

Model 664F(b) Flush-Diaphragm Pressure Sensors

Description

The 664F(b) pressure sensor which provides outstanding thermal stability and high accuracy is based on the BCM high-quality metal foil strain gauge. The sensor features all welded structure so there is no O-ring seal inside the sensor body.

As this model employs flush-diaphragm structure, the 664F(b) is suitable for pressure measurement of viscous fluids or fluids with media containing solids.

The sensor has its process connection and electronics housing connection with threads, and the entire sensor body is weldable.



664F(b)

Features

- rugged and fully welded structure
- measuring ranges: 16bar, ..., 400bar
- reliable metal foil strain gauge technology
- accuracy up to 0.1%fs
- compensated temperature range: -20 ~ +85 °C
- excited by either current or voltage

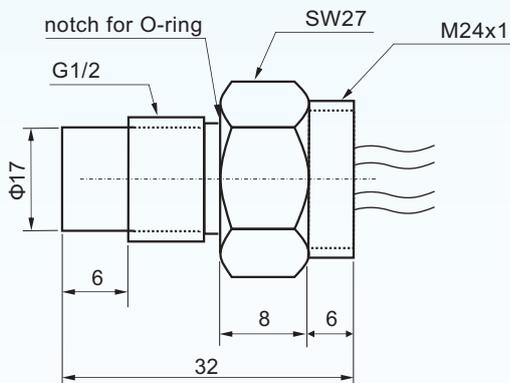
Applications

- industrial controls
- hydraulic systems
- compressors
- food industry
- process control systems

Environmental Specifications

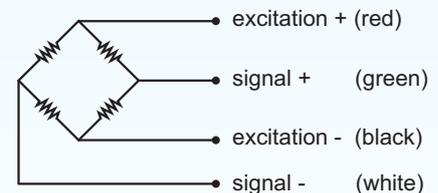
- position effect: < 0.1% of zero offset shift in any direction
- vibration effect: no change at 10 g (RMS), 20~2000 Hz
- shock: 100 g, for 10 millisecond

Dimensions



Note: all dimensions are in mm

Electrical Interface



BCM SENSOR TECHNOLOGIES BVBA

Model 664F(b) Flush-Diaphragm Pressure Sensors



Technical Data

| Parameters | Units | Specifications | Notes |
|--|----------|---|-------|
| pressure medium | | viscous fluid or media containing solids | 1 |
| measuring ranges | bar | 0~16, ~25, ~40, ~60, ~100, ~160, ~250, ~400 | 2 |
| pressure references | | gauge | |
| overload pressure | %fs | 150 | 3 |
| output sensitivity | mV/V | 1.2, 1.5, 2 (option: 0.5~4.5 Vdc ratiometric, 4~20 mA, I2C) | |
| excitation | Vdc | 5~12 | |
| zero offset | mV | ≤ ±1 | 4 |
| accuracy | %fs | ±0.1 (for ranges ≥ 250bar), ±0.25 (for ranges ≥ 60bar), ±0.5 (standard) | 5 |
| long-term stability | %fs/year | ≤ ±0.2 | |
| bridge resistance | Ω | 350, 700 (standard), 1000, 2000 | |
| insulation resistance | MΩ | 500 @100Vdc | |
| compensated temperature range | °C | -20 ~ +85 | |
| operating temperature range | °C | -40 ~ +125 | |
| storage temperature range | °C | -40 ~ +125 | |
| temperature coefficient of zero offset | %fso/°C | ≤ ±0.01 | 6 |
| temperature coefficient of span | %fso/°C | ≤ ±0.01 | 6 |
| life time | cycles | 10 ⁸ | |
| response time | ms | ≤ 1 | 7 |
| mechanical interface | | G1/2 male | |
| housing connection | | M24x1 male | |
| electrical interface | | 4 colored PVC flexible wires, 100mm | |
| pressure diaphragm | | 17-4PH stainless steel | |
| material of mechanical interface | | 17-4PH stainless steel | |
| O-ring material | | fluorine rubber | |
| net weight | gram | ~40 | |

General conditions for measurements: media temp. = 25°C ±1°C, ambient temp. = 25°C ±1°C, humidity = 50%RH ±10%RH,
barometric pressure: 86~106 kPa, vibration = 0.1 g (1m/s/s) max.

- Notes:
1. The pressure medium should be compatible with wetted parts material and pressure diaphragm.
 2. For customized pressure ranges, consult BCM.
 3. "fs" refers to full scale pressure or rated pressure.
 4. Measured at 10 Vdc excitation.
 5. Accuracy = $\sqrt{\text{non-linearity}^2 + \text{hysteresis}^2 + \text{repeatability}^2}$.
 6. Calculated as a rate of output change between 25°C and 70°C, and normalized by the output at 25°C, when the sensor is not temperature compensated.
 7. Response time for a 0 bar to fs step change, 10% to 90% rise time.

The listed specifications and dimensions are subject to change without prior notice.

BCM SENSOR TECHNOLOGIES BVBA

Model 664F(b) Flush-Diaphragm Pressure Sensors



Ordering Information

ordering code: **664F(b)-250-II-G1/2-(*)**

| pressure ranges | | | |
|---|---|------------------------|---|
| 16 = 0~16 bar | G | 160 = 0~160 bar | G |
| 25 = 0~25 bar | G | 250 = 0~250 bar | G |
| 40 = 0~40 bar | G | 400 = 0~400 bar | G |
| 60 = 0~60 bar | G | customized range | |
| 100 = 0~100 bar | G | available as an option | |
| accuracy | | | |
| II = 0.1%fs | | | |
| III = 0.25%fs | | | |
| IV = 0.5%fs (standard) | | | |
| process connection | | | |
| G1/2 | | | |
| other thread types available as options, consult BCM | | | |
| customized parameter | | | |
| “(*)” is necessary only if any customized parameter is required, otherwise it is neglectable. | | | |

Examples of Ordering Code

- standard sensor:
model-pressure range-accuracy-process connection
664F(b)-160-IV-G1/2
- customized sensor:
model-pressure range-accuracy-process connection-customized parameter
664F(b)-300-III-G1/2-(*)
(*): Customized pressure range = 0~300 bar.

BCM SENSOR TECHNOLOGIES BVBA

