

Wireless 1-Phase Current Meter with 1 x 630A Clamp-On CT

Wireless Sensor Network Based on LoRa Technology



R718N163 Data Sheet

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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 battery 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.

Operating 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.

Application

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

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Main Characteristic

- 2 ER14505 battery AA SIZE (3.6V / section) in parallel power supply
- Protection level: host body IP53, sensor IP30
- The base is attached with a magnet that can be attached to a ferromagnetic material object
- Adopt clamp-on current transformer, it can easily connect to the device to be detected
- 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 platform: Actility/ThingPark, TTN, MyDevices/Cayenne
- Low power consumption and long battery life
- Battery Life*2:

Please refer to web: http://www.netvox.com.tw/electric/electric_calc.html

At this website, users can find battery lifetime for various models at different configurations.

*1. Actual range may vary depending on environment.

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

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Electric

Power Supply	2 ER14505 lithium batteries (3.6 V 2400mAh / section) in parallel
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	5A to 630A (depending on the current transformer configuration)

* Specific electrical characteristics may vary depending on the power supply voltage.

Split-Core Current Transformer Parameter

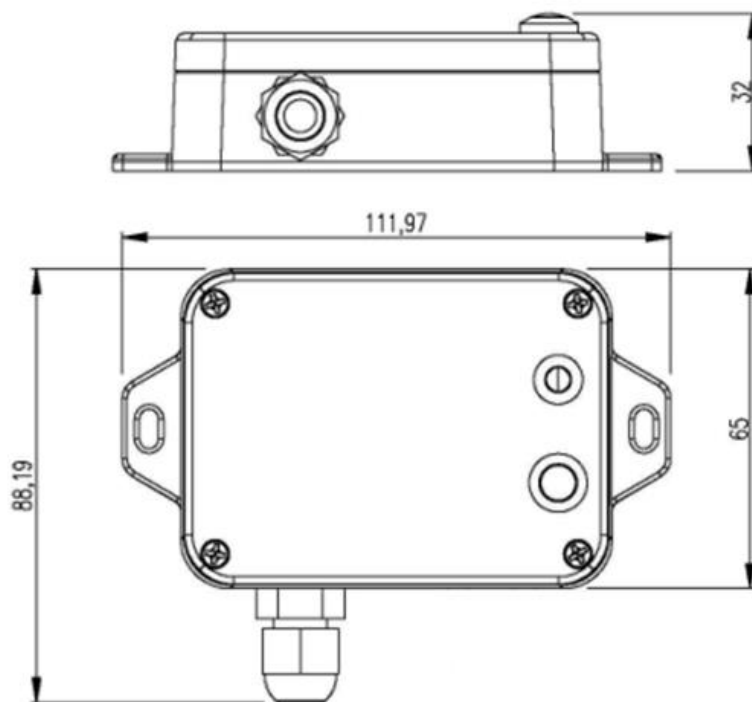
Rated Primary Current	300A, 50Hz ~ 60Hz
Rated Secondary Current	50 mA
Saturation Current	≥630A
Applicable Voltage	<600V
Ratio	6000: 1
Load Resistance	10 Ω
Accuracy	1% (5A-720A)
Electrical Strength	3000V
Housing Material	Flame Retardant Grade 94-V0 UL Material
Environmentally Friendly	ROHS compliant
Operating Temperature	-40 °C ~ 85 °C

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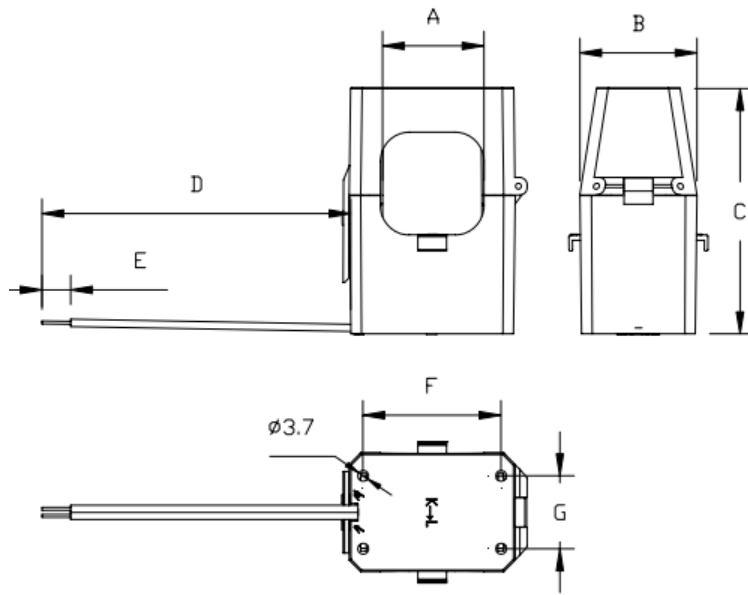
Frequency

Frequency Range	863MHz-928MHz 470MHz-510MHz
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	0.3kbps ~ 50k bps
Modulation	LoRa / FSK (Note: you can choose one of them)
Available LoRaWAN Band	EU863-870, US902-928, AU915-928, KR920-923, AS923, CN470-510 (Note: optional, to be done in the factory configuration)

Physical



Wireless 1-Phase Current Meter with 1 x 630A Clamp-On CT



A	B	C	D	E	F	G
35±0.5	40.3±0.3	84.8max	900±30	6±1	48±0.3	25±0.3

Dimension	Host body: L: 112 mm *W: 88.19 mm *H: 32 mm Sensor: H: 84.8mm *L: 40.8mm *W: 48mm
Host body Weight	141 g
Sensor Weight	365.4 g
Sensor External Wiring Length	900 mm
Ambient Temperature Range	-20°C ~ 55°C
Storage Temperature Range	-40°C ~ 85°C
Ambient Humidity Range	<90% RH (No condensation)
Mounting	Screw / Magnet