T233/T235

DC-Operated 2 axis, Gravity-Referenced Servo Inclinometer

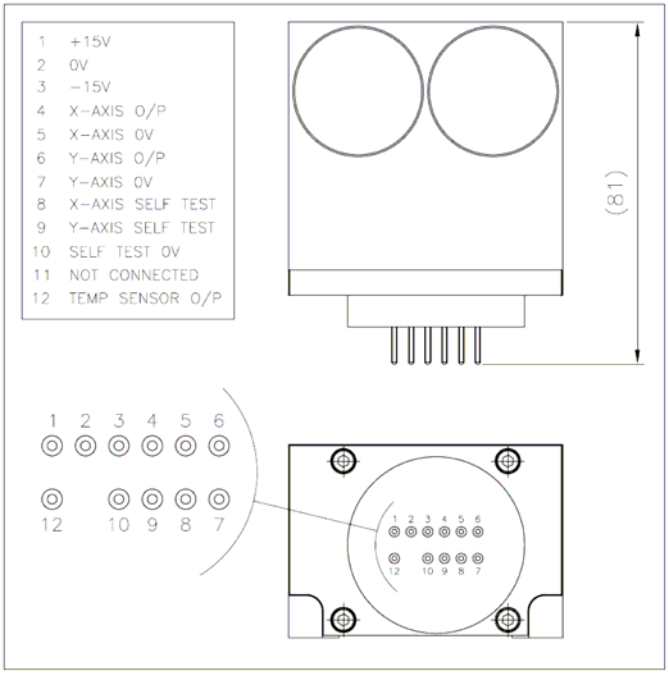
Sherborne Sensors
.... the first choice in precision

Features

- *Compact dual axis (X and Y)*
- *Each axis fully conditioned offering a complete operating system*
- *Ranges ±1° to ±90°*
- *Total electrical isolation between axes*
- *High accuracy specification Input voltage ±15 VDC; output signal ±5 VDC*
- *Self test on both axes*
- *Silicone oil and electrical damping*
- *Temperature Sensor Output (AD592) – T235 only*

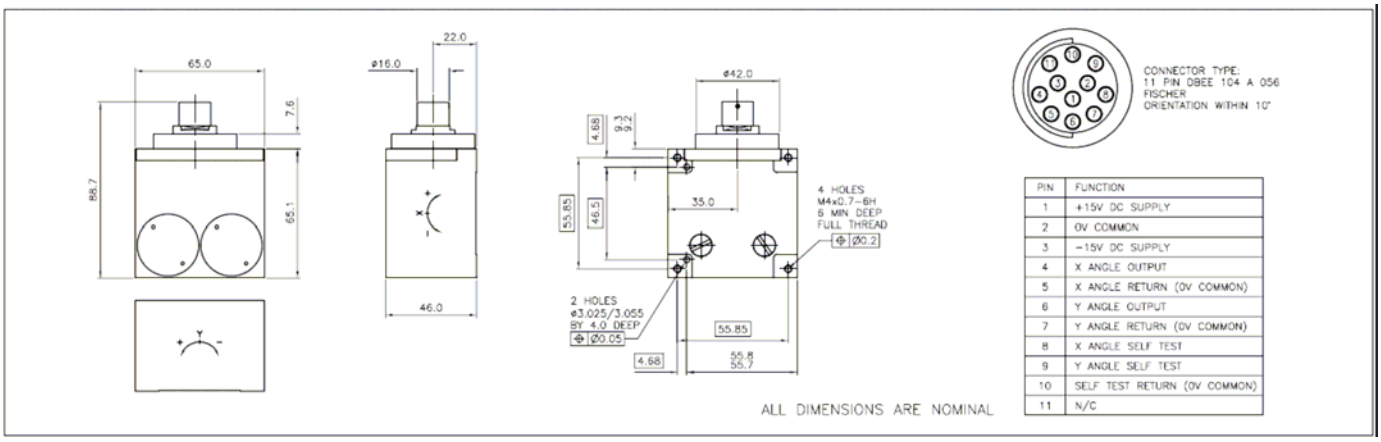
Applications

- *High Accuracy, robust levelling systems*
- *Oil platform levelling*
- *Satellite antenna platform levelling*
- *Any industrial application where 2 axis levelling or monitoring is required*



T233 and T235

The T233 and T235 are high precision 2 axis (X and Y) gravity referenced servo inclinometers suitable for military or industrial applications. Both axes have a similar high specification to the single axis LSO Series. Any alignment problems with single axis units, when used for X and Y measurements, are removed by the precision housing of the T233 Series with the accurately positioned dowel holes.



PIN	FUNCTION
1	+15V DC SUPPLY
2	0V COMMON
3	−15V DC SUPPLY
4	X ANGLE OUTPUT
5	X ANGLE RETURN (0V COMMON)
6	Y ANGLE OUTPUT
7	Y ANGLE RETURN (0V COMMON)
8	X ANGLE SELF TEST
9	Y ANGLE SELF TEST
10	SELF TEST RETURN (0V COMMON)
11	N/C

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BS EN 9001-2008
AS 9100 Rev C

2 YEAR WARRANTY

Sherborne Sensors, a Nova Metrix company

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Environmental Characteristics

Operating Temperature Range		°C	-18 to 70
Survival Temperature Range		°C	-40 to 70
Constant Acceleration Overload		g	50
Shock Survival			1250g, 0.5msec, ½ sine
Vibration Endurance			35g rms, 20 Hz to 2000 Hz sinusoidal
Environmental Sealing		IP65	
EMC Directive	EN 61326: 1998		
EMC Emissions	EN 55022: 1998		30 MHz to 1 GHz
EMC Immunity	EN61000-4-2 1995 inc A1: 1998 & A2: 2001		±4 kV
	EN61000-4-3: 2002		10 V/m
	EN61000-4-4: 2004		± 1 kV
	EN61000-4-6 1996 inc A1: 2001		3 Vrms
	EN61000-4-6: 2007		10 Vrms
	EN61000-4-8: 1994 Incorporating Amendment A1: 2001		30 A/m

Specifications by Range @ 20°C

Range		**±1°**	**±3°**	**±14.5°**	**±30°**	**±90°**
Excitation Voltage	Volts dc			±12 to ±18		
Current Consumption	mA (nom)	±25	±25	±15	±15	±15
Full Range Output (FRO) (see note 1)	Volts dc			±5		
Output Standardisation	% FRO (max)			±1		
Output Impedance	Ohm			<10		
Output Noise (DC to 10kHz)	V rms (max)			0.005		
Non-Linearity (see note 2)	% FRO (max)	0.05	0.05	0.02	0.02	0.05
Non-Repeatability	% FRO (max)	0.04	0.02	0.004	0.002	0.001
Resolution	arc seconds	0.1	0.2	1.0	2.0	4.0
-3 dB Frequency	Hz	10	15	30	40	55
Sensitive Axis-to-Case Misalignment	deg (max)	±0.1	±0.15	±0.25	±0.5	±1.0
Cross-axis sensitivity (see note 3)	% FRO (max)			0.2		
Zero Offset (see note 4)	Volts dc (max)	±0.05	±0.04	±0.03	±0.02	±0.02
Thermal Zero Shift	%FRO/°C (max)	±0.05	±0.03	±0.01	±0.005	±0.003
Thermal Sensitivity Shift	%Reading/°C (max)	±0.04	±0.03	±0.01	±0.006	±0.006
Temperature Sensor Output	µA/°K			1		

Notes

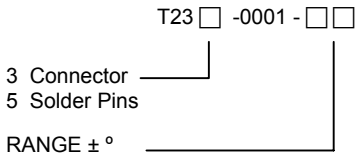
1. Full Range Output is defined as the full angular excursion from positive to negative, i.e. ±90° =180°
2. Non-linearity is determined by the method of least squares
3. Cross-axis Sensitivity is the output of unit when tilted to full range output angle in cross axis
4. Zero offset is specified under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

How to Order

Specify model type with appropriate range e.g. T233-0001-30 denotes a 2-Axis Inclinometer with angular range ±30°, fitted with 12-way electrical connector

Please specify Mating Connector 3CON-037F if required.

DESIGNATION & ORDERING CODE



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