

## STARMANS electronics s.r.o.

### Overview - Defectobook DIO1000

DEFECTOBOOK DIO 1000 is the newest instrument fully developed and designed by STARMANS electronics Ltd. company. This ultrasonic device is a suitable compromise between high-end ultrasonic testing and dimensions (often limited in industrial applications). The DEFECTOBOOK DIO 1000 implies both conventional ultrasonic and EMAT generators for contact, non-contact ultrasonic and through-transmission testing.



### Technical specification:

**Display:** Color TFT sunlight, 1024 pixels (W) X 768 pixels (H)

**Display Characteristics:** High resolution screen with brightness adjustment. Excellent visibility on sunlight

**Display Update Rate:** Minimum 60 Hz

**True Sampling Rate:** 200 MHz, 12-bit

**Gain Control:** 110 dB Max and reference gain level control in 6 dB, 1 dB, 0.5 dB and 0.1 dB selectable steps

**Auto Transducer Calibration:** Automated calibration of transducer, zero offset and/or velocity

**Reject:** 0 % to 80 % of full scale in 1 % increments

**Units:** English, metric, or microseconds

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**Material Velocity:** From 100 to 15240 m/s in steel

**Range:** Standard 1 mm to 60,000 mm

**Refracted Angle:** Fixed settings of 0°, 30°, 45°, 60°, 70°, or variable from 10° to 90° in 0.1° steps for calculations

**Peak Memory:** Pulse repetition rate up to 20 kHz and peak envelope of A-Scan display

**Peak Hold:** Freezes Peak Memory echo envelope for recorded waveform comparison with live A-Scan

**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

**Rectification:** Full Wave, Half Wave Positive or Negative rectified, and RF waveform

**Analog Bandwidth:** 0.5 MHz to 30 MHz at -3 dB

**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

**Filters:** Broadband, Narrowband, or Custom Selectable Low and High Pass Filters – 1 MHz, 2 MHz, 2.25 MHz, 4 MHz, 5 MHz, 10 MHz

**Test Modes:** Pulse Echo, Dual, or Through Transmission

**Alarms:** Selectable threshold positive/negative or minimum depth modes

**Operating Temperature:** -10 °C to 50 °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 **LiIon** battery pack rated at 3.6 V at 16 Ah

**Battery Operating Time:** 8 hours, depending on display brightness.

**Transducer Cable Connectors:** Lemo®

**Keypad:** Graphic symbols, International

**Languages:** Selectable in menu, user-defined custom language

**USB Communications Port:** Hi-speed interfacing with PC

**Communication ports:**

- RS232
- Ethernet
- Wireless Ethernet
- Bluetooth

**Memory:** 4 – 16 GB

**B-scan input:** Encoder, A, B – pulses, start, TTL 5 V, Encoder supply – switchable 5V

**B-scan memory:** 10 km of B-scan, 1 mm resolution

**A-scan memory:** 5 000 000 A-scan

**High Speed Parallel and TTL Port:** Alarm outputs, trigger in/out control

**Analog Output:** Selectable voltage output of depth or amplitude data

**Dimensions:** 224×188×37 mm

**Display dimensions:** 99×130 mm

**Weight:** 0.74 Kg without battery + 0.54 kg battery for 8 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

### **DIO1000 LF – Low Frequency Version**

This DIO low frequency version is suited for testing materials with high attenuation of ultrasonic waves, as concrete, plastic materials with enhanced attenuation, constructions and coarse-grained materials in general.

The principal feature of this equipment is its low operation frequency from 20 kHz to 1 MHz. The other features – see DIO1000 family overview.

The above mentioned materials are being inspected in transmission methods with separated transmitter and receiver probes.

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