



Instructions for Use # INST03

**ms18 – INSTRUCTIONS FOR USE**

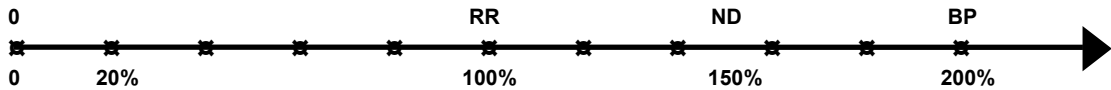
These instructions are related to the « **monolit sensor®** » **ms18 – BP** (Basse Pression / Low Pressure) covering the **Pressure Ranges 0 - 2 / 0 - 5 / 0 - 10 & 0 - 20 bar**.

The « **monolit sensor®** » units are strictly devoted to **Gage (Relative)** pressure measurements.

**PRESSURE RANGE SELECTION**

▫ The ms18 Models (without electronics) have a pressure Rated Range (RR) set-up for a given output signal (typically 2mV/V).

Nevertheless, their design makes possible to use them in a wide range, in conjunction with the (Customer's) design of the related electronics:



The Rated Range (**RR**) corresponds to the Pressure Value for which:

- the mechanical errors (Linearity, Hysteresis, Repeatability) are specified
- it is possible to use the sensor up to 150 % of the RR without any deterioration of the initial performance (**ND** =Non Deterioration point)
- it is guaranteed that the Burst Pressure (**BP**) equals minimum 200 % of the RR.

Nevertheless, the mechanical properties of Ceramic are such as it is possible to use the sensor between 0 and 20 % only of its RR whilst keeping the same performance level, assuming that the sensor is calibrated between 0 and 20 % of its RR (this remark is valid for any value higher than 20 % , as well).

As an example, a ms18 -10 sensor (RR =10 bar, Gage Pressure), can be used:

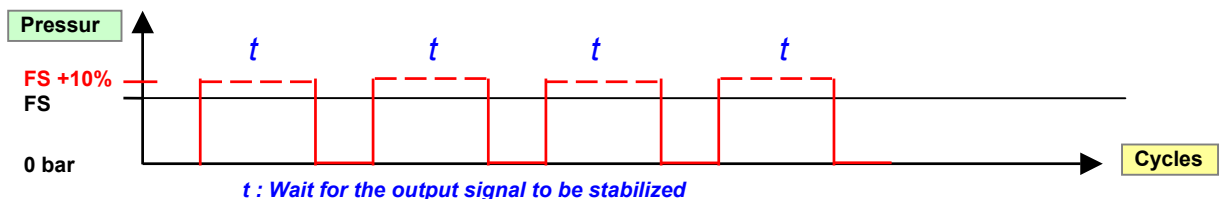
from	0 to 2 bar	0 to 10 bar	0 to 15 bar
with an overload capability, without deterioration	650 %	50 %	0 %
with an overload capability, without destruction	900 %	100 %	33 %
with a combined (L + H) Error *	0.3 %	0.3 %	0.3 %
with an typical output signal (in mV/V)	0.4	2.0	3.0

\* (When calibrated within the specified limits).

Thus, it appears that **Down ranging** becomes very easy.

In practice, the End-User choice will result from a compromise between the overloading capability and the Signal / Noise ratio which determines the resolution of the measurement.

▫ **Important remark** : Once the sensor is integrated in its housing, it is necessary to submit the assembly to a few fatigue cycles, in order get the sensor's optimum performance. Perform at least 4 pressure cycles from zero up to 110% of the Full Scale (FS) according to the following diagram :

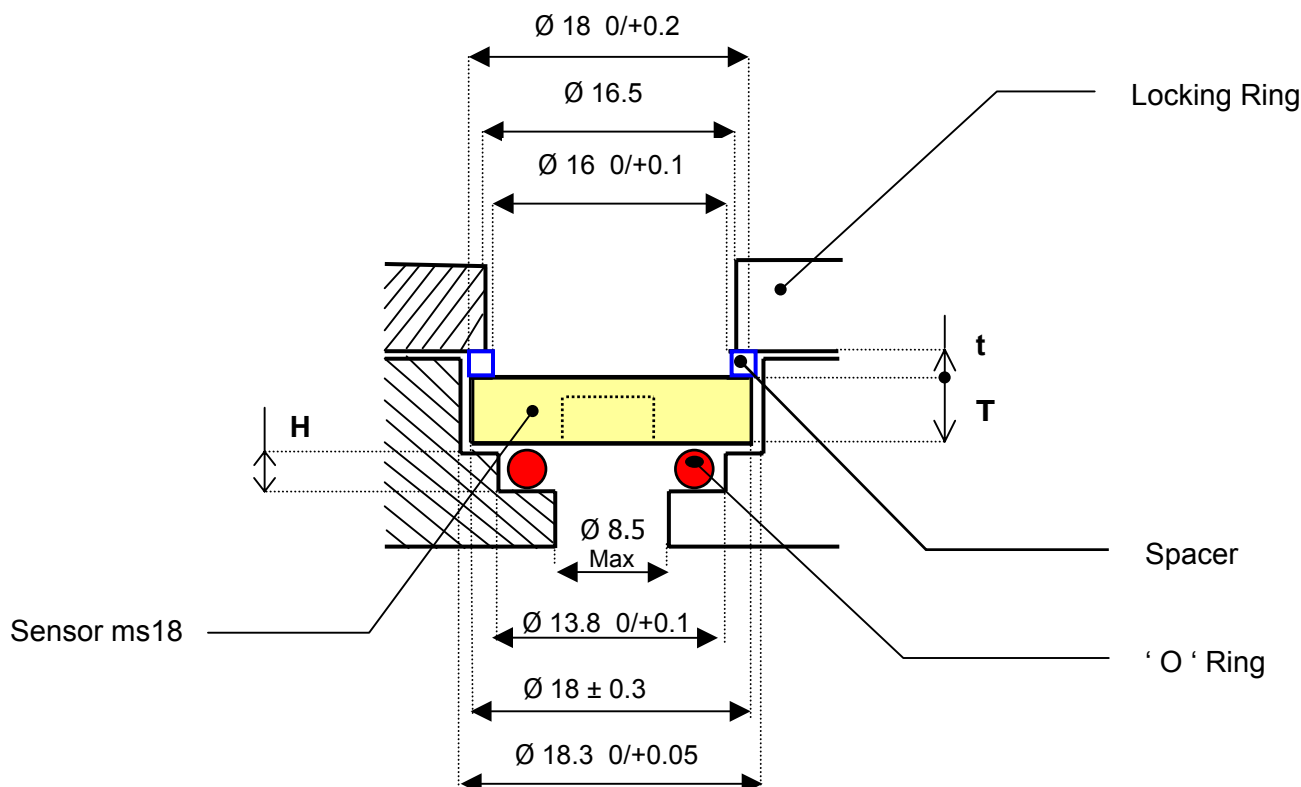


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Specification subject to change without prior notice.

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### MOUNTING RECOMMENDATIONS

The schematic diagram and table below are only given as a guide line. It is recommended, when the external body assembly (pressure adaptor + Locking ring) are made of a hard material (like Stainless Steel) to insert at the back of the sensor a Spacer made of a soft material (like brass for instance) between ceramic and stainless steel.



The 'O' Ring material and the external body material must be selected as compatible with the fluid applied. The 'H' dimension must be determined in order to reduce the torus diameter of the 'O' Ring by about 25%, making sure that the sensor remains floating (without being in touch with the metal).

Pressure Range (bar)	0 - 2	0 - 5	0 - 10	0 - 20
Sensor Height T (mm)	5.25 +/- 0.05	5.30 +/- 0.05	5.49 +/- 0.05	5.65 +/- 0.05
Spacer height t (mm)	1.25 +/- 0.05	1.20 +/- 0.05	1.01 +/- 0.05	0.85 +/- 0.05
'O' Ring Size (mm)	10.6 x 1.78	10.6 x 1.78	10.6 x 1.78	10.6 x 1.78
'O' Ring Shore A	70	70	70	70

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### **ⓘ ELECTRICAL CONNECTION**

Pre-heat the sensor on a heating plate at about 80 °C. Use a 62/36.Ag<sub>2</sub> solder alloy fused by means of a 50 W iron heated at about 370 °C.

- In order to keep the benefit of the protection against humidity and moisture, it is strongly recommended to cover the pads (after wires soldering) by means of an efficient protective coating, to avoid condensation effects.

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