

## TSM "Piccola" Span Tension Meter



### General:

The Tension Meter TSM "Piccola" is used for fast and simple tension measuring of commercially available belt systems by frequency measurement.

Fully electronic and state-of-the-art microprocessor technology provides high measuring precision. All V-belts, toothed belts and flat belts, within the specified measuring range from 10 to 600 Hz can be measured. Type, color and material of the belt will not affect the measurement result, because the acoustic principle will be used.

The principle of the vibrating string is used. The oscillation frequency of the basic vibration and the belt tension are in a fixed ratio. Ever higher the frequency of the excited belt, ever higher the belt tension.

### **!!! Safety Note**

The measurement may not be taken on the current drive. Before you start the measurement, take care that the drive is switched off and secured against accidental activation.

### Calculation of span force:

The calculated oscillation frequency is equivalent to the relation:

$F_v = 4 \cdot m \cdot L^2 \cdot f^2$	$F_v$ = initial tension force	[N]
	$m$ = belt weight per meter	[kg/m]
	$L$ = oscillating belt length	[m]
	$f$ = frequency of belt oscillation	[Hz]

**Calibration:**

The device is calibrated during final inspection. Further calibrations normally are not necessary. However, if internal guide lines require further calibrations, a so-called factory calibration can be requested from us. In this case the device will be checked at defined measuring points within the measuring range and the results will be confirmed in a calibration report.

**Technical data:**

Measuring range:	10 - 600 Hz
Measuring precision:	10 - 400 Hz $\pm$ 1% / >400 Hz $\pm$ 2%
Resolution:	10 - 99,9 Hz: 0,1 Hz / > 100 Hz: 1 Hz
Measuring method:	Contactless (acoustic with electronic noise suppression)
Power supply:	2 x 1,5 V Micro (AAA - cells)
Working hours:	> 48h continuous measurement (depending on the quality of the used batteries) Automatic shut-off after 2 minutes without using
Power consumption:	Max. 12 mA
Display:	LCD, two lines, 2 x 8 characters
Dimensions:	App. 90 mm x 50 mm x 27 mm
Weight:	App. 100 g (without batteries and microphone)