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■ Description

CAS-UNI-NEMA-5P-010DA-RL-LX controller enables easy autonomous control and dimming of DALI, 0-10V and 1-10V devices (drivers, electronic ballasts, etc.). There is no need to use hubs, master devices or complex computer programs.
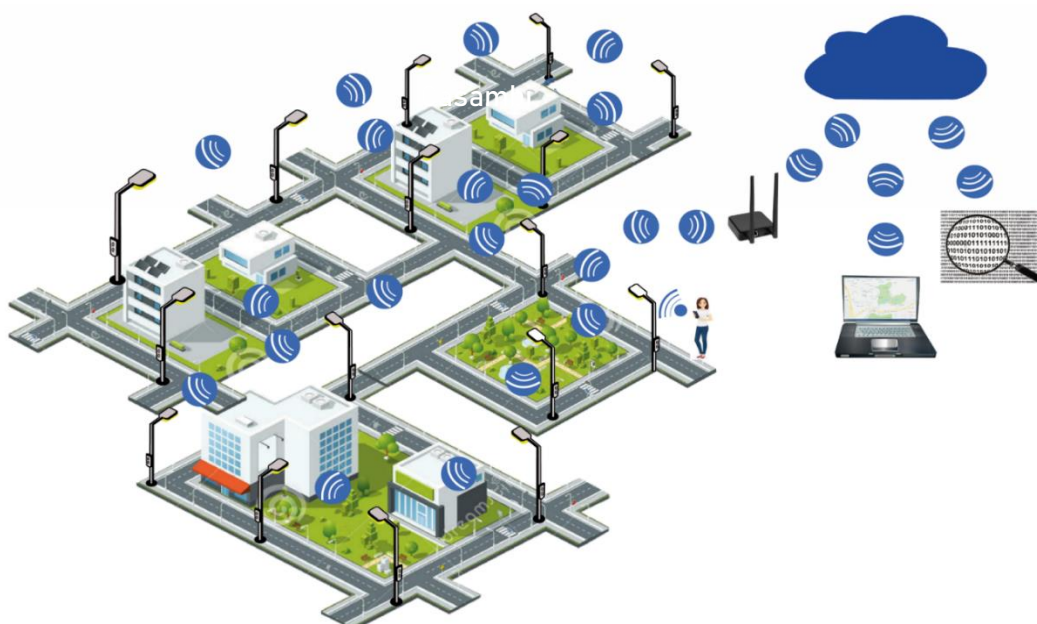
Communication is achieved by a meshed Bluetooth 4.0 or 5.0 network.

Each control unit stores information about its own configuration and also the configuration of the rest of controls installed in the same network. This provides the system with a high robustness level and also simplifies replacement of control units as programming them is not required.

Configuration and control can be done from a mobile phone or tablet using the free CASAMBI APP (available for iOS and Android). The networks work autonomously once configured. Remote control of the installation is also possible through the cloud by use of an internet connected device with Casambi App set up as gateway.

Main use is control of outdoor lighting applications. It is provided with an IP66 UV resistant enclosure. Hydrophobic vent is incorporated to prevent condensation.

Electrical connection and mechanical fixing are done through a standard NEMA socket (ANSI 136.41) without tools.

■ Operation

By use of CASAMBI APP it is possible to group the luminaries by streets or areas, set dimming levels based on the time, schedule special events for specific dates, etc.

Communication range between controllers is up to 200m (Long range Optimum net mode) or 300m (Long range Max. net mode), outdoors with no obstacles. Adding the controllers to a net must be done with a mobile phone or tablet within range of each unit. For further installation setup and programming it is only necessary to be within the range of one of the controllers. Because it is a mesh type network, controllers communicate with each other until the information reaches the controller for which it is intended, even if it is located far away.

Communication security is provided by encrypted messages. It is possible to set different levels of access and configuration permissions. Network configuration information can optionally be stored in CASAMBI cloud and recovered if necessary. Several restoration points can be created. When a controller receives a firmware update, it will automatically be retransmitted to the other controllers.

Each network supports up to 250 controllers. One installation can have unlimited number of networks which can be grouped together in one Site. Through the sites we can control different networks simultaneously, each network must have access to Internet through a Casambi router.

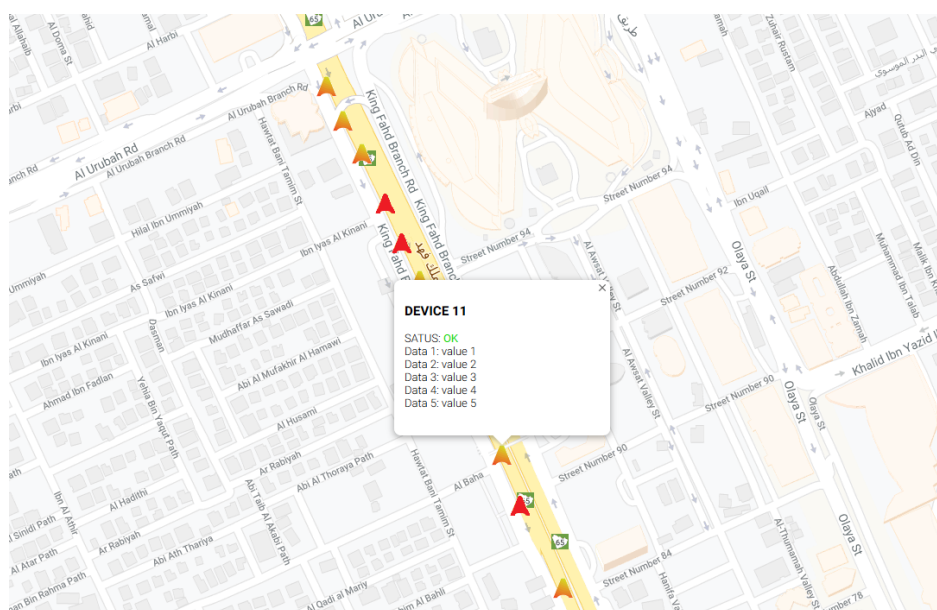Diverse operating modes are possible (on/off, dimming 0-100%, circadian control, tunable white, etc.).

Different dimming signal profiles can be configured to match the driver/ballast requirements (see profile list), these include DALI (active, passive, linear or logarithmic) types as well as 0-10V and Relay.

It is compatible with any other devices from other manufacturers which also incorporate CASAMBI inside and CASAMBI Ready products like luminaries, presence sensors, relays, actuators, push buttons, etc.

CAS-UNI-NEMA-5P-010DA-RL-LX features a light sensor which can be configured in Casambi App to set specific illuminance levels for energy saving, or used in daylight controlled basic scenes for switching the lights on/off.

The LOUT relay can be independently controlled with some of the available profiles and the internal temperature of the unit can be monitored in the App.

CAS-UNI-NEMA-5P-010DA-RL-LX is IoT ready. It can receive information provided by a DALI D4i driver or ballast (power consumption, working hours, accumulated energy consumption, temperature, etc.) which can be sent to Casambi cloud through a Gateway device with internet connection and Casambi App set up as gateway. Access to this big data to exploit this information is possible through API and JSON protocol.

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■ Technical data

Nominal line voltage	110-277Vac
Input voltage range	85-305Vac
Input current	≤ 23mA
Frequency	47-63Hz
Power consumption standby	<0,8W@230Vac (Unconnected DALI/0-10V dimming output, LOUT switched on)
Power consumption	<1,25W @230Vac (One DALI device connected or 2mA 0-10V)
Output control interface	DALI (active or passive) / 0-10V, according to profile type.
Integrated DALI BUS voltage source	16VDC (isolated from mains)
DALI output current (∗)	45mA Nominal. 20mA Guaranteed DALI current / 60mA max.
0-10V voltage range/max current	0,2-10V/8mA source. 0,4-10V/10mA sink. (0,2-10V@0-5mA sink)
Dimming range	0-100%
LOUT max. current	15A with resistive load / 5A with Electronic ballasts or LED drivers
Light sensor range	20-1500Lx
RF communication interface	Bluetooth 4.0 or 5.0 Low energy (BLE)
RF communication protocol	Casambi
RF spectrum	2402–2483 MHz
RF network	Self-healing, frequency-hopping, spread spectrum mesh technology
Maximum transmission power	+8 dBm
Wireless class	Class 2
Data security	AES128 bit encryption + elliptical cryptography
Firmware update	OTA (Over the air)
Time/date update	Internal counter. Updatable from APP or by use of external timer after power disconnection or through Casambi gateway
Protections	Line permanent overvoltage, line surge overvoltage, overtemperature.
Temperature monitoring	Internal temperature is displayed in Casambi App
Operating temperature range	-30º to +70ºC
Dimensions	Diameter 88mm. Height 63mm
Weight	198gr. (Carton box included)
Enclosure material	PC with anti-UV treatment
Enclosure isolation type	Reinforced isolation ◎
IP	66
IK	09
Connector	NEMA 5P (ANSI C136.41)
Standards	EN 61347-1:2016, EN 61347-2-11:2003, EN 55015:2013, EN 61547:2011, EN 61000-3-2, EN 61000-3-3, EN 301489-1, EN 301489-17, UL773, FCC Part 15
DALI standards	IEC 62386 part 101, 103, 351
Directives	(LVD) 2014/35/UE, (EMC) 2014/30/UE, (RED) 2014/53/UE, (RoHS) 2011/65/UE, (REACH) 1907/2006.
Approvals	DALI2, D4i, CE (pending), UL (pending), FCC (pending), ISED (pending), UKCA (pending), RCM (pending)

(∗) If the integrated DALI Bus Power Supply of 60mA max is enabled, the maximum bus power supply current provided by other components in the luminaire shall be at most 190mA.
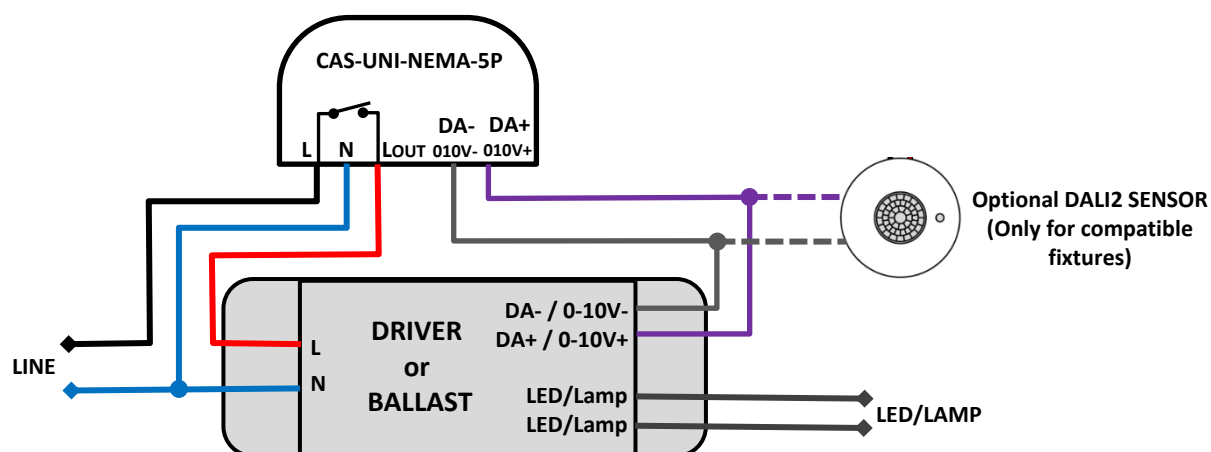
■ Standard Profiles

010 Linear	**0-10V output**. Linear dimming curve. LOUT switches on when dimming level >0
010 Linear + iRelay	**0-10V output & Relay.** Linear dimming curve. Independent toggle switch control for the internal relay that switches the Live output (LOUT). (Long press on the icon for toggle switch to show up)
RELAY	**Relay.** Toggle switch for the internal relay that switches the Live output (LOUT).
DALI Lin Broadcast	**DALI Broadcast**. Linear dimming curve. LOUT switches on when dimming level >0
DALI Lin BC + iRelay	**DALI Broadcast & Relay**. Linear dimming curve. LOUT has independent control by a toggle switch (cannot be switched ON/OFF by tapping on the icon). (Long press on the icon for toggle switch to show up)
DALI Lin BC +Ext. Sensors	**DALI Broadcast**. Linear dimming curve. LOUT switches on when dimming level >0. For use with compatible external DALI2 **presence and light sensor**. Internal light sensor of the node is disabled.
DALI Lin BC +Ext. Presence	**DALI Broadcast**. Linear dimming curve. LOUT switches on when dimming level >0. For use with compatible external DALI2 **presence senso**r.
DALI Lin (4xGroup)	**DALI Broadcast 4xGroup**. Linear dimming curve. LOUT switches on when dimming level >0. Controls DALI groups G0-G3.
DALI Lin DT6 TW 3-5K SA	**DALI Tunable white DT6 Short addresses. 3000K-5000K**. Linear dimming curve. LOUT switches on when dimming level >0. Automatic DALI addressing.
DALI Lin DT6 TW Warm-Cool SA	**DALI Tunable white DT6 Short addresses.** Linear dimming curve. TW slider only indicates "Warm/Cool" (no CCT value data). LOUT switches on when dimming level >0. Automatic DALI addressing.
DALI Lin DT6 RGB SA	**DALI RGB DT6 Short address**. Linear dimming curve. LOUT switches on when dimming level >0. Automatic DALI addressing.
DALI Lin DT6 RGB/W SA	**DALI RGB/W DT6 Short address**. Linear dimming curve. Dedicated slider for white channel. LOUT switches on when dimming level >0. Automatic DALI addressing.
DALI Lin DT8 TW 3-5K BC	**DALI2 DT8 Tunable white Broadcast. 3000K-5000K**. Linear dimming curve. LOUT switches on when dimming level >0.
DALI Lin DT8 RGB/W BC	**DALI2 DT8 RGB/W Broadcast.** Linear dimming curve. Dedicated slider for white channel. LOUT switches on when dimming level >0
DALI Lin DT8 XY/W BC	**DALI2 DT8 XY/W Broadcast.** Linear dimming curve. Dedicated slider for white channel. LOUT switches on when dimming level >0
DALI Lin 2xDIM SA	**DALI 2xDimmers. Short Addresses**. Linear dimming curve. LOUT switches on when dimming level >0. Automatic DALI addressing. Individual slider levels are overwritten when dimmed by sliding on the App icon.
DALI Lin 2xDIM SA +Ext.Presence	**DALI 2xDimmers. Short Addresses**. Linear dimming curve. LOUT switches on when dimming level >0. Automatic DALI addressing. Individual slider levels are overwritten when dimmed by sliding on the App icon. For use with compatible external DALI2 **presence sensor.**
DALI Lin 3xDIM SA	**DALI 3xDimmers. Short Addresses**. Linear dimming curve. LOUT switches on when dimming level >0. Automatic DALI addressing. Individual slider levels are overwritten when dimmed by sliding on the App icon.
DALI Lin 4xDIM SA	**DALI 4xDimmers. Short Addresses**. Linear dimming curve. LOUT switches on when dimming level >0. Automatic DALI addressing. Individual slider levels are overwritten when dimmed by sliding on the App icon.
DALI Lin 5xDIM SA	**DALI 5xDimmers. Short Addresses**. Linear dimming curve. LOUT switches on when dimming level >0. Automatic DALI addressing. Individual slider levels are overwritten when dimmed by sliding on the App icon.
DALI Lin 6xDIM SA	**DALI 6xDimmers. Short Addresses**. Linear dimming curve. LOUT switches on when dimming level >0. Automatic DALI addressing. Individual slider levels are overwritten when dimmed by sliding on the App icon.
DALI Lin 7xDIM SA	**DALI 7xDimmers. Short Addresses**. Linear dimming curve. LOUT switches on when dimming level >0. Automatic DALI addressing. Individual slider levels are overwritten when dimmed by sliding on the App icon.
DALI Lin 8xDIM SA	**DALI 8xDimmers. Short Addresses**. Linear dimming curve. LOUT switches on when dimming level >0. Automatic DALI addressing. Individual slider levels are overwritten when dimmed by sliding on the App icon.

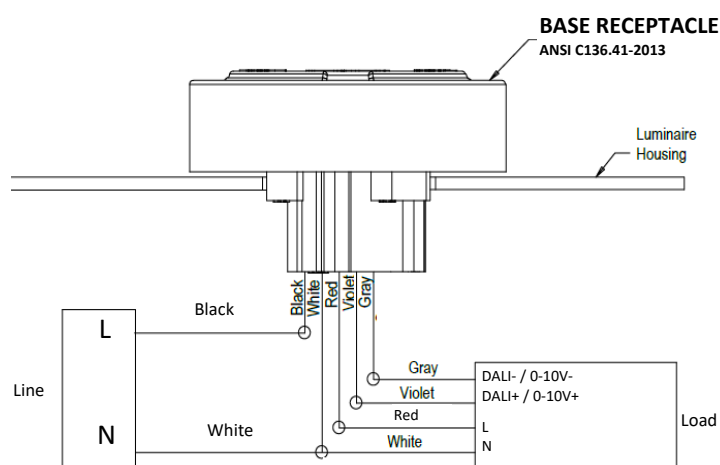Other profiles available on request, please contact us.

DALI type profiles of CAS-UNI-NEMA-5P-010DA-RL-LX have the internal DALI power supply activated by default.
It is possible to deactivate the internal DALI power supply with the App:

■ **Wiring diagram**

Note: The internal relay is normally closed (NC). When the controller is unpowered, LOUT is connected to L.

The information presented in this document may change without notice

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