The Fredericks Company

TrueTilt™ Single Axis Mid-Range Electrolytic Tilt Sensor
Part Number: 0703-1602-99

Operating Specifications†

Operating range	±25°
Linear Range	±10°
Axes of Measurement	1
Linearity (±10°)	≤1.0%
Repeatability	≤18 arc seconds
Resolution	≤1 arc second
Null Offset	≤1°
Roll Sensitivity	0.03% per degree
Long Term Stability/Drift	≤0.01°
Null Temperature Offset	≤6 arc seconds per °C
Range Temperature Offset	0.075% per °C
Operating Temperature	-40° to +85° C
Storage Temperature	-50° to +100° C
Null Impedance	50 K Ohms
Time Constant (63.2% of final output)	≤1 second
Materials	Magnetic metals
Maximum Current at Null	0.2 mA (continuous)

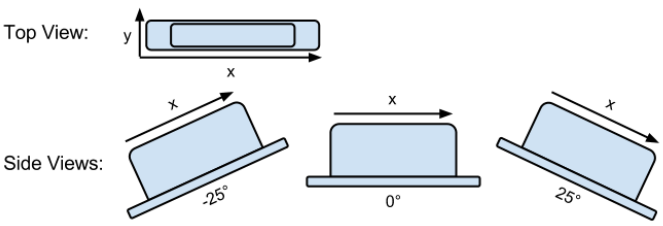
Physical Characteristics

Length	40.6 mm (1.6”)
Width	7.6 mm (0.3”)
Height	14.2 mm (0.560”)
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”)
Weight	5.8 g

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

Direction of Measurement



Description

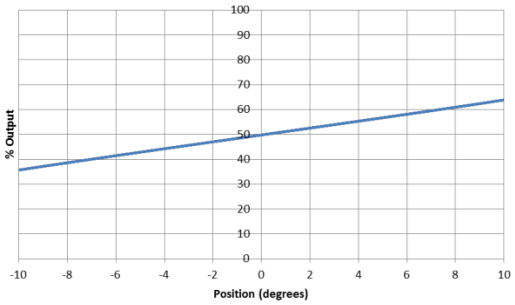
The 0703-1602-99 TrueTILT™ single axis, mid-range electrolytic tilt sensor has a robust all metal construction providing durability while maintaining superior tolerances and sensor to sensor performance. It is an economical sensor ideal for a versatile range of applications in many sectors.

Applications

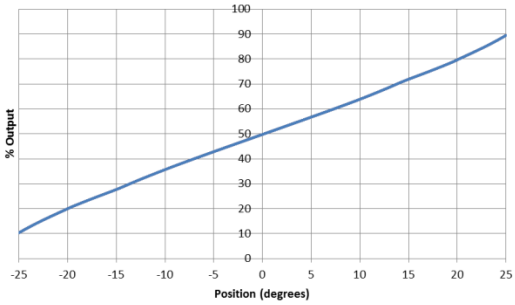
- Construction machinery and equipment
- Railway monitoring
- Laser leveling systems
- Aerial platform level control, monitor, and alarm
- Mining machinery and equipment
- Agricultural machinery and equipment

View a full list of applications on The Fredericks Company website at www.frederickscom.com.

Linear and Operating Range Behavior



Linear Range



Operating Range

Certifications and Ratings

- RoHS Compliant

† See The Fredericks Company website for a list of term definitions.

The Fredericks Company

TrueTilt™ Single Axis Mid-Range Electrolytic Tilt Sensor
Part Number: 0703-1602-99

Notes

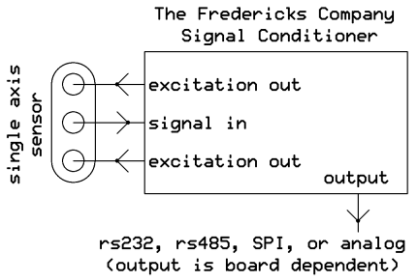
When using an excitation circuit not designed by The Fredericks Company, ensure that no direct current is passed through the sensor. Direct current will lead to sensor damage, output drift, and general instability.

The 0703-1602-99 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 basics is provided on The Fredericks Company website at www.frederickscom.com.

Test Circuit

All data was acquired with a Fredericks Company Dual Axis 6200 Series Signal Conditioner in single axis mode at 20° 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.



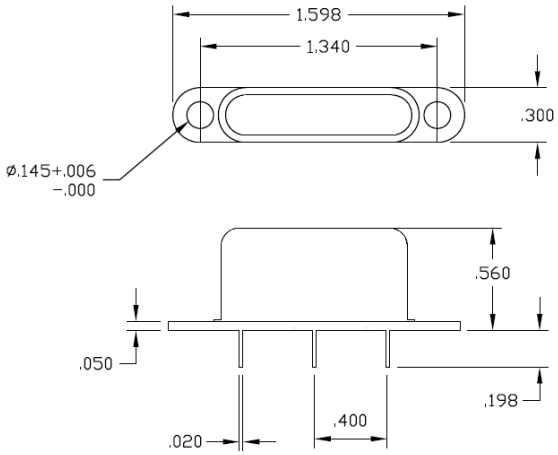
Related Products

6200 series signal conditioners - These signal conditioners can be configured with the 0703-1602-99 or any other Fredericks Company tilt sensor. They have a variety of outputs, including RS-232, RS485, SPI, and analog. 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 0703-1602-99 is part of this series which includes narrow, mid, and wide range metal sensors which have different operating specifications to fit the customer's needs.

See The Fredericks Company website at www.frederickscom.com for a full list of products.

Dimensional Drawings



Contact Us

The Fredericks Company
2400 Philmont Avenue
Huntingdon Valley, PA 19006

tel: 215 947 2500
fax: 215 947 7464
email: sales@frederickscom.com
web: 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

FREDERICKS COMPANY

Distribuidor

Brasil e América do Sul

CONTATO

Endereço
Rua Sete de Setembro, 2671 - Centro
13560-181 - São Carlos - SP - Brasil

Telefone
+ 55 (16) 3371-0112
+ 55 (16) 3372-7800

Internet
www.metrolog.net
metrolog@metrolog.net

Metrolog Controles de Medição