# **Non-indicating Pressure Transmitters**

### Features

- Excellent corrosion resistance with stainless steel housing
- High accuracy ±0.3% F.S.
- · Various connection method
  - Head type, DIN connector type, connector cable type
- Various user friendly function
  - Built-in zero-point, span adjustment (head type)

Please read "Safety Considerations" in the instruction manual before using.



[Head type]

CE

[DIN connector type] [Connector cable type]

### Ordering Information

| TPS20 – G 1 5                            | F8 (0 to 5)    | (gf/cm²)                           |                            |
|--|----------------|------------------------------------|----------------------------|
| 1 2 3 4                                  | 5              | 6                                  |                            |
|  | Non-indicating | Pressure Transmitters              |                            |
| ① Item                                   | TPS20          | Pressure Transmitter               |                            |
| A Maaaaaaa aa | G              | Gauge pressure                     |                            |
| ② Measurement presssure                  | A              | Absolute pressure                  |                            |
|  | 1              | Head type                          |                            |
| ③ Cable                                  | 2              | DIN connector type                 |                            |
|  | 3              | Connector cable type               |                            |
|  |                | Gauge pressure                     | Absolute pressure          |
|  | 1              | 0 to 0.2kgf/cm <sup>2</sup>        | <u> </u>                   |
|  | 2              | 0 to 0.5kgf/cm <sup>2</sup>        | —                          |
|  | 3              | 0 to 1kgf/cm <sup>2</sup>          | 0 to 1kgf/cm <sup>2</sup>  |
|  | 4              | 0 to 2kgf/cm <sup>2</sup>          | 0 to 2kgf/cm <sup>2</sup>  |
|  | 5              | 0 to 7kgf/cm <sup>2</sup>          | 0 to 7kgf/cm <sup>2</sup>  |
|  | 6              | 0 to 10kgf/cm <sup>2</sup>         | 0 to 10kgf/cm <sup>2</sup> |
|  | 7              | 0 to 20kgf/cm <sup>2</sup>         | 0 to 20kgf/cm <sup>2</sup> |
|  | 8              | 0 to 35kgf/cm <sup>2</sup>         | 0 to 35kgf/cm <sup>2</sup> |
|  | 9              | 0 to 70kgf/cm <sup>2</sup>         | —                          |
| ④ Pressure range                         | A              | 0 to 100kgf/cm <sup>2</sup>        | <u> </u>                   |
|  | С              | 0 to 200kgf/cm <sup>2</sup>        | —                          |
|  | F              | 0 to 300kgf/cm <sup>2</sup>        | <u> </u>                   |
|  | Н              | 0 to 350kgf/cm <sup>2</sup>        |                            |
|  | М              | -760mmHg to 0kgf/cm <sup>2</sup>   | <u> </u>                   |
|  | 0              | -760mmHg to 1kgf/cm <sup>2</sup>   | <u> </u>                   |
|  | Q              | -760mmHg to 7kgf/cm <sup>2</sup>   | <u> </u>                   |
|  | V              | -760mmHg to 10kgf/cm <sup>2</sup>  |                            |
|  | Х              | -760mmHg to 20kgf/cm <sup>2</sup>  | —                          |
|  | Y              | -760mmHg to 35kgf/cm <sup>2</sup>  | <u> </u>                   |
|  | Z              | Others                             |                            |
| Pressure port                            | P2             | R1/2 (with adapter, PT)            |                            |
|  | P8             | R3/8 (with adapter, PT)            |                            |
|  | F8             | G3/8 (standard, PF)                |                            |
|  | ZZ             | Others                             |                            |
| Iser pressure range                      |                | User pressure range <sup>**1</sup> |                            |

※ 1: Write the desired pressure range and it is the default of user pressure range. (select "Z" at ④Pressure range)

\* For ordering cable, order as CID3-2, CID3-5, CLD3-2, CLD3-5. (sold separately)

### Specifications

| Series   |                                  | TPS20   |                                    |  |  |
|--|----------------------------------|---|------------------------------------|--|--|
| Pressure typ   | e                                | Gauge pressure  | Absolute pressure                  | Compound pressure                      |  |
| Rated press  | ure range                        | 0 to 0.2 to 350kgf/cm <sup>2</sup>  | 0 to 1.0 to 35kgf/cm <sup>2</sup>  | -760mmHg to 0 to 35kgf/cm <sup>2</sup> |  |
| Max. pressu  | re range                         | 300% of max. span   |                                    |  |  |
| Measured m   | aterials                         | Liquid, gas, oil (except corrosive environment of stainless steel type 316) |                                    |  |  |
| Power suppl  | у                                | 15-35VDC==  |                                    |  |  |
| Permissible  | voltage range                    | 90 to 110% of rated voltage   | 90 to 110% of rated voltage        |  |  |
| Current cons   | sumption                         | Max. 50mA   | Max. 50mA                          |  |  |
| Response tir   | ne                               | Max. 100ms  |                                    |  |  |
| Protection ci  | rcuit                            | Reverse polarity protection circuit   |                                    |  |  |
| Current outp   | ut                               | DC4-20mA  |                                    |  |  |
| Linearity  |                                  | ±0.3% F.S. (-10 to 50°C), ±0.5% F.S. (50 to 70°C)                           |                                    |  |  |
| Hysteresis   |                                  | ±0.3% F.S.  |                                    |  |  |
| Temp. Zero   | Shift                            | ±0.03% F.S.   |                                    |  |  |
| Temp. Span   | Shift                            | ±0.03% F.S. (at 25°C)   |                                    |  |  |
| Load resista   | nce                              | Max. 600Ω   |                                    |  |  |
| Insulation re-   | sistance                         | Over 100MΩ (at 500VDC megger)   |                                    |  |  |
| Dielectric strength 500VAC 50/60Hz for 1 minute  |                                  |   |                                    |  |  |
| Vibration 1.5mm amplitude at frequency of 10 to 55Hz (for 1 min) in each X, Y, Z direction for |                                  | n X, Y, Z direction for 2 hours   |                                    |  |  |
| Shock  |                                  | 95m/s <sup>2</sup>  |                                    |  |  |
| Tightening to  | g torque Industrial plug over 5N |   |                                    |  |  |
| Pressure por   | rt                               | G3/8t (standard), R3/8, R1/2  |                                    |  |  |
| Environ-   | Ambient temp.                    | -10 to 70°C, storage: -10 to 70°C   |                                    |  |  |
| ment   | Ambient humi.                    | 5 to 95% RH, storage: 5 to 95%  | RH                                 |  |  |
| Materials  |                                  | Sealing, diaphragm, connectior  | n: stainless steel type 316, O-rir | ng: fluoro rubber                      |  |
| Connection   |                                  | +, -  |                                    |  |  |
| Case structu   | ire                              | Drip-proof structure  |                                    |  |  |
| Approval   |                                  | CE  |                                    |  |  |
| Weight <sup>×1</sup>   |                                  | Approx. 350g (approx. 320g) (based on head type)                            |                                    |  |  |

 $\times$  1: The weight includes packaging. The weight in parenthesis is for unit only.

※ F.S.(Full Scale): It is rated pressure range.

% Environment resistance is rated at no freezing or condensation.

# Example of External Connections



### Dimensions

(unit: mm)





106 71 34 21 14 8 G3/8 **O**H ╓╖





• DIN connector type





Connector cable type





XThe standard pressure port for above is G3/8.

# Connection Cable (Sold Separately)

• CID3-2 / CID3-5





(unit: mm)

| Model  | L (m) | Meterial |  |
|--------|-------|----------|--|
| CID3-2 | 2     |          |  |
| CID3-5 | 5     | FVC      |  |
| CID3-5 | 5     |          |  |

#### • CLD3-2 / CLD3-5



| Model  | L (m) | Meterial |
|--------|-------|----------|
| CLD3-2 | 2     |          |
| CLD3-5 | 5     | FVC      |

### **Autonics**

### Connectors



# Troubleshooting

| Error                          | Troubleshooting   |  |
|--------------------------------|---|--|
| No outputs                     | Check the power supply.<br>Check the polarity (+, -) when wiring cable.<br>Check the connection part.   |  |
| Abnormally fluctua ing output  | Check the power supply.<br>Check the supplied pressure.<br>Check the pressure line.   |  |
| Out of zero point output value | Check the power supply.<br>Check the load resistive value of current output type for a receiver is over $600\Omega$ .<br>Check the measuring point and transmission distance.<br>Check the line resistance is below $600\Omega$ . |  |

(blue) GND

# Proper Usage

- · Follow instructions in 'Cautions during Use'. Otherwise, It may cause unexpected accidents.
- 15-35VDC power supply should be insulated and limited voltage/current or Class 2, SELV power supply device.
- When installing the unit on pipe line, use the hexagon part of connections not to turn the unit with a pipe wrench. Do not use the unit with strong vibrations.
- · Store the unit at the place without moisture, dust, and v bration.
- This product which does not have drive part at sensing part does not need to repair it. Even though inside of pressure pipe is normally clean, it needs to take maintenance once a year as below instructions.
  - 1 Check the broken status of outside.
  - 2 Check the pressure slot, cleanliness inside, and corrosion state.
- ③ Short each terminal and check the insulation resistance between the case and power.
- When removing a sensor for maintenance, follow the below instructions.
- Replace an O-ring which is used once.
  Be sure that diaphragm part is not damaged.
- · Switch or circuit breaker for suppling or cutting off the power should be installed nearby users for convenient control.
- The unit cannot be repaired due to disassembled structure.
- The unit is fixed with bolt and nut at the both sides of case.
  Do not press excessive load (approx. 300kg/cm<sup>2</sup>), or it may cause damage to the unit.
- This unit may be used in the following environments.
- ① Indoor / Outdoor (in the environment condition rated in 'Specifications')
  - ② Altitude max. 2,000 m
  - ③ Pollution Degree 2
  - ④ Installation Category II

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