

## Dual Axis RS-485 Inclinometer

Part Number: 0729-1760-99



Operating Specifications <sup>1</sup>	
Communications	RS-485
Supply Voltage	+7 to +16 V dc
Supply Current	20 mA @ 7 V dc
Operating range	±60°
Linear Range	±25°
Axes of Measurement	2
Linearity (% of ±60°)	≤ 7.0%
Linearity (% of ±25°)	≤ 2.0%
Symmetry (±60°)	≤3°
Symmetry (±25°)	≤1°
Repeatability	≤0.1°
Resolution	≤0.003°
Null Offset	≤5°
Cross-Axis Sensitivity	≤ 0.025° per degree
Long Term Stability/Drift	≤0.1°
Null Temperature Offset	0.006° per °C
Range Temperature Offset	0.1% per °C
Operating Temperature	-40° to +70° C
Storage Temperature	-40° to +70° C
Frequency Response	≤100 ms
Settling Time	≤500 ms

Physical Characteristics	
Housing	Plastic <sup>2</sup>
Electrical Connections	12" cable with 24 gauge wire
Weight	50 grams
Length	56.30 mm (2.217")
Width	40.00 mm (1.575")
Height	20.00 mm (0.335")
Hole Center	28.50 mm (0.787")

RS-485 Commands <sup>3</sup>	
*9911#	X Axis Output (0 to 65535)
*9921#	Y Axis Output (0 to 65535)
*9941#	Temperature output (0 to 1023)
*9980#	Read product information
*9981Axx#	Change address (xx = 01 to 99)
*9982Sxxxxxxxxxxxx#	Enter user information
*9982D#	Read user information
*9988Rx#	Baud rate (x = baud rate code) <sup>3</sup>
*9989B#	Reset to factory defaults

Wiring	
Red	Supply voltage
Black & Yellow	Ground
Blue	RS-485 A
Green	RS-485 B

### Certifications and Ratings

- IP66

<sup>1</sup> See The Fredericks Company website for a list of term definitions.

<sup>2</sup> Metal housing available upon request.

<sup>3</sup> See the 0729-1760-99 Instruction Manual for RS-485 command descriptions and setup instructions.

### Description

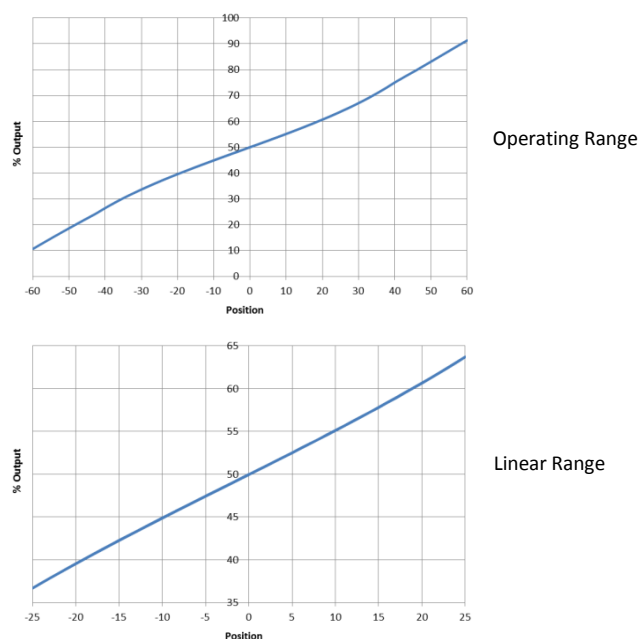
The 0729-1760-99 RS-485 inclinometer utilizes a Fredericks TrueTilt™ wide range electrolytic tilt sensor and RS-485 signal conditioner. Its robust plastic housing and epoxy potting provide excellent durability and environmental protection. This inclinometer has superior tolerances and unit to unit performance. Its small profile and economic design make it an ideal solution for a versatile range of applications in all sectors.

### Applications

- Aerial lift platform leveling monitor or control
- Crane boom angle measurement
- Robotic controls
- Satellite dish alignment
- Solar panel position and elevation control
- Wheel alignment systems

View a full list of applications on The Fredericks Company website at [www.fredericks.com](http://www.fredericks.com).

### Operating and Linear Range Output Behavior



### Benefits

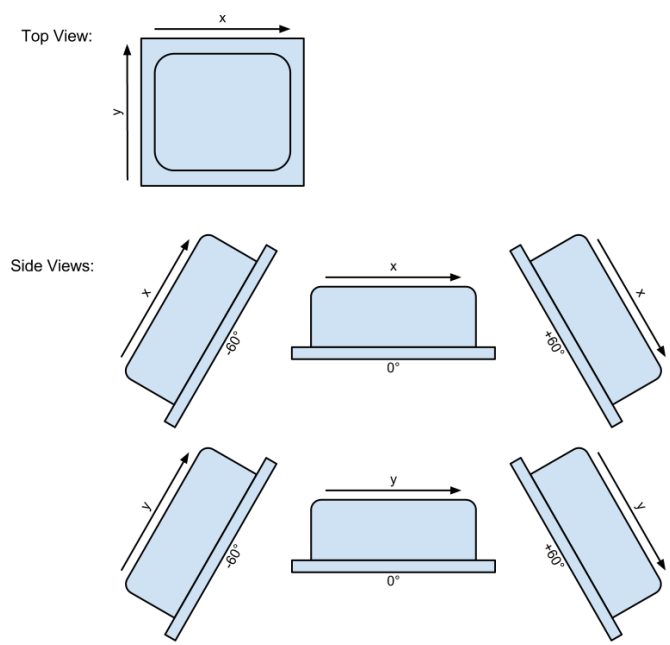
- Very low power consumption
- Extremely long life
- Minimal drift over lifetime compared to MEMS devices
- Excellent resolution and repeatability
- Superior performance in extreme temperatures and environments
- Excellent customer support
- Manufactured in the United States of America



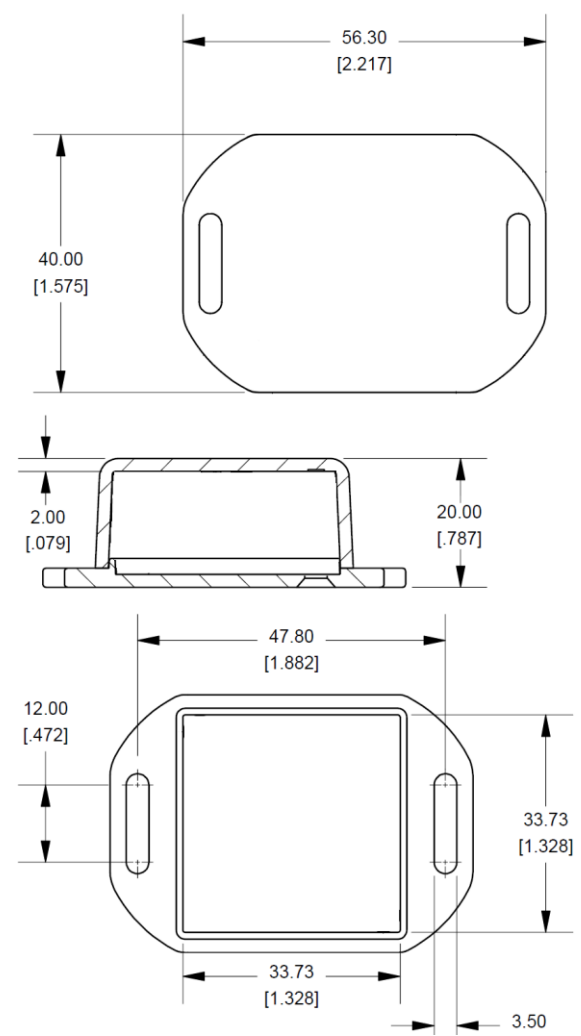
**Dual Axis RS-485 Inclinometer**  
**Part Number: 0729-1760-99**



**Direction of Measurement**



**Dimensional Drawings**



**RS-485 Settings**

<b>Baud Rate</b>	9600 (default)
<b>Data Bits</b>	8
<b>Parity</b>	None
<b>Stop Bits</b>	1

**Mounting Notes**

The 0729-1760-99 and all inclinometers in this series must be mounted horizontally (parallel to the surface of the earth and perpendicular to the force of gravity). For best performance, isolate the unit from vibrations when mounting it.

**Related Products**

0729 series inclinometers - These inclinometers utilize Fredericks TrueTilt™ wide range electrolytic tilt sensors. They have a variety of outputs including analog, RS-232, and RS-485. These inclinometers have a low profile and a robust plastic housing with epoxy potting to provide excellent durability and environmental protection.

6200 series signal conditioners - These signal conditioners can be configured with any Fredericks electrolytic tilt sensor. They have a variety of outputs including analog, PWM, RS-232, RS-485, and SPI. The electrolytic tilt sensor and signal conditioner are provided separately or as an assembly with the sensor already installed at the customer's request.

See The Fredericks Company website at [www.frederickscom.com](http://www.frederickscom.com) for a full list of products.

**Contact Us**

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