

# WISE-4220

## Industrial Wi-Fi 2.4G Wireless I/O Module

NEW



### Introduction

The WISE-4220 series is an Ethernet-based wireless IoT device, integrated with IoT data acquisition, processing, and publishing functions. As well as various I/O and sensor types, the WISE-4220 series provides data pre-scaling, data logic, and data logger functions. These data can be accessed via mobile devices and be published to the cloud with security at anytime and anywhere.

### 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 existing Ethernet network to wireless. The limited AP mode enables the WISE-4220 to be accessed via other Wi-Fi devices directly as an AP.



#### HTML5 Web Configuration Interface

All the configuration interfaces are applied in web service, and the web pages are based on HTML5, so users can configure the WISE-4220 without the limitation of OS/devices. You can use your mobile phone or tablet to directly configure the WISE-4220.



### Features

- 2.4GHz Wi-Fi reducing the wiring cost during big data acquisition
- Easily extend the existing network by adding APs, and share existing Ethernet software
- Configured by mobile devices directly without installing any software or Apps
- Zero data loss using the log function with RTC time stamp
- Data can be automatically pushed to Dropbox or computer
- Supports RESTful web API in JSON format for IoT integration

### Data Storage

The WISE-4220 can log up to 10,000 samples of data with a time stamp. The I/O data can be logged periodically, and also when the I/O status changes. Once the memory is full, users can choose to overwrite the old data to ring log or just stop the log function.



### Cloud Storage

Data logger can push the data to file-based cloud services like Dropbox using pre-configured criteria. With RESTful API, the data can also be pushed to a private cloud server in the format of JSON. Users can setup their private cloud server using the provided RESTful API and their own platform.



## Specifications

### General

- **WLAN Standard** IEEE 802.11b/g/n
- **Frequency Band** 2.4GHz ISM Band
- **Transmit Power** 802.11b: 12.0 dBm ±1dBm  
802.11g: 15.5 dBm ±1dBm  
802.11n: 15.5 dBm ±1dBm
- **Antenna** Connector: Reverse SMA  
Gain (Peak): 2.45 dBi
- **Outdoor Range** 150m with line of sight
- **Connectors** Plug-in screw terminal block (power)
- **Watchdog Timer** System (1.6 second) and Communication (programmable)
- **Certification** CE, FCC, IC, NCC, SRR, RCM, VCCI, TELEC (CC3200 listed antenna)
- **Dimensions (W x H x D)** 70 x 102 x 38 mm
- **Enclosure** PC
- **Mounting** DIN 35 rail, wall, stack, and pole
- **Power Input** 10 – 50 V<sub>DC</sub>
- **Power Consumption** 1.2 W @ 24 V<sub>DC</sub>
- **Power Reversal Protection**
- **Supports User Defined Modbus Address**
- **Supports Data Log Function** Up to 10000 samples with RTC time stamp
- **Supported Protocols** Modbus/TCP, TCP/IP, UDP, DHCP, and HTTP
- **Supports RESTful Web API in JSON format**
- **Supports Web Server in HTML5 with JavaScript & CSS3**
- **Supports System Configuration Backup and User Access Control**

### Environment

- **Operating Temperature** -25 ~ 70°C (-13~158°F)
- **Storage Temperature** -40 ~ 85°C (-40~185°F)
- **Operating Humidity** 20 ~ 95% RH (non-condensing)
- **Storage Humidity** 0 ~ 95% RH (non-condensing)

## WISE-4220-S231 (Built-in Temperature and Humidity Sensor)

### Temperature Sensor

- **Operating Range** -25°C ~ 70°C (-13°F ~ 157.9°F)
- **Resolution** 0.1 (°C/°F/K)
- **Accuracy** ±2.0°C (±35.6°F) (vertical installation)

### Humidity Sensor

- **Operating Range** 10 ~ 90% RH
- **Resolution** 0.1% RH
- **Accuracy** ±4% RH @ 0%-50% RH  
±10% RH @ 50%-60% RH  
±13% RH @ 60%-90% RH

## 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)  
240 Ω (External resistor for current)
- **Support Data** 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 32 addresses by 8 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 32 address by max. 8 instructions)

## Ordering Information

### Wi-Fi 2.4G Wireless I/O Module

- **WISE-4220-A** Wi-Fi 2.4G Wireless I/O Module
- **WISE-4220-S231-A** Wi-Fi 2.4G Wireless Module with Temperature and Humidity Sensor

### WISE-S200 I/O Module

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

### 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)

