This hybrid regulator combines a regulator and a solenoid valve.

### Stepless control through electric signals
Port sizes M5 to 2 inches can be covered by combining an ultra-compact electro-pneumatic pilot valve and a 3-port high-capacity exhaust main regulator.

### Simple circuit configuration
- **Piping labor reduced**
- **A flexible system has been adopted.**

### Application example
- **Cylinder Thrust Control**
  - Tension control balancer
  - Example: Auto balancer

### Drive and Thrust Control
- Cylinder behavior and pressurization control for peening and stamping
- Example: Welding pressure control of spot welding gun cylinder
- Loading cylinder control

### Pressure Control of Tank
- Automatic adjustments

### Flow Control of Various Fluids
- For remote control of another air operated valve

### Air Flow Control of Nozzle
- Note) Use for the sonic flow.

### Ease of handling
- Having the amplifier built into the electro-pneumatic pilot valve, only an external power supply and signal (voltage, current) need to be connected.

### Manifold capable
- Using the VVEXB/2/4 series, a maximum 10 station manifold is possible.
## E-P HYREG® Series VY1

### Power source/Command signal

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Power source voltage DC</th>
<th>Command signal DC</th>
<th>Input impedance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nil</td>
<td>24 V</td>
<td>1 to 5 V</td>
<td>67 kΩ</td>
</tr>
<tr>
<td>1</td>
<td>0 to 10 V</td>
<td>10 kΩ</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>4 to 20 mA</td>
<td>120 Ω</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>0 to 20 mA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>1 to 5 V</td>
<td>67 kΩ</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>0 to 10 V</td>
<td>10 kΩ</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>4 to 20 mA</td>
<td>120 Ω</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>0 to 20 mA</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### How to Order

- **E-P HYREG**
  - Maximum operating pressure: 0.9 MPa

- **Pilot type**
  - 0: Internal pilot
  - 1: External pilot

- **Thread type**
  - Nil
  - F: G
  - N: NPT
  - Y: NPTF

Note 1) Not conforming to ISO1179-1.

### Body size / Port size Rc

<table>
<thead>
<tr>
<th>Mounting</th>
<th>Symbol</th>
<th>Body ported</th>
<th>Port size Rc</th>
<th>Base mounted</th>
<th>Power source/Command signal</th>
</tr>
</thead>
<tbody>
<tr>
<td>D</td>
<td>00</td>
<td>M5</td>
<td>M5</td>
<td>Without sub-plate</td>
<td>24 V 1 to 5 V 67 kΩ</td>
</tr>
<tr>
<td>B</td>
<td>00</td>
<td>M5</td>
<td>M5</td>
<td>Without sub-plate</td>
<td>24 V 1 to 5 V 67 kΩ</td>
</tr>
<tr>
<td>A</td>
<td>05</td>
<td>M5</td>
<td>M5</td>
<td>Without sub-plate</td>
<td>24 V 1 to 5 V 67 kΩ</td>
</tr>
</tbody>
</table>

Note 2) Only bracket or foot may be mounted.

Note 3) When replacing the pilot valve, it may not satisfy characteristics such as accuracy, etc. Confirm the product works under the operating conditions before using. If SMC is requested to repair the product, SMC confirms whether characteristics are satisfied.

Note 4) in the applicable pilot valve part number is designated for the power source/command signal.

---

904
Standard Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Part no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>VY1D00</td>
<td>VY1A0†</td>
</tr>
<tr>
<td>Port size</td>
<td>M5</td>
</tr>
<tr>
<td>1(P)</td>
<td>0.11</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>VY110†</th>
<th>VY120†</th>
<th>VY130†</th>
<th>VY140†</th>
<th>VY150†</th>
<th>VY170†</th>
<th>VY190†</th>
</tr>
</thead>
<tbody>
<tr>
<td>Port size</td>
<td>M5</td>
<td>M5</td>
<td>½</td>
<td>½</td>
<td>½</td>
<td>½</td>
</tr>
<tr>
<td>1(P)</td>
<td>0.25</td>
<td>0.35</td>
<td>0.55</td>
<td>0.75</td>
<td>1.5</td>
<td>2</td>
</tr>
<tr>
<td>Weight (kg)</td>
<td>0.11</td>
<td>0.16</td>
<td>0.19</td>
<td>0.25</td>
<td>0.35</td>
<td>0.55</td>
</tr>
</tbody>
</table>

Note 1) Not conforming to ISO1179-1.
**Series VY1**

**Characteristics**

Command Signal — Outlet Pressure Characteristics (Characteristics of pressure setting)

Port 1 (P) Pressure 0.9 MPa

<table>
<thead>
<tr>
<th>Port 2 (A) Pressure (MPa)</th>
<th>Command signal</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.1</td>
<td></td>
</tr>
<tr>
<td>0.2</td>
<td></td>
</tr>
<tr>
<td>0.3</td>
<td></td>
</tr>
<tr>
<td>0.4</td>
<td></td>
</tr>
<tr>
<td>0.5</td>
<td></td>
</tr>
<tr>
<td>0.6</td>
<td></td>
</tr>
<tr>
<td>0.7</td>
<td></td>
</tr>
<tr>
<td>0.8</td>
<td></td>
</tr>
<tr>
<td>0.9</td>
<td></td>
</tr>
</tbody>
</table>

Note 1) Enter symbols above in VY1D00-\*\*.

Note 2) Other body sizes add the dispersion on the above data when the main valve activates.

---

Command signal voltage (current) for starting the operation of a pilot valve VY1D00 (direct operated)

There is dispersion in the following range

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Input signal</th>
<th>Operation start range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nil, 5</td>
<td>1 to 5 VDC</td>
<td>0.93 to 1.07 VDC</td>
</tr>
<tr>
<td>1, 6</td>
<td>0 to 10 VDC</td>
<td>0.01 to 0.1 VDC</td>
</tr>
<tr>
<td>2, 7</td>
<td>4 to 20 mA DC</td>
<td>3.7 to 4.3 mA DC</td>
</tr>
<tr>
<td>3, 8</td>
<td>0 to 20 mA DC</td>
<td>0.02 to 0.2 mA DC</td>
</tr>
</tbody>
</table>

Note 1) Enter symbols above \*\* in VY1D00-\*\*. \*\* indicates power supply and a command signal.

Note 2) Other body sizes add the dispersion on the above data when the main valve activates.
Pressure Characteristics

**VY1D00**

- Port 2 (A) pressure (MPa) vs. Port 1 (P) pressure (MPa)
- Set point

**VY1A0 /1B0**

- Port 2 (A) pressure (MPa) vs. Port 1 (P) pressure (MPa)
- Set point

**VY110 /120**

- Port 2 (A) pressure (MPa) vs. Port 1 (P) pressure (MPa)
- Set point

**VY130**

- Port 2 (A) pressure (MPa) vs. Port 1 (P) pressure (MPa)
- Set point

**VY140**

- Port 2 (A) pressure (MPa) vs. Port 1 (P) pressure (MPa)
- Set point

**VY150**

- Port 2 (A) pressure (MPa) vs. Port 1 (P) pressure (MPa)
- Set point

**VY170**

- Port 2 (A) pressure (MPa) vs. Port 1 (P) pressure (MPa)
- Set point

**VY190**

- Port 2 (A) pressure (MPa) vs. Port 1 (P) pressure (MPa)
- Set point
Series VY1

Characteristics

Flow Characteristics

<table>
<thead>
<tr>
<th>Model</th>
<th>Port 2 (A) Pressure (MPa)</th>
<th>Port 1 (P) Pressure 0.9 MPa</th>
</tr>
</thead>
<tbody>
<tr>
<td>VY1D00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VY1A0 /1B0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VY110 /120</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VY130 /140</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VY150</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VY170</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Exhaust Time**

1. Exhaust Time from 0.5 MPa to 0.1 MPa

2. Exhaust Time from 10 L Tank

3. Exhaust time from optional pressure point

Ex.) Using VY1500, lower the 500 L tank pressure from 0.4 to 0.1.

a) If describing the above graph in accordance with graphs, the exhaust time is read, $27 - 3 = 24$ s.

b) Then, to convert the time into one from a 500 L tank.

$$t = \frac{1000}{500} \times 24$$

$$t = 12$$

Then, the result is 12 s.
**Series VY1**

**Dimensions**

**VY1D00**

- 2 x ø4.4 Mounting hole
- 3 x M5 Port 1 (P), 2 (A), 3 (R)

**VY1A00**

- 3 x M5 Port 1 (P), 2 (A), 3 (R)
- 2 x ø4.5 Mounting hole
- 2 x M3 thread depth 6.5 (For bracket and foot mounting)

**Connection mark**

All types are the same in terms of connection.

- VEXA-18-3A (Hexagon socket head cap screw M3 L = 8 (2 pcs.) (With spring washer))

**Foot (Option)**

- VEXA-18-3A (Hexagon socket head cap screw M3 L = 8 (2 pcs.) (With spring washer))

**Bracket (Option)**

- VEXA-18-2A (Hexagon socket head cap screw M3 L = 8 (2 pcs.) (With spring washer))

**Silencer (Option)**

- AN120-M5

**Applicable cable O.D.**

- ø4 to ø6.5

**Applicable cable O.D.**

- ø4 to ø6.5
**VY1B0**

- M5 external pilot port (VY2B01 only)
- Connections mark
  - All types are the same in terms of connection.

**VY110**

- M5 Pilot EXH port
- Pressure gauge (Option) G27-10-01
- Connection mark
  - All types are the same in terms of connection.
- Foot (Option) VEX1-18-1
  - 1/8 gauge port
  - M3 thread depth 6.5
  - (For bracket and foot mounting)
  - 4 x ø4.5 Mounting hole
- VEX1-18-1A (Hexagon socket head cap screw M3 L = 6.5 (2 pcs.) With spring washer)
- Bracket (Option) VEX1-18-2
  - 1/8, 1/4 Port 1 (P), 3 (R)
- Silencer (Option) AN120-M5
  - Applicable cable O.D. ø4 to ø6.5
- PG7
- PG7
- PG7
- PG7

---

**Connection Specifications**

- Port 1 (P), 3 (R)
  - M5, 1/8
  - Applicable cable O.D. ø4 to ø6.5

- Port 2 (A)
  - M5, 1/8
  - Mounting hole 2 x ø4.5

---

**Note**

- All types are the same in terms of connection.

---

**Dimensions**

- (99.5) 59.5 49.5 27.5
- 27.5
- 9
- 34 36
- 1/8 Gauge port
- 2 x ø4.5 Mounting hole
- Pressure gauge (Option) G27-10-R1-X207
- Applicable cable O.D. ø4 to ø6.5

---

**Materials**

- Hexagon socket head cap screw M3 L = 8 (2 pcs.)
- With spring washer

---

**Options**

- Pressure gauge (Option) G27-10-01
- Silencer (Option) AN120-M5
- Bracket (Option) VEX1-18-1A
- Foot (Option) VEX1-18-2

---

**Part Numbers**

- VY1B01
- VY1101
- VY1
- VY1B0
- VY110
Series VY1

Dimensions

VY120\(^0\)

VY130\(^0\)
Series VY1

Dimensions

VY170

Connection mark
All types are the same in terms of connection.

Pressure gauge (Option)
G46-10-01

Applicable cable O.D.
ø4 to ø6.5

Port 3 (R)
1, 1/4

VY190

Connection mark
All types are the same in terms of connection.

Pressure gauge (Option)
G46-10-01

1/8 Gauge port

Applicable cable O.D.
ø4 to ø6.5

Port 1 (P), 2 (A)
2 x 1, 1 1/4

Bracket (Option)
VEX7-32A
Hexagon socket head cap screw M6 L = 15 (4 pcs.) (With spring washer)

Silencer (Option)
AN210-02
1/8 Pilot EXH port

Mounting hole
2 x ø9

Bracket (Option)
VEX9-32A
Hexagon socket head cap screw M6 L = 15 (4 pcs.) (With spring washer)

View A

Dimensions

(VY1701 only)
1/4 external pilot port

(VY1901 only)
1/4 external pilot port

1/4 external pilot port

1/4 Pilot EXH port

Port 1 (P), 2 (A)
2 x 1 1/2, 2

Mounting hole
4 x ø9

Hexagon socket head cap screw M6 L = 15 (4 pcs.) (With spring washer)
The VY 1D00, which is the smallest direct drive, consists of a solenoid, pressure sensor, control circuit, body cover, and a sub-plate. The type with sub-plate can be used alone, and the type without sub-plate can also be used as a pilot valve.

**VY1A0, VY1B0 (Pilot valve: VY1D00-□00)**

**Working principle**
- When the command signal is below 1 VDC, (refer to page 906) the solenoid valve is inactive, and the port 2(A) pressure is zero.
- When a command signal between 1 and 5 VDC is provided, the solenoid is activated.
- The port 2(A) pressure is fed back to the control circuit by the pressure sensor.
- The control circuit compares the feedback signal with the size of the command signal that was provided, and:
  1. If the feedback signal is smaller, current is supplied to the solenoid valve to raise the port 2(A) pressure [from 1(P) to 2(A)].
  2. If the feedback signal is greater, current is not supplied to valve to reduce the port 2(A) pressure [from 2(A) to 3(R)].

The above processes 1) and 2) are repeated at high speeds to set the port 2(A) pressure.

**Circuit**

When the command signal is below 1 VDC, the solenoid valve is inactive, and the port 2(A) pressure is zero. When a command signal between 1 and 5 VDC is provided, the solenoid valve is activated. The port 2(A) pressure is fed back to the control circuit by the pressure sensor.

- When the command signal is below 1 VDC, the solenoid valve is inactive, and the port 2(A) pressure is zero.
- When a command signal between 1 and 5 VDC is provided, the solenoid valve is activated.
- The port 2(A) pressure is fed back to the control circuit by the pressure sensor.
- The control circuit compares the feedback signal with the size of the command signal that was provided, and:
  1. If the feedback signal is smaller, current is supplied to the solenoid valve to raise the port 2(A) pressure [from 1(P) to 2(A)].
  2. If the feedback signal is greater, current is not supplied to valve to reduce the port 2(A) pressure [from 2(A) to 3(R)].

The above processes 1) and 2) are repeated at high speeds to set the port 2(A) pressure.

**Component Parts**

<table>
<thead>
<tr>
<th>Description</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Body</td>
<td>Zinc alloy die-cast</td>
</tr>
<tr>
<td>2 Pilot valve assembly</td>
<td></td>
</tr>
<tr>
<td>3 Adjusting piston</td>
<td>Aluminum alloy</td>
</tr>
<tr>
<td>4 Spring</td>
<td>Stainless steel</td>
</tr>
<tr>
<td>5 Valve guide</td>
<td>Stainless steel</td>
</tr>
<tr>
<td>6 Valve</td>
<td>Aluminum alloy/Rubber</td>
</tr>
<tr>
<td>7 Retainer</td>
<td>Aluminum alloy</td>
</tr>
<tr>
<td>8 Rod</td>
<td>Stainless steel/Rubber</td>
</tr>
</tbody>
</table>
**Working principle**

- The pair of poppet valves close due to the balance between actuating forces $F_1$ and $F_2$. Actuating force $F_1$ is applied to the top surface of pressure regulation piston by the pilot pressure (pilot valve assembly $VY1D00$, $VY1B00$), and actuating force $F_2$ is applied to the bottom surface of the piston by the port 2(A) pressure that passes through the feedback passage. Thus, the port 2(A) pressure that corresponds to the pilot pressure is established. The poppet valve, which maintains a pressure balance with the port 2(A) pressure, is backed up by spring (refer to the diagram on the left).

- When the port 2(A) pressure becomes higher than the pilot pressure, $F_2$ becomes higher than $F_1$. This causes the pressure regulation piston to move upward, and the top poppet valve to open, allowing the air to be discharged from port 2(A) to port 3(R). When the port 2(A) pressure drops to reach a balance, the regulator returns to the state shown in the diagram to the left.

- Conversely, if the port 2(A) pressure is lower than the pilot pressure, $F_2$ becomes less than $F_1$. This causes the pressure regulation piston to move downward, and the lower poppet valve to open, allowing the air to be supplied from port 1(P) to port 2(A). When the port 2(A) pressure rises to reach a balance, the regulator returns to the state shown in the diagram to the left.

**Component Parts**

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Pilot valve assembly</td>
<td>—</td>
</tr>
<tr>
<td>2</td>
<td>Body</td>
<td>Aluminum alloy</td>
</tr>
<tr>
<td>3</td>
<td>Cover</td>
<td>Aluminum alloy</td>
</tr>
<tr>
<td>4</td>
<td>Adjusting piston</td>
<td>Aluminum alloy</td>
</tr>
<tr>
<td>5</td>
<td>Spring</td>
<td>Stainless steel</td>
</tr>
<tr>
<td>6</td>
<td>Valve guide</td>
<td>Aluminum alloy</td>
</tr>
<tr>
<td>7</td>
<td>Poppet valve</td>
<td>Aluminum alloy/Rubber</td>
</tr>
<tr>
<td>8</td>
<td>Shaft</td>
<td>Stainless steel</td>
</tr>
<tr>
<td>9</td>
<td>Valve guide</td>
<td>Aluminum alloy</td>
</tr>
</tbody>
</table>
E-P HYREG®
Manifold Specifications

Using the series VVEXB/2/4, a maximum of 10 stations manifold is possible.

Specifications

<table>
<thead>
<tr>
<th>Applicable valve</th>
<th>VY1B0 1</th>
<th>VY120 2</th>
<th>VY140 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valve stations</td>
<td>2 to 10 stations</td>
<td>2 to 8 stations</td>
<td>2 to 6 stations</td>
</tr>
<tr>
<td>Passage</td>
<td>Common supply/exhaust</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pilot type</td>
<td>Internal pilot, Common external pilot (2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pilot port size</td>
<td>M5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Port size port 1(P), 2(A), 3(R)</td>
<td>1/8</td>
<td>1/4</td>
<td>1/4 3/8 1/2</td>
</tr>
<tr>
<td>Blanking plate assembly (3)</td>
<td>VEXB-6</td>
<td>VEX1-17</td>
<td>VEX4-5</td>
</tr>
</tbody>
</table>

Note 1) VY1B0 6 stations or more, VY120 5 stations or more, VY140 4 stations or more supply pressure to the ports 1(P) on both sides of the manifold and exhaust pressure from the port 3(R) on the both sides.

Note 2) When used as a common external pilot, select the internal pilot specification as an applicable valve.

Note 3) Gasket and mounting bolts are equipped.

How to Order

Enter the valves and the blank plates to be placed on a manifold in order, starting at the left side of the manifold base (with port 2(A) facing you).

Ex.) VVEX2-5-02
- VY1200-00-G  4 pcs.
- VEX1-17  1 pc.

Piping 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>NPT</td>
</tr>
</tbody>
</table>

Note 1) In the case of VVEXB, the “2” in the first digit of the valve station number is a dummy part number.

Note 2) Not conforming to ISO 1179-1.

Dimensions

<table>
<thead>
<tr>
<th>VVEXB</th>
</tr>
</thead>
</table>

Connection mark

All types are the same in terms of connection.

Individual external pilot port: P1
M5 (VY1B0-1-00 only)
2 x ø5.5
(For mounting)

Port 3(R): 2 x 1/8
Exhaust from the both sides for 6 stations or more.

Common external pilot port: See “Note for P1”.

2 x M5
(VVEXB-2n-01 only)

Port 2(A): n x 1/8
Pressurize from the both sides for 6 stations or more.

Note for P1
Confirm internal pilot or common external pilot by checking whether P1 has a M5 screw or not.

Internal pilot…………………… P1 has no M5 screw.
Common external pilot………… P1 has an M5 screw.

| Note) It is recommended to use a common type when the external pilot type is used. |
Series VY1

Dimensions

**VVEX2**

Connection mark
All types are the same in terms of connection.

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Stations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2</td>
</tr>
<tr>
<td>L1</td>
<td>91</td>
</tr>
<tr>
<td>L2</td>
<td>76</td>
</tr>
</tbody>
</table>

Port 2(A): n x 1/4
Port 1(P): 2 x 1/4
Pressurize from the both sides for 5 stations or more.

Common external pilot port: See "Note for P1".
(2 x M5 (VVEX2-2-n-02 only)

Port 3(R): 2 x 1/4
Exhaust from the both sides for 5 stations or more.

**VVEX4**

Connection mark
All types are the same in terms of connection.

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Stations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2</td>
</tr>
<tr>
<td>L1</td>
<td>123</td>
</tr>
<tr>
<td>L2</td>
<td>107</td>
</tr>
</tbody>
</table>

Port 2(A): n x 1/4, 3/8
Port 1(P): 2 x 3/8, 1/2
Pressurize from the both sides for 4 stations or more.

Common external port: See "Note for P1".
(2 x M5 (VVEX4-2-n-02 only)

Port 3(R): 2 x 3/8, 1/2
Exhaust from the both sides for 4 stations or more.

**Note for P1**
Confirm internal pilot or common external pilot by checking whether P1 has a M5 screw or not.
Internal pilot: P1 has no M5 screw.
Common external pilot: P1 has an M5 screw.
Precautions

Be sure to read before handling.
Refer to front matter 43 for Safety Instructions and each Best Pneumatics for Precautions on every series.

Piping

Caution

Tightening the fittings and their torque
When screwing fittings into the valves, make sure to tighten them to the proper torque values given below.

<table>
<thead>
<tr>
<th>Connection thread</th>
<th>Applicable torque (N-m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>M5 x 0.8</td>
<td>1.5 to 2 1/6 rotation</td>
</tr>
<tr>
<td>Rc 1/4</td>
<td>7 to 9</td>
</tr>
<tr>
<td>Rc 1/2</td>
<td>12 to 14</td>
</tr>
<tr>
<td>Rc 3/8</td>
<td>22 to 24</td>
</tr>
<tr>
<td>Rc 1/4</td>
<td>28 to 30</td>
</tr>
<tr>
<td>Rc 1/2</td>
<td>36 to 38</td>
</tr>
<tr>
<td>Rc 1</td>
<td>40 to 42</td>
</tr>
<tr>
<td>Rc 1/2</td>
<td>48 to 50</td>
</tr>
<tr>
<td>Rc 2</td>
<td>48 to 50</td>
</tr>
</tbody>
</table>

Air Supply

Caution

Poor quality air could enhance the spool’s sliding resistance and may not achieve the specified properties. Use compressor oil with a minimal generation of oxidants and install a mist separator (SMC’s Series AM/AFM). Refer to pages 2 and 3 in SMC Air Preparation System.

Pressure Gauge

Caution

For products with pressure gauge, use caution about the durability of a pressure gauge, since it may be affected by the sudden pressure changes during operation.

Wires to be Used

Caution

Use 3 core shielded wires measuring 0.5 (mm²) for the power supply and signal lines according to the respective number of conductors. When connecting the shielded braided wire, connect it to the ground of the signal generator. As a rule, the electro-pneumatic hybrid regulator should be installed in a location that is free of noise or is shielded. If it must be installed in an environment with poor noise conditions, eliminate the power supply noise by using a line filter, Z-wrap, or a spark killer on the 100 V power supply or signal source. The length of the power supply and signal lines must be kept as short as possible.

How to Use DIN Terminal

Caution

Wiring procedures
1. Loosen the retaining screw and pull the connector from the solenoid valve terminal block.
2. Remove the retaining screw, insert a flat head screwdriver into the groove below the terminal block and pry it up to separate the terminal block from the housing.
3. Loosen the terminal screws (slot head screws) on the terminal block.
4. In accordance with the wiring procedure, insert the lead wires into the terminals and tighten the terminal screws to secure in place.

Outlet changing procedure
After the terminal block has been separated from its housing, reassemble the housing in the desired direction (in four 90° increments) to change the direction of the cord outlet.

Precautions

Kindly insert the connector straight in without tilting it, and pull it out straight.

Applicable wire
Cord external diameter: ø4 to ø6.5
36 to 38 c.f. 0.5 mm² 3 core wire (JIS C 3306 equivalent)

Connector part no.: VK300-82-1

Input Signal

Caution

Input signal when out of operation
There is dispersion in operation start voltage (current) for the input signal. (Refer to page 968.)
If the command signal when out of operation exceeds the lower limit of the operation start voltage (current), the solenoid valve inside the pilot valve starts to activate and may be in the operation state.
The service life of this product varies depending on the operating time of the solenoid valve inside the pilot valve. Be sure to cut off the command signal when the pressure control on the outlet side is not required, such as when the line is temporarily halted, etc. (Refer to "Service Life" below.)

Service Life

Caution

The pilot valve service life is approximately 4000 to 5000 operating hours. (When using AF + AFM) This may be approximately 3000 hours with ultra-dry air (dew point –40°C or equivalent).

Bleed

Caution

Since the pilot solenoid valve enters the normally operating status and the air is discharged continuously in the pressure setting status, the bleed sound is produced. However, this is not a abnormal phenomenon.

Related Products:

Silencer (Series AN)
- Noise reducing effect: 30 dB or more.
- Large effective area
- Refer to Best Pneumatics No. 6 for details.

Exhaust cleaner (Series AMC)
- Provides noise reduction and oil mist collecting functions.
- Can also be used in a common piping system.
- Oil mist recovering efficiency 99.9%
- Noise reduction efficiency 35 dB or more
- Refer to Best Pneumatics No. 6 for details.