

Wireless Three-Phase Current Meter

R718N3100(E) Data Sheet

Wireless Sensor Network Based on LoRa Technology



R718N3100



R718N3100E (detachable cables)

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Wireless Three-Phase Current Meter with 3 x 1000A Clamp-On CT

1. Introduction

NETVOX wireless three-phase current detector is used to detect the input current of the three-phase alternating current. The device is compatible with LoRaWAN protocol. It integrates a chip module that conforms to LoRaWAN wireless protocol and joins the gateway to display the collected data.

2. Working Principle

This device is connected with 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. 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. The device monitors the secondary side small current and adopts batteries to supply the power which ensures that users can use the device safely.

3. Features

- Clamp-on current transformer (with detachable and non-detachable cable)
- 2 ER14505 battery AA SIZE (3.6V/section) in parallel power supply
- Main body: IP53; Sensor: IP30
- Magnetic base
- LoRaWAN™ Class A compatible
- Frequency hopping spread spectrum
- Configuration parameters can be configured through third-party software platforms, data can be read and alarms can be set via SMS text and email (optional)
- Applicable to the 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. At this website, users can find battery lifetime for various models at different configurations.

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

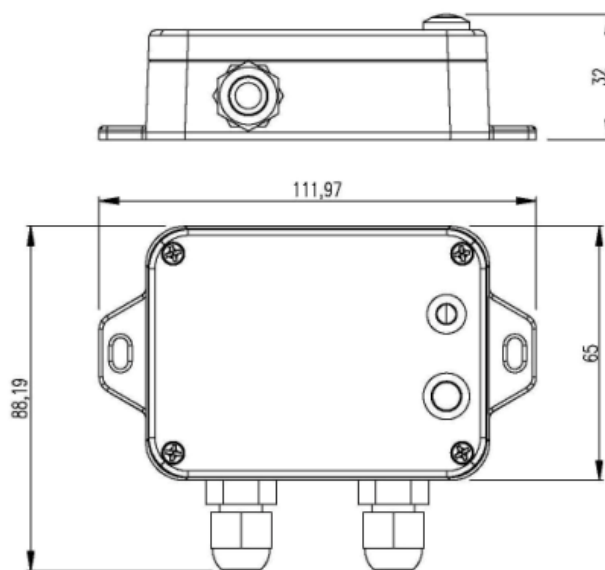
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4. Applications

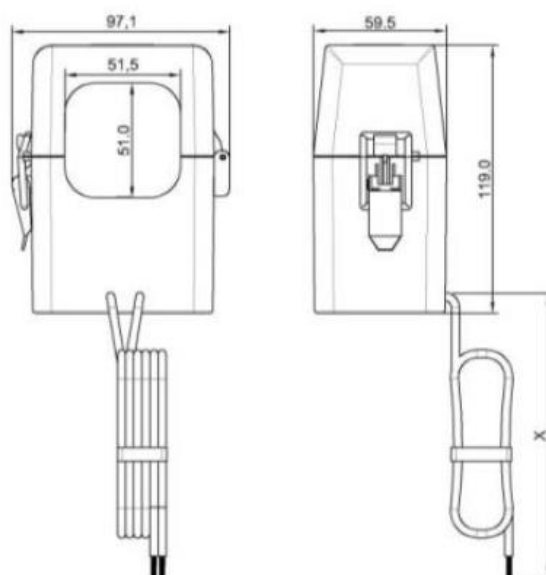
- Indoor current detecting devices for homes, hotels, office buildings, shopping malls, etc.
- Smart city
- Thermal system equipment

5. Dimensions

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



CT: 119mm x 97mm x 59.5mm



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6. Electrical Specifications

Power Supply	2 ER14505 lithium batteries (3.6V, 2400mAh/section) in parallel
Battery Life	<p>3.8 years</p> <p>(conditions: ambient temperature 25 °C, report once every 60 min, TX power = 20dBm, LoRa spreading factor SF = 10)</p> <p>Note:</p> <p>Battery lifespan may vary due to the changes of report interval, TX power, and spreading factor. Detailed calculation data could be found on http://elecalc.netvoxcloud.com:8080/electric_calc/electric_calc.html?lang=en.</p>
Standby Current	25uA
Device Wakeup Current	7mA
RF Receiving Current	11mA @3.3V
RF Emission Current	120mA @3.3V
Battery Measurement Accuracy	±0.1V
Current Measurement Accuracy	<±1%
Current Resolution	1mA
Current Measurement Range	<p>10A to 1000A</p> <p>(varies according to the configuration of the current transformer)</p>

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

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7. Frequency

Frequency Range	863MHz-928MHz 470MHz-510MHz
Tx Power	US915 20dbm AS923 16dbm AU915 20dbm CN470 19.15dbm EU868 16dbm KR920 14dbm IN865 20dbm
Rx Sensitivity	-136dBm (LoRa, Spreading Factor = 12, Bit Rate = 293bps) -121dBm (FSK, Frequency deviation = 5kHz, Bit Rate = 1.2kbps)
Antenna Type	Built-in antenna
Communication Range	10km (The actual transmission distance depends on the environment.)
Data Transfer Rate	0.3kbps – 50kbps (LoRa) 1.2kbps – 300kbps (FSK)
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, need to be configured before shipment)

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8. Clamp-On Current Transformer

Rated Primary Current	1000A, 50Hz – 60Hz
Rated Secondary Current	500mA
Saturation Current	1000A
Ratio	2000: 1
Load Resistance	0.36Ω
Accuracy	0.5%
Electrical Strength	2000V/0.3mA/3S
Case Material	Flame Retardant Grade 94-V0 UL Material
Environmentally Friendly	ROHS compliant, CE/UL certified
Operating Temperature	-40 °C – 50 °C

9. Physical Properties

Dimension	Main body: 112mm (L) x 88.19mm (W) x 32mm (H) Sensor: 119mm x 97mm x 59.5mm
Main Body Weight	About 141g
Sensor Weight	About 60*3 g
Sensor External Wiring Length	Non-detachable cable: about 900mm Detachable cable: about 1200mm
Ambient Temperature Range	-20°C – 55°C
Storage Temperature Range	-40°C – 85°C
Ambient Humidity Range	<90%RH (No condensation)
Mounting Method	Screw / Magnet