

# Model MS3500L

## Remote LPR Data Logger

Metal Samples' MS3500L is a battery-powered, intrinsically safe, remote data-logger capable of measuring and storing data from Linear Polarization Resistance (LPR) corrosion probes. The instrument is microprocessor-based and features a simple, menu-driven interface.

The MS3500L datalogger measures general corrosion, localized corrosion (pitting), and conductance, and stores that information. It utilizes state-of-the-art algorithms and data analysis techniques to accurately measure general corrosion rate and pitting. Harmonic distortion analysis (HDA) is applied to improve the performance of the industry-accepted linear polarization resistance (LPR) technique used to measure corrosion rate.

To further enhance the performance, an application-specific Stern-Geary variable (B value) is calculated and updated every measuring cycle. There is no need to manually update the B value because of process changes. During the measurement cycle, datalogger also performs an automated electrochemical noise (ECN) measurement, which in combination with the corrosion rate data can provide a measurement of localized corrosion (pitting). The logger works with Metal Samples three-electrode CorrTran style probes and electrodes. Probes are available in a variety of mounting types and materials to suit almost any type of installation.

The MS3500L 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 more than 100,000 readings and is stored in non-volatile Flash memory.

Stored data can be uploaded to any 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. Data can also be reviewed on the instrument's LCD display for quick reference.

Stored data can be downloaded directly to a certified Data storage device. This eliminates the need to remove the MS3500L from its site, or to bring a laptop PC to the site. This can be particularly useful when collecting data from multiple MS3500L Data Loggers. And since the MS3500L is intrinsically safe, data can be downloaded from the MS3500L even in hazardous locations.

The MS3500L also offers an optional 4-20mA current loop output. 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 stainless steel NEMA 4X / IP 66 enclosure, and all external connections are weather-proof. This makes the MS3500L suitable for use in almost any indoor or outdoor environment.



# Technical Specifications

## Model

MS3500L - Basic Model\*

MS3510L - Basic Model\* + 4-20mA Current Loop Output

\*All models include USB interface

## 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 4X / IP66 - stainless steel  
Mounting Specifications: 10.75"H x 6"W (27.31cm x 15.24cm) Bolt Pattern  
0.3" (0.76cm) Diameter Bolt Holes  
Operating Temperature: -40° to 158°F (-40° to 70°C)  
Storage Temperature: -40° to 158°F (-40° to 70°C)

## Performance Data

Probe Type:	3-Electrode LPR		
Measurement Type:	General corrosion	Local Corrosion	Conductance
Measurement Unit:	mpy or mmpy	unitless	microSiemens
Measurement Range:			
Default Range:	0-40 mpy (0-1 mmpy)	0.0 - 1.0	5 - 333,333
Low:		0.0 - 0.3	
Maximum:	1000 mpy (25 mmpy)	0.3 - 1.0	
Max. Error:	Excitation voltage <0.05% of full span		
Download Method:	Directly to USB Flash drive (Certified Data Transfer Unit required for use in hazardous areas)		
Data Storage:	> 100,000 readings		
Factory Settings	B value (Stern Geary value): 25.6 mV K value (corrosion constant): 11800		
Measurement time	4 to 21 minutes (depends on configuration)		

## Electrical Data

Power Requirements: 7.2 V lithium battery pack  
Typical Battery Life: 3 years (based on measurement interval)  
Output Specifications: Optional 4-20mA Current Loop Output (MS3510L)

## Certifications

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-40 Deg C < Ta < 70 Deg C (with Tadrian TL5930 cells)  
-40 Deg C < Ta < 50 Deg C (with Xeno XL-205F cells)

## Special Features

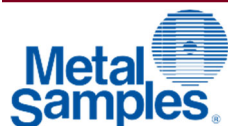
- Microprocessor-based electronics
- Menu-driven interface
- Large internal memory for more storage
- IP66 enclosure

## Included Accessory Items

12' Probe Cable, Meter Prover, Current Loop Connector\*\*, Operation Manual, Corrosion Data Management Software  
\*\*MS3510L model

## Optional Accessory Items (Ordered Separately)

Certified Data Transfer Unit (required for transferring data in a hazardous area)



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