



# WF-2019

## Quick Start

Nov. 2013 Version 1.0

### 「 WF-2019 」 Package Checklist

The package includes the following items:

- One WF-2019 module
- One Quick Start
- One software utility CD
- One screw driver
- One RS-232 cable (CA-0910)
- One Antenna 2.4GHz - 5 dBi (ANT-124-05)
- One DB-1820 daughter board



### Note:

If any of these items are missed or damaged, contact the local distributors for more information. Save the shipping materials and cartons in case you want to ship in the future.

## ● Appearance and pin assignments

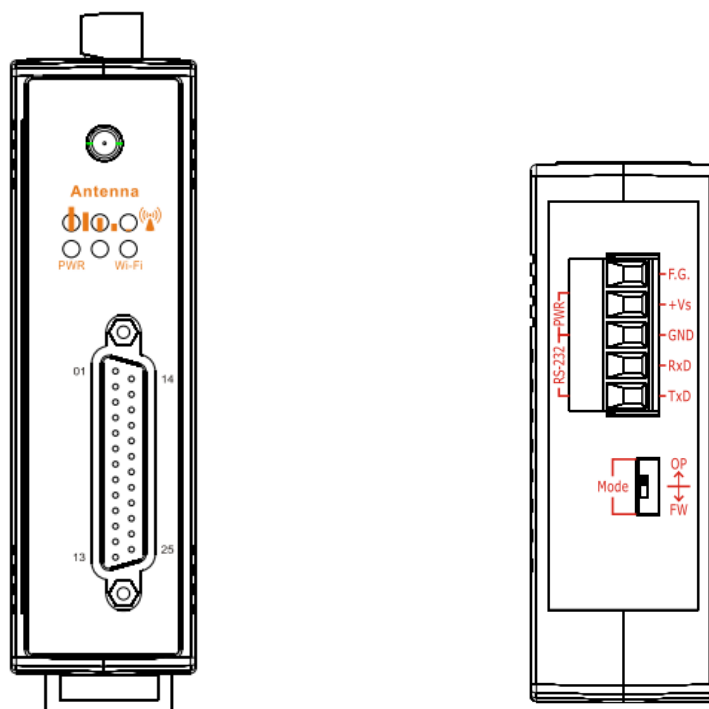


Figure 1: Appearance of the WF-2019

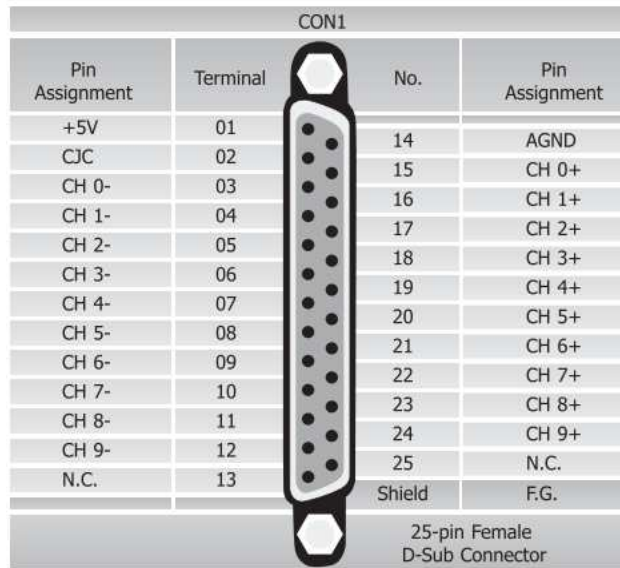


Figure 2: Pin Assignment of D-Sub 25-pin

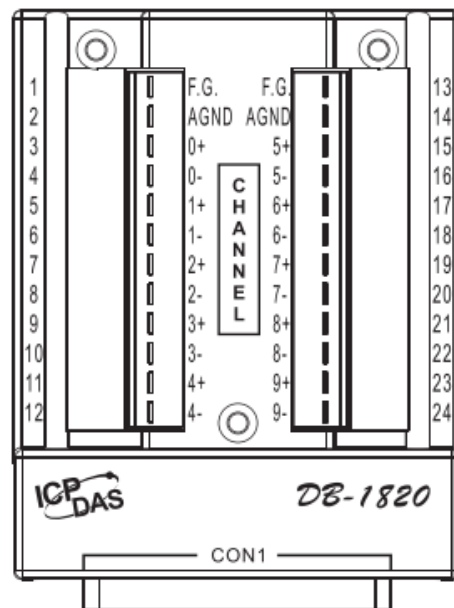


Figure 3: Pin Assignment of DB-1820

Table 1: Power/Signal Connector

Power/Signal connector	
Pin Assignment	Description
F.G	Frame Ground
+Vs	+10 ~ +30 VDC
GND	Power / RS-232 GND
RxD	RS-232 RxD
TxD	RS-232 TxD

**Operating Mode Selector Switch**

***FW mode:*** Firmware update mode

***OP mode:*** Firmware operation mode

● **Hardware Connection**

Power and Serial port connection

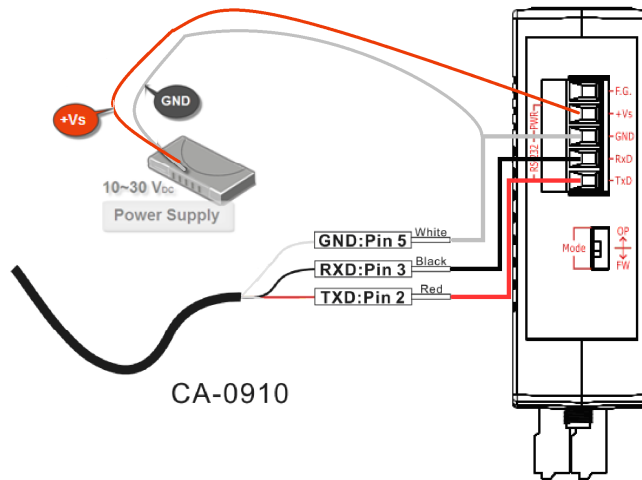


Figure 4: Power and Serial port wire connection

I/O connection

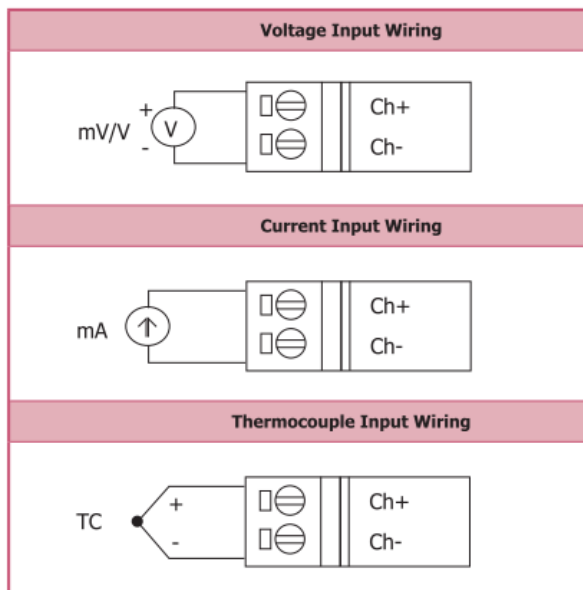


Figure 5: Wire connections

## ● Installation

Before use, associated hardware configuration, the steps described as follows :

### Step 1: Checking the WF-2000 series firmware operation mode

It needs to set the DIP switch to the "OP" position (operation mode), as resetting the power, WF-2000 series will be in the operation mode.

### Step 2: Serial port connection

WF-2000 series supports RS-232 serial communication. The circuit configuration is as shown in Figure 4.

If you do not need parameter setting, this step can be omitted.

### Step 3: Power connection

Connect the power supply to WF-2000 series' power terminator, as shown in Figure 4.

## WF-2000 series connection setting

### WF-2000 Series Wireless Network Configuration

The screenshot displays the 'WF-2019 NetworkConfig (192.168.255.1)' web interface. It is divided into three main sections: Network, Wi-Fi, and Communication.

- Network Section:**
  - NetID: 1 (dropdown)
  - DHCP Enable
  - IP Address: 192, 168, 255, 1
  - Subnet Mask: 255, 255, 255, 0
  - Gateway: 192, 168, 255, 254
  - MAC Address: 00-1D-C9-80-0B-47
- Wi-Fi Section:**
  - Wi-Fi Modes: Ad-Hoc (dropdown)
  - SSID Auto Search (with Search button)
  - SSID: WF-2019
  - Encryption: NONE (dropdown)
  - Wireless Key: (empty text field)
  - Wireless CH: 2 (dropdown)
- Communication Section:**
  - F/W Version: 1.0
  - Date Created: 2013/11/6
  - Auto Disconnect when Idle
  - Comm. Net ID: 1 (dropdown)
  - RS-232 (dropdown) and COM5 (dropdown)
  - Buttons: Write Parameter, Read Parameter

Figure 6: Wi-Fi Configuration

- 01 、 Net ID : The Unit Identifier in Modbus TCP/IP application data unit. This case is set as "1".
- 02 、 IP Address: WF-2000 series' IP address. Here set to "192.168.255.1".
- 03 、 Subnet Mask : Net Mask settings. Here set to "255. 255. 255.0".
- 04 、 Gateway : Gateway settings. Here set to "192.168.255.254".
- 05 、 Wi-Fi Mode : Wireless network connection mode settings. Here set to "Ad-Hoc" mode. (If select the "AP" mode, wireless AP devices is needed.)
- 06 、 SSID : Service set identifier. Here set to "WF-2019".
- 07 、 Encryption : Encryption mode settings. Here set "NONE" (without encryption).
- 08 、 Wireless Key : Wireless encryption Key. Here does not have the setting.
- 09 、 Wireless CH : Wi-Fi connection channel settings. Here set to "2".
- 10 、 Upload parameters : After completing the settings above, select the "RS-232" interface, communication "Net ID" and "COM Num". Press "Write Parameter" button to upload the parameters.

## PC Wireless Network Configuration and Connection

### 01 、 TCP/IP Setting :

- a. Entry the **IP address** as "192.168.255.x", where "x" is a number between 1 and 254 **except 1**, **Subnet mask** as "255.255.255. 0". Finally, press "OK" button.

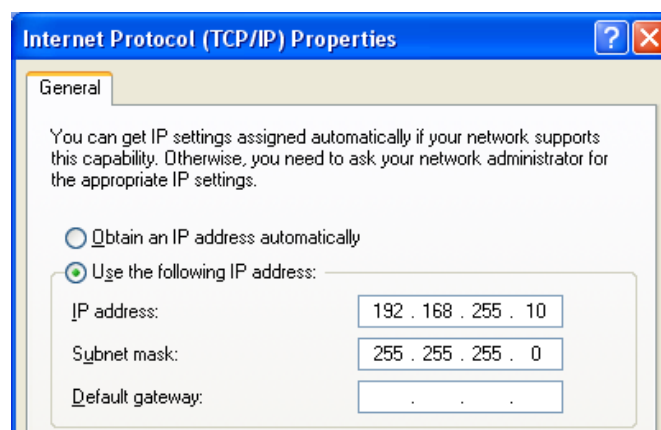


Figure 7: IP address configuration interface

## 02 、 Wireless network connection :

- a. View available wireless networks and you can see the "WF-2019" wireless network in the list.
- b. Select the "WF-2019" and press the "Connect" button.
- c. After waiting for a while, there will appear connection success screen.

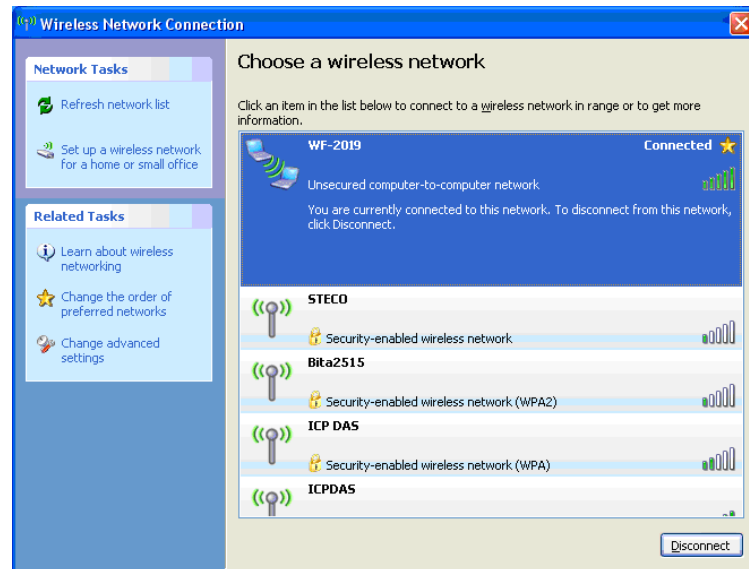


Figure8: Connection successful interface

## Access I/O data

### 01 、 Connection with Modbus TCP utility

- a. Open Modbus TCP utility and key in the IP address as "192.168.255.1", Port as "502". Finally, press the "Connect" button.
- b. If the network settings are correct, this will immediately establish a connection.
- c. Use the function code "0x04", and set the Reference Number as "0x00", Word Count as "0x0b" to get the AI value.

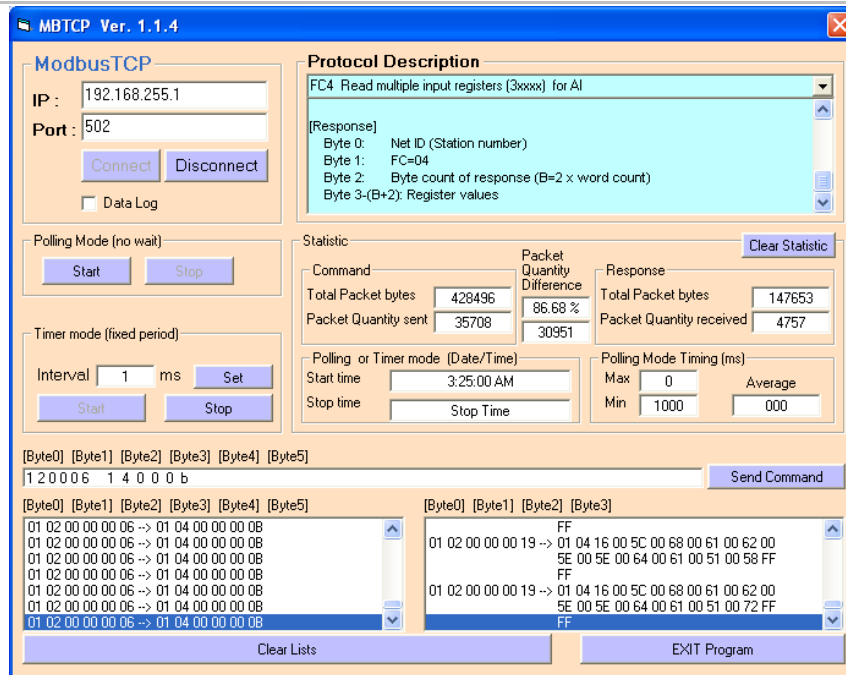


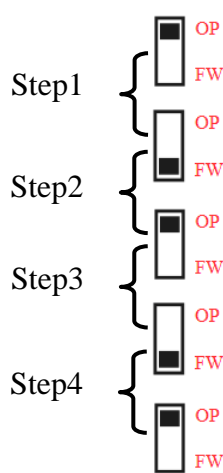
Figure 9: Analog Input reading screen

## WF-2019 AI Address Mapping

Table 2: (3xxxx) AI address

Begin Address	Points	Descriptions	Data Format	Data Range
30001 (0x0)	0~9	Analog Input	2's Complement HEX	0x8000 ~ 0x7FFF
30011 (0xA)	1	CJC data	2's Comp. HEX	0xFED4 ~ 0x03E8

## Troubleshooting

Item	Problem Description	Solution
1	Power Failure (PWR LED Off)	1. Please return to the ICP DAS for inspection and repair
2	WLAN connection can not be established	<ol style="list-style-type: none"> <li>1. Make sure that the service set identifier device (SSID) settings are the same.</li> <li>2. Make sure Wi-Fi transmission Channel settings are the same.</li> <li>3. Make sure encryption is set, encryption keys are the same way</li> <li>4. Make sure antenna is connected</li> <li>5. Please confirm whether there are barriers on the scene. That could result in poor signal quality.</li> </ol>
3	TCP connection can not be established	<ol style="list-style-type: none"> <li>1. Make sure WLAN connection is established successfully</li> <li>2. Make sure the network configuration is good (TCP / IP Port, Local IP, Net Mask)</li> </ol>
4	<p>How to restore factory default</p>  <p>The diagram illustrates four steps for restoring factory defaults using a dip-switch:</p> <ul style="list-style-type: none"> <li><b>Step1:</b> Switch is in the 'OP' position.</li> <li><b>Step2:</b> Switch is moved to the 'FW' position.</li> <li><b>Step3:</b> Switch is moved back to the 'OP' position.</li> <li><b>Step4:</b> Switch is moved back to the 'FW' position.</li> </ul>	<ol style="list-style-type: none"> <li>1. Power on the WF-2000 series I/O module</li> <li>2. Change the Dip-Switch position of the WF-2000 series and to complete the following steps in 5 seconds. <ul style="list-style-type: none"> <li>Step1. From "OP" to "FW" position.</li> <li>Step2. From "FW" to "OP" position.</li> <li>Step3. From "OP" to "FW" position.</li> <li>Step4. From "FW" to "OP" position.</li> </ul> </li> <li>3. When the correct implementation of the above steps, the Signal Strength LEDs and PWR/Wi-Fi LEDS of the WF-2000 series should be turn on, and that should be turn off after 500 ms later.</li> <li>4. Reset the power the WF-2000 series would back to factory defaults.</li> </ol>

## ● Technical Support

If you have problems about using the WF-2000 series I/O module, please contact ICP DAS Product Support.

Email: [service@icpdas.com](mailto:service@icpdas.com)