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 transmit 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 $\varnothing$9mm Remote on 3m deported cable ($\varnothing$4.1mm) - connected to the sensor by a plug-in connector $\varnothing$ext 12mm
Transformation ratio	1: 3000
Monitoring range	0-20 ARMS on power supply110, 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	CE ☒ ☑ RoHS

ORDERING INFORMATION

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