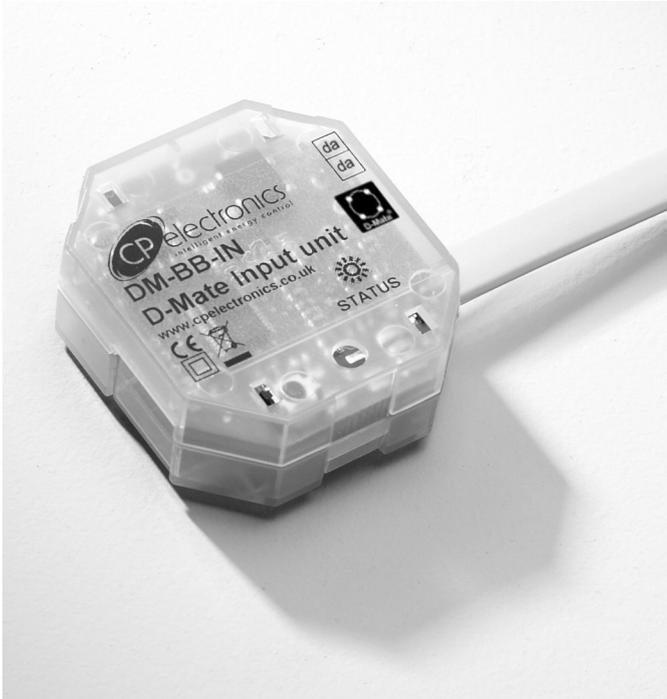


DM-BB-IN

D-Mate input unit

Overview



The DM-BB-IN Input Unit provides a control interface between a D-Mate lighting control system and external devices such as:

- Button/switch scene plates
- Security systems
- AV equipment

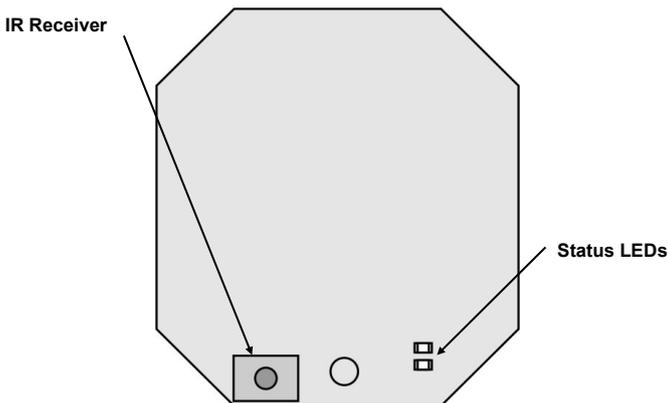
The unit features seven Volt-free switch inputs that can be activated by the contact closure of push-buttons, switches, or relays.

Activating an input causes the unit to transmit a scene, raise or lower light levels messages to the D-Mate system.

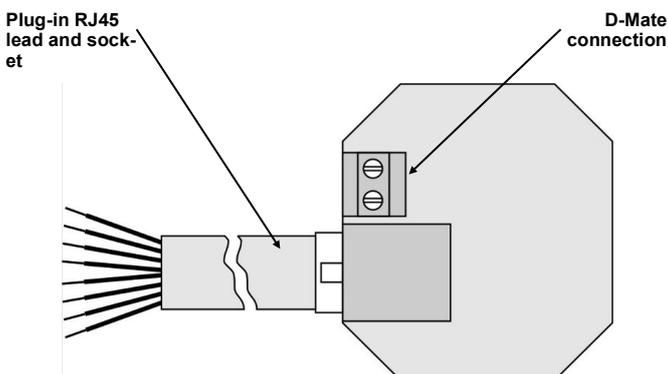
Scene programming is via the UNLCDHS only.

Features

Front features



Back features



IR Receiver

Receives control and programming commands from an IR (infrared) handset.

Status LEDs

The LEDs flash **Green** or **Red** to indicate the following:

<i>Valid setting received</i>	
<i>Button press / release</i>	
<i>Factory reset</i>	   

D-Mate connection

Connection to the D-Mate bus. The D-Mate bus is polarity insensitive.

Plug-in RJ45 lead and socket

A short 8 core flat cable with plug that is supplied with each unit, used to connect the inputs to external devices.

D-Mate

D-Mate is a Lighting Control System suitable for small to medium scale applications offering the following key benefits:

- 4 independently dimmable lighting circuits. *An additional 4 circuits can be programmed via the UNLCDHS.*
- Scene setting - 4 user programmable scenes (plus an 'off' scene) per Scene plate.
- Scene recall via push-button Scene Plates, Input Units or IR handsets
- Presence and absence operation using detectors
- Lux switching and lux dimming (maintained illuminance) operation

Introduction

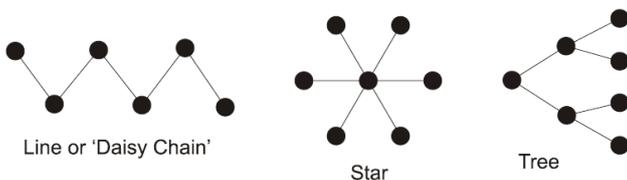
Devices within the D-Mate system communicate via a simple two wire data bus. The bus is powered via the D-Mate PSU and data is passed between devices using a format based around the DALI standard. The bus operates at a nominal voltage of 16 Volts DC which serves to provide operating power to each device connected to the bus. A maximum current of 200mA is available from the PSU. Therefore, in any D-Mate system, the maximum number of devices will be dependant on the total current consumption of all devices, including ballasts.

Note: The use of additional D-Mate PSUs or third party PSUs with a higher current rating is not permitted.

The output from the DM-SL-PSU is fully isolated from the mains input and may be regarded as an SELV device. However, as DALI ballasts only offer basic insulation, all devices on the D-Mate bus must be wired as if carrying mains potential.

Physical requirements

Data bus connections between devices must be made using suitable mains-rated two-core cable, such as two-core flex or bell wire. The minimum recommended core size is 0.75mm² for most applications. The data bus may be wired using any convenient network topology (e.g. line, star or tree). However, whichever topology is used, the total length of all cable (including spurs) within a system should not exceed 200m. There is no requirement to use screened cable. However, the routing of cables through electrically 'noisy' environments should be avoided to prevent possible interference on the bus.

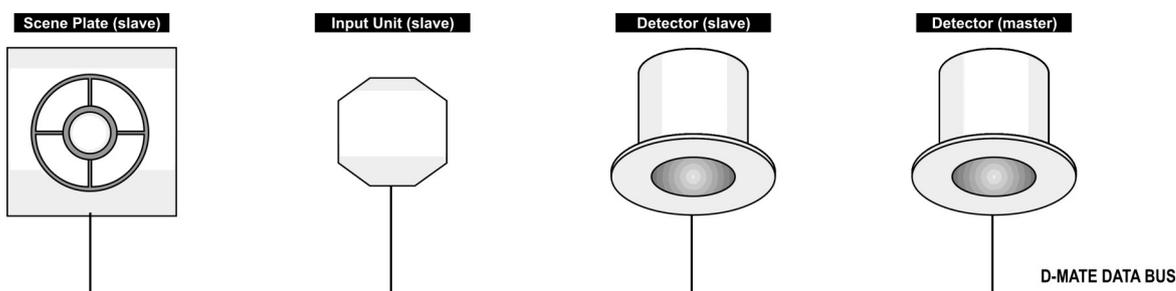


The data bus/power connections to all D-Mate devices are designed to operate correctly with reversed polarity. However, it is good practice to ensure all devices are wired with correct polarity. DALI and DSI ballasts are tolerant to reversed polarity, however, 1-10V ballasts are not.

Multiple Device Control (Master and Slaves)

It is possible to use multiple D-Mate control devices, such as detectors and plates in a system. For example there may be a need to have two plates in a room where the master plate controls all the circuits in the room but the slave plate is used to control a subset of circuits. An application of this would be where there are two detectors in a large room, where one would be the master and the other the slave.

Where multiple control devices are used on the same circuit, one device must be designated the 'master'. This is the device that is responsible for sending control messages to the Addressers. The master device also stores the levels for each Scene for the circuit(s) it controls. The other control devices on that circuit must be designated as 'slaves'. These do not control the Addressers directly, but send messages to the master device which then sends messages to the Addressers. Where a detector exists on a circuit it must always be the master device, with any additional detectors or scene plates configured as slaves. Where a single detector is used with one more scene plates, it will automatically set the plates to slaves for the corresponding circuits. When there are no detectors in a system and only plates or input units, one of the plates or input units will need to be set as the master. To set the input unit as a master see page 7.



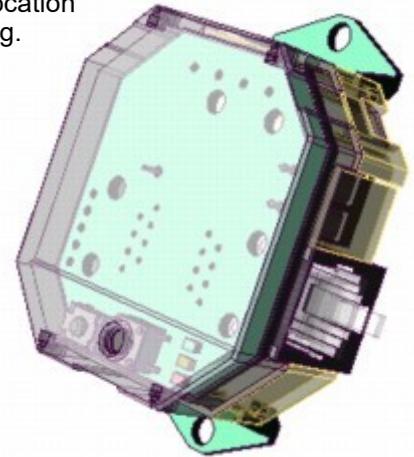
The DM-BB-IN Input Unit can either be mounted to any suitable solid surface or concealed inside a backbox.

Surface Mounting Method

Fit the two snap-on mounting brackets on the back side of the unit as shown.

Use the holes in the mounting brackets to affix the unit to a wall or other solid surface using suitable screw fixings.

Mounting bracket location for surface mounting.



Backbox Mounting Method

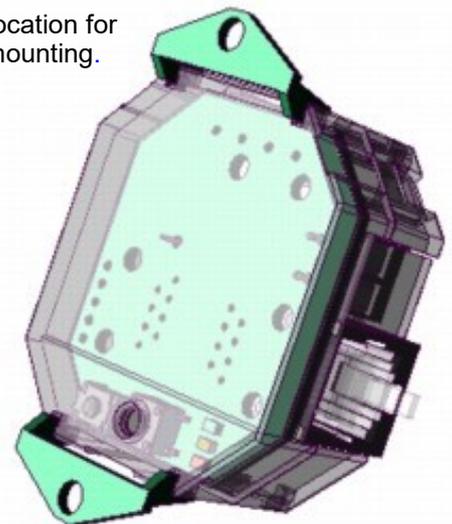
For **unsecured** fixing, the unit can be simply placed inside a UK or European backbox (without fitting the snap-on mounting brackets). This enables a proprietary switch plate to be connected and screwed to the backbox.

Alternatively, for **secured** fixing, fit the two snap-on mounting brackets on the front side of the unit as shown. The unit can then be secured to the backbox using suitable fixing screws (up to M3.5).

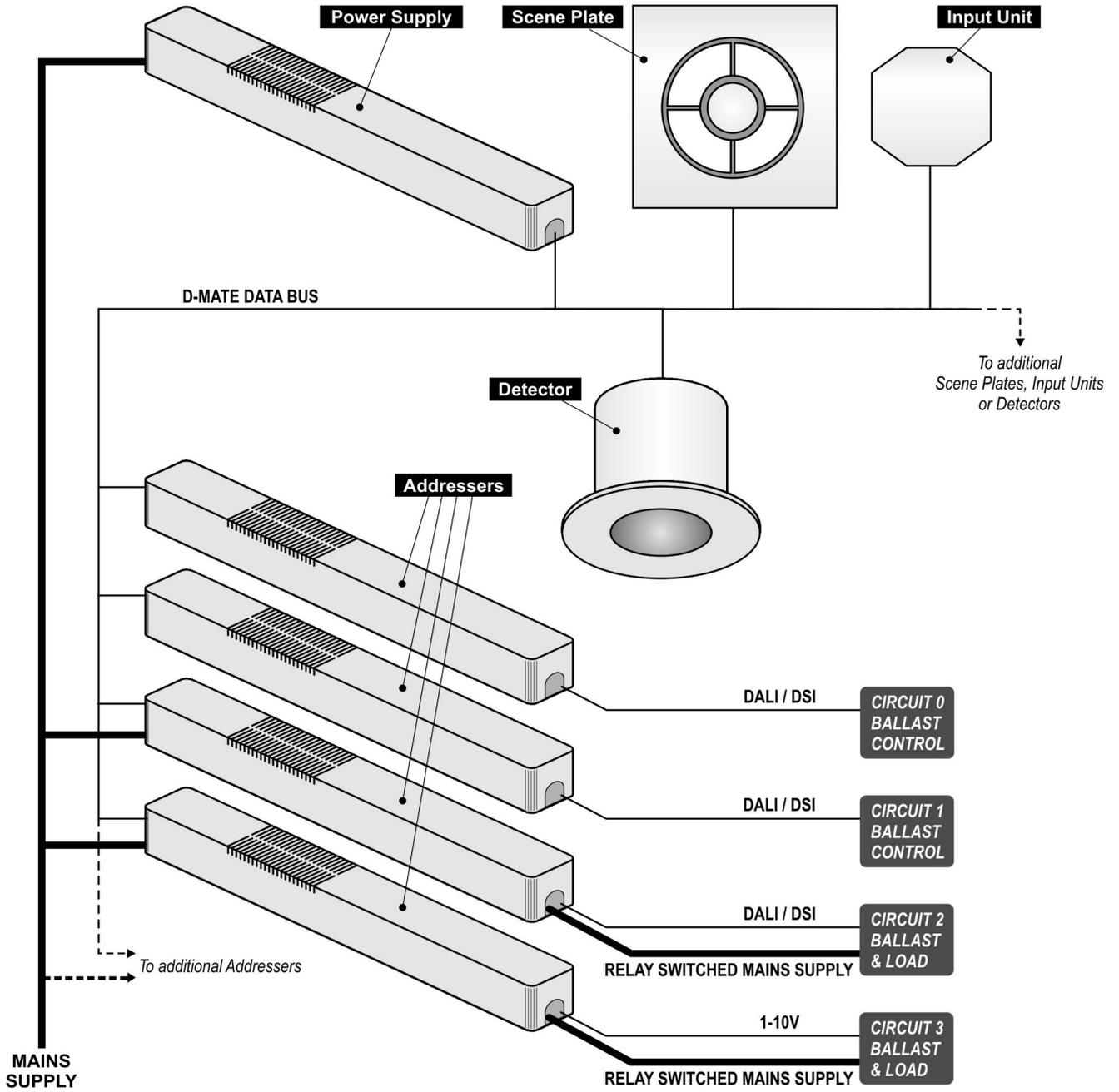
NOTE: *The mounting bracket holes are spaced to suit either a UK (60.3mm pitch) or European (60mm pitch) backbox.*

CAUTION: *Do not over tighten the fixing screws as this may cause the brackets to split.*

Mounting bracket location for secured backbox mounting.



System wiring example



Input connections to the DM-BB-IN Input Unit are made via the RJ45 lead supplied. The lead has 8 wires, comprising 7 switch inputs plus a common connection .

Connect the lead wires to suitable push-buttons or switches as required (see wiring examples below)

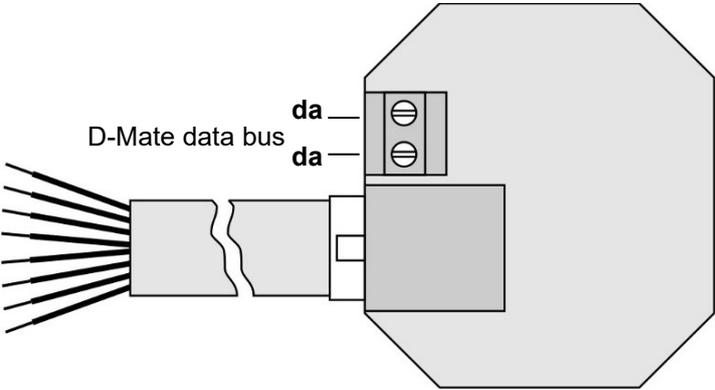
The inputs are mapped to the following functions.

Connections to the D-Mate data bus are shown below right.

Input	Function
1	Scene 1
2	Scene 2
3	Scene 3
4	Scene 4
5	Raise
6	Lower
7	Off

Input connection identification

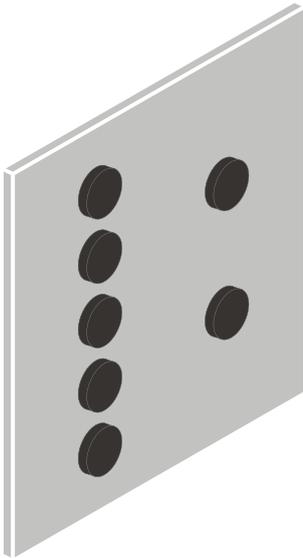
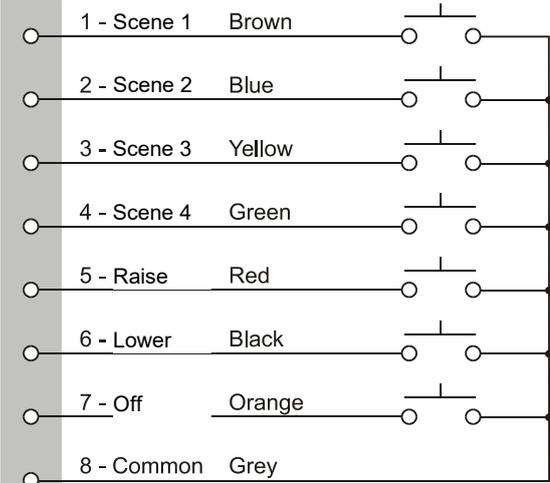
- 1 - Switch 1 - Brown
- 2 - Switch 2 - Blue
- 3 - Switch 3 - Yellow
- 4 - Switch 4 - Green
- 5 - Switch 5 - Red
- 6 - Switch 6 - Black
- 7 - Switch 7 - Orange
- 8 - Common - Grey



Note. The use of latching switches are not recommended

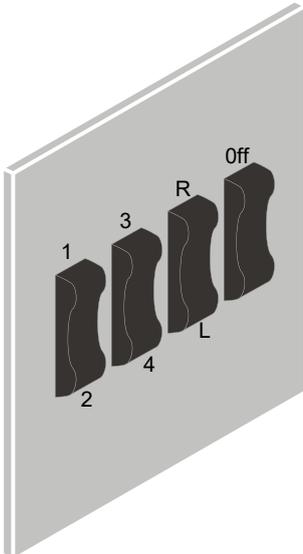
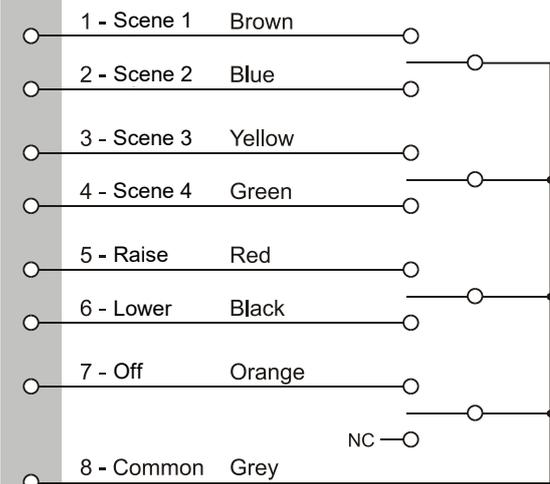
Using individual push-buttons

RJ45 Lead



Using centre retractive switches

RJ45 Lead



Basic programming



The UHS5 handset has limited functionality when used with the DM-BB-IN.

Point the handset at the input unit and send the required programming commands to the unit as shown below. Ensure that the IR receiver is not covered.

Valid commands will be indicated by a green LED flash.



Number of Shift key presses			
↑ SHIFT			
0	1	2	3
○ SHIFT 1 ○ SHIFT 2	☀ SHIFT 1 ○ SHIFT 2	○ SHIFT 1 ☀ SHIFT 2	☀ SHIFT 1 ☀ SHIFT 2

Parameter Name	Default Value	Number of Shift key presses				UHS5 Handset Graphics	Description
		0	1	2	3		
Button Activation							
On / Raise		On	Raise				Turn lights on or to raise lights.
Off / Lower		Off	Lower				Turn lights off or to lower lights.
Scene lock <i>(Walk test button)</i>	Off	On	Off				Locks / unlocks the input unit so that Scenes cannot be saved. To prevent scenes being overwritten.
Defaults				D			Returns the unit to the default settings.
Burn-in <i>(Only use when input unit is a master)</i>	0	0	50	100			Determines how long the output will be at 100% so that lamps 'burn-in'. The 'burn-in' time is not affected by power supply interruptions.
Preset ABS	Master	A	B	Capped mode R/L (default, see p7)			2 presets for Master / Slave configuration: • A: Master • B: Clear Master
Preset PRS		A	B	Broomstick mode R/L (see p7)			2 presets for Master / Slave configuration: • A: Slave • B: Clear Slave

Default scene levels

The D-Mate system is factory-set to provide the following scene levels:

- Scene 1 – all circuits at 100%
- Scene 2 – all circuits at 75%
- Scene 3 – all circuits at 50%
- Scene 4 – all circuits at 25%

To change scene levels see page 7.

Master input unit activation

When there is a system that has no detectors but has multiple plates and / or input units, one will need to be set as the master. To effect this, either:

- Use the UHS5 to set the unit as a slave using the method above, or
- Use the UNLCHS to set the master, slave configurations (see advanced programming section).

Advanced programming

Parameter Name	Default Value	Range / Options	Description	UHS5	UNLCDHS
Absence Time Out (Time adjustment)	30 seconds	0-999 seconds	If the lights are turned on and no activity is detected within the Absence Time out the lights will turn off.	✗	✓
IR Enabled	N	Y or N	Enable or disable device control or programming by IR handset.	✗	✓
Burn-in (Only use when plate is a master)	0	0 (disabled) or 1 to 999 hours	Determines how long the output will be at 100% so that lamps 'burn-in'. The 'burn-in' time is not affected by power supply interruptions.	✓	✓
Fade Time	2 (1 second)	1 (0.7s) 2 (1.0s) 3 (1.4s) 4 (2.0s) 5 (2.8s) 6 (4.0s) 7 (5.7s) 8 (8.0s)	Sets the default fade rate for circuits using DALI ballasts. Value is sent to all Addressers on Detector/Plate power up and when changed, and must be set to the same value for all devices.	✗	✓
Max Value	99	0-99%	Sets the maximum light level for all circuits.	✗	✓
Min Value	1	0-99%	Sets the minimum light level for all circuits.	✗	✓
Master Circuit Ch1	0	0-14	First circuit number that device is a master of	✗	✓
Master Circuit Ch2	1	0-14	Second circuit number that device is a master of	✗	✓
Master Circuit Ch3	2	0-14	Third circuit number that device is a master of	✗	✓
Master Circuit Ch4	3	0-14	Fourth circuit number that device is a master of	✗	✓
Slave Circuit Ch1	0	0-14	First circuit number that device is a slave of	✗	✓
Slave Circuit Ch2	1	0-14	Second circuit number that device is a slave of	✗	✓
Slave Circuit Ch3	2	0-14	Third circuit number that device is a slave of	✗	✓
Slave Circuit Ch4	3	0-14	Fourth circuit number that device is a slave of	✗	✓
Scene 0 Levels Ch1-4	0	0-100%	Levels applied to each of the four channels (circuits) when Scene 0 (off scene) is selected.	✗	✗
Scene 1 Levels Ch1-4	100	0-100%	Levels applied to each of the four channels (circuits) when Scene 1 is selected.	✗	✓
Scene 2 Levels Ch1-4	75	0-100%	Levels applied to each of the four channels (circuits) when Scene 2 is selected.	✗	✓
Scene 3 Levels Ch1-4	50	0-100%	Levels applied to each of the four channels (circuits) when Scene 3 is selected.	✗	✓
Scene 4 Levels Ch1-4	25	0-100%	Levels applied to each of the four channels (circuits) when Scene 4 is selected.	✗	✓
Scene 5-9 Levels Ch1-4	100	0-100%	Levels applied to each of the four channels (circuits) when Scene 5, 6, 7, 8 or 9 are selected.	✗	✓

User Modes					
On			Selects last Scene.	✓	✓
Off			Turns lights off.	✓	✓
Raise	-	-	Increase light level. Reverts when occupancy cycle complete.	✓	✓
Lower	-	-	Decrease light level. Reverts when occupancy cycle complete.	✓	✓
Scene up	-	-	Steps up between 9 pre-defined scenes.	✗	✓
Scene down	-	-	Steps down between 9 pre-defined scenes.	✗	✓
Select Scene	-	0-9	Select the individual scene.	✗	✓
Circuit Number	1	1-4	Select the circuit to adjust level of.	✗	✓
Circuit Level	99	0-99%	Set the circuit level for the circuit above. <i>Note; only operates if the Scene Plate is the Master.</i>	✗	✓
Save Scene	-	-	Saves the set levels in the selected scene. <i>Note; only operates if the Scene Plate is the Master.</i>	✗	✓
Raise from off	Y	Y/N	When scene raising, parameter allows outputs which are off to switch on, as opposed to staying off. Useful for switched loads.	✗	✓
Lower to off	Y	Y/N	When scene lowering, parameter allows outputs to go completely off as opposed to staying at minimum.	✗	✓
Broomstick R/L	N (Capped)	Y/N	Broomstick mode keeps the difference in a scene's channel levels during scene raising lowering and maintained illuminance. <i>Note; that when the lead channel reaches either 100% or 0% the differentials will reduce till the last channel reaches 100% or 0% .</i>	✓	✓

Technical data

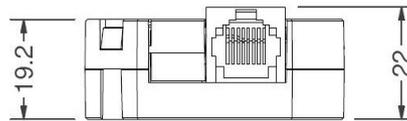
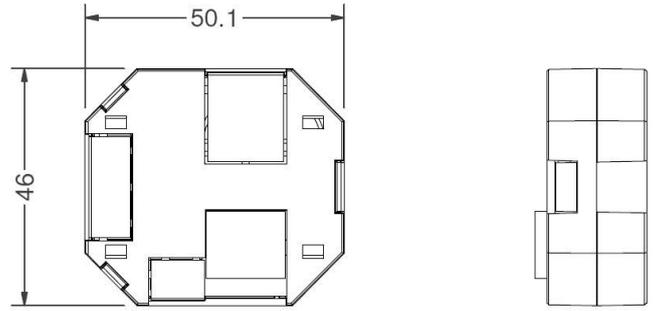
Dimensions	See diagrams opposite
Weight	0.03kg
Supply Voltage	9.5VDC—22.5VDC via DALI
Supply Current	6mA
D-Mate bus	Cannot be considered as SELV since DALI, DSI and 1-10V ballasts only offer basic insulation, therefore all devices on the D-Mate bus must be wired as if carrying mains potential.
Terminal Capacity	2.5mm ²
Fixing method	Surface fixing 35mm deep plastic surface mount moulded box. Flush fixing 25mm steel backbox or 25mm deep cavity backbox.
Temperature	-10°C to 35°C
Humidity	5 to 95% non-condensing
Material (casing)	Flame retardant PC
Type	Class 2
IP rating	IP40

Compliance EMC-2014/30/EU
LVD-2014/35/EU

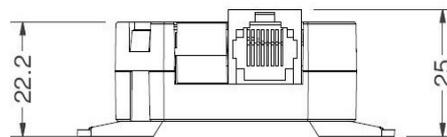
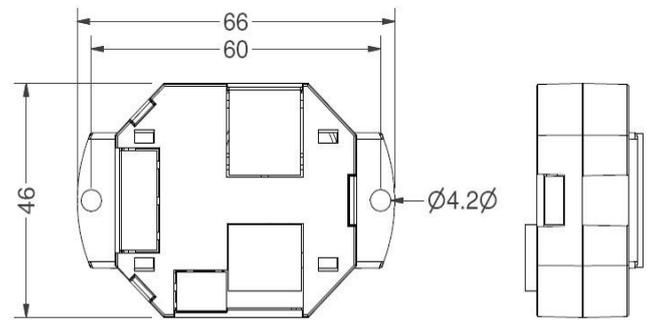
For further compliance information visit
www.cpelectronics.co.uk/compliance



Dimensions - without brackets



Dimensions - with brackets



Part numbers

	Part number	Description
Input unit	DM-BB-IN	D-Mate input unit
Accessories	UHS5	IR programming handset
	UHS7	IR user handset
	UNLCDHS	Universal LCD programming handset

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.



UK Patent no. GB2467196
International patents pending



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