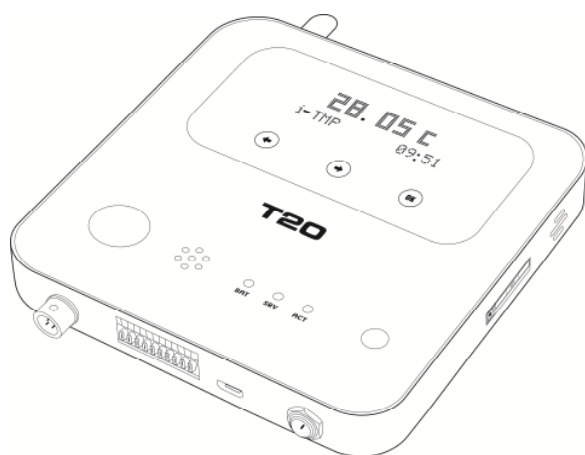


T20

User's manual



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Feature

Display

- OLED temperature humidity display
- Touch key switch menu

Data logger

- An Inside temperature($\pm 0.3^{\circ}\text{C}$) and humidity($\pm 2\text{RH}\%$) sensor
- support up to 2 temperature probe or 2 one-piece temperature&humidity probe
- 4000 temperature record-set (auto rollback)
- Flexible data logging interval (1 minute up to 24 hours)
- PC software export records via USB2.0 or Wi-Fi

Alarm

- Configurable temperature/humidity low and high level to alarm
- High-brightness red led light on panel
- Built-in alarm buzzer
- Power failure/recover alarm
- Support 2 wired inputs for alarm

Communications

- SMS | Preset 10 authorized phone numbers
Configurable alarm/recover SMS
Query current value by SMS
Control relay by SMS
Remote setting by SMS
- GPRS | TCP/IP connect 4 internet servers (IP or domain)
Http post, Cwt_IO protocol
Real-time/logging upload data
- Wi-Fi | Real-time/logging upload data
View data on APP
Control relay on APP
802.11 b/g security WEP/WPA/WPA2

Thermostat

- Inside 3 relays
- Temperature and humidity alarm/ultra high/low interlock
- Programmable timer relay action

Standard package

T20 X1

DS18B20 temperature probe (3 meter) x1 , optional one-piece temperature&humidity probe

AC/DC Adaptor x1 (INPUT: 110-240V AC OUTPUT: 12V 1.5A DC)

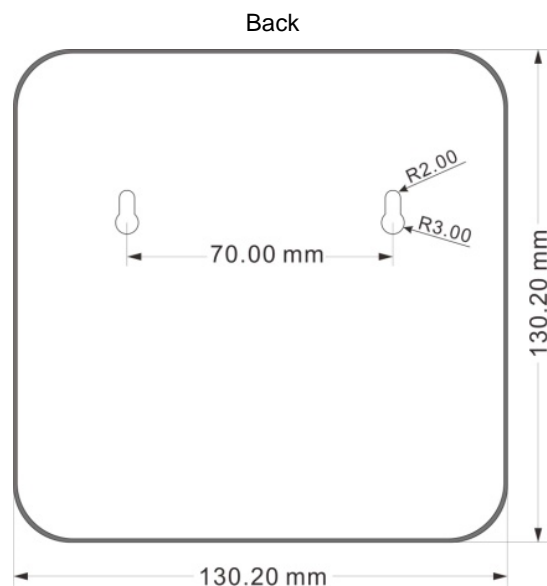
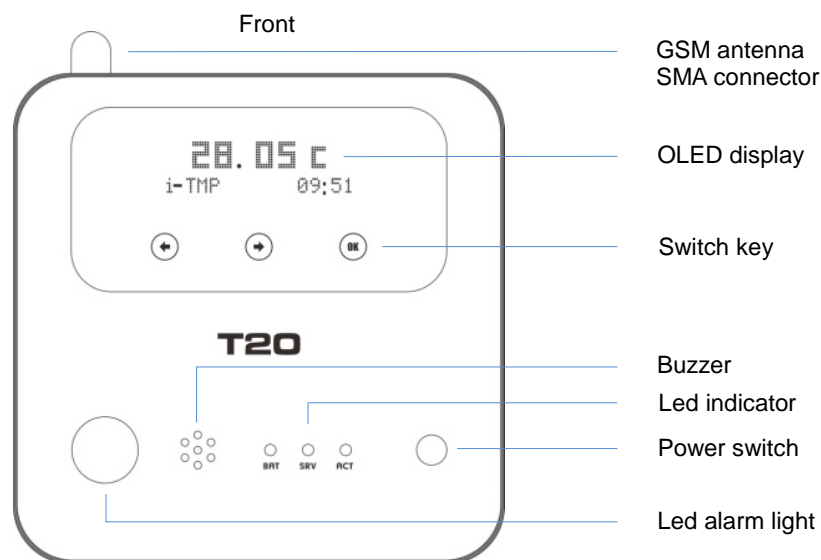
Micro USB Cable x1

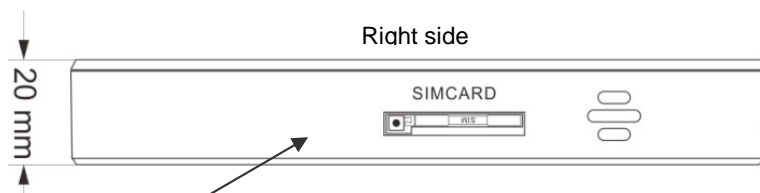
Antenna x1

Electronica feature

DC Power supply	12V DC (Standard adapter: DC 12V/1.5A)
Power consumption	12V input Max. 340mA
GSM frequency	Quad-band 900/1800/850/1900HMz
Wi-Fi	802.11 b/g security WEP/WPA/WPA2
Antenna	50 Ω SMA Antenna interface
Working temperature	-30°C ~ +70 °C
Working humidity	Relative humidity 95%
Digital Inputs	2 digital inputs (Dry contact)
Outputs	3 relay outputs (220V 2A)
one-piece probe temperature measurement range	-40°C to +80°C($\pm 0.3^{\circ}\text{C}$)
one-piece probe humidity measurement range	0% to 100%RH ($\pm 2\text{RH}\%$)
Extend temperature probe measurement range	-55°C to +125°C($\pm 0.5^{\circ}\text{C}$) (-67°F to +257°F)
Weight	265g

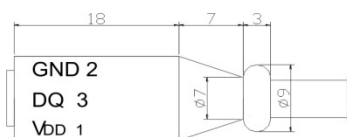
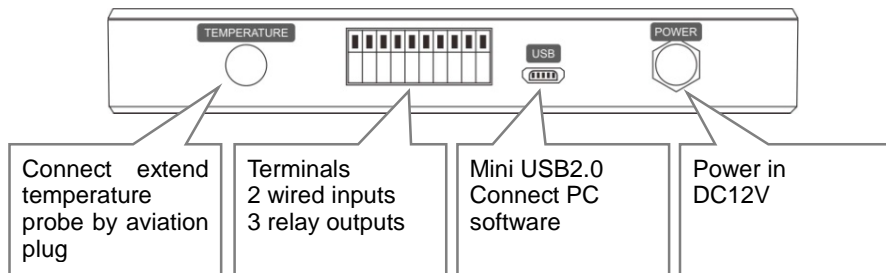
Install



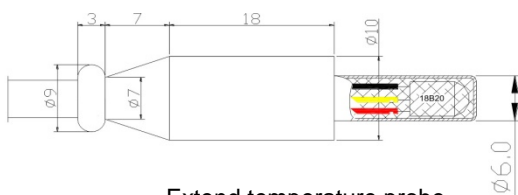


Install SIM card

Press the small yellow dot, the SIM card drawer will spring out automatically. Take out the drawer, put the SIM card in it on the slot direction and plug back the drawer.

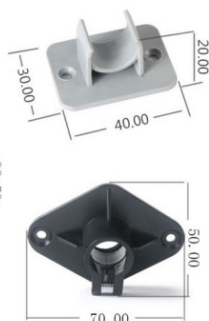
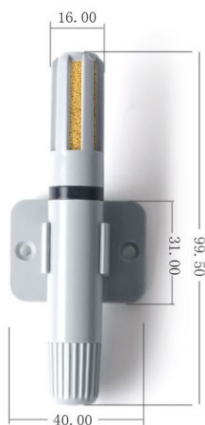


Extend temperature probe
aviation plug



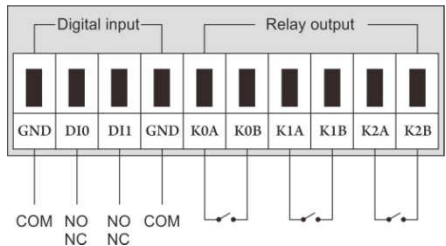
Extend temperature probe

one-piece
temperature&humidity
probe



Probe's brackets

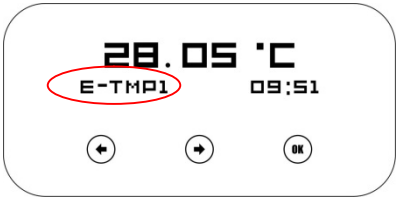
Terminals descriptions



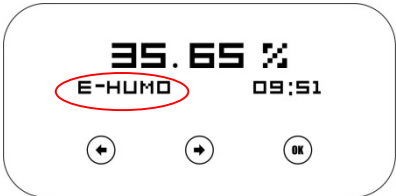
Press switch key to view every channel's value



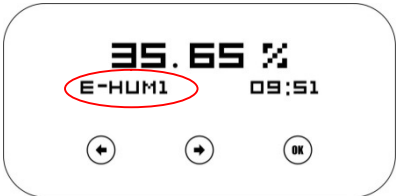
Channel 0 temperature



Channel 1 temperature



Channel 0 humidity



Channel 1 humidity

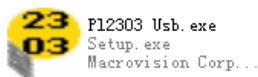
LED indicator description

Indicator	Status	Indication description
BAT	on	during interior battery is charging
SRV	Light on during handling	It will be light on when the system sends short messages and light off when the handling is over
ACT	Flicker	It will flicker periodically when the system is under operation, and the interval time is 6 sec

Setup by PC software

Connect PC software

Step1: Run the Driver of pl2303; follow the application wizard to finish the installation. Then restart the computer to ensure the driver run.

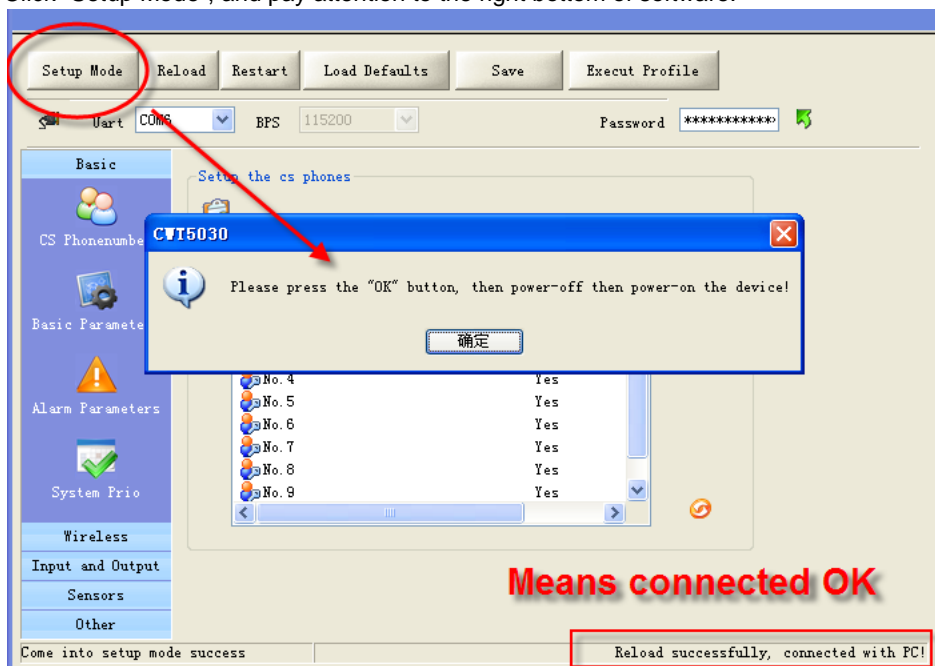


Step2: Connect T20 to computer by USB cable, and run the software



Step3: access setup mode

Click "Setup Mode", and pay attention to the right bottom of software.



Definition: Working mode and setup mode

In setup mode, all functions are disabled, only to setup parameters. And T20 must be restart to enter working mode, all functions is enabled, the T20 can alarm and be control.

Setup temperature parameters

Basic
Input and Output
Data Transmission
Sensors

Sensor's Name

Buzzer

Ext Temperature

Build-in Temperature

Humidity Sensor

Battery

Log

Others

Extend wired temperature sensor DS18B20

No.	Value	High	Low	Adjus...	Alarm...	Alarm...	Re-Al...	Alarm...	24Hours	Sound...	End
0	23.31	0	0	0	2	0	0	15	1	1	
1	---	0	0	0	2	0	0	15	1	1	1

☒ add high or low limit alarm information in alarm sms

☐ sms notify when disconnected

temperature unit: centigrade °C °F Save

uart export temperature timer(sec):

GPFS upload temperature timer(sec): ☐ upload hour range (hours):

upload when temperature changed:

☒ upload data when change detected

☐ saving log when change detected

save log timer(sec): ☒ enable log saving

upload log threshold value:

Reload successfully, come

0# Extend wired temperature sensor DS1...

23.31

High:

Low:

Adjustments:

Alarm range lag:

Alarm sms lag:

AlarmSms interval (min):

Re-Alarm sms interval (min):

Alarm ensuring timer (sec):

☒ 24Hours

☒ Sound alarm

☒ Enable

☒ Alarm sms

☒ Interlock enable

High alarm Dout: None

Low alarm Dout: None

Alarm Dout: None

✓ Ok

Setup temperature parameters

Basic

Input and Output

Data Transmission

Sensors

Sensor's Name

Buzzer

Ext Temperature

Ext Humidity

Build-in Temperature

Humidity Sens

Log

Others

External wired humidity sensor

No.	humidity	high	low	adjus...	alarm...	alarm...	Re-al...	alarm...	24Hours	sound...	ens
0	---	0	0	0.00	5	0	0	15	Y	Y	Y
1	---	0	0	0.00	5	0	0	15	Y	Y	Y

☐ add high or low limit alarm information in alarm SMS

☐ SMS notify when disconnected

rs-232/USB export timer(sec) 0

GPRS upload timer(sec) 0 ☐ upload hour range (hours) 0 <-> 0

upload/log step 0.00

☒ upload data when change detected

☐ saving log when change detected

save log timer(sec) 60 ☒ enable log saving

upload log when saved counts upper 0

Save

For example, record extend humidity every 60 seconds

External wired humidity sensor

high 0

low 0

adjustments 0.00

alarm range lag 5

alarm SMS lag 0

alarm SMS interval (min) 0

Re-alarm SMS interval (min) 0

alarm ensure timer (sec) 15

☒ 24Hours

☒ sound alarm

☒ enable

☒ alarm SMS

☒ interlock enable

alarm SMS step 10

high alarm Dout None

low alarm Dout None

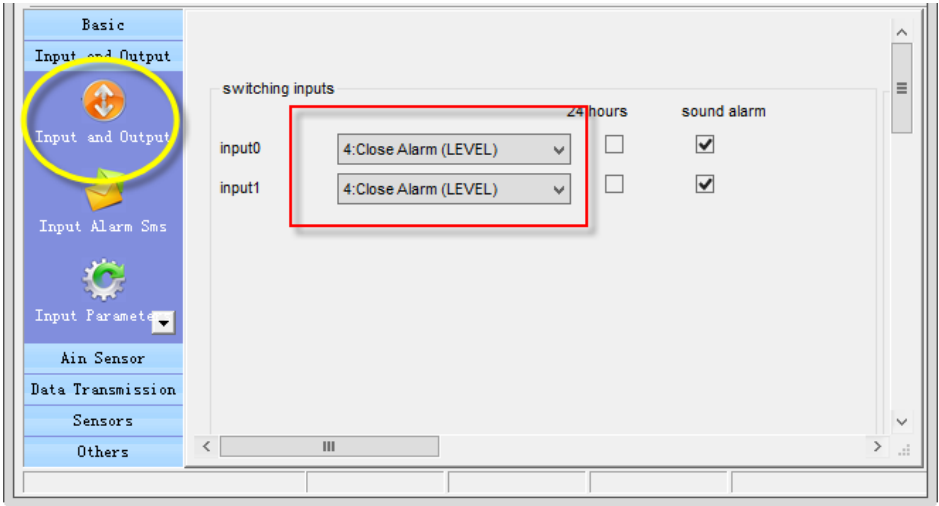
alarm output None

Ok

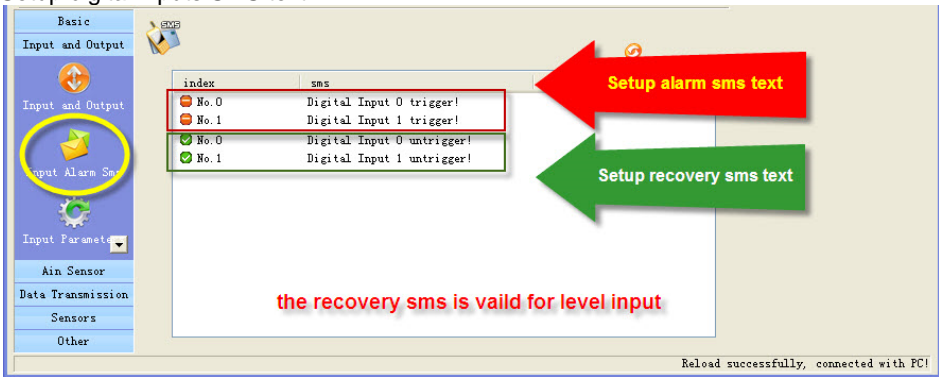
Setup high and lower point to alarm

Setup digital input alarm

Setup digital input type, the alarm SMS content of inputs is fully configurable.



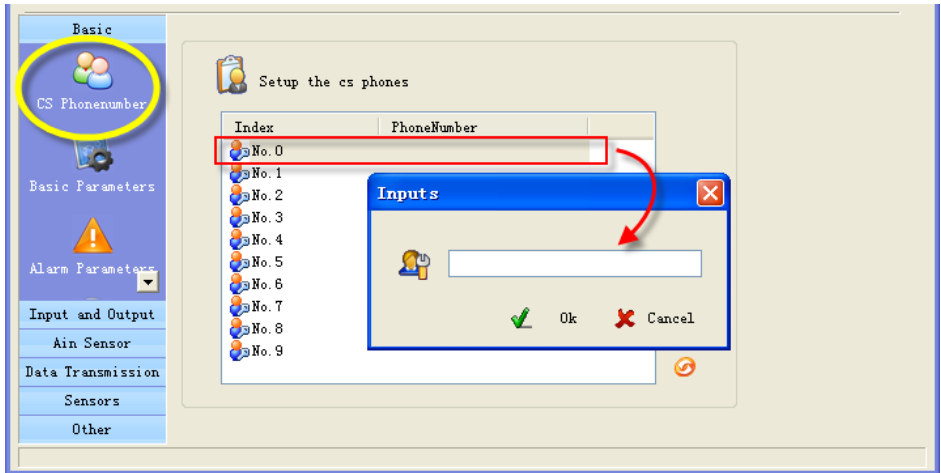
Setup digital inputs SMS text



Setup SMS

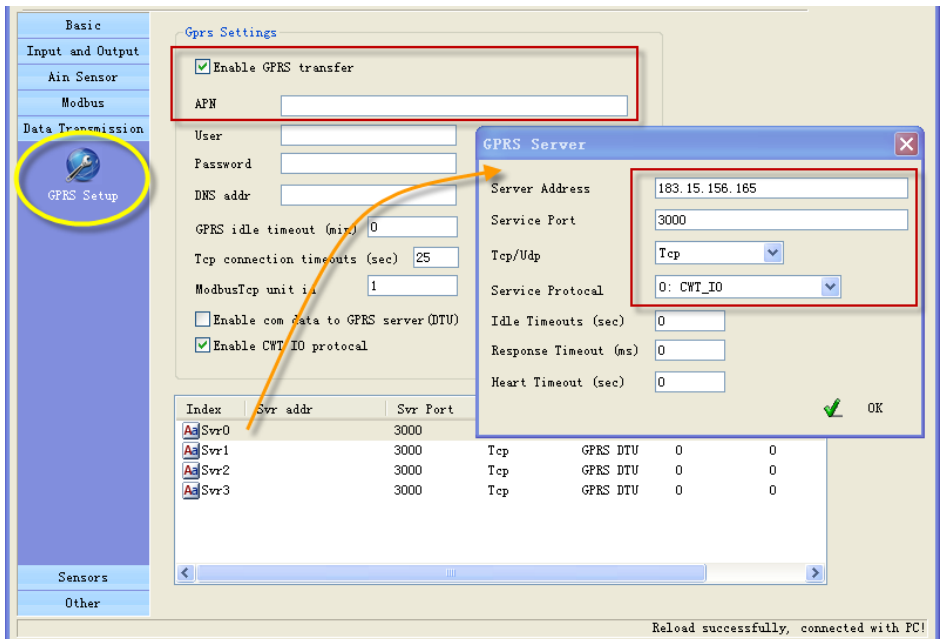
Setup CS numbers

The "CS number" can receive SMS (alarm SMS, report SMS etc) and send SMS commands to control T20. User can set 10 CS numbers, CS0-CS9



Setup GPRS parameters

Setup GPRS parameters

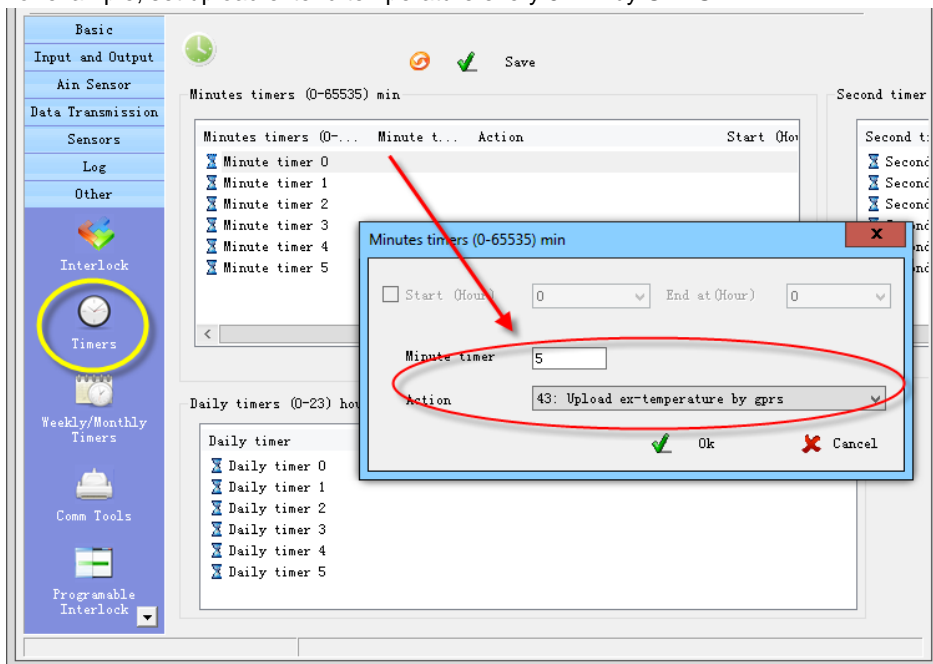


T20 transmits data to server, so must setup target server's IP address, port and protocol.
 NOTE: server IP must be a public fixed IP address or a domain.
 If your PC only has an internal network IP, probably something likes 192.168.1.XXX. You

must do port Forwarding in your router.

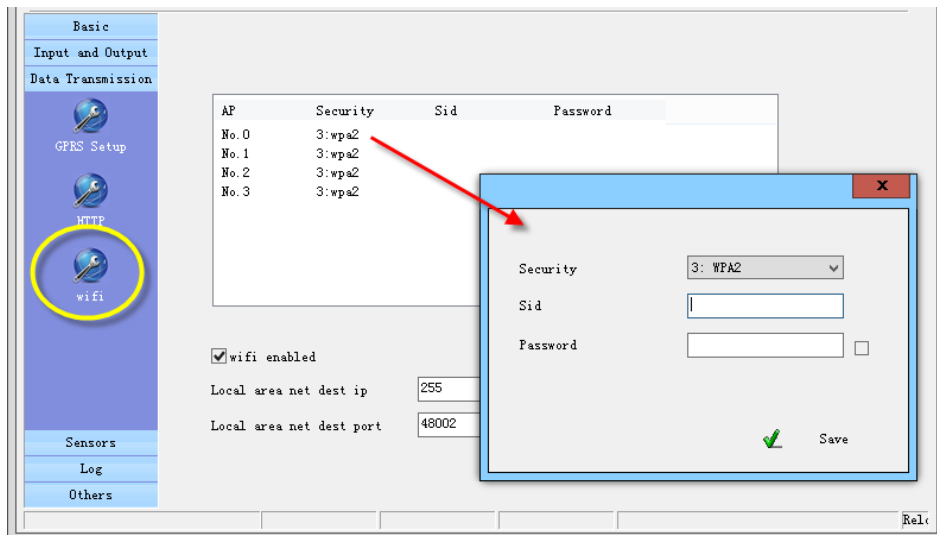
Setup timer to upload data

For example, set upload extend temperature every 5 min by GPRS.



Setup Wi-Fi parameters

Support 4 Wi-Fi connections profile.



Sid: the name of Wi-Fi network

Security: support WEP/WPA/WPA2/NONE

Common SMS commands

Operations	Command
Query system status	DAYRP
Set ten mobile phone numbers for host	CS<n><phone numbers> (<n>=0~9)
	Example: Set 1388888888 as the first mobile phone number for host
	Send SMS: CS013888888888
Query all phone numbers	CS?
Delete phone numbers	CS<n> (<n>=0~9)
	Example: Delete CS9 mobile phone number
	Send SMS: CS9
Relay0 on	IOOH0
Relay0 off	IOOL0
Relay1 on	IOOH1
Relay1 off	IOOL1
Relay2 on	IOOH2
Relay2 off	IOOL2
Relay pulse	IOOP<n>,<sec> (<n>=0-2)
Query humidity	EHUMIC
Query temperatures	ETMPC
Add a Wi-Fi network	WIFIAPADD<security>,<sid>,<pwd>
Delete a Wi-Fi setting	WIFIAPDEL<n> (<n>=0-3)
Delete all Wi-Fi setting	WIFIAPDEL
Enable Wi-Fi	WIFIENABLE1
Disable Wi-Fi	WIFIENABLE0