AF-GSM300-HW868

General

The rail-type multifunction electrical instrument with external RogAF-GSM is a new 4G remote wireless data acquisition device launched by Acrel Electric. By adopting embedded design, it is embedded TCP/IP protocol stack, as well as powerful microprocessor chip and built-in watchdog, therefore, it has reliable and stable performance.

In this product, the standard RS485 data interface is provided, which can be easily connected to RTU, PLC, industrial computer and other equipment. It only needs to complete the initial configuration at one time and then it can complete the data acquisition of MODBUS device, and communicates with Acrel server. The outline of the device is shown in Figure 1.



Figure 1.

Functions

◆ It supports data acquisition of the serial port MODBUS RTU protocol and communicates with the Acrel server through the Acrel platform protocol.

◆ It supports for data acquisition of up to 30 MODBUS RTU devices.

◆ It supports the acquisition of 5 register address fields for each MODBUS device, with each register address range not exceeding 64.

◆ It supports triggering alarms by presetting alarm addresses and alarm values for each MODBUS address range. There are currently up to 14 alarm addresses for each address field.

◆ It supports server MODBUS or LORA unvarnished transmission communication.

◆ It supports to connect the data center by fixed IP and dynamic domain name resolution.

Technical parameter

Technical parameters	AF-GSM300-HW868
Working frequency band	LTE-FDD: B1 B2 B3 B4 B5 B7 B8 B12 B13 B18 B19 B20 B25 B26 B28 LTE-TDD: B38 B39 B40 B41 UMTD:B1 B2 B4 B5 B6 B8 B19 GSM:B2 B3 B5 B8
Transmission rate	LTE-FDD maximum download rate is 150Mbps, maximum upload rate is 50Mbps LTE-TDD maximum download rate is 130Mbps, maximum upload rate is 35Mbps CDMA maximum download rate is 3.1Mbps, maximum upload rate is 1.8Mbps GSM maximum download rate is 107Kbps, maximum upload rate is 85.6Kbps
Download	LORA communication(868MHz)
Upload	4G communication
SIM card voltage	3V, 1.8V
Antenna interface	50Ω/SMA(female)

Technical parameters	AF-GSM300-HW868
Serial port type	RS-485
Baud rate	115200bps
Operating voltage	DC12V
Operating current	350 ~ 400mA @ 12V (400mA when dialing)
Operating temperature	-40℃～85℃
Storage temperature	-40℃～90℃
Humidity range	0 ~ 95% non-condensing
Installation method	Wall mounted installation
Product size	9.6cm×6.7cm×2.4cm

Operation

◆ Pulse constant:

For antenna installation, the antenna interface of this device adopts 50Ω/SMA (female). The external antenna must use the antenna suitable for 4G working frequency band. If other mismatched antennas are used, it may affect or even damage the DTU.

For SIM card installation, when installing the SIM card, make sure that the device is not powered. This device uses a drawer type SIM card holder. When opening, it needs to push the yellow button inward, then pull out the card holder. After installing the SIM card, push the card sleeve in.

◆ Panel light:

Status: two seconds of flashing indicates it is initializing the wireless module; One second of flashing indicates it is connecting the server; Normally on indicates it has been connected to the server.

Signal: 1 second of flashing signal indicates the value is less than 50%; 0.5 second of flashing signal indicates the value is greater than 50%; Normally on signal indicates the value is greater than 80%.

Communication: it flashes once when there is a pack of data interacting with the download device.

Network: it flashes when there is network data transmission.

◆ The interface on one side of AF-GSM300/400 is shown in Figure 3:

Power input, terminal mode: DC9 ~ 30V.

RS485 signal input.



Figure 3 AF-GSM300/400 Interface

◆ The host computer is used for configuration:

As shown in Figure 4, after the device is successfully connected to the host computer (the host status box turns green),the relevant status values and parameter values can be read ,or configure relevant parameters according to the needs. After writing the correct parameters, click on "Parameter Settings" to write and save the parameters to the device.



◆ Methods of Use

After setting the parameters, confirm that the download device in running normally and can be normally communicated with the gateway. Wait for establishing a connection with the server, and send the device number to the server to distinguish the device. In addition, the device will poll the download device to query the on-line download device according to the set query address range and query register address field, and report the rolled date to the server.