



OL-Z series

Smart Street Lighting Controller

ZHAGA socket, LPWA NB-IoT/LTE-M communication technology

Features

- Universal luminaire compatibility via standard Zhaga Book 18 socket
- Support Cat.NB1/Cat.NB2/Cat.M1 communication with optional 2G fallback
- Smart Control dimming function compatible with DALI2 protocol
- Auto ON/OFF and dimming function
- Electrical parameters monitoring (DALI2 protocol compliant)
- Compatible with DALI2 LED drivers
- Intelligent operation based on predefined schedule
- Astronomical clock for autonomous sunrise and sunset time control
- Integrated ambient light level sensor for autonomous ON/OFF switching
- Integrated accelerometer for tilt detection
- Support GPS for location positioning
- Platform connection - support MQTT and MQTT-TLS transfer protocol
- Support Content Management System (CMS)
- Wide operating temp range -30°C to +70°C
- Support FOTA updates



Introduction

ORing's smart lighting series managed wireless controllers are designed for Smart Streetlight applications. Thanks to cellular-based, licensed-band LPWA communication technologies, they can use the advantages to operate securely and stable in large group being at the same time economic and energy saving.

OL-Z-NB series is compliant with the Zhaga Book 18 guidelines. It incorporates the multifunctional control unit which implements the DALI2 protocol to communicate with the smart driver. It can read the electrical parameters from the street lamp. According to the parameters, it also obtains fault detection information for alarming – over/under voltage, over/under current, lamp/driver fault, device failure to help users save time spent on troubleshooting.

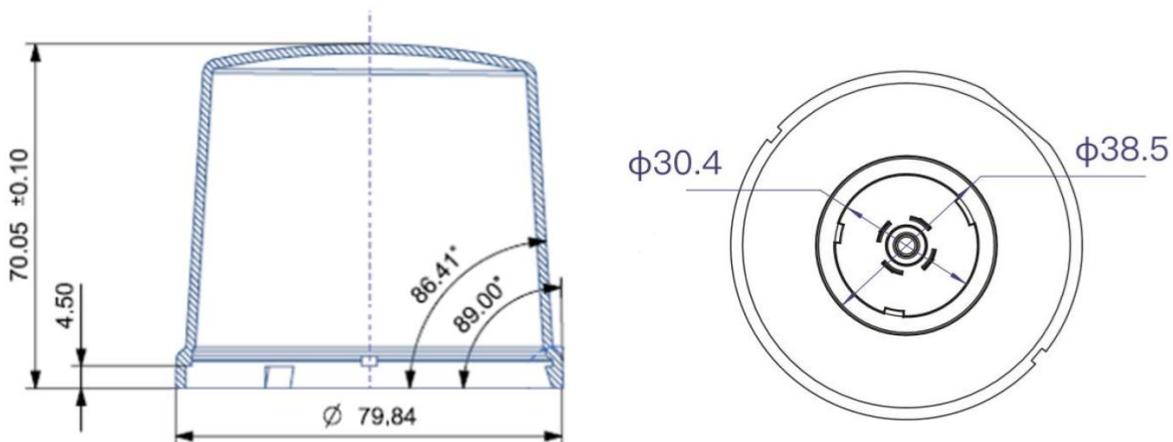
Specification

ORing Lighting Model	OL-Z SERIES
Connection Socket	
Type and Pin Define	Zhaga (Book 18)
Control Interface	
ON/OFF/Dimming	DALI2 (IEC 62386) compliant
Network Interface	
Working Mode	NB-IoT / CAT M1 / 2G fallback (optional)
SIM Card Type	Nano SIM Card or Chip eSIM
Network Parameters	
NB-IoT	Frequency Band: B1/B2/B3/B4/B5/B8/B12/B13/B14/B18/B19/B20/B25/B26/B27/B28/B66/B71/B85 max. Data Rate DL / UL: Cat.NB1 : 27 kbps / 63 kbps Cat.NB2 : 124 kbps / 158 kbps
Cat.M1	Frequency Band: B1/B2/B3/B4/B5/B8/B12/B13/B14/B18/B19/B20/B25/B26/B27/B28/B66/B71/B85 max. Data Rate DL / UL: 300 kbps/ 1.1 Mbps
2G (optional)	Quad-band 850/900/1800/1900 MHz
Electrical Specification	
Input Voltage	24Vdc=0.6A
Power consumption	Maximum 9.3W/24V@GSM, 2.2W/24V@CatM1, 1W/24V@NB
Physical Characteristic	
Dimensions	Φ80 x 70mm
Weight(g)	100g
IP Ratings	IP66
IK Ratings	IK08

Protection / Certification	
EMC (Electromagnetic Compatibility)	EN 301 489-1, EN 301 489-52 EN 61000-3-2, EN 61000-3-3 EN55032/35
ESD (Electro Static Discharge)	IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV
RF (radio frequency)	EN 301 511 2G EN 301 908-1 (NB IOT, Cat M1) EN 303 413
SAR (Specific Absorption Rating)	EN 62311
SFT	EN 62368-1, EN 61347-1, EN 61347-2-11 EN 60950-22
Environmental	
Storage Temperature	-40°C to +80°C
Operating Temperature	-30°C to +70°C
Operating Humidity	0 to 95%
Additional Sensor Support Feature	
Accelerometer	Static g-force measurement for tilt/roll angle
Light Sensor	Detection Range: 0.001 lx to 100k lx
Warranty	5 Years*

*For warranty period and details, please contact with ORing's sales person.

Dimensions and Drawing



Zhaga Socket Exterior

- Number of Pins: 4
- Pin assignment:

Pin 1	24VDC
Pin 2	DALI-
Pin 3	DALI+
Pin 4	Not connected
- Voltage rating: 24Vdc typ. 25.2Vdc max.
- Current rating: 500mA max.



Ordering Information

Model Name	Description
OL-Z1D600D1-NBGTF-1	Lighting Controller, Zhaga, NB-IOT/LTE-M/2G, Dali2, Band3/8/20/28
OL-Z1D601D1-NBGTF-1	Lighting Controller, Zhaga, NB-IOT/LTE-M/2G, Dali2, G Sensor, Band3/8/20/28
OL-Z1D602D1-NBGTF-1	Lighting Controller, Zhaga, NB-IOT/LTE-M/2G, Dali2, Light Sensor, Band3/8/20/28
OL-Z1D603D1-NBGTF-1	Lighting Controller, Zhaga, NB-IOT/LTE-M/2G, Dali2, G Sensor, Light Sensor, Band3/8/20/28

Packing List

OL-Z Series Controller x1