CAN Newsletter Online

SIGNAL ANALYZER

Measuring various data with CAN

The battery-powered Coco-80X is a handheld data recorder and dynamic signal analyzer from Crystal Instruments. Its CAN interface allows measurement of various data.

(Photo: Crystal Instruments)

The recorder is suitable for a wide range of industries including petrochemical, paper, steel and other metals, automotive, aviation, aerospace, electronics, and military. These industries demand data recording and analysis, as well as a real-time machine condition monitoring solution. Combined with hard keys, the multi-point touch functionality touchscreen is designed for an intuitive user interface that provides analysis functions. The system is equipped with a 7,0-inch color LCD display with multi-point touch functionality as well as a physical keypad. Flexible connections via CAN and other networks is provided.

Users can connect the Coco-80X to a PC to download files, remotely control operations, or upgrade the software through several means of network connections. It is equipped with eight software-enabled input channels. Embedded firmware contains a key enabling those channels for which software has been purchased. This means a unit initially purchased as a two-channel product can be remotely upgrade to four, six, or eight channels via purchased upgrade. Each analog input is serviced by two 24-bit ADCs and a DSP. Measured time histories are stored in 32-bit single precision floating point format and all subsequent signal processing is performed using floating-point arithmetic. 54 sample rates from 0,48 Hz to 102,4 kHz are provided with better than 150 dB of alias-free data from DC to 45 % of any selected sample rate protected by steep 160 dB/Octave anti-aliasing filters. The eight channels are amplitude matched within 0,1 dB and phase matched within 1°.

The (ISO 11898-1&2) CAN digital input allows simultaneous measurement of an vehicle's speed, engine rotations per minute, and/or any of the hundreds of performance variables tracked by its CAN network. Users can plug into the vehicle's SAE J1962 compliant On-Board Diagnostic (OBD-II) connector to add these additional time signals to their measurement.

The device measures and records both dynamic and static signals. The SD card storage records eight channels of data at up to 102,4 kHz while performing real-time frequency and time domain calculations. An embedded signal source channel provides several standard waveforms that are synchronized with the input sampling rate. A tachometer channel can be enabled to measure the rotating speed during data acquisition. The source and tachometer share a Lemo connector.

The CAN feature allows the subsystems to communicate among each other (Photo: Crystal Instruments)

The hardware platform supports Dynamic Signal Analyzer (DSA). Each working mode has its own user interface and navigation structure. DSA mode is designed for structure analysis and mechanical testing. It is useful for electrical measurement, acoustic analysis, and a range of other applications.

The firmware update can be realized by either download from the Internet or through the SD card without relying on the Internet. Multiple languages are supported that can be switched dynamically. It comes with English, Chinese, Japanese, French, and Spanish.

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