

# Ci-SS21

## RS-485 Bus

### Link Redundant Module

ShenZhen Comark Technology Co., Ltd.

Tel: 86-755-26055466

Fax: 86-755-22630031

Post : 518126

Addr: Floor 4, Building G, No.2 Tangxi Industrial

Zone, No. 21, Xijing Road, Gu Shu, Xi Xiang, Bao'An

District, Shenzhen, 518126, P. R. China.

Website: <http://www.comark.cn>

## Summary

This series is designed for industrial grade RS-485 Link Redundant Module, Realizing the mutual conversion between single bus and double redundant bus, the single serial device can be accessed into redundant bus network. It has photon coupled isolation and Anti signal interference functions, Baud rate can be set via DIP. The product is Industrial grade designed, Casing: IP40 protection, wave grain aluminum reinforce case option, DIN rail mounting, DC(9~36V) power input, support Fieldbus ports error Relay alarm output, dual redundant power input and isolation protection. -40~75°C Operating Temperature, can meet various Industrial situation.

## Characteristic

- Support 3 RS-485 bus, according to RS-485 Protocol
- Realizes the mutual conversion between single bus (M port) and dual redundant bus (A, B port)
- Support Dial switch for setting communication rate(all ports baud rate must be same)
- Support 3Chs photon coupled isolation ports, Isolated Voltage 1000V, and 4000V Anti-thunder protection
- Support 4 dual colors LED Indicator, Fieldbus ports error Relay alarm output
- DC (9~36V) dual redundant power input, With DC1500V voltage isolation and reverse connect protection
- IP40 protection, Metal case (wave grain aluminum reinforce case option), 35mmDIN-Rail Installation
- Operating Temperature: -40°C to 75°C suitable to various Industrial work situation

## Specification

### Bus data interface

- Interface type: standard 9 pin type D RS-485 fieldbus cable interface, conform to RS-485 protocol standard.
- Support RS-485 bus standard
- Baud Rates: 9.6Kbps、19.2Kbps、45.45Kbps、93.75Kbps、187.5Kbps、500Kbps
- Signal Delay (electrical interface): ≤4Bit
- Isolated voltage 1000V,4000V Anti-thunder

## More Reliable Connection, More Inteligent Life

protection

- Resistor: without terminal resistor, connect external when necessary

### Power

- DC (9~36V) dual redundant power input, industrial standard voltage DC24V, consumption is less than 4W, With DC1500V voltage isolation and reverse connect protection, adopt 5 cores 5.08mm industrial terminal port (please use industrial standard power, otherwise it will occur unit error or damage).

### Protection

- Relay: Fieldbus ports error Relay alarm output
- Contact rating: 1A @24V DC, Industrial Terminal port

### Mechanical

- Dimensions (H×D×W): 136mm×104.8mm×52.8mm
- Weight:800g
- Casing: IP40 protection, wave grain aluminum reinforce case option
- Installation: Wall mounting or DIN rail mounting

### Environmental

- Operating Temperature:-40 °C ~75 °C (-40 °C ~85 °C optional)
- Storage Temperature: -40°C~85°C
- Ambient Relative Humidity: 5%~95%(non-condensing)

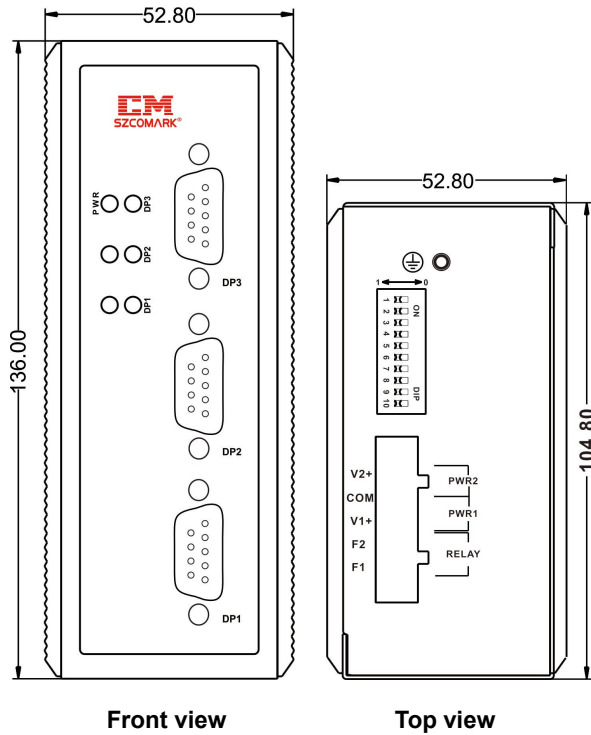
### Warranty

- Warranty Period: 5 years

### Certifications

- IEC61000-4-2(ESD): Power ±2KV Contact, ±15KV Air; Relay ±2KV Contact, ±15KV Air; Data Cable ±15KV Air
- IEC61000-4-4(EFT):Power ±4KV, Data Cable ±4KV
- IEC61000-4-5(Surge):Power ±2KV CM/ ±1KV DM, Relay±2KV CM/ ±1KV DM
- IEC60068-2-27(Shock)
- IEC60068-2-32(Free Fall)
- IEC61000-6-2(General Industrial Standard)
- EN50121-4 (rail transit)

## Overall Dimension



## LED Indicators

LED	state	Description	Alarm
PWR	off	Non-connect or error	No
	Green light	Power is ok	No
	Red light	Power Error	No
DP1-3	off	Fieldbus is closed	No
	Red light	The following conditions are called copper link failure: 1. No data received within 2 seconds on corresponding electric port. 2. Wrong setted.	Yes

Red shine	Electric port fault but has data sending	Yes
Green light	Copper port is normal	No
Green shine	Copper port is normal, can received data	No

## Terminal Resistor

Resistor is to eliminate the effect of the signal reflected in communication cable, in Actual configuration, the Terminal resistors of the two ends of line should be on the state of "ON", the ones of intermediate node should be on the state of "OFF", otherwise, it may make communication error. Suggest to use RS-485 standard connector and line.

## Connection

1. Bus cable wiring methods: electrical interface is a 9-pin Sub-D socket connector; the connector has a lock for fixing. Pin definition conforms to RS-485 standard, using RS-485 dedicated fast connector plug for connecting to this interface here suggested, please don't connect the opened and unused cable to bus.

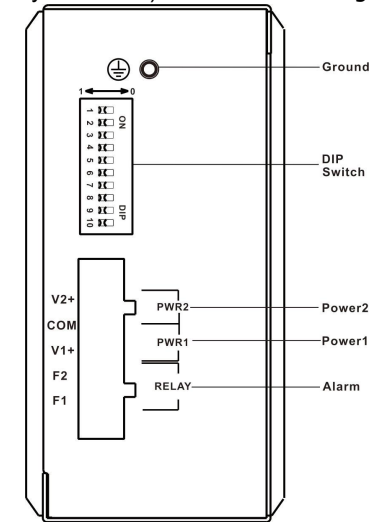
Profile	Subscript	Signal type	Definition
	1	Shield	Shield or protected area
	2	-	-
	3	RxD/TxD-P	Data line A
	4	-	-
	5	Ground	Data reference potential (ground)
	6		
	7	-	-
	8	RxD/TxD-N	Data line B
	9	-	-

2. Power and Relay alarm output connection:

- a) this device supports dual redundant input, V1 +, V2 + respectively connect the anode of power supply (DC9~36V), COM with cathode (double power sharing).

## More Reliable Connection, More Intelligent Life

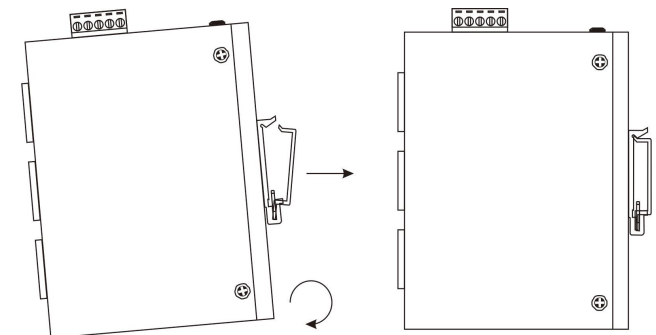
- b) Relay alarm output connection: F1, F2 in normal open. When the alarm is closed, make F1, F2 both contacted in series with external alarm circuit (e.g., buzzer, etc.). (When there is no electricity on device, the relay is closed.) As shown in the figure below.



## DIN-Rail Installation

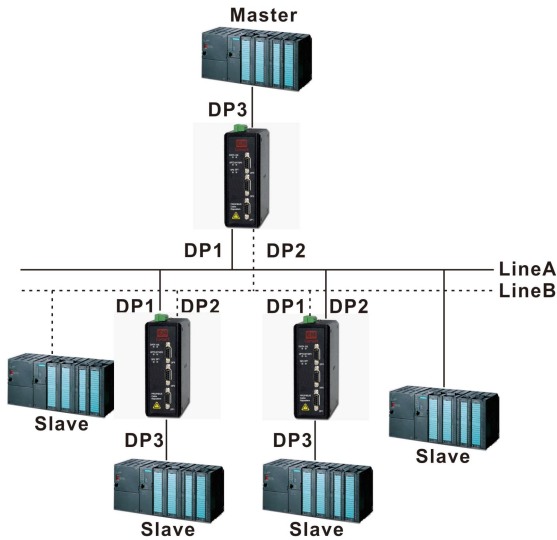
In order to use in industrial environments expediently, Ci-SS21 adopt 35mm DIN-Rail installation, the installation steps as follows:

- Step 1: Examine the DIN-Rail attachment  
Step 2: Examine DIN Rail whether be firm and the position is suitability or not.  
Step 3: insert the bottom of the DIN-RAIL into the slot, then insert the top of the DIN-RAIL into the slot.  
Step 4: after insert the DIN-RAIL into the slot, check the device is installed into the slot firmly.

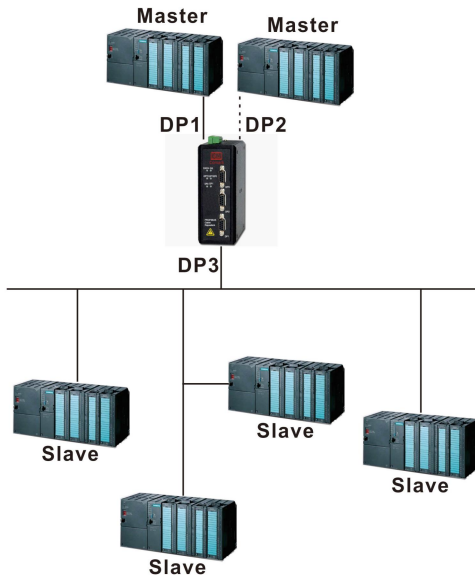


## Typical Application

Convert the simple and non-redundant RS-485 bus into two corresponding redundant buses



Redes the dual master station into a single bus structure



## Troubleshooting

Fault Symptoms	What to Do
PWR off	Check and ensure the power supply meets the requirement, and terminal wiring is correct or not.
PWR Red light	Device working error
DP1~3 Off	Check received data conform to transmit data from bus or not.
DP1~3 Red shine	Check received data conform to transmit data from bus or not.
LED Normal, can't communicate	Check the systems time delay spec meet the fieldbus standard, please note the unit time delay addition effect, please modify PLC parameter.

## Package Checklist

Please check accessories completely when open the box.

Packing list is as follows:

- RS-485 Link Redundant Module(with industrial terminal block for power equipment)
- Product specification
- Product warranty card

## Cautions

- Please use DC24V Industrial standard power. Please use 0.75mm<sup>2</sup> above quality copper line.
- When relay alarm output, the voltage and current can exceed the rated one(1A@24VDC), otherwise, it will damage the unit.
- This device is precision communication instruction, please insure its ground connection well, the device ground connection is via the landing screw on the sideboard, please use the professional landing line, which is less than 2.5 mm<sup>2</sup>, and landing resistor is less than 50hms.

## Order Information

Part No.	Product series	Description
Ci-SS21	3*copper	RS-485 bus link redundancy module, 1 M port (DP3), 2 redundant bus A (DP1), B (DP2) port, DIP switch

	setting rate.
--	---------------

Attached List (Ci-SS21 series Baud rate switch set)

SW	Function
S1	Unused
S2	Unused
S3	Unused
S4...S7	=0000 set RS-485 bus rate as 9.6Kbps =0001 set RS-485 bus rate as 19.2Kbps =0010 set RS-485 bus rate as 45.45Kbps =0011 set RS-485 bus rate as 93.75Kbps =0100 set RS-485 bus rate as 187.5Kbps =0101 set RS-485 bus rate as 500Kbps
S8...S10	Unused