


zeno**smart** | ZENOPIX
smart solutions

Lighting Control Systems

LoRaWAN and NB-IoT Street Light Control

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



LCZG

Zhaga Street Light Control Device

The Zhaga Streetlight Controller is a cutting-edge wireless remote-control unit engineered for LED streetlights featuring a Zhaga® Book 18-compliant connector. Its plug-and-play installation simplifies deployment across diverse street lighting modules.



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.

The controller communicates over LoRaWAN® and NB-IoT networks. For streetlight control, it supports DALI, DALI-2, D4i, and 0–10 V analog interfaces. Its sleek, modern design complements slim LED fixtures. Additionally, an optional GPS module is available to streamline map positioning and ensure precise time synchronization.

Measured and Monitored Parameters

- Lamp ontime
- Ambient light
- Controller temperature
- Forwards D4i energy registers for each driver
- Lamp/driver fault
- Controlgear faults
- Controller tilt angle and collision events
- GPS position (optional)

Controller Features

- Control up to 4 DALI / DALI-2 drivers independently powered measurement via DALI driver
- D4i energy registers reported for each driver
- Versatile astronomical calendar-based dimming
- Time-based dimming profiles
- Automatic device time synchronization
- Light intensity sensor
- Remote control and configuration
- Multicast control and configuration
- Configuration via Zenosmart app (iOS & Android)
- GPS positioning (optional)
- Simple push-and-twist lock installation
- Autonomous and adaptive operation (configure once, then operate)
- Realtime control and feedback
- RTC maintains 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

Zhaga Street Light Control Device

Supply	
Power supply	24 V DC or 100–240 V AC
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 & Cat-NB2 compliant
Rf Frequency	868 / 915 / 923 MHz	B3, B8, B20 (1710–1880, 880–960, 791–862 MHz)
Rx Sensitivity	–137 dBm @ 125kHz 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 Support
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	0–10 V or 1–10 V 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 | NB-IoT | DALI-2 | D4i | TALQ

LoRaWAN® is a registered 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 registered trademarks exclusively licensed in various countries by the Digital Illumination Interface Alliance (DiiA).

Technical Data

Zhaga Street Light Control Device

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	
D4i reported parameters	V, W, Wh, and PF, lamp–on time, and many others (Only for D4i Drivers)

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

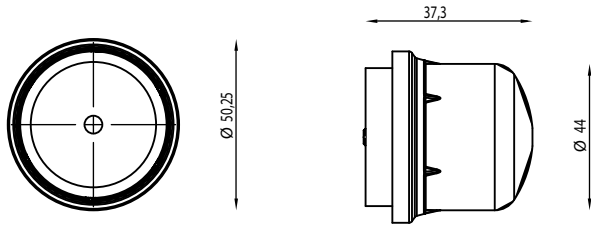
Environmental	
Ingress protection	IP67 (IEC 60529)
Operating temperature	–20°C ... +60°C

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

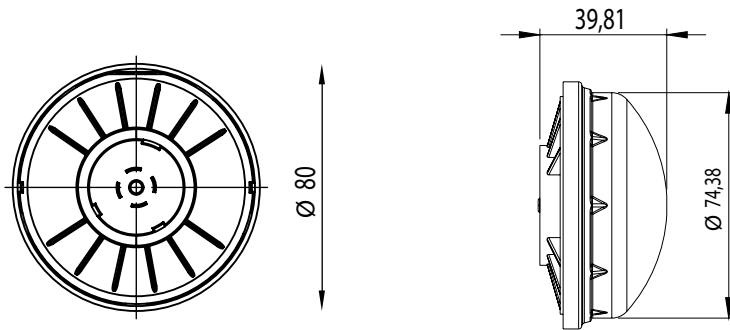
Compliance	
Standards	EN 61347–1, EN 61347–2–11, EN 300220, EN 62368, EN 301489, EN 62479, EN 50581
Certifications	CE

Mechanical Dimensions

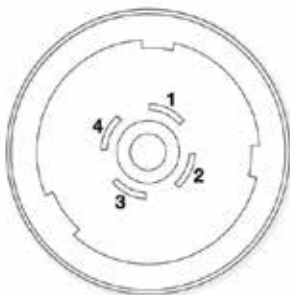
Zhaga 40



Zhaga 80



Wiring Guide



PIN	Definition	Type
1	24VDC	DC Power output
2	GND	DC Power output
3	NC	Float
4	0-10V	Dim+ input

Note: That is the pin definition of the front socket, and the docking party is the light controller (floatproof socket).

All dimensions are in millimeters (mm).

Zhaga 40

ORDER CODE	LCZG4	X	A
Communication type			
LoRaWAN		L	
Mesh		M	
Frequency			
EU868			A
AU915			B
US915			C
AS923			D

For quick configuration, Bluetooth and OTAA, DALI-2 / DiiA (IEC 62386) / D4i, 0-10V analog, tilt and light sensors are included in the devices by default.

Zhaga 80

ORDER CODE	LCZG8	L	X	A
Communication type				
LoRaWAN		L		
Nb-IoT		N		
Mesh		M		
GPS option				
Not available			X	
Availavle			G	
Frequency				
EU868				A
AU915				B
US915				C
AS923				D


For quick configuration, Bluetooth and OTAA, DALI-2 / DiiA (IEC 62386) / D4i, 0-10V analog, tilt and light sensors are included in the devices by default.



zenosmart | **ZENOPIX**
smart solutions

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

 info@zenosmart.com  zenosmart.com  +90 312 911 26 46

 Konutkent Mah. 3028 Sok. Elmar Towers C Blok, No: 8C/120
Çankaya/Ankara/Türkiye