WF-2051

Quick Start

「 WF-2051 」 Package Checklist



The package includes the following items:

- One WF-2051 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)

Note:

1. 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.
2. This document supports the RevB version for the WF-2051 module. For the previous version, please refer the v1.x version quick start on the CD.

Appearance and pin assignments

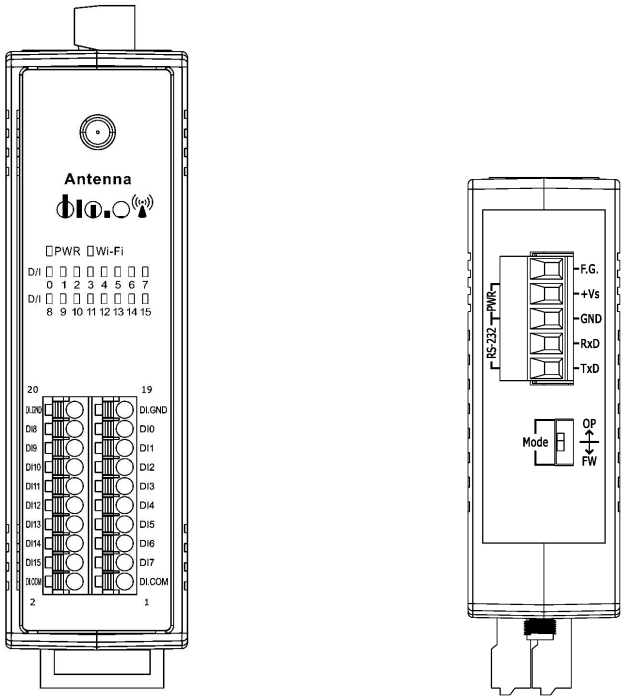


Figure 1: Appearance of the WF-2051

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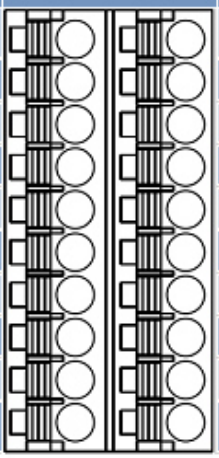
Pin Assignment Name		Terminal No.		Pin Assignment Name
DI.GND	20		19	DI.GND
DI8	18		17	DI0
DI9	16		15	DI1
DI10	14		13	DI2
DI11	12		11	DI3
DI12	10		9	DI4
DI13	8		7	DI5
DI14	6		5	DI6
DI15	4		3	DI7
DI.COM	2		1	DI.COM

Figure 2: I/O Connector of WF-2051

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

Table 2: Operating Mode Selector Switch

Operating Mode Selector Switch		
Mode	**Jumper Position**	**Description**
FW		Firmware update mode
OP		Firmware operation mode

● Hardware Connection

Power and Serial port connection

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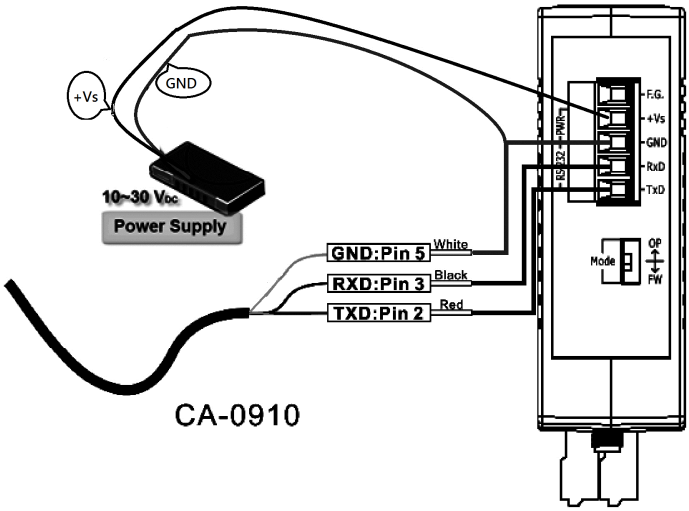


Figure 3**:** Power and Serial port wire connection

I/O connection

Input Type	ON State LED ON	ON State LED OFF
Dry Contact	Relay ON	Relay OFF
Relay Contact	Relay Close — DIx / GND	Relay Open — DIx / GND
TTL/CMOS Logic	Voltage < 4V	Voltage > 10V
	Logic Level Low / Logic GND — DIx / GND	Logic Level High / Logic GND — DIx / GND
Open Collector	Open Collector ON	Open Collector OFF
	ON — DIx / GND	OFF — DIx / GND

Figure 4**:** DI Dry contact wire connection

Input Type	ON State LED ON	OFF State LED
Wet Contact	Relay ON	Relay OFF
Relay Contact	+ / − Relay Close — DI.COM / DIx	+ / − Relay Open — DI.COM / DIx
TTL/CMOS Logic	Voltage > 10V	Voltage < 4V
	Logic Power / Logic Level Low — DI.COM / GND	Logic Power / Logic Level High — DI.COM / GND

Figure 5**:** DI Wet contact wire connection

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● 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 3.

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 3.

WF-2000 series connection setting

WF-2000 Series Wireless Network Configuration

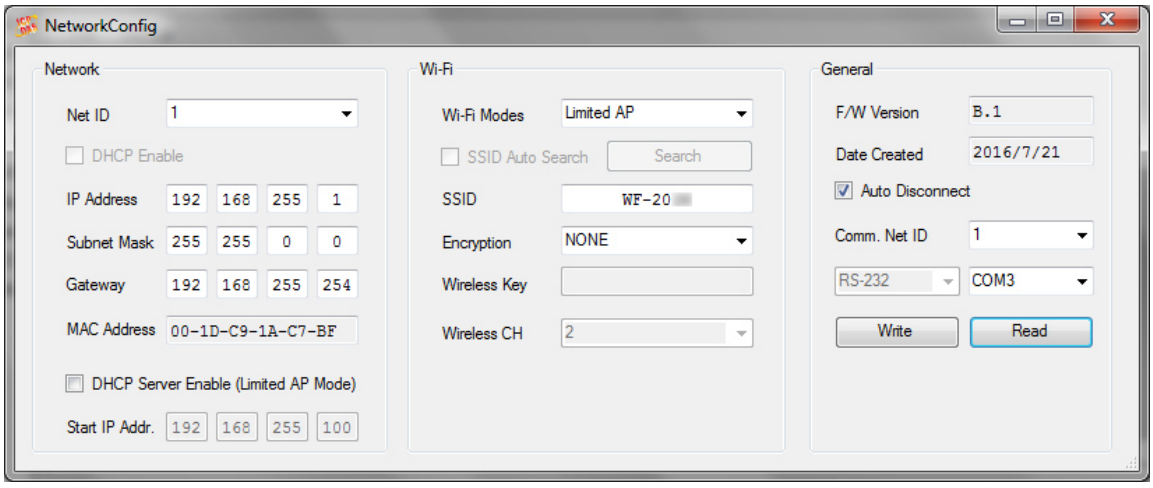


Figure 6**:** Wi-Fi Configuration

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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 "255.255.0.0".
04、Gateway ：Gateway settings. Here set to "192.168.255.254".
05、Wi-Fi Mode ：Wireless network connection mode settings. Here set to "Limited AP" mode. (If select the "Limited AP" mode, the "DHCP Server" function is enabled)
06、SSID ：Service set identifier. Here set to "WF-2051".
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" 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.

02、Wireless network connection ：

a. View available wireless networks and you can see the "WF-2051" wireless network in the list.
b. Select the "WF-2051" and press the "Connect" button.
c. After waiting for a while, there will appear connection success screen.

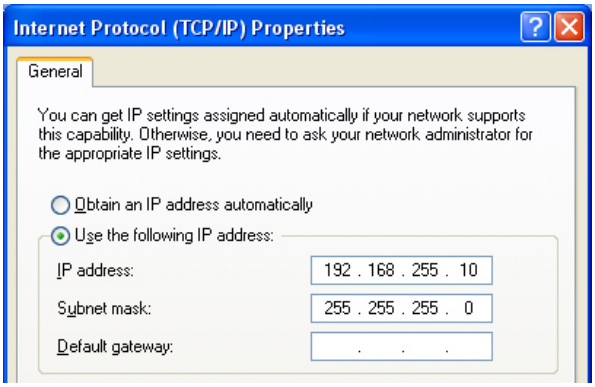


Figure 7: IP configuration interface

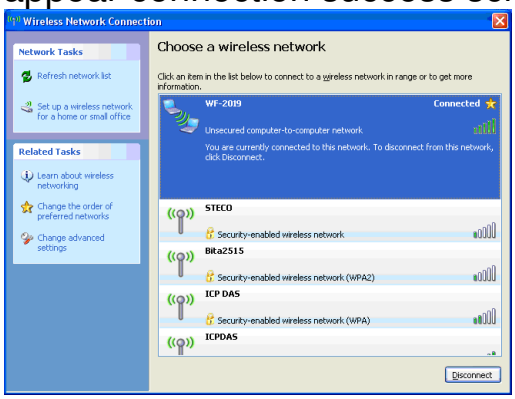


Figure 8: Connection interface

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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, click the "Connect" button.

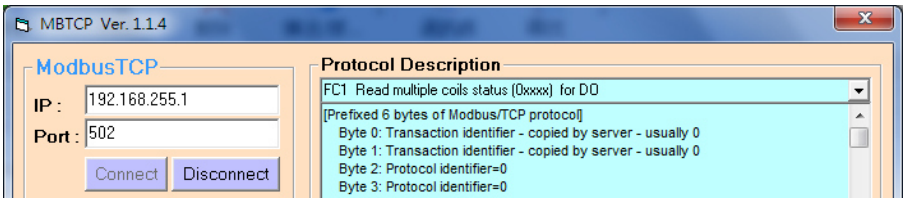


Figure 9: Modbus TCP utility Connection interface

b. Use the function code "0x02", and set the Reference Number as "0x00", Bit Count as "0x10" to get the 16 CHs DI value.

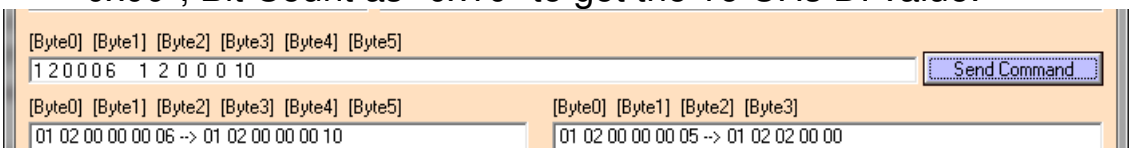


Figure 10: Digital Input reading screen

c. Use the function code "0x04", and set the Reference Number as "0x32", Word Count as "0x10" to get the 8 CHs Counter value (4 bytes each counter).

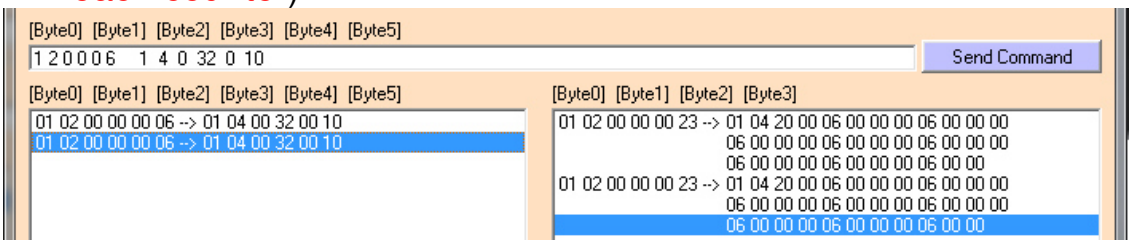


Figure 11: Counter reading screen

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WF-2051 I/O Address Mapping

Table 3: (0xxxx) DO address

Begin Address	Points	Descriptions	Range	Access Type
00011	1~8	Clear High Speed Counter	1=Clear	W
00021	1~8	Clear Low Speed Counter	1=Clear	W

Table 4: (1xxxx) DI address

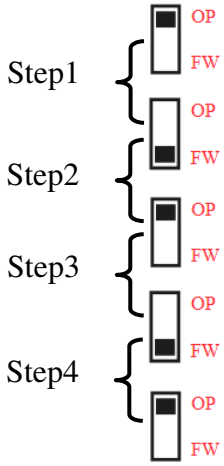
Begin Address	Points	Descriptions	Range	Access Type
10001	1~16	Digital Input	0=OFF, 1=ON	R

Table 5: (3xxxx) AI address

Begin Address	Points	Descriptions	Range	Access Type
30051	1~16 (2 points/ Each Channel)	High Speed Counter	0~4294967295	R
30071	1~16 (2 points/ Each Channel)	Low Speed Counter	0~4294967295	R

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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	1. Make sure that the service set identifier device (SSID) settings are the same. 2. Make sure Wi-Fi transmission Channel settings are the same. 3. Make sure encryption is set, encryption keys are the same way 4. Make sure antenna is connected 5. Please confirm whether there are barriers on the scene. That could result in poor signal quality.
3	TCP connection can not be established	1. Make sure WLAN connection is established successfully 2. Make sure the network configuration is good (TCP / IP Port, Local IP, Net Mask)
4	How to restore factory default 	1. Power on the WF-2000 series I/O module 2. Change the Dip-Switch position of the WF-2000 series and to complete the following steps in 5 seconds. Step1. From “OP” to “FW” position. Step2. From “FW” to “OP” position. Step3. From “OP” to “FW” position. Step4. From “FW” to “OP” position. 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. 4. Reset the power the WF-2000 series would back to factory defaults.

● 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

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