# Model MS4500E

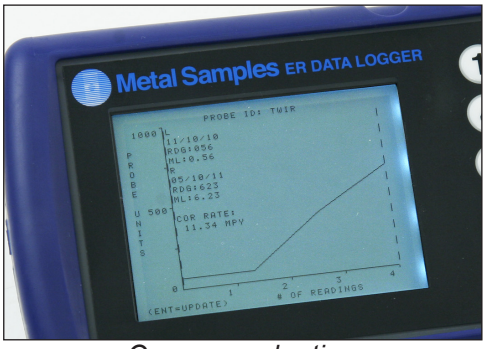
## High-Resolution ER Data Logger

The MS4500E is a hand-held, battery-powered, corrosion meter capable of measuring and storing data from all types of electrical resistance (ER) corrosion probes. The instrument is light weight, microprocessor-based, and features a simple, menu-driven interface using a keypad and a backlit graphical LCD display.


*Probe shown in photo not included with corrosion meter*

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 new high-resolution measurement of the MS4500E detects smaller increments of metal loss, providing faster response than traditional ER instruments (obtaining corrosion rates in hours instead of days). Additionally, it has been designed to work with high temperature probes and with longer extension cables than its predecessors.

After taking a reading, the instrument displays metal loss in mils and corrosion rate in mils per year (mpy). The reading can then be stored to memory or discarded. All stored readings are automatically time and date stamped. Readings are stored to non-volatile Flash memory which retains data without the need for a battery backup.




*On-screen charting*

*Transfer data directly to USB Flash drive*

The MS4500E can store 16,000 readings per probe on up to 250 different probes (4 million total). Stored data can be downloaded directly to a USB Flash (“jump”) drive in non-hazardous areas. Data can be opened and charted using the provided Corrosion Data Management software, or can be imported into any standard data analysis (spreadsheet) program such as Microsoft Excel. Data can also be reviewed and charted on the instrument’s LCD display for quick reference.

# Technical Specifications

**Model**
MS4500E - Handheld ER Corrosion Data Logger

**Physical Data**

| | |
|---|---|
| Instrument Weight*: | 2.13 lb. (0.97 kg) |
| Total Weight w/ Case & Accessories: | 7.40 lb. (3.35 kg) |
| Instrument Dimensions*: | 8.57"L x 4.54"W x 2.38"D (21.77cm x 11.53cm x 6.05cm) |
| Carrying Case Dimensions: | 14.50"L x 11.38"W x 5.88"D (36.83cm x 28.89cm x 14.92cm) |
| Operating Temperature: | -13° to 140°F (-25° to 60°C) |
| Storage Temperature: | -13° to 158°F (-25° to 70°C) |

** Includes protective boot.*

**Performance Data**

| | |
|---|---|
| Measurement Type: | ER measurement using any standard ER probe types<br>Preferred probe types: Cylindrical, Flush (Large)<br>Compatible probe types: Tube Loop, Wire Loop, Flush (Small) |
| Range: | 0 - 100.00 mils |
| Resolution: | 0.004% of Probe Life |
| Repeatability: | ± 0.1% of Full Scale |

**Electrical Data**

| | |
|---|---|
| Power Requirements: | Four AA Batteries - Duracell PC1500 (or Duracell MN1500) |
| Maximum Probe Cable Distance: | 200 ft (61 m) |
| Download Method: | Directly to USB Flash drive (in non-hazardous areas only) |

**Hazardous Location Certifications – Intrinsic Safety**

| | |
|---|---|
| USA / Canada | For use in Class I Zone 0 AEx ia [ia] IIC T4 Ga<br>Ex ia [ia] IIC T4 Ga<br>Class I, Division 1, Groups A,B,C & D, T4<br>Provides outputs to Class I, Division 1 [Ex ia]<br>- 25°C ≤ Ta ≤ + 60°C |
| Europe and Worldwide (ATEX and IECEx) | II 1 (1) G Ex ia [ia] IIC T4 Ga<br>- 25°C ≤ Ta ≤ + 60°C<br>ATEX Certificate No: **ITS18ATEX203161X**<br>IECEx Certificate No: **IECEx ETL 18.0007X** |

**Special Features**
- High resolution ER measurement for rapid response
- Data storage capacity of 16,000 readings per probe on 250 different probes (4 million total)
- Backlit graphical LCD display (240 x 128 pixel resolution)
- On-screen charting
- Automatic data-logging
- Non-volatile Flash memory
- Multilingual menu (English, Spanish, Portuguese, French)
- Portable

**Included Accessory Items**
Carrying Case, Probe Cable (1' coiled - 6' extended), Meter Prover, Operation Manual, Corrosion Data Management Software, Protective Boot

**Optional Accessory Items**
Certified Data Transfer Unit
Certified USB Barrier

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