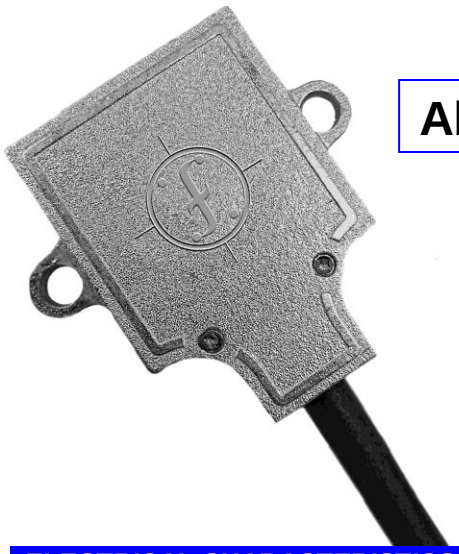

0750 Series

Absolute Stand Alone Inclinometer

0750 Dual axis RS-485 output

FEATURES

√ Silicon 3D MEMS sensor
√ 0.1° Accuracy
√ RS-485 serial interface
√ 11 bit resolution
√ Operating temperature range –40…+85°C
√ Inclination and temperature output
√ Long term stability < 0.02°
√ Shock resistance >20,000g
√ 30 x30x13mm size, single or dual axis
\ Horizontal or vertical mounting

BENEFITS

√ Excellent long term stability
√ Sensing element controlled frequency response
√ Outstanding shock durability
√ Harsh environment robustness

APPLICATIONS

√ Platform tilt measurement
√ Equipment and instrument condition monitoring
√ Inclination based position measurement
√ Rotational orientation measurement (dual axis)

For Customized product please contact The Fredericks Company

ELECTRICAL CHARACTERISTICS

Parameter	Condition	Min.	Typ	Max.	Units
Supply voltage		7	16	35	V
Current consumption			20		mA
Output	RS-485 half-duplex				kΩ
Data transfer speed	11 bit word		10		Hz

PERFORMANCE CHARACTERISTICS

Parameter	Condition	0750-9002-99	0750-3002-99	Units
Measuring range [1]		+/-90	+/-30	°
Measuring axis	(See directions)	X-Y	X-Y	
Offset [2, 5]	Output at 0°, HEX 03FF	FS/2	FS/2	
Offset temperature error	0…to 70°C	+/-0.2	+/-0.2	°
	-25…to 85°C	+/-0.6	+/-0.6	°
Resolution [5]	@0° (offset position)	0.07	0.03	°/LSB
		11	11	Bit/FS
Sensitivity	Sine of inclination	90	30	°/FS
Sensitivity temperature error [5]	0…to 70°C	+/-0.2	+/-0.2	%
	-25…to 85°C	+/-0.5	+/-0.5	%
Nonlinearity (Accuracy)	Sinus output	+/-0.1	+/- 0.1	°
Frequency response –3dB [3]		18	18	Hz
Cross axis sensitivity [4]		4	4	%

Typical values @ ambient temperature unless otherwise specified.

Note1. The measurement is limited by the sensitivity and offset.
Note2. Offset specified as Output @ 0°.
Note 3. The frequency response is determined by the sensing element's internal gas dampening
The output has true DC (OHz) response.
Note 4. The cross-axis sensitivity determines how much inclination, perpendicular to the measuring axis, couples to the output
Note 5. Mounting position should be calibrated. See measuring positions

MEASURING POSITIONS

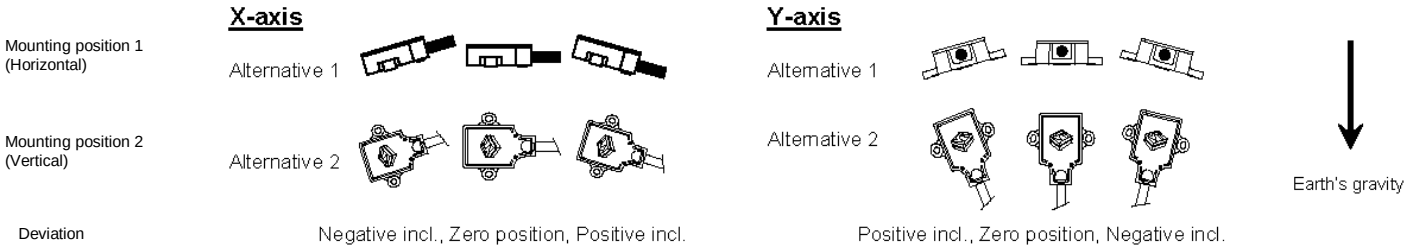

Figure 1. Positions

Notes:
» It is important that the part is parallel to the mounting plane, and that the output equals zero value when sensor is in the zero position
» Zero position: Please note the picture above, which provides information on how the output of the accelerometer behaves in different circumstances when assembled. Please also note that you can rotate the part around the measuring plane for optimum mounting location

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Absolute Stand Alone Inclinometer

ELECTRICAL CONNECTIONS

Wire color	Name	Function
Yellow	A	Bus connection
White	B	Bus connection
Green		NC
Blue	GND	Ground
Red	V_{cc}	Power supply

SOFTWARE LEVELS

MECHANICAL SPECIFICATIONS

Cable length:	30 cm
Total weight:	Approx. 60 grams (excluding connector)
Protection class:	IP66 (excluding connector)
Dimensions:	60mm x 40mm x 15mm

MOUNTING

The sensor module is to be mounted on a flat smooth surface with 2 screws

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