

# Ci-MM30

## Modbus Plus Bus HUB

### Repeater

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## Summary

This series is designed for industrial grade Modbus Plus HUB Repeater, support Modbus Plus protocol, Support 3 Chs Fieldbus serial ports data communication, Hub repeater and star link. It can extend the Modbus Plus Fieldbus transmission distance, change fieldbus diagram, at same time, 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 Modbus Plus bus, according to Modbus Plus Protocol ,Baud Rates:1Mbps
- 3 Ports HUB function, support star link and extend the Modbus Plus Fieldbus transmission distance
- 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 Modbus Plus fieldbus cable interface, conform to Modbus Plus protocol standard.
- Support Modbus Plus bus standard
- Baud Rates:1Mbps
- Signal Delay (electrical interface): ≤6Bit

## More Reliable Connection, More Intelligent Life

- Isolated voltage 1000V,4000V Anti-thunder 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)

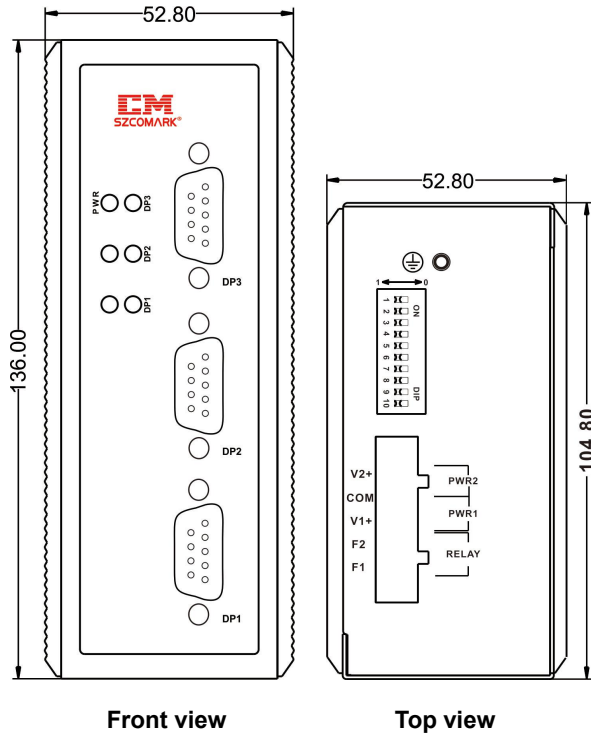
### Warranty

- 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

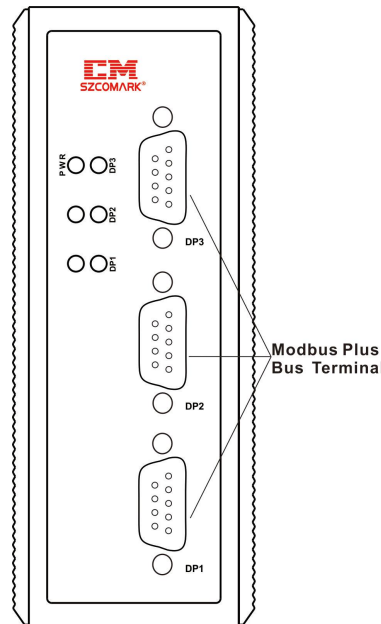
Red shine	Electric port fault but has data sending	Yes
Green light	Copper port is normal	No
Green shine	Copper port is normal, can received data	No

## 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 Modbus Plus standard connector and line.

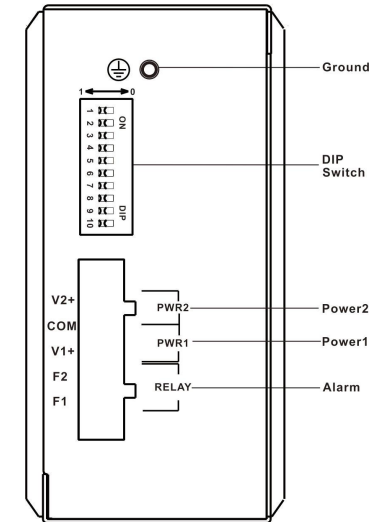
## Connection

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 Modbus Plus standard, using Modbus Plus dedicated fast connector plug for connecting to this interface here suggested, please don't connect the opened and unused cable to bus.



## More Reliable Connection, More Intelligent Life

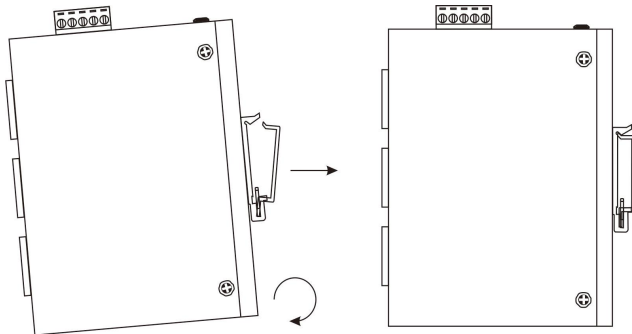
2. Power and Relay alarm output connection:
- this device supports dual redundant input, V1 +, V2 + respectively connect the anode of power supply (DC9~36V), COM with cathode (double power sharing).
  - Relay alarm output connection: F1, F2 in normal open. When the alarm is closed, make F1, F2 both contacted 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.



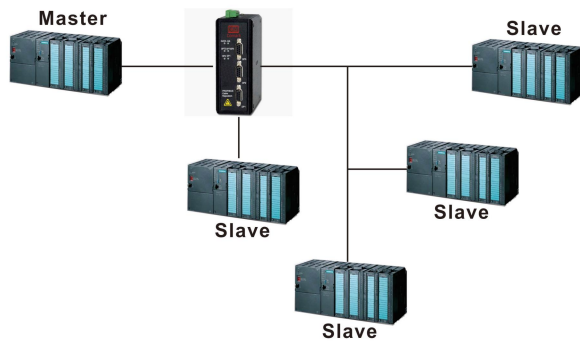
## DIN-Rail Installation

In order to use in industrial environments expediently, Ci-HH30 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



### 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 the port dial switch is 0010.
DP1~3 Red shine	Check the port dial switch is 0010
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:

- Modbus Plus HUB Repeater (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-HH30	3*copper	Modbus Plus HUB repeater, 3 Chs Modbus Plus Ports, 1Mbps baud rate.

Attached List (Ci-HH30 series Baud rate switch set)

SW	Function
S1	Unused
S2	Unused
S3	Unused
S4...S7	Modbus Plus BUS Baud rate set, must be 0010
S8...S10	Unused