Chengdu Ebyte Electronic Technology Co.,Ltd

Wireless Modem

User Manual



ECAN-F02 User Manual

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1 Overview

1.1 Introduction



The ECAN-F02 is a new generation of industrial-grade CAN-to-fiber optic intelligent converter independently developed by Chengdu EBB Electronics Technology Co., Ltd. The product adopts a wide DC input voltage of 9V to 36V, easily adapting to various complex industrial power supply environments. Internally, it integrates one standard CAN bus interface and two standard single-mode dual-core SC fiber optic interfaces, supporting bidirectional transparent, lossless, real-time conversion between CAN data and optical signals. Conversion delay is controlled at the microsecond level, ensuring high signal fidelity and instantaneous response.

The device features a built-in dual isolation protection mechanism for power and signal, significantly improving anti-interference capabilities and system reliability, ensuring signal integrity and real-time interaction quality during long-term operation. The dual fiber optic interface design not only supports point-to-point communication but also allows for flexible construction of fiber optic ring network topologies, achieving link redundancy and self-healing recovery. It is widely applicable to industrial environments with strong electromagnetic interference, long-distance transmission, and high reliability requirements.

In terms of ease of use, the ECAN-F02 features a built-in selectable 120Ω terminating resistor, allowing users to flexibly switch it on or off according to the fieldbus topology. It also comes equipped with hardware DIP switches for quick configuration of key parameters such as the CAN baud rate, eliminating the need for any host computer software and enabling true plug-and-play functionality. Furthermore, the device supports remote firmware upgrades, facilitating future feature evolution and system maintenance, further reducing on-site operation and maintenance costs .

1.2 Features

- It has a built-in 120Ω terminating resistor, which can be selected via a DIP switch;
- Supports DC wide voltage input from 9V to 36V and supports reverse power connection protection;
- Supports independent isolation of power supply and signal;
- EMC Level 3 design, tested and passed ESD, EFT, SURGE, RS, CS, etc.
- Supports dual fiber optic interface design;
- Supports ring network communication;
- Supports transmission up to 20km;
- Supported CAN baud rate range: 5K～1Mbps;

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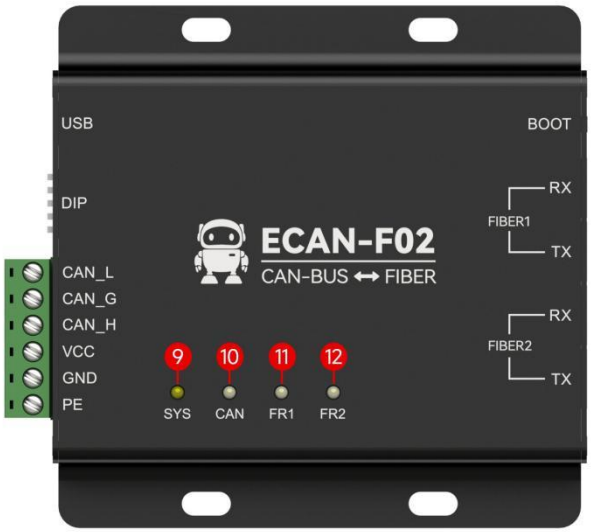
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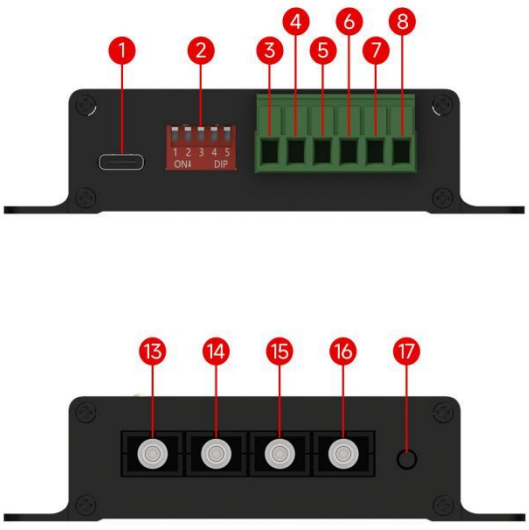
2 Specifications

2.1 Basic parameters

Parameters	Value
Operating voltage	DC 9～36V
Configuration method	Hardware DIP switches
Number of fiber optic channels	2
CAN channel count	1
Fiber optic interface	SC
Number of fiber optic interfaces per channel	Dual-core
Fiber type	single-mode
Fiber operating wavelength	1310nm
Transmission distance	Single-mode 20km
CAN standard	Supports CAN2.0 A/B
CAN baud rate	Supports 5k to 1Mbps
Termination resistor	Built-in 120Ω terminating resistor, selectable via DIP switch
isolation	Power isolation 1500V DC; CAN bus isolation 5000V DC
Operating temperature	-40℃～+80℃
Installation method	Positioning hole installation
Remark	Customization is available for other fiber optic interface specifications.

2.2 Interface Description





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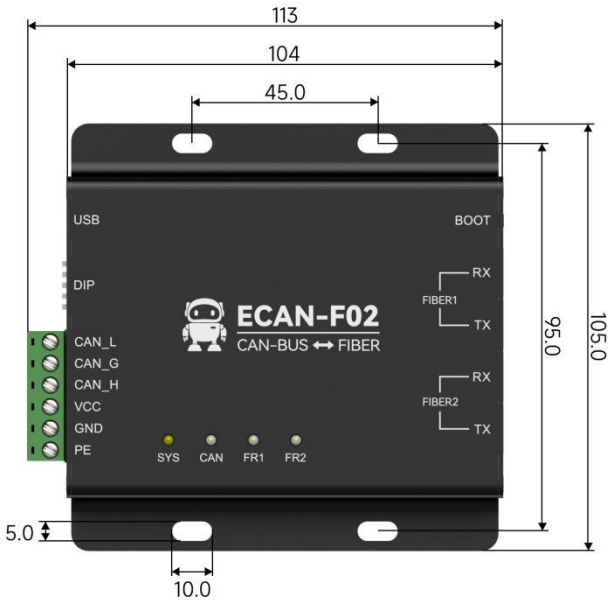
The hardware interface is described as follows:

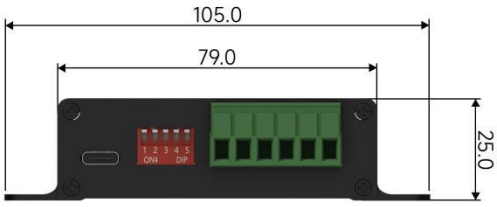
Interface serial number	name	Remark
1	Type-C	Remote upgrade
2	5-position DIP switch	The first four bits are used to configure the CAN baud rate, and the last bit is used to configure the matching resistor.
3	CAN_L	CAN bus low
4	CAN_G	CAN bus ground
5	CAN_H	CAN bus high
6	VCC	Positive power supply, DC 9～36V
7	GND	Power supply negative
8	PE	Earth
9	SYS	Operation indicator light (yellow): Flashing during normal operation
10	CAN	CAN data transceiver indicator/CAN bus error indicator (red and green dual-color light): The green indicator light flashes when data is being transmitted/received on the CAN bus, while the red indicator light remains solid when there is a CAN bus error.
11	FR1	Optical Port 1 Data Transmit/Receive Indicator Lights (Red and Green): The red light flashes when transmitting data, and the green light flashes when receiving data.
12	FR2	Optical Port 2 Data Transmit/Receive Indicator Lights (Red and Green): The red light flashes when transmitting data, and the green light flashes when receiving data.
13	FIBER2-TX	Optical Port 2 Transmit Interface
14	FIBER2-RX	Optical Port 2 Receiver Interface
15	FIBER1-TX	Optical Port 1 Transmit Interface
16	FIBER1-RX	Optical port 1 receiver interface
17	BOOT button	BOOT button for remote upgrades

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2.3 Dimensional Drawing





Unit : mm
Tolerance value : X±0.5mm
X.X±0.2mm

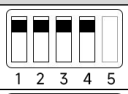
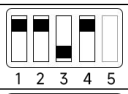
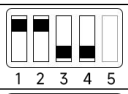
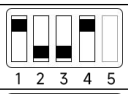
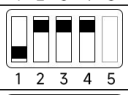
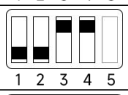
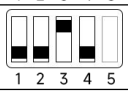
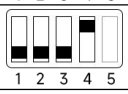
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3 Equipment Configuration

3.1 Configure CAN baud rate

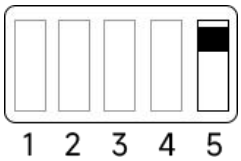
The device configures the CAN baud rate using bits 1-4 of the side DIP switches. The DIP switch and baud rate correspondence table is as follows:

Illustration	Baud rate (bps)	Illustration	Baud rate (bps)
	1000k		800k
	25k		500k
	400k		250k
	200k		125k
	100k		80k
	50k		40k
	20k		13.33k
	10k		5k

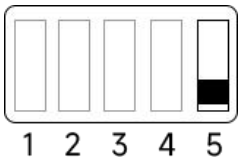
Note: A device restart is required for the changes to take effect after modifying the baud rate.

3.2 Configure CAN bus terminating resistor

The device configures the CAN bus terminating resistor via the 5th bit of the side DIP switch. Flipping the switch down (to the ON position) enables the built-in 120Ω matching resistor.



Not enabled



Enabled

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3.3 Fiber optic connection

The device supports two standard single-mode dual-core SC fiber optic interfaces. Users only need to select the corresponding fiber optic cable for plug-and-play functionality.

Note: When connecting a dual-core fiber optic cable, RX should be connected to TX, and TX should be connected to RX.

4. Revision History

Version	Revision Date	Revision Notes	maintainer
1.0	2026-06-05	Initial version	ZYD

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Technical support: support@cdebyte.com
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---
Official hotline:028-61399028
Web: www.cdebyte.com
Address: B2, Mould Industrial Park, 199# Xiqu Ave, High-tech Zone, Chengdu, 611731, Sichuan, China

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