Wireless Single-Phase Current Meter

R718N17(E) Data Sheet

Wireless Sensor Network Based on LoRa Technology

R718N17

R718N17E (detachable cable)

Wireless Single-Phase Current Meter with 1 x 75A Clamp-On CT

1. Introduction

NETVOX wireless single-phase current detector is used to detect the input current of the single-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)

• SX1276 wireless communication module

• 2 ER14505 battery AA size (3.6V/section) in parallel power supply

• Main body: IP53; Sensor: IP30

• Only support AC current measuring

• CT cable is divided into two types: detachable and non-detachable.

• Magnetic base

• LoRaWAN™ Class A compatible

• Frequency hopping spread spectrum

• 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.

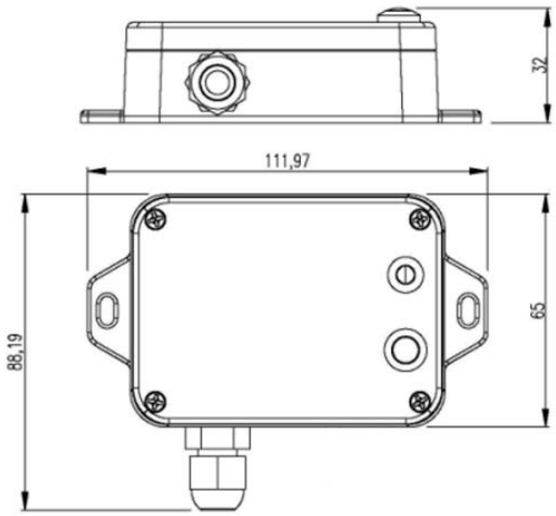
4. Applications

• Indoor current detecting devices for homes, hotels, office buildings, shopping malls, etc.

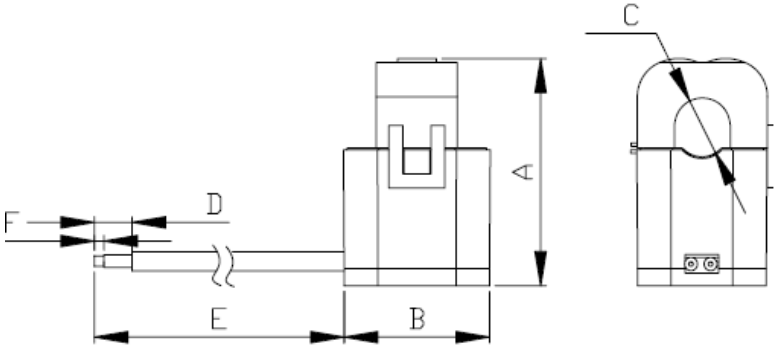
• Smart city

• Thermal system equipment

5. Dimensions



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



A	B	C	D	E	F
41max	27.5max	10±0.2	25±5	900±30	6±1

CT: 27.5mm (L) x 25mm (W) x 41mm (H)

6. Electrical Specifications

Power Supply	2 ER14505 lithium batteries (3.6V, 2400mAh/section) in parallel
Battery Life	5 years (conditions: ambient temperature 25 ℃, report once every 30min, TX power = 20dBm, LoRa spreading factor SF = 10)
Standby Current	25uA
Device Wakeup Current	0.8mA – 20mA (* When not transmitting /receiving LoRa data)
Module Wakeup Current	0.8mA – 8mA –
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	100mA – 75A (varies according to the configuration of the current transformer)

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

7. Frequency

Frequency Range	863MHz-928MHz 470MHz-510MHz
Power Output	19dBm±1dBm (max)
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: Please choose one modulation method.)
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)

8. Clamp-On Current Transformer

Rated Primary Current	30A, 50Hz ~ 60Hz
Rated Secondary Current	10mA
Saturation Current	≥75A
Ratio	3000: 1
Load Resistance	10Ω
Accuracy	1%
Electrical Strength	3000V
Case Material	Flame Retardant Grade 94-V0 UL Material
Environmentally Friendly	ROHS compliant
Operating Temperature	-40 ℃– 85 ℃

9. Physical Properties

Dimension	Main body: 112mm (L) x 88.19mm (W) x 32mm (H) Sensor: 27.5mm (L) x25mm (W) x 41mm (H)
Main Body Weight	About 141g
Sensor Weight	About 49.6g
Sensor External Wiring Length	Undetachable cable: about 900mm Detachable cable: about 1200mm
Ambient Temperature Range	-20℃– 55℃
Storage Temperature Range	-40℃– 85℃
Ambient Humidity Range	<90%RH (No condensation)
Mounting Method	Screw / Magnet