touch fitting for ø1/4&quot;</td>
<td>VVQ1000-50A-N7</td>
<td>VVQ1000-51A-N7</td>
<td>VVQ2000-51A-N7</td>
</tr>
<tr>
<td></td>
<td>1/4 threaded type port block assembly</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>3/8 threaded type port block assembly</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

| A, B Port       | One-touch fitting for ø10  | VVQ1000-51A-C10 | —            | —            |
|                 | One-touch fitting for ø12  | —            | —            | VVQ4000-50B-C12 | VVQ4000-50B-C12 |
|                 | One-touch fitting for ø5/16"| VVQ1000-51A-N9 | —            | —            |
|                 | 3/8 threaded type port block assembly | — | — | — | SY9000-58B-03 |

| E Port          | One-touch fitting for ø3.2 | —            | —            | —            |
|                 | One-touch fitting for ø4   | —            | —            | —            |
|                 | One-touch fitting for ø6   | —            | —            | —            |
|                 | One-touch fitting for ø8   | —            | —            | —            |
|                 | One-touch fitting for ø10  | —            | —            | —            |
|                 | One-touch fitting for ø12  | —            | —            | —            |
|                 | One-touch fitting for ø5/16"| —            | —            | —            |
|                 | One-touch fitting for ø3/8"| —            | —            | —            |
|                 | 3/8 threaded type port block assembly | — | — | — | SY9000-58B-03 |
1/4, 3/8 thread type port block assembly
For A, B port
SY9000 – 58A – 02
03
For P, E port
SY9000 – 58B – 03

Thread type

<table>
<thead>
<tr>
<th>Nil</th>
<th>Rc</th>
</tr>
</thead>
<tbody>
<tr>
<td>F</td>
<td>G</td>
</tr>
<tr>
<td>N</td>
<td>NPT</td>
</tr>
<tr>
<td>T</td>
<td>NPTF</td>
</tr>
</tbody>
</table>

Note 1) Be careful to avoid damage or contamination of O-rings, as this can cause air leakage.
Note 2) When removing a fitting assembly from a valve, after removing the clip, attach tubing or a plug (KQP-□□□) to the One-touch fitting, and pull it out while holding the tubing (or plug). If it is pulled out while holding the release button of the fitting assembly (resin part), the release button may be damaged. However, 02 and 03 port block assemblies should be pulled out as they are.
Note 3) Be sure to shut off the power and air supplies before disassembly. Furthermore, since air may remain inside the actuator, piping and manifold, confirm that the air is completely exhausted before performing any work.

How to order tie-rod type 10 solenoid valves with manifold block

[SV1000 to SV4000 series]
• Type with manifold block is used when adding stations, etc.

SV 1100 05 F

Type of actuation

1 2 position single
2 2 position double
3 3 position closed center
4 3 position exhaust center
5 3 position pressure center
A 4 position dual 3 port valve: N.C./N.C.
B 4 position dual 3 port valve: N.O./N.O.
C 4 position dual 3 port valve: N.C./N.O.

* 4 position dual 3 port valves are applicable to the SV1000 and SV2000 series only.

Pilot type

<table>
<thead>
<tr>
<th>Nil</th>
<th>Internal pilot</th>
</tr>
</thead>
<tbody>
<tr>
<td>R</td>
<td>External pilot</td>
</tr>
</tbody>
</table>

* External pilot specifications is not available for 4 position dual 3 port valves.

Back pressure check valve

<table>
<thead>
<tr>
<th>Nil</th>
<th>None</th>
</tr>
</thead>
<tbody>
<tr>
<td>K</td>
<td>Built-in</td>
</tr>
</tbody>
</table>

* Built-in back pressure check valve type is applicable to the SV1000 series only.
* Back pressure check valve is not available for 3 position valve.

Note 1) Be careful to avoid damage or contamination of O-rings, as this can cause air leakage.
Note 2) When removing a fitting assembly from a valve, after removing the clip, attach tubing or a plug (KQP-□□□) to the One-touch fitting, and pull it out while holding the tubing (or plug). If it is pulled out while holding the release button of the fitting assembly (resin part), the release button may be damaged. However, 02 and 03 port block assemblies should be pulled out as they are.
Note 3) Be sure to shut off the power and air supplies before disassembly. Furthermore, since air may remain inside the actuator, piping and manifold, confirm that the air is completely exhausted before performing any work.

Note) Refer to Specific Product Precautions 2 on page 138.

Example (SV1000)
SV1200-5FU-T-C6
SV Series
Manifold Options (Common for Type 16 and 10)

■ Relay output module
By adding a relay output module to a SV series manifold, devices up to 110 VAC, 3 A (large type solenoid valves, etc.) can be controlled together with the SV series valves.

How to Order

SV □ 000 - 60 - □ A - □A

Table: Relay Output Module Specifications

<table>
<thead>
<tr>
<th>Item</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of output points</td>
<td>1 output [connector with lead wire (M12)]</td>
</tr>
<tr>
<td>Output type</td>
<td>Contact type (&quot;a&quot; contact)</td>
</tr>
<tr>
<td>Load voltage</td>
<td>110 VAC</td>
</tr>
<tr>
<td>Load current</td>
<td>3 A</td>
</tr>
<tr>
<td>Indicator light</td>
<td>Orange</td>
</tr>
<tr>
<td>Enclosure</td>
<td>Based on IP67 (IEC60529)</td>
</tr>
<tr>
<td>Current consumption</td>
<td>20 mA or less</td>
</tr>
<tr>
<td>Polarity</td>
<td>Non-polar</td>
</tr>
<tr>
<td>weight (g)</td>
<td>48</td>
</tr>
</tbody>
</table>

Connection Destination (Female Side) Connector Cable

<table>
<thead>
<tr>
<th>Connector size</th>
<th>pin</th>
<th>Manufacturer</th>
<th>Applicable series</th>
</tr>
</thead>
<tbody>
<tr>
<td>M12</td>
<td>4</td>
<td>Correns Corp.</td>
<td>VA-4D</td>
</tr>
<tr>
<td></td>
<td></td>
<td>OMRON Corp.</td>
<td>XS2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Azbil Corp.</td>
<td>PA5-41</td>
</tr>
<tr>
<td></td>
<td></td>
<td>HIROSE ELECTRIC CO., LTD.</td>
<td>HR24</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DDK Ltd.</td>
<td>CM01-8DP4S</td>
</tr>
</tbody>
</table>

■ Y type connector
Used to branch a two output relay output module to two separate systems.

How to Order

EX500 — ACY00 — S

Relay output module and Y type connector wiring example
Manifold Options

■ Blanking plate assembly
Used in situations where valves will be added in the future or for maintenance.

<table>
<thead>
<tr>
<th>Series</th>
<th>Blanking plate assembly part no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SV1000</td>
<td>SV1000-67-1A</td>
</tr>
<tr>
<td>SV2000</td>
<td>SV2000-67-1A</td>
</tr>
<tr>
<td>SV3000</td>
<td>SV3000-67-1A</td>
</tr>
<tr>
<td>SV4000</td>
<td>SV4000-67-1A</td>
</tr>
</tbody>
</table>

■ SUP/EXH block disk
[SUP block disk]
By placing a SUP block disk in a manifold valve’s pressure supply passage, two different high and low pressures can be supplied to one manifold.

[EXH block disk]
By installing an EXH block disk in a manifold valve’s exhaust passage, the valve’s exhaust can be separated so that it will not affect other valves. It can also be used on a manifold with mixed positive pressure and vacuum.

(Two pieces are required to block EXH on both sides. However, the SV1000 and 2000 series type 10 manifolds require only one piece.)

Caution
Mounting screw tightening torques
M2: 0.16 N·m
M3: 0.8 N·m
M4: 1.4 N·m

■ Label for block disk
These labels are attached to manifolds in which SUP and EXH block disks have been installed, in order to identify the installed locations. (Three sheets each included.)

SV1000 – 74 – 1A
Label for SUP block disk
Label for EXH block disk
Label for SUP/EXH block disk

* When a block disk is concurrently ordered by specifying on the manifold specification sheet, etc., a label will be stuck on the position where block disk is mounted.

■ Silencer (Compact resin type/One-touch fitting connection)
AN10-C to AN30-C

Sound absorbing material
(Resin sintered body)

Dimensions (mm)

<table>
<thead>
<tr>
<th>Series</th>
<th>Model</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>d</th>
</tr>
</thead>
<tbody>
<tr>
<td>SV1000</td>
<td>AN15-C08</td>
<td>45</td>
<td>13</td>
<td>20</td>
<td>ø8</td>
</tr>
<tr>
<td>SV2000</td>
<td>AN20-C10</td>
<td>57.5</td>
<td>16.5</td>
<td>30.5</td>
<td>ø10</td>
</tr>
<tr>
<td>SV3000</td>
<td>AN30-C12</td>
<td>71.5</td>
<td>20</td>
<td>43.5</td>
<td>ø12</td>
</tr>
</tbody>
</table>

■ Plug (White)
These are inserted in unused cylinder ports and P, E ports.

<table>
<thead>
<tr>
<th>Applicable fitting size d</th>
<th>Model</th>
<th>A</th>
<th>L</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>ø4</td>
<td>KQ2P-04</td>
<td>16</td>
<td>32</td>
<td>ø6</td>
</tr>
<tr>
<td>ø6</td>
<td>KQ2P-06</td>
<td>18</td>
<td>35</td>
<td>ø8</td>
</tr>
<tr>
<td>ø8</td>
<td>KQ2P-08</td>
<td>20.5</td>
<td>39</td>
<td>ø10</td>
</tr>
<tr>
<td>ø10</td>
<td>KQ2P-10</td>
<td>22</td>
<td>43</td>
<td>ø12</td>
</tr>
<tr>
<td>ø12</td>
<td>KQ2P-12</td>
<td>24</td>
<td>44.5</td>
<td>ø14</td>
</tr>
<tr>
<td>ø1/8&quot;</td>
<td>KQ2P-01</td>
<td>16</td>
<td>31.5</td>
<td>ø5</td>
</tr>
<tr>
<td>ø5/32&quot;</td>
<td>KQ2P-03</td>
<td>16</td>
<td>32</td>
<td>ø6</td>
</tr>
<tr>
<td>ø1/4&quot;</td>
<td>KQ2P-07</td>
<td>18</td>
<td>35</td>
<td>ø8.5</td>
</tr>
<tr>
<td>ø5/16&quot;</td>
<td>KQ2P-09</td>
<td>20.5</td>
<td>39</td>
<td>ø10</td>
</tr>
<tr>
<td>ø3/8&quot;</td>
<td>KQ2P-11</td>
<td>22</td>
<td>43</td>
<td>ø11.5</td>
</tr>
</tbody>
</table>
Manifold Options

■ Circular connector/Cable assembly (26 pins)

AXT100—MC26—□

Lead Wire Length

<table>
<thead>
<tr>
<th>Part no.</th>
<th>L dimension</th>
</tr>
</thead>
<tbody>
<tr>
<td>AXT100-MC26-015</td>
<td>1.5 m</td>
</tr>
<tr>
<td>AXT100-MC26-030</td>
<td>3 m</td>
</tr>
<tr>
<td>AXT100-MC26-050</td>
<td>5 m</td>
</tr>
</tbody>
</table>

When a commercially available connector is required, use a 25 pin female connector conforming to MIL-C24308.

D-sub connector/Cable assembly (25 pins)

AXT100—DS25—□

Lead Wire Length

<table>
<thead>
<tr>
<th>Part no.</th>
<th>L dimension</th>
</tr>
</thead>
<tbody>
<tr>
<td>AXT100-DS25-015</td>
<td>1.5 m</td>
</tr>
<tr>
<td>AXT100-DS25-030</td>
<td>3 m</td>
</tr>
<tr>
<td>AXT100-DS25-050</td>
<td>5 m</td>
</tr>
</tbody>
</table>

D-sub Connector Cable Assembly

Terminal No.

<table>
<thead>
<tr>
<th>Terminal no.</th>
<th>Lead wire color</th>
<th>Dot marking</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Black</td>
<td>None</td>
</tr>
<tr>
<td>2</td>
<td>Brown</td>
<td>None</td>
</tr>
<tr>
<td>3</td>
<td>Red</td>
<td>None</td>
</tr>
<tr>
<td>4</td>
<td>Orange</td>
<td>None</td>
</tr>
<tr>
<td>5</td>
<td>Yellow</td>
<td>None</td>
</tr>
<tr>
<td>6</td>
<td>Pink</td>
<td>None</td>
</tr>
<tr>
<td>7</td>
<td>Blue</td>
<td>None</td>
</tr>
<tr>
<td>8</td>
<td>Purple</td>
<td>White</td>
</tr>
<tr>
<td>9</td>
<td>Gray</td>
<td>Black</td>
</tr>
<tr>
<td>10</td>
<td>White</td>
<td>Black</td>
</tr>
<tr>
<td>11</td>
<td>Red</td>
<td>White</td>
</tr>
<tr>
<td>12</td>
<td>Orange</td>
<td>Red</td>
</tr>
<tr>
<td>13</td>
<td>Yellow</td>
<td>Red</td>
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<td>14</td>
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</tr>
<tr>
<td>15</td>
<td>Blue</td>
<td>White</td>
</tr>
<tr>
<td>16</td>
<td>Purple</td>
<td>None</td>
</tr>
<tr>
<td>17</td>
<td>Gray</td>
<td>None</td>
</tr>
<tr>
<td>18</td>
<td>Orange</td>
<td>Black</td>
</tr>
<tr>
<td>19</td>
<td>Red</td>
<td>White</td>
</tr>
<tr>
<td>20</td>
<td>Brown</td>
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<tr>
<td>21</td>
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<tr>
<td>22</td>
<td>Gray</td>
<td>Red</td>
</tr>
<tr>
<td>23</td>
<td>Black</td>
<td>White</td>
</tr>
<tr>
<td>24</td>
<td>White</td>
<td>None</td>
</tr>
</tbody>
</table>

Note) Terminal no. 6 is connected to 5 inside the connector.

Circular Connector, D-sub Connector Cable Assembly

Electric Characteristics

<table>
<thead>
<tr>
<th>Item</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conductor resistance Ω/km, 20°C</td>
<td>65 or less</td>
</tr>
<tr>
<td>Withstand voltage VAC, 1 min.</td>
<td>1000</td>
</tr>
<tr>
<td>Insulation resistance, MΩ/km, 20°C</td>
<td>5 or less</td>
</tr>
</tbody>
</table>

Note) The minimum inside bending radius for each cable is 20 mm.
Manifold Options

- Flat ribbon cable/Cable assembly
  - AXT100 – FC
  - Cable length (L): 1.5 m, 3 m, 5 m
  - Terminal no.: 26 pins
  - Connector width (W): 17.2, 30, 37.5
  - For other commercial connectors, use a type with strain relief conforming to MIL-C-83503.

- Connector cable for M12 waterproof connector (Female side)
  - Connector manufacturers' example
    - HIROSE ELECTRIC CO., LTD.
    - 3M Japan Limited
    - Fujitsu Limited
    - Japan Aviation Electronics Industry, Limited
    - J.S.T. Mfg. Co., Ltd.

SV1000/2000 and the EX500 series input unit DIN rail dimensions and mass

- VZ1000 – 11 –
  - Rail mounting hole pitch 12.5
  - As for □, enter the number from the DIN rail dimensions table.

SV3000 and 4000 DIN rail dimensions and mass

- VZ1000 – 11 –
  - Rail mounting hole pitch 12.5
  - As for □, enter the number from the DIN rail dimensions table.
SV Series

Manifold Options

- Interface Regulator
  How to Order Interface Regulator

**SV1000 Series**

- SV1 0 00 - 05 - P
- Applicable valve (Note 3)
  0: For single, double, 4 position
  3: For 3 position

Pressure gauge option (Note 1)
- M1: Without pressure gauge
- 05: With MPa indication pressure gauge (For odd number station)
- 06: With MPa indication pressure gauge (For even number station)
- N5: With psi indication pressure gauge (For odd number station)
- N6: With psi indication pressure gauge (For even number station)

**SV2000/3000/4000 Series**

- SV2 000 - 00 - P
- Regulating port
  - P: P port
  - A1: 4 port (P controlled type, A port regulation)
  - B1: 5 port (P controlled type, B port regulation)

Pressure gauge option
- M1: Without pressure gauge
- 00: With MPa indication pressure gauge
- N0: With psi indication pressure gauge

Note 1) In the case of the SV1000 series with a pressure gauge when mounting on the manifold, use caution that the part numbers are different between the odd no. stations and the even no. stations to avoid pressure gauges from interfering from each others.

Note 2) The units with the psi indication are sold only overseas according to the new measurement law in Japan.

Note 3) Use caution that the part numbers will differ depending on the one for single/double and 4- and 3-position due to the different length of solenoid valves. Also, if the one for 3 position is included in the same manifold, use all the ones for 3-position.

**Symbol**

- (A)4: 2(B)
- (EA)5: 3(EB)
- (P): (P)

**Accessories**

- Round head combination screw
- Gasket

<table>
<thead>
<tr>
<th>Series</th>
<th>Round head combination screw</th>
<th>Gasket</th>
</tr>
</thead>
<tbody>
<tr>
<td>SV1000</td>
<td>SX3000-22-9 (M2 x 39.5)</td>
<td>SX3000-57-4</td>
</tr>
<tr>
<td>SV2000</td>
<td>SV2000-21-7 (M3 x 53)</td>
<td>SX5000-57-6</td>
</tr>
<tr>
<td>SV3000</td>
<td>SV3000-21-4 (M4 x 57)</td>
<td>SX7000-57-5</td>
</tr>
<tr>
<td>SV4000</td>
<td>SV2000-21-8 (M3 x 69.5)</td>
<td>SY9000-11-2</td>
</tr>
</tbody>
</table>

**Caution**

- Mounting Screw Tightening Torques
  - M2: 0.16 N·m
  - M3: 0.8 N·m
  - M4: 1.4 N·m
Manifold Option

- Individual SUP spacer assembly
- Individual EXH spacer assembly

How to order individual SUP/EXH spacer assembly

SV1000 Series

SV1000 – 38 – 1A – C6

- Port size
C6: One-touch fitting for Ø3.2
C4: One-touch fitting for Ø4
C6: One-touch fitting for Ø6
N1: One-touch fitting for Ø1/8
N3: One-touch fitting for Ø5/32
N7: One-touch fitting for Ø1/4

- Spacener type
38: Individual SUP spacer
39: Individual EXH spacer
68: Individual SUP + Individual EXH spacers (Double-stack)

SV2000/SV3000/SV4000 Series

SV 2 000 – 38 – 1 A

- Series
Symbol: Series t
2: SV2000
3: SV3000
4: SV4000

- Port size
Note: SV2000/3000/4000 port size

<table>
<thead>
<tr>
<th>Series</th>
<th>Port size</th>
</tr>
</thead>
<tbody>
<tr>
<td>SV2000</td>
<td>1/8</td>
</tr>
<tr>
<td>SV3000</td>
<td>1/4</td>
</tr>
<tr>
<td>SV4000</td>
<td></td>
</tr>
</tbody>
</table>

Accessory

<table>
<thead>
<tr>
<th>Series</th>
<th>Round head combination screw</th>
<th>Gasket</th>
</tr>
</thead>
<tbody>
<tr>
<td>SV1000</td>
<td>SX3000-22-9 (M2 x 39.5)</td>
<td>SX3000-57-4</td>
</tr>
<tr>
<td>SV2000</td>
<td>SV2000-21-6 (M3 x 46)</td>
<td>SY5000-11-15</td>
</tr>
<tr>
<td>SV3000</td>
<td>SV3000-21-3 (M4 x 53)</td>
<td>SY7000-11-11</td>
</tr>
<tr>
<td>SV4000</td>
<td>SV2000-21-5 (M3 x 60)</td>
<td>SY9000-11-2</td>
</tr>
</tbody>
</table>

- Individual SUP/EXH spacer assembly (Double-stack)
## Single Valve/Sub-plate Type IP67 Compliant

### SV1000/2000/3000/4000 Series

### How to Order

#### Series

<table>
<thead>
<tr>
<th>1</th>
<th>SV1000</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>SV2000</td>
</tr>
<tr>
<td>3</td>
<td>SV3000</td>
</tr>
<tr>
<td>4</td>
<td>SV4000</td>
</tr>
</tbody>
</table>

#### Type of actuation

<table>
<thead>
<tr>
<th>1</th>
<th>SV1000/2000/3000/4000</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>2 position single (A1 2(B)) (EA1 3(EB)) (P)</td>
</tr>
<tr>
<td>2</td>
<td>2 position double (A1 2(B)) (EA1 3(EB)) (P)</td>
</tr>
</tbody>
</table>

#### SV1000/2000/3000/4000

<table>
<thead>
<tr>
<th>3</th>
<th>3 position closed center (A1 2(B)) (EA1 3(EB)) (P)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>3 position exhaust center (A1 2(B)) (EA1 3(EB)) (P)</td>
</tr>
<tr>
<td>5</td>
<td>3 position pressure center (A1 2(B)) (EA1 3(EB)) (P)</td>
</tr>
</tbody>
</table>

#### SV1000

<table>
<thead>
<tr>
<th>A</th>
<th>4 position dual 3 port valve: N.C./N.O. (A1 2(B)) (EA1 3(EB)) (P)</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>4 position dual 3 port valve: N.O./N.O. (A1 2(B)) (EA1 3(EB)) (P)</td>
</tr>
<tr>
<td>C</td>
<td>4 position dual 3 port valve: N.C./N.O. (A1 2(B)) (EA1 3(EB)) (P)</td>
</tr>
</tbody>
</table>

#### SV2000

<table>
<thead>
<tr>
<th>A</th>
<th>4 position dual 3 port valve: N.C./N.O. (A1 2(B)) (EA1 3(EB)) (P)</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>4 position dual 3 port valve: N.O./N.O. (A1 2(B)) (EA1 3(EB)) (P)</td>
</tr>
<tr>
<td>C</td>
<td>4 position dual 3 port valve: N.C./N.O. (A1 2(B)) (EA1 3(EB)) (P)</td>
</tr>
</tbody>
</table>

### Made to order

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Nil</th>
<th>X90</th>
</tr>
</thead>
<tbody>
<tr>
<td>Port length (mm)</td>
<td>300</td>
<td>500</td>
</tr>
</tbody>
</table>

### Thread type

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Nil</th>
<th>Rc</th>
<th>F</th>
<th>G</th>
<th>N</th>
<th>NPT</th>
<th>T</th>
<th>NPTF</th>
</tr>
</thead>
</table>

### Port size

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Nil</th>
<th>01</th>
<th>02</th>
<th>03</th>
<th>04</th>
</tr>
</thead>
<tbody>
<tr>
<td>Port size</td>
<td>1/8</td>
<td>1/4</td>
<td>3/8</td>
<td>1/2</td>
<td></td>
</tr>
</tbody>
</table>

### Manual override

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Nil</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of override</td>
<td>Non-locking push type</td>
<td>Push-turn locking slotted type</td>
</tr>
</tbody>
</table>

### Light/Surge voltage suppressor

<table>
<thead>
<tr>
<th>Symbol</th>
<th>U</th>
<th>R</th>
</tr>
</thead>
<tbody>
<tr>
<td>With light/surge voltage suppressor</td>
<td>With surge voltage suppressor</td>
<td></td>
</tr>
</tbody>
</table>

### M12 waterproof connector

<table>
<thead>
<tr>
<th>Symbol</th>
<th>W1</th>
<th>W2</th>
<th>W3</th>
<th>W4</th>
<th>W7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cable length (mm)</td>
<td>300</td>
<td>500</td>
<td>1000</td>
<td>2000</td>
<td>5000</td>
</tr>
</tbody>
</table>

### Rated voltage

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Nil</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage</td>
<td>24 VDC</td>
<td>12 VDC</td>
<td></td>
</tr>
</tbody>
</table>

* SV3000 and 4000 are not available with 4 position dual 3 port valve.
SV Series Solenoid Valve Specifications

<table>
<thead>
<tr>
<th>Fluid</th>
<th>Air</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal pilot operating pressure range (MPa)</td>
<td>2 position single 4 position dual 3 port valve 0.15 to 0.7 2 position double 0.1 to 0.7 3 position 0.2 to 0.7</td>
</tr>
<tr>
<td>External pilot operating pressure range (MPa)</td>
<td>Operating pressure range –100 kPa to 0.7 2 position single, double 3 position 0.25 to 0.7</td>
</tr>
<tr>
<td>Ambient and fluid temperature (°C)</td>
<td>–10 to 50 (No freezing)</td>
</tr>
<tr>
<td>Max. operating frequency (Hz)</td>
<td>2 position single, double 4 position dual 3 port valve 5 3 position 3</td>
</tr>
<tr>
<td>Manual override</td>
<td>Non-locking push type</td>
</tr>
<tr>
<td>Pilot exhaust method</td>
<td>Internal pilot Common exhaust type for main and pilot valve</td>
</tr>
<tr>
<td>Lubrication</td>
<td>Not required</td>
</tr>
<tr>
<td>Mounting orientation</td>
<td>Unrestricted</td>
</tr>
<tr>
<td>Impact/Vibration resistance (ms²)</td>
<td>150/30 (8.3 to 2000 Hz)</td>
</tr>
<tr>
<td>Enclosure</td>
<td>IP67 (Based on IEC60529)</td>
</tr>
<tr>
<td>Electrical entry</td>
<td>M12 waterproof connector</td>
</tr>
<tr>
<td>Coil rated voltage</td>
<td>24 VDC, 12 VDC</td>
</tr>
<tr>
<td>Allowable voltage fluctuation</td>
<td>±10% of rated voltage</td>
</tr>
<tr>
<td>Power consumption (W)</td>
<td>0.6 (With indicator light: 0.65)</td>
</tr>
<tr>
<td>Surge voltage suppressor</td>
<td>Zener diode</td>
</tr>
<tr>
<td>Indicator light</td>
<td>LED</td>
</tr>
</tbody>
</table>

Note) Impact resistance: No malfunction occurred when it is tested with a drop tester in the axial direction and at the right angles to the main valve and armature in both energized and de-energized states every once for each condition. (Values at the initial period)
Vibration resistance: No malfunction occurred in a one-sweep test between 45 and 2000 Hz. Test was performed at both energized and de-energized states in the axial direction and at the right angles to the main valve and armature. (Values at the initial period)

Response Time

<table>
<thead>
<tr>
<th>Type of actuation</th>
<th>Response time (ms) (at the pressure of 0.5 MPa)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SV1000</td>
<td>SV2000</td>
</tr>
<tr>
<td>2 position single</td>
<td>11 or less</td>
</tr>
<tr>
<td>2 position double</td>
<td>10 or less</td>
</tr>
<tr>
<td>3 position</td>
<td>18 or less</td>
</tr>
<tr>
<td>4 position dual 3 port valve</td>
<td>15 or less</td>
</tr>
</tbody>
</table>

Note) Based on dynamic performance test, JIS B 8375-1981. (Coil temperature: 20°C, at rated voltage)

M12 Waterproof Connector Wiring Specifications

<table>
<thead>
<tr>
<th>Single solenoid</th>
<th>Double solenoid</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 pin connector (M12) plug</td>
<td>4 pin connector (M12) plug</td>
</tr>
<tr>
<td>Circuit diagram</td>
<td>Circuit diagram</td>
</tr>
<tr>
<td>Solenoid valve side pin wiring diagram</td>
<td>Solenoid valve side pin wiring diagram</td>
</tr>
</tbody>
</table>

Note) Solenoid valves have no polarity.

Connection Destination (Female Side) Connector Cable

<table>
<thead>
<tr>
<th>Connector size</th>
<th>pin</th>
<th>Manufacturer</th>
<th>Applicable series</th>
</tr>
</thead>
<tbody>
<tr>
<td>M12</td>
<td>4</td>
<td>Correns Corp.</td>
<td>VA-4D</td>
</tr>
<tr>
<td></td>
<td></td>
<td>OMRON Corp.</td>
<td>XS2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Azbil Corp.</td>
<td>PA5-41</td>
</tr>
<tr>
<td></td>
<td></td>
<td>HIROSE ELECTRIC CO., LTD.</td>
<td>HR24</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DDK Ltd.</td>
<td>CM01-8DP4S</td>
</tr>
</tbody>
</table>

* This connector is a female connector for ① relay output module and ② single unit/sub-plate.
### Flow Rate Characteristics/Weight

#### SV1000 Series

<table>
<thead>
<tr>
<th>Valve model</th>
<th>Type of actuation</th>
<th>Port size</th>
<th>Flow rate characteristics</th>
<th>Weight (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>SV1</strong> 00-□-01</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 position</td>
<td>3 position</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Closed center</td>
<td>Pressure center</td>
<td>(1)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.77</td>
<td>1.2 [0.51]</td>
<td>123 (88)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.28</td>
<td>0.24 [0.45]</td>
<td>128 (93)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.18</td>
<td>0.29 [0.14]</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.85</td>
<td>0.89 [0.47]</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.30</td>
<td>0.47 [0.24]</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.19</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.1</td>
<td>0.88 [0.44]</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.30</td>
<td>0.44 [0.21]</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.26</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note 1) [ ]: Denotes the normal position. Note 2) ( ): Denotes without sub-plate.

#### SV2000 Series

<table>
<thead>
<tr>
<th>Valve model</th>
<th>Type of actuation</th>
<th>Port size</th>
<th>Flow rate characteristics</th>
<th>Weight (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>SV2</strong> 00-□-02</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 position</td>
<td>3 position</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Closed center</td>
<td>Pressure center</td>
<td>(1)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.8</td>
<td>3.3 [0.84]</td>
<td>159 (96)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.47</td>
<td>0.36 [0.60]</td>
<td>163 (100)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.50</td>
<td>0.85 [0.28]</td>
<td>168 (105)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.8</td>
<td>1.8 [0.40]</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.44</td>
<td>0.33 [0.48]</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3.0 [1.2]</td>
<td>1.1 [0.37]</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.64</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.1</td>
<td>0.40 [0.24]</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.29</td>
<td>0.36 [0.54]</td>
<td></td>
</tr>
</tbody>
</table>

Note 1) [ ]: Denotes the normal position. Note 2) ( ): Denotes without sub-plate.

#### SV3000 Series

<table>
<thead>
<tr>
<th>Valve model</th>
<th>Type of actuation</th>
<th>Port size</th>
<th>Flow rate characteristics</th>
<th>Weight (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>SV3</strong> 00-□-03</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 position</td>
<td>3 position</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Closed center</td>
<td>Pressure center</td>
<td>(1)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3.0</td>
<td>5.3 [2.3]</td>
<td>250 (121)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.40</td>
<td>0.39 [0.49]</td>
<td>253 (124)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.80</td>
<td>1.3 [0.65]</td>
<td>26 (132)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2.6</td>
<td>2.2</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.42</td>
<td>0.49 [0.24]</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.71</td>
<td>1.1 [0.63]</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>4.7 [1.7]</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.35 [0.48]</td>
<td>1.1 [0.49]</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.41</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.72</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note 1) [ ]: Denotes the normal position. Note 2) ( ): Denotes without sub-plate.

#### SV4000 Series

<table>
<thead>
<tr>
<th>Valve model</th>
<th>Type of actuation</th>
<th>Port size</th>
<th>Flow rate characteristics</th>
<th>Weight (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>SV4</strong> 00-□-04</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 position</td>
<td>3 position</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Closed center</td>
<td>Pressure center</td>
<td>(1)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>7.3</td>
<td>12 [3.3]</td>
<td>505 (208)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.42</td>
<td>0.26 [0.41]</td>
<td>509 (212)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2.0</td>
<td>2.8 [0.84]</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>7.6</td>
<td>6.7</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3.2</td>
<td>0.40 [1.9]</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>7.3</td>
<td>0.29 [0.54]</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.32</td>
<td>3.6 [1.5]</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.8</td>
<td>0.33 [0.19]</td>
<td></td>
</tr>
</tbody>
</table>

Note 1) [ ]: Denotes the normal position. Note 2) ( ): Denotes without sub-plate.
Construction: SV1000/2000/3000/4000 Single Valve/Sub-plate Type

Component Parts

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Material</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Body</td>
<td>Aluminum die-cast (SV1000 is zinc die-cast)</td>
<td>White</td>
</tr>
<tr>
<td>2</td>
<td>Adapter plate</td>
<td>Resin</td>
<td>White</td>
</tr>
<tr>
<td>3</td>
<td>Pilot body</td>
<td>Resin</td>
<td>White</td>
</tr>
<tr>
<td>4</td>
<td>Piston</td>
<td>Resin</td>
<td>—</td>
</tr>
<tr>
<td>5</td>
<td>End plate</td>
<td>Resin</td>
<td>White</td>
</tr>
<tr>
<td>6</td>
<td>Spool valve assembly</td>
<td>Aluminum/HNBR</td>
<td>—</td>
</tr>
<tr>
<td>7</td>
<td>Molded coil</td>
<td>—</td>
<td>Gray</td>
</tr>
</tbody>
</table>

Replacement Parts

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Part no.</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>Sub-plate</td>
<td>SY3000-27-1</td>
<td>Refer to thread types on page 128 for —</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SY5000-27-1</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1/4: SY7000-27-1</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3/8: SY7000-27-2</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1/2: SY9000-27-1</td>
<td>—</td>
</tr>
<tr>
<td>9</td>
<td>Gasket</td>
<td>SY3000-11-25</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SY5000-11-18</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SY7000-11-14</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SY9000-11-2</td>
<td>—</td>
</tr>
<tr>
<td>—</td>
<td>Round head combination screw</td>
<td>SX3000-22-2 (M2 x 24)</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SV2000-21-1 (M3 x 30)</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SV3000-21-1 (M4 x 35)</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SV2000-21-2 (M3 x 40)</td>
<td>—</td>
</tr>
</tbody>
</table>

Note) Round head combination screw requires 2 pcs. per one valve for the SV1000, SV2000 and SV3000 series. For the SV4000 series, it requires 3 pcs.
SV Series

Dimensions: SV1000 Series

2 position single/double, 4 position dual 3 port [M12 waterproof connector type]
SV1□00(R)-□□□-01□

3 position closed center/exhaust center/pressure center [M12 waterproof connector type]
SV1□00(R)-□□□-01□
Dimensions: SV2000 Series

2 position single/double, 4 position dual 3 port [M12 waterproof connector type]
SV2□□□(R)-□□□□□-□□

3 position closed center/exhaust center/pressure center [M12 waterproof connector type]
SV2□□□(R)-□□□□□-□□
**SV Series**

**Dimensions: SV3000 Series**

2 position single/double [M12 waterproof connector type]
SV3□00(R)-□□□-02, 03□

3 position closed center/exhaust center/pressure center [M12 waterproof connector type]
SV3□00(R)-□□□-02, 03□
Dimensions: SV4000 Series

2 position single-double [M12 waterproof connector type]
SV4□00(R)-□W□-03, 04□

3 position closed center/exhaust center/pressure center [M12 waterproof connector type]
SV4□00(R)-□W□-03, 04□
### 1 Main Valve Fluororubber Specifications

Fluororubber is used for rubber parts of the main valve to allow use in applications such as the following.

1. When using a lubricant other than the recommended turbine oil, and there is a possibility of malfunction due to swelling of the spool valve seals.
2. When ozone enters or is generated in the air supply.

Note) Because in the -X90 series fluororubber is used for only main valve, the rubber parts of the application/usage in conditions requiring heat resistance should be avoided.

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Main Valve Fluororubber Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SV</strong>&lt;sup&gt;00&lt;/sup&gt;-<strong>X90</strong></td>
<td>Entry is the same as standard products.</td>
</tr>
</tbody>
</table>

**Model no.**

SV<sup>1</sup>00-<sup>2</sup>-<sup>3</sup>-<sup>4</sup>-X90
SV Series
Specific Product Precautions 1
Be sure to read this before handling the products.
Refer to back page 50 for Safety Instructions and pages 3 to 9 for 3/4/5 Port Solenoid Valve Precautions.

SV Series Used as a 3 Port Valve

In the case of using a 5 port valve (as a 3 port valve)
The SV series can be used as normally closed (N.C.) or normally open (N.O.) 3 port valves by closing one of the cylinder ports (A or B) with a plug. However, they should be used with the exhaust ports kept open. They are convenient at times when a double solenoid type 3 port valve is required.

<table>
<thead>
<tr>
<th>Number of solenoids</th>
<th>Actuation</th>
<th>B port</th>
<th>A port</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single</td>
<td>N.C.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Double</td>
<td>N.O.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Light/Surge Voltage Suppressor

Solenoid valves have no polarity.
Light/Surge voltage suppressor

Surge voltage suppressor

Single solenoid

Double solenoid, 3 position type

Light Indication

Caution
When equipped with indicator light and surge voltage suppressor, the light window turns orange when solenoid A is energized, and it turns green when solenoid B is energized.

Exhaust Restriction

Since Series SV is a type in which the pilot valve exhaust joins the main valve exhaust inside the valve, use caution, so that the piping from the exhaust port is not restricted.

Caution
When locking the manual override with the push-turn locking slotted type, be sure to push it down before turning. Turning without first pushing it down can cause damage to the manual override and other trouble such as air leakage, etc.

Caution
When equipped with indicator light and surge voltage suppressor, the light window turns orange when solenoid A is energized, and it turns green when solenoid B is energized.

Caution
Do not use valves in atmospheres of corrosive gases, chemicals, salt water, water, steam, or where there is direct contact with any of these.

Caution
Manual Override Operation

Handle carefully, as connected equipment can be actuated through manual override operation.

Non-locking push type

Push-turn locking slotted type

After pushing down, turn in the direction of the arrow. If it is not turned, it can be operated the same way as the non-locking type.

Environment

Warning
1. Do not use valves in atmospheres of corrosive gases, chemicals, salt water, water, steam, or where there is direct contact with any of these.

Warning
2. Products compliant with IP65 and IP67 enclosures (Based on IEC60529) are protected against dust and water, however, these products cannot be used in water.

Caution
3. Products compliant with IP65 and IP67 enclosures satisfy the specifications by mounting each product properly. Be sure to read the Specific Product Precautions for each product.

Caution
4. When using built-in silencer type manifold with an IP67 enclosure, keep the exhaust port of the silencer from coming in direct contact with water or other liquids. Liquid filtration through the exhaust port of the silencer can cause damage to the valve.

Non-locking push type

Push-turn locking slotted type

Caution
When locking the manual override with the push-turn locking slotted type, be sure to push it down before turning. Turning without first pushing it down can cause damage to the manual override and other trouble such as air leakage, etc.

Caution
When equipped with indicator light and surge voltage suppressor, the light window turns orange when solenoid A is energized, and it turns green when solenoid B is energized.

Exhaust Restriction

Since Series SV is a type in which the pilot valve exhaust joins the main valve exhaust inside the valve, use caution, so that the piping from the exhaust port is not restricted.

Caution
When locking the manual override with the push-turn locking slotted type, be sure to push it down before turning. Turning without first pushing it down can cause damage to the manual override and other trouble such as air leakage, etc.

Exhaust Restriction

Since Series SV is a type in which the pilot valve exhaust joins the main valve exhaust inside the valve, use caution, so that the piping from the exhaust port is not restricted.
SV Series
Specific Product Precautions 2

Be sure to read this before handling the products. Refer to back page 50 for Safety Instructions and pages 3 to 9 for 3/4/5 Port Solenoid Valve Precautions.

Connector Entry Directions

**Caution**
Connector entry directions for D-sub connectors and flat ribbon cables can be changed. To change the connector's entry direction, press the levers on both sides of the connector, take it off, and change the direction as shown in the drawing. Since lead wire assemblies are attached to the connector, excessive pulling or twisting can cause broken wires or other trouble. Also, take precautions so that lead wires are not caught and pinched when installing the connector.

![Connector Entry Directions Diagram](image)

One-touch Fittings

**Caution**
1. Tube attachment/detachment for One-touch fittings
   1) Attaching of tube
      (1) Take a tube having no flaws on its periphery and cut it off at a right angle. When cutting the tube, use tube cutters TK-1, 2 or 3. Do not use pinchers, nippers or scissors, etc. If cutting is done with tools other than tube cutters, there is the danger that the tube may be cut diagonally or become flattened, etc., making a secure installation impossible, and causing problems such as the tube pulling out after installation or air leakage. Also allow some extra length in the tube.
      (2) Grasp the tube and push it in slowly, inserting it securely all the way into the fitting.
      (3) After inserting the tube, pull on it lightly to confirm that it will not come out. If it is not installed securely all the way into the fitting, this can cause problems such as air leakage or the tube pulling out.

   2) Detaching of tube
      (1) Push in the release button sufficiently, and push the collar evenly at the same time.
      (2) Pull out the tube while holding down the release button so that it does not come out. If the release button is not pressed down sufficiently, there will be increased bite on the tube and it will become more difficult to pull it out.
      (3) When the removed tube is to be used again, cut off the portion which has been chewed before reusing it. If the chewed portion of the tube is used as is, this can cause trouble such as air leakage or difficulty in removing the tube.

How to Order Manifold

**Caution**
The letter “S” or “D” is indicated on manifold blocks for the SV series as shown below. This indication refers to the type of substrate assembly (single wiring or double wiring) inside the manifold blocks.

When the manifold specification sheet does not include a wiring specification, all stations will be double wiring specification (D). In this case, single and double solenoid valves can be mounted in any position, but when a single valve is used, there will be an unused control signal. To avoid this, indicate positions of manifold blocks for single wiring specification (S) and double wiring specification (D) on a manifold specification sheet. (Note that double, 3 or 4 position valves cannot be used for manifolds blocks with single wiring specification (S)).

![Manifold Blocks Diagram](image)

Substrate Assemblies inside Manifolds

**Caution**
Substrate assemblies inside of manifolds cannot be taken apart. Attempting to do so may damage parts.

Other Tubing Brands

**Caution**
1. When using tube other than SMC brand, confirm that the following specifications are satisfied with respect to the outside diameter tolerances of the tube.

   1) Nylon tubing within ±0.1 mm
   2) Soft nylon tubing within ±0.1 mm
   3) Polyurethane tubing within +0.15 mm within –0.2 mm

Do not use tubing which does not meet these outside diameter tolerances. It may not be possible to connect them, or they may cause other trouble, such as air leakage or the tube pulling out after connection.

Back Pressure Check Valve Built-in Type

**Caution**
1. Valves with built-in back pressure check valve is to protect the back pressure inside a valve. For this reason, use caution the valves with external pilot specification cannot be pressurized from exhaust port [3/5(E)]. As compared with the types which do not integrate the back pressure check valve, C value of the flow rate characteristics goes down. For details, please contact SMC.
2. Do not switch valves when A or B port is open to the atmosphere, or while the actuators and air operated equipment are in operation. The back pressure prevention seal may be peeled off, which may cause air leakage or malfunctions. Use caution especially when performing a trial operation or maintenance work.
SV Series
Specific Product Precautions 3
Be sure to read this before handling the products. Refer to back page 50 for Safety Instructions and pages 3 to 9 for 3/4/5 Port Solenoid Valve Precautions.

Caution

Specifications

<table>
<thead>
<tr>
<th>Interface regulator</th>
<th>SV1000</th>
<th>SV2000</th>
<th>SV3000</th>
<th>SV4000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applicable model</td>
<td>SV1000</td>
<td>SV2000</td>
<td>SV3000</td>
<td>SV4000</td>
</tr>
<tr>
<td>Set pressure range</td>
<td>0.1 to 0.7 MPa</td>
<td>0.1 to 0.7 MPa</td>
<td>0.1 to 0.7 MPa</td>
<td>0.1 to 0.7 MPa</td>
</tr>
<tr>
<td>Maximum operating pressure</td>
<td>0.7 MPa</td>
<td>0.7 MPa</td>
<td>0.7 MPa</td>
<td>0.7 MPa</td>
</tr>
<tr>
<td>Fluid</td>
<td>Air</td>
<td>Air</td>
<td>Air</td>
<td>Air</td>
</tr>
<tr>
<td>Ambient and fluid temp.</td>
<td>Maximum at 50°C</td>
<td>Maximum at 50°C</td>
<td>Maximum at 50°C</td>
<td>Maximum at 50°C</td>
</tr>
<tr>
<td>Weight With pressure gauge</td>
<td>38.4 g (43.4 g)</td>
<td>86.5 g</td>
<td>103.8 g</td>
<td>178.2 g</td>
</tr>
<tr>
<td>Weight Without pressure gauge</td>
<td>32 g (37 g)</td>
<td>80.3 g</td>
<td>97.6 g</td>
<td>171.8 g</td>
</tr>
</tbody>
</table>

Note 1) Apply pressure from P port in the base for Interface regulator.
Note 2) P port pressure regulation is only available for closed center, pressure center and 4-position dual 3-port valve.
Note 3) Gasket and mounting screws are included in the weight.
Note 4) ( ) Denotes the values of SV1300.

Flow Rate Characteristics

SV1000 P Reduced pressure (P → A, B)

SV2000 P Reduced pressure (P → A, B)

SV3000 P Reduced pressure (P → A, B)

How to Calculate the Flow Rate

For obtaining the flow rate, refer to front matters
# SV Series
## Specific Product Precautions 4

Be sure to read this before handling the products.
Refer to back page 50 for Safety Instructions and pages 3 to 9 for 3/4/5 Port Solenoid Valve Precautions.

### Warning
1. These products are intended for use in general factory automation equipment.
   Avoid using these products in machinery/equipment which affects human safety, and in cases where malfunction or failure can result in extensive damage.
2. Do not use in an explosive atmosphere, environment with inflammable gases, or corrosive atmosphere.
   This can cause injury or fire, etc.
3. Work such as transporting, installing, piping, wiring, operation, control and maintenance should be performed by personnel with specialized knowledge.
   There is a danger of electrocution, injury or fire, etc.
4. Install an external emergency stop circuit that can promptly stop operation and shut off the power supply.
5. Do not remodel these products, as there is a danger of injury and damage.
6. Do not wipe the product with chemicals, etc.

### Caution
1. Read the operation manual carefully, strictly observe the precautions and operate within the range of the specifications.
2. Do not drop these products or submit them to strong impacts. This can cause damage, failure or malfunction, etc.
3. In locations with poor electrical conditions, take steps to ensure a steady flow of the rated power supply. Use of a voltage outside of the specifications can cause malfunction, damage to the unit, electrocution or fire, etc.
4. Do not touch connector terminals or internal substrates when current is being supplied. There is a danger of malfunction, damage to the unit or electrocution if connector terminals or internal substrates are touched when current is being supplied.
   Be sure that the power supply is OFF when adding or removing manifold valves or input blocks, etc., or when connecting or disconnecting connectors.
5. Operate at an ambient temperature that is within the specifications. Even when the ambient temperature range is within the specifications, do not use in locations where there are rapid temperature changes.
6. Keep wire scraps and other extraneous material from getting inside these products. This can cause fire, failure or malfunction, etc.
7. Give consideration to the operating environment depending on the type of enclosure being used.
   To achieve IP65 or IP67 protection, provide appropriate wiring between all units using electrical wiring cables, communication connectors and cables with M12 connectors. Also, provide waterproof caps when there are unused ports, and perform proper mounting of input units, input blocks, SI units and manifold valves, etc. Provide a cover or other protection for applications in which there is constant exposure to water.
8. Obey the proper tightening torque.
   There is a possibility of damaging threads if tightening exceeds the tightening torque range.
9. Provide adequate protection when operating in locations such as the following:
   • Where noise is generated by static electricity, etc.
   • Where there is a strong electric field
   • Where there is a danger of exposure to radiation
   • When in close proximity to power supply lines
10. When these products are installed in equipment, provide adequate protection against noise by using noise filters, etc.
11. Since these products are components that are used after installation in other equipment, the customer should confirm conformity to EMC directives for the finished product.
12. Do not remove the name plate.
13. Perform periodic inspections and confirm normal operation. It may otherwise be impossible to guarantee safety due to unexpected malfunction or erroneous operation.
14. Do not use in places where there are cyclic temperature changes.
   In case that the cyclic temperature is beyond normal temperature changes, the inside the product is likely to be adversely effected.
15. Do not use in direct sunlight.
   Do not use in direct sunlight. It may cause malfunction or damage.
16. Do not use in places where there is radiated heat around it.
   Such a place is likely to cause malfunction.

---

### Power Supply Safety Instructions

#### Caution
1. Operation is possible with a single power supply or a separate power supply. However, be sure to provide two wiring systems (one for solenoid valves, and one for input and control units).
2. Use the following UL approved products for DC power supply combinations.
   1) Controlled voltage current circuit conforming to UL508
      Circuit uses the secondary coil of an isolated transformer as the power supply, satisfying the following conditions.
      • Max. voltage (with no load): 30 Vrms (42.4 V peak) or less
      • Max. current: (1) 8 A or less (including shorts), and (2) When controlled by a circuit protector (fuse, etc.) with the following rating

<table>
<thead>
<tr>
<th>No-load voltage (V peak)</th>
<th>Max. current rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 to 20 [V]</td>
<td>5.0</td>
</tr>
<tr>
<td>Over 20 [V] to 30 [V]</td>
<td>100</td>
</tr>
<tr>
<td>Peak voltage value</td>
<td></td>
</tr>
</tbody>
</table>

2) A circuit (class 2 circuit) with maximum 30 Vrms (42.4 V peak) or less, and a power supply consisting of a class 2 power supply unit confirming to UL1310, or a class 2 transformer confirming to UL1585

### Safety Instructions for Cable

#### Caution
1. Be careful of mis-wiring. This can cause malfunction, damage and fire in the unit.
2. To prevent noise and surge in signal lines, keep all wiring separate from power lines and high voltage lines. Otherwise, this can cause malfunction.
3. Check wiring insulation, as defective insulation can cause damage to the unit due to excessive voltage or current.
4. Do not bend or pull cables repeatedly, and do not place heavy objects on them or allow them to be pinched. This can cause broken lines.
EX600 Precautions

## Warning

1. **Use this product within the specification range.**
   - Using beyond the specified specifications range can cause fire, malfunction, or damage to the system. Confirm the specifications when operating.

2. **When using for an interlock circuit:**
   - Provide a multiple interlock system which is operated by another system (such as mechanical protection function).
   - Perform an inspection to check that it is working properly.
   - This may cause possible injury due to malfunction.

## Caution

1. **When applicable to UL, use a Class 2 power supply unit conforming to UL1310 for direct current power supply.**

2. **Use this product within the specified voltage range.**
   - Using beyond the specified voltage range is likely to cause the units and connecting devices to be damaged or to malfunction.

3. **The power supply for the unit should be 0 V as the standard for both power supply for output as well as power supply for control/input.**

4. **Do not install a unit in a place where it can be used as a foothold.**
   - Applying any excessive load such as stepping on the unit by mistake or placing a foot on it, will cause it to break.

5. **Keep the surrounding space free for maintenance.**
   - When designing a system, take into consideration the amount of free space needed for performing maintenance.

6. **Do not remove the name plate.**
   - Improper maintenance or incorrect use of operation manual can cause failure and malfunction. Also, there is a risk of losing conformity with safety standards.

7. **Beware of inrush current when the power supply is turned on.**
   - Some connected loads can apply an initial charge current which will trigger the over current protection function, causing the unit to malfunction.

## Caution

1. **When handling and assembling units:**
   - Do not touch the sharp metal parts of the connector or plug.
   - Do not apply excessive force to the unit when disassembling.
   - The connecting portions of the unit are firmly joined with seals.
   - When joining units, take care not to get fingers caught between units.
   - Injury can result.

## Caution

2. **Do not drop, bump, or apply excessive impact.**
   - Otherwise, the unit can become damaged, malfunction, or fail to function.

3. **Observe the tightening torque range.**
   - Tightening outside of the allowable torque range will likely damage the screw.
   - IP67 cannot be guaranteed if the screws are not tightened to the specified torque.

4. **When lifting a large size manifold solenoid valve unit, take care to avoid causing stress to the valve connection joint.**
   - The connection parts of the unit may be damaged.

5. **When placing a manifold, mount it on a flat surface.**
   - Torsion in the whole manifold can lead to trouble such as air leakage or defective insulation.

## Wiring

1. **Confirm grounding to maintain the safety of the reduced wiring system and for anti-noise performance.**
   - Provide a specific grounding as close to the unit as possible to minimize the distance to grounding.

2. **Avoid repeatedly bending or stretching the cable and applying a heavy object or force to it.**
   - Wiring applying repeated bending and tensile stress to the cable can break the circuit.

3. **Avoid miswiring.**
   - If miswired, there is a danger of malfunction or damage to the reduced wiring system.

4. **Do not wire while energizing the product.**
   - There is a danger of malfunction or damage to the reduced wiring system or input/output equipment.

5. **Avoid wiring the power line and high pressure line in parallel.**
   - Noise or surge produced by signal line resulting from the power line or high pressure line could cause malfunction.
   - Wiring of the reduced wiring system or input/output device and the power line or high pressure line should be separated from each other.

6. **Confirm the wiring insulation.**
   - Defective insulation (contact with other circuits, improper insulation between terminals, etc.) may cause damage to the reduced wiring system or input/output device due to excessive voltage or current.
SV Series
Specific Product Precautions 6
Be sure to read this before handling the products. Refer to back page 50 for Safety Instructions and pages 3 to 9 for 3/4/5 Port Solenoid Valve Precautions.

EX600 Precautions

<table>
<thead>
<tr>
<th>Wiring</th>
<th>Operating Environment</th>
</tr>
</thead>
</table>

**Caution**

7. When a reduced wiring system is installed in machinery/equipment, provide adequate protection against noise by using noise filters, etc. Noise in signal lines may cause malfunction.

8. When connecting wires of input/output device or Handheld Terminal, prevent water, solvent or oil from entering inside from the connector section. This can cause damage, equipment failure or malfunction.

9. Avoid wiring patterns in which excessive stress is applied to the connector. This may cause malfunction or damage to the unit due to contact failure.

**Operating Environment**

**Caution**

3. Do not use in an environment where oil and chemicals are used. Operating in environments with coolants, cleaning solvents, various oils or chemicals may cause adverse effects (damage, malfunction) to the unit even in a short period of time.

4. Do not use in an environment where the product could be exposed to corrosive gas or liquid. This may damage the unit and cause it to malfunction.

5. Do not use in locations with sources of surge generation. Installation of the unit in an area around the equipment (electromagnetic lifters, high frequency induction furnaces, welding machine, motors, etc.), which generates the large surge voltage could cause to deteriorate an internal circuitry element of the unit or result in damage. Implement counter-measures against the surge from the generating source, and avoid touching the lines with each other.

6. Use the product type that has an integrated surge absorption element when directly driving a load which generates surge voltage by relay, solenoid valves or lamp. When a surge generating load is directly driven, the unit may be damaged.

7. The product is CE marked, but not immune to lightning strikes. Take measures against lightning strikes in your system.

8. Keep dust, wire scraps and other extraneous material from getting inside the product. This may cause malfunction or damage.

9. Mount the unit in such locations, where no vibration or shock is affected. This may cause malfunction or damage.

10. Do not use in places where there are cyclic temperature changes. In case that the cyclic temperature is beyond normal temperature changes, the internal unit is likely to be adversely affected.

11. Do not use in direct sunlight. Do not use in direct sunlight. It may cause malfunction or damage.

12. Use this product within the specified ambient temperature range. This may cause malfunction.

13. Do not use in places where there is radiated heat around it. Such a place is likely to cause malfunction.

**Warning**

1. Do not use in an atmosphere containing an inflammable gas or explosive gas. Use in such an atmosphere is likely to cause a fire or explosion. This system is not explosion-proof.

**Caution**

1. Select the proper type of enclosure according to the environment of operation. IP65/67 is achieved when the following conditions are met.

   1) Provide appropriate wiring between all units using electrical wiring cables, communication connectors and cables with M12 connectors.
   2) Suitable mounting of each unit and manifold valve.
   3) Be sure to mount a seal cap on any unused connectors. If using in an environment that is exposed to water splashes, please take measures such as using a cover.

   When the enclosure is IP40, do not use in an operating environment or atmosphere where it may come in contact with corrosive gas, chemical agents, seawater, water, or water vapor. When connected to EX600-D□□□E or EX600-D□□□F, manifold enclosure is IP40.

   Also, the Handheld Terminal conforms to IP20, so prevent foreign matter from entering inside, and water, solvent or oil from coming in direct contact with it.

2. Provide adequate protection when operating in locations such as the following. Failure to do so may cause damage or malfunction. The effect of countermeasures should be checked in individual equipment and machine.

   1) Where noise is generated by static electricity, etc.
   2) Where there is a strong electric field
   3) Where there is a danger of exposure to radiation
   4) When in close proximity to power supply lines
EX600 Precautions

**Adjustment/Operation**

**Warning**
1. Do not perform operation or setting with wet hands. There is a risk of electrical shock.
   <Handheld Terminal>
2. Do not apply pressure to the LCD. There is a possibility of the crack of LCD and injuring.
3. The forced input/output function is used to change the signal status forcibly. When operating this function, be sure to check the safety of the surroundings and installation. Otherwise, injury or equipment damage could result.
4. Incorrect setting of parameters can cause malfunction. Be sure to check the settings before use. This may cause injury or equipment damage.

**Caution**
1. Use a watchmaker’s screwdriver with thin blade for the setting of each switch of the SI Unit. When setting the switch, do not touch other unrelated parts. This may cause parts damage or malfunction due to a short circuit.
2. Provide adequate setting for the operating conditions. Failure to do so could result in malfunction. Refer to the operation manual for setting of the switches.
3. For the details of programming and address setting, refer to the manual from the PLC manufacturer. The content of programming related to protocol is designed by the manufacturer of the PLC used.
   <Handheld Terminal>
4. Do not press the setting buttons with a sharp pointed object. This may cause damage or malfunction.
5. Do not apply excessive load and impact to the setting buttons. This may cause damage, equipment failure or malfunction.

When the order does not include the SI Unit, the Valve Plate to connect the manifold and SI Unit is not mounted. Use attached valve fixing screws and mount the Valve Plate. (Tightening torque: 0.6 to 0.7 N·m)

**Maintenance**

**Warning**
1. Do not disassemble, modify (including circuit board replacement) or repair this product. Such actions are likely to cause injuries or breakage.
2. When an inspection is performed,
   • Turn off the power supply.
   • Stop the air supply, exhaust the residual pressure in piping and verify that the air is released before performing maintenance work. Unexpected malfunction of system components and injury can result.

**Caution**
1. When handling and replacing the unit:
   • Do not touch the sharp metal parts of the connector or plug.
   • Do not apply excessive force to the unit when disassembling. The connecting portions of the unit are firmly joined with seals.
   • When joining units, take care not to get fingers caught between units. Injury can result.
2. Perform periodic inspection. Unexpected malfunction in the system composition devices is likely to occur due to malfunction of machinery or equipment.
3. After maintenance, make sure to perform an appropriate functionality inspection. In cases of abnormality such as faulty operation, stop operation. Unexpected malfunction in the system composition devices is likely to occur.
4. Do not use benzene and thinner for cleaning units. Damage to the surface or erasure of the display can result. Wipe off any stains with a soft cloth. If the stain is persistent, wipe off with a cloth soaked in a dilute solution of neutral detergent and wrung out tightly, and then finish with a dry cloth.

**Other**

**Caution**
1. Refer to the catalog of each series for Common Precautions and Specific Product Precautions on manifold solenoid valves.