Ultrasonic thickness gauges SAUTER TN-EE


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Hand-held measuring device for ultrasonic material thickness testing in Echo-Echo principle

Features

- **External sensor**
- **Data interface USB,** standard
- **Scan mode** (10 measurements per sec.) or single point measuring mode possible
- **Internal memory** for up to 20 files (with up to 100 values per file)
- **Selectable measuring units:** mm, inch
- Two measuring modes to determine material thickness:
  - Pulse-echo mode
  - Echo-echo mode
- Echo-echo measuring: Determining the actual thickness of materials irrespective of any coating which might be present. In this way, the wall thickness of pipes, for example, can be determined in a non-destructive manner, without having to remove the coating and the measurement can be shown on the display, with the adjustment for the coating thickness already taken into account
- Echo-echo measurements are only possible with the measuring head included as part of the delivery (ATU-US12, see accessory)
- 1 **Delivered in a robust carrying case**

Technical data

- Precision: 0,5 % of [Max] ± 0,04 mm
- Dimensions W×D×H 74×32×150 mm
- Battery operation, batteries standard 2× 1.5 V AA, AUTO-OFF function to preserve batteries
- Net weight approx. 245 g
- Maximum thickness of coating (paints, lacquers or similar coatings which shall be eliminated): 3 mm

Accessories

- **Plug-In for data transfer of measuring** data from the measuring instrument and transfer to a PC, e.g. in Microsoft Excel®, SAUTER AFI-1.0
- **External sensor,** 5 MHz, ø 12 mm, for echo-echo measuring, SAUTER ATU-US12
- **Ultrasound contact gel,** standard, can be reordered, approx. 60 ml, SAUTER ATB-US03
- **RS-232/USB adapter,** SAUTER AFH 12
  Note: All following Pulse-Echo sensors can only be used in Pulse-Echo mode, not in Echo-Echo mode
- **External sensor (Pulse-Echo),** 2,5 MHz, ø 14 mm, for thick samples, in particular cast iron with rough upper surfaces: Measuring range 3–300 mm (steel), SAUTER ATU-US01
- **External sensor (Pulse-Echo),** 7 MHz, ø 6 mm, for thin test materials: Measuring range 0,75–80 mm (steel), SAUTER ATU-US02
- **External sensor (Pulse-Echo),** 5 MHz, ø 10 mm, SAUTER ATU-US09
- **External sensor (Pulse-Echo),** 5 MHz, ø 10 mm, transducer at an angle of 90°, SAUTER ATU-US10

STANDARD: CAL BLOCK · MEMORY · USB · ZERO · BATT · 1 DAY

OPTION: SOFTWARE · ISO +4 DAYS

Model	Measuring range Echo-echo	Measuring range Puls-Echo	Readout [d]	Sensor	Sound velocity		Option Factory calibration certificates	
SAUTER	mm	mm	mm		m/sec		KERN	
TN 30-0.01EE	3–30	0,65–600	0,01	5 MHz | ø 12 mm	1000–9999		961-113	
TN 60-0.01EE	3–60	0,65–600	0,01	5 MHz | ø 12 mm	1000–9999		961-113	

Pictograms

Adjusting program (CAL):
For quick setting of the instrument's accuracy. External adjusting weight required.

Calibration block:
standard for adjusting or correcting the measuring device.

Peak hold function:
capturing a peak value within a measuring process.

Scan mode:
continuous capture and display of measurements.

Push and Pull:
the measuring device can capture tension and compression forces.

Length measurement:
captures the geometric dimensions of a test object or the movement during a test process.

Focus function:
increases the measuring accuracy of a device within a defined measuring range.

Internal memory:
to save measurements in the device memory.

Data interface RS-232:
bidirectional, for connection of printer and PC.

Data interface USB:
To connect the measuring instrument to a printer, PC or other peripheral devices.

Data interface Infrared:
To transfer data from the measuring instrument to a printer, PC or other peripheral devices.

Control outputs (optocoupler, digital I/O):
to connect relays, signal lamps, valves, etc.

Analogue interface:
to connect a suitable peripheral device for analogue processing of the measurements

Statistics:
using the saved values, the device calculates statistical data, such as average value, standard deviation etc.

PC Software:
to transfer the measurement data from the device to a PC.

Printer:
a printer can be connected to the device to print out the measurement data.

GLP/ISO record keeping:
of measurement data with date, time and serial number. Only with SAUTER printers

Measuring units:
Weighing units can be switched to e.g. non-metric at the touch of a key. Please refer to website for more details.

Measuring with tolerance range (limit-setting function):
Upper and lower limiting can be programmed individually. The process is supported by an audible or visual signal, see the relevant model

ZERO:
Resets the display to "0".

Battery operation:
Ready for battery operation. The battery type is specified for each device.

Rechargeable battery pack:
rechargeable set.

Mains adapter:
230V/50Hz in standard version for EU. On request GB, AUS or USA version available.

Power supply:
Integrated, 230V/50Hz in EU. More standards e.g. GB, AUS or USA on request.

Motorised drive:
The mechanical movement is carried out by a electric motor.

Motorised drive:
The mechanical movement is carried out by a synchronous motor (stepper).

Fast-Move:
the total length of travel can be covered by a single lever movement.

DAkkS calibration possible:
The time required for DAkkS calibration is shown in days in the pictogram.

Factory calibration:
The time required for factory calibration is specified in the pictogram.

Package shipment:
The time required for internal shipping preparations is shown in days in the pictogram.

Pallet shipment:
The time required for internal shipping preparations is shown in days in the pictogram.

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