

Microsense II - 5810

Non-Contact Capacitance Gauging Module for High Dynamic Applications



Features

- Non-contact capacitive displacement measurements and sensing
- Nanometer resolution at high bandwidths
- 100 kHz bandwidth
- Selectable filters for maximum resolution
- External low noise power supply
- Industry standard analog output

Designed for High Dynamic Displacement Gauging and Sensing Applications

- Non-contact displacement measurements
- Easy to integrate into OEM test and measurement systems
- High performance
- Designed for adaptability to many applications
- Single analog output
- Downloadable calibrations
- Custom sensors readily available
- High / Low limit outputs

Laser Calibration

High precision individual unit calibration at factory using ADE developed laser interferometry system. Calibration traceable to NIST. Performance graph included.

Applications

Ultra-high RPM mechanism analysis

- Hard Disk Drive motors
- Rotary spindle applications
- Machine tool performance analysis
- 100K+ RPM applications
- High speed air bearings

High volume OEM gauging applications

Precision dimensional gauging

High-frequency, high-resolution slide and spindle runout analysis

High-resolution vibration analysis

Fast Tool Servo-loop positioning system feedback

Predictive maintenance transducers

Operating Ranges

Operating range is preset at factory for selected probe. Range may be additionally amplified by means of internal jumpers.

Custom Configurations

Available for multiple unit orders. Contact factory.

- ▲ Non-contact capacitive displacement measurements
- ▲ Nanometer resolution at 100 kHz bandwidth
- ▲ Industry Standard output
- ▲ Selectable filters for maximum resolution
- ▲ Analog meter for easy set up
- ▲ Uses Standard 5000 Series Probes



Performance

Measurement Range

$\pm 25 \mu\text{m}$ to $\pm 1000 \mu\text{m}$ full scale, depending on probe selection

Measurement Resolution

Typical resolution is better than 2 nm (r.m.s.) @ 1 kHz.

Typical Resolutions (nm, r.m.s)

Sensor ϕ (mm)	Range ($\pm \mu\text{m}$)	Bandwidth (kHz)	Resolution (nm)
0.5	25	1	0.5
0.5	50	20	2.2
2.0	125	1	1.7
2.0	250	100	22.3
5.0	250	5	2.9
5.0	500	1	5.7

Linearity

Typically 0.25% over full scale range, depending on probe model and operating range.

Stability

Typically better than 200 ppm per $^{\circ}\text{C}$ over temperature range of 15°C to 35°C .

Bandwidth

Jumper selectable from:
1 kHz, 5 kHz, 20 kHz, 100 kHz

Inputs / Outputs

Probe Input

Single, accepts Series 5000 probe family

Analog Output

Single & differential, preset ± 10 volts for full scale range. Jumpers set output scaling and bipolar/unipolar output.

Limits

User adjustable digital outputs for detecting overrange and measurement limits



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Adjustments / Indicators

Front Panel Adjustments

Calibration adjustment for scale factor
Offset adjustment for zero setting
Limit settings

Front Panel LED Indicators

+ Limit, - Limit

Physical Dimensions

18 cm- L x 11 cm-W x 4 cm-H
(7.0" x 4.25" x 1.5")

Weight

1 kg (2.2 lbs)

Operating Environment

Temperature

5°C to 50°C (41°F to 122°F)

Humidity

0 to 95% RH, non-condensing

Power Requirements

90-240 VAC

Standard ADE Universal Low Noise Power Supply with IEC Connector included with Module