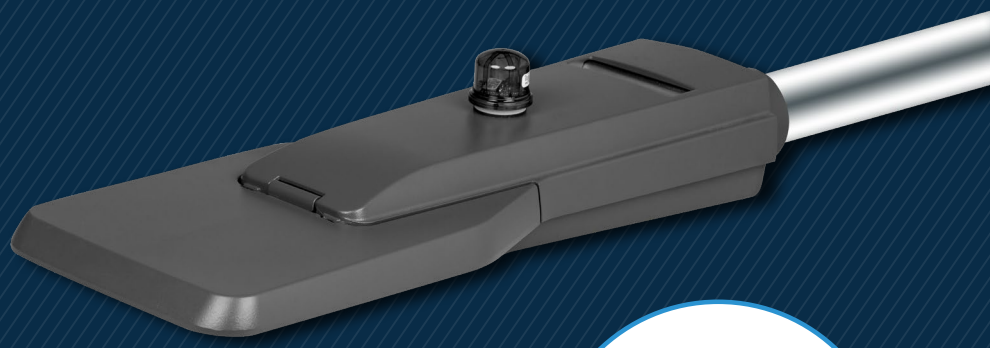
AIUNEO aiut brand

ALZ 10x5

for Smart Street Light Metering

IoT Module



- Optimal management of street lighting
- IoT connectivity, SRD radio communication
- Astronomical clock and GPS location
- For luminaires with ZHAGA connectors and SR or DALI2 protocol
- Data encryption
- Accelerometer technology to detect the change of luminaire position
- Built-in photocell
- Compatible with systems controlled by astronomical programmers

ALZ 10x5 is an IoT module developed for remote monitoring and configuration of street lightning. The device gathers power metering and luminaire status data and transmits them via LoRa low power network or radio SRD technology to the acquisition server. The module is developed for universal 4-pin ZHAGA luminaires equipped with DALI interface and SR or DALI2 protocol.

The module enables to configure the lighting time and light level in defined time periods what significantly reduces energy consumption and saves operating costs. The embedded accelerometer enables to register and send notifications about the tilt of the luminaire (e.g. caused by a road accident) or unauthorized dismantling of the module to the system. Such notifications can be interpreted as alarms and processed respectively to inform the responsible personnel with SMS or email.

aiut

AIUT S.A. ul. Wyczółkowskiego 113, 44-109 Gliwice, Poland
Tel.: (+48 32) 77 54 000 Fax: (+48 32) 77 54 001
www.aiuneo.com | www.aiut.com

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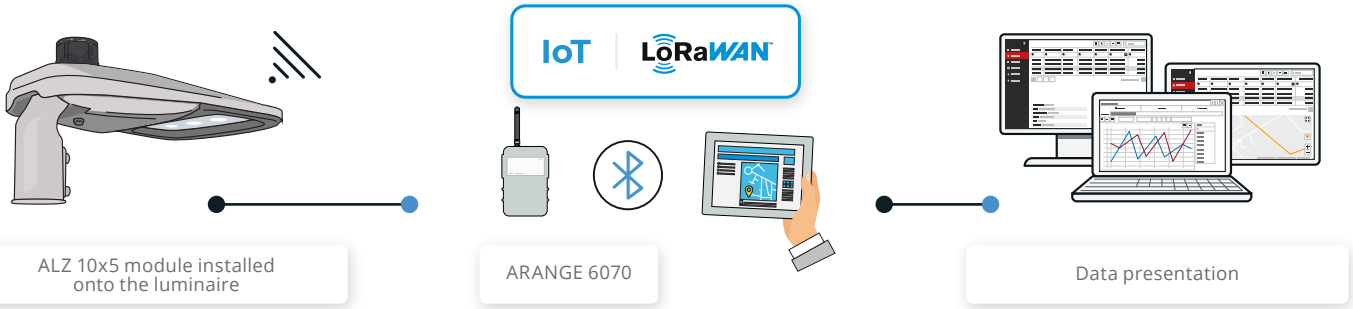
PLUG & PLAY

ALZ 10x5 is a module that operates using two independent, unlicensed wireless communication technologies - data from the module installed on the luminaire can be transferred to the IoT system directly via LoRaWAN, or using RF (short-range) radio where ARANGE 6070 communicates via Bluetooth with a phone equipped with Android. Received data are encrypted with AES using 128-bit keys. Universal functionality of the module allows its operating within one common Smart City IoT platform.



ALZ 10x5 module installed onto the luminaire

ARANGE 6070

Data presentation

Environmental parameters

- Ingress protection: IP 66
- Operational temperature: -40°C to + 70°C
- 24V power supply from the ZHAGA connector
- Dimensions: H x D: 48mm x 46mm

Radio Communication LoRa and RF

- Bidirectional communication IoT/RF: control, diagnostics, configuration
- Range: up to 5 km (LoRa), up to 200m (RF)
- Frequency band: unlicensed
- Radio frequency: 868 MHz, output power: 16 dBm
- Bit rate: 50 kbps (LoRa), 4.8 kbps (RF)

Radio Communication LoRa and RF

x: F - LoRa and RF communication
7 - RF communication

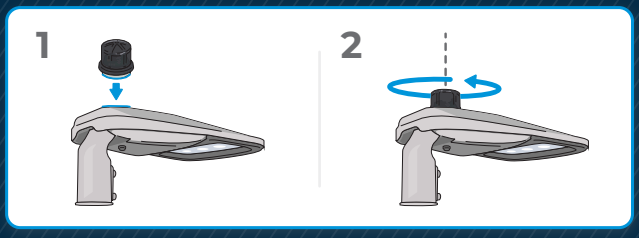
yz: 00 - no additional functionality
30 - integrated astronomical clock, photocell, accelerometer
31 - integrated astronomical clock and photocell

Data Structures

- Active energy, active power
- Apparent energy, apparent power
- Current, voltage
- Lighting time, temperature, statuses
- Type of detected events: changed module position* (e.g. damaged luminaire, module removal), no communication with the luminaire

Installation

- Direct installation onto 4-pin ZHAGA luminaires equipped with DALI interface and SR or DALI2 protocol
- Easy installation with simple twist and lock motion, no tools needed



Luminaire control mode lighting

- **Astronomical mode (1)** - the lighting is turned on only in accordance with the built-in astronomical clock (from sunset to sunrise).
- **Photocell mode (2)** - the lighting is turned on/off on the basis of measurements from the photocell light sensor.
- **Hybrid mode (3)** - the lighting is turned on/off during sunrise and sunset with the use of the measurements from the photocell light sensor.

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