



CUSTOMIZE EVERYTHING FOR YOU

NB-IOT WIRELESS SENSOR NODE

OVERVIEW

Regarding

Wintec launched the Sensor Node series for remote or mobile monitoring / data collection and control. WW-5H2X is the first product in the Sensor Node series.

The product can be connected to analog sensors / thermocouple thermometers / frequency counters / rain gauges / digital sensors / Modbus sensors, and also provides analog / digital control contacts and GPS positioning functions.

It also provides sensor data collection and upload to cloud / server and sensor data logger functions. Regarding data confidentiality also adds AES encryption function.

WW-5H2X only provides the full version. It is suitable for purchasing when the initial requirements are not clear or when you want to quickly display your application ecology.

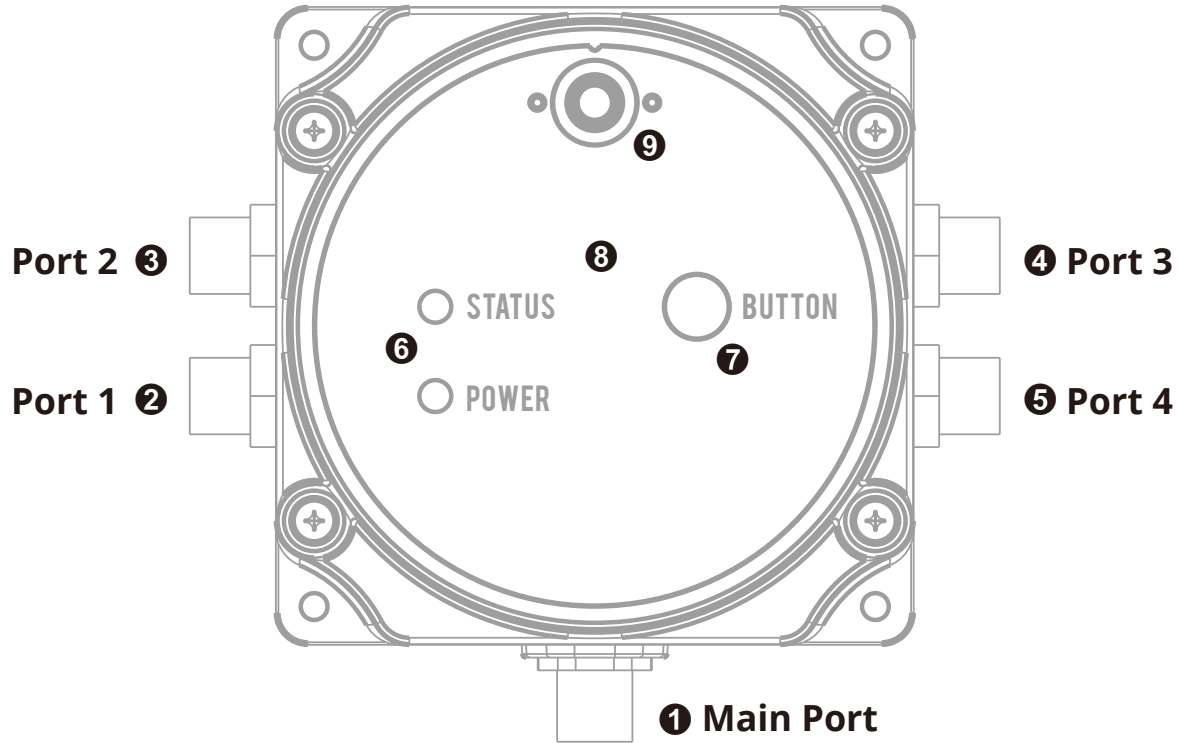
With the increasing popularity of the Internet of Things and simple functions, single purpose has become a trend. Field devices usually require only one function, and that function is almost never changed again. Many functions are not used, resulting in waste of resources and increased costs. Therefore, in addition to providing a complete version of the product, it also provides a new product concept: product modularity.

Product modularity means that the WW-5H2X function list can be checked according to the needs. We will customize production according to the function list.

This document applies to the full version of WW-5H2X. If you confirm that you only need certain functions after using the full version, please feel free to contact us to order customized products.



APPEARANCE



1 Main Port

- Power Input
- Solar Panel
- DC Adapter
- RS-485
- Configuration
- Sensor
- External Battery Pack

2 3 4 Port 1~3

- Analog Input
- Digital Input
- RTD PT-100
- Frequency Count
- Analog Output
- Digital Output
- Power Output

5 Port 4

- Analog Input
- Digital Input
- RTD PT-100
- Frequency Count
- Analog Output
- Digital Output
- **Pulse Count**
- Power Output

6 Indicator

7 Wake Up

8 GPS Receiver Inside

9 Antenna Connector

SPECIFICATION

Product Type	Outdoor
Cellular Protocol	NB-IoT (LTE Cat NB1 3GPP Release 13)
Internet Protocol	TCP / UDP / MQTT / MQTTS / Line Notify
Operating LTE Bands	Band 1 / Band 3 / Band 5 / Band 8 / Band 20 / Band 28
SIM Type	nano SIM , e-SIM(optional)
Sensitivity	Maximum -116dBm
Transmit RF Power	Maximum 23 dBm (Class 3)
Antenna Connector Type	RP-SMA Jack
Cellular Data Rate	NB1 (26.15 kbit/s DL, 62.5 kbit/s UL)
Main Port Interface	RS-485
Port1~4 Interfaces	Analog or Digital Input / Analog(0~10V) or Digital Output / FFT (Frequency Count) / RTD(PT-100) / Pulse Count(Port4 only, special connector required)
Port1~4 Connector Type	M12 5PIN
Main Port Connector Type	M12 8PIN
RS-485 Support Protocol	Modbus RTU / Hex / ASCII / Transparent
RS-485 Baud Rate	1200bps / 2400bps / 4800bps / 9600bps / 19200bps / 38400bps / 57600bps / 115200bps / 230400bps
Analog Input	Analog Input Support 0~10 V / 0~20 mA / 4~20 mA / ADC (0~10 V)
Digital Input	Digital Input Support High / Low Signal Judge
Analog Input	Source Voltage > 1V / cannot be used in sleep mode
Analog Input Spec	Analog Input Support 0~10 V ($\pm 0.1\%$) / 0~20 mA / 4~20 mA / ADC (0~10 V, $\pm 0.1\%$)
FFT (Frequency Count) Spec	Resolution 12bit / Frequency range : 1~3KHz / Input leave > 100mVp-p
RTD(PT-100) Spec	Tolerance 1mV / temperature range :-150°C ~ +300°C / 2-wire or 3-wire
Pulse Count Spec	Resolution 24bit / 2 or 3 or 4 Wire (support rain gauge function)
Digital Output	Digital Output Support PWM / Latch Mode
Digital Output Spec	[PWM] Frequency: Max. 2KHz / [Latch] High: VCC (Infinite Input impedance), Low: GND (100 ohm) / Maximum Current 80mA, Maxim Input 36V (open drain)

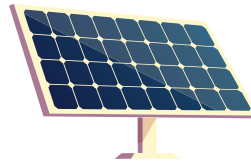
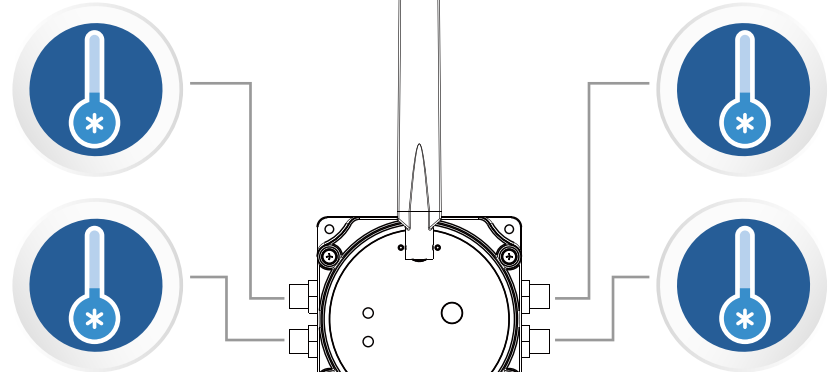
Analog Output	Analog Output Support 1~10V ($\pm 3.0\%$) , Recommended Current : < 10mA
Analog Output Spec	Resolution 12bit
Button	Wake Up
LED Status	Power Status / Wireless Status
GPS / GNSS	U-blox GPS Chipset
GNSS Receiver Type	72-channel u-blox M8 engine, GPS / QZSS L1 C / A, GLONASS L10F, BeiDou B1I Galileo E1B /C, SBAS L1 C / A: WAAS / EGNOS / MSAS / GAGAN
GNSS Sensitivity	Tracking & Navigation: -167 dBm, Reacquisition: -160 dBm, Hot Start: -157 dBm, Cold Start: -148 dBm
GNSS Antenna Type	Built in Patch Antenna
GNSS Protocol	NMEA0183
GNSS Accuracy	2.0m CEP (GPS / SBAS / QZSS+GLONASS)
GNSS Acquisition Time (Average)	Hot Start / 1 sec, Cold Start / 26 sec
Data Logger Storage	Micro SD Card (support SDHC)
Encryption Function	AES 128/256 , ECB / CBC / CTR
Encryption Method	SDCard. / Upload / Publish
Operating Temperature	-40°C ~ 85°C
Main Unit Dimensions	10 x 10 x 4.8 cm (Not include antenna and external connect)
Weight	260 g
Waterproof	IP 68
Redundant Battery	18650 / 3.7V / 5000mAh (1S2P)
Battery Protection	Temperature / OVP / OCP
NTC Specification (Required)	10k ohm($\pm 1\%$)
Input Power Supply	7V ~ 36V DC / 1A (with over protect)
Solar Charger Voltage Range	7V ~ 36V DC
Solar Chager Current	20mA~1.4mA ($\pm 10\text{mA}$)
Output Power Supply	Each Port (1~4) : 10V DC / 30mA (Max.)
Output Power Monitor	Current Measurement
Power Consumption	12V 5.3~6.8mA @receive / 12V 250~300mA @transmit / 12V 50~400uA @sleep / 12V 1.4mA @charging
Special Specification	Flame Retardant

SOLUTION

PT-100 with Internal Battery



PT-100
Temperature Sensor

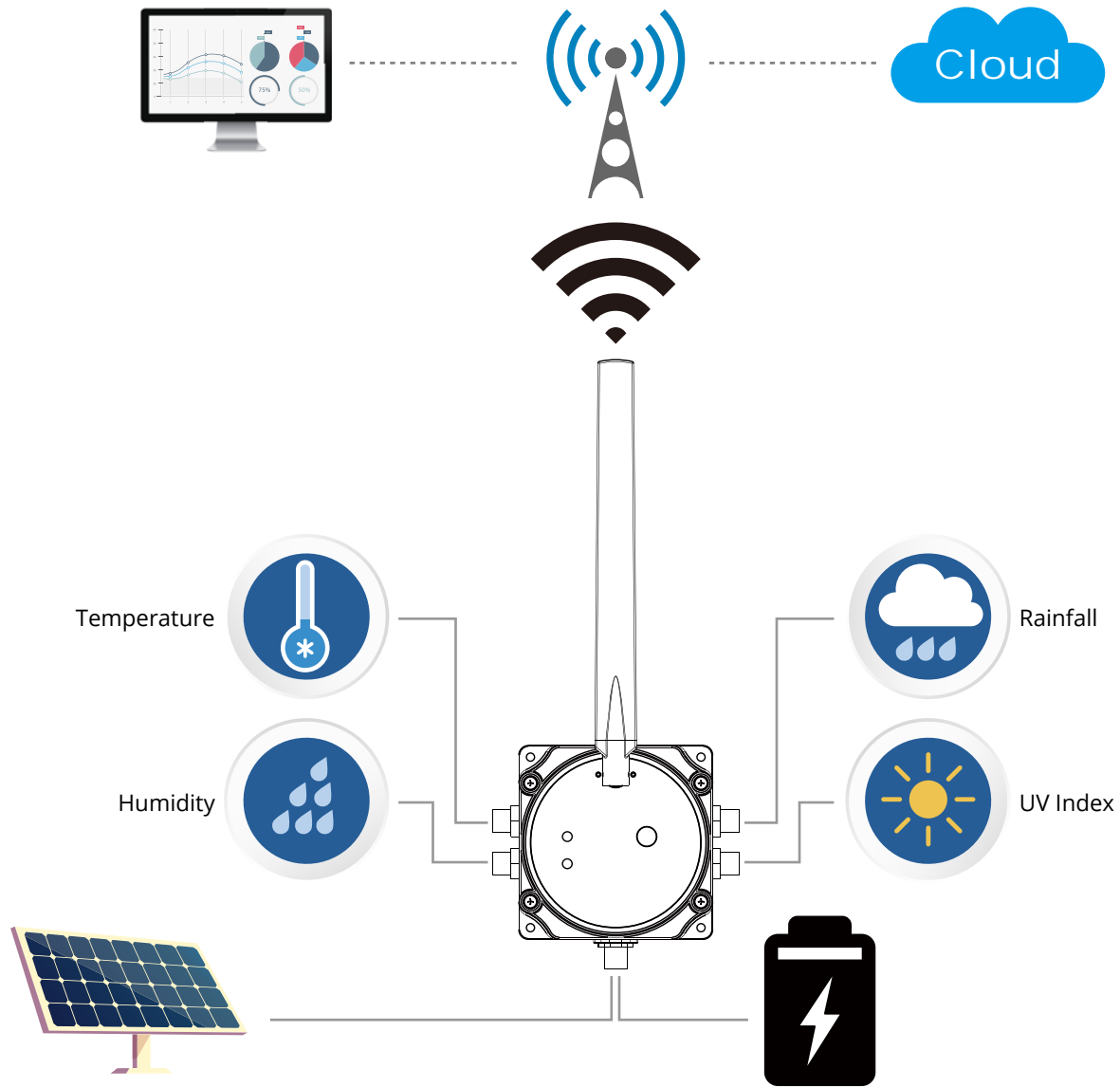


SOLUTION

Analog Sensor with External Battery Pack



Regarding the connection method and Solution Diagram, please download from our website www.win-tec.com.tw



SOFTWARE FUNCTION

01

Encryption Function

Support AES / TLS / MQTTS, provide communication encryption, plain text encryption, storage encryption.

02

Main / Backup Server Support

You can set two paths to upload the host to prevent the host from being unable to connect.

03

3 Publish Topic

Convenient for cloud management.

04

3 Subscribe Topic

Convenient for cloud management.

05

60 Schedule Management

Multiple schedules can assist in returning data.

06

Forward Sensor Data

Forward data to cloud using TCP / UDP / MQTT / MQTTS / Line Notify through cellular or internet network.

07

Flexible Time Management

Relative time, absolute time... etc., multiple flexible time setting methods.

08

Modification Settings Remotely

Remotely adjust settings via control center or cloud.

09

Control I / O Remotely

Remotely control your switches, indicators... etc., through the control center or cloud.

10

Power / Battery / Load Status Detection

Monitor power status and report.

ORDER SELECTION GUIDE

	Port 1	Port 2	Port 3	Port 4	Independent Function
Analog Input	✓	✓	✓	✓	
RTD PT-100	✓	✓	✓	✓	
Frequency Counter	✓	✓	✓	✓	
Analog Output	✓	✓	✓	✓	
Power Output	✓	✓	✓	✓	
Pulse Count				✓	
GPS					✓
Solar Charger					✓
Battery Solution					✓ Build In Battery External Battery



Wintec also launched 4G LTE Cat 1 / LTE Cat M1 / LoRaWAN / WiSUN wireless sensor node series,
if you have any requirements, please contact us.