Datasheet

UPS PoE-03 Datasheet

Overview

Description

devices. It has useful features such as surge protection, voltage regulation, and intelligent battery management. It also has intelligent adapter power capability detection and overcurrent buck control.

When the output current exceeds the rated current, the output voltage drops and the output power is adjusted; when the output current exceeds 5% of the rated current, the overcurrent protection is triggered.

This product provides power to the RAK7268 Indoor Gateway and the RAK7289 Outdoor Gateway without requiring a main power supply.

Features

- Input：100-240 V_{AC} (50~60 Hz)
- Output:
  - 48 V_{DC} 0.23 A
  - 9~12 V_{DC} 3 A
  - 5 V_{DC} 1.5 A
- Offers intelligent recognition of adapter power capability
- Supports overcurrent buck regulation
- Supports adjustment of small current charging based on voltage drop switching, with small switching changes and short switching time
- Supports low battery warning signal for lithium batteries, external power supply, or lithium battery power supply warning signal
- The internal lithium battery pack has comprehensive protection against overcharging, discharging, overcurrent, short circuit

- Support hardware, MCU control, and other multiple protection
- Net Weight：265 g
- Dimension: 105 x 105 x 27.5 mm

Specifications

Overview

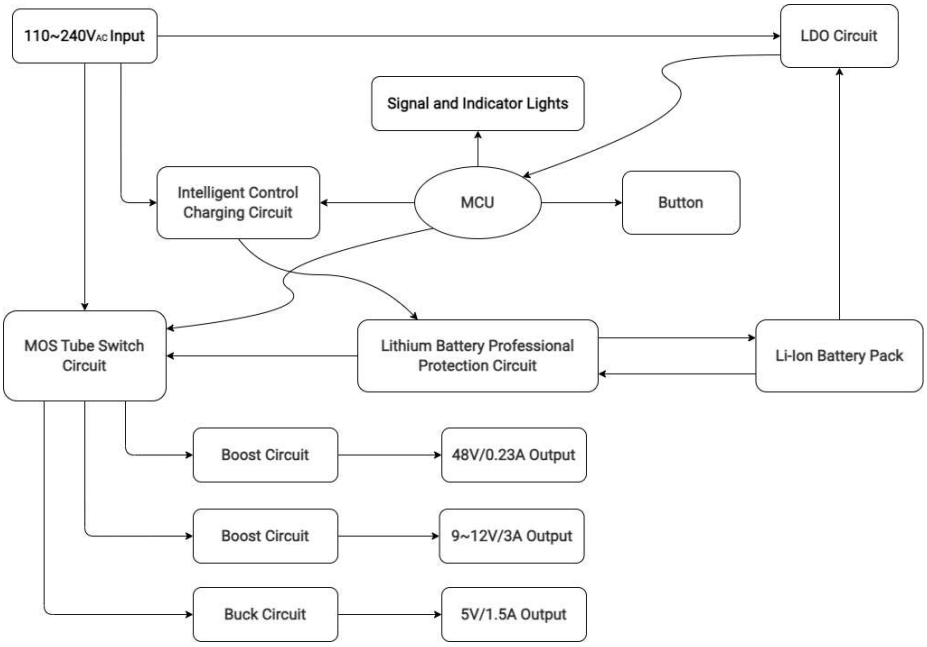

Figure 1: UPS PoE-03 function diagram

Hardware

Interfaces

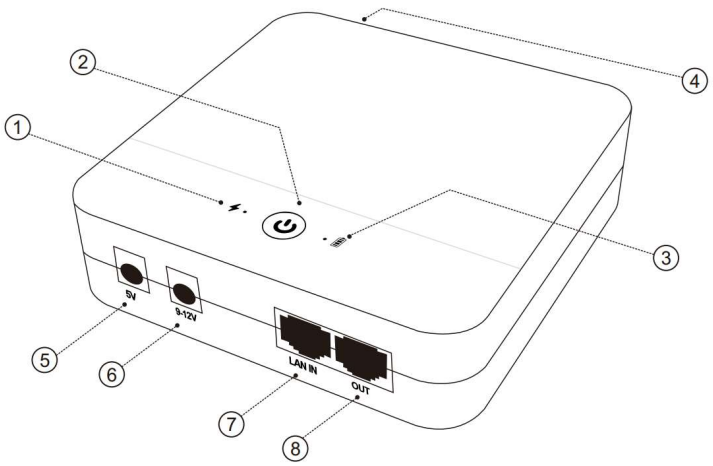

Figure 2: UPS PoE-03 parts

Number	Label
1	Working Indicator

Number	Label
2	Power On/Off Switch
3	Charging Indicator
4	110-240 V_{AC} Power Input port
5	5 V_{DC} 1.5 A Output port
6	9~12 V_{DC} 3 A Output port
7	LAN IN
8	48.0 V_{DC} 0.23 A Output port (LAN OUT)

Port	Specification
Input Port AC 110 V ~ 240 V	US/EU/UK 8 digit-character AC power port
Output no-load voltage	5.5 x 2.5 mm DC Female connector
Average output conversion efficiency	5.5 x 2.5 mm DC Female connector
Output current	RJ45 (LAN OUT)

LED Indicator Status

LED	Status
🟢	Device is ON.
🔴	Device is charging.

- Short press the switch button turns on/off the device.
- No input: Shuts down when the battery voltage falls 9 V
- No external input: Battery voltage below 9 V shuts down output. Green light turns off.

- Charging the device turns on the red LED and automatically turns off when it's full charged.

Electrical Characteristics

Item	Min.	Typical	Max.	Unit
Power input port voltage	110 V	220 V	240 V	V
Output no-load voltage	5 V	5 V + 9 V + 12 V + 48 V	48 V	V
Average output conversion efficiency	-	≥85%	-	-
Output current	-	48 V_{DC} 0.23 A 9~12 V_{DC} 3 A 5 V_{DC} 1.5 A	-	-

Battery Information

Li-Ion Battery Protection Characteristics

Item	Symbol	Description	Standard
Overcharge protection	V_{DET1}	Overcharge monitoring voltage	4.25±0.05 V
	tV_{DET1}	Overcharge detection delay time	700 ~ 1300 ms
	V_{REL1}	Overcharge release voltage	4.15±0.08 V
Over-discharge protection	V_{DET2}	Over-discharge detection voltage	2.40±0.2 V
	tV_{DET2}	Over-discharge detection delay time	80 ~ 170 ms
Overcurrent protection	V_{DET3}	Overcurrent detection voltage	0.20±0.025V
	I_{DP}	Overcurrent protection current	3~6 A

	tV_{DET3}	Detection delay time	8~12 ms
	-	Protection release condition	Disconnect the load
Short-circuit protection	-	Protection condition	External circuit short circuit
	T_{SHORT}	Detection delay time	≤12 us
	-	Protection release condition	Disconnect the short circuit
Lithium battery Internal resistance	R_{DS}	Main circuit on-state resistance	VC = 4.2 V; RDS≤60 mΩ
Current consumption	I_{DD}	Internal circuit consumption during operation	IDD≤30.0 μA

Battery Working & Storage Conditions

Description	Temperature
Lithium battery charging working environment	0° C ~ +45° C
Lithium battery discharging working environment	0° C ~ +45° C
Battery capacity in 40% ~ 60% storage for 30 days	-20° C ~ +45° C
Battery capacity in 40% ~ 60% storage for 90 days	-20° C ~ +35° C

NOTE

- Low-temperature environments reduce discharge capacity.
- If the UPS POE-03 is not used for an extended period of time, it should be fully charged and stored in a cool, dry place, and it should be charged once every 3~5 months.

Home « Quick Start Guide