

## Semi Flush Miniature Pressure Sensor



### Features

- ➔ Operating from -40 to +125°C
- ➔ Thin film technology
- ➔ Semi flush miniature sensor
- ➔ High natural frequency up to 120kHz

### Applications

- ➔ Automotive - on vehicle
- ➔ Aerospace
- ➔ Research laboratory
- ➔ Automation & Robotics

The PSF160 series is designed for highly dynamic pressure measurements. Thanks to a semiflush construction, the pressure diaphragm is exposed, in direct contact with the medium, with reduced dead volume. Being all titanium, it is compatible with most media including corrosive fluids used in industry. Unamplified (mV/V output) or equipped with the latest signal conditioning technologies from EFE (0-5 and 0.5-4.5Vdc outputs), it is able to measure very dynamic pressure spikes. Its thin film sensitive element ensures high performances and stability over wide temperature range. Models with built-in electronics (power supply : 8-30Vdc), being low consumption ( < 10mA) and with high bandwidth capabilities are particularly adapted to embedded applications.

## Technical specifications

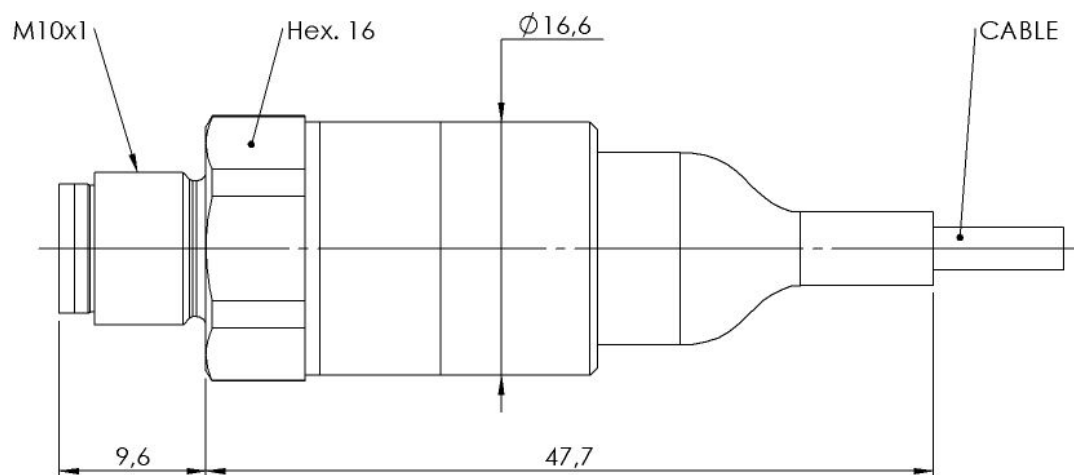
|                                          |                                                                                                                                                                                |
|------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Pressure ranges (FS)                     | -1/+4bar ; -1/+9bar ;<br><br>5bar ; 10bar ; 20bar ; 40bar ; 70bar ; 250bar ;<br><br>-14.5/+60PSI ; -14.5/+140PSI ;<br><br>70PSI ; 150PSI ; 300PSI ; 500PSI ; 1000PSI ; 3000PSI |
| Type                                     | Absolute ; Gage                                                                                                                                                                |
| Type (for ranges > 40 bar)               | Sealed Gage                                                                                                                                                                    |
| Safe overload                            | 150% FS                                                                                                                                                                        |
| Burst pressure                           | 300% FS                                                                                                                                                                        |
| Power supply                             | 5Vdc $\pm$ 10mV                                                                                                                                                                |
| Consumption                              | < 10mA                                                                                                                                                                         |
| Insulation                               | > 1000 MOhms under 50Vdc at ambient temperature                                                                                                                                |
| Output at -100%FS (only for $\pm$ range) | 0.5Vdc                                                                                                                                                                         |
| Output at 0%FS (except ranges $\pm$ )    | 0.5Vdc                                                                                                                                                                         |
| Output at 100%FS                         | 4.5Vdc                                                                                                                                                                         |
| Zero and sensitivity settings tolerances | $\pm$ 50mV                                                                                                                                                                     |

## Technical Specifications

|                                            |                                                                     |
|--------------------------------------------|---------------------------------------------------------------------|
| Non linearity and hysteresis combined      | $\pm 0.25\%$ FS<br>Option : $\pm 0.1\%$ FS                          |
| Non repeatability                          | $\pm 0.02\%$ FS typ.                                                |
| Signal bandwidth                           | 1000Hz @ -3dB<br>Option : Special Adjustment up to 5000Hz @ -3dB    |
| Compensated temperature range              | 0 to +60°C<br>Option : -25 to +85°C ; -25 to +125°C ; -40 to +125°C |
| Operating temperature range                | -40 to +125°C                                                       |
| Combined thermal zero & sensitivity shifts | $\pm 0.02\%$ FS/°C                                                  |
| Constant acceleration in linear vibrations | $\pm 0.02\%$ FS/g (frequency 20-2000Hz, 50g max.)                   |
| Mechanical shock                           | 100g ½ sinus 1ms                                                    |
| Electrical protection                      | Protected against polarity inversion                                |
| EMC protection                             | Compliant to EN61000                                                |
| Electrical connection                      | AWG26, Viton Jacketed Shielded Cable Ø3mm, 4 wires                  |
| Mechanical connection                      | M10x1-4h male semi-flush with integrated O-ring                     |
| Material(s) of wetted parts                | Titanium TA6V (3.7165)                                              |
| Weight                                     | < 20g without cable                                                 |
| Enclosure protection                       | IP65 for absolute & sealed gage version                             |

## Codification

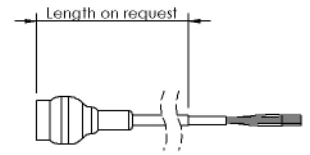
|                                                    |       |   |   |       |    |    |       |   |   |   |   |
|----------------------------------------------------|-------|---|---|-------|----|----|-------|---|---|---|---|
| Semi Flush Miniature Pressure Sensor               | PSF16 | 3 | T | 10bar | A  | 17 | 08/1m | A | 1 | 1 | B |
| Output Signal                                      |       |   |   |       |    |    |       |   |   |   |   |
| 0.5-4.5Vdc regulated power supply                  |       | 3 |   |       |    |    |       |   |   |   |   |
| Material                                           |       |   |   |       |    |    |       |   |   |   |   |
| Titanium                                           |       |   | T |       |    |    |       |   |   |   |   |
| Range                                              |       |   |   |       |    |    |       |   |   |   |   |
| Example                                            |       |   |   | 10bar |    |    |       |   |   |   |   |
| Type                                               |       |   |   |       |    |    |       |   |   |   |   |
| Absolute                                           |       |   |   |       | A  |    |       |   |   |   |   |
| Gage                                               |       |   |   |       | G  |    |       |   |   |   |   |
| Sealed Gage                                        |       |   |   |       | SG |    |       |   |   |   |   |
| Mechanical connection                              |       |   |   |       |    |    |       |   |   |   |   |
| M10x1-4h male semi-flush with integrated O-ring    |       |   |   |       |    | 17 |       |   |   |   |   |
| Electrical connection                              |       |   |   |       |    |    |       |   |   |   |   |
| AWG26, Viton Jacketed Shielded Cable Ø3mm, 4 wires |       |   |   |       |    |    | 08/1m |   |   |   |   |
| Compensated temperature range                      |       |   |   |       |    |    |       |   |   |   |   |
| 0 to +60°C                                         |       |   |   |       |    |    |       | A |   |   |   |
| -25 to +85°C                                       |       |   |   |       |    |    |       | B |   |   |   |
| -25 to +125°C                                      |       |   |   |       |    |    |       | C |   |   |   |
| -40 to +125°C                                      |       |   |   |       |    |    |       | D |   |   |   |
| Non linearity and hysteresis combined              |       |   |   |       |    |    |       |   |   |   |   |
| ±0.25% FS                                          |       |   |   |       |    |    |       |   | 1 |   |   |
| ±0.1% FS                                           |       |   |   |       |    |    |       |   | 2 |   |   |
| Combined thermal zero & sensitivity shifts         |       |   |   |       |    |    |       |   |   |   |   |
| ±0.02% FS/°C                                       |       |   |   |       |    |    |       |   |   | 1 |   |
| Options                                            |       |   |   |       |    |    |       |   |   |   |   |
| Special Adjustment up to 5000Hz @ -3dB             |       |   |   |       |    |    |       |   |   |   | B |



DIMENSIONS : mm

**#26 AWG, 4 CONDUCTOR SHIELDED VITON CABLE**

| VOLTAGE OUTPUT | CONDUCTOR      |
|----------------|----------------|
| + EXCITATION   | RED            |
| + SIGNAL       | GREEN / YELLOW |
| NC             | WHITE          |
| 0 VOLT         | BLUE / BLACK   |
| SENSOR HOUSING | SHIELD         |



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