

zeno**smart** |  **ZENOPIX**
smart solutions

Lighting Control Systems

LoRaWAN and NB-IoT Street Light Controller



LCCB

Custom Box Lighting Controller

The Zenosmart LCCB Controller is a state-of-the-art wireless remote control unit specifically designed for road and street lighting, park and garden lighting, as well as indoor and outdoor lighting in buildings. Its compact housing allows for easy installation on any luminaire or pole, offering maximum installation flexibility.



Custom Box Lighting Controller

You can easily connect it to your luminaires with its 5 pin IP67 socket. This device is highly rugged for both indoor and outdoor environments. With LoRaWAN® and NB-IoT options, it seamlessly integrates with both your existing lighting system and third-party solutions. We offer open communication protocols, an open-source JavaScript codec, and our dedicated Zenosmart Connect application for convenient system optimization.

The controller can be connected to your system via LoRaWAN® and NB-IoT networks. Luminaires can be easily controlled through DALI, DALI-2, DALI-D4i, and 0–10 V analog interfaces. An optional comprehensive GPS module is available to provide map data and precise time synchronization.

Measured and monitored parameters

- Lamp on time
- Ambient light
- Controller temperature
- Forwards D4i Energy registers for each driver
- Built in measurement for A, V, W, Wh, WB, W Fund, and PF, lamp-on time, sag and swell
- Lamp/driver fault
- Control gear faults
- Controller tilt action, collision event
- GPS position (Optional)

Controller Features

- Control up to 4 DALI / DALI-2 drivers independently or 0-10V 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 over current protection circuit with auto reset
- Configuration Zenosmart app (iOS & Android)
- GPS positioning (Optional)
- Autonomous and adaptive operation (configure and forget)
- 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	24 VDC or 100-240 VAC
Peak 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	3 GPP LTE release 14 Cat-NB1 and Cat-NB2 compliant
RF frequency	868 / 915 / 923MHz	Cat-NB1/NB2: B3, B8, B20 1710-1880, 880-960, 791-862MHz
Rx sensitivity	-137 dBm @ 125 kHz BW SF12	-108 dBm sensitivity (Cat-M1) for low band, -107 dBm for mid band
Tx power	up to +22 dBm (depending on region)	up to +23 dBm
Network security	Encrypted communication based on security keys (AES128-bit)	APN / VPN
GPS	GPS/GLONASS/BeiDou/QZSS (Optional)	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 15V power supply
Analog output	0-10V or 1-10V Analog output
Logical signal input (LSI)	2 x 0-24V Logic signal input configurable alert, dim levels (analog/digital), etc.

Sensors	
Light sensor	Integrated, Configurable threshold
Tilt Sensor	2-axis tilt sensor



LoRaWAN® is a trademark of Semtech Corporation. DALI, the DALI Logo, DALI2, the DALI2 Logo, DiiA, the DiiA Logo, D4i, the D4i Logo, DALI+ and the DALI+ Logo are trademarks in various countries in the exclusive use of the Digital Illumination Interface Alliance.

Lamp Control	
Dimming range	0%–100% (linear or logarithmic depending on control gear settings)
Control interface	DALI-2 / DiIA (IEC 62386) / D4i / 0–10 V / 1–10 V Analog

Metering	
Built in parameters	A, V, W, Wh, WB, W Fund, and PF, lamp-on time, sag and swell, (Non D4i Drivers)
D4i reported parameters	V, W, Wh, and PF, lamp-on time, and many others (Only for D4i Drivers)
Measurement accuracy	%0.5 for built in measurement circuit

Output Switch	Mechanical Contact Relay	Solid State Relay	Without Switching Output
Switching type	5A (100.000 Operation)	2A (With zero cross detection)	No any switching output

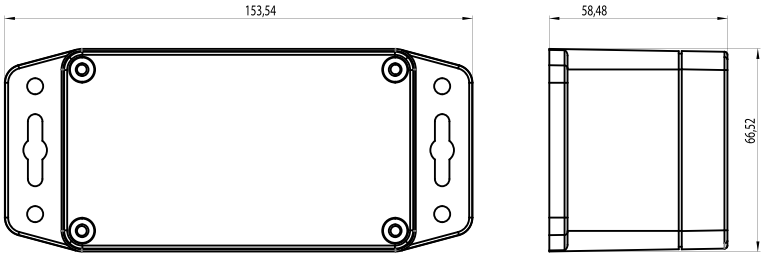
Timing	
Real Time Clock (RTC)	Yes, super capacitor backup (up to 15 days)

Environmental	
Ingress protection	IP67 (IEC 60529)
Operating temperature	–20 °C ... +60 °C

Mechanical	
Weight	150 gr
Dimensions	154 x 65 x 59 mm (6.06 x 2.56 x 2.32 in)
Body material	ABS

Compliance	
Standards	EN 61347–1, EN 61347–2–11, EN 300220, EN 62368, EN3 01489, EN 62479, EN 50581
Certifications	CE

Mechanical Dimensions



Customized Wiring

The Zenosmart LCCB Controller is available with various connection options. Options include direct PCB soldering with IP67 glands 5 pin IP67 connector sets. For more information, please contact our sales or customer service team.



5 Pin IP67 Socket



Different Diameter Fittings

All dimensions are given by mm.

Order Code	LCCB	1	L	01	1	A	B	A	X	R	00
Body type and size											
Custom Box (SF212)		1									
Communication type											
LoRaWAN			L								
Nb-IoT			N								
Bluetooth			B								
Zigbee			Z								
Hardware version (1~n)											
Supply voltage type											
110~220VAC					1						
24VDC					2						
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 (included with NB-IoT)									G		
Relay option											
Not available										X	
Solid state relay										S	
Mechanical contact relay										R	
Sensor option											
Not available											00
DIM											01
Light Sensor											02
PIR Sensor											03
Radar Sensor											04