

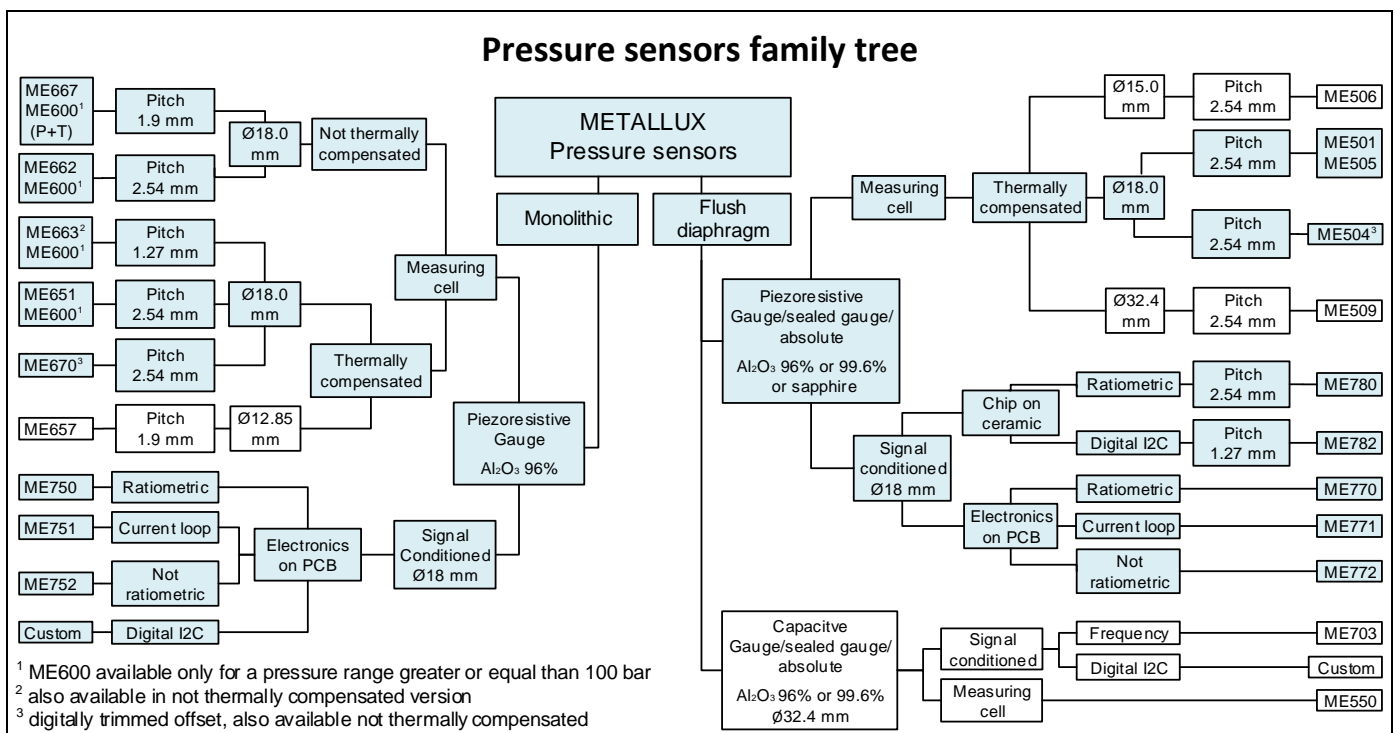


Mounting proposal for Ø18 mm ceramic pressure sensors

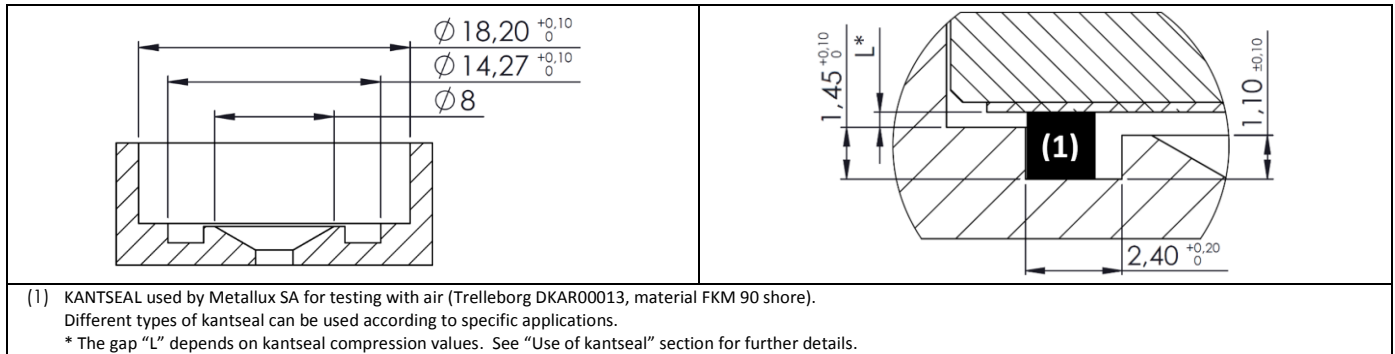
This document must be considered a valid but not exhaustive guideline about mounting in a housing an 18 mm diameter ceramic pressure sensor produced by Metallux SA. Proper housing dimensioning and gasket selection remain the customer's responsibility, depending on the final application. Please observe the O-ring / kantseal suppliers recommendations, in addition with the sealing areas indicated in all Metallux SA product datasheets.

| Metallux pressure sensor families | Sensor type | Mounting Type A | Mounting Type B | Mounting Type C | Mounting Type D | Mounting Type E |
|-----------------------------------|---------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| ME501 | Flush diaphragm | ● | | | | |
| ME504 | Flush diaphragm | ● | | | | |
| ME505 | Flush diaphragm | ● | | | | |
| ME600 | Monolithic reduced cavity | ○ | | ○ | | ● |
| ME651 | Monolithic large cavity | | ○ | | ● | |
| ME662 | Monolithic large cavity | | ○ | | ● | |
| ME663 | Monolithic large cavity | | ○ | | ● | |
| ME667 | Monolithic large cavity | | ○ | | ● | |
| ME670 ≤ 50 bar | Monolithic large cavity | | ○ | | ● | |
| ME670 ≥ 100 bar | Monolithic reduced cavity | ○ | | ○ | | ● |
| ME75x ≤ 50 bar | Monolithic large cavity | | ○ | | ● | |
| ME75x ≥ 100 bar | Monolithic reduced cavity | ○ | | ○ | | ● |
| ME77x | Flush diaphragm | ● | | | | |
| ME78x | Flush diaphragm | ● | | | | |
| ME790 | Monolithic reduced cavity | ○ | | ○ | | ● |

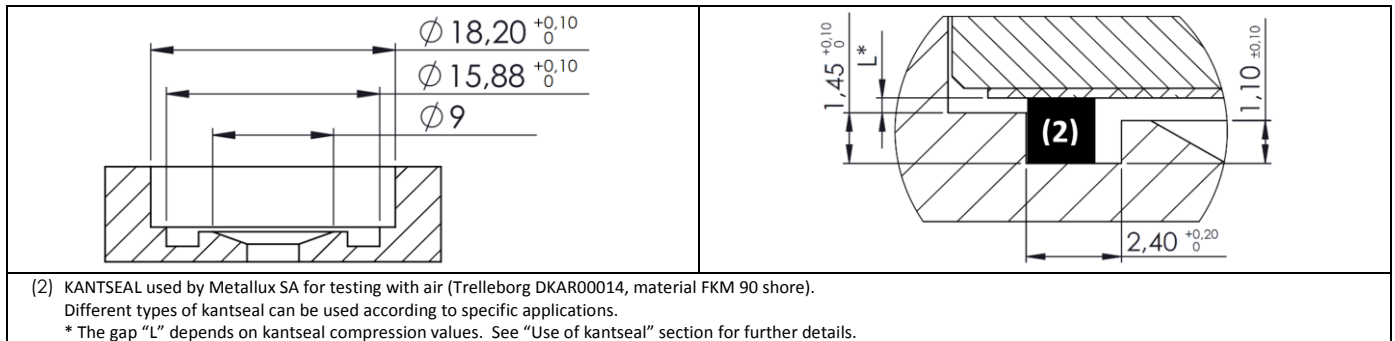
- Recommended
- Possible alternative



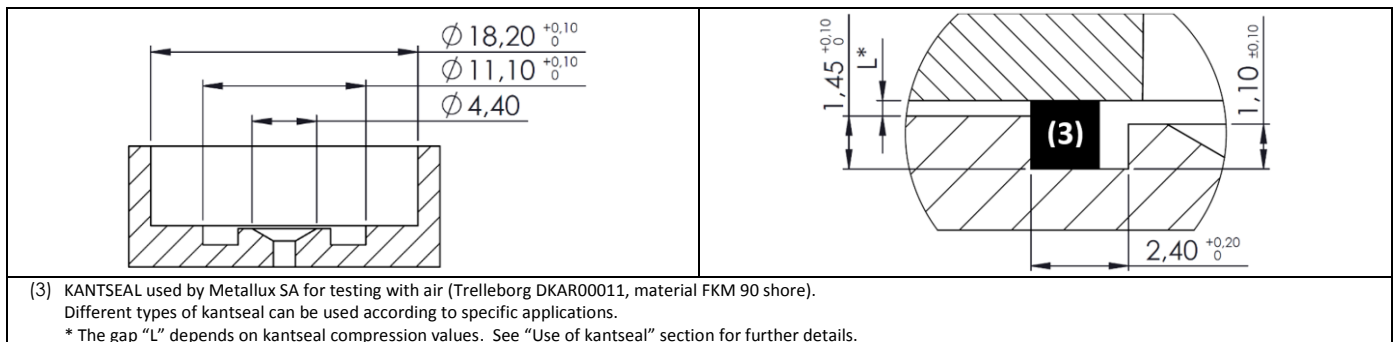
Mounting proposal type A: face sealing, diaphragm



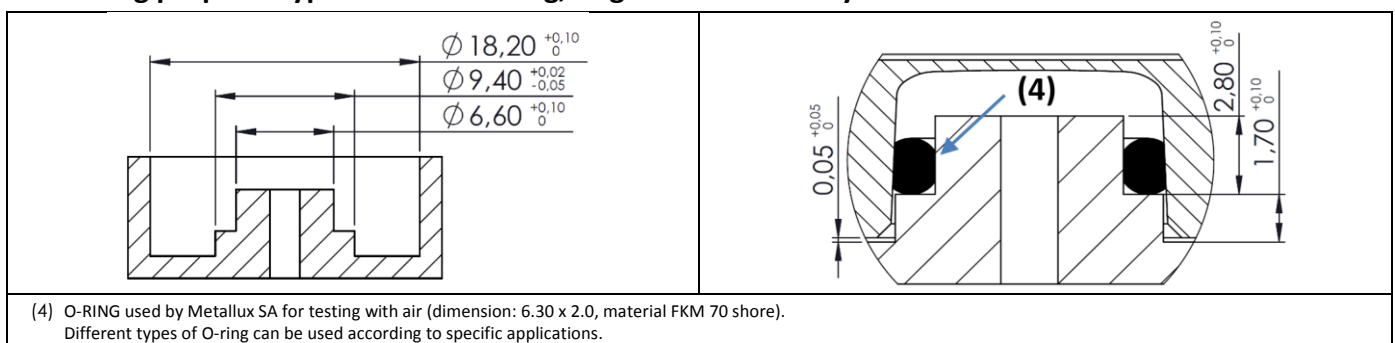
Mounting proposal type B: face sealing, large diameter cavity



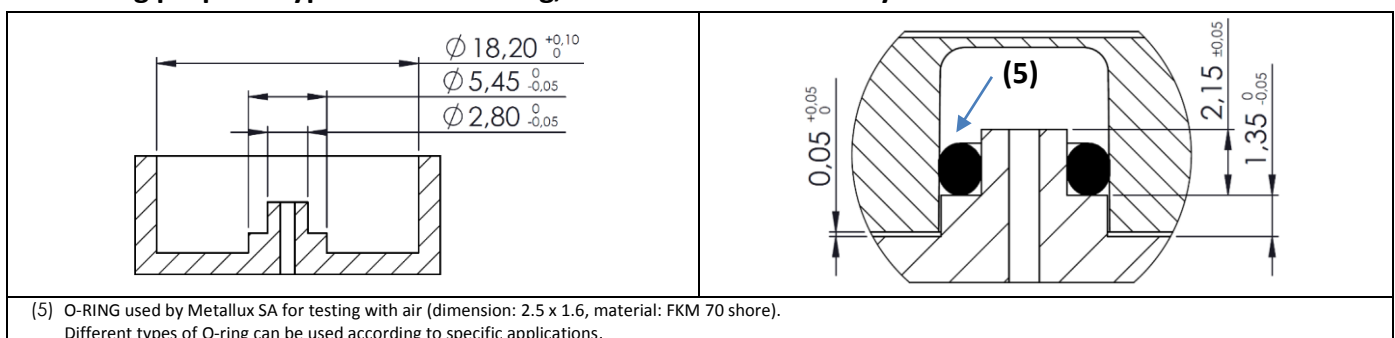
Mounting proposal type C: face sealing, reduced diameter cavity



Mounting proposal type D: radial sealing, large diameter cavity



Mounting proposal type E: radial sealing, reduced diameter cavity

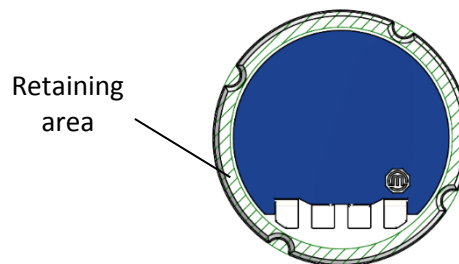


Housing design general guidelines

Upper closing area

The upper retaining area is indicated in the product datasheet, shaded in green as in the image on the right.

The housing's closing cap must not get in contact with the sensor outside the indicated area.



Use of kantseal for face sealing

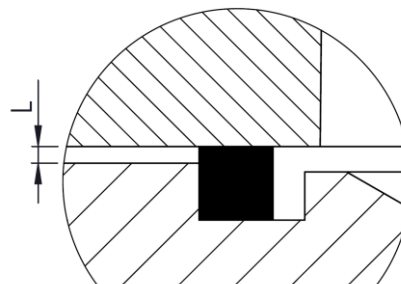
Kantseals are less compressible than O-ring counterparts, therefore it is also possible to design a torque-controlled screwing system to fix the sensor in the housing.

Metallux recommends not exceeding the torque or the kantseal compression values shown in the table.

The gap "L" between the sensor and the housing depends from the kantseal compression. In any case the diaphragm of sensors or the lower part of the body of the monolithic sensors must not be in contact with the housing.
(L > 0).

Recommendation from the kantseal suppliers in terms of compatible media must be respected at all time

| Pressure [bar] | Tight Torque [Nm] | 90 shore DKAR00013 compression values [mm] | L values [mm] |
|----------------|-------------------|--|---------------|
| 0.5 to 5 | 0.9 | ≈ 0.07 | ≈ 0.16 |
| 5.001 to 20 | 1.1 | ≈ 0.10 | ≈ 0.13 |
| 20.001 to 100 | 1.6 | ≈ 0.13 | ≈ 0.10 |
| 100.001 to 600 | 1.8 | ≈ 0.15 | ≈ 0.08 |
| 600.1 to 1000 | 2.1 | ≈ 0.17 | ≈ 0.06 |



L evaluation:

$$L = \text{kantseal height} - \text{compression (see table)} - \text{gasket seat height}$$

In the example, referring to mounting proposal type A:

$$L = 1.68 - \text{compression} - 1.45 \approx 0.16 \dots 0.06 \text{ mm (depending from pressure range)}$$

Use of the O-ring for face sealing

It's also possible to use O-ring for face sealing

The O-ring compression after tightening the sensor has to be about 20% of its cross-section.

However, recommendation from the O-ring suppliers in terms of compression and compatible media take precedence and must be respected at all time

The flush diaphragm of the sensors or the lower part of the monolithic sensors body **must not** be in contact with the housing.

Always keep a minimum distance of 0.05-0.10 mm considering the gasket already compressed. (See the highlighted dimensions in the image on the right).

