



# MMU-16E

## MALFUNCTION MANAGEMENT UNIT FOR NEMA CABINETS

Incorporates many of the features of a TS1-1989 Conflict Monitor Unit along with additional enhanced monitoring, display, and trouble shooting functions.

### FEATURES

- Nema TS2-2016 Standard
- Standardized Communications
- Full Intersection Display
- Event Logging
- Dual Indication Monitoring
- Field Check Monitoring

### HIGHLIGHTS

- Signal Sequence History Logs
- LEDguard®
- EDI RMS-Engine
- Data Access Provided By ECcom PC Software
- Dual 12/16 Channel Mode



## NEMA CABINET COMPATIBLE

### Nema TS2-2016 Standard

The MMU-16E meets all specifications of the Nema Standard TS2-2016 while maintaining downward compatibility with existing Nema TS1-1989 Traffic Control Assemblies.

### Standardized Communications

Type 16 real time SDLC communications with the Controller Unit exchanges field input status, Controller Unit output status, fault status, MMU programming, and time and date, along with a watchdog function for Port 1 activity.

### Full Intersection Display

The Full Intersection Display uses Red, Yellow, and Green LEDs to show active colors of all channel inputs simultaneously for both real-time intersection status and latched fault status.

### Event Logging

A time-stamped nonvolatile event log records the complete intersection status as well as AC Line events, configuration changes, monitor resets, temperature and true RMS voltages.

### Dual Indication Monitoring

Detects simultaneous active Green and Yellow, Green and Red, or Yellow and Red inputs on the same channel (Type 12 mode includes Walk).



### Field Check Monitoring

In Type 16 mode, the MMU-16E analyzes the Controller Unit output commands and field input status to isolate whether the problem was caused by a Controller Unit malfunction, or a failure in the load bay or field wiring, and then identifies the faulty channel and input directly.

### Signal Sequence History Logs

The five Signal Sequence History logs stored in nonvolatile memory graphically display up to 30 seconds of signal status prior to each fault event.

### LEDguard®

This EDI innovative signal thresholding technique can be used to increase the level of monitoring protection when using LED based signal heads.

### EDI RMS-Engine

A DSP coprocessor converts AC input measurements to True RMS voltages, virtually eliminating false sensing due to changes in frequency, phase, or sine wave distortion.

### ECcom PC Software

Access to the MMU-16E data is provided by the industry standard EDI ECcom Windows based software for status, event log retrieval, configuration, and data archival.

### Dual 12/16 Channel Mode

Operates as a 16 channel unit (Type 16) with 3 inputs per channel (Red/Dont Walk, Yellow, Green/Walk), or as a 12 channel unit (Type 12) with 4 inputs per channel (Red, Yellow, Green, Walk) for downward compatibility with TS1-1989.