ETC

CEM3 Power Controller

ETC Power Control Series

Type(s)

Project

Date

Notes

GENERAL INFORMATION

The Sensor3 Control Electronics Module (CEM3) is ETC's new platform for power control. CEM3 manages priority-based Ethernet, DMX and Preset control for ultra-smooth 16-bit dimming, fast activation of relays, and instant-on support for emergency-lighting systems. Energy usage, system status, and quick changes to circuit setup can be accessed at its intuitive facepanel or remotely at the lighting console.

APPLICATIONS
- Professional and educational theaters
- Production studios
- Performance halls
- Retail and dining
- Houses of worship
- High-density architectural dimming
- Touring and Portable dimming

FEATURES
- **Net3 Uplink** - Connect to the Net3 lighting network using the ethernet jack on the front of the control module
- **USB QuickLoad** - Back up system settings and upgrade software
- **Point of Control Interface** - Easy-to-read systems display shows the user-pertinent system information
- **Live Control Override -** For presets, set level, and dimmer check
- **Local Menu** - Access to setup features and control directly at the control processor
- **Backup Looks** - 64 presets with programmable fade times and priority allows for take control, pile on, or live control failover sources to ensure that your show will never go black!
- **Connect to Console** - System and rack feedback to live control desks is standard
- **Quick Setup Wizard** - Builds a simple system in a single step
- **Advanced Features (AF)** - Adds dimmer-specific reporting
- **ETC Dimmer Doubling™** - Increase your individually controllable fixtures without adding extra circuits (supported only at 60hz)
- **RideThru** - Optional accessory that supports the processor electronics for a few seconds during a power outage
- **Battery Pack** - Optional accessory that supports the processor electronics for several minutes during a power outage

ORDERING INFORMATION

Control Module

MODEL	DESCRIPTION
CEM3	CEM3 Power Controller

Compatible Systems

MODEL	DESCRIPTION
SENSOR3 INSTALLATION RACKS	
SR3-48/SR3AF-48	Sensor3 48-module installation racks
SR3-24/SR3AF-24	Sensor3 24-module installation racks
SR3-12/SR3AF-12	Sensor3 12-module installation racks
SR3-6/SR3AF-6	Sensor3 6-module installation racks
HSR3/HSR3AF-	Sensor3 230 V installation racks
SR3AFN	Sensor3 GFCI installation racks
ESR3AFN	Sensor3 CE installation racks
SENSOR3 TOURING RACKS	
SP3	Sensor3 small-frame touring rack
SP3	Sensor3 large-frame touring rack
SENSOR3 PORTABLE PACKS	
SP3-2420	Sensor3 12-module portable pack
SP3-1220	Sensor3 6-module portable pack

CEM3 Accessories

MODEL	DESCRIPTION
RK	Retrofit kit for Sensor standard and AF racks

SPECIFICATIONS

GENERAL
- Universal Control Electronics Module
- Direct Ethernet connectivity for dimmer levels, feedback and system control
- UL, cUL LISTED and CE Marked
- UL 924 LISTED for Emergency Lighting Control

PHYSICAL
- Formed-steel body
- Die-cast facepanel finished with textured epoxy paint
- 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
- Universal Voltage range 91–139V and 181–259 VAC*
- Line-feed frequencies from 47–53 Hz and 57–63 Hz
- Automatic frequency-variation compensation
- Two configurable DMX512 inputs (2500 V opto-isolated)
  *Note: Suggested maximum main transformer tap 135 V or 255 V to allow for line fluxuation.

CONTROL FEATURES
- Eight-line by 20-character graphical LCD for system configuration, live control, and status display
- Full number pad for quick access to dimmers
- Shortcut buttons for Setup, About, and live control
- Five status LED indicators: Power, Network activity, DMX-A DMX-B, and Panic
- 64 user-programmable presets
- Single Panic circuit with flexible programming
- Replacement CEM3 automatically loads rack configuration
- Configuration backups saved on USB or network
- Dimmer outputs regulate to maintain constant power ±1V
- Individual output scale voltage settings for load-wiring compensation
- Selectable Firing Modes: Normal, Forward Phase, Reverse Phase, Dimmer Doubled, Sinewave, and Fluorescent
- Control Modes: Dimmed, Switched, Latch/lock, Always On, and Off
- Selectable Dimmer Output Curves: Linear, Modified Linear, Square, Modified Square, Sensor 2.0, and five custom curves
- 16-bit fade resolution (> 30,000-Step Resolution per 1/2 cycle)
- Selectable Data Loss Behavior

FEEDBACK
- All Sensor racks with CEM3 modules include basic system diagnostic reporting
- 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

LOCAL LIVE CONTROL
- Set Levels, Preset Activation, and Dimmer Check

STATUS (ABOUT)
- All modules: module type, mode, control source, module location, and overtemp
- AF modules: module removed, breaker trip, recorded and actual load
- Rack: temperature, rack type, Run Hours
- Network: IP address, SubNet mask, Gateway and active link
- Rack Data Ports: status for DMX A and B, and sACN
- About Rack Power: frequency, voltage per phase, and voltage headroom
- About Software: version number

SETUP
- Setup dimmer: Firing Mode, Curve, Scale Voltage and Name
- Patch
- Set rack priority per DMX port
- Data Loss Behavior: Hold last Look, Wait and Fade, Play Preset
- Name the rack (using ACN)
- Custom dimmer numbering
- Get Config and save Config to USB

PHYSICAL

CEM3 Dimensions

MODEL	HEIGHT		WIDTH		DEPTH	
	in	mm	in	mm	in	mm
CEM3	2.06	52	11.80	300	7.00	178

CEM3 Weight

MODEL	WEIGHT		SHIPPING WEIGHT	
	lb	kg	lb	kg
All CEM3	3.5	1.6	6.2	2.8

Maximum BTU Production per Module

MODEL	BTUS	WATTS	EFFICIENCY
All CEM3	<10	<4	N/A

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