

# Inclinometers

## SI-701FND, SI-701FNE

The Columbia Models SI-701FND is a premium performance force balance inclinometer designed to yield exceptional performance and long life under extreme shock and vibration conditions. A fluid-damped sensor system makes this sensor virtually uninfluenced by shock and vibration encountered in the most severe applications.

The Models SI-701FND inclinometer is capable of producing accurate tilt data in the presence of vibration, which would saturate most other accelerometer-based sensor designs. The closed loop servo system maintains scale factor and zero bias stability over the entire operating temperature range.

- \* High Performance
- \* Extremely Rugged
- \* +/-15 VDC Operation



*Consult the factory for customized versions of these sensors.*

### Specifications

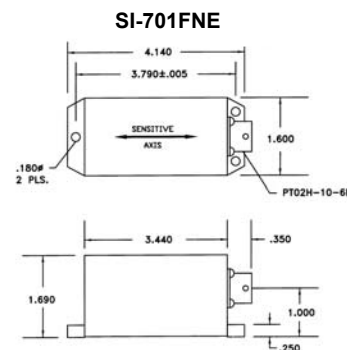
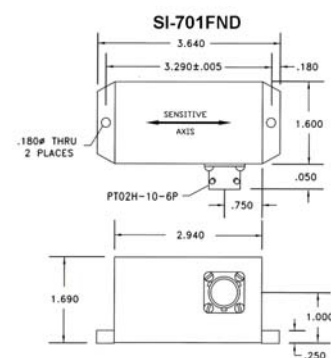
Operational	SI-701FND
Ranges Available	$\pm 1^\circ$ , $\pm 5^\circ$ , $\pm 15^\circ$ , $\pm 30^\circ$ , $\pm 45^\circ$ , $\pm 90^\circ$
Output Voltage	$\pm 5$ VDC at Rated Range
Recommended Load	100K Ohms or Greater
Excitation	$\pm 15$ VDC 20 mA Max.
Output Impedance	<5000 Ohms
Output Noise	<2 mV RMS
Non-Linearity	$\pm 0.05\%$
Non-Repeatability	<0.5 Min. of Arc
Scale Factor Tolerance	$\pm 1\%$
Scale Factor Temp Coefficient	$\pm 0.02\%$ F.R.
Zero Bias	1 Min. of Arc or 0.01 Volts (Greater Value Applies)
Zero Bias Temp. Coefficient	0.05 Min. of Arc / Deg. C
Resolution	0.005% F.R.
Bandwidth	0 To 3 Hz (-18dB / Octave Rolloff)
Orthogonal Sensitivity	0.001 G/G Exclusive of Sensitive Axis Alignment
Case Alignment	$\pm 0.1^\circ$
Vibration Rectification	50 $\mu\text{G}/\text{G}^2$

### Environmental

Temperature, Operating	-20 To +75 Deg C
Temperature, Storage	-40 To +85 Deg C
Random Vibration (2 To 2,000 Hz)	35 G RMS
Constant Vibration	50 G RMS
Shock Survival	1500 G, 1 mSec
Humidity	95% R.H.

### Physical

Weight	12 Oz (340.2 Gm)
Size (Including Connector)	3.64 In L x 2.10 In W x 1.69 In H (92.5 cm L x 53.4 cm W x 49.0 cm H)
Case Material	Aluminum
Sealing	Environmental
Connector	PT02H-10-6P (Side)
Mating Connector (Optional)	PT06A-10-6S(SR)



### I/O Connector Pin Functions:

Pin	Function	Pin	Function
A	+15 VDC	D	Eo
B	Ground	E	Spare
C	-15 VDC	F	Spare

### Ordering Information:

SI-701FND (+/- X Deg) M

SI-701FNE (+/- X Deg) M

Standard Inclinometer

Range +/- X Deg (Required)

Optional Mating Connector



Columbia Research Laboratories, Inc. 1925 Mac Dade Blvd. Woodlyn, PA 19094 USA

Phone: 1.800.813.8471 / Fax: 610.872.3882 / email: sales@columbiaresearchlab.com