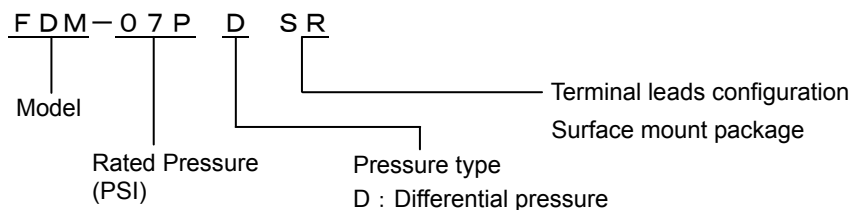


## ■Features

Differential pressure, Surface mount package

## ■Ordering Information



RoHS compliance

Measurable pressure range(kPa)	Part number
-13.79 to 13.79	FDM-02PDSR
-34.47 to 34.47	FDM-05PDSR
-48.26 to 48.26	FDM-07PDSR
-103.4 to 103.4	FDM-15PDSR
-206.8 to 206.8	FDM-30PDSR
-344.7 to 344.7	FDM-50PDSR
-482.6 to 482.6	FDM-70PDSR
-827.4 to 827.4	FDM-120PDSR

## ■Specifications

Model	02PD	05PD	07PD	15PD	30PD	50PD	70PD	120PD	Unit		
<b>Recommended operating conditions</b>											
Pressure type	Differential pressure								-		
Rated pressure	13.79	34.47	48.26	103.4	206.8	344.7	482.6	827.4	kPa		
Measurable pressure range	-13.79 to 13.79	-34.47 to 34.47	-48.26 to 48.26	-103.4 to 103.4	-206.8 to 206.8	-344.7 to 344.7	-482.6 to 482.6	-827.4 to 827.4	kPa		
Temperature range	0 to 50								deg.C		
Pressure media	Non-corrosive gases only (No liquid)								-		
Excitation current (Constant)	1.5								mADC		
<b>Absolute maximum rating</b>											
Maximum differential pressure **1	Twice of rated pressure							1.5 times of rating pressure	-		
Port1 Maximum load pressure	Twice of rated pressure							1.5 times of rating pressure	-		
Port2 Maximum load pressure	Twice of rated pressure							1.5 times of rating pressure	-		
Maximum excitation current	3.0								mADC		
Operating temperature	-20 to 100								deg.C		
Storage temperature	-40 to 120								deg.C		
Operating humidity	30 to 80 (Non dew condition)								%RH		
<b>Electric characteristics (Drive Current 1.5mA constant ,ambient temperature Ta=25deg.C)</b>											
Output span voltage **2	60 to 140 (at 0kPa to rated pressure)								mV		
Offset voltage **2	+/-20 (at 0kPa)								mV		
Bridge resistance	4000 to 6000								Ω		
Response time	2 (for the reference)								msec.		
Accuracy	TSO*								+/-5	%FS/0-50deg.C	
	TCS*								2.5	%FS/0-50deg.C	
	Linearity		+/-0.5			+/-0.3			+/-0.5	+/-0.6	%FS
	Pressure hysteresis		+/-0.4			+/-0.2			+/-0.4		%FS

\*TSO : Temperature sensitivity of offset voltage(Temperature range from 0-50 deg.C)

\*TCS : Temperature coefficient of output span voltage(Temperature range from 0-50 deg.C)

\*\*1 Port1 pressure > Port2 pressure , Port2 pressure : reference pressure

\*\*2 Output refers to pressure at pressure port2.

Pressure(kPa) =Port1 pressure - Port2 pressure

P1= 0 kPa                      T1= 0 deg.C  
 P2= 1/2 x P3 (kPa)            T2= 25 deg.C  
 P3= reted pressure (kPa)    T3= 50 deg.C

Offset voltage (mV)

$$\begin{aligned} V_{\text{off}} &= V(P1, T) \\ V_{\text{off}}(0) &= V(P1, T1) \\ V_{\text{off}}(25) &= V(P1, T2) \\ V_{\text{off}}(50) &= V(P1, T3) \end{aligned}$$

Output voltage at full scale (mV)

$$\begin{aligned} V_{\text{fs}} &= V(P3, T) \\ V_{\text{fs}}(0) &= V(P3, T1) \\ V_{\text{fs}}(25) &= V(P3, T2) \\ V_{\text{fs}}(50) &= V(P3, T3) \end{aligned}$$

Output span voltage (mV)

$$\begin{aligned} SV &= V_{\text{fs}} - V_{\text{off}} \\ SV(0) &= V_{\text{fs}}(0) - V_{\text{off}}(0) \\ SV(25) &= V_{\text{fs}}(25) - V_{\text{off}}(25) \\ SV(50) &= V_{\text{fs}}(50) - V_{\text{off}}(50) \end{aligned}$$

Temperature sensitivity of offset voltage (%FS)

$$\begin{aligned} TSO &= \{\text{LARGER ONE}\} / SV(25) \times 100 \\ \text{LARGER ONE} &= \text{larger absolute value which of } \{V_{\text{off}}(0) - V_{\text{off}}(25)\} \text{ and } \{V_{\text{off}}(50) - V_{\text{off}}(25)\} \end{aligned}$$

Temperature coefficient of output span voltage (%FS)

$$TCS = \{\max[SV(0), SV(25), SV(50)] - \min[SV(0), SV(25), SV(50)]\} / SV(25) \times 100$$

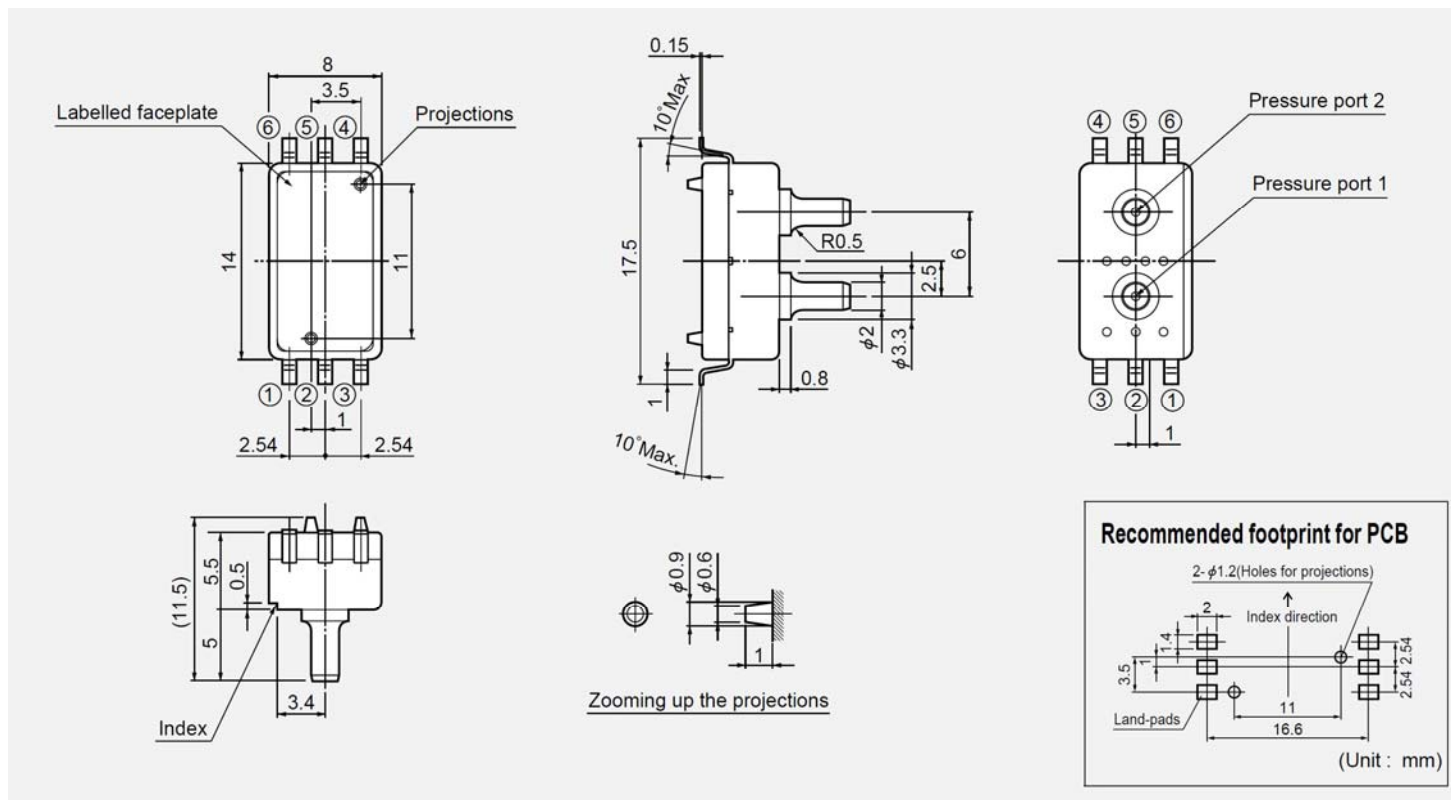
Linearity (%FS)

$$NL = \{V(P2, T2) - [V_{\text{off}}(25) + V_{\text{fs}}(25)] / 2\} / SV(25) \times 100$$

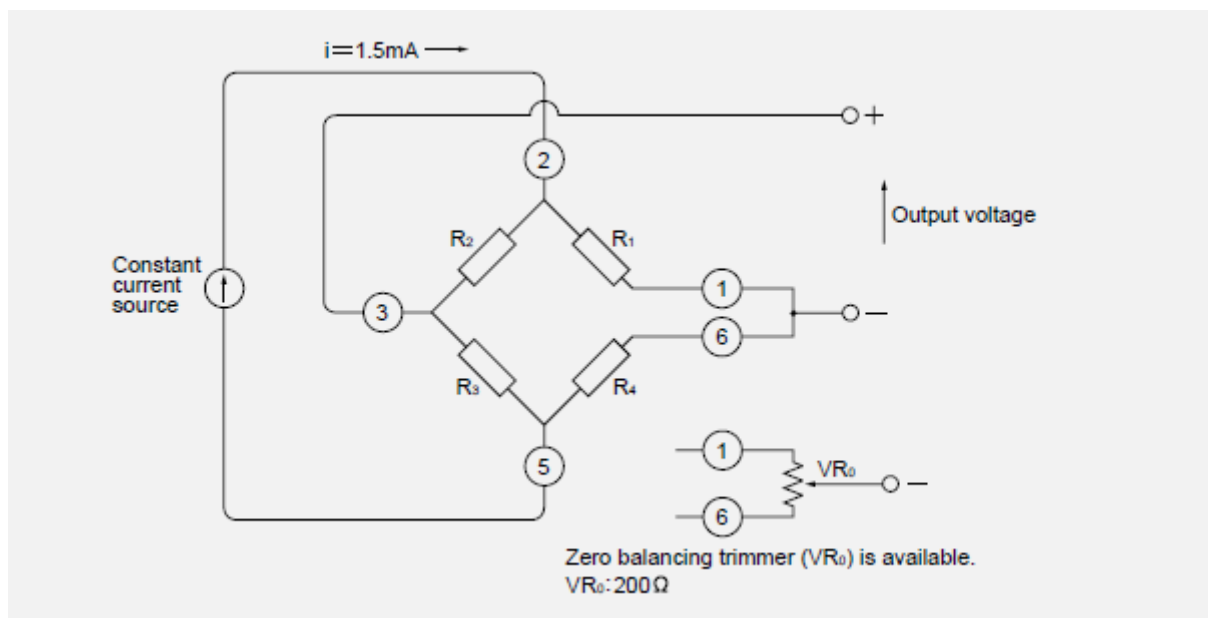
Pressure hysteresis (%FS)

$$\begin{aligned} \text{Phys} &= \{V_{\text{off}}'(25) - V_{\text{off}}(25)\} / SV(25) \times 100 \\ V_{\text{off}}'(25) &: \text{Output voltage against P1 after stressing by P3 pressure.} \end{aligned}$$

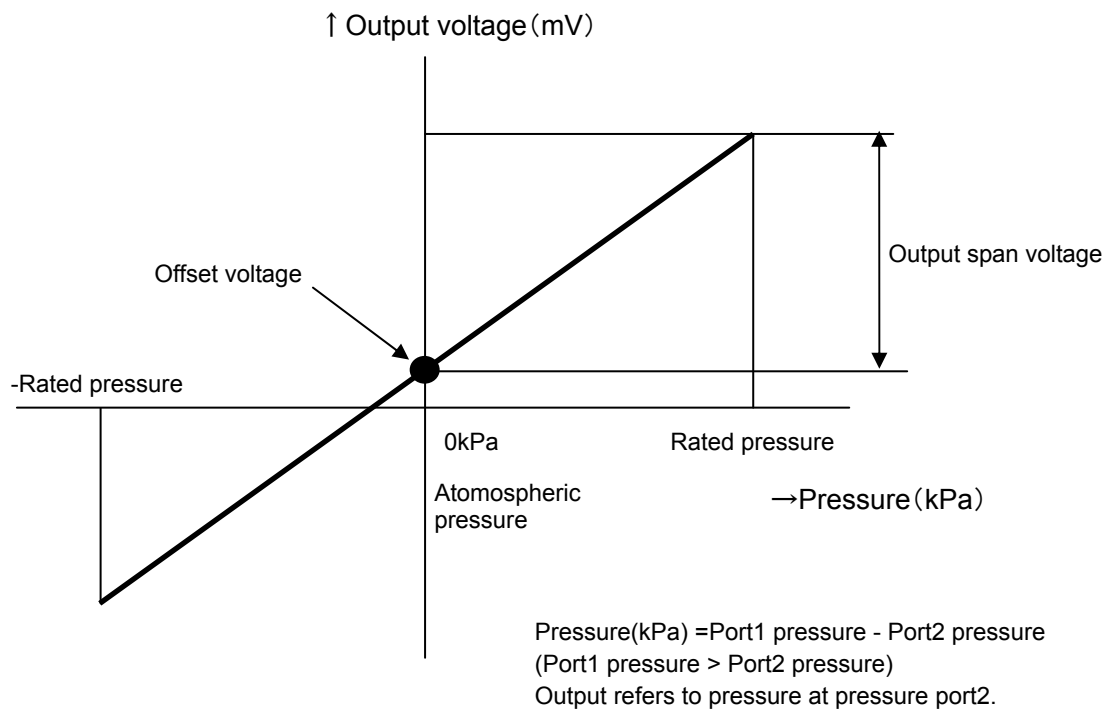
■ Outline dimensions ■



■ Connection diagram ■



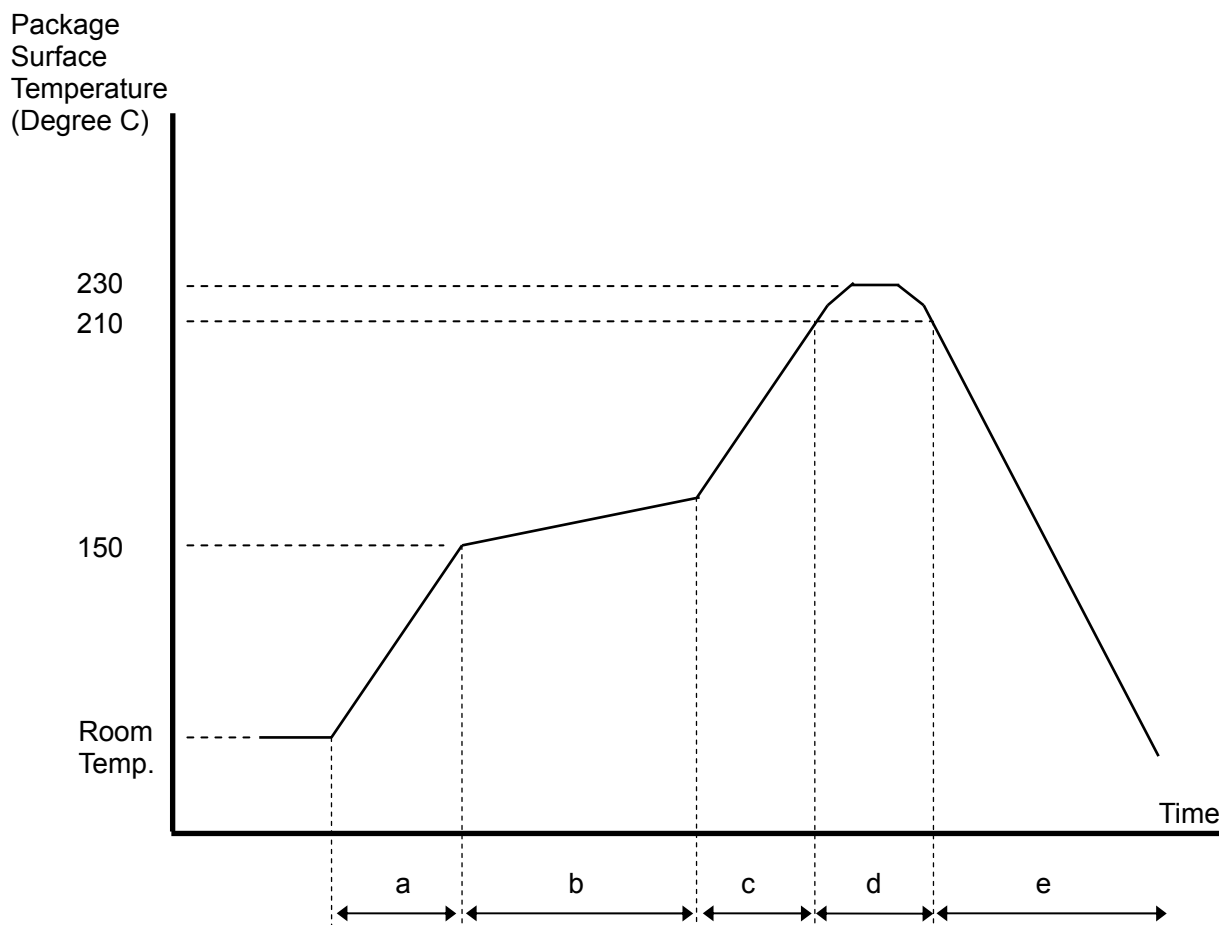
■Output characteristics■



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