

EURODIM TWIN TECH

Free mixing of sine-wave and thyristor plug-in dimmers

Preliminary data sheet 03-08

EURODIM TWIN TECH brings the best of both worlds: Transistor Technology for state-of-the-art sine-wave dimming, freely mixed with cost-efficient Thyristor Technology and its proven track record. EURODIM TWIN TECH comes with the full remote control features of 21st century systems.

EURODIM TWIN TECH is a high-density dimmer rack with all digital, plug-in dimmer modules for professional theatre and television installations. It allows a free mix of sine-wave and thyristor technologies, and dimmer ratings. The ultimate for accurate, stable and reliable performance, combined with comprehensive remote programming and diagnostics functions.

Dimmer modules

- 4 x 3 kW thyristors; up to 128 x 3 kW per rack.
- 4 x 2.5 kW sine-wave; up to 128 x 2.5 kW per rack.
- 3 x 5 kW thyristors; up to 96 x 5 kW per rack.
- 3 x 5 kW sine-wave; up to 96 x 5 kW per rack.
- 10 kW on request.
- Automatic detection of type of dimmer module.
- Full diagnostics is standard in sine-wave modules and optional in thyristor modules.

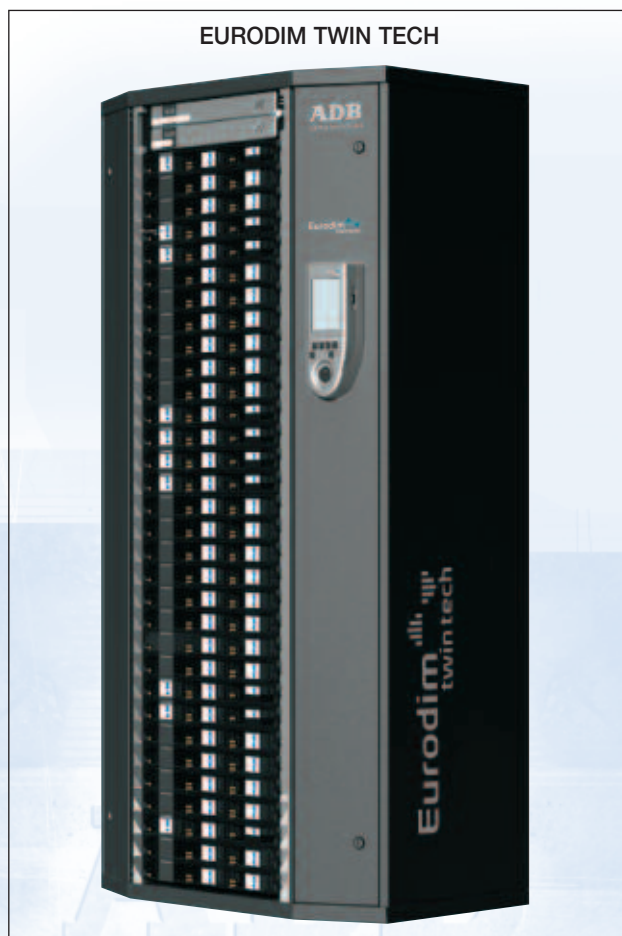
Free mixing of sine-wave and thyristor technology

EURODIM TWIN TECH racks are compatible with all modules types and ratings.

Flexibility: in a mixed installation with thyristor and sine-wave modules, dimmers can freely be moved to suit the specific requirements of each production. Sine-wave modules can thus be allocated to acoustically critical locations or luminaires. No reprogramming is necessary.

Filtering

- TV broadcast quality filtering (BBC & TDF TV standards; minimum 400 μ s rise-time, 10% to 90%).
- Professional quality filtering (200 μ s) as an alternative.
- Sine-wave modules.



Reliability and instant back-up

- Plug-in control electronics and power supplies.
- Double control electronics provide instant back-up (option); copying between CPUs.
- All programming data stored on plug-in memory card.
- Guaranteed continuity of control and full ventilation in the event of the loss of any one supply phase.
- All modules designed for continuous duty at full rated load.

Set-up functions

- Graphical backlit touch-screen LCD, softkeys and user-friendly menu for easy access to all dimmer functions.
- Create user-defined groups of dimmers across dimmer racks (with PC).
- Programming per dimmer, per group, or globally.
- Search per circuit (channel) number or per dimmer name.
- Five control inputs with free DMX addressing and flexible merge rules per dimmer or per group: priority level per control source per dimmer, and HTP or LTP merge of 'equal priority' sources.
- 16 user-selectable dimmer laws of which 14 are user-reprogrammable to custom laws: linear rms voltage, linear rms to 120 V, TV laws (BBC, TV1, TV2), zero-crossing non-dim with hysteresis, fluorescent, square law.
- Automatic compensation of variations of the mains voltage, per phase.
- Voltage reduction factor for extended lamp life or variable load cable length compensation.
- Programming of dimmer name, dimmer law, patching, voltage reduction factor, dimmer response time, preheat, smoothing.
- Selectable output voltage response time for extended lamp life: 30 ms, 100 ms, 300 ms.
- Restore Points to recall earlier settings.
- Restore House Patch function recalls a preferred DMX patch; Restore possible per input source.
- Creation and storage of 129 lighting cues (128 + Priority) each with fade and wait times, for back-up cues, working lights, or stand-alone operation.
- After loss of DMX data: switch to other console, or maintain last levels, or wait and fade to a cue, or wait and fade to black; programmable globally, or per group, or per dimmer.

Cue control

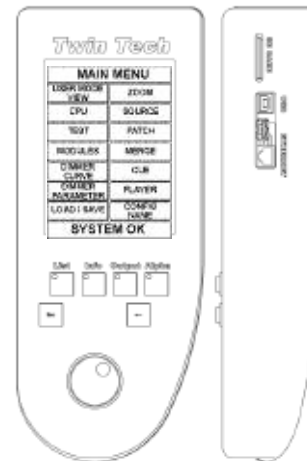
Simultaneous play-back of up to 6 cues (presets). Applications include reconfigurable rooms, dimmer rack shared by two areas, house lights, blue lights.

Remote Cue Control functions such as playing and fading up/down of the cues, starting a Cue Chaser, storing a cue,... can be triggered via the internal clock (date and time) and via standard DMX. Control systems integration is now possible without the need for specialist protocols.

System check, dimmer and load check

- Up to 300 indicators, and clear text messages, for seeing at a glance the status of individual dimmers, DMX signals and CPUs, as well as fan failures, over-temperature, missing supply phase...
- All error messages also available over the Ethernet network.
- Local test of a dimmer, of a group: steady, flash, test chaser.
- Output voltage and load current indicators per dimmer, supply indicator per module.
- Log of important events.

Human Interface

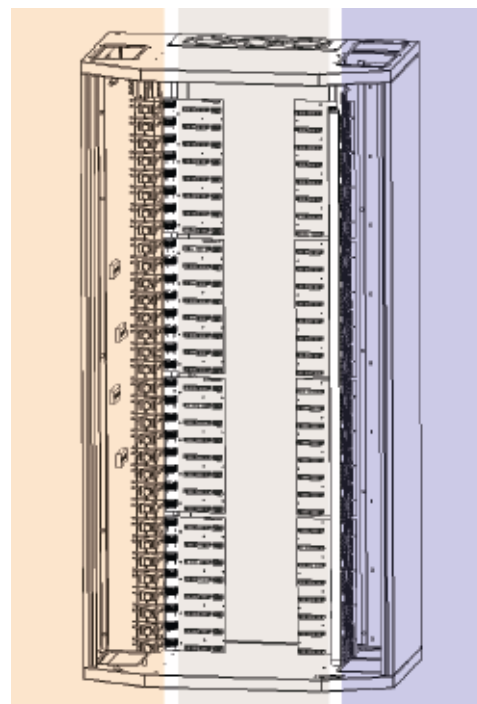


Electrical protection

- Each module is protected by an HRC supply fuse (50 kA), and each dimmer is protected by an MCB.
- Dimmer protection is available in 1P and 1P+N disconnect; delta supply (2P) on request.
- Optional 30 mA RCD protection per module or per dimmer.

Power Distribution

Busbars Ventilation Load terminals



Benefits of ADB sine-wave technology

Noise-free: ADB sine-wave dimmers effectively eliminate all filament noise, which makes them the preferred choice for lighting applications where lamp noise is critical.

Loads: they have successfully been tested with a very wide range of resistive, inductive and capacitive, dimmable and non-dimmable loads. These include discharge lamp ballasts (HMI), switched power supplies and 12 V converters, moving lights, electronic equipment, LEDs... No minimum load.

Power factor: the power factor equals the PF of the load, thereby eliminating the reactive power (kVAr) typical of phase-controlled dimmers.

Harmonics: less than 1% harmonic distortion, no pollution sent back to the mains.

Self-protecting: ADB sine-wave dimmers are self-protecting against short-circuit, overload and over-temperature, without MCB tripping.

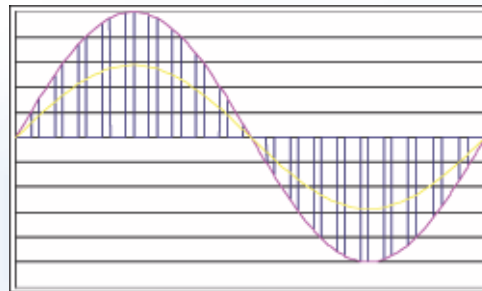
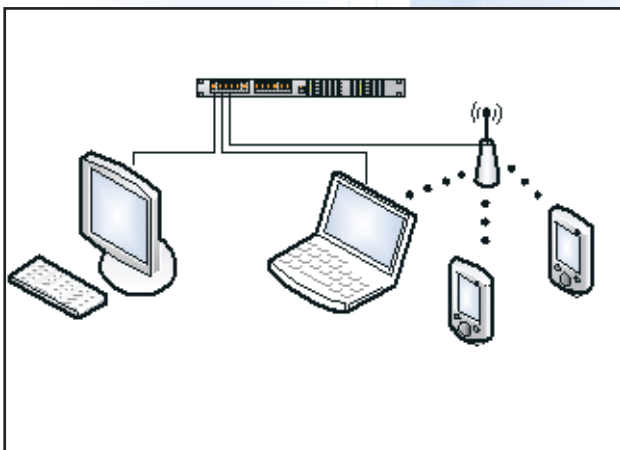
Dynamic response: similar to thyristor modules, to allow free mixing

Dimmer Manager

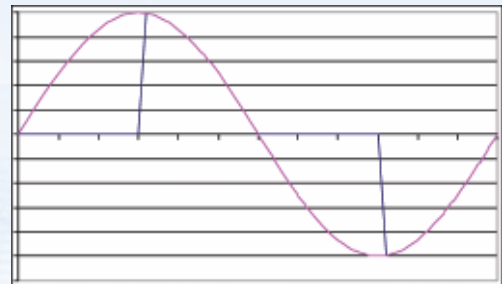
The Dimmer Manager PC software combines four products in one: a Cue Control system, a Status Reporting system, a Remote Programming tool, and a Commissioning & Service tool. Dimmer Manager provides a system-wide overview of status of CPU and back-up CPU, error and alarm messages (loss of DMX, fan failure, temperature, missing phase...), and Diagnostics information about individual dimmers. Dimmer Manager functions include downloading & uploading of dimmer parameters, on-line & off-line editing, graphical editing and library of custom dimmer laws, and creating back-ups of system configurations e.g. per show or per stage.

- system-wide search by circuit (channel) number, by dimmer name
- view and edit the priorities and DMX patches, per dimmer
- view and edit dimmer laws, shape of custom laws
- view and edit preheat level, response time, smoothing, factor
- view and edit Cues: levels, fade and wait times
- view type of dimmer module per slot
- view all input levels for a dimmer

Ethernet Configuration



Sinewave dimming (pulse width modulation PWM)



Phase control dimming

Diagnostics

The Diagnostics System constantly monitors all the key components of the EURODIM TWIN TECH installation.

It displays all this information on the local display and remotely on the Dimmer Manager PC. Filtered status messages can also be sent to the technician's wireless dimmer controllers (PDAs).

All EURODIM TWIN TECH racks detect and report in real time:

- CPU, back-up CPU: responding / missing
- DMX and eDMX status: present / missing / type of DMX error
- fan status per fan
- room temperature warning (no action)
- missing supply phase, mains over-voltage

All events & parameters are available over the network. A flashing error message on the EURODIM's LCD display informs of important events.

Sine-wave modules, and thyristor modules with full diagnostics, also detect and report in real time:

- dimmer protection tripped (MCB, RCD)
- temperature status (cool, warm, hot / shut down)
- overload and no-load
- load changes and comparison with memorised reference load (requires a test level)

Multi-user wireless remote dimmer controller

PDA-based wireless Remote Dimmer Controllers give direct access to the dimmers, independently of the lighting console. Technicians can recall cues, groups of dimmers, or individual dimmers, for focusing or test.

EURODIM TWIN TECH

Technical Data

- **Protocols:** DMX512-A, Art-Net (Art-DMX), remote programming and cue management (Ethernet), ACN and RDM ready.
- **Power supply:** star 3 NPE 400 (TN-S), 198 V to 264 V, 50/60 Hz. Split or delta supply upon request.
- **Rated current** 600 A ; fault current rating Icc 50 kA.
- **Rated load** of dimmer modules, for continuous duty at 35 °C ambient °T:
 - thyristors: 4 x 3 kW ; 3 x 5 kW
 - fluo modules: 2 x 3 kW with switched 230 V output for preheat
 - sine-wave: 4 x 2.5 kW ; 3 x 5 kW
- **Control inputs:** two DMX512-A digital inputs and three universes over Ethernet; opto-isolated.
- **Software updates** via Ethernet and via plug-in memory card.
- **Dimming range:** full dimming of any incandescent lamp between 0 W (30 W for thyristor modules) and full rated load.
- **Efficiency at rated load:** low loss thyristor dimmers with an exceptional efficiency $\eta \geq 98,3\%$, to reduce the operating costs in energy and HVAC.
- **Dimensions:**
- **Weight:**
 - standard cabinet :**
 - 229 kg
 - plug-in module :**
 - 200 µs - 12 kg
 - 400 µs - 12,5 kg
 - sine wave: 10,5 kg

Installation

- Racks designed for top and bottom entry of all cabling. Racks can be installed against a wall.
- Two cabling compartments, readily accessible without removal of the dimmer modules, ensuring easy installation and maintenance.
- Load wiring terminals suitable for 2.5 - 10 mm² ; adaptors for 16 mm² ; 25 mm² for 10 kW.

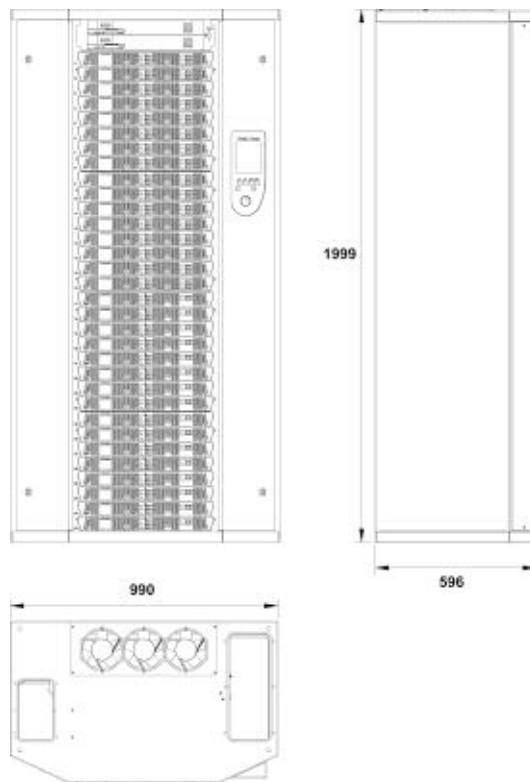
Ventilation and over temperature protection

- Assisted ventilation by means of 3 axial fans.
- Automatic fan management.
- The performance of each fan is monitored individually.
- Remote warning message in case of high dimmer room temperature (no action).

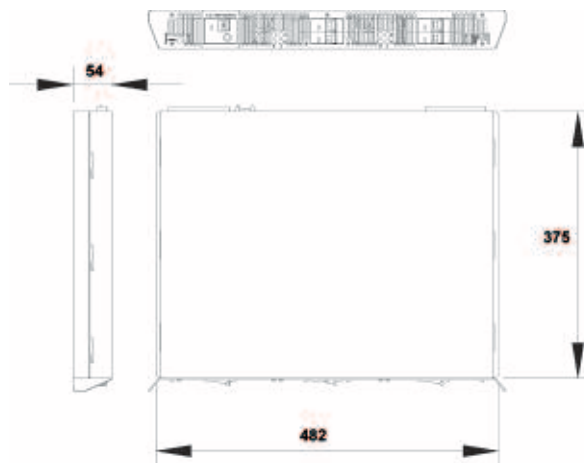
Types of loads

- Hard-fired thyristors for control of 230V tungsten halogen lamps, resistive and inductive loads, transformer-fed low voltage lamps, fluorescent lighting with suitable ballasts
- Feed-through, manual bypass and relay modules available on request

Standard cabinet



Plug-in module



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