Mini DIN-Rail 3-in-1 Serial Device Server

Model: FCT-1300-F1S1

1 serial port · 1 Fast Ethernet

RS-232 / RS-422 / RS-485 · Web selection

Dual terminal / built-in AC power version available



Product Overview

- Connect serial devices or a serial bus to Ethernet. The web UI selects RS-232, RS-422, or RS-485 for the 1 serial port.
- Supports TCP/UDP transparent transmission, Modbus RTU to TCP, MQTT transparent transmission, and Modbus to JSON data packets for easy platform integration.
- Aluminum alloy fanless casing, supports rail or wall mounting; optional dual DC terminal power supply or built-in AC power version.

Key Features

- **Port Surge Protection** Power supply, serial port 6 kV; network port with 4 kV surge protection
- **Existing Software** Virtual serial port / Socket, reduces application modification
- **On-site Adaptation** Select the serial mode in the web UI. Custom baud rates are supported.
- **Platform Integration** MQTT transparent transmission / Modbus to JSON
- **Remote Management** Cross-routing, reconnection after network outage, remote upgrade
- **Multi-terminal access** Up to 4 TCP / UDP sessions
- **Industrial installation** Aluminum alloy IP40; wide temperature range, rail / wall-mounted

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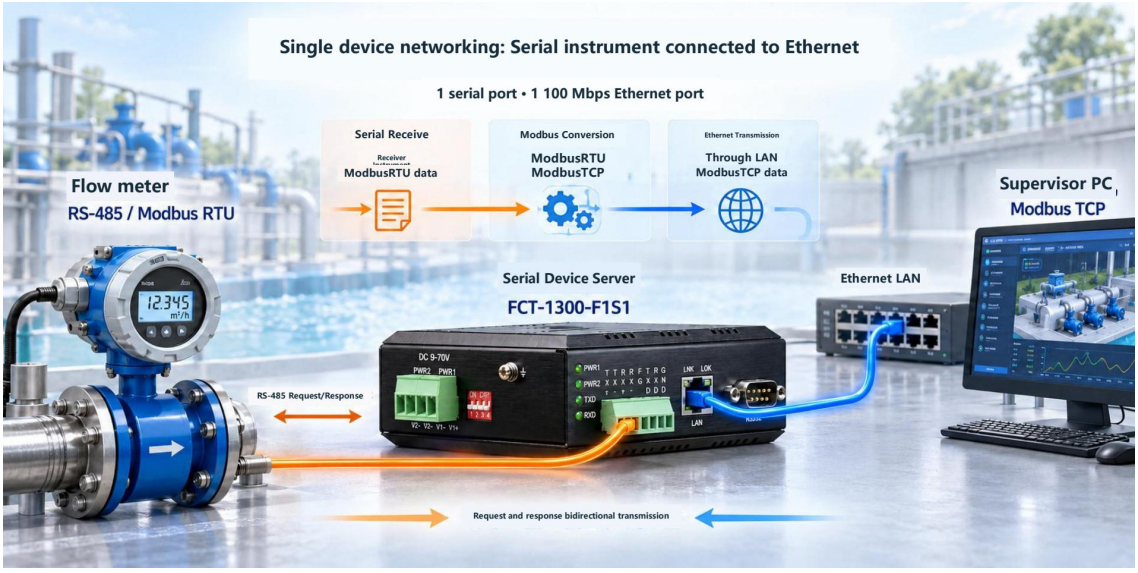
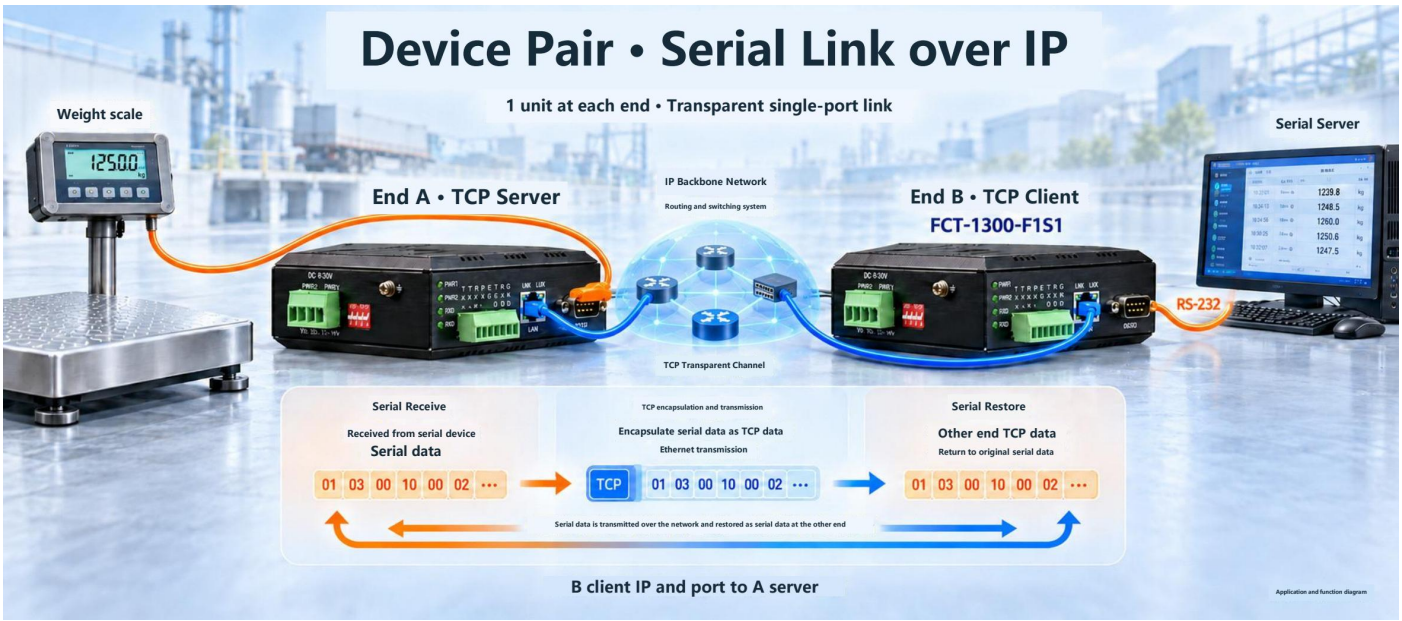
Single unit application; remote monitoring of pump station instruments



Application diagram: One device connects RS-485 data from a flow meter to Ethernet, and the upper computer collects data via Modbus TCP. Instruments and platforms are provided according to projects, and the scenario and connections illustrate the connection method.

S1 is a three-in-one serial port channel; RS-232 / 422 / 485 can be used according to settings. When multiple sessions access the same instrument, the upper-level system coordinates the requests.

Two devices connected in pairs for factory weighing data transmission



Application diagram: One unit at each end, A end connected to a weighing instrument, B end connected to a serial port host; serial port data is transmitted transparently via an IP-based network. Each unit uses a serial port channel, and RS-232 is selected in the diagram.

TCP Client on side B points to IP and port of TCP Server on side A; serial port mode, baud rate, and frame format must match the connected terminal. Both ends must be reachable over IP, with routing and access policies allowing the TCP connection.

Technical Specifications

Hardware and Electrical

Item	Specification
Processor	ARM Cortex-M4, main frequency 240 MHz
Ethernet	1 × RJ45; 10/100BASE-T(X), full / half-duplex adaptive, Auto-MDI/MDIX
MAC address table	4096 items
Serial Port	1-channel RS-232 / RS-422 / RS-485, Web selectable; terminals + DB9 male connector
Serial port speed	300–921600 bps; supports automatic scanning matching and custom baud rate
Terminal power supply version	Dual redundant DC 9–70 V; 4-pin 5.08 mm pluggable terminals
Built-in AC power version	Suffix -AC; AC 85–265 V or DC 110–300 V; three-digit plum-shaped power socket.
Total Power Consumption	< 5 W
Power Supply Protection	Power supply, serial port: 6 kV; RJ45 network port: 4 kV surge protection; overload protection; terminal versions support reverse connection protection and internal isolation.
Size / Weight	110 × 86 × 40 mm; 0.495 kg / unit
Enclosure / installation	Aluminum alloy, fanless; IP40; 35 mm rail or wall-mounted
Operating / Storage temperature	-40 ℃ to +85 ℃
Operating Humidity	0%–95% RH, no condensation
MTBF	> 100000 hours

Network & Management

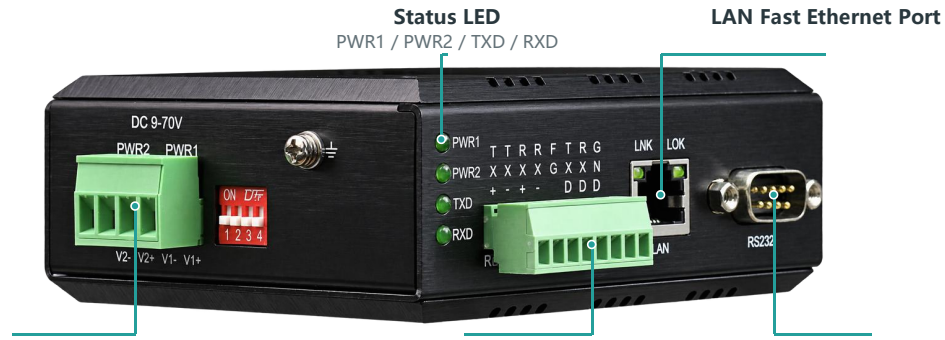
Item	Function
Agreement	TCP、UDP、ARP、ICMP、HTTP、DNS、DHCP、SNMP、MQTT
Transparent transmission mode	TCP Server、TCP Client、UDP Server、UDP Client
Modbus conversion	Modbus RTU to Modbus TCP, for collection by upper-level machines over network
MQTT / JSON	Supports MQTT transparent transmission; supports Modbus to JSON data packet conversion
Session Connection	Up to 4 TCP or UDP sessions per serial port; UDP supports single-machine or multi-machine communication
Application access	TCP/IP Socket, virtual serial port driver; supports communication across gateways and routing layers
Data Framing	Supports serial data framing configuration
Operation monitoring	Serial port status and parameter monitoring; automatic connection restoration after network interruption
Configuration and Access	Web, Windows configuration tool, serial port configuration; supports access control, quick configuration, and SNMP network management
Maintenance	Supports local and remote system firmware updates

Multiple sessions do not increase physical serial ports; requests from the same terminal are coordinated by the upper system. MQTT topics, message format, and Modbus registers are configured per item.

Interfaces and Installation

Physical diagram of the device; dual-terminal power supply and built-in AC power supply correspond to different power versions.

Communication and status indication



RS-232 / RS-422 / RS-485 modes can be selected via web software; both terminals and DB9 serve the same serial port channel.

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Power Supply Options

Dual-channel DC terminal power supply

DC 9–70 V



Protective grounding stud

Built-in AC220V power supply -AC

AC 85–265 V / DC 110–300 V

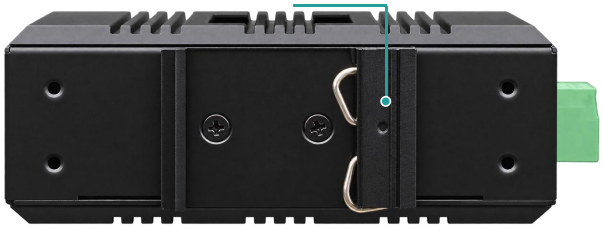


Protective grounding stud

The terminal power interface is 4-pin, 5.08 mm pitch, marked as V2− / V2+ / V1− / V1+; supports two redundant inputs.

Mounting Hardware

35 mm rail clamp



Wall-mounted mounting bar and mounting holes



Physical dimensions: 110 × 86 × 40 mm. Space is provided for network cable, DB9, terminals, and power lines during installation; installation accessories shall match the order specification.

Serial Pinout

Mode	Signal
RS-232	Terminal blocks: RXD / TXD / GND; DB9 male: RXD / TXD / GND / CTS / RTS
RS-422 / four-wire RS-485	TxD+ / TxD− / RxD+ / RxD− / GND
Two-wire RS-485	A (TX+) / B (TX−) / GND

Port Surge Protection

Interface or test item	Rating / Test Conditions	Protection Notes
Power Interface	Open-circuit peak voltage = 6 kV (open-circuit peak voltage)	Reduces lightning-induced surges and switch operation surges from power lines; overload protection; DC terminals support reverse connection protection
Three-in-one serial port	Open-circuit peak voltage = 6 kV (open-circuit peak voltage)	RS-232 / RS-422 / RS-485; reduces lightning-induced interference and switching surge risks on signal lines.
RJ45 Ethernet interface	4 kV (open-circuit peak voltage)	Reduces lightning induction and switch operation surge risks from network cable
Test Standards for Surge Protection:GB/T 17626.5 (IEC 61000-4-5) surge immunity test; **Open-circuit voltage waveform:**10/700 μs; **Test source impedance:**40 Ω		

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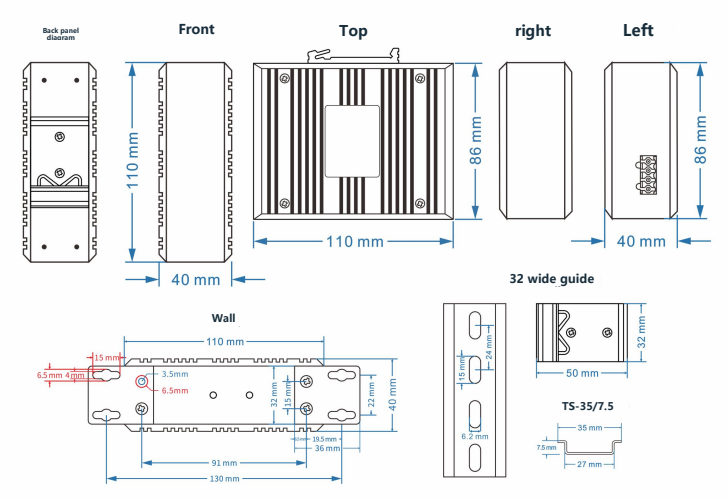
Dimensions and Mounting



Enclosure: 110 × 86 × 40 mm; Wall-mounted horizontal mounting hole spacing: 130 mm, compatible with TS-35/7.5 rail. Dimensions in mm; see interface and installation diagram for communication panel and power interface locations.

Ordering Codes and Configuration

FCT-	1300-	F1	S1	-AC
Company and product type	Industrial serial device server series	1 Fast Ethernet copper port	1-channel selectable RS-232/422/485 serial port	Built-in AC power option

Select power supply first: basic model for dual DC terminals; -AC added at the end of the model for built-in AC power version. Also confirm installation accessories and matching cables.

NO	Name	Definition
1	**Company and type**	FC = Feichang; T is the type identifier in this product model.
2	**Product Series**	1300 is the code for this industrial serial device server series.
3	**Ethernet specifications**	F = Fast Ethernet copper port; F1 = 1 10/100 Mbps RJ45 copper port
4	**Serial port specifications**	S = three interfaces: RS-232 / RS-422 / RS-485; S1 = 1 channel, Web selection mode.
5	**Power Supply Attributes**	AC = built-in AC220V power supply, denoted as -AC; input AC 85–265 V or DC 110–300 V. Without -AC, it indicates dual DC 9–70 V terminal power supply.
6	**Installation and Accessories**	35 mm rail or wall-mounted unit; mounting parts, power cables, and serial cables shall be specified in the order list.

Ordering Examples

Full Model Code	Power and Mounting Options
FCT-1300-F1S1	Dual redundant DC 9–70 V terminals; rail / wall-mounted and accessories based on order
FCT-1300-F1S1-AC	Built-in AC220V power supply; input AC 85–265 V / DC 110–300 V; accessories are provided according to order.

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