

Sensorex®

Single axis servo-inclinometer/ accelerometer

SX41200



The Meggitt (Sensorex) SX41200 is a single axis closed-loop servo-inclinometer/ accelerometer, designed to provide high reliability tilt or acceleration measurements within extreme environments, and particularly those characterized by high shock and vibration inputs.

The highly rugged design of the SX41200 incorporates a galvanometric pendulum sensing element with hydro-mechanical damping, combined with an optical position sensor, with voltage or current output, proportional to the sine of the angle of tilt.

When the instrument is submitted to a certain angle α , the galvanometric pendulum tends to move in the direction of the inclination. Its position is detected and converted into a current which feeds back to the galvanometer in order to bring it back to its initial position.

This current, proportional to the measured gravity, passes through an accuracy resistor and provides the output voltage. An output amplifier gives low output impedance.

Characteristics

- High performances
- Excellent temperature stability
- Very high resistance to shocks and vibrations (accreditation GAM T13 and EN 50155)
- Rugged, watertight IP65 sealed housing for severe environments
- Conform to European standard of network

Applications

- Industry :
 - Alignment of structures (rolling mills, alternators...)
 - Safety purpose (cranes, offshore platforms...)
 - Levelling (roads, railway tracks...)
 - Angular measurements
- Defense :
 - Positioning of shooting platforms, radar antennas...
 - Detection of ship roll and pitch
- Railway:
 - Acceleration measurements (ATP, ATC)

Meggitt Sensing Systems

Our measurement product competencies:
 LVDTs | Inertial systems | Inclinometers | Accelerometers | IMU |
 MEMS sensors | Servo-inclinometer | Conditioners

MEGGITT
 smart engineering for
 extreme environments

Sensorex®

Single axis servo-inclinometer/ accelerometer SX41200

Specifications

Outputs	±5V or 4-20 mA (minimum power supply 15V, max load 300 Ω)
Power supply	10V to 30V – 35 mA max (4-20 mA version : 55 mA max)
Consumption (except current output)	< 35mA
Bandwidth	From 4Hz to 12Hz according to range
Non linearity	< 0.05% of FS (< 0.02% of FS optional, except for the range ±90°)
Non repeatability & hysteresis	< 0.001% of FS
Cross axis sensitivity	< 0.005 g/g
Bias	< 15 mV (on voltage output models)
Electrical noise	< 2mVrms (0Hz to 1kHz)
Bias thermal drift	0.01% of FS/°C
Sensitivity thermal drift	0.01% of measure/°C
Operating temperature	-40°C to +80°C
Storage temperature	-55°C to +85°C
Network	NF EN 61326 (industry)
Vibrations	5g / 20Hz à 500Hz
Shocks	200g / 6ms
Protection	IP 65

Selection guide

Range	Bandwidth	Reference (current output)	Reference (voltage output)
±3°	4Hz	690041285	690041289
±5.75°	4Hz	690041215	690041219
±14.5°	5Hz	690041225	690041229
±30°	6Hz	690041235	690041239
±45°	8Hz	690041245	690041249
±90°	12Hz	690041255	690041259

Options

Special bandwidth
Special range and output signal
Zero offset (unipolar output)
Linearity < 0.02% of FS (except for range ±90°)

Contact

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