



**TrueTilt™ Single Axis Narrow Range Electrolytic Tilt Sensor**  
**Part Number: 0703-0711-99**



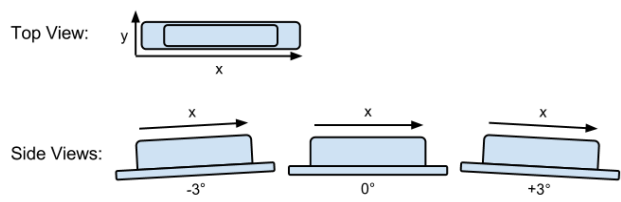
Operating Specifications <sup>1</sup>	
Operating range	±3°
Linear Range	±1°
Axes of Measurement	1
Linearity (±1°)	≤3%
Symmetry (±1°)	≤0.05°
Repeatability	≤5 arc seconds
Resolution	≤1 arc second
Null Offset	≤0.25°
Cross Axis Roll Sensitivity	≤20 arc seconds (±3° roll)
Long Term Stability/Drift	≤5 arc seconds
Null Temperature Coefficient (max.)	±1 arc second per °C
Operating Temperature	-20° to +50° C
Storage Temperature	-50° to +100° C
Null Impedance (typ.)	50 kΩ
Time Constant (63.2% of final output)	≤1 second
Materials	Magnetic metals
Maximum Current at Null	0.2 mA (continuous)

Physical Characteristics	
Length	40.6 mm (1.598")
Width	7.6 mm (0.3")
Height	8.5 mm (0.335")
Hole Center	34 mm (1.34")
Hole Diameter	3.7 mm (0.145")
Lead Spacing	10.1 mm (0.4")
Lead Diameter	0.5 mm (0.02")
Lead Length	5 mm (0.198")

- 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

- Certifications and Ratings**
- RoHS Compliant

**Direction of Measurement**



**Description**

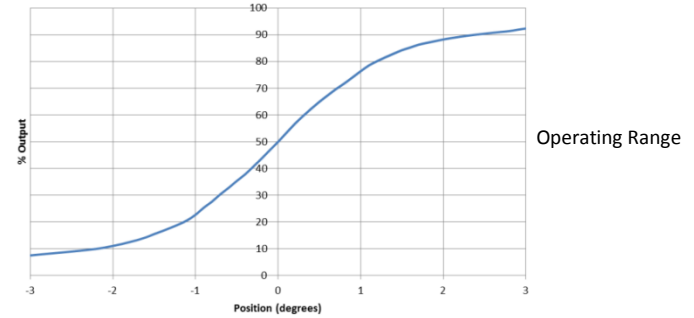
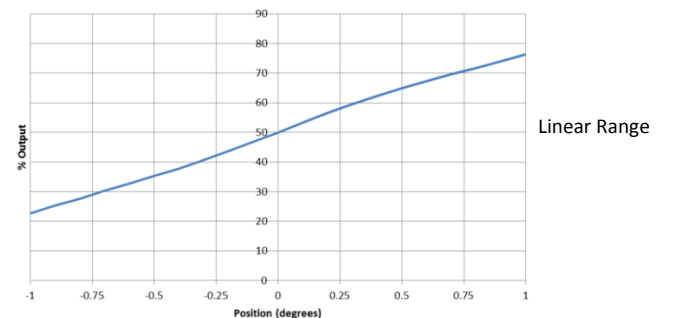
The 0703-0711-99 TrueTILT™ single axis, narrow range electrolytic tilt sensor has a robust, all metal construction providing durability while maintaining superior tolerances and sensor to sensor performance. It is economical with a high level of linearity and repeatability making it ideal for a versatile range of applications in all sectors.

**Applications**

- Dam, building, and bridge construction and monitoring
- Geophysical tilt metering and monitoring
- Gyroscopes
- Laser leveling systems
- Mining machinery and equipment
- Zero point and position adjustment

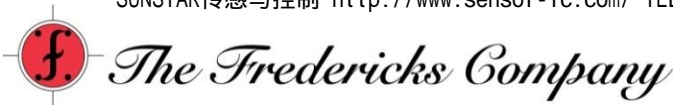
View a full list of applications on The Fredericks Company website at [www.fredericks.com](http://www.fredericks.com).

**Linear and Operating Range Behavior**



<sup>1</sup> See The Fredericks Company website for a list of term definitions. All test data was acquired with a Fredericks signal conditioner at 23° C.





**TrueTilt™ Single Axis Narrow Angle Electrolytic Tilt Sensor**  
**Part Number: 0703-0711-99**



**Notes**

When using an excitation circuit not designed by The Fredericks Company, ensure that no direct current is passed through the sensor. Direct current will lead to sensor damage, output drift, and general instability.

The 0703-0711-99 and all sensors in the TrueTilt™ series must be mounted horizontally (parallel to the surface of the earth and perpendicular to the force of gravity). For best performance, isolate the sensor from vibrations when mounting it.

Further information on sensor fundamentals is provided on The Fredericks Company website at [www.frederickscom.com](http://www.frederickscom.com).

**Related Products**

6200 series signal conditioners - These signal conditioners can be configured with the 0703-0711-99 or any other Fredericks Company tilt sensor. They have a variety of outputs including analog, PWM, RS-232, RS-485, and SPI. The sensor and board are provided separately or as an assembly with the sensor already installed at the customer's request.

TrueTILT™ series sensors - The 0703-0711-99 is part of this series which includes narrow, mid, and wide range sensors which have different operating specifications to fit specific customer requirements.

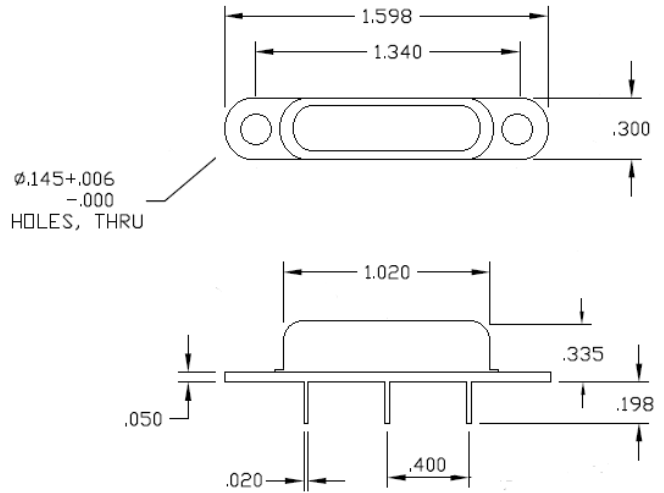
See The Fredericks Company website at [www.frederickscom.com](http://www.frederickscom.com) for a full list of products.

**Ordering Information**

**Sensor Part Number** 0703-0711-99  
**Signal Conditioner Part Number** 1-6200-0XX

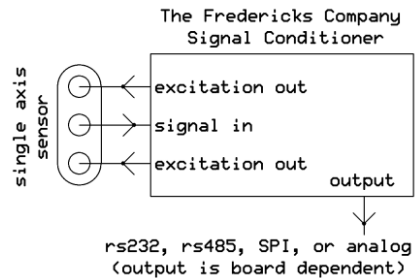
Communications	XX
SPI	05
RS-232	06
Analog/PWM	07
RS-485	08

**Dimensional Drawings**



**Test Circuit**

All data was acquired with a Fredericks Company Dual Axis 6200 Series Signal Conditioner in single axis mode at 23° C. A general schematic of our signal conditioners in single axis mode is provided below. Further information on sensor excitation and excitation circuitry is provided on The Fredericks Company website at [www.frederickscom.com](http://www.frederickscom.com).



**Contact Us**

The Fredericks Company  
 2400 Philmont Avenue  
 Huntingdon Valley, PA 19006  
 tel: 215 947 2500  
 fax: 215 947 7464  
 email: [sales@frederickscom.com](mailto:sales@frederickscom.com)  
 web: [www.frederickscom.com](http://www.frederickscom.com)

Disclaimer: Specifications subject to change without notice. The Fredericks Company assumes no responsibility for inaccuracies in product specifications or any liability arising from product use.  
 © 2012 The Fredericks Company

