Tilt, inertial and vibration

Single- or Dual-Axis Inclinometer, RS485, 4–20mA or CANopen, up to ±90°

Model DW-TL

Temperature-compensated inclinometer for one or two axes, with ranges from ±10° to ±90°, RS232, RS485, RS422 or TTL, 4–20 mA or CANopen output, a 9–36 V DC supply and an IP67 housing of 92 × 48 × 36 mm.



Range
±10° to ±90°

Output
RS485, 4–20 mA or CANopen

Protection
IP67

Features

- Single-axis (X) or dual-axis (XY) tilt measurement
- Full temperature compensation from −40 to +85 °C
- Built-in 24-bit A/D converter
- RS232, RS485, RS422 or TTL; 4–20 mA; or CANopen output
- Wide 9–36 V DC supply
- Waterproof aviation connector, IP67
- 4–20 mA output for cable runs of up to 2 km

Applications

Levelling of construction vehicles, Bridge and dam monitoring, Positioning of laser equipment, Angle control in medical devices, Attitude of underground drilling rigs, Tilt monitoring of geological equipment

Specifications

Performance

Axes	Single axis (X) or dual axis (XY)
Measuring range	±10° / ±30° / ±60° / ±90° (CANopen version: up to ±60°)
Resolution	0.001° (RS485, CANopen); 0.0007° (4–20 mA)
Accuracy at 25°C	0.003° (±10°) / 0.01° (±30°) / 0.02° (±60°) / 0.03° (±90°)

Zero temperature coefficient	±0.0004 °/°C (digital); 0.0005 °/°C (4–20 mA), −40 to +85 °C
Sensitivity temperature coefficient	≤50 ppm/°C (≤100 ppm/°C at ±90°, RS485 version)
Response frequency	20 Hz
Power-on time	0.5 s

Output	
Output signal	RS232 / RS485 / RS422 / TTL; 4–20 mA (12 mA at 0°); CANopen
Communication protocol	Modbus (digital versions); CANopen (CANopen version)
Output rate	5 / 15 / 35 / 50 Hz settable (RS485); 10 / 20 Hz settable (CANopen)

Electrical	
Supply voltage	9–36 V DC (digital and CANopen versions); 11.5–36 V DC (4–20 mA)
Operating current	50 mA without load (CANopen version)
Insulation resistance	≥100 MΩ

Environmental	
Operating temperature	−40 to +85 °C
Storage temperature	−40 to +85 °C
Ingress protection	IP67
Shock	100 g at 11 ms, 3 axes (half sine)
Vibration	10 grms, 10–1000 Hz
MTBF	≥98,000 h

Mechanical	
Dimensions	92 × 48 × 36 mm
Mounting hole spacing	82 × 38 mm; 4 × M4 screws, 2 × M3 positioning pins
Electrical connection	Waterproof aviation connector; 2 m shielded cable as standard
Weight	≤220 g (RS485), 235 g (CANopen), ≤260 g (4–20 mA), without cable

Ordering and support

Pricing, samples, lead time and custom versions: xyx@gzdwin.com, +86 181 0280 8901.

Guangzhou Dwin Technology Co., Ltd., 4th Floor, Building 2, No. 4, Xingye Street, Xiaowu, Nansha District, Guangzhou, China. Specifications are typical values and may change without notice; confirm critical values with DWIN before design-in. Revision 2026-11.