One Connect | Casambi wireless DALI System

TECHNICAL INFORMATION - FEATURES

System overview

One-Connect-Plus 'Casambi' products enable wireless communication with a remote DALI emergency test system without the need for additional hardware or traditional DALI bus wiring.

Our Casambi Wireless emergency products are equipped with Casambi's proven 2.4GHz radio mesh technology and once paired with the remote gateway, are able to communicate with virtually any existing DALI emergency lighting test system as if it were wired.

Features

- Wide range of existing Luxemesh emergency solutions now available One-Connect-Plus enabled
- Built-in radio node eliminates the need for extra components and wiring in the luminaire
- Emergency products are easily paired using the existing Casambi App
- Easy upgrade for existing luminaires without a change of layout
- Easily view the luminaires signal strength and identify emergency devices from within the Casambi App
- Product endorsed and tested by Casambi
- Designed and manufactured in Great Britain



Omni-LED with embedded Casambi radio

Common Technical Data	
Luxemesh Product Code Modifier	/CW
Wireless Technology Provider	Casambi
Wireless Technology	2.4GHz Mesh
Typical maximum range between luminaires (Line of sight)	50m
Emergency test system protocol	DALI
Emergency devices per gateway	64



Casambi to DALI Gateway 'OC/CAS/GTWY'

One-Connect-Plus enabled products	Application	Emergency Power	Lamp Voltage Range	Product Web Page
OC/CAS/GTWY	Casambi to DALI Gateway. One needed per 64 emergency devices	--	--	--
Omni-LED	Internal conversion module range	2-4W	12-200V	OMNI-LED LFP
RBC	IP65 capable remote box. Ideal for Highbay conversions	2-4W	12-200V	LED-COMPACT REMOTE
RBF	Articulated remote solution where ceiling access is restricted	2-4W	12-200V	OMNI-LED FLEXI
Solo	Stand alone recessed luminaire	1.5W	3V	ONE-LED SOLO
Solo Surface	Stand alone surface mounted luminaire	1.5W	3V	SOLO SURFACE
Exit Bulkhead	Stand alone surface mounted luminaire	2.8W	--	BULKHEAD
Exit Blade	Stand alone surface mounted or recessed luminaire	1.2W	--	BLADE
Exit Box	Stand alone surface mounted luminaire	1.2W	--	BOX

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SUPPLEMENTARY INSTALLATION & OPERATION (/CW Versions) continued.

Disclaimers

One-Connect-Plus Casambi emergency products have been designed and manufactured to comply with the requirements of applicable standards.
Operation beyond the parameters specified in this document and associated standards may result in reduced performance and ultimate premature failure, with the warranty made void. It is the users responsibility to ensure full compatibility of the Luxemesh emergency product for the intended application and for compliance of the emergency conversion to relevant Standards.
The specifier/ system designer should follow the luminaire manufacturer's specifications and be aware of the environment to which the luminaire and these components are used and ensure compatibility of Luxemesh products with other components in the lighting/ DALI system. One-Connect-Plus Casambi emergency products should be installed and operated according to instructions and limitations supplied within this document in addition to those supplied with the relevant product. Please contact our Technical department if you are in any doubt.

Precautions

One-Connect-Plus Casambi emergency products should be installed as per the following guidelines, electric shock, malfunction or damage to the product may result if incorrectly installed.
The product should be installed by a qualified and competent electrician. If the product is to be mounted in an external location, consider the battery as temperatures below 0°C may be frequent in cold months. In this case, the design life of 4 years will be compromised and more frequent battery replacements may be needed. Likewise, if the product is situated in a hot environment where the temperature is maintained at 25°C or above, or sited next to large panes of glass in which case it may be exposed to thermal magnification. It is recommended that IP65 products are avoided for use in internal applications as undue thermal stress may result.

Installation notes

Wire Preparation: Refer to main product data sheet for wire specification and connection details.
Best effort should be made to keep the Luxemesh D2ST products and battery away from direct sources of heat, i.e. mains LED drivers and LED lamps. Avoid obstructing airflow around the sides of the One-Connect-Plus Casambi emergency products and other electronic products. Allow a clearance of 10mm or more wherever possible.

The battery supplied is fitted with a non reversible plug to avoid reverse polarity connection and care should be taken when plugging it in.
If it is anticipated that the un-switched supply may be interrupted, it is imperative that the battery is left disconnected and commissioning is delayed until the supply is stable**.**
Lamp Connections should be kept as short as possible and under no circumstances exceed 1m for self-contained products.
The One-Connect-Plus Casambi emergency products should be secured using fixing points provided.

Test Switch input (Optional accessory)

The One-Connect-Plus Casambi emergency products offers the facility for the user to perform multiple functions with a switch connected to the 'TEST SWITCH' input.
A non-latching push-to-make switch should be used as shown in the products wiring diagrams. Some products have a test switch built-in. Refer to main product data sheet. See details below for functions and modes of use.

Test Switch Information	
Function	**Test Switch Action**
Disable Sounder	Press and hold for longer than 5 seconds (Sounder bleeps once for confirmation)
Enable Sounder	Press and hold for longer than 5 seconds (Sounder bleeps twice for confirmation)
Start a Function Test*	Press and release 2 times within 5 seconds
Confirm physical selection	Press once during physical selection mode initiated by DALI system
Stop Identification	Press once during identification mode to exit.
Set Test Time of Day	Press and hold for longer than 10 seconds

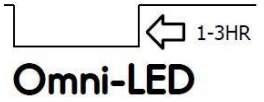
Some Luxemesh products are supplied with a small plastic selector fitted, which denotes 3 hour operation as standard. If 1 hour emergency operation is required with the correct battery, the selector should be removed before power on.
Warning! Only the LiFePO4 battery supplied with the Omni-LED module by Luxemesh may be used.

Permanent battery damage can occur if the 3 hour setting is used with the incorrect battery.
See main product data sheet for applicable battery information.
Luxemesh emergency products provide SELV reinforced insulation between the mains supply and battery charging circuit and employs self-resetting protection against short-circuit of battery terminals. Normal charging will resume automatically once a fault is removed. The mains supply should always be disconnected when servicing the product.

If other devices are connected to the un-switched supply, please be aware that to maintain compliance with EN60598-2-22 that in event of its failure it will not affect other devices on the same circuit. In this case we recommend the use of separate fused terminal blocks to each device.

Internal fuses used within Luxemesh emergency products are not user serviceable.

CAUTION! Ensure the jumper setting located in some product lids is configured correctly for the intended application and the associated battery is of the correct capacity. See battery selection guide on page 5.

Autonomy Selection Information	
Emergency Duration Required	**Jumper Setting**
3 Hours (Default Setting)	
1 Hour	

SUPPLEMENTARY INSTALLATION & OPERATION (/CW Versions) continued.

Communication Network Setup

One-Connect Plus operates on the 2.4Ghz band, so consider and test effects of other nearby RF sources, which may impair performance of the Casambi mesh network.

Install Luxemesh One-Connect Plus equipped emergency devices within radio range of at least one other One-Connect Plus device which must include a gateway. Radio range is considered 50m maximum (line of sight) in an open area. For indoor use, this may reduce to 25m or less, so make allowance for attenuation of signals needing to pass through walls, floors, metal structures etc. Further guidance on the Casambi mesh network and system configuration can be found at www.casambi.com/support

Each One-Connect Plus gateway is to be connected to a single DALI bus of a DALI hub and no other DALI devices are to be wired to the same DALI bus.

Each One-Connect Plus gateway is to be paired with a maximum of 64 x One-Connect plus emergency devices. This is limited by the DALI bus. On the Casambi network, each One-Connect Plus gateway is to be paired with One-Connect plus emergency control gear by Luxemesh only. Mixing of different device types and/or none-Luxemesh equipment on the emergency Casambi to DALI mesh is not recommended or supported.

1) One-Connect Plus DALI gateway.

Each One-Connect Plus gateway should be wired to a pair of DA/ DA terminals on the emergency test systems DALI hub. The One-Connect Plus gateway is powered by the DALI bus, so no other connections to the gateway are needed. The gateway can be mounted and wired remotely from the DALI hub if needed in an optimum location with a maximum cable of distance 300m. Avoid mounting the gateway inside or near metal enclosures as they will shield and restrict radio signal strength and/ or direction. Once DALI bus power is available to each One-Connect Plus gateway, they will be discoverable in the Casambi app.

2) Pairing emergency devices with a One-Connect Plus DALI gateway.

If not already available, download and install the Casambi app on either an IOS or Android device. Once the One-Connect Plus emergency devices and are powered on, they will also be discoverable in the Casambi app.

From within the Casambi app, create a new Casambi network to be used for emergency devices only.

Important! A new casambi network will need to be created for each One-Connect Plus gateway/ DALI bus on the test system hub(s).

Once the required network(s) are created, simply add Luxemesh emergency devices and a single gateway to each Casambi network as required.

Ensure emergency devices are added to the same Casambi network as the gateway/ DALI bus that you wish to control them with. Advance planning is highly recommended.

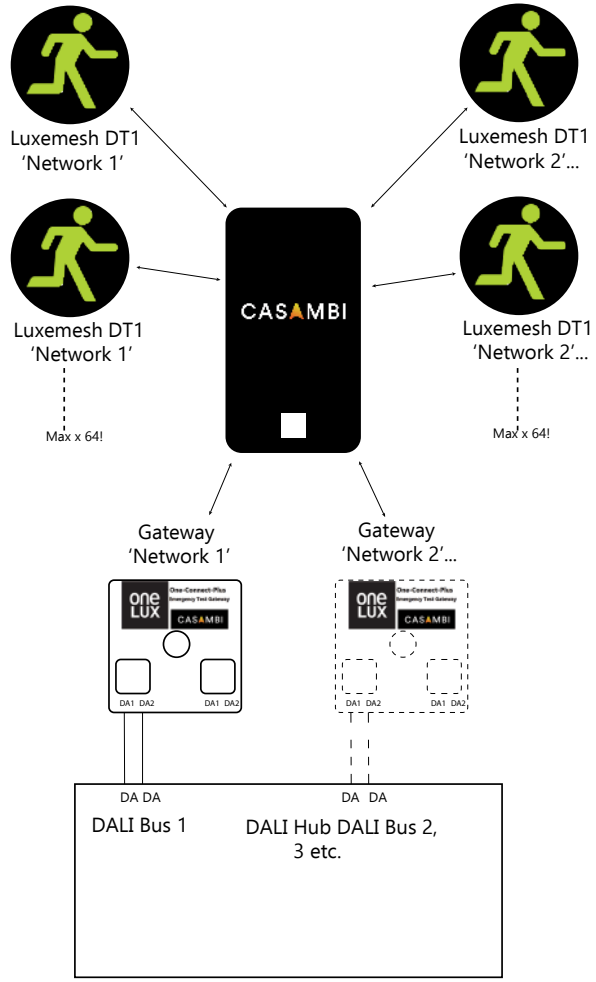
To assist the setup process, Luxemesh emergency devices will respond to the 'Identify' command which can be initiated by selecting a device from the 'Nearby device' tree within the Casambi app.

3) Gateway setup.

From the 'Gateways' tab in the 'more' screen of Casambi app, select each One-Connect Plus gateway and scroll to 'PARAMETERS' section to adjust 'DT1 status cycle' to something between 60s and 'DT1 data refresh' to 1N cycles.

4) DALI hub setup.

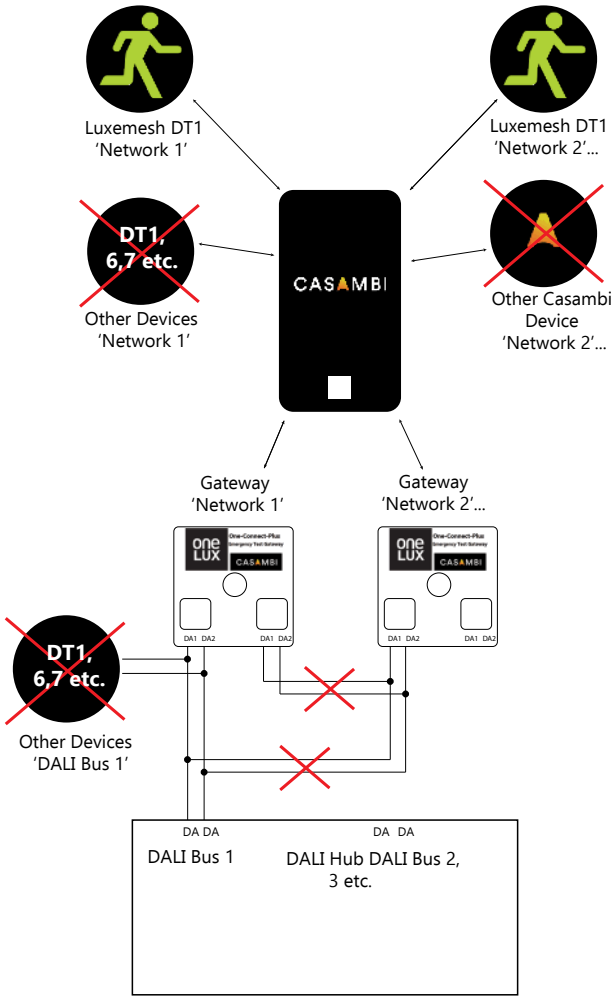
Once the emergency devices and gateways are paired with each other in the Casambi app, the emergency devices should become available in the DALI emergency test application and associated to the correct DALI bus. From here they can be commissioned as per a normal wired DALI system.



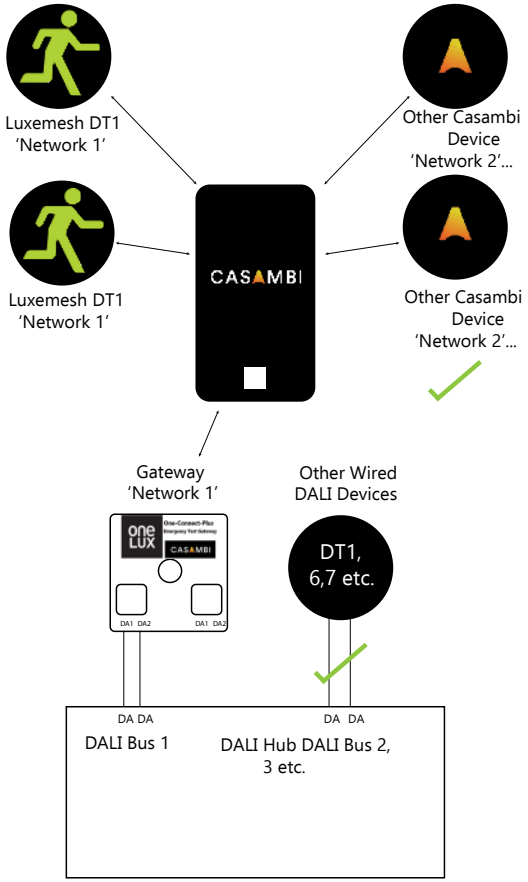
Correct configuration of devices for wireless DALI emergency

TECHNICAL INFORMATION - FEATURES

SUPPLEMENTARY INSTALLATION & OPERATION (/CW Versions) continued.



Incorrect configuration examples if using mixed devices



Correct configuration example if using mixed devices

TECHNICAL INFORMATION - FEATURES

SUPPLEMENTARY INSTALLATION & OPERATION (/CW Versions) continued.

Commissioning:

Once the product has been installed and availability of the un-switched supply is deemed stable, **connect the battery, then apply mains power.** After applying power, the Luxemesh D2ST products will begin standby/ charge mode and await further instruction from the DALI master.

The duration of stand-alone self tests, and capability of the product recognised by a DALI master may be determined by the configuration link, which is accessible through the enclosure lid of some Luxemesh emergency products. (See page 2 for details).

Caution should be taken to ensure the battery charge current compatibility before adjusting configuration.

If it is anticipated that the un-switched supply may be interrupted before normal use, we advise that the battery is left disconnected and commissioning is delayed until the supply is stable. If mains is not applied after connecting the battery, the unit will continue to draw a minimal amount of power from the battery whilst in standby mode. **Continued use in this state in excess of several months can cause permanent damage to some batteries.**

It may be necessary to repeat the initial charge/discharge process several times to re-condition the battery and achieve full rated emergency duration.

Automatic Testing

The One-Connect-Plus Casambi emergency products will configure itself according to the default DALI specification. (See table below). **It is important to note that it will await test times to be configured by the DALI master.**

Short discharge periods each month for the Function Test will not adversely affect Luxemesh batteries and should be considered as a maintenance exercise for the battery. Regular full discharge cycles will however adversely affect the design life of the battery, so excessive testing should be avoided wherever possible.

A summary of test timings can be seen in the table below.

The status of the One-Connect-Plus Casambi emergency products can be determined at any time from the indicator LED. Details of the indicator LED status conditions and optional test switch functionality can be found on page 6.

Automatic Testing Information				
Test Type	**Duration**	**Test Delay time**	**Test Interval / Occurrence**	**Notes**
Function Test	20 Seconds	0	Every 7 Days	Caution! Factory default of zero test delay time is set for DALI Mode
Duration Test	1 or 3 Hours*	0	Every 52 Weeks	Caution! Factory default of zero test delay time is set for DALI Mode

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Module LED Status Indicator Information							
LED Colour	**LED Status**	**On Time (Seconds)**		**Off Time (Seconds)**		**Sounder**	**Purpose**
Green	Steady On, or Very Slow Flash	Permanent 10		0 0.5			Normal status with fully charged battery (Commissioned unit)
	Slow Flash	1.5		0.5			First 24 hour charge and Duration Test. (Non-Commissioned unit)
	Fast Flash	0.5		0.5			Function Test or Duration Test in progress. (Commissioned unit)
Varied		**On**	**Off**	**On**	**Off**		**Purpose**
Green	Long 'On' then flash	10	0.5	0.5	0.5		Battery being charged (Commissioned unit)
Red & Green (alternate)	Fast Flash	0.5	0.5	0.5	0.5		Physical select enabled by DALI system only

Module Status Information (Fault Conditions) *A function test can also be initiated at anytime whilst mains power is present by shorting the test switch off-on, 2 times within 5 seconds. A push switch is also available.					
LED Colour	**LED Status**	**On Time (Seconds)**	**Off Time (Seconds)**	**Sounder**	**Cause**
Red	Slow Flash	0.5	1.5	Yes	1) Possible initial commissioning duration test failed: 2) Possible battery connection fault: 3) Possible open circuit or short circuit battery: 4) Possible battery capacity fault:
Fast Flash	0.5	0.5	Yes	1) Possible lamp fault: 2) Possible internal circuit fault:	1) Check the lamp and wiring for faults or damage. Repair/replace as necessary. Initiate a function test to see if the fault has cleared. If the fault does not clear, proceed to step 2) **Caution, high voltages can be present at the lamp when the battery is connected even if the mains power is turned off!!** 2) If repairing/ replacing the lamp or wiring does not clear the fault, there may be a problem with the unit. Turn off mains power, replace