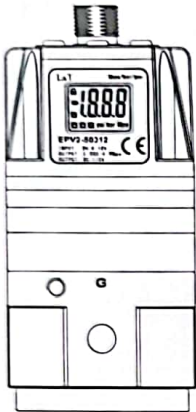


# OPERATION MANUAL

## E/P REGULATOR

### EPV1\EPV2\EPV3 series

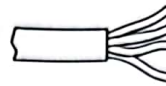


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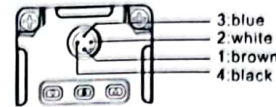
|                                |      |
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| Safety instructions.....       | P2   |
| Wiring method.....             | P3   |
| Setting method.....            | P4-6 |
| Error indication function..... | P6   |
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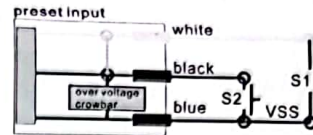
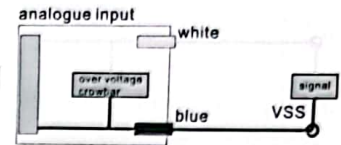
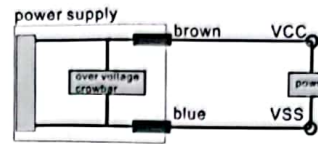
#### Wiring method



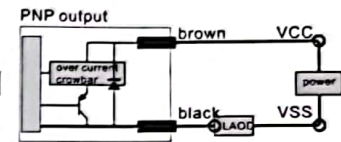
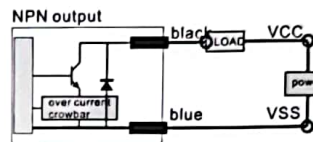
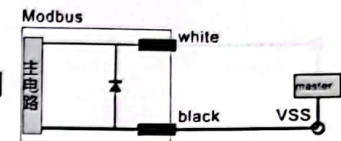
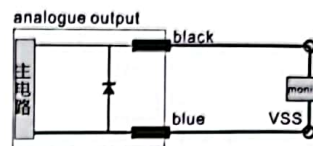
|         |                   |
|---------|-------------------|
| 1.brown | VCC(Power supply) |
| 2.white | Input signal      |
| 3.blue  | VSS(COMMON)       |
| 4.black | Output signal     |



note:the wire color is for when optional cable is used



| preset | P_1 | P_2 | P_3 | P_4 |
|--------|-----|-----|-----|-----|
| S1     | OFF | ON  | OFF | ON  |
| S2     | OFF | OFF | ON  | ON  |



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#### Safety instructions



**WARNING:**operator error could result in serious injury or loss of life

- Whether this product is applicable should be determined by designer or senior person of air pressure system.
- This product should be performed by knowledgeable and experienced operator, it is very dangerous to error operate compressed air.
- Do not operate the equipment or remove the components until safety is confirmed, regular inspection should be taken to ensure the proper operation.



**WARNING:**operator error could result in injury or equipment damage

- If power to this product is cut off due to power failure, etc. when it is in a controlled state, residual pressure will be retained temporarily.
- The optional cable connector is a 4 wire type, when the monitor output(analogue output or switch output) is not being used, prevent it from touching the other wires as a malfunction could occur.
- This product is adjusted for each specification at the time of shipment from the factory. Avoid careless disassembly or removal of parts, as this can lead to malfunction.
- Take the following steps to avoid malfunction due to noise:
  - Install a line filter etc. to the AC power line to reduce/eliminate power supply noise.
  - Avoid malfunction due to noise by installing this product and its wiring away from strong electric fields, such as those of motors and power line. etc.
  - Be sure to implement protective measures against load surge for induction loads (solenoid valves, relays, etc).
  - Turn off the power supply before installing and removing the connector.
- Please note that the right angled cable connector does not rotate and is limited to only one entry direction.

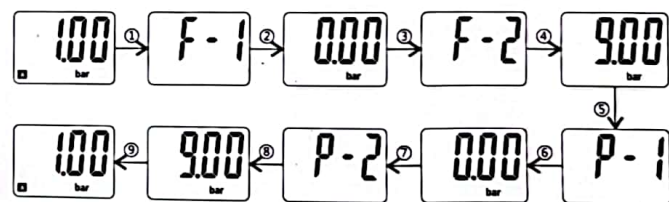
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#### Setting method

Key to unlock

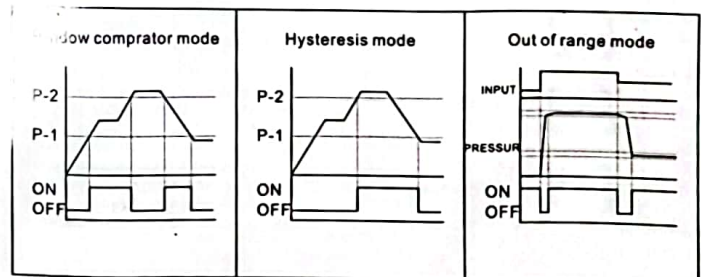


Analog input signal type setting of min. pressure, max. pressure



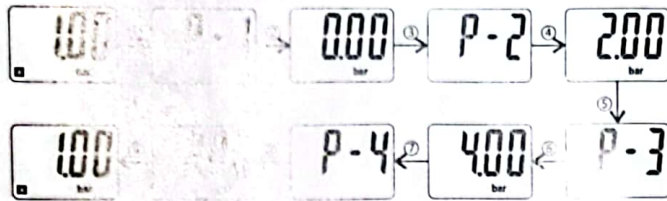
|                                                                              |                                                       |
|------------------------------------------------------------------------------|-------------------------------------------------------|
| 1.Unlock keys and press <b>S</b> key                                         | 2.Set the minimum pressure F-1 by using <b>▼▲</b> key |
| 3.press <b>S</b> key to save data                                            | 4.Set the maximum pressure F-2 by using <b>▼▲</b> key |
| 5.press <b>S</b> key to save data (P-1/P-2 only used in switch out products) |                                                       |
| 6.Set the pressure P-1 by using <b>▼▲</b> key                                | 7.press <b>S</b> key to save data                     |
| 8.Set the pressure P-2 by using <b>▼▲</b> key                                | 9.press <b>S</b> key to save data                     |

Note 1: F-1 is adjustable in a range from 0% to 90% of rated value.  
 Note 2: F-2 is adjustable in a range from 10% to 100% of the rated value.  
 Note 3: (F-2)-(F-1) ≥ 10% F.S.  
 Note 4: P-1 < P-2, Window comparator mode.  
 Note 5: P-1 ≥ P-2, Hysteresis mode.  
 Note 6: P-1 = P-2 = 0, Out of range mode.



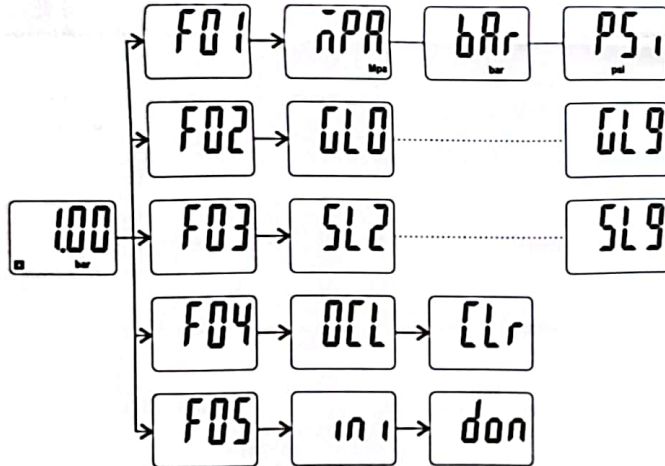
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### Setting of preset pressure



1. Unlock keys and press [S] key for 2 seconds to function setting
2. Set the pressure P-1 by using [V] [A] keys
3. press [S] key to save data
4. Set the pressure P-2 by using [V] [A] keys
5. press [S] key to save data
6. Set the pressure P-3 by using [V] [A] keys
7. press [S] key to save data
8. Set the pressure P-4 by using [V] [A] keys
9. press [S] key to save data

### Function setting



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### Technical Specifications

| Model                      | EPV1-1               | EPV1-3                                                                                                                       | EPV1-5       |
|----------------------------|----------------------|------------------------------------------------------------------------------------------------------------------------------|--------------|
|                            | EPV2-1               | EPV2-3                                                                                                                       | EPV2-5       |
|                            | EPV3-1               | EPV3-3                                                                                                                       | EPV3-5       |
| Min. pressure supply       | Set pressure +0.1MPa |                                                                                                                              |              |
| Max. pressure supply       | 0.2MPa               | 1.0MPa                                                                                                                       |              |
| Set pressure range         | 0.005~0.1MPa         | 0.005~0.5MPa                                                                                                                 | 0.005~0.9MPa |
| Power supply               | Voltage              | DC24V±10%                                                                                                                    |              |
|                            | Current              | DC24V : 0.12A MAX                                                                                                            |              |
| Input                      | Current type         | DC4~20mA, DC0~20mA                                                                                                           |              |
|                            | Voltage type         | DC0~5V, DC0~10V                                                                                                              |              |
|                            | Preset type          | 4 point                                                                                                                      |              |
| Input resistance           | Current type         | below 250Ω                                                                                                                   |              |
|                            | Voltage type         | approx 6.5KΩ                                                                                                                 |              |
|                            | Preset type          | Preset input type 24VDC approx 4.7KΩ                                                                                         |              |
| Output                     | Analog output        | DC1~5V(load impedance: over 1KΩ)<br>DC4~20mA(load impedance: below250Ω)<br>Output precision within range the range of 6%F.S. |              |
|                            | Switch output        | NPN-OC output type: 30mA<br>PNP-OC output type: 30mA                                                                         |              |
| linear                     |                      | ±1%F.S.                                                                                                                      |              |
| hysteresis                 |                      | 0.5%F.S.                                                                                                                     |              |
| repeatability              |                      | ±0.5%F.S.                                                                                                                    |              |
| temperature characteristic |                      | ±2%F.S.                                                                                                                      |              |
| display                    | Precision            | ±2%F.S.                                                                                                                      |              |
|                            | Division             | 1000 division                                                                                                                |              |
| Ambient temperature        |                      | 0~50°C                                                                                                                       |              |
| Protection class           |                      | IP65                                                                                                                         |              |

### Reference data of response time

| series       | Input signal 50%~100% |          |          |          |
|--------------|-----------------------|----------|----------|----------|
|              | EPV0                  | EPV1     | EPV2     | EPV3     |
| without load | below 0.1S            | 0.2~0.3S | 0.2~0.3S | 0.3~0.4S |
| with load 1L |                       | 0.3~0.5S | 0.3~0.5S | 0.4~0.5S |

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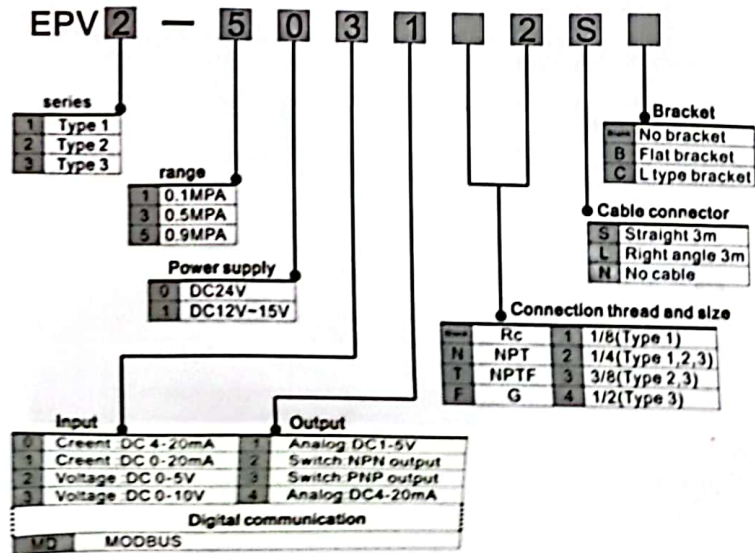
|                                                                                       |  |
|---------------------------------------------------------------------------------------|--|
| Unlock keys and press [S] key for 2 seconds to function setting                       |  |
| F01 Unit setting                                                                      |  |
| Select F01, press [S] key, to unit setting.                                           |  |
| Select Bar, MPa, psi by using [V] [A] keys, and press [S] key to save data.           |  |
| F02 response setting                                                                  |  |
| Select F02, press [S] key, to response setting.                                       |  |
| Select GL0~GL9 by using [V] [A] keys, and press [S] key to save data.                 |  |
| The gain is changed when sharp fluctuations in output pressure.                       |  |
| F03 error setting                                                                     |  |
| Select F03, press [S] key, to error setting                                           |  |
| Select SL2~SL9 by using [V] [A] keys, and press [S] key to save data.                 |  |
| The gain is changed when sharp fluctuations in output pressure.                       |  |
| F04 "Zero clear" setting                                                              |  |
| Select F04, press [S] key, to "Zero clear" setting                                    |  |
| Press both [V] [A] keys until CLR displayed, the adjustable range is within 5%F.S.    |  |
| Operate "zero clear" to correct the initial pressure                                  |  |
| F05 Initialize settings                                                               |  |
| Select F05, press [S] key, to Initialize settings                                     |  |
| Press both [V] [A] keys until DON displayed, return to pressure display automatically |  |

### Error indication function

| No | Contents of error                               | countermeasure                                                                            |
|----|-------------------------------------------------|-------------------------------------------------------------------------------------------|
| 1  | E-1 Input signal exceeds the rated value range. | Reset input signal to within the rated range                                              |
| 2  | E-2 Solenoid valve failure                      | Contact customer service for maintenance                                                  |
| 3  | E-3 Out of range error of zero clear            | Error operate, recheck, please operate "zero clear" with in the range of 5%F.S.           |
| 4  | E-4 Air line failure                            | Please check if first pressure is supplied and if EXH side and pilot exhaust are blocked. |

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### Ordering guide



Abstract EPV series regulator applies signal feedback control system via MEMS pressure sensor, marking output pressure synchronous changed accurately with input signal.

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