

Ci-AA/DD/OO21

CAN/DeviceNet/CAN Open

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 product is a can protocol type Fieldbus link redundant module, realizes the mutual conversion of single-road bus and double redundant bus, can connect single can port equipment to redundant bus network. The series conforms to the Fieldbus based on the CAN2.0A/B protocol, such as can, DeviceNet, CANOpen, SDS, NMEA2000, SAE J1939, SAE J2284, the rate is set by the dial-up switch (recommended) or the selection rate adaptive setting. 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 including CAN 2.0A&CAN2.0B 32 kinds of reserve rate of communication
- DeviceNet、CANOpen Bus support Dial switch for setting communication rate or rate adaptive
- Support 3Chs photon coupled isolation ports, Isolated Voltage 1000V
- The unit has 120 ohms, use corresponding switch to make it to be enable, provide 4000V lightning protection function
- 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

- 3 5-Pin terminal interface, in line with the recommendations of the organization of CiA and ODVA
- Support CAN/DeviceNet/CANOpen bus standard

More Reliable Connection, More Intellegent Life

- Baud Rates: DeviceNet/CANOpen full rate adaptation, up to 1Mbps
- Isolated voltage 1000V,4000V Anti-thunder protection
- Resistor: the unit has 120 ohms, use corresponding switch to make it to be enable(Invalid default)

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)

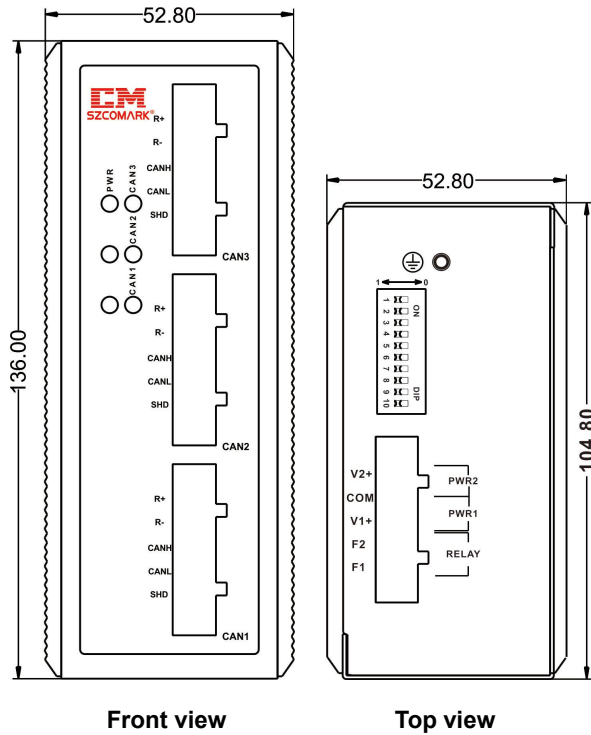
Warranty

- Warranty Period: 5 years

Certifications

- IEC61000-4-2(ESD): Power ±4KV Contact, ±15KV Air; Relay ±6KV 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
CAN1-3	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

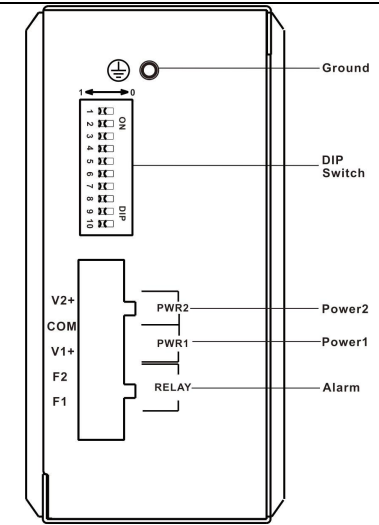
Terminal Resistor

Resistor is to eliminate the effect of the signal reflected in communication cable, can be connected in the two terminal nodes of the cable as needed. Photoelectric converter is to make cable bus segment, each segment on both ends of the cable can be an external resistor as needed. Please refer to the bus standard resistor connection mode, such as using splitter.

The equipment has 120 Ω termination resistor whose default setting is invalid. If the field needs, please put the short circuit wire between the R+ and R- to enable it. If you need other resistance, please extend it between CANH and CANL.

Connection

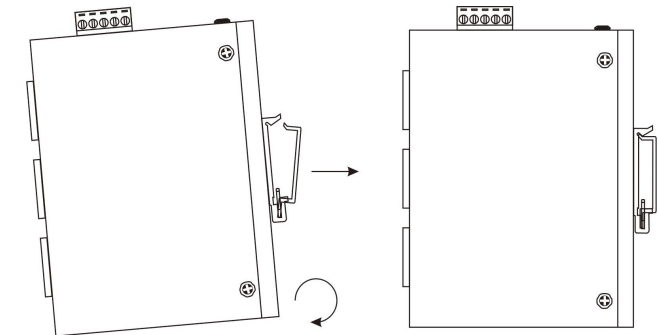
- Bus connection methods: Bus cable CANL is connected to 5-Pin terminals CANL, CANH connected to 5-Pin terminals CANH, the shielded cable connected to the SHD, finally fix terminal with a fixed screw tight. (The use of terminal resistance, refer to the above description)
- Power and Relay alarm output 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

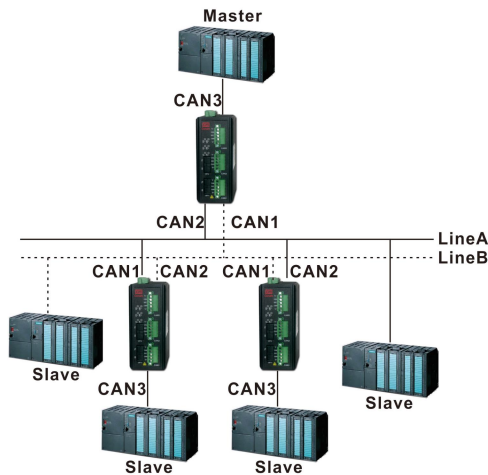
In order to use in industrial environments expediently, Ci-AA/DD/OO21 adopt 35mm DIN-Rail installation, the installation steps as follows:

- 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.

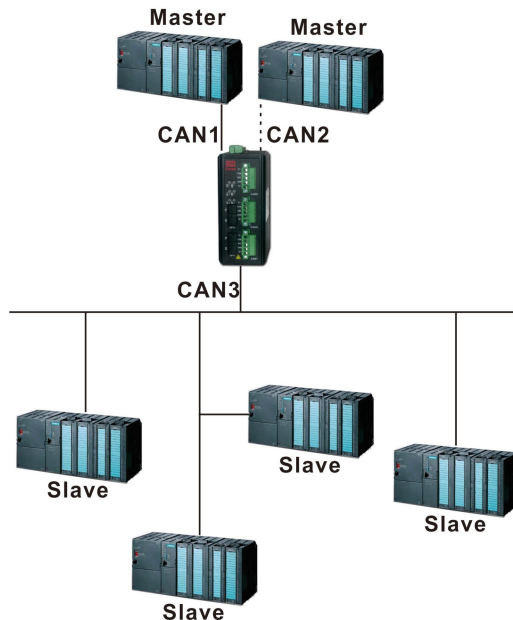


Typical Application

Convert the simple and non-redundant CAN 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
CAN1~3 Off	CAN/DeviceNet/CANOpen data communication is abnormal, check the connector.
CAN1~3 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:

- CAN/DeviceNet/CANOpen Link Redundant Module (with industrial terminal block for power equipment)
- Product specification
- Product warranty card

Cautions

- Please use DC24V Industrial standard power. Please use 0.75mm² 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 mm², and landing resistor is less than 50hms.

Order Information

Part No.	Product series	Description
Ci-AA21	3*copper	CAN2.0A/B bus link redundancy module, 1 M port (CAN3), 2 redundant

		bus A (CAN1), B (CAN2) port, DIP switch setting rate.
Ci-DD21	3*copper	DeviceNet bus link redundancy module, 1 M port (CAN3), 2 redundant bus A (CAN1), B (CAN2) port, DIP switch setting rate or rate adaptive option.
Ci-OO21	3*copper	CANOpen bus link redundancy module, 1 M port (CAN3), 2 redundant bus A (CAN1), B (CAN2) port, DIP switch setting rate or rate adaptive option.

Attached List 1 (Ci-AA21 series Baud rate switch set)

SW[1...3]	Unused		
SW[4...8]	Speed	SW[4...8]	Speed
00000	7813	00001	10000
00010	11111	00011	12500
00100	14652	00101	15625
00110	18018	00111	20000
01000	22222	01001	25000
01010	27211	01011	31250
01100	35714	01101	45455
01110	50000	01111	57143
10000	62500	10001	74074
10010	83333	10011	100000
10100	125000	10101	166667
10110	190476	10111	250000
11000	285714	11001	333333
11010	444444	11011	500000
11100	571429	11101	666667
11110	800000	11111	1000000

Note: All can power at the same rate, by the Dial code

switch SW[4...8]

Attached List 2 (Ci-DD21/Ci-OO21 series)

Baud rate switch set)

SW1、SW2、SW3	SW1、SW2、SW3 with CAN1、CAN2、CAN3 one-to-one correspondence. =111 Default Rate Adaptive =000 Fixed rate (set by dialing switch)
SW[4...7]	Speed
0000	10Kbps
0001	20Kbps
0010	50Kbps
0011	100Kbps
0100	125Kbps
0101	250Kbps
0110	500Kbps
0111	800Kbps
1000	1000Kbps
SW[8...10]	未使用

Note: All can power at the same rate, by the Dial code switch SW[4...7]

Tip: Note that the rate list above needs to be relative to the specific model.