EBR-LCM8, EBR-LCM10 & EBR-LCM12
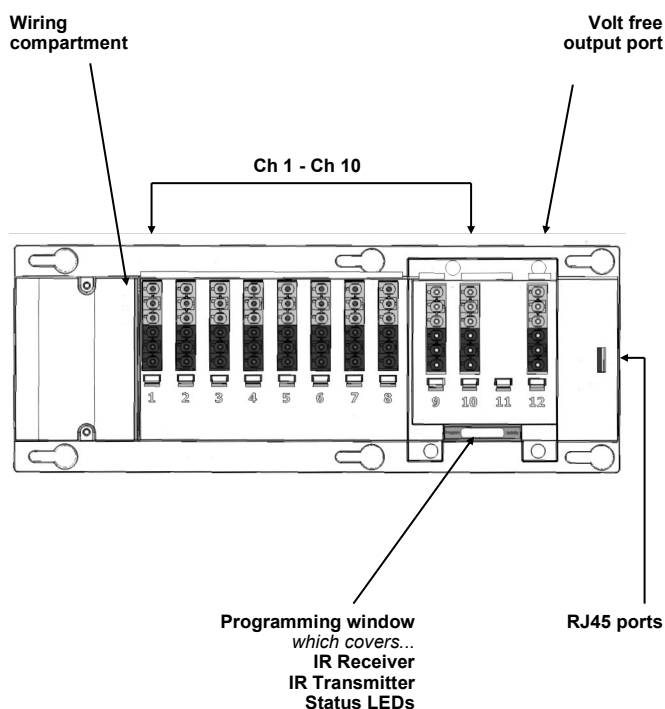
Lighting control module

Overview

The EBR-LCM8, EBR-LCM10 & EBR-LCM12 series of lighting control modules (LCMs) are used as part of the Rapid lighting control system to control lighting. The standard Rapid LCM has 8 individually addressable outputs to allow for fully independent control of DALI/DSI or switching only fittings. The Rapid LCM can be expanded using a 4 output plug in module, providing an extra four 6 pole outputs.

A separate relay is used for emergency testing. This LCM also has a total of 11 SELV switch inputs. 8 in the wiring compartment with screw terminals and 7 via an RJ45 port.

The plug in module is available in a number of formats which allow the installer to incorporate a different dimming protocol from the main LCM and also a volt free contact for switching fixed output loads like fan coil units. The ability to have a different dimming protocol from the main LCM is also useful where, during the fit out, LED lighting may have been installed which is 1-10v and where an existing LCM is either DALI or DSI. The 4 outputs are also individually addressable allowing for maximum flexibility.

Features

Front features (10 output LCM shown)

Wiring compartment

Volt free output port

Ch 1 - Ch 10

Programming window
which covers...
**IR Receiver
IR Transmitter
Status LEDs**

RJ45 ports

Wiring compartment
Within the wiring compartment there are the following connections.
- Mains, including a Permanent Live used to feed the emergency test relay.
- Low Voltage connections
  - 8 x SELV inputs
  - 2 x Rapid network CAN ports
  - Shared 6A emergency test relay.

Emergency test relay
Shared 6A relay via each GST style output

Pluggable connections
8, 10 or 12 outputs via a GST style switched ports with either separate broadcast DALI / DSI broadcast or 1-10V connections.

Volt free output port (EBR-LCM10-10AD and EBR-LCM10-10DD only)
6A 230VAC Voltage free contact. Used to switch external peripherals, such as HVAC and BMS systems.
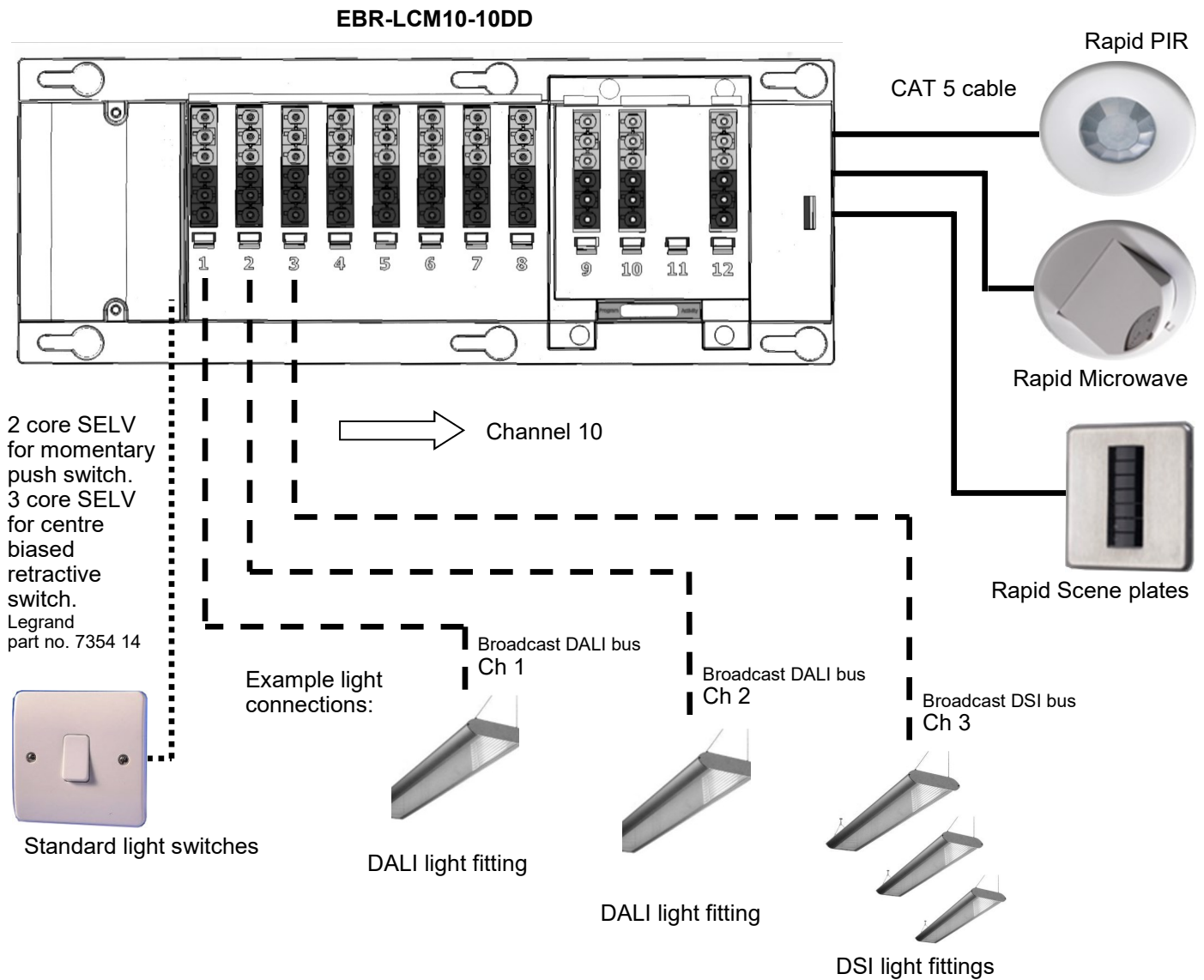
RJ45 ports
At the end of the unit there are 5 RJ45 ports.
- 4 x power and Rapid network CAN ports
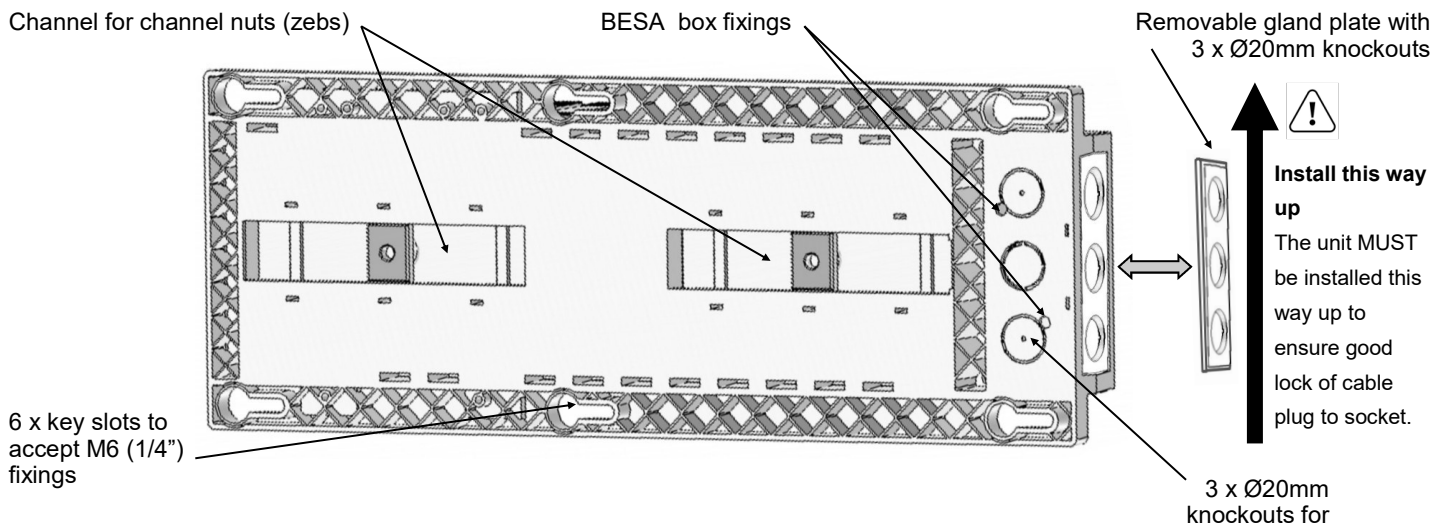- 1 x SELV switch input port (7 inputs plus common)

Removable memory feature
The removable memory feature allows settings to be easily transferred to a replacement or new LCM without the need for reprogramming.
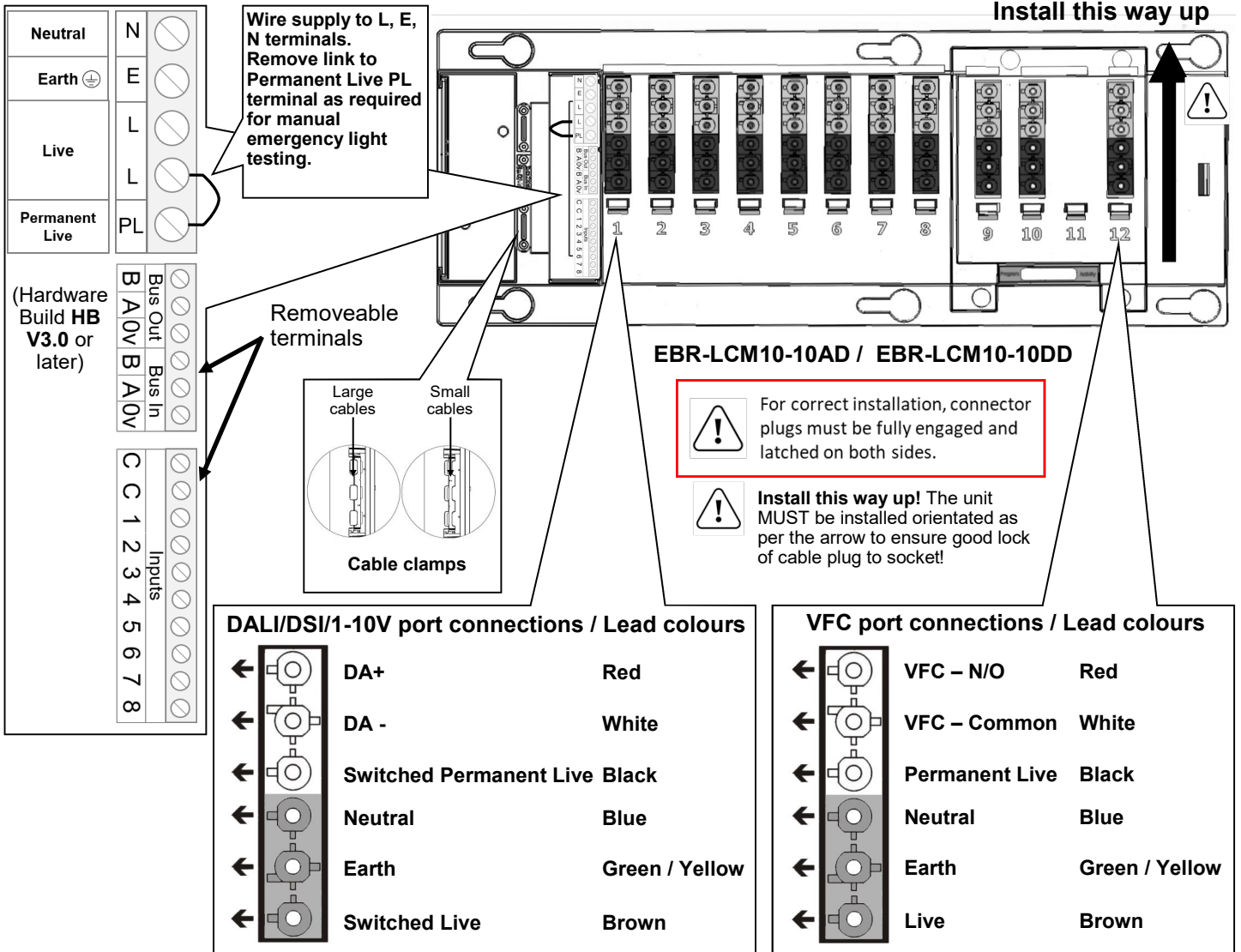
System wiring example

EBR-LCM10-10DD

CAT 5 cable

Rapid PIR

Rapid Microwave

Rapid Scene plates

2 core SELV for momentary push switch.
3 core SELV for centre biased retractive switch.
Legrand part no. 7354 14

Channel 10

Standard light switches

Example light connections:

Broadcast DALI bus
Ch 1

Broadcast DALI bus
Ch 2

Broadcast DSI bus
Ch 3

DALI light fitting

DALI light fitting

DSI light fittings

Installation

Channel for channel nuts (zebs)

BESA box fixings

Removable gland plate with 3 x Ø20mm knockouts

Install this way up

The unit MUST be installed this way up to ensure good lock of cable plug to socket.

6 x key slots to accept M6 (1/4") fixings
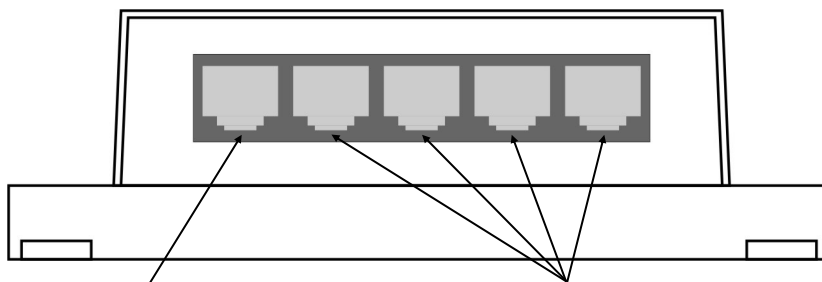
3 x Ø20mm knockouts for

Warning. This device works at mains voltage. Be sure to take care when working with electricity.
- The box should be fixed on a smooth, flat surface or using drop rod fixings attached to channel nuts.
- Ensure that there is easy access to the wiring compartment and all connectors once the box is in-situ.
- Care should be taken when siting the LCM to ensure that other services or building fabric do not obstruct access to the IR port and status LEDs.

Install this way up

Neutral	N
Earth ⏚	E
Live	L
	L
Permanent Live	PL

Wire supply to L, E, N terminals. Remove link to Permanent Live PL terminal as required for manual emergency light testing.

(Hardware Build **HB V3.0** or later)

Bus Out	B
	A0v
Bus In	B
	A0v

Inputs	C C 1 2 3 4 5 6 7 8

Removeable terminals

Large cables   Small cables

Cable clamps

EBR-LCM10-10AD / EBR-LCM10-10DD

⚠ For correct installation, connector plugs must be fully engaged and latched on both sides.

⚠ **Install this way up!** The unit MUST be installed orientated as per the arrow to ensure good lock of cable plug to socket!

DALI/DSI/1-10V port connections / Lead colours

←	DA+	Red
←	DA –	White
←	Switched Permanent Live	Black
←	Neutral	Blue
←	Earth	Green / Yellow
←	Switched Live	Brown

VFC port connections / Lead colours

←	VFC – N/O	Red
←	VFC – Common	White
←	Permanent Live	Black
←	Neutral	Blue
←	Earth	Green / Yellow
←	Live	Brown

Note. All phase conductors should be identified with appropriate sleeving.
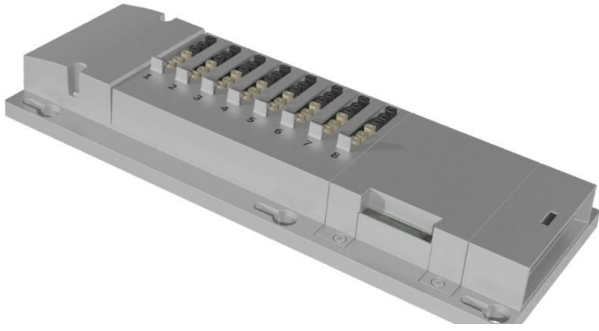
RJ45 ports

**Port 1**
7 x switch inputs
Inputs C, 11, 10, 9, 8, 7, 6, 5

Port 2, 3, 4 & 5
CAN + power (12VDC)
Detector / scene plate
(Hardware Build **HB V3.0** or later)

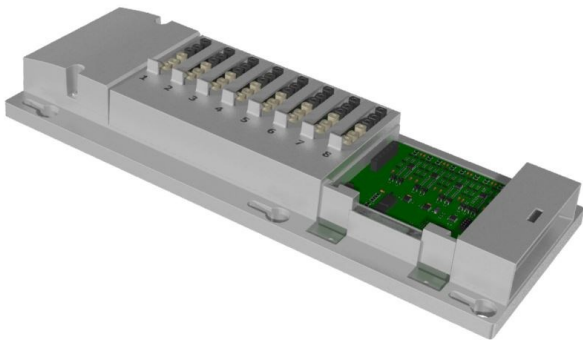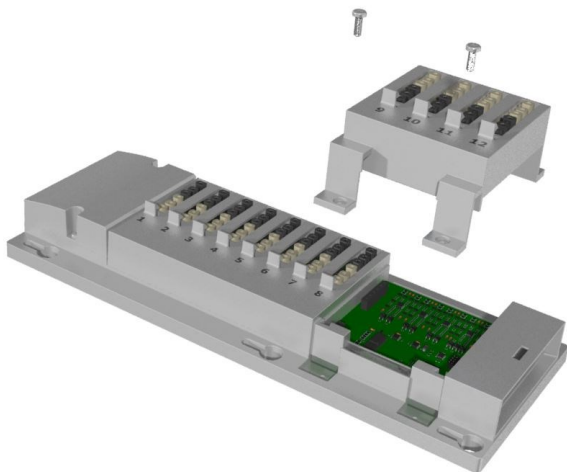| Switch	RJ45 pin	Colour
C	1	White/orange
11	2	Orange
10	3	White/green
9	4	Blue
8	5	White/blue
7	6	Green
6	7	White/brown
5	8	Brown

3

Changing the module

It may be necessary to expand the number or types of outputs of an EBR-LCM8-8. This can be done simply using the following steps.
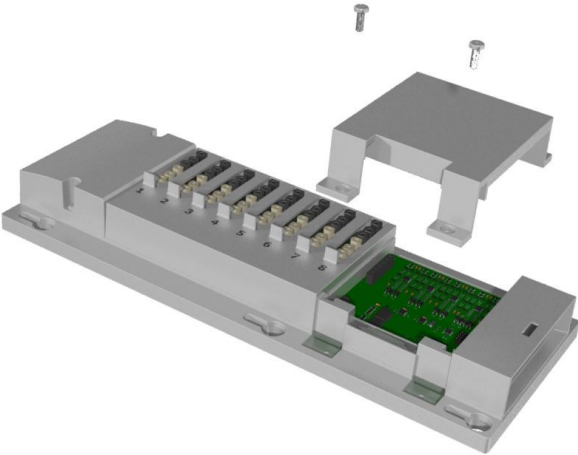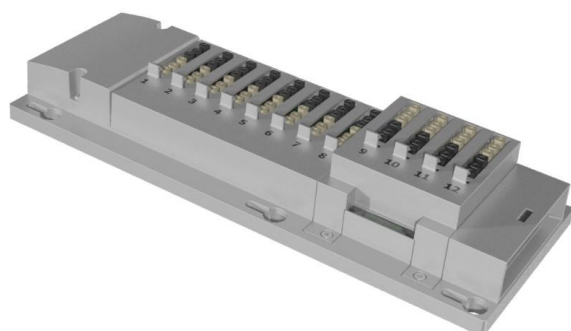
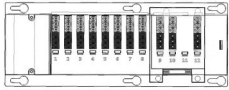Remove the 4 screws securing the blanking cover.

Remove the blanking cover.

Insert the module.
Note. Care must be taken when inserting the modules to ensure that both connections are made properly between the module and main LCM circuit board. If force is needed then check that the pins have not been damaged.

Secure the module with the 4 screws.

The functionality of the LCM are controlled by a number of parameters which can be changed or programmed by any of the following devices:

- **Rapid commissioning software** This is software that runs on a PC and is used to program all Rapid functions. Full details of which can be found in the Rapid System Manual
- **UNLCDHS** Infrared Handset (with LCD). See user guide for full programming details.

Point the handset at the LCM and send the required programming commands to the unit as shown below.

Status LEDs

There are 2 status LEDs situated under the programming window. Full details of the various states of the LEDs can be found in the Rapid System Manual. Below are the main indicator functions.
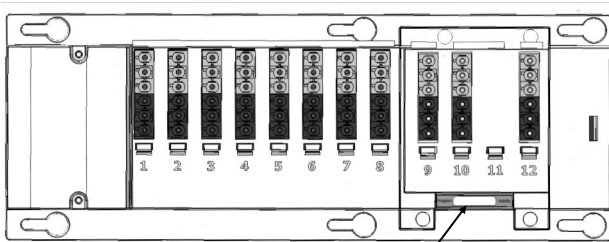
Status LEDs

IR message received	☼G
Network activity	☼R

Commissioning

To bring the lights on prior to commissioning, do one of the following:

- Power the boxes up without a bus controller or area controller connected. After about 15 minutes all channels will energise.
- From the user menu of the programming handset, select *override on Y*, send this to each individual box. Note that if the power is reset, this action will need to be performed again.

Commissioning will normally be performed by our trained commissioning engineers.

Please note that prior to commissioning, it is the responsibility of the installing contractor to ensure the following:

- The boxes must be connected and installed as described overleaf
- Mains power must be available
- Luminaires must be plugged in
- Bus connection must be established and checked

The LCM can be set up using our infrared programming handset or computer front end. For programming details see the separate programming document.

Inrush current

The electrical circuit's characteristics, design, circuit breaker rating, and type will delineate the maximum inrush allowable on the circuit.

Based on testing using Tridonic LCAI 10W 150 mA-400mA ECO C LED driver (Tridonic Article Number 28000130). Up to a maximum of 80A of Inrush current per output channel for no more than 10 mS.

The following *maximum* number of LED drivers can be connected to 12 output Rapid LCM. Alternative LED drivers may have larger inrush and will need to be de-rated accordingly. Check with the luminaire manufacturer. **CP Electronics accept no responsibility for checking and applying suitable de-rating factors for LED loads.**

- No more than 36 LED drivers per LCM.
- If all output channels used - no more than 3 LED drivers per output.

NB: if other channels are not used up to a maximum of 5 drivers may be connected to a single 6 pole output. This is as long as the electrical loading, Inrush rating and/or maximum driver allowance is not exceeded.

Port addressing & monitoring

Each luminaire port is individually addressed and is configured by the software commissioning process. When multiple light fittings are connected to the same port, they will have the same operation behaviour. For correct monitoring operation of DALI fittings, for each port, only 1 x DALI gear and the addition of 1x emergency DALI gear is allowed.

Technical data

|	
Dimensions	See diagrams opposite
Weight	0.97kg (EBR-LCM12-12DD)
Supply Voltage	220-240VAC
Frequency	50Hz
Relay rating	Switched live 10A Switched permanent live 6A Volt free output (VFC) 6A ***EBR-LCM10-10AD and EBR-LCM10-10DD only***
Terminal Capacity	Mains - 4mm^2 in wiring compartment Switched inputs and CAN - 2.5mm^2 in wiring compartment
Load per LCM	10A
Load per channel	6A fluorescent and incandescent lighting 3A compact fluorescent lighting 3A low energy lighting 3A low voltage lighting (switch primary of transformer) 3A fans and ventilation equipment Switch SON lighting loads via a contactor
Power consumption	EBR-LCM8-8DD On 5100mW, Off 2630mW EBR-LCM10-10DD On 6220mW, Off 2920mW EBR-LCM10-10DD On 6670mW, Off 3310mW
Dimming	Maximum 3 drivers / ballasts per channel (current limit 50mA per channel). Maximum 250mA per LCM. Cable lengths for dimming outputs: 100m using 0.5mm^2 wire 150m using 1.00mm^2 wire 300m using 1.5mm^2 wire
SELV	There are 3 isolated circuits supplied from an isolating safety transformer. • SELV rated Logic power (relay drive, microcontroller, CAN bus) has a nominal and maximum voltage of 13V. • SELV inputs have a nominal voltage of 12 V and a maximum of 19V. • The non-SELV circuitry of the Dimming outputs is 16V nominal and 22.5V maximum
Temperature	-10ºC to 35ºC
Humidity	5 to 95% non-condensing
Material (casing)	LCM Base (White) : Flame retardant ABS (UL94 V1) Wiring Compartment Cover (White) : Flame retardant ABS (UL94 V1) Channel connector Cover (White) : Flame retardant PC (UL94 V0) Module Blanking Cover (Clear) : Flame retardant PC (UL94 V2) Module connector cover (Clear) : Flame retardant PC (UL94 V2)
Classifications	Insulation Class II Purpose Automatic control Construction Independently mounted control for surface mounting Ball pressure test Insulating material retaining current carrying parts tested at 125°C, all other insulating materials tested at 75°C. Type of action Type 1.B action micro disconnection Overvoltage Category III Software class Class A Pollution Degree 2
Compliance	CE UKCA

For further compliance information visit www.cpelectronics.co.uk/compliance

396mm
350mm
200mm
146mm
127mm

Fixing points M6 (1/4")
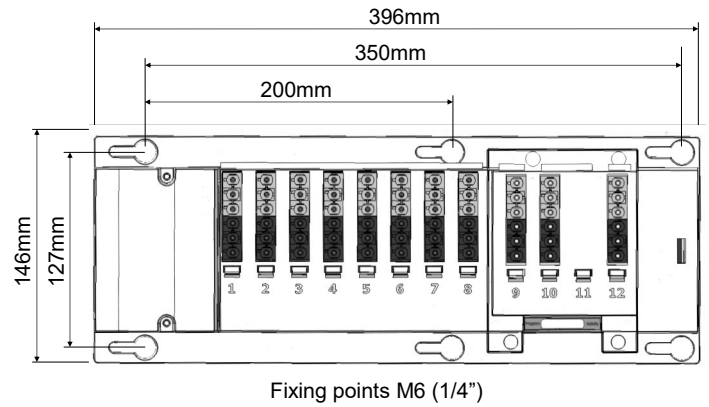
Height Space Allowance:
For EBR-LCM8-8AD and EBR-LCM8-8DD, allow 150mm for total height of unit (including connectors and cable).
For all other LCMs with plug-in modules allow170mm for total height of unit (including connectors and cable).

Important
For lighting purposes only with suitable circuit protection. For fixed wiring only.

IMPORTANT NOTICE!
This device should be installed by a qualified electrician in accordance with the latest edition of the IEE Wiring Regulations and any applicable Building Regulations.

Part numbers

LCM	EBR-LCM8-8DD	Rapid 8 channel LCM DALI / DSI dimming
	EBR-LCM8-8AD	Rapid 8 channel LCM 1-10V dimming
	EBR-LCM10-10DD	Rapid 10 channel LCM DALI / DSI dimming + 1 x VFC output
	EBR-LCM10-10AD	Rapid10 channel LCM 1-10V dimming + 1 x VFC output
	EBR-LCM12-12DD	Rapid 12 channel LCM DALI / DSI dimming
	EBR-LCM12-12AD	Rapid12 channel LCM 1-10V dimming
Modules	EBR-MOD2-2DD	2 channel DALI / DSI + 1 x VFC output plug-in module
	EBR-MOD4-4DD	4 channel DALI / DSI plug-in module
	EBR-MOD2-2AD	2 channel 1-10V + 1 x VFC output plug-in module
	EBR-MOD4-4AD	4 channel 1-10V plug-in module
Accessories	UNLCDHS	Universal LCD programming handset
	EBR-BT	Bus terminator
	EBR-BR	Bus repeater

ESTA
energy systems trade association

CP Electronics - a business unit of
Legrand Electric Limited
Brent Crescent, London NW10 7XR UK
Tel: +44 (0)333 900 0671
Fax: +44 (0)333 900 0674

A brand of legrand
www.cpelectronics.co.uk
enquiry@cpelectronics.co.uk

Due to our policy of continual product improvement CP Electronics reserves the right to alter the specification of this product without prior notice.

Ref: #WD745 Issue 11