



# ±60° RS-232 Dual-Axis Inclinometer

Part Number: 0729-1768-99



## RS-232 Settings

|           |      |
|-----------|------|
| Baud Rate | 9600 |
| Data Bits | 8    |
| Parity    | None |
| Stop Bits | 1    |

## RS-232 Commands

|               |   |
|---------------|---|
| X             | X axis output (0 to 65535)                |
| Y             | Y axis output (0 to 65535)                |
| T             | Temperature output (0 to 1023)            |
| S             | Output X, Y, temperature at set intervals |
| R             | Stop timed interval output                |
| 1, 2, 3, 4, 5 | Delay (in seconds) for set intervals      |
| @Z#           | Set current position as zero              |
| &C*           | Clear saved zero position                 |

## Electrical Connections

|                |                                      |
|----------------|--------------------------------------|
| J1 Pin 1 (+5)  | Supply (+)                           |
| J1 Pin 2 (C)   | Supply (-)                           |
| J1 Pin 3 (C)   | Ground                               |
| J1 Pin 4 (OUT) | RS-232 transmit (TX)                 |
| J1 Pin 5 (IN)  | RS-232 receive (RX)                  |
| J1 Pin 6 (C)   | Ground                               |
| J1 Pin 7 (C)   | Ground                               |
| L1             | Dual axis sensor connection          |
| J3             | Single axis sensor x axis connection |
| J4             | Single axis sensor y axis connection |

## Example RS-232 Command and Response Byte Values

Retrieve X axis tilt value which returns 32768 (0° tilt):

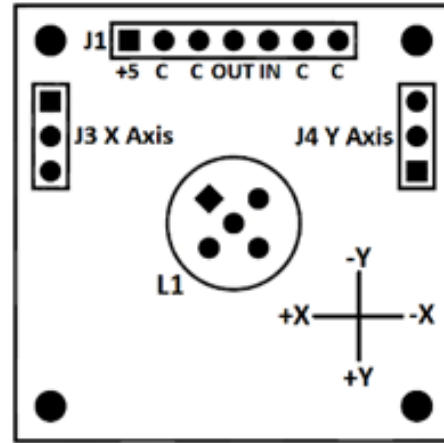
### Command

|       |      |
|-------|------|
| Byte  | 0    |
| ASCII | X    |
| Hex   | 0x58 |

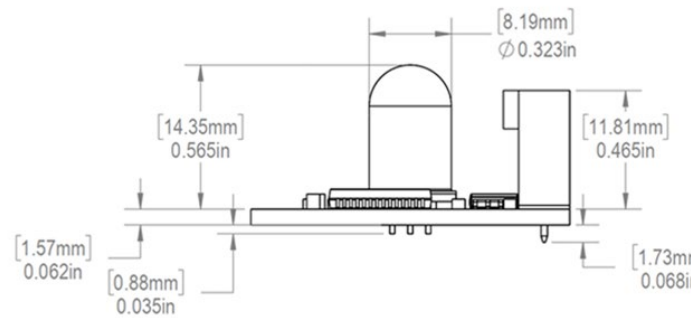
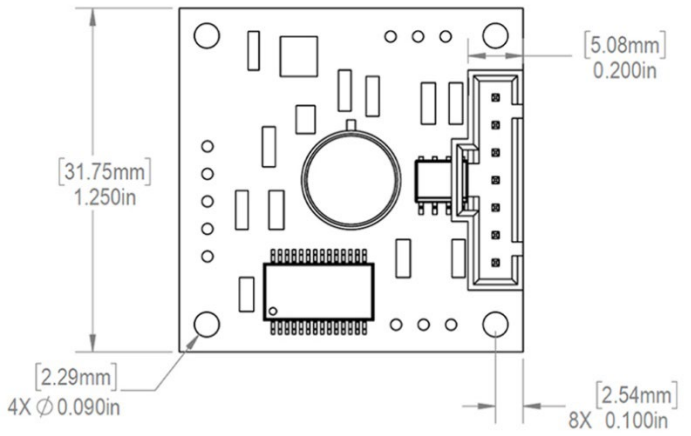
### Response

|       |      |      |      |      |      |      |      |
|-------|------|------|------|------|------|------|------|
| Byte  | 0    | 1    | 2    | 3    | 4    | 5    | 6    |
| ASCII | 3    | 2    | 7    | 6    | 8    | <lf> | <cr> |
| Hex   | 0x33 | 0x32 | 0x37 | 0x36 | 0x38 | 0x0A | 0x0D |

## Pin Diagram and Direction of Measurement



## Dimensional Drawings





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**Converting Temperature Values**

The board temperature output is a 10-bit value (0 to 1023). To convert that value to a temperature in °C, use the following equation:

$$\text{Temperature in } ^\circ\text{C} = (((\text{output}/1023) * \text{supply voltage}) - 0.5) / 0.01$$

**Mounting Notes**

The [0729-1768-99](#) and all inclinometers 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.

**Certifications and Ratings**

- RoHS Compliant

**Additional Documentation**

|                           |   |
|---------------------------|---|
| <a href="#">AN1000</a>    | <a href="#">Electrolytic Tilt Sensor Excitation</a>                   |
| <a href="#">AN1001</a>    | <a href="#">Temperature Compensation of Electrolytic Tilt Sensors</a> |
| <a href="#">AN1003</a>    | <a href="#">Configuring Tera Term to Use with TFC Tilt Products</a>   |
| <a href="#">AN1005</a>    | <a href="#">Converting Tilt Angle to Degrees</a>                      |
| <a href="#">Article</a>   | <a href="#">Structural Monitoring Case Study: Resensys</a>            |
| <a href="#">Datasheet</a> | <a href="#">0717-4318-99 Wide Range Tilt Sensor</a>                   |
| <a href="#">Datasheet</a> | <a href="#">1-6200-006 RS-232 Signal Conditioner</a>                  |

**Company Information**

**Specialty Manufacturing Services That Promise Precision** - Since 1935, The Fredericks Company has been a global provider and U.S. designer and manufacturer of the highest performance tilt and vacuum measurement products on the market, with manufacturing processes that ensure the reliability of our products.

**Tilt Measurement Products and Sensors That Set Standards** - Fredericks’ comprehensive tilt measurement product portfolio offers [electrolytic tilt sensors](#), [inclinometers](#), and [tilt switches](#). Engineered to outperform competing technology, our tilt sensors are accurate and repeatable with excellent resolution. Our tilt measurement products have no planned obsolescence and serve industries ranging from [construction](#) and [RV leveling](#) to aerospace applications and everything in between.

**A Partnership That Prioritizes Uptime, Lead Time, and Service** - Fredericks guarantees customer satisfaction and our “not too big, not too small” operation is what enables us to offer a true partnership experience. Our dedicated representatives and engineers offer exceptionally responsive service and the fastest lead times in the industry, knowing that uptime is the key to your success. With anytime access to our leadership team and solutions that enhance your products, you will feel the Fredericks difference.

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