Ultrasonic thickness gauge SAUTER TO-EE

Material thickness gauge for ultrasonic material thickness testing in Echo-Echo principle

Features

- **Premium** thickness gauge device using ultrasonic technology: New **NT measuring technology** generation with automatic sensor adjustment (V-path correction for improved accuracy and more rapid display speed)
- **Dual measuring modes** to determine material thickness:
  - Pulse-Echo mode (up to 600 mm)
  - Echo-Echo mode (up to 100 mm)
- **Echo-Echo measurements:** Determining the actual thickness of materials regardless of any existing coating, such as, for example, paint or an anti-corrosion coating on the base metal. 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
- Can be used on these materials, as well as others: Metals, plastics, ceramics, composite materials, epoxy, glass and other materials
- **High-precision mode:** Readout accuracy can be switched from 0.1 mm to 0.01 mm
- 1 **Premium display** with colour TFT display (320×240) with adjustable brightness so that it can be read easily in any environmental conditions
- Large **internal data memory** for up to 100 data sets each with 100 individual values
- **Energy-saving** operation with 2× AA batteries and an operating time of at least 100 hours, adjustable power-off time (sleep mode) and adjustable display switch-off (standby mode)
- 2 **USB data output** for easy data download from the device memory to the PC, as standard
- **Adjustment options:** 0-point adjustment, 1-point adjustment, 2-point adjustment by measuring material of different thicknesses
- **3 different measurement modes** with standard measuring (single measurement), scan mode (for continuous measurement and display of the ACTUAL value, the MIN and MAX value of the measuring sequence) and DIFF mode with calculation of the difference between the ACTUAL measured value and a manually defined nominal thickness
- **Limit alarm function:** Upper and lower limit adjustable. The measurement process is supported by an audible and visual signal
- **Menu languages:** GB, DE, FR, ES, IT
- Date and time can be adjusted. It is possible to store the measurement values with a time stamp
- Standard measuring probe ATU-US12 included with delivery
- 3 **Delivered in a robust carrying case**

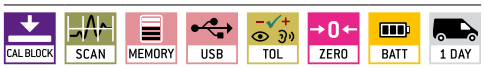
Technical data

- Measuring precision: 0,5 % of [Max] ± 0,04 mm
- Dimensions W×D×H 70×31×130 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

- **External sensor,** 5 MHz, ⌀ 10 mm, for echo-echo measuring, SAUTER ATU-US12
- **Ultrasound contact gel,** standard, can be reordered, approx. 60 ml, SAUTER ATB-US03
- Further sensors on request
- **Note:** Further details and plenty of further accessories see internet

STANDARD



OPTION

Model	Measuring range Echo-Echo	Measuring range Pulse-Echo	Readout [d]	Speed of sound	Sensor		Option Factory calibration certificates	
SAUTER	mm	mm	mm	m/s			KERN	
TO 100-0.01EE	3–100	0,7–600	0,1/0,01	100–19999	5 MHz | ⌀ 10 mm		961-113	

Datasheet_TO-EE_V1

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.

WLAN data interface:
To transfer data from the balance to a printer, PC or other peripherals.

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.

Network interface:
For connecting the scale to an Ethernet network.

KERN Communication Protocol (KCP):
It is a standardized interface command set for KERN balances and other instruments, which allows retrieving and controlling all relevant parameters and functions of the device. KERN devices featuring KCP are thus easily integrated with computers, industrial controllers and other digital systems.

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.

Your KERN specialist dealer: