

FDX3000

POWER CONTROL SYSTEM

Step into the future





Trusted performance

FDX3000 makes your lighting system ready for the future. Modern venues are embracing hybrid lighting and taking advantage of a wide range of loads, from tungsten-halogen and moving lights, to LEDs and other emerging technologies. Those venues need a reliable power control system that can handle each load safely and effectively. With new features and enhancements combined with the dependable performance of the classic FDX family, the FDX3000 system can work with all lighting desks and is able to take on every installation and load – now and into the future.

Powerful networking

ETC's CEM3 (Control Electronics Module 3) is the high performance platform for the FDX3000 power control system that makes setting up a power control rack or running your system a breeze. CEM3 offers ultra smooth 16 bit dimming resolution and peace of mind, thanks to its line disturbance immunity from voltage and frequency fluctuations. No system is too large for FDX3000, with its support for up to six sources across eight universes and feedback to unlimited remote devices.

Remote management

FDX3000 gives access to an entire lighting system from any location in a venue, with comprehensive monitoring, including real time status of intelligent fixtures, network devices, Net3 Gateways and much more. When combined with Net3 Conductor hardware and Concert software, the whole system can be managed from anywhere in the building.

ETC's system management tools include much more than dimming rack management. New equipment can be plugged into the system, automatically recognised and be immediately ready for use. Concert software automatically finds the new equipment and provides all of the tools necessary to set up, monitor and maintain a lighting system, with a simple and easy-to-use interface.

System management and integration

FDX3000 and ETC desks work together seamlessly, providing immediate access to the system and circuit status, and allowing the ability to switch between dimmable and non-dim operation. More advanced settings include changes to minimum and maximum output voltage, curve, preheat and control modes. The rig check function validates the plot and checks for lamp burnouts during load

in and preshow. Backup presets, which can run in the background at a lower priority than the performance control system, ensure that lights never go dark. In addition, Net3 Conductor lives on the network as a permanent file server, storing critical information, error status and system configuration, while providing services for time and network addresses as new lighting equipment is added to the network. And at the rack, there is the convenience of a backlit graphical display and a number pad that permit direct access to individual channels and circuits.

Dimming and switching in one module

Now future-proofing can happen circuit-by-circuit, thanks to the DP90S module. Whether at the dimmer rack, lighting desk, computer or at the outlet with a mobile device, users can freely change between dimming, switching and direct power, for support of a wide variety of loads that may be connected. This module – combined with the control features of CEM3 (Control Electronics Module 3) – sets the gold standard for smooth dimming, with superior performance on fast-acting loads like LEDs and VIP90 where eight-bit control isn't smooth enough to remove the 'stepiness' typically seen at low lighting levels.

Simple upgrades

The DP90S module is compatible with all standard DP90 modules, so a single circuit or entire existing FDX system can be upgraded to receive the latest future proofing benefits. A plug-in upgrade kit for existing systems also allows processor upgrades to CEM3, so the same smooth fades and remote system management found in FDX3000 can be brought into FDX systems of any age.

Low maintenance

FDX3000 shows off its proud German design heritage with its strong, 19-inch hinged frame that gives a trained electrician a safe method to gain front access to power and data wiring, while all electronics and modules swing out from the frame as the rack remains flush against the wall. This lowers maintenance costs, because routine rack maintenance can be performed without the hassle of uninstalling any electronic or power components. To further reduce maintenance costs, the rack also uses spring terminal clamps for load connections, so annual tightening of every load lug is not necessary.

More information about the FDX3000 power control system can be found at www.etconnect.com.



CEM3 dimmer processor features

Fade control	16 bit control for smooth continuous fades on fast-acting loads
Control curves	10 standard curves; non-dim; custom curves; independently set per circuit
Protocol	DMX512A (ANSI E1.11-2008), sACN (streaming ACN, ANSI E1.31), ETCNet3 (ACN ANSI E1.17)
Presets	Up to 16 presets per space; racks can be split into multiple spaces
DMX patching	Up to eight universes can be patched, with six sources per universe
Streaming ACN	Each circuit can be addressed to any streaming ACN address across a maximum of four universes within a single rack
Maximum control source	12 Ethernet-based sources simultaneously at the same priority
Priorities	200 to 1; priority 200 is the strongest; all sources received at the same priority react in highest-takes-precedence; priority 100 is default; DMXA, DMXB, sACN, presets can be assigned separate priorities per source for override, HTP or backup
Data loss options	1. Wait and fade out 2. Fade to preset 3. Hold last look
Maximum output voltage	Can be set from 100V to 265V

Interfaces

DMX512/1990	Two DMX input ports, highest takes precedence
Ethernet	1 x 10/100Mbps, complies with DIN 56930-3 automatic data rate detection
USB	Front USB port for saving configuration data or firmware updates
Monitoring input	Temperature sensor
Spaces	The ability to divide rack circuits into logical groupings that divide control and reporting

General data

Display	Graphical backlit display
User interface language	German, English, Spanish or French can be set via menu; support for language file upload
Status indicators	Five LEDs: 1 x supply voltage, 1 x network activity, 1 x panic function, 2 x DMX inputs
Circuit monitoring	For feedback of set/actual value state to Eos, Cobalt, Congo, NT and NTX desk families
Power input	181V to 280Vac, 47 to 63Hz
Line input	Line, neutral and earth, five-wire, 3 x line + neutral + earth (ground)
Feedback	Live updates via Ethernet of circuit and system status, including line-voltage per phase circuit level, presence of load, breaker trip, which source is in control of each circuit, and remote management of all circuit settings
Mechanical design	19", 4U chassis for mounting two CEM3 processors
Preheating/drive limit	0 to 100% can be set independently for each dimmer
In the event of rack over-temperature	Warning and shutdown, temperature values can be set
Line supply	Three phase power supply unit for maximum reliability
Mass	1.6 kg
Certification	CE Certified
Ambient temperature	0 to 35°C, maximum 40°C
Atmospheric humidity	Maximum 90% (non-condensing)
Safety	Complies with EN 60 950
EMC	Complies with EN55022 and EN61000-4-4

Additional options

Software	ETC Concert software for configuration and monitoring
Backup system	Continuous redundant control by 2 x CEM3

Power output stages

DP90 and DP90S 2.5kW	
Mechanical layout	Modular plug-in assemblies
Operating modes	Phase-angle dimming for all tungsten-halogen and magnetic-transformer loads found in practical use; switching for electronic ballasts (switch on and switch off point can be set independently); always-on for direct power output
Power output	2.5kVA/tungsten load, 2.5kW 1.25kVA inductive load
Power dissipation at 100% drive and nominal load	<40 watts
Rise time	220µs (optional 600µs to comply with BBC and TDF standards)
Dimensions	W x H x D: 40mm x 132mm x 220mm
Weight	Approximately 0.9kg (including line and LF filter)
Switching power	2.5kVA switching capacity (DP90S only)
DP90 and DP90S 5.0kW	
Power output	5kVA/tungsten load, 5kW 2.5kVA inductive load
Power dissipation at 100 % drive and nominal load	<70 watts
Rise time	220 µs (optionally 600 µs to comply with BBC and TDF standards)
Dimensions	W x H x D: 80mm x 132mm x 220mm
Weight	Approximately 1.5 kg (including line and LF filter)
Switching power	5kVA switching capacity (DP90S 5.0kW only)
DP90 10.0kW	
Power output	10kVA/tungsten load, 10kW 5kVA inductive load
Power dissipation at 100 % drive and output load	<140 watts
Rise time	220 µs (optionally 600 µs to comply with BBC and TDF standards)
Dimensions	W x H x D: 160mm x 132mm x 220mm
Weight	Approximately 4.3kg (including line and LF filter)
General data	
Minimum load	0VA (not required) for 150W current feedback
DC voltage on output	0V (symmetrical control)
Power factor range for load control	>0.4
Surge capacity	Cold lamps can be connected to fully driven output stages
Efficiency	>98% at 100% nominal load, >94% at 20% nominal load
Ambient temperature	0 to 35 °C
Atmospheric humidity	0 to 90%, non-condensing
Options	
Neutral disconnect	Circuit breakers 1P+N or 2P (all-pole line disconnection)
Residual current device	Per output stage or per output stage row

Dimmer rack features

Mechanical layout	Standard 19" steel frame with side walls and rear wall. Subrack with output stages and dimmer processors mounted on swing frame. Individual plug-in dimmers and processors can be replaced easily.
Colour	Light grey RAL 7035
Installation	Against the wall, side by side or back to back (only front access necessary)
Rack components	Maximum of 2 x CEM3 processor (redundancy) and 96 x dimmer 2.5kVA (72 with RCBO), or 48 x dimmer 5kVA, or 24 x dimmer 10kVA, or mixed on request
Line voltage indicators	Three phases available
Rack power dissipation	Approximately 3kVA when all circuits are at full
IP rating	10
Ventilation	Forced cooling: Two fans per two subracks
Noise level	<55 dB(A) at a distance of 1m
Supply	3 x 230/400V, N, PE, 50/60Hz 3 x 240A (calculated at 70% diversity factor, 100% loading possible)
Power input lugs	16-120 mm ² (2 x 16-120mm ² or 95-250mm ² by request)
Upstream main breaker	External, by others
Subrack and branch circuit protection	Group fuse per subrack 3 x fused 63A Branch breaker per circuit: C13A for 2.5kVA, C25A for 5kVA, C50A for 10kVA
Residual current protection	30mA RCD per subrack by request (RCBO possible)
Cable entry	Top and bottom feed (bottom standard)
Load connections	Spring-loaded terminals 4mm ² for 2.5kVA, 10mm ² for 5kVA, 16mm ² for 10kVA
Dimensions	H x W x D: 2,000 x 800 x 600mm; maximum width with side walls = 820mm; maximum height = 2,040mm
Weight without dimmers	Approximately 230kg
Weight fully equipped	Up to 374kg
Ambient temperature	0 to 35°C
Relative atmospheric humidity	0 to 90%, non-condensing
Safety	Complies with EN 61439
EMC	Complies with EN61000-4-4 and EN61547
Optional accessories	
Floor stand	100mm or 200mm by request
Front door	By request



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