

# SPECTROTILT™ Dual Axis 360 Degree Inclinometer

The SPECTROTILT™ CANbus Dual Axis 360 Deg Inclinometer offers unparalleled accuracy and value. By combining a MEMS sensor, with custom digital electronics and software, Spectron has successfully spanned the gap between cost and performance. The sensor supports 11 different orientations\* to accommodate whichever position the sensor is mounted. ESD and EMI protection, aluminum housing, all in a splash and dust proof housing.

## Applications

- Construction Equipment
- Aerospace
- Antenna Position
- Oceanographic



## General Specifications

Input Voltage..... +11 to +32Vdc (unregulated)  
 Input Current..... 65mA

Tilt Range:..... 0-360 deg / +/-180 deg  
 Accuracy:..... +/-0.3 deg  
 Resolution:..... 0.01 deg.  
 Repeatability:..... 0.03 deg

Temperature Range

- operating ..... -40° to +80° C
- storage ..... -55° to +125° C

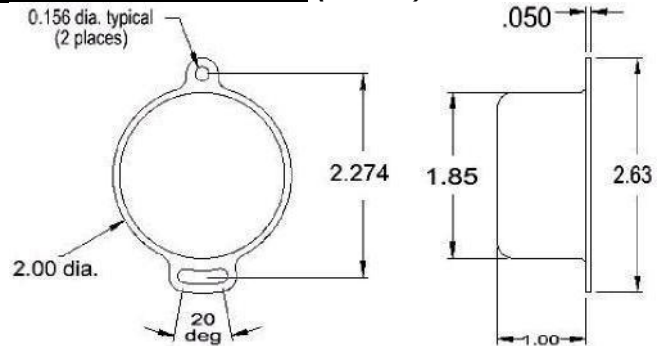
Start-up Time ..... <3 second  
 Max Transmission..... 200 Meters  
 Transmission Rate..... 250K Bits

Output..... CANbus  
 CAN Interface..... CANopen DS301 and DSP410  
 Number of PDO's..... 2  
 Heartbeat..... Yes  
 Number of SDO's..... 1 Rx / 1 Tx  
 Variable PDO Mapping..... Yes  
 Identifier..... 11-Bits CAN Identifier  
 Default Node ID..... 15

CANopen Features:

Device Profile..... Cia standard 410 version 1.2  
 NMT master..... No  
 NMT slave..... Yes  
 PDO modes..... Synchronous, Asynchronous

## Physical Dimensions (inches)



## Electrical Connections

CANbus..... Tyco1838275-3 connector or equivalent provided  
 Cable length..... 2 feet  
 Termination resistors. Consult factory for options  
 Status:..... Yellow LED...Power, no connection to CANbus  
 Green LED....Power, with connection to CANbus

## Ordering Information

Part Number: SSY2360

Consult factory for further technical information!

**Example of Sensor Orientation (vehicle)**

The sensor supports 11 different orientations depending on where the Inclinator is mounted.

|                     |                         |   |
|---------------------|-------------------------|---|
| <b><u>INDEX</u></b> | <b><u>Sub-Index</u></b> | <b><u>Type</u></b> (Value: see table below) |
| 2202h               | 00                      | byte  |

| <b><u>Value</u></b> | <b><u>Unit Position</u></b> | <b><u>Mounting Eyelet</u></b> |
|---------------------|-----------------------------|-------------------------------|
| 0                   | Top of vehicle              | Front                         |
| 1                   | Top of vehicle              | Right                         |
| 2                   | Bottom of vehicle           | Front                         |
| 3                   | Bottom of vehicle           | Right                         |
| 4                   | Right hand side of vehicle  | Front                         |
| 5                   | Right hand side of vehicle  | Top                           |
| 6                   | Left hand side of vehicle   | Front                         |
| 7                   | Left hand side of vehicle   | Top                           |
| 8                   | Front of vehicle            | Top                           |
| 9                   | Front of vehicle            | Right                         |
| 10                  | Back of vehicle             | Top                           |
| 11                  | Back of vehicle             | Right                         |

**Sensor mapping for default setting:**

| <b><u>Index</u></b> | <b><u>Sub-Index</u></b> | <b><u>Object</u></b> | <b><u>Type</u></b> |
|---------------------|-------------------------|----------------------|--------------------|
| 2200h               | 04h                     | Temperature          | Integer 16         |
| 2203h               | 00h                     | Node Identifier      | Integer 16         |
|                     | 65h                     | Emergency COB        | Integer 16         |
|                     | 66h                     | Heartbeat            | Integer 16         |
| 2202h               | 00h                     | Sensor orientation   | See Below          |
| 6010h               | 00h                     | Longitudinal         | Integer 16         |
| 6020h               | 00h                     | Lateral              | Integer 16         |

**Example of Setup**

```
// start heart beat 200ms
WriteObjectDirectory(0x1017.0.200)
// send roll every 2 sync
WriteObjectDirectory (0x1800.2.2)
// send pitch every 3 sync
WriteObjectDirectory (0x1801, 2, 3)
// Place unit into operating mode
// Start sending sync message
0x80
```

**Example to Read Lateral Slope**

|     |                         |        |
|-----|-------------------------|--------|
| 60F | 40 20 60 00             | master |
| 58F | 42 20 60 00 61 46 00 00 | Slave  |



SPECTRON SYSTEMS TECHNOLOGY INC.  
 595 OLD WILLETS PATH  
 HAUPPAUGE NY 11788  
 PHONE: 631 582-5600  
 FAX: 631 582-5671  
[www.spectronsensors.com](http://www.spectronsensors.com)

