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LoRaWAN NEMA

SMART CITY LIGHTING CONTROL UNIT DATASHEET

What is the LoRaWAN NEMA?

NEMA is a smart city lighting control unit developed for use with NEMA socket-compatible fixtures. It operates on 230V AC mains voltage. It offers energy savings and centralized lighting management with its dimming functionality. With its remote control and monitoring features, it is ideal for integration into modern urban lighting infrastructures.

Application Areas

It can be used in logistics, ports, smart factories, and smart city applications.

Technical Specifications

Operating Voltage :	230VAC
Power Consumption :	0.6W
LoRaWan Power Supply:	20mA
Communication Protocol:	LoRaWAN
Operating Frequency :	868Mhz
Standby Mode Current :	2,1uA
Signal Transmission Power :	22dBm (Max.)
Receiver Sensitivity :	-116,5dBm~ -136dBm
Communication Speed :	1.2Kbps....115.2Kpbs
Lifespan:	50,000 h

Control Type :	0-10V/DALI/ ON-OFF/PWM

An optional GPS module can be added.

Body Type :	UV Resistant Polycarbonate
Mounting Type :	Twist Lock Type
Relay Output :	10A
Surge Protection :	10kV
Body color :	Black
Protection :	IP66
Operating temperature :	-20°C to + 50°C
Dimensions Hx∅	100x81mm
Protection Class:	Class II

Features

SENSOR TYPE	DESCRIPTION
RTC (Real-Time Clock)	Keeps accurate track of time independently even during network outages, ensuring that pre-programmed time-based lighting schedules are executed without interruption.
LDR (Light Dependent Resistor)	Detects ambient light levels to allow the NEMA controller to automatically turn the streetlights on at sunset and off at sunrise.
Tilt Sensor	Monitors the physical orientation of the pole or fixture, instantly triggering an alert to the central management system if a collision, tilt, or severe structural displacement occurs.
Power Measurement	Continuously monitors electrical parameters like voltage, current, and power consumption to report accurate energy usage and detect potential fixture malfunctions.
GPS Module	Automatically detects the geographical coordinates of the NEMA controller to report its position to the map-based central management system and ensures precise time synchronization.
Surge Protection	Safeguards the system against high-voltage spikes up to 10kV caused by lightning strikes or grid fluctuations, thereby extending hardware lifespan.
0-10V Dimming Feature	Communicates analogly with the fixture driver to enable precise adjustment of light intensity between 0% and 100%, maximizing energy savings.

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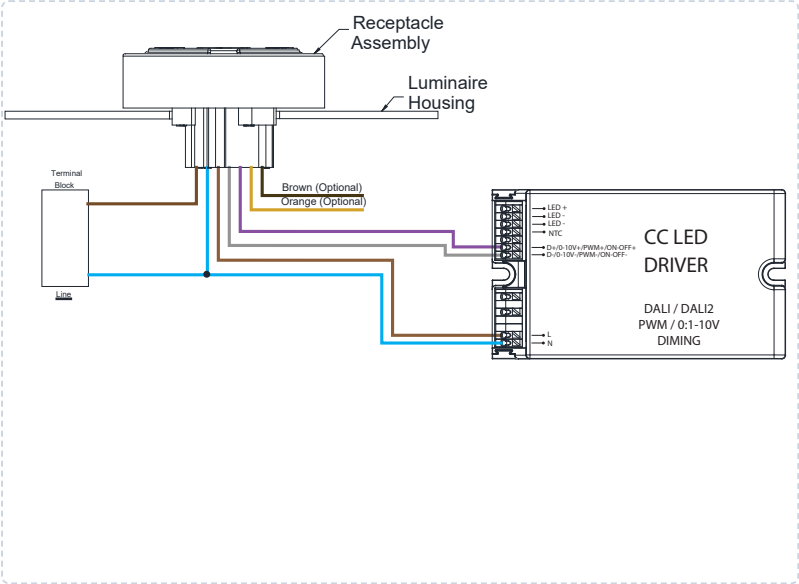


- Dimming
- Power Consumption
- Measurement Fault Detection
- System
  Internal Relay (Ecxept DALI Model)

Wiring & Connection Details

DALI CONTROLLED

LINE	
NEUTRAL	
DALI +	
DALI -	
LOAD	

CABLE DIMENSIONS : 3x1,5 + 2x0,50mm2

0-10V CONTROLLED

LINE	
NEUTRAL	
0-10V +	
0-10V -	
LOAD	

CABLE DIMENSIONS : 3x1,5 + 2x0,50mm2

ON-OFF CONTROLLED

LINE	
NEUTRAL	
ON-OFF +	
ON-OFF -	
LOAD	

CABLE DIMENSIONS : 3x1,5 + 2x0,50mm2

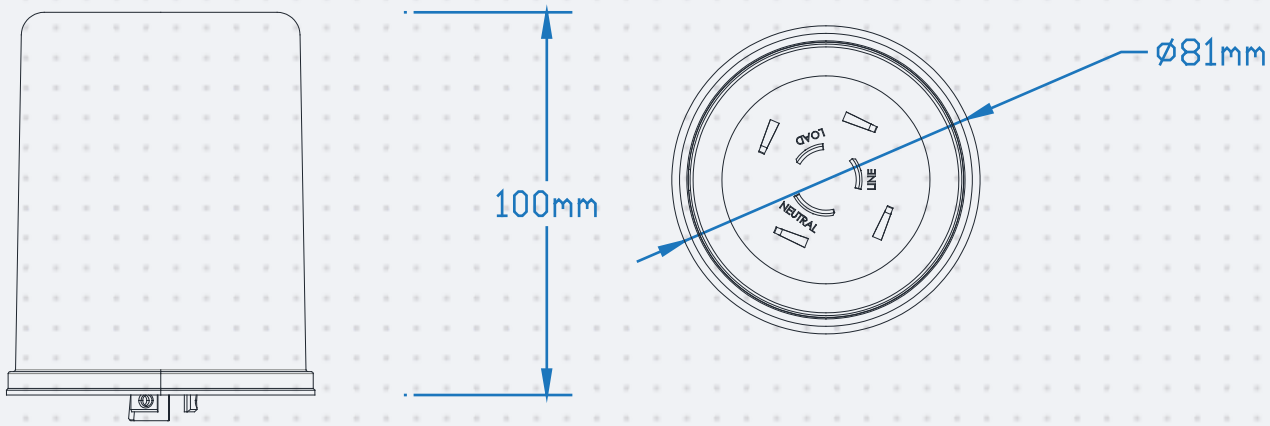
PWM CONTROLLED

LINE	
NEUTRAL	
PWM +	
PWM -	
LOAD	

CABLE DIMENSIONS : 3x1,5 + 2x0,50mm2

LoRaWAN® IP66 CE

Dimensions



LoRaWAN - POINODE Working Principle

LoRaWAN - POINODE products are controlled by the Olios application server via a network gateway.

POINODE

POINODE

Module Status Information

The module status information shows in which color the NEMA is in which states.

LED INDICATOR	STATUS	DESCRIPTION
Red	Stable	Communication module failure
Purple	Flashing	Test mode, awaiting data. The manufacturer used mode 40 during the test phase If no test data is received within seconds (approximately 40 flashes), normal operation mode.
Turquoise	Stable	Test mode active.The mode used by the manufacturer during the testing phase.
	Flashing	Delayed data transmission in test mode. Delay and device address ratio flashes until it stops.
Yellow	Stable	Attempting to connect / pair with Lorawan Gateway via ABP or OTA Mode but the result was unsuccessful.
	Flashing	Attempting to connect / pair with Lorawan Gateway via ABP or OTA Mode is doing it. According to the value set in the device software, this trial period repeats.
Green	Stable	Link communication with Lorawan Gateway is active.
	Flashing	Normal mode, data transmission with delay. Delay and device address ratio flashes until it stops.
OFF	OFF	Operation time when the device is sending data or changing mode until the led indicator turns off.