



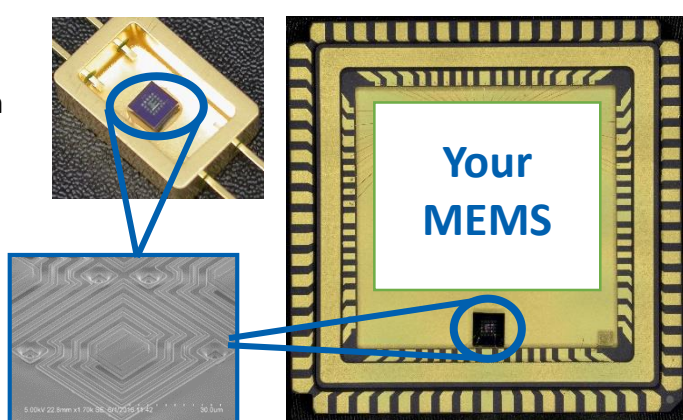
MEMS-PIRANI

Pressure microsensor and control software with improved reading unit

The INO MEMS-Pirani sensor uses a technology derived from the advanced INO uncooled microbolometer developed for IR imaging. INO's patented measurement method is embedded in a commercially available software. Our improved reading unit includes the software and a Voltage Bias source, all in an integrated design.

FEATURES AND BENEFITS

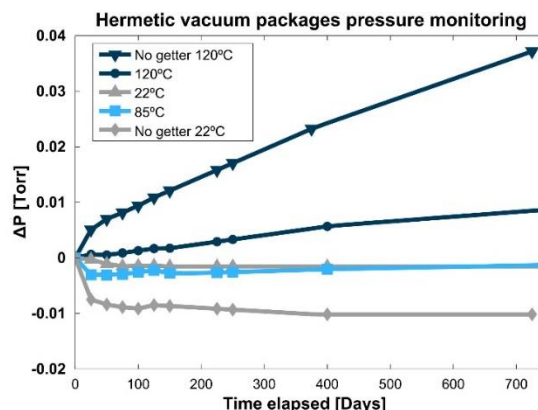
- Extended measuring range from 1×10^{-3} Torr to 1 atm
- Ultra-compact design: easy integration in packages
- Low ambient temperature sensitivity
- User-friendly software for direct pressure measurement
- Quick hermeticity test



KEY APPLICATIONS

The MEMS-Pirani has proven an invaluable tool in vacuum packaging process development and performance assessment. This internal cavity pressure measurement over time is a non-destructive method with leak rate detection limit lower than conventional helium tests.

- Pressure monitoring in hermetic vacuum packages
- Reliability testing and accelerated life testing
- General vacuum control
- Vacuum pressure measurement in semiconductor and coating industries



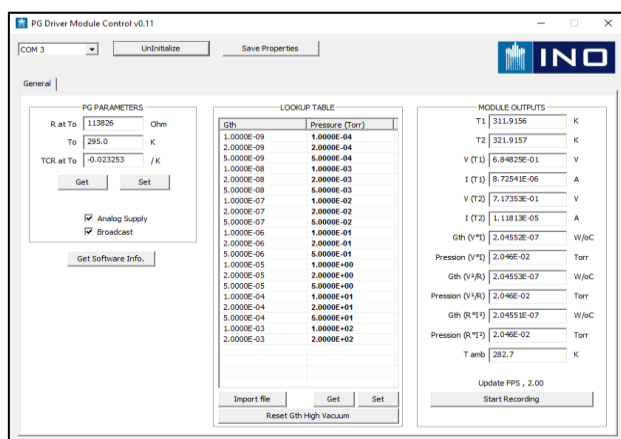


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SOFTWARE AND READING UNIT

- **Reading speed:** 0.25 to >2 seconds
- **Repeatability:** 1.06×10^{-11} (0.5 sec)
- **Repeatability:** 0.56×10^{-11} (1.0 sec)
- **Autonomous, plug and play, logarithmic analog output**
- **250 cc size** (COTS, could be 160 cc with current PCB)
- Simple USB connection to computer or +5V supply



SPECIFICATIONS*

SENSOR TYPE	MEMS-Pirani
MEASUREMENT RANGE	<1 X 10 ⁻³ Torr to 1 atm
ACCURACY (typical)	± 5% of reading from 3 mTorr to 10 mTorr ± 2% of reading from 10 mTorr to 760 Torr (10 mTorr to 10 Torr, TRL-06 unit)
REPEATABILITY (typical)	± 2 X 10 ⁻⁴ Torr or ± 1.5% of reading from 1 mTorr to 760 Torr
CALIBRATION STABILITY WITH TEMPERATURE	± 5 X 10 ⁻⁵ Torr/°C or ± 0.7%/°C from 5 mTorr to 40 Torr (5 mTorr to 10 Torr, TRL-06 unit)
BAKEOUT TEMPERATURE	300°C (572°F) maximum
RESPONSE TIME	< 100 ms
CHIP SIZE (typical)	< 2 mm x 2 mm

*All calibrations were made using air as a calibration gas.
Note: All specifications are subject to change without notice.