

TORQLITE

ECHOMETER PRODUCT RANGE

FAST, EASY AND ACCURATE



TORQLITE

INTRODUCING ECHOMETER PREMIER

The latest addition to our range of Ultrasonic Bolt Load & Elongation Measurement Instruments



The Echometer Premier ultrasonic measurement device has been developed specifically for the bolting industry which measures, displays, stores and transfers bolt elongation and load. A hard wearing unit with a touch screen. The most advanced instrument available to control or verify bolt elongation and load in the field or laboratory developed with input from the most experienced users and electronic developers in the bolt tightening industry delivering a system with intuitive software.

FAST, EASY AND ACCURATE

Easy to use colour touch screen display
(Can be used with gloves or stylus).

Compatible with MS Windows and MS Excel. No need for special PC Software.

IP44 rated (sealed for field use).

Chargeable by external charger or Micro-USB.

Secure sector for all bolt data and a "public" sector for transfer via USB to computer.

Automatic temperature compensation through a magnetic temperature probe.

Flexible bolt data storage options, large storage.

INTUITIVE OPERATION

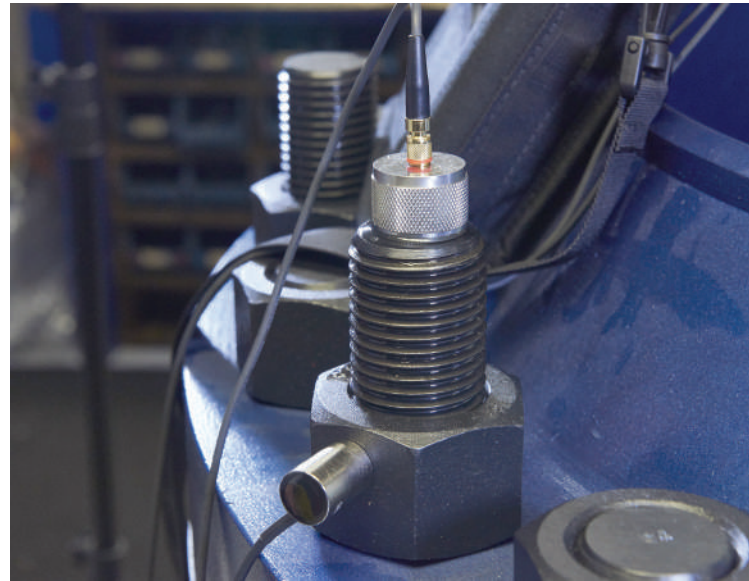
- Programmable touch pad QWERTY alphanumeric input.
- Creation, storage, retrieval of individual projects (group of fasteners).
- Bolt types for projects (geometry, material, etc.) stored individually for repeated use/retrieval.
- Flexible bolts/readings per project; no setup limits.
- Temperature, signal parameters, scope trace and date/time stored with each reading.

ADDITIONAL FEATURES

- Real time clock – date-time stored with every reading.
- Sleep mode and auto shut off.
- Power/sleep LED.



The Echometer range of products utilize state of the art ultrasonic technology to accurately measure the elongation, stress and load in bolts. Results are displayed on easy to read screens and can be stored for future reference.



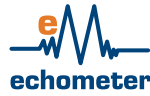
Measurement is achieved by determining the change in the transit time of an ultrasonic shock wave along the length of the fastener as it is tightened.

The Echometer units work with most bolt tightening systems and are used to monitor the bolt during the tightening process to ensure accurate initial loading. The retained load in the bolt can then be monitored at any time.

With built in data recording and reporting through interfaces, Echometer units are quick and easy to use and offer a reliable solution to the most difficult bolting problems.

Transducers need to be purchased separately – they are not included with the units due to application specific requirements. If in doubt contact your representative for more information.

SPECIFICATION



Weight	0.4kg (with batteries)	2.04kg (with batteries)	1.445 kg (with batteries)
Size	63.5mm x 165mm x 31.5mm	216mm x 165mm x 70mm	175mm x 175mm x 42 mm
Keyboard	Membrane switch pad with 12 tactile keys	Membrane switch pad with 21 tactile keys	3.8x2.2 in / 97x56 mm Touch Screen
Power Source	3 x 1.5V alkaline or 1.2V NiCad AA cells. Typically operates for 150 hours on alkaline and 100 hours on NiCad. Auto power off if idle for 5 minutes.	Lithium Ion Pack 10.8V, 2 amp 18hrs typical operation. Emergency battery backup. 6 x 1.5V alkaline, 1.2V AA NI-MH or other equivalent power source.	4 sealed 3.4mAH Lithium Ion 18650 cells, twin smart chargers with SOC monitoring. Operating time in 20+hrs, USB and 115/230 VAC Fast 9v standard 2.1mm power supply input
Memory	16 Mb internal RAM	4 Gb internal & up to 64 Gb external SD Slot.	256 Mb internal RAM
Data Output	Bi-directional RS232 serial port; Windows PC interface software.	USB Direct 1.1 PC Connectivity and RS232 PC serial Interface.	Mini USB

TRANSDUCER DATA & SELECTION

There are several things to consider when deciding which transducer to use:

- The crystal diameter should be completely in contact with the bolt end surface.
- The outside diameter should be clear of any obstruction.
- The frequency should be chosen to suit the bolt length.
- The larger the diameter the stronger the signal and therefore better results are obtained by using the largest size transducer that will fit on the bolt.
- TorqLite recommends the 3/8" diameter, 5MHz transducer as the best general purpose covering 90% or more of typical bolting applications.

MAGNETIC TRANSDUCERS

Size (diameter)	Frequency	Application
1/8" (3.1mm)	5 Mhz	General Purpose
1/8" (3.1mm)	10 Mhz	Hi-resolution/short Bolts
3/16" (4.7mm)	5Mhz	General Purpose
1/4" (6.3mm)	2.25 Mhz	Long Bolts
1/4" (6.3mm)	5 Mhz	General Purpose
1/4" (6.3mm)	10 Mhz	Hi-resolution/Short Bolts
3/8" (9.5mm)	2.25 Mhz	Long Bolts
3/8" (9.5mm)	5 Mhz	General Purpose
1/2" (12.7mm)	2.25 Mhzs	Long Bolts
1/2" (12.7mm)	5 Mhz	General Purpose
3/4" (19.0mm)	2.25 Mhz	Long Bolts
3/4" (19.0mm)	5 Mhz	General Purpose

Diameter reference	Outside diameter
1/8" (3.1mm)	0.38" (9.6mm)
3/16" (4.7mm)	0.38" (9.6mm)
1/4" (6.3mm)	0.75" (19.0mm)
3/8" (9.5mm)	0.81" (20.5mm)
1/2" (12.7mm)	1" (25.4mm)
3/4" (19.0mm)	1.21" (30.7mm)

NON-MAGNETIC TRANSDUCERS

1/8" (3.1mm)	0.23" (5.8mm)
1/4" (6.3mm)	0.355" (9.0mm)
1/2" (12.7mm)	0.605" (15.3mm)

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