2-Port Modbus Serial Server with Fiber Cascading

Model: FCT-1200-F1B2S2

2-channel RS-232/422/485 · 2 optical, 1 electrical (100 Mbps)
Modbus RTU to TCP · Web/SNMP management



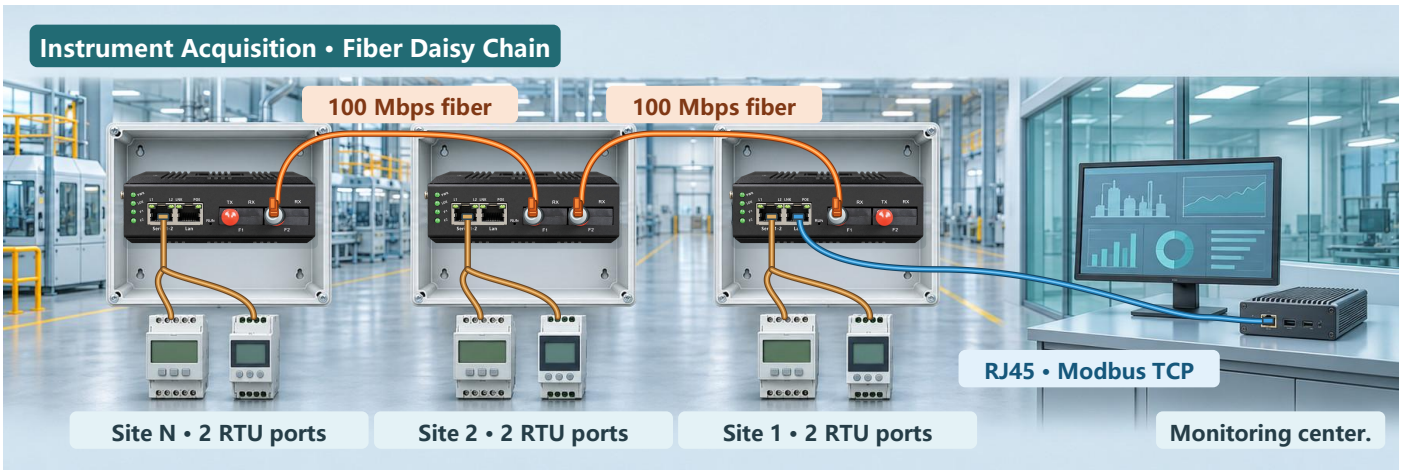
Product Overview

- Connect 2 RS-232/422/485 instruments to Ethernet, with Modbus RTU-to-TCP conversion for centralized monitoring.
- 2 Fast Ethernet fiber ports support station daisy-chaining; 1 Fast Ethernet RJ45 port connects the local network.
- DIN-rail or wall mounting. Select low-voltage terminals or built-in wide-input power to suit the cabinet supply.

Key Features

- **Fiber cascade** Two Fast Ethernet ports can be connected in series at multiple collection sites.
- **2 serial ports** Two selectable RS-232/422/485 serial ports, supporting custom baud rate and automatic scanning matching.
- **Multi-session** Each serial port supports up to 4 TCP or UDP sessions, with virtual serial ports and Socket access.
- **Remote admin** Supports Web, SNMP, online upgrade, and automatic connection restoration during network outage.

Typical Application



Two serial ports at each site are connected to Modbus RTU instruments, and adjacent servers are connected via 100 Mbps fiber ports. Site 1 is connected via RJ45 to the monitoring center for acquisition by the upper computer via Modbus TCP.

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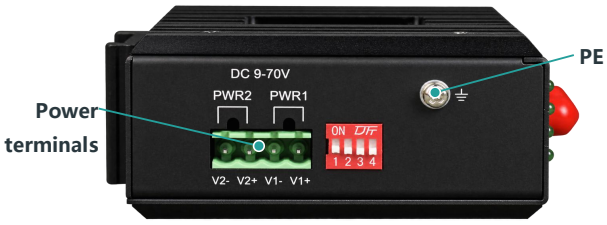
Deployment stage	Configuration and acceptance
Serial port connection	Set according to instrument specifications, addresses, baud rate, and serial port parameters; two RS-485 lines are used in examples.
Fiber optic cascading	Adjacent ends must have matching fiber port configuration, speed, wavelength, single/multi-mode, single/double-fiber, and optical path budget. Communication is verified based on the actual number of sites and serial port load.
Upper computer acquisition	Data read via accessible Ethernet connection. When multiple sessions are used, the upper system coordinates requests for the same instrument.

The diagram shows an open link. Before closing the fiber loop, verify the local hardware, firmware, and loop prevention mechanisms of the field network.

Interfaces and Installation



Service panel · Two serial ports, one Fast Ethernet copper port and two 100 Mbps fiber Ethernet ports



Low-voltage terminal board · PWR1/PWR2



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

Serial1-2 is a serial interface. Use the matching serial cable; verify connector pinout and DIP settings against the wiring data for the delivered hardware version.

Hardware and environment

Item	Specification
Processor	ARM Cortex-M4, 240 MHz。
Ethernet port	1 × RJ45, 10/100BASE-T(X) auto-negotiation, full/half-duplex auto-negotiation, supports Auto-MDIX.
Ethernet fiber port	2 × 100 Mbps fiber Ethernet ports, support link stacking. SC/FC/ST/LC (SFP) can be selected according to the order configuration.
Fiber type and wavelength	Supports single-fiber or dual-fiber operation. Multimode: 850/1310 nm; single-mode: 1310/1550 nm.
Optical fiber transmission distance	20/40/60/80/120 km, determined by optical interface configuration, remote site, and optical path budget.

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Item	Specification
Typical optical transmission power	Single-mode: 100 μW–0.93 mW.
MAC address table	Can learn 4096 MAC addresses.
Serial port and baud rate	2 channels available for RS-232/RS-422/RS-485, 300–921600 bps. Supports line-speed non-blocking communication, automatic scan matching, and custom baud rates.
Structure and Installation	IP40 anodized aluminum alloy casing, fanless cooling. 110 (length) × 87 (width) × 40 (height) mm, 0.45 kg/unit, mounted on rails or wall.
Environment and Reliability	Operating/storage −40 to +85 °C; operating humidity 0–95% RH, non-condensing. MTBF >100,000 hours; all models receive 100% burn-in testing.

Serial signal definition

Standard	Signals	Interface standard
RS-232	RXD、TXD、GND	EIA/TIA-232（ITU-T V.28）
RS-422	TxD+、TxD−、RxD+、RxD−、GND	EIA/TIA-422（ITU-T V.11）
Four-wire RS-485	TxD+、TxD−、RxD+、RxD−、GND	EIA/TIA-485
Two-wire RS-485	A（TX+）、B（TX−）、GND	EIA/TIA-485

Networking and management

Item	Specification
Operating Mode	Modbus TCP、TCP Server、TCP Client、UDP Server、UDP Client。
Protocol Conversion	Modbus RTU to Modbus TCP, for reading serial device data via Ethernet.
Protocol and access	TCP, UDP, ARP, ICMP, HTTP, DNS, DHCP, SNMP, support for standard TCP/IP Socket and virtual serial port driver.
Concurrent connections	Up to 4 TCP or UDP sessions per serial port. TCP supports up to 4 connections, and UDP supports single-machine or multi-machine communication.
Configuration and monitoring	Windows configuration tool, serial port and Web configuration; supports access control, quick configuration, serial port status and parameter monitoring, and SNMP network management.
Network restoration and upgrade	Supports cross-gateway/routing communication, automatic connection restoration after network interruption, and local and remote firmware upgrade.

Power supply and protection

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, dual input for PWR1/PWR2.	1 × 3-pin cloverleaf power inlet.
Internal isolation and protection.	Internal isolation, dual-path redundancy, automatic polarity detection, overload protection, and anti-backfeed protection.	Internal isolation of power supply, with overload and backfeed protection.
Total Power Consumption	＜5 W。	＜5 W。

Electromagnetic compatibility: Industrial Level 4 EMC. Test conditions and items shall be verified according to the test data of the corresponding hardware version.

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Ordering and Selection

FCT	1200	F1	B2	S2	[-AC]
Feichang serial device server.	Product Series	1-channel Fast Ethernet copper port.	2-channel Fast Ethernet fiber port.	2-channel selectable RS-232/422/485 serial port	Built-in high-power supply

Model segmentation definition

NO	Name	Definition
01	FCT	Product prefix for Feichang serial device server.
02	1200	Product series to which this device belongs.
03	F1	1-channel 10/100 Mbps adaptive RJ45 Ethernet port
04	B2	2-channel 100 Mbps optical Ethernet port, suitable for site fiber optic cascading
05	S2	2-channel serial ports, supporting RS-232, RS-422 or RS-485
06	-AC	Built-in high-voltage power supply. No -AC suffix indicates dual-redundant DC terminals for power supply.

Full Ordering Code

Ordering Code	Power supply configuration
FCT-1200-F1B2S2	Dual-redundant DC 9–70 V terminals for power supply.
FCT-1200-F1B2S2-AC	Built-in wide-input power supply, AC 85–265 V or DC 110–300 V, with a 3-pin cloverleaf inlet.

Confirm power supply version, optical interface type, single/double fiber, single/multi-mode, wavelength, transmission distance, and peer configuration during ordering.

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