Cellular IoT M2M RTU





S275 User Manual

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Website: https://www.bliiot.com



Preface

Thanks for choosing BLIIoT Cellular IoT M2M RTU. These operating instructions contain all the information you need for operation of a device in the RTU S27 family.

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Disclaimer

This document is designed for assisting user to better understand the device. As the described device is under continuous improvement, this manual may be updated or revised from time to time without prior notice. Please follow the instructions in the manual. Any damages caused by wrong operation will be beyond warranty.

Revision History

Revision Date	Version	Description	Owner		
November 30th, 2021	V1.0	Initial Release	XJH		
October 21st, 2022	V1.1		LKY		
		1, Add BLRMS function			
March 17 th , 2023	V1.2	2, Add steps to connect to Ali and	LKY		
		Huawei Cloud			
		1, Removed the step of switching to			
April 28 th , 2023	V1.3	DescriptionOwnerInitial ReleaseXJHInitial ReleaseLKY1, Add BLRMS functionLKY2, Add steps to connect to Ali andLKYHuawei CloudLKY1, Removed the step of switching toLKYSET mode before configurationLKY2, Modify some functionsLKY			
		2, Modify some functions			



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1 Introduction

1.1 Overview

The Cellular IoT M2M RTU is an industrial class, high reliability, high stability, and programmable Remote Terminal Unit (RTU). It embedded 32-Bit High Performance Microprocessor MCU, inbuilt industrial Cellular module. The RTU features 8 digital inputs, 6 analog inputs, 4 relay outputs, 1 ambient sensor input for monitoring onsite temperature and humidity, and 1 RS485 serial port. And as Modbus master, the RTU can connect to expansion I/O module or read data from instruments, PLC and other devices.

Users can set high and low limit according to different application scenarios, when alarm occurs, the RTU will notify users by SMS, dialing, and also uploading data to cloud platform, monitoring center. The RTU also can be used as a remote switch, remote I/O, remote smart PLC, timer switches, which is able to open the gate or turn on the machine with a free charge call at specified time to save time for daily maintenance.

The RTU supports BLIIoT IoT RTU protocol, Modbus RTU over TCP protocol, Modbus TCP protocol, MQTT protocol, which can communicate directly with the server, cloud platform or SCADA. It is a cost effective IoT solution for industrial automation, security monitoring system, automatically measurement and control system, BTS monitoring, remote data acquisition, telemetry systems, automatically control system.

1.2 Typically Applications

BTS Monitoring, Security Alarm System applications, Supervision and monitoring alarm systems, Automatic monitoring system, Vending Machines security protection, Pumping Stations, Tanks, Oil or Water levels, Buildings and Real Estate, Weather Stations, River Monitoring and Flood Control, Oil and gas pipelines, Corrosion protection, Temperatures, Water leakage applications, Wellheads, boat, vehicle, Energy saving, street lights control system, Valve controls, Transformer stations, Unmanned machine rooms, Control room application, Automation System, M2M, Access Control System, etc.



S275 Application Diagram



1.3 Safety Directions



Safe Startup

Do not use the unit when using 4G equipment is prohibited or might bring disturbance or danger.



Interference

All wireless equipment might interfere network signals of the unit and influence its performance.



1.4 Packing List

Please make sure below items are included in the package:

(Pictures are for reference only)

 1xRTU, Wiring terminal, 1xMini USB, 1xSMA cellular antenna, 1xPower adaptor, DIN-Rail mounting clip kit, Product qualification certificate, Warranty card



1.5 Features

- > 4G network communication, can be operated from anywhere, no distance limitation;
- ▶ Wide range power supply 9~36VDC with over voltage and phase-reversal protection;
- Embedded ARM Cortex-M4 32 Bit RISC Core RTOS system, reliable performance with in-built watchdog;
- 8 digital inputs, supports both dry contact and wet contact. Logic level: 10~30V or short circuit treated as close, 0~3V or open circuits treated as open. DIN0 as a high-speed pulse counter,



sampling frequency: 1MHz; DIN1~3 as low-speed pulse counter, anti-shake time can be set 1~2000ms, default 1ms; DIN1 with arm and disarm function;

- 4 relay output (5A@30VDC, 5A@250VAC), can auto control by timer, alarm-link and remote control by SMS, cloud. The first DO can set time to control by authorize number;
- I temperature & humidity sensor input for monitoring onsite environment, the sensor model is AM2301, temperatures range from -40°C to 80°C, with a 0.5°C accuracy, humidity range from 0 to 100RH%, with a 3% accuracy;
- ▶ 6 analog inputs, 12bits resolution, supports 0-5V, 0-20mA, 4-20mA output transducers;
- > Inbuilt 32G SD card to save up to tens of thousands historical data and events;
- 1 RS485 port, support Modbus slave protocol, can link up to SCADA, HMI, DSC, PLC. Support Modbus Master protocol, can connect to 16 Modbus Salve, e.g.: Data Acquisition Module, meters, generator, PLC, VFD, etc., and 320 tags can set alarm value and content, also support data transparent transmission;
- Powerful SMS function: Threshold high SMS alert, SMS set, SMS inquiry, SMS command for Modbus PLC, and SMS monitoring communication with Slaves;
- Inbuilt 1 DC output for external transducers to save wiring cost;
- Automatically resend the data while communication interrupt or failure, and failure will alert by SMS;
- Supports remote restart, remote configure and operate by SMS commands;
- > 10 SMS Alert and auto dial numbers for receiving alarm message, can program to receive specified alarm message. The authorized numbers also can dial to open the door or turn on/off machine with a free charge call at the specified time;
- > Inbuilt inter-lock logic programmer and powerful timer program function;
- > Support SMS, dial, 4G network for alert, USB port for configuration and upgrade firmware;
- Support TCP/UDP, MQTT, Modbus TCP, Modbus RTU over TCP, BLIIoT IoT RTU protocol and data transparent transmission;
- Metal case with IP30 protection grade, safely isolated from inner system, especially suitable for industrial control application.
- Small size: 108mmx82mmx40mm, support wall-mounting and DIN Rail mounting.



1.6 Technical Specifications

Category	Parameter	Description		
	Input Voltage	DC 9~36V		
	Power Consumption	Normal: 50mA@12V, Max: 150mA@12V		
	Output	1 Channel; Voltage: 9 \sim 36V DC; Current:		
Power	Ouipui	1500mA@12V(Max)		
	Drotaction	Reverse wiring prevention;		
	FIDIECIIDII	ESD Air: 15KV; Surge: 4KV		
	Backup Battery	3.7V/900mA (It is optional. Default: Without battery)		
USB	USB	1xMini USB		
	QTY	1xRS485		
	Baud Rate	1200bps-115200bps		
	Data Bit	8		
Serial Port	Parity Bit	None, Even, Odd		
	Stop Bit	1, 2		
	Protocol	Modbus RTU(slave), Modbus RTU(master)		
	Protection	ESD Contact: 8KV; Surge: 4KV(8/20us)		
	QTY	8 Channel		
	Туре	Support both Wet contact and Dry contact		
	Dry Contact	Close: Short circuit; Open: Open circuits		
	Wet Contact	Close: 10~30V; Open: 0~3V		
Digital Input		DIN0 as a high-speed pulse counter, sampling		
	Others	frequency: 1MHz; DIN1~3 as low-speed pulse counter,		
	Others	anti-shake time can be set 1~2000ms, default 1ms;		
		DIN1 with arm and disarm function;		
	Protection	2KVrms		
	QTY	4 Channel		
	Туре	Relay output (5A@30VDC, 5A@250VAC)		
Digital Output	Others	The first DO can set time to control by authorize		
		number; Custom setting close and open times		
	Protection	2KVrms		
	QTY	6 Channel		
	Туре	Differential input, 4-20mA/0-20mA/0-5V		
	Resolution	12Bit		
Analog Input		±0.1% FSR @ 25°C		
	Accuracy	±0.3% FSR @ -10 and 60°C		
		±0.5% FSR @ -40 and 75°C		
	Sampling Rate	200ms		



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	Input Impedance	>1M ohms			
Temperature&	Resolution	16bit(0.1%RH, 0.1°C)			
	Sampling Rate	200ms			
	Temperature Range	-40 to +80°C			
	Accuracy	0.5°C			
(AIVI230T)	Humidity Range	0 to 99RH%			
	Accuracy	3%RH			
	SIM	Drawer type, Support 1.8V/3V SIM/UIM card, Built-in			
	511VI	15KV ESD protection			
	SIM Slot	1			
		GSM/EDGE:900,1800MHz			
		WCDMA:B1,B5,B8			
	L-E Version	FDD-LTE:B1,B3,B5,B7,B8,B20			
		TDD-LTE:B38,B40,B41			
		GSM/EDGE:900,1800MHz			
		WCDMA:B1,B8			
	L-CE Version	TD-SCDMA:B34,B39			
		FDD-LTE:B1,B3,B8			
4G		TDD-LTE:B38,B39,B40,B41			
		WCDMA:B2,B4,B5			
	L-A VEISION	FDD-LTE:B2,B4,B12			
		GSM/EDGE:850,900,1800MHz			
		WCDMA:B1,B2,B5,B8			
	L-AU VEISION	FDD-LTE:B1,B3,B4,B5,B7,B8,B28			
		TDD-LTE:B40			
		WCDMA:B2,B4,B5			
	L-AF VEISION	FDD-LTE:B2,B4,B5,B12,B13,B14,B66,B71			
		GSM:900,1800			
	CAT-1 Version	FDD-LTE:B1,B3,B5,B8			
		TDD-LTE:B34,B38,B39,B40,B41			
	Internet Protocol	IPV4, TCP/UDP, Modbus RTU, Modbus TCP, MQTT,			
		BLIIOT IOT RTU			
	Indicator	4G signal, running, arming and disarming, 485			
0 - (*	Indicator	transmit-receive			
	Configuration	PC software configuration, support WIN XP, WIN 7,			
Soltware	Comguration	WIN 8 and WIN 10			
	Slave Connection	16 devices, Max 320 I/O data points(Bool, 16bit, 32bit,			
		64bit)			
	Transparent	Support			
	Transmission	oupport			



SMS Command		Support		
	Login Package	Support custom login package		
	Heartbeat Package	Support custom heartbeat package		
	Storago	Built in 32G SD card, capable of storing up to 100,000		
	Slorage	historical records		
	MTBF	≥100,000 hours		
		EN 55022: 2006/A1: 2007 (CE &RE) Class B		
		IEC 61000-4-2 (ESD) Level 4		
		IEC 61000-4-3 (RS) Level 4		
Safety	EMC	IEC 61000-4-4 (EFT) Level 4		
		IEC 61000-4-5 (Surge)Level 3		
		IEC 61000-4-6 (CS)Level 4		
		IEC 61000-4-8 (M/S) Level 4		
	Others	CE, FCC, RoHS		
Environment	Working	-45~85°C, 5~95% RH		
Environment	Storage	-45~105°C, 5~95% RH		
Others	Shell	Metal		
	Size	108x82x40mm		
	Protection	IP30		
	Installation	Wall-mounting or DIN Rail mounting.		

1.7 Model Selection

Model				Tem&	Storage	Storage USB	RS485	I/O data points			
meder		AI		Hum	Slorage			bool	16Bit	32Bit	64Bit
S270	2	2	2	1	2M	1	x	х	х	х	x
S271	4	4	4	1	2M	1	x	х	x	x	х
S272	8	6	4	1	32G	1	1	64	64	x	х
S274	4	x	4	1	32G	1	1	64	128	64	64
S275	8	6	4	1	32G	1	1	64	128	64	64



2 Hardware Specifications

2.1 Size





2.2 Interface



2.2.1 Digital Input

Digital Input				
Function Description				
DI0	First channel of Digital input, support high speed pulse counting, sampling			





	frequency: 1MHz				
DI1	Second channel of Digital input, support low speed pulse counting, support used				
	as arming and disarming input				
DI2	Third channel of Digital input, support low speed pulse counting				
DI3	Fourth channel of Digital input, support low speed pulse counting				
СОМ	Common grounding				
СОМ	Common grounding				
DI4	Fifth channel of Digital input				
DI5	Sixth channel of Digital input				
DI6	Seventh channel of Digital input				
DI7	Eighth channel of Digital input				
СОМ	Common grounding				
СОМ	Common grounding				
Dry	DI switch to Dry contact				
Wet	DI switch to Wet contact				

Note: DIN0 as a high-speed pulse counter, sampling frequency: 1MHz; DIN1~3 as low-speed pulse counter, anti-shake time can be set 1~2000ms, default 1ms;

When using the counter function, please switch the DIP switch on device to Wet.

Diagram of DI internal interface:



2.2.2 LED Indicators

LED Indicators						
Symbol	Name	Color	State	Description		
		DED	Always ON	Normal		
	4G Signal	OFF		4G module abnormal		
Alarm Alarm	Alorm	RED	Always ON	Triggered alarm		
	Alam		OFF	No alarm		
Run Run	Dun	RED	Flickering	System is running		
	Run		OFF	System stop running		
Arm	Arm	RED	Always ON	Armed		



			OFF	Disarmed
тх	Transmit via serial port	RED	Flickering	Data communication via RS485 serial port
			OFF	No data
RX	Receive via serial port	RED	Flickering	Data communication via RS485 serial port
			OFF	No data

2.2.3 Digital Output

Digital Output		
Functions	Description	
DO0+	First channel of Digital output	
DO0-	First channel of Digital output	
DO1+	Second channel of Digital output	
DO1-	Second channel of Digital output	
DO2+	Third channel of Digital output	
DO2-	Third channel of Digital output	
DO3+	Fourth channel of Digital output	
DO3-	Fourth channel of Digital output	

Diagram of DO internal interface:



2.2.4 Analog Input

Mode selection(DIP Switch)		
Functions	Description	
V	Switch to "V" indicate that the analog input type is "0-5V"	
mA	Switch to "mA" indicate that the analog input type is "0-20mA" or "4-20mA"	
A0-A5	Corresponding to the analog input of each channel	



Note: According to the output type of the transmitter(mA or V), switch the DIP switch of the corresponding channel to the corresponding position on the device.

Analog Input		
Functions	Description	
AI0	First channel of Analog input positive interface	
Al1	Second channel of Analog input positive interface	
Al2	Third channel of Analog input positive interface	
AI3	Fourth channel of Analog input positive interface	
GND	Common grounding	
GND	Common grounding	
Al4	Fifth channel of Analog input positive interface	
AI5	Sixth channel of Analog input positive interface	

Diagram of AI internal interface:



2.2.5 RS485 and Temperature&Humidity

RS485 and Temperature&Humidity			
Functions	Description		
485+	RS485 A +		
485-	RS485 B -		
GND	485 Grounding		
VCC	Power supply interface of Tem &Hum sensor(AM230x/AM240x)		
DATA	Data interface of Tem &Hum sensor(AM230x/AM240x)		
GND	Grounding of Tem &Hum sensor(AM230x/AM240x)		

2.2.6 Power&Switch&Mode Settings

Power&Switch&Mode Settings



Functions	Description
VIN+	9-36V Power input positive
VIN-	9-36V Power input negative
VOUT+	9-36V Output positive
VOUT-	9-36V Output negative
OFF	Device shutdown
ON	Device startup
	Used to connect configuration software, set parameters, and
030	upgrade

2.2.7 SIM Card Slot

When inserting/removing the SIM card, please turn off the device. Note: Please place the device flat when inserting/removing the SIM card.

3 Installation

3.1 Wall mounted





3.2 DIN Rail mounting



4 Configuration

4.1 Preparation before configuration

Please follow the steps

- 1) Insert the SIM Card;
- 2) Connect the device to an external power and power on, switch the power switch to ON.



- 3) Connect the RTU to PC by USB cable, and install the USB Driver to the computer;
- 4) Open configuration software, choose the correct COM port and fill in the password(Default: 1234), select Normal SIM card mode to enter configuration software;
- Open parameter setting page---->Click "Read" button to get device current value--->After modifying or setting the parameters---->Click the "Save" button to saving parameters in device;
- 6) If you need to program bulks of RTU with similar parameters, you can [Export Configuration File],



and then [Load Configuration File] to the next device to complete the settings quickly;

- 7) Power off the device when configuration is complete, switch the power switch to OFF;
- 8) Reboot the device, then the configuration information will be loaded in the device.

4.1.1 Install USB Driver

Install the USB Driver to the computer firstly. When successful, it can be found out at the device manager of the XP or Windows 7 or Win8/Win10. Also, the driver for different OS can be downloaded from Silicon Laboratories, Inc. http://www.silabs.com , the model is CP210x.

4.1.2 Check COM Port

A 🚔 Sammy-PC			
Batteries			
Disk drives			
Display adapters			
DVD/CD-ROM drives			
De ATA/ATAPI controllers			
🛛 🔚 Imaging devices			
Keyboards			
Mice and other pointing devices			
Monitors			
Network adapters			
Ports (COM & LPT)			
Silicon Labs CP210x USB to UA	RT Bridge (COM3)		
Silicon Labs CP210x USB to UA	RT Bridge (COM3)		
Processors	RT Bridge (COM3)		
Login	RT Bridge (COM3)		
Login	RT Bridge (COM3)	- 1/1	010145
Login	RT Bridge (COM3)	English	BLRMS
Login	RT Bridge (COM3)	English	a BLRMS
Login	RT Bridge (COM3)	English	BLRMS
Login	RT Bridge (COM3) Select COM3	English	BLRMS
Login	RT Bridge (COM3) Select COM3	English ~ Refr	BLRMS
Login	RT Bridge (COM3) Select COM3 Password (Default:1234)	English ~ Refr	BLRMS
Login	RT Bridge (COM3) Select COM3 Password(Default:1234)	English ~ Refr	BLRMS
Login	RT Bridge (COM3) Select COM3 Password(Default:1234)	English ~ Refr	BLRMS
Login	RT Bridge (COM3) Select COM3 Password(Default:1234) ****	English ~ Refr	a BLRMS esh
Login	RT Bridge (COM3) Select COM3 Password(Default:1234) ****	English V Refr	a BLRMS esh

Choose the correct "COM port" when entering configuration software.

4.1.3 Login Configuration Software

Choose the correct port, then fill in the password to login configuration software The login password is 1234



Click "Read" button to get device current parameters first

ation Parame eter Settings Basic I	nformation	ll it when used as Modbus Slave o	ver RS485) Model No. S272-RTL	J Ver. V2.0.0 EN 4	
Settings Descrip	tion:		(30 characters)	IMEI 868711063018231	Read
Numbers	Add timestamp to alarm SN	IS Arm automatical	when power on		J
gs					Save
ettings	Auto Arm after disarm:	L	Minut (0~9999)		
Timer	Reporting SMS Content Settings				
ol Settings	dd the following additional infor	mation in the report SMS			
Control Settings	DI0 Status	Arm Status	Al0 Value	DO0 Status	
	DI1 Status	GSM/3G Signal Value	Al1 Value	DO1 Status	
	DI2 Status	External Power Status	Al2 Value	DO2 Status	
	DI3 Status	Device ID	Al3 Value	DO3 Status	
Settings	DI4 Status	Temperature Value	Al4 Value		
	DI5 Status	Humidity Value	AI5 Value		
	DI6 Status	Device Description			
ettings	DI7 Status				
Alarm	SMS Content Settings				
A a	dd the following additional infor	mation in the alarm SMS			
=r	DI0 Status	Arm Status	AI0 Value	DO0 Status	
ner	DI1 Status	GSM/3G Signal Value	Al1 Value	DO1 Status	
	DI2 Status	External Power Status	AI2 Value	DO2 Status	
	DI3 Status	Device ID	AI3 Value	DO3 Status	
	DI4 Status	Temperature Value	Al4 Value		
	DI5 Status	Humidity Value	AI5 Value		
ettings	DI6 Status	Device Description			
	DI7 Status				
n					
ping Table					

4.2 Basic Settings

🖗 S272-RTU Cellular IoT RTU Configuration Software	V3.2.0			
🚽 Load Config. File 🛛 Export config. file 📑 Re	eset 🛈 Reboot 🗧 Help			
Basic Information	Parameter Settings 🗙 Other Settings 🗙			
Parameter Settings Other Settings Alarm Numbers Output Settings Q Access Control Se	Change password Old password: New password: Confirm password: Change (4-digit number) Change Remote configuration Connection Off BLRMS URL 118.31.57.219 Port: 1883 Token Key: Read Write In Remote config connection modes:: 1. OffNo remote config function 2. Within one hourDevice can use remote config function 3. Always connectedDevice can always use remote config	Sync host time Time : 2015-03-31 22:25:00 v Time zone: (UTC+08:00) Read RTU time Sync RTU time and for 1 hour after turning on. g function.		
Change password				
Item	Description	Default		
Old password	Enter the old password	Empty		
New password	Enter the new password	Empty		
Confirm password	Confirm the password	Empty		



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Change	Password modification takes effect		
Synchronous host time			
Item	Description	Default	
Time	Current time on device		
Time zone	Current time zone on computer		
Sync RTU time	Time on computer is synchronized with RTU		
Read RTU time	Read the current time		
Remote configuration			
Item	Description		
Connection	Off/Within one hour/Always connected		
BLRMS URL	Remote platform address		
Port	Remote port		
Token key	User ID		

🌬 S272-RTU Cellular IoT RTU Configuration Software V3.2.0



Basic information		
Item	Description	Default
	As device ID address only when device is Modbus	
Device ID	slave via RS485, range: 1-247 It is invalid in other	1
	situations.	
Model No.	Device model number	
Version	Device version	
IMEI	Device serial number	
Device description	The alarm message will include device description	Empty



	information.	
Add timestamp to	Alorm magazare will include the time	Chook
alarm SMS	Alarm message will include the time	Check
Arm automatically	RTU will enter into Arm mode automatically once	Chook
when power on	the RTU powered on	Check
Auto arm after	RTU will change to arm mode automatically after	Lincheele
disarm	a certain period after disarm	Uncheck

No need to set the "Timer reporting SMS content" and "Alarm SMS Content"

if the RTU connect to cloud platform

Timer reporting SMS content settings			
Item	Description	Default	
Add the following additional	Check the related item to add its		
information in the report	value/status to the Timer report text	Uncheck	
SMS	message.		

Alarm SMS content settings								
Item	Description	Default						
Add the following additional information in the alarm SMS	Check the related item to add its value/status to the alarm text message.	Uncheck						

4.3 Alarm Numbers Settings

When device connect to cloud platform, it may be frequently offline due to sending text message, receiving text message and dialing. We don't suggest you use SMS alarm if RTU need to be connected to cloud platform.



Slave Failure

🍻 S272-RTU Cellular IoT RTU Configuration Software V3.2.0

Basic Information	Parameter Settings >	Other Set	tings ×	Alarm Nu	mbers×						
Parameter Settings	Authorized User Telep	hone Number	Settings								
Parameter Setungs	(Alarm No	o.) Power	Timer	Arm/Dis	arn Low	Power	Power	Cellular	Relay	Slave	Slave
Other Settings	User N0.0		Report	SMS	Signal	Lost	Recovery	Failure	Change	Alarm	Failu
Alarm Numbers	User N0.1										
Output Settings	User N0.2										
Relay Settings	User N0.3										
Access Control Settings	User N0.4		\checkmark								
	User N0.5										
Access Control Settings	User N0.6										
Input Settings	User N0.7										
OI Settings	User N0.8		\square								
DI Alarm Settings	User N0.9										
Al Settings Al Alarm Settings Timer Settings Hour Timer Periodic Timer Logic Trigger	Note: 1. Check this op 2. Signal Low: st	tion to send a a to send a to s	correspondi GSM/3G/4G	ng SMS to t network sig	he correspc nal is below	nding num 14.	ber when the	e event occ Re	urs; ad	Sav	e

	Authorized user telephone number settings	
Item	Description	Default
Alarm No.	Authorized mobile numbers to receive the alarm text message or dial	Empty
Power on	Text message will be sent when RTU powered on, the message includes device model, version, description, IMEI, status, signal value etc	Check
Timer report	Timer report text message will be sent	Check
Arm/Disarm SMS	Text message will be sent when the state(Arm or Disarm) of RTU changed.	Check
Low signal	Text message will be sent when 4G signal strength lower than 14	Uncheck
Power lost	Text message will be sent when external DC power loss	Check
Power recovery	Text message will be sent when external DC power restored	Check
Cellular failure	Text message will be sent when re-connection failed three times.	Uncheck
Relay change	Text message will be sent when relay state changes	Uncheck
Slave alarm	Text message will be sent when Modbus slave alarm occurs	Uncheck
Slave failure	Text message will be sent when Modbus slave communication timeout	Uncheck



4.4 Digital Output Settings

No need to set Channel name, ON/OFF SMS, Open description, Close description when device connect to cloud platform.

This device features 4 relay outputs, rated range: 5A/30VDC, 5A/250VAC. It can be set as an authorized number to call in for control, or it can be controlled remotely by SMS, or timer, event correlation automatic control, or remote control via the monitoring center and cloud platform.

asic Information	Paramet	ter Settings ×	0	ther Settings ×	Alarm Num	bers × Re	lay Settings	×				
Parameter Settings		Output Type		Channel Name (MAX.20)	Close Time(s)	Repeat Times	Interval Time(s)	ON/OFF SMS	Alarm Verify Time(s)	Open Descr	iption(MAX.30)	Close Description(MAX.30
Other Settings	DO_0	Swith on/off	~		2	0	0		2			
Alarm Numbers	DO_1	Swith on/off	~		2	0	0		2			
utput Settings	DO_2	Swith on/off	~		2	0	0]	2			
ccess Control Settings	DO_3	Swith on/off	~		2	0	0		2	1		
Access Control Settings	Note:	11 0.10	000							Read	Save	
DI Settings	2.Inter 3.Freq 4.For	rval time: 0-10000 juency: 0-1000 tim alarm output type	sec sec s, it v	vill be triggered whe	en there is a s	ound alarm a	nd ringing ti	me needs	to be set.			
	5 For	door opener out	out t	ype, relay will output	t a normally c	losed signal v	hen dialed i	n, and clos	sed duration ne	eeds to be set.		

Relay Output settings							
Item	Description	Default					
Output type	 Support 3 output types Open door: Only the first Channel(DO0) can be set as Open Door, DO0 will close and the device will be automatically set to disarm status when the authorization number calls in. When DO0 used as Open door, then it cannot be used as regular ON/OFF switch Siren: Only DO1 can be set as Siren, DO1 will close when the siren function(DI setting) is executed Switch ON/OFF: The relay is used as a switch, it can be used as a normal timing event, linkage event, and SMS control. 	Switch on/off					
Channel name	Custom setting channel name, in order to identify it in text message.	Empty					
Close time	Relay close and last time, 0 second means always close.	0					
Repeat times	Times to repeat closure when the relay action is performed.	0					



	The interval time of relay repeating the close and	0
Interval times	open action.	
interval times	Use it with "repeat times", you can consider it as	
	pulse output. The unit is second.	
	Text message will be sent when relay state	Uncheck
UN/OFF SIMS	changes	
Alarm verify	Alarm ofter a period when the relay state shanged	0
times	Alarm after a period when the relay state changed	
Open description	Description of "OPEN" state in the text message	Empty
Close description	Description of "CLOSE" state in the text message.	Empty

4.5 Access Control Settings

No need to set this when device connect to cloud platform

This function is valid only when the DO0 is set as open door.

Users can quickly set the number and time period for call-in control. It is really convenient for remote control of electric locks in unattended computer rooms. It is possible to remotely authorize a certain maintenance personnel to open the door by calling in with his mobile phone within a limited period of time, which solves the traditional cumbersome approval process that takes a lot of time to pick up and deliver keys. And you can also set various parameters on this page through SMS, cloud platform, and monitoring center.

comig. me	Meser Uneboor							
Basic Information	Access Control Setting	gs 🔀						
Parameter Settings	Access Control							
Other Settings	*When the selecte signal with the typ	d user number is diale e .'used as door oper	ed, the all ing'.	arm disar	ms and the first channel	s relay 0 ou	tputs a door opening	
Alarm Numbers		End time			Start time			
Output Settings	User No.0	2000-01-01 00:00		~	2000-01-01 00:00		Always	
Relay Settings	User No.1	2000-01-01 00:00		~	2000-01-01 00:00		Always	
Access Control Settings	User No.2	2000-01-01 00:00		~	2000-01-01 00:00		Always	
Access Control Settings	User No.3	2000-01-01 00:00		~	2000-01-01 00:00		Always	
North Cattle	User No.4	2000-01-01 00:00		~	2000-01-01 00:00		Always	
anput settings	User No.5	2000-01-01 00:00		~	2000-01-01 00:00		Always	
DI Settings	User No.6	2000-01-01 00:00		~	2000-01-01 00:00		Always	
DI Alarm Settings	User No.7	2000-01-01 00:00		~	2000-01-01 00:00		Always	
Al Settings	User No.8	2000-01-01 00:00		~	2000-01-01 00:00		Always	
(Al Alarm Settings	User No.9	2000-01-01 00:00		~	2000-01-01 00:00		Always	
Timer Settings					D	laad	Caus	
() Hour Timer	Note:		1			eau	Jave	
Periodic Timer	 If Always is select If the start time ar open the door during 	nd end time are selected the set time period.	ed, the us	ser numb	er can only be dialed in t	0		
Logic Trigger								

Access Control							
Item	Description	Default					
User No.0-No.9	Authorized mobile number	Uncheck					
Start time	Mobile number call-in permission start time						



End time	Mobile number call-in permission end time	
Always	You can call in to open the door at any time	Uncheck

4.6 Input Settings

This device features 8 digital input, 6 analog input, and 1 temperature and humidity input, of which DI0 supports counter function. For their addresses in the registers and the supported Modbus function code, please refer to 8.1 Device Register Address

4.6.1 DI Setting

When device connect to cloud platform, it may be frequently offline due to sending text message, receiving text message and dialing.

No need to set [Alarm SMS], [Recover SMS], [Change SMS], [Interval alarm SMS] and [Total alarm value] when device connect to cloud platform.

272-RTU Cellular IoT RTU Configura Load Config. File 🛛 🐳 Export config	tion Soft g. file	tware V3. Reset	2.0	Reboot 🛐 H	elp											-	
Parameter Settin ^	Param	eter Setti	ngs	× DI Settings	; 🔀												
Other Settings		Input Ty	be	Alarm SMS	Recover	SMS	Change SI	AS	Current Value	Reco	very n	Alarm Verift	Siren	24h			
Alarm Numbers	DIO	NO	~						Open			2					
Output Settings	DI1	Disable							1			2					
Relay Settings	DI2	NC							1			2					
Access Control Setting	DI3	Counter							Open			2					
Access Control S	DI4	NO	~						Open			2	- 1 o				
Input Settings	DIS	NO	~						Open	_		2					
DI Settings	DIG	NO	~						Open			2					
DI Alam Caning	DIZ	NO							Open	_		2					
Di Alarm Setting	Dir	NO	· ·						Open		-	2					
Al Settings				Initial Value	Interval Alarm \	Value	Interval Alarm SMS	Total Ala	m Value	Tota	al Alar	m SMS					
Al Alarm Setting:				0	0 (MAX.99999			(MAX.9									
Timer Settings				Initial Value	Interval Alarm	/alue	Interval Alarm SMS	Total Ala	m Value	Tota	al Alar	m SMS	Anti-s	nake-time			
Hour Timer		DI1 Cou	ter	1	5			999	in faibe		in i dan		100	ms			
Periodic Timer					(MAX.99999	19)		(MAX.9	99999)				(MAX	.2000)			
O Logic Trigger				Initial Value	Interval Alarm	Value	Interval Alarm SMS	Total Ala	m Value	Tota	al Alar	m SMS	Anti-sl	nake- <mark>tim</mark> e			
Logic Trigger		DI2 Cou	nter	1	5			999					100	ms	Read		
RS485 Settings					(MAX.99999	19)		(MAX.9	99999)				(MAX	.2000)	Save	1	
Serial Port Settin		212.0		Initial Value	Interval Alarm	/alue	Interval Alarm SMS	Total Ala	m Value	Tota	al Alar	m SMS	Anti-sl	nake-time			
Slave Information		DI3 Cou	iter	0	0 (MAX.99999	19)		(MAX.9					1 (MAX	2000)	Read Current Valu	Je	
Slave Mapping T Mapped Registe Cloud Platform Setting		Note: 1, The 2, Cha 3, Cha 4, Ala	alari innels innel	m confirmation tir 0~3 can be used 1 can be used to infirmation time: i	ne and interval s I as pulse counte connect a buttor ndicates the time	endin ers; n for a	g time are (0~1000 arming/disarming; kes for the alarm to	ls) ; be recogni	zed after	it is trig	qgere	d;					

Select the corresponding input type according to the detector.

DI setting								
Item	Description	Default						
	• Disable: Digital input of this channel unable to							
	use							
Input type	• NO: The normal state of the digital input is							
	normally open, and the normally closed state is							
	an abnormal event.							



	• NC: The normal state of the digital input is	
	normally closed, and the normally open state is	
	an abnormal event.	
	• Change: Each time the state of the digital input	
	changes, it will be treated as an abnormal event	
	• Counter: DIN0 as a high-speed pulse counter,	
	sampling frequency: 1MHz;	
	DIN1~3 as low-speed pulse counter, anti-shake	
	time can be set 1~2000ms, default 1ms;	
	• Arm/Disarm: Only DIN1 can be set as	
	Arm/Disarm. The arm and disarm state will	
	switch when DI changes from NO to NC	
Alorm SMS	The text message sent to authorized numbers when	Empty
	alarm occurs	
Pacovar SMS	The text message sent to authorized numbers when	Empty
Recover Sivis	alarm restored	
	When DI input type set as "Change", the text	Empty
Change SMS	message you entered here will be sent once the	
	alarm occurs	
Current value	Current state of digital input	
	Under the arm or 24-hour state, when alarm	Uncheck
Recovery alarm	restored, the text message will be sent to authorized	
	numbers	
Alorm vorify time	When the abnormal event last more than this period,	1
	it will be treated as a true alarm. The unit is second	
Siron	Enable the Siren function, when DO1 set as Siren,	Uncheck
Silen	DO1 will close when the alarm occurs	
24br	Alarm will be triggered no matter RTU is in Arm or	Uncheck
24111	Disarm mode	

Counter										
Item	Description	Default								
Counter	Pulse counter	Uncheck								
Initial value	Initial value to start counting	Empty								
Interval alarm value	Alarm occurs when counting to the interval value	Empty								
Interval alarm	The text message sent to authorized numbers	Empty								
SMS	when interval alarm happens									
Total alarm	When counts to the total value, it will automatically	Empty								
value	clear the count value to the initial value									



Total alarm SMS	The text message sent to authorized numbers	Empty					
	when counts to the total value						
	Unit: ms, default 1, indicates that the maximum	1					
	pulse sampling frequency is 1KHz; when the pulse						
	frequency is low, appropriately increasing the						
Anti ahaka tima	anti-shake time can improve the accuracy.						
Anu-snake ume	(Pulse sampling frequency = 1000/anti-shake time,						
	for example, 1ms corresponds to 1000Hz, 10ms						
	corresponds to 100Hz, 100ms corresponds to						
	10Hz, 1000ms corresponds to 1Hz)						
When using counter function, please switch the DIP switch on device to Wet.							

4.6.2 DI Alarm Settings

When device connect to cloud platform, it may be frequently offline due to sending text message, receiving text message and dialing.

Users can authorize a certain person to receive alarm

🖗 S272-RTU Cellu	ar IoT RTU Configurat	tion Software V3.2.0																		-	×
Load Config. F	le 🛛 🐳 Export config	. file 📑 Reset 🧕	Reb	oot	2	Help															
	arameter Settin ^	DI Settings $ imes$	DI Ala	rm S	etting	is >	()														
	ther Settings					arm :	Send	SMS					DI	Alarn	n Dial	Out					
	larm Numbers	Channel	0	1	2	3	4	5	6	7	0	1	2	3	4	5	6	7			
Output	Settings	User No.0		\square			\square	\square				\square	\square	\square			\square				
		User No.1	\square	\square	\square		\square	\square	\square	\square	\square	\square	\square	\square	\checkmark	\square	\checkmark	\square			
R	elay Settings	User No.2		\square	\square		\square	\square	\square				\square	\checkmark		\square	\square	\square			
Access	Control Setting	User No.3		\square				\square	\square	\square			\square			\square	\square				
A (0)	ccess Control S	User No.4		\square	\square			\square	\square	\square	\square	\square	\checkmark	\checkmark	\square	\square	\square	\square			
	attings	User No.5	\square	\square	\square			\square	\square	\square	\square	\square	\square	\square	\square	\square	\checkmark	\square			
input o	stangs	User No.6	\square	\checkmark	\square	\square	\square	\square	\square	\square	\square	\square	\square	\square	\checkmark	\square	\square	\square			
	I Settings	User No.7		\square							\square		\square	\square			\square				
	I Alarm Setting	User No.8						\square	\square				\square			\square	\square				
(Ô) A	l Settings	User No.9							\square	\square			\square	\square		\square	\bowtie	\square			
	I Alarm Setting:													Rea	ad	Í	Write				
🖨 - 🧑 Timer 9	ettings	Nata																			
	our Timer	1. Check means s	end SI	MS c	or dial	the c	orres	pond	ing u	iser nur	nber w	hen th	e DI c	hanne	el is tri	ggere	d;				
	eriodic Timer	2. When selecting if there is no answ	alarm wer, it	will c	ling, e lial th	ach n e nex	umbe t user	er can ;	be o	dialed to	or up to	o 20 si	econd	s,							
E Logic T	rigger																				
	ogic Trigger																				

4.6.3 AI Setting

Analog input can be used for temperature monitoring, current monitoring, voltage monitoring, power factor monitoring, water level monitoring, pressure monitoring, environmental monitoring, wind speed monitoring, etc. Users can set high and low limit alarm thresholds and restore alarms according to needs. When the limit is exceeded or recovered, personalized notifications can be set to specific users.



This device features 6 analog input, 12-bit resolution, 200ms sampling frequency, and supports 0-5V, 0-20mA, 4-20mA output sensors. It can be flexibly combined for measurement and monitoring of various different applications. Such as three-phase current and voltage monitoring and so on. Note: Analog input type

There is DIP switch on the device, switch to mA or V type according to the output type of the transmitter.



- 2) The input type you choose in the configuration software should be the same as the DIP switch
- 3) For information on measuring ranges, please refer to transmitter specification

The device features 1 temperature & humidity sensor input for monitoring onsite environment, the sensor model is AM230x/AM240x, temperatures range from -40°C to 80°C, with a 0.5°C accuracy, humidity range from 0 to 100RH%, with a 3% accuracy;



S2/2-RTU Cellular IoT RTU Configur Load Config. File Export conf	fig. file	ware V3.2.0	() R	leboot 🛐 He	q										×
Other Settings	Al Setti	Input		High Alarm	Low Alarm	Recovery	Max Rang	e Min Range	Current	Upper /	Alarm Lower Alarn	n Recovery	Confirm Time	Sound	24h
Alarm Numbers	AIO	Disable	~				0	0	0	0	0		2		
	AI1	Disable					0	0	0	0	0		2		
Output Settings	AI2	0~5V 0~20mA					0	0	0	0	0		2		
Relay Settings	AI3	4~20mA					0	0	0	0	0		2		
Access Control Setting	AI4	Disable	~				0	0	0	0	0		2		
	A15	Disable	~				0	0	0	0	0		2		
Access Control S	Temp	Disable	~				80	-40	0	0	0		2		
Input Settings	Hum	Disable	~				100	0	0	0	0		2		
O I Settings DI Alarm Setting Al Settings Al Alarm Setting: O Timer Settings	Note 1.Da 2.Co 3.Co	e: ta range: 6 nfirmation nfirmation	digits time, time r	s, with 4 integers audible, 24-hour range: 0-9999.	and 2 decimals ((-9999.99 to 999 time, and sendi	19.99). ing times are tl	e same as DIN.	Read Cu	rrent	Read	Write]		

No need to set [High alarm], [Low alarm], [Recovery], when device connect to cloud platform.

Al setting										
ltem	Description	Default								
Input	Disable: Do not use this channel	Dischlo								
input	Enable: Use this channel	Disable								



	0~5V: Connect sensors with 0-5V output	
	0~20mA: Connect sensors with 0~20mA output	
	4~20mA: Connect sensors with 4~20mA output	
High clorm	The text message sent to authorized numbers	Empty
	when current value higher than upper limit	
Low clorm	The text message sent to authorized numbers	Empty
	when current value lower than lower limit	
Pagayany	The text message sent to authorized numbers	Empty
Recovery	when current value return to normal	
Max range	The maximum measuring range of the sensor	Empty
Min range	The minimum measuring range of the sensor	Empty
	Refer to the current real value, such as the	
Current	pressure is xxxPa, or the temperature is xxx°C and	
	other specific values.	
Linner elerm	When the current value exceeds the upper limit of	Empty
	the alarm, an alarm will be triggered;	Епріу
	When the current value is lower than the alarm	Empty
LOW alarm	lower limit value, an alarm will be triggered;	Епріу
Pagayany	When the value returns to the normal range, a text	Unahaak
Recovery	message will be sent to authorized numbers	Uncheck
Confirm time	When the abnormal event last more than this	1
Commune	period, it will be treated as a true alarm.	I
Sound	When DO1 set as Siren, DO1 will be closed when	Unchock
Sound	the alarm occurs	Uncheck
246-	Alarm will be triggered no matter RTU is in Arm or	Uncheck
2711	Disarm mode	UNCHECK

4.6.4 Al Alarm Settings

Users can authorize a certain person to receive alarm

When device connect to cloud platform, it may be frequently offline due to sending text message, receiving text message and dialing.



🕯 \$272-RTU Cellular IoT RTU Configuration Software V3.2.0								- 1	×								
🗲 Load Config. File 🛛 Export config. file 📑 Reset	C	Reb	oot	2	lelp												
Parameter Settin ^ Al Settings ×	1	Al Ala	irm Se	etting	s 🗡												
Other Settings			Anal	og in	put a	larm	SMS				Ana	log i	nput a	alarm	diali	g	
Alarm Numbers Analog chan	nel	1	2	3	4	5	т	н	D	1	2	3	4	5	т	н	
Output Settings User No.0	\square	\square	\square	\square	\square	\square	\square		3	\square	\square	\square	\square	\square	\square		
Relay Settings User No.1		\square	\square		\square	\square			3	\square	\square	\square	\square		\square		
User No.2						\square			3								
User No.3						\square			3	\square	\square						
Access Control S User No.4	\square	\square	\square			\checkmark			3	\square	\square	\square	\square				
Input Settings User No.5			\square			\square			3		\square		\square				
DI Settings User No.6			\square			\square			3						\square		
User No.7									2								
User No.8																	
User No.9	\square		\square	\square		\bowtie	\square		1	\square	\bowtie		\bowtie	\square			
AI Alarm Setting										-	Rea	н	T T	V	Vrite		
Timer Settings										-							
	ate s	endir	ng SM	IS or	dialin	g the	corre	sponding user nu	mb	er wh	nen th	e cor	respo	nding	AI ch	nnel is triggered;	
Periodic Timer 2. When selectin	g ala	rm d	ialing,	each	num	ber ca	in be	dialed for a maxi	mur	m of	20 se	cond	. If th	ere is	no an	wer, the next user number will be dialed.	

4.7 Timer Setting

The device is able to perform certain actions automatically at a preset time, which can effectively reduce human participation and greatly improve efficiency. For example, turn on the water pump regularly, discharge sewage regularly, start the exhaust fan regularly, switch equipment on and off at regular intervals, and so on.

In addition, this device supports a variety of timing functions, which can meet the application requirements of most places. For example, it can perform certain actions according to a certain time every day and every week, and start from a certain preset time point. Interval a certain preset time, and then execute a certain action periodically, a total of 10 timing events can be set.

1) Hour Timer

Lontig. Hie 🔶 Export con	tig. tile	Reset U	Rebo	ot 👔 H	lelp						
- Parameter Settin ^	Hour Tim	ner 🔀									
Other Settings	Daily Tim	ner									
Alarm Numbers		Weekly		Hou	ır	Mir	nute	Action			
Output Sattings	🗆 <mark>1</mark>	Sunday	~	00	~	00	~	Reboot	~		
Couput settings	2	Sunday		00	~	00	~	Reboot	~		
Relay Settings	3	Tuesday		00	~	00	~	Reboot	~		
Access Control Setting	4	Wednesday	1	00	~	00	~	Reboot	~		
Access Control S	5	Friday		00	~	00	~	Reboot	~		
Input Settings	6	Saturday		00	~	00	~	Reboot	~		
DI Settings	7	Sunday	~	00	~	00	~	Reboot	~		
a brockings	8	Sunday	~	00	~	00	~	Reboot	~		
DI Alarm Setting	9	Sunday	~	00	\sim	00	~	Reboot	~		
Al Settings	🗌 10	Sunday	~	00	~	00	~	Reboot	~		
Al Alarm Setting								Pand			
Timer Settings											
Hour Timer											

	Hour Timer	
Item	Description	Default



Cellular IoT M2M RTU --- S272/S274/S275

1-10	Represents timers 1-10	Uncheck
Weekly	Monday to Sunday or Everyday	
Hour	Specific hour	
Minute	Specific minute	
Action	The action to be executed at preset time	

2) Periodic Timer

🚧 S272-RTU Cellular IoT RTU Configur	ration Softwar	re V3.2.0							-,-	×
Load Config. File Fixport conf	fig. file 🌉	Reset ① Reboo	ot 🛐 Help							
Parameter Settin ``	Periodic I	imer 🔼								- 1
	Periodic T	imer								
Alarm Numbers	periodical	ly auto upload GPI	RS data 10	(10-655	35 sec) 🗌 Enable/D	isable				
Dutput Settings		Weekly	Hour	Minute	e Interval(s)	Ac	tion			
*		Sunday 🗸	00 ~	00	~ 0	Keboot	~			
Relay Settings	2	Sunday	00 ~	00	~ 0	Reboot	~			
Access Control Setting	3	Tuesday	00 ~	00	~ 0	Reboot	~			
Access Control S	□ <mark>4</mark>	Wednesday Thursday	00 ~	00	~ 0	Reboot	~			
~~	5	Friday	00 ~	00	~ 0	Reboot	~			
Input Settings	6	Saturday	00 ~	00	~ 0	Reboot	~			
	7	Everyday Sunday V	00 ~	00	~ 0	Reboot	~			
- DI Alarm Setting	8	Sunday 🗸 🗸	00 ~	00	~ 0	Reboot	~			
	9	Sunday 🗸 🗸 🗸	00 ~	00	~ 0	Reboot	~			
Al Alarm Setting:							-			
E Timer Settings						Read	Save			
Hour Timer	Selecti	ng this option sch	edules periodic ex	ecution of spec	cified actions with a se	et interval, starting fi	rom a specified time.			
Periodic Timer										
E Logic Trigger										
looir Triagor										

Periodic Timer											
Item	Description	Default									
Periodically auto	When 4G data transmission protocol is BLIIoT IoT										
upload GPRS	RTU Protocol, enable periodically auto upload is the	10									
data	default. Unit: second										
1-9	Represents timers 1-9	Uncheck									
Weekly	Monday to Sunday or Everyday										
Hour	Specific hour										
Minute	Specific minute										
Action	The action to be executed at preset time										

4.8 Logic Trigger Setting

Users can quickly set up to 40 automatic logic control functions, which can meet the automation control needs of most applications. It is automatically triggered according to preset conditions without human intervention, and the device automatically performs predetermined actions and notifies the user with text messages or network data. On the one hand, it saves time and reduces losses, on the



other hand, it improves work efficiency.

For example: it can be set to automatically start the exhaust cooling equipment when the temperature is too high, and automatically shut down the exhaust cooling equipment when the temperature recovers, or start the diesel generator when the current and voltage are low, and stop the diesel generator when the current and voltage are high, or turn off the water pump when the water pressure is high, start the water pump when the water pressure is low, and so on.

S272-RTU Cellular IoT RTU Configu	ration Software V3.2.0		- 🗆 X
두 Load Config. File 🛛 🐳 Export con	nfig. file 📲 Reset 🛈 Reboot 🛐 Help		
Parameter Settin ^	Periodic Timer 🗙 Logic Trigger 🔀		
Other Settings	Event: Arm	~	
Alarm Numbers	Execute action: All DO Close	~ Add Delete	
Output Settings			
Relay Settings	Event	Action	
Access Control Setting	DI1 Alarm of Pulse Interval DI2 Alarm of Pulse Interval	DO1 Close	
Access Control S			
Input Settings			
DI Settings			
DI Alarm Setting			
Al Settings			
Al Alarm Setting:			
- Timer Settings			
Hour Timer			
Periodic Timer			
Eugic Trigger	Clear		
Logic Trigger	Up to 40	0 custom logic relationships can be compiled at most.	
RS485 Settings		Read Write	
Serial Port Settin		The three second	
Claus Information			

Logic trigger				
Item	Description			
Event	Including "Arm", "DIx trigger", "DIx recovery", "DIx			
	alarm of pulse interval", "DIx alarm of total number of			
	pulse", "Alx high alarm", "Alx low alarm", "Alx			
	recovery", "Temperature high alarm", "Temperature			
	low alarm", "Temperature recovery", "Humidity high			
	alarm", "Humidity low alarm", "Humidity recovery"			
	Including "Reboot", "All DO close", "All DO open",			
Execute Action	"DO0 close", "DO0 open", "DO1 close", "DO1 open",			
Execute Action	"DO2 close", "DO2 open", "DO3 close", "DO3 open",			
	"Open door", "Siren", "Arm", "Disarm", "GPRS online"			
Add	Add selected settings			
Delete	Delete selected settings			

Note: "x" in "DIx" means serial number of DI channel, range: 0-7; "x" in "AIx" means serial number of AI channel, range: 0-5



4.9 Serial Port Settings

This chapter introduces the purpose and parameters of the RS485 serial port, including Modbus master, Modbus slave, and transparent transmission.

As Modbus master, S275 can be used to connect to expansion I/O module or read data from instruments, PLC and other devices;

As Modbus slave, S275 can be connected to HMI, PLC, and DSC for local data communication;

When serial port set as transparent transmission, the data of built-in I/O cannot be transmitted to the cloud platform via network. If you need this function, please choose other model like S475.

🍻 S272-RTU Cellular IoT RTU Configuration Software V	3.2.0					×
🗲 Load Config. File 🛛 Export config. file 📑 Res	et 🛈 Reboot 🔋 Help					
Parameter Settin ^ Serial Port Se	ttings 🔀					
Other Settings RS485 Alarm Numbers	ModBus RTU Slave	Polling Cycle	200	(200~65535 ms)		
Baud Rate	9600 ~	Timeout Period	200	(200~65535 ms)		
Relay Settings Parity	none v	Comm Fail Confirmation Time	60	(0~65535 sec)		
Access Control Setting Stop Bits	1 ~					
Access Control S Note: Input Settings DI Settings DI Settings DI Alarm Setting Al Alarm Setting Al Alarm Setting Al Control Contr	polling cycle cannot be less than 20 timeout period cannot be less than	0ms. Read	Write			

Serial port				
Item	Description	Default		
RS485	Including "Disable", "ModBus RTU master", "ModBus	Close		
	RTU Slave" and "Transparent transmission"			
Baud rate	1200, 2400, 4800, 9600, 19200, 38400, 57600,			
	115200	9000		
Data bit	8	8		
Parity bit	rity bit none, even, odd			
Stop bit	1, 2	1		
Polling cycle	Interval time between two polling command(unit:ms)	200		
	The longest time waited for slave to return data when			
Timeout period	master sent a command to slave(unit: ms).			
	If the waiting time longer than this time, the slave will			



	be considered as no response.	
Master/slave communication fail verify time	When master and slave communication fails many times, the period of communication fail more than this value, the slave will be regarded as lost, and a	60
	slave failure message will be sent.(unit:s)	

Note: "Polling cycle", "Timeout period" and "Master/slave communication fail verify time" are only valid when the RS485 set as "Modbus RTU Master".

4.10 Modbus RTU Slave Settings

When RS485 serial port set as "Modbus RTU master", the device will actively poll the slave continuously according to the Modbus RTU protocol, and read the value of the register in the slave into the mapping area of the device for storage, so that the registers in the slave are mapped to the device, and the reading and writing of the mapped registers of the device will be directly transmitted to the slave via RS485 serial port.

There is a one-to-one correspondence between the address of the slave register and the address of the mapping register in this device, which is the list of mapping registers.

S275 can connect various slaves via serial port, and it supports up to 16 slave, expansion I/O module can be connected to the device.

For example, S275 connect to M series Ethernet I/O module to expanding the number of DI, DO, AI, AO, and PT100 input, or connect to the power monitoring module to read the current, voltage, and power of the three-phase power, or connect to the UPS power supply for data monitoring, etc.

4.10.1 Slave Mapping Table

Users can add, modify, and delete slave. After entering the slave mapping table, please read the mapped slave information first to prevent new slaves from overwriting the previous slave. To edit a slave, just select a line and click the right mouse button to complete operations such as deletion, addition, and parameter modification.

1) Add slave


Daramatar Sattin ^	Slave Mapping Ta	ble 🗙					
	No. Slave Address	Data Type	Function Code	Slave Register Start Address	Number of Readings	Local Mapped Register Start Address	Local Mapped Register End Address
Other Settings	1	Add SI	ave Device				
Alarm Numbers	2	Edit Sl	ave Device				
Output Settings	3	Test W	rite Instruction				
Relay Settings	5	Delete	Slave Device				
Access Control Setting	6	Clear	Display				
Access control setting	7	cicure	Jispidy				
Access Control S	8						
Input Settings	10						
DI Settings	11						
	12						
DI Alarm Setting	13						
	14						
AI Alarm Setting:	16						
Timer Settings							
Hour Timer							
Logic Trigger				Delete All	Read Write		
	Note:						
RS485 Settings	1.Before adding a 2.Selecting an emp	device,please tv row allows	adding a mapp	read the mapping device list.			
- (Serial Port Settin	3.Up to 16 devices	can be adde	d 3	, 3			
Slave Information							
Slave Mapping T	Holding Register C	ontrol Instrue	tion 06 Instru	cti v Modify			
Slave Mapping 1							

Right-click to Add Slave

No.	1	
lave Address(Range 1~254)		
Data Type	Bool	~
Function Code	01	~
Register start address		
Registers quantity		
Mapping start address	64	\sim

	Add slave	
Item	Description	Default
Slave address	Slave address range: 1-247	Empty
Data type	Bool, 16 bit, 32bit, 64bit	Bool
Function code	01, 02, 03, 04, 15, 16	Empty
Register start	Register start address for reading and writing slave	Empty
address	data	Empty
Register	The number of alove data	Empty
quantity		Empty



Mapping start	The start address of slave register start address	Emerts (
address	which mapped to the device register map area.	Empty
Mapping end	Calculate the end mapping address according to start	Empty
address	address and reading data quantity	Empty

2) Edit slave

5	No. Slave	Address	Data Type	Function Code	Slave Regi	ster Start Address	Number	of Readings	Local Mapped Register Start Address	Local Mapped Register End Add
Other Settings	1	1	Bool	1		1		1	64	64
Alarm Numbers	2	1	16bits	3		Add Slave Device		1	20000	20000
tout Settings	3					Edit Slave Device				
a a a a a a a a a a a a a a a a a a a	4					Test Write Instruc	tion	-		
Relay Settings	5					Delete Slave Devi	e	-		
ess Control Setting	7					Clear Display		-		
Access Control S	8					Clear Display				
	9									
Settings	10									
DI Settings	11									
DI Alarm Satting	12									
Di Alarin Setung	13									
AI Settings	14									
Al Alarm Setting:	15									
	10									
settings										
Hour Timer										
Periodic Timer										
c Ingger					L	Delete All	Read	Write		
Logic Trigger										
85 Settings	1.Before a	dding a d	evice, please	click "Read" to	read the m	apping device list.				
	2.Selecting	an empt	y row allows	adding a mapp	ed device b	y right-clicking				
Serial Port Settin	3.Up to 16	devices	can be adde	d						
e Information										
Slave Mapping T	Holding Re	egister Co	ontrol Instru	tion 06 Instruc	ti ~	Modify				
since mapping i	Coil Contro	ol Instruc	tion	05 Instrue	ti v	Modify				
Mapped Registe										
ne .										

Address Mapping	Channel Name	Data Type	Input Type	Alarm Verify Time	Alarm SMS Content	Recovery SMS Content	Enable Recovery SMS	Relay0	Relay1	Relay2	Relay3	Enable
64	Tag64	DATA_BOOL ~	N0 ~	2								

🛃 Slave Edito)F											\times
Address Mapping	Channel Name	Data Type	Ratio	Alarm Verify Time	Threshold high	Threshold low	High Alarm SMS Content	Low Alarm SMS Content	Recovery SMS Content	Enable Recovery SMS	Relay0	Relay
20000	Int20000	DATA_SIGNED_AB	1	2	0	0						

	Edit slave	
Item	Description	Default
Address	The device mapping address corresponding to the	
mapping	slave register	
	"Channel name + Alarm content" include in the text	
Channel name	message sent to authorized number when	
	alarm/recovery	





	Bool	
	It has been selected as a Boolean type when adding	Pool
	a slave	DOOI
Data type	• 16bit/32bit/64bit	
	According to the type of data point selected from the	
	slave, the letter ABCDEFGH indicates the sorting of	GП
	the data in the slave register	
la a cita te va a	• NO: The normal state is normally open (0)	NO
прит туре	• NC: The normal state is normally closed (1)	NU
	The data in the mapping address will be multiplied	
	by this ratio, and the multiplied value will be	
	compared with the upper limit value and the lower	
	limit value. If the threshold value is exceeded, an	
Ratio	alarm will be triggered, and the alarm content and	1
	the current value will be sent to the authorized	
	number. The data of the mapped address will not be	
	multiplied by this ratio when it is collected by 4G	
	When the abnormal event last more than this	
Alarm verify time	period, alarm will be triggered, and text message	2
	sent to authorized number	
	If value of the mapped address data multiplied by	
Thus she ld high	the ratio higher than this value, when alarm occurs,	F ucution
i nresnola nign	the "channel name" + "high limit alarm SMS	Empty
	content" will be sent to the authorized number	
	If value of the mapped address data multiplied by	
Thus sheld low	the ratio lower than this value, when alarm occurs,	F uents i
Threshold low	the "channel name" + "low limit alarm SMS content"	Етріу
	will be sent to the authorized number	
Lligh alogn CMC	When the high limit alarm occurs, "channel name" +	
High alarm SIVIS	this SMS content will be sent to the authorized	Empty
content	number.	
	When the low limit alarm occurs, "channel name" +	
Low alarm SIVIS	this SMS content will be sent to the authorized	Empty
content	number.	
Alarm SMS	When alarm occurs, "channel name" + this SMS	Empty
content	content will be sent to the authorized number.	Епірту
Recovery SMS	When alarm restored, "channel name" + this SMS	Empty
content	content will be sent to the authorized number.	Empty
Enable recovery SMS	Text message will be sent when alarm restored	Uncheck



Relay0	First relay will close when alarm occurs	Uncheck
Relay1	Second relay will close when alarm occurs	Uncheck
Relay2	Third relay will close when alarm occurs	Uncheck
Relay3	Fourth relay will close when alarm occurs	Uncheck
Enable	Enable alarm function	Uncheck

Note: Check "slave alarm" in "alarm numbers settings" page to enable the slave alarm function

4.10.2 Mapped Register Data

Click "Mapped Reister Data" to view the value of the current slave

DO O	Slave Mapping List × Map	ing Register 🔼	000' ·	0171 ·	
- Jaar	Boolean	16Bit	32Bit	64Bit	
Access Control	Register No. Current Value	Register No. Current Value ^	Register No. Current Value 🔨	Register No. Current Value	
Arress	64	20000	20128	20256	
	65	20001	20130	20260	
Input Setting	66	20002	20132	20264	
and and a second s	67	20003	20134	20268	
DI Setting	68	20004	20136	20272	2 🗌 Regular inquir
300	69	20005	20138	20276	Seconds, minimum 2 seconds
DI Alarm	70	20006	20140	20280	
300	71	20007	20142	20284	Kead
AL Setting	72	20008	20144	20288	
Sec	73	20009	20146	20292	Notice:
Al Alarm	74	20010	20148	20296	1. Before reading data,
	75	20011	20150	20300	pls read slave list
Timer Setting	76	20012	20152	20304	first then it can disnl
- Inner Setting	77	20013	20154	20308	correct value
A Hour Timor	78	20014	20156	20312	
riour rimer	79	20015	20158	20316	
Pariadis Timer	80	20016	20160	20320	
Periodic Timer	81	20017	20162	20324	
Link Trigger Setting	82	20018	20164	20328	
Link Trigger Setting	83	20019	20166	20332	
Contab Trians	84	20020	20168	20336	
Link Trigger	85	20021	20170	20340	
and the second	86	20022	20172	20344	
RS485 Setting	87	20023	20174	20348	
	88	20024	20176	20352	
Serial Port	89	20025	20178	20356	
	90	20026	20180	20360	
Slave Setting	91	20027	20182	20364	
	92	20028	20184	20368	
Slave Mapping L	93	20029	20186	20372	
5 million 1 mill	94	20030	20188	20376	
Mapping Registe	95	20031	20190	20380	
	96	20032	20192	20384	
Cloud Platform Setting	97	20033	20194	20388	
	98	20034	20196	20392	
Cellular Network	99	20035	20198	20396	
2	100	20036	20200	20400	
Historical Record	101	20037	20202	20404	
	102	20038	20204	20408	
	103	20039	20206	20412	
~	100			LOTIL V	

Note: If you want to view the current value of the slave, you need to click the [Read] button in the [Slave Mapping Table], first read the slave configuration information to the configuration software, and then go to the [Mapped Register Data] page to view the current value of the slave.

4.11 Cellular Network Settings

If you want to use BLIIoT platform, please contact BLIIoT sales person to get Login message/Client ID.

Note:

- 1, Click the "Write" button to saving parameters in device;
- 2, When configuration is complete, power OFF the device;
- 4, At last, reboot the device, then the device will enter into normal running mode.



out Settings	Cellular Network	Settings 🔀								
Relay Settings	Bei	Lai Cloud V3.I	0	BeiLai Cloud V2.0(Modbus)	BeiLai Cloud V2.0(MQTT)		Huawei Cloud	Ali Cloud	Other	
Access Control Settings	Methods	Disable		~			Server 1 IP/DNS	modbusrtu.kp	tu.com	(Max60)
t Settings	Connection	TCP		~			Port	4000	(0-65535)	
DI Settings	ΔΡΝ				(Max60)		Server 2 IP/DNS			(Max60)
DI Alarm Settings	APN username	. [(May60)		Port	0	(0-65535)	
AI Settings	APN parrieon	4			(Max60)		Heartbeat time	60	(10-65535 sec)	
AI Alarm Settings	Arti passwor				((112,00))		Resend times.	3	✓ (1-9)	
er Settings				R	econnection tin	ne when th	e server has no data.	600	(120-65535 sec)	
Hour Timer							MQTT Settings			
Periodic Timer	Login Msg	ASCII	~		(Max60)	Subscrib	be		
c Trigger	Login ACK Msg	ASCII	~			Max60)	Public			
Logic Trigger	Logout Msg	ASCII				Max60)	MQTT Device	e ID		
35 Settings	Heartbeat Msg	ASCII		req		Max60)	MQTT usern	ame		
Serial Port Settings	Heartbeat ACK N	ASCII		res		Max60)	MQTT passv	vord		
e Information	Login Msg poli	5y					Publish interva	l (s) 10	(10-65535秒)	
Slave Mapping Table	At login							MQTT data r	etransmission 🗌 Ena	ble/Disable
Mapped Register Data							Note: This setting	g is only require	d when using the MQT	T protocol.
d Platform Settings	Click the butto						g to the cloud		Read	Write

BLIIoT Cloud via Modbus					
Item	Description	Default			
Communication	When choosing BLIIoT cloud, the parameter				
protocol	is default				
Protocol	ТСР	ТСР			
APN	Access point name provided by mobile operator	Empty			
APN user name	User name provided by mobile operator	Empty			
APN password	Password provided by mobile operator	Empty			
	Device serial number issued by BLIIoT	Pay for cloud			
Login message	(Contact sales to get the serial number)	services			
Login ACK message	System default				
Logout message	System default				
Heartbeat message	System default				
Heartbeat ACK message	System default				
Login message strategy	System default	Send once when login server			
Server 1 IP/DNS	modbusrtu.kpiiot.com(BLIIoT V3.0 modbus) modbus.dtuip.com(BLIIoT V2.0 modbus)	Default			
Server listen	Target server 1 port number(BLIIoT V3.0 modbus)	4000			
	Target server 1 port number(BLIIoT V2.0	6651			



	modbus)		
Server 2	Target server 2 DNS or IP	Empty	
IP/DNS	larget server 2 bits of it	стри	
Server listen	Torget conver 2 port number(0,65525)	Empty	
port	Target server 2 port number (0-05555)	Empty	
Hearthaat	If the connection to the server fails 3 times in		
interval	a row, the time interval for the next	60	
	connection to the server.(1-9999) seconds		
	After setting heartbeat and login message, if		
Resend time	server no response, the times of data	3	
	resend(1-9)		

BLIIoT Cloud via MQTT				
Item	Description	Default		
APN	Access point name provided by mobile operator	Empty		
APN user name	User name provided by mobile operator	Empty		
APN password	Password provided by mobile operator	Empty		
Server 1 IP/DNS	mqtt.dtuip.com	Default		
Server listen port	Target server 1 port number	1883		
Server 2 IP/DNS	Target server 2 DNS or IP	Empty		
Server listen port	Target server 2 port number(0-65535)	Empty		
Subscribe topic	The topic when the device subscribes to the	Automatically		
	information /+	generate		
Publish topic	The topic when the device publishes	Automatically		
	information	generate		
MQTT Device ID	Device serial number issued by BLIIoT(Contact sales to get the serial number)	Pay for cloud services		
MQTT user name	The account that publishes the topic on the proxy server	MQTT		
MQTT password	The password to publish the topic on the proxy server	MQTTPW		
Publish interval	The time interval for the device to upload data regularly (10-65535)	10		
MQTT data re-transmission	Whether to enable data re-transmission	Enable/Disable		



Relay Settings							
access Control Settings	BeiLai Cloud 1	/3.0 BeiLai Cloud V2.0(Modbus)	BeiLai Cloud V2.0(MQTT)	Huawei Cloud	Ali Cloud	Other	
Access Control Settings	Methods Huawe	i Cloud		Server 1 IP/DNS	mqtt.dtuip.com		(Max60)
nput Settings	Connection TCP	~		Port	1883	(0-65535)	
OI Settings	ADN		(Max60)	Server 2 IP/DNS			(Max60)
OI Alarm Settings	APN urername		(Max60)	Port		(0-65535)	
Al Settings	APN assured		(Max60)	Heartbeat time	60	(10-65535 sec)	
Al Alarm Settings	APIN password		(Waxoo)	Resend times.	3	(1-9)	
imer Settings			Reconnection time whe	en the server has no data.	300	(120-65535 sec)	
ogic Trigger Logic Trigger	Device ID Key Service ID Publishing cycle(10	(10-65535秒)		Select file Wh	ether to up		
Serial Port Settings ave Information	Device secre	data retransm Enable/Disa	ible	Select file Wh	ether to up		
 Serial Port Settings Jave Information Slave Mapping Table Mapped Register Data 	Device secre	`data retransm⊡ Enable/Disa	ıble	Select file Wh	ether to up		

	Huawei Cloud				
Item	Description	Default			
APN	Access point name provided by mobile	Empty			
	operator	Empty			
APN user name	User name provided by mobile operator	Empty			
APN password	Password provided by mobile operator	Empty			
Authentication	Device key	Default			
Device ID	Set the same ID as the one in HUAWEI	Emert (
	Cloud(Device-Device ID)	Emply			
Кеу	Set the same Device Secret Key as the one				
	in HUAWEI Cloud when creating device in	Empty			
	HUAWEI Cloud.				
	Set the same Service ID as the one in				
Somiaa ID	HUAWEI Cloud.	Empty			
	(IOT Platform-Products-Add	Empty			
	Service-Service ID)				
Publishing cycle	Cycle time of data publishing(10-65535)	60sec			
MQTT data	Whether or not to enable data	Diachla			
retransmission	retransmission, check to enable.	Disable			
	The time interval between the next				
Heartbeat time	connection to the server after 3 consecutive	60sec			
	failed connections to the server, in seconds.				
Resend times	Number of times to resend data when there	3			



is no answer packet response (heartbeat	
packet answer and registration code answer	
packet are set). (1-9)	

output settings	Cellular Network Se	ttings 🔀							
Relay Settings	BeiLai	Cloud V3.0	BeiLai Cloud V2.0(Modbus)	BeiLai Cloud V2.0(MQTT)	Huawei Cloud	Ali Cloud	Other		
Access Control Settings	Methods	Ali Cloud	~		Server 1 IP/DNS	mqtt.dtuip.com		(Max60)	
Input Settings	Connection	ТСР	~		Port	1883	(0-65535)		
DI Settings	APN			(Max60)	Server 2 IP/DNS			(Max60)	
DI Alarm Settings	APN username			(Max60)	Port		(0-65535)		
Al Settings	APN password			(Max60)	Heartbeat time	60	(10-65535 sec)		
Al Alarm Settings					Resend times.	3	✓ (1-9)		
Timer Settings				Reconnection time w	hen the server has no data.	300	(120-65535 sec)		
Hour Timer									
Periodic Timer	Authenticat	io Device key	×						
Logic Trigger	Product pri	iva							
logic Trigger	Device nam	ne							
RS485 Settings	Device priv	at	the seconth						
Carial Dard Carlings	Publishing cycl	e(s))	(10-65535程少)						
Character Setungs	MQTT data re	etransmi Lnab	le/Disable						
Slave Information									
Slave Mapping Table									
Mapped Register Data	1								
Cloud Platform Settings						F	lead	Write	
089.									
Cellular Network Settings									

	Ali Cloud	
Item	Description	Default
APN	Empty	
APN user name	User name provided by mobile operator	Empty
APN password	Password provided by mobile operator	Empty
Authentication	Device key	Default
Product private	Set the same ProductKey as the one in Ali	Empty
key	Cloud.(Device-Click DeviceSecret)	Empty
Dovice name	Set the same DeviceName as the one in Ali	Empty
Device name	Cloud.(Device-Click DeviceSecret)	Linpty
Device private	Set the same DeviceSecret as the one in Ali	Empty
key	Cloud(Device-Click DeviceSecret)	Empty
Publishing cycle	Cycle time of data publishing(10-65535)	60sec
MQTT data	Whether or not to enable data	Diachla
retransmission	retransmission, check to enable.	Disable
	The time interval between the next	
Heartbeat time	connection to the server after 3 consecutive	60sec
	failed connections to the server, in seconds.	



Resend times	Number of times to resend data when there	
	is no answer packet response (heartbeat	2
	packet answer and registration code answer	3
	packet are set). (1-9)	

4.12 Historical Record

The device has a built-in 32G SD card, which is used to store the alarm records and historical records of the device. If you need the device to record historical records, then you need to set the interval for saving historical records in the [Periodic Timer] page, and alarm records do not need to be set separately, and the device will automatically save them.

The device will automatically manage the historical records. When there is no space in the memory, it will automatically delete the previous data and keep the latest half of the historical data. It is convenient for users to inquire. In addition, users can also export data to computers for permanent storage. Details as follows:

🔐 S272-RTU Cellular IoT RTU Configuration S	oftware V3.2,0	- 0	×
Load Config. File Export config. file Output Settings	Reset OReboot Help Cellular Network Settings X History Record X		
Relay Settings	History records Total: 0 (ead all O Read by record # 1 ~ 1 Clear Read Save As CSV C	Clear host da	ata
Access Control Settings			
Input Settings			
DI Alarm Settings			
Al Alarm Settings			
Timer Settings Hour Timer			
Periodic Timer			
Logic Trigger			
Serial Port Settings			
Slave Information	Note: 1 May 100 000 seconds can be started		
Mapped Register Data	2.When the storage is full, older records will be deleted automatically.		
Cloud Platform Settings			
History Record			

Historical Record				
Item	Description	Default		
Total	All records			
Read all	Read all records in the device	Check		
Read by record	Customize filtering of records	Uncheck		
Clear	Clear the screen	Empty		
Read	Read historical records	Empty		
Save as CSV	Export to a CSV format file			



Erase RTU records Clear all the historical data

4.13 System

The same parameters can be quickly configured for multiple devices through the export and import function, and the factory reset function will restore the device to the factory settings.

🔐 S272-RTU Cellular I	IoT RTU Configuration Se	oftware V3.2	.0		
Eload Config. File	Export config. file	Reset		🛐 Help	

4.13.1 Export Configuration File

It is convenient for the user to save the configuration parameters of the device and configure multiple devices in batches.

4.13.2 Load Configuration File

Click Load Configuration File button at the top left of the page and select the file to load

4.14.3 Reset

Reset device through the factory reset button in configuration software.

All parameters of the device will be restored to the factory default initial value.

If you forget the password you set, please contact the after-sales service of Shenzhen Beilai Technology.

5 SMS Functions

This device supports remote setting, query, control and other operations through SMS commands. Notes:

1. The default password is 1234, you can use SMS command to modify the password;

2. The "password" in the SMS command refers to the device password, such as 1234, just enter the password directly;

3. The "+" sign in the SMS command is not the content of SMS, please do not add any spaces or other characters in SMS;

4. SMS commands must distinguish between uppercase English letters, such as "PWD" instead of



"pwd";

5. If the password is entered correctly and the command is entered incorrectly, the host will return a text message: "The command format is wrong, please confirm!" At this time, please check whether the Chinese and English input methods or uppercase and lowercase letters are correct;

6. If the password is entered incorrectly, no information will be returned;

7. The host will return a confirmation message after receiving the message command, if no message is returned, please check whether the password is correct and the signal is normal.

5.1 SMS Command List

1) Modify password

Event	SMS Command	Return SMS Content
Setting		This is the New
	Old Password+P+New Password	Password, please
		remember it carefully.

Default password: 1234, new password must be 4 digits

2) Arm/Disarm

Event	SMS Command	Return SMS Content
Arm	Password+AA	Armed
Disarm	Password+BB	Disarmed

3) Set RTU Time

Event	SMS Command	Return SMS Content
Setting	Password+Dxxxx-xxTxx: xx: xxWxx For example: 1234D2015-05-22T15:20:30W01 W01 stands for Monday, W07 stands for Sunday	xxxx(Y)XX(M)XX(D)xx(H)X(M)xx(W)

4) Query Device Current State

Event	SMS Command	Return SMS Content
Query	Password+EE Statu Arme Versi IMEI GSM	Status:
		Armed/Disarmed:
		Model:
		Version:
		IMEI:
		GSM Signal Value:

5) Set User Numbers

Event	SMS Command	Return SMS Content



	Password+A+series number+T+tel	
Setting	number	Telx:
	Series number = 0~9	
Query	Password+A	Return all numbers
Delete	Password+A+aprica number	Return 0~4 or 5~9
		numbers.

6) Call-in to open the door

Authorized number can dial to open the door

Event	SMS Command	Return SMS Content
	• Open door within the	
	authorized time	Tel1:
	Password+B+series	Tel2:
Setting	number+S+start time+E+end time	Tel3: 13570810254
	 Always have permission to 	Tel4:
	open door	Tel5:
	Password+B+series number+P	
Query	Decoword - P	Return all authorized
Query		user numbers
Delete	Password+B+series number	Return all authorized
		user numbers

Example: "1234B0S201505231230E201605231230", where "201505231230" represents the year, month, day, hour and minute respectively.

7) Set Daily Report Time

Event	SMS Command	Return SMS Content
Setting	Password+DR+series number+T+time	Daily SMS Report at:
Query	Password+DR	XX:XX
Delete	Password+DRDEL	

Serial number: 0~9, example: "1234DR1T12:30"

8) Digital Input

Event	SMS Command	SMS Command
		DI1: Open/Close
Query state	Password+DINE	DI2: Open/Close

9) Analog Input

Event		SMS Command	SMS Command
Threshold	Setting	Password+AINR+channel	Alx: Low:xxx,



		number+Lxxx+Hxxx	High:xxx.
	Quant	Password+AINR+channel	Alx: Low:xxx, High:xxx.
	Query	number	Aly: Low:xxx, High:xxx.
	Delete	Password+AINR+channel	
	Delete	number+DEL	
	Sotting	Password+AINM+channel	Alx: Min:xxx, Max:xxx
AI	Setting	number+Lxxx+Hxxx	
measure	Quert	Password+AINM+channel	Alx: Min:xxx, Max:xxx.
ment	Query	number	Aly: Min:xxx, Max:xxx.
range	Delete	Password+AINM+channel	
	Delete	number+DEL	
Query			AINx: xxxx ,
current			【Normal/Higher/Lower】
value			
			AIN1: xxxx ,
Query all			【Normal/Higher/Lower】
current		Password+AINE	AIN2: xxxx ,
value			【Normal/Higher/Lower】

You can query the value of multiple channels by enter several channel number

10) Control Relay

Event		SMS Command	Return SMS Content
DO	Setting	Password+DO+channel number+T	DOx:xxxx
	Query	Password+DO+channel number	DOx:xxxx
Name	Delete	Password+DO+ channel number+DEL	
	Polov	Password+DOC+ shapped number	DOx: Close
	Relay		DOy: Close
Onon B		Password+DOO+ shannel number	DOx: Open
Openik	elay	Password+DOO+ channel number	DOy: Open
Query current		Password+DOE+ channel number	DOx: Close/Open
value			DOy: Close/Open
0			DO1: Close/Open
		Password+DOE	DO2: Close/Open
value			
Close relay			
according to		Password+DOLC+ shapped number	DOx:
configured			DOy:
closing time			
Pulse	Set	Password+DOT+Time	Pulse Output Time:



output	time		xxxS
	Query	Password+DOT	Pulse Output Time: xxxS
	Delete	Password+DOP+channel number	

11) Set Server (cellular network)

Event	SMS Command	Return SMS Content
Sotting	Password+IP+ IP address+P+Com	
Setting	port	Sever:
Query	Password+IP	Port:
Delete	Password+IPDEL	

12) Set cellular network parameters

Event	SMS Command	Return SMS Content
Sotting	Password+AP+apn+#+user	APN:
Setting	name+#+user password	User name:
Query	Password+AP	Password
Delete	Password+APDEL	

13) GPRS Online

Event	SMS Command	Return SMS Content
Online	Password+GPRSonline	GPRS always online

14) Historical Data

Event	SMS Command	Return SMS Content
Delete	Password+HISDEL	Delete all historical
Delete		records

15) Set pulse counter

Event	SMS Command	Return SMS Content
Clear	Password+DIN+Channel	Clear Successfully
	number+CLR	
Query	Password+PR	Counter Current Value:
		xxx

Channel number is 0~3, corresponding to DI0~3 pulse counter

6 Communication Protocols

S275 can be connected to servers, SCADA or cloud platform via 4G.





Make sure mobile phone communication is normal

- 1, Open configuration software to log in.
- 2, On parameter page, click "Sync RTU time", "Read RTU time" to set up time synchronization.
- 3, Check arm automatically when power on.
- 4, Click the "Save" button to saving parameters in device.

5, On alarm numbers page, enter the mobile phone number used to receive the alarm, and then check the corresponding options, if you want to receive text messages from device power on, power lost, and power recovery, check the power on, power lost, power recovery, then click the [Save] button.

ie S272-RTU Cellular IoT RTU Configuration Software V3.2.0												
୶ Load Config. File 🛛 🐳 Export config. file 🛛 📳	Reset ORebo	oot 🔃 Help										
Basic Information	Parameter S	$_{\rm ettings}$ $\times $	Other Set	tings ×	Alarm Nu	mbers						
Parameter Settings	Authorized l	Jser Telephone	e Number 9	ettings								
Other Settings		(Alarm No.)	Power	Timer	Arm/Dis	arn Low	Power	Power	Cellular	Relay	Slave	Slave
Other Settings	User N0.0	-				Signal						
Alarm Numbers	User N0.1		1 0									
Output Settings	User N0.2		1 0									
Relay Settings	User N0.3											
Access Control Settings	User N0.4		1 0	\checkmark								
	User N0.5											
Access Control Settings	User N0.6											
Input Settings	User N0.7			\square								
DI Settings	User N0.8			\checkmark								
DI Alarm Settings	User N0.9											
Al Settings Al Alarm Settings Al Alarm Settings Original Alarm Settings	Note: 1, Che 2, Sign	ck this option al Low: status	to send a c when the C	orrespondi ISM/3G/4G	ng SMS to t network sig	he correspo nal is below	nding num 14.	ber when the	e event occi	urs; ead	Sav	•

6, Power OFF the device.

7, Install the SIM card, and then turn on the device, wait for about 1-2 minutes, the number used to receive the alarm should receive message notify the device is turned on. Unplug the external power supply of the device, the number used to receive the alarm should receive message notify the external power lost. Then re-connect the external power supply to the device, then the mobile phone

number used to receive the alarm should receive message notify the external power recovery. So far, it has been verified that the device can communicate normally.

8, Power off the device, reboot device, and enter the configuration page again. Click [Read] button on the page, read the previously set parameters first, otherwise it will be overwritten by the new parameters.

6.1 Modbus RTU Slave Application

6.1.1 Read DO State

Relay DO register address as holding coil, address 0~3, refer to chapter 8.1 Device Register Address

Content	Bytes	Data (H: HEX)	Description		
Device Address	1	01H	01H Device, Range: 1-247, according to setting		
Device Address	Ŧ	0111	address		
Function Code	1	01H	Read holding coil type, function code 01		
DO Register	2	00.0011	Range: 0000H-0003H		
start address	Z	00 00H			
Read DO	2	00.0411			
Register QTY	2	00 04H	Range: 0001H-0004H		
16CRC Verify	2	3D C9H	CRC0 CRC1 low byte in front, high byte in behind		

Master Send Data Format:

Receiver Return Data Format:

Content	Bytes	Data (H: HEX)	Description					
Device Address	1	01H	01H Device,	according to th	ne data Master	r send		
Function Code	1	01H	Read holding	g coil				
Return Byte	1	014	Poturn Data	Longth				
Length	1		Kelurn Dala Length					
Returning Data	1	02H	02H means 4 converter Bin DO3(bit3) 0	DO status, hig nary as below DO2(bit2) 0	gh 4 byte invali DO1(bit1)	id, low 4 Byte DO0(bit0) 0		
			Open	Open	Close	Open		
			Device curre	nt relay status	: DO0,DO2,DO	3 = Open,		
			DO1= Close					
16CRC Verify	2	D0 49H	CRC0 CRC1 low byte in front, high byte in behind					



Example: Read 4 relays DO0~DO3 status, device address as 1 :

Server send: 01 01 00 00 00 04 3D C9

01H= Device address; 01H= Read relay function code; 00 00H= Read starting relay DO0 address; 00 04H= Read serial 4 DO status; 3D C9H CRC= Verify.

Device answer: 01 01 01 02 D0 49

01H= Device address; 01H= Read relay function code; 01H= Return data byte qty; 02H= Returning data, stands for Binary 0000 0010 high 4 byte invalid, low 4 byte 0010, sort as DO3 DO2 DO1 DO0 status, D0 49HCRC verify.

If read DO or multi DO status, only need to revise " DO Register start address" and " Read DO Register QTY ", calculate the CRC again, returning data according to description data.

6.1.2 Control DO

1) Control 1 channel device DO output

Master Send Data Format:

Content	Bytes	Data (H: HEX)	Description			
Device Address	1	01H	01H Device, Range: 1-247, according to setting			
Device Address	Т	0111	address			
Function Code	1	05H	Write single holding coil type, function code 05			
DO Register	2	00.0011	Denze: 0000 0002 stands for DO0 DO2			
Address	Z	00000	Range. 0000-0005, stands for DO0-DO5			
Active	2	FF 0011	This value: FF 00H or 00 00H, FF 00H= Close relay, 00			
Active	Z	FF UUH	00H= Open relay			
16CRC Verify	2	8C 3AH	CRC0 CRC1 low byte in front, high byte in behind			

Receiver Return Data Format:

Content	Bytes	Data (H: HEX)	Description
Device Address	1	01H	01H Device, according to the data Master send
Function Code	1	05H	Write single holding coil type, function code 05
DO Register Address	2	00 00H	Range: 0000H-0003H, stands for DO0-DO3
Active	2	FF 00H	This value: FF 00H or 00 00H, FF 00H= Already actived close relay, 00 00H= Already actived open relay
16CRC Verify	2	8C 3AH	CRC0 CRC1 low byte in front, high byte in behind



Example: Control relay DO0 close, then:

Server send: 01 05 00 00 FF 00 8C 3A

01H= Device address; 05H= Control single relay command; 00 00H = Address of DO0; FF 00H= DO0 close;

8C 3A H16 byte CRC verify.

Device answer: 01 05 00 00 FF 00 8C 3A

01H= Device address; 05H= Control single relay command; 00 00 H = DO0 Address; FF 00H= Active DO0 close; 8C 3AH 16 byte CRC verify.

If single control other relay outputs, only need to change "DO Register Address" and "Active", calculate CRC verify again.

2) Multi control DO outputs

Master Send Data Format:

Content	Bytes	Data (H: HEX)	Description				
Device Address	1	01H	01H Device, acc	ording to settin	ng address		
Function Code	1	OFH	Write multi holo	ding coil			
DO Register start address	2	00 00H	Range: 0000H-0003H, stands for DO0-DO3				
Control Relay Qty	2	00 04H	Range: 00001H-0004H				
Write Byte QTY	1	01H	Write 1 byte, sir	nce device only	4DO, use 4 bir	nary can do it	
Writing Data	1	OFH	0FH stands for 4 DO status, high 4 byte invalid, low 4 byteconverter to binary as belowDO3(bit3)DO2(bit2)DO1(bit1)DO0(bit0)				
			Active close	Active close 0= Active ope	Active close	Active close	
16CRC Verify	2	7E 92H	CRC0 CRC1 low byte in front, high byte in behind				

Receiver Return Data Format:

Content	Bytes	Data (H: HEX)	Description
Device Address	1	01H	01H Device, according to setting address
Function Code	1	OFH	Write multi holding coil
DO Register start	2	00.0011	Range: 0000H-0003H, stands for DO0-DO3
address	2	00.00H	
Active Relay Qty	2	00 04H	Qty: 0-4, stands for how many relays already actived
16CRC Verify	2	54 08H	CRC0 CRC1 low byte in front, high byte in behind

Example: Close device 4 DO at same time, then:



Server send: 01 0F 00 00 00 04 01 0F 7E 92

01H= Device address; 0FH= Control multi relay; 00 00H= Relay DO0 starting address; 00 04H= Control 4 relays; 01H= Send data qty; 0FH= Data sent converter to binary 0000 1111 high 4 byte invalid, low 4 byte 1111 sort to match DO3 DO2 DO1 DO0, 1 stands for close relay, 7E 92H CRC verify.

Device answer: 01 0F 00 00 00 04 54 08

01H= Device address; 0FH= Control multi relay; 00 00H= Relay DO0 starting address; 00 04H= Actived 4 relays; 54 08H CRC verify.

6.1.3 Read DI State

Master Send Data Format:

Content	Bytes	Data (H: HEX)	Description
Device Address	1	01H	01H Device, Range: 1-247, according to setting address
Function Code	1	02H	02 read input coil DIN status
DIN Register Start Address	2	00 00H	Range: 0000H-0007H, stands for DIN0-DIN7
Read DIN Register Qty	2	00 08H	Range: 0001H-0008H, Read qty of DIN status
16CRC Verify	2	79 CCH	CRC0 CRC1 low byte in front, high byte in behind

Receiver Return Data Format:

Content	Bytes	Data (H: HEX)	Description							
Device Address	1	01H	01H Device, Range: 1-247, according to setting address							
Function Code	1	02H	02 read	02 read input coil DIN status						
Return Bytes Qty	1	01H	Return [Return Data Length						
Returning Data	1	OFH	OFH con for DIN7 DIN 7 (bit7) 1 Close 1= Close	Verter to Z-DINO st DIN6 (bit6) 1 Close e, 0= Ope	binary tatus DIN5 (bit5) 1 Close	1111 11 DIN4 (bit4) 1 Close	11 from DIN3 (bit3) 1 Close	DIN2 (bit2) 1 Close	low byt DIN1 (bit1) 1 Close	e, stands DIN0 (bit0) 1 Close



16CRC Verify 2 E1 8CH CRC0 CRC1 low byte in front, high byte in behind

Example: Inquiry device 8 DIN data at same time, then:

Server send: 01 02 00 00 00 08 79 CC

01H= Device address; 02H= Inquiry DIN status; 00 00H= DI Starting address; 00 08H= Serial reading 8 DIN status; 79 CC H CRC verify.

Device answer: 01 02 01 0F E1 8C

01H= Device address; 02H= Inquiry DIN status; 01H= Returning data bytes qty; 0FH DIN status, every byte stands for one DIN status, 0FH converter to binary 1111 1111 from high to low byte, stands for DIN7-DIN0 status, 0= Open, 1= Close, E1 8CH 16 byte CRC verify.

If need to inquiry multi DIN status, only need to change "DIN Register Start Address", "Read DIN Register Qty", calculate CRC verify again.

6.1.4 Read AI, Tem&Hum, DI0, Power value

Master Send	Data Format:
-------------	--------------

Content	Bytes	Data (H: HEX)	Description
Device	1	01H	01H Device, Range: 1-247, according to setting address
Function Code	1	04H	04 read input register
Register			One address can read 2 bytes. AIN address range: 0000-000BH, One AIN data take two address,
Starting	2	00 00H	temperature address: 0018H, humidity address: 0019H, DIN1
Address			count value address: 001A, 001B External power voltage address: 000E
Read Register	2	00.1CH	Read qty of input register, read AIN0 to DIN0 count value address,
Qty	2	00100	total 28 register, 0000H to 0001BH.
16CRC Verify	2	F1 C3H	CRC0 CRC1 low byte in front, high byte in behind

Receiver Return Data Format:

Content	Bytes	Data (H: HEX)	Description
Device Address	1	01H	01H Device, Range: 1-247, according to setting address



Function Code	1	04H	04 read input register									
Data Bytes Range	1	38H	One address can read 2 bytes. AIN address range: 0000-000BH, One AIN data take two address, 38H temperature address: 0018H, humidity address: 0019H, DINO count value address: 001A,001B									
			External po	wer voltage	e addre	ess:	000E					
				N= Retur	ning b	yte	s, sample o	data 56 p	oints	::		
			AIN	AINO	AIN	1	AIN2	AIN3	AI	N4	AIN5	
			Receivin	00 00	00 0	0	00 00	00 00	00	00	00 00	
			g Data	00 E7H	00		00	00	0	0	00	
					DDF	1	DDH	DCH	DI	ΞH	DFH	
	DC 00 00 DE 00 00		Decimal	194	207	7	0	0	0)	0	
		00 DE 00	Value									
		00 00 DF	Real	1.94	2.07	7	0	0	0		0	
		00 00 00 00 04 C6	Value									
Returning	N					_						
Data		01 9A 00	Other	Extern	al	Temperatur		Humidity		DIN0 Count		
		00 00 01	Value	Power Vo	Itage		e			Value		
		00 01 00	Receivin	04 C6	H		0B 36H	1B E4	1H	00 0	DO OO OB	
		01 00 01	g Data				0.070					
		00 01 00	Decimal	1222			2870	/14	0		11	
		01 00 01	Value	12.22	.,		20.7%	74.40/	DU			
		OB 36 1B	Keal	12.22	V		28.7°C	/1.4%	кн		1 times	
		E4 00 00				Tar		11				
		00 OBH	BH Any, External Power Voltage, Temperature, Humidity real									
16000			value-negis		.00							
Verify	2	A9 3CH	CRC0 CRC1	CRC0 CRC1 low byte in front, high byte in behind								

Example: Inquiry device 28 input type register at same time, start from address 0. Include 6 AIN, one device temperature, humidity, external power voltage, DIN0 count value, then:

Server send: 01 04 00 00 00 1C F1 C3

01H= Device address; 04H= Read input register value; 00 00H AIN0= Starting address; 00 1CH= Serial reading 28 input register value; F1 C3H CRC verify.

Device answer: 01 04 38 00 00 00 E7 00 00 0D DD 00 00 DD 00 00 0D DC 00 00 0D DE 00 00 00 DF 00 00 00 00 04 C6 01 9A 00 00 01 00 01 00 01 00 01 00 01 00 01 00 01 0B 36 1B E4 00 00 00 0B A9 3C

01H= Device address; 04H= Read input register value; 56 bytes data after 38H, 00 00 00 E7H AIN0 value, 00 00 00 DDH AIN2 value, 00 00 00 DDH AIN2 value, 00 00 00 DDH AIN3 value, 00 00 00



DEH AIN4 value, 00 00 00 DFH AIN5 value, 00 00 00 00H invalid value, 04 C6H external power voltage value, 01 9A 00 00 00 01 00 01 00 01 00 01 00 01 00 01 00 01 00 01H invalid value, 0B 36H temperature value, 1B 36H humidity value, 00 00 00 0BH DIN0 count value, A9 3C CRC verify.

6.2 Modbus RTU Master Application

As Modbus master, RTU can be used to connect to expansion I/O module via RS485 serial port.

This section takes this RTU as a Modbus RTU master connect to Modbus RTU slave as an example, the details are as follows:

1) Serial port settings

In the [Serial Port] page, select "Modbus RTU Master", the baud rate, data bit, parity bit, and stop bit are consistent with the parameters of device connected to RS485 serial port, and the polling cycle, timeout time and The master/slave communication fail verify time can be set as default.

🍻 S272-RTU Cellular IoT RTU Configuration Software V3	.2.0				- C	X C
🕌 Load Config. File 🛛 🐺 Export config. file 📑 Rese	t 🛈 Reboot 🛐 Help					
Parameter Settin * Serial Port Sett	tings 📕					
Other Settings RS485	ModBus RTU Slave ~	Polling Cycle	200	(200~65535 ms)		
Alarm Numbers Baud Rate	9600 ~	Timeout Period	200	(200~65535 ms)		
Output Settings Data Bits	8 ~	Comm Fail Confirmation Time	60	(0×65535 sec)		
Relay Settings Parity	none ~	communication mile	00	(0 05555 300)		
Access Control Setting Stop Bits	1 ~					
Access Control S Note:						
Input Settings	polling cycle cannot be less than 200r	ns. Read	Write			
DI Settings						
DI Alarm Setting						
Al Settings						
Al Alarm Setting						
Timer Settings						
Hour Timer						
Periodic Timer						
Logic Ingger						
Logic Trigger						
RS485 Settings						
Serial Port Settin						
Slave Information						
A a set a set						

2) Slave settings

Refer to chapter 4.10.1 Slave Mapping Table

3) Shut down and restart the device

The device will running according to the configuration parameters.

Note: After adding slave information, the device must be shut down and restart.

6.2.1 Read Bool Mapping Address Data

Master Send Data Format:



Content	Bytes	Data (H: HEX)	Description
Device Address	1	01H	01H Device, Range: 1-247, according to setting address
Function Code	1	01H	Read Holding Coil type, Function Code 01
Boolean Register Starting Address	2	00 40H	Range: 0040H-007FH, Address refer to chapter 8.2 Mapping Register
Read Register Qty	2	00 0AH	Range: 0001H-0040H, Boolean mapping address, total 64 address
16CRC Verify	2	BD D9H	CRC0 CRC1 low byte in front, high byte in behind

Receiver Return Data Format:

Content	Bytes	Data (H: HEX)				Descr	riptior	ı			
Device Address	1	01H	01H Device	e, accord	ling to	the da	ta Mas	ster se	nd		
Function Code	1	01H	Read Holdi	ng Coil							
Return Bytes Length	1	02H	Return data	Return data length							
			High byte n According t converter b	neans lo to Modb pinary as	w add ous pro belov	ress da tocol, /:	ata, lov fix 73 (v byte 01H re	means al value	high c e to 01	lata, 73H
	N	73 01H	BIT Position	Bit15	Bit 14	Bit 13	Bit 12	Bit 11	Bit 10	Bit 9	Bit 8
Returning Data	N= Return		Boolean Address	Invali d	Inv alid	Inv alid	Inv alid	Inv alid	Inva lid	73	72
	ing		Value	0	0	0	0	0	0	0	1
	bytes length		BIT Position	Bit7	Bit 6	Bit 5	Bit 4	Bit 3	Bit2	Bit 1	Bit O
			Boolean Address	71	70	69	68	67	66	65	64
			Value	0	1	1	1	0	0	1	1
			Eg: Read 10) value,	high 10) byte	addres	ss valu	e looke	d as in	ivalid
16CRC Verify	2	5D 0CH	CRC0 CRC1	low byt	e in fro	ont, hig	gh byte	e in bel	hind		

Example: Read 10 mapping Boolean value starting from address 64, then:

Server send: 01 01 00 40 00 0A BD D9

01H= Device address; 01H= Read holding coil; 00 40H= Read Boolean value starting from address

64; 00 0AH= Serial reading 10 Boolean status; BD D9H CRC verify.

Device answer: 01 01 02 73 01 5D 0C

01H= Device address; 01H= Read holding coil; 02H= Returning data bytes; 73 01H= 10 Boolean status read, refer to table above; 5D 0CH CRC verify.

6.2.2 Revise Bool Mapping Address Data

If need to revise slaves connected, need to add slave and use function code 15 for mapping command in configuration software. After mapping address value changed, will revise to write RS485 matched slave address data.

Content	Bytes	Data (H: HEX)	Description
Device Address	1	01H	01H Device, Range: 1-247, according to setting address
Function Code	1	05H	Write single Holding Coil type, Function Code 05
Boolean Mapping	2	00 400	Range: 0040H-007FH, address refer to chapter 8.2 Mapping
Register Address	2	00 40 1	Register
Writing Value	2		This value: FF 00H or 00 00H, FF 00H= Write 1, 00 00H=
writing value	2		Write 0
16CRC Verify	2	8D EEH	CRC0 CRC1 low byte in front, high byte in behind

Master Send Data Format:

Receiver Return Data Format:

Content	Bytes	Data (H: HEX)	Description
Device Address	1	01H	01H Device, according to the data Master send
Function Code	1	05H	Write single Holding Coil type, Function Code 05
Boolean Register Address	2	00 40H	Range: 0040H-007FH
Writing Value	2	FF 00H	This value: FF 00H or 00 00H, FF 00H= Write 1, 00 00H= Write 0
16CRC Verify	2	8D EEH	CRC0 CRC1 low byte in front, high byte in behind

Example: Revise Boolean mapping address 64 status value, revise to 1, then:

Server send: 01 05 00 40 FF 00 8D EE

01H= Device address; 05H= Revise Boolean value; 00 40 H= Revise mapping address; FF 00H=

Write 1, 8D EEH16 byte CRC verify.

Device answer: 01 05 00 40 FF 00 8D EE

01H= Device address; 05H= Revise Boolean value; 00 40 H= Revise mapping address; FF 00H= Write 1, 8D EEH16 byte CRC verify.

If need revise multi, please refer to Modbus protocol, Function code 15.

6.2.3 Read Data Type Mapping Address

Master Send Data Format:

Content	Bytes	Data (H: HEX)	Description
Device Address	1	01H	01H Device, Range: 1-247, according to setting address
Function Code	1	03H	03 function code, read holding register
Mapping Register Starting Address	2	4E 20H	One address can read 2 bytes. Address range: 4E20H-501CH, mapping data type address range, address refer to chapter 8.2 Mapping Register
Read Mapping Register Qty	2	00 0AH	Read qty of input register
16CRC Verify	2	3D 2FH	CRC0 CRC1 low byte in front, high byte in behind

Receiver Return Data Format:

Content	Bytes	Data (H: HEX)			Descrip	otion		
Device Address	1	01H	01H Device,	Range: 1-2	247, accor	ding to se	etting add	ress
Function Code	1	03H	Read holding	register				
Data Bytes Range	1	14H	One address	can read	2 bytes.			
Deturning	N=	00 14 00 1E 00 28 00 32 00 4B	N= Returning Mapping Address	g bytes, sa 20000	mple data	20002	s: 20003	20004
Data	Returnin g Bytes	00 41 00 0A 00 25 00 14 00	Data	00 14H	00 1EH	00 28H	00 32H	00 4BH
		ZAH	Mapping Address Receive	20005	20006	20007	20008	20009



			Data	00 41H	00	00 25	00 14	00 2A	
					0AH				
			Mapping add	lress data	real value	e need to	calculate	slave	
			mapping data	a type acc	ording de	vice RS48	5 connect	ted, refer	
			to " Mapping	Register	Address a	nd Functi	on code"		
16CRC Verify	2	FB 34H	CRC0 CRC1 lo	ow byte in	front, hig	h byte in	behind		

Example: Read 10 mapping address data, start from 20000, then:

Server send: 01 03 4E 20 00 0A D3 2F

01H= Device address; 03H= Read holding register; 4E 20H= Read starting address, decimal 20000 00 0AH read 10 register value, D3 2FH 16 byte CRC verify.

Device answer: 01 03 14 00 14 00 1E 00 28 00 32 00 4B 00 41 00 0A 00 25 00 14 00 2A FB 34

01H= Device address; 03H= Read holding register; 14H return 20 bytes, 00 14 00 1E 00 28 00 32 00 4B 00 41 00 0A 00 25 00 14 00 2A return data, refer to table above, FB 34H 16 byte CRC verify.

6.2.4 Revise Data Type Mapping Address

If need to revise slave data which RS485 connected, need to add slave and use function code 16 for mapping command in configuration software. After mapping address value changed, will revise to write RS485 matched slave address data.

If the data type of address 20000 mapping salves is signed-int AB:

Content	Bytes	Data (H: HEX)	Description
Device Address	1	01H	01H Device, Range: 1-247, according to setting address
Function Code	1	06H	Write single holding register
Mapping	2	45 2011	Address range: 4E20H-501CH, mapping data type address
Register Address	2	4E 20H	range, address refer to chapter 8.2 Mapping Register
Writing Data	2	00 64H	Sample data writing value is decimal 100
16CRC Verify	2	9E C3H	CRC0 CRC1 low byte in front, high byte in behind

Master Send Data Format:

Receiver Return Data Format:

Content	Bytes	Data (H: HEX)	Description
Device Address	1	01H	01H Device, Range: 1-247, according to setting address



Function Code	1	06H	Write single holding register
Mapping	ode 1 g 2 hress 2 hta 2 ify 2		Address range: 4E20H-501CH, mapping data type
Register Address	2	4c 20H	address range
Writing Data	2	00 64H	Writing 100 successfully
16CRC Verify	2	9E C3H	CRC0 CRC1 low byte in front, high behind

Example: If the data type of address 20000 mapping salves is signed-int AB, revise mapping address 20000 register to 100, then:

Server send: 01 06 4E 20 00 64 9E C3

01H= Device address; 06H= Revise single holding register value, 4E 20H= Revise address 20000 register value, 00 64H= Write to decimal value 100, 9E C3 H16 byte CRC verify.

Device answer: 01 06 4E 20 00 64 9E C3

01H= Device address; 06H= Revise single holding register value, 4E 20H= Revise address 20000 register value, 00 64H= Revise to decimal value 100, 9E C3 H16 byte CRC verify.

If need to revise multi data type mapping address, refer to Modbus protocol, Function code 16.

7 Connect to Cloud Platform

7.1 BLIIoT Modbus Cloud

1) Enter "Login message" then click "Write"

Please contact sales person to get Login message



-	Cellular Network	Settings	×						
Relay Settings	Beil	Lai Cloud V	3.0	BeiLai Cloud V2.0(Modbus)	BeiLai Cloud V2.0(MQTT)	Huawei Cloud	Ali Cloud	Other	
Access Control Settings	Methods	Modbu	is RTU	~		Server 1 IP/DNS	modbus.dtuip.co	om	(Max60)
t Settings	Connection	ТСР		~		Port	6651	(0-65535)	
DI Settings	APN				(Max60)	Server 2 IP/DNS			(Max60)
DI Alarm Settings	APN username				(Max60)	Port		(0-65535)	
AI Settings	APN password				(Max60)	Heartbeat time	60	(10-65535 sec)	
Al Alarm Settings						Resend times.	3	(1-9)	
er Settings				F	Reconnection time wher	i the server has no data.	300	(120-65535 sec)	
Hour Timer									
Periodic Timer	Login Msg	ASCII	~		(Max60)				
: Trigger	Login ACK Msg	ASCII	~		(Max60)				
	Logout Msg	ASCII	~		(Max60)				
Logic Trigger		ASCII	~	Q	(Max60)				
5 Settings	Heartbeat Msg								
Logic Trigger 15 Settings Serial Port Settings	Heartbeat Msg Heartbeat ACK N	ASCII	~	A	(Max60)				
Logic Trigger 15 Settings Serial Port Settings Information	Heartbeat Msg Heartbeat ACK M Login Msg polic	ASCII	~	A	(Max60)				
Logic Trigger 15 Settings Serial Port Settings Information Slave Mapping Table	Heartbeat Msg Heartbeat ACK M Login Msg polic At login	ASCII V	·	A ~	(Max60)				
Logic Trigger 5 Settings Serial Port Settings Information Slave Mapping Table Mapped Register Data	Heartbeat Msg Heartbeat ACK N Login Msg polic At login	ASCII	~	A	(Max60)				
Logic Trigger 15 Settings 9 Information 9 Slave Mapping Table 1 Mapped Register Data 1 dPlatform Settings	Heartbeat Msg Heartbeat ACK N Login Msg polic At login Click the butto	ASCII y	the "He	A vertice of the second	(Max60) ssues related to connec	ting to the cloud	R	ead	Write

2) Add data points BLIIoT cloud(Data point identification REGXXX refer to chapter 8.1 Device Register Address)

← Device List				
Device	mo		v	
Equipment	Equipment translation seria	l number		
Device	Please enter the device name	me		<u></u>
Link	MB RTU		v	0
time zone	UTC+08:00		v	0
Dropping	Recommended Value 👻	60 (seconds)	v	0
Sensor	Append	Batch Addition		
	Sensor Name	Numerical Type	v	0(Decimal Place) Unit Sort Delete



Read write instruction settings

– 🛛 🗙

Serial Number	Sensor	Slave Address	Function Code	Bias	Data Format	Data Bits	Byte Order	Acquisitio Cycle
1	DO0	1	01Read and write 🛛 👻	1	bit			60
2	DO1	1	01Read and write 🔍	2	bit			60
3	DIN0	1	02Read-only	1	bit			60
4	DIN1	1	02Read-only -	2	fid			60
5	AIN0	1	04Read-only 👻	1	32Position Signed N 🐨		AB CD 👻	60
6	AIN1	1	04Read-only 💌	3	32Position Signed N 🐨		AB CD 👻	60
7	温度	1	04Read-only	25	16Position Signed N 👻			60
8	湿度	1	04Read-only 👻	26	16Position Signed N 🐨			60
9	DIN0计数	1	04Read-only 💌	27	32Position Unsignet 💌		AB CD 📼	60
10	电压电源	1	04Read-only 👻	15	16Position Unsigned 💌			60

12 2 1 2 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1	a 1
Determine	Cancel

Slave address: S27X ID

- Function code: Select the corresponding function code according to the slave type(Refer to chapter 8.2 Mapping Register)
- > Bias: The register address of S27X needs to plus 1, such as address 0 bias item enter 1
- Data format: The Boolean type does not need to be set, and the numerical type is selected according to the actual situation.
- > Byte order:Sorting of numerical data points
- > Acquisition cycle: Interval time of data acquisition



M						Console D	і 🖓 Е	nglish 👩 🕶
۲	Device name /ID 🔍	to Return	冷轧净环 5	Serial Number: 8611900523344520				900
	All Equipment Alarm 0 Offline 25	Ċ	DO0 ID:2922812	Connected Updated:2023/04/21 11:03:21		AlmQ	RT Curve	⊙ Hist Query 4-
	 mo 2/9 S272 	Ċ	DO1 ID:2922813		OFF	AlmQ	RT Curve	Hist Query-
-	智慧工厂物联网数据采集与控制	Ċ	DIN0 ID:2922814	Connected Updated:2023/04/21 11:03:21	OFF	AlmQ	RT Curve	⊖ Hist Query4-
٢	 RTU5028E (Modbus RTU)_021 电测量MatM230T 	Ċ	DIN1 ID:2922815		OFF	AlmQ	RT Curve	Hist Query 4-
•	BL102		AIN0 ID:2922816		0.18 * 🛩	AlmQ	RT Curve	⊙ Hist Query 4-
	(NOULLE (NULLUS (NO))		AIN1 ID:2922817	Gonnected Updated:2023/04/21 11:03:22	0.00 * 🛩	AlmQ	RT Curve	⊖ Hist Query 4-
		1	温度 ID:2922818		0.00 % 🛩	AlmQ	RT Curve	Hist Query-
	 注制器组 0/8 		湿度 ID:2922819	Genected Updated:2023/04/21 11:03:22	0.00 % 🛩	AlmQ	RT Curve	Hist Query 4-
	> KTCS 0/3		DIN0计数 ID:2922820		0 % 🛩	AlmQ	RT Curve	Hist Query-
	 甘素兰州区域 0/2 CX BL102 0/1 		电压电源 ID:2922821	Connected Updated:2023/04/21 11:03:22	12.59 v 🛩	AlmQ	RT Curve	Hist Query 4-

7.2 BLIIOT MQTT Cloud

There are three kinds of identities in the MQTT protocol: Publisher (Publish), Broker (Broker) (server), and Subscriber (Subscribe). Among them, the publisher and subscriber are both clients, the broker is server, and the message publisher can also be a subscriber. Take S27X connected to BLIIoT cloud 2.0 platform as an example:

When device publish I/O point data:



When customer control the device:



Enter MQTT device ID



	Output Settings	Cellular Network S	ettings 🔀								
	Access Control Settings	BeiLa	i Cloud V3.0	BeiLai Cloud V2.0(Modbus)	BeiLai Cloud V2.0(MQTT)	Huawei Cloud	Ali Cloud	Other			
Input Settings Connection D I Settings D Alarm Settings A I Settings APN A I Atrm Settings MAND B Hour Timer MANDD C Periodic Timer MQTT Settings L I Logic Trigger MQTT Settings C Logic Trigger MQTT Settings S Settings MQTT Device ID MQTT Device ID MQTT data retransmission [Enable/Disable Note: This settings I (Ick the button or check the "Help" menu for common issues related to connecting to the cloud	Access Control Settings	Methods	MQTT	~		Server 1 IP/DNS	mqtt.dtuip.com		(Max60)		
O D I Settings O D I Alarm Settings O Al Settings APN username (Max60) Periodic Timer I Logic Trigger O Logic Trigger O Logic Trigger O Serial Port Settings Server 1 P/DNS O Server 2 IP/DNS MQTT Settings MQTT Settings MQTT Settings MQTT Settings Subscribe Public MQTT Device ID MQTT data retransmission Base Mapping Table O Slave Mapping Table O Cloud Platform Settings Cloud Platform Settings Click the button or check the "Help" menu for common issues related to connecting to the cloud Read Write	Input Settings	Connection	ТСР	~		Port	1883	(0-65535)			
O DI Alarm Settings A I Settings A I Alarm Settings A I Alarm Settings Timer Settings Hour Timer Hour Timer Hour Timer I Logic Trigger Logic Trigger I Logic Trigger Stave Information Slave Information Slave Mapping Table Mapped Register Data Cloud Platform Settings Cloud Platform Settings Cloud Platform Sett		APN			(Max60)	Server 2 IP/DNS		5. 5.	(Max60)		
Al Settings A Al Jarm Settings Timer Settings I Hour Timer I Logic Trigger Logic Trigger I Logic Trigger I Logic Trigger Stave Information Slave Mapping Table I Slave Mapping Table I Slave Mapping Table I Cloud Platform Settings Cloud Platform Settings Cloud Platform Settings Cloud Platform Settings Cloud Platform Settings Cloud Platform Settings Cloud Platform Settings Cloud Platform Settings Cloud Platform Settings Cloud Platform Settings Cloud Platform Settings Cloud Platform Settings Cloud Platform Settings Cloud Platform Settings Cloud Platform Settings Cloud Platform Settings Cloud Platform Settings Cloud Platform Settings Cloud Platform Settings Cloud Platform Settings Cloud Platform Settings		APN username			(Max60)	Port		(0-65535)			
Al Alarm Settings Timer Settings Image: Settings Image: Periodic Timer Image: Logic Trigger Image: Logic Trigger <t< td=""><td></td><td>APN password</td><td></td><td></td><td>(Max60)</td><td>Heartbeat time</td><td>60</td><td>(10-65535 sec)</td><td></td><td></td><td></td></t<>		APN password			(Max60)	Heartbeat time	60	(10-65535 sec)			
Timer Settings Reconnection time when the server has no data. 300 (120-65535 sec) WQTT Settings MQTT Settings O Periodic Timer Subscribe Logic Trigger Public O Logic Trigger MQTT Device ID RS485 Settings MQTT Device ID Serial Port Settings MQTT provide ID Slave Information MQTT data retransmission Enable/Disable Note: This setting is only required when using the MQTT protocol. Cloud Platform Settings Click the button or check the "Help" menu for common issues related to connecting to the cloud	AI Alarm Settings					Resend times.	3 、	(1-9)			
Hour Timer MQTT Settings Periodic Timer Subscribe Logic Trigger Public Icogic Trigger MQTT Device ID RS485 Settings MQTT username Serial Port Settings MQTT password Slave Information Slave Mapping Table Slave Mapping Table MQTT periodic This setting is only required when using the MQTT protocol. Cloud Platform Settings Click the button or check the "Help" menu for common issues related to connecting to the cloud Read Write	Timer Settings				Reconnection time wh	en the server has no data.	300	(120-65535 sec)			
	Hour Timer					MQTT Settings					
Logic Trigger Public Cologic Trigger MQTT Device ID RS485 Settings MQTT username Serial Port Settings MQTT Device ID Save Information MQTT password Slave Mapping Table MQTT data retransmission Slave Mapping Table Note: This setting is only required when using the MQTT protocol. Cloud Platform Settings Click the button or check the "Help" menu for common issues related to connecting to the cloud Read Write						Subscribe	•				
Image: Construction of the settings MQTT Device ID Image: Construction of Stave Mapping Table MQTT Device ID Image: Construction of Stave Mapping Table MQTT data retransmission Enable/Disable Image: Construction of Mapping Table MQTT data retransmission Enable/Disable Image: Construction of Click the button or check the "Help" menu for common issues related to connecting to the cloud Read Write	Logic Trigger					Public					
R445 Settings MQTT username MQTT MQTT password MQTTPW MQTT password MQTTPW Slave Information 10 Slave Mapping Table MQTT data retransmission Enable/Disable Note: This setting is only required when using the MQTT protocol. Cloud Platform Settings Click the button or check the "Help" menu for common issues related to connecting to the cloud Read Write	Logic Trigger					MQTT Device	ID				
Serial Port Settings MQTT password MQTTPW Slave Information Publish interval (s) 10 (10-655355%) Slave Mapping Table MQTT data retransmission Enable/Disable Mapped Register Data Note: This setting is only required when using the MQTT protocol. Cloud Platform Settings Click the button or check the "Help" menu for common issues related to connecting to the cloud Read Write	RS485 Settings					MQTT userna	me MQTT				
Slave Information Publish interval (s) 10 (10-655359) Slave Mapping Table MQTT data retransmission Enable/Disable Mapped Register Data Note: This setting is only required when using the MQTT protocol. Cloud Platform Settings Click the button or check the "Help" menu for common issues related to connecting to the cloud Read Write	Serial Port Settings					MQTT passwo	MQTTPW				
Image: Slave Mapping Table MQTT data retransmission Enable/Disable Image: Mapped Register Data Note: This setting is only required when using the MQTT protocol. Image: Cloud Platform Settings Click the button or check the "Help" menu for common issues related to connecting to the cloud Read Write	Slave Information					Publish interval	(s) 10	(10-65535秒)			
Note: This setting is only required when using the MQTT protocol. Cloud Platform Settings Click the button or check the "Help" menu for common issues related to connecting to the cloud Read Write	Slave Mapping Table						MQTT data ret	ransmission 🗌 Ena	ble/Disable		
Cloud Platform Settings Click the button or check the "Help" menu for common issues related to connecting to the cloud Read Write	Mapped Register Data					Note: This setting	is only required	when using the MQT	T protocol.		
	Cloud Platform Settings	Click the button	or check the "He			ecting to the cloud	Re	ad	Write		
Cellular Network Settings	Cellular Network Settings									-	

Add data points on BLIIoT cloud

M	21 Monito	ring Center			
0	← Device List				
≓ ♥	Device	mo			
•	Equipment	Equipment translation seria	number		
∿ ⊙	Device	Please enter the device nar	ne		2
ŧ	Link	MQTT			0
1	time zone	UTC+08:00			0
	Dropping	Recommended Value 👻	60 (seconds)	•	0
	Sensor	Append	Batch Addition		
		Sensor Name	Numerical Type		0(Decimal Place) Vinit Sort Delete

Read and write identification setting, slave identification unified as REG plus mapping register address, refer to chapter 8.2 Mapping Register



2 Monitoring Center					Console
Link Protocol	← Device List				
TCP Protocol	All Sensors				
HTTP Protocol					
MB RTU		215	25	215	
MB TCP		(')	(')	(')	(')
MQTT Protocol					
UDP Protocol	l L	DO0	D01	DINO	DIN1
TCP JSON Protocol		Sensor ID: 2922812	Sensor ID: 2922813	Sensor ID: 2922814	Sensor ID: 2922815
CTCoAP Protocol		Read write	Read write	Read write	Read write
NB-IoT Protocol	Setting Parameters	Write	Write	Write	Write
CoAP Protocol					
	AINO	ANI	Ш. Ш.Я.	Ea	DINOITEX
	Sensor ID: 2922816	Sensor ID: 2922817	Sensor ID: 2922818	Sensor ID: 2922819	Sensor ID: 2922820
	Read write				
	Write	Write	Write	Write	Write

Payload data format of device publish message

```
Publish Topic: MQTT client ID
{
         "sensorDatas": [
              ł
                  "flag":"DI1",
                                          //Read and write flag
                  "switcher":1
                                          //data type and value
              },
              {
                  "flag":"AI1",
                  "value":10.00
              }
              {
                  "flag":"REG20000",
                                           // Register address and value
                  "value":1.00
              }
         ],
         "time":"1591841863",
                                           //Time stamp (When power on, first time
    connection no time stamp, later connections have time stamp)
         "state":"alarm",
                                          //Alarm(Only appears when alarm occurs)
         "state":"recovery",
                                         //Alarm(Only appears when alarm recover)
         "retransmit":"enable"
                                         //Historical data (only for re-transmission of
    historical data, but not for real-time data)
      }
```

Note:

//Read and write flag: the character is "flag", followed by "MQTT identification of data points"

//Data type and value:

1. Switch-type data: the character is "switcher", followed by "0" or "1" (0 open, 1 closed)

2. Numerical data: the character is "value", followed by "specific value"

//Timestamp: the character is "time", followed by "specific timestamp "

//Alarm and recovery identification: the characters are "state", followed by "alarm" or "recovery" (alarm is alarm data, recovery is recovery data)

//Historical data identification: the character is "retransmit", followed by "enable"

The data collected during the network disconnection will be temporarily stored in the device, and will be republished when the network is recovered. It is identified by the "retransmit" character, indicating historical data. (Need to enable MQTT data retransmission function in the configuration software)

Payload data format in device subscription message

(The topic of the BLIIoT 2.0 platform downstream publish message is called "device serial number/sensor ID", so the device subscribe topic needs to add the wildcard "/+" in order to receive the data sent by the platform to achieve control)Subscribe topic: device serial number /+ (corresponding to the data filled in the subscribe topic item on the configuration software)

Note:

//Platform sensor ID: The character is "sensorsID", followed by the ID number (ID is automatically generated by the platform)

//Data type and value:

1. Switch-type data: The character is "switcher", followed by "0" or "1" (0 open, 1 closed)

2. Numerical data: The character is "value", followed by "specific value"

//Read and write flag: The character is "flag", followed by "MQTT identification of data points"

//Downstream packet identification of the platform: The character is "down", followed by "down", which means that this is the downlink data of the platform.



Device I/O data point read and write flag

Data Point	Flag	Туре	Description
DO	DOx	Switcher	0 is open, 1 is closed
DI	DIx	Switcher	0 is open, 1 is closed
AI	Alx	Value	True value = original value
Temperature	TEMP	Value	True value = original value
Humidity	HUMI	Value	True value = original value
External power voltage	EXTPWR	Value	True value = original value
DIN0 counter	COUNT	Value	True value = original value
DIN1counter	COUNT1	Value	True value = original value
DIN2 counter	COUNT2	Value	True value = original value
DIN3 counter	COUNT3	Value	True value = original value

Note:

"DOx": DO0, DO1, DO2, DO3

"DIx": DI0, DI1, DI2, DI3, DI4, DI5, DI6, DI7

"AIx": AI0, AI1, AI2, AI3, AI4, AI5

7.3 Huawei Cloud

Firstly, create a device on HUAWEI CLOUD to obtain the device ID, device secret, service ID.

1, Create Product



2, Individual Register



-HUANG	HUAWEI CLOUD	∂ Console ♥ Beijing4	÷		Billing & Costs Resources E	Enterprise D	Developer Tools ICP License	Support Service Tick	ets English hw_008617674704107_01 문	ıÿ⊠
≡	IoT Device Access	All Devices Total devices	0 • Activated devices: 0 • Online: 0						Individu	al Register
0	Standard Change	Individual Registe	ər	×					Analyze historical data to	ain insights.
707	freeStandardInstance	* Resource Space ⑦	DefaultApp_6488oic9				Advanced Search 🗧	All 👻	设备名称 · Support prefix fuzzy search	QC
0	Overview	* Product	\$27X •				Fuzzy search is performed underscores, and exact se	I for Chinese characters, i arch is performed for othe	atters, digits, hyphens, and r special characters.	
0	Devices		Mqtt devices have subscribed to the platform preset topic by default. View the list of subscribed topics		Device ID	Res	ource Space 🖓	Product 7	Node Type Operation	
	All Devices	* Node ID	S27X		6.0					
۵	Groups	Device Name								
Ø	Software/Firmware Upgrades	Device ID	648809461cacf07a38145c83_S27X		No table data availab	ile.				
ය	Device CA Certificates	Description								
۲	Rules	•	0/2,048							
	Storage Management	Authentication Type @	Secret X.509 certificate							
	O&M New	 Secret 	······ · · · · · · · · · · · · · · · ·							
	Resource Spaces	Confirm Secret	······ @							
	IoTDA Instances	e la	OK Cancel							
	Documentation	ę								0
	API Explorer	9								e
	Forum for help	P								

3, Obtain the device ID, device secret, service ID

HUAWEI CLOUD	ଲ ୦୦	nsole Beijing4 All Devices Total devices 1 Activated devices 0 Online	Billing & Costs Résources Enterprise De	Develo	oper Tools ICP License	Support Service	Tickets	English hw_008	1617674704107_01	₩ M
I OT Device Access	•	All Devices Total devices: 1 • Activated devices: 0 • Online Device List Batch Registration Batch Update Device List Batch Registration Device Name • Inactive 10 • Total Records: 1 < 3 >	Batch Deletion The Uplication X Image: Deletion D	×	Aðvanced Saarch ≌ Fuzzy saarch is perform underscorer, and ga e Space ⊽ sp_64880ic9	Al de Chases characteristic de Chases characteristic extension performed of Product S27X	Start	牧田市 ・ S R, Ggit, hyphens, an Mode Type Directly co	Analyze historical data to gain aupport prefix fuzzy search @ d Operation Detail Detete More •	egister insights C
Documentation API Explorer	8									0
Forum for help	ď))秋行 (45至)	舌 Windows "设置"以激活 Windows。	



нама	HUAWEI CLOUD	ର ୦୦	isole 🛛 Beljing4 👻		Billing & Costs Resources Enterprise	ə Developer Tools ICP License Support Service Tickets English tww_008617674704107_01 📺 💭 🖸	
Ξ	IOT Device Access		Products / S27X				
0	Standard Chang	•	S27X ID: 648809461cact07a38145c83 Registered devices: 1			Update product	
,00	Overview		Product Name S27X	Add Servic	e	Resource DefaultApp_64880ic9	
0	Products		Device Type 生产环境监控	* Service ID	\$275	Space Protocol MQTT	
0	Devices	•	Data Type json	Service Type	xxxxxx Ø	Created Jun 13, 2023 14:14:30 GMT+06:00	
0	Rules	•	Description	Description	XXXXXXX	industry 看至地市-14地址	
4	Storage Management	Ţ			6/128		
Ø	Resource Spaces		Model Definition Codec Deployment Online Debuggin		OK Cancel		
8	IoTDA Instances						
÷	IoT Device Provisioning	e e					
	API Explorer	ø			Basic Service	Battery	
	Forum for help	ø		Command		Property	
				SET_PRESSU	URE_READ_PERIOD Water	Water Voltage Level Jsage	
				Period Value	Result		3
			A product model describes product details and service ca	ipabilities. You can defi	ine a product model using multiple methods. If you do not define a produc	fuct model for a device, the platform only forwards the data reported by the device and does not parse the data.	
				Custo	omize Model Import from Local Import from Excel	Import from Library Learn more 游话 Windows	

4, Add Property

Property name refer to chapter 8.2 Mapping Register

HAAWEI	HUAWEI CLOUD		sole 🛛 Beijing4								
Ξ	InT Device Access		Device Type 生产环境监控				Protocol	MQTT			
_	101 001100100000		Data Type json				Created	Jun 13, 202	13 14:14:30 GMT+08:00		
	Standard Chan		Manufacturer BLIIOT				Industry	智慧城市-环	境感知		
	freeStandardInstance	<u></u>	Description -								
.000.		- 1					×				_
0	Overview		Model Definition Codec Deployment Or	Iline Debugging To	Add Property		^				
0	Products		Add Service Import from Library Impo	rt from Local Import	+ Property Name	REGRA				Learn About Product Models	Export
~	Devices	*			A Freporty Harris	1004					
<u>م</u>	Rules	-	Service List $\oplus \mathbb{C}$	Service ID \$275	Description					Modify Service Delete	Service
Ð	Storage Management		S275				0/128				_
4	O&M New	Ţ		Add Property	+ Data Type	Integer	*				
ø	Deserves Cases			Property Nan				Desc	ription	Operation	
A	Resource opaces				* Access Permissions	Read Write					
-	IoTDA Instances				* Value Range	0 - 1					
e,	IoT Device Provisioning	do									
	Documentation	°°			Step			he			
	API Explorer	°			Unit						
	Forum for help	°									
				Add Command		OK Cancel					
				Command Name		Command Darameters	Respons	se Darameters		Operation	
				Command Hamo		Command Farameters	Roopon	of the method of the		operation	0
							d				9
						No	table data availab	ole.			


ж	HUAWEI CLOUD	ନ୍ତି Const	ole Q Beijing4	•				Billing & Costs	Resources	Enterprise	Developer Tools	ICP License	Support	Service Tickets	English	hw_008617674704107_0	i e ,ä	
Ξ	InT Device Access		Device Type	生产环境监控							Protocol	MQTT						
	IOT DEVICE ACCESS		Data Type	json							Created	Jun 13, 2	023 14:14:3	0 GMT+08:00				
0			Manufacturer	BLIIOT							Industry	智慧城市	环境感知					
۲	Standard Chan freeStandardInstance	ge	Description	-														
,000,																		
	Overview		Model Definiti	ion Codec Dep	loyment On	line Debugging T	Topic Management											
0	Products		Add Service	Import from L	brary Import	from Local Impo	int from Excel									Learn About Product Mod	els Export	
0	Devices	*																
-	Rules	-	Service List		ΦC	Service ID 8275	Service Type XXXXXXX	Description XXXXXXX								Modify Service	Delete Service	
Ô	Storage Management		S275															
4	O&M New					Add Property	Batch Deletion											
©						Property Na	me	Data Type		Acce	ss Mode	Des	scription			Operation		
0	Resource Spaces					REG64		Integer		Read	able,Writable					Copy Edit Delete		
8	IoTDA Instances					DIN1		Integer		Read	able					Copy Edit Delete		
⊕	IoT Device Provisioning	P				D01		Integer		Read	able,Writable					Copy Edit Delete		
	Documentation	e ^o				10 🔻 Total Re	cords: 3 < 1 >											
	API Explorer	d ^o																
	Forum for help	ď				Add Command												
						Command Name		Command Parame	ters		Respons	e Parameters			Operat	ion		
											6							0
																		\odot
																		-
										No tal	ole data availab	e.						
																激活 Window 转到"设置"以激活 V	S Vindows,	

5, RTU configuration

Fill in device ID, device secret, service ID, then click write to save the parameters.

tput Settings	Cellular Network Settings	×					
Relay Settings	BeiLai Cloud	V3.0 BeiLai Cloud V2.0(Modbus)	BeiLai Cloud V2.0(MQTT)	Huawei Cloud	Ali Cloud	Other	
Access Control Settings	Methods Huawe	ei Cloud 🗸		Server 1 IP/DNS	mqtt.dtuip.com	n	(Max60)
ut Settings	Connection TCP	~		Port	1883	(0-65535)	
DI Settings	APN		(Max60)	Server 2 IP/DNS			(Max60)
DI Alarm Settings	APN username		(Max60)	Port		(0-65535)	
AI Settings	APN password		(Max60)	Heartbeat time	60	(10-65535 sec)	
Al Alarm Settings				Resend times.	3	~ (1-9)	
er Settings			Reconnection time w	hen the server has no data	300	(120-65535 sec)	
Hour Timer	-	4					
Periodic Timer	Authenticatio Devic	ce key 🗸					
ic Trigger	Device ID						
Logic Trigger	Key						
85 Settings	Service ID	(10,65525前))					
Serial Port Settings	Device certi	(10-05555())		Select file	ether to ur		
e Information	Device secr			Select file WH	ether to up		
Slave Mapping Table	MQT	T data retransm Enable/	Disable	Clear			
Manned Register Data							
d Platform Settings	Click the button or check			necting to the cloud		Peed	14/-14-
Collular Naturals Cattings						Read	write

6, Check the status of the device



-	HUAWEI CLOUD	G Console ♥ Beijing4 ▼		
\equiv	IoT Device Access	Online Debugging		Select Device
0	Standard Chang	Debug output		Application Simulator Device Simulator
.00	Overview	Application Simulator	Platform	1
0	Products	Data Reputing	Data Reputing	
٢	Devices Rules			
© 4	Storage Management		,,	
0	O&M New	·		
∞ ⊕	Online Debug			<u></u> /
	Message Trace	No data avaitable.	No data available.	No data avaitable.
	Anomaly Detection			
	Run Logs			
	Remote Login Remote			0
	Configuration Resource Spaces			
	IoTDA Instances	8 •		激活 Windows 参照"设置"以影话 Windows。

7.4 Ali Cloud

Firstly, create a product on ALI CLOUD to obtain the device certificate.

1, Create Product

E C-J Alibaba Cloud			Q Search	Expenses	ICP	Enterprise	Support	Tickets {
← 公共实例	IoT Platform / Devices / Products / Create Product							
Instance Details	← Create Product (Device TSL)							
Devices ^	Create Product Create Product from Device Center							
Products	* Product Name							
Devices	\$275							
Groups Device Simulation	* Category Category Category Custom Category							
Device Distribution	* Node Type Directly Connected Device Gateway sub-device	Gateway device						
Message Forwarding \checkmark Maintenance \checkmark Security Center \checkmark	Networking and Data Format * Network Connection Method Cellular (25 / 35 / 46 / 56)							
Simulation	* Data Type 🔞							
Documentation and Tools	ICA Standard Data Format (Alink JSON) Checksum Type Authentication Mode Device Secret Hide More Product Description							
🗐 Feedback	OK Cancel							

2, Add Device



E C-J Alibaba Cloud	🖨 Workbench 🗐 Al	Resources 👻 👲 China (Shanghai) v		Q Search	Expenses ICP Enterp
← 公共实例	IoT Platform / Devices / Devi	ces				
Instance Details	Devices					
Devices 🔿	All	Total Devi 1	ies 😡	 Activated Devices (2) 1 	• Online 🚱	
Products	Device List Batch Ma	inagement Advanced Se	arch			
Devices						
Groups	Add Device Batch Add	I DeviceName 🗸	Enter DeviceName	Add Device 🔞	×	
Device Simulation	DeviceName/Alias	Product	Node	A Nata Vau da pat paad ta spasif	· DavicaNama, If DavicaNama is not	nline
Device Distribution	S275	S275	Device	specified, Alibaba Cloud will issu as DeviceName.	e a unique identifier under the product	, 2022, 19:02:08.427
loT Twin Engine				Products		
Message Forwarding 🛛 🗸				S275	~	
Maintenance 🗸 🗸				DeviceName 🔞		
Security Center 🗸 🗸				\$275		
Simulation				Alias 😰		
				2000000		
Documentation and Tools						
					OK Cancel	

3, Obtain device certificate

≡	C-J Alibaba Clou	id 🏻 🛱	Workbench		 ✓ <u> </u>	iina (Shanghai) 👒				Search			Expenses	ICP	Enterprise	Support	Tickets	æ
← :	☆共实例	loT Pla	atform / Devices /	Devices / S275														
Insta	nce Details	÷	\$275 Offin	e														
Devi	ces ^	Produ	cts S275 ctKey htz4	View QBU9bWg Copy						Dev	viceSecret	*****	*** View					
P	roducts	De	vice Information	Topic List	TSL Data	Device Shad	ow Manage Fi	les Device Log	Online Debug	Groups	Task							
D	evices																	
6	roups	Devie	ce Information															
2	ioups	Produ	ct Name	S275				ProductKey	htz4QB	U9bWg Copy	8				Region			China (
D	evice Simulation	Node	Туре	Devices			Device Certific	ate					×		Authenticati	on Mode		Device
D	evice Distribution	Alias	0	Edit			berice certaine	ate					^		Firmware Ve	rsion		•
27		Create	ed At	Oct 28, 202	22, 09:18:02		Device Certifica	е Сору					_		Last Online			Nov 1,
lo	oT Twin Engine	Currer	nt Status 🔞	Offline			ProductKey	htz4QBU	9bWg Copy				_		Device local	log reportir	ng	Disable
Mes	age Forwarding 🛛 🗸	MQTT	Connection Parameter	ers Here			DeviceName	\$275 Cc	ру				_					
Mair	tononco						DeviceSecret	e69c8fbf.	2e528605ab7e10ad91c	6d750 Copy								
Ividi	itenance v	<					Certificate Insta	lation Modes					_					
Secu	rity Center 🛛 🗸 🗸	wore	e Device Informat	ion			V Introduction to th	e unique certificate ne	r-device and unique-ce	rtificate-per-p	roduct mode		_					
Simu	lation	SDK L	anguage				V Indoduction to a	ie unique-ceruncate-pe	receive and unquerce	intineate-pei-p	router mode		_		Module Mar	nufacturer		-
		Modu	le Information									Cl	ose					
Docu	imentation and Tools																	
		Tag I	nformation	🖌 Edit														
		Davis	Teo Newsylle for															
		Device	e lag into results to	una.														

4, Add Feature

"Identifier" refer to chapter 8.2 Mapping Register



E C-J Alibaba Cloud	😞 Workbench 🗮 All Reso	urces 👻 👲 China (Shangha	ii) ~	Q Search		Expenses ICP Ent	terprise Support Tickets 🛃 🖸	۵ ۵
← 公共实例	loT Platform / Devices / Products /	Product Details / Define Feature						
Instance Details Devices	← Edit Draft Product Name \$275			EditSelf-Defined Feature	×	IQBU9bWg Copy		
Products	You are editing a draft. You need the second sec	d to click Publish to apply the TSL n	odel.	Properties				
Devices	Import TSL Model Ve	rsion History 🗸		* Feature Name @				
Groups Device Simulation	Enter a module name Q +	Default Module		* Identifier @				
Device Distribution	Default Module	Add Standard Feature	Add Self-defined Feature Na	* Data Type		e	Data Definition	Act
loT Twin Engine Message Forwarding V	+Add Module	Properties	温度(Cur	Boolean	~		Value Range: -1.4E-45 ~ 3.4028235E3 8	Edit
Maintenance V		Properties		* Boolean Value 0 - 断开			Value Range: -1.4E-45 ~ 3.4028235E3 8	Edit
Security Center V		Properties		1 - 闭合 * Read/Write Type			Value Range: -1.4E-45 ~ 3.4028235E3 8	Edit
Documentation and Tools		Properties	AINO Cu	Read/Write Read-only			Value Range: -1.4E-45 ~ 3.4028235E3 8	Edit
		Properties	电源电压	Description Enter a description			Value Range: -1.4E-45 ~ 3.4028235E3 8	Edit
		Properties	DO3 Cur		0/100 n		Boolean value: 0 - 断开 1 - 闭合	Edit
		Properties	DO2 Cuso	OK COL	Cancel		Boolean value: 0 - 助开 1) 初合	Edit
E C-J Alibaba Cloud		es 🗸 👲 China (Shanghai)		 Search The update edit has been successful 	Exp	enses ICP Enterprise S	Support Tickets 🕀 🖸 🧯 👾	Q
← 公共实例	IoT Platform / Devices / Products / I	Product Details / Define Feature						
Instance Details	← Edit Draft							

Instance Details Devices	← Edit Draft Product Name S275			ProductKey	htz4Q8U9bWg Copy		
Products	You are editing a draft. You need	I to click Publish to apply the TSL m	odel.				
Devices Groups Device Simulation	Import TSL Model Ven	sion History V Default Module Add Standard Feature	idd Self-defined Feature				
Device Distribution	Delaur Module	Feature Type	Feature Name(all)	Identifier 14	Data Type	Data Definition	Actions
IoT Twin Engine Message Forwarding V	+Add Module	Properties	温度(Custom)	HUMI	Float	Value Range: 0 ~ 100	Edit Delete
Maintenance \lor		Properties	温度 Custom	TEMP	Float	Value Range: 0 ~ 100	Edit Delete
Security Center 🗸 🗸		Properties	AIN1 Custom	All	Float	Value Range: 0 ~ 20	Edit Delete
Simulation		Properties	AIN0 (Custom)	A10	Float	Value Range: 0 ~ 20	Edit Delete
Documentation and Tools		Properties	电源电压 (Custom)	EXTPWR	Float	Value Range: 0 ~ 40	Edit Delete
		Properties	DO3 (Custom)	D03	Boolean	Boolean value: 0 - 断开 1 - 闭合	Edit Delete
		Properties	DO2 Custom	DO2	Boolean	Boolean value: 0 - 断开	Edit Delete

5, Publish



E C-J Alibaba Cloud	🖓 Workbench 🗏 All R	Resources 👻 👲 China	(Shanghai) v		Q Search	Ex	openses ICP	Enterprise Su	port Tickets	£ 12	0' T	7 Q	⑦ EN	liukey Main Accurrence
← 公共实例	IoT Platform / Devices / Produc	cts / \$275												
nstance Details	← S275													Publish
Devices ^	ProductKey htz4Q8U9b Total Devices 1 Manage	Wg Copy			ProductSecr	et ***** Vie	w							
Products	Product Information To	opic Categories Defin	e Feature Message Analy	sis Server-side Subscriptio	n Device Provisioning	File Uploading Co	onfigurations							
Devices	What is currently displayed	is the function definition that	Publish		_		×							
Groups	TSI Model		You are publishing	a the following products	s: S275									
Device Distribution	Enter a module name Q	Default Module	Published products will tra	nsition from the development stage	to either the production stage or	implementation stage.	Ś							
IoT Twin Engine	Default Markula	Feature Type	Please confirm that all produc	t information and device features m	neet the prerequisites for publishin	g:		Data Defin	ition		Actions			
Message Forwarding 🛛 🗸	Delauit module	Properties	Step 1 Chec delet	k whether the product informa te the information after the pro	ition is correct. You cannot me duct is published.	odify or Confirm	ned 📀	Value Ran	je: 0 ~ 100		View			
Maintenance V		Properties	Make Stop 2	e sure that all features of the de	evice have been debugged. A	fter the	nad 💽	Value Ran	je: 0 ~ 100		View			
Simulation		Properties	upgr	ade.	incurry the reactives through t			Value Ran	je: 0 ~ 20		View			
Documentation and Tools		Properties	Step 3 Make	e sure that the product is ready tches.	r for publishing and can be de	eployed Confirm	ned 🤡	Value Ran	je: 0 ~ 20		View			
		Properties				Publish	Cancel	Value Ranj	ie: 0 ~ 40		View			
		Properties	DO3 Custom	D	03	Boolean		Boolean vi 0 - 断开 1 - 闭合	lue:		View			2
								Berlinson						



6, RTU configuration

Fill in the parameters, then click write to save the parameters.



Output Settings	Cellular Network Se	ettings 🗙							
Relay Settings	BeiLa	i Cloud V3.0	BeiLai Cloud V2.0(Modbus)	BeiLai Cloud V2.0(MQTT)	Huawei Cloud	Ali Cloud	Other		
Access Control Settings	Methods	Ali Cloud	~		Server 1 IP/DNS	mqtt.dtuip.com	_	(Max60)	
Input Settings	Connection	ТСР	~		Port	1883	(0-65535)		
OI Settings	APN			(Max60)	Server 2 IP/DNS			(Max60)	
OI Alarm Settings	APN username			(Max60)	Port		(0-65535)		
O Al Settings	APN password			(Max60)	Heartbeat time	60	(10-65535 sec)		
O AI Alarm Settings					Resend times.	3	(1-9)		
Timer Settings				Reconnection time w	hen the server has no data.	300	(120-65535 sec)		
Hour Timer Periodic Timer Logic Trigger Logic Trigger RS485 Settings Serial Port Settings Slave Information Slave Mapping Table Mapped Register Data	Authentica Product pr Device nar Device prin Publishing cyc MQTT data n	tio Device key ive ne vat le(s)) etransm Enab	✓ (10-65535₺9) (10-65535₺9) ole/Disable]					
Cloud Platform Settings	Click the button				necting to the cloud	R	ead	Write	

7, Check the status of the device

E C-J Alibaba Cloud		Q Search	Expenses ICP Enterprise Support Tickets 🔂 🔄	Å Ħ ♀ ⑦ EN Mair
← 公共实例	IoT Platform / Maintenance / Online Debug			
Instance Details	Online Debug			
Devices \checkmark	Select device: S275 V S275 V			
Message Forwarding \sim	Online debugging only supports debugging real equipment, please use X Device simulator	Real-time Logs		Auto-Refresh 🌔 🤇
Maintenance ^	virtuai equipment deougging	Time Content		
Real-time Monitoring	Property Debugging Service Calls Remote Login			
Dashboard				
Device Log				
Online Debug				
Secure Tunnel				
Remote Config				
OTA Update				
Tasks	The device is offline. Make sure that the device is enabled and connected before			
Event Response	debugging.		No data available.	
Security Center \sim	Refresh View TSL Model			
Simulation				
Documentation and Tools				

7.5 Other IoT Server

S27X supports custom cloud platform configuration, which supports MODBUS RTU, MOBUDS TCP, and MQTT protocols.

The data format of the custom MQTT protocol is the same as the data format of the MQTT of the BLIIoT Cloud V2.0 platform.

The Modbus RTU and Modbus TCP protocols are standard Modbus protocols.



out Settings	Cellular Network S	ettings 🗙						
Relay Settings	BeiLa	i Cloud V3.0	BeiLai Cloud V2.0(Modbus)	BeiLai Cloud V2.0(MQTT)	Huawei Cloud	Ali Cloud	Other]
Access Control Settings	Methods	Ali Cloud	~		Server 1 IP/DNS	nqtt.dtuip.com		(Max60)
t Settings	Connection	ТСР	~		Port 18	883 (0-65535)	
DI Settings	ΔΡΝ			(Max60)	Server 2 IP/DNS			(Max60)
DI Alarm Settings	APN username			(Max60)	Port	(0-65535)	
AI Settings	APN parsword			(Max60)	Heartbeat time 60	0 ((10-65535 sec)	
Al Alarm Settings	APIN password			(Waxoo)	Resend times. 3	~ ((1-9)	
r Settings				Reconnection time whe	n the server has no data. 30	00 ((120-65535 sec)	
Hour Timer					MQTT Settings			
Periodic Timer	Login Msg	ASCII ~		(Max60) Subscribe			
Trigger	Login ACK Msg	ASCII ~		(Max60) Public			
Logic Trigger	Logout Msg	ASCII v		(Max60) MQTT Device ID			
5 Settings	Heartbeat Msg	ASCII ~	Q	(Max60) MQTT username	e MQTT		
Serial Port Settings	Heartbeat ACK M	ASCII ~	A	(Max60) MQTT password	d MQTTPW	_	
Information	Login Msg policy				Publish interval (s)	10	(10-65535秒)	
Slave Mapping Table	At login		~			MQTT data retrans	smission 🗌 Enable	e/Disable
Mapped Register Data					Note: This setting is	only required whe	n using the MQTT p	protocol.
Platform Settings	Click the button	or check the "			cting to the cloud	Read	V	Write
Cellular Network Settings								
Celiular Network Setungs				D. P. L. Ward, S. M. L. M.	and the second second second			

8 Register

8.1 Device Register Address

1) Read and Write, Holding Coil (Function Code 01, Function Code 05, Function Code 15)

Register Address		Definition		Description
Hexadecimal	Decimal	Demition	Data Type	Description
0	0	DO0	Bool	
1	1	DO1	Bool	• 1: Relay close
2	2	DO2	Bool	• 0: Relay open
3	3	DO4	Bool	

2) Read, Input Coil (Function Code 02: Read Coil)

Register Address		Definition	Dete Turne	Description
Hexadecimal	Decimal	Demition	Data Type	Description
0	0	DIO	Bool	Dry contact
1	1	DI1	Bool	Short circuit: Logic 1
2	2	DI2	Bool	Open circuit: Logic 0
3	3	DI3	Bool	
4	4	DI4	Bool	Wet contact



5	5	DI5	Bool	0-0.5V: Logic 1
6	6	DI6	Bool	3-30V: Logic 0
7	7	DI7	Bool	

3) Read, Input Register (Function Code 04: Read Input Register)

Register Address		Definition	Dete Turne	Description
Hexadecimal	Decimal	Definition	Data Type	Description
0	0	AIO	32bit int	Y=X/100
2	2	AI1	32bit int	Y=X/100
4	4	AI2	32bit int	Y=X/100
6	6	AI3	32bit int	Y=X/100
8	8	AI4	32bit int	Y=X/100
Α	10	AI5	32bit int	Y=X/100
C-D	12-13	Unavailable		
E	14	Voltage	16bit unint	Y=X/100
F-17	15-23	Unavailable		
18	24	Temperature	16bit int	Y=X/100
19	25	Humidity	16bit int	Y=X/100
10	20		20hit uint	Enable when DIN0 as
	20			counter mode
10	28		22bit uint	Enable when DIN1 as
	20			counter mode
16	30	DI2 count value	32bit uint	Enable when DIN2 as
	50			counter mode
20	32	DI3 count value	32bit uint	Enable when DIN3 as
20	32	LIS COUNT VAIUE	J∠DIL UINL	counter mode

In the description, each variable is defined as follows:

Y: True value

X: The value stored in the register

"Y=X/100" means: "real value = the value stored in the current register/100"

4) Read and Write, Holding Register (Function Code 03, Function Code 06, Function Code 16)

Register Address		Definition	Dete Turne	Description
Hexadecimal	Decimal	Demnition	Data Type	Description
5A(bit0)	90(bit0)	DI0 count clear	Bool	Write 1 to clear DI0 count
5A(bit1)	90(bit1)	DI1 count clear	Bool	Write 1 to clear DI1 count
5A(bit2)	90(bit2)	DI2 count clear	Bool	Write 1 to clear DI2 count
5A(bit3)	90(bit3)	DI3 count clear	Bool	Write 1 to clear DI3 count



4000	5000	DIO accentication	32bit uint	Enable when DIN0 as
1300	5000	Dio count value		counter mode
138A	5002	DI1 count value	20hit uint	Enable when DIN1 as
				counter mode
138C	5004	DI2 count value	32bit uint	Enable when DIN2 as
				counter mode
138E	5006	DI3 count value	32bit uint	Enable when DIN3 as
				counter mode

Device I/O data point read and write flag

Data Point	Flag	Туре	Description
DO	DOx	Switcher	0 is open, 1 is closed
DI	DIx	Switcher	0 is open, 1 is closed
AI	Alx	Value	True value = original value
Temperature	TEMP	Value	True value = original value
Humidity	НИМІ	Value	True value = original value
External power voltage	EXTPWR	Value	True value = original value
DIN0 counter	COUNT	Value	True value = original value
DIN1counter	COUNT1	Value	True value = original value
DIN2 counter	COUNT2	Value	True value = original value
DIN3counter	COUNT3	Value	True value = original value

Note:

"DOx": DO0, DO1, DO2, DO3

"DIx": DI0, DI1, DI2, DI3, DI4, DI5, DI6, DI7

"Alx": AI0, AI1, AI2, AI3, AI4, AI5

8.2 Mapping Register

1) Holding Coil (Function Code 01, Function Code 05, Function Code 15)

Register Address		Definition		Decemintien
Hexadecimal	Decimal	Demition	Data Type	Description
40	64	Bool 64	Bool	Boolean type, slave
41	65	Bool 65	Bool	mapping address, can
42	66	Bool 66	Bool	mapping slave input coil
			Bool	and holding coil status.
			Bool	Total 64



|--|

2) 16 Bit Slave Register: Read and Write, Holding Register, Function Code 03, 06, 16

Register Address		Definition	Doto Turno	Description
Hexadecimal	Decimal	Demilion	Data Type	Description
4E 20	20000	16bit data 20000		According to mapping
4E 21	20001	16bit data 20001		rules set via configuration
4E 22	20002	16bit data 20002	Sort AB, its	software, this address will
			data type	sort slave mapping data
			according to	to AB, stock in this
			slave	address, for cloud
			mapping	reading together, can
4E 9F	20127	16bit data 20127	data type	mapping slave input and
				holding register.
				Total 128

3) 32 Bit Slave Register: Read and Write, Holding Register, Function Code 03, 06, 16

Register Address		Definition	DIT	Description
Hexadecimal	Decimal	Definition	Data Type	Description
4E A0	20128	32bit data 20128		According to mapping
4E A2	20130	32bit data 20130		rules set via
4E A4	20132	32bit data 20132	Sort ABCD, its data type according to slave mapping data type	configuration software, this address will sort
				slave mapping data to
				ABCD, stock in this
				address, for cloud reading together, can
4F 1E	20254	32bit data 20254		mapping slave input and holding register.
				Total 64

4) 64 Bit Slave Register: Read and Write, Holding Register, Function Code 03, 06, 16

Register Address		Definition	Dete Turne	Description
Hexadecimal	Decimal	Definition	Data Type	Description
4F 20	20256	64bit data 20256	Sort	According to mapping
4F 24	20260	64bit data 20260	ABCDEFGH	rules set via
4F 28	20264	64bit data 20264	, its data	configuration software,



			type	this address will sort
			according to	slave mapping data to
	•••		slave	ABCDEFGH, stock in
			mapping	this address, for cloud
			data type	reading together, can
50 1C	20508	64bit data 20508		mapping slave input
				and holding register.
				Total 64

MQTT identifier of the mapping register is unified as "REG" + the corresponding value For example: Slave Boolean 64, MQTT ID is REG64, 16-bit 20000 ID is REG20000.

9 BLRMS

9.1 Register a BLRMS account

BLRMS Address: my-rtu.com Register a BLRMS account then log in.

▲ 不安全 my-rtu.com/user/login					A® t≩ CD t≅
● 语言~					
	BeiLa	ai Remote M	lanagement Sy	stem	
			<u> </u>		
		A Account			
		the Password	ø		
		© Code	404		
		Auto Login	Register Forgot Password		
			Login		
			Login		

A token will be automatically generated in the BLRMS.

The token is a unique identification number for each account to identify the user. Every user under the device need to use the same Token. Click "Device Management" - "Token Key" to get the token.



😂 BLRMS	₩ V2.01		۹	Welcome, KAMISAMALZ G Log out
습 Home	Home Token Key Devic	tes		
器 Device Managem ^				
Token Key	🕹 Export			
Groups	Selected 0 Item Empty			
Devices		Token	User	Operation
Logs	G 1	DD502FD7C95D44848ECC6842AA56FD85	KAMISAMALZ	Copy Delete
			1-1 Tota	al 1 Article < 1 > 20 Article/Page >
		Copyright© 2023 Shenzhen Beilai Technology Co.,Ltd V3.0	00.221209	

9.2 Remote configuration

Choose connection mode, fill in the BLRMS URL, Port, and Token key, then click write in.

BLRMS address: 118.31.57.219, port 1883.

272-RTU Cellular IoT RTU Configuration Software V	
ad Config. File Export config. file Resc Parameter Settings Other Settings Alarm Numbers Output Settings Access Control Settings Access Control Settings DI Settings DI Settings	t
O I Alarm Settings Al Settings Al Alarm Settings Timer Settings Hour Timer Periodic Timer	Read Write In Remote config connection modes:: 1. OffNo remote config function 1. OffNo remote config function 2. Within one hourDevice can use remote config function for 1 hour after turning on. 3. Always connectedDevice can always use remote config function.

9.3 Remote management

Open the configuration software and click the BLRMS button(remote operation requires the device in operation mode and SIM card).



[English	BLRMS
Select		
COM1 ~	Refresh	
Password(Default:1234)		

Fill in the Server IP: 118.31.57.219, port 8080. Then fill in the account password of the BLRMS and click "Get device". All the devices applicable to the configuration software under this account will appear at the Online Device.

	rver	118.31.57.219	Port	8080	Get devices
rname 🔟 Password ********* Choose	ername	17	 Password	****	Choose

Device name defaults to the IMEI serial code. If user filled in Device Description, then the device

name is the device description.

asic information			
Device ID 1 (1~247)	Model No. S271-RTU	Version 3EA50]
Device Description: 测试S271-380		IMEI 868998036667380	Read
Add timestamp to alarm SMS	Arm Automatically when power on.		Save
Add timestamp to alarm SNIS	Arm Automatically when power on.		S

After selecting the correct device, click choose to connect. If the connection failed, please confirm that the device is in operation mode and the SIM card communication is normal and the device state is online; the offline state may be caused by delay, please wait a while to get the device again. The port COM option becomes gray when successful connection. Click next to start remote configuration.

10 Upgrade

Firmware of this device can be upgraded through USB, please contact BLIIoT sales person if you need to upgrade the firmware.



11 Warranty Term

1) This equipment will be repaired free of charge for any material or quality problems within one year from the date of purchase.

2) This one-year warranty does not cover any product failure caused by man-made damage, improper operation, etc.

12 Technical Support

Shenzhen Beilai Technology Co., Ltd. Website: https://www.bliiot.com