THE MINI-MAX
Bolt Tension Monitor

Ultrasonically measures the elongation produced by tightening a threaded fastener.

MINI-MAX
BOLT TENSION MONITOR

0.0241 IN

DELAY: 4.80 | WIDTH: 0.51
MODE: P-E GT | GAIN: 50
GATE1: 4.92 | TEMP: 67.2
THR: 6 | LOC: 01
GROUP: NAME

MENU CLR MEAS
OK + ESC
◄ ENTER ►
AUTO SET ▼ ON/OFF

DAKOTA ULTRASONICS

▶ The FIRST cost-effective ultrasonic solution available on the market.

▶ EFFECTIVELY monitor your bolts during periodic shutdowns over the service life of the fastener.

▶ VISUALLY compare the unloaded to the loaded waveform.

▶ MEASUREMENT QUANTITIES Time (nanoseconds), Elongation, Load, Stress, and %Strain.

▶ DISPLAY OPTIONS — RF, Rectified, Large Digits with Limits Bar.

▶ DISPLAY RESOLUTION 1/8 inch VGA 240 x 160 pixels.

▶ STORES 8000 readings and waveforms in multiple groups.

▶ BUILT-IN linear regression or vector for optimizing load measurements.

▶ AUTO SET feature automatically optimizes detection and adjusts display.

▶ HI/LO ALARM tolerance limits work in conjunction with the data port and external pump shut-off device.

Physical

Weight:
13.5 ounces (with batteries).

Size:
Width (2.5 in/63.5 mm)
Height (6.5 in/165 mm)
Depth (1.24 in/31.5 mm)

Operating Temperature:
-14˚ to 140˚F (-10˚ to 60˚C).

Keyboard:
Membrane switch with twelve tactile keys.

Case:
Extruded aluminum body with nickel plated aluminum end caps (gasket sealed).

Data Output:
Bi-directional RS232 serial port; Windows® PC interface software.

Display:
1/8in VGA grayscale display (240 x 160 pixels); viewable area 2.4 x 1.8in (62 x 45.7mm); EL backlit (on/off/auto invert).

Ultrasonic Specifications

Measurement Modes:
Pulse-Echo (flaws, pits).
Pulse-Echo w/Gate (fine adjust).

Pulser:
Square wave pulser with adjustable pulse width (spike, thin, wide).

Receiver:
Manual or AGC gain control with 40dB range.

Timing:
10 bit 250 MHz digitizer.

Transducer

Transducer Types:

Dual Element (1 to 10 MHz).

Locking quick disconnect "00" LEMO connectors.

Standard 4 foot cable.

Custom transducers and cable lengths available for special applications.

Measuring

Range:
From 1 to 96 inches (25.4 to 244 cm).

Quantities:

Time - Nanoseconds.

Elongation - Change in length (inches/millimeters).

Load - Force load applied (pounds KIP or megapascals MPa).

Stress - Force for unit area stress applied (inches per inch or millimeters per millimeter).

%Strain - Ratio of elongation to effective length.

Resolution:

+/- 0.00001 inch (0.0001 mm).

Velocity Range:

0.0492 to .3937 inches/microsecond (in/µs) (1250 to 9,999 meters/sec).

Fixed, Single, and Two-point zero calibration options.

Select bolt material types from a preset or custom list.

Units:

English & Metric / Farenheit & Centigrade.

Display

A-Scan: Rectified +/- (half wave view), or RF (full waveform view).

Large Digits: Display and toggle between nanoseconds, elongation, load, stress, and strain; Digit Height: 0.400 inch (10mm).

Limits Bar (alarm limits): Set Hi & Lo alarm limits for displaying an acceptable tolerance range.

Repeatability Bar Graph: Bar graph indicates stability of measurement.

Data Logger

Total of 8,000 bolts in multiple bolt groups. Stores both waveform views, nanoseconds, elongation, load, stress, strain and all gauge settings for each reading.

Memory:
16 megabit non-volatile ram.

Transducer

Transducer types:
Single element (1 MHz to 10 MHz & 1/8 to 1inch diameters). Magnetic & Non-Magnetic options.

Glue-on transducers available for short bolts with minimal elongations to eliminate transducer placement errors.

Locking quick disconnect "00" LEMO connectors. Standard 10 foot cable.

Custom transducers available for special applications.

Temperature probe for automatic temperature compensation.

Features

Setups:
64 custom user defined setups; Factory setups can also be edited by the user.

Gate:
Gate used to fine adjust where the detection point occurs.

Alarm Limits:
Set Hi and Lo tolerances with audible beeper, viewable scan bar, and visual LEDs.

Auto Set:
Locates the detection signal, optimizes the gain setting, and adjusts the overall display to show the waveform and detection point automatically.

Field Calibration:
Vector & linear regression.

Certification

Factory calibration traceable to NIST & MIL-STD-45662A.

Warranty

2 year limited

CE approved

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