

# ELM-Series Electrolyte Level Monitor



ELM Monitor

## Product Description

The **ELM-Series** is a reliable electrolyte level and temperature monitoring system designed for flooded batteries. Utilizing low cost, easy to install sensors, the system will alarm on low electrolyte level or higher than normal temperature. In the condition of an alarm, the sensors communicate to the system monitor and dry contact alarm(s) activate while simultaneously activating the appropriate alarm LED lights. In the event that four or more cells trigger an alarm state, the monitor will trigger a group alarm in addition to the single alarm. The alarm contacts may be linked in to any facilities management or alarm system for remote monitoring.

## Product Features

- Low cost monitor for electrolyte level & cell temperature monitoring
- Auto calibrating sensors adjust to battery in seconds
- Alarm contacts for external alarming
- LED lights on monitor and sensors for visual alarming on-site or confirmation of no fault status
- Fast and easy installation, all cabling cut to length based on simple site survey
- Applicable to any flooded battery system regardless of voltage & amp-hour
- Temperature monitoring designed for protection against thermal runaway conditions

## Cost-Saving Benefits

The ELM allows for significant savings in maintenance costs for battery sites by reducing the man-power needed to inspect battery electrolyte levels. Per NERC Standard PRC-005-2, no periodic on-site inspection of cell electrolyte level is required when remote electrolyte level monitoring with alarming is utilized.



Installation to Battery Cells



ELM Sensor with Mounting Cradle

## Sensor Installation

Installation of the ELM sensors is simple and fast. Sensors are daisy chained together via provided, pre-cut ribbon cable. All required materials for installation are provided and do not require modification. Each ELM sensor is installed to the front of the battery case via a peel off adhesive. Small marks on the sensor allow it to be easily lined up with the minimum line on the cell for accurate level detection. No marking of the battery is required during installation.

## Sensor LED Indicators

Each sensor has (3) LED lights. The LED's provide quick visual cues to determine the condition of specific cells in a battery system.

- **No Fault** - Green LED illuminated when the sensor is powered on and no fault is detected
- **Level** - Red LED illuminates red when the sensor detects the electrolyte level is low
- **Temperature** - Red LED illuminates when temperature exceeds set threshold



Sensors Installed to Level Line on Flooded Cells

Technical Specifications	
<b>Battery Types:</b>	Compatible with all transparent flooded battery types
<b>Temperature Alarm Activation:</b>	35 °C (95 °F), ± 2 °C (3.5 °F) 49 °C (120 °F), ± 2 °C (3.5 °F) 63 °C (145 °F), ± 2 °C (3.5 °F) <b>Optional:</b> No temperature alarm
<b>Level Accuracy:</b>	±2 mm (± 0.08") above or below line label
<b>Input Voltage:</b>	12 VDC, AC/DC wall adapter included standard Additional voltage inputs available with optional PSU
<b>Output Relays</b>	SPDT volt-free contact relays for: 1+ low electrolyte level detection 4+ low electrolyte level detection 1+ high temperature detection 4+ high temperature detection
<b>Dimensions: (L x W x D)</b>	<b>Monitor:</b> 176 x 80 x 51 mm (6.9 x 1.6 x 3 in.) <b>Sensor:</b> 54 x 35 x 15 mm (2.2 x 1.4 x 0.8 in.) <b>Sensor Cradle:</b> 65 x 52 x 14 mm (2.6 x 2.1 x 0.6 in.) <b>Cables:</b> 1.25mm pitch at length of 305 mm (12 in.)

## System Includes

- ELM Monitor
- ELM Sensors
- Sensor Mounting Cradles
- Pre-Cut Ribbon Cables
- Print Installation Manual
- 12V AC Wall Adapter
- **Optional:** Additional power supplies available for various AC or DC inputs

## Ordering Information

No.	Model # <sup>(1)</sup>	Description
1	ELM-4C	Electrolyte Level Monitoring Solution: Up to 4 Cells
2	ELM-6C	Electrolyte Level Monitoring Solution: Up to 6 Cells
3	ELM-8C	Electrolyte Level Monitoring Solution: Up to 8 Cells
4	ELM-12C	Electrolyte Level Monitoring Solution: Up to 12 Cells
5	ELM-24C	Electrolyte Level Monitoring Solution: Up to 24 Cells
6	ELM-60C	Electrolyte Level Monitoring Solution: Up to 60 Cells
7	ELM-120C	Electrolyte Level Monitoring Solution: Up to 120 Cells
8	ELM-240C	Electrolyte Level Monitoring Solution: Up to 240 Cells

1) Common configurations shown, custom configurations available.