Panasonic

Characteristics of Pressure Sensor

Formulas to calculate characteristics of Pressure Sensor are described as follows.

1. Output span voltage

$$V\left(PkPa,25°C\right) - V\left(0kPa,25°C\right) = FS$$

2. Offset voltage

$$V\left(0kPa,25°C\right)$$

3. Linearity

$$\frac{V\left(\dfrac{P}{2}kPa,25°C\right) - \left(\dfrac{V\left(PkPa,25°C\right) + V\left(0kPa,25°C\right)}{2}\right)}{FS} \times 1\,0\,0$$

4. Pressure hysteresis

$$\frac{V1\left(0kPa,25°C\right) - V2\left(0kPa,25°C\right)}{FS} \times 1\,0\,0$$

$V1$: During decompression

$V2$: pressurization

5. Offset temperature characteristic

$$\frac{V\left(0kPa,50°C\right) - V\left(0kPa,25°C\right)}{FS} \times 1\,0\,0$$

$$\frac{V\left(0kPa,0°C\right) - V\left(0kPa,25°C\right)}{FS} \times 1\,0\,0$$

6. Sensitivity temperature characteristic

$$\frac{\left[V\left(PkPa,0°C\right) - V\left(0kPa,0°C\right)\right] - FS}{FS} \times 1\,0\,0$$

$$\frac{\left[V\left(PkPa,50°C\right) - V\left(0kPa,50°C\right)\right] - FS}{FS} \times 1\,0\,0$$

Fig.1 Output span voltage, Offset voltage, Linearity, Pressure hysteresis
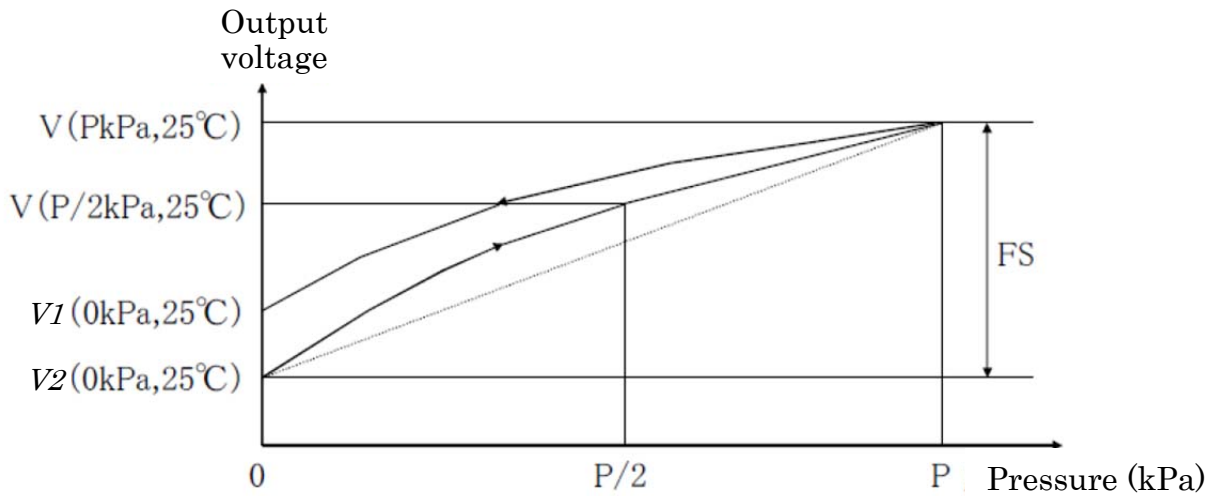

Fig.2 Offset temperature characteristic, Sensitivity temperature characteristic