Advancing with Technology ElektroPhysik

Ultrasonic Thickness Measurement

MiniTest 400 Series

Wall Thickness Gauges

- Portable hand-held precision gauges
- Suitable for steel, stainless steel, aluminium, glass, plastics, etc.
- Interchangeable transducers
- Automatic transducer recognition
- Models with automatic zero adjustment and high-speed scan
- Pulse-echo mode from 0.65...500 mm

Echo-echo mode (3…25 mm) to measure through coatings

MiniTest 420 · 430 · 440

Field of application

Rugged ultrasonic thickness gauges are designed for use in harsh industrial environments. Easy to use and light-weight, these handy gauges provide accurate thickness readings on site for quality assurance and corrosion testing.

MiniTest 420

The basic models are designed for simple and quick thickness measurement. This model incorporates a calibration block for zero adjustment and a quick calibration.

MiniTest 430

Equipped with data memory and USB interface, the MiniTest 430 also includes an automatic zero calibration facility. Various modes such as minimum, difference and alarm mode make this model the ideal tool for quality control. In high-speed scan mode an increased measuring rate of 10 readings per second is achieved along with indication of the smallest thickness values. MiniTest 430 provides reliable corrosion testing. The high-speed scan mode is also particularly suited for measurements on hot-temperature samples.

MiniTest 440

Featuring all functions of the MiniTest 430, the top model of the series connects to the U5.0E transducer to measure through a coating in the echo-echo mode.

Transducers for versatile applications

In the standard supply schedule, all models come with a 5 MHz transducer. To meet specific customer requirements, ElektroPhysik offers a range of transducers that connect to all models of the MiniTest 400 series. The automatic transducer recognition allows to switch quickly between different measuring tasks.

Supply schedule in the plastics carrying case

- MiniTest 420 / U5.0 or
- MiniTest 430 / U5.0 or
- MiniTest 440 / U5.0E
- Protective rubber cover
- Coupling gel, 200 ml
- Operating instructions
- 2 x batteries, 1,5V (AA)
- Data transfer software with USB connecting cable (430; 440)
- Control test block (optional accessories)

Transducer Specifications

Type	Ø	Frequency	Measuring range	Temperature	Applications
U5.0E	8 mm	5.0 MHz	3…25 mm (E-E) 0.8…300 mm (I-E)	-20…+50°C	Measures through coatings in the E-E mode
U5.0	8 mm	5.0 MHz	0.8…350 mm	-20…+50°C	Flat surfaces, large curvatures
U2.0	12 mm	2.0 MHz	2.0…500 mm	-20…+50°C	Rough surfaces (e.g. cast steel)
U7.5	6 mm	7.5 MHz	0.65…50 mm	-20…+50°C	Thin walls, small radii
U10.0	4 mm	10.0 MHz	0.65…20 mm	-20…+50°C	Small shaped objects
U5.0HT	13 mm	5.0 MHz	3.0…200 mm	-20…+350°C	High-temperature transducer

Technical Data		420	430	440
Display	Current data, velocity, transducer type, battery state, batch	●	●	●
Range	Echo-echo: 3…25 mm Pulse-echo: 0.65…500 mm (depending on transducer)	●	●	● ●
Display / resolution	128 x 64 pixels, backlit / 0.01 mm (0...99.9 mm); 0.1 mm (>100 mm)	●	●	●
Measuring systems	Metric/mils (switchable)	●	●	●
Sound velocity	1000 m/s to 9999 m/s; 9 pre-set sound velocities	●	●	●
Gain setting	Automatic and manual	●	●	●
Transducer recognition	Automatic	●	●	●
Transducer calibration	Automatic		●	●
Measuring accuracy	0.65 mm ...9.99 mm: +/- 0.04 mm; 10.00 mm...99.99 mm: +/- (0.1 % of reading + 0.04 mm); 100.00 mm...500.00 mm: +/- (0.3 % of reading)			
Pulse-echo mode	Standard, Minimum (seek the smallest point) Difference, Alarm, High-speed scan	●	● ●	● ●
Echo-echo mode	Measures through coatings			●
Data storage / output	10 batches with max 500 values / USB interface		●	●
Automatic shut off	2 min., 5 min. or disable			
Dimensions and weight	130 x 73 x 24 mm / approx. 190 g			
Operating temperature	-20 to 50°C			
Power	2 x AA batteries, approx. 64 hours in continuous operation			

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