Product Data Sheet

Belt Frequency Meter
Type 3 Optical (7-300Hz)



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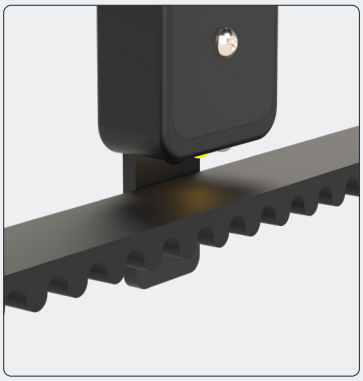
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OPT **OPTICAL**
SENSOR HEAD

The Type 3 Optical Belt Frequency Meter come with a OPT T01 sensor head as standard.









Belt Frequency Meter - Type 3 Optical (7-300Hz)

The Type 3 Optical Belt Frequency Meter is suitable for measuring frequencies in all types of power transmission belts, ranging from toothed timing belts to poly-vee belts. This belt meter is available in Optical and Acoustic.

This belt meter is operated by a simple ON/OFF keypad button.



7Hz to 300Hz

The Type 3 Optical Belt Frequency Meter has a frequency measurement range of 7Hz to 300Hz and uses an optical sensor head. This meter is useful where there is a requirement to measure tension in a variety of belts, some vibrating at low frequencies.

The optical sensor head uses an infrared beam to detect the vibration of the belt. It is particularly suitable for small belts under low levels of tension. This meter is useful for wide belts with large spans.

The belt must be tapped to induce the natural frequency of vibration. The sensor may be beamed onto the flat side of the belt (either the outer faces or pulley contact face) from distances of 5-15mm although in most cases readings may be taken from distances up to 50mm. Alternatively, the edge of the belt may be used, with the depth finger on the sensor head providing an easy way to hold the sensor steady.

A specialised optical version of 4Hz-300Hz is available by request.



Compatability

This belt meter is compatible with the following sensor heads:

Type	Product Code	Description
Acoustic	SH_ACO T01	Sensor Head - Acoustic - ACO T01
Acoustic	SH_ACO T02	Sensor Head - Acoustic - ACO T02
Acoustic	SH_ACO T03	Sensor Head - Acoustic - ACO T03
Acoustic	SH_ACO T04	Sensor Head - Acoustic - ACO T04
Acoustic	SH_ACO T05	Sensor Head - Acoustic - ACO T05
Acoustic	SH_ACO T06	Sensor Head - Acoustic - ACO T06
Acoustic	SH_ACO T07	Sensor Head - Acoustic - ACO T07
Acoustic	SH_ACO T08	Sensor Head - Acoustic - ACO T08
Acoustic	SH_ACO T09	Sensor Head - Acoustic - ACO T09
Acoustic	SH_ACO T10	Sensor Head - Acoustic - ACO T10
Acoustic	SH_ACO T11	Sensor Head - Acoustic - ACO T11
Acoustic	SH_ACO T12	Sensor Head - Acoustic - ACO T12
Optical	SH_OPT_T01	Sensor Head - Optical - OPT T01
Optical	SH_OPT_T02	Sensor Head - Optical - OPT T02
Optical	SH_OPT_T03	Sensor Head - Optical - OPT T03
Optical	SH_OPT_T04	Sensor Head - Optical - OPT T04
Optical	SH_OPT_T05	Sensor Head - Optical - OPT T05
Optical	SH_OPT_T06	Sensor Head - Optical - OPT T06
Optical	SH_OPT_T07	Sensor Head - Optical - OPT T07
Optical	SH_OPT_T08	Sensor Head - Optical - OPT T08
Optical	SH_OPT_T09	Sensor Head - Optical - OPT T09
Optical	SH_OPT_T10	Sensor Head - Optical - OPT T10
Optical	SH_OPT_T11	Sensor Head - Optical - OPT T11
Magnetic Pickup	SH_MAG_T01	Sensor Head - Magnetic Pickup - MAG T01

Charging Batteries

The Belt Frequency Meter is compatible with user-supplied rechargeable batteries and recharging unit. A convenient 3.5mm, positive centre charging socket is located on the bottom end of the meter body adjacent to the sensor cable plug-in port.

The built-in circuit of the meter controls the charging current, automatically providing a fast and a trickle charge. Charging current is internally limited to 100 mA. Charging time is typically 12-14 hours for a full charge.

Rechargeable batteries provide 30 hours of continuous operation. Automatic power off occurs 2 minutes from the last use of the meter.

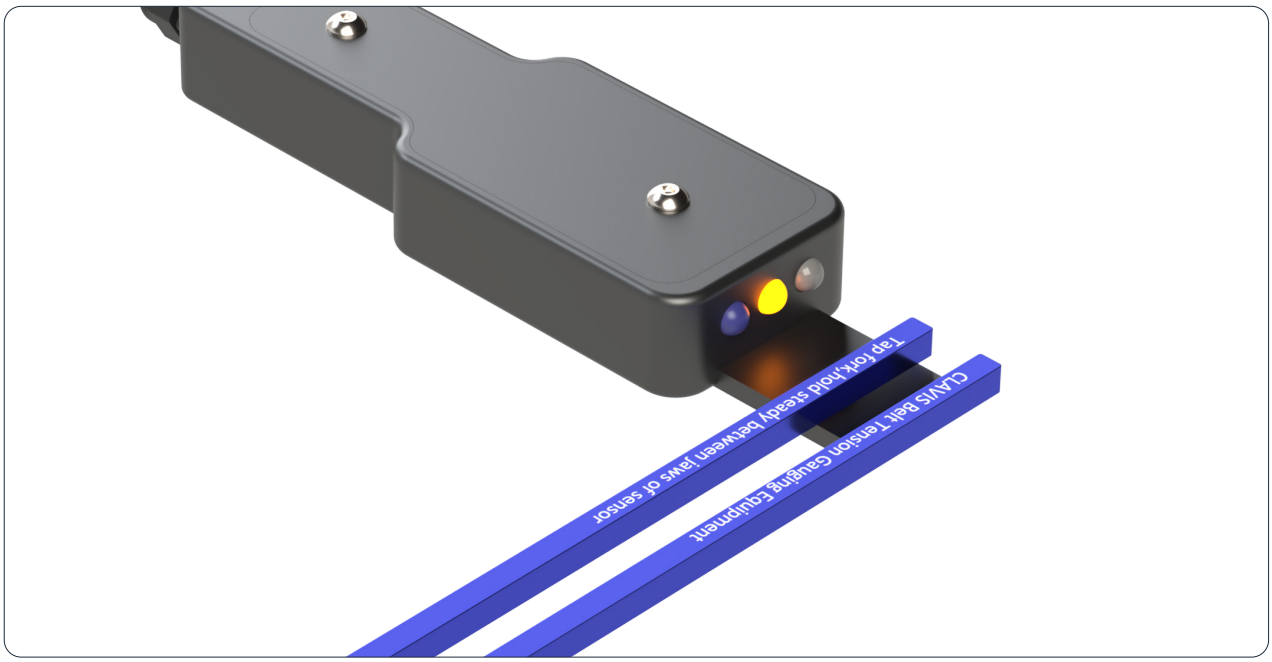
Calibration

Every Clavis meter is supplied with a precision mechanical resonator (tuning fork) for simple calibration validation by the user. If you have additional calibration requirements, Clavis can supply a Sonic Calibration Meter.



The measurement system of the Belt Frequency Meter is based upon a very stable quartz crystal that should never wander. However, a precision mechanical resonator (tuning fork) is included with the meter so that a calibration check at a spot frequency of 250Hz may be performed at any time.

Tap the tip of the tuning fork on a hard surface and then hold steady in front of the optical sensor at a distance of 15mm (1/2 inch) or in between the jaws of the acoustic sensor. The meter should measure a frequency of 250Hz, demonstrating that it is in calibration.

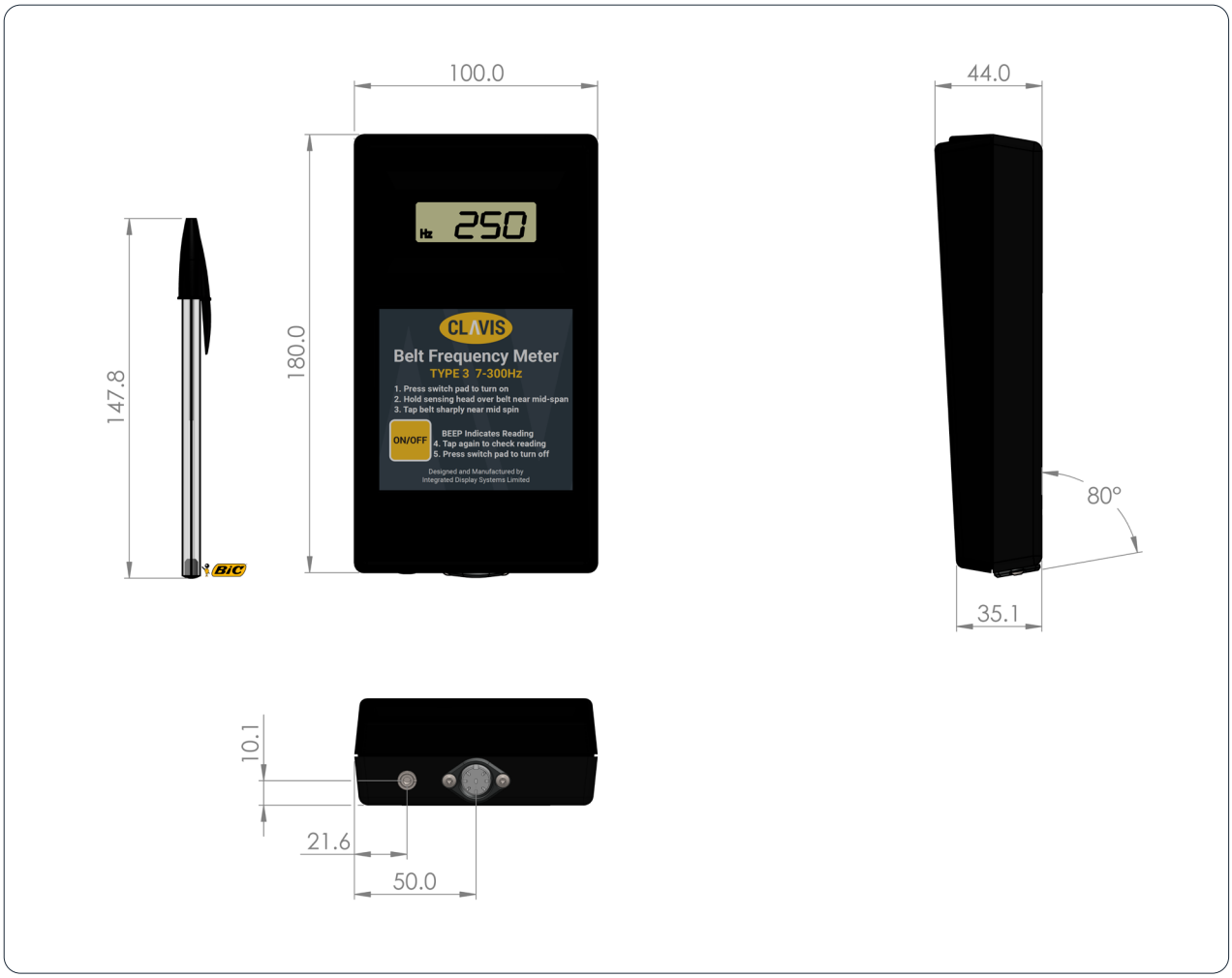


Results within +/- 1% are acceptable. There is no adjustment possible. If greater variance is experienced, meter should be returned for recalibration.

Technical Specification

Measurement Range	
Frequency Range Optical	7Hz to 300Hz
Measurement Accuracy	
Below 100Hz	+/- 1 significant digit
Above 100Hz	+/- 1%
Environment Conditions	
Operating Temperature	+10°C to +50°C +50°F to +122°F
Shipment & Storage Temperature	+5°C to +70°C +23°F to +158°F
Protection Class	IP54
Sensor	
Type	Infrared Optical
IR Wavelength	970nm
Visible Aiming Beam	Narrow angle orange LED
Housing	Machined aluminium
Cable length	1.4m
Power Supply	
Battery Type	AA (1.5V) Alkaline (Optional rechargeable - see below)
Number	4
Expected life	30 hrs
Compartment Location	Back of meter
Optional Rechargeable Batteries	
Battery Type	AA (1300 mAh minimum)
Charger	12 to 15 V DC output
Socket/polarity	3.5mm positive centre

Dimensions



Equipment

You can expect each device to have the following;

- Detachable Sensor Head
- Carrying Case
- Technical Manual
- Tuning Fork (Calibration Check)
- Calibration Certification
- Battery Charger (Choice of Insert)
- Rechargeable Batteries

