



# TRYSTAR®

## Remote Monitoring & Communications

## Emergency Lighting Inverter Products

- FastLITE Model FST
- UltraLITE Model ELC
- UltraLITE Model ELU
- eLITE Model ELN
- eLITE Model ELE
- EON Model EL3

REMOTE MONITORING & COMMUNICATIONS

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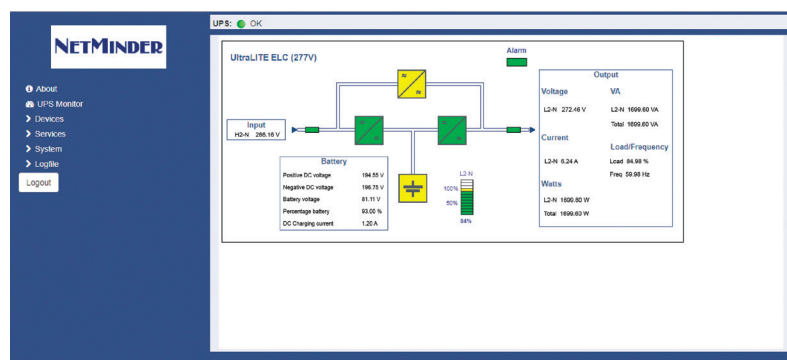
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## NETMINDER HARDWARE

### NetMinder CS141 Series Of Communication Adapters

The **NetMinder CS141** series of adapters integrate a Trystar emergency lighting inverter into an Ethernet TCP/IP, MODBUS TCP, or MODBUS RS485 network. These adapters provide remote monitoring of inverter status, alarm conditions and electrical measurements via a web browser, without the need for any external software. Remote notification of alarms, battery tests and status are available via SNMP and e-mail; and are also viewable on a web-page. When used with emergency lighting inverters, the **NetMinder CS141** adapters will report the inverter's battery test pass / fail results to satisfy NFPA life safety system requirements.



Example of a NetMinder inverter monitoring screen, via the adapter's internal web interface.

These adapters are available in three different versions:

- **NetMinder CS141B** – Basic Ethernet / SNMP / TCP/IP / MODBUS TCP communications used in inverter applications.
- **NetMinder CS141L** – Advanced version, includes all functionality of the basic version, plus the addition of 4 auxiliary contact closure inputs.
- **NetMinder CS141L-485** – Adds MODBUS RS485 communications to the advanced version of the NetMinder CS141L.

### BACnet Communications Capability

The NetMinder CS141 adapters are able to communicate over a BACnet/IP or MS/TP network with the addition of customized hardware provided by Trystar. All objects including parameters, alarms, status, and test results can be monitored and stored by building management systems (BMS) ... thereby improving connectivity and simplifying maintenance.

BACnet compatibility is available with all Trystar emergency lighting inverters. The required hardware for BACnet is internally-mounted within Models "ELC", "ELU", and "EON". Models "ELN" and "ELE" require external hardware.

## PRODUCTS WITH LOCAL MONITOR & NETMINDER ADAPTER

### AUltralITE Model ELC

#### Available Alarms and Status Indications

**Note:** The NetMinder adapter displays some alarm events as “UPS”, however these also refer to the “Inverter”.

#### CS141B / CS141L / CS141L-485 Alarms

- On Battery
- Loss of AC Input Power
- UPS OK (Inverter OK)
- Power Restored
- UPS Connection Lost (Inverter Connection Lost)
- UPS Connection Restored (Inverter Connection Restored)
- UPS Battery Old (Inverter Battery Old)
- Overload
- Load Normal
- Bypass On
- Bypass Off
- Battery Low
- Load >80%
- Load >90%
- Battery Time Remaining
- Battery Test Running
- Battery Test Pass
- Battery Test Fail
- Battery Test Cancelled

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#### CS141L / CS141L-485 Only Alarms

- AUX Port 1 High
- AUX Port 2 High
- AUX Port 3 High
- AUX Port 4 High
- AUX Port 1 Low
- AUX Port 2 Low

- AUX Port 3 Low
  - AUX Port 4 Low
- 

Any alarm function may be assigned to a specific AUX port. Usage of AUX Ports requires an additional circuit board. Consult factory for details.

**Device Functions**

- Manual Battery Test (Web Interface Only)
- Battery Test Cancel (Web Interface Only)

**Electrical Parameters Displayed**

- Input Voltage
- Output Voltage
- Output Frequency
- % Load
- % Battery Capacity
- Charger Current
- Battery Voltage
- Output VA
- Output Watts
- Output Current
- +/- DC Bus Voltage (Web Interface Only)

## PRODUCTS WITH LOCAL MONITOR & NETMINDER ADAPTER

### UltraLITE Model ELU

#### Available Alarms and Status Indications

**Note:** The NetMinder adapter displays some alarm events as “UPS”, however these also refer to the “Inverter”.

#### CS141B / CS141L / CS141L-485 Alarms

- On Battery
- Loss of AC Input Power
- UPS OK (Inverter OK)
- Power Restored
- UPS Connection Lost (Inverter Connection Lost)
- UPS Connection Restored (Inverter Connection Restored)
- UPS Battery Old (Inverter Battery Old)
- Overload
- Load Normal
- Bypass On
- Bypass Off
- Battery Low
- Load >80%
- Load >90%
- Battery Time Remaining
- Battery Test Running
- Battery Test Pass
- Battery Test Fail
- Battery Test Cancelled

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#### CS141L / CS141L-485 Only Alarms

- AUX Port 1 High
- AUX Port 2 High
- AUX Port 3 High
- AUX Port 4 High
- AUX Port 1 Low
- AUX Port 2 Low
- AUX Port 3 Low

- AUX Port 4 Low

Any alarm function may be assigned to a specific AUX port. Usage of AUX Ports requires an additional circuit board. Consult factory for details.

#### **Device Functions**

- Manual Battery Test (Web Interface Only)
- Battery Test Cancel (Web Interface Only)

#### **Electrical Parameters Displayed**

- Output Voltage
- Output Frequency
- % Load
- % Battery Capacity
- Charger Current
- Battery Voltage
- Output VA
- Output Watts
- Output Current
- +/- DC Bus Voltage (Web Interface Only)



## PRODUCTS WITH LOCAL MONITOR & NETMINDER ADAPTER

### Any aeLITE Model ELN

#### Available Alarms and Status Indications

**Note:** The NetMinder adapter displays some alarm events as “UPS”, however these also refer to the “Inverter”.

#### CS141B / CS141L / CS141L-485 Alarms

- Powerfail / On Battery
- UPS OK (Inverter OK)
- Power Restored
- UPS Connection Lost (Inverter Connection Lost)
- UPS Connection Restored (Inverter Connection Restored)
- UPS Battery Old (Inverter Battery Old)
- Overload
- Load Normal
- Battery Low
- Load >80%
- Load >90%
- Battery Time Remaining

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#### CS141L / CS141L-485 Only Alarms

- AUX Port 1 High
- AUX Port 2 High
- AUX Port 3 High
- AUX Port 4 High
- AUX Port 1 Low
- AUX Port 2 Low
- AUX Port 3 Low
- AUX Port 4 Low

Any alarm function may be assigned to a specific AUX port. Usage of AUX Ports requires an additional circuit board. Consult factory for details.

#### Electrical Parameters Displayed

- Input Voltage
- Output Voltage
- Frequency

- Output Current (MODBUS only)
- % Load
- % Battery Capacity
- Output VA (MODBUS only)
- Output W (MODBUS only)

#### **eLITE Model ELE**

##### **Available Alarms and Status Indications**

**Note:** The NetMinder adapter displays some alarm events as “UPS”, however these references do equate to “Inverter”.

##### **CS141B / CS141L / CS141L-485 Alarms**

- Powerfail / On Battery
- UPS OK (Inverter OK)
- Power Restored
- UPS Connection Lost (Inverter Connection Lost)
- UPS Connection Restored (Inverter Connection Restored)
- UPS Battery Old (Inverter Battery Old)
- Bypass On
- Bypass Off
- Battery Low
- Battery Time Remaining
- General Alarm
- General Alarm Cancelled

##### **CS141L / CS141L-485 Only Alarms**

- Battery Test Pass
- Battery Test Fail
- AUX Port 1 High
- AUX Port 2 High
- AUX Port 3 High
- AUX Port 4 High
- AUX Port 1 Low
- AUX Port 2 Low
- AUX Port 3 Low
- AUX Port 4 Low

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Any alarm function may be assigned to a specific AUX port. Usage of AUX Ports requires an additional circuit board. Consult factory for details.

## PERIPHERALS & ACCESSORIES

### Multifunction Communication Modem (MCM)

Meeting NFPA standards for system testing is critical in today's business infrastructure. To assist in meeting these standards, Trystar is offering the Multifunction Communications Modem (MCM). The Multifunction Communications Modem can send a fax, an e-mail, dial a phone number and play a prerecorded message, or report system test results to a web page. On inverters with system test pass/fail contacts, the Multifunction Communications Modem records system test results and automatically sends a written test report which satisfies NFPA guidelines for stored energy emergency lighting system testing. The Multifunction Communications Modem comes standard with 2 contact inputs for battery test pass/fail results, plus options for up to 8 different devices.



### Remote Annunciator

Using LED's and an audible alarm, the Remote Annunciator is a device that connects to the status and alarm contacts within the emergency lighting inverter and notifies key facility personnel of inverter alarm conditions. The Remote Annunciator includes a 50-ft cord (longer cords available in 25-ft increments) that plugs into the inverter. The Remote Annunciator both displays and sounds product-specific alarms; and also includes an Alarm Silence pushbutton which allows system personnel to silence the audible alarm(s).



### Automatic Message Dialer

System monitoring is critical. In some cases where e-mail or a computer network is not available, the Automatic Message Dialer fills the gap. The automatic message dialer is an optional device available on our lighting inverters, that provides 24/7 monitoring via a telephone line. In the event there is an alarm condition with the lighting inverter, the Automatic Message Dialer dials up to 4 numbers and plays a customizable pre-recorded voice message.



### MIU4 (4X Port Expander)

The MIU 4 is available with the Trystar line of lighting inverters. The MIU 4 gives you the flexibility to use the NetMinder CS141, an Automatic Message Dialer, plus 2 other ports for a remote annunciator or another alarm monitoring device from one inverter. With the MIU4, there are no worries about running out of status signals.



## INTELLISTAT TSTM NETWORK COMMUNICATIONS

### Intellistat TS™ Monitor

The “**Model FST**” and the “**Model ELU**” emergency lighting inverters offer advanced digital monitoring via the optional “Intellistat TS”, located on the unit itself. On the “**EON Model EL3**”, the “Intellistat TS” monitor is standard on every unit.

This full-featured, user-friendly monitor provides quick and easy access to electrical parameters, system status, and event logs from a touchscreen display. Operational conditions and alarm conditions are displayed on the screen, together with an audible alarm. The color, high-resolution, LCD touchscreen display allows the entry of date / time values, system setpoints, alarm threshold settings, and password information into the monitor.

The “Intellistat TS” provides complete system diagnostics, including user-programmable automatic battery testing and time- / datestamped logging of the results.

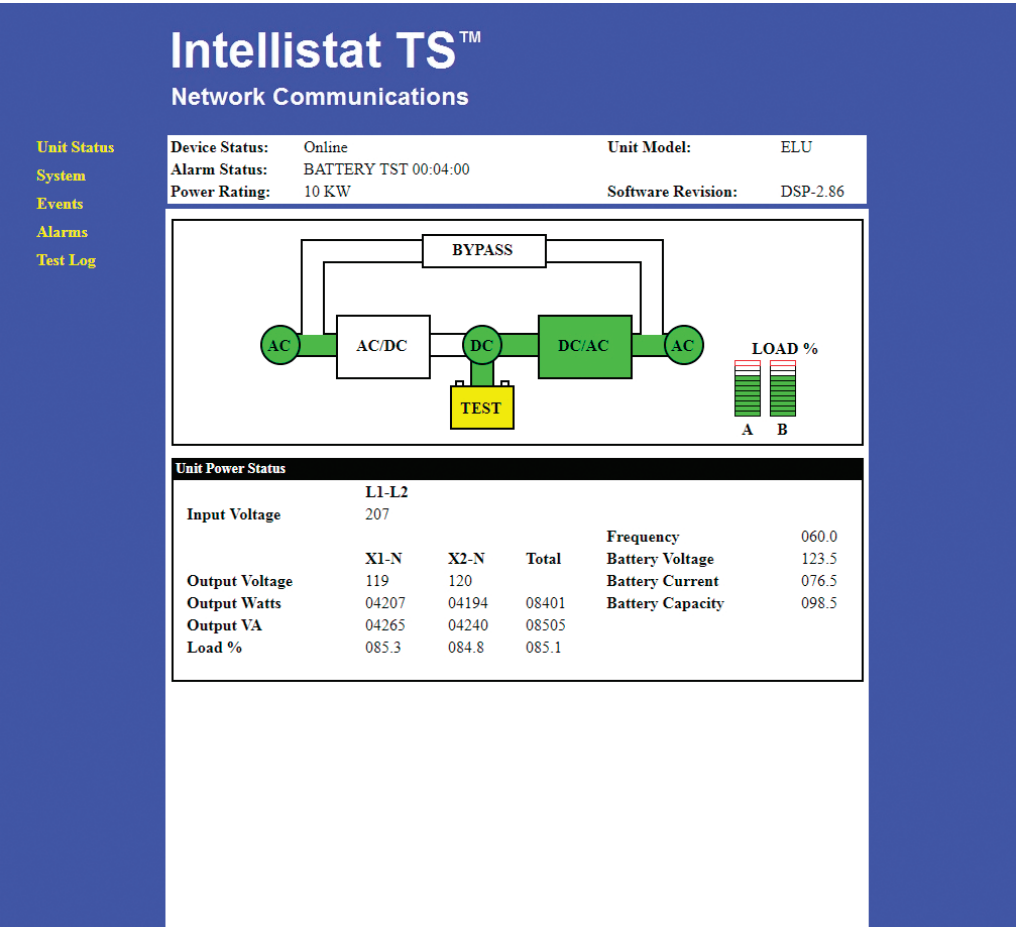
### Intellistat TS™ Network Communications

The “Intellistat TS” monitor is available with optional “built-in” network communications, which integrate the inverter into a BACnet/IP

or BACnet MS/TP, Ethernet TCP/IP, MODBUS TCP, or MODBUS RS485 network with a specific IP address for Ethernet-connected systems.

**When this option is selected, the use of a NetMinder adapter is no longer necessary for remote monitoring ... however, all the communication protocols listed above are still available.**

This “built-in” network communications capability also provides remote monitoring of the inverter’s status, battery test pass/fail results, alarm conditions, and electrical measurements via a web browser, without the need for any external software. Remote notification of alarm and status “Events” are available via SNMP, e-mail, and text messaging; or via the user’s building management system. “Alarms” and battery “Test Logs” each store up to 250 events that are time- and date-stamped, and may be downloaded in a text file.



## PRODUCTS WITH INTELLISTAT TS NETWORK COMMUNICATIONS

### FastLITE Model FST

#### (with optional Intellistat TS monitor) Available Alarms and Status Indications

- General Alarm
- Return to System Normal
- On Battery Power
- Return to AC Power
- Output VA High
- Load Normal
- Output Circuit Breaker Open
- Input Voltage Out Of Range
- Output Voltage Out Of Range
- Low Battery Warning
- Battery Critical (10% or less of capacity remaining)
- Over-temperature
- System Shutdown
- Contact Service
- System Testing
- Battery Test Failed
- Battery Test Passed
- Lighting Integrity Test Failed
- Lighting Integrity Test Passed

#### Device Functions

- Manual Battery Test (Web Interface Only)
- Battery Test Cancel (Web Interface Only)

#### Electrical Parameters Displayed

- Input Voltage
- Output Voltage
- Output Watts
- Output VA
- % Load
- Frequency
- Battery Voltage

- Battery Current
- Battery Capacity

## PRODUCTS WITH INTELLISTAT TS NETWORK COMMUNICATIONS

### Model ELU

#### (with optional Intellistat TS monitor) Available Alarms and Status Indications

- General Alarm
- Return to System Normal
- On Battery Power
- Return to AC Power
- Output VA High
- Load Normal
- On Manual Bypass
- Output Circuit Breaker Open
- Input Voltage Out Of Range
- Output Voltage Out Of Range
- Low Battery Warning
- Battery Critical (10% or less of capacity remaining)
- Over-temperature
- System Shutdown
- Contact Service
- System Testing
- Battery Test Failed
- Battery Test Passed
- Lighting Integrity Test Failed
- Lighting Integrity Test Passed

#### Device Functions

- Manual Battery Test (Web Interface Only)
- Battery Test Cancel (Web Interface Only)

#### Electrical Parameters Displayed

- Input Voltage
- Output Voltages L-N, L-L
- Output Watts Per Phase
- Output VA Per Phase
- % Load Per Phase

- Frequency
- Battery Voltage
- Battery Current
- Battery Capacity

## **PRODUCTS WITH INTELLISTAT TS NETWORK COMMUNICATIONS**

### **EON Model EL3**

#### **Available Alarms and Status Indications**

- General Alarm
- Return to System Normal
- On Battery Power
- Return to AC Power
- Output VA High
- Load Normal
- On Manual Bypass
- Output Circuit Breaker Open
- Input Voltage Out Of Range
- Output Voltage Out Of Range
- Low Battery Warning
- Battery Critical (10% or less of capacity remaining)
- Over-temperature
- System Shutdown
- Contact Service
- System Testing
- Battery Test Failed
- Battery Test Passed
- Lighting Integrity Test Failed
- Lighting Integrity Test Passed
- Manual Restart Required
- Bypass Not Available

#### **Electrical Parameters Displayed**

- Input Voltage (Phase A, B, C)
- Output Voltages (Phase A, B, C)
- Output Watts (Phase A, B, C)
- Output VA (Phase A, B, C)



- % Load (Phase A, B, C)
- Frequency
- Battery Voltage
- Battery Current
- Battery Capacity

## PERIPHERALS & ACCESSORIES

Consult factory for availability of peripherals and accessories for use with specific inverter models.

### Multifunction Communication Modem (MCM)

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