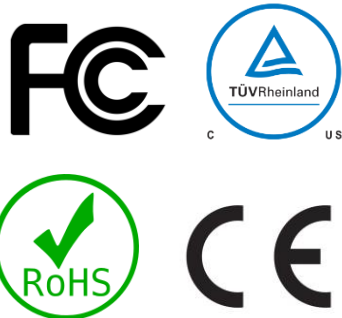


## JNET1 Lamp Controller Unit (LCU) NEMA



The Juganu JNET1© LCU Wireless Controller is a smart city solution designed for seamless lighting and IoT management. Built on the NEMA 7-pin connector standard, it enables advanced wireless control, monitoring, and automation of compatible luminaires and IoT sensors



### Features

- **Smart Connectivity** – Integrates a JNET1 Node for robust wireless communication and remote management of NEMA-compatible luminaires.
- **IoT-Ready** – Supports optional IoT sensors for expanded functionality.
- **Autonomous Operation** – Ensures continued performance even during network outages.
- **Precision Timing & Location** – Includes GPS and an astronomical clock (GMT-based) for accurate scheduling and geolocation.
- **Advanced Lighting Control** – Offers customizable dimming profiles and scheduling for optimized energy efficiency.

# Juganu JNET1 Wireless Controller Functionality

## Network Connectivity

- Juganu JNET1 proprietary protocol is highly optimized for urban area with exceptional propagation, SubG, and 2GFSK (license free frequency bands ISM, subject to each country regulation).
- Two built-in RF transceivers (2GFSK) that establish an efficient full-duplex secured source routing-tree wireless network.
- Flexible load management and ad-hoc offloading.

## Smart Lamp Functionality

- **ON/OFF/Dimming**
  - Remote-controlled dimming [0-100%] or Power [Watts].
  - Restores last dimming level following power outage.
- **Remote Monitoring & Control**
  - Extensive Remote Control/Monitoring protocol supporting Broadcast, Multicast, Unicast.
  - App. 100 commands including Get Status, Group ID settings, & Frequency Adjustment.
  - Production & Assembly house automatic scripting.
  - Mobile applications for Juganu network installation and maintenance.

## Addressing Types

- JNET1 Network Controller – Broadcast, Multicast, Unicast.
- JNET1 Dimmer Application – Broadcast, Public address (x16), Attribute Address, Unicast.
- **Dimmer Autonomous behavior**  
Continuous lighting control and management even during communication failures.
  - Unlimited Light Profiles (LP)
  - Unlimited LP programs control the Lamp light over timespans of Day, Week, Month, or full Year. LMS sends LPs to the Light controller device (NEMA), enabling autonomous operation.
  - GPS Astronomical Clock based on lamp's geographic location helps control the Lamp light.

Astronomic <b>Sunset</b> w/ prior relative WPS events			Astronomic <b>Sunrise</b> w/ prior relative WPS events		
	Event time	Dimming		Event time	Dimming
	T – 40min	40%		T – 40min	80%
	T – 20min	80%		T – 20min	40%
<b>Sunset</b>	T = 18:06	100%	<b>Sunrise</b>	T = 06:15	OFF

- DLS – Turns lights on/off according to sunrise and sunset times.
- WPS – Wireless Program Scheduling (Light Event Profile) – **for special light control events**. Combines with DLS to create a dimming sequence that corresponds with the changing Sunset/Sunrise timing throughout the year.
- **Over-The-Air (OTA) Distributed Update**
  - Seamless firmware OTA Update leveraging source routing tree structure.

## JNET1 LCU - NEMA

### CONNECTOR

NEMA standard ANSI C136.41 7, 7-pin connector

AC IN (BLK)

connect by AC Module's Relay

AC OUT (RED)

disconnect by AC Module's Relay

### NETWORK CONNECTIVITY

Spreading technique

Frequency agility, SubG 2GFSK

Routing topology

Source Routing Tree

Communication standard

Juganu proprietary efficient tree routing, exceeds RPL;

Addressing paradigm

Proprietary MAC address

IPV6 protocol

IPV6 Tunneling - optional

Advanced bandwidth management

Flexible load management, flexible ad-hoc off-loading

Max hop number

64

Number of nodes per gateway

1000 (typical)

Wireless Network Security

Counter Mode Cipher Block Chaining Message Authentication Code Protocol over AES128, Pre-Shared Key

Data Logging

offline time-stamped Controller statuses for online. Offline, warning or error codes

Up/Download channel utilization

Concurrent up/download channel, employing frequency diversity

### ELECTRICAL

AC Power connection

Universal AC input (RMS Volts) 100-277 (nominal  $\pm 10\%$ ) through NEMA standard ANSI C136.41 7, 7-pin connector, 10kV protection, 47-63Hz

AC over voltage survivability

Survive up to 305V

ON/OFF and dimming interface

AC switch  
PWM (0 – 10V) through NEMA standard ANSI C136.41 7, 7-pin connector

Power

Upto 165W

### LOCATION & TIME SYNCHRONIZATION

GPS accuracy

2m

Astronomical clock

Built in, with GPS, calculating location and local time to allow turn ON/OFF in accordance with sunset and sunrise local times

### DIMMING OPTIONS (see Dimming Options diagram below)

PWM (+) / PWM (-)

0-10 VDC Dimming contacts

### GENERAL INFORMATION

Dimensions

Height 107 mm , Diameter 84 mm

Net Weight

0.3 kg

Operating temperatures

-40°C to 50°C (-40°F to +122°F)

Humidity

95% non-condensing

Environmental protection rate

IP66

Impact Protection

IK09

# JNET1 LCU - NEMA

## CONTROLLER MEASUREMENTS AND REPORTING

NEMA Controller energy measurement accuracy  $\pm 0.5\%$ .

1. RMS input voltage [Volts]
2. RMS input current [Amps]
3. Apparent power (VA)
4. True input power (Watts)
5. Power factor
6. Average input power factor when device is on
7. Cumulative ON state time in minutes or hours
8. Temperature over time
9. Lamps' cumulative ON hours
10. Cumulative energy consumption.
11. Monitoring and tracking Controller/lamp statuses – diagnose and alert upon fault detection
12. Offline parameter storage at least once/60 minutes, including latest values before going offline – continuation of logging, such as run time and energy consumption
13. Storage of offline parameters for at least 2 days

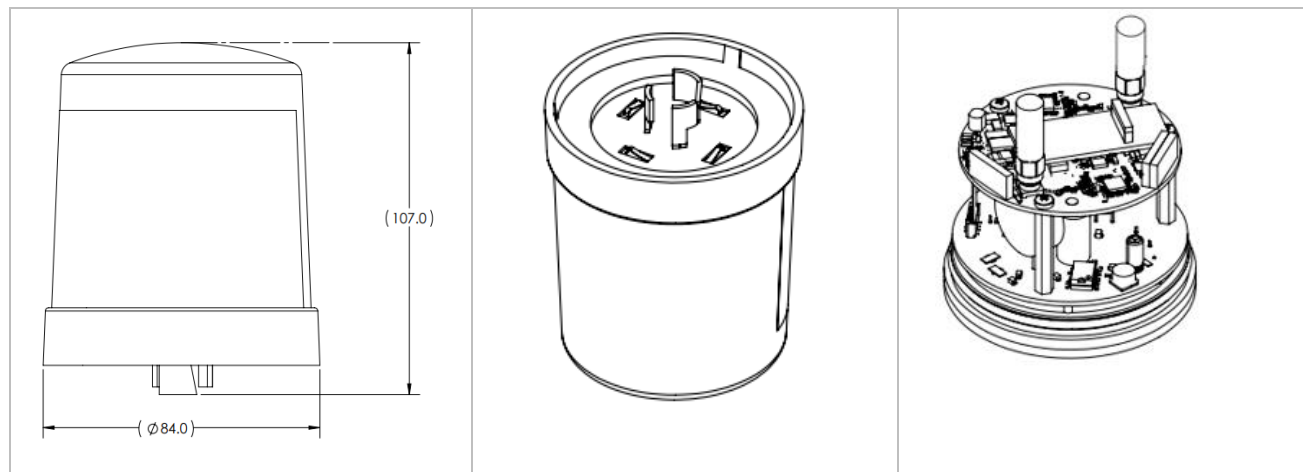
## JNET1 LCU - NEMA

STANDARDS (additional local standards applicable)

Group	Standard abbreviation	Description
<b><u>CE-RED</u></b>		
Safety	IEC 62368-1:	Safety Testing and Report
	EN 61347-1	
	EN 61347-2	
EMC	EN 55015	EMC Testing & Report
	EN 55024	
	EN 55032	
	EN 61547	
	EN 301489-1,3,19	
	EN 303413	
	EN 62479	
	EN 61000-3-2,3	
Surge test	EN 61000-4-5	10KV test
Radio	EN 300 220-1 ,2	Radio spurious Test & Report
<b><u>cTUVus *</u></b>		
FCC ID *	47 CFR Part 15 Subpart B	Radio tests for North America market Radio module FCC ID 2ATPH-JNET1-915MHz
Safety *	UL 62368-1:2014 CAN/CSA-C22.2 NO. 62368-1-14	Safety testing for North America market
<b><u>Mechanics</u></b>		
Ingress Protection Rating	IEC 60529	Protection rate
Impact Shock	IEC 62262	Mechanical Impact
Environmental	ETSI EN 300 019-1-4 Class 4.1 IEC60598-1	Environmental
* Only applicable for PWM models.		

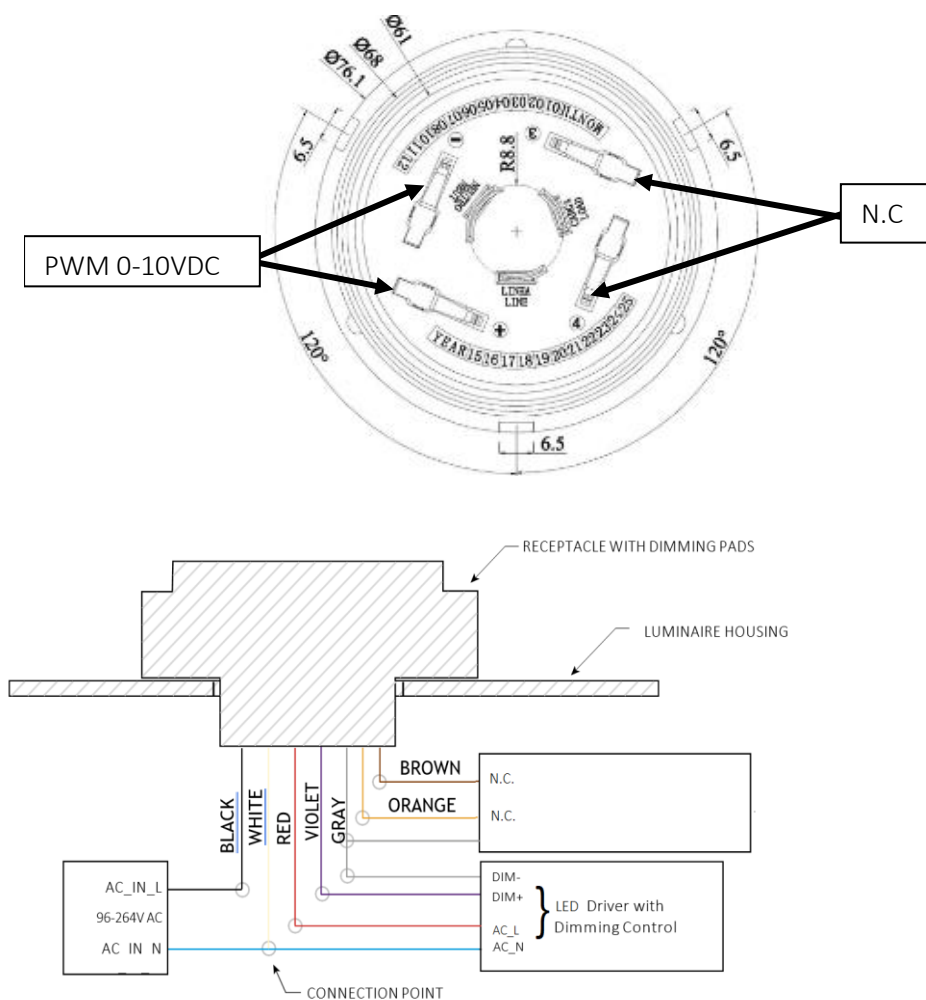
## DRAWING

### NEMA



## DIMMING OPTIONS

### 1. PWM 0-10VDC



## ORDERING INFORMATION

Product	Band	Dimming	GPS
JWC-JNET1	xxx MHz	XXXX	xx

Model	Description
JWC-JNET1-915-PWM	JNET1 LCU , 915MHz , 0-10V PWM
JWC-JNET1-915-PWM-GPS	JNET1 LCU , 915MHz , 0-10V PWM, GPS
JWC-JNET1-915-DALI	JNET1 LCU , 915MHz , DALI
JWC-JNET1-915-DALI-GPS	JNET1 LCU , 915MHz , DALI, GPS
JWC-JNET1-433-PWM	JNET1 LCU , 433MHz , 0-10V PWM
JWC-JNET1-433-PWM-GPS	JNET1 LCU , 433MHz , 0-10V PWM, GPS
JWC-JNET1-433-DALI	JNET1 LCU , 433MHz , DALI
JWC-JNET1-433-DALI-GPS	JNET1 LCU , 433MHz , DALI, GPS

### # Ordering Example

JWC-JNET1-915-PWM-GPS

### Description

JNET1 LCU NEMA, 915 MHz with PWM 0 to 10 V dimming and GPS