

T820 Series

Gravity-Referenced Dual Axis Inclinometer



Introduction

The T820 is a high precision, gravity referenced, dual axis inclinometer. The diameter of just 23mm is ideal for borehole applications or other space restricted areas. The unit can withstand high levels of mechanical shock without any degradation in specification and is sealed against the ingress of contaminants.

Applications

- Bore-hole logging
- Seismic studies
- Measurements in confined areas

Features

- 23mm diameter cylindrical housing with precision angular alignment feature
- Ranges $\pm 14.5^\circ$ to $\pm 60^\circ$
- Input voltage options: bi-polar : ± 12 to ± 18 Vdc or single ended : 9 to 18Vdc
- Output: ± 5 Vdc (bi-polar input) or 0.5 to 4.5Vdc (single ended input)
- Solder pin terminations or connector within diameter of housing
- Stainless Steel Construction, reduces angular errors due to flexibility of sensor
- Sealing to IP67 / NEMA 6

Specifications

Range		±14.5°	±30°	±60°
Excitation Voltage	Volts dc	±12 to ±18 (bi-polar supply) 9 to 18 (single ended supply)		
Current Consumption	mA (max)	30		
Full Range Output (FRO) (see note 1)	Volts dc	± 5 ±1% (bi-polar supply) 0.5 to 4.5 ±1% (single ended supply)		
Output Impedance	Ohm	<10		
Non-Linearity (see note 2)	% FRO (max)	0.07	0.07	0.12
Non-Repeatability	% FRO (max)	0.02 (bi-polar supply option) 0.03 (single ended supply option)		
Resolution	arc seconds	1	2	4
3 dB Frequency	Hz	5		
Sensitive Axis to Case Misalignment	deg (max)	± 0.25	± 0.5	± 1.0
Cross axis sensitivity (see note 3)	% FRO (max)	± 0.2		
Zero Offset	mV (max)	± 20		
Thermal Zero Shift	%FRO/°C (max) (%FRO/°F (max))	0.010 (0.006)	0.005 (0.003)	0.005 (0.003)
Thermal Sensitivity Shift	%Reading/°C (max) (%Reading/°F (max))	0.010 (0.006)	0.006 (0.004)	0.006 (0.004)

Environmental Specifications

Operating Temperature Range	°C (°F)	-18 to 70 (-0.4 to 158)
Survival Temperature Range	°C (°F)	-40 to 70 (-40 to 158)
Constant Acceleration Overload	g	50
Shock Survival		1000g, 0.5msec, ½ sine
Vibration Endurance		20g rms, 20 Hz to 2000 Hz sinusoidal
Environmental Sealing		IP67 / NEMA6

Notes

1. Full Range Output is defined as the full angular excursion from positive to negative, i.e. ±30° =60°.
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.

How to order

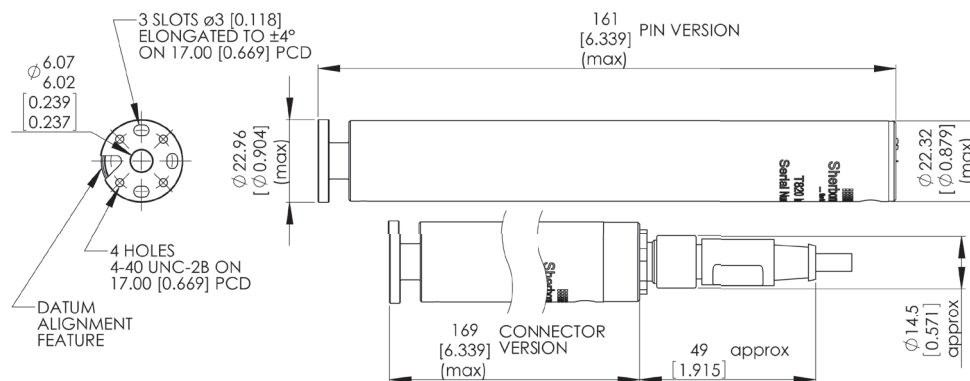
Specify model type with appropriate range e.g.

T825-0011-30 denotes solder pins, 9 to 18Vdc Supply, Range ±30°

Designation & ordering code

Series Number	Connector	Supply	Range	Pin Version
T 8 2	□	- 0 0	□	1 - □
0 - ±12 to ±18Vdc I/P				
1 - +9 to +18Vdc I/P				
14.5 - ±14.5°				
30 - ±30°				
60 - ±60°				

Dimensions in mm [inches]



WIRING DETAILS

T825 Solder Pin

- 1 = -ve Supply (bi-polar supply only)
- 2 = 0V Common
- 3 = X Signal Output
- 4 = Y Signal Output
- 5 = +ve Supply
- 6 = Chassis

T823 Connector/Cable

- Brown -ve Supply
- White 0V Common
- Blue X Signal Output
- Black Y Signal Output
- Grey +ve Supply