Metal Samples
Corrosion Monitoring Systems

MS3500E Remote ER Data Logger

The MS3500E is a battery-powered, intrinsically safe, remote data-logger capable of measuring and storing data from all types of electrical resistance (ER) corrosion probes. The instrument is microprocessor-based and features a simple, menu-driven interface using a 2-key keypad and a 2-line LCD display.

Corrosion rate measurements are made using the electrical resistance method. Essentially, the instrument measures the resistance of the probe element which changes over time, as metal loss occurs. The rate of change is directly proportional to corrosion rate. This method finds a wide variety of applications since it can be used in conductive and nonconductive environments such as petroleum, chemical, water, soil, or even atmosphere.

The MS3500E takes probe readings on a user-programmable logging interval. Readings are time and date stamped as they are taken, then stored to memory. Between readings, the instrument remains in a "sleep" mode to conserve main battery power. The instrument's memory is capable of storing 3,100 readings, and is protected by a lithium back-up battery.

Stored data can be uploaded to any IBM compatible PC as a comma-delimited ASCII text file. Because the data is in ASCII text format, it can be imported into any standard data analysis program such as Microsoft Excel, Lotus 123, or Corel Quattro Pro. Data can also be reviewed on the instrument's LCD display for quick reference.

Stored data can also be uploaded to a Metal Samples model MS1500E Handheld ER Data Logger for transfer to a PC. This handy feature eliminates the need to remove the MS3500E from its site, or to bring a laptop PC to the site. This can be particularly useful when collecting data from multiple MS3500E Data Loggers. And since both the MS3500E and the MS1500E are intrinsically safe, data can be uploaded from the MS3500E to the MS1500E even in hazardous locations.

The MS3500E also offers an optional 4-20mA current loop output (model MS3510E). This feature allows data from the instrument to be fed directly to any industrial process computer that accepts analog inputs.

The instrument is housed in a NEMA-4 enclosure, and all external connections are weather-proof. This makes the MS3500E suitable for use in almost any indoor or outdoor environment.

Technical Specifications

Model

MS3500E - Remote ER Data Logger (Ordering # IN3500)
MS3510E - Remote ER Data Logger w/ 4-20mA Current Loop Output (Ordering # IN3510)

Physical Data

Instrument Weight:	11.94 lb. (5.42 Kg)
Total Weight w/ Accessories:	13.64 lb. (6.19 Kg)
Instrument Dimensions:	11.50"H x 8.94"W x 4.00"D (29.21cm x 22.71cm x 10.16cm)
Case Specifications:	NEMA-4
Mounting Specifications:	10.75"H x 6"W (27.31cm x 15.24cm) Bolt Pattern 0.3" (0.76cm) Diameter Bolt Holes
Operating Temperature:	32° to 122°F (0° to 50°C)
Storage Temperature:	-4° to 158°F (-20° to 70°C)

Performance Data

Measurement Type:	ER measurement using any standard ER probe type (Wire Loop, Tube Loop, Cylindrical, Flush, Strip, etc.)
Range:	0-1000 digits representing 0-100% of probe life
Resolution:	1 digit
Cycle Time:	1 Hour to 99 Days

Electrical Data

Power Requirements:	Six 1.5V AA Batteries
Maximum Probe Cable Distance:	10 ft (3.05 m)
Output Specifications:	RS-232 Output in Comma-Delimited ASCII Text Format 4-20mA Current Loop Output (MS3510E Only)
Intrinsic Safety:	Class I, Division 1 Groups A, B, C, and D Temperature Code T3C Class I, Zone 0, Group IIC, T3C Conforms to ANSI/UL Std. 913

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Special Features

- Microprocessor-based electronics
- Data storage capacity of 3,100 readings, with battery backup
- Menu-driven interface using a 2-key keypad and a 2-line LCD display
- Low-battery detection

Accessory Items

10' Probe Cable, Meter Prover, Communications Cable and Connector, Current Loop Connector (MS3510E only), Operation Manual, Corrosion Data Management Software

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