



IoT Controller

Featuring LoRaWAN[®]

UC300

User Guide



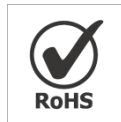
Safety Precautions

Milesight will not shoulder responsibility for any loss or damage resulting from not following the instructions of this operating guide.

- ❖ The device must not be remodeled in any way.
- ❖ Do not place the device close to objects with naked flames.
- ❖ Do not place the device where the temperature is below/above the operating range.
- ❖ Power off the device when installing or wirings.
- ❖ Make sure electronic components do not drop out of the enclosure while opening.
- ❖ The device must never be subjected to shocks or impacts.

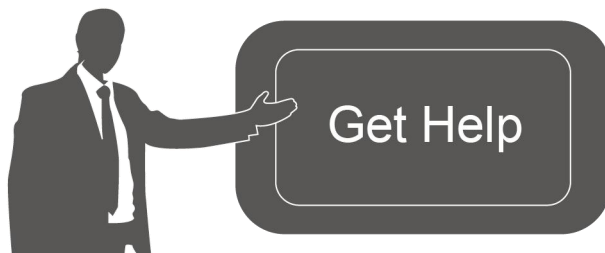
Declaration of Conformity

UC300 is in conformity with the essential requirements and other relevant provisions of the CE, FCC, and RoHS.



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For assistance, please contact

Milesight technical support:

Email: iot.support@milesight.com

Tel: 86-592-5085280

Fax: 86-592-5023065

Address: Building C09, Software Park III,
Xiamen 361024, China

Revision History

Date	Doc Version	Description
Mar. 17, 2022	V 1.0	Initial version
Nov. 2, 2023	V 1.1	<ol style="list-style-type: none"> 1. Support to add variables on IF custom message and report periodic packet action; 2. Support to set pulse filter rate; 3. Support serial baud rate as 14400.

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1. Product Introduction

1.1 Overview

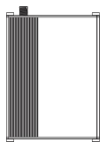
UC300 is an IoT controller used for remote control and data acquisition from multiple sensors. It contains different I/O interfaces such as analog inputs, digital inputs, relay outputs, serial ports and so on, which support remote device data transmission and control via LoRaWAN[®]. Besides, UC300 supports multiple trigger conditions and actions which works autonomously even when the network drops.

1.2 Features

- Easy to connect with diverse wired sensors through DI/DO/AI/PT100/RS232/RS485 interfaces
- Multiple triggering conditions and actions
- Embedded watchdog for work stability
- Industrial metal case design with wide operating temperature range
- Compliant with standard LoRaWAN[®] gateways and network servers
- Quick and easy management with Milesight IoT Cloud solution

2. Hardware Introduction

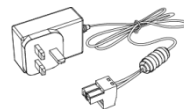
2.1 Packing List



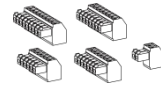
1 ×
UC300 Device



1 ×
LoRaWAN[®] Antenna



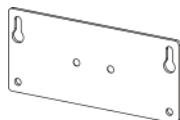
1 ×
Power Adapter



5 ×
Terminal Blocks



1 × DIN Rail
Mounting Clip



1 × Wall Mounting
Bracket



4 × Wall Mounting
Kits



4 × Fixing Screws



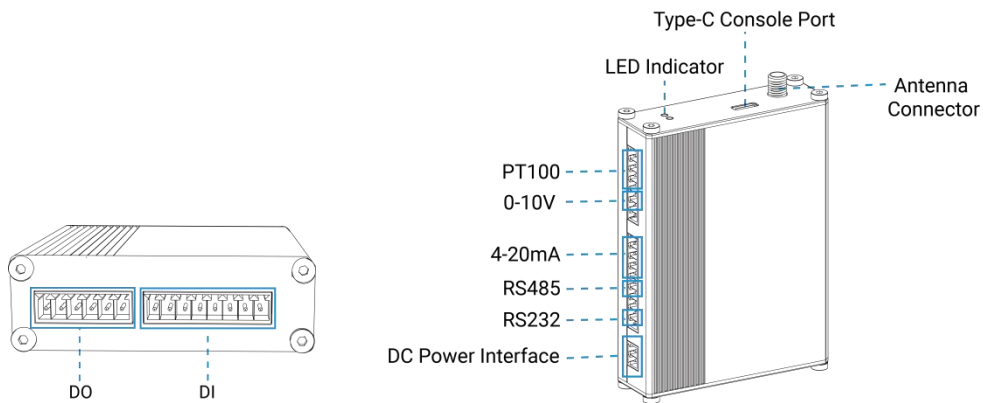
1 ×
Quick Start Guide



1 × Warranty
Card

! If any of the above items is missing or damaged, please contact your sales representative.

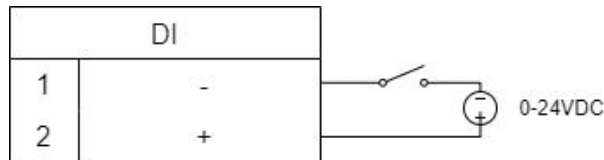
2.2 Hardware Overview



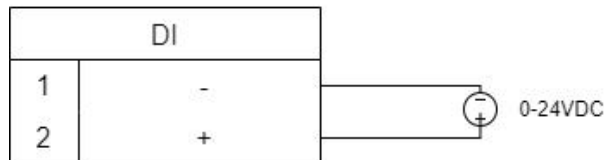
2.3 Wiring Examples

(1) Digital input wiring:

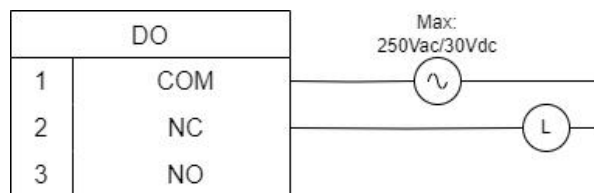
Dry Contact:



Wet Contact:

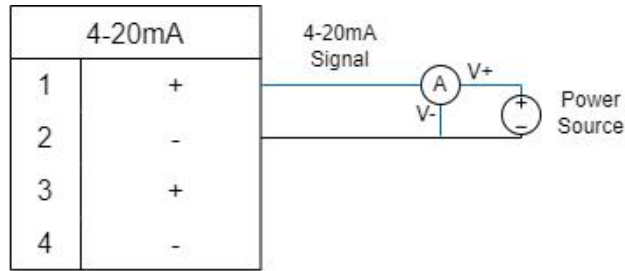


(2) Relay output wiring:

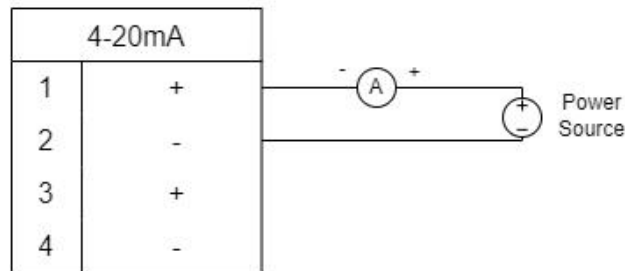


(3) 4-20mA wiring:

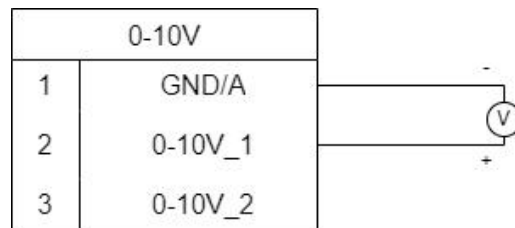
3-Wire:



2-Wire:

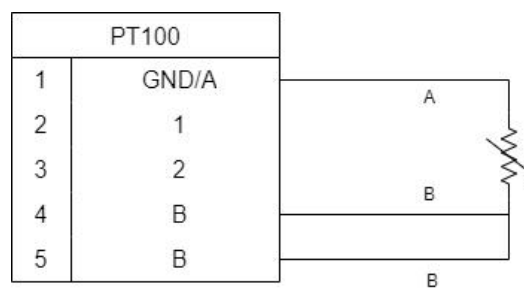


(4) 0-10V wiring:

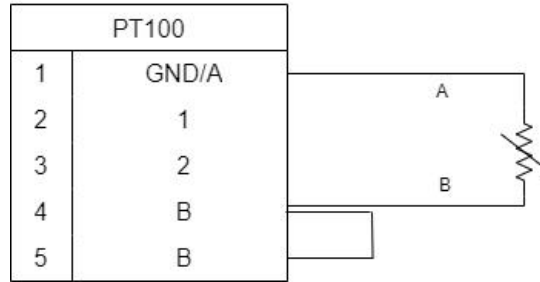


(5) PT100 wiring:

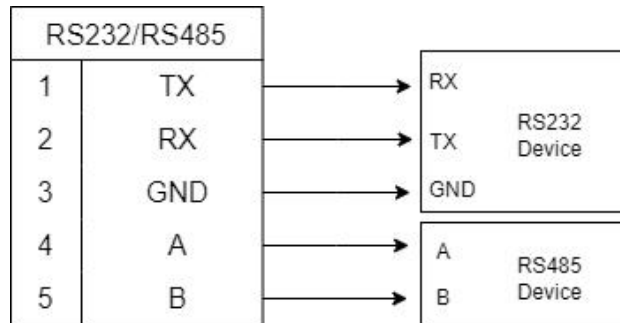
3-Wire:



2-Wire:



(6) RS232/RS485 wiring:



RS485 Terminal Resistor (Internal)¹:

DIP Switch	Description
1 on 2 off 3 off	Add 120 Ω resistor between A and B
1 off 2 on 3 off	Add pull-down resistor on B
1 off 2 off 3 on	Add pull-up resistor on A

2.4 LED Indicators

LED	Indication	Status	Description
SYS	System Status	Static On	System works
		Slowly Blinks	Fail to acquire data from data interfaces
		Static On	System error
ACT	Network Status	Off	Not join to network
		Blinks as Requests	Send join network requests
		Blinks Twice → Static On	Succeed to join to network
		Blinks Once	Succeed to send uplinks
		Blinks Twice	Fail to send uplinks
Blinks Twice	Receive downlinks		

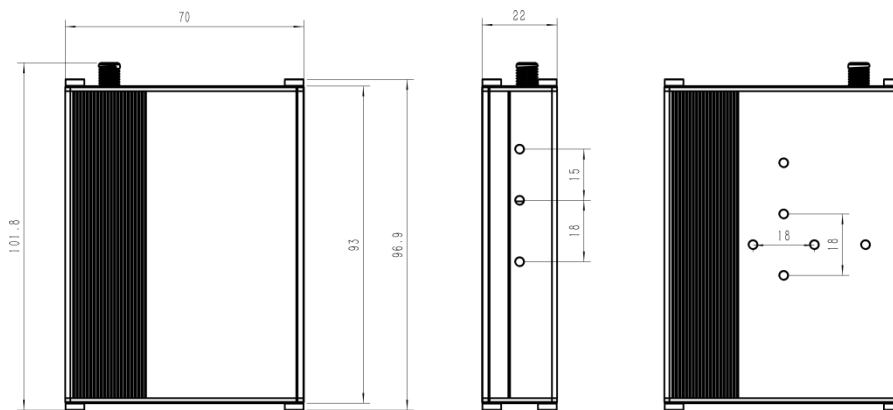
2.5 Reset Button

There is a reset button inside the device.

¹ Add resistors to avoid data-corrupting reflections if RS485 data rate is high or cable length is long.

Function	Description	
	SYS LED	Action
Reset	Static Green	Press and hold the reset button for more than 10 seconds.
	Static Green → Rapidly Blinking	Release the button and wait.
	Off → Static Green	The device resets to factory default.

2.6 Dimensions (mm)

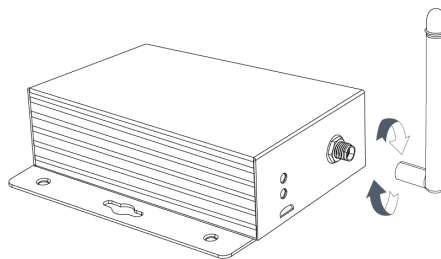


3. Hardware Installation

3.1 Antenna Installation

Rotate the antenna into the antenna connector accordingly.

The external antenna should be installed vertically always on a site with a good signal.

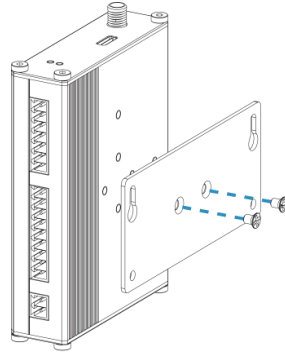


3.2 Device Installation

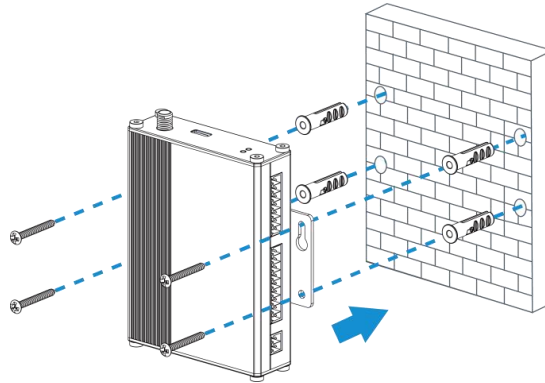
UC300 device can be placed on a desktop or mounted to a wall or a DIN rail.

3.3.1 Wall Mounting

1. Fix the wall mounting bracket to the device with 2 screws.

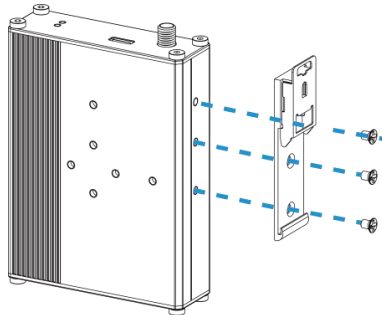


2. Drill 4 holes on the wall according to the bracket, then fix the wall plugs into the wall.
3. Fix the device to the wall plugs with screws. When installation, it's suggested to fix the two screws on the top at first.

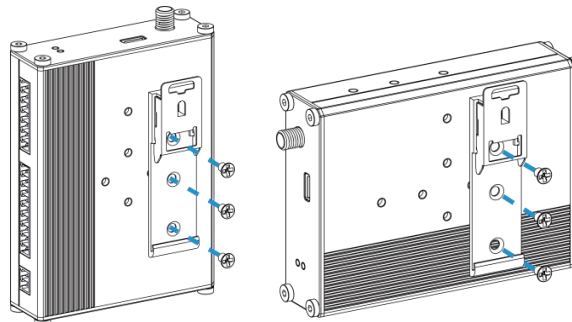


3.3.2 DIN Rail Mounting

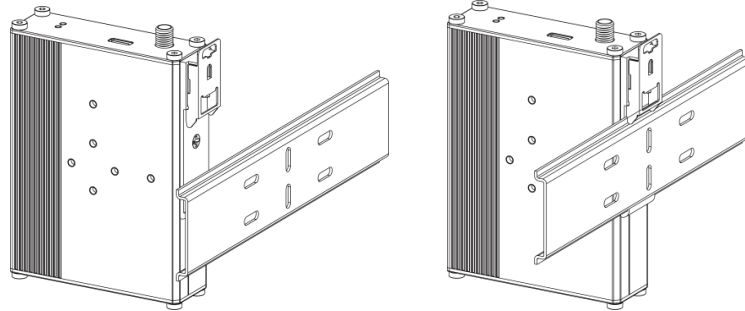
1. Fix the mounting clip to the device with 3 screws.



You can also try below installation methods:



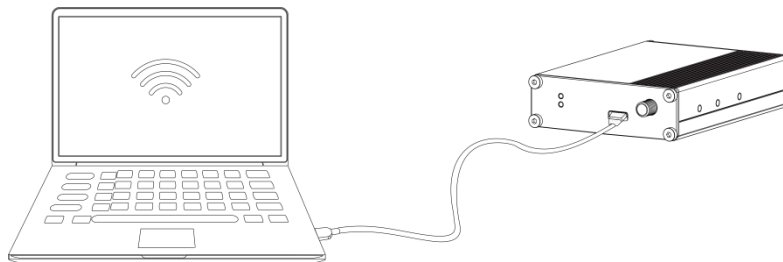
2. Hang the device to the DIN rail. The width of DIN rail is 3.5cm.



4. Operation Guide

4.1 Log in the ToolBox

1. Download ToolBox software from Milesight IoT website.
2. Power on the UC300 device, then connect it to computer via type-C port.



3. Open the ToolBox and select type as **General**, then click password to log in ToolBox. (Default password: 123456)

Type	General
Serial port	COM4
Login password	
Baud rate	115200
Data bits	8
Parity bits	None
Stop bits	1

Save Cancel

4. After logging in the ToolBox, you can change device settings.

Status >

Model:	UC300-915M
Serial Number:	6445C19252730004
Device EUI:	24e124445c192527
Firmware Version:	01.03-a1
Hardware Version:	1.1
Join Status:	De-Activate
RSSI/SNR:	-105/-17
Channel Mask:	00ff0000000000ff00
Uplink Frame-counter:	0
Downlink Frame-counter:	0
Device Time:	2023-11-07 20:12:55

[Sync](#)

4.2 LoRaWAN Settings

LoRaWAN settings is used for configuring the transmission parameters in LoRaWAN® network.

Basic LoRaWAN Settings:

Go to **LoRaWAN Settings > Basic** to configure join type, App EUI, App Key and other information. You can also keep all settings by default.

Device EUI	<input type="text" value="24E124445D112669"/>
App EUI	<input type="text" value="24E124C0002A0001"/>
Application Port	<input type="text" value="85"/>
Join Type	<input type="text" value="OTAA"/>
LoRaWAN Version	<input type="text" value="V1.0.2"/>
Class Type	<input type="text" value="Class C"/>
Application Key	<input type="text" value="*****"/>
RX2 Data Rate	<input type="text" value="DR0 (SF12, 125 kHz)"/>
RX2 Frequency	<input type="text" value="505300000"/>
Spread Factor	<input type="text" value="SF12-DR0"/>
Confirmed Mode	<input type="checkbox"/>
Rejoin Mode	<input checked="" type="checkbox"/>
Set the number of packets sent	<input type="text" value="32"/> packets
TXPower	<input type="text" value="TXPower0-19.15 dBm"/>

Parameters	Description
Device EUI	Unique ID of the device on the label.
App EUI	Default App EUI is 24E124C0002A0001.
Application Port	The port used for sending and receiving data (RS232 data excluded), default port is 85.
Join Type	OTAA and ABP modes are available.
LoRaWAN Version	V1.0.2, V1.0.3 are available.
Class Type	It's fixed as Class C.
Application Key	Appkey for OTAA mode, default is 5572404C696E6B4C6F52613230313823.
Device Address	DevAddr for ABP mode, default is the 5 th to 12 th digits of SN.
Network Session Key	Nwkskey for ABP mode, default is 5572404C696E6B4C6F52613230313823.
Application Session Key	Appskey for ABP mode, default is 5572404C696E6B4C6F52613230313823.
RX2 Data Rate	RX2 data rate to receive downlinks or send/receive Milesight D2D commands.
RX2 Frequency	RX2 frequency to receive downlinks or send/receive Milesight D2D commands. Unit: Hz
Spread Factor	If ADR is disabled, the device will send data via this spread factor.

Confirmed Mode	If the device does not receive ACK packet from network server, it will resend data once.
Rejoin Mode	Reporting interval \leq 35 mins: the device will send a specific number of LinkCheckReq MAC packets to the network server every reporting interval or every double reporting interval to validate connectivity; If there is no response, the device will re-join the network. Reporting interval $>$ 35 mins: the device will send a specific number of LinkCheckReq MAC packets to the network server every reporting interval to validate connectivity; If there is no response, the device will re-join the network.
Set the number of packets sent	When rejoin mode is enabled, set the number of LinkCheckReq packets sent. Note: the actual sending number is Set the number of packet sent + 1 .
ADR Mode	Allow network server to adjust datarate of the device.
Tx Power	Transmit power of device.

Note:

- 1) Please contact sales for device EUI list if there are many units.
- 2) Please contact sales if you need random App keys before purchasing.
- 3) Select OTAA mode if you use Milesight IoT Cloud to manage devices.
- 4) Only OTAA mode supports rejoin mode.

LoRaWAN Frequency Settings:

Go to **LoRaWAN Settings > Channel** to select supported frequency and select channels to send uplinks. Make sure the channels match the LoRaWAN® gateway.

Basic
Channel

Support Frequency : EU868

	Index	Frequency/MHz	Max Datarate	Min Datarate
<input checked="" type="checkbox"/>	0	<input style="width: 80px;" type="text" value="868.1"/>	5-SF7BW125	0-SF12BW125
<input checked="" type="checkbox"/>	1	<input style="width: 80px;" type="text" value="868.3"/>	5-SF7BW125	0-SF12BW125
<input checked="" type="checkbox"/>	2	<input style="width: 80px;" type="text" value="868.5"/>	5-SF7BW125	0-SF12BW125
<input type="checkbox"/>	3	<input style="width: 80px;" type="text" value="0"/>	5-SF7BW125	0-SF12BW125
<input type="checkbox"/>	4	<input style="width: 80px;" type="text" value="0"/>	5-SF7BW125	0-SF12BW125
<input type="checkbox"/>	5	<input style="width: 80px;" type="text" value="0"/>	5-SF7BW125	0-SF12BW125
<input type="checkbox"/>	6	<input style="width: 80px;" type="text" value="0"/>	5-SF7BW125	0-SF12BW125
<input type="checkbox"/>	7	<input style="width: 80px;" type="text" value="0"/>	5-SF7BW125	0-SF12BW125

If frequency is one of CN470/AU915/US915, you can enter the index of the channel that you want to enable in the input box, making them separated by commas.

Examples:

1, 40: Enabling Channel 1 and Channel 40

1-40: Enabling Channel 1 to Channel 40

1-40, 60: Enabling Channel 1 to Channel 40 and Channel 60

All: Enabling all channels

Null: Indicates that all channels are disabled

Basic
Channel

Supported Frequency : US915

? Enabled Channel Index:

Channel Index	Frequency/MHz	Channel Spacing/MHz	BW/kHz
0 - 15	902.3 - 905.3	0.2	125
16 - 31	905.5 - 908.5	0.2	125
32 - 47	908.7 - 911.7	0.2	125
48 - 63	911.9 - 914.9	0.2	125
64 - 71	903.0 - 914.2	1.6	500

Note:
 64 channels numbered 0 to 63 utilizing LoRa 125 kHz BW starting at 902.3 MHz and incrementing linearly by 0.2 MHz to 914.9
 8 channels numbered 64 to 71 utilizing LoRa 500 kHz BW starting at 903.0 MHz and incrementing linearly by 1.6 MHz to 914.2

Save

4.3 Data Interface Settings

4.3.1 Basic Settings

Device ID

Reporting Interval(min)

D2D Key

Change Password

Parameters	Description
Device ID	Show the SN of the device.
Reporting Interval	Reporting interval of transmitting data to network server.Default: 20mins,

	range: 1~1080 mins Note: RS232 transmission will not follow the reporting interval.
D2D Key	Set a unique key the same as the setting in Milesight D2D controller or agent device. See details on Milesight D2D chapter.
Change Password	Change the password to login ToolBox.

4.3.2 Digital Input/Pulse Counter

UC300 supports 4 digital inputs and every input can work as either digital input mode to detect high/low level or pulse counter to record counting values. When working as digital input, UC300 will upload the data according to reporting interval or when status changes.

Interface Name: DI_1

Enable:

Interface Type: Digital Input

Status: ✔ Fetch

Interface Name: DI_2

Enable:

Interface Type: Counter

Digital Filter: ?

Filtering Rate: 65280 ms

Counter Values: ✔ Refresh Start Clear

Modify the count values:

Parameters	Description
Enable	Enable digital input to detect status and upload the data.
Digital Input	
Fetch	Click to get the current input status.
Counter	
Digital Filter	Enable to filter the pulse counter values to reduce false triggering.
Filtering Rate	Set to filter the pulse counter below this rate.
Refresh	Refresh to get latest counter values.
Start/Stop	Click to start/stop counting. Note that UC300 will send non-changeable counting values if you do not click Start.

Clear	Count the value from 0.
Modify the count values	Set the initial counting value.

4.3.3 Digital Output

UC300 supports 2 digital outputs to control the devices.

Interface Name	DO_1	
Enable	<input checked="" type="checkbox"/>	
When Power is Restored, DO	Return to Previous Working State	
Status	Closed <input type="text"/> ✔ Fetch Switch	

Interface Name	DO_2	
Enable	<input checked="" type="checkbox"/>	
When Power is Restored, DO	Turn to Normally Closed	
Status	Open <input type="text"/> ✔ Fetch Switch	

Parameters	Description
Enable	Enable the digital output to control the device and upload changed status.
When Power is Restored, DO	After the device power is restored, the DO status will return to normally closed or normally open according to this parameter.
Fetch	Click to get the current output status.
Switch	Click to change the DO status.

4.3.4 RS485

UC300 has one RS485 port to support Modbus RTU or transparent device connection .

1. Connect RS485 device to RS485 port.
2. Go to **General > RS485** to enable RS485 and configure serial port settings. Serial port settings should be the **same** as the RS485 terminal devices.


Enable	<input checked="" type="checkbox"/>
Stop Bit	1 bits
Data Bit	8 bits
Parity	Even
Baud Rate	9600
Execution Interval (ms)	50
Max Resp Time (ms)	500
Max Retry Times	3
Modbus RS485 bridge LoRaWAN	<input checked="" type="checkbox"/>
Pass-through Mode	Active Pass-through
Port	0

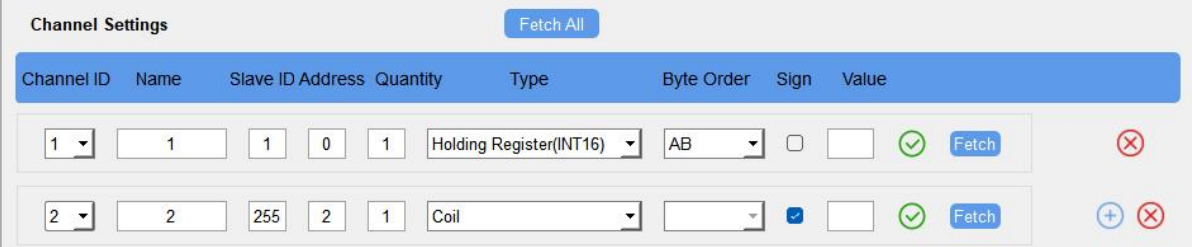
Parameters	Description
Enable	Allow the device to collect RS485 data and upload the data.
Stop Bit	1 bit/2 bit are available.
Data Bit	8 bit is available.
Parity	None, Odd and Even are available.
Baud Rate	1200/2400/4800/9600/14400/19200/38400/57600/115200 are available.
Execution Interval (ms)	The execution interval between each Modbus channel command.
Max Resp Time (ms)	The maximum response time that the UC300 waits for the reply to the command. If it does not get a response after the max response time, it is determined that the command has timed out.
Max Retry Time	Set the maximum retry times after device fails to read data from RS485 terminal devices.
Modbus RS485 bridge LoRaWAN	If this mode is enabled, the device will transmit Modbus RTU commands from network server to RS485 terminal devices transparently and send Modbus reply originally back to the network server. Port: Select from 2-84, 86-223.
Pass-through Mode	Select pass-through mode when Modbus RS485 bridge LoRaWAN is enabled. Active Pass-through: network server can send any type of command to RS485 device and RS485 device can only react according to server

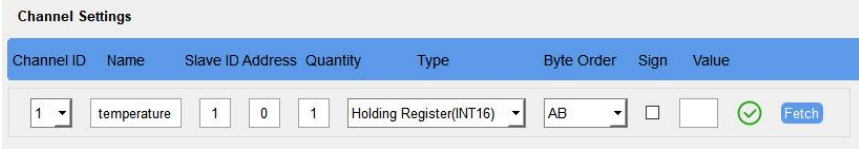
commands.

Two-way Pass-through: not only can network server send any type of command to RS485 device, but also RS485 device supports transmitting the data to the network server actively.

Note: When **Two-way Pass-through** is enabled, Modbus channels can't be used and corresponding IF-THEN command will not work.

3. Click  to add Modbus channels, then save configurations.



Parameters	Description
Channel ID	Select the channel ID you want to configure from 16 channels.
Name	Customize the name to identify every Modbus channel.
Slave ID	Set Modbus slave ID of terminal device.
Address	The starting address for reading.
Quantity	Set read how many digits from starting address. It fixes as 1.
Type	Select data type of Modbus channels.
Byte Order	Set the Modbus data reading order if you configure the type as Input register or holding register. This will affect the uplink order and for details refer to <i>UC300 LoRaWAN® Communication Protocol</i> . INT32/Float: ABCD, CDBA, BADC, DCBA INT16: AB, BA
Sign	The tick indicates that the value has a plus or minus sign.
Fetch	After click, UC300 will send Modbus read command to test if it can read correct values. Example: the device will send command as below setting: 01 03 00 00 00 01 84 0A 
Fetch All	Click to fetch all configured channels.

4. Click **Fetch** to check if UC300 can read correct data from terminal devices.



Note: Do not click **Fetch** frequently since response time to reply is differ for every terminal device.

4.3.5 RS232

UC300 has one RS232 interface for transparent communication. Usually it will use different tunnels from other data interfaces to communicate with server.

Enable	<input checked="" type="checkbox"/>
Baud Rate	9600
Stop Bit	1 bits
Data Bit	8 bits
Parity	None
Packet Length (byte)	256
Serial Frame Interval (ms)	100
Port	86

Parameters	Description
Baud Rate	1200/2400/4800/9600/14400/19200/38400/57600/115200 are available.
Data Bit	8 bit is available.
Stop Bit	1 bit/2 bit are available.
Parity	None, Odd and Oven are available.
Packet Length (byte)	When the device receives RS232 data up to this length, it will fragment it as a single packet and send to network server.
Serial Frame Interval (ms)	The interval that the device sends out real serial data stored in the buffer area to public network. The range is 10-65535 milliseconds. Note: data will be sent out when real serial data size reaches the preset packet size, even though it's within the serial frame interval.
Port	Send or receive RS232 data from this port, this port should different from the Application port. Range: 2-84, 86-223.

4.3.6 Analog Input/PT100

UC300 has two 4-20mA analog inputs, two 0-10V analog inputs and two PT100 inputs for analog device connection. After wirings, you can click **Fetch** to check if the value is correct.

PT100 Note:

- 1) The temperature unit in the reporting package is fixed as °C.
- 2) Please modify the command IF condition threshold settings if you change the temperature unit.

Interface Name	? 4-20mA_1
Enable	<input checked="" type="checkbox"/>
Osh	<input type="text" value="20.00"/>
Osl	<input type="text" value="4.00"/>
Unit	<input type="text" value="mA"/>
Status	<input type="text"/> ✓ Fetch

Interface Name	? 0-10V_1
Enable	<input checked="" type="checkbox"/>
Osh	<input type="text" value="10.00"/>
Osl	<input type="text" value="0.00"/>
Unit	<input type="text" value="V"/>
Status	<input type="text" value="0.00V"/> ✓ Fetch

Interface Name	PT100_1
Enable	<input checked="" type="checkbox"/>
Unit	<input type="text" value="°C"/>
Status	<input type="text"/> ✓ Fetch

4.4 IF-THEN Command

UC300 supports configuring locally IF-THEN commands to do some actions automatically even without network connection. One device can be added 16 commands at most.

1. Go to **Command** page, click **Edit** to add commands.

Settings >

[Save](#)

ID	Configuration	Edit	Delete
1	If pt100(pt100_2) is above 35.00 continued for 0s. then do_1 will be normally open in 0s and it will last for 0s .		
2			
3			

Configuration for command NO.2

If

Is continued for

Set lockout time

2. Set a IF condition based on the terminal device data or UC300 device status. Users can add at most 2 conditions in one command.

Condition	Description
Time	Set the time condition. You can sync the time manually on Status page.
Digital Input	When UC300 device detects the DI as a specific status. Is continued for: the DI changed status should last for some time. Set lockout time: after the lockout time, UC300 will detect if DI status matches the condition. 0 means this IF condition will only be detected once.
Counter	When pulse counter reaches a specific value. This only works when DI works as counter mode.
Channel/4-20m A/0-10V/PT100	When the value reaches any threshold. Is continued for: the analog value should last for some time. Set lockout time: after the lockout time, UC300 device will detect if analog value matches the condition. 0 means this IF condition will only be detected

	once.
Received a message	When UC300 device receive a specific message from server.
The Device Restarts	When the device restarts.
Received a D2D control command	When the device works as a D2D agent device to receive a D2D control command. See details on Milesight D2D chapter.

3. Set THEN action according to your request. Users can add at most 3 actions in one command.

Action	Description																
Send a custom message	<p>Send a custom message to the server. Users can add variables on the message.</p> <p>Example: PT100=\$T1</p> <p>The message will replace the "\$T1" as real temperature value. Corresponding variable names are shown as below:</p> <table border="1"> <thead> <tr> <th>Data Interface</th> <th>Variable Name</th> </tr> </thead> <tbody> <tr> <td>DI 1/2/3/4</td> <td>\$DI1, \$DI2, \$DI3, \$DI4</td> </tr> <tr> <td>Counter 1/2/3/4</td> <td>\$C1, \$C2, \$C3, \$C4</td> </tr> <tr> <td>DO 1/2</td> <td>\$DO1, \$DO2</td> </tr> <tr> <td>4-20mA 1/2</td> <td>\$A1, \$A2</td> </tr> <tr> <td>0-10V 1/2</td> <td>\$V1, \$V2</td> </tr> <tr> <td>PT100 1/2</td> <td>\$T1, \$T2</td> </tr> <tr> <td>RS485 Channel 1/2...16</td> <td>\$R01, \$R02, \$R03,\$R15, \$R16</td> </tr> </tbody> </table>	Data Interface	Variable Name	DI 1/2/3/4	\$DI1, \$DI2, \$DI3, \$DI4	Counter 1/2/3/4	\$C1, \$C2, \$C3, \$C4	DO 1/2	\$DO1, \$DO2	4-20mA 1/2	\$A1, \$A2	0-10V 1/2	\$V1, \$V2	PT100 1/2	\$T1, \$T2	RS485 Channel 1/2...16	\$R01, \$R02, \$R03,\$R15, \$R16
Data Interface	Variable Name																
DI 1/2/3/4	\$DI1, \$DI2, \$DI3, \$DI4																
Counter 1/2/3/4	\$C1, \$C2, \$C3, \$C4																
DO 1/2	\$DO1, \$DO2																
4-20mA 1/2	\$A1, \$A2																
0-10V 1/2	\$V1, \$V2																
PT100 1/2	\$T1, \$T2																
RS485 Channel 1/2...16	\$R01, \$R02, \$R03,\$R15, \$R16																
Output Trigger	<p>DO can be set to normally open/normally closed/change status.</p> <p>Delay Time: this action will trigger after a specific time;</p> <p>Duration: the output status will last for a specific time, 0 means permanent.</p>																
Restart the Device	Reboot the device.																
Report Periodic Package	Report a periodic package to network server.																
Send a D2D control command	The device works as a D2D controller device to send a D2D control command. See details on Milesight D2D chapter.																

Send a Modbus command via RS485 interface

This only works when UC300 works as D2D agent device. See details on [Milesight D2D](#) chapter.

4. After setting all commands, click **Save**.

Settings > Reboot

ID	Configuration	Edit	Delete
1	If time(local time) is Every Day at 22:10. then Send a custom message and content is 111 . then Send a custom message and content is 2222 .		
2	If digital input(DI_1) changes state(trigger on rising or falling edge) and remaining inactive for longer than 0s . then and content is 0101 .		

Save

4.5 Milesight D2D Settings

Milesight D2D protocol is developed by Milesight and used for setting up transmission among Milesight devices without gateway. When the D2D setting is enabled, UC300 can work as a Milesight D2D controller to send control commands to other devices or work as a Milesight D2D agent to receive commands to trigger the DO or RS485 devices.

1. Go to **General > Basic** page to define a unique D2D key which is the same as D2D controller or agent devices. (Default D2D Key: 5572404C696E6B4C6F52613230313823)

General >

Basic | Digital Input | Digital Output | RS485 | RS232

Device ID: 6445C19252730004

Reporting Interval(min): 10

D2D Key: *****

Change Password:

2. Go to **LoRaWAN Settings > Basic** to configure the RX2 datarate and RX2 frequency. When UC300 works as Milesight D2D controller, it will send commands as RX2 settings.

Basic	Channel
Device EUI	24E124445D112669
App EUI	24E124C0002A0001
Application Port	85
Join Type	OTAA
LoRaWAN Version	V1.0.2
Class Type	Class C
Application Key	*****
RX2 Data Rate	DR0 (SF12, 125 kHz)
RX2 Frequency	505300000

3. Go to **Command** page to set corresponding operations.

When DI triggers, UC300 can work as D2D controller to send control command to control the D2D agent device. The command should be a 2-byte hexadecimal number.

Configuration for command NO.1	
If	Digital Input
	DI 1
	goes active (rising edge-triggered)
Is continued for	0 s
<input type="checkbox"/> Set lockout time	
Then	Send a D2D control command
Content is	0001

When UC300 receives a D2D command, it can work as a D2D agent to trigger the DO, restart the device or send Modbus command to RS485 terminal devices.

If Received a D2D control command

Containing Only 4-bit hexadecimal numbers are allowed

Then Report Periodic Package

- DO_1
- DO_2
- Report Periodic Package
- Restart the device
- Send a Modbus co... RS485 interface

Configuration for command NO.1

If Received a D2D control command

Containing f001

Then DO 1

Will be normally open

Delay Time 0 s Duration 0 s

4.6 Maintenance

4.6.1 Upgrade

1. Download firmware from Milesight website to your PC.

2. Go to **Maintenance > Upgrade**, click **Browse** to import firmware and upgrade the device.

Note: Any operation on ToolBox is not allowed during upgrading, otherwise the upgrading will be interrupted, or even the device will break down.

Model:	UC300-915M
Firmware Version:	01.03
Hardware Version:	1.1
Domain:	Beijing Server
FOTA:	Up to date
Local Upgrade	<input type="text"/> Browse Upgrade

4.6.2 Backup

UC300 devices support configuration backup for easy and quick device configuration in bulk.

Backup is allowed only for devices with the same model and LoRaWAN® frequency band.

1. Go to **Maintenance > Backup and Reset**, click **Export** to save current configuration as json format backup file.
2. Click **Browse** to select backup file, then click **Import** to import the configurations.

Config Backup	Export
Config File	<input type="text"/> Browse Import
Restore Factory Defaults	Reset

4.6.3 Reset to Factory Default

Please select one of following methods to reset device:

Via Hardware: Open the case of UC300, hold on the reset button for more than 10s until SYS LED blinks.

Via ToolBox Software: Go to **Maintenance > Backup and Reset** to click **Reset**.

Upgrade Backup and Reset

Config Backup	<input type="button" value="Export"/>		
Config File	<input type="text"/>	<input type="button" value="Browse"/>	<input type="button" value="Import"/>
Restore Factory Defaults	<input type="button" value="Reset"/>		

5. Communication Protocol

Please refer to the *UC300 LoRaWAN[®] Communication Protocol*, for decoders of Milesight IoT products please click [here](#).

-END-