

Defectobook® DIO1000 PA

Portable Ultrasonic Flaw Detector
Phased Array Version



Defectobook® DIO 1000 PA 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.

MAIN 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.
- Pipe inspection
- Crack detection and sizing

ENVIRONMENTAL TESTS:

- Tests for Damp heat / Humidity as per norms EN 600-2-78;02; EN 60068-1
- Vibration tests as per norm EN 60068-2-6 ed 2:08
- Shock tests as per norm EN 60068-2-29:1996+Z1:10

GENERAL SPECIFICATIONS

| | |
|--------------------------------|---|
| Display: | Color TFT sunlight, 1024 (W) X 768 (H) |
| Display Update Rate: | Minimum 60 Hz |
| Display dimensions: | 99x130 mm |
| Focal law quantity: | 512 (1024) |
| Synchronization: | Outside synchronization, echo start |
| Operating Temperature: | -10 °C to 50 °C |
| Storage Temperature: | -40 °C to 70 °C |
| Battery Operating Time: | up to 10 hours |
| Memory: | 4 – 16 GB (up to 40000 A-Scans) |
| Dimensions: | 224x188x34 mm |
| Weight: | 0.74kg without battery + 0.54kg battery |
| Warranty: | 2 years, optional 3 years |

DIO 1000 PA specifications:

| | Conventional | Phased Array |
|-------------------------------------|---|--|
| PULSER | | |
| Pulser Type: | User Selectable: Turnable square wave, negative spike excitation, burst | |
| Pulser Energy: | 18 – 189 V | 18 – 79 V (189 V optional) |
| Pulser Repetition Frequency: | 10 Hz - 20 kHz | |
| Configuration: | 16 channel | |
| Pulse width: | 15 – 5000 ns | 15 – 250 ns |
| Damping: | 50, 57, 200, and 1 000 Ohms | Active |
| RECEIVER | | |
| Gain Control: | 0 – 111 dB with 0.1/0.5/1.0/6dB step | 0 – 32 dB with 0.1/0.5/1.0/6dB step |
| Rectification: | Full Wave, Half Wave Positive or Negative rectified, and RF waveform | |
| Receiver Bandwidth: | 0.5 MHz to 200 MHz (at –3 dB) | 0,5 MHz to 100 MHz |
| Amplitude measurement: | 0 – 150 % FSH | |
| Filters: | 2, 2.25, 4, 10MHz BP; digital LP 6 to 50MHz | |
| INPUT / OUTPUTS | | |
| Transducer Cable Connectors: | Lemo | Molex |
| Communications Ports: | USB | |
| B-scan input: | A, B – pulses, TTL 5V, Start | |
| CALIBRATION | | |
| Auto Transducer Calibration: | Zero offset and velocity | |
| Units: | Mm, inch, μ s | |
| Material Velocity: | From 1 to 19,999 m/s | |
| Range: | 0 to 29,000mm for PRF 100Hz in steel | |
| Test Modes: | Pulse Echo, Dual, Through Transmission, EMAT | Pulse Echo, Through Transmission, EMAT |
| GATES | | |
| Gate Monitors: | Four independent flaw gates - Floating gate, Interface gate, Measuring gate, Back-wall attenuator | |
| Alarms: | Selectable threshold positive/negative or minimum depth modes | |
| Cursors: | N/A | Radius, Angle |
| MEASUREMENTS | | |
| Views: | A-scans (40 000 A-scans memory), B-scans | A-scans, B-scans, S-scans, optional C-scan |
| Scan Type: | Linear, Sector Scan | |
| Auto Gate: | Thickness | |
| DAC/TCG/DGS: | 20 points, plus 4 sub curves | |
| Colour maps: | RGB, TOFD | |