

ER-TS-12200-Modbus High Precision Wireless Transmission Tilt Sensor

Introduction

ER-TS-12200-Modbus High Precision Wireless Transmission Tilt Sensor

is a wireless inclination sensor with ultra-low power consumption, small size and high performance, which is aimed at the industrial application of users without power supply or real-time dynamic measurement of object attitude angle. Powered by lithium battery, based on Internet of things technology Bluetooth and ZigBee (optional) wireless transmission technology, all internal circuits have been optimized and designed, and various measures such as industrial MCU, three proof PCB board, imported cable, wide temperature metal shell are adopted to improve the industrial level of the product. With good long-term stability and small zero drift, it can automatically enter the low-power sleep mode, so as to get rid of the dependence on the use environment.

The product has compact structure, precise design, re compensation for temperature and linearity, and integrated comprehensive protection functions such as short circuit, instantaneous high voltage, polarity, surge, etc. it is simple and convenient to use. The wireless digital signal transmission method eliminates the cumbersome wiring and noise interference caused by long cable transmission; The industrial design has extremely high measurement accuracy and anti-interference ability. The wireless sensor nodes can form a huge wireless network, support thousands of measuring points to monitor the inclination at the same time, and support professional computer software. Without field survey, it can measure and record the state of the measured object in real time; The safety monitoring system is suitable for remote real-time monitoring and analysis of industrial sites, dilapidated houses, ancient buildings, civil engineering, tilt deformation of various towers and other needs.

Features

Dual axis monitoring (single axis optional)

Range: $\pm 30^\circ$

Accuracy: 0.001° , resolution: 0.0005°

Volume (94*74*64mm) (customizable)

Ultra low power consumption

Powered by built-in rechargeable lithium battery

Wide temperature operation $-40\sim+85^\circ\text{C}$

IP67 protection grade

Applications

Bridge construction

Pan tilt leveling

Ship navigation attitude measurement

High Railway Foundation Tunnel Monitoring

Satellite solar antenna positioning

Medical equipment

Angle control of various construction machinery

Specifications

Parameter	Condition	ER-TS-12200-Modbus	Unit
Measuring range	± 30		$^\circ$
Measuring axis	X, Y		
Zero temperature drift	$-40\sim 85^\circ$	± 0.0005	$^\circ / ^\circ\text{C}$
Sensitivity temperature coefficient	$-40\sim 85^\circ$	≤ 150	ppm/ $^\circ\text{C}$
Frequency response	DC response	100	Hz
Resolution	0.0005		$^\circ$
Accuracy	$-40\sim 85^\circ\text{C}$	0.001	$^\circ$

Long term stability	-40~85 °C	<0.0016	°
Power on start time	0.2		s
Response time	0.05		s
Wireless frequency	2460mhz (default), 2405~2480 adjustable		
Transmission distance	1.6km		
Built in battery capacity	6000mAh		
Average working time	≥ 55000 hours / time		
Impact resistance	20000g, 0.5ms, 3 times / shaft		
Anti vibration	10grms, 10~1000Hz		
Insulation resistance	≥100m Ω		
Waterproof grade	IP67		
Weight	475g (excluding packing box)		