FRE-24-Zhaga-NB1 - NB-IoT 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.

CERTIFIED CE

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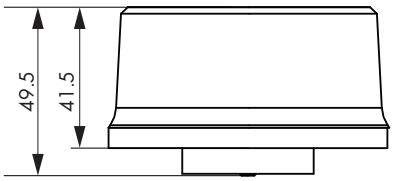
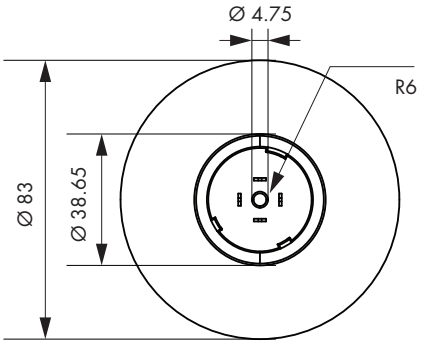
DIMENSIONS (mm):





CERTIFICATIONS:

CE

SR CERTIFIED

	FRE-24-Zhaga-NB1
Lamp Type	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
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	6W/ 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)	83 x 50 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 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.

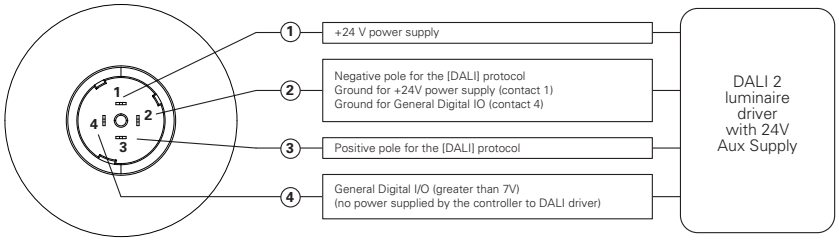
CONFIGURABLE PARAMETERS:

- 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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