

Dual Axis Tilt Switch with Relay Output

Part Number: 0729-1763-XX



Operating Specifications ¹	
Communications	RS-232
Supply Voltage	6.5 V DC to 40 V DC
Supply Current	30 mA @ 12 V DC
Operating range	±10° (narrow angle)
	±25° (mid-range)
	±45° (wide angle)
Linear Range	±25°
Axes of Measurement	2
Repeatability	≤0.1° (narrow, wide)
	≤18 arc seconds (mid)
Resolution	≤0.003° (narrow, wide)
	≤1 arc second (mid)
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 °C to 70 °C
Storage Temperature	-40 °C to 70 °C
Time Constant (63.2% of final output)	≤100 ms

Physical Characteristics	
Housing	ABS Plastic ²
Electrical Connections	DB15 male connector
Weight	82 grams (without potting)
Length	79.76 mm (3.14")
Width	53.34 mm (2.10")
Height	27.31 mm (1.08")
Hole Center	91.22 mm (3.59")

RS-232 Commands ³	
'x'	Output linear X value (0 to 65535)
'y'	Output linear Y value (0 to 65535)
'c'	Output X value in degrees
'd'	Output Y value in degrees
'e'	Change and save trip delay
'f'	Change and save return trip delay
'h'	Change and save hysteresis value
'g'	Change and save relay polarity
'1' to '4'	Set the selected axis trip point
'n'	Save current position as zero
'+'	Increase the filter value
'-'	Decrease the filter value

Certifications and Ratings

- IP66
- CE certified to CFR 47 FCC Part 15 Subpart B, EN 55011:2009/A1:2010, EN 61326-1:2006

Description

The 0729-1763-XX RS-232 programmable tilt switch utilizes Fredericks TrueTilt™ wide range, mid-range, or narrow range electrolytic tilt sensors and four output relays with user-settable trip points. Its robust plastic housing and epoxy potting provide excellent durability and environmental protection. This tilt switch 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.

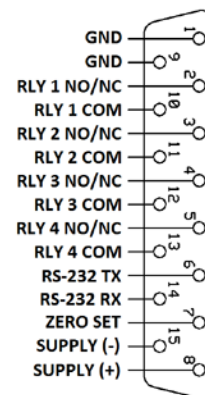
Applications

- 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.frederickscompany.com.

Wiring Connections⁴

Description	Color	Pin Number
Power input	Red	8
Common	Red	1
	Black	15
Zero Wire	Orange	7
Relay 1 (IN)	White	2
Relay 1 (COM)	Black	10
Relay 2 (IN)	Green	3
Relay 2 (COM)	Black	11
Relay 3 (IN)	Yellow	4
Relay 3 (COM)	Black	12
Relay 4 (IN)	Blue	5
Relay 4 (COM)	Black	13
(Setup via RS-232 link)		
RS-232 Input	Black	14
RS-232 Output	Brown	6



Benefits

- 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

¹ See The Fredericks Company website for a list of term definitions

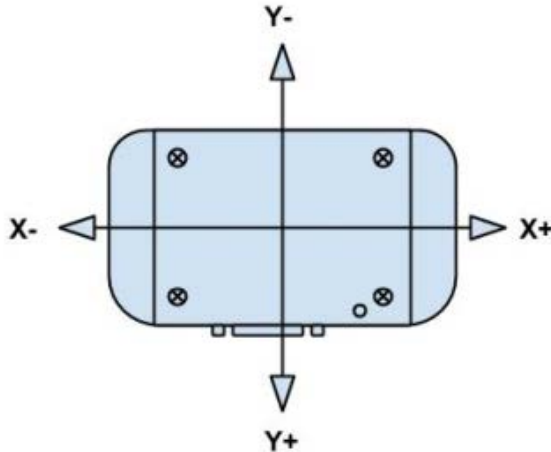
² Metal housing available upon request

³ See Operating Manual for a full list of commands

⁴ Connections shown using a TFC 2-9858-XXX cable



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Direction of Measurement

RS-232 Settings

Baud Rate	9600 (selectable up to 115200)
Data Bits	8
Parity	None
Stop Bits	1

Mounting Notes

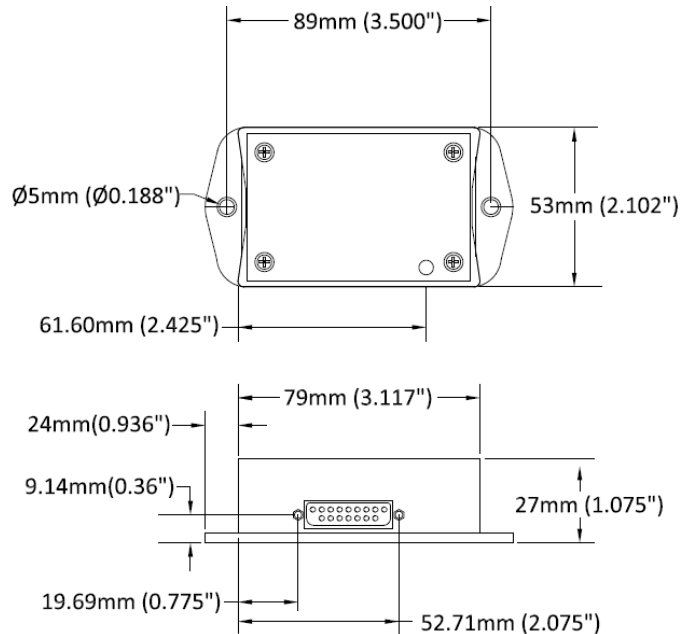
The 0729-1763-XX must be mounted horizontally (parallel to the surface of the earth and perpendicular to the force of gravity). For best performance, isolate the unit from vibrations when mounting it.

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.frederickscompany.com for a full list of products.

Dimensional Drawings

Ordering Information

Tilt Switch Plastic Housing Potted	0729-1763-01
Tilt Switch Metal Housing Potted	0729-1763-02
Tilt Switch Plastic Housing Not Potted	0729-1763-03
Tilt Switch Metal Housing Not Potted	0729-1763-04
Cable	2-9858-0XX
10 ft (3 m)	10
20 ft (6.1 m)	20
35 ft (10.6 m)	35
50 ft (15.2 m)	50

Contact Us

The Fredericks Company
 2400 Philmont Avenue
 Huntingdon Valley, PA 19006
 tel: 215-947-2500
 email: sales@frederickscompany.com
 web: www.frederickscompany.com

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