

# Wireless 3-Phase Current Meter with 3 x 250A Clamp-On CT

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Wireless Sensor Network Based on LoRa Technology



R718N325



R718N325(E) detachable cables

## R718N325(E) Data Sheet

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## 1. Introduction

The Netvox wireless three-phase current detector can 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 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 transformers, which can be conveniently connected to the measuring device.

## 2. 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's small current and is powered by batteries to ensure the safety of the users.

## 3. Main Characteristic

- 2 ER14505 battery AA SIZE (3.6V / section) in parallel
- Protection level: main body: IP53, sensor: IP30
- Magnetic base
- Clamp-on current transformer (with non-detachable and detachable cables)
- 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 long battery life

Note: Please refer to web: [http://www.netvox.com.tw/electric/electric\\_calc.html](http://www.netvox.com.tw/electric/electric_calc.html). Users can find battery lifetime for various models at different configurations on this website.

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1. Actual range may vary depending on the environment.
2. Battery life is determined by sensor reporting frequency and other variables

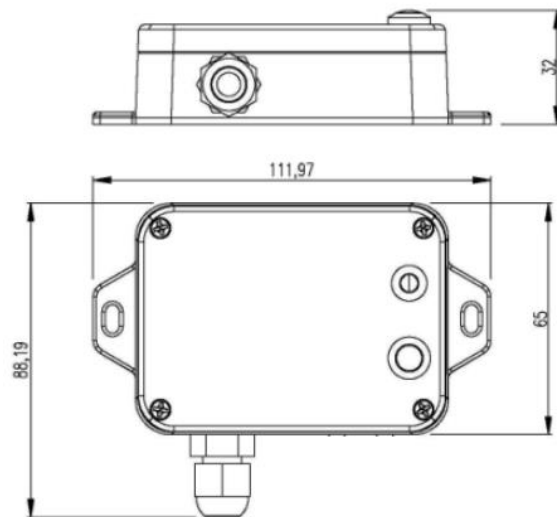
**4. Applications**

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

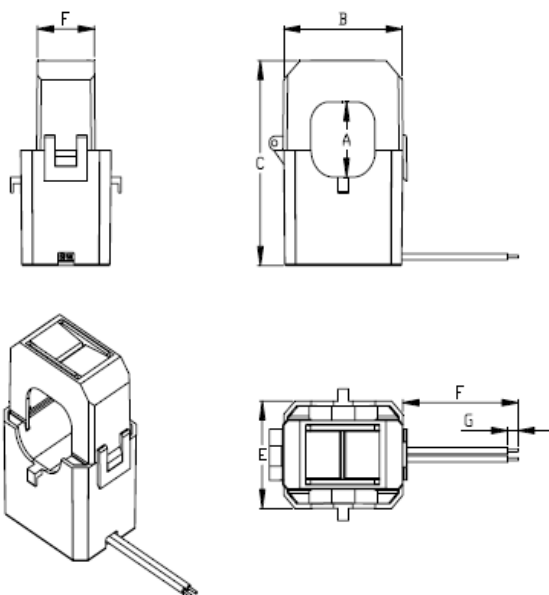
**5. Dimensions**

Main body:

112mm (L) x 88.19mm (W) x 32mm (H)



CT: 46mm (L) x 34mm (W) x 66mm (H)



A	B	C
24.3±0.5	46 max	66 max

D	E	F	G
22 max	34 max	900±30	6±1

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## 6. Electrical Specifications

Power Supply	2 ER14505 lithium batteries (3.6 V 2400mAh / section) in parallel
Battery Life	5 years (when ambient temperature: 25 °C, report once every 15mins, 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
Current Measurement Accuracy	<±1%
Current Resolution	1mA
Current Measurement Range	1A to 250A (depending on the current transformer configuration)

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

## 7. Clamp-on Current Transformer Parameter

Rated Primary Current	200A, 50Hz to 60Hz
Rated Secondary Current	66.66mA
Saturation Current	≥250A
Ratio	3000: 1
Load Resistance	10 Ω
Accuracy	1% (1A to 250A)
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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## 8. 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	LoRa : 0.3kbps to 50kbps FSK: 1.2 to 300kbps
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)

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**9. Physical Properties**

Dimensions	Main body: 112mm (L) x 88.19mm (W) x 32mm (H) Sensor: 46mm (L) x 34mm (W) x 66mm (H)
Main body Weight	141 g
Sensor Weight	150.6*3 g
Sensor External Wiring Length	R718N325 (non-detachable cable): 900 mm R718N325E (detachable cable): 1200 mm
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