+33 (0)1 46 91 93 30 Capteurs et Systèmes de mesure
59, rue Émile Deschanel - 92400 COURBEVOIE - France - Fax : 33 (0)1 46 91 93 39 - contact@pm-instrumentation.com

# Uniaxial Force Balanced Inclinometer

Model IMU 110 XX

## PROFILE

Sensor Technology s.r.l. announces the first sensor belonging to the family of MEMS force balance servo inclinometers .The sensor utilises a silicon micro-machined variable capacitance sensing element with the lowest noise and highest performance available on the market . The custom design results in a very low noise sensor with exceptional stability and robustness . The high immunity to thermal transients and transverse acceleration and very high resolution make it an ideal candidate to replace traditional servo-inclinometers in many applications.

**PERFORMANCES**

- Measuring ranges ± 5° to ± 90 °
- Voltage supply 7 to 15 VDC
- Optional temperature sensor
- New CMOS electronics
- Very long life
- 6000 G shock survival
- No mechanical moving part
- MEMS Sensor
- Low weighs and dimensions
- Low current consumption


**MAIN FEATURES**

- Aluminium housing
- Resolution 0.0001 °( frequency dep)
- Current Consumption < 10mA
- Range ± 5 ° a ± 90 °
- Connector 4 pin LEMO or equivalent
- Mounting hole diameter 5mm

**APPLICATIONS**

- **Platform leveling**
- **Measure pitch and roll**
- **Automatic levelling systems**
- **Wheel alignment**
- **Robotics**
- **Construction equipment**
- **Antenna positioning**
- **Machine tools and heavy machinery**

# TECHNICAL SPECIFICATIONS

| Model IMU 110 XX | | |
|---|---|---|
| Measuring Ranges | ° | +/- 5 , ± 10 , ± 20 , ± 30 , ± 90 |
| Voltage Supply | Volt | ± 6 to ± 15 |
| Y-X out zero | Volt | 0 +/- 100mV |
| Output Voltage | mV | ± 5 Volt |
| Linearity | % FS | < 0,5 % |
| Resolution | ° | 0.00005 ° ( 0….10 HZ ) |
| Hysteresis | % FS | < 0,01 |
| Working Temperature compensated | ° C | -40. + 85 |
| Storage temperature | ° C | -55 + 85 |
| Frequency response | sec | Factory calibrated ( 1 HZ tipical ) |
| Temperature Zero Drift T 0- 60 | µg/ °C | < 100 |
| Temperature Sensitivity drift T 0 -60 | ppm / °C | < 100 |
| Cross axis error | % FS | < 1% at max tilt |
| Current consumption | mA | < 10 mA |
| Protection | | IP65 |
| Connector | | 4 Pin LEMO or equivalent |
| Materials | | Anodised aluminium housing |

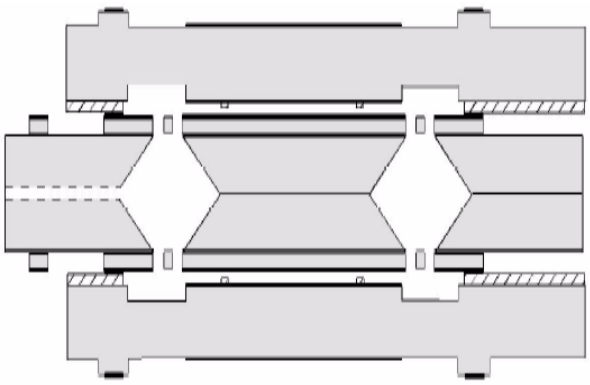
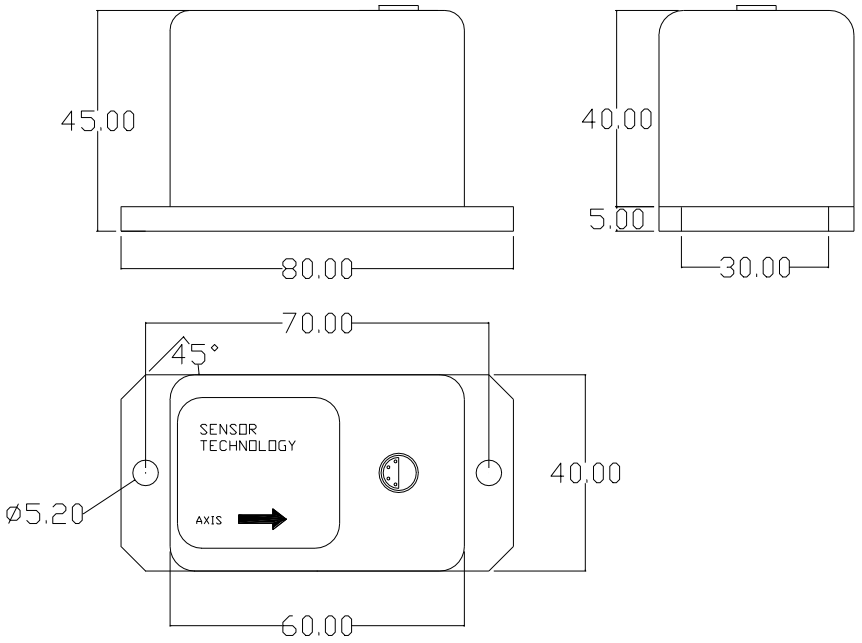


FIG. 1 - SENSOR CROSS -SECTION SHOWING THE FOUR-LAYER CONSTRUCTION

## MECHANICAL DRAWING




## SELECTION GUIDE

| | 5 Degree | 10 Degree | 20 Degree | 30 Degree | 90 Degree |
|---|---|---|---|---|---|
| **IMU-110-** | **05** | **10** | **20** | **30** | **90** |