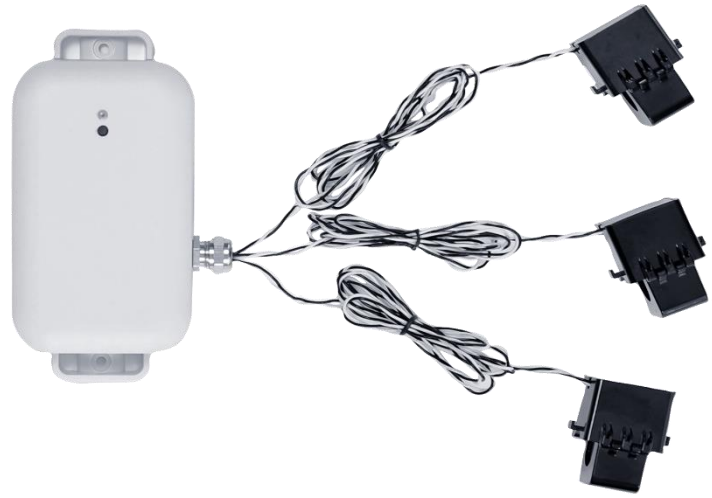


Description

The AMPSENSE is advanced technology sensor applied for measurement of the magnitude of the electric current through easily installed split core current transformers and used indoors. Sensor is one phase or three phase with integrated advanced intelligent (AI) computational algorithm enables reliable capability of the measurement the magnitude current. The data transmitted from the sensor is based on Class A LoRaWAN® wireless network. AMPSENSE is powered with 3.6V batteries and able to operate up to 13 years depending on the configuration. The AMPSENSE sensor is easily configured and connected to the LoRaWAN® wireless network. The calibration is not needed for the AMPSENSE.



Applications

- Smart buildings
- Government buildings
- Public buildings
- Industrial facilities
- Factories
- Warehouses

Product features

- LoRaWAN communication
- Computational AI algorithm
- Indoor electric current sensor
- Configuration over the air
- Robust enclosure
- Auto self-calibration
- Split core current transformers

Sensing characteristics

Current	1A to 32A / 1A to 50A / 1A to 75A / 1A to 75A / 1A to 150A / 1A to 250A / 1A to 400A / 1A to 600A
Current Measurement Accuracy	<+-1%
Phase number	One phase / three phase (in accordance of clients choice)

Mechanical specification

Weight	80 g without battery
Dimensions	121 x 62 x 26 mm
Enclosure	Plastic ASA+PC-FR
Storage Temperature	-10 to 70 °C

Sensor Power Supply

Battery Type and voltage	2x3.6 V AA Lithium Battery ER14505 AA lithium batteries (3.6V2400mAh/section)
Expected Battery Life	<13 years (Depending on configurations and environment)

Sensor logging Function

Sampling Interval	Configurable via downlink, NFC configuration is optional
Data Upload Interval	Configurable via downlink, NFC configuration is optional

Radio / Wireless specification

Wireless Technology	LoRaWAN® 1.0.3
Wireless Security	LoRaWAN® End-to-End encryption (AES)
LoRaWAN Device Type	Class A End-device
Supported LoRaWAN® features	OTAA, ABP, ADR, Adaptive Channel Setup
Supported LoRaWAN® regions	EU863 – 870 Optional: US902 – 928, EU863 – 870, AU915 – 928, EU433, RU864, IN865
Link Budget	137 dB (SF7) to 151 dB (SF12)
TX Power	14dBm±1dBm (Region specific)
Rx Sensitivity	132 dBm (LoRa, Spreading Factor=12, Bit Rate=293bps) -118 dBm (FSK, Frequency deviation=5kHz, Bit Rate=1.2kbps)
Communication range	10 km (line-of-sight, actual transmission distance depends on the environment)

Data sizes

Measurement	Data size	Elaboration
Current I phase	2	MSB byte A, LSB byte, one digit after decimal point expressed as unsigned 2 byte value
Current II phase	2	MSB byte A, LSB byte, one digit after decimal point expressed as unsigned 2 byte value
Current III phase	2	MSB byte A, LSB byte, one digit after decimal point expressed as unsigned 2 byte value
Battery	2	MSB byte represent Volts before decimal point , LSB byte represents two digits after decimal point expressed as unsigned 2 byte value, first byte – integer Volts, second byte – Volts (two digits after decimal point).

Sensor dimensions:

