

Industrial Cellular RTU



Product Overview

TY511 Series RTU is a type of industrial cellular remote telemetry unit, which adopts high-powered industrial 32-bits CPU, with multi-layer software detection and hardware protection mechanism to ensure reliability and stability of the device. It supports worldwide carrier 4G/3G/2G cellular network FDD-LTE, TDD-LTE, and HSPA/UMTS/WCDMA, EVDO, TD-SCDMA, EDGE, CDMA 1X and GPRS, to realize real time data acquisition, storage, control, alarm and transmission, as well as security of data transmission.

TY511 has rich interfaces, including tipping bucket rain gauge input, digital input, analog input, relay, digital output, RS232, RS485, etc., and it has been widely used for remote monitoring and control applications, such as, hydrology, water resources, water pollution, water treatment, reservoir dam, mountain flood disaster, geological disaster, meteorology, environmental protection, new energy resources, etc.

Key Features

Rich and flexible industrial interfaces

2-RS232, 2-RS485, 8-DI, 8-DO, 8-ADC, 2-Pulse, 3-Power output, 1-SD slot, etc.

Large capacity of local data storage

Supports up to 16MB data storage and additional SD card data storage (Up to 16G).

Secure and transparent data transmission

Built in standard TCP/IP stack, supports up to 5 data centers for synchronous and transparent data transmission.

Local historical data exporting (via serial port or SD card), remote real time and historical data query.

Integrated with data acquisition and 4G/3G/2G data transmission, reliable and cost-saving, to realize hydrology and water resources data acquisition, storage, display, control, alarm and transmission, etc.

Easy to configure and use

Support multi types of configuration, including configured through local LCD and keyboard, serial port, remote configuration, etc.

Remote management

Support remote management, including remote configuration through data center and SMS*, remote firmware upgrade, and center management software* to manage the devices remotely.

Extendable functionalities

Support monitoring status of current of external battery.

Support image capture(via serial port camera).

Support external LCD/LED display(via USB Port)

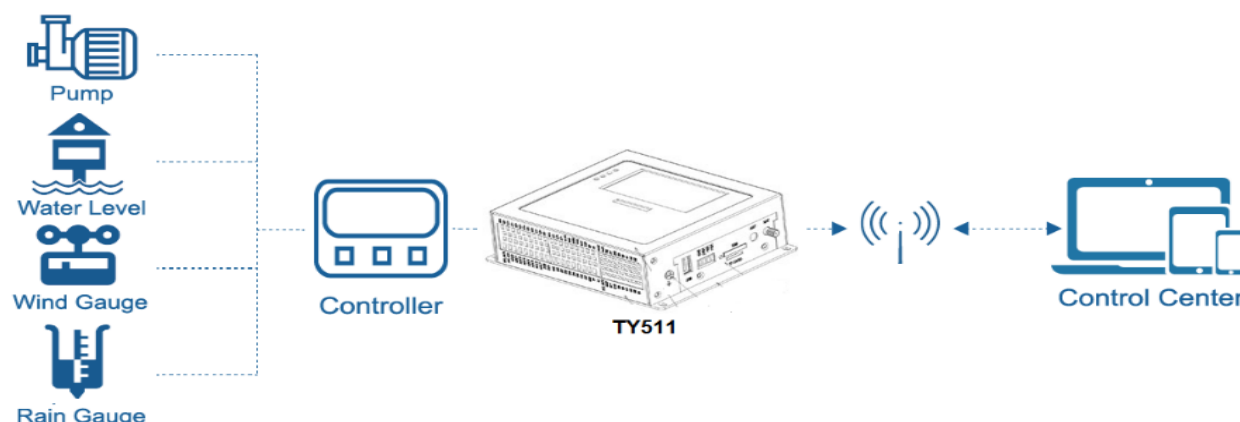
Robust and reliable

High standard Industrial grade design, suitable for unattended and harsh industrial applications.

Complete system protection and keep online mechanism, to ensure always online

Support anti-electromagnetic interference, suitable for harsh environment.

Application Diagram



Specifications

System

CPU	Industrial 32-bit CPU
Flash	16MB
SRAM	256KB

Cellular Interface

Antenna Connector	1 × 50 Ω SMA Female, or 2(Option)
SIM Slot	1
ESD Protection	15KV

Serial Interface

Connector	Terminal block, 3.5 mm female socket with lock
Ports	2×RS232, 2×RS485
Baud Rate	300bps to 230400bps
ESD protection	8KV for RS232, 15KV for RS485

I/O

Analog Input	8 16-bit AD, supports 4-20mA current signal input, and 0-5V voltage signal input is optional
Digital Input	8 Logic 0: Wet contact 0-3VDC, or dry contact close Logic 1: Wet contact DC 5-30V, or dry contact open
Digital Output	8(optical isolation) Logic 0: Wet contact 0-3VDC, or dry contact close Logic 1: Wet contact DC 5-30V, or dry contact open
Pulse Input	2x tipping bucket rain gauge input(low level) 2x pulse input(high level)
Relay	8 Max switching voltage: 30VDC/220VAC Max switching current: 4A Max switching power: 120W

USB Port

Ports	1 For external display screen port, able to connect 192*64 dot matrix STN LCD screen with keyboard
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SD Slot (TF)

Port(s)	1, support up to 16G
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Power Output

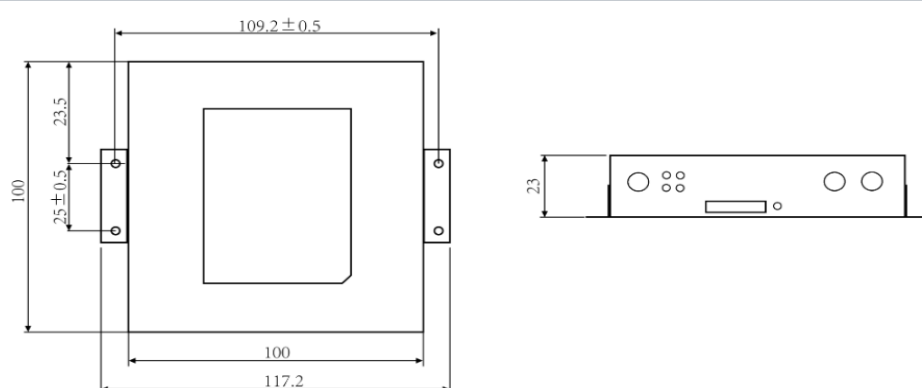
Ports	3 Default is 12V. rated output current of 1 power output is 1A, and total rated output current of 3 power outputs is 2A, built in overcurrent protection
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Software

Network Protocols	MQTT*, Transparent (TCP Client/Server, UDP Client/Server), Modbus Gateway (Modbus RTU to Modbus TCP), DNS, etc.
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Management	Config Tool, Cloud DMP (Device Management Platform) ¹
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Dimensions(mm)



Note:

1. There is license fee for DMP.
2. * Under development, or option features
3. Price of extended warranty will be different.
4. If you couldn't find the frequency band for your regions or have any questions, please contact Bivocom sales representatives for more information.

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Power Supply and Consumption

Connector	Terminal block
Standard Power	DC 12V/1.5A
Input Voltage	5-35 VDC

Physical Characteristics

Ingress Protection	IP30
Housing & Weight	Metal, 770g (1.70lbs)
Dimensions	154.2×127×46.6mm (6.07x5x1.83 inches), without antenna and accessories
Mounting	Desktop, Wall mount

Environmental

Operating Temperature	-35°C to +75°C (-31°F to +167°F)
Storage Temperature	-40°C to +80°C (-40°F to +176°F)
Relative Humidity	0% to 93% (non-condensing) at 25°C/77°F
Ethernet Isolation	1.5 kV RMS

Others

LED Indicators	System, Online, Power, Error
LCD Screen	128*64 dot matrix, backlight
Keyboard	16 Keys (2*8 keys)
Grounding screw	1x M3 screw
Built-in	Watchdog, RTC, Timer
Approvals²	CE*, RCM*, FCC*
Warranty Period³	Standard: 12 Months Extended: 2-5 Years ³

Standard Package Content

TY511 RTU
Power Adapter(DC 12V/1.5A, EU/US/UK/AU plug optional)
Mag-mount Cellular Antenna (SMA Male, 1 meter, 5dBi)
RS232 Cable (DB9 Female, 1 meter)
4x 12-Pin Terminal Block
2x 10-Pin Terminal Block
1x 4-Pin Terminal Block
Quick Start Guide(Printed)

Order Information

Model	Frequency Band ⁴
TY511-LF	LTE CAT 4 EMEA: B1/B3/B5/B7/B8/B20/B38/B40/B41 ANZ/LATAM: B1/B3/B5/B7/B8/B28 NA: B2/B4/B5/B12/B13/B14
TY511-W	HSPA/UMTS/WCDMA 900/2100MHz, or 850/1900/2100MHz Global: 800/850/900/1900/2100