STARMANS
electronics s.r.o.

Defectobook® DIO1000 SFE

Portable Ultrasonic Flaw Detector





Defectobook® DIO 1000 is the latest instrument fully developed and designed by company STARMANS Electronics Ltd.

New generation of electronic components, fast micro-processors and our long-term experience in manufacturing of ultrasonic instruments enabled us to develop really advanced revolutionary ultrasonic flaw detector Defectobook® DIO1000 with the best parameters and functions.

APPLICATIONS:

- Aerospace – composite testing
- Steel production – large castings, hot and cold rolled steel
- Engineering – welds and joints
- Railway – track junctions in manganese steel
- Energy – austenitic welds, drive shafts etc.
- Automotive – spot weld testing
- Customized applications

MAIN FEATURES:

Well balanced between ergonomics and functionality: easy solutions for your daily applications in workshop, laboratory and outdoors. Due to its
adjustable handle, the instrument sits stable on any surface you encounter, even on round parts.

Large bright color LCD screen 1024 x 768 pixels, excellent visibility on the direct sunlight.

Optimum performance and extended connectivity.

Lightweight 1,28 kg / 3,04 lbs and just 34 mm thin.

The DIO 1000 combines the powerful advantages of digital design with the detailed dynamic echo information to bring back the “analog look and performance”, using sampling rate of 200 MHz.

Direct access to 12 functions.

Burst pulser selectable and tunable for optimum probe matching to satisfy a wide range of tough-to-penetrate applications.

EMAT for non-contact testing.

Trigonometric flaw location function with curvature correction automatically calculates depth, surface distance and sound path to flaw along with the leg of the inspection when using angle beam probes. All TOF measurements can be displayed in mm, inches or µm.

Standard DAC, JIS-DAC, AVG, API, Automatic Thicknessmeter, Auto Gain, Auto Freeze.

Weld rating calculation simplifies the rating of indications in welds according to AWS Specification D1.1.

B-scan imaging - thickness mode or RGB palette.

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DIO 1000 SFE **specifications:**

GENERAL SPECIFICATIONS

Display:	Color TFT sunlight, 1024 pixels (W) X 768 pixels (H)
Display Update Rate:	Minimum 60 Hz
Display dimensions:	99×130 mm
True Sampling Rate:	200 MHz, 12-bit
Operating Temperature:	-10 °C to 60 °C
Storage Temperature:	-40 °C to 70 °C
Power Requirements:	AC Mains: 100-120 V AC, 200-240 V AC, 50-60 Hz
Battery:	Built-in and external rechargeable Lilon battery pack rated at 3.6 V at 16 Ah
Battery Operating Time:	10 hours, depending on display brightness
Keypad:	Graphic symbols, International
Languages:	Selectable in menu, user-defined custom language
Memory:	2– 16 GB
Dimensions:	224×188×34 mm
Weight:	0.74 Kg without battery + 0.54 kg battery for 10 working hours
PC Requirements:	PC running minimum Microsoft® Windows® Vista®, Microsoft® Windows® XP®, Microsoft Windows 2000®,
Warranty:	Two years warranty, battery not included. Optional three year warranty available

INPUT / OUTPUTS

Transducer Cable Connectors:	Lemo®
Communications Ports:	USB, RS232, Ethernet, Wireless Ethernet (optional), Bluetooth (optional)
B-scan input:	Encoder, A, B – pulses, start, TTL 5 V, Encoder supply – switchable 5V
High Speed Parallel and TTL Port:	Alarm outputs, trigger in/out control
Analog Output:	Selectable voltage output of depth or amplitude data

PULSER

Peak Memory:	Pulse repetition rate up to 20 kHz and peak envelope of A-Scan display
Pulser Type:	User Selectable: Tunable square wave, negative spike excitation, burst
Pulser Energy:	Low (100 V) and Max (400 V)
Damping:	50, 57, 200, and 1000 Ohms

RECEIVER

Gain Control:	110 dB Max and reference gain, level control in 6 dB, 1 dB, 0.5 dB and 0.1 dB selectable steps0 % to 80 % of full scale in 1 % increments
Reject:	Full Wave, Half Wave Positive or Negative rectified, and RF waveform
Rectification:	0.5 MHz to 30 MHz at –3 dB
Receiver Bandwidth:	Broadband, Narrowband, or Custom Selectable Low and High Pass Filters – 1 MHz,
Filters:	2 MHz, 2.25 MHz, 4 MHz, 5 MHz, 10 MHz

CALIBRATION

Auto Transducer Calibration:	Automated calibration of transducer, zero offset and/or velocity
Units:	metric or microseconds
Material Velocity:	From 100 to 15240 m/s in steel
Range:	Standard 1 mm to 60,000 mm in steel
Refracted Angle:	Fixed settings of 0°, 30°, 45°, 60°, 70°, or variable from 10° to 90° in 0.1° steps for calculations
Test Modes:	Pulse Echo, Dual, or Through Transmission

GATES

Gate Monitors:	Four independent flaw gates controllable over entire sweep range - Floating gate, Interface gate, Measuring gate (relative, absolute, amplitude, time), Back-wall echo attenuator
Alarms:	Selectable threshold positive/negative or minimum depth modes

MEASUREMENTS

A-scan memory:	40 000 A-scans (up to 200 000 optional) – printscreen PNG, A-scan, setup
B-scan memory:	10 km of B-scan, 1 mm resolution
Peak Hold:	Freezes Peak Memory echo envelope for recorded waveform comparison with live A-Scan
Auto Gate:	Thickness
DAC:	Standard, up to 20 points, 111 dB dynamic range (71dB continual)
TCG:	For echo amplitude adjustment and evaluation
Curvature correction:	Automatically
Spot weld:	Auto Gain echo, Auto Freeze

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