

Wireless 3-Phase Current Meter with 3 x 150A Clamp-On CT

Wireless Sensor Network Based on LoRa Technology



R718N315



R718N315E (detachable cables)

R718N315(E) Data Sheet

Copyright©Netvox Technology Co., Ltd.

This document contains proprietary technical information which is the property of NETVOX Technology and is issued in strict confidential and shall not be disclosed to others parties in whole or in parts without written permission of NETVOX Technology. The specifications are subjected to change without prior notice.

Introduction

The Netvox wireless three-phase current detector is used to detect three-phase electrical input current. The device is compatible with the LoRaWAN protocol, and integrates a chip module that conforms to the LoRaWAN wireless protocol, and joins the gateway to display the collected data in the gateway. The device is powered by a battery and receives AC through a current transformer. This device adopts clamp-on current transformer, which can be easily connected to the device to be tested.

Working Principle

The device is connected to current transformers. A current transformer converts the primary side large current into a secondary side small current according to the principle of electromagnetic induction. The primary side large current is isolated from the secondary side small current. This device is to monitor the secondary side small current and is powered by batteries to ensure the safety of the users.

Features

- 2 ER14505 battery AA SIZE (3.6V / section) in parallel power supply
- Main body: IP53; sensor: IP30
- Magnetic base
- SX1276 wireless communication module
- LoRaWAN™ Class A compatible
- Frequency Hopping Spread Spectrum (FHSS)
- Third-Party online wireless sensor monitoring and notification system to configure sensors, view data and set alerts via SMS text and email (optional)
- Available third-party platforms: Actility/ThingPark, TTN, MyDevices/Cayenne
- Low power consumption and longer battery life

Note: (1) Actual range may vary depending on the environment.

(2) Battery life is determined by sensor reporting frequency and other variables.

(3) Please visit http://elecalc.netvoxcloud.com:8080/electric_calc/electric_calc.html?lang=en to find more detailed information on battery lifetime calculation.

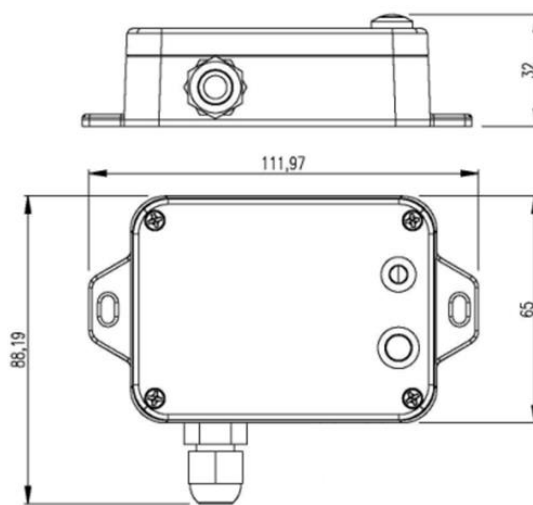
Wireless 3-Phase Current Meter with 3 x 150A Clamp-On CT

Applications

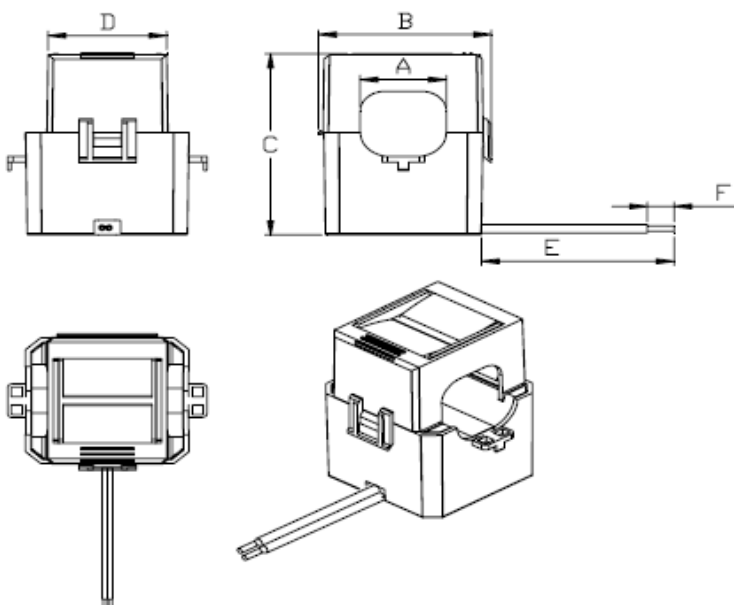
- Indoor current detecting devices for homes, hotels, office buildings, shopping malls, etc.
- Smart city
- Thermal system device

Dimensions

Main body: 112 mm (L) x 88.19 mm (W) x 32 mm (H)



CT: 33mm (L) x 28.5mm (W) x 43.5mm (H)



A	B	C
16±0.5	33±0.5	43.5±0.5

D	E	F
22.8±0.3	900±30	6±1

Wireless 3-Phase Current Meter with 3 x 150A Clamp-On CT

Electrical Specifications

Power Supply	2 x 3.6V ER14505 lithium batteries
Battery Lifespan	5 years (conditions: ambient temperature 25°C, report once every 15 min, TX power = 20dBm, LoRa spreading factor SF = 10)
Standby Current	25uA
Wakeup Current	7mA
RF Receiving Current	11 mA/ 3.3V
RF Emission Current	127 mA/ 3.3 V
Battery Measurement Accuracy	± 0.1V
Current Measurement Accuracy	<±1%
Current Resolution	1mA
Current Measurement Range	1A – 150A (depending on the current transformer configuration)

Note: Electrical specifications may vary depending on the power supply voltage.

Clamp-on Current Transformer Parameter

Rated Primary Current	100A, 50Hz – 60Hz
Rated Secondary Current	33.33mA
Saturation Current	≥150A
Ratio	3000: 1
Load Resistance	10 Ω
Accuracy	1% (1A–150A)
Electrical Strength	3000V
Case Material	Flame Retardant Grade 94-V0 UL Material
Environmentally Friendly	ROHS compliant
Operating Temperature	-40 °C – 85 °C

Wireless 3-Phase Current Meter with 3 x 150A Clamp-On CT
Frequency

Frequency Range	863MHz-928MHz 470MHz-510MHz
Power Output	19dBm±1dBm
Power Output	US915 20dbm AS923 16dbm AU915 20dbm CN470 19.15dbm EU868 16dbm KR920 14dbm IN865 20dbm
Receiving Sensitivity	-136 dBm (LoRa, Spreading Factor = 12, Bit Rate = 293bps) -121 dBm (FSK, Frequency deviation = 5kHz, Bit Rate = 1.2kbps)
Antenna Type	Built-in antenna
Communication Distance	10 km (The actual transmission distance depends on the environment.)
Data Transfer Rate	FSK: 1.2kbps – 300kbps LoRa: 0.3kbps – 50k bps
Modulation	LoRa / FSK (Note: One modulation method is required.)
Available LoRaWAN Band	EU863-870, US902-928, AU915-928, KR920-923, AS923-1, AS923-2, AS923-3, IN865-867, CN470-510 (Note: optional, to be done in the factory configuration)

Wireless 3-Phase Current Meter with 3 x 150A Clamp-On CT

Physical Properties

Dimension	Main body: 112 mm (L) x 88.19 mm (W) x 32 mm (H) Sensor: 33mm (L) 28.5mm (W) x 43.5mm (H)
Main body Weight	141 g
Sensor Weight	70.1*3 g
Sensor External Wiring Length	Non-detachable cable: about 900 mm Detachable cables: about 1200mm
Ambient Temperature Range	-20°C – 55°C
Storage Temperature Range	-40°C – 85°C
Ambient Humidity Range	<90% RH (No condensation)
Mounting	Screw / Magnet