d-TILT/BluTilt

d-Tilt and **BluTilt** are full 360 arcdeg triaxial tiltmeters for very precise measurement (0.001 arcdeg resolution) of changes in inclination. These instruments use a very low noise MEMS accelerometer that enables a resolution of 0.001 arcdeg with a 24hr stability of +/-0.001 arcdeg.

The **d-Tilt/BluTuilt** features full (360 arcdeg) tri-axial measurement so that placement on structures can be does not require precise leveling. The **d-Tilt/BluTilt** can be attached to a beam or mounted directly to any structure. The **d-Tilt/BluTilt** is also available in borehole model (shown) with a 38mm OD.

The **d-Tilt/BluTilt** can has an internal logging capability that can store 30,000 readings. The results are downloaded over Bluetooth 5 to an android device. The reading interval and clock synchronization are also handled via Bluetooth 5.

The d-Tilt is available in several different types of package including being incorporated in a tilt beam.

Features:

▲ **Full 360 arcdegree triaxial**

▲ **0.001 arcdeg resolution with +/-0.001 stability (24hr test)**

▲ **Full 360 arcdeg triaxial**

▲ **Output directly in arcdeg**

▲ **Available with 5 year power supply (1 reading/hr) or 2 year (1 reading/hr)**

▲ **Unique instrument ID**

▲ **On-board digital temperature sensor for accurate compensation**

▲ **High survivability following blasts and vibration**

▲ **30,000 readings stored, download by Bluetooth 5**

▲ **Bluetooth 5 wireless communication (BluTilt)**

▲ **Free Android App for data aggregation**

▲ **Easy to install, no pre-leveling or calibration required**

▲ **Available with wired option(d-Tilt)**

▲ **Available in borehole form factor**
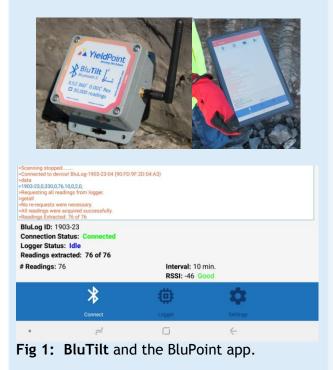
BluTilt Telemetry

Manual Readout

Readout can be made using YieldPoint's low cost manual readout box, which performs diagnostics on the lead-wires, recognizes the sensor type and ID and outputs the displacement and temperature data directly in mm and °C.

Automated Data Retrieval

BluPoint

BluTilt can be wirelessly enabled using BluPoint which provides a Bluetooth 5.0 connection which has a range of 100m LOS. **BluTilt**'s integrated BluPoint radio can transmit data to BluGateways which are WiFi or LTE-M enabled. These devices can upload data to VantagePoint, YieldPoint's data aggregation and visualization tool.

BluTilt also functions as a local data-logger storing 30,000 readings. Wireless download can be by any Bluetooth enabled Android device using the BluPoint app.

Fig 1: BluTilt and the BluPoint app.

d-Tilt Telemetry

900MHz 1for1 Telemetry

For longer range deployments the d-Rebar operate with YieldPoint's 900MHz 1for1 mesh radio telemetry system. Individual radios have a LOS range of 300m.

Fig 2: An installed 1 for radio

Fig 3: The 1for1 Gateway

Specifications

- ▲ Triaxial, X Y, Z axes

- ▲ Full 360 arcdeg range for each axis

- ▲ 0.001 arcdeg resolution

- ▲ +/- 0.001 arcdeg stability for 24hr test

- ▲ Repeatability +/-0.003 arcdeg

- ▲ Non-linearity +/-0.006 arcdeg

- ▲ Wireless Bluetooth 5 Coded PHY at 125kb/s (BluTilt)

- ▲ Wired option RS485 with transmission up to 500m over 2 x tp (d-Tilt)

- ▲ Internal battery 5000mAhr at 3.3V

- ▲ 4mAh/day at 3.3V (1 reading/hr)

- ▲ Replaceable battery 4 x AA alkaline or lithium

- ▲ Optional Aluminum IP68 enclosure (IP65 standard)

- ▲ On board temperature sensor (+/- 0.5C accuracy)

- ▲ Wired connection available(d-Tilt)