

Signal Conditioning for Monolithic and Flush Piezoresistive Pressure Sensors

Metallux SA in Mendrisio presents a new development to enlarge the Piezoresistive Pressure sensor program. The monolithic and flush pressure sensors are now available with on-board signal conditioning. This allows higher integration for custom applications together with the already well known advantages and characteristics of the ceramic pressure sensors.



▲ Fig. 1: Pressure sensor ME771

CERAMIC PRESSURE SENSORS					
ME501/ME505 0,5 .. 600 [Bar] Rel / Abs / S gauge			ME662 2 .. 400 [Bar] Relative		
ME770 0,5 .. 4,5 Vdc	ME771 0 .. 10 Vdc	ME772 4 .. 20 mA	ME750 0,5 .. 4,5 Vdc	ME751 0 .. 10 Vdc	ME752 4 .. 20 mA

▲ Fig. 2: Pressure sensor series

Sensor Root

The new family's root is the world famous flush ME501/505 and monolithic ME662 series. The sensor's characteristics have been optimized. The screen print layout now perfectly fits the additional signal conditioning. Trimming is now performed with a direct conductor cutout, no longer on the resistors. Using the flush type, the assembling and bonding process has been reviewed and optimized. The ME75x and ME77x sensor series are available as relative and absolute. The signal conditioning is performed on a PCB through 4 lead frames soldered to the sensor element. The pressure and temperature calibration is done electronically with the asic on-board. The new method provides greater precision and life stability.

Sensor Series

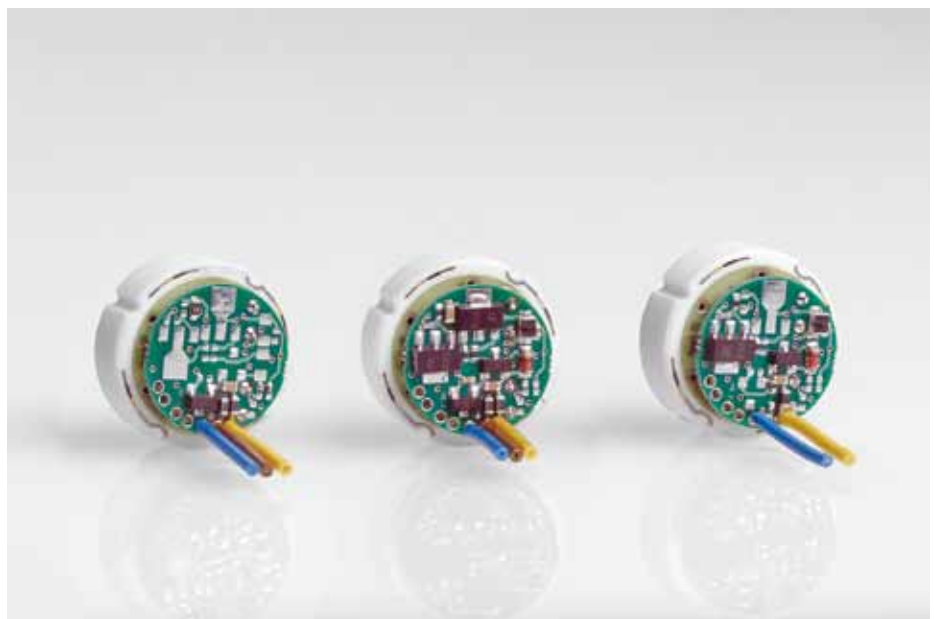
The ME77x (see fig. 2 and 3) has the flush type ME501/505 as its base and is available as relative, absolute and sealed gauge. The ME77x (see fig. 2 and 4) is only based on the relative type ME662.

Both series are available in three different Output-signal configurations.

- Voltage Output (3-wires)
0,5..4,5 V_{dc} Analog Output ratiometric
0..10 V_{dc} Analog Output

- Current Output (2-wires)
4..20 mA Analog Output

All the electronics are EMI tested and comply with EN61000-4-6, out of the ratiometric configuration offers a polarity check and overvoltage protection.



▲ Fig. 3: Pressure sensor ME770-771-772



▲ Fig. 4: Pressure sensor ME750-751-752

Sensor Benefits

- Life stability $\leq 0.2\%$ FS / year
- Precision $\leq 1\%$ FS
- Temperature compensation
- EMI-compatibility (Steel-housing)
- Aggressive medium capability
- Self check
- Custom-calibration
- High linearity and low hysteresis value

► INFO

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