FCT-6300-F5

5-Port, 2-Serial Industrial Cellular Gateway

4G Cat.4 / 5G RedCap



4 LAN + 1 WAN, all 10/100 Mbps. Two shared serial / I/O groups provide 2 serial ports OR 1 serial + 2 I/O OR 4 I/O. Optional 2.4 GHz Wi-Fi and five-port PoE PSE.

Selection boundaries

PoE is PSE output, not an input for powering the gateway. Enabling PoE requires DC 48-55 V. Dual SIM is single standby. Match the cellular region, antenna configuration and signal types to the order.

English specification | Edition 2026-10-27. Photos show the 4G version; RedCap antenna arrangements follow the selected configuration.

Product Overview & Selection Essentials

FCT-6300-F5 connects industrial field devices with four LAN and one WAN Fast Ethernet ports, serial instruments and acquisition interfaces.

Check Before Selecting

• Network interfaces Five Fast Ethernet RJ45 ports, fixed as 4 LAN + 1 WAN. This model has no optical port.

• Serial & acquisition Choose 2 serial ports, 1 serial + 2 I/O, or 4 I/O across two shared resource groups.

• Cellular version Choose 4G Cat.4 or 5G RedCap; verify regional bands against your operator.

• PoE power Optional PSE output. DC 48-55 V input is required when PoE is enabled.

• Antenna configuration RedCap: dual cellular without Wi-Fi, or single cellular + Wi-Fi. Assess signal conditions for the latter.

Configure & Request a Quote

Model Naming Rules & Complete Examples

Code / position	Meaning
FCT-	Company + type
6300-	Series
F5	5 Fast Ethernet ports
Interface code + quantity	For example D2, D1A2
UW	Optional Wi-Fi
UF / UR	Choose one cellular version
-P	Optional PoE
-CN / -AU / -EU	4G: CN / AU / EU; RedCap: CN / EU

An interface letter is followed by its quantity: D2 = 2 RS-485 ports; D1A2 = 1 RS-485 port + 2 current inputs. Wireless codes are ordered UW + UF / UR. Omit UW without Wi-Fi.

NO	Item	Definition
1	Company	FC = FCTELE
2	Product type	T = industrial gateway
3	Series	6300 = 110 mm industrial DIN-rail series

NO	Item		Definition
4	Port specification	Ethernet	F = Fast Ethernet; F5 = 5 Fast Ethernet RJ45 ports, fixed as 4 LAN + 1 WAN.
		Serial Ports	D = RS-485; R = RS-232; X = RS-422.
		DI / DO	K = digital input (DI); J = digital output (DO).
		AI / AO	A = current input; M = current output; V = voltage input; Y = voltage output.
5	Wireless configuration		UW = optional 2.4 GHz Wi-Fi; UF = 4G Cat.4; UR = 5G RedCap. Choose UF or UR.
	Other wireless codes		UL = LoRa; UX = Wi-Fi 6; UB = Wi-Fi 7; UO = 4G Cat.1; UG = full-featured 5G. These are general naming references, not confirmed options for this model.
6	eSIM / PoE		eSIM supported, subject to carrier provisioning. -P = optional five-port standard PoE PSE, available for 4G and RedCap. DC 48-55 V is required when enabled. Omit -P without PoE.
7	Regional suffix		Cat.4: -CN / -AU / -EU. RedCap: -CN / -EU. Place the regional suffix last; see the band tables.

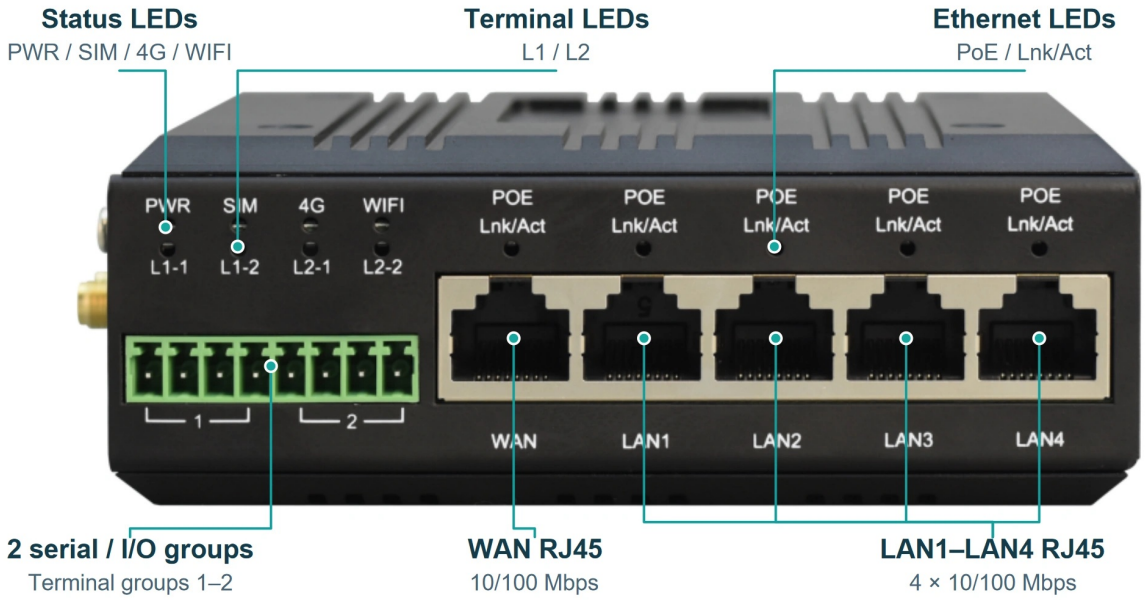
Complete Model Examples

Example Ordering Model	Configuration Details
FCT-6300-F5D2UWUF-P-CN	2 RS-485 + Wi-Fi + 4G Cat.4 + PoE, China version
FCT-6300-F5D2UF-CN	2 RS-485 + 4G Cat.4, without Wi-Fi / PoE, China version
FCT-6300-F5D2UR-P-CN	2 RS-485 + RedCap-CN + PoE, dual cellular antennas, without Wi-Fi
FCT-6300-F5D2UR-P-EU	2 RS-485 + RedCap-EU + PoE, dual cellular antennas, without Wi-Fi
FCT-6300-F5D2UWUR-P-EU	2 RS-485 + RedCap-EU + Wi-Fi + PoE, single cellular antenna
FCT-6300-F5D1A2UF-CN	1 RS-485 + 2 current inputs + Cat.4, without Wi-Fi / PoE

All examples provide 4 LAN + 1 WAN and eSIM support. RedCap uses dual cellular antennas without Wi-Fi, or a single cellular antenna with Wi-Fi; assess site signals for the latter. Every two same-type I/O channels replace one serial port.

FCTELE cloud deployment is optional; video needs a separate video platform. Confirm antennas, power supplies, mounting accessories and the simultaneous PoE output budget for the order and project.

Interface & Mounting Guide



FCT-6300-F5 front interface callout diagram

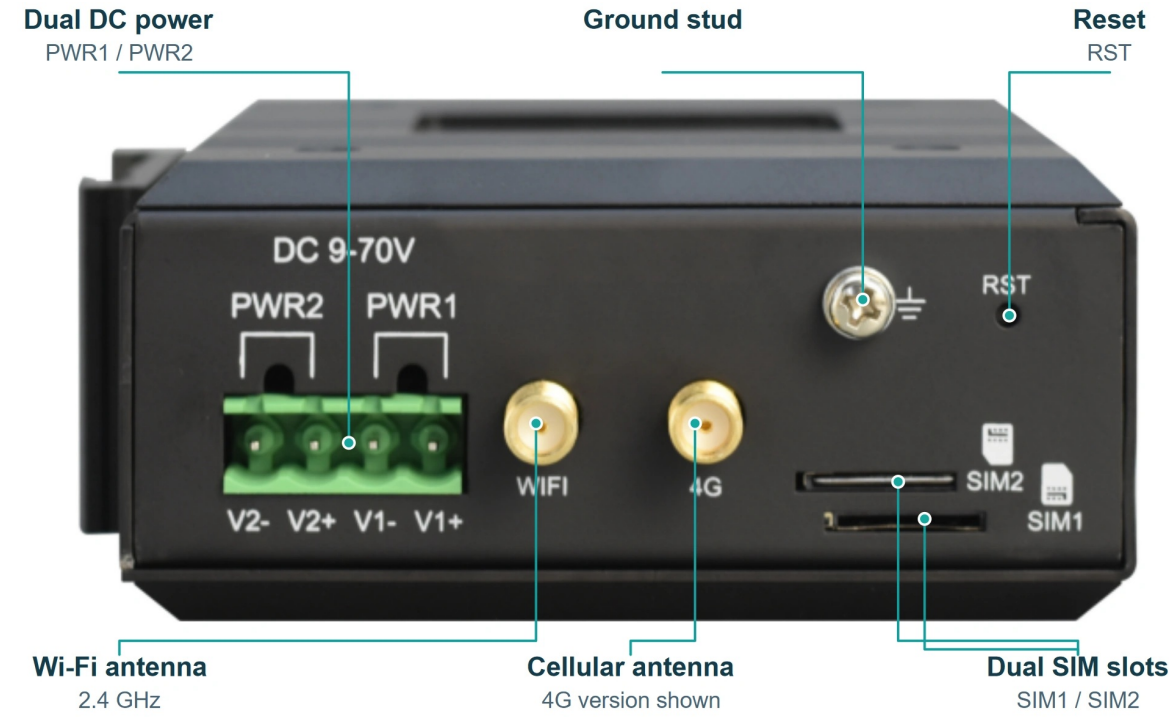
Two serial / I/O terminal groups, one WAN and four LAN RJ45 ports. All Ethernet ports operate at 10/100 Mbps.

• Status LEDs: PWR / SIM / 4G / WIFI; L1 / L2 indicate terminal-group status.

• Serial / I/O: Two shared resource terminal groups; select interface types when ordering.

• WAN: One 10/100 Mbps RJ45 port.

• LAN: LAN1-LAN4: four 10/100 Mbps RJ45 ports.



FCT-6300-F5 power and antenna callout diagram

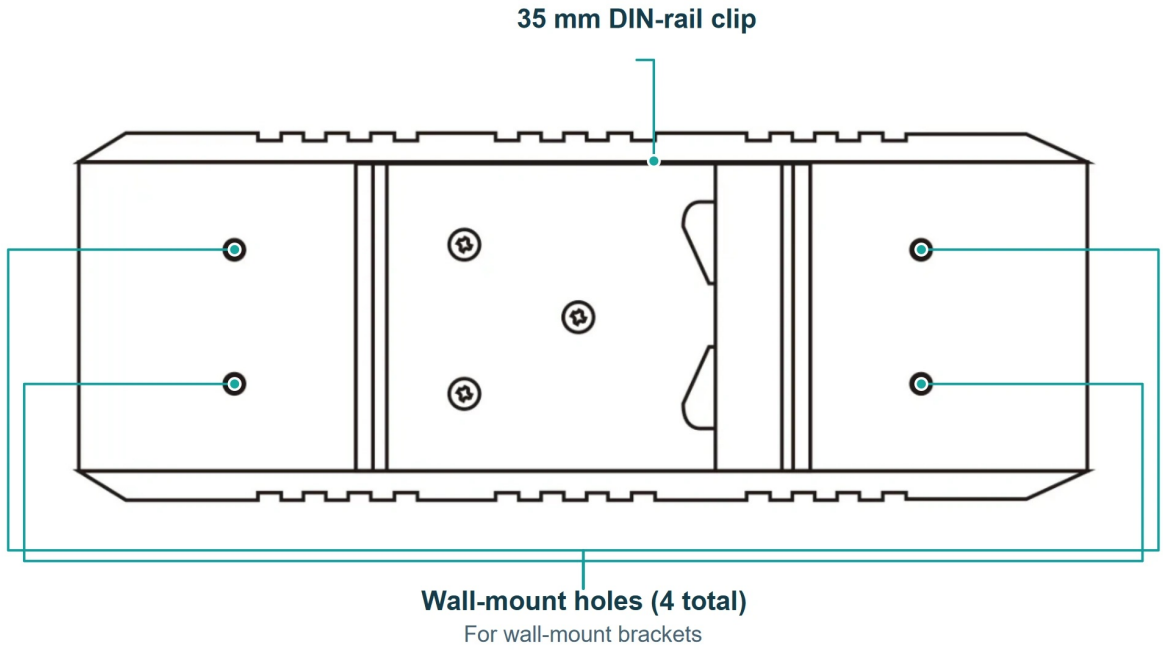
Dual DC power, ground and reset, cellular / Wi-Fi antenna connectors and two physical SIM slots. The 4G version is shown.

• Power: PWR1 / PWR2: dual DC 9-70 V inputs.

• Optional PoE: DC 48-55 V input is required when PSE output is enabled.

• Antennas: The 4G version is shown; RedCap antennas follow the ordered configuration.

• SIM: Two physical SIM slots, dual SIM single standby, with eSIM support.



FCT-6300-F5 rear mounting callout diagram

35 mm DIN-rail clip and four wall-mount holes; 110 x 86 x 40 mm aluminum-alloy enclosure.

• DIN rail: 35 mm DIN-rail clip.

• Wall mounting: Four wall-mount bracket holes, two on each side.

• Enclosure: Aluminum alloy, fanless cooling.

• Dimensions: 110 x 86 x 40 mm; allow space for cables and antennas.

The gateway uses dual DC 9-70 V inputs. DC 48-55 V is required when PoE is enabled. Optional five-port PoE PSE powers external equipment; it is not a PoE input for powering the gateway.

Specifications

Check interfaces and power first, then expand software, cellular bands and mounting details.

Hardware Specifications

Communication interfaces	
LAN	4 x RJ45, 10/100 Mbps, auto-negotiated full / half duplex
WAN	1 x RJ45, 10/100 Mbps, auto-negotiated full / half duplex
Ethernet features	Auto-MDI/MDIX; 4,096-entry MAC address table
Serial / I/O	2 x RS-232 / RS-422 / RS-485, selected when ordering. Each serial resource can be replaced by 2 DI / 2 DO / 2 AI / 2 AO of the same type, up to 4 I/O channels in total.
SIM / eSIM	2 physical SIM slots; dual-SIM single standby; eSIM supported
Antenna interfaces	4G: cellular + Wi-Fi. RedCap: dual cellular without Wi-Fi, or single cellular + Wi-Fi
Power connector	4-position pluggable terminal, 5.08 mm pitch

Serial rate: 300-150,000 bps. RS-232: RXD / TXD / GND; two-wire RS-485: A / B / GND. RS-422 and four-wire RS-485: TxD+ / TxD- / RxD+ / RxD- / GND. Interface types are selected when ordering.

Mechanical and environmental specifications	
Dimensions	110 x 86 x 40 mm
Enclosure & cooling	Aluminum-alloy enclosure; fanless cooling
Ingress protection	IP40
Mounting	35 mm DIN rail or wall mounting
Weight	0.55 kg per unit
Operating temperature	4G: -40 to +85 degC; see the RedCap temperature note
Storage temperature	-40 to +85 degC
Operating humidity	0-95% RH, non-condensing

Wireless LAN	
Wireless LAN	2.4 GHz, IEEE 802.11b/g/n, single antenna; theoretical wireless rate up to 150 Mbps

Wireless rates are theoretical peaks; actual traffic depends on network, antennas and load. Ethernet ports operate at 10/100 Mbps.

Serial & Acquisition Interfaces

Serial Ports	I/O	Example Configuration
2 channels	0 channels	D2: 2 x RS-485
1 channel	2 channels	D1K2: 1 x RS-485 + 2 DI
0 channels	4 channels	K2J2: 2 DI + 2 DO

Two resource groups: each provides one serial port OR two same-type I/O channels. Do not add the maximum 2 serial ports and 4 I/O channels together.

Electrical & Acquisition

Power & PoE	
Gateway power input	Dual redundant DC 9-70 V inputs; DC 48-55 V when PoE is enabled
Protection	Overload and reverse-polarity protection
Gateway consumption	Less than 3 W without PoE
PoE role & ports	Optional PSE power output on 5 Ethernet ports
PoE input requirement	Gateway DC input must be 48-55 V when PoE is enabled
PoE output capability	5 ports support IEEE 802.3at; confirm the available total simultaneous output for the specific project

Acquisition interface options	
Serial / I/O relationship	Every two I/O channels of the same type replace one serial port; two resource groups, up to 4 I/O channels
Allowed combinations	Each group: one serial port or 2 DI / 2 DO / 2 AI / 2 AO. Combine the two groups without allocating a resource twice
Digital input (DI)	Dry contact or NPN / PNP transistor input
Digital output (DO)	24 V DC applications; switching current: dry contact 0.5 A, MOS / optical MOS 0.12 A
Analog characteristics	12-bit resolution; sampling rate 1,000 samples/s
Analog input ranges	0-20 mA, 4-20 mA, 0-5 V, 0-10 V, -5 to +5 V

Choose 2 serial ports, 1 serial + 2 I/O, or 4 I/O. Confirm signal types and ranges with the order. The listed analog-input ranges do not establish analog-output ranges.

The RedCap cellular module operates at -35 degC to +75 degC, with an extended module range of -40 degC to +85 degC. Confirm extension conditions and complete-device applicability with the order.

Cellular Versions & Antennas

Cellular versions	
4G Cat.4	UF; LTE FDD / TDD, without carrier aggregation
5G RedCap	UR; Release 17, 5G SA / LTE Cat.4; see regional bands

RedCap Antenna Selection

Configuration	Application Priority	Ordering Code
2 cellular antennas, without Wi-Fi	Prioritize cellular reception	UR (dual cellular)
1 cellular antenna + 2.4 GHz Wi-Fi	Wi-Fi required alongside cellular	UWUR (single cellular)

Test reception, throughput and connection stability on site when using a single cellular antenna in weak-signal or multipath conditions.

Cellular Versions & Theoretical Rates

Cellular versions	Supported Network	Module Theoretical Downlink / Uplink
4G Cat.4	LTE FDD / TDD	FDD: 150 / 50 Mbps; TDD: 130 / 30 Mbps
5G RedCap	5G SA / LTE Cat.4	SA 64QAM and LTE: 150 / 50 Mbps; optional SA 256QAM: 226 / 120 Mbps

Theoretical peaks depend on module configuration and network support. Traffic through a single Fast Ethernet port is limited by its 100 Mbps rate and protocol overhead.

Networking & Software Functions

Networking & Software

Operating system: OpenWrt

Network and data functions	
Wired access	Static IP, DHCP, PPPoE
Cellular access	Cellular dial-up; APN / VPDN private networks
Dial-up authentication	CHAP, PAP, MS-CHAP, MS-CHAPv2, or no authentication
Link backup	Wired / cellular backup, wired recovery detection and dual-SIM failover
Connection maintenance	Heartbeat and online detection, reconnection, watchdog and system monitoring
Routing	NAT, PAT, DMZ, port mapping, virtual server, DDNS
Firewall	SPI stateful packet inspection and iptables firewall configuration

Network and data functions	
VPN compatibility	PPTP / L2TP; configurable redial intervals and attempts
Device management	Web management / upgrade; SMS connection control and status notification
Wi-Fi management	Wireless repeater, WDS bridging, guest network, scheduling, regional channels and transmit-power adjustment
Serial tunneling	TCP / UDP Server, Client
Protocol conversion	Modbus RTU to Modbus TCP
MQTT data	Multi-topic publish / subscribe, MQTT tunneling, Modbus-to-JSON conversion, incoming JSON parsing and periodic reporting

Dual SIM is single standby; two cellular connections do not operate simultaneously. eSIM requires carrier provisioning. Link switching and service recovery depend on network conditions and configuration.

Regional Versions & Supported Bands

Cellular Regions & Frequency Bands

4G Cat.4 regional bands

Model / Region	-CN	-AU	-EU
	China / India	Latin America / Australia / New Zealand	EMEA / Southeast Asia
LTE-FDD	B1/3/5/8	B1/2/3/4/5/7/8/28/66	B1/3/5/7/8/20/28
LTE-TDD	B34/38/39/40/41	B40	B38/40/41
WCDMA	B1/5/8	B1/2/4/5/8	B1/5/8
GSM	EGSM900 / DCS1800	GSM850 / EGSM900 / DCS1800 / PCS1900	EGSM900 / DCS1800

5G RedCap regional bands

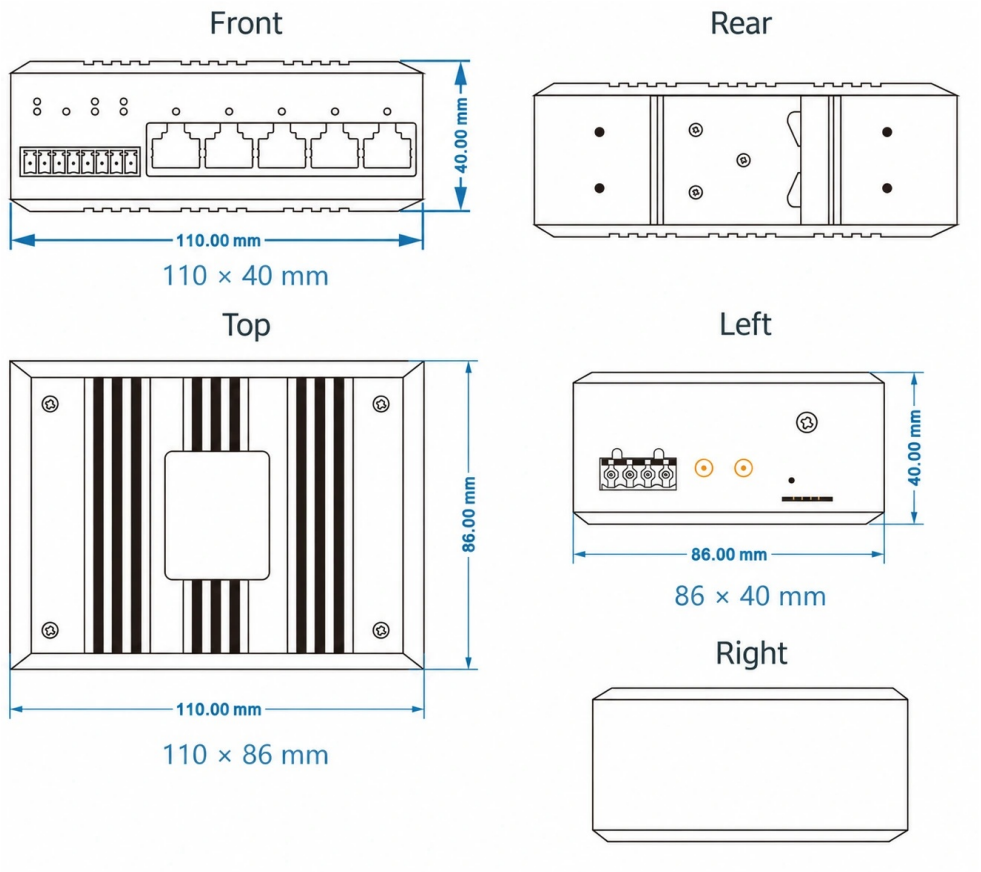
Model / Region	-CN	-EU
	China	EMEA / Southeast Asia / Australia / New Zealand
5G NR SA	n1/3/5/8/28/40/41/78/79	n1/3/5/7/8/20/28/38/40/41/77/78
LTE-FDD	B1/3/5/8	B1/3/5/7/8/20/28
LTE-TDD	B34/38/39/40/41	B38/40/41/42/43

Regional suffixes depend on cellular version: CN / AU / EU for Cat.4; CN / EU for RedCap. For Australia and New Zealand, choose Cat.4 AU or RedCap EU. EMEA means Europe, the Middle East and Africa. Verify operator bands and local coverage before deployment.

Dimensions & Mounting Drawing

Dimensions & Mounting

Overall dimensions: 110 x 86 x 40 mm. Dimensions are in mm. Allow additional space for terminal access, antennas and cable bends.



FCT-6300-F5 front, rear, top and side views with dimensions

Typical Applications

Each application is shown separately. Click an image to enlarge it on this page.

Water Pump Station · Remote Monitoring

Pump-station example: 1 RS-485 + 2 AI. The PLC handles local control; the gateway acquires data and provides remote communications. A 4G configuration is shown.



Water pump station monitoring: one RS-485 port and two AI channels

Industrial Automation · Device Connectivity

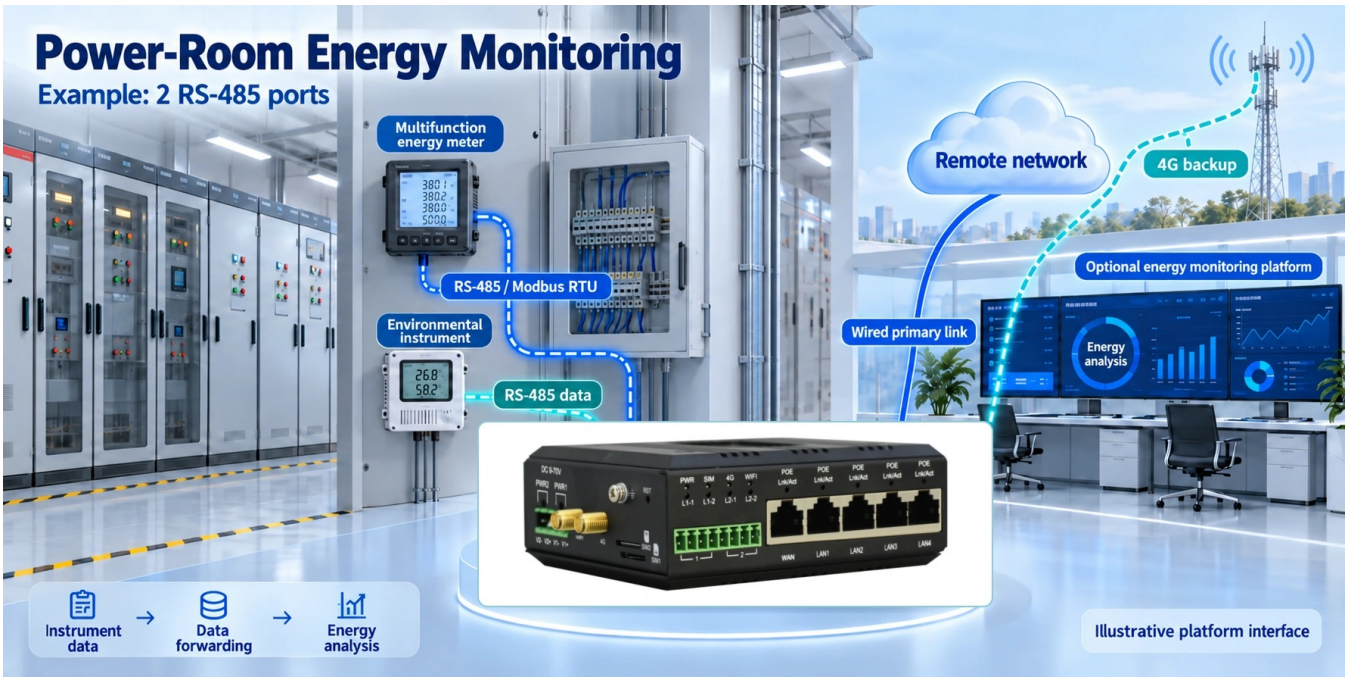
Automation example: the PLC connects over Ethernet and serial instruments connect over RS-485. Wired and cellular links provide remote access and backup according to configuration.



Industrial automation connectivity

Power Room · Energy Monitoring

Energy-monitoring example: two RS-485 ports collect meter and environmental-instrument data for a remote business platform. The platform is a project option.



Power-room energy monitoring with two RS-485 ports

These are typical application illustrations, not installation wiring diagrams. Confirm sensor types, separate power supplies, PoE loads and grounding for the project. A 4G configuration is shown; RedCap uses the ordered antenna arrangement.

Resources & FAQs

FCT-6300-F5 Selection FAQs

Check interfaces, power, network and installation conditions before confirming the complete ordering model.

What are the five Ethernet ports on FCT-6300-F5?

Four RJ45 LAN ports and one RJ45 WAN port, all 10/100 Mbps. FCT-6300-F5 has five copper Ethernet ports and no SFP port.

Can all 2 serial ports and 4 I/O channels be used simultaneously?

No. Serial and I/O share two resource groups. Each group supports one RS-232 / RS-422 / RS-485 port, or two DI, DO, AI or AO channels of the same type. Select 2 serial ports, 1 serial + 2 I/O, or 4 I/O channels when ordering.

How is 1 RS-485 plus 2 current inputs encoded?

Use interface code D1A2. The datasheet example FCT-6300-F5D1A2UF-CN means 1 RS-485 port, 2 current inputs and China-version 4G Cat.4, without Wi-Fi or PoE. Confirm the input range when ordering.

Does PoE power the gateway or other devices?

PoE is optional five-port PSE output for compatible powered devices, identified by -P. The gateway requires DC 48-55 V when it is enabled. The five ports support IEEE 802.3at; confirm the available simultaneous total output for the project.

Can both 4G and RedCap versions include PoE?

Both cellular versions offer optional PoE PSE. Non-PoE configurations accept dual DC 9-70 V inputs. When PoE output is enabled, input must be DC 48-55 V; check supply capacity together with the load.

Can two SIMs connect simultaneously, and how is eSIM used?

The two physical slots operate in dual-SIM single-standby mode: only one cellular connection is active at a time. Dual-SIM failover and wired / cellular backup are supported. eSIM needs carrier provisioning; switching and application recovery depend on the site network and configuration.

Can RedCap use dual cellular antennas and Wi-Fi together?

The datasheet specifies two arrangements: UR uses dual cellular antennas without Wi-Fi; UWUR uses one cellular antenna with 2.4 GHz Wi-Fi. For Wi-Fi configurations, assess site reception and test weak-signal or multipath performance.

Which regional version applies to China, Europe or Australia?

4G Cat.4 uses -CN, -AU or -EU; RedCap uses -CN or -EU. Australia and New Zealand use -AU for Cat.4 and -EU for RedCap. Confirm the band tables, carrier network and site coverage.

Can it convert Modbus and report MQTT JSON data?

The datasheet lists Modbus RTU-to-TCP conversion, multi-topic MQTT publish / subscribe, tunneling, Modbus-to-JSON conversion, incoming JSON parsing and periodic reporting. Validate instrument registers, platform topics and data formats with the delivered firmware.

How should dimensions and operating temperature be checked?

The aluminum enclosure measures 110 x 86 x 40 mm and supports 35 mm DIN rail or wall mounting. The 4G operating range is -40 to +85 degC. The RedCap module range is -35 to +75 degC; confirm extended -40 to +85 degC conditions and the complete-unit range with the order.

Documentation & Application Boundaries

Interface counts, power requirements, bands and ordering rules follow the FCT-6300-F5 specification. Photos show the 4G version; RedCap antennas and delivered firmware follow the order.

• View Product Datasheet PDF

• Check Interfaces & Mounting · Check Regional Bands · Check Complete Ordering Models

The configurator checks resources when ordering; it does not imply field-replaceable modules. Integrate external instruments, controllers and platforms against project protocol, power and communication requirements.