

ms18c & ma18 series - INSTRUCTIONS FOR USE

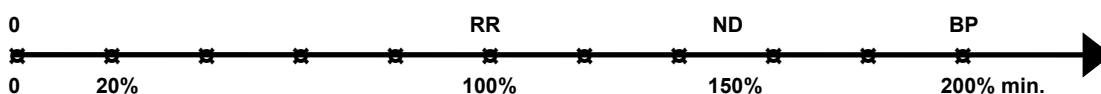
These instructions are related to the « **monolit sensor®** » **ms18c** covering the Pressure Ranges **0 - 2 to 0 - 200 bar**.

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

PRESSURE RANGE SELECTION

▫ The ms18c Models (without electronics) have a pressure Rated Range (RR) set-up for a given output signal from 1.6 mV/V up to 3.7mV/V (refer to data sheet for more details).

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 ms18c -10 sensor (RR =10 bar, Gage Pressure), can be used:

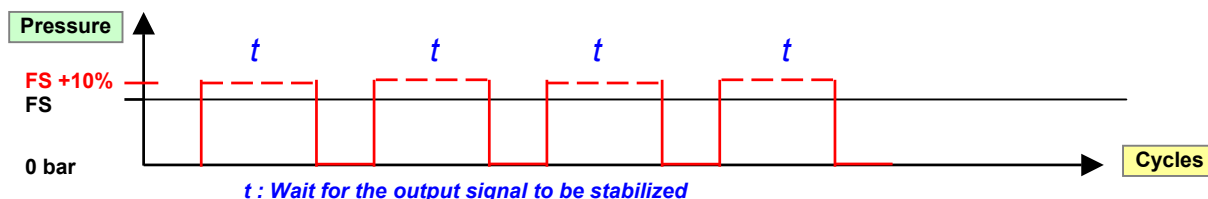
from	0 to 2 bar	0 to 10 bar	0 to 15 bar
with an overload capability, without deterioration	650 %	50 %	0 %
with an overload capability, without destruction	1250 %	250 %	66 %
with a combined (L + H) Error *	0.3 %	0.3 %	0.3 %
with a typical output signal (in mV/V)	0.6	3.0	4.5

* (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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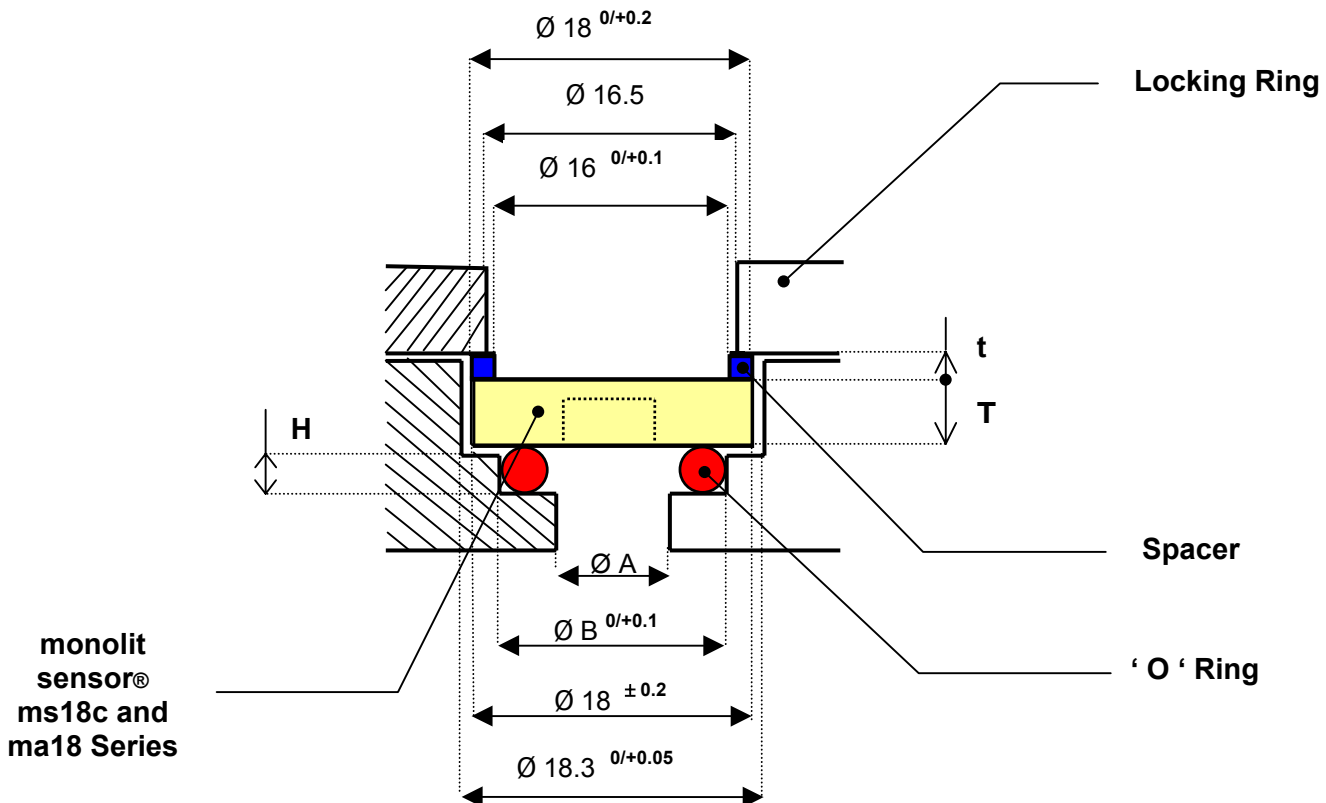
Specification subject to change without prior notice.

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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 Ranges	0 – 2 bar up to 0 - 200 bar	
T = Sensor Height (mm)	6.35 +/- 0.05	
t = Spacer height (mm)	According to your own design	
Sensors Ranges (bar)	0 – 2 / 0 – 5 / 0 – 10 / 0 – 20	0 – 50 / 0 – 100 / 0 – 200
'O' Ring - Shore A	70	80
'O' Ring Sizes (mm)	10.6 x 1.78 or 10.52 x 1.83	6.07 x 1.78
$\varnothing A$ Maxi (mm)	8.5	4.0
$\varnothing B$ (mm)	13.8	9.2

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ⓘ ELECTRICAL CONNECTION - SOLDERING INFORMATION: (RoHS Sensor)

Pre-heat the sensor on a heating plate at about +145 °C. Use an unleaded 95.5SN/3.8AG/0.7CU solder alloy fused by means of a 50 W iron heated at about +425 °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.