

WISE-4471

Cat. NB1/ Cat. M1 Wireless I/O Module

NEW



Introduction

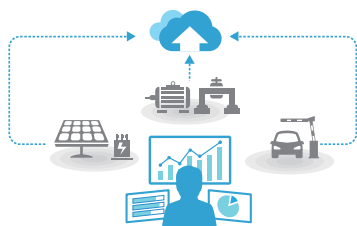
NB-IoT and LTE Cat M1 are new wireless technologies included in the 5G evolution of cellular technology standards defined by the 3rd Generation Partnership Project (3GPP). NB-IoT and LTE Cat M1 feature low power consumption and utilize LTE networks based on licensed spectrum bands. These technologies are optimized for connectivity to machines, assets and sensors in order to enable IoT applications such as smart cities, smart agriculture and remote asset management.

WISE-4471 series is a 4G cellular based IoT wireless sensor node compliant with LTE Cat. NB1 and Cat. M1 with built in antenna for flexible installation. In addition to offering various I/O types, WISE-4471 series provides a data logger and direct cloud connectivity so that data can be published to the cloud by messaging protocol such as MQTT, CoAP, LwM2M with secure socket supported.

Features

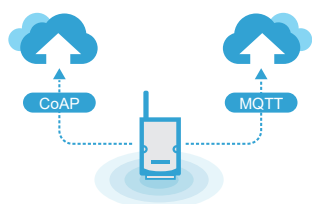
Automatic Connection with Cloud

By utilizing leading IoT messaging protocols such as MQTT and CoAP, WISE-4471 series easily integrates with popular cloud services, reducing setup complexity and accelerating implementation.



Open Connectivity for Cloud and System

WISE-4471 series support CoAP and MQTT communication protocols while continually integrating mainstream cloud services to simplify the complexity of data integration.

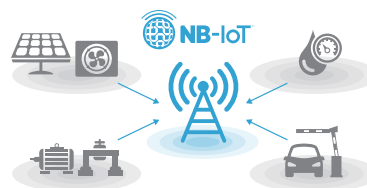


Features

- Global coverage of Cat. NB1 and Cat. M1 frequency bands
- Application-ready I/O combination with optional IP65 I/O
- Wide voltage power input with 10 ~ 50V_{DC}
- Data buffered function with time stamp reducing data lost
- Fast and easy deployment to reduce operation cost
- Supports direct cloud service for IoT integration
- Support MQTT, CoAP & LwM2M protocol

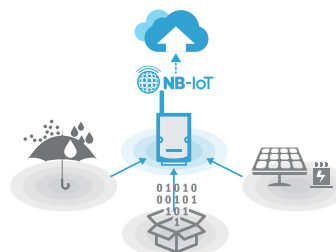
Legacy and Existing Devices to NB-IoT/eMTC

WISE-4471 series offer digital I/O, 4-20-mA analog and RS-232/485 interfaces for various applications, quickly providing NB-IoT/eMTC network functions to existing devices and assets.



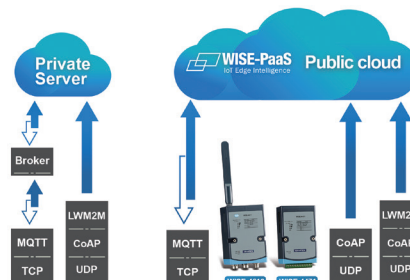
Upgrade Legacy Equipment through Cloud Management

WISE-4471 series NB-IoT/eMTC sensor nodes are suitable for data collection from widely distributed assets. No complicated programming, setup, or registration are required for a fast introduction into IoT applications such as smart cities, smart water/electricity meters, and remote facility management.



Device to Cloud System Architecture

WISE-4471 series wireless sensor nodes support the open communication protocols MQTT, CoAP, and LwM2M. Users can transmit data to specific public cloud services or existing private cloud platforms by publish/subscribe or push.



Specification

Wireless Communication

3GPP Standards	R, T3, Cat. NB1/ Cat. M1
Frequency Band	2, 3, 4, 5, 8, 12, 13, 20, 28
Antenna Type	Internal

General

Power Input	10 ~ 50V _{DC} external power
Power Consumption	2.0 W
Configuration Interface	Micro-B USB
SIM	3FF/Micro SIM
Connector	Plug-in screw terminal block (I/O and power)
WISE-4471-S2xxc	M12 4-pin code-A male x 1 (Power)
WISE-4471-S4xxc	M12 8-pin code-D female x 1 (I/O)
LED Indicator	Status, Error, Tx, Rx, Signal Level
Mounting	DIN 35 rail, wall, pole and stack
Dimension (W x H x D)	70 x 112 x 38 mm
Certification	CE, NCC, FCC, IC

WISE-S214 (4AI/4DI)

Analog Input

Channels	4
Resolution	16bits Bipolar; 15bits Unipolar
Sampling Rate	10Hz (Total) with 50/60Hz Rejection
Accuracy	±0.1% for Voltage Input; ±0.2% for Current Input
Input Range	0~150mV, 0~500mV, 0~1V, 0~5V, 0~10V, ±150mV, ±500mV, ±1V, ±5V, ±10V, 0~20mA, ±20mA, 4~20mA
Input Impedance	>1MΩ (Voltage)
Support Data	240 Ω (External resistor for current) Scaling and Averaging

Digital Input

Channels	4 (Dry Contact)
Supports 200Hz Counter Input (32-bit + 1-bit overflow)	
Supports keep/discard counter value on power-off	
Support inverted digital input status	

WISE-S250 (6DI, 2DO & 1RS-485)

Digital Input

Channels	6 (Dry Contact)
Supports 3kHz Frequency Input	

Digital Output (Sink Type)

Channel	2
Output Current	100 mA
	At 0 → 1: 100 us
	At 1 → 0: 100 us
	(for Resistive Load)
Supports Pules Output	5 kHz
Max. Load Voltage	30V

Serial Port

Port Number	1
Type	RS-485
Data Bits	7, 8
Stop Bits	1, 2
Parity	None, Odd, Even
Baud Rate (bps)	1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200
Protocol	Modbus/RTU (Total 64 addresses by 30 max. instructions)

WISE-S251 (6DI/1RS-485)

Digital Input

Channels	6 (Dry Contact)
Supports 200Hz Counter Input (32-bit + 1-bit overflow)	
Supports keep/discard counter value on power-off	
Support inverted digital input status	

Serial Port

Port Number	1
Type	RS-485
Data Bits	7, 8
Stop Bits	1, 2
Parity	None, Odd, Even
Baud Rate (bps)	1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200
Protocol	Modbus/RTU (Total 64 address by max. 20 instructions)

WISE-S472 (1DI/2COM) IP65

Serial Port

Port Number	2
Type	Port 1: RS-485; Port 2: RS-485/232
Serial Signal	RS-485: DATA+, DATARS-; 232: Tx, Rx, GND
Data Bits	7, 8
Stop Bits	1, 2
Parity	None, Odd, Even
Baud Rate (bps)	1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200
Protection	15 kV ESD
Protocol	Modbus/RTU (Total 32 address by max. 8 instructions)

Digital Input

Channels	1
Input Type	Dry Contact (Wet Contact by request)
Logic Level	0: Open; 1: Close to DCOM
Supports 200Hz Counter Input (32-bit + 1-bit overflow)	
Keep/Discard Counter Value when Power-off	
Supports 200Hz Frequency Input	
Supports Inverted DI Status	

Environment

Operating Temperature	-20 ~ 60°C
Storage Temperature	-40 ~ 85°C
Operating Humidity	20 ~ 95% RH
Storage Humidity	0 ~ 95% RH

Ordering Information

WISE-4471-UA	Cat. NB1/Cat. M1 Wireless Module
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WISE-S200 I/O Module

WISE-S214-A	4AI/4DI
WISE-S250-A	6DI, 2DO & 1RS-485
WISE-S251-A	6DI & 1RS-485

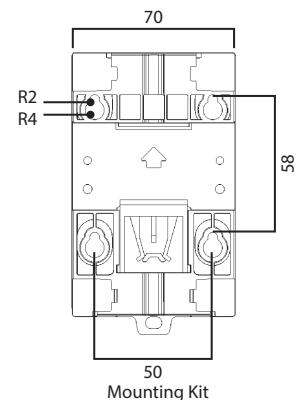
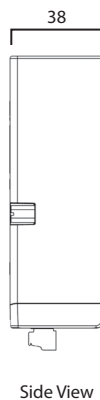
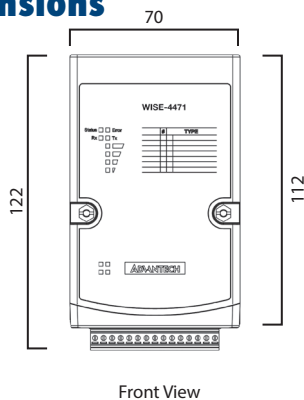
WISE-S400 IP65 I/O Module

WISE-S414-A	4AI (Upon Request)
WISE-S472-A	1DI, 1RS-485, 1RS-485/RS-232

Accessories

PWR-242-AE	DIN Rail Power Supply (2.1A Output Current)
PWR-243-AE	Panel Mount Power Supply (3A Output Current)
PWR-244-AE	Panel Mount Power Supply (4.2A Output Current)
1654011516-01	M12 Connector 8P Male
1655005903-01	M12 Connector 4P Female
1700028162-01	2M M12 code-A 4-pin female cable for power wiring
1700028163-01	2M M12 code-D 8-pin male cable for I/O wiring

Dimensions



Unit: mm

Mouser Electronics

Authorized Distributor

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