ITP 100/101/110/111

LoRa IoT Photocell

Main features

- Remote management of public lighting
- Compatible with LoRaWAN protocol
- Consumption measurement retention
- Integrated internal antenna
- GPS → Georeferencing (optional)
- Fixture failure report (optional)
- Remote and automatic dimming
- Integration with Tago via ITG gateway with Internal Network Server and through ChirpStack

Applications

- Smartcity

Overview

Developed for the complete management of IP (Public Lighting) in Smart Cities, Khomp photocells are physically connected in luminaires, and thus measure different quantities, such as: Energy consumption, voltage, current, power factor. In addition, report fault messages, such as power failure and load overcurrent. It also has modern light sensors, forming an immune system to sudden changes in light, lightning and headlights.

The Khomp photocells also have a relay that can turn the luminaire on and off in the absence of sunlight, close to zero voltage (ZCD), increasing the product's life, and a dimming circuit that controls the intensity of the light. generated light, contributing to the reduction of energy consumption.

Khomp also offers an option with a gyroscope / accelerometer, capable of monitoring whether the pole where the lamp is located was hit in an accident, if it is tilted or swaying with the wind. It also has versions equipped with an integrated GPS for georeferencing, which facilitates its location in case of maintenance.

The connection of the photocells to the integrator's solution is done through a LoRa gateway, such as the Khomp ITG 201 LoRa Outdoor.

Through the LoRaWan network, commands can be sent to configure the photocell, such as dimming percentage value, lighting fixture and parameters for fault signaling.

Models

Model	Description
ITP 100	Basic Endpoint Fotocélula LoRa version.
ITP 101	Endpoint LoRa photocell with integrated GPS.
ITP 110	Endpoint Fotocélula LoRa with integrated gyroscope / accelerometer.
ITP 111	Endpoint Fotocélula LoRa with integrated GPS, gyroscope / accelerometer.

Technical specifications

Technical information

- Operates under LoRa class C network
- Waterproof protection
- 7 pins (can be used on 3, 5 or 7 pin bases):
  - 2 for dimming
  - 3 for neutral, phase and AC return
  - 2 for future use of data exchange
- Standard NEMA 7 pin or ANSI 136.41
- Integrated internal antenna
- Internal memory: 512 Kbit
- UTC Clock
- Internal tension: 100–240 VAC
- Capacity: 5 A
- LoRaWAN 1.0.3 protocol
- Accepts Multicast operation
- Frequency range: 915–928 MHz
- Channels: 8 (configuráveis)
- Power: até +20 dBm
- Sensitivity: from -137 dBm
- Communication distance: some KM according to the installation area

Warranties and certifications

- Total warranty (legal + Khomp warranty): 1 year
- Anatel (Brazilian National Telecommunications Agency) Certification
- ISO 9001 certified

Functionalities

- Activation relay: Turn on the luminaire at night
- Dimerization circuit: 0-10 V PWM
- Gyroscope / Accelerometer (Optional)
- GNSS: GPS, Glonass (Optional)
- Light sensor
- Internal backup with supercapacitor
- Consumption monitor:
  - RMS voltage
  - RMS current
  - Power factor
  - Frequency
  - Active energy (Accumulated)
  - Reactive energy (Accumulated)
  - Temperature
  - Dimerization level

Physical/Environmental

- Product dimensions: 84×93 mm
- Transport box dimensions: 125×110×95 mm
- Gross weight: 300 g
- Net Weight: 250 g
- Operating temperature: -20°C to 85°C
- Operating humidity: 0–90% (non-condensing)

Everynet interoperability seal

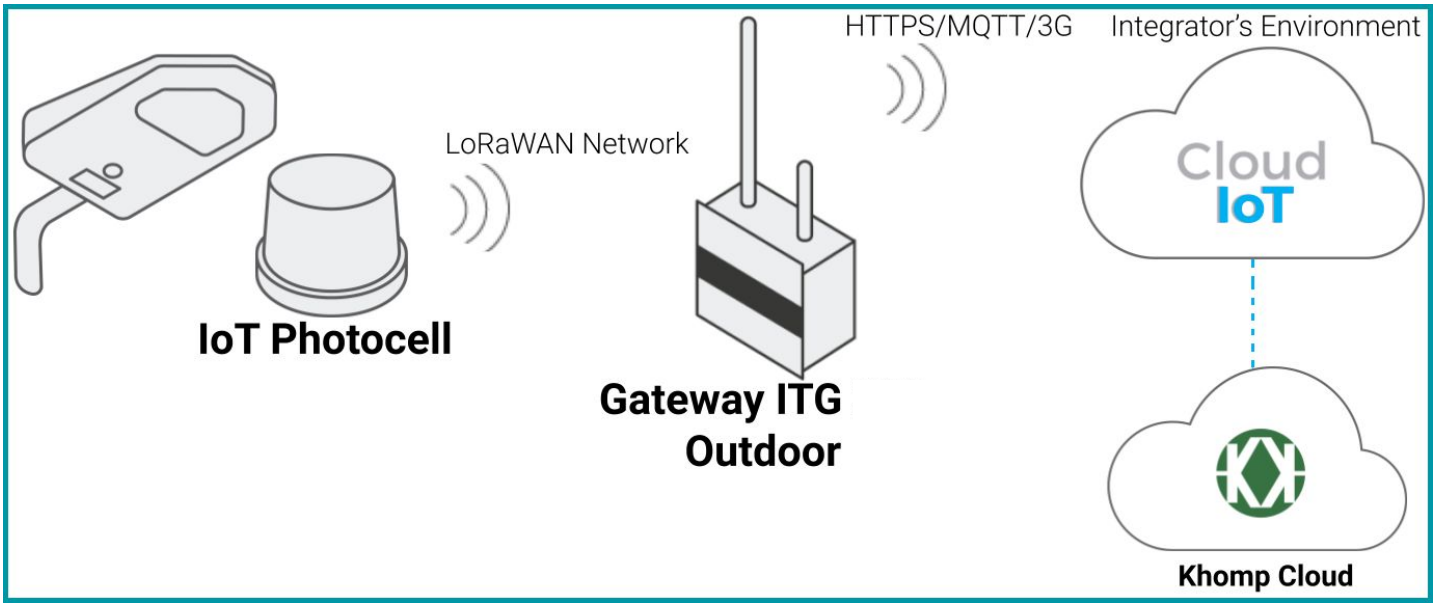
COMPATIBLE WITH LoRaWAN

&thingz Interoperability Lab

Application Model

In the scenario presented, the LoRa IoT Khomp Photocell, sends information to an ITG Khomp IoT gateway via the LoRaWAN protocol, and after this information is collected, it is sent to the solution integrator's Cloud, being available for analysis and decision making through of the integrator's application.

Thus, according to the need, the luminaire can switch on or off, its brightness can increase or decrease, and also, possible problems can be predicted according to the analysis of the collected information, such as voltage, power and frequency. Using the gyroscope / accelerometer (optional), you can check any unusual movement of the luminaire and its fixation, and through the integrated GPS (optional), know the exact location of a luminaire with a possible problem.



- This equipment is not entitled to protection against harmful interference and may not cause interference to duly authorized systems.
- This equipment is not suitable for use in domestic environments, as it may cause electromagnetic interference that requires the user to take measures to minimize this interference.