

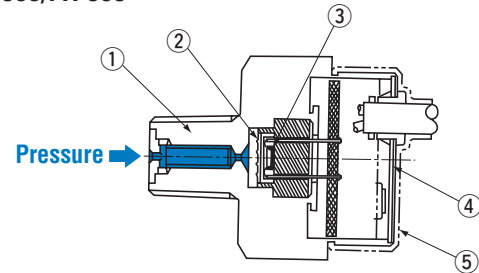
## PRESSURE TRANSDUCERS WITH AMP.

## PA-860/PA-868



## FEATURES

- Resistant against surge pressure
- SUS 316L welded stainless steel diaphragm
- Built-in amplifier circuit
- Voltage or current output modes are available

INTERNAL STRUCTURE  
PA-860/PA-868

| Part name |                           | Material        |
|-----------|---------------------------|-----------------|
| ①         | Fitting                   | Iron, Ni-plated |
| ②         | Stainless steel diaphragm | SUS 316L        |
| ③         | Sensor chip               | Silicone        |
| ④         | Back cover                | SUS 303         |
| ⑤         | Drip-proof cover          | Silicone rubber |

## MODEL NUMBER DESIGNATION

|                         |              |                  |  |
|-------------------------|--------------|------------------|--|
| Series name             |              | Fitting          |  |
| PA-860 : Voltage output | PA-860 - 503 | R2 : R 1/4       |  |
| PA-868 : Current output | PA-868 - 503 | G3 : G 3/8       |  |
| Rated pressure range    |              | Drip-proof cover |  |
| 503 : 0 ~ 5 MPa         |              | B : Non-provided |  |
| 104 : 0 ~ 10 MPa        |              | H : Provided     |  |
| 204 : 0 ~ 20 MPa        |              |                  |  |
| 354 : 0 ~ 35 MPa        |              |                  |  |
| Pressure unit           |              |                  |  |
| P : Pa pressure unit    |              |                  |  |

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

# PA-860/PA-868

## PRESSURE TRANSDUCERS WITH AMP.

### ■ LIST OF MODEL NUMBERS

| Output         | Fitting       | Pressure reference |                            | Gauge            |                  |                  |                  |
|----------------|---------------|--------------------|----------------------------|------------------|------------------|------------------|------------------|
|                |               | Drip-proof cover   | Rated pressure range [MPa] | 0 ~ 5            | 0 ~ 10           | 0 ~ 20           | 0 ~ 35           |
| Voltage output | R2<br>(R 1/4) | Non-provided       |                            | PA-860-503P-B-R2 | PA-860-104P-B-R2 | PA-860-204P-B-R2 | PA-860-354P-B-R2 |
|                |               | Provided           |                            | PA-860-503P-H-R2 | PA-860-104P-H-R2 | PA-860-204P-H-R2 | PA-860-354P-H-R2 |
|                | G3<br>(G 3/8) | Non-provided       |                            | PA-860-503P-B-G3 | PA-860-104P-B-G3 | PA-860-204P-B-G3 | PA-860-354P-B-G3 |
|                |               | Provided           |                            | PA-860-503P-H-G3 | PA-860-104P-H-G3 | PA-860-204P-H-G3 | PA-860-354P-H-G3 |
| Current output | R2<br>(R1/4)  | Non-provided       |                            | PA-868-503P-B-R2 | PA-868-104P-B-R2 | PA-868-204P-B-R2 | PA-868-354P-B-R2 |
|                |               | Provided           |                            | PA-868-503P-H-R2 | PA-868-104P-H-R2 | PA-868-204P-H-R2 | PA-868-354P-H-R2 |
|                | G3<br>(G 3/8) | Non-provided       |                            | PA-868-503P-B-G3 | PA-868-104P-B-G3 | PA-868-204P-B-G3 | PA-868-354P-B-G3 |
|                |               | Provided           |                            | PA-868-503P-H-G3 | PA-868-104P-H-G3 | PA-868-204P-H-G3 | PA-868-354P-H-G3 |

※ : Verify the above model numbers when placing orders.

### ■ STANDARD SPECIFICATIONS

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

| Item                   |                         | Model number | PA-860        |   |      |      | PA-868 |      |      |      |    |
|------------------------|-------------------------|--------------|---------------|---|------|------|--------|------|------|------|----|
|                        |                         |              | 503P          | 104P  | 204P | 354P | 503P   | 104P | 204P | 354P |    |
| General specifications | Pressure reference      |              | Gauge ※1      |   |      |      |        |      |      |      |    |
|                        | Rated pressure range    |              | MPa           | 5   | 10   | 20   | 35     | 5    | 10   | 20   | 35 |
|                        | Maximum pressure        |              | MPa           | 10  | 20   | 40   | 50     | 10   | 20   | 40   | 50 |
|                        | Operating temp. range   |              | °C            | － 10 ~ 75   |      |      |        |      |      |      |    |
|                        | Compensated temp. range |              | °C            | 0 ~ 50  |      |      |        |      |      |      |    |
|                        | Operating humidity      |              | %RH           | 35 ~ 85 (No condensation)                                       |      |      |        |      |      |      |    |
|                        | Storage temp.           |              | °C            | － 20 ~ 90 (Atmospheric pressure, humidity 65 %RH maximum)       |      |      |        |      |      |      |    |
|                        | Pressure medium         |              |               | Hydraulic oil   |      |      |        |      |      |      |    |
|                        | Insulation resistance   |              | MΩ<br>minimum | 100 (500 V DC)  |      |      |        |      |      |      |    |
|                        | Dielectric strength     |              |               | 350 V AC, 60 s (Leakage current 0.5 mA maximum)                 |      |      |        |      |      |      |    |
|                        | Pressure port           |              |               | R 1/4、G 3/8   |      |      |        |      |      |      |    |
|                        | Net weight              |              | g             | Approx. 170   |      |      |        |      |      |      |    |
|                        | Drip-proof structure    |              |               | Without drip-proof cover : IP-54, With drip-proof cover : IP-65 |      |      |        |      |      |      |    |

※1 : The transducer measures gauge pressure using an absolute pressure sensing element.

# PA-860/PA-868

## PRESSURE TRANSDUCERS WITH AMP.

### STANDARD SPECIFICATIONS

● Unless otherwise specified, the specs are defined at an ambient temperature of  $25 \pm 5^\circ\text{C}$  and excitation voltage of 12 V DC.

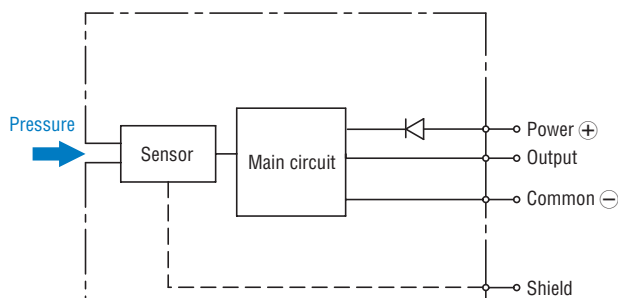
| Item          |                        | Model number     | PA-860         |      |      |      | PA-868                                |      |      |      |
|---------------|------------------------|------------------|----------------|------|------|------|---------------------------------------|------|------|------|
|               |                        |                  | 503P           | 104P | 204P | 354P | 503P                                  | 104P | 204P | 354P |
| Power         | Supply voltage         | V DC             | 12 ~ 24 ± 10 % |      |      |      |                                       |      |      |      |
|               | Consumption current    | maximum          | 10 mA          |      |      |      | ————                                  |      |      |      |
| Analog output | Output voltage/current | DC               | 1 ~ 5 V        |      |      |      | 4 ~ 20 mA                             |      |      |      |
|               | Zero voltage/current   |                  | 1 ± 0.05 V     |      |      |      | 4 ± 0.1 mA                            |      |      |      |
|               | Span voltage/current   |                  | 4 ± 0.05 V     |      |      |      | 16 ± 0.1 mA                           |      |      |      |
|               | Linearity/Hysteresis   | %F.S.            | ± 0.5          |      |      |      |                                       |      |      |      |
|               | Thermal error          | ZERO<br>%F.S./°C | ± 0.05         |      |      |      |                                       |      |      |      |
|               |                        | SPAN<br>%F.S./°C | ± 0.05         |      |      |      |                                       |      |      |      |
|               | Load resistance        |                  | 10 kΩ minimum  |      |      |      | 500 Ω maximum (At power voltage 24 V) |      |      |      |
|               | Response               | ms<br>maximum    | 20             |      |      |      |                                       |      |      |      |

### ENVIRONMENTAL CHARACTERISTICS

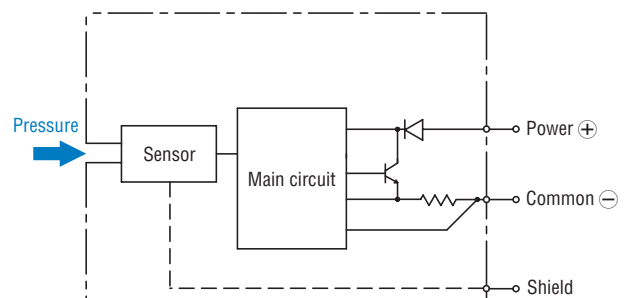
| Test item           | Test conditions (At $25 \pm 5^\circ\text{C}$ )                                    | Permissible change   |
|---------------------|---|--|
| Vibration           | 10 ~ 500 Hz, 1.5 mm maximum/98.1 m/s <sup>2</sup> , 3 directions for 2 hours each | Zero voltage/current, Span voltage/current:<br>$\pm 3\%$ 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 $^\circ\text{C}$ , 90 ~ 95 %RH, 240 hrs.                                       |  |

### INTERNAL ELECTRICAL SCHEMATICS

#### PA-860



#### PA-868



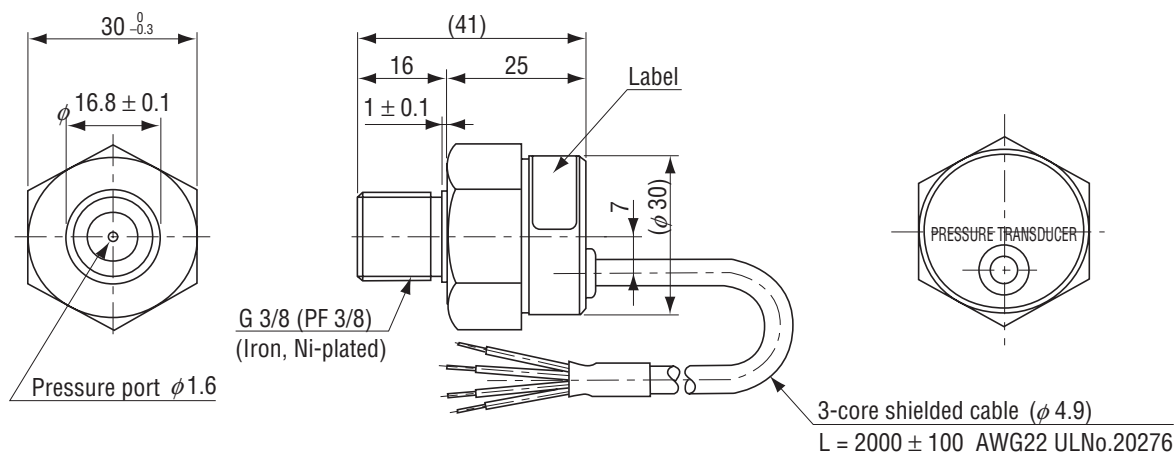
# PA-860/PA-868

## PRESSURE TRANSDUCERS WITH AMP.

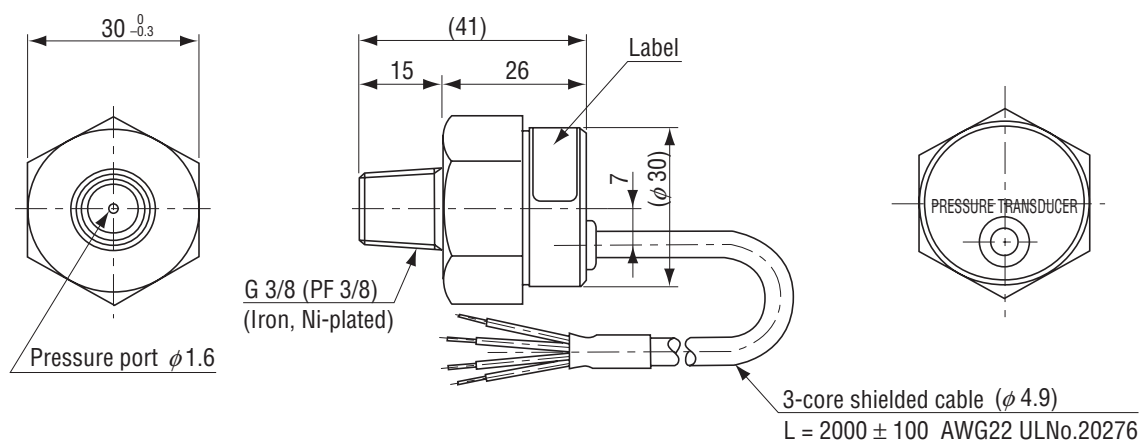
### OUTLINE DIMENSIONS

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

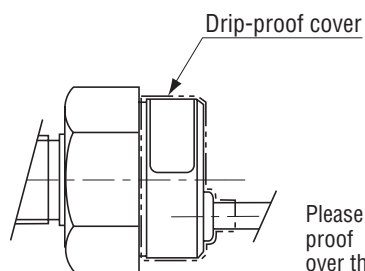
#### Configurations of joint G3 (G 3/8) type



#### Configurations of joint R2 (R 1/4) type



#### Drip-proof cover type



Please make sure that the drip-proof cover is properly placed over the main body and the cable.

#### PA-860

| Wire color | Connection     |
|------------|----------------|
| Red        | Power $\oplus$ |
| Black      | Common         |
| White      | Output         |
| Gray       | Shield         |

#### PA-868

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