# Belt Tension Meter RTM-400

**Measuring range max. 10 - 800 Hz**

**Trummeter for measuring belt tension and for control the strand force of V-belts, tooth belts, power belts or similar. The optimal life time of a belt is depending on the correct belt tension. The set point for belt tension is specified as natural frequency in Hz or strand force in N.**
**Non-contact measuring occurs by infrared light - frequency measurement**



**Belt tension meter RTM-400**  CE

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## Special Features

- Measuring principle: Frequency measurement by LED light, if the belt is stationary
- The readings can be displayed as frequency (Hz) or strand force (N or lbf)
- The belt tension meter RTM includes a display unit as well as 2 measuring probes:
  - plug in probe for one-hand operation
  - measuring probe with cable for limited access space
- For determinating the spring force in Newton, 2 parameters are needed. Thereby the following restrictions are obtained:
  - free strand length 9.99 m
  - belt mass up to 9.999 kg/m

- Measuring range 10 - 800 Hz
- Multilingual operator guidance and display (german, english, french, italian, spanisch, portugese, swedish, norwegian, danish, finnish)
- Manufacturer`s calibration report is included

## Standard Features

- Easy and save operation
- Trummeter with rugged, handy plastic housing
- Microprocessor controlled belt tension meter
- Measurement with highest precision

## Photo Gallery
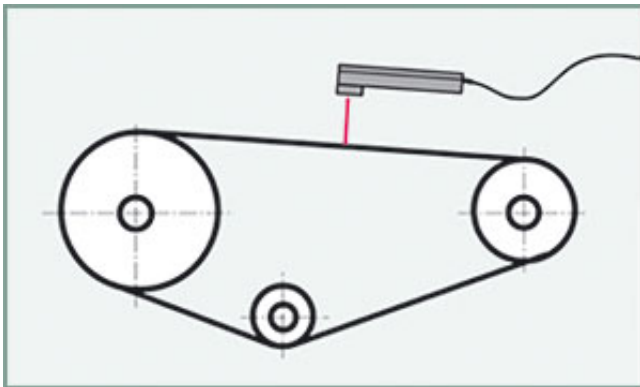


Model RTM-400 inclusive 2 sensors

## Available Models

| Model | Measuring Range |
|-------|-----------------|
| RTM-400 | max. 10 - 800 Hz |

## Operation




The belt tension can be measured only when the drive is stationary. Preferably, the belt tension should always be measured at the center of the longer belt strand between the two drive pulleys. The distance to the belt can be 5 - 40 mm. Depending upon ambient light and surface of belt, the measurement can occur from a distance of max. 60 mm, whereas darker light and better reflection (can be obtained by attaching a reflective tape) admit a larger measuring distance.

**Measurement:**
The belt is tapped in order to make it natural oscillating. This static natural frequency is then measured by the probe with the aid of pulsed light. Care must be taken to ensure the light is sufficiently reflected by the belt. A reflective tape must be fixed if necessary.

## Note

Measurement deviations of up to ±10 % for several measurements taken on the same drive belt are as a rule not caused by a measurement error or fault in the unit. In most cases, measurement deviations are due to the mechanical tolerances of the drive systems.

**Attention!** Newton- or poundforce-calculations have a <u>square factor</u> higher error result!

## Belt Masses

| Ribbed V-belts | PJ = 0.082 | PL = 0.320 | |
| --- | --- | --- | --- |
| | PM = 1.100 | | kg/m per 10 ribs |
| V-belts | SPZ = 0.074 | SPA = 0.123 | |
| | SPB = 0.195 | SPC = 0.377 | kg/m per belt |
| | | | |
| | 10 = 0.064 | 13 = 0.109 | |
| | 17 = 0.196 | 20 = 0.266 | |
| | 22 = 0.324 | 25 = 0.420 | |
| | 32 = 0.668 | 40 = 0.958 | kg/m per belt |
| Power belts | SPZ = 0.120 | SPA = 0.166 | |
| | SPB = 0.261 | SPC 0 0.555 | kg/m per rib |
| | | | |
| | 3V/9J = 0.120 | 5 V/15J = 0.252 | |
| | 8V/25J = 0.693 | | kg/m per rip |
| Polyurethane Tothed belts | T 2.5 = 0.015 | T 5 = 0.024 | |
| | T 10 = 0.045 | T 20 = 0.084 | kg/m per 10 mm width |

AT 3 0 0.023      AT 5 = 0.034
AT 10 = 0.063     AT 20 = 0.106     kg/m per 10 mm width

To measure the belt mass precisely, we recommend that you weigh the drive belt and then recalculate this weight based on a belt length of 1 meter.

The table above contains comparison values for some belts.

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## Delivery Includes



Trummeter with carrying case, 2 measuring probes, 1 battery, manufacturer`s calibration report and operating instruction in german or english (as requested)

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## Specifications

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|---|---|
| **Measuring range:** | 10 - 800 Hz |
| **Digital sampling error:** | < 1 % |
| **Indicator error:** | ±1 Hz |
| **Total error:** | < 5 % |
| **Adjustable measuring units:** | Hz (Frequency) or N, lbf (Strand force) |
| **Measuring distance:** | 3 - 20 mm |
| **Display:** | 2 line LCD, 16 characters per line |
| **Languages:** | 10 languages (german, english, french, italian, spanish, portugese, swedish, norwegian, danish, finnish) |
| **Input ranges:** | Free strand length: up to 9.99 m<br>Belt mass: up to 9.999 kg/m |
| **Temperature ranges:** | Operation: +10 °C ... 50 °C, Transport: -5 °C ... +50 °C |
| **Air humidity:** | 85 % RH, max. |
| **Power supply:** | 9 V - Battery |
| **Housing:** | Plastic (ABS) |
| **Dimensions:** | 126 x 80 x 37 (LxWxH) |
| **Weight net (gross):** | Approx. 170 g (approx. 660 g) |

Specifications subject to change without notice!

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