

INSTRUCTION MANUAL

THE PRESSURE GUAGE WITH SWITCH

G59D-8-P10-TC

- Please read this instruction manual carefully before using this product, particularly the section describing safety.
- Retain this instruction manual with the Product for further consultation whenever necessary.

For Safety Use

To use this product safely, basic knowledge of pneumatic equipment, including materials, piping, electrical system and mechanism, is required (to the level pursuant to JIS B 8370 Pneumatic System Rules).

We do not bear any responsibility for accidents caused by any person without such knowledge or arising from improper operation.

Our customers use this product for a very wide range of applications and we cannot keep track of all of them. Depending on operating conditions, the product may fail to operate to maximum performance, or cause an accident. Thus, before placing an order, examine whether the product meets your application, requirements, and how to use it.

This product incorporates many functions and mechanisms to ensure safety. However, improper operation could result in an accident. To prevent such accidents, **read this operation manual carefully for proper operation.**

Observe the cautions on handling described in this manual, as well as the following instructions:



DANGER

Failure to pay attention to DANGER notices may cause a situation that results in a fatality or serious injury and that requires urgent addressing.



WARNING

Failure to pay attention to WARNING notices may result in a fatality or serious injury.



CAUTION

Failure to pay attention to WARNING notices may result in injury or damage to equipment or facilities.

※1) ISO 4414 :Pneumatic fluid power • • • Recommendations for the application of equipment to transmission and control systems.

※2) JIS B 8370:General rule for pneumatic systems

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1. Unpacking

- 1) Confirm that the product model number ordered and the product model number marked on the product are identical with each other.
- 2) Inspect the product for damage.



WARNING

Do not seal open until just before pipe, not to indicate foreign materials on the product inside. Causing failure and faulty operation, etc.

2. Installation

2. 1 Installation Environment

Avoid using the regulator in the following environment.

- 1) When the ambient temperature exceeds the service temperature range of the product.
- 2) Where the dusty atmosphere.
- 3) An atmosphere where corrosive gasses.
- 4) An atmosphere where spatter could scatter.
- 5) Where the product is exposed to direct sun lay and when water contact to the product.
- 6) Where the product is exposed to radiant heat if the product is installed near a heat source.
- 7) Do not use the pressure gauge with switch in a location where bending stress or tension is applied to the lead wire repeatedly.
- 8) Where the product is exposed to excessive shock or vibration.



WARNING

Do not use this product in an atmosphere containing organic or other chemicals or where or where chemicals may adhere to the product. Failure to follow this instruction may result in breakage.

2. 2 Piping

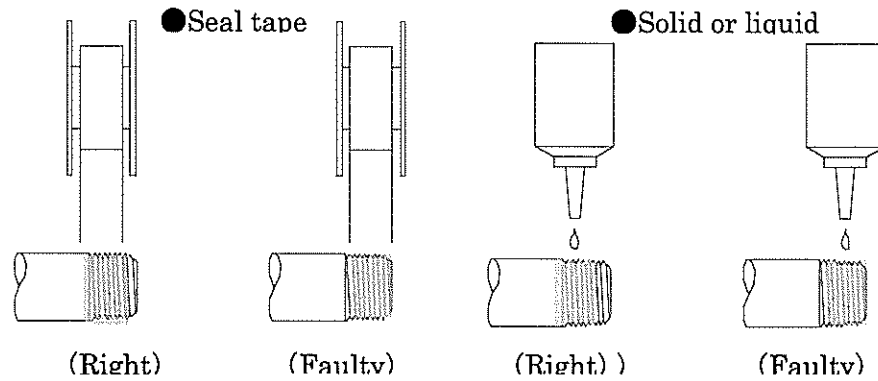
- 1) Take care not to drop or impose impact on the pressure gauge with switch during piping or installation.
- 2) Hold the piping section minute (stock: hexagon head) firmly during piping work.


The body is held to pipe cause and damage.

- 3) Flush air into the pipe to blow out foreign substances and chips before piping.



- 4) Apply seal tape or sealant two pitches thread off from pipe tip and carefully keep its residual from falling into pipes or equipment.





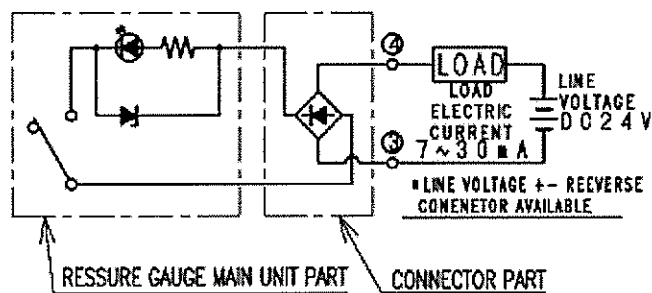
WARNING In piping, avoid applying too much torque, load, or overhanging. Failure to follow this instruction may result in breakage of the product.

2. 3 Wiring

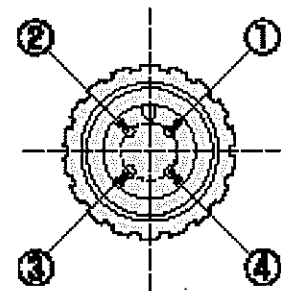
- 1) Connection of the lead wire Connector socket.

OMRON Corporation Model XS2C.

Also, it can contact be reverse since be lost not polarized and.



Inner circuit and the way of wiring



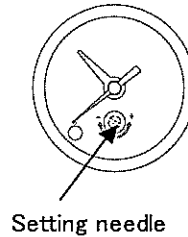
Terminal array of male contact

3. Operation

3. 1 Pressure setting method

- 1) The setpoint of a pressure switch is exhibited by green setting needle. However, the setpoint of a pressure switch does setting needle to clockwise rotating direction. Once is rotated setting needle counterclockwise, set again when setting needle beyoned setting position at that time.

Setting method of setting needle



Setting needle

○ Attached located rubber cap to a lens by a minus headed screw driver (blade width 2.9mm) to put through, and turn setting screw, setting needle is set the set pressure.

※When setting screw is turned.

• Minus (-) side (clockwise)

→set pressure decrease.

• Minus (+) side (counterclockwise)

→Set pressure rising.

- 2) The setpoint always provides differential more than 0.1MPa than working pressure (including pressure drop). When differential is small, may cause malfunction. Refer to the figure above for setting method of setting needle. However, care must be taken since may not be applied to and pressure rising times ON than the pressure that working pressure added the set pressure plus hysteresis (0.07MPa) plus setting needle error ($\pm 0.05\text{MPa}$) plus accuracy ($\pm 3\%F \cdot S$). Add accuracy of a pressure gauge to max. error (setting needle error) of setting needle and principles.



WARNING

- 1) If the compressed air contains chemicals or corrosive gas, malfunction or breakage of the product may result.
- 2) Operate the product within the specified pressure and temperature ranges.



CAUTION

- 1) Check the working circuit and working fluid.
Malfunctions could occur if fluids containing solids, or fluids not within the specifications are passed.
Connect a filter to the primary side of the product to prevent solid matters from entering.
- 2) Avoid since repeat and pulsation of pressure of sudden pressure rising lowering reduce pressure gauge life. Absorbing change of pressure by air in the circuit

4 Maintenance

4. 1 Regular Check

- 1) Set a pressure gauge for inspection and apply pressure higher than the set pressure plus hysteresis (0.07MPa) plus setting needle error ($\pm 0.05\text{MPa}$) plus accuracy ($\pm 3\%F \cdot S$) to confirm that the switch operates (the operation indicator lamp will light with the applied voltage). Then, reduce the pressure below the set pressure to confirm that the switch deactivates (the operation indicator lamp will go off with the applied voltage).
- 2) Inspect the pressure gauge with switch for external and internal leakage.



5. Troubles and Remedies

| Troubles | Causes | Remedies |
|----------------------------------------------------------------------|------------------------------------------------------|------------------------------------------------------------------------------------------------------|
| The switch does not operate under the set pressure. | The air pressure is not supplied or is insufficient. | Apply pressure higher than the set pressure plus hysteresis plus setting needle error plus accuracy. |
| | The wiring is disconnected. | Repair the wiring, to replace the pressure gauge with switch. |
| | Silicon is contact adherence. | To keep set pressure at a distance from operating range. |
| The switch is not disctivated under pressure below the set pressure. | The air pressure is high. | Reduce the air pressure below the set pressure. |
| | The switch contact has melted. | Change the load and wiring length, then replace the pressure gauge with switch. |

6. Specifications

6. 1 Product Specifications

| Descriptions | | Gauge |
|---------------------|----------------|-------------------------------------------------|
| Working fluid | | Compressed air |
| Fluid temperature | | 5~60°C |
| Ambient temperature | | -5~60°C(Be lost freezing) |
| Accuracy | Note1 | Equivalent to classJIS 3($\pm 3\%F \cdot S$) |
| Shape | | DT type(Rear side screw, Stock section 6 angle) |
| Material | Stock | Brass |
| | Bourdon tube | Bronze phosphate |
| | Housing | Steel sheet plus Chrome plated |
| | Lens | Polycarbonate resin |
| | Setting needle | ABS resin (green) |
| Pressure range | | 0~1.0MPa |
| Port size | | R1/8, R1/4 |
| Mass | | 100g |

Note1 : Display accuracy endorsement temperature is $20 \pm 15^\circ\text{C}$.

Note2 : Do not apply a pressure to maximum display pressure and over.
Malfunction may be caused.

| Descriptions | | Pressure switch |
|-----------------------|--|--------------------------------------------------------|
| Set pressure range | | 0.1~0.8MPa |
| Hysteresis | | 0.07MPa |
| Contact configuration | | 1a(Normally open) |
| Setting needle error | | $\pm 0.05\text{MPa}$ |
| Lead wire length | | 300mm |
| Electric connection | | CABLE CONNECTOR (M12),4-PIN |
| Indicator light | | Light generation diode / DC24V Load current: 8~30mA |

Micro switch rated

| Load | Resistance load | |
|-----------------------|-----------------|--------|
| Rated voltage | DC30V | AC125V |
| Working current range | 0.1~1A | 0.1~1A |

6. 2 Outside Dimensions

