Installation Manual IOM0084- ModbusRTU

Packing List

IOM0084 Expansion Module (1 piece)   User Manual (1 piece) Certificate of Compliance (1 piece)

1.Product parameters

This product adopts the mainstream ARM core 32-bit microprocessor and supports the Modbus RTU protocol, which can realize the fast expansion of the I/O module of the controller.

Processor: 32-bit, clock frequency: 72MHz

Memory: 64KB flash memory, 20KB random access memory

Power supply: AC/DC 12~24V

Communication: Modbus RTU (Default: 9600, 8, 1, None, Address 1)

Analog Input:14-bit resolution,support 0-10V and 0-20mA input

Analog Output:12-bit resolution,support 0-10V and 0-20mA output

The analog input AI defaults to current signals. If you need to connect voltage signals, simply move the corresponding Uin switch (the 8 switches in Uin switch configuration correspond to the 8 ports of analog input) upwards.

The analog output AO can select either current or voltage signals. Each channel can only use one output mode at a time.

2.Model Description

	BI/DI	BO/DO	AI	AO
IOM0084	0	0	8	4

3.Register Definition Explanation

● **AI---Input Register(0x03)**

AI Port	Voltage Register address	Voltage corresponding value	Current Register Address	Current corresponding value
1	40031	0~10V=0~10000	40051	0~20mA=0~20000
2	40032	0~10V=0~10000	40052	0~20mA=0~20000
3	40033	0~10V=0~10000	40053	0~20mA=0~20000
4	40034	0~10V=0~10000	40054	0~20mA=0~20000
5	40035	0~10V=0~10000	40055	0~20mA=0~20000
6	40036	0~10V=0~10000	40056	0~20mA=0~20000
7	40037	0~10V=0~10000	40057	0~20mA=0~20000
8	40038	0~10V=0~10000	40058	0~20mA=0~20000

● **AO---Holding Register(0x03/0x06)**

AO Port	Voltage Register address	Voltage corresponding value	Current Register Address	Current corresponding value
1	40071	0~10V=0~10000	40081	0~20mA=0~20000
2	40072	0~10V=0~10000	40082	0~20mA=0~20000
3	40073	0~10V=0~10000	40083	0~20mA=0~20000
4	40074	0~10V=0~10000	40084	0~20mA=0~20000

AO Register address	AO Port	Description
40001	---	Device Address: 1（1~15）
40002	---	BDT: 9600 （2.4K/4.8K/9.6K/19.2K/115.2K）
40003	---	Check bit: None （0-none,1 - odd, 2 - even）

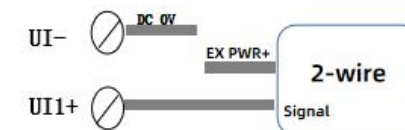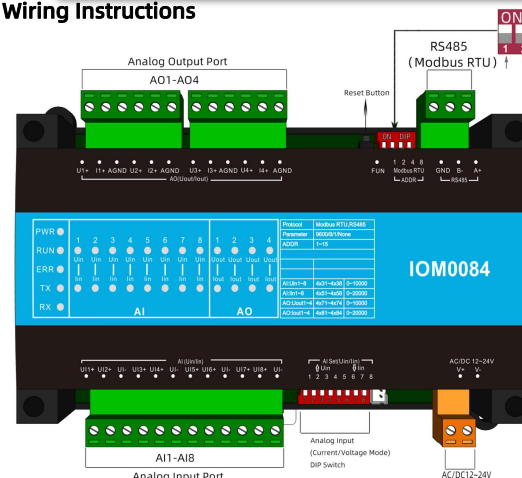## 4. Wiring Instructions

Taking Channel 1 as an Example:

Figure 2: Analog Output(Voltage) Wiring Diagram

Figure 3: Analog Output(Current) Wiring Diagram
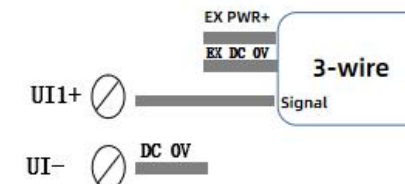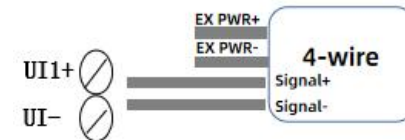

Figure 4: Analog Input Wiring Diagram

Figure 5: Analog Input Wiring Diagram

Figure 6: Analog Input Wiring Diagram
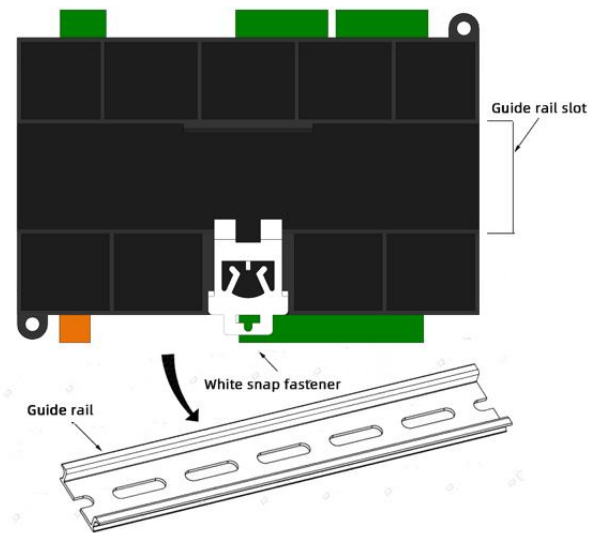
5.Installation method: Rail-mounted

Figure 7: Pull down the white snap of the product and insert it into the rail strip. Then press the white snap upwards as shown in the figure to fix it.
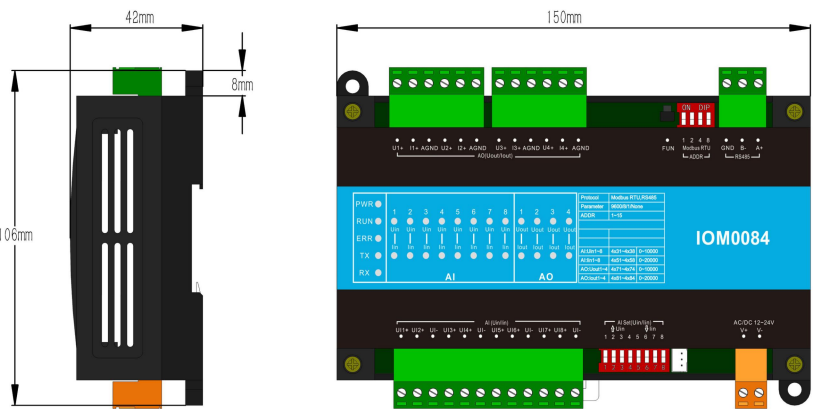
6.Product dimensions

Figure 8: Product dimensions: 150mm * 106mm * 42mm (L × W × H). Weight: 250g

7.FAQ

Q①： What is the default communication parameter of the module?

A①： The default communication parameters of the ModbusRTU module: baut-rate 9600, data-bit 8, stop-bit 1, no parity, and device ID is 1.

Q②： How to modify the communication parameter of the module?

A②： Use third-party software Modbus Poll, follow chapter "3.0 Description of Definition for Registers", Read the data from registers 40001 and 40002, which represent device addresses (1-15) and communication baud rate of 9600. Modify the module communication parameters according to the description in the "Instructions" column. After power failure and restart, the set parameters take effect. (Station number 40001 displays the station number set by the current dip switch. If software is required to set the station number, the dip switches 1/2/3/4 must be placed in the OFF position.)

Q③： How to modify the device ID?

A③： How to modify the device ID (device address)?

Refer to the table below for the internal dial of the hardware (binary dial code).The dip switch has 4 bits, each representing a numerical value. When pushed to the OFF position, it is set to 0. When turned ON, it represents 1, 2, 4, and 8 in sequence. When turned ON, it represents the sum of numerical values, which equals the address code of the device. If the device ID is set to "11", dialing codes 1, 2, and 4 will push it to the ON position, and dialing code 3 will push it to the OFF position, which is equivalent to 1+2+8=11. Note: The maximum address code is 15.

Device ID	1	2	3	4	5	6	7	8
Dial	1	2	1+2	3	1+3	2+3	1+2+3	4
Device ID	9	10	11	12	13	14	15	
Dial	1+4	2+4	1+2+4	3+4	1+3+4	2+3+4	1+2+3+4	

Q④： How to forcibly reset the baud rate of this I/O module to its default value?

A④： Activate the module's hardware reset button (typically labeled Reset). This action immediately restores the baud rate to 9600, ensuring rapid reset of the communication link to its initial state.

The free software: BACnetScan scanning software, OPC2WEB software, X2OPC_Free software,MBus scanning tools, Lumiscan green rice smart home scanning tools.

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