Specification

SWITCHING LOAD
6A, used for emergency test only.

DALI BUS LOAD
30 DALI ballasts (EN60929 Annex E.4) per module, 64 ballasts per bus, maximum dimming pair cable length 200m
Cable min. 0.75mm^2

SUPPLY VOLTAGE	12VDC
TERMINAL CAPACITY	2.5mm^2
MATERIAL	Flame retardant ABS
TYPE	Class 2
TEMPERATURE	-10°C to 35°C
CONFORMITY	EMC-2014/30/EU LVD-2014/35/EU

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

Part Numbers

EBR-DIN-DALIG	Rapid DIN rail DALI Gateway
EBR-DIN-PSU-DALIG	Rapid DIN rail DALI PSU
EBR-DIN-PSU	Rapid DIN rail PSU

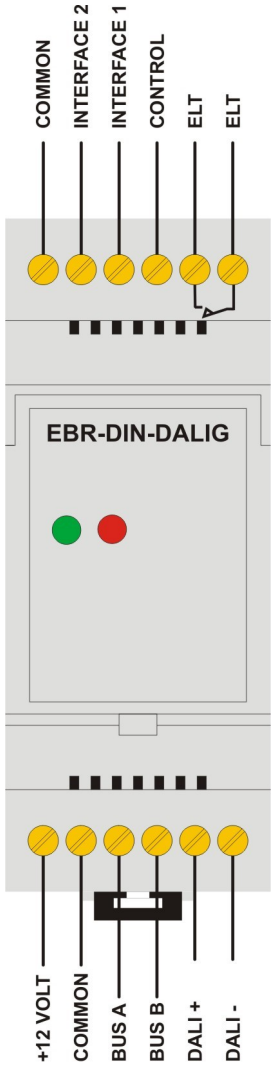
IMPORTANT NOTICE!
This device should be installed by a qualified electrician in accordance with the latest edition of the IEE wiring regulations.

C.P. Electronics Ltd
Brent Crescent
London
NW10 7XR
United Kingdom
Tel: + 44 (0) 333 900 0671
Fax: + 44 (0) 333 900 0674
www.cpelectronics.co.uk
enquiry@cpelectronics.co.uk

Ref: #WD256 Issue 4

EBR-DIN-DALIG

DALI Gateway Din Rail Module



Overview

The Rapid DALI Gateway Din Rail Module provides an interface between a Rapid lighting control system and a set of DALI ballasts wired together on a single DALI bus. The module acts as a full function LCM with 10 individually programmable output channels; each channel can have up to 2 standard and 1 EMPRO ballast connected. Two interface inputs are provided for connection to external devices such as light switches, emergency test switches and time clocks. For digital emergency test and monitoring the unit supports EMPRO ballasts; for switched emergency test applications the unit provides a switched, permanent live output. Up to 7 EBR-DIN-DALIG modules can be connected together to give control of up to 64 individually addressable DALI ballasts.

Features include:

- 10 individually addressable output channels per module
- Up to 64 DALI ballasts per system
- Supports luminaires with multiple ballasts
- Control and fault feedback indication per channel
- Allows ballasts to be grouped for faster control
- Auto re-addressing of failed ballasts with no user intervention
- 2 interface inputs per module
- Tridonic EMPRO compatible
- Switched permanent live for emergency test

Installation and Wiring

- Mount in a suitable DIN rail enclosure and wire as in the diagram opposite.
- Where multiple modules are used, connect the CONTROL wires together.
- 1 EBR-DIN-PSU is required to power the internal circuitry of the module. Subject to the maximum output current of this device, the PSU can also be used to power other Rapid peripherals such as detectors and other DIN modules—please refer to the datasheet for this device.
- 1 EBR-DIN-PSU-DALIG is required to power the DALI bus. Up to 7 EBR-DIN-DALIG modules can be connected depending on the number of DALI ballasts on the bus.
- Where required connect the permanent live of the emergency fittings to the output of the EBR-DIN-DALIG units as shown in the diagram.
- Where required, connect switches to the interface connections between the input and common as shown on the diagram. **Switches must be isolated.**

Commissioning

To bring the lights on prior to commissioning simply ensure that the luminaires have a permanent supply.

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 units must be connected and installed as described in these instructions
- Mains power must be available
- Luminaires must be connected and in working order
- Both DALI bus connections and Rapid bus connections must be established and checked

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

The remainder of this guide describes how to address the DALI bus. Any other commands and programming is identical to a standard Rapid LCM.

Rapid IDs

Each EBR-DIN-DALIG module must be given a Rapid ID using the following convention:
The first module must be given an ID ending in zero, e.g. 90, 220 etc. This will be termed the *base module*.
Where multiple modules are used to control a larger DALI bus, the subsequent IDs must use the next consecutive numbers. E.g. 91, 92, 93, 94, 95 & 96.
Even if the full 7 modules are not used, the IDs must be reserved and not used by any other Rapid device in the same area.

Replacing Ballasts

If a single ballast is replaced, or all of the ballasts connected to a single channel are replaced (i.e. a luminaire with multiple ballasts), the new ballast(s) are automatically assigned a new *short address* when powered on. No re-programming should be necessary. Allow up to 10 minutes for the module to discover the replacement, reprogram it automatically, and refresh the output level and state.

If ballasts connected to more than one channel are replaced then the procedure described in the *Assigning Ballasts to Channels* section will have to be followed.

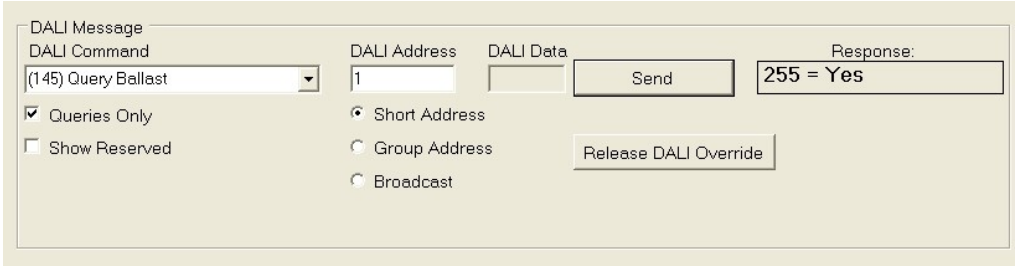
Ensure that replacement ballasts are wiped clean before being attached to the DALI bus. If the ballast is brand new this should not be a problem. Otherwise this is easily achieved by wiring the ballast into another module, powering up and sending the *Clear Short Address* command.

Passthrough Operation

The Rapid commissioning software can send any DALI message over the Rapid bus with any of the DALI addressing modes and display the appropriate responses.

No knowledge is necessary of which commands require an extender, e.g. emergency ballast messages or require repeating to take effect. All addresses and data are presented in true DALI form, i.e. zero based rather than one based as used in the rest of the software.

DALI messages which change the output level of the ballast acts as overrides and need to be released before normal operation is resumed. The software prompts for release of override before any other operation is attempted.



Subset Assignment

When several luminaires are to be controlled together, subsets should be used to reduce the number of dimming commands and so improve performance. All luminaires in a subset use the same dependencies and will give the same output levels.

Ballasts can be assigned to subsets with the following restrictions

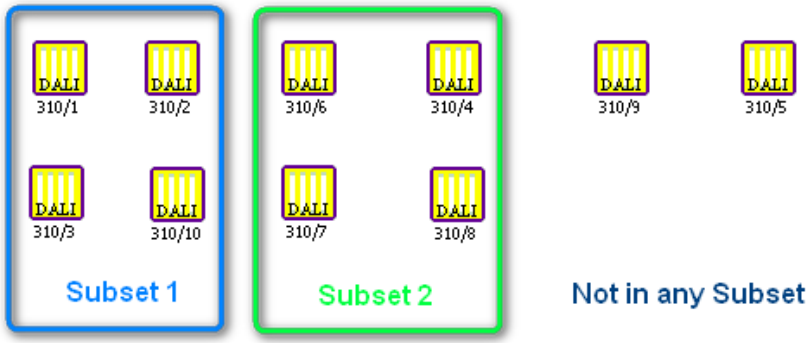
- Subset numbers are pre-allocated based on ID (see table)
- Two subsets are available per module

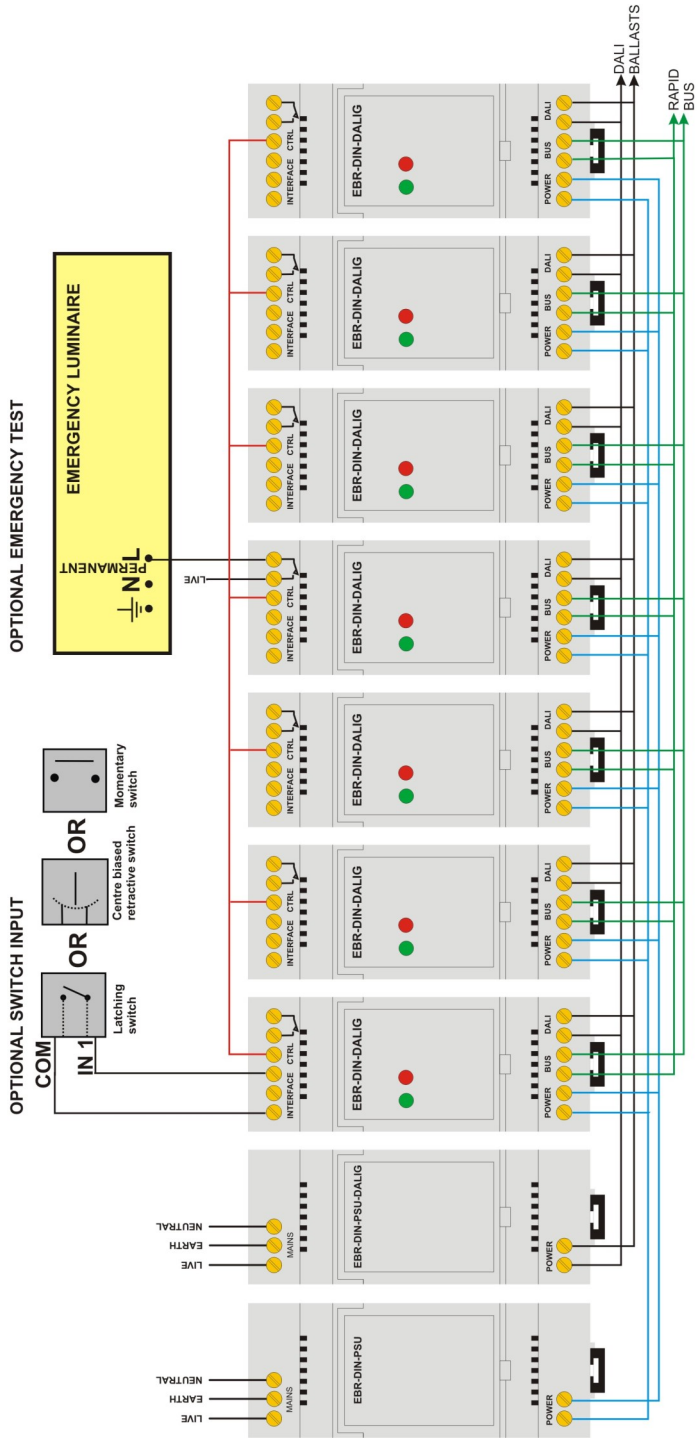
ID Last Digit	Subset Ch 1	Subset Ch 6
0	1	2
1	3	4
2	5	6
3	7	8
4	9	10
5	11	12
6	13	14

- Subset Ch 1, if used, applies to channel 1 and optionally to other channels
- Subset Ch 6, if used, applies to channel 6 and optionally to other channels apart from 1
- The first subset for any module uses channel 1 dependencies, dependencies on other channels in this subset are ignored.
- The second subset for any module uses channel 6 dependencies, dependencies on other channels in this subset are ignored.
- Channels do not have to be assigned to any subset.
- Subsets cannot span across modules.

See the diagram below for an example of how ballasts can be assigned to subsets.

Assigning subsets can be done using the DALI addressing screen on the Rapid commissioning software.



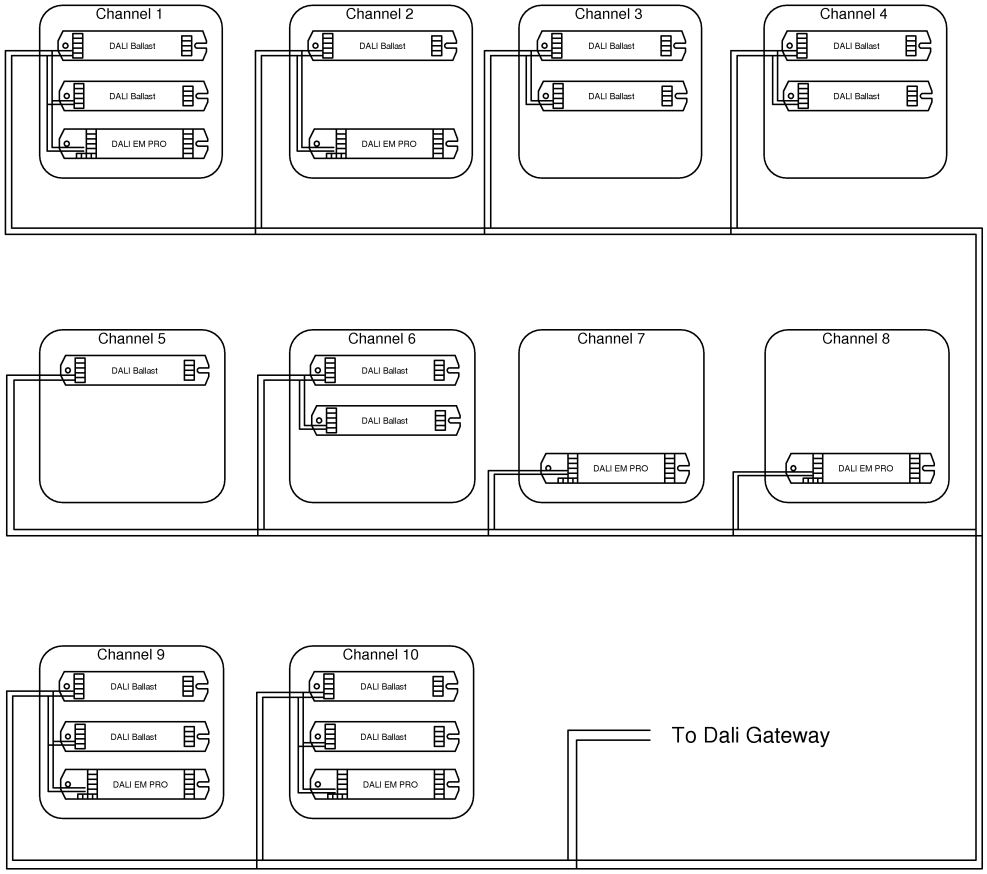


Channels

The EBR-DIN-DALIG has 10 fully addressable and controllable output channels. Assigned to each of these output channels can be one, or a number of DALI ballasts, all connected to the same DALI bus.

Each channel can have 1 or 2 standard DALI ballasts plus 1 EMPRO ballast attached. This allows the channel to address an entire luminaire, even if the luminaire has multiple ballasts. See the diagram below showing a possible combination of channels and ballasts.

Up to 7 EBR-DIN-DALIG modules can be connected together to give up to 64 channels. However there is a total limit on the DALI bus of 64 addresses, so, even though up to 3 ballasts can be used per channel as shown in the diagram, the total of 64 ballasts must not be exceeded on any bus.



Assigning Ballasts to Channels

1.Firstly, each module must be programmed with an ID using the programming handset, ensuring that the ID conforms with the description in the “Rapid IDs” section.

2.Load up the DALI addressing screen of the Rapid commissioning software.

3.Assign the DALI *short address*.
For completely un-programmed systems send a *Clear Short Address* command then send a *Randomise Short Address* command.
For previously programmed systems where new ballasts are being added, just send a *Randomise Short Address* command.

4.The module turns all the ballasts to minimum while finding the random address, and the ballast is turned off completely when it has been given a short address. It takes about 10 seconds per ballast to find the random address. The module also discovers if the ballast is an emergency type. When this is complete, all ballasts are turned to full.

5.Click *Get List of Found Ballasts* to display the addressed ballasts.

6.Assign each ballast to a channel on the module, remember you can have up to 2 standard ballasts and 1 EMPRO ballast per channel.
Firstly identify the ballast using the *On Max*, *Off* or *Flash* functions and with the *Short Address* option. *Off-On* flashing is provided for switching ballasts, while *Min-Max* flashing is a preferable option for dimmable ballasts. Emergency ballasts have a special flash sequence which affects their LED as well as the main lamp.
Once channels have been assigned, the *On/Off/Flash* functions can be used with channel addressing instead of short addressing to prove the assignment.

7.Repeat the assignment until all ballasts are assigned to a channel.