

Wireless Single-Phase Current Meter with 1 x 150A Clamp-On CT

Wireless Sensor Network Based on LoRa Technology

R718N115(E) Data Sheet



R718N115

R718N115E
(with detachable cable)

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Introduction

The Netvox wireless single-phase current detector is used to detect single-phase electrical input current. The device is compatible with the LoRaWAN protocol, and integrates a chip module that conforms to the LoRaWAN wireless protocol to display the collected data in the gateway. The device is powered by batteries and obtains the load AC current value through the current transformer. The device adopts the clamp-on current transformer, which can be conveniently connected to the measuring device.

Working Principle

This device is connected to a current transformer. The current transformer is an instrument that converts the primary side large current into a secondary side small current according to the principle of electromagnetic induction, and 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
- Protection level: main body IP53; sensor IP30
- SX1276 wireless communication module
- Magnetic base
- Clamp-on current transformer
- LoRaWAN™ Class A compatible
- Frequency Hopping Spread Spectrum (FHSS)
- Available third-party platform: Actility/ThingPark, TTN, MyDevices/Cayenne
- Low power consumption and long battery life

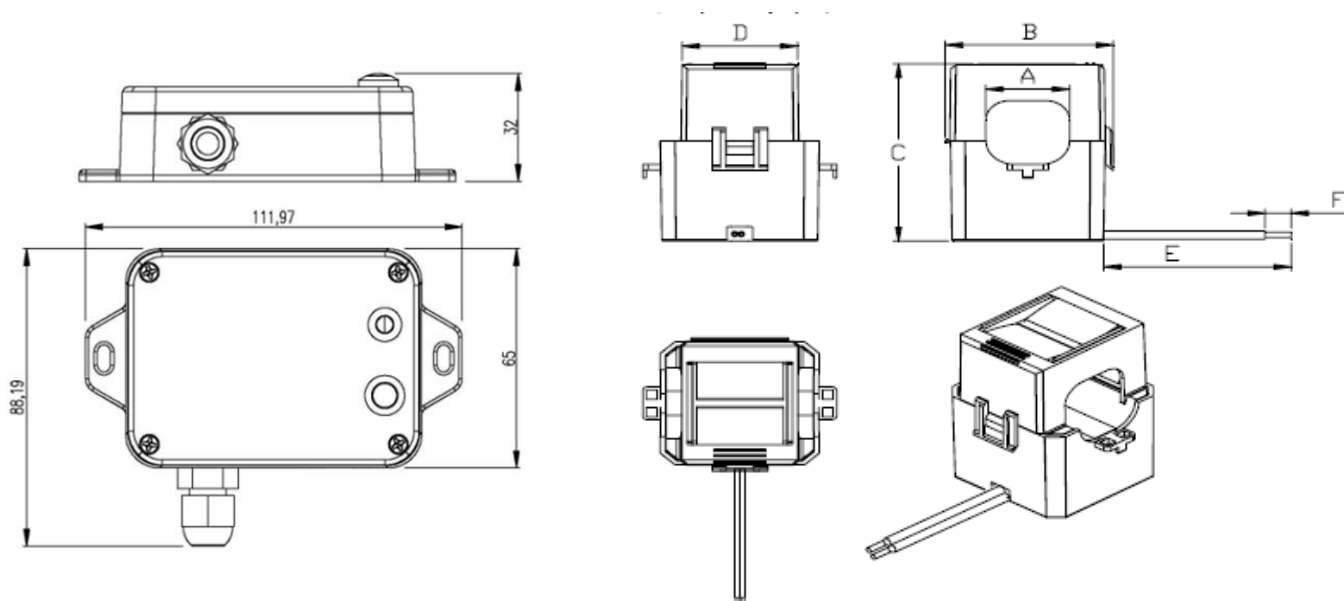
Note: Please visit http://www.netvox.com.tw/electric/electric_calc.html for detailed information about battery lifetime.

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Applications

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

Dimensions



▲ Main body

L:112mm x W:88.19mm x H:32mm

▲ Current Transformer

L: 33 x W: 28.5mm x H: 43.5

A	B	C
16±0.5	33±0.5	43.5±0.5

D	E	F
22.8±0.3	900±30	6±1

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Electrical Specification

Power Supply	2 ER14505 lithium batteries in parallel (3.6 V 2400mAh for each battery)
Battery Lifespan	5 years (when ambient temperature: 25 °C, report once every 30mins, txpower = 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 to 150A

Note: The electrical specifications may vary due to the power supply voltage.

Clamp-on Current Transformer Parameter

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

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Frequency

Frequency Range	863MHz-928MHz 470MHz-510MHz
Power Output	19dBm±1dBm (max)
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 (line of sight) Note: Actual transmission distance may vary due to the environment.
Data Transfer Rate	Lora: 0.3 to 50kbps; FSK:1.2 to 300kbps
Modulation	LoRa / FSK Note: one modulation 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 Single-Phase Current Meter with 1 x 150A Clamp-On CT**Physical Properties**

Dimensions	Main body: L: 112 mm x W: 88.19 mm x H: 32 mm Sensor: L: 33mm x W: 28.5mm x H: 43.5mm
Host body Weight	141g
Sensor Weight	70.1g
Sensor External Wiring Length	R718N115: 900mm R718N115E: 1200mm (detachable cable)
Ambient Temperature Range	-20°C to 55°C
Storage Temperature Range	-40°C to 85°C
Ambient Humidity Range	<90% RH (No condensation)
Mounting	Screw / Magnet