



The Panametrics-NDT™ EPOCH 4B is a general purpose digital ultrasonic flaw detector that combines many practical features for flaw detection and thickness measurements, a rugged and splash proof housing, and a numeric datalogger. An intuitive direct-access keypad with fewer keys, easy thumb control of critical parameter settings, and convenient portability make the EPOCH 4B an excellent choice for inspectors that need an affordable and easy-to-use flaw detector.

Standard measurement features include a 25MHz bandwidth for thin material testing, a fast 60Hz electronics update rate, a tunable square wave pulser for attenuating materials, and many other benefits for weld inspection, thickness monitoring, bond inspection, and crack detection and sizing.

The EPOCH 4B offers several software options. The narrowband filter option improves signal-to-noise ratio in high gain applications. AWS D1.1 & D1.5 provides a "dynamic reflector" indication rating for various weld inspection classifications. DAC curve option calculates signal amplitude as a percentage of the DAC curve level. TVG (Time Varied Gain) corrects for distance/amplitude variations due to material attenuation. Echo-to-Echo provides true metal thickness measurements with no need to remove paint or coating. Other options include Low PRF, Expanded Memory, and Extended Range.

The EPOCH 4B offers the choice of high resolution liquid crystal or electroluminescent displays.

FEATURES

- Selectable, tunable square wave or negative spike excitation pulser
- Light, ergonomically designed (5.7 lbs./2.6 Kg)
- Fast, minimum 60Hz electronics update rate
- High-power NiMH battery
- Large, bright, high-resolution ELD or LCD with full/split screen views
- Automated transducer calibration
- Display Freeze holds waveform and soundpath data
- Soundpath data viewable in inches, millimeters, or microseconds
- Peak Memory feature
- RF display mode
- Alarms, threshold positive/negative, or minimum depth
- Numeric datalogger
- Security Key enables remote upgrade of software options

INSTRUMENT SOFTWARE OPTIONS

- DAC (Distance Amplitude Correction)
- TVG (Time Varied Gain)
- Expanded Memory
- Low PRF
- Echo-to-Echo thickness measurement
- Extended range
- Narrowband filters
- AWS D1.1 & D1.5

EPOCH 4B SPECIFICATIONS*

Display: 320 pixels (W) X 240 pixels (H), ELD or LCD screens

Display Update Rate: Minimum 60Hz

Sensitivity: 110dB Max and Reference level sensitivity feature with 6dB or 0.1dB selectable resolution

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

Material Velocity: 0.025 to 0.6000 in/ μ sec (635 to 15240 m/S)

Range:

- Standard 0.16 inch to 200 inch (4mm to 5,000mm)

- Optional 0.038 inch to 400 inch (1mm to 10,000mm)

Refracted Angle: Fixed settings of 0°, 30°, 45°, 60°, 70°, or variable from 10° to 85° in 0.1° resolution

Peak Memory: Simultaneous display of live A-Scan at 60Hz update rate and peak envelope of A-Scan display

Pulser Type: User selectable, tunable square wave, negative spike excitation

Pulse Energy: Low (100V), Medium(200V), High(300V), and Max(400V)

Damping: 50, 63, 150, and 400 Ohms

Rectification: Full Wave, Half Wave Positive or Negative, and unrectified RF settings

Analog Bandwidth: 0.3MHz to 25MHz at -3dB

Filters: Broadband
Optional narrowband filters

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

Alarms: Selectable threshold positive/negative or minimum depth modes

Operating Temperature:
ELD/ -20°C to 50°C (-4°F to 122°F)
LCD/ 0°C to 50°C (32°F to 122°F)

Storage Temperature: -40°C to 70°C (-40°F to 158°F) depending on battery and display

Power Requirements: AC Mains: 100-120 VAC, 200-240 VAC, 50-60Hz

Battery: Internal Rechargeable NiMH battery pack rated at 12V at 4000mAH

Battery Operating Time: ELD 7 hours nominal. LCD 10 hours nominal. 2 hours typical recharge time

Transducer Cable Connectors:
Fits BNC or Number 1 Lemo®

Keypad: English or International symbols

Languages: Available in keypad selectable languages: English, French, German, Spanish, Italian, Russian, Japanese, and user-defined custom languages

RS-232 Communications Port: Allows interfacing with PCs and printers. Max Baud Rate 38.4

High Speed Parallel Port: Allows rapid communication to external devices

Analog Output: Keypad selectable voltage output of depth or amplitude data

VGA Output Port: Connects to standard VGA monitor or A/V projector

Dimensions:
(ELD) 11.15"H x 6.55"W x 2.6"T
(LCD) 11.15"H x 6.55"W x 2.4"T

Weight: 5.7lbs. (2.6 Kg) with battery

PC Requirements: Compatible with Microsoft® Windows® XP®, Microsoft Windows 2000®, Microsoft Windows NT® 4.0, or Microsoft Windows 98® operating systems. Microsoft® Internet Explorer 6.0 browser

Warranty: One year warranty, battery not included. Optional second year warranty available

ORDERING INFORMATION

EPOCH 4B, Microprocessor-Based Ultrasonic Flaw Detector includes:

- EP4/MCA Mini charger adapter
- EP4/BAT Nickel metal hydride rechargeable battery
- EP4/CAL-NIST NIST calibration certificate
- EP4B/MAN Instruction manual
- EP4/TC Transport case
- EP4/PS Stainless steel pipe stand
- EP4/HS Hand strap

OPTIONAL ACCESSORIES

EP4/SC Shipping hard shell case

EP4/BAT-AA Alkaline battery pack

EP4/EC External stand-alone charger

EP4/RPC Rubber protective carrying case

EP4/PR Printer: 110-120V

EP4/PRE Printer: 230-240V

EP4/DP-E Display protectors (ELD)

EP4/DP-L Display protectors (LCD)

EP4/C-15VGA-6 VGA cable

EP4/C-25PRL-6 Parallel port cable

EP4/C-9FAT-6 Serial port cable

EP4P/IP-KIT-SERIAL Interface Program including serial port cable



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