

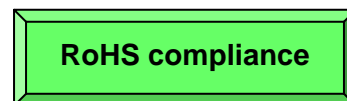
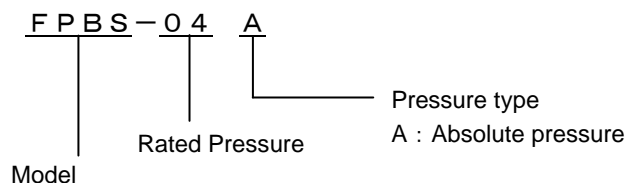
■ Features

Barometric pressure measurable
 Non-corrosive gas, Water or Sea water
 Very small size

■ Applications

- Barometer, Relative altimeter
- Weather forecast
- Altitude compensation
- Diving depth meter

■ Ordering Information



| Measurable pressure range(kPa·abs) | Part number |
|------------------------------------|-------------|
| 62.1~434.7 | FPBS-04A |
| 101.3~905.5 | FPBS-82A |

■ Specifications

| Model | FPBS-04A | FPBS-82A | Unit |
|--|---|---------------------------------|---------------------------------|
| Recommended operating conditions | | | |
| Pressure type | Absolute pressure | | — |
| Rated pressure | 434.7 | 905.5 | kPa·abs |
| Measurable pressure range | 62.1~434.7 | 101.3~905.5 | kPa·abs |
| Temperature range | 10~40 | 5~35 | °C |
| Pressure media | Non-corrosive gases , Water or Sea water **1 | | — |
| Excitation current (Constant) | 0.15 | | mADC |
| Absolute maximum rating | | | |
| Maximum load pressure | 1961 | 2942 | kPa·abs |
| Maximum excitation current | 3.0 | | mADC |
| Operating temperature | -20~70 | | °C |
| Storage temperature | -30~85 | | °C |
| Operating humidity | 30~80 (Non dew condition) | | %RH |
| Electric characteristics (Drive Current 0.15mA constant ,ambient temperature Ta=25°C) | | | |
| Output span voltage | 2.5~7.0 (at 62.1~101.3kPa·abs) | 5.0~9.0 (at 101.3~905.5kPa·abs) | mV |
| Offset voltage | 1.0~11.0 (at 62.1 kPa·abs) | -1.0~3.0 (at 101.3 kPa·abs) | mV |
| Bridge resistance | 3000~4500 | | Ω |
| Response time | 2 (for the reference) | | msec |
| Accuracy | TSO* | ±5%FS /10~40°C | ±5%FS /5~35°C |
| | TCS* | 2.5%FS /10~40°C | 2.5%FS /5~35°C |
| | Linearity | ±0.5%FS (at 62.1~101.3kPa·abs) | ±0.5%FS (at 101.3~905.5kPa·abs) |

*TSO: Temperature sensitivity of offset voltage

*TCS: Temperature coefficient of output span voltage

****1** it's not available when pressure media always contact.

Evaluating equations

$V(P,T)$ is defined as the output voltage at Pressure kPa·abs, Temperature T.

• Full scale span voltage

$$(04A) : SV = \text{SPAN}[62.1 \sim 101.3 \text{ kPa}] = \text{SPAN}(25) = V(101.3, 25) - V(62.1, 25)$$

$$(82A) : SV = \text{SPAN}[101.3 \sim 905.5 \text{ kPa}] = \text{SPAN}(25) = V(905.5, 25) - V(101.3, 25)$$

• Offset voltage

$$(04A) : V_{\text{off}} = V(62.1, 25)$$

$$(82A) : V_{\text{off}} = V(101.3, 25)$$

• Temperature sensitivity of offset (TSO)

$$(04A) : \text{TSO} = (V(62.1, 40) - V(62.1, 10)) / \text{SPAN}(25) \times 100$$

$$(82A) : \text{TSO} = (V(101.3, 35) - V(101.3, 5)) / \text{SPAN}(25) \times 100$$

• Temperature coefficient of sensitivity (TCS)

$$(04A) : \text{TCS} = (\text{SPAN}(\text{MAX.}) - \text{SPAN}(\text{MIN.})) / \text{SPAN}(25) \times 100$$

$$(82A) : \text{TCS} = (\text{SPAN}(\text{MAX.}) - \text{SPAN}(\text{MIN.})) / \text{SPAN}(25) \times 100$$

SPAN(MAX.): =The value is bigger of SPAN

SPAN(MIN.): =The value is smaller of SPAN

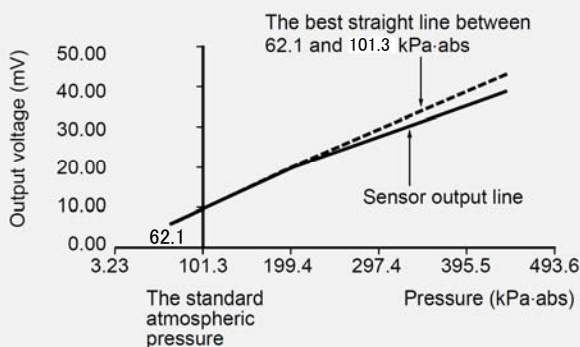
• Linearity

$$(04A) : \text{NL} = (V(86.6, 25) - (V(62.1, 25) + V(101.3, 25)) / 2) / \text{SPAN}(25) \times 100$$

$$(82A) : \text{NL} = (V(503.4, 25) - (V(101.3, 25) + V(905.5, 25)) / 2) / \text{SPAN}(25) \times 100$$

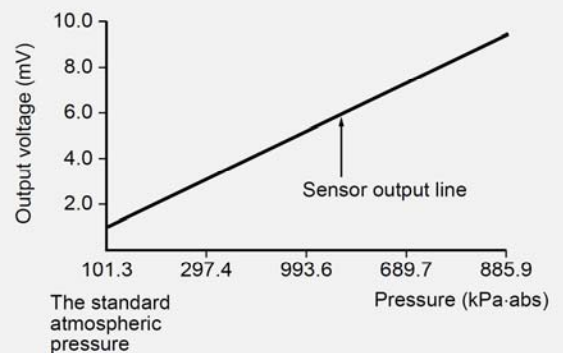
● Example of output characteristics(04A)

Excitation current : $i=0.15\text{mA}$ Constant
Temperature : $T_a=25^\circ\text{C}$

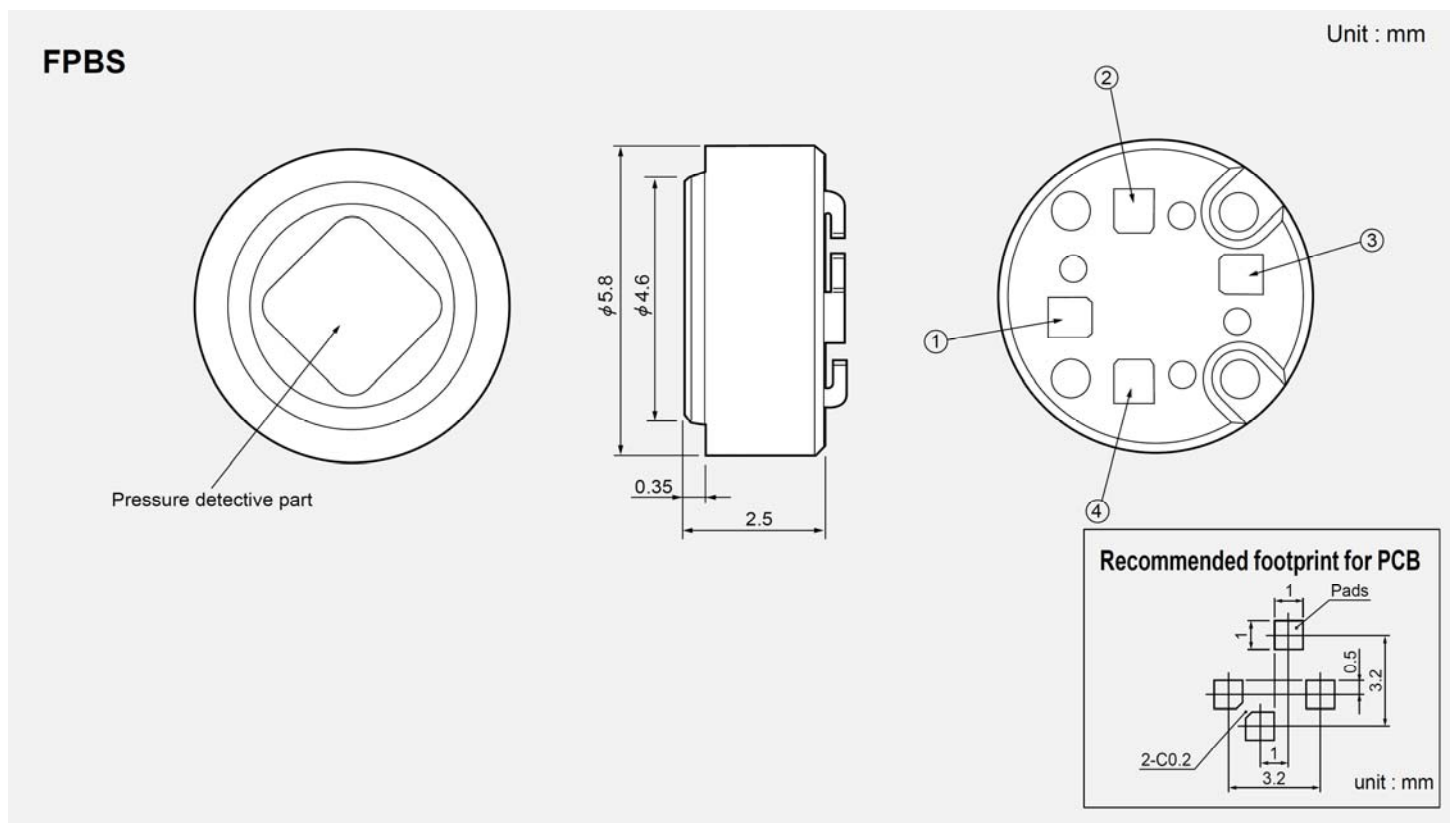


● Example of output characteristics(82A)

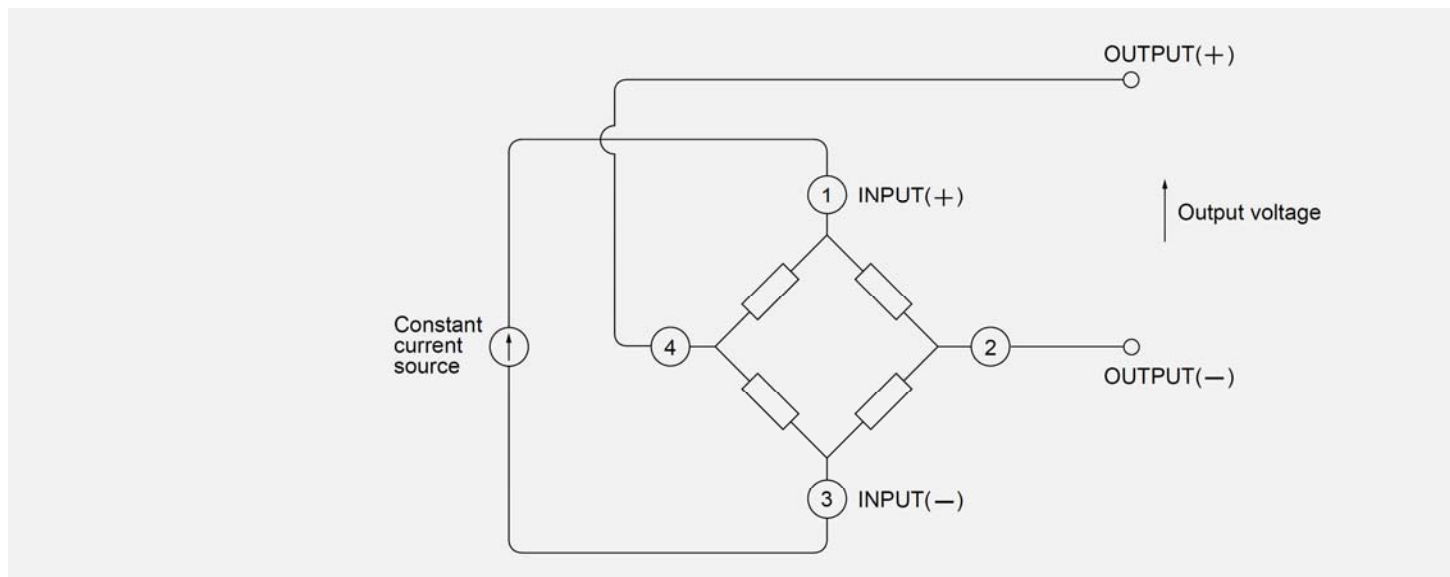
Excitation current : $i=0.15\text{mA}$ Constant
Temperature : $T_a=25^\circ\text{C}$



■ Outline dimensions ■



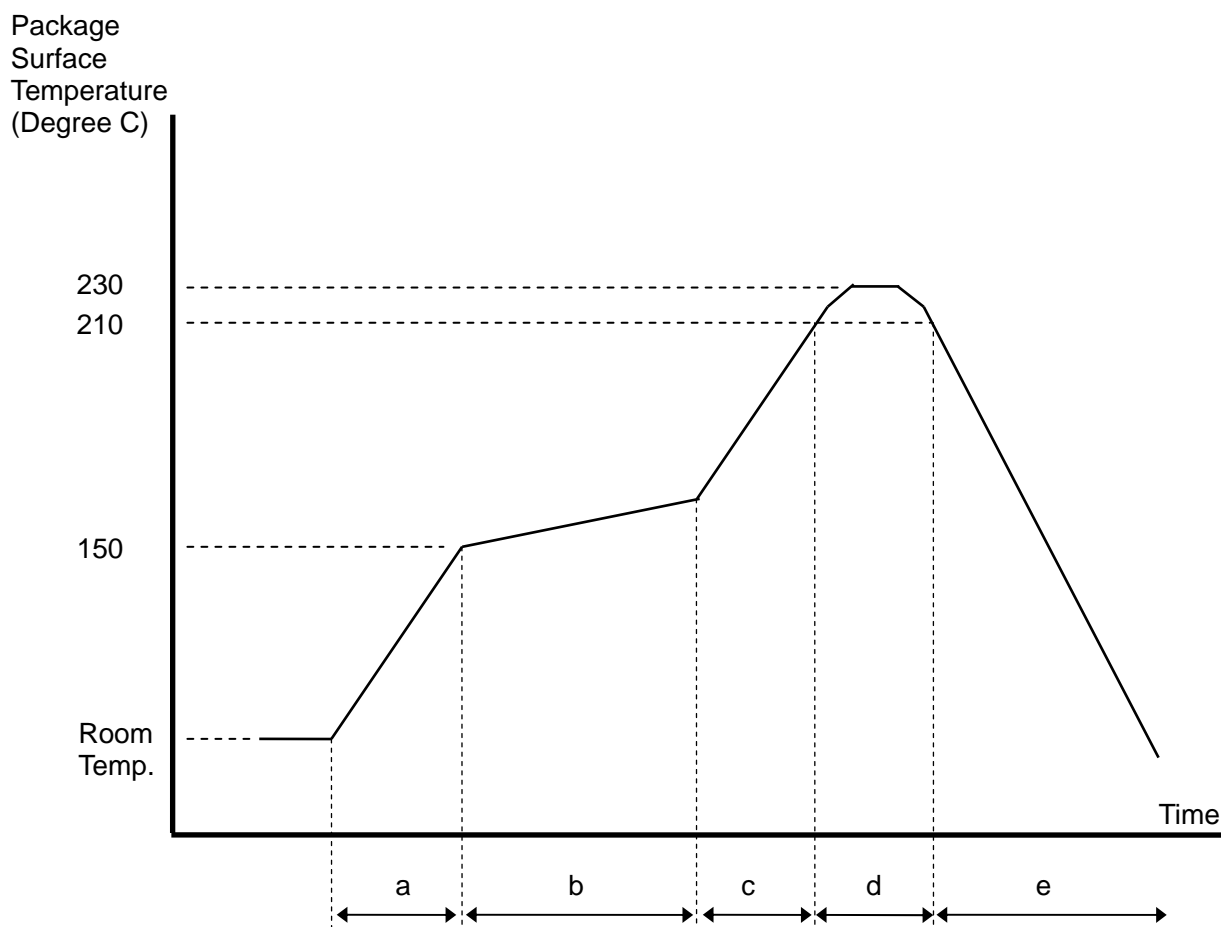
■ Connection diagram ■



Note ; Please read instruction "Notes" before using the sensor.
Fujikura reserves the right to change specifications without notice.

Please set Zero-calibration function up your products. The offset voltage may be shifted some mechanical stress such as mounting, installation and etc. over longtime using.

Reflow Soldering process recommendation profile



- | | |
|-------------------|--|
| a: Ramp up rate | 1 or 2 degree C/sec. |
| b: Pre-heating | 150°C~180°C within 60~120sec. |
| c: Ramp up rate | 1 to 2 degree C/sec. |
| d: Heating | max.230 degree C,max.10sec. 210 degree C,within 30sec. |
| e: Ramp down rate | 1 or 2 degree C/sec. |

- Note ;
- 1) Temperature means Surface temperature of the sensor package.
 - 2) Reflow process max. 2 times.
 - 3) Do not wash the sensor.
 - 4) Do not put the solder and flux on the sensor package.

If you have any questions regarding technical issues or specifications, please contact us.
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