Wireless 3-Phase Current Meter with 3 x 150A Clamp-On CT

Wireless Sensor Network Based on LoRa Technology

R718N315D   R718N315DE

R718N315D(E)

DataSheet

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Introduction

R718N315D(E), the three-phase current meter, is to detect the current of three-phase load. The device is compatible with the LoRaWAN protocol and equipped with a wireless communication module to display the collected data in the gateway. The R718N3xxD(E) series is powered by DC and receives AC through the solid-core/clamp-on current transformers (CTs), which proportionally convert high-voltage current in the primary winding into lower-value current into the second winding.

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.
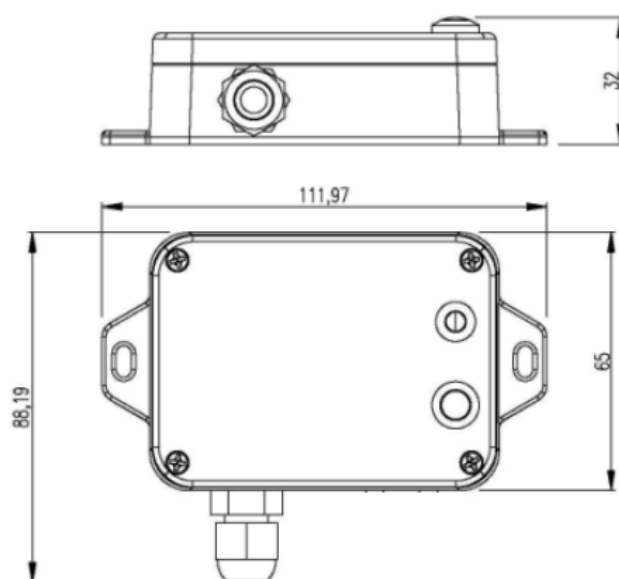
Features

- SX1276 wireless communication module
- Power adapter (input: AC 100V to 240V, 50/60Hz; output: DC 3.3V/1A)
- IP Ratings: main body: IP30, sensor: IP30
- Magnetic base
- Clamp-on current transformers
- Supports optional cable types: detachable or non-detachable
- Supports threshold configuration and alarm function
- Suitable for AC current detection
- LoRaWAN™ Class C compatible
- Frequency-hopping spread spectrum (FHSS)
- Available third-party platforms: Actility/ThingPark, TTN, MyDevices/Cayenne

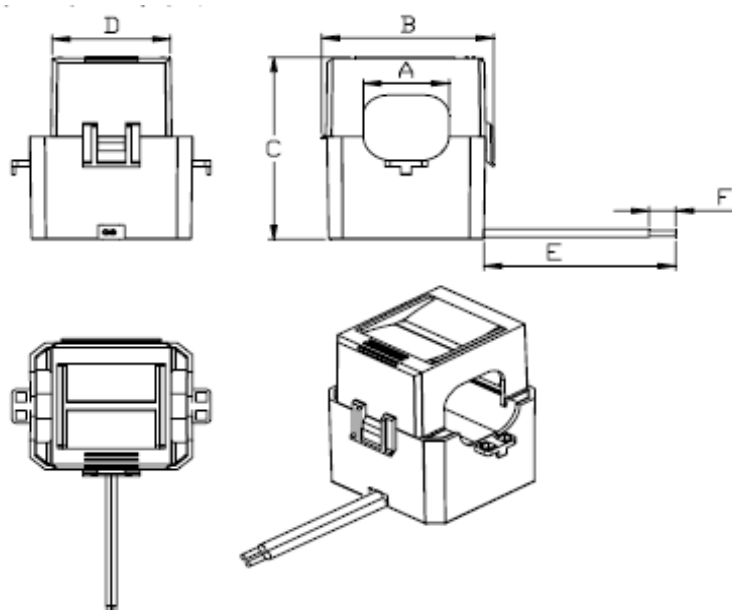# Wireless 3-Phase Current Meter with 3 x 150A Clamp-On CT

Applications

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

Dimensions

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

A	B	C	D	E	F
16±0.5	33±0.5	43.5±0.5	22.8±0.3	900±30	6±1

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Electrical Specifications

Power Supply	DC 3.3V/1A
Power Consumption	≤ 0.5W
RF Receiving Current	11mA / 3.3V
RF Emission Current	120mA / 3.3 V
Current Measurement Accuracy	< ± 1%
Current Resolution	1mA
Current Measurement Range	1A to 150A

Note: The electrical characteristics may vary due to the voltage of power supply.

Frequency

Frequency Range	863MHz-928MHz 470MHz-510MHz
Power Output	19dBm±1dBm
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 (Actual transmission distance may vary due to the environment.)
Data Transfer Rate	Lora: 0.3 to 50kbps FSK:1.2 to 300kbps (could be configured)
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, to be done in factory configuration)

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Clamp-On Current Transformer Parameter

Rated Primary Current	100A, 50Hz~60Hz
Rated Secondary Current	33.33mA
Saturation Current	≥ 150A
Ratio	3000:1
Load Resistance	10 Ω
Accuracy	1% (1A-150A)
Electrical Strength	3000V
Case Material	Flame Retardant Grade 94-V0 UL Material
Environmentally Friendly	ROHS compliant
Operating Temperature	-40 ℃ to 85 ℃

Physical Properties

Dimensions	Main body: L: 112mm *W: 88.19mm *H: 32mm Sensor: H:43.5mm * L:33mm * W:28.5mm
Main body Weight	About 141g
Sensor Weight	About 70.1*3g
Sensor External Wiring Length	About 900mm
Ambient Temperature Range	-20℃ to 55℃
Storage Temperature Range	-40℃ to 85℃
Ambient Humidity Range	<90% RH (No condensation)
Mounting	Screw/Magnet