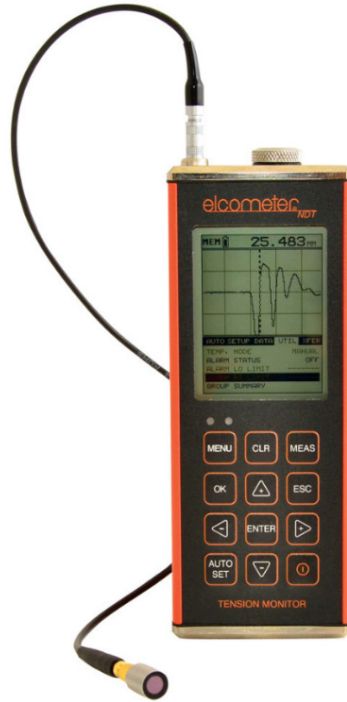


Elcometer BG80 Bolt Tension Monitors



When nuts and bolts are fastened together under load the action of tightening the nut increases the force applied to the bolt causing elongation.

The BG80 bolt tension monitor accurately measures this elongation allowing the gauges to accurately measure time (nanoseconds), elongation, load, stress, and %strain of the bolt.

By using ultrasonics, bolt tension monitors are not affected by temperature, friction or resistance factors affecting the accuracy of standard torque measurement techniques - giving the BG80TDL accuracy within 0.0001mm.

Using the gauge's USB interface together with the optional shut off accessory the gauge can be programmed to automatically stop the tightening process when the appropriate load has been applied.

Features

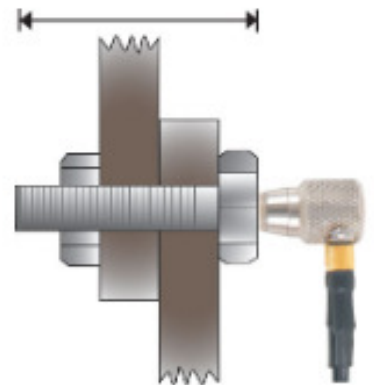
- Range of display & measurement options including: Elongation, Load, Stress, and %Strain, RF, Rectified, Large Digits with Limits Bar
- BG80TDL features temperature compensation to counteract measurement irregularity caused by temperature change
- Data storage capability: 4GB internal memory
- Auto Set feature automatically optimizes detection and adjusts display
- Hi/Lo Alarm tolerance limits work in conjunction with the data port

How does it work?

As a fastener is tightened it stretches (elongates) in length.

Manual torque wrenches measure the force applied when tightening a fastener, the accuracy can be affected by temperature, friction and resistance.

As BG80 & BG80TDL ultrasonically measures the change in length accurately determining the applied load of a fastener as it is tightened, they are not affected by these factors.



Technical Specification

Model & Part Number	BG80TDL
Material thickness digits display	■
Measurement Mode ¹	PE & PE with Gate
Measurement Rate:	4 readings per second
Manual:	
Measuring Range ²	25.4 – 2440mm
Measurement Accuracy ²	± 1% or ±0.1mm whichever is the greater
Measurement Resolution	0.0001mm
Velocity Calibration Range	1250 - 10,000m/s
Additional Features:	
Limit alarm mode	■
Data logging	8,000 readings
Calibration Options	Fixed, single & 2 point
Transducer Probe Type	Single element
Transducer Frequency Range	1 - 10MHz
Display	1/8 VGA
Units (selectable)	mm or inches
LED Backlight	On / off / auto
Repeatability / Stability Indicator	■
Battery Type	3 x AA alkaline
Battery Life (approximate)	150 hours
Low Battery Indicator	■
Battery Save Mode	Auto
Operating Temperature	-10 to 60°C
Size (w x h x d)	63.5 x 165 x 31.5mm
Weight (including batteries)	383g
Aluminium case design with gasket sealed end caps, waterproof membrane keypad	■
Transducer Connector Type	LEMO
RS232 Interface	■

¹ PE: Pulse-Echo Mode

² Measuring range & accuracy depends on material, surface conditions and the transducer selected

Packing List

Elcometer NDT BG80TDL Gauge
Couplant
Carry Case
User Manual
Test Certificate
3 x AA Batteries
DakView Software
USB Transfer Cable

Transducers

A complete range of magnetic Bolt Gauge Transducers for use with the BG80TDL.



Part Number	Element Type	Probe Characteristic	Damping	Microdot	Top	All Metals
2.25 MHz Bolt Gauge Transducers						
TX2M25CM-5	Si/EI Non-Magnetic	Standard	S	■	■	■
TX2M25CM-6	Si/EI Magnetic	Standard	S	■	■	■
TX2M25DM	Si/EI Magnetic	Standard	S	■	■	■
TX2M25EM-5	Si/EI Non-Magnetic	Standard	S	■	■	■
TX2M25EM-6	Si/EI Magnetic	Standard	S	■	■	■
TX2M25GM	Si/EI Magnetic	Standard	S	■	■	■
5.00 MHz Bolt Gauge Transducers						
TX5M00AM-2	Si/EI Non-Magnetic	Standard	S	■	■	■
TX5M00AM-3	Si/EI Magnetic	Standard	S	■	■	■
TX5M00CM-7	Si/EI Non-Magnetic	Standard	S	■	■	■
TX5M00CM-8	Si/EI Magnetic	Standard	S	■	■	■
TX5M00DM	Si/EI Magnetic	Standard	S	■	■	■
TX5M00EM-7	Si/EI Magnetic	Standard	S	■	■	■
TX5M00EM-6	Si/EI Non-Magnetic	Standard	S	■	■	■
TX5M00GM	Si/EI Magnetic	Standard	S	■	■	■
10.00 MHz Bolt Gauge Transducers						
TX10M0AM-2	Si/EI Non-Magnetic	Standard	S	■	■	■
TX10M0AM-3	Si/EI Magnetic	Standard	S	■	■	■
TX10M0CM-4	Si/EI Non-Magnetic	Standard	S	■	■	■
TX10M0CM-5	Si/EI Magnetic	Standard	S	■	■	■

S - Standard Undamped Transducer

Accessories

Cables & Adaptors

TL-24030-3	T/Cable: 4' Single Lemo 00 to Microdot
TL-24030-10	T/Cable: 10' Single Lemo to Microdot
TL-24030-11	T/Cable: 20' Single Lemo to M/dot Single
TL-24030-12	T/Cable: 20' Lemo to Lemo 00
TL-24031	RS232 Cable (6'); DB-9 to Lemo
TL-24032	USB to Serial Adapter

Couplant

TC-24034-1	Couplant: Standard; 4oz Bottle (Material Safety Data Sheet)
TC-24034-2	Couplant: Standard; 12oz Bottle (Material Safety Data Sheet)
TC-24034-3	Couplant: Standard; 1 Gallon (Material Safety Data Sheet)
TC-24034-9	Couplant: Hi-Temp 371°C; 2oz Tube (Material Safety Data Sheet)

Other Accessories

TZ-24036	Temperature Sensor with 6' Cable
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