Sherborne Sensors

LSW Series

Weatherproof, Gravity-Referenced Inclinometer

Features

- Stainless steel construction
- Waterproof molded cable system – field replaceable
- High level DC output signal proportional to sine of the angle of tilt
- ±3° to ±90° ranges available
- Extremely rugged, withstands 1500g shock

Applications

Ballast transfer systems	Pipeline levelling
Level control and calibration systems	Large machinery installation
Robotics	Tilt safety systems

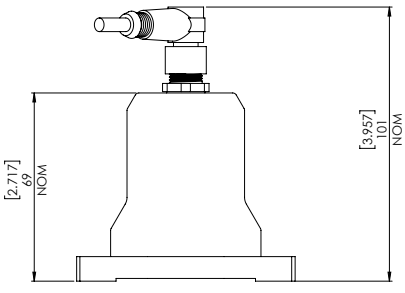
Benefits

- High accuracy
- -18°C to 70°C temp rating
- High reliability

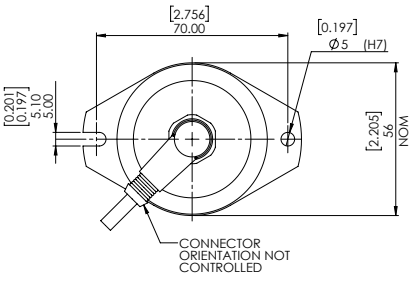
Electrical Connections

Pin 1	+12V to +18V dc
Pin 2	Output
Pin 3	0V
Pin 4	-12V to -18V dc

SIDE VIEW



PLAN VIEW



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Specifications

Specifications by Range @ 20°C		±3°	±14.5°	±30°	±90°
Output Standardisation	% FRO		±1		
Output Impedance	Ω (max)		10		
Output Noise (DC to 10kHz)	Vrms (max)		0.002		
Non-linearity *(see note 2)*	% FRO	0.05	0.02	0.02	0.05
Non-repeatability	% FRO	0.01	0.002	0.001	0.0005
Resolution	arc seconds	0.2	1.0	2.0	4.0
-3 dB Frequency	Hz	15	30	40	55
Sensitive Axis-to-Case Misalignment	deg (max)	±0.15	±0.25	±0.50	±1.0
Cross-axis Sensitivity *(see note 3)*	% FRO (max)		0.2		
Output at Zero Angle *(see note 4)*	mA (nom)		12		
Zero Offset	Volts dc	±0.04	±0.04	±0.02	±0.02
Thermal Zero Shift	%FRO/°C	±0.03	±0.01	±0.005	±0.003
Thermal Sensitivity Shift	%Reading/°C	±0.03	±0.01	±0.006	±0.006

Electrical

Full Range Output (FRO) *(see note 1)*	Volts dc	±5
Excitation Voltage	Volts dc	±12 to ±18
Current Consumption	mA (nom)	±15

Environmental Characteristics

Operating Temperature Range	°C	-18 to 70
Survival Temperature Range	°C	-40 to 70
Constant Acceleration Overload	g	50
Shock Survival		1500g, 0.5 ms, ½ sine
Vibration Endurance		35g RMS, 20 Hz to 2000 Hz sinusoidal

Notes

1. Full Range Output is defined as the full angular excursion from positive to negative, i.e. ±90° = 180°.
2. Non-linearity is determined by the method of least squares.
3. Cross axis sensitivity is the output of the unit when tilted to full range angle in cross axis.
4. Zero offset is specified under static conditions with no vibration inputs.

Model Designation & Ordering Code

L S W - □

- **3** ±3°
- **14.5** ±14.5°
- **30** ±30°
- **90** ±90°

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