DASCOR™

GENERAL

The M1a series of data loggers form a self-contained battery operated system, which has eight input channels. The ML1008 models are signal conditioned specifically to accommodate four Micron Instruments DBST sensors measuring normal bond stress or bond line shear stress and temperature simultaneously.

The excitation for each sensor is set to 1.0 mA constant current with a compliance voltage of up to 3.5 Volts, or a maximum sensor resistance of 3.5KΩ.

The unit shown on the left is the original design and has seen almost a decade of service. The newer design on the right reflects changes in connectors and other features to improve their robustness. Several of these loggers have survived in runaway test chambers with temperatures in excess of 150°C, with no loss of acquired data or calibration.

The logger interface can also provide real time data for checking sensor operation. The actual voltage measurements of the conditioned signal are reported in ADC Counts, as well as in engineering units of PSI for stress and °C or °F for temperature. The software is compatible with Windows 2000, or XP.

DASCOR offers the service of initializing each sensor to the logger when ordering both the sensors and loggers together. Other items required to obtain the data are a Serial Interface Adapter (SIA) that operates with a compatible Windows program and a computer and includes a wall power adapter is provided.

FEATURES

- 1 to 8 active channels selectable, with 12 bit resolution and minimal data skew
- 8 channels total, configured in four pairs
- Constant Current excitation for each pair of channels
- Non-volatile memory will survive complete power loss without losing data
- The maximum installed memory allows 10,240 scans of all 8 channels (163,840 Bytes)
- Logging intervals from 1 second to 18 hours
- Internal noise typically less than 4 counts
- All Calibration and test identification is stored in non-volatile logger memory
- "Real time" utility for displaying current measurements. (used for checking logger operations for calibration of sensors)
- Pause plug. (Logger starts when external inhibit plug removed)
- NEMA-4 water resistant metal enclosure with water resistant penetrations

SOFTWARE

- Upgraded software works on Windows 2000, and XP.
- Complete setup and download functions. Data is stored as a standard "Comma Separated Variable" format compatible with all spreadsheets and databases.
- Readings are converted to engineering units in software based on stored calibration factors.
- The downloaded data is displayed as raw milli-Volts of signal and as stress in PSI and temperature in °C or °F.

POWER

- One local battery (9V transistor radio style) or external power inputs (12 to 18 VDC) via the SIA.
- Typical power consumption is 600 mAH per year of operation for long term monitoring.
- Ground bonding terminal provided.

ML1008-A (M1A) Data Logger

COMPONENTS OF A DATA LOGGER SET

1. Typical Micron Instruments DBST Sensor with bridge completion module and mounting shim
2. Power supply adapters for local outlets
3. Wall mount power supply (80-260 VAC in, 18 VDC out) shown connected to the SIA
4. Serial Interface Adapter (SIA) for connecting the logger to a PC (including USB support through an adapter)
5. M1c data loggers (original (bottom) and new style (top) connectors)

The ML1008 series loggers shown are set up internally for specific DBST type sensors. With very low power consumption, operation for over one year, or five complete memory fills, is possible on a single internal 9-Volt battery. The maximum allowable memory in this
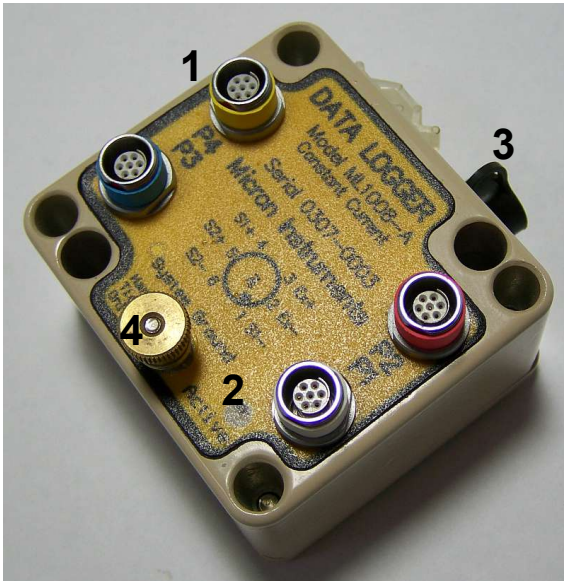
DATA LOGGER FEATURES

1. Connections for four Micron Instruments DBST Sensors
2. Logger "Active" indicator LED
3. SIA receptacle for the Serial Interface cable
4. Thumb nut for connecting a ground bond wire

The new M1c Data Logger (1) comes from a family that has a long and proven track record in many unusual and severe environments. The original M1a core design has been adapted for agricultural research use as large (2) and small (3) ruminant loggers, high temperature and pressure logging for offshore oil and marine applications (4), humidity (5), temperature, pH (6), ORP and other ion specific measurements for environmental monitoring, as well as propellant grain monitoring for WHIMS systems as the M1a (7) & 2-ch-HT (8).

DASCOR specializes in custom and OEM instrumentation solutions for science and industry and is ready to adapt any of our products to fit your exact needs, including private labeling.