DT Series Features

- Large, backlight LCD with 3 different displays *(see diagram at right below)*
- The display rotates in 90° steps for better reading
- New, unique, force reduced material-catching system
- Automatic Zero-Setting in each measuring position
- Material memory locations for customer made calibrations: 4 (model DTS) and 9 (model DTX)
- Flexible menu set-up to meet operators demand (German or English)
- Selectable units of measurement: cN, daN, g, kg, N, lb
- High speed data sampling (internal 8 kHz) and recording of MIN, MAX, last reading, PEAKS, average and standard deviation
- Programmable MIN and MAX alarms indication in the display.
- Cal. adjustment for fine tuning the calibration if material differs from the used calibration material

For highest accuracy, the diameter of the material to be measured can be set with a wheel and displayed in the screen *(not available for all models)*

DT Series Hand-Held Digital Tension Meters

12 tension ranges from 0.2 – 200 cN to 0.6 – 60 daN

Check-Line® **DTS Digital Tension Meter** and **DTX Data Logging Digital Tension Meter** accurately measure the running line tensions of yarns, fibers, wires, cables, optic fibers and similar materials. Both feature auto-rotating display and auto-zeroing to permit measuring material running in any orientation. Special versions of DTS and DTX meters are available for tapes and films, narrow access and larger diameter applications.

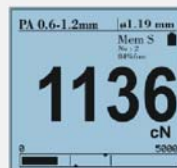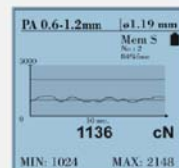Depending on the measuring position the LCD display automatically rotates in 90° steps

Large LCD with three selectable displays

Numeric

Numeric, bar graph with set point markers

Numeric and X-Y diagram

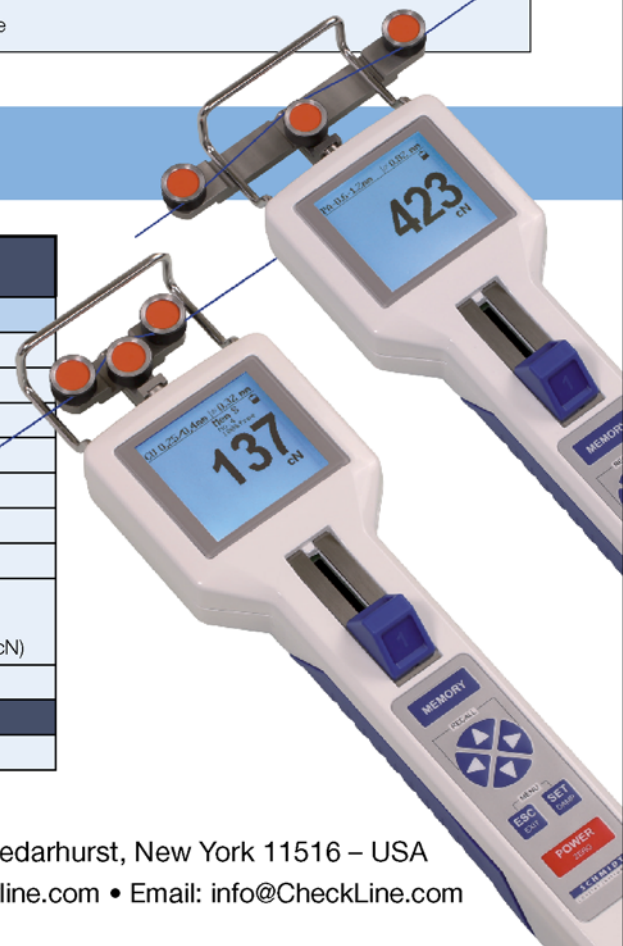# DT Series Specifications

Calibration	According to factory procedure	**Damping**	Adjustable electronic damping (averaging)
Accuracy	For PA from 5 % up to 100 % FS*: ± 0.5 % FS* ± 1 digit remaining tension range and other calibration materials: ± 3 % FS* ± 1 digit	**Cal. Adjustment**	± 10 steps in 1 % increment
		Thickness compensation	Max. 2.5 mm (not available for all models)
		Auto power off	Approx. 3 minutes of non-use
Memory (material curves)		**Temperature coefficient**	Gain: less than ± 0.01 % FS* /°C
DTS:	1 for factory calibration plus 4 for customized calibrations	**Zero point**	less than ± 0.3 % FS* /°C
DTX:	2 for factory calibration plus 9 for customized calibrations	**Temperature range**	10 - 45 °C
Measuring units	Force (switchable): cN, daN, g, kg, N, lb Thickness (switchable): mm, inch	**Air humidity**	85 % RH, max.
Overrange	Approx. 10 % FS*, full scale, without accuracy guarantee	**Power supply**	LiPo accumulator (approx. 40 h continous use), charging time approx. 3 1/2 h AC adapter 100 - 240 V AC, adapter (EU, USA, UK)
Overload protection	100 % FS*		
Measuring principle:	Strain gauge bridge	**Housing mater**	Die-cast aluminium
Measuring roller deflection	Max. 0.2 mm	**Housing dimensions**	265 x 78.5 x 46 mm (L x B x H)
Signal processing	Digital, 16 bit A/D converter	**Weight, net (gross)**	Up to DTX-50K approx. 875 g / 1550 g
Measuring frequency	Max. 1 kHz (1000 measurings/sec.) intern 8 kHz		DTX-60K-V1 approx. 1040 g / 2700 g
		Additional specifications model DTX	
Graphic LCD Displays (3)	Numeric, Numeric with graph (time-tension), X-Y-diagram	**Output signal**	USB
		Memory	60.000 values at 255 measuring periods
Display update rate	Approx. 2 times per second	**Memory modes**	4 memory modes with statistical evaluation
Memory	MIN, MAX, PEAK, AVG and LAST		

* FS = Full Scale

DT Series Guide Rollers

V-grooved	Line Speeds ᵛmax…m/min	Roller Material
Standard	2000	Hard-coated aluminium
Code K	3500	Hard-coated aluminium
Code H	5000	Plasma-coated aluminium
Code T	1000	Plastic (POM) black
Code W	1000	Nickel-plated steel
Code ST	1000	Hardened steel
Code B	1000	Tempered steel for tire cord
Code CE 2	1000	Aluminium ceramic-coated
Code ASY **Code ASYB**	1000 1000	Hard-coated aluminium Tempered steel for tire cord asymmetrical groove Gauge is without filament guide (not for tension range 200 cN)
Code V 1	1000	Hard-coated aluminium (only for tension range 60 daN)
U-grooved		
Code U	2000	Hard-coated aluminium (not for tension range 200 cN)

Model DTS

DTS Additional Features

- Everything in operator's view:
  - the guide rollers
  - the measured material
  - the readings

- Filament guide and roller shifting mechanism ensure easy acquisition of the running material

- Ball-bearing mounted, V-grooved guide rollers

- Rubberized handle provides a secure hold in the operator's hand

- Rugged aluminium housing

- LiPo Akku provides approx. 40 hours of continuous operation with AC adapter

- CE certified, interference resistant against static electrifications

- *Optionally available:* Inspection Certificate 3.1 according EN 10204 with calibration report

Depending on the measuring position the LCD display automatically rotates in 90° steps

User-friendly LCD full-text display Some functions can be password protected.

Available Models

Type	Tension Range (cN)	Measuring Head Width* mm	Factory Calibration** Material Curve 1 Polymid (PA) Monofil	Textive Industry Applications e.g. yarn count	Wire Industry Applications e.g., soft annealed copper wire	Thickness Compensator included
DTS-200	0.2 - 200	66	0.12 mm Ø	max. 200 TEX	max. 0.15 mm Ø	
DTS-500	0.5 - 500	66	0.12 + 0.20 mm Ø	max. 500 TEX	0.05 - 0.25 mm Ø	✔
DTS-1000	10 - 1000	66	0.20 + 0.40 mm Ø	max. 1000 TEX	0.10 - 0.40 mm Ø	✔
DTS-2000	20 - 2000	66	0.40 + 0.70 mm Ø	max.2000 TEX	0.30 - 0.60 mm Ø	✔
DTX-2500	25 - 2500	116	0.40 + 0.70 mm Ø	max. 2500 TEX	0.30 - 0.60 mm Ø	✔
DTS-4000	40 - 4000	66	0.50 + 0.80 mm Ø	max. 4000 TEX	0.35 - 0.80 mm Ø	✔
DTS-5000	50 - 5000	116	0.60 + 1.20 mm Ø	max. 5000 TEX	0.40 - 1.00 mm Ø	✔
DTS-10K	0.1 - 10 daN	116	0.80 + 1.40 mm Ø	max. 10000 TEX	0.70 - 1.20 mm Ø	✔
DTS-20K	0.2 - 20 daN	166	1.20 + 1.80 mm Ø	max. 20000 TEX	1.00 - 1.70 mm Ø	✔
DTS-30K	0.3 - 30 daN	216	1.40 + 2.00 mm Ø	max. 30000 TEX	1.20 - 2.00 mm Ø	✔
DTS-50K	0.5 - 50 daN	216	steel rope1.5 mm Ø (7 x 7 x 0.20)	max. 50000 TEX	1.40 - 2.00 mm Ø	
DTS-60K-V1	0.6 - 60 daN	280	steel rope 2.0 mm Ø (7 x 7 x 0.30)	max. 60000 TEX	1.80 - 3.00 mm Ø	

* Depending on model, either width of filament guide or outer distance between outside guide rollers

Delivery of DTS Includes:
Tension meter with carrying case, accumulator and AC adapter with country adapters (EU, US, UK), Certificate of compliance with the order 2.1 according EN 10204 free of charge, operating instruction in german or english (as requested).

Attachment

Code MH   Mounting thread for online use (2 x M5 on rear panel)

ELECTROMATIC Equip't Co., Inc., 600 Oakland Ave, Cedarhurst, New York 11516 – USA

Tel: 800-645-4330 • 516-295-4300 • Fax: 516-295-4399 • Web: Checkline.com • Email: info@CheckLine.com

Model DTX

DTX Additional Features

- **Memory for 60,000 readings**
- USB interface
- 4 different memory modes:
  - *Mode S:* statistics only
  - *Mode H:* storage of the X-Y diagram for reviewing after finishing a series of measurement (e.g. short time spooling)
  - *Mode C:* continuous logging over a user set time and different series of measurement (2 Hz)
  - *Mode F:* fast, continuous logging over a user set time and different| series of measurement (1000 Hz)
- Tension Inspect 3 software displays real-time readings on a PC or stores them in a file
- *Optoion:* Wi-Fi module for wireless communication with a PC

User-friendly LCD full-text display Some functions can be password protected.

Depending on the measuring position the LCD display automatically rotates in 90° steps

Available Models

Type	Tension Range (cN)	Measuring Head Width* mm	Factory Calibration** Material Curve 1 Polymid (PA) Monofil	Textive Industry Applications e.g. yarn count	Factory Calibration** Material Curve 2 Copper Wire	Wire Industry Applications e.g., soft annealed copper wire	Thickness Compensator included
DTX-200	0.2 - 200	66	0.12 mm Ø	max. 200 TEX	0.10 mm Ø	max. 0.15 mm Ø	
DTX-500	0.5 - 500	66	0.12 + 0.20 mm Ø	max. 500 TEX	0.16 + 0.25 mm Ø	0.05 - 0.25 mm Ø	✔
DTX-1000	10 - 1000	66	0.20 + 0.40 mm Ø	max. 1000 TEX	0.25 + 0.40 mm Ø	0.10 - 0.40 mm Ø	✔
DTX-2000	20 - 2000	66	0.40 + 0.70 mm Ø	max.2000 TEX	0.40 + 0.60 mm Ø	0.30 - 0.60 mm Ø	✔
DTX-2500	25 - 2500	116	0.40 + 0.70 mm Ø	max. 2500 TEX	0.40 + 0.60 mm Ø	0.30 - 0.60 mm Ø	✔
DTX-4000	40 - 4000	66	0.50 + 0.80 mm Ø	max. 4000 TEX	0.50 + 0.80 mm Ø	0.35 - 0.80 mm Ø	✔
DTX-5000	50 - 5000	116	0.60 + 1.20 mm Ø	max. 5000 TEX	0.60 + 1.00 mm Ø	0.40 - 1.00 mm Ø	✔
DTX-10K	0.1 - 10 daN	116	0.80 + 1.40 mm Ø	max. 10000 TEX	0.70 + 1.20 mm Ø	0.70 - 1.20 mm Ø	✔
DTX-20K	0.2 - 20 daN	166	1.20 + 1.80 mm Ø	max. 20000 TEX	steel rope 1.5 mm Ø steel rope 2.0 mm Ø	1.00 - 1.70 mm Ø	✔
DTX-30K	0.3 - 30 daN	216	1.40 + 2.00 mm Ø	max. 30000 TEX	steel rope 1.5 mm Ø steel rope 2.0 mm Ø	1.20 - 2.00 mm Ø	✔
DTX-50K	0.5 - 50 daN	216	steel rope1.5 mm Ø (7 x 7 x 0.15)	max. 50000 TEX (7 x 7 x 0.30)	steel rope1 2.0 mm Ø	1.40 - 2.00 mm Ø	
DTX-60K-V1	0.6 - 60 daN	280	steel rope 2.0 mm Ø (7 x 7 x 0.30)	max. 60000 TEX (7 x 7 x 0.40)	steel rope 2.5 mm Ø	1.80 - 3.00 mm Ø	

* Depending on model, either width of filament guide or outer distance between outside guide rollers
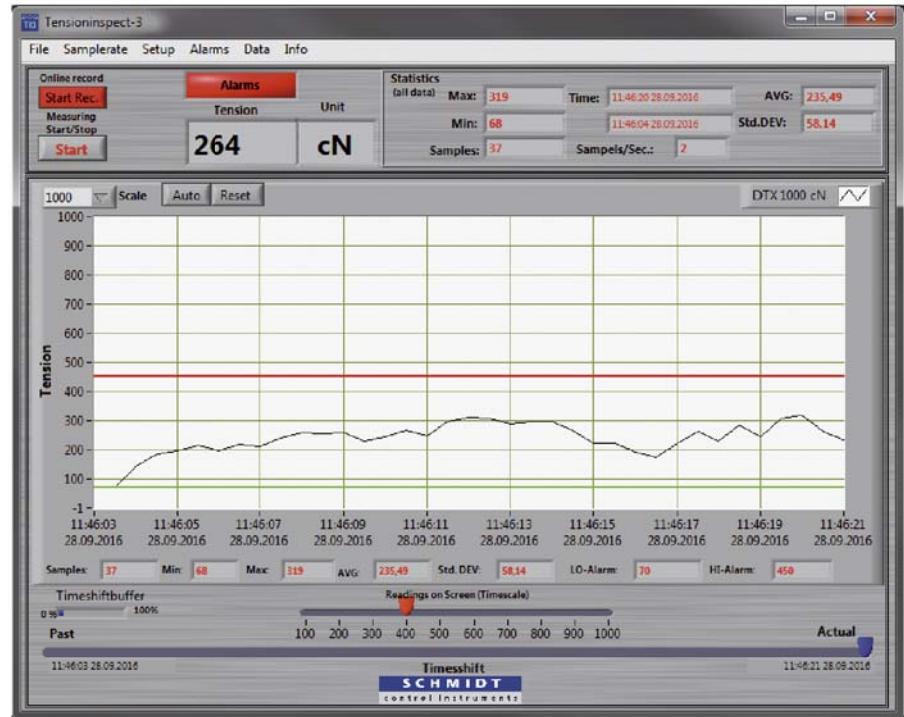** Suitable for 95 % of applications

Delivery of DTX Includes Tension meter with carrying case,accumulator and AC adapter with country adapters (EU, US, UK), USB cable, Software Tension Inspect 3, Certificate of compliance with the order 2.1 according EN 10204 free of charge, operating instruction in german or english (as requested)

Attachment

Code MH   Mounting thread for online use (2 x M5 on rear panel)
Code WL   Wi-Fi Module for wireless data transfer

Tension Inspect 3 Software (DTX models only)

Tension Inspect 3 Software to display and store measurement data on a PC. The DTX models can be connected to a PC using the USB output or the optional Wi-Fi module.

Features

- Real-time reading
- The readings are also shown in a X-Y- diagram (time/date-tension)
- For data analysing the buffered diagram can be zoomed and scaled
- Recording of the buffered readings as CSV-file (on user request)
- Online recording with automatic storage of the readings as CSV file
- Two different statistics:
  - All recorded values
  - Buffered diagram readings
- Adjustable set-points with protocol
- Timeshift function for subsequent detailed data viewing of the diagram
- Reloading and displaying of stored readings (PC file and memory of DTX)
- Creating of a HTML report
- Download of values to Excel
- Printing of stored values using Excel functions

Special Purpose Models

Special purpose tension meters are available for measuring all kinds of tapes and bands, such as textile ribbon, films, foils, fiber bunches etc.

DTSB & DTXB
For use with ribbons, filaments, carbon strands, foils and similar flat materials. Ten tension ranges available from 5.0 - 200 cN up to 0.6 - 60 daN.

DTSF & DTXF
For use on optical fibers, glass fibers and fragile materials. Three tension ranges available from 1 – 200g up to 10 – 1000g.

DTSE & DTXE
For measurement in areas with limited space or tightly grouped filaments. Four tension ranges available from 1 – 200g up to 20 – 2000g.

DTSL & DTXL
For use on sensitive materials, such as fiber optics, carbon fibers and other technical fibers. Four tension ranges up to 20 Kg.

DTSB & DTXB

DTSF & DTXF

DTSE & DTXE

DTSL & DTXL

DTS gauges are the basic models. DTX gauges include datalogging capability.

Note: These models do not include a filament guide and material thickness compensator. When selecting the instrument for your specific application, please keep in mind that:

1. Rollers of different widths are not interchangeable by the user.

2. The roller with should correspond with the width of the material to be measured. Otherwise incorrect measuring result may occur and the instrument may be damaged.

To assist you in selecting the right tension meter for your specific application, please furnish:

- Kind and dimensions of the material to be measured.
- Expected tension range.
- Possibly a material sample of about 3 meters.

ELECTROMATIC Equip't Co., Inc., 600 Oakland Ave, Cedarhurst, New York 11516 – USA
Tel: 800-645-4330 • 516-295-4300 • Fax: 516-295-4399 • Web: Checkline.com • Email: info@CheckLine.com