



WISE-4000

Cloud-Ready IoT Wireless I/O Module

The WISE-4000 series are Ethernet-based wireless IoT devices equipped with IoT data acquisition, processing, and publishing capabilities. In addition to diverse I/O, the WISE-4000 series modules provide data pre-scaling, data logic, and data logger functions. This data can be accessed via mobile devices and securely transmitted to the cloud at any time and from any location.

Key Features

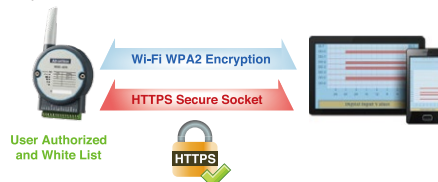
IEEE 802.11 b/g/n 2.4GHz Wi-Fi with AP Mode

The Wi-Fi interface is easily integrated with wired or wireless Ethernet devices, users only need to add a wireless router or AP to extend an existing Ethernet network into a wireless network. The limited AP mode enables the WISE-4000 module to be accessed like an AP using other Wi-Fi devices.



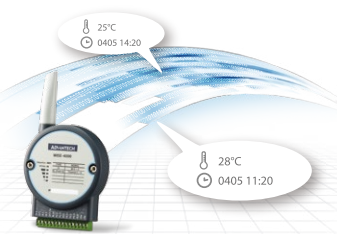
RESTful Web Service with Security Socket

As well as Modbus/TCP, the WISE-4000 series module supports IoT communication protocols and RESTful web service. Data can be polled or even pushed automatically from the module when the I/O status changes. The I/O status can be retrieved using an Internet media type such as JSON. The WISE-4000 module also supports HTTPS, which offers sufficient security for use in a wide area network (WAN).



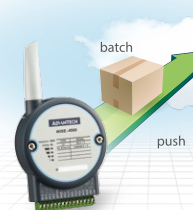
Data Storage

The WISE-4000 module can log up to 10,000 data samples with a time stamp. I/O data can be logged periodically, and when the I/O status changes. Once the memory is full, users can choose to overwrite old data, ring log, or stop the log function.



Cloud Storage

Data loggers can push data to file-based cloud services such as Dropbox using pre-configured criteria. With RESTful API, data can also be pushed into a private cloud server in JSON format. Users can set up a private cloud server using the provided RESTful API and their own platform.



HTML5 Web Configuration Interface

All configurations can be made through a web interface, and the web pages are HTML5-based, enabling users to configure the WISE-4000 module without OS/device limitations. Users can directly configure WISE-4000 via a mobile phone or tablet.



Modbus/RTU to Web Service or Modbus/TCP

The RS-485 port of the WISE-4051 module supports Modbus and can be used to poll data from Modbus/RTU devices, such as ADAM-4000 or ADAM-5000/485. Users can then access the data from WISE-4051 via Modbus or REST. The data can also be logged.

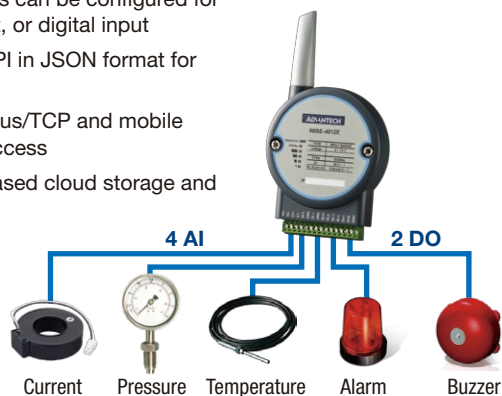


WISE-4000 Series

WISE-4012

4-ch Universal Input and 2-ch Digital Output IoT Wireless I/O Module

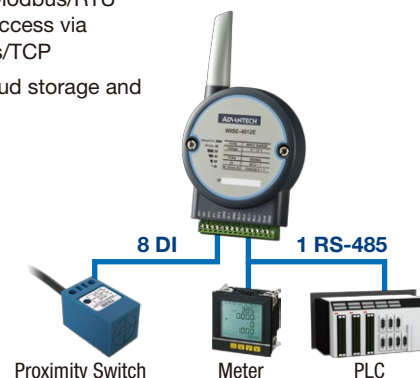
- 2.4 GHz IEEE 802.11b/g/n WLAN
- 4-channel inputs can be configured for voltage, current, or digital input
- RESTful web API in JSON format for IoT integration
- Supports Modbus/TCP and mobile device direct access
- Supports file-based cloud storage and local logging



WISE-4051

8-ch Digital Input IoT Wireless I/O Module with 1-port RS-485

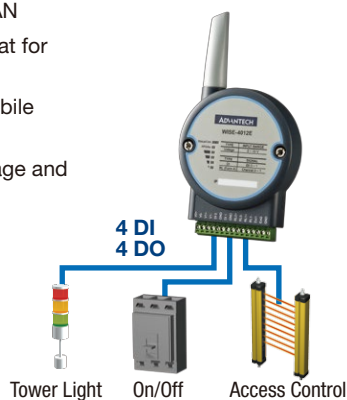
- 2.4 GHz IEEE 802.11b/g/n WLAN
- RS-485 port supports Modbus/RTU protocol; data can be accessed via RESTful API or Modbus/TCP
- Supports file-based cloud storage and local logging



WISE-4050

4-ch Digital Input and 4-ch Digital Output IoT Wireless I/O Module

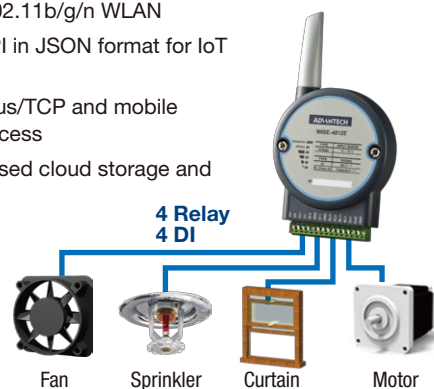
- 2.4 GHz IEEE 802.11b/g/n WLAN
- RESTful web API in JSON format for IoT integration
- Supports Modbus/TCP and mobile device direct access
- Supports file-based cloud storage and local logging



WISE-4060

4-ch Digital Input and 4-ch Relay Output IoT Wireless I/O Module

- 2.4 GHz IEEE 802.11b/g/n WLAN
- RESTful web API in JSON format for IoT integration
- Supports Modbus/TCP and mobile device direct access
- Supports file-based cloud storage and local logging



WISE-4012E IoT Developer Kit



WISE-4012E IoT Developer Kit

6-ch Input/Output IoT Wireless I/O Module for IoT Developers

- 2.4 GHz IEEE 802.11b/g/n WLAN
- 2-channel 0 ~ 10V input, 2-channel digital input, and 2-channel relay output
- Supports Modbus/TCP and mobile device direct access
- Includes an extension board for simulating sensor status, micro USB, power cable, screwdriver, and WebAccess/SCADA software



Get More Details

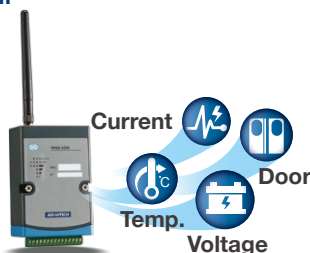


Advantech's WISE Wireless Sensor Node (WSN) series modules provide intelligent sensing abilities with flexible I/O, serial interfaces, and built-in sensors. WISE-4200 modules utilize a LPWAN (low-power, wide-area networks) wireless interface, which has a kilometer-long communication distance and battery power. The features of LPWAN make WISE modules ideal solutions for both indoor and outdoor energy and environment monitoring. Moreover, to facilitate the simple and cost-effective vertical IoT applications, the WISE WSN series offers high connectivity with various cloud platforms.

Key Features

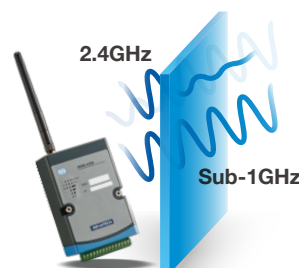
Application-Ready Sensor Combination

The combination of I/O and sensors makes WISE-4200 a user-friendly module for diverse applications. With the inclusion of DI, DO, and RS-485 ports, WISE-4200 can be easily adapted for control monitoring at a data center or warehouse.



Superior Penetration Through Concrete and Steel

Sub-GHz signals can penetrate through concrete and steel buildings. Compared to 2.4 GHz, Sub-GHz offers superior signal penetration and lower degradation, making it suitable for indoor and smart city applications.



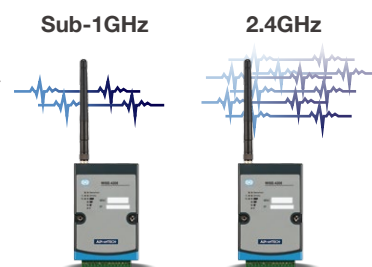
Powered by a 3.6V AA Lithium Battery

The low power consumption of sub-GHz enables the sensor node to be powered by a battery. With a 3.6V AA Lithium battery, the sensor node can maintain communication at a distance of 5 km for up to 5 years, thereby eliminating the need to recharge or change batteries.



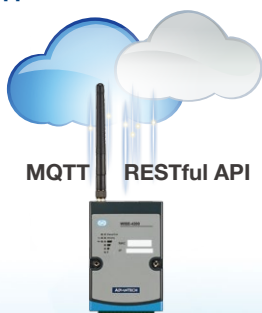
Reduced Interference Compared to 2.4 GHz

Compared to Wi-Fi, Bluetooth, ZigBee, or any 2.4 GHz wireless interface, a sub-GHz interface can reduce interference at sites with high humidity or many 2.4 GHz devices.



MQTT and RESTful API IoT Protocol Support

IoT wireless sensor nodes are designed for not only automation applications, but also IoT applications that may use MQTT or RESTful web API IoT protocols for cloud integration.



Extended Communication Range

Sub-GHz is a type of LPWAN (low-power, wide-area network) designed for long-range communication. Under the same power consumption, Sub-GHz offers a longer communication range compared to 2.4 GHz. (Note: Low data rate for long range)



WISE-4200 Access Point

WISE-4210-AP

Industrial Sub-GHz IoT Wireless-to-Ethernet AP

- Sub-GHz IEEE 802.15.4g wireless access point
- RJ-45 Ethernet port enables an uplink interface
- Network capacity of up to 64 sensor nodes
- 5 km outdoor line-of-sight range
- Supports RESTful web API, MQTT, and Modbus/TCP

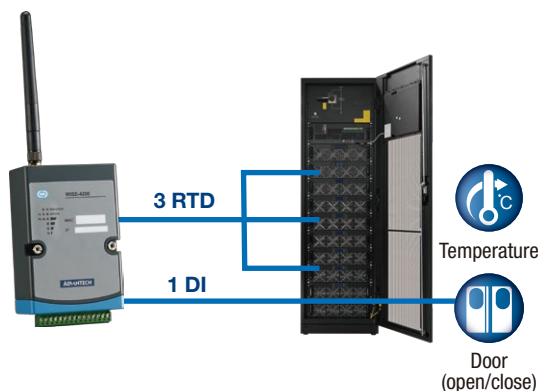


WISE-4200 Sensor Node

WISE-4210-S215

Industrial Sub-GHz WSN with 4-ch RTD or Digital Input

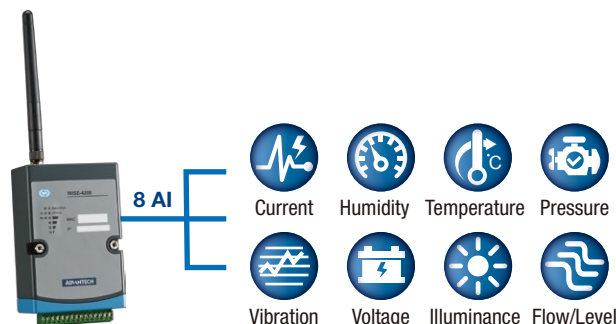
- Sub-GHz IEEE 802.15.4g wireless sensor node
- 4-channel input can be individually configured as RTD or DI
- Temperature range: Pt-100: -200 ~ 200 °C
Pt-1000: -40 ~ 160 °C
- Accuracy : ±0.1% of FSR at 25°C



WISE-4210-S217

Industrial Sub-GHz WSN with 8-ch Analog Input

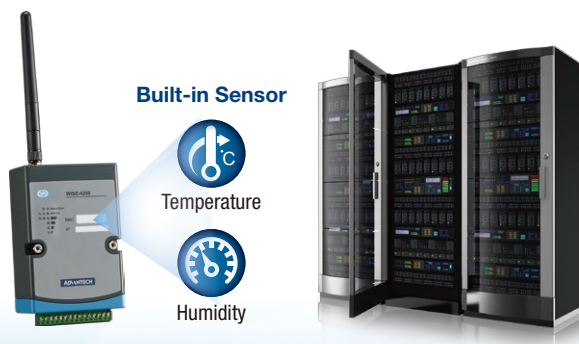
- Sub-GHz IEEE 802.15.4g wireless sensor node
- 8-channel analog input can be configured as voltage or current input
- Input range: Voltage: 0 ~ 10V_{DC}
Current: 4 ~ 20mA
- Resolution: 16 bit



WISE-4210-S231

Industrial Sub-GHz WSN with Temperature and Humidity Sensors

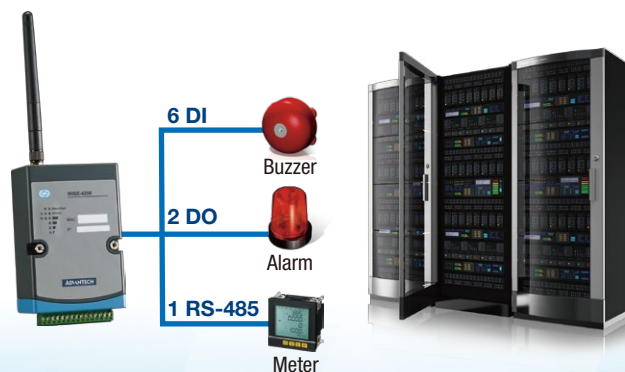
- Sub-GHz IEEE 802.15.4g wireless sensor node
- Built-in temperature and humidity sensors
- Operating range: Temperature: -20 ~ 70 °C
Humidity: 5 ~ 95% RH
- Accuracy: ±1.0 °C / ± 6% RH



WISE-4210-S250

Industrial Sub-GHz WSN with 1 RS-485 Port and DI/O

- Sub-GHz IEEE 802.15.4g wireless sensor node
- 6-channel dry contact DI, 2-channel DO, and 1 RS-485 port
- RS-485 port supports Modbus/RTU protocol (32 addresses total with a maximum of 8 instructions)





WISE-4400

IP65 Sub-GHz IoT Wireless Sensor Node

Advantech's WISE Wireless Sensor Node (WSN) series modules provide intelligent sensing abilities with flexible I/O, serial interfaces, and built-in sensors. WISE-4400 modules utilize a LPWAN (low-power, wide-area networks) wireless interface, which has a kilometer-long communication distance and battery power. The features of LPWAN make WISE modules ideal solutions for both indoor and outdoor energy and environment monitoring. Moreover, to facilitate the simple and cost-effective vertical IoT applications, the WISE WSN series offers high connectivity with various cloud platforms.

Key Features

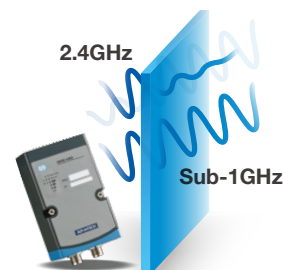
IP65-Rated Housing for Harsh Environments

WISE-4400 is aimed at harsh environments full of dust, dirt, and oil. The IP65-rated housing protects against water and dust penetration, making WISE-4400 the ideal solution for maintaining hygiene in food and beverage production lines.



Superior Penetration Through Concrete and Steel

Sub-GHz signals can penetrate through concrete and steel buildings. Compared to 2.4 GHz, Sub-GHz offers superior signal penetration and lower degradation, making it suitable for indoor and smart city applications.



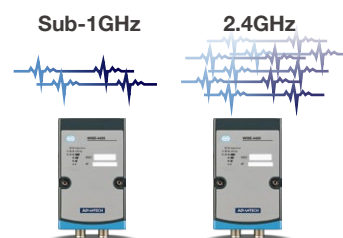
Internal Antenna Design

With the internal antenna design, WISE-4400 can withstand installation in harsh environments, such as a CNC machines room, boiler room, or pipe room, can save installation space, and can reduce maintenance efforts.



Reduced Interference Compared to 2.4 GHz

Compared to Wi-Fi, Bluetooth, ZigBee, or any 2.4 GHz wireless interface, a sub-GHz interface can reduce interference at sites with high humidity or many 2.4 GHz devices.



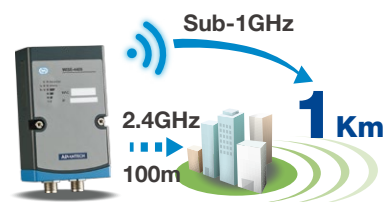
MQTT and RESTful API IoT Protocol Support

IoT wireless sensor nodes are designed for not only automation applications, but also IoT applications that may use MQTT or RESTful web API IoT protocols for cloud integration.



Extended Communication Range

Sub-GHz is a type of LPWAN (low-power, wide-area network) designed for long-range communication. Under the same power consumption, Sub-GHz offers a longer communication range compared to 2.4 GHz. (Note: Low data rate for long range)



WISE-4400 Access Point

WISE-4410-AP

IP65 Sub-GHz IoT Wireless-to-Ethernet AP

- Sub-GHz IEEE 802.15.4g wireless access point
- RJ-45 Ethernet port enables an uplink interface
- Network capacity of up to 64 sensor nodes
- 5 km outdoor line-of-sight range
- Supports RESTful web API, MQTT, and Modbus/TCP

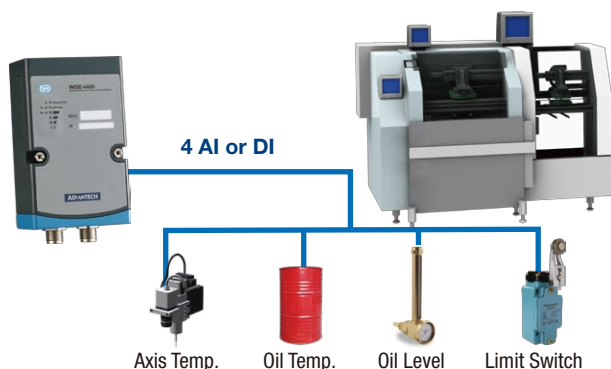


WISE-4400 Sensor Node

WISE-4410-S412

IP65 Sub-GHz WSN with 4-ch Analog Input

- Sub-GHz IEEE 802.15.4g wireless sensor node
- 4-channel input can be individually configured as AI or DI
- Input range: Voltage: 0 ~ 10V_{DC}
Current: 4 ~ 20mA
- Resolution: 16 bit



WISE-4410-S415

IP65 Sub-GHz WSN with 4-ch RTD Input

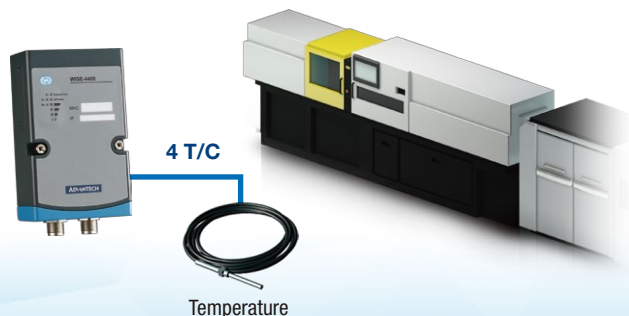
- Sub-GHz IEEE 802.15.4g wireless sensor node
- 4-channel input can be individually configured as RTD or DI
- Temperature range: Pt-100: -200 ~ 200 °C
Pt-1000: -40 ~ 160 °C
- Accuracy: ±0.1% of FSR at 25 °C



WISE-4410-S418

IP65 Sub-GHz WSN with 4-ch Thermocouple Input

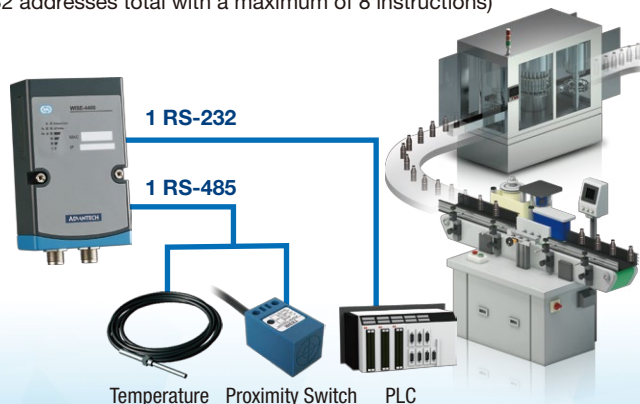
- Sub-GHz IEEE 802.15.4g wireless sensor node
- 4-channel thermocouple input
- Temperature range: J-type: -210 ~ 1,200 °C
K-type: -270 ~ 1,372 °C
- Accuracy: ±0.1% of FSR at 25 °C



WISE-4410-S472

IP65 Sub-GHz WSN with 2 Serial Ports

- Sub-GHz IEEE 802.15.4g wireless sensor node
- 1 RS-485 port and 1 RS-232/RS-485 port
- Serial port supports Modbus/RTU protocol (32 addresses total with a maximum of 8 instructions)





WISE-4600

Outdoor IoT Wireless Sensor Node

Advantech's WISE Wireless Sensor Node (WSN) series modules provide intelligent sensing abilities with flexible I/O, serial interfaces, and built-in sensors. WISE-4600 modules utilize a LPWAN (low-power, wide-area networks) wireless interface, which has a kilometer-long communication distance and battery power. The features of LPWAN make WISE modules ideal solutions for both indoor and outdoor energy and environment monitoring. Moreover, to facilitate the simple and cost-effective vertical IoT applications, the WISE WSN series offers high connectivity with various cloud platforms.

Key Features

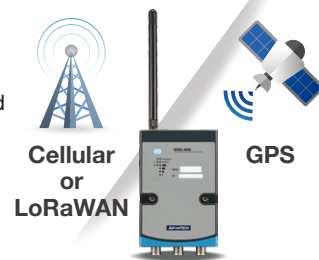
IP65-Rated Housing for Outdoor Applications

WISE-4600 is designed for outdoor applications, such as water treatment and agriculture monitoring. The IP65-rated housing protects against water and dust penetration, making WISE-4600 the ideal solution for outdoor installation.



LoRaWAN/Cellular Network Support with Optional GPS

LoRaWAN is a new communication standard for wide area networks that consumes minimal power. WISE-4600 supports LoRaWAN and traditional cellular networks and can be equipped with optional GPS for providing location information in wide area applications.



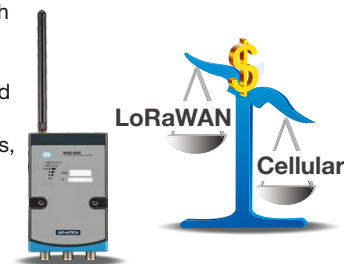
Solar Power Rechargeable Battery Design

Because maintaining power supply to remote devices installed outdoors can be challenging, WISE-4600 supports a wide input voltage range to facilitate convenient recharging. A solar panel or other external power source can be used to recharge WISE-4600.



LoRaWAN Reduces Service Costs Compared to Cellular Networks

Cellular networks typically incur high costs, causing problems for data acquisition applications. However, LPWAN wireless interfaces designed specifically for IoT applications can reduce annual network service costs, supporting the wide deployment of sensor nodes for big data acquisition.



MQTT and RESTful API IoT Protocol Support

IoT wireless sensor nodes are designed for not only automation applications, but also IoT applications that may use MQTT or RESTful web API IoT protocols for cloud integration.



Superior Penetration Compared to 1800~2100 MHz Cellular Networks

LoRaWAN networks use Sub-GHz signals that can penetrate concrete and steel buildings. Compared to high frequency cellular networks, LoRaWAN offers superior penetration and less degradation, making it more suited to smart city applications.



WISE-4600 Agricultural Applications

WISE-4610-S614

Outdoor LoRaWAN WSN with 4-ch Analog Input

- LoRaWAN wireless sensor node
- 4-channel inputs can be individually configured as AI or DI
- Input range: Voltage: 0 ~ 10V_{DC}
Current: 4 ~ 20mA
- Resolution: 16 bit

WISE-4671-S614

Outdoor 3G WSN with 2-ch Analog Input

- Cellular wireless sensor node for Asia and Europe
- 4-channel inputs can be individually configured as AI or DI
- Input range: Voltage: 0 ~ 10V_{DC}
Current: 4 ~ 20mA
- Resolution: 16 bit



WISE-4600 Water Applications

WISE-4610-S672

Outdoor LoRaWAN WSN with 2 Serial Ports

- LoRaWAN wireless sensor node
- 1 RS-485 port and 1 RS-232/RS-485 port
- Serial port supports Modbus/RTU protocol (32 addresses total with a maximum of 8 instructions)

WISE-4671-S672

Outdoor 3G WSN with 2 Serial Ports

- Cellular wireless sensor node for Asia and Europe
- 1 RS-485 port and 1 RS-232/RS-485 port
- Serial port supports Modbus/RTU protocol (32 addresses total with a maximum of 8 instructions)

