Wireless Plug-and-Play Power Outlet with Consumption Monitoring

R809A Data Sheet

Wireless Network Based on LoRa Technology

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1. Introduction

R809A is a wireless plug-and-play power outlet with consumption monitoring for indoor use. It can remotely control the output switch and detect the output power. With the wireless SX1276 module of LoRa/FSK modulation communication, the device can be controlled remotely. R809A is used to measure the power consumption of electrical appliances and control wireless switches.

The specifications of the plug and socket supported by R809A are B, F, G, I.

R809A**B**: US type   R809A**F**: EURO type   R809A**G**: UK type   R809A**I**: AU type

2. Features

- LoRa/FSK modulation for long-distance wireless communication
- SX1276 wireless communication module
- Built-in memory for storing power (Active Power) consumption data
- LoRaWAN^{TM} Class C compatible

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3. Electrical Specifications

Rated Operating Power Supply	100 to 240VAC, 50/60Hz
Typical Operating Current	15mA/220VAC/1W (max: 120mA)
Typical Load Characteristics	Resistive load: 16A/250VAC; P:4000VA Inductive load (max.): 8A/220VAC; P:1760VA (COSφ=0.4) Rated Load: EU type: 16A/250VAC UK type: 13A/250VAC AU type: 10A/250VAC US type: 15A/125VAC Electric motor (max.): 1.5HP/240VAC White lamp/fluorescent lamp/gold halogen lamp: 3000W/220VAC LED lamp (max.): less than 400W (within 8 LED lamps) Note: The device's overload protection would automatically cut off the power in 2 seconds after detection.
Relay Switch Lifetime	100,000 times
Current Measurement Range	100mA to 16A
Energy Measurement Error	$< \pm 1\%$

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4. 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
Receiving Sensitivity	-136dBm (LoRa, Spreading Factor=12, Bit Rate=293bps) -121dBm (FSK, Frequency deviation=5kHz, Bit Rate=1.2kbps)
Antenna Type	Build-in antenna
Communication Range	10km (line of sight) Note: The actual range may vary due to the environment.
Data Rate	LoRa: 0.3kbps to 50kbps FSK: 1.2kbps to 300kbps
Modulation	LoRa/FSK (Note: One modulation method is required.)
Supportable LoRaWAN Band	EU863-870, US902-928, AU915-928, KR920-923, AS923-1, AS923-2, AS923-3, IN865-867, CN470-510 (Note: optional, to be configured before shipment)

5. Physical Properties

Dimensions	95mm * 58mm * 42.5mm (not including the plug)
Ambient Humidity Range	5 to 85%RH (No condensation)
Ambient Temperature Range	-10°C to 50°C
Storage Temperature Range	-40°C to 85°C