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LCNM

NEMA ANSI C136.41 5/7-Pin LoRaWAN® Lighting Controller Unit

LCNM

NEMA ANSI C136.41 5 or 7-Pin Streetlight Controller

This device is robust enough for outdoor environments and seamlessly integrates with both existing lighting setups and third-party solutions. We've prioritized cost-effective system integration by providing open communication protocols, an open-source JavaScript payload decoder, and our dedicated Zenosmart Connect app.

NEMA ANSI C136.41 5 or 7-Pin Streetlight Controller

The controller facilitates communication via LoRaWAN® and NB-IoT networks. For streetlight control, it supports DALI, DALI-2, D4i, and 0–10 V analog interfaces. Its modern design makes it an ideal match for industrial LED fixtures. Additionally, an optional GPS module is available to streamline map positioning and ensure precise time synchronization.

The NEMA ANSI C136.41 5-Pin or 7-Pin Streetlight Controller is a cutting-edge wireless remote-control unit specifically engineered for LED streetlights featuring the ANSI C136.41-compliant connector. Its simple plug-and-play installation streamlines deployment across diverse street lighting modules.

Measured and Monitored Parameters

- Lamp on time
- Ambient light
- Controller temperature
- Forwards D4i energy registers for each driver
- Builtin measurement for A, V, W, Wh, WB, W Fund and PF, lampon time, sag, and swell
- Control gear faults
- Controller tilt action, collision event
- GPS position (optional)

Controller Features

- Control up to 4 DALI / DALI-2 drivers independently or via 0–10 V analog control
- Power measurement via DALI driver or built-in circuit
- D4i energy registers reported for each driver (only for D4i drivers)
- Versatile astronomical calendar-based dimming
- Time-based dimming profiles
- Automatic device time synchronization
- Light intensity sensor
- Remote control and configuration
- Multicast control and configuration
- Built-in overcurrent protection circuit with auto-reset
- Configuration via Zenosmart app (iOS & Android)
- GPS positioning (optional)
- Simple push-and-twist lock installation
- Autonomous and adaptive operation (configure once, then operate)
- Real-time control and feedback
- RTC to keep time after power loss
- Built-in tilt sensor
- Surge protection
- Digital input (LSI) for external events (motion sensor, switch, photocell, etc.)
- Fully documented open communication protocol

Technical Data

Supply	
Power supply	100–240 VAC 0.2 A – (rated load up to 15 A)
Peek power consumption	3 W (Maximum)
Surge protection	Built-in surge protection circuit
Current protection	Built-in over current protection circuit with auto reset

Communication	LoRaWAN®	NB–IoT
Network interface	LoRaWAN® 1.0.4 class C	3GPP LTE Release 14 Cat–NB1 and Cat–NB2 compatible
RF frequency	868 / 915 / 923 MHz	Cat–NB1/NB2: B3, B8, B20 1710–1880, 880–960, 791–862MHz
Rx sensitivity	–137 dBm @ 125 kHz BW SF12	–108 dBm sensitivity for low band (Cat–M1), –107 dBm for mid band
Tx power	Up to +22 dBm (depending on the region)	Up to +23 dBm
Network security	Encrypted communication based on AES–128 bzzzsecurity keys	APN / VPN support
GPS	GPS/GLONASS/BeiDou/QZSS	GPS/GLONASS/BeiDou/QZSS
Firmware update (OTA)	Bluetooth and LoRaWAN®	
Bluetooth	Optional	

Interfaces	
DALI control and power supply	Controls up to 4 DALI ballasts with internal 15 VDC power supply
Analog output	0–10 V or 1–10 V analog output
Logical signal input (LSI)	1 × 0–24 V logical signal input configurable for alert, dim levels (analog/digital), etc.

Sensors	
Light sensor	Integrated; configurable threshold
Tilt sensor	2–axis tilt sensor

LoRaWAN I NB-IoT I DALI-2 I D4i I TALQ

Technical Data

NEMA ANSI C136.41 5 or 7-Pin Streetlight Controller

Lamp Control	
Dimming range	0–100% (linear or logarithmic depending on controller gear settings)
Control interface	DALI2 / DiiA (IEC 62386) / D4i / 0–10 V / 1–10 V Analog

Metering	
Builtin Parameters (non–D4i drivers)	A, V, W, Wh, WB, Wfund, PF, lamp on–time, sag and swell
D4i reported parameters	V, W, Wh, PF, lamp on–time, and others (depending on controller grear specifications)
Measurement accuracy	±0.5% for builtin measurement circuit

Output Switch	Mechanical Contact Relay	Solid State Relay	Without Switching Output
Switching type	5A (100,000 Operations)	2A (with zerocross detection)	No switching output option available

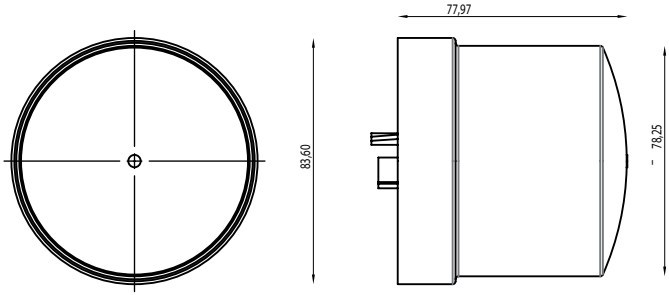
Timing	
Real time clock (RTC)	Yes, super capacitor backup (up to 15 days)

Environmental	
Input protection	IP66 (IEC 60529)
Operating temperature	–20°C + ... + 60 °C

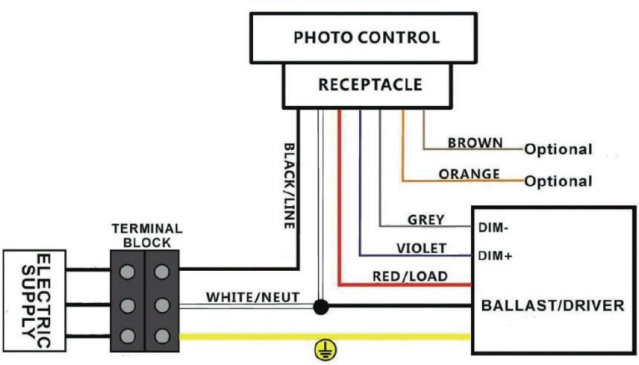
Mechanicala	
Standard	ANSI C136.412013
Pins & positions	5 or 7-pin and 3-pin power contacts; 2 or 4-pin dimming and signal contacts
Weight & dimensions	150 g and 76 mm × 70 mm (height × diameter)
Base & dome material	High-temperature-resistant polybutylene terephthalate & anti-UV, impact-resistant polycarbonate

Compatibility	
Standards	EN 61347l, EN 61347211, EN 300 220, EN 62368, EN 301 489, EN 62479, EN 50581
Certifications	CE

Mechanical Dimensions



Cable Connection Guide



All dimensions are in millimeters (mm).

ORDER CODE	LCNM	L	1	A	B	D	G	R	A
Communication type									
LoRaWAN		**L**							
Nb-IoT		**N**							
Bluetooth		**B**							
Zigbee		**Z**							
Hardware version (1~n)			**1**						
LoRaWAN frequency									
Not available				**X**					
LoRaWAN EU 868				**A**					
LoRaWAN AU 915				**B**					
LoRaWAN US 915				**C**					
LoRaWAN AS 923-1				**D**					
LoRaWAN AS 923-2				**P**					
LoRaWAN AS 923-3				**Q**					
LoRaWAN AS 923-4				**R**					
LoRaWAN 868 Multiregion (configurable via software)				**T**					
LoRaWAN 915 Multiregion (configurable via software)				**U**					
Additional bluetooth option									
Not available					**X**				
Bluetooth for quick configuration and OTA					**B**				
Control option									
DALI-2 / DiiA (IEC 62386) / D4i						**D**			
0-10V Analog						**A**			
GPS option									
Not available							**X**		
GPS							**G**		
Relay option									
Not available								**X**	
Solid state relay								**S**	
Mechanical contact relay								**R**	
Sensor option									
Not available									**X**
Energy Analyzer									**A**
PIR Sensor									**B**
Radar Sensor									**C**

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Zenosmart intelligently enhances energy efficiency and sustainability with innovative, AI-powered, IoT-based solutions, making life easier.

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