

## Single Axis Programmable Tilt Switch

Part Number: 0729-1757-99

### Operating Specifications<sup>1</sup>

<b>Output</b>	2 open collectors
<b>Supply Voltage</b>	4.5 V DC to 28 V DC
<b>Supply Current</b>	24 mA @ 12 V DC
<b>Operating Range</b>	±45°
<b>Axes of Measurement</b>	1
<b>Repeatability</b>	≤0.1°
<b>Null Offset</b>	≤5°
<b>Cross Axis (Roll) Sensitivity</b>	≤0.025° per degree
<b>Long Term Stability/Drift</b>	≤0.1°
<b>Null Temperature Coefficient<sup>2</sup></b>	≤0.006° per °C
<b>Scale Temperature Coefficient</b>	0.1% per °C
<b>Operating Temperature</b>	-40 °C to 70 °C
<b>Storage Temperature</b>	-40 °C to 70 °C
<b>Temperature Sensor Range</b>	-40 °C to 125 °C
<b>Time Constant (63.2% of final output)</b>	≤100 ms
<b>Output Delay</b>	0.5 s
<b>Output Hysteresis</b>	0.35°

### Dimensions

<b>Housing</b>	ABS Plastic <sup>3</sup>
<b>Electrical Connections</b>	18" cable with 24 gauge wire
<b>Weight</b>	40 grams
<b>Length</b>	50.8 mm (2.000")
<b>Width</b>	38.1 mm (1.500")
<b>Height</b>	19.1 mm (0.750")
<b>Flange Length</b>	76.2 mm (3.000")
<b>Hole Center</b>	63.5 mm (2.500")
<b>Hole Diameter</b>	4.8 mm (0.190")

### Electrical Connections

<b>Red</b>	Supply (4.5 V DC to 28 V DC)
<b>Black</b>	Supply (-)
<b>Green</b>	Ground for supply and open collectors
<b>Blue</b>	Left trip point open collector
<b>Gray</b>	Right trip point open collector

### Open Collector Output Description

The open collector is closed (connected to ground) when non-tripped and open (disconnected from ground) when tripped. It is rated to a maximum of 200 mA when closed. For opposite open collector output functionality (open when non-tripped and closed when tripped), see the 0729-1758-99.

### Benefits

- Very low power consumption
- Simple integration
- Excellent resolution and repeatability of measurements
- Superior performance in extreme temperatures and environments
- Excellent customer support
- Manufactured in the United States of America

<sup>1</sup> Visit [www.frederickscompany.com](http://www.frederickscompany.com) for a list of definitions.

<sup>2</sup> See application note AN1001 for a description of temperature compensation.



### Description

The 0729-1757-99 Single Axis Programmable Tilt Switch utilizes a 0717-4319-99 Fredericks TrueTilt™ wide range electrolytic tilt sensor and analog signal conditioner. Its robust plastic housing provides excellent durability and environmental protection. This tilt switch has superior tolerances and unit to unit performance. Its low profile housing and economic design make it an ideal solution for a versatile range of applications in all sectors.

### Applications

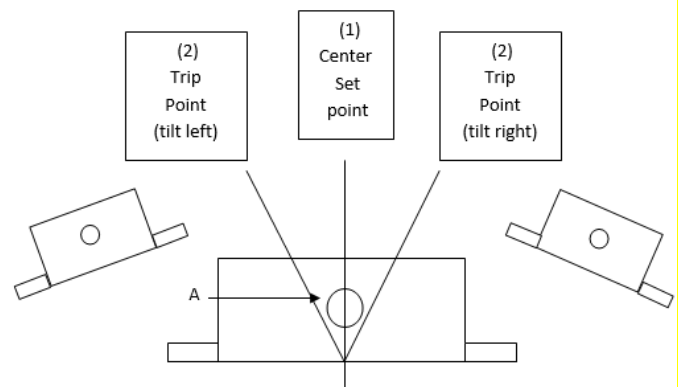
- Construction vehicles
- Agricultural vehicles
- Vehicle tip over prevention
- Aerial lift platform, boom lift, forklift, scissor lift, and telehandler, operator safety and tip over prevention

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

### Certifications and Ratings

- RoHS Compliant
- IP64 (note that the standard version of this unit is not potted, epoxy potting is available upon request for IP66 protection)

### Direction of Measurement



<sup>3</sup> Metal housing available upon request.

**Single Axis Programmable Tilt Switch**  
**Part Number: 0729-1757-99**

**Mounting Notes**

The 0729-1757-99 and all tilt switches 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**

**Tilt Switches**

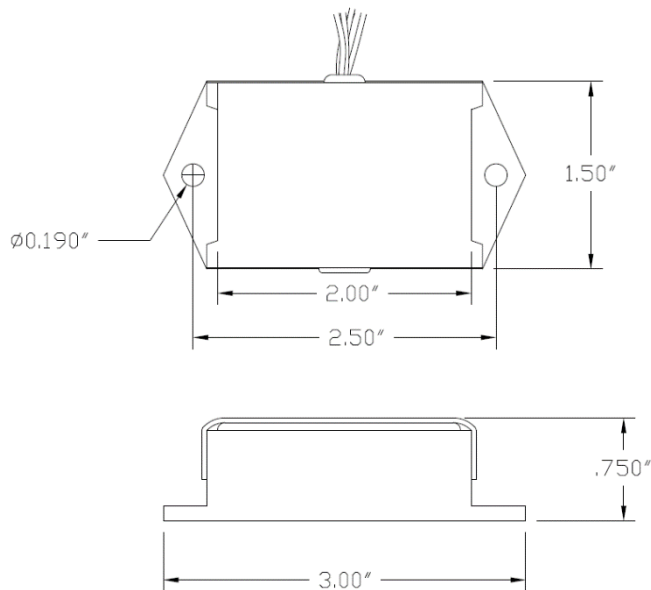
**0729-1758-99** ±45° range, single axis, 2 open collector outputs

**0729-1736-99** ±35° range, dual axis, 1 relay output

**0729 series inclinometers** - Inclinometers provide a continuous output of tilt angle position instead of the on/off functionality of the tilt switch. Our inclinometers in this series utilize Fredericks TrueTilt™ wide range electrolytic tilt sensors. They have a variety of output options including analog 0 to 5 V DC, CAN Bus SAE J1939, 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.



**Dimensional Drawings**



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