# Industrial CAN and Serial Device Server

Model: FCT-1300

N1D1 / N1R1 / N1X1

1-channel CAN + 1-channel serial · 100 Mbps uplink
Both CAN and serial support 6 kV surge protection and 3 kV optical isolation




## Product Overview

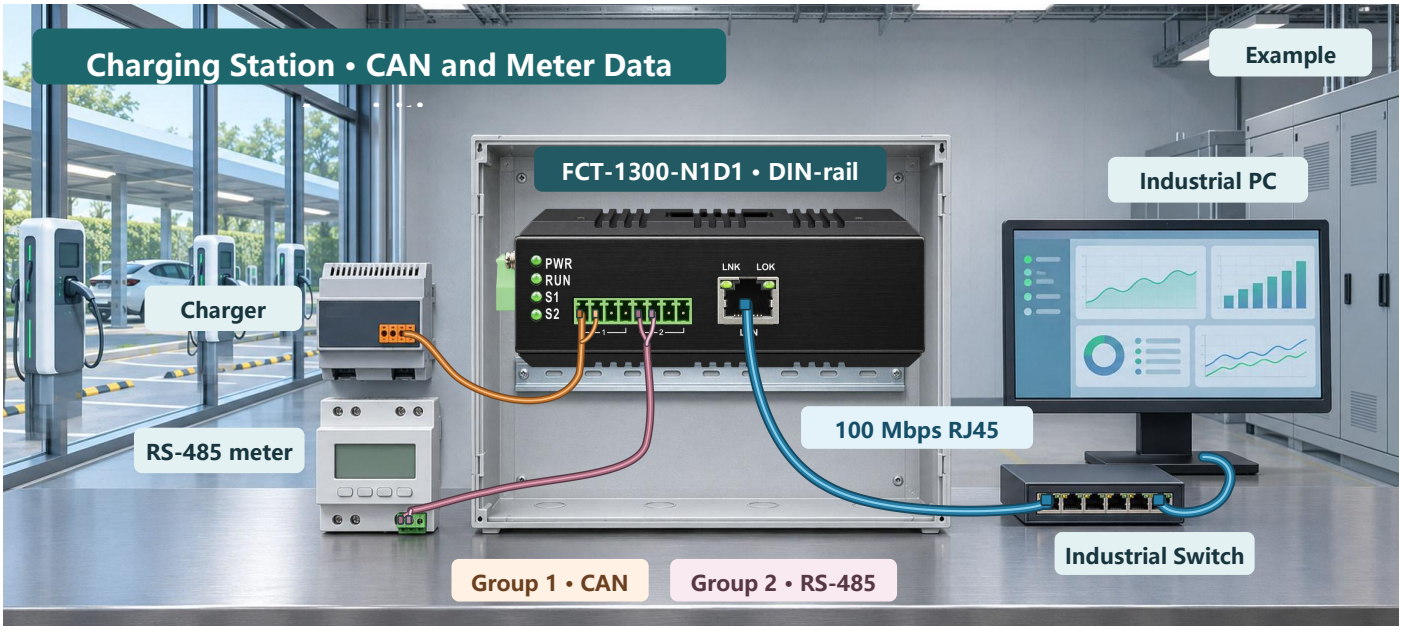
- Connect 1 CAN bus and 1 serial port through a shared Fast Ethernet port for centralized industrial-PC acquisition and management.
- 1 fixed-interface serial port per unit; select its electrical standard by model.
- Fanless IP40 aluminum enclosure for 35 mm DIN-rail or wall mounting. Choose low-voltage terminals or a built-in wide-input power supply.

## Key Features

- **Port mix** CAN and serial ports are connected to field devices separately and connected via the same Ethernet network.
- **Protection** Both CAN and serial ports have 6 kV surge protection and 3 kV optical isolation. CAN has an independent shielded wire ground.
- **Compatibility** both CAN and serial ports support up to 4 TCP or UDP sessions. Serial port supports virtual serial ports.
- **Remote admin** Web/SNMP; remote upgrade.

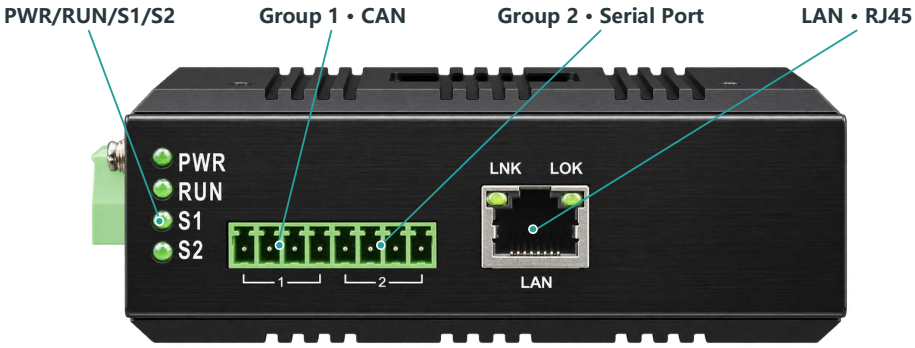
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## Typical Application




N1D1 Example. Group 1 connects to the charging controller, terminal 1 is CAN-H, and terminal 2 is CAN-L. Group 2 connects to the RS-485 meter, terminal 1 is A (TX+), and terminal 2 is B (TX−). Both channels share the 100 Mbps uplink, and the industrial PC parses according to its own field protocol.

## Interfaces and Installation




Front terminal group 1: CAN; group 2: serial port. Serial port pins shall be defined according to the wiring provided with the corresponding model.




Low-voltage terminal plate · PWR1/PWR2 dual DC inputs

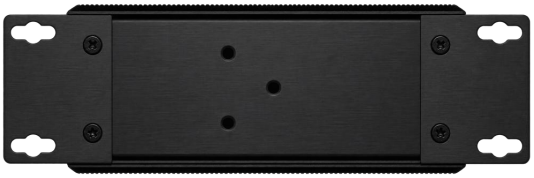



Built-in wide-input power version · 3-pin cloverleaf inlet

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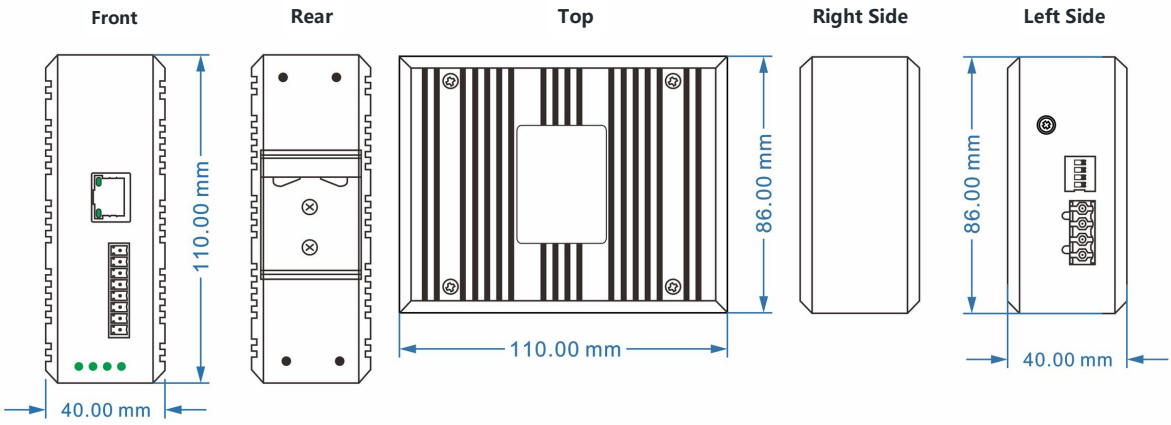


Central back rail clip · 35 mm DIN rail



Wall-mounted mounting bar · four mounting holes at both ends

## Dimensions and Mounting




Common housing dimensions: 110 × 86 × 40.0 mm (length × width × height), weight: 0.495 kg/unit. The figure shows the low-voltage terminal plate.

## Hardware and communication interface

| Item | Specification |
|---|---|
| Processor | ARM Cortex-M4, 240 MHz。 |
| Ethernet | 1 × RJ45, 10/100BASE-T(X) auto-negotiation, supports full/half-duplex and Auto MDI/MDIX. The MAC address table can learn 4096 addresses. |
| CAN Interface | 1-channel, 3.5 mm terminal block, CAN-H, CAN-L, GND. Supports CAN 1.0, CAN 2.0A/2.0B, compliant with ISO/DIS 11898. |
| CAN speed and mode | 0–1 Mbps, line-speed non-blocking, supports automatic scanning matching and customization. Supports transparent conversion, transparent transmission with information carrying, and relaying. |
| CAN messages | Maximum transmission at 8000 frames/s, receive message timestamp accuracy up to 1 μs. |
| Serial Port | 1-channel fixed format, 3.5 mm terminal block. 300–921600 bps, supports line-speed non-blocking, automatic scanning matching, custom baud rate, and serial frame splitting. |
| Mechanical and Environmental | IP40 anodized aluminum alloy casing, no fan. Operating/storage temperature range −40–+85 °C, operating humidity 0%–95% RH, no condensation. |
| Reliability | MTBF > 100,000 hours; all models pass 100% burn-in test. |

## Serial Pinout

| Standard | Signal | Standards |
|---|---|---|
| RS-232 | RXD、TXD、GND | EIA/TIA-232（ITU-T V.28） |

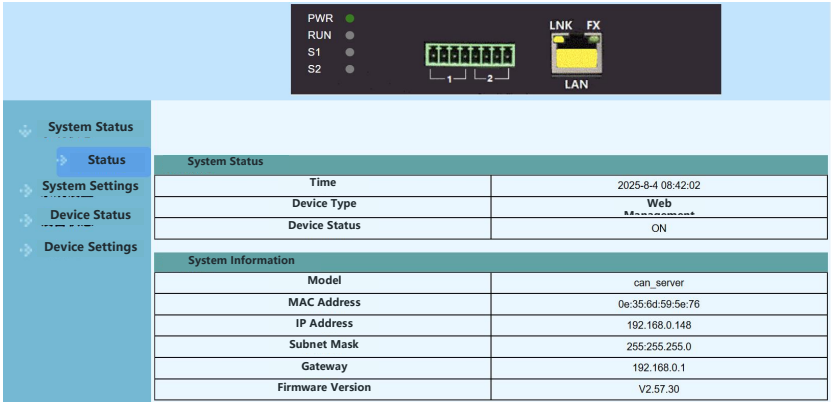
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| Standard | Signal | Standards |
|---|---|---|
| RS-422 | TxD+、TxD−、RxD+、RxD− | EIA/TIA-422（ITU-T V.11） |
| RS-485 four-wire | TxD+、TxD−、RxD+、RxD− | EIA/TIA-485 |
| RS-485 two-wire | A（TX+）、B（TX−）、GND | EIA/TIA-485 |

## Network & Management

| Item | Specification |
|---|---|
| Operating Mode | Modbus TCP、TCP Server、TCP Client、UDP Server、UDP Client。 |
| Session and Access | CAN and serial ports each support up to 4 TCP or UDP sessions. TCP supports multiple connections, allowing up to 4 users for monitoring or management. Supports TCP/IP Socket and virtual serial port drivers. |
| Protocols and Routing | TCP, UDP, ARP, ICMP, HTTP, DNS, DHCP, SNMP. Supports cross-gateway and cross-routing communication, as well as automatic connection restoration after network interruption. |
| Configuration and Maintenance | Web and Windows tool configuration, access control, quick configuration, CAN and serial port status and parameter monitoring, SNMP management, local and remote firmware upgrade. |

## Web management interface




Example of web interface.

## Lightning protection and isolation

| Item | Specifications or technical requirements | Description |
|---|---|---|
| Lightning protection for signal interfaces | 6 kV for CAN and serial interfaces | Reduce risks of interface damage due to lightning induction and transient surges. |
| Optical isolation | 3 kV for CAN and serial interfaces | Communication signals use high-speed optocoupler isolation. |
| Isolated power supply | 3 kV isolation DC-DC | Supplies power for the isolation circuit. |
| Independent shield/reference ground | CAN with independent shield/reference ground interface | Reduces interference caused by common ground of shielded lines. |
| Power supply and EMC | Lightning protection and surge protection for power supply, industrial level 4 EMC | Reduces the risk of damage due to induced high voltage and surge impacts. |

## Power Supply Selection

| Item | Low-voltage terminal plate | Wide-voltage built-in power supply version |
|---|---|---|
| Input range | Dual-channel redundant DC 9–70 V. | AC 85–265 V or DC 110–300 V. |
| Power supply interface | 4-pin 5.08 mm plug-in terminals, PWR1/PWR2. | 3-pin cloverleaf power inlet. |

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| Item | Low-voltage terminal plate | Wide-voltage built-in power supply version |
|---|---|---|
| Isolation and Protection | Internal isolation of the power supply, with overload and reverse connection protection. Automatic polarity detection, no need to distinguish positive or negative poles for wiring. | Supports overload protection. |
| Total Power Consumption | < 5 W。 | < 5 W。 |

## Ordering Information

Model segmentation: FCT / 1300 / N1 / D1, R1 or X1

| NO | Name | Definition |
|---|---|---|
| 01 | FCT / 1300 | Feichang product prefix and product series. |
| 02 | N1 | 1-channel CAN bus. |
| 03 | D1 / R1 / X1 | 1-channel fixed standard serial port. D = RS-485, R = RS-232, X = RS-422. |

### Full Ordering Code

| Model | CAN bus | Serial port configuration |
|---|---|---|
| FCT-1300-N1D1 | 1-channel | 1-channel RS-485 |
| FCT-1300-N1R1 | 1-channel | 1-channel RS-232 |
| FCT-1300-N1X1 | 1-channel | 1-channel RS-422 |

All models come with 1-channel 100 Mbps RJ45. Specify full model, power supply version, and installation method when ordering.

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