

DATASHEET

ORION-NEMA-868



Product Overview

ORION-NEMA-868 is a smart controller designed for street lighting luminaires equipped with NEMA standard sockets. The device enables remote monitoring and control of luminaires via LoRaWAN communication technology, ensuring reliable data transmission to a remote server through a gateway.

The controller is compatible with 1–10 V dimmable drivers and is intended for residential, urban, and roadway lighting applications. Remote on/off switching and dimming control are supported, while electrical and environmental parameters such as voltage, current, power, energy, temperature, humidity, and dimming level can be monitored and reported periodically.

Key Features

- Plug-and-play installation compatible with NEMA-5 and NEMA-7 standard sockets,
- LoRaWAN® 1.0.2 compliant, LoRa Alliance® certified wireless communication operating in the EU868 frequency band, supporting Class A and Class C operation, multicast, OTAA (Over-The-Air Activation), and Adaptive Data Rate (ADR) features,
- Remote luminaire on/off and dimming control via relay output and 1–10 V interface,
- Internal electronic measurement circuits for the acquisition of electrical quantities
- Integrated temperature, humidity, and ambient light sensors,
- Configurable periodic data reporting and remote control based on server commands.



Technical Specifications

Communication	
Frequency Band	868 Mhz
TX Power	+16 dBm
Receiver Sensitivity	-138 dBm
Protocol	LoRaWAN 1.0.2
Antenna	Internal PCB

Dimming Interface	
0-10V/PWM	Supported
DALI-2	Not supported

Electrical Characteristics	
Operating Voltage Range	100-277 /185-277VAC
Maximum Voltage	265V AC or 305V DC
Maximum Load Current	4.8 A
Power Consumption	< 2 W
Surge Protection	6 kV
Maximum Load Power	1 kW

Mechanical Characteristics	
Socket Interface	NEMA-ANSI C136.41
Dimensions	98 mm height, 84 mm diameter
Weight	< 200 gr
Enclosure Material	Polycarbonate housing

Technical Specifications

Environmental Conditions	
Operating Temperature Range	-25 °C to +60 °C
Protection degree	IP68, IK08
Expected Lifetime	5 years

Functional Characteristics	
Measurements	Voltage, current, temperature, humidity, ambient light level
Calculated Parameters	RMS voltage, RMS current, frequency, active power, reactive power, apparent power, power factor, active energy
Measurement Accuracy	< 1%

Mechanical and Electrical Connections

Mains supply and control signals are routed to the luminaire driver via an ANSI C136.41 compliant NEMA socket. In addition to phase (L) and neutral (N) connections, a 1–10 V dimming interface (DIM+ / DIM-) is supported. This architecture enables standardized and direct integration of NEMA-compatible smart lighting controllers into the luminaire.

