TILT – 30A
High Accuracy
Three-Axis Accelerometer

Dual-Axis Inclinometer
Product Brief

Specifications – electrical
- Power source: 4.1 – 38 VDC
- Measuring range (dual mode): ±90° (two-dimensional)
  ±180° (one-dimensional)
- Resolution: 0.025° | 0.5 mg (data rate ≤ 5)
- Noise density: 0.01°/√Hz
- Accuracy:
  Horizontal installation: Err. ≤ ±0.15°
  Vertical installation: Err. ≤ ±0.15° (within ±30° of Vertical)
- Zero offset error: < ±0.05° (@20°C)
- Temperature offset drift: ±0.008°/°C (typical)
- Repeatability: < 0.05°
- Sensor Bandwidth: 200 Hz
- Baud rate: 2.4kbps – 921.6kbps selectable, default: 115.2kbps
- Data format: ASCII, port settings: 1 start bit, 8 data bits, 1 stop bit & no parity
- Output data rate: 1, 2, 5, 10, 20, 25, 40, 50, and 100 Hz selectable
- LED indicators:
  Green: CPU heartbeat
  Flashing at 1 Hz
  Red: Data transmission rate
  Flashing at current data rate
- Power consumption: < 30 mA (@ 5 V)
- GUI software: WinCTi-Tilt®
- Serial interface options:
  RS232, RS422, RS485, USB, SSI,
  Wireless (Bluetooth 4.2)
  RS485 with multi-drop networking
- Temperature sensor resolution: 1°C

Specifications – mechanical
- Protection: IP 67 (housing, connector and cable)
- Dimension: 1.65” x 2.15” x 1.00”
- Material:
  enclosure: anodized aluminum
  Connector: brass / nickel
  Cable molded head: TPU
  Cable carrier: TPU or nylon
  Conductor insulation: PVC
- Temperature range:
  40°C to +105°C
- Connection: Cable gland
  connector M8, 6-contact (female)

Terminal assignment
- Connector: RS232/UART/USB
- RS422
- RS485
- Wire Color
- Pin 1: +Vin
- Pin 2: GND
- Pin 3: TX
- Pin 4: –
- Pin 5: RX
- Pin 6: –
- Device:
  M 8 – 6-contact (female)
- Cable:
  M 8 – 6-pin (male)

Features
- Dual mode digital inclinometer
  - Dual-axis, horizontal installation: ±90°
  - Single-axis, vertical installation: ±180°
- High resolution: 0.025° | 0.5 mg
- High accuracy: Err. ≤ 0.15°
- Selectable accelerometer range: ±2 g/±4 g/±8 g
- Simple ASCII interface language
- IP 67 compliant connector, cable, and housing
- LED heartbeat and transmission indicators
- Robust aluminum housing
- Low power consumption: < 30 mA (@ 5 V)

Applications
- Platform control, alignment, and stabilization
- Inclination (pitch and roll) and rotational movement measurement
- Antenna and satellite dish tracking and rotational movement
- Motion and position measurement
- Navigation and GPS compensation
- Robotic position sensing and control
- Position feedback for solar tracking systems
- Agricultural and industrial vehicle tilt monitoring

Accessories
- Connector and cable
  MSKS 6F/CS12187 Male cable M8, 6-pin

1 Zero g offset can be easily corrected and saved by user.
2 Units can be calibrated between -40°C and 80°C on request.

3 Cable is a third party product with temperature tolerance from 40°C to +105°C (-40°F to +221°F).

4 USB uses UART interface and a UART to USB cable.
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Dimensional drawing

<table>
<thead>
<tr>
<th>Part number</th>
<th>TILT – XX</th>
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</thead>
<tbody>
<tr>
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<td>A1</td>
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<td>Interface</td>
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<tr>
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<td></td>
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<tr>
<td>4</td>
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<tr>
<td>8</td>
<td>RS485</td>
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Housing material
A  Aluminum
P  ABS Plastic
S  Stainless Steel 316L
O  OEM (No Housing)

Family Series
05  Small size board (1”x1”)
10  Board with multiple interfaces
15  High accuracy analog inclinometer board
20  Low cost, ABS plastic enclosure
3x  High accuracy, aluminum enclosure
5x  Dynamic inclinometer, aluminum enclosure
70  Harsh environment, stainless steel enclosure

Horizontal installation position
Measuring range: ±90° (two-dimensional)

Vertical installation position

Warranty: This product has 18 months limited warranty.
For more information, please visit:
www.CTiSensors.com/warranty

This product is fully designed and manufactured in the U.S.A.