

Wireless 1-Phase Current Meter with 1 x 30A Clamp-On CT

Wireless Sensor Network Based on LoRa Technology



R718N13 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 split-core 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, and the secondary side of the device is monitored. Low current, battery powered, to ensure safe use of the device.

Main Characteristics

- LoRaWAN™ Class A compatible
- Apply SX1276 wireless communication module
- 2 ER14505 battery AA SIZE (3.6V / section) parallel power supply
- IP Rating: Host body-IP53, CT-IP30
- The base is attached with a magnet that can be attached to a ferromagnetic material object
- Improved power management for longer battery life
- 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
- 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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Application

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

Electrical

Power supply	2 ER14505 lithium batteries (3.6 V, 2400mAh/ section) in parallel
Battery life	5 years (Condition: ambient temperature 25 °C, report once every 30mins, txpower = 20dBm, LoRa spreading factor SF = 10)
Stand by Current	25uA
Wake up Current	7mA
RF Receiving Current	11 mA/ 3.3V
RF Emission Current	127 mA/ 3.3V
Battery Measurement Accuracy	± 0.1V
Current Measurement Accuracy	<±1%
Current Resolution	1mA
Current Measurement Range	100mA to 30 A (varies according to the configuration of the current transformer)

Physical

Size	Main body size: L: 112 mm * W: 88.19 mm * H: 32 mm Sensor size: H: 32 mm * L: 26.4 mm * W: 16 mm
Main body Weight	Approximately 141 g
Sensor Weight	About 30g
Sensor External Wiring Length	Approximately 950mm
Environment Temperature Range	-20°C ~ 55°C
Storage Temperature Range	-40°C ~ 85°C
Environment Humidity Range	<90% RH (No condensation)
Mounting	Screw / magnet

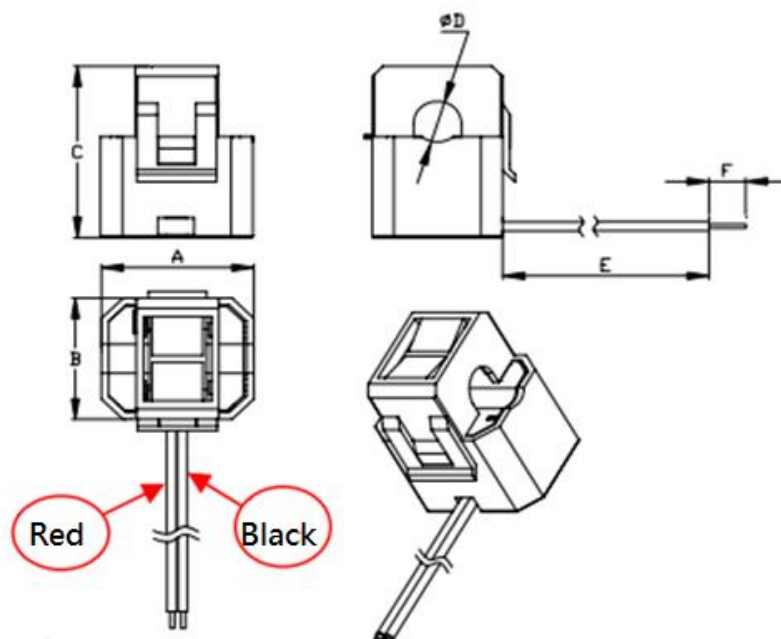
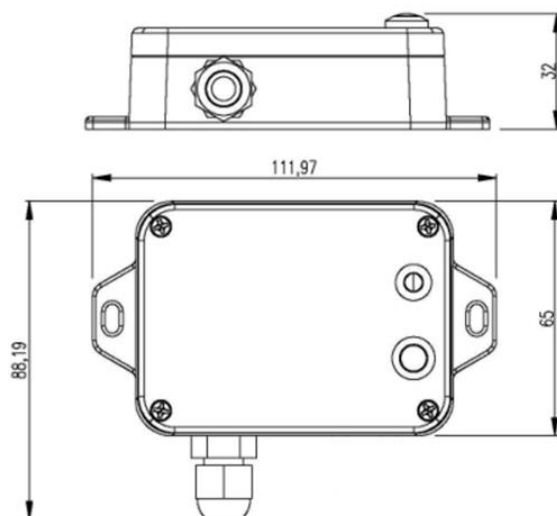
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Frequency

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	-136dBm (LoRa, Spreading Factor = 12, Bit Rate = 293bps); -121 dBm (FSK, Frequency deviation = 5kHz, Bit Rate = 1.2kbps)
Antenna type	Built-in antenna
Communication distance	5 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)

Split-core Current Transformer Parameters

Rated Primary Current	15 A, 50Hz ~ 60Hz
Rated Secondary Current	5mA
Applicable Voltage	<600V
Saturation current	30A
Ratio	3000: 1
Load resistance	10 Ω
Accuracy	1%
Electrical Strength	3000V
Housing material	Flame retardant grade 94-V0 UL material
Environmental protection	ROHS compliant
Operating temperature	-40 °C ~ + 85 °C

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Clamp-on CT

A	B	C	D	E	F
26.4max	16max	32max	6±0.5	920±20	6±1