Project:

Reference Type:

Item Code:

Date:

Notes:

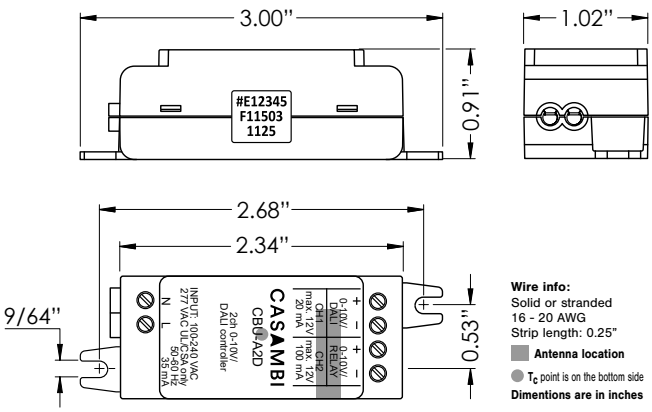
CBU-A2D

Bluetooth-controllable 0-10V/DALI controller

Warning!

Hazardous voltages. Risk of electric shock or fire. Only qualified professionals should make the connections. Disconnect the mains power supply and verify its absence prior to installation.

DIMENSIONS (IN INCH)



PRODUCT DESCRIPTION

CBU-A2D is a Bluetooth-controllable, Casambi-enabled 0-10V/DALI controller. The product offers flexible configuration options, including dual-channel 0–10V analog control or single-channel DALI digital control. CBU-A2D has a universal 100-240 VAC input voltage range. The device is also compatible with a 277 VAC input for customers adhering to UL/CSA standards.

CBU-A2D can control one or two 0-10V controllable LED drivers, or it can control a tunable white LED driver with two 0-10V control interfaces. The product can be configured in single-channel DALI mode, enabling seamless integration with DALI-compatible LED drivers or sensors to support presence detection and ambient light sensing capabilities.

CBU-A2D can be controlled with Casambi app which can be downloaded free of charge from Apple App Store and Google Play Store.

Different Casambi enabled products can be used from a simple one luminaire direct control to a complete and full featured light control system where up to 250 units form automatically an intelligent mesh network.

With Standalone DALI output, CBU-A2D acts both as a controller and as a power supply making it possible to connect directly to an LED driver with DALI interface without the need for an external DALI power supply. This so-called Standalone DALI makes it possible to implement multi-channel lighting systems with adjustable color (RGB and RGBW) or color temperature (CCT), while keeping the wiring and number of components at their minimum.

DISPOSAL INSTRUCTIONS

This electrical product must not be disposed of as unsorted municipal waste. Please dispose of this product correctly: Regulations governing hazardous waste identification, classification, generation, management and disposal, found in title 40 CFR parts 260 through 273, should be observed.

Project:

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Notes:

TECHNICAL DATA

Input

- Voltage range: 100-240 VAC
  277 VAC (UL/CSA only)
- Frequency: 50/60 Hz
- Max. mains current: 35 mA
- No-load standby power: < 0.5 W

Channel 1 output

- Output voltage, 0-10V: 0-10 VDC
  (7 mA sinking; 20 mA sourcing)
- Output voltage, DALI: 12 VDC
- Guaranteed current, DALI: 20 mA
- Maximum DALI bus current: 250 mA

In accordance with IEC 62386-101, Section 6.5.2 (“Single Bus Power Supply Current Rating”), the DALI bus current shall not exceed 250 mA under any operating condition.

Channel 2 output

- Output voltage, 0-10V: 0-10 VDC
  (7 mA sinking; 20 mA sourcing)
- Output voltage, ext. relay control: 12 VDC, max. 100 mA

Radio transceiver

- Operating frequencies: 2402...2480 Mhz
- Maximum output power: +4 dBm

Operating conditions

- Ambient temperature, t_a: -4°F...+113°F
- Max. case temperature, t_c: +158°F
- Storage temperature: -13°F...+158°F
- Max. relative humidity: 0...80%, non-cond.

Connectors

- Wire range, solid & stranded: AWG 20-16
- Wire strip length: 0.25”
- Tightening torque: 0.4 Nm/4 Kgf.cm

Mechanical data

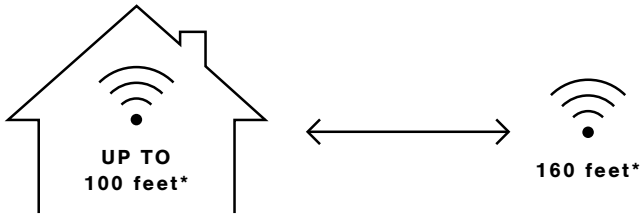
- Dimensions (L x W x H): 3.00” x 1.02” x 0.91”
- Weight: 1.41 oz.
- Degree of protection: IP20 (indoor use only)
- Protection class: Built-in Class 2

Certification

- European Union: CE
- United Kingdom: UKCA
- FCC ID: 2ALA3-CBUA2D
- IC ID: 22496-CBUA2D
- UL: 5LE6 / E494741
  UL2043 Plenum Rated

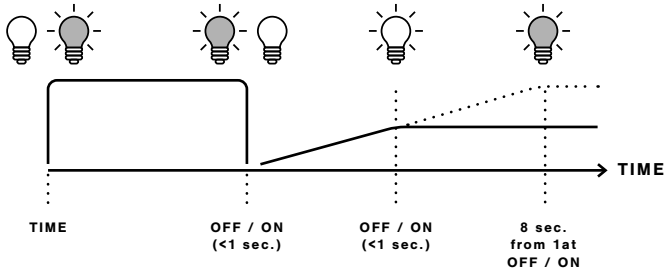
RANGE

The communication range in radio technology may ultimately vary depending on the design of the product in which the antenna is housed and on the environment in which it operates. In practice, this means a well-designed product from a radio point of view, with a good line of sight connection between nodes, can achieve radio coverage up to 100 feet indoors, and, in theory, up to 160 feet in the open air. Casambi uses a mesh network technology, whereby each Casambi unit, or Casambi Ready product, also acts as a repeater. Hence, longer ranges can be achieved by using multiple Casambi products within the network.



*The wireless range of a Casambi unit depends on several factors; how it has been integrated into a luminaire, where it has been installed - taking into consideration surrounding obstacles such as walls and other building materials that may block signals.

DIMMING WITHOUT APP



1. Turn lights on from a wall switch.
2. Quickly flick the wall switch off (max. 1sec.) and back on. The light level starts to increase gradually.
3. Flick the switch again at the desired dim level. The selected level is saved automatically.
4. If the second flick is not done within 8 seconds, the light intensity reaches its maximum level.
5. Flicking the switch can also be used to switch between predefined scenes.

Project:

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Date:

Notes:

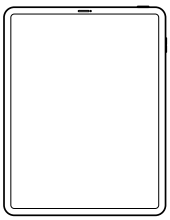
CASAMBI MESH-NETWORK COMPATIBILITY

There are different radio modes that can be selected when creating a network in the Casambi App: ‘Balanced’, ‘Better Performance’ and now ‘Long Range’ options. The CBU-A2D does not support ‘Long Range’ mode and is intended for use within standard, shorter-range networks configured to ‘Balanced’ or ‘Better Performance’ modes.

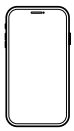
COMPATIBLE DEVICES

Compatible devices: Android and iOS Operating Systems.

We support the latest OS versions for Android and iOS, and their last two major versions respectively.



Tablets



Smartphones

CASAMBI

Download on the App Store

GET IT ON Google Play

PROTECTION CLASS

CBU-A2D is a built-in class II device with SELV (Safety Extra-Low Voltage) output. This means that CBU-A2D is a protection class II device which is designed to be used inside a light fixture. A symbol for this is two concentric circles (IEC 60417-6295):

However, if the module is connected to a device with only basic insulation, the output of CBU-A2D is considered FELV, not SELV. For example, DALI and 0-10V are considered as basic insulated control interfaces, which means that even if the driver and CBU-A2D are both specified as double insulated devices, the DALI or 0-10V control interface between them, by definition, is not. In such a case, the control wires between CBU-A2D and the driver are considered having only a basic insulation.

INSTALLATION

Warning!

Do not connect an external DALI bus power supply and/or disable D4i LED driver’s internal bus power supply prior to connecting CBU-A2D. Erroneous connection may cause device malfunction and possible permanent damage of CBU-A2D.

A CBU-A2D device has intergrated 20 mA DALI bus power supply required for bus operation. Never connect external power supply to the same bus with CBU-A2D. In case other DALI devices have integrated bus power supply, such as D4i LED driver, you shall disable such power supply before connecting CBU-A2D to DALI bus.

Make sure that the mains voltage is switched off when making any connections.

Use AWG 16-20 solid or stranded conductor electrical wires. Strip the wire 0.25” from the end. Insert the wires into the corresponding holes, and tighten the connector screws to 0.4 Nm.

If the connected LED driver cannot be turned off completely from the control interface, an external relay with 12 VDC coil can be connected to channel 2. The CBU-A2D module does not include a built-in protective diode, which is necessary to protect the internal circuitry from flyback voltage. **To preserve the warranty, the relay must either include a built-in protective diode or have one added externally**.

A suitable fixture configuration must be selected in order to control a relay.

CBU-A2D, as any other Casambi product, should not be placed in a metal enclosure or next to large metal structures. Metal will effectively block radio signals which are crucial to the operation of the product. A thorough connectivity testing is strongly recommended in the installation site.

Project:

Reference Type:

Item Code:

Date:

Notes:

DISCLAIMER

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna,
- Increase the separation between the equipment and the receiver,
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected,

- Consult the dealer or an experienced radio/TV technician for help.

Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and
(2) this device must accept any interference received, including interference that may cause undesired operation.

This device complies with Industry Canada's license-exempt RSSs. Operation is subject to the following two conditions:
(1) This device may not cause interference; and
(2) This device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:
(1) l'appareil ne doit pas produire de brouillage;
(2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Project:

Reference Type:

Item Code:

Date:

Notes:

FIXTURE PROFILES

Profile#	Profile name as shown in mobile App	Description	DALI addressing	App controls	Wiring diagram
11499	0-10V + Relay	Single-channel 0–10V analog dimmer with relay (12 VDC) connected to Channel 2. Relay switches Off automatically when dimming is at zero level.	**N/A** [4]	**5**	**1**
11500	2CH 0-10V	Dual-channel 0–10V analog dimmer.	**N/A** [4]	**7**	**2**
11501	0-10V TW	Dual-channel 0–10V analog dimmer with warm/cool tuneable white mixing.	**N/A** [4]	**3**	**3**
11503*	0-10V 2CH Dim, TW [NoMix]	Dual-channel 0-10V analog dimmer for tuneable white. Note that this mode does not perform warm/cool mixing, but directly sends dimmer value to output 0 and temperature value to output 1. The dimming function operates with a linear response curve.	**N/A** [4]	**3**	**3**
11504	2CH Dim, Vertical	Dual-channel luminaire with dimmers and vertical ratio selector (sum of channels is same as dim level).	**N/A** [4]	**8**	**4**
11507	PushButton + Relay	Dual-channel controller with low-voltage push button (**NO** [5]) connected to Channel 1, a 12VDC relay to Channel 2. App control managed via a custom On/Off element.	**N/A** [4]	**2**	**5**
11508	0-10V (On/Off)	Single-channel 0-10V analog dimmer with relay (12 VDC) connected to Channel 2. Relay operation is exclusively managed through a custom On/Off toggle switch element within the App.	**N/A** [4]	**4**	**1**
11509	0-10V (PB)	Single-channel 0-10V analog dimmer with external push-button (**NO** [5]).	**N/A** [4]	**6**	**6**
11510	DALI / BC / Sensors (lin)	DALI digital dimmer featuring a linear control curve. Operates DALI drivers via broadcast commands and integrates with presence and ambient daylight sensors for automated lighting control.	**BC** [2]	**5**	**13**

* Default profile for CBU-A2D-LR products delivered from the factory.

[1] "**Auto**" - Drivers are automatically addressed by Casambi Controller.
[2] "**BC**" - DALI Broadcast.
[3] "**DALI**" - Drivers must be pre-addressed using a DALI configuration tool/software.
[4] "**N/A**" - Not Applicable.
[5] "**NO**" - "Normally Open" push button

Project:

Reference Type:

Item Code:

Date:

Notes:

FIXTURE PROFILES

Profile#	Profile name as shown in mobile App	Description	DALI addressing	App controls	Wiring diagram
11511	DALI TW	DALI digital controller with dual-channel warm/cool tuneable white mixing.	**Auto** [1]	**1**	**8**
11512	DALI DT8 TW	DALI digital controller with tunable white control, designed for use with DALI DT8 driver supporting the TC color model. The DALI driver handles warm/cool mixing, while DALI digital dimmer sets the dimming level and color temperature.	**Auto** [1]	**1**	**9**
11513	DALI 2CH	DALI digital dimmer for dual-channel luminaires. dimmer #1: address #0 dimmer #2: address #1	**Auto** [1]	**7**	**10**
11515	DALI Relay	DALI digital relay (12VDC) controller. DALI addressing must be configured using a dedicated tool specific to the driver.	**DALI** [3]	**2**	**1**
11520	DALI DT8 RGB/TW	DALI DT8 digital controller with mutually exclusive RGB or TC (color temperature) controls.	**Auto** [1]	**14**	**11**
12115	DALI DT8 XY/TW [Evo]	Multichannel DALI DT8 digital controller supporting 'XY' color-type control.	**Auto** [1]	**10**	**11**
16270	DALI DT8 TW (Log)	Multichannel DALI DT8 digital controller with tunable white control using a logarithmic curve.	**Auto** [1]	**1**	**9**
16533	DALI 4CH	DALI digital dimmer for quad-channel luminaires.	**Auto** [1]	**9**	**12**
16677	Presence	The controller appears in the app as a presence sensor when mains power is supplied via an external motion or presence sensor.	**N/A** [4]	**N/A** [4]	**7**
17067	DALI RGB [auto]	DALI digital dimmer with RGB control (3 channels) and automatic DALI address assignment support.	**Auto** [1]	**12**	**14**
17068	DALI RGB White [auto]	DALI digital dimmer with RGBW control (4 channels) and automatic DALI address assignment support.	**Auto** [1]	**11**	**15**

[1] "**Auto**" - Drivers are automatically addressed by Casambi Controller.
[2] "**BC**" - DALI Broadcast.
[3] "**DALI**" - Drivers must be pre-addressed using a DALI configuration tool/software.
[4] "**N/A**" - Not Applicable.

Project:

Reference Type:

Item Code:

Date:

Notes:

FIXTURE PROFILES

Profile#	Profile name as shown in mobile App	Description	DALI addressing	App controls	Wiring diagram
18020	DALI / BC / Sensors (log)	DALI digital dimmer featuring a logarithmic control curve. Operates DALI drivers via broadcast commands and integrates with presence and ambient daylight sensors for automated lighting control.	**BC** [2]	**5**	**13**
19710	DALI 1CH (pre-configured)	DALI digital dimmer for single-channel luminaires. Integrates with presence and ambient daylight sensors for automated lighting control. DALI addressing must be configured using a dedicated tool specific to the driver.	**DALI** [3]	**5**	**13**
23815	DALI DT8 RGB/White	DALI DT8 digital controller with RGBW control (4 channels).	**Auto** [1]	**13**	**16**
27801	0-10V 2CH Dim TW (Inverted) [NoMix]	Dual-channel 0-10V dimmer for tuneable white (with CCT response curve inverted). Note that this mode does not perform warm/cool mixing, but directly sends dimmer value to output 0 and temperature value to output 1.	**N/A** [4]	**1**	**3**
29161	DALI T8 RGB/White (BC)	DALI DT8 digital controller with RGBW control (4 channels). Operates DALI drivers via broadcast commands.	**BC** [2]	**13**	**16**

[1] "**Auto**" - Drivers are automatically addressed by Casambi Controller.
[2] "**BC**" - DALI Broadcast.
[3] "**DALI**" - Drivers must be pre-addressed using a DALI configuration tool/software.
[4] "**N/A**" - Not Applicable.

Project:

Reference Type:

Item Code:

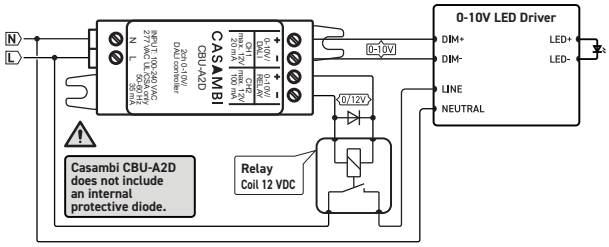
Date:

Notes:

WIRING DIAGRAMS

Each CBU product can operate in various roles according to the chosen profile. It is possible to change the profile of an unpaired device using the Casambi App. Above are listed the fixture profile options for the CBU-A2D.

1.



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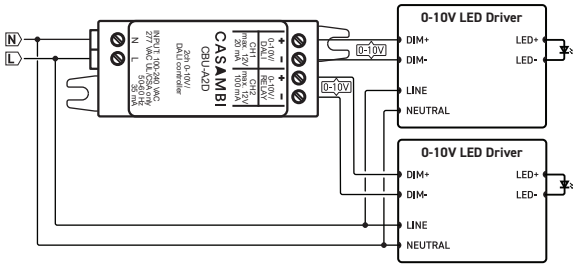

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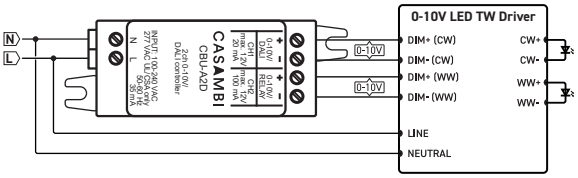

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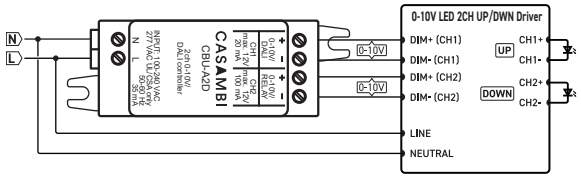

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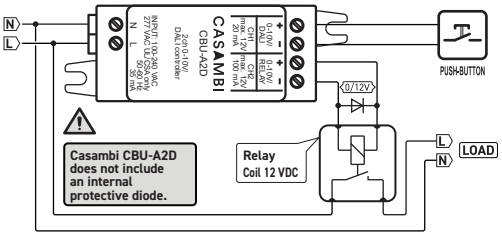

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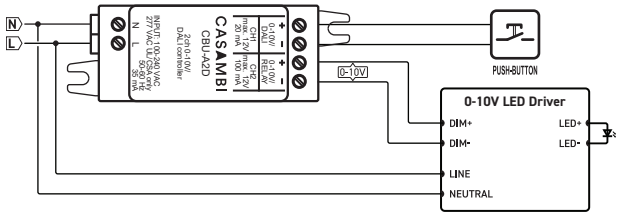

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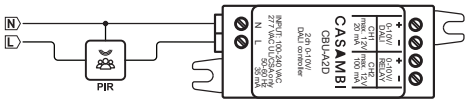

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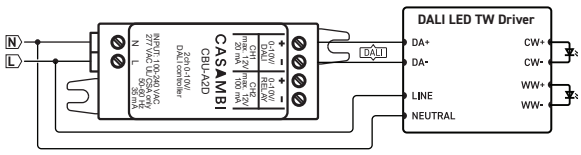

Project:

Reference Type:

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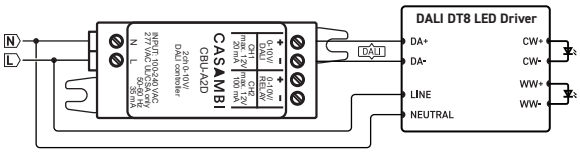
WIRING DIAGRAMS

⚠ In wiring configurations shown in **diagrams 8–16**, the Casambi CBU-A2D includes an integrated DALI bus power supply. External DALI power sources must not be connected. If used with D4i LED drivers, ensure their internal power supplies are disabled. Always maintain correct bus polarity to avoid malfunction.

9.



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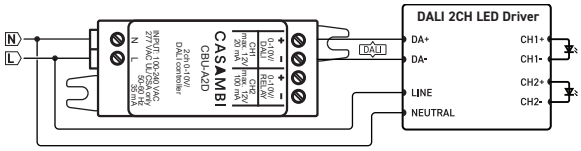

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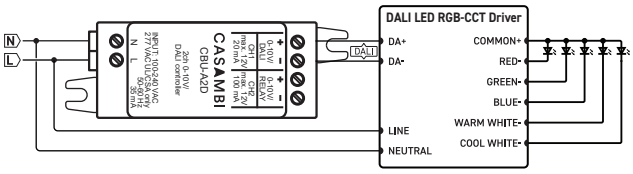

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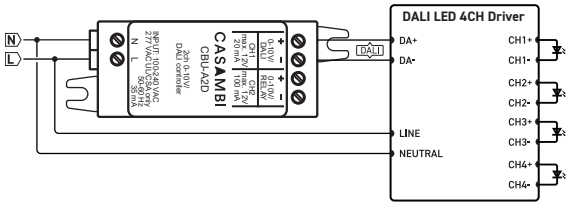

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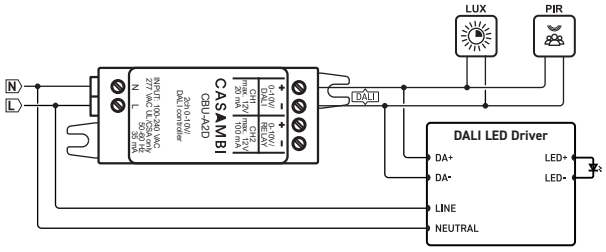

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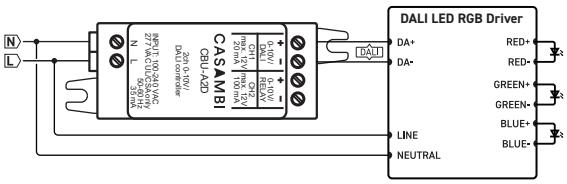

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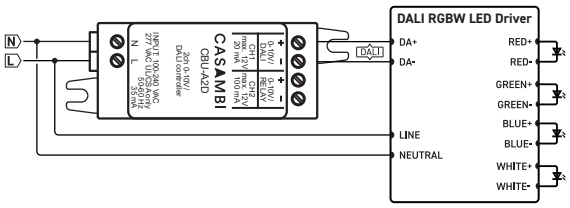

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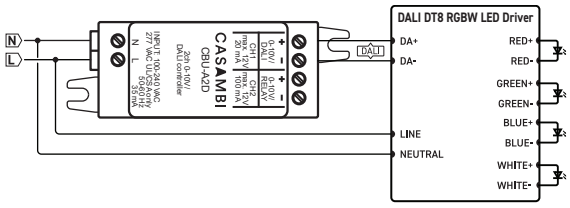


Project:

Reference Type:

Item Code:

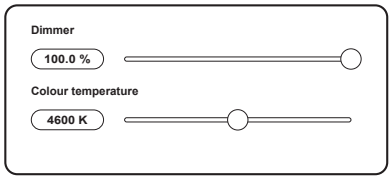
Date:

Notes:

MOBILE APPLICATION CONTROLS

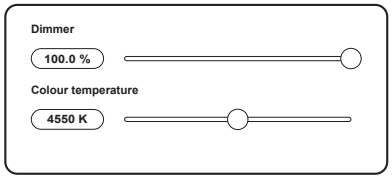
The selected fixture profile also defines the controls that will be visible in the Casambi App — such as dimmers, color temperature sliders, on/off toggles, and push-button actions. The images below illustrate the app control layouts corresponding to each fixture profile. The numbering corresponds to the fixture profiles listed in the App Controls column above.

1.



2.

3.



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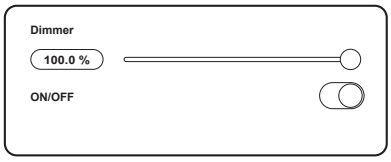

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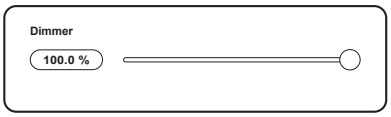

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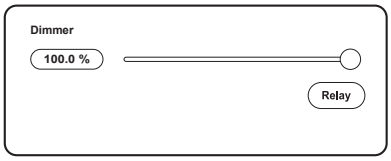

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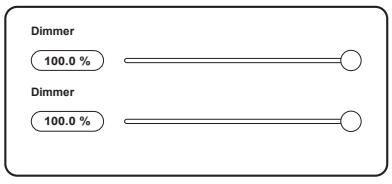

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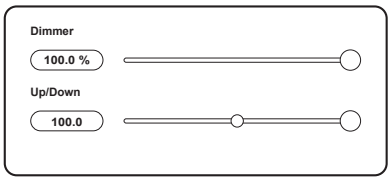

Project:

Reference Type:

Item Code:

Date:

Notes:

MOBILE APPLICATION CONTROLS

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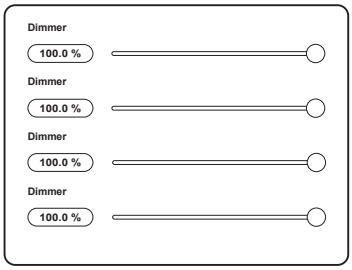

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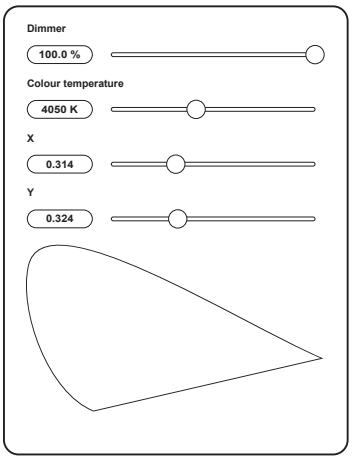

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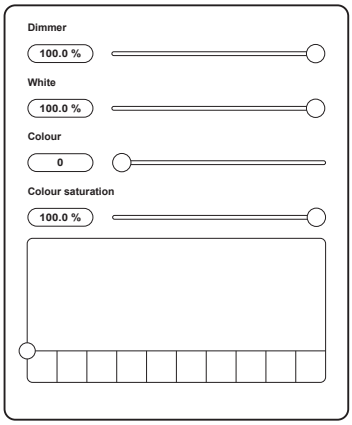

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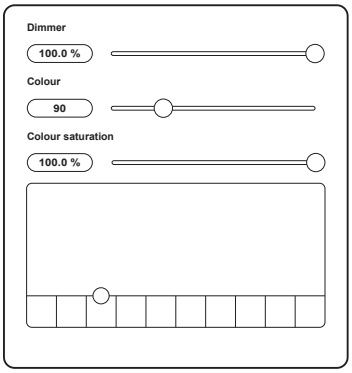

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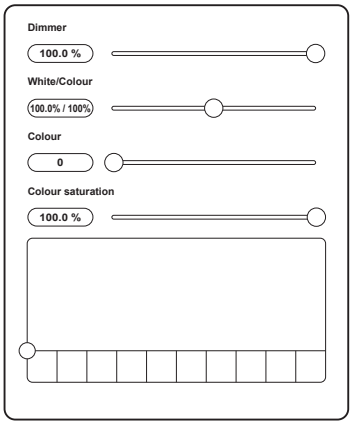

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