



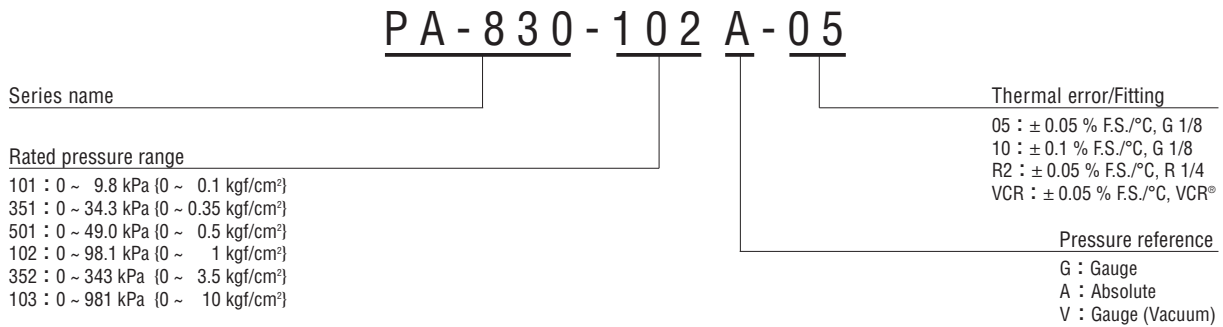
## FEATURES

- High corrosion resistance by double diaphragm structure
- Built-in amplifier circuit
- 2 types to choose from (Gauge and Absolute pressures)
- Incorporating temperature compensation function (0 ~ 50 °C)
- Voltage output mode
- Available with a \*VCR® fitting

**INTERNAL STRUCTURE**  
PA-830 (G 1/8)

| Part name |                             | Material      |
|-----------|-----------------------------|---------------|
| ①         | Fitting                     | SUS 316L      |
| ②         | “O” ring(P15 or P12.5)      | Fluoro-rubber |
| ③         | Housing                     | Aluminum      |
| ④         | Compensation resistor board | Ceramic       |
| ⑤         | Sealed liquid               | Silicone oil  |

## MODEL NUMBER DESIGNATION



※Please refer to the LIST OF MODEL NUMBERS when placing orders.

※VCR® is a registered trade name of Cajon Co. CAJON® is a registered trade name of Swagelok Co.

Note: For handling of VCR fittings, please contact a service center of Swagelok Co.

# PA-830

## PRESSURE TRANSDUCERS WITH AMP.

### LIST OF MODEL NUMBERS

| Output         | Pressure reference           |  | Gauge                |                       |                     |                      |                     |                       | Absolute               |                     |
|----------------|------------------------------|--|----------------------|-----------------------|---------------------|----------------------|---------------------|-----------------------|------------------------|---------------------|
|                | {% F.S./°C}<br>Thermal error | kPa {kgf/cm <sup>2</sup> }<br>Rated pressure range | 0 ~ 9.8<br>{0 ~ 0.1} | 0 ~ 49.0<br>{0 ~ 0.5} | 0 ~ 98.1<br>{0 ~ 1} | 0 ~ 343<br>{0 ~ 3.5} | 0 ~ 981<br>{0 ~ 10} | 0 ~ -98.1<br>{0 ~ -1} | 0 ~ 34.3<br>{0 ~ 0.35} | 0 ~ 98.1<br>{0 ~ 1} |
| Voltage output | ± 0.05                       | Fitting :<br>G 1/8                                 | /                    | PA-830<br>-501G-05    | PA-830<br>-102G-05  | PA-830<br>-352G-05   | PA-830<br>-103G-05  | PA-830<br>-102V-05    | PA-830<br>-351A-05     | PA-830<br>-102A-05  |
|                |                              | Fitting :<br>R 1/4                                 | /                    | PA-830<br>-501G-R2    | PA-830<br>-102G-R2  | PA-830<br>-352G-R2   | PA-830<br>-103G-R2  | PA-830<br>-102V-R2    | PA-830<br>-351A-R2     | PA-830<br>-102A-R2  |
|                |                              | Fitting :<br>VCR                                   | /                    | PA-830<br>-501G-VCR   | PA-830<br>-102G-VCR | PA-830<br>-352G-VCR  | PA-830<br>-103G-VCR | PA-830<br>-102V-VCR   | PA-830<br>-351A-VCR    | PA-830<br>-102A-VCR |
|                | ± 0.10                       | Fitting :<br>G 1/8                                 | PA-830<br>-101G-10   | PA-830<br>-501G-10    | PA-830<br>-102G-10  | PA-830<br>-352G-10   | PA-830<br>-103G-10  | PA-830<br>-102V-10    | PA-830<br>-351A-10     | PA-830<br>-102A-10  |

☐: Not available

※Verify the above model numbers when placing orders.

### STANDARD SPECIFICATIONS

● Unless otherwise specified, the specs are defined at an ambient temperature of 25±5 °C and excitation voltage of 12 V DC.

| Item                   | Model number            | PA-830                     |  |               |             |                |              |               |                      |                   |
|------------------------|-------------------------|----------------------------|--|---------------|-------------|----------------|--------------|---------------|----------------------|-------------------|
|                        |                         | 101G                       | 501G   | 102G          | 352G        | 103G           | 102V         | 351A          | 102A                 |                   |
| General specifications | Pressure reference      | Gauge                      |  |               |             |                |              | Absolute      |                      |                   |
|                        | Rated pressure range    | kPa {kgf/cm <sup>2</sup> } | 9.8<br>{0.1}   | 49.0<br>{0.5} | 98.1<br>{1} | 343<br>{3.5}   | 981<br>{10}  | -98.1<br>{-1} | 34.3 (abs)<br>{0.35} | 98.1 (abs)<br>{1} |
|                        | Maximum pressure        | kPa {kgf/cm <sup>2</sup> } | 19.6<br>{0.2}  | 98.1<br>{1}   | 196<br>{2}  | 686<br>{7}     | 1961<br>{20} | 196<br>{2}    | 103 (abs)<br>{1.05}  | 196 (abs)<br>{2}  |
|                        | Break-down pressure     | kPa {kgf/cm <sup>2</sup> } | 29.4<br>{0.3}  | 147<br>{1.5}  | 294<br>{3}  | 1030<br>{10.5} | 2942<br>{30} | 294<br>{3}    | 147 (abs)<br>{1.5}   | 294 (abs)<br>{3}  |
|                        | Operating temp. range   | °C                         | -20 ~ 70   |               |             |                |              |               |                      |                   |
|                        | Compensated temp. range | °C                         | 0 ~ 50   |               |             |                |              |               |                      |                   |
|                        | Operating humidity      | %RH                        | 35 ~ 85 (No condensation)                                |               |             |                |              |               |                      |                   |
|                        | Storage temp.           | °C                         | -20 ~ 70 (Atmospheric pressure, humidity 65 %RH maximum) |               |             |                |              |               |                      |                   |
|                        | Pressure medium         |                            | Corrosive gases/liquids compatible with SUS 316L ※1      |               |             |                |              |               |                      |                   |
|                        | Insulation resistance   | MΩ<br>minimum              | 100 (500 V DC)   |               |             |                |              |               |                      |                   |
|                        | Dielectric strength     |                            | 500 V AC, 60 s (Leakage current 1 mA maximum)            |               |             |                |              |               |                      |                   |
|                        | Sealed liquid           |                            | Silicone oil   |               |             |                |              |               |                      |                   |
|                        | Pressure port           |                            | G 1/8 (PF 1/8)、R 1/4 (PT 1/4)、1/4 VCR® ※2                |               |             |                |              |               |                      |                   |
| Net weight             | g                       | Approx. 140                |  |               |             |                |              |               |                      |                   |
| Power                  | Supply voltage          | V DC                       | 12 ~ 24 ± 10 %   |               |             |                |              |               |                      |                   |
|                        | Ripple content          | maximum                    | 10 % (P-P)   |               |             |                |              |               |                      |                   |
|                        | Consumption current     | mA<br>maximum              | 20   |               |             |                |              |               |                      |                   |

※1 PA-830-VCR : Also compatible with SUS316.

※2 An "O" ring is provided for only G1/8 type. (Positive pressure : P15, Negative/Absolute Pressure : P12.5)

# PA-830

## PRESSURE TRANSDUCERS WITH AMP.

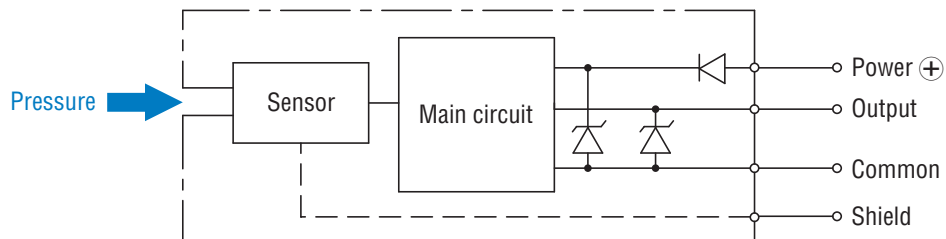
| Item          |   | Model number  | PA-830                           |             |             |             |              |             |             |
|---------------|---|---------------|----------------------------------|-------------|-------------|-------------|--------------|-------------|-------------|
|               |   |               | 101G                             | 501G        | 102G        | 352G        | 103G         | 102V        | 351A        |
| Analog output | Output voltage  | V DC          | 1 ~ 5                            |             |             |             |              |             |             |
|               | Zero voltage  | V             | 1 ± 0.04 (at 25 °C)              |             |             |             |              |             |             |
|               | Span voltage  | V             | 4 ± 0.04 (at 25 °C)              |             |             |             |              |             |             |
|               | Output current  | mA maximum    | 1 (Load resistance 5 kΩ minimum) |             |             |             |              |             |             |
|               | Linearity/Hysteresis  | %F.S.         | ± 0.5                            | ± 0.3       |             | ± 0.5       | ± 0.3        |             | ± 0.5       |
|               | Thermal error<br>0 ~ 50 °C<br>(Reference temp.: 25 °C)                  | ZERO %F.S./°C | ± 0.05/± 0.1 ※3                  |             |             |             |              |             |             |
|               |   | SPAN %F.S./°C | ± 0.05/± 0.1 ※3                  |             |             |             |              |             |             |
|               | Supply voltage effect   | V maximum     | ± 0.1                            |             |             |             |              |             |             |
|               | Response  | ms            | Approx. 2                        |             |             |             |              |             |             |
|               | Gravitational effect<br>(From vertical position to horizontal position) | %F.S. max.    | Approx. 1                        | Approx. 0.5 | Approx. 0.3 | Approx. 0.1 | Approx. 0.05 | Approx. 0.3 | Approx. 0.5 |

※3 The thermal error of the PA-830-101G will be ± 0.1 %F.S./°C only.

### ENVIRONMENTAL CHARACTERISTICS

| Test item           | Test conditions (At 25 ± 5 °C)   | Permissible change                                    |
|---------------------|--|---|
| Vibration           | 10 ~ 500 Hz, 1.5 mm maximum/98.1 m/s <sup>2</sup> ,<br>3 directions for 2 hours each | Zero voltage, Span voltage:<br>± 1 %F.S. maximum each |
| Shock               | 490 m/s <sup>2</sup> , 3 directions for 3 times each                                 |   |
| Pressure cycling    | 0 ~ Rated pressure, 10 <sup>6</sup> cycles   |   |
| Moisture resistance | 40 °C, 90 ~ 95 %RH, 240 hrs.   |   |

### INTERNAL ELECTRICAL SCHEMATICS

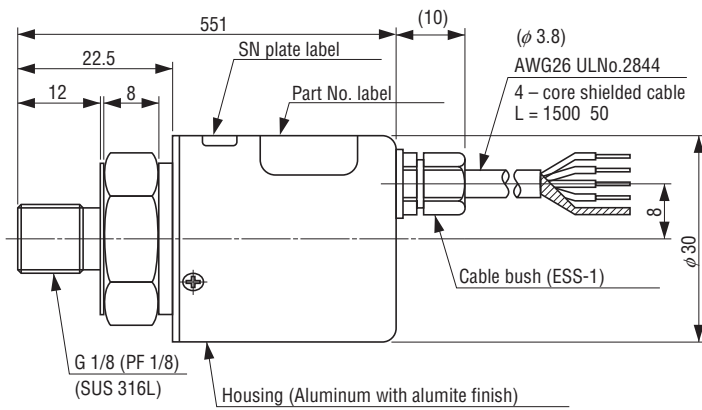
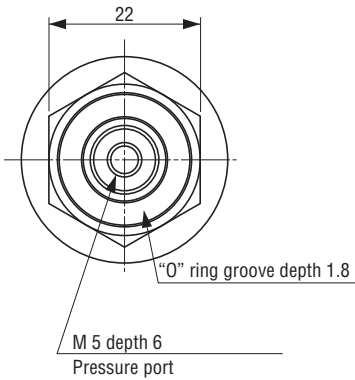


# PA-830 PRESSURE TRANSDUCERS WITH AMP.

## OUTLINE DIMENSIONS

Unless otherwise specified, tolerance :  $\pm 0.5$  (Unit: mm)

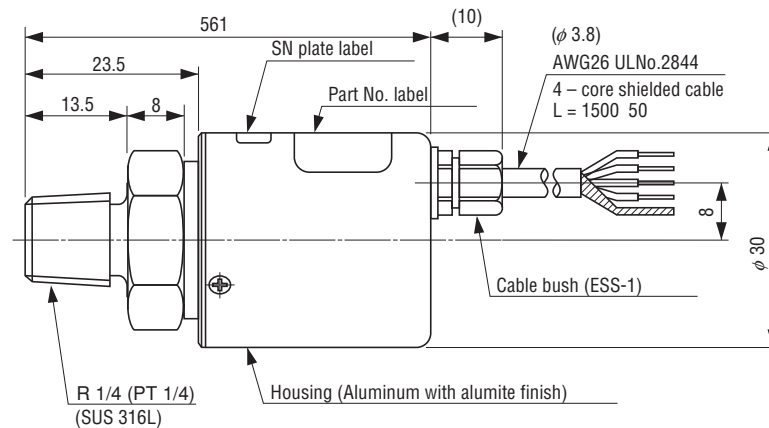
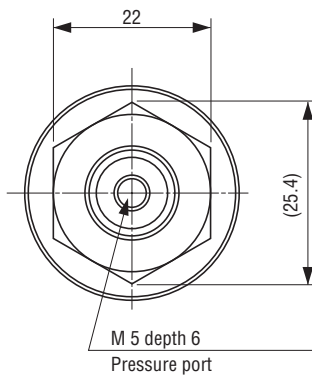
### ● G1/8 type



### PA-830

| Wire color | Connection     |
|------------|----------------|
| Red        | Power $\oplus$ |
| White      | Output         |
| Green      | N.C.           |
| Black      | Common         |
| Shield     | Fitting        |

### ● R1/4 type



### ● VCR type

