



**B.N.C.TOOLING Co.,Ltd.**

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## Tension Meter

5 Tension ranges available  
from 0.3 - 100.0 cN up to 3 - 2000 cN

### ***Tension Meter ETB and ETX***



#### Specifications

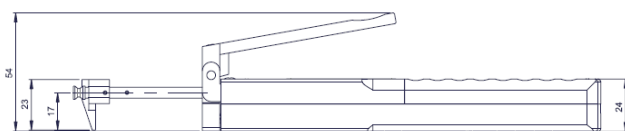
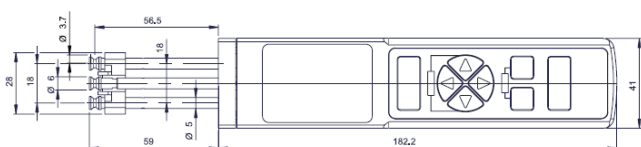
Calibration:	According SCHMIDT factory procedure
Accuracy:	$\pm 1$ % full scale $\pm 1$ digit or better (typical $\pm 0.5$ % full scale)
Measuring units:	cN, g, N or lb, switchable
Overrange:	Approx. 10 % full scale, without accuracy guarantee
Overload protection:	200 % full scale
Measuring principle:	Strain gauge bridge
Measuring roller deflection:	Max. 0.5 mm
Signal processing:	Digital
Damping:	Adjustable electronic damping, averaging
Sampling rate internal:	approx. 1 kHz
Sampling rate:	Max. 200 Hz (200 readings/sec)
Display:	Colour-TFT 128 x 160
Display update rate:	Approx. 2 times per second
Memory:	Last, average, MAX and MIN
Temperature coefficient:	Gain: less than $\pm 0.01$ % full scale/ $^{\circ}\text{C}$
Temperature range:	10 – 45 $^{\circ}\text{C}$
Air humidity:	85 % RH, max.
Auto power off:	Approx. after 3 minutes of non-use
Power supply:	LiPo accumulator (approx. 20 h continuous use, charging time approx. 3.5 h),

USB AC adapter 100...240 V AC with 4 adapters (EU/USA/UK/AUS-NZ)

Housing material:	Aluminium
Dimensions:	See dimensions
Weight, net (gross):	Approx. 310 g (1220 g)

#### Additional specifications of model ETX

Output signal:	USB
Memory:	Max. 60000 at 999 measuring periods
Memory Modes:	5 memory modes with statistical evaluation and PEAK capture



#### Dimensions

- Electronic tension meter for hard to reach and limited access space applications.
- Available in two models: ETB (Basic unit) and ETX (with memory and outputs)
- Hand-held instrument with guide rollers up to max. 2000 m/min
- Tension meter with measuring head as small as possible

**Additional Special Features Model ETX**

- The tension meter ETX can be connected to a PC using the USB interface to monitor readings constantly on a PC
- Memory for 60.000 readings
- 5 different memory modes can be selected by the operator:
  - Mode S: only statistical values per series are displayed
  - Mode H: storage of the X-Y-diagram for reviewing after finishing a series of measurement
  - Mode C: continuous logging over a user set time and max. 999 series of measurement (2 Hz)
  - Mode F: as C with higher sampling rate (200 Hz)
  - Mode D: storage of single readings and statistic

**Standard Features**

- Tension meter ETB and ETX with guide rollers mounted on long shafts to reach into tightest places
- Hand-held instrument with ball-bearing mounted, V-grooved guide rollers up to 2000 m/min, for higher line speed use model ETPB or ETPX
- Coloured, backlight TFT display with 3 different display modes
  - numeric
  - numeric with live bargraph
  - numeric with graph (time-tension)
- The display rotates in 90° steps for better reading
- Automatic “Zero-Setting” in each measuring position using a special sensor technique
- Selectable units of measurement: cN, g, N and lb
- Very high data sampling rate (internal 1 kHz)
- Storage of MIN, MAX, last reading, average and standard deviation per measuring interval
- User-set MIN and MAX alarms with indication of TFT display if reading is out of limits
- Adjustable electronic damping for better reading when tension fluctuates
- 3 separate calibration material memory locations for custom calibrations
- Calibration adjustment for fine tuning of the calibration if material differs from the used calibration material
- Menu set-up in English or German language

**Special Features**

- Rugged aluminium housing
- LiPo accumulator (approx. 20 hours continuous operation) with AC adapter
- CE certified, interference resistant against static electrifications
- Certificate of Compliance with the order 2.1 according EN 10204 is included
- Optionally available: Inspection Certificate 3.1 according EN 10204 with calibration report

**Available Models**

Model	Model	Measuring Range	Resolution	Measuring Head Width*	SCHMIDT Calibration Material
<b>ETB-100</b>	<b>ETX-100</b>	0.3 – 100.0 cN	0.1 cN	24 mm	PA: 0.20 mm Ø**
<b>ETB-200</b>	<b>ETX-200</b>	2.0 – 200.0 cN	0.1 cN	24 mm	PA: 0.20 mm Ø**
<b>ETB-500</b>	<b>ETX-500</b>	2.0 – 500.0 cN	0.1 cN	24 mm	PA: 0.20 mm Ø**
<b>ETB-1000</b>	<b>ETX-1000</b>	3 – 1000 cN	1 cN	38 mm	PA: 0.30 mm Ø***
<b>ETB-2000</b>	<b>ETX-2000</b>	3 – 2000 cN	1 cN	38 mm	PA: 0.50 mm Ø***