

DLI Watchman® DCA-31™B

Handheld Data Collector / Real Time Analyzer

DLI is pleased to introduce the new DLI Watchman® DCA-31™B Handheld Data Collector / Real Time Analyzer. A larger size color screen and fast state-of-the-art processors with flash memory offer an improved user experience over the original DCA-31. The DCA-31B is a very small, rugged data collector capable of capturing a wide range of vibration and process data as applied to machine condition monitoring, bearing fault detection and process parameter monitoring. DCA-31B features:

- On screen user assistance
- Spectrum, waveform, envelope demodulation
- Time synchronous averaging
- Harmonic cursor for in-field data analysis
- FFTs up to 12,800 line for accurate troubleshooting
- Interfaces to all ALERT host software

Coupled with StandardALERT™, AdvancedALERT® or ExpertALERT™ software, the DCA-31B provides support for a complete machine condition monitoring program to include: program management, data collection, analysis and reporting. The lightweight and small form factor means that it is easy and convenient to use. The DCA-31B incorporates a ¼ VGA backlit color screen for easy reading and route navigation as well as comprehensive data presentation and interpretation. The DCA-31B comes standard with enough memory onboard to load large routes that can include literally hundreds of machines.

The enclosure is rugged and well sealed (IP65) (suitable for the tough industrial or marine environments)



Latest Technology

The DCA-31B incorporates the latest advances in analog and digital electronics, including a blazing fast X-Scale processor and Motorola DSP to harness the precision and speed of two 20-bit Sigma-Delta A/D converters. The DCA-31B is available in single or two-channel configurations. Should you decide to upgrade your DCA-31B later, only a firmware upgrade is required to enable its two-channel capability. This upgrade offers faster data collection, cross-channel phase measurement, and orbit displays.



Standard Features

- Windows CE™ operating system
- Intuitive hierarchical tree route & off-route data collection format
- Real time overall vibration, time and frequency
- Envelop demodulation for bearing detection
- Sealed to IP 65 rating (Completely protected against the ingress of dust and against water jets)
- Modular design with optional analysis options

Optional Features

- Single & Two Plane Field Balancing
- Bump Test module for resonance studies
- Two-channel capability for faster data collection, cross-channel phase, and orbits
- CSA rated (Class 1, Division 2, Groups A, B, C, D) for explosive environments
- Additional accessories: Strobe or Tachometer for motion/speed analysis, Current Clamp for motor current measurements, Temperature, Pressure or other process sensors

Specifications

Input Signal Types

- ICP Accelerometers
- Velocity Transducers
- Displacement Probes
- Infrared Temperature Sensors
- Photo-Optical Pickups
- Triaxial Transducers
- Acc/Vel Transducers
- DC Inputs
- Keypad

Signal Inputs

- 3 x ICP, AC Signals, DC Signals
- Tacho from Trigger
- TEDS (Technical Electronic Data Sheet)
- Power in Battery Charge
- Trigger Supply Output
- Trigger In

Input Channels

- 1 channel: Triaxial ICPTM/AC/DC
- 2 Simultaneous (Firmware upgradeable); Channel 1 - Triaxial ICPTM/AC/DC, Channel 2 - ICPTM/AC/DC

Input Signal Range

- +/- 40 Volts Max.

Signal

- RMS / Pk / Pk-Pk / dB

Measurement Parameters

- Acceleration, Velocity, Displacement, Demod, Temperature, Phase, Voltage, User Specified.

Measurement Types

- Overall, Spectrum, Time Waveform, Phase, Order Normalized, Spectral Band Alarm.

Transducer Check

- Bias Voltage Integrity

Auto Range

- Yes

Dynamic Range

- >90 dB

Frequency Range

- DC to 40 kHz Max.

AC/ICP

- 0.16 Hz Min.

Integrated

- 0.24 Hz Min.

Filters

- High Pass - 2, 10, 70 Hz
- Demodulated Vibration: 0.6-1.25, 1.25-2.5, 2.5-5, 5-10, 10-20 kHz

Real Time Rate

- 40 kHz single channel

Windowing

- Hanning, Hamming, Rectangular

FFT Resolution

- 100 - 12,800 lines, single channel

Time Block Length

- 256-32,768 samples, single channel

Averaging

- Time and Spectral

Power

- Rechargeable L-Ion

Operating System

- Windows CE™

Processors

- Main Processor - xScale PXA255 @ 400MHz
- DSP: Motorola DSP56L307

Internal Operating RAM

- 64 Megabytes RAM

FLASH Disk

- >40 (up to 50) Megabytes Flash

PCMCIA

- Type I and Type II

PC Communications

- Serial: 9 -Pin D-Type and IrDA 1.1

Machine Identification

- Plant, Area, Machine, Location, Point Description, Units, Alarm Levels, Previous Measurements and Alarm Types.

Alarms

- Overall and Spectrum

Physical

- Display - 1/4 VGA, 240 x 320, 3 1/2", backlit color LCD
- Indicators - LED Red-Amber-Green
- Size - 8 in x 5 in x 2in. (200mm x 130mm x 50mm)
- CSA Certification (Hazardous Environments) – Class 1, Division 2, Groups A, B, C & D.
- Drop Test – 6.5 Feet (2 Meters) (Mil Std 810)
- Sealing - IP 65
- Weight - 1.5 lb. (700grams)
- Temperature - -10°C to + 50°C (Operating)
- Temperature - -20°C to + 60°C (Storage)

Connectors

- Input - 6 Pin Fisher (Two Connectors)
- Power/Trigger - 7 Pin Fisher
- RS232 - 9 Pin Plug D-Type

Optional Accessories

- Transit Case
- Soft Carry Case
- Neck Strap
- Belt Clip
- Accelerometer Cable
- Transducer Loop
- Trigger Input Cable
- Utility Belt
- Spare Battery
- External Battery Charger
- SRAM Storage Card
- Flash Storage Card

Optional Measurement Modules to Expand Functionality

- Balancing (Single or Two-plane field balancing)
- Conformance Check (Provide Pass/Fail indication)
- Bump Test Module (Resonance studies)
- Recorder/Data Logger (Long time capture)



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