

# MEMS-PIRANI

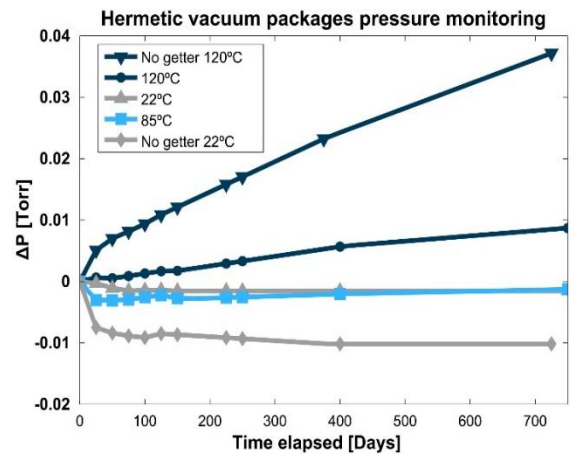
## PRESSURE MICROSENSOR AND CONTROL SOFTWARE WITH IMPROVED READING UNIT

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.

### APPLICATIONS

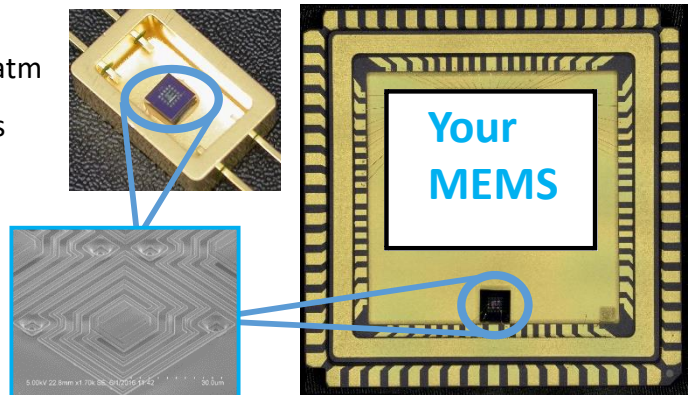
The MEMS-Pirani has proven an invaluable tool in vacuum packaging process development and performance assessment. This internal cavity pressure measurement over time is a non-destructive method with leak rate detection limit lower than conventional helium tests.

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



### FEATURES AND BENEFITS

- Extended measuring range from  $1 \times 10^{-3}$  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



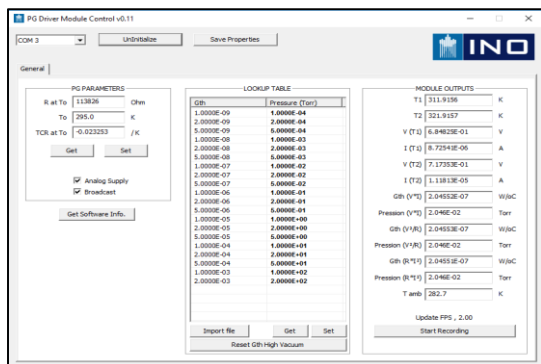


# MEMS-PIRANI

PRESSURE MICROSENSOR AND CONTROL SOFTWARE WITH IMPROVED READING UNIT

## SOFTWARE AND READING UNIT

- **Reading speed:** 0.25 to >2 seconds
- **Repeatability:**  $1.06 \times 10^{-11}$  (0.5 sec)
- **Repeatability:**  $0.56 \times 10^{-11}$  (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\*

<b>SENSOR TYPE</b>	MEMS-Pirani
<b>MEASUREMENT RANGE</b>	<math>1 \times 10^{-3}</math> Torr to 1 atm
<b>ACCURACY (typical)</b>	$\pm 5\%$ of reading from 3 mTorr to 10 mTorr $\pm 2\%$ of reading from 10 mTorr to 760 Torr (10 mTorr to 10 Torr, TRL-06 unit)
<b>REPEATABILITY (typical)</b>	$\pm 2 \times 10^{-4}$ Torr or $\pm 1.5\%$ of reading from 1 mTorr to 760 Torr
<b>CALIBRATION STABILITY WITH TEMPERATURE</b>	$\pm 5 \times 10^{-5}$ Torr/ $^{\circ}$ C or $\pm 0.7\%/^{\circ}$ C from 5 mTorr to 40 Torr (5 mTorr to 10 Torr, TRL-06 unit)
<b>BAKEOUT TEMPERATURE</b>	300 $^{\circ}$ C (572 $^{\circ}$ F) maximum
<b>RESPONSE TIME</b>	< 100 ms
<b>CHIP SIZE (typical)</b>	< 2 mm x 2 mm

\*All calibrations were made using air as a calibration gas.

Note: All specifications are subject to change without notice

COMM-17012