
CUSTOMIZE EVERYTHING FOR YOU
NB-IOT WIRELESS SENSOR NODE
Wintec®
wireless electronics

OVERVIEW

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

❶ Main Port
- Power Input
  - · Solar Panel
  - · DC Adapter
- RS-485
  - · Configuration
  - · Sensor
- External Battery Pack

❷❸❹ Port 1~3
- Analog Input
- Digital Input
- RTD PT-100
- Frequency Count
- Analog Output
- Digital Output
- Power Output

❺ Port 4
- Analog Input
- Digital Input
- RTD PT-100
- Frequency Count
- Analog Output
- Digital Output
- Pulse Count
- Power Output

❻ Indicator

❼ Wake Up

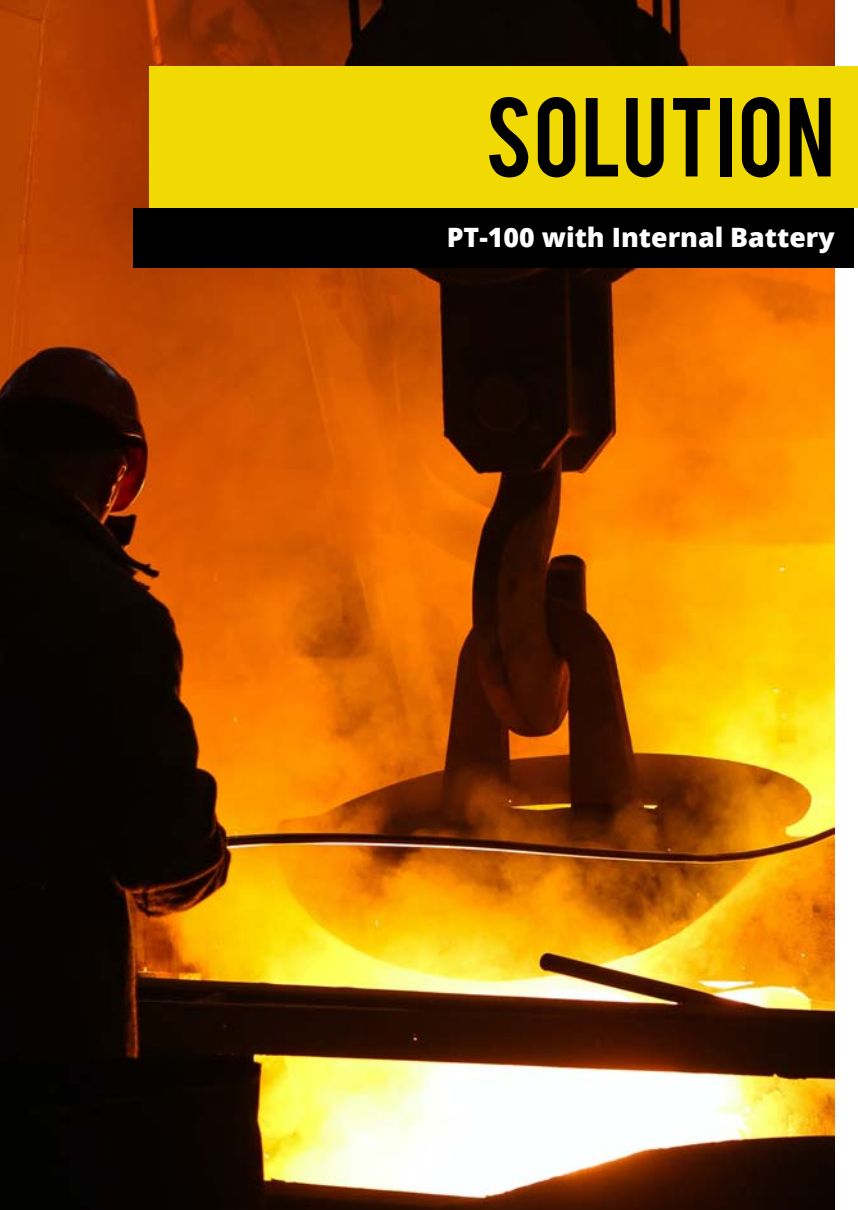
❽ GPS Receiver Inside

❾ Antenna

SPECIFICATION

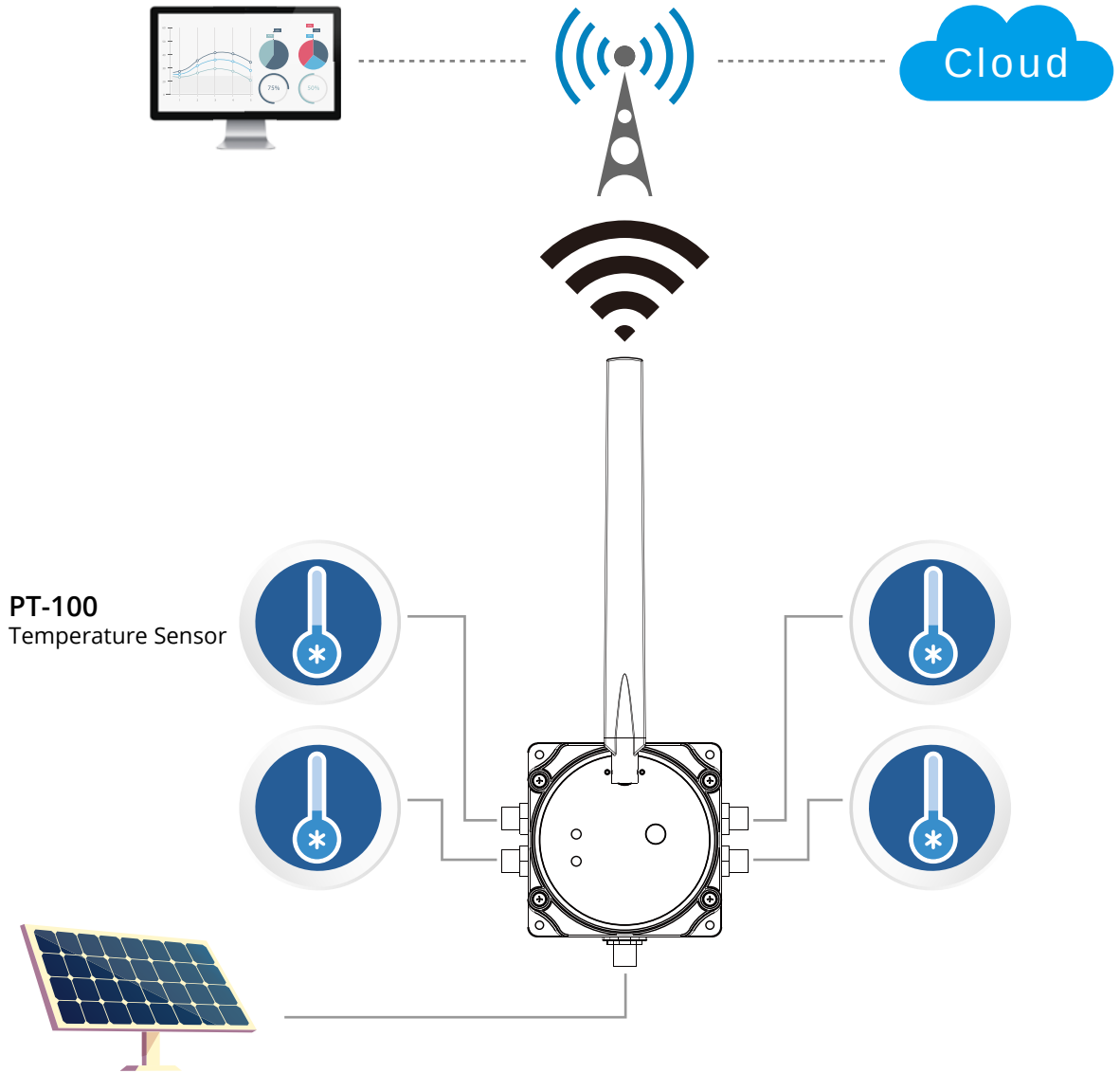
Product Type	Outdoor
Cellular Protocol	NB-IoT (LTE Cat NB1 3GPP Release 13)
Internet Protocol	TCP / UDP / MQTT / MQTTS / Line Notify
Operating LTE Bands	Band 1 / Band 3 / Band 5 / Band 8 / Band 20 / Band 28
SIM Type	nano SIM, e-SIM (Optional)
Sensitivity	Maximum -116dBm
Transmit RF Power	Maximum 23 dBm (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 (1~10V) 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 (default) / 230400bps
Digital Input	Digital Input Support High / Low Signal Judge
Analog Input Spec	Analog Input Support 0~±10 V (± 0.1%) / 0~20 mA (± 0.2%) / 4~20 mA (± 0.2%)
FFT (Frequency Count) Spec	Frequency Range: 1Hz~3KHz / Input leave > 100mVp-p
RTD (PT-100) Spec	Recommend Temperature Range: -150°C ~ +300°C / 2-Wire or 3-Wire
Pulse Count Spec	Support rain gauge function
Digital Output	Digital Output Support PWM / Latch Mode
Digital Output Spec	[PWM] Frequency: Max. 2KHz / [Latch] Maxim Input 36V (Open drain), Maximum Current 80mA
Analog Output	Analog Output Support 1~10V (±3.0%), Recommended Current: < 10mA
Button	Wake Up
LED Status	Power Status / Wireless Status

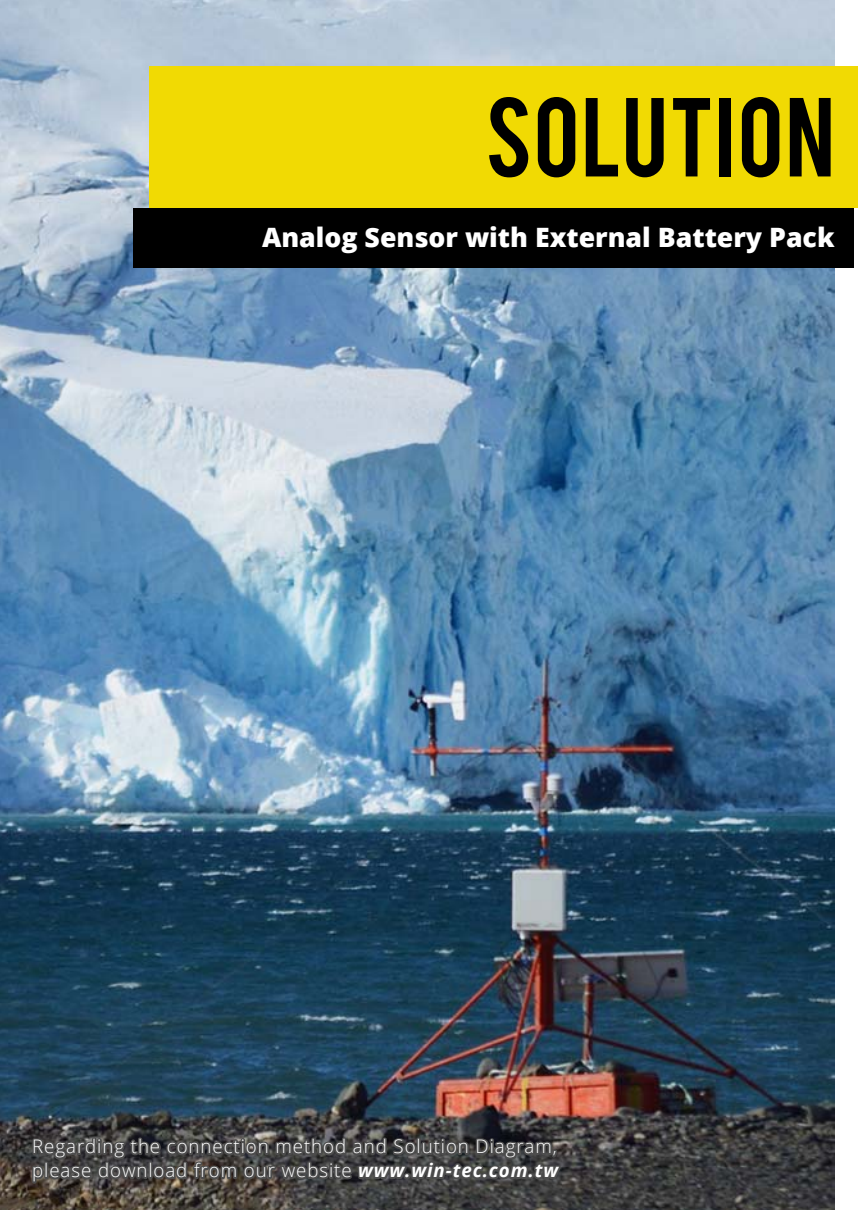
GNSS / GPS	U-blox GNSS Chipset
GNSS Receiver Type	72-Channel u-blox M8 Engine, GPS / QZSS, GLONASS, BeiDou, Galileo, SBAS supported (WAAS / EGNOS / MSAS / GAGAN)
GNSS Default Receiver Setting	GPS / SBAS / QZSS + GLONASS
GNSS Sensitivity	Tracking & Navigation: -167 dBm, Reacquisition: -160 dBm, Hot Start: -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	SD Card / Upload / Publish
Operating Temperature	-40°C ~ 85°C (Without battery)
Main Unit Dimensions	10 x 10 x 4.8 cm (Not include antenna and external connect)
Weight	260 g (Without battery)
Waterproof	IP 68
Redundant Battery	18650 / 3.7V / 6000mAh (1S2P)
Battery Protection	Temperature (OVP / OCP)@charging
NTC Specification (Required)	10k ohm (±1%)
Input Power Supply	7V ~ 36V DC (With OVP), 7V/1A@charging
Solar Charger Voltage Range	7V ~ 36V DC
Solar Chager Current	20mA~1400mA (±10mA)
Output Power Supply	Each Port (1~4): 10V DC / 30mA (Max.) support current monitor function
Output Power Monitor	12V 6.8mA @receive / 12V 300mA @transmit / 50~400uA@sleep@battery only / 12V 1.4mA @charge off
Special Specification	Flame Retardant



SOLUTION

PT-100 with Internal Battery

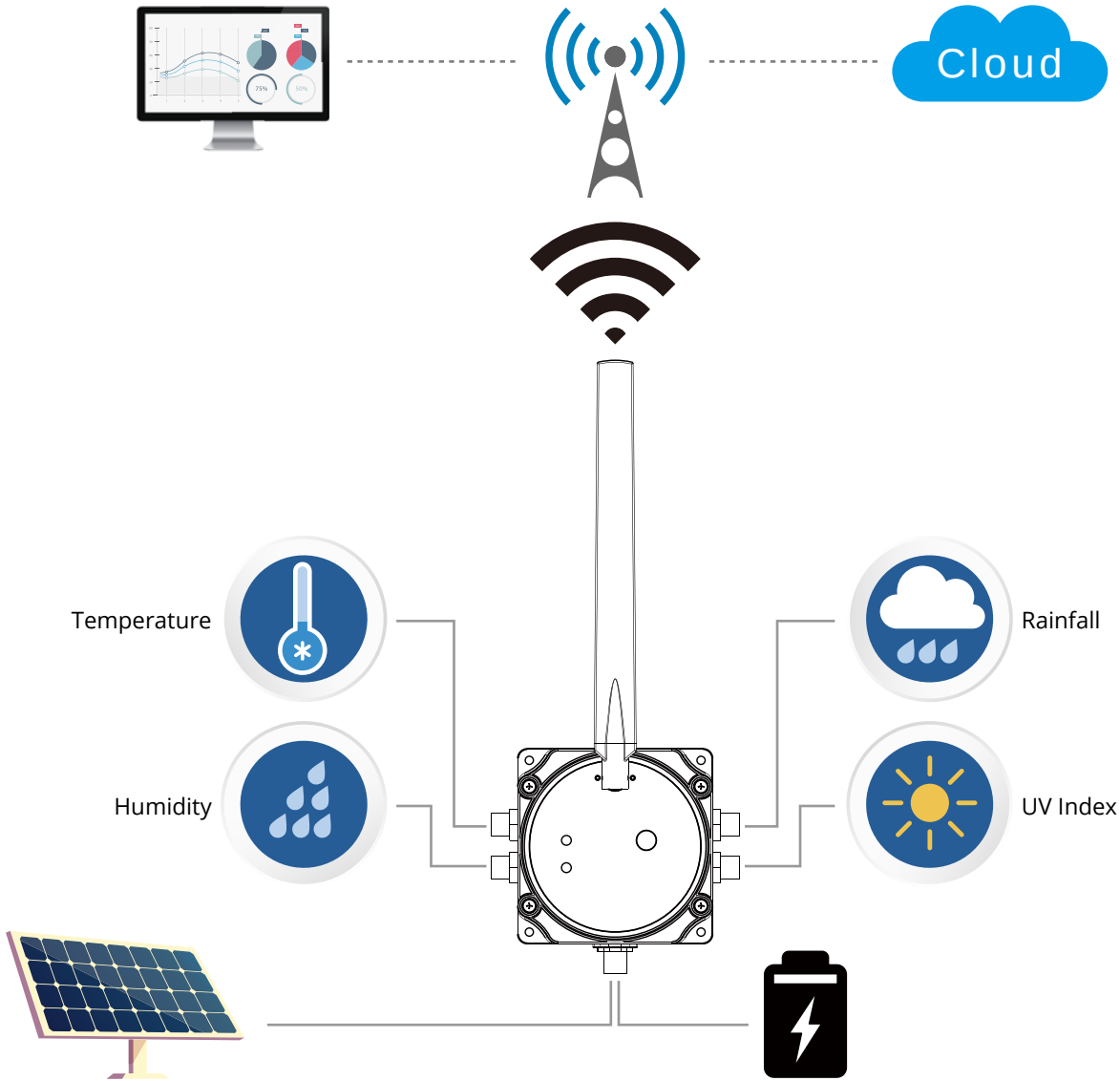




SOLUTION

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 celluar or internet network.

07
Flexible Time Management
Relative time, absolute time... etc., multiple flexible time setting methods.

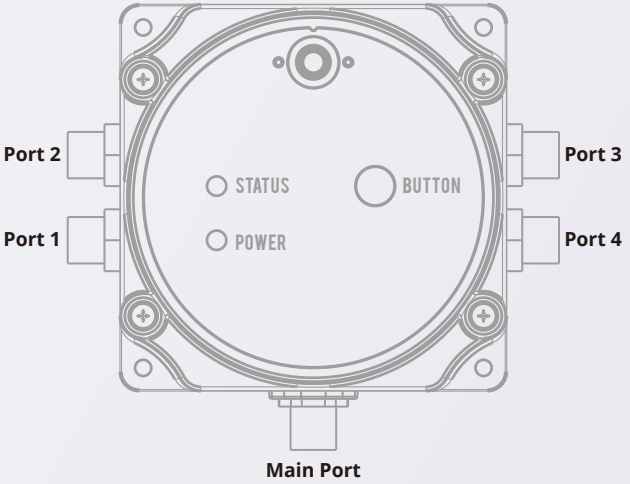
08
Modification Settings Remotely
Remotely adjust settings via control center or cloud.

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

Category	Function		
Port 1	◯ Analog Input	◯ RTD PT-100	◯ Frequency Count
	◯ Analog Output	◯ Power Output	
Port 2	◯ Analog Input	◯ RTD PT-100	◯ Frequency Count
	◯ Analog Output	◯ Power Output	
Port 3	◯ Analog Input	◯ RTD PT-100	◯ Frequency Count
	◯ Analog Output	◯ Power Output	
Port 4	◯ Analog Input	◯ RTD PT-100	◯ Frequency Count
	◯ Analog Output	◯ Pulse Count	◯ Power Output
Independent Function	◯ GPS	◯ SD Card	◯ Solar Charger
	◯ Build In Battery	◯ External Battery (choose 1 from 2)	
Accessories	◯ Solar Panel	◯ DC Adapter	



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

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