Wireless Current Sensor

with 6 Clamp-On CT, 4 x NTC Temperature Sensor and 1 x Digital Output

Wireless Sensor Network Based on LoRa Technology

R900NAD Series Data Sheet

Wireless Current Sensor

R900NAD series

Model	Power Supply	CT* 6	NTC* 4	Digital Out	Light
R900NAD607T4O	DC-Powered	75A	●	●	
R900NAD607T4OL	DC-Powered	75A	●	●	●
R900NAD615T4O	DC-Powered	150A	●	●	
R900NAD615T4OL	DC-Powered	150A	●	●	●
R900NAD625T4O	DC-Powered	250A	●	●	
R900NAD625T4OL	DC-Powered	250A	●	●	●
R900NAD663T4O	DC-Powered	630A	●	●	
R900NAD663T4OL	DC-Powered	630A	●	●	●
R900NAD6100T4O	DC-Powered	1000A	●	●	
R900NAD6100T4OL	DC-Powered	1000A	●	●	●
R900NAD6300T4O	DC-Powered	3000A	●	●	
R900NAD6300T4OL	DC-Powered	3000A	●	●	●

Note: Please contact our sales representatives about other models of the R900NAD series.

What do the numbers in our product model mean?

e.g. R 9 0 0 N A D 6 3 0 0 T 4 O L
(1) (2) (3) (4) (5) (6)

(1) **R900NA**: AC detection

(2) D: DC-powered (DC 12V)

(3) **6**: The number of current transformers
(can be 1 to 6)

300: Current
75A = 07
150A = 15
250A = 25
630A = 63
1000A =100
3000A = 300

(4) **T**: NTC
4: The number of NTC

(5) **O**: Type of digital out
(O – output; I – input)

(6) **L**: Light sensor
(can be L or N/A)

Wireless Current Sensor

R900NAD series with Light sensor

Wireless Current Sensor

Introduction

R900NAD series is a wireless current sensor that has 6 clamp-on current transformers (CT), 4 point-contact NTC thermistors, 1 digital out, 1 light sensor, and a built-in vibration sensor.

It supports hard switching. After inserting the battery, the device will not power on automatically. To turn on R900, press and hold the button for 3 seconds until the green indicator light flashes once. To power off, press and hold the button for 5 seconds until the green indicator flashes once. Release the function key and press it in 5 seconds. The green indicator will flash 5 times, and R900 turns off automatically. Using hard switching helps reduce power consumption and extends battery life.

In addition to these functions, the R900NAD series supports configuration and firmware upgrade through Netvox NFC App. Just hold your phone near the device. Data reading, device settings, everything you need can all be done on the app.

Features

- Equipped with multiple kinds of sensors
  (Up to 6* clamp-on CTs + up to 4* NTC thermistors + 1* digital out + 1* light sensor+ 1* built-in vibration sensor)
- CT cable (detachable/undetachable), measurement range (75/150/250A…), phase (single / 3-phase) can be personalized based on user's need
- Only for AC detection
- Support NFC. Configure and upgrade firmware on Netvox NFC app
- Store up to 10000 data
- Report when device disconnects from the network
- Export digital out signal based on the threshold of current and temperature
- Support magnetic switch to turn on/off and factory reset device
- Powered by DC-powered (12V)
- Up to 7 installation methods for different kinds of scenarios
- Main unit: IP53; Sensor: IP30
- LoRaWAN™ Class C 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

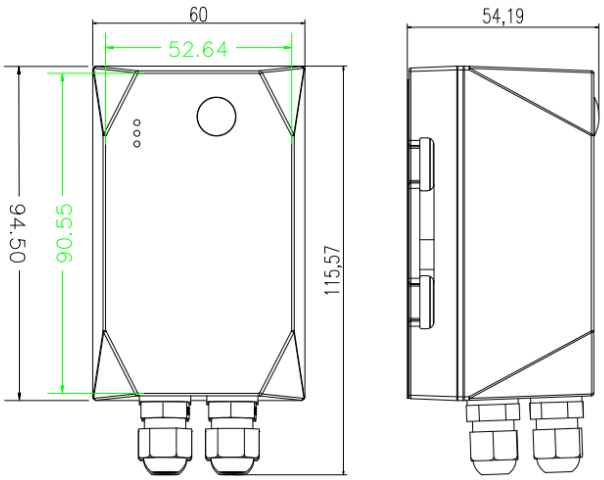
Wireless Current Sensor

Applications

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

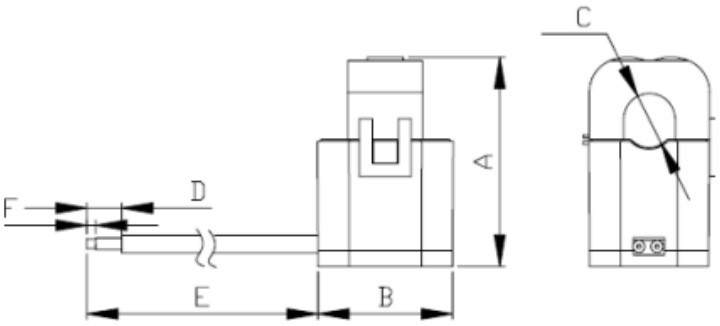
Dimensions

Main Unit



Current Transformer

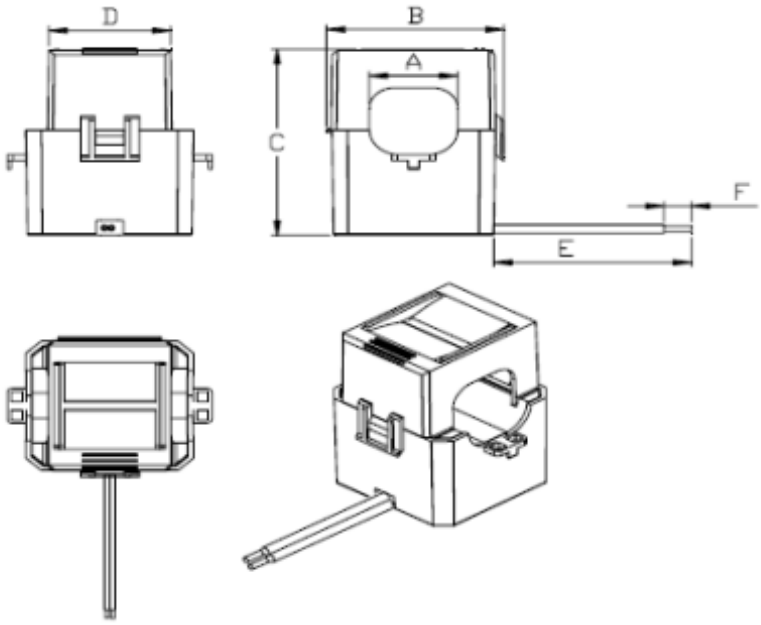
75A



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

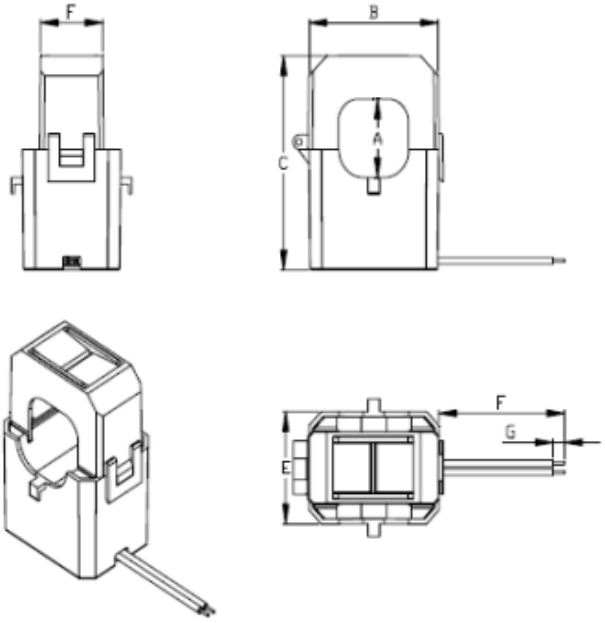
Wireless Current Sensor

150A



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

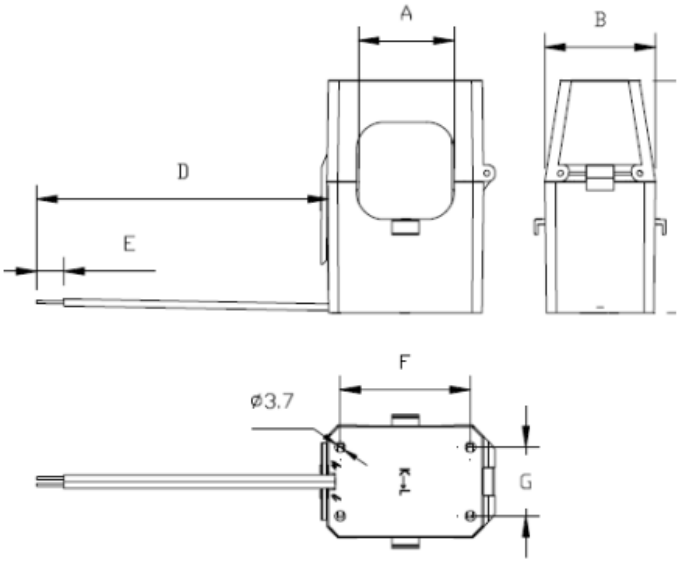
250A



A	B	C	D	E	F	G
24.3±0.5	46 (max)	66 (max)	22 (max)	34 (max)	900±30	6±1

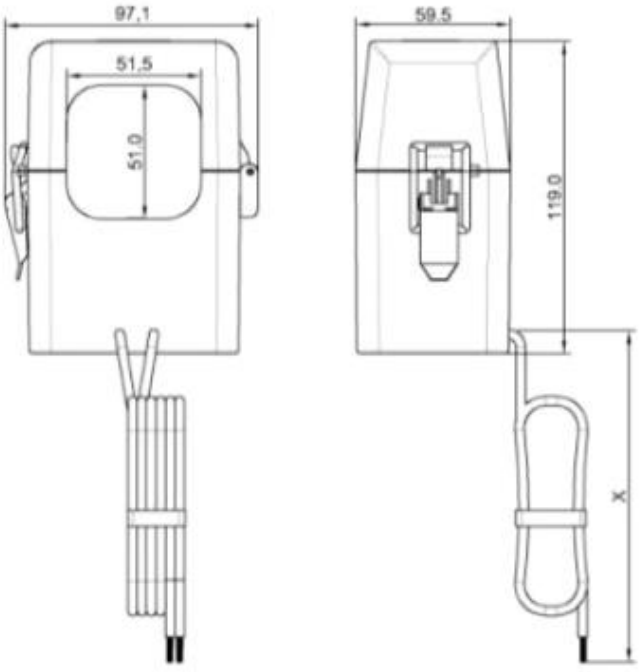
Wireless Current Sensor

630A



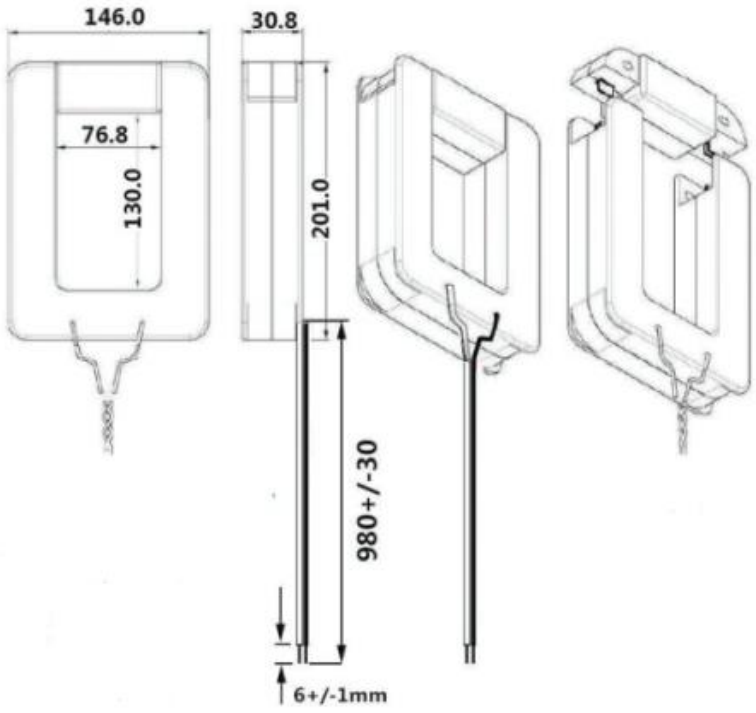
A	B	C	D	E	F	G
35±0.5	40.3±0.3	84.8 (max)	900±30	6±1	48±0.3	25±0.3

1000A



Wireless Current Sensor

3000A



Electrical Specifications

Power Supply	DC-powered (12V power adapter)
RF Receiving Current	12mA @3.3V
RF Transmitting Current	138mA @3.3V, TX power = 22dB
Current resolution	1mA

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

Wireless Current Sensor

Current Transformer

75A

Rated Primary Current	Rated Secondary Current	Saturation Current	Ratio	Load Resistance	Electrical Strength
30A 50Hz–60Hz	10mA	≥75A	3000:1	10Ω	AC3000V

150A

Rated Primary Current	Rated Secondary Current	Saturation Current	Ratio	Load Resistance	Electrical Strength
100A 50Hz–60Hz	33.33mA	≥150A	3000:1	10Ω	AC3000V

250A

Rated Primary Current	Rated Secondary Current	Saturation Current	Ratio	Load Resistance	Electrical Strength
200A 50Hz–60Hz	66.66mA	≥250A	3000:1	10Ω	AC3000V

630A

Rated Primary Current	Rated Secondary Current	Saturation Current	Ratio	Load Resistance	Electrical Strength
300A 50Hz–60Hz	50mA	≥630A	6000:1	10Ω	AC3000V

1000A

Rated Primary Current	Rated Secondary Current	Saturation Current	Ratio	Load Resistance	Electrical Strength
1000A 50Hz–60Hz	500mA	≥1000A	2000:1	0.36Ω	2000V/0.3mA/3S

3000A

Rated Primary Current	Rated Secondary Current	Saturation Current	Ratio	Load Resistance	Electrical Strength
3000A 50Hz–60Hz	500mA	≥3000A	6000:1	0.3Ω	AC3KV/3mA/3s

NTC Thermistor

Terminal Type	Point-contact
Measurement Range	-40°C to 125°C
Resistance at 25°C	10k (typical value)

B Value (B25/50)	3990
Accuracy	±3°C (within -40°C to +125°C) ≦ 2°C (affected by cable)

Light Sensor

Measurement Range	0.01 Lux – 157 Kilolux
Accuracy	± 20% (under daylight conditions) ± 10% (under stable lighting conditions such as 6500K white LED light at room temperature)

Frequency

Frequency Range	863MHz-928MHz 470MHz-510MHz
TX Power	US915 22dBm AS923 16dBm AU915 22dBm CN470 19.15dBm EU868 16dBm KR920 14dBm IN865 20dBm
RX Sensitivity	–123 dBm for 2-FSK (at 1.2 Kbit/s), –148 dBm for LoRa® (at 10.4 kHz, SF= 12)
Antenna Type	Built-in Antenna
Communication Range	10km (line of sight) Note: The actual transmission distance depends on the environment.
Data Transfer Rate	FSK: 0.6 – 300Kbit/s Lora: 0.018 – 62.5Kbit/s
Modulation	LoRa / FSK Note: One modulation is required.
Available LoRaWAN Band	EU863-870, US902-928, AU915-928, KR920-923, AS923-1, AS923-2, AS923-3, IN865-867, CN470-510 Note: configured before shipment

Physical Properties

Main Unit

Dimensions	L: 115.5mm x W: 60mm x H: 54mm
Ambient Operating Temperature	-20°C to 55°C
Ambient Storage Temperature	-40°C to 85°C
Ambient Humidity	<90%RH (no condensation)
Installation	Standard: screws, double-sided tape, bracket Prepared by Customer: cable ties Optional: DIN rail, magnetic, swivel bracket

Current Transformer

Weight (per CT)	75A: about 46.9g 150A: about 70.1g 250A: about 150.6g 630A: about 420g 1000A: about 600g 3000A: about 1kg
Cable Size & Length	22AWG Red and Black wire Undetachable cable: 900mm; detachable cable: 1200mm
Housing Material	Flame Retardant Grade 94-V0 UL Material
Environmental Regulation	RoHS-compliant
Operating Temperature	75A/150A/250A/630A: -40℃ to 85°C 1000A/3000A: -20°C to 50°C

NTC Thermistor

Cable Material & Length	PTFE wire; 1000mm

Digital Out

Voltage	3.3V
Cable Length	Ø 3mm 2-core round cable; 1000mm