Technical Data

DISPLAY

Screen type	Ø colour LC display Ø transmissive / transreflective Ø daylight suitable Ø background illumination
Screen size	143.4 x 79.3 mm^2
Resolution	400 x 240 pixels
A-Scan size	142 x 73.5 mm^2
Grid	Electronically generated, switchable
Grid visualization	Ø coarse: 10-fold horizontal, 5-fold vertical Ø fine: 50-fold horizontal, 25-fold vertical

A-SCAN-DISPLAY AND DIGITIZATION

Image refresh rate	50 Hz
A-Scan display	Ø normal display Ø filled echoes Ø frozen Ø echo dynamics curve Ø zoom over monitor 1
RF display	Across the entire adjustment range
Rectification	Full-wave, positive, negative, without (RF)
Suppression	Adjustable: 0 – 99% screen height in 1%-steps (linear)
Zoom	Monitor range (monitor 1) spread on full screen width
A/D converter	9 bit
Digitization method	Direct, with A/D-converter
Sampling rate	80 MHz
Sampling error for digitiz.	< ± 0.5% screen height at 4 MHz
Response time	< 20 ms

MEASURING RANGES

Testing range	2.5 – 4850 mm steel
Sound velocity	100 – 15000 m/s in 1 m/s steps
Delay	0 – 3000 mm in 0.1 mm steps
Linearity of time axis	± 0.5 % of screen width

TRANSMITTER

Number of transmitters	2 (resolution and power)
Pulse shape	Unipolar (negative) needle pulse
Transmitter damping	10, 50, 220 [Ω], without
Pulse repetition frequency (PRF)	8 Hz to 3000 Hz (depending on testing range, adjustable from - 85% to +50% in 1% steps)
Trigger modes	internal, external, 1st echo

AMPLIFIER AND ATTENUATOR

Frequency ranges	3 (LF-, RF- and broadband)
Adjustable gain	100 dB in 0.1, 1, 2, 6, 12, 20 dB steps

FLAW EVALUATION

Evaluation of echo height (for both monitors)	Ø % screen height (% SH) Ø dBabs Ø dBrel (DAC-version and higher) Ø mm FBH (DGS/DAC-version)
Flaw position	Ø sound path Ø depth Ø projection distance and shortened projection distance Ø resolution 0.1 mm steel

REFERENCE LINE (DAC version)

Number of DAC points	Max. 11
Reference line	Adjustable offset: max. ± 80 dB
Additional eval. curves	4 (max. ± 15 dB shift to DAC curve)

DGS METHOD (DGS/DAC version)

DGS curve	0 to 30 mm FBH and backwall echo
Reference reflector	Backwall echo or FBH
Additional eval. curves	4 (max. ± 15 dB shift to DGS curve)

MONITORS

Number of monitors	2 (for each channel)
Response time	With PRF (max. 3 kHz)
Operation modes	normal, invers, off
Setting range	Ø monitor start: 0 – 4000 mm in 0.1 mm steps Ø monitor width: 0 – 3000 mm in 0.1 mm steps
Statistical noise suppression	0 – 250 pulses
Signal outputs (for both monitors)	Ø level: TTL (5V) , low: active, ZA = 100 Ω response accuracy: ± 0.5% SH Ø switching hysteresis: < 0.5% SH
Optical indication	2 luminescent diodes on front panel (sum signal) 16 luminescent diodes via port-control-unit*

MULTIPLEXER-OPERATION

Error indicator	ON / OFF
Test channels	1 to 8 (selectable)
Delay	0 - 3800 ns, 15 ns steps
Amplitude adjustment	-11 dB to +11 dB, 1 dB steps

INPUTS, OUTPUTS

Error signal	TTL level (5V) and analogue output
USB interface	USB 1 interface for PC connection and for printing via the PC connection
VGA output*	for external monitor
Trigger input/output*	TTL level (5V), low active, trigger threshold approx. 2 V, trigger on and off

MISCELLANEOUS

Measuring units	mm, inch (switchable)
Date and time	Built-in real-time clock
Languages	German, English (switchable)

STORAGE

A-Scan	Actual A-Scan by means of a FREEZE function on the screen
Internal memory	224 data sets incl. A-Scans, testing parameters and text comment

POWER SUPPLY

Mains operation	12 V battery (e.g. car battery); AC power supply: Ø 85 – 264 V AC, 47 – 63 Hz Ø output: 12 V DC Ø operating temp.: 0 °C - +50 °C Ø storage temp.: -40 °C - +85 °C Ø allowable humidity 0 – 95%
Automatic switch-off	In case of low voltage

DIMENSIONS, WEIGHT ETC.

Dimensions (H x W x D)	130 x 330 x 340 mm^3
Operating / storage temp.	-10 °C to +50 °C / -20 °C to +60 °C
Weight	4,3 kg
Connectors and interfaces	Ø 2 x Lemo 1 (for ultrasonic probes) Ø PC: USB 1 Ø D-Sub socket (9 poles) triggering input Ø D-Sub socket (9 poles) analogue flaw output Ø D-Sub socket (25 poles) TTL flaw output Ø VGA (15 poles)* monitor out Ø 16 BNC connections for probes Ø connection for 12 V power supply

* option

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