

TT2000

Ultrasonic Tension Meter



TT2000

Digital Direct Reading

- Non-destructive axial bolt tension tester
- Input information regarding fastener & materials
- Sound wave lengths are measured and compared.

Model
TT2000
TT2000C

TT2000 Specifications

Measuring Range	5-10,000mm (Steel material)
Applicable Length of Bolt	50-9,000mm
Applicable Nominal Diameter of Bolt	φ6mm dia or more (Applicable for less than φ6mm dia. with an optional sensor)
Ultrasonic Wave Frequency	0.5-15 MHz
Time Axis Resolution	5ns
Result of Measurement	Bolt initial length (mm), Stress (Mpa), Elongation (mm), Propagation rate (μs)
Measuring Resolution	Depends on bolt diameter and length [Ex.] Based on the first echo measurement (steel material) Bolt diameter φ10, Bolt tightening length 50mm ± approx. 1.47kN Bolt diameter φ20, Bolt tightening length 100mm ± approx. 2.94kN
Memory Capacity of Data	2,000pcs. or time pass measurement 300 items (Max. 50 kinds of different bolts can be registered)
Bolt Temperature Correction	Manual input by key, Auto temperature input *1
Display	Color TFT6.4 type (640 x 480dots)
External Output	8 bits serial interface (RS232C) *2 Composite output (NTSC), Alarm output (photo coupler), Encoder input *3
Power Supply	AC85-130V, AC185-265V (50/60Hz) or DC12V *4
Optional Battery	Portable: 2.5h use for 1.5h Charge Built-in case: 8h use for 4.5h charge
Operating Temperature	0-45 °C
Dimensions	Body: H160 x W246 x D60mm Body + Built-in battery: H160 x W246 x D246mm
Weight	Body: 1.2kg Body + built-in battery: 4.9kg

- Note**
1. Optional thermometer can be connected to TT2000C for auto temperature adjustment Input temperature range is from -40°C to 200°C. Measurement over 60°C requires a sensor specially designed for high temperature.
 2. RS232C connector is available only with TT2000C.
 3. DC12V can be used only when using the optional portable battery or the built-in battery case.

TT2000 Optional Accessories

Model Name
RS232C Junction Cable A
Portable Battery Cable
RS232C Junction Cable B



Ultrasonic Sensor

Part #	Name	Applicable Bolts
607	5C6.4N	More than M8, L1<approx.50mm
608	5C12.7N	More than M14, L1<approx.2m

- Note**
1. L1 is standard bolt length with material in SCM, S-C, SS for ultrasonic wave reflection measurement n=1.
 2. Ultrasonic wave sensor is consisting of 3 parts, Sensor, Magnet Holder and Bolt Holder.
 3. Standard 5C6.4N does not include bolt holder.
 4. 5C6.4N=[5: Frequency (MHZ)]
[C: Oscillator Material (C: piezoelectric ceramics)]
[6.4: Oscillator Diameter, mm]
[N: Perpendicular (Normal)]

Features of ultrasonic wave sensor

1. The magnetic holder provides stabilized force through the sensor, which provides high repeatability measurement.
2. The bolt holder gives same position of the sensor to support more accurate measurement.

NEW

Axial Tension Calibrator



AFC-20G2

Model
AFC-20G2

Accuracy ±2%+1digit

Axial Tension	Min. - Max.	20 to 200
Measurement Range [kN]	1 digit	0.01
Available Bolt Size (Reference) [mm]		Less than φ20mm, Bolt nominal length 45 to 300
	M10	45 to 80
	Standard accessory	(A nut with the same strength as the measurement bolt is required)
	M16	50 to 85
Dimensions [mm]	Overall Length	451
	Width	438 (Body300)
	Depth	409
Weight Approx. [kg]		55
Power		AC100 to 240V ±10% 50 / 60Hz
Temperature in Use		0 to 40°C Less than 85%RH (No condensation)