CAN485

CAN to RS-485 Interface Converter

User Manual

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【Summarize】

CAN485 is used for data exchange between CAN-Bus field bus and RS-485 bus interface converter, and supports Modbus RTU protocol. CAN485 interface converter integrated a RS-485 channel and a CAN-Bus channel can be easily embedded using RS-485 interface for communication nodes, do not need to change the original hardware architecture enables the device to obtain the CAN-Bus communication interface, to achieve between the equipments of RS-485 and CAN-Bus network connection and data communication. RS-485 channel CAN485 devices to support a variety of baud rate, the range is 300bps~115200bps. CAN-Bus channel support CiA recommended a variety of standard baud rate and user-defined baud rate, the range of 2.5Kbps~1Mbps. CAN485 interface converter provides three types of data conversion: transparent conversion, encryption conversion and Modbus protocol conversion.

Its exterior design supports DIN-Rail mounting and Wall mounting, which is convenient for engineering application. The board comes with a photoelectric isolation module, complete electrical isolation control circuit and CAN-Bus communication circuit, so that the CAN485 converter has a strong anti-interference ability, greatly improving the system in the harsh environment of the use of reliability.

【Packing list】

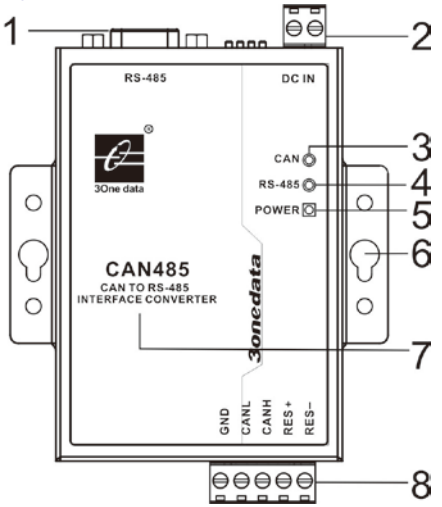
The serial device server is shipped with the following items. If any of these items are missing or damaged, please contact your customer service representative for assistance.

- Interface Converter x 1
- Documentation and software CD x 1
- User manual x 1
- Terminal resistance 120Ω x 1
- Warranty card x 1

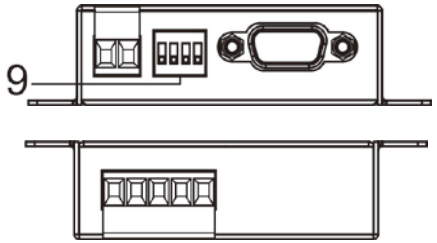
【Feature】

- Support CAN2.0A and CAN2.0B protocol, in compliance with the ISO/DIS 11898 specification
- Bidirectional data communication between CAN-Bus and RS-485
- Integrated 1 CAN-Bus communication interface, support for user-defined baud rate
- Integrated 1 RS-485 three pins type communication interface, communication rate between 300~115200bps can be set
- Provide three kinds of data conversion modes: transparent conversion, transparent with the identity conversion, Modbus protocol conversion
- CAN-Bus circuit using 2000VAC electrical isolation, support 8KV electrostatic protection (air discharge)
- CAN-Bus baud rate 2.5k~1Mbps
- Maximum frame rate: 500 frames per second
- DC9~48V wide voltage supply input, power supply support reverse connection
- IP40 protection grade, DIN-Rail or wall mounting installation
- -40-75℃ working temperature

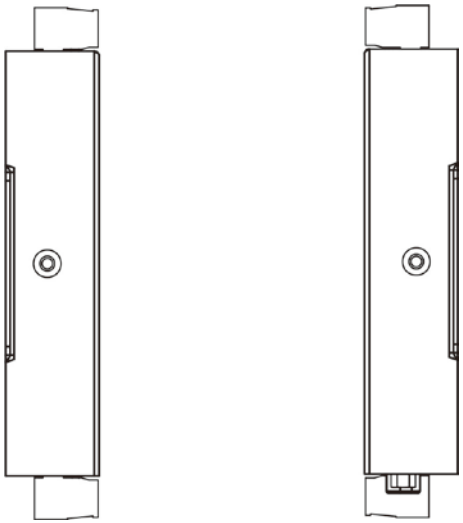
【Panel layout】



Top view



Front and Rear view

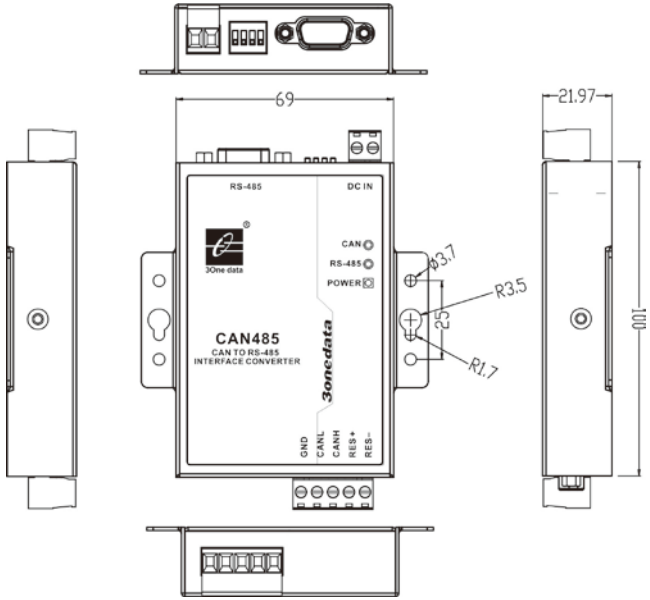


Side view

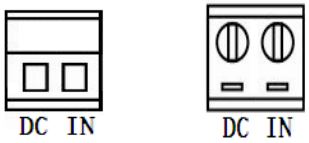
1. RS-485 Serial port (DB9M)
2. Power input terminal block
3. CAN-Bus Link/ACT LED
4. Serial port transmits and receives data LED
5. Power indicator
6. Wallmount screw hole
7. Equipment information
8. CAN-Bus port terminal block
9. DIP switch

【Dimension】

Unit (mm)



【Power supply input】



CAN485 interface converter provide DC power input, voltage input is the two terminal form, plug type 2 core spacing of 5.08mm terminals, wherein the power input range of 9 ~ 48VDC. The power support is not polarity that the device can still work normally after the reverse.

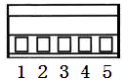
【DIP switch】

The converter front panel provide 4 bit DIP switch to set function (ON is effective). 1 and 4 keep for future function. 2 is for configuration mode settings. 3 is recovery default factory. Please power off and power on when you change the status of DIP switch.

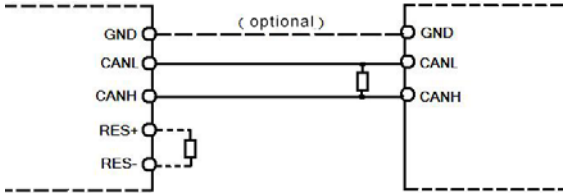
【Communication connector】

CAN-Bus interface

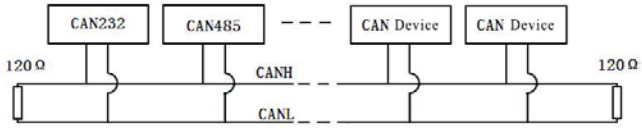
NO.	Name	Define
1	GND	Protective Ground
2	CANL	CANL Signal Line
3	CANH	CANH Signal Line
4	RES+	External Terminal Resistor (+)
5	RES-	External Terminal Resistor (−)



CAN terminals



While CAN485 device connects with the CAN-Bus network via twisted pair, CANL connects with CANL, CANH connects with CANH. According to the ISO11898 standard, to reduce signal reflections on the CAN-Bus and enhance the reliability of communication, terminal matching resistor is usually added to 2 endpoints of the bus. The size of terminal matching resistor is decided by the characteristic impedance of cable transmission, such as twisted pair's characteristic impedance is 120Ω, the 2 endpoints on the bus should be connected 120Ω terminating resistor. CAN485 can set external terminating resistor, when the device is connected with the CAN-Bus network via a twisted pair, only use resistor to short circuit between the twisted pair ports RES+ and RES- to achieve terminal resistor accession, as shown below.

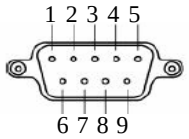


When the CAN485 converter is used as the CAN-Bus network terminal, the two pin is connected to a resistance of 120Ω, otherwise no need to install a 120Ω resistor.

Serial port connection

RS-485 side is DB9 Male. The PIN definition is as follows:

DB9 Male



PIN	RS-485	
1	D—	RS485—
2	D+	RS485+
3	—	—
4	—	—
5	GND	Signal ground
6/7/8/9	—	—

【LED Indicator】

LED indictor light on the top panel of product, the function of each LED is described in the table as below.

System statue LED		
LED	Indicate	Description
PWR	ON	Power is connected/Function natural
	OFF	Power is disconnected or function nu-natural
CAN	ON	CAN-Bus port connect successfully
	Flashing	CAN-Bus port has data transmission
	OFF	CAN-Bus port connect unsuccessfully
RS-485	ON	Serial port connect successfully
	Flashing	In transmitting/ receiving data
	OFF	None data receive/ transmit

【Installation】

Before installation, confirm that the work environment meet the installation require, including the power needs and abundant space. Whether it is close to the connection equipment and other equipments are prepared or not.

1. Avoid in the sunshine, keep away from the heat fountainhead or the area where in intense EMI.
2. Examine the cables and plugs that installation requirements.
3. Power: 9 ~ 48VDC
4. Environment: working temperature: -40～75℃
   Storage Temperature: -40～85℃
   Relative humidity 5%～95%
5. Support wall or DIN-Rail mounted

Wiring Requirements

Cable laying need to meet the following requirements,

1. It is needed to check whether the type, quantity and specification of cable match the requirement before cable laying;
2. It is needed to check the cable is damaged or not, factory records and quality assurance booklet before cable laying;
3. The required cable specification, quantity, direction and laying position need to match construction requirements, and cable length depends on actual position;
4. Cables should be straight in the hallways and turning;
5. Cable should be straight in the groove, and cannot beyond the groove in case of holding back the inlet and outlet holes. Cables should be banded and fixed when they are out of the groove;
6. User cable should be separated from the power lines. Cables, power lines and grounding lines cannot be overlapped and mixed when they are in the same groove road. When cable is too long, it cannot hold down other cable, but structure in the middle of alignment rack;
7. It should have corresponding simple signal at both sides of the cable for maintaining.

【Specification】

Serial Interface

Standard: RS-485

RS-485 signal: D—, D+, GND

Parity bit: None, Even, Odd, Space, Mark

Data bit: 8bit

Stop bit: 1bit, 2bit

Band rate: 300bps～115200bps

Transfer distance: no more than 1200m

Connector: DB9 Male

CAN-Bus Interface

Standard: CAN2.0A, CAN2.0B

CAN-Bus signal: CANL, CANH, GND, RES+, RES-

Band rate: 2.5K～1Mbps

Transfer distance: 40m~10Km

Power supply

Input voltage: 9~48VDC

Type of input: 2 bits terminal block

No-load consumption: 1.57W@9VDC

Full-load consumption: 1.59W@9VDC

Power support reverse connection

Working environment

Working temperature: -40～75℃

Storage temperature: -40～85℃

Relative Humidity: 5%~95% (no condensation)

Mechanical Structure

Shell: IP40 protect grade, metal shell

Installation: DIN-Rail or Wall mounting

Weight: 237g

Size (W×H×D): 69mm×22mm×100mm

Industry Standard

EMI: FCC Part 15, CISPR (EN55022) class A

EMS: EN61000-4-2 (ESD), Level 3

Shock: IEC 60068-2-27

Free fall: IEC 60068-2-32

Vibration: IEC 60068-2-6

Certification

CE, FCC, RoHS, UL508 (Pending)

Warranty: 3 years