SC1M5-8S5
RS485 HUB
User Manual

1-channel RS485 to 8-channel RS485 hub

TABLE OF CONTENTS

1. OVERVIEW 3
2. FEATURE 4
3. TECHNICAL PARAMETERS 4
4. HARDWARE DESCRIPTION 5
5. USAGE METHOD 6

1. Overview

The SC1M5-8S5 is an industrial-grade isolated 8-port RS485 hub that can expand from one RS485 master port to eight RS485 slave ports. It can effectively realize the relay, expansion and isolation of RS485 networks.



Figure 1SC1M5-8S5 Appearance

The SC1M5-8S5's main port provides isolated RS485, and the secondary port expands to provide 8 isolated RS485 interfaces.

Generally, RS485 wiring requires a daisy-chain connection, avoiding a star connection centered on the master station. However, in some cases, a star connection is necessary for convenience. In such cases, using an RS485 hub can effectively isolate interference between multiple RS485 connections.

The SC1M5-8S5 active isolated RS485 hub is specifically designed for harsh industrial environments, making it particularly suitable for applications requiring high reliability and security. Its opto-isolation function effectively isolates RS485 master and slave devices from each other, preventing damage caused by

ground potential differences, static electricity, lightning strikes, and surges. It also effectively prevents ground loops caused by ground potential differences between the master and slave devices, thus avoiding damage to the RS485 equipment.

The SC1M5-8S5 has three main application modes:

1. Isolation: Effectively isolates the master and slave ends of the RS485 network; simultaneously isolates 8 slave stations.
2. Relay : can effectively extend the communication distance of RS485 networks.
3. Expansion: It can expand from 1 RS485 to 8 RS485, multiplying the number of RS485 devices in the network.

Features

1. The RS485 master and slave ports have optocoupler isolation protection.
2. Supports high baud rates of 460800bps.
3. The main RS485 has 2500V voltage isolation, and the slave RS485 has 2500V voltage isolation from the internal circuitry of the device.
4. The back is equipped with a guide rail mounting slot, which is suitable for guide rail installation.
5. 9-24V wide voltage input.

2. Technical parameters

Interface Standard	Compliant with EIA/TIA RS-232 and RS485 standards
physical interface	RS485: Terminal block
working methods	RS485: Two wires (A, B)
Communication rate	300–460800bps baud rate (adaptive)
Support points	Each RS485 port supports a maximum of 32 nodes.
Communication distance	1200 meters (at 9600bps) ; the higher the communication speed, the shorter the distance.
working methods	Half-duplex transparent transmission
Power supply voltage	DC 9~24V
Operating temperature	-45 ℃ ~+85 ℃

Ambient humidity	<95%RH
transmission medium	Plain parallel wire or twisted pair

3. Hardware Description

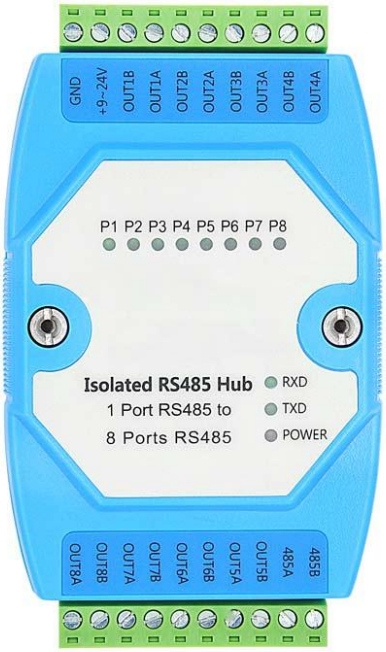


Figure 2 Interface Diagram

3 shows the front view of the SC1M5-8S5 , and the interface descriptions are as follows:

name	illustrate
GND, +9~24V	Power terminal input
OUT1A～OUT8A, OUT1B～OUT8B	RS485 ports 1-8
485A, 485B	RS485 main port

The panel indicator lights are explained as follows:

P1～P8	Data received from ports 1 to 8
RXD	The master 485 received data from the slave station.
TXD	Master 485 sends data to slave station

POWER	Power indicator light

4. How to use

1. Extended usage: When the master RS485 device needs to connect 8 RS485 slave devices in a star topology, connect the master device to the SC1M5-8S5 master port and the slave devices to the SC1M5-8S5 slave port. This can prevent interference between RS485 devices and provide effective isolation.
2. Isolation: Connect one end of the RS485 to the RS485 master port and the other end to any RS485 slave port. This effectively isolates the RS485 line, providing protection against lightning strikes and interference. It also effectively protects the other RS485 device from damage caused by high voltage or strong current.
3. Repeater : When the RS485 line travels over a distance exceeding 1200 meters, signal attenuation and interference increase. Using the SC1M5-8S5 can extend the communication distance.