

Ultrasonic thickness gauges SAUTER TN-EE



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)
- Delivered in a robust carrying case

Technical data

- Measuring 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

- Data transfer software, USB interface cable included, SAUTER ATU-04
- External sensor, 5 MHz, ø 10 mm, for echo-echo measuring, SAUTER ATU-US12
- Ultrasound contact gel, standard, can be reordered, approx. 60 ml, SAUTER ATB-US03
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						OPTION	
CALBLOCK	MEMORY	USB	ZERO	BATT	1 DAY	SOFTWARE	+4 DAYS

Model	Measuring range Echo-Echo	Measuring range Pulse-Echo	Readout	Sensor	Sound velocity	Option	
						Factory calibration certificates	
SAUTER	mm	mm	[d] mm		m/sec	KERN	
TN 30-0.01EE	3–30	0,65–600	0,01	5 MHz ø 10 mm	1000–9999	96 1-113	
TN 60-0.01EE	3–60	0,65–600	0,01	5 MHz ø 10 mm	1000–9999	96 1-113	

Pictograms

 Adjusting program (CAL): For quick setting of the instrument's accuracy. External adjusting weight required	 WLAN data interface: To transfer data from the balance/measuring instrument to a printer, PC or other peripherals	 Protection against dust and water splashes IPxx: The type of protection is shown in the pictogram cf. DIN EN 60529:2000-09, IEC 60529:1989+A1:1999+A2:2013
 Calibration block: Standard for adjusting or correcting the measuring device	 Data interface Infrared: To transfer data from the measuring instrument to a printer, PC or other peripheral devices	 ZERO: Resets the display to "0"
 Peak hold function: Capturing a peak value within a measuring process	 Control outputs (optocoupler, digital I/O): To connect relays, signal lamps, valves, etc.	 Battery operation: Ready for battery operation. The battery type is specified for each device
 Scan mode: Continuous capture and display of measurements	 Analogue interface: To connect a suitable peripheral device for analogue processing of the measurements	 Rechargeable battery pack: Rechargeable set
 Push and Pull: The measuring device can capture tension and compression forces	 Analog output: For output of an electrical signal depending on the load (e.g. voltage 0 V – 10 V or current 4 mA – 20 mA)	 Plug-in power supply: 230V/50Hz in standard version for EU. On request GB, AUS or USA version available
 Length measurement: Captures the geometric dimensions of a test object or the movement during a test process	 Statistics: Using the saved values, the device calculates statistical data, such as average value, standard deviation etc.	 Integrated power supply unit: Integrated, 230V/50Hz in EU. More standards e.g. GB, AUS or USA on request
 Focus function: Increases the measuring accuracy of a device within a defined measuring range	 PC Software: To transfer the measurement data from the device to a PC	 Motorised drive: The mechanical movement is carried out by a electric motor
 Internal memory: To save measurements in the device memory	 Printer: A printer can be connected to the device to print out the measurement data	 Motorised drive: The mechanical movement is carried out by a synchronous motor (stepper)
 Data interface RS-232: Bidirectional, for connection of printer and PC	 Network interface: For connecting the scale/measuring instrument to an Ethernet network	 Fast-Move: The total length of travel can be covered by a single lever movement
 Profibus: For transmitting data, e.g. between scales, measuring cells, controllers and peripheral devices over long distances. Suitable for safe, fast, fault-tolerant data transmission. Less susceptible to magnetic interference.	 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	 Verification possible: The time required for verification is specified in the pictogram
 Profinet: Enables efficient data exchange between decentralised peripheral devices (balances, measuring cells, measuring instruments etc.) and a control unit (controller). Especially advantageous when exchanging complex measured values, device, diagnostic and process information. Savings potential through shorter commissioning times and device integration possible	 GLP/ISO record keeping: Of measurement data with date, time and serial number. Only with SAUTER printers	 DAkKS calibration possible: The time required for DAkKS calibration is shown in days in the pictogram
 Data interface USB: To connect the measuring instrument to a printer, PC or other peripheral devices	 Measuring units: Weighing units can be switched to e.g. non-metric. Please refer to website for more details	 Factory calibration: The time required for factory calibration is specified in the pictogram
 Bluetooth* data interface: To transfer data from the balance/measuring instrument to a printer, PC or other peripherals	 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	 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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