

Measuring principle

This has a microphone as a sensor, which measures the vibrating frequency(transverse vibration of a string theory) of the free belt, by converting acoustic sound pressure to electric signals. By measuring the vibrating frequency, tension can be calculated after setting belt parameters of span, width and mass with formula $T=4 \times M \times W \times S^2 \times F^2 \times 10^{-9}$

Applications

Belt tension testers test the tension of belts, wires, ropes, tapes, etc, as a means of mechanical strength test. Widely useful in automobile, textile, cables, wires, plastic films, paper, printing, etc. It can be used to measure the tension of auxiliary belts fitted to motor vehicles and other machines.

Features

- Adjustable directional probe
- Measures vibrating frequency, which can help calculate the belt tension
- Upto Max frequency of 680Hz
- Data storage and backlit display



Technical Specifications

Model	Metrix+ BTF 01
Range	10 ~ 680Hz
Belt Width	Input upto 999.9mm
Belt free strand length	Input upto 9999mm
Belt mass	Input upto 999.9
Measurement distance	10mm
Units	Frequency: Hz Tension: N
Resolution	1Hz
Precision	<100Hz: 1Hz, >100Hz: 1%
Accuracy	< 5%
Digital sampling accuracy	< 1%
Power	4 x 1.5V AAA batteries
Features	LED indication, data storage, low battery indication, auto power off
Operating	Temp: 0~50C, Humidity <80% RH
Dimensions	140 x 72 x 34mm, approx. 350g
Std accessories	Main unit, sensor, manual, case

[Note- Tension checking should always be carried out in accordance with the vehicle manufacturers' instructions.]

[In low tension ranges, a bigger vibration may be generated more easily, which may cause measurement errors. If the tension value cannot be obtained, the belt may be too loose to make a clear frequency signal. For more accurate tension values, try to tighten the belt.]

[The noise from a windy environment may affect the sensor, please avoid windy environments.]

Taking a Measurement

NOTE: for newly fitted belts please turn the belt system at least 3 rotationsto settle the belt before measuring.

1. Place the probe within 10mm of the belt and press the Measure Button(TEST).
2. Tap the belt to make it vibrate while maintaining the 10mm or less gap. Do not allow the probe to touch the belt.
3. The will show "Testing" on the screen..
4. "Calculating" will be shown on the screen when a reading has been taken.
5. The measured results will be shown when the buzzes once and shows a green LED. Note: if the screen shows a red LED this indicatethe measured frequency or calculated tension is over the specified range.
6. For best results always take the average of 3 measurements.
7. To view the frequency or tension readings press the Hertz Button (Hz/N).