RAK2470 WisNode Bridge Serial Prime Datasheet

Overview

Description

The **RAK2470 WisNode Bridge Serial Prime** is an RS485 to LoRaWAN converter designed for outdoor industrial applications. Utilizing the LoRaWAN network, RAK2470 wirelessly transmits RS485 data to and from end devices.

The RAK2470 comes with a T-type conversion cable for connecting RS485 sensors. Both the RAK2470 and the connected sensor can be powered through the DC power interface.

Its default M12-4 circular connector also supports direct connection to compatible devices such as MPPT solar charge controllers, inverters, and integrated inverter systems.

The RAK2470 can be configured and managed through IO.Box, which provides a graphical interface for configuring LoRaWAN®, RS485, and system settings.

Together with a RAKwireless gateway and LoRaWAN Network Server, the RAK2470 provides a flexible way to build or extend wireless industrial monitoring and control systems. Its IP67-rated enclosure, wide input voltage range, and pole-mounting support make it suitable for outdoor and field deployments.

Features

- **Regional Parameters Version**: RP001-1.0.3
- **LoRaWAN 1.0.3** protocol stack, supports **Class C**
- **Input range:** 5 ~ 12 V_{DC}
- **Mounting:** Pole
- IP67 weatherproof

Specifications

Main Specifications

Parameter	Specifications
LoRa Feature	Protocol stack: LoRaWAN 1.0.3 Frequency: EU868 / IN865 / RU864 / US915 / AU915 / KR920 / AS923 / CN470 LoRaWAN mode: Class C Tx power: 22 dBm
RS485 Feature	Data rate: 9600, 115200 Carrying capacity: Up to 32 devices
Power Supply	5-12 V_{DC} input
Antenna	LoRa: Built-in fiberglass antenna Frequency: 863 ~ 928 MHz VSWR: < 2 Efficiency: > 80% Max Gain: 3 dBi
Enclosure Material	Fiberglass

Parameter	Specifications
Dimensions	30 mm × 215 mm
Protection Grade	IP67
Working Temperature	-40° C ~ +85° C
Storage Temperature	-40° C ~ +85° C
Installation method	Pole

Hardware

The hardware specification describes the device's interfaces and parameters.

Interfaces

The **RAK2470 WisNode Bridge Serial Prime** comes with an M12-4 circular connector (including power and RS485 data interfaces).

The power interface needs to be powered by a DC power supply (5 ~ 12 V), and the voltage must be stable.

In addition, the RS485 host baud rate supports 9600 and 115200, and up to 32 devices can be connected.

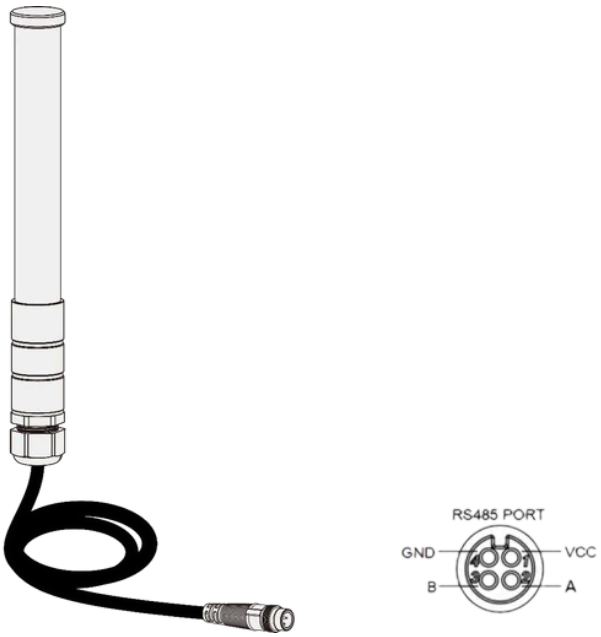


Figure 1: M12-4 connector pin definition

Pin	Circular Connector	Description	Type
1	VCC	Power input (5 ~ 12 V_{DC})	PI (Power input)
2	RS485_A	RS485 A+	IO (Bidirectional)
3	RS485_B	RS485 B-	IO (Bidirectional)
4	GND	Ground	PI (Power input)

T-Type Conversion Cable

The RAK2470 comes with a 1 m T-type conversion cable for each branch. Using this conversion cable, the RAK2470 can be connected to any RS485 equipped sensors, and power can be supplied to both the RAK2470 and the connected sensor via the DC power port.

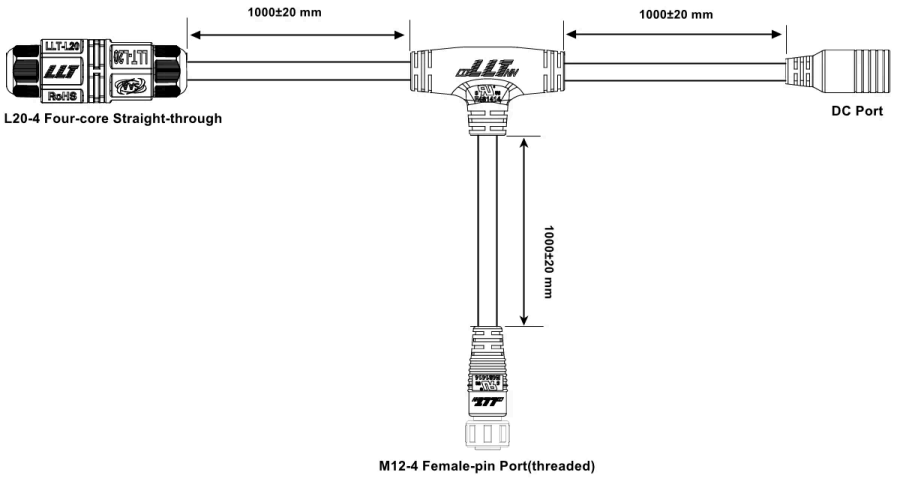


Figure 2: T-type conversion cable

> **NOTE**
>
> The standard length of the T-type conversion cable is 1 m. If you need to customize the cable length, kindly contact inquiry@rakwireless.com .

Interface	Pin	Description
L20-4 Four-core Straight-through Port	Pin1	Connect to the positive terminal of the sensor power cord.
	Pin2	Connect to RS485-A of the sensor.
	Pin3	Connect to RS485-B of the sensor.
	Pin4	Connect to the negative terminal of the sensor power cord.
M12-4 Female-pin Port	Pin1	Power input (5 ~ 12 V_{DC})
	Pin2	RS485 A+
	Pin3	RS485 B-
	Pin4	GND
DC port		Power input port

Certification