MODE LIGHTING

CONTROLLING THE FUTURE OF LIGHTING

eDIN

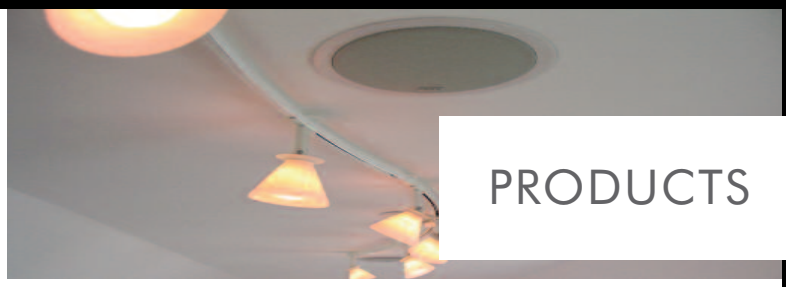
Product Brochure

www.edincontrols.com

OVERVIEW

eDIN is designed to meet the demanding requirements of systems integrators, residential developers and designers alike in a simple, flexible, cost-effective system with a modular, DIN rail mounting, form-factor.

Aimed at both commercial and residential projects, eDIN is easy to specify, install and commission, bringing intelligent lighting control within reach of small and medium sized projects. eDIN can be used in two ways: either providing multi-room, multi-scene lighting and blind control, optionally integrated with a multi-media system, or for small systems (up to eight channels) in a stand-alone mode.



PRODUCTS

DIN-NPU-00-01 Network Processor Unit
System processor for multi-room control with Ethernet and RS232 connectivity. Easy setup and control with web browser enabled programming.

DIN-03-04 4 x 3A Leading Edge Dimmer
Dimmer module for control of 720w per circuit (maximum module load of 2400w). Switching or dimming function is selectable for control of multiple load types.

DIN-02-08 8 x 2A Leading Edge Dimmer
Dimmer module for control of 480w per circuit (maximum module load of 2400w). Switching or dimming function is selectable for control of multiple load types.

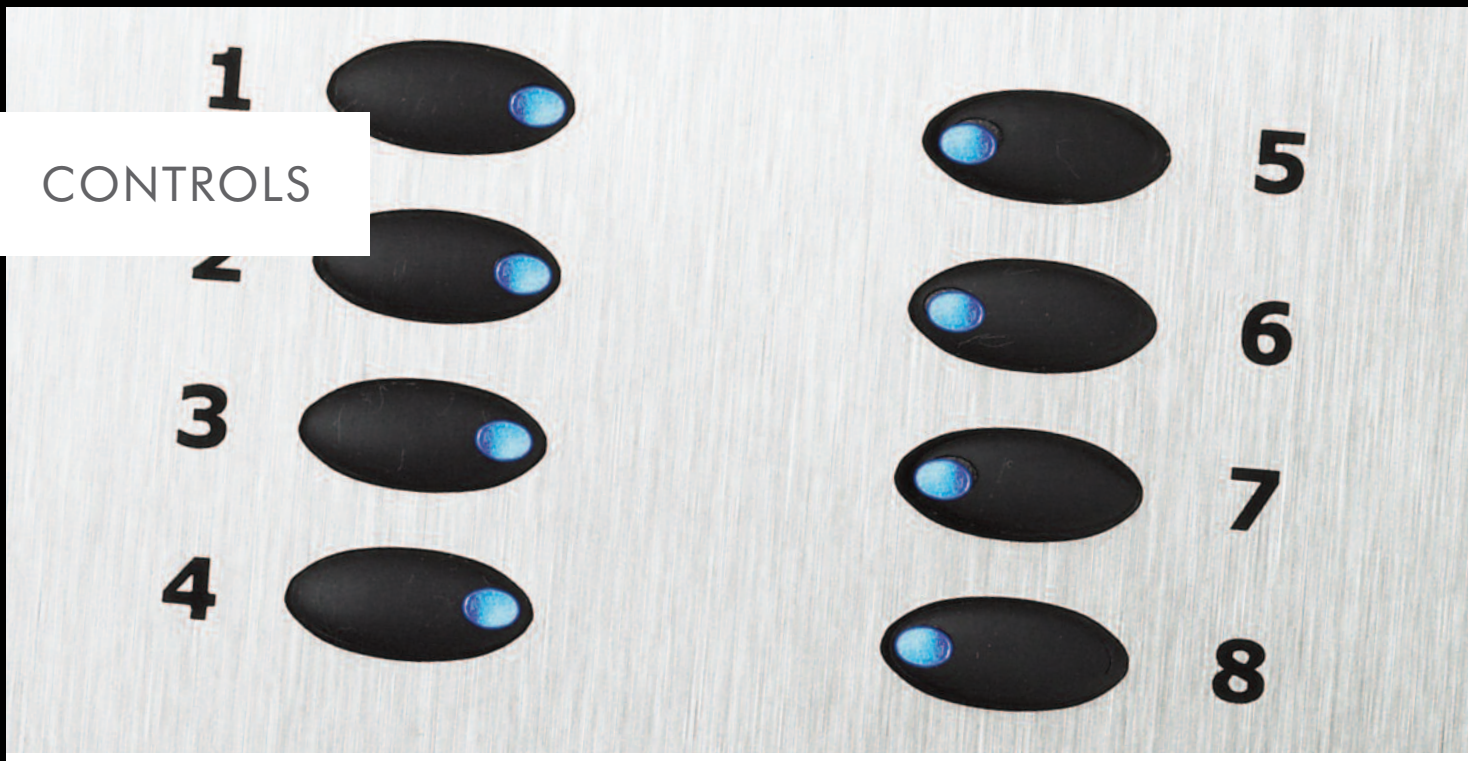
DIN-MSR-05-04 4 x 5A Relay
Mains zero-crossing synchronised feed-through relay module, for control of blinds, motors and switched loads. Four volt-free change-over channels. Channel 1 also offers DC polarity reversal for control of low voltage blinds.

DIN-INT-00-08 8 x Channel Input/Output Interface
Eight channels independently configurable in any combination of: 0-10v or DSI outputs or 0-10v, DSI, or volt free contact closure inputs. The module can also output DMX for simple colour changing.

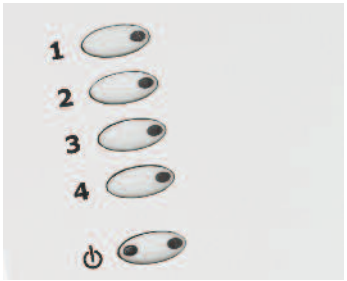
DIN-PSU-24V Power Supply Unit
Low voltage power supply for eDIN Modules. Every eDIN system requires a minimum of one 24v PSU.

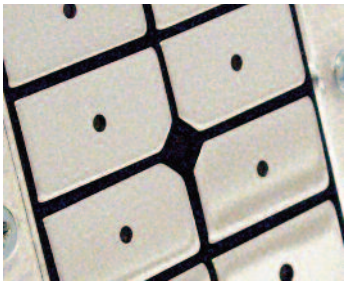
DIN-UBC-01-05 Universal Ballast Control Module
Suitable for control of analogue or digital ballasts. Integral DALI power supply, with control of up to 64 DALI addressable devices. Four additional isolated I/O channels, independently configurable in any combination of: 0-10v or DSI outputs or 0-10v, DSI, or volt-free contact closure inputs.

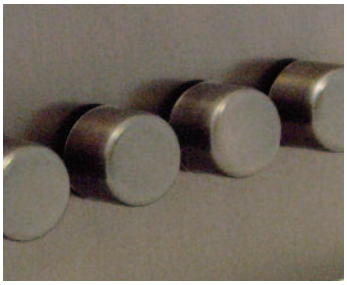
CONTROLS



eDIN systems can be controlled by a number of different keypad and switch options allowing flexibility in design and client choice allowing decisions to be made based on function, format and personal style preferences. Moods or "scenes" can be controlled from a web browser, keypads, or integrated with other forms of user interface, including multi-room AV touch-screen systems or conventional electrical switches. Control options include:-





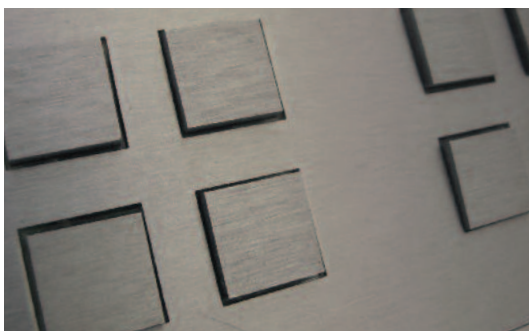


Push button: UK size single gang plates with 2, 5 or 10 buttons are available with programmable button LED colours. As standard these use the stylish MK Aspect screwless fascia plates, available in a number of different colours/finishes.

Touch button: The 8 button touch plate offers the same control actions (scene selection, dim up/dim down, toggle etc) as the regular push buttons but in the same touch-sensitive format common in modern smart phones. The touch plate can have a printed or blank insert to show button functions and the LED colour is configurable to match functions or décor.

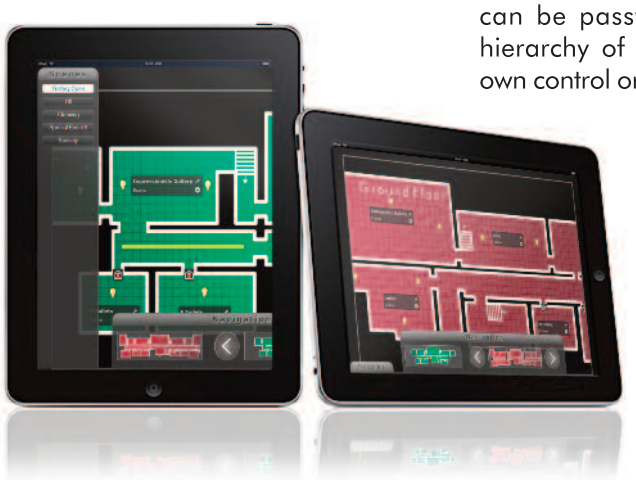
Rotary: Offering control of single circuits or groups of circuits for up / down level control with a push action for ON/OFF control or scene recall the rotary control plate offers the features and versatility of a lighting control system in a more traditional styling suited to older style buildings.

Standard switches: With the addition of a small interface module standard, non latching switches can be integrated into the system including multi-position control to provide an alternative style of operation. This may be for secondary positions such as a bedside, meeting room lecturn or second entry door position or for design preference to provide intuitive control for guests in a hotel suite.



iPhone or iTouch control: Through the safari browser on your iPhone you can select areas and trigger lighting scenes from your phone. This feature is available automatically, once the Network Processor has been programmed.

iPad or Netbook control: An iPad or Netbook can be used to trigger lighting scenes, select scenes and provide simple lighting level edit controls as standard.



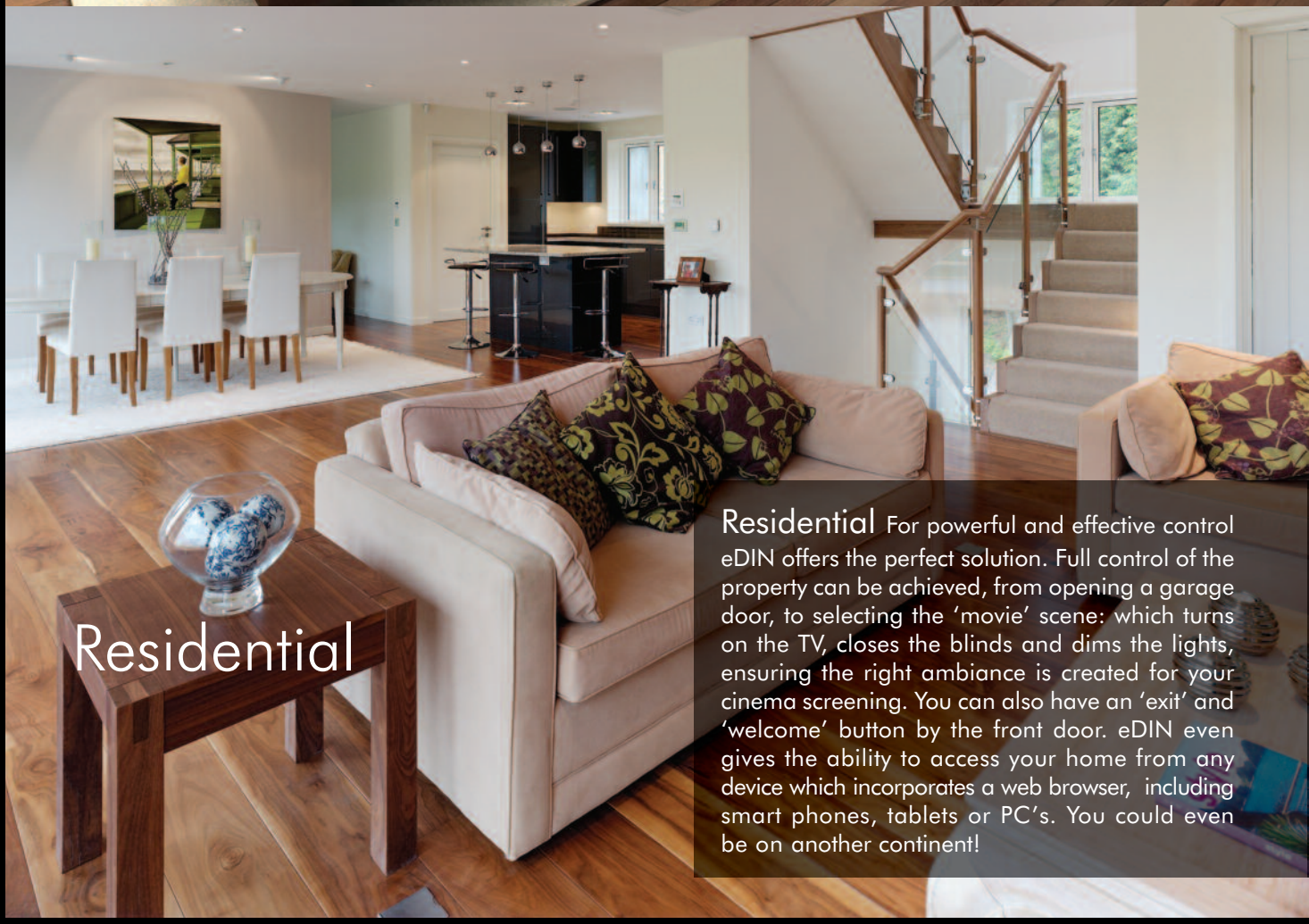
Floorplan plug-in: Bespoke graphical layouts can be added to indicate building layouts, scene selections, room styles and operational status. This can be through the use of floor plan type layouts, images and bespoke buttons and is tailored on a project by project basis.

Browser control from a PC or Mac: an Ethernet connection is used to access configuration and control. The configuration pages can be password protected for a hierarchy of users, each with their own control or level-setting privileges.

APPLICATIONS

Hotels

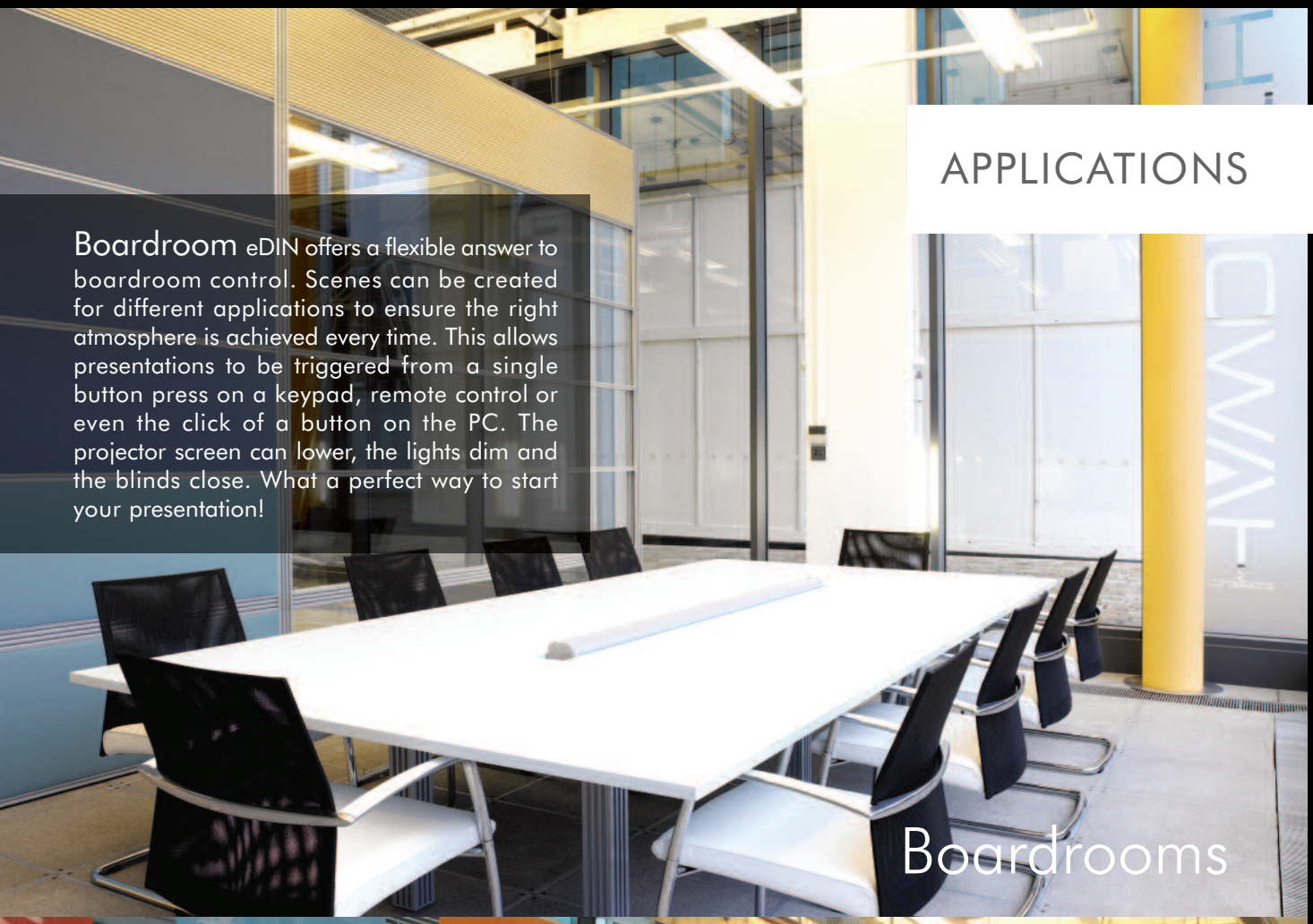
Hotel Room eDIN is ideal for all types of hotel room. Key cards can be utilised along with standard switches, presence detectors and multi-function control plates. This allows the guest to close the curtains and reduce the light level at the touch of a button, a single button press can also turn off all the lights within a room. A 'welcome' scene can even be triggered by the receptionist when the guest checks in ensuring they are welcomed to a warm environment.



Residential

Residential For powerful and effective control eDIN offers the perfect solution. Full control of the property can be achieved, from opening a garage door, to selecting the 'movie' scene: which turns on the TV, closes the blinds and dims the lights, ensuring the right ambiance is created for your cinema screening. You can also have an 'exit' and 'welcome' button by the front door. eDIN even gives the ability to access your home from any device which incorporates a web browser, including smart phones, tablets or PC's. You could even be on another continent!

APPLICATIONS



Boardrooms

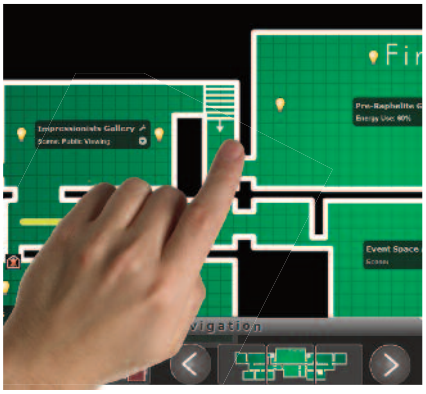
Boardroom eDIN offers a flexible answer to boardroom control. Scenes can be created for different applications to ensure the right atmosphere is achieved every time. This allows presentations to be triggered from a single button press on a keypad, remote control or even the click of a button on the PC. The projector screen can lower, the lights dim and the blinds close. What a perfect way to start your presentation!

Offices

Office Use eDIN allows an office space to be adapted to create a multi-use working environment, whilst actively conserving energy. The fully networked system achieves optimised energy savings dynamically through constant monitoring of occupancy, levels of both natural and artificial light, and time-of-day operation profiles.

BEHIND THE SCENES

eDIN systems offer a range of background features to provide more than just basic control options and enables enhanced control of lighting in any environment.



Future Proofing: The state of the art processing power of the Network Processor Unit combined with the integral web server means control and functionality can be maintained at the highest of levels for years to come.

Energy Saving: By combining SceneSetting with timed control, astronomical control and occupancy detectors an eDIN system can be tailored to provide energy saving controls as part of a sustainable development.

Modular Construction: The DIN rail module form-factor of eDIN allows each project to be supplied with a tailor made solution.

Remote Access: The use of the web connectivity in eDIN makes it accessible from anywhere in the world (providing this has been authorised

Security: eDIN incorporates a firewall with optional white-list for connecting devices. Users can be given individual control and/or level-setting privileges for each area being controlled by the system.

INTEGRATION

eDIN incorporates TCP/IP, RS232, and a web server to ensure seamless integration with most third party devices. Other methods of integration include:

Contact Closure Inputs: These can be used to trigger any scene or event programmed into the eDIN system, from a single light to triggering scenes from the fire and/or security alarm system.

Infrared: All Mode control plates come complete with integral infrared sensors as standard. Ceiling mount sensors are also available.

Relay Control: Volt-free feed through relays allow the control of blinds, third party devices, lighting circuits and heating systems.

Automated Operation: Timed events can be programmed into the eDIN system allowing fully automated operation. Scenes can even be triggered depending on dawn and dusk times.

Absence & Presence: The addition of multisensors to provide occupancy detection. An integrated infrared receiver allows for manual adjustment and recall of lighting scenes.

Colour Changing Control: Simple preset DMX control for the integration of colour changing fixtures without needing in depth knowledge of DMX.

STANDALONE OPERATION

For small systems upto eight channels in size, modules operate in a "Standalone" mode without needing a network processor to be used.

In its simplest format this allows a single keypad to operate up to eight circuits in a scene setting arrangement or to provide individual control of each circuit in an "Impulse" control style (ON/OFF and dimming from momentary action switches), creating simple systems that are both cost effective and quick to install.

The modules within the eDIN range can be used with keypads or switches to create standalone systems with as detailed in the table below. This includes "convertor" modes for 1-10v or DSI conversion to DSI, 1-10v or DALI control where required.

eDIN STANDALONE FUNCTIONS

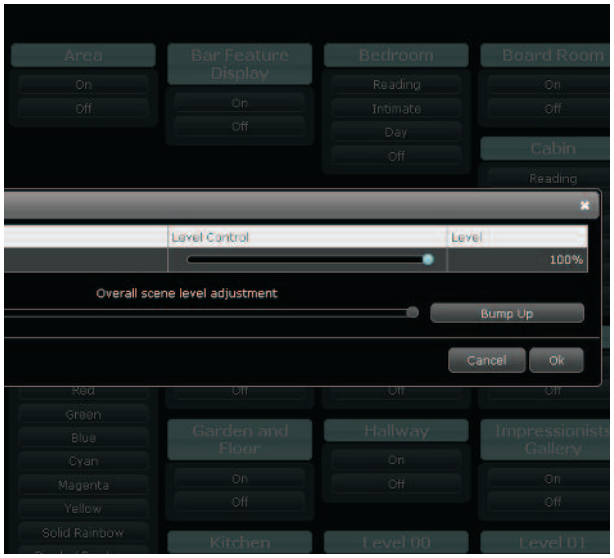
INPUT MODULE / OUTPUT MODULE	I/O Module as switch inputs	EVO-INT-CI-04 EVO-INT-CI-08 Contact Input Modules	EVO-SGP-55 Ten Button Evolution Plate	I/O Module as 0/1-10V inputs	I/O Module as DSI inputs
I/O Module *0-10v/DSI*	Impulse or Scene Setting · *recall only*	Impulse or Scene Setting · *recall only*	Impulse or Scene Setting · *recall and program*	Dimming (to SELV Devices)	Dimming (to SELV Devices)
8 x 2A Dimmer	Impulse or Scene Setting · *recall only*	Impulse or Scene Setting · *recall only*	Impulse or Scene Setting · *recall and program*	Dimming	Dimming
4 x 3A Dimmer	Impulse or Scene Setting · *recall only*	Impulse or Scene Setting · *recall only*	Impulse or Scene Setting · *recall and program*	Dimming	Dimming
Relay Unit *ON/OFF*	Impulse or Scene Setting (ON/OFF only) · *recall only*	Impulse or Scene Setting (ON/OFF only) · *recall only*	Impulse or Scene Setting (ON/OFF only) · *recall and program*	Dimming (ON/OFF only)	Dimming (ON/OFF only)
Universal Ballast Controll Module *DALI/0-10v/DSI*	Impulse or Scene Setting · *recall only*	Impulse or Scene Setting · *recall only*	Impulse or Scene Setting · *recall and program*	Dimming	Dimming

At the heart of a fully integrated multi-room lighting system lies the eDIN Network Processor Unit. This module unlocks the full potential of the eDIN range allowing users to select and adjust lighting scenes using standard web browsers and provides the features needed for modern living with simple to understand user interfaces.

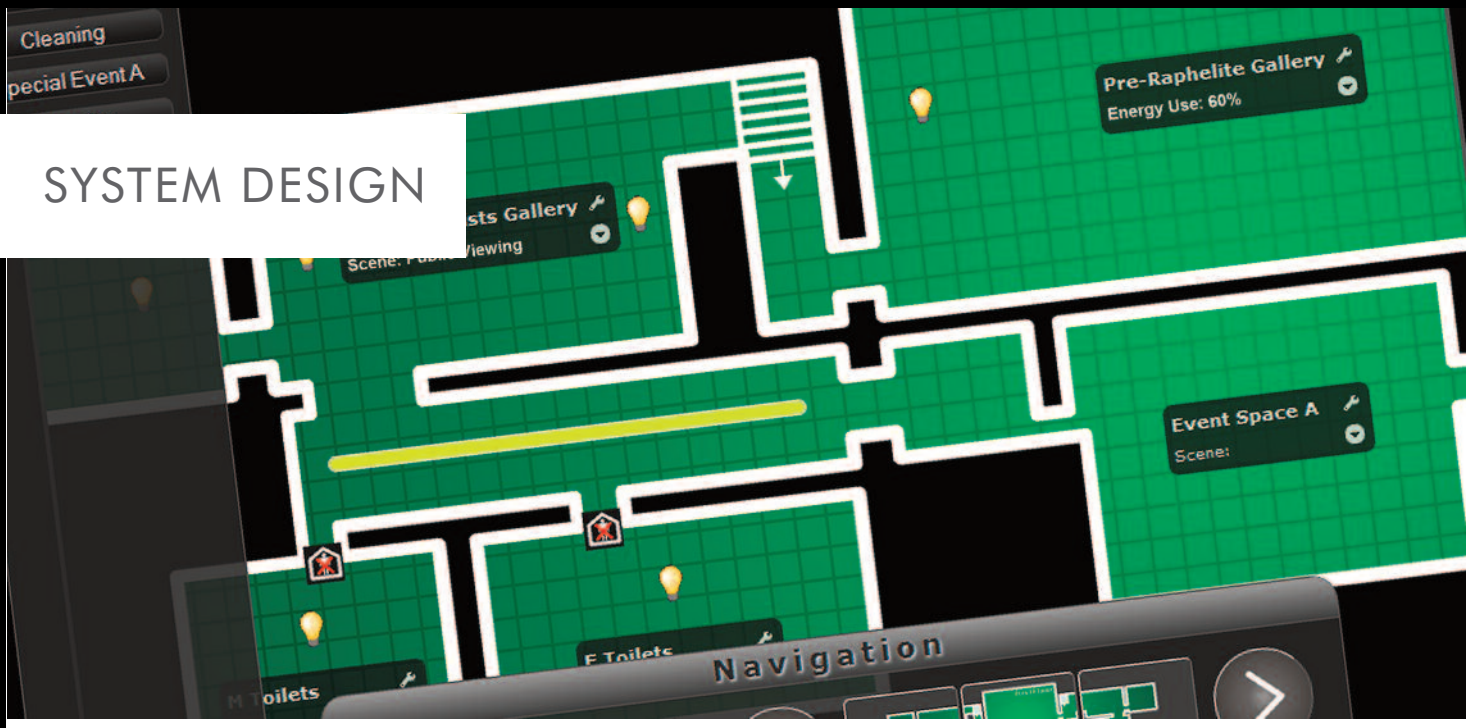
This web browser based facility is not just of use to the end client who can control their eDIN system from almost anywhere in the world.

Engineers can go online to access the sophisticated web server through a secure link to setup, configure or test an installation as well as adjust and save lighting levels without having to attend site. Useful for projects in remote locations or when quick changes are requested.

RS232 and Ethernet connections are standard and a comprehensive command library is available for full AV integration.



SYSTEM DESIGN

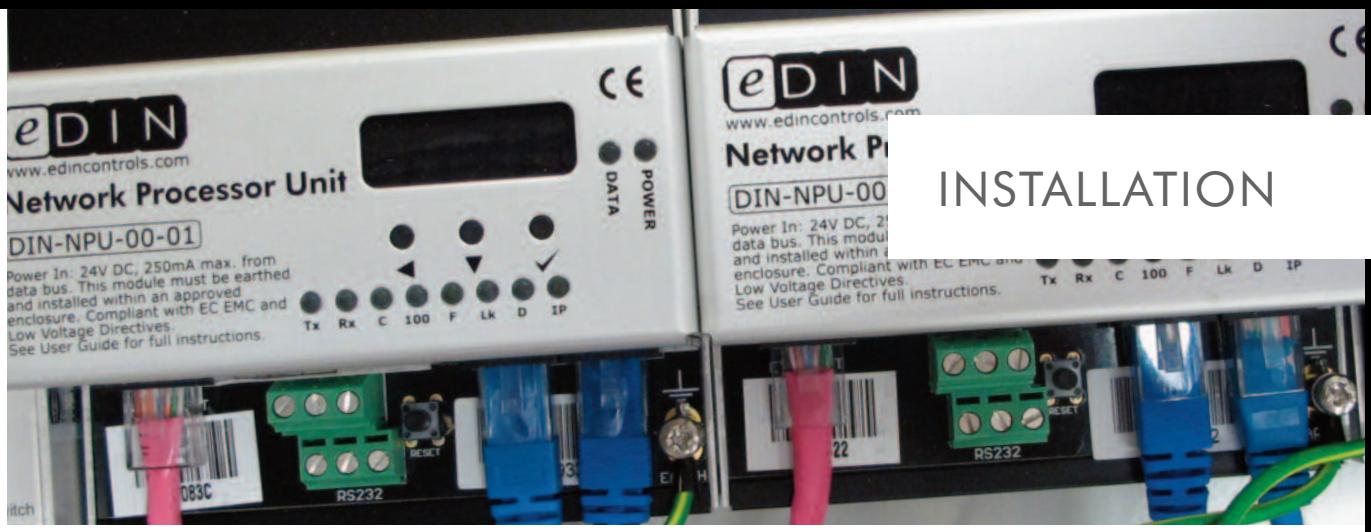


Designing a system using the eDIN modules is a simple process and by thinking through the types of lighting and how they are controlled you can create a solution using the simplest combination of parts. The chart below provides guidance on the selection of the correct type of module type to enable a system to be quickly and easily created.

MODEL	GUIDANCE
Output Load Type	Control requirements
Mains Dimming	Dimmer Module output set to dimmed operation
Mains Switching	Dimmer Module output set to switched operation or Relay Module output
1-10V	Dimmer Module output set to switched operation or Relay Module output and lv configurable channel from Input/Output Module or Universal Ballast Control Module set to 1-10v output
DSI	Permanent mains feed supplied direct from MCB or RCBO and lv configurable channel from Input/Output Module or Universal Ballast Control Module set to DSI output
DALI	Permanent mains feed supplied direct from MCB or RCBO and DALI output from Universal Ballast Module. A single Universal Ballast Module can control up to 64 devices as 16 groups / channels of control (reduced to only 8 groups in standalone mode)
DMX (for colour change)	Permanent mains feed supplied direct from MCB or RCBO. Outputs 7&8 from an Input/Output Module set to DMX control. This will provide preset colour and pattern selection only

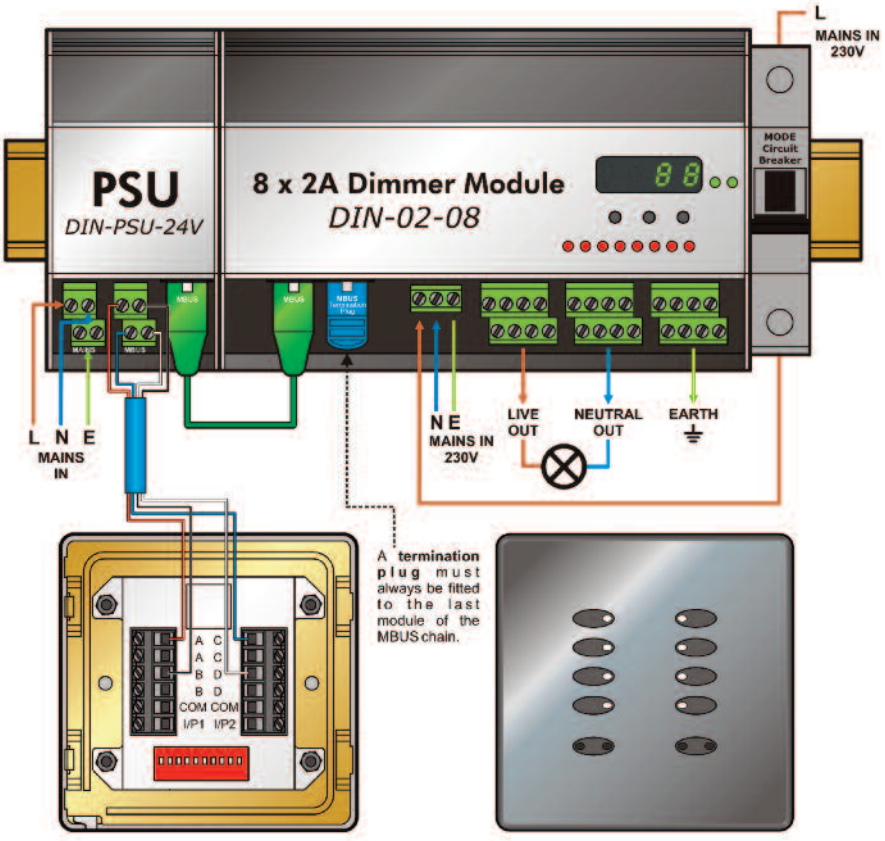
eDIN modules may also be used as expansion modules for the Mode Evolution Lighting Control System. Using the same M-BUS network, eDIN modules operate as slave devices to an Evolution system allowing the flexibility of eDIN to be coupled with the capacity and power of the Evolution System (see www.evolutioncontrols.com for more details).

System expansion – The system size and programming capacity is limited only by the capabilities of the web browser. With this in mind a maximum circuit count of around 50 circuits is recommended for programming using the web browser. For larger systems the dedicated PC software from the larger Evolution series can be used to create and edit more complex files to upload to the Network Processor. In these applications the Network Processor is still able to offer the scene selection and level adjustment features of standard eDIN systems.



Compliance to 17th Edition Installation Regulations is easily achieved including the use of MCBs and RCBOs on the input or output side of eDIN modules.

In some system designs it may be impractical to install all the modules in single location. eDIN modules can be sited around a project and connected using the MBUS connections allowing the equipment to be located in most convenient positions.



Each eDIN module incorporates an on-board, display driven, menu system through which circuit functions can be setup without the use of a computer. Depending on which modules are used, functions include dimming or switching operation, DALI address "Find" and group "Assign", maximum and minimum dimming levels, test modes and network diagnostics.

For further assistance on the specification of systems and selection of modules please contact your local dealer or Mode Lighting directly for further support

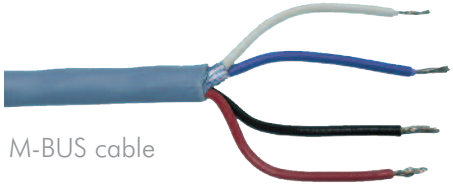
ENCLOSURES

eDIN Modules use the industry standard DIN Rail mounting method. By designing the products in this way it allows a wide choice when it comes to selecting cabinets and enclosures within which to mount the products. A range of standard cabinets are available from Mode Lighting in various sizes to help simplify the cabinet selection and installation process. All cabinets have Earth and Neutral Bus Bars and are supplied with a small quantity of blanking inserts.

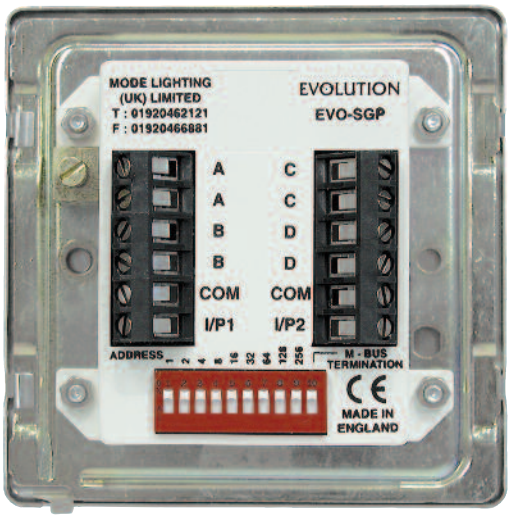
The following recommended guidelines will help in the selection of cabinets when specifying a system

1) Allow space for an Incoming Isolator and / or RCD protection in the enclosure (or adjacent distribution unit).
2) A minimum of one MCB or RCBO per dimmer, relay or ballast control module should be incorporated into the enclosure (or adjacent distribution unit).
3) Dimmers should occupy no more than 2/3rds of the module spaces within a cabinet
4) Cabinets should not be installed above heating manifolds without suitable insulation between services.
5) Cabinets should not be mounted below water pipes or tanks.
6) If mounted in warm locations ventilation should be provided within the electrical cupboard or riser where the equipment is mounted.

Once installed in the enclosures, modules connect together using the standard CAT5 link leads (supplied with each unit) for speed and simplicity. When using keypads these should be connected to the M-BUS terminals located on the eDIN Power Supply Unit using a 0.5mm^2 stranded two-twisted pair (four core) cable (EVO-CAB-00-04) or equivalent.



M-BUS cable



TECHNICAL INFORMATION

PHYSICAL DATA

PART CODE	MODEL	DIN MODULE SIZE	DIMENSIONS	WEIGHT	MAINS INPUT	MAINS INPUT CONNECTION
DIN-PSU-24V	Power Supply Unit	3 Module	56mm Wide x 100mm High x 64mm Deep	0.34kg	90 - 264v 50/60Hz, single phase	Live, Neutral & Earth Maximum wire size 1.5mm²
DIN-MSR-05-04	4 x 5A Feed Through Relay Module	6 Module	104mm Wide x 100mm High x 64mm Deep	0.43kg	230v ± 10% 50/60Hz, single phase	Contacts rated for 250v live switching, 1.5mm²
DIN-NPU-00-01	Network Processor Unit			0.35kg	——	——
DIN-INT-00-08	8 x Channel Input / Output Interface			0.35kg	——	——
DIN-UBC-01-05	Universal Ballast Control Module			0.45kg	90 - 264v 50/60Hz, single phase	Live, Neutral & Earth Maximum wire size 2.5mm²
DIN-02-08	8 x 2A Dimmer Module Leading Edge	9 Module	156mm Wide x 100mm High x 64mm Deep	0.95kg	230v ± 10% 50/60Hz, single phase	Live, Neutral & Earth Maximum wire size 2.5mm²
DIN-03-04	4 x 3A Dimmer Module Leading Edge					

BUS & LOW VOLTAGE DATA

PART CODE	LOW VOLTAGE I/O CONNECTIONS	M-BUS CONNECTION	M-BUS CURRENT CONSUMPTION
DIN-PSU-24V	——	1 x RJ-45 1 x 4-way 1.5mm² screw terminals	*Supplies 800mA*
If the M-BUS current requirements exceed 800mA additional DIN-PSU-24V Modules should be used.			
DIN-MSR-05-04	Screw Terminals, 1.5mm²	2 x RJ-45 (in and out)	80mA
DIN-NPU-00-01	RS232 Screw Terminals, 1.5mm² Ethernet RJ45, 100 Base-T		250mA
DIN-INT-00-08	Screw Terminals, 1.5mm²		Input Mode: 50mA Output Mode: Up to 850mA
DIN-UBC-01-05	Screw Terminals, 1.5mm²		50mA
DIN-02-08	——		50mA
DIN-03-04	——		50mA

Bus Cable Length: M-BUS: 1000m maximum DALI: 300m maximum with 1.5mm² cable

CONTROL DATA

PART CODE	CONTROL INPUTS	OUTPUTS DETAILS	OUTPUT CONTROL TYPE
DIN-MSR-05-04	Mode M-BUS	1 x DPCO / 3 x SPCOμ-gap Relays Maximum wire size 1.5mm²	Switching only - 250v AC Volt-free Contact Closures
DIN-NPU-00-01	Ethernet TCP/IP, M-BUS RS232 (Bi-directional)	——	Ethernet TCP/IP, M-BUS RS232 (Bi-directional)
DIN-INT-00-08	Up to 8 x 0-10v input or DSI input or IR or contact closure (or open collector) input configurable	Non isolated Low Voltage	Up to 8 x 0/1-10v or 6 x I/O with 1 x DMX or DSI (configurable)
DIN-UBC-01-05	Up to 4 x as closed / released / held / released-after-held, or timed PIR sensor M-BUS	Fully isolated Low Voltage I/O Integral 250mA DALI PSU	DALI and up to 4 x 0/1-10v or DSI (configurable)
DIN-02-08	Mode M-BUS	8 x 2A (resistive or inductive) dimmed outputs 8 x neutral, 8 x earth. Max wire size 1.5mm²	Leading edge mains dimming
DIN-03-04	Mode M-BUS	4 x dimmed live outputs, 4 x neutral 4 x earth. Max wire size 1.5mm²	Leading edge mains dimming

ELECTRICAL DATA

PART CODE	CHANNEL LOADING	MODULE LOADING 240V	STANDARDS (CE, EMC)
DIN-PSU-24V	——	0.35A maximum	EN55015, EN61547, EN61000-3-2, EN61000-3-3, EN60669-1, EN60669-2-1
DIN-MSR-05-04	5A (approx. 1100w) (resistive load) per feed-through relay 3A (approx. 1100w) (inductive load) per feed-through relay	20A maximum	
DIN-NPU-00-01	——	——	
DIN-INT-00-08	2mA per channel (input) 100mA per channel (output)	——	
DIN-UBC-01-05	Integral 250mA DALI PSU Configurable I/O 100mA per channel (output)	0.5A maximum	
DIN-02-08	2A (approx. 480w) per channel resistive or inductive	10A maximum	
DIN-03-04	3A (approx. 720w) per channel resistive or inductive load	10A maximum	

All eDIN Modules carry the CE Mark and are fully compliant with EC, EMC and LV Directives.

Mode Lighting works closely with all stakeholders in the project chain from Lighting Designers and M & E Consultants through to Architects, Developers and End Clients.

Design assistance doesn't end here. Project specific support is provided to Electrical Contractors and Specialist AV Installers to ensure a trouble-free installation and project delivery.

Products designed and manufactured in the UK by Mode Lighting include Architectural and Commercial energy saving control systems, plus Electronic Transformers, Drivers and LED assemblies.

Over forty years of experience in these areas has led to the creation of a worldwide network of satellite offices, distributors and dealers to provide local sales and technical support to clients on Mode products.

MODE LIGHTING

CONTROLLING THE FUTURE OF LIGHTING

www.modelighting.com

Mode Lighting (UK) Limited
The Maltings, 63 High Street
Ware, Hertfordshire
SG12 9AD
United Kingdom

T: +44 (0) 1920 462121
F: +44 (0) 1920 466881
E: sales@modelighting.com

Commercial
www.ecocontrols.com

Architectural
www.evolutioncontrols.com

LED
www.modelighting.com

Integration
www.edincontrols.com