V20 Series

Rugged,compact cellular RTU

- 4G/3G/2G network optional
- Multiple operation modes
- Rich Serial and I/O ports
- Programmable for user-defined I/O and Modbus
- Flexible and practical data communications
- GPS/DB Optional
- Built-in RTU Clock
- Data storage optional
- Friendly configuration tool
- HOMTECS M2M RTU Management Platform
- Wide operating temperature range: -30 to 75℃

Introduction

HOMTECS rugged V20 Series RTU (Remote Terminal Unit) is a cellular communication device installed at a remote location that collect data, codes the data into a format that is transmittable and transmit the data back to a central station or master, being developed especially for data collection and data transmission in IoT / M2M application.

V20 offers two serial ports and I/O ports, enabling it to connect to a variety of fields devices. With PPP, TCP/IP protocol, it could convert user serial port data to mobile 4G/3G/2G IP network data and transmit the data to customer's data master via transparent TCP/UDP protocol. DI ports support various of digital signal such as door sensor and smoke detector. AI ports support 4~20mA/0~5V signal such as temperature sensor and humidity sensor. Especially, V20 Series is programmable for users to customize DI/AI ports and Modbus properties according to various application requirements.

V20 is a smart remote internet-ready RTU with unique compact hardware and software designs, making it an ideal solution for a variety of industrial automation and monitoring applications including Cold Chain Logistics, Oil & Gas, Power, Environment Protection, Water Conservancy and Lighting control monitoring etc.

Basic Features

- Integrated 4G/3G/2G cellular communication
- Support programmable function
- Standard PPP, TCP/IP and UDP/IP protocol
- Industrial pluggable terminal block
- RS232 port for data communication
- RS485 port for Modbus RTU
- 2 analog inputs and 2 Digital inputs
- Memory data storage optional
- Built-in GPS optional
- Built-in RTC, support real-time clock
- Optimized EMC design

- Support APN and VPDN private network
- Support short message service (SMS)
- Support transparent data transmission
- Support data service center with dynamic IP address
- Support LED status indication
- Wide range voltage input
- External power on/off control
- GPS Optional

Enhanced Features

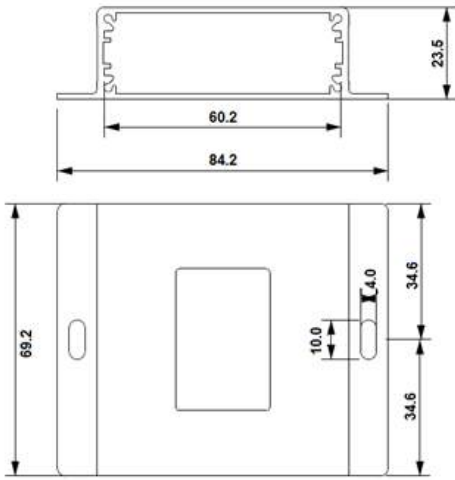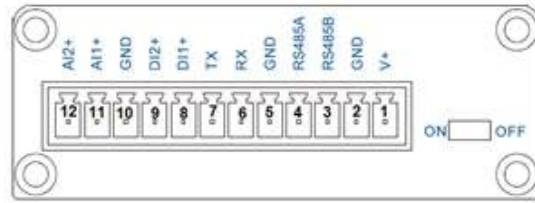| Multiple operation modes	• Always online, automatically connect to 4G/3G/2G when powered on • Off-line when idle, online mode will be triggered by user data/ring/SMS • Online/offline control by commands via user equipmentData loop test
Flexible and utilitarian data communications	• Supports TCP/IP, UDP/IP, SMS and AT • Self-defines transparent or protocol communications • Self-defines customized data frame separator • Self-defines reconnecting interval • Self-defines heart-beat data frame
Parameters configuration and remote management	• Built-in parameters configuration menu • RTU Configuration tool based on PC • Remote parameters configuration via RTU Management Platform • Remote parameters configuration by SMS • Parameters configuration via AT+ command

Specification

Cellular Features	Physical Characteristics
• Network: FDD 4G/TDD 4G 　　　　 HSPA/UMTS 　　　　 EDGE/GPRS • Output Power: Class4（2W）@900MHz；Class1（1W）@1800MHz • Protocol: PPP/TCP/UDP/Ping • Gain: 1.4dBi@900MHz，3dBi@1800MHz • RF impedance: 50Ω	• Dimension: 69mm x 84m x 23.5mm 　　　　　　　(84mm includes Wall mount kits) • Weight: 110g (not including accessories) • Mount: Wall Mount • Shock and Vibration: SAE J1455 • Operation temperature: -30~ + 75℃ • Store temperature: -40~ +85℃ • Related humidity: 0~95% (non-condensing) 　Guarantee: one year

Interface	Power
• Cellular Antenna: SMA-K(Female) • Standard Micro SIM/R UIM interface • 12Pin Terminal block connector • GPS Antenna: SMA-K(Female) (optional)	• Voltage: DC +7.5~32V (standard 12V/1A power adapter) • SIM/R-UIM Card: 1.8/3V • Consumption: Transfer mode: 30mA/12v (Average), 　　　　　　　 Idle: 7mA/12V (GPS off)

Serial Communication Port	Device Management
• 1x RS232, RXD,TXD,GND • 1xRS485, A, B • Baud Rate: 300 – 115200bps • Protocol: ModBus RTU	• RTU Configuration Tool • Support parameter configuration and firmware Upgrade via WLINK RTU Platform • Support remote parameters configuration by SMS • Support parameters configuration via AT+ commands

Analog Input	GPS /DB (Optional)
• Analog Inputs: 2 channels • Resolution: 12 bits • Input Range: 4~20mA, 0~5V	• GPS sensitivity: -160dBm • GPS accuracy: 2.5m CEP • Update Rate: 1Hz@5Hz • Time To First Fix: Cold status 27s, Hot status 1s • AGPRS: Support

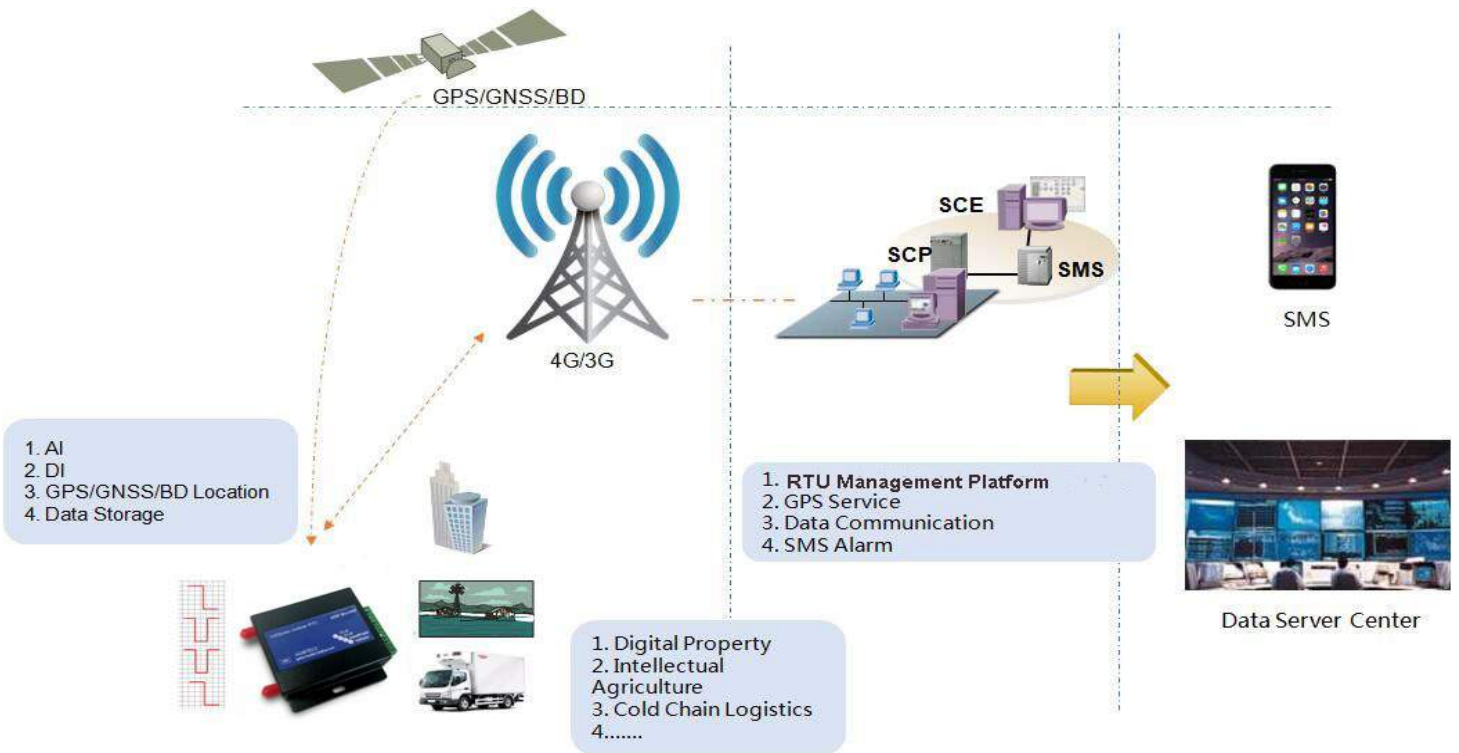| Digital Input	Certification
• Digital I/O: 2 Channel • Sensor Type: Dry contact	• CE, CCC, RoHS

Dimensions

Interface Indication

Pin	Interface	Description
1	V+	Power Vin+, Anti reverse
2	GND	Power GND
3	RS485-B	RS485 B, 57600bps as default
4	RS485-A	RS485 A
5	GND	GND for RS232 communication
6	RX	RS232 RX, 57600bps as default
7	TX	RS232 TX
8	Di1+	Digital Input, Dry Contact
9	Di2+	Digital Input, Dry Contact
10	GND	Short to DI
11	Ai1+	Analog Inputs, 4~20mA or 0~+5V, 12bits Resolution

Typical Diagram

Package Contents

V20 Series Unit
1x 12VDC Power Supply Adaptor
1x Power connect cable
1x RS-232 connection Cable
1x 4G/3G antenna
1x 1x GPS antenna (option for the models with GPS only)

Ordering Information

V20-G12T: EDGE/GRPS

V20-G12T-G: EDGE/GPRS , GPS

V20-W12T : HSDPA

V20-W12T-G: HSDPA, GPS

V20-FA2T: FDD-LTE/ TDD-LTE 4G

V20-FA2T-G: FDD-LTE/ TDD-LTE 4G, GPS

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