

## FRE-24-Zhaga-NB1-GSM - NB-IoT, GSM compatible, luminaire controller

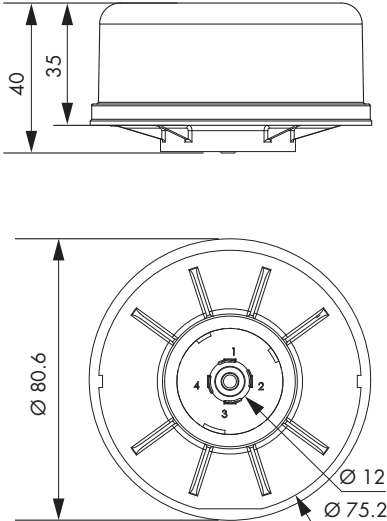
Plug-and-play upgrade for lamps compatible with Zhaga socket (book 18) with full lamp management and feedback functionality.

- › ZHAGA socket (book18).
- › Can control additional independent devices via DALI relay.
- › Enables individual remote management, ON / OFF / Dimming of streetlight lamps with DALI 2 / DiiA / Osram DEXAL / Philips SR control gear.
- › Specially designed and optimized for LPWA networks.
- › Autonomous operation based on predefined schedules, light level sensor and adaptive lighting.
- › Adaptive lighting capabilities based on DALI digital input for motion sensing.
- › Bandwidth efficient with minimal communication requirements.
- › Secure communication based on encryption keys.
- › Electrical parameters monitoring (measured by DALI2 control gear): V, W, A, Wh, PF, frequency.
- › Advanced data synchronization and notification mechanism.
- › Internal precision Real time clock (RTC) with backup battery.
- › Infrared interface for local configuration.
- › Integrated light level sensor.
- › Over The Air (OTA) firmware update.
- › Designed lifetime: 10+ years.
- › TALQv2 certified solution.





### DIMENSIONS (mm):



### CERTIFICATIONS:



| FRE-24-Zhaga-NB1-GSM            |   |
|---------------------------------|---|
| LampType                        | LED, CF, HID with DALI 2 / DiiA / D4i / Osram DEXAL / Philips SR control gear   |
| Maximum lamp power              | Depending on the lamp control gear  |
| Additional controlled devices   | Yes, independent controlled via DALI relay  |
| Functions / Operation mode      | ON / OFF / Dimming  |
| Dimming range                   | 1%-100% (linear or logarithmic depending on control gear settings)  |
| Control interface               | DALI 2/ DiiA (IEC 62386)/ D4i/ Philips SR   |
| Power supply                    | 24 VDC (min 21.6 VDC - max 30 VDC)  |
| External interface              | infrared  |
| Network interface               | NB-IoT / GSM  |
| Supported frequencies           | worldwide   |
| Internet protocol version       | IPv4/IPv6   |
| Inter-node mesh communication   | Optionally available, with motion sensor add-on   |
| Last gasp                       | Optional  |
| Firmware update                 | IR (infrared) / OTA (over the air)  |
| GNSS                            | Optional- Geolocation and precision time (GPS, GLONASS, BeiDou, Galileo and QZSS)   |
| Security                        | Encrypted communication based on security keys (AES128-bit)   |
| Surge protection                | provided by DALI 2 control gear   |
| Internal scheduling memory      | 128 events (daily / weekdays / weekends / fixed date / exceptions)  |
| Measurement accuracy            | Depending on control gear specifications  |
| Average power consumption       | 0.5W/ 24V   |
| Maximum power consumption       | 5W/ 24V peak power according to DiiA  |
| Precision Real Time Clock (RTC) | Yes, battery operated   |
| Battery operation time          | 10 years +  |
| Real-time lamp operation        | Yes   |
| Digital input                   | 1x dry contact (for PIR sensor, photocell sensor, open door sensor etc.)  |
| Output                          | Festive lighting or another occasional consumer (if it is a Dali Bus device)  |
| Tilt sensor                     | Optional (configurable threshold for tilt & roll)   |
| Light sensor                    | Integrated. Configurable threshold.   |
| Ingress protection              | IP66 (IEC 60529)  |
| Impact protection               | IK09 (IEC 62262)  |
| Operating temperature range     | -25°C to +70°C  |
| Weight                          | 80 ± 5 g  |
| Dimensions (diameter x height)  | 80 x 40 mm  |
| Mounting                        | Zhaga (book 18)   |
| Compliant standards             | • RED Directive: LVD Directive & protection of health (EN IEC 62368-1, EN IEC 62479), EMC Directive (ETSI EN 301 489-1, ETSI EN 301 489-52), Efficient use of radio spectrum (ETSI EN 301 908-1, ETSI EN 301 908-13, ETSI EN 301 511, ETSI EN 303 413) • RoHS Directive • Environmental Testing: EN 60068-2-1, EN 60068-2-2 |
| Certifications                  | CE, SR Signify  |

### MEASURED PARAMETERS:

(depending on the lamp control gear)

- › Lamp power
- › Line voltage
- › Current
- › Active power
- › Reactive power
- › Apparent power
- › Power factor
- › Frequency
- › Control gear temperature
- › Energy consumption (active/reactive)
- › Lamp / controller- running hours counter
- › Lamp On / Off cycles counter
- › Dimming level at the moment of interrogation (optional). It needs to be specified before product shipping.

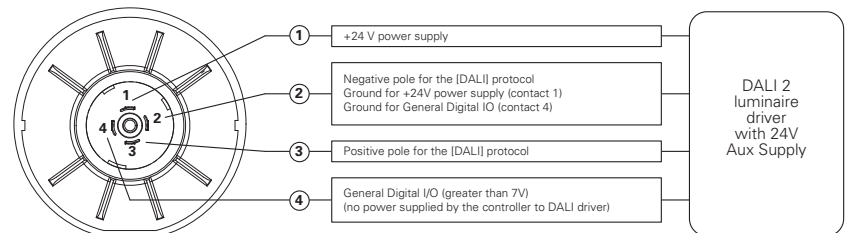
### CONFIGURABLE PARAMETERS:

- › Astronomical calendar scheduler
- › Predefined scheduler
- › Start state ( Photocell / Schedule / Manual)
- › Over/ under voltage threshold
- › Over/ under current threshold
- › Fade time
- › Lamp warming time
- › Lamp cooldown time
- › Light level threshold
- › Data transmission setup
- › Alert priority setup
- › Use of necessary light flux (Adjustable Lighting Output)- Only ON/OFF based on photocell value
- › Maintaining of constant light flux (Constant Lumen Output)- depending on the control gear

### ALARMS MONITORED:

- › Over/ under voltage detection
- › Over/ under current detection
- › Lamp or driver fault detection
- › Device failure

### ELECTRICAL CONNECTIONS:



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