AIT230

Dual Axis, gravity-referenced Servo Inclinometer

- **Ranges ±1° to ±90°**
- **Non-Linearity 0.02 % to 0.05 % reading, depending on Range**
- **Input Voltage ±12 to ±18 VDC**
- **Output Signal ±5 VDC**

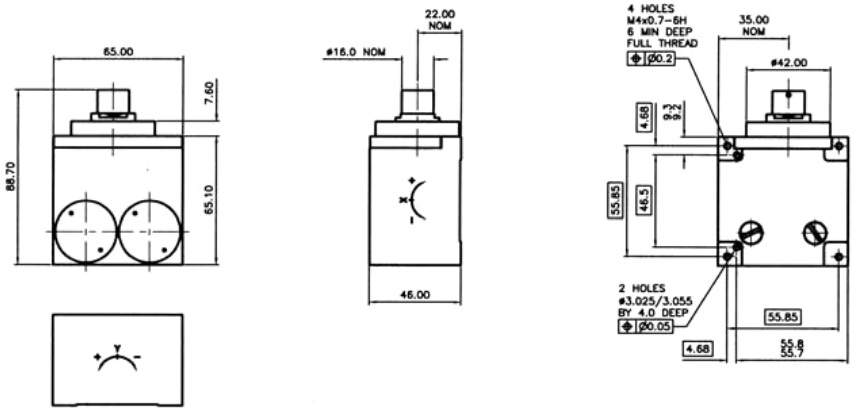
The AIT233 and AIT235 are high precision 2 axis (x and y) gravity referenced servo inclinometers suitable for both military and industrial applications. Both axes have a similar high specification to the single axis AILSO Series. Any alignment problems with single axis units, when used for x and y measurements, are removed by the precision housing of the AIT233 Series with the accurately positioned dowel holes.

Applications:

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

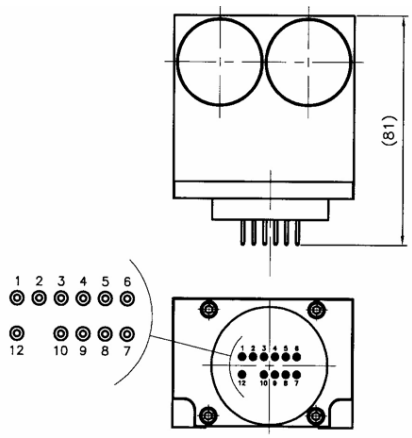
Dimensions and Electrical Connections

AIT233



Connector Type:
11 Pin DBEE 104 A 056
Fischer
Orientation within 10°

AIT235



Pin	AIT235 (Solder Pins)
1	+12 to +18 VDC
2	0 V
3	-12 to -18 VDC
4	X-Axis O/P
5	X-Axis 0 V
6	Y-Axis O/P
7	Y-Axis 0 V
8	X-Axis Self Test
9	Y-Axis Self Test
10	Self Test 0 V
11	not connected
12	Temp Sensor O/P

Pin	AIT233 (Connector)
1	+12 to +18 VDC supply
2	0 V Common
3	-12 to -18 VDC supply
4	X Angle Output
5	X Angle Return (0 V Common)
6	Y Angle Output
7	Y Angle Return (0 V Common)
8	X Angle Self Test
9	Y Angle Self Test
10	Self Test Return (0 V Common)
11	not connected

All dimensions are approx. values. Unless otherwise specified dimensions are in mm.
These drawings are for information only and not intended for construction purpose. Please ask for detailed drawings.

ALTHEN GmbH Mess- und Sensortechnik
Frankfurter Str. 150 - 152 ☏ +49 6195 70060 http://www.althensensors.com
65779 Kelkheim / Germany 🖷 +49 6195 700666 info@althen.de

ALTHEN MESS- UND SENSORTECHNIK

Specification

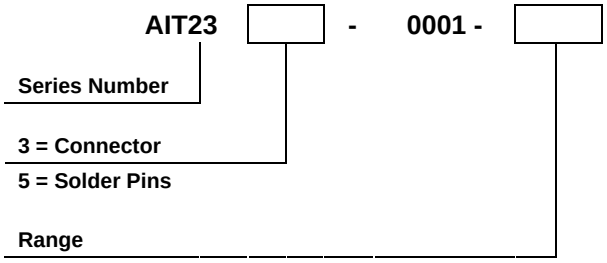
Operating Temperature Range	-18 °C to +70 °C
Survival Temperature Range	-40 °C to +70 °C
Constant Acceleration Overload	50 g
Shock Survival	1250 g, 0.5 ms, ½ sine
Vibration Endurance	35 g rms, 20 Hz to 2000 Hz sinusoidal
Environmental Sealing	IP65

Specification by Range @ 20 °C

Range		**±1°**	**±3°**	**±14.5°**	**±30°**	**±90°**
Excitation Voltage	VDC			±12 to ±18		
Current Consumption	mA (nom)	±25	±25	±15	±15	±15
Full Range Output (FRO) (see note 1)	VDC			±5		
Output Standardisation	% FRO (max)			±1		
Output Impedance	Ω			<10		
Output Noise	V rms (max)			0.005		
Non-Linearity (see note 2)	% reading (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)	VDC (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	% reading/°C (max)	±0.04	±0.03	±0.01	±0.006	±0.006

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 angle in cross-axis.
4. Zero offset is specified under static conditions with no vibration inputs

Ordering Information



Specify model type with appropriate range e.g. **AIT233-0001-30** denotes a Dual Axis Inclinometer of range ±30°, fitted with 12-way recepticle.

Our policy is to improve specification of our products continuously, so technical and production details can be changed without any notice.

ALTHEN GmbH Mess- und Sensortechnik
Frankfurter Str. 150 - 152 ☏ +49 6195 70060 http://www.althensensors.com
65779 Kelkheim / Germany 🖷 +49 6195 700666 info@althen.de

ALTHEN MESS- UND SENSORTECHNIK