

GENERAL INFORMATION

The Sensor+ Control Electronics Module (CEM+) receives and manages Ethernet control signals as well as two DMX512 inputs. It controls dimmer output, and communicates feedback information to compatible lighting control devices and network peripherals.

- APPLICATIONS**
 - Professional and educational theatre
 - Production studios
 - Performance halls
 - Retail and dining
 - Houses of worship
 - High density architectural dimming
 - Touring and Portable dimming
- FEATURES**
 - Direct Ethernet connectivity for dimmer levels, feedback and system control
 - Two DMX512 input connections
 - Rugged industrial construction
 - Modular design
 - Local Menu-driven User Interface
 - Advanced configuration editing
 - 128 Presets with programmable fade times
 - System and rack feedback standard
 - Support for Advanced Features (AF) dimmer-specific reporting
 - Supports ETC Dimmer Doubling™
 - UL and cUL LISTED and CE Marked
- ACCESSORIES**
 - Sensor+ Connect – a browser-based Graphical User Interface - accessible thru an Emphasis server, computer, or a PDA on the network
 - Sensor+ Preset Stations
 - Retrofit kits to upgrade existing Sensor racks to CEM+ modules

ORDERING INFORMATION

Control Modules

| Sensor+ Control Electronics Module | |
|------------------------------------|----------------------------|
| Model# | Description |
| CEM+ | Control Electronics Module |

Compatible Systems

| Sensor+ Installation Racks | |
|----------------------------|--|
| Model# | Description |
| SR6+ | Sensor+ 6 module rack |
| SR12+ | Sensor+ 12 module rack |
| SR24+ | Sensor+ 24 module rack |
| SR48+ | Sensor+ 48 module rack |
| SR6AF+ | Sensor+ 6 module Advanced Features rack |
| SR12AF+ | Sensor+ 12 module Advanced Features rack |
| SR24AF+ | Sensor+ 24 module Advanced Features rack |
| SR48AF+ | Sensor+ 48 module Advanced Features rack |
| HSR+/HSRAF+ | Sensor+ 230V racks |
| SRAFN+ | Sensor GFCI racks |
| SRD2+ | Sensor Delta racks |
| ESRAFN+ | Sensor CE racks |
| Sensor+ Touring Racks | |
| Model# | Description |
| SP4820+ | Sensor+ 24 module Touring Rack (48- 20A dimmers) |
| SP7220+ | Sensor+ 36 module Touring Rack (72- 20A dimmers) |
| SP9620+ | Sensor+ 48 module Touring Rack (96- 20A dimmers) |
| Accessories | |
| Model# | Description |
| SBOX | Sensor+ Preset Stations |
| RK | CEM to CEM+ Retrofit kit for standard Sensor racks |
| RK-AF | CEM to CEM+ Retrofit kit for Sensor AF racks |



SPECIFICATIONS

| | |
|-------------------------|---|
| GENERAL | Universal Control Electronics Module Direct Ethernet connectivity for dimmer levels, feedback and system control UL, cUL LISTED and CE Marked |
| PHYSICAL | Formed steel body finished with textured epoxy paint Injection molded face panel Slide-in module installs and removes without tools Spring-loaded module release Airflow sensor to ensure adequate airflow |
| ELECTRICAL | Accepts: Single phase Three phase WYE or Delta Universal Voltage range 90-250 VAC Line feed frequencies from 47-63Hz Automatic frequency variation compensation |
| CONTROL FEATURES | 2-line by 20-character backlit LCD for system configuration, status display and error indication Backlit 7-button keypad includes Reset button 4 status LED indicators: Power, Network activity, DMX-A and DMX-B Two configurable DMX512 inputs (2500V opto-isolated) 128 user-programmable presets assignable to 4 rooms Maximum of 1024 racks (64 groups of 16) Single Panic circuit with flexible programming Complete group configuration stored in each CEM+ Individual CEM+ failure does not disable multi-rack group Replacement CEM+ can download configuration from adjacent racks, rack back plane or online server Multi-rack configuration can be restored from a single CEM+ Dimmer outputs are regulated to maintain constant power to loads $\pm 1V$ Individual output scale voltage settings for load wiring compensation (60 – 140V) Selectable Dimmer Modes Normal Dimmer Doubled Switched (unregulated on/off with adjustable threshold) Fluorescent with adjustable threshold Always On Off Selectable Dimmer Output Curves Linear Modified Linear Square Modified Square Sensor 2.0 40,000-Step Resolution per half cycle Response speed <25mS Selectable Data Loss Behavior |
| FEEDBACK | All Sensor racks with CEM+s include basic system diagnostic reporting Remote monitoring, programming and backup functions over the network using Sensor+ Connect or WYSILink software program Standard rack feedback includes: DMX input status, Rack power status, and Rack temperature Advanced Features (AF) provides dimmer specific status and load feedback (requires AF dimmer rack and AF dimmer modules) |

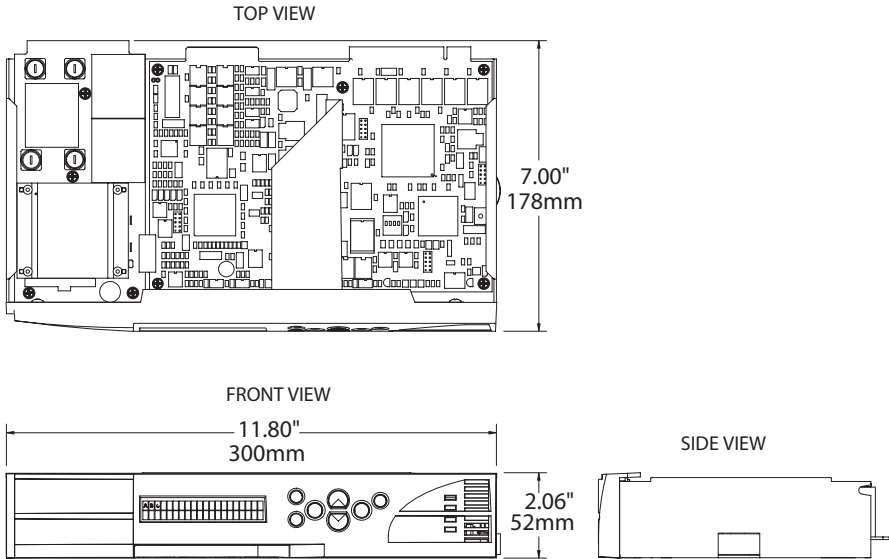
LOCAL PROGRAMMING MENU

| | |
|--------------------|---|
| RACK ERRORS | View Error messages |
| ABOUT | About Group: Software version, panic status, preset status, and group name About Network: IP address, SubNet mask and Gateway About Rack General: ambient temperature and airflow, rack type, and air filter status About Rack Power: frequency, voltage per phase, and voltage headroom About Rack Data: status for DMXA, DMXB, and Network activity About Rack Address: DMXA, DMXB or EDMX start address, Rack Address mode (Standard or Advanced) About Dimmer: module type, curve, scale voltage, output level, control source, and module location About Room: assign and monitor presets in a room Identify Rack: quick way to find and identify a single rack in a group |
| LOGIN | Security Level passwords determine screens and modes available to user |
| PRESETS | Play, deactivate or clear presets Record presets from DMX, EDMX and set levels Set fade times and priority levels Name presets and rooms Set maximum number of active presets per room |
| PANIC | Activate, deactivate or clear group-wide panic Record panic from DMX, EDMX and set levels Record panic properties: normally open or closed, maintained or momentary, master level, and option to force all non-panic dimmers to zero |
| DIMMERS | Set dimmers at levels and release Set dimmer curve Name the dimmer |
| RACK SETUP | Name rack and set type of rack Patch Capability Set first dimmer and address mode (standard or advanced) Set Temperature Alarm Set Power Balance – Column, Single Phase or Three Phase Set Air Filter Cleaning reminder based on hours of use Configure Fan as Always On or Off if no data/15 min. Select Data loss Behavior – Hold last Look, Wait and fade, Crossfade to a Preset |
| GROUP SETUP | Name Group Setup Group Network – IP Address, SubNet mask, Gateway Address and Enable/Disable Network Set Data Priority per DMX port Select Language – English, French, Spanish or German Select Temperature Reporting type - F° or C° Set Login Timeout Record Loads and Report Load Errors |

CEM+ Control Module

Sensor®+ Series

DIMENSIONS



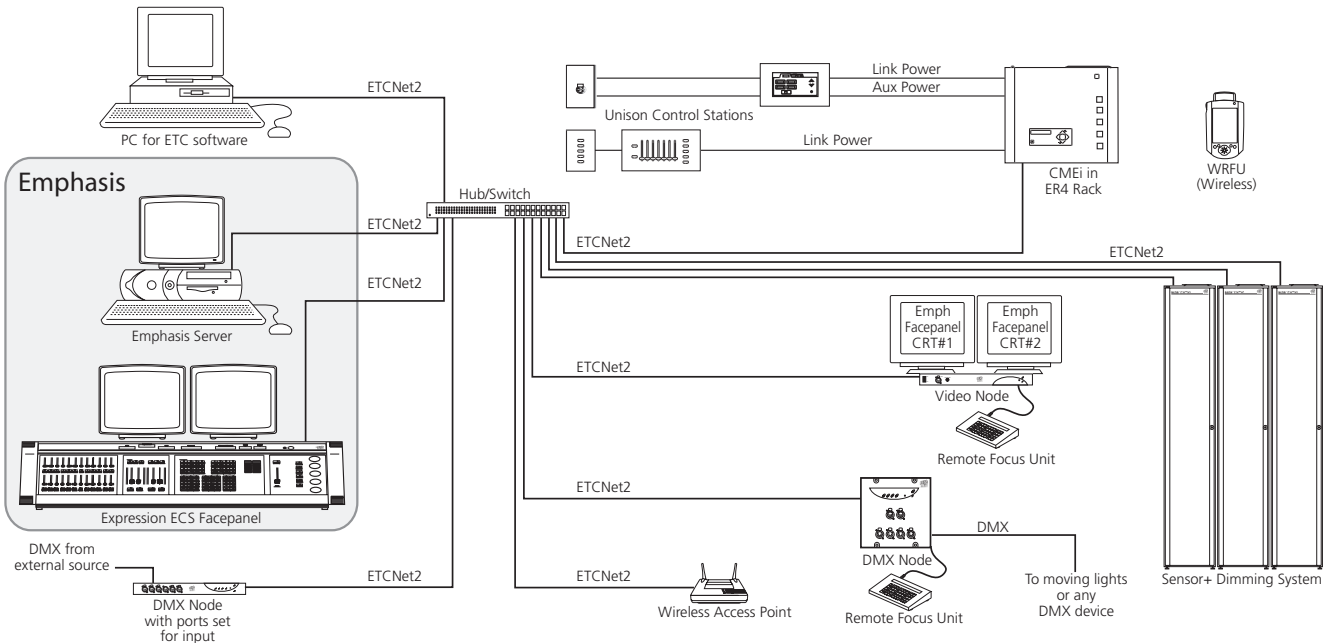
Control Electronic Module Weight

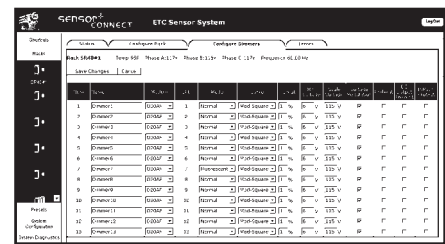
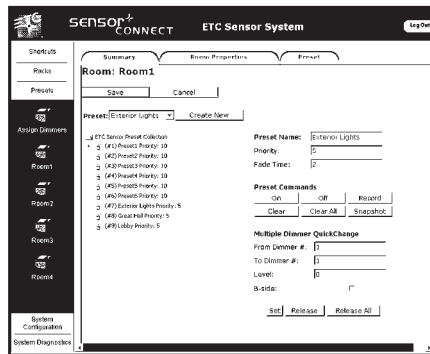
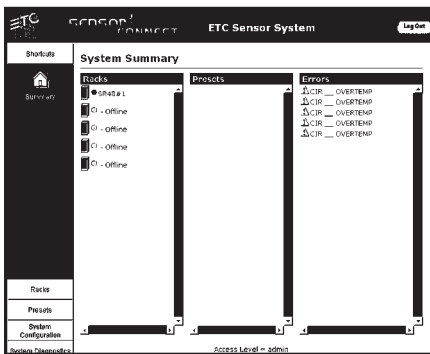
| Model | Weight | | Shipping Weight | |
|-------|--------|-----|-----------------|-----|
| | lbs | kgs | lbs | kgs |
| CEM+ | 4.2 | 2 | 6.2 | 2.8 |

Maximum BTU Production per module

| Model | BTUs | Watts | Efficiency |
|----------|------|-------|------------|
| ALL CEM+ | <10 | <4 | N/A |

TYPICAL NETWORK SYSTEM RISER DIAGRAM





SENSOR+ CONNECT

Sensor+ Connect duplicates the functions of the Control Electronics Module (CEM+), but on your Emphasis server, computer or even your PDA. This graphical user interface (GUI) allows you to monitor rack activity, reconfigure dimmer curves, record or activate presets – plus a whole lot more.

Offers all the features needed to create, edit and download specific information to the racks and modules.

- FEATURES**
- Configure rack and module information
 - Patch/Address 2 DMX Universes
 - File transfer capabilities
 - Record and activate 128 preset looks
 - Assign presets to up to 4 rooms

SYSTEM REQUIREMENTS Emphasis server, Computer or PDA

- Internet Browser Software such as Internet Explorer 6.0 or better
- Network connection (wired or wireless) to a Sensor System with a CEM+ module

BROWSER NAVIGATION

- LOGIN** Security Level passwords determine screens and modes available to user
- HOME** System Summary – Rack status, Active Presets, Error List
- RACKS** Select a rack or all racks
View rack status, rack configurations, dimmer configuration and rack specific errors
Rack Configuration
Name rack and set type of rack
Set Address mode: standard or advanced
Set Temperature Alarm
Select Power Balance – Column, Single Phase or Three Phase
Configure Fan Time mode as Always On or Off if no data/15 min.
Dimmer Search
Search for dimmer(s) by specifying a number of search criteria – quick dimmer configuration

DIMMER CONFIGURATION

- Set dimmer name and module type
- Set dimmer mode: Normal, Dimmer Doubled Switched, Fluorescent, Always On, Off
- Set dimmer curve: Linear, Modified Linear, Square, Modified Square and Sensor 2.0
- Set Scale Voltage and Threshold levels
- Select On/Off for Voltage Regulation, Preheat, DC Output Prevention, and Inrush Protection
- Set Temperature Reporting mode as F° or C°

PRESETS

- Assign Dimmers:
 - Assign dimmers to Rooms
 - Room 1, 2, 3 or 4:
 - Play or deactivate presets
 - Record presets from DMX, EDMX and Set levels
 - Set fade times and priority levels
 - Set Room Properties – name and maximum number of active presets

PHYSICAL CONFIG

- Panic
 - Play or deactivate group-wide panic
 - Record and clear panic
 - Set panic properties: normally open or closed, maintained or momentary, master level, and option to force all non-panic dimmers to zero

Patch

- Patch Configuration includes: Port Enable, DMX Loss Behavior, Dimmer Number Start, Length, Priority, Fade and Hold Time.

Network

- Setup Group Network – IP Address, Netmask, Gateway Address and Enable/Disable Network

File Transfer

- Copy configuration files to a computer (download)
- Send updated configuration files to CEM+ (upload)

Load Management

- Record Loads and Report Load Errors

DIAGNOSTICS

- Dimmer Check
 - Set a dimmer to a level, with easy dimmer advancement
- Dimmer Level
 - Set dimmer(s) to a specified intensity.



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