

*The Fredericks Company*

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**0729-1727-99**  
**Single Axis**  
**Programmable**  
**Tilt Switch**

- +4.5 to +28 Volt Single Power Supply
- $\pm 45$  Degree Sensing Range
- Unidirectional and Bi-directional  
Open Collector Outputs



Fredericks Programmable Tilt Switch is a combination Microprocessor based electronics and TrueTilt™ dual axis tilt sensor in a compact, high-impact plastic case. This design provides the user with a non-mercury, field settable switch solution for many applications. The assembly can be easily custom configured for a wide variety of angle range trip points. It avoids the wide hysteresis errors of most mercury and gravity ball switches over temperature. The simple design makes it cost effective for prototype and production requirements.

**Applications Include:**

- ◆ Vehicle Tip- Over Protection/ Warning
- ◆ Alarm System Activation
- ◆ Structural Threshold Monitoring
- ◆ Safety Cut off switch

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# 0729-1727-99

## "Single Axis, Programmable, Tilt Switch"

### Sensor Operating Specifications:

Tilt sensor part number.....0717-4304-99

Operating Range (max.).....  $\pm 45^\circ$   
Repeatability.....  $0.1^\circ$   
Resolution.....  $< 0.2$  arc minutes  
Symmetry (typ.).....  $5\%$   
Mech. Crosstalk / Deg. (to  $20^\circ$ ).....  $0.025^\circ$   
Temperature Coefficient  
Null.....  $20$  arc sec /  $^\circ\text{C}$   
Scale.....  $0.1\%$  /  $^\circ\text{C}$   
Stability @ 24 Hrs.....  $0.1^\circ$   
Operating Temperature .....  $-40^\circ\text{C}$  to  $+85^\circ\text{C}$   
Storage Temperature.....  $-55^\circ\text{C}$  to  $+100^\circ\text{C}$   
Time Constant (1) .....  $\leq 100$  msec  
Material ..... magnetic

### Temperature range

Operating..... $-40$  to  $+85^\circ\text{C}$   
Storage..... $-55$  to  $+100^\circ\text{C}$

### Circuit Board Operating Specifications:

Power supply voltage (range)..... $+4.5$  to  $+28$  VDC  
Power supply current (typical)..... $1.0$  mA @  $12$ VDC  
Output (unidirectional)..... $200$  mA max  
Output (Bi-directional)..... $200$ mA max  
Cable length..... $18.0$ "  
Output Delay..... $0.5$  sec  
Output Hysteresis..... $1.0^\circ$

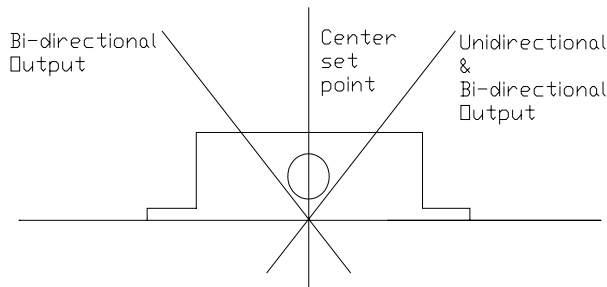
### Case Dimensions:

Length.....  $2.00$ "  
Width..... $1.50$ "  
Height..... $0.750$ "  
Flange Length..... $3.00$ "  
Flange Holes (centerline)..... $2.50$ "  
Hole Diameter..... $0.190$ "

### Connector:

Red..... $+4.5$  to  $28$  VDC  
Black.....Common  
Green.....Common (OC)  
Blue.....Open Collector (unidirectional)  
Grey.....Open Collector (bi-directional)

**Programming and Operation:** Unit can be programmed to trip at any point within its angle range. This is accomplished very simply by applying power and inserting and removing a jumper at the starting and trip point. Unidirectional output will trip in one direction only. Bi-Directional output will trip in both directions. The unit can be reprogrammed as often as necessary for any application.



*Note: Custom applications are available upon request.*

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