

LoRaWAN™ INTENS'O SENSOR



The INTENS'O SENSOR measures the magnitude of the electrical current flowing in the AC power supply of any equipment. The sensor is used to determine the equipment status according to one or more configurable current thresholds. Data is transmitted over a public or private LoRaWAN™ radio network.

APPLICATIONS

- Escalator: detection of the stair stop
- Public lighting: detection of a defective street lamp
- Buildings, factories : supervision of an elevator, machine, process for control of correct operation
- Detection of overconsumption in the context of predictive maintenance,
- Indoor or outdoor protected uses

BENEFITS & KEY FEATURES

- LoRaWAN™, Class A
- Easy to use and deploy
- Remote current clamp (Split-core current transformer)
- Measurements at regular intervals
- Up to 12 years autonomy depending on configuration
- IP65

QUALITY & RELIABILITY

- CE, RoHS, LoRa Alliance™



INTENS'O SENSOR analyses the current magnitude of any electrical conductor. The current magnitude is measured thanks to a split core current transformer without disrupting the current path.

INTENS'O regularly measures the current magnitude and periodically transmits the operating status of the equipment. When the current magnitude is crossing a threshold previously set by the user, the sensor automatically transmits an alert with the associated current measurement. The alert can be transmitted from a public or private LoRaWAN™ communication network.

INTENS'O SENSOR is quickly and easily placed on the power phase conductor of any control cabinet or of the electrical motor of the equipment for instance. It enables to check:

- If the equipment is operating or down, due to a mechanical failure for instance;
- Whether the street light is operating properly or not in order to quickly replace the street lamp

Up to 7 different current thresholds can be set by the user. When used in a building or in a factory for instance, It enables to set up a predictive maintenance service.

INTENS'O SENSOR is easy to use, deploy and maintain. The sensor is equipped with:

- A split core current transformer
- A 3m cable allowing the current clamp to be placed on the live conductor in the electrical panel, close to the motor. The sensor can be remote to be located in the optimal radio coverage area,
- A 3M Dual Lock adhesive and adaptable hitching system
- An NFC identification tag (product number, serial number, production batch)
- A magnetic switch and a buzzer that allow the installer to easily enable / disable the sensor.


The sensor is powered by a 3.6Volt lithium battery. The autonomy is more than 10 years when measuring current magnitude every 1 minute and when transmitting data every hour.

NKE WATTECO, YOUR PARTNER IN SMART SENSORS & ACTUATORS

We are a European leader in designing and manufacturing highly reliable and low power consumption smart sensors, actuators and multiprotocol remote data solutions.

nke Watteco is an adopter member of the LoRa® Alliance

TECHNICAL CHARACTERISTICS

| RADIOFREQUENCY | |
|---|---|
| Frequency (MHz) | 863-870 |
| Transmit Power(dBm) | +14 |
| Receiver Sensitivity (dBm) | -140 |
| FIRMWARE CONFIGURATION | |
| Protocol | LoRaWAN™, Class A |
| Configuration | Measurement interval from 1 second (default 60 seconds) Radio transmission period from 1 second (default 12 hours) Intensity threshold: up to 7, within the measuring range (default 1.5 Amp) Editable configuration from the remote server via the downlink |
| Activation method | Activation by Personalization (ABP) and Over-The-Air Activation (OTAA) |
| Data encryption | AES128 – no data compression |
| Applicative layer | ZCL open source (coming in 2018) to be decoded by the remote server |
| POWER MONITORING | |
| Power transformer | Torus 41 x 29.5 x 26 mm ; for insulated conductor up to Ø9mm Remote on 3m deported cable - connected to the sensor by a plug-in connector Øext 12mm |
| Transformation ratio | 1: 3000 |
| Monitoring range | 0-20 ARMS on power supply 110, 230, 380 or 400Volts AC 50/60 Hz 0.1A resolution in the range of 1 to 20 A |
| Max. current | 70 A _{RMS} |
| Dielectric insulation of the clamp | 1 000V – 1mA – 1 minute |
| POWER | |
| Tension | 3,6V / 3600mAh –lithium battery |
| Autonomy in a +10°C to +25°C temperature range | > 10 years: 1 measure / 60 seconds - 1 transmission / 60 minutes > 7 years: 1 measure / 2 seconds - 1 transmission / 4 hours |
| INTERFACE | |
| NFC Tag | Product number, serial number, production batch |
| Buzzer | Set up and pairing with the network |
| Magnetic switch | Putting into service / pairing with the network– Unpairing/shutdown for storage |
| ALARMS | |
| Treshold crossing | Instantaneous transmission after measure |
| Battery Tension | Transmission according to periodicity of data frame |
| MECHANICAL FEATURES | |
| Dimensions (mm) | 84 x 82 x 55 – Dual-sided adhesive, or screw (non furnished) |
| IP Class | IP65 |
| Fire protection | UL94-V2 |
| ENVIRONMENTAL | |
| Operating temperature (°C) | -20 / +60 |
| Storage temperature (°C) – Humidity (% rH) | -10 / +30 – Humidity < 75% RH |
| DIRECTIVES & STANDARDS | |
| CEM 2014/30/UE, BT 2014/35/UE, RED 2014/53/UE, CE, RoHS |  |

ORDERING INFORMATION

| REFERENCE | MODEL DESCRIPTION |
|-----------|--------------------------|
| 50-70-091 | LoRaWAN™ INTENS'O SENSOR |