

# WISE-4012

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



### Main Features

**NEW**

- 4-ch universal input and 2-ch digital output
- 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



### Introduction

The WISE-4000 series is an Ethernet-based wireless IoT device, integrated with IoT data acquisition, processing, and publishing functions. As well as various I/O types, the WISE-4000 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-4000 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-4000 without the limitation of OS/devices. You can use your mobile phone or tablet to directly configure the WISE-4000.



#### RESTful Web Service with Security Socket

As well as supporting Modbus/TCP, the WISE-4000 series also supports IoT communication protocol, RESTful web service. Data can be polled or even be pushed automatically from the WISE-4000 when the I/O status is changed. The I/O status can be retrieved by internet media types like JSON. The WISE-4000 also supports HTTPS which has security that can be used in a Wide Area Network (WAN).



#### Data Storage

The WISE-4000 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

### Universal Input

- **Channels** 4
- **Resolution** 16-bit
- **Sampling Rate** Universal Input 10Hz (Total)  
Digital Input 2Hz (Per Channel)
- **Accuracy**  $\pm 0.1\%$  of FSR (Voltage)  
 $\pm 0.2\%$  of FSR (Current)
- **Input Type and Range**  
Analog Input  $\pm 150\text{mV}$ ,  $\pm 500\text{mV}$ ,  $\pm 1\text{V}$ ,  $\pm 5\text{V}$ ,  $\pm 10\text{V}$ ,  
 $0\text{--}150\text{mV}$ ,  $0\text{--}500\text{mV}$ ,  $0\text{--}1\text{V}$ ,  $0\text{--}5\text{V}$ ,  $0\text{--}10\text{V}$ ,  
 $0\text{--}20\text{mA}$ ,  $4\text{--}20\text{mA}$ ,  $\pm 20\text{mA}$
- **Input Impedance**  
Digital Input (Dry Contact) 0: Open, 1: Close  
> 10M  $\Omega$  (Voltage)  
120  $\Omega$  (External resistor for current)
- **Over Voltage Protection**  $\pm 35\text{V}_{\text{DC}}$
- **Burn-out Detection** Yes (4~20mA only)
- **Supports Data Scaling and Averaging**

### Digital Output

- **Channels** 2  
(Open collector to 30 V, 400 mA max.  
for resistance load)
- **Isolation** 3,000  $V_{\text{rms}}$
- **Supports 5 kHz Pules Output**
- **Supports High-to-Low and Low-to-High Delay Output**

### General

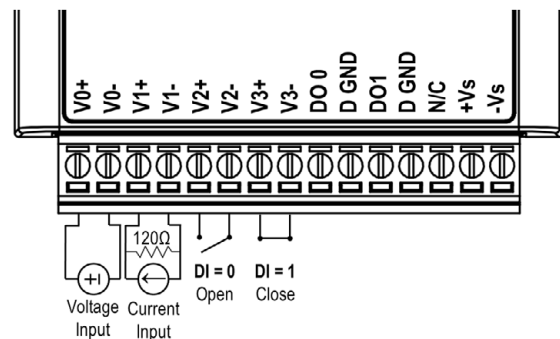
- **WLAN** IEEE 802.11b/g/n 2.4GHz
- **Outdoor Range** 110 m with line of sight
- **Connectors** Plug-in screw terminal block (I/O and power)
- **Watchdog Timer** System (1.6 second) and  
Communication (programmable)
- **Certification** CE, FCC, R&TTE, NCC, SRRC, RoHS, KC
- **Dimensions (W x H x D)** 80 x 148 x 25 mm
- **Enclosure** PC
- **Mounting** DIN 35 rail, wall, and stack
- **Power Input** 10 ~ 30  $V_{\text{DC}}$
- **Power Consumption** 2.5 W @ 24  $V_{\text{DC}}$
- **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**  $-25 \sim 70^{\circ}\text{C}$  ( $-13 \sim 158^{\circ}\text{F}$ )
- **Storage Temperature**  $-40 \sim 85^{\circ}\text{C}$  ( $-40 \sim 185^{\circ}\text{F}$ )
- **Operating Humidity** 20 ~ 95% RH (non-condensing)
- **Storage Humidity** 0 ~ 95% RH (non-condensing)

## Pin Assignment



## Ordering Information

- **WISE-4012-AE** 4-ch Universal Input and 2-ch Digital Output IoT Wireless I/O Module

### Selection Table

| Model Name | Universal Input | Digital Input | Digital Output | Relay Output | RS-485 |
|------------|-----------------|---------------|----------------|--------------|--------|
| WISE-4012  | 4               |               | 2              |              |        |
| WISE-4050  |                 | 4             | 4              |              |        |
| WISE-4051  |                 | 8             |                |              | 1      |
| WISE-4060  |                 | 4             |                | 4            |        |

### 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)

## Dimensions

