

ISys100-BOL

Bolt Monitoring System

Datasheet

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CN Rev.v1.0.2

Product Overview

ISys100-BOL bolt monitoring system consists of the IMon-U108 bolt monitoring data acquisition unit and the ISen-H302 series bolt monitoring sensors. Users can remotely monitor bolt preload, receive timely alarm notifications for bolt loosening, fatigue and breakage, and continuously track the entire process of bolt loosening. This ensures safe equipment operation, avoids unplanned downtime, and reduces operation and maintenance time and cost.

The bolt monitoring data acquisition unit adopts high-precision ultrasonic technology for accurate measurement. Bolt preload or axial stress is calculated based on the ultrasonic echo time. It features anti-interference, high precision and real-time performance, and can effectively monitor changes in bolted joint status. It supports up to 8 external probes and can also monitor temperature.

Main Features

- **Real-time monitoring:** Monitors bolt fastening status in real time and detects loosening, breakage and other anomalies in a timely manner;
- **High accuracy:** Accurately measures bolt preload or axial stress;
- **Wide applicability:** Suitable for monitoring various types of bolted connections;
- **Easy installation:** No modification or disassembly of existing equipment required, featuring fast installation and commissioning;
- **High reliability:** Stable long-term operation, suitable for high-intensity work in harsh environments;

- **Alarm functions:** Provides loosening, overload, breakage and abnormal pre-warning, and issues alarms to prompt users for timely handling.

Technical Parameters

Project Type	Technical Parameters
Data acquisition unit IMon-U108	
Number of channels	8
Data sampling rate	Up to 1 Hz per channel, configurable
Communication	RS485
Transport protocol	Modbus
Power supply	24V DC
Interface	4-pin female aviation connector
Main unit dimensions	147mmx 135mmx 37.7mm (L x W x H)
Weight	466g
Bolt monitoring sensor (Tower) ISen-H302-T, Bolt monitoring sensor (Blade root) ISen-H302-B	
Preload measurement accuracy	±0.1%
Preload measurement error	±3%
Monitoring bolt specification range	Diameter: ≥ M12, length: 13.25 cm – 100 cm
Probe dimensions	Customizable
Probe cable length	MAx 16m
Temperature measuring range	-40 ~ 85°C
Temperature measurement accuracy	±0.1°C
General parameters	
Operating temperature	-40 ~ 85°C
Operating humidity	10% ~ 90%RH
Housing material	Aluminum alloy

IP grade	IP54
Installation method	Probe: adhesive bonding, main unit: screw mounting

Product Dimension Diagram

Dimensional drawing:

Bolt monitoring data acquisition device IMon-U108

