



iO-GRID™
and SIEMENS PLC
Modbus TCP Connection
Operating Manual



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1. Remote I/O Module System Configuration List

Part No.	Specification	Description
GFGW-RM01N	Modbus TCP-to-Modbus RTU/ASCII, 4 Ports	Gateway
GFMS-RM01S	Master Modbus RTU, 1 Port	Main Controller
GFDI-RM01N	Digital Input 16 Channel	Digital Input
GFDO-RM01N	Digital Output 16 Channel / 0.5A	Digital Output
GFPS-0202	Power 24V / 48W	Power Supply
GFPS-0303	Power 5V / 20W	Power Supply
0170-0101	8 pin RJ45 female connector/RS-485 Interface	Interface Module

1.1 Product Description

- I. The interface module can convert the gateway's RS485 port into a RJ45 connector.
- II. The main controller is in charge of the management and dynamic configuration of I/O parameters and so on.
- III. The power module and interface module are standard for remote I/O's and users can choose the model or brand they prefer.

2. Siemens S7-200 Smart Connection Setup

This section details how to connect a gateway to Siemens S7-200 Smart. For detailed information regarding **iO-GRID^M**, please refer to the **[iO-GRID^M -Series Product Manual](#)**

2.1 i-Designer Program Setup

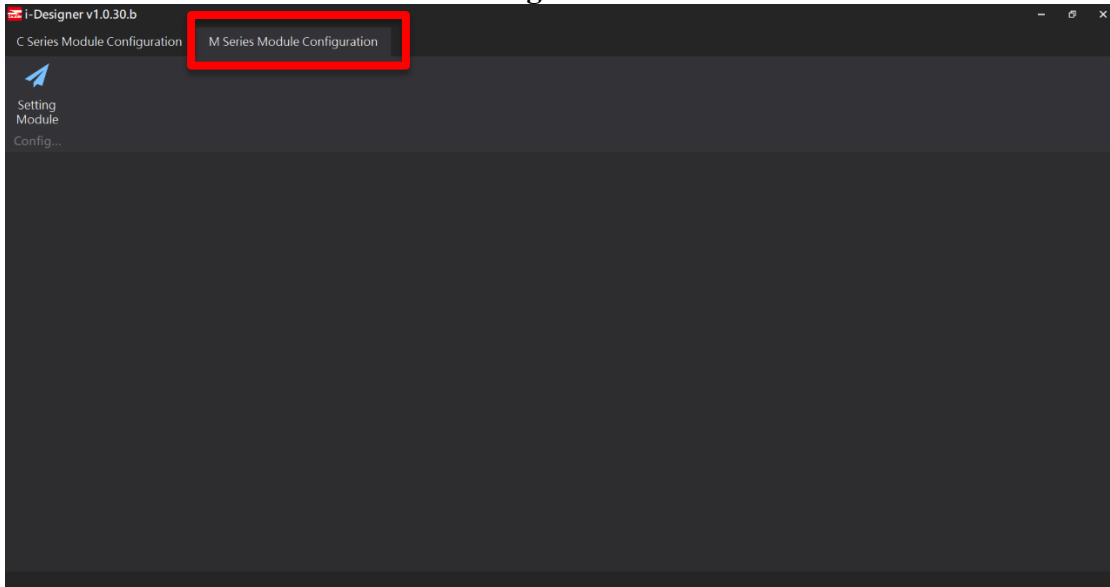
- I. Make sure that the module is powered and connected to the gateway module using an Ethernet cable



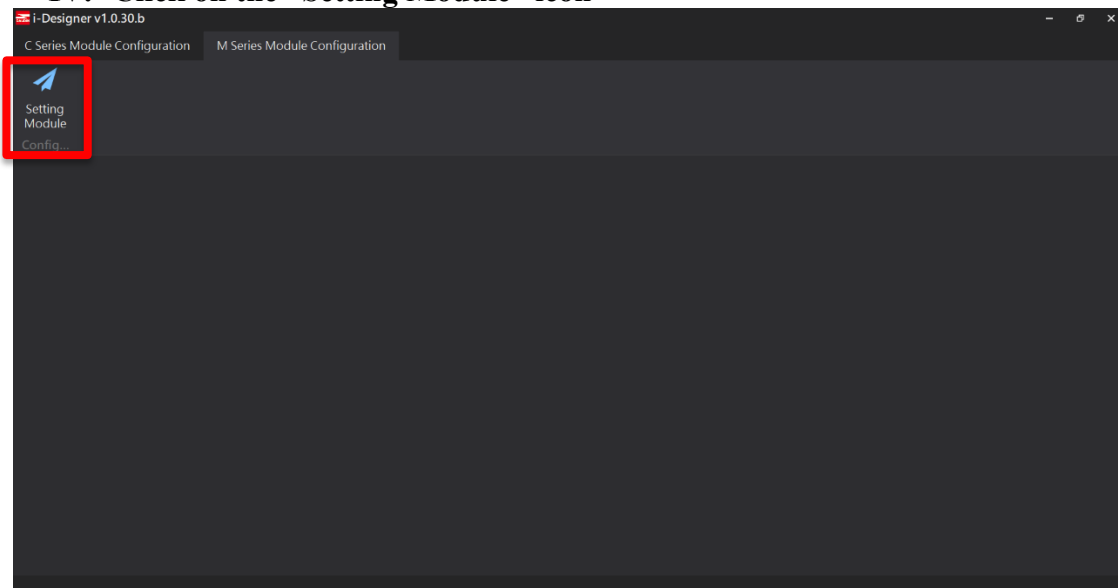
- II. Click to launch the software



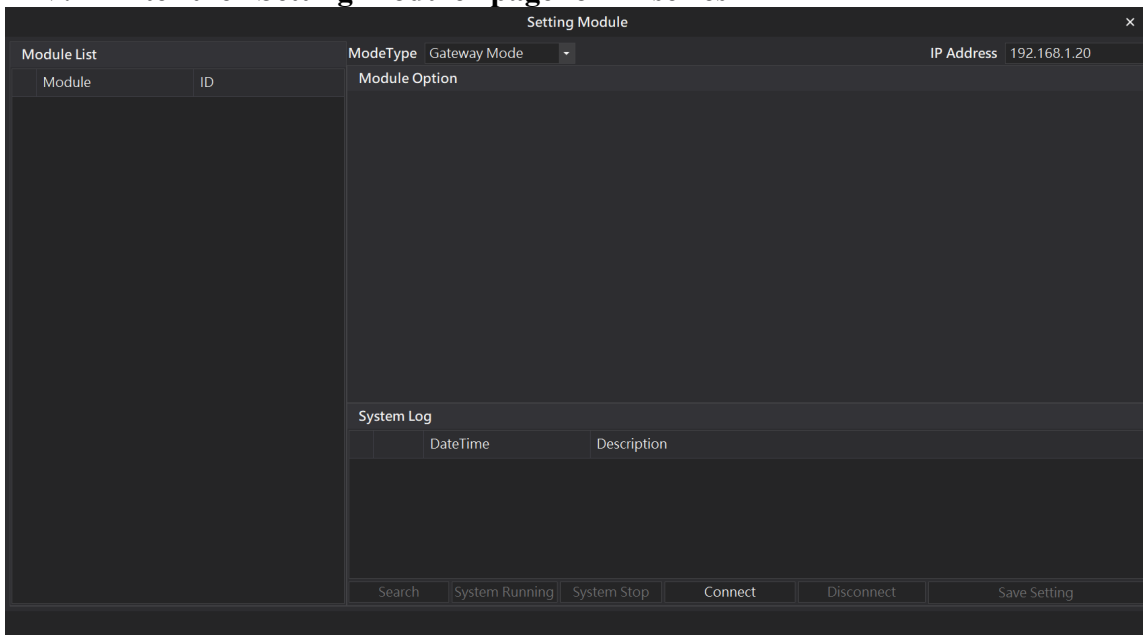
III. Select “M Series Module Configuration”



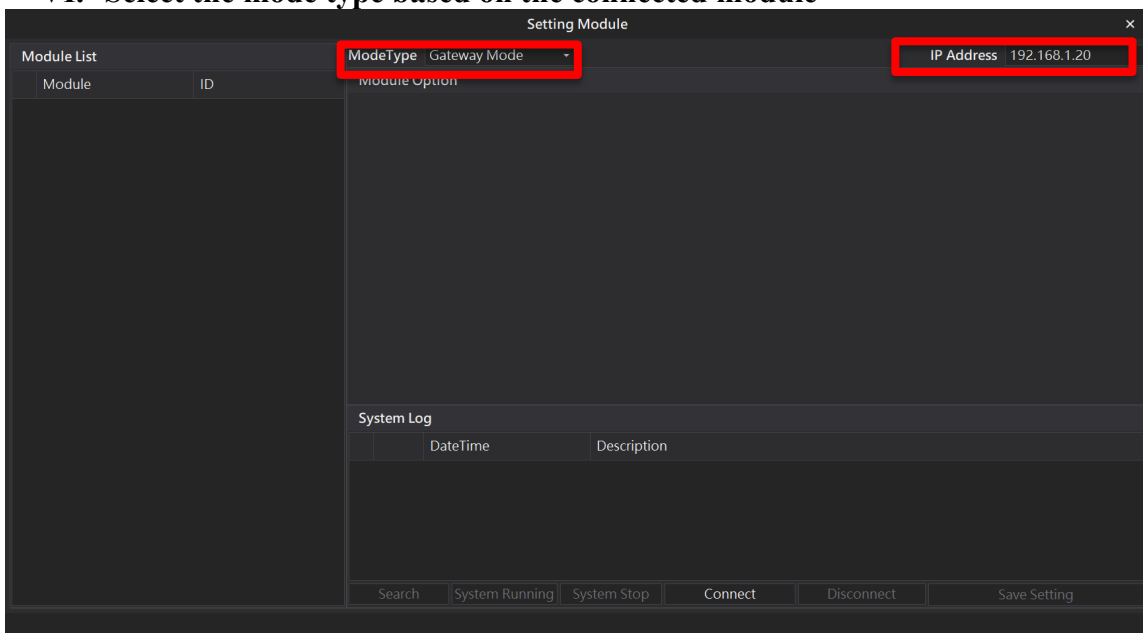
IV. Click on the “Setting Module” icon



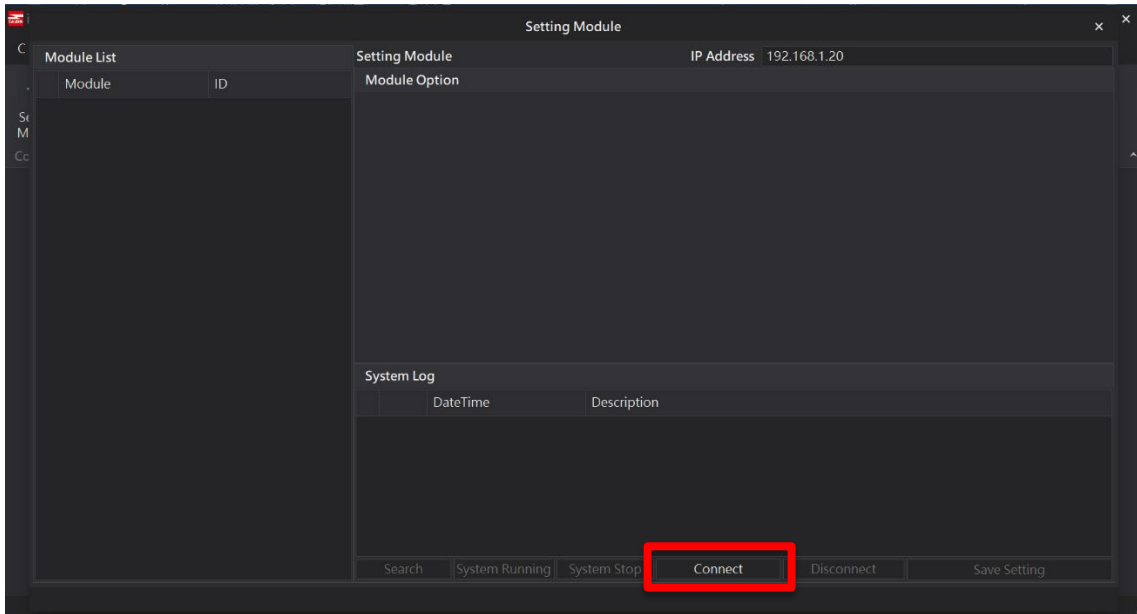
V. Enter the “Setting Module” page for M-series



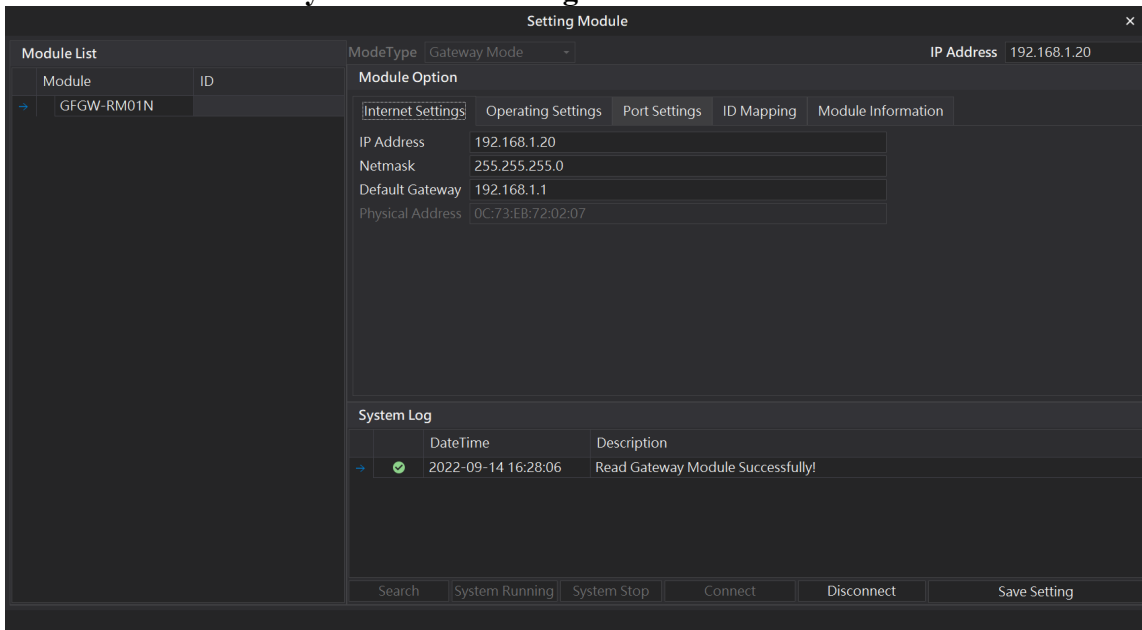
VI. Select the mode type based on the connected module



VII. Click on “Connect”

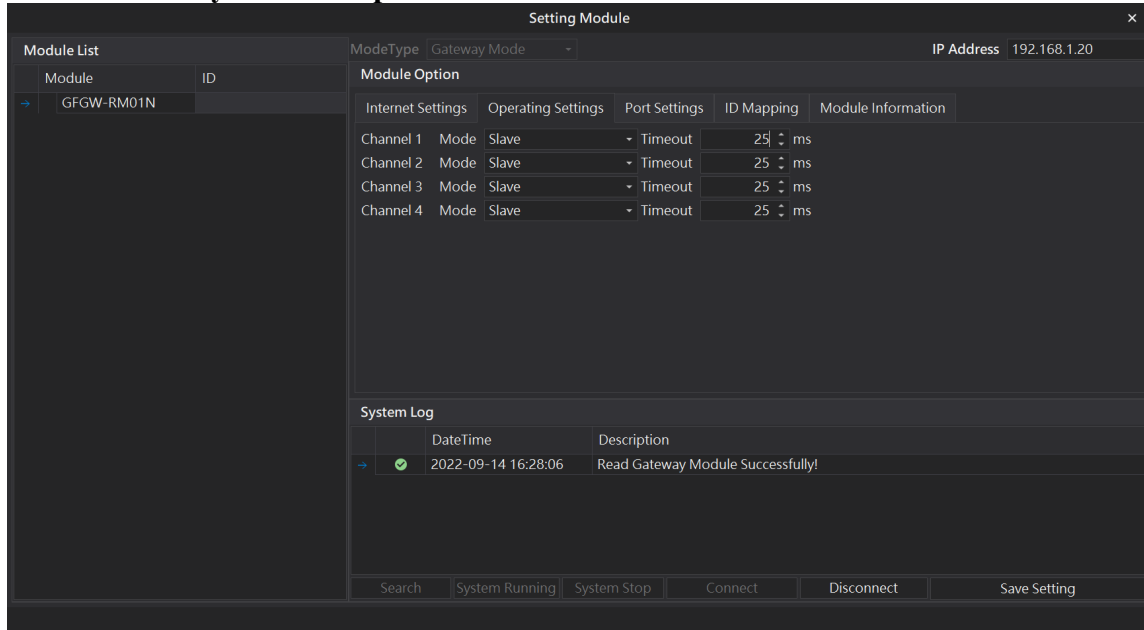


VIII. Gateway Module IP Settings



Note: The IP address must be in the same domain as the controller equipment

IX. Gateway Module Operational Modes



The screenshot shows the 'Setting Module' window with the following details:

- Module List:**

Module	ID
GFGW-RM01N	
- ModeType:** Gateway Mode
- IP Address:** 192.168.1.20
- Module Option:**

Channel	Mode	Operating Settings	Port Settings	ID Mapping	Module Information
Channel 1	Slave	Timeout	25 ms		
Channel 2	Slave	Timeout	25 ms		
Channel 3	Slave	Timeout	25 ms		
Channel 4	Slave	Timeout	25 ms		
- System Log:**

DateTime	Description
2022-09-14 16:28:06	Read Gateway Module Successfully!
- Buttons:** Search, System Running, System Stop, Connect, Disconnect, Save Setting

Note:

Set Group 1 as Slave and set the gateway to use the first set of RS485 port to connect to the main controller (GFMS-RM01N)

2.2 Siemens S7-200 Smart Hardware Connections

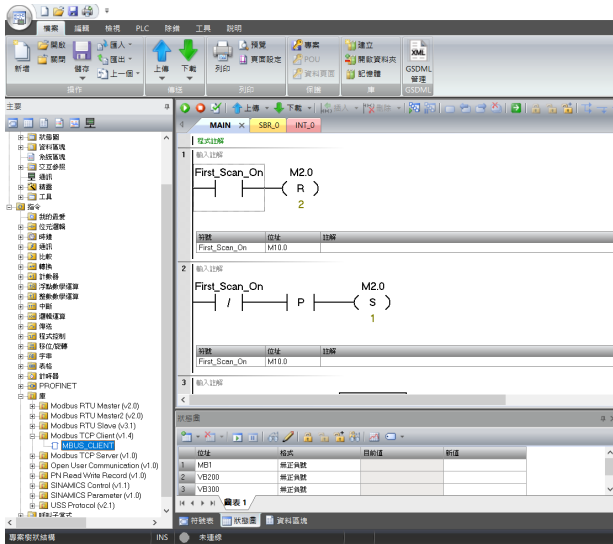
This chapter explains how to use the Step7-MicroWINSMART program to connect S7-200 Smart to **iO-GRID^M**. The software must be V2.4 or above for Modbus TCP support. For detailed information, please refer to the S7-200 SmartSeries Manual

I. Modbus TCP connects with the gateway via the Ethernet cable going through the Ethernet port on the S7-200 Smart



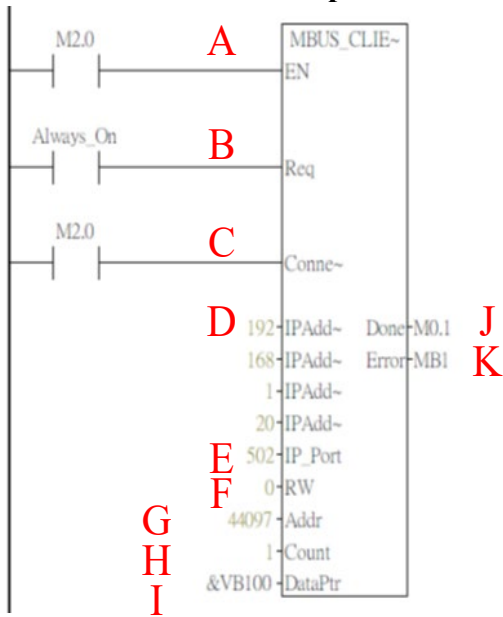
2.3 Siemens S7-200 Smart Connection Setup

I. Launch Step7-MicroWINSMART and click on “Commands” on the right side of the program



- A. Click on the “Commands” menu
- B. Click on the “Bases” menu
- C. Click on the “Modbus TCP Client” menu
- D. Click to add a new “MBUS_CLIENT”

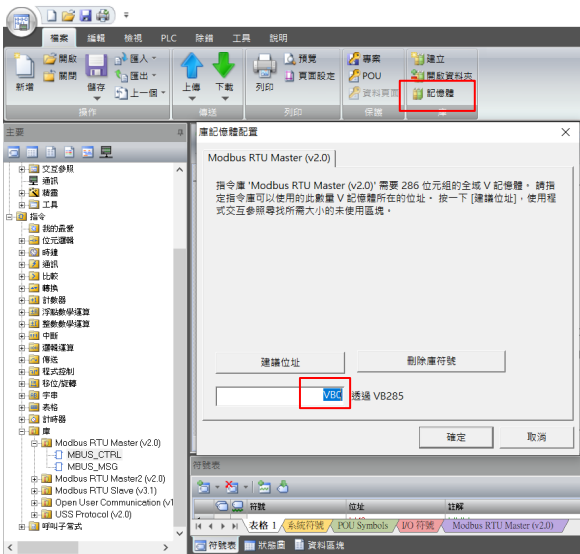
II. Communication protocol settings



Names & Definitions

	Names	Function
A	EN	Enable bits
B	Req	When it is "1", it means to send Modbus requests to the server
C	Connect	When it is "1", it will attempt to connect to the assigned IP address; When it is "0", it will disconnect and ignore any requests from the "Req" command
D	IP Add 1~4	Gateway IP address
E	IP Port	The gateway's port number, which is 502
F	RW	Operating modes. "0" is "Read" and "1" is "Write"
G	Addr	Read/Write Modbus' starting address
H	Count	Length of the data to be read/written
I	DataPtr	Address where the data is stored
J	Done	Completed bits
K	Error	Error Code

III. Command Memory Configurations



- A. Click on the “Memory” menu
- B. Set up a command’s starting address and once finished, click on “Confirm”

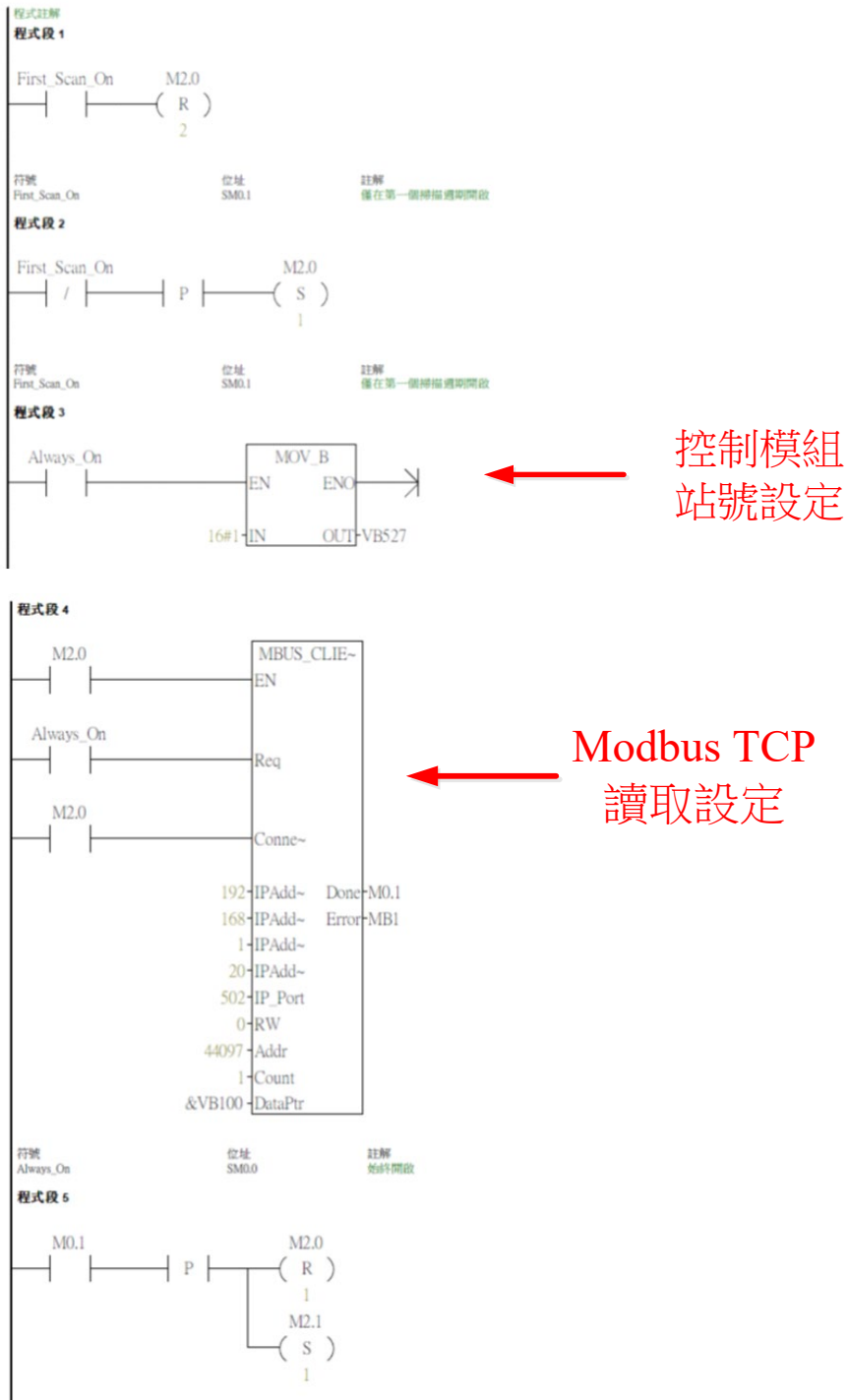
Notes:

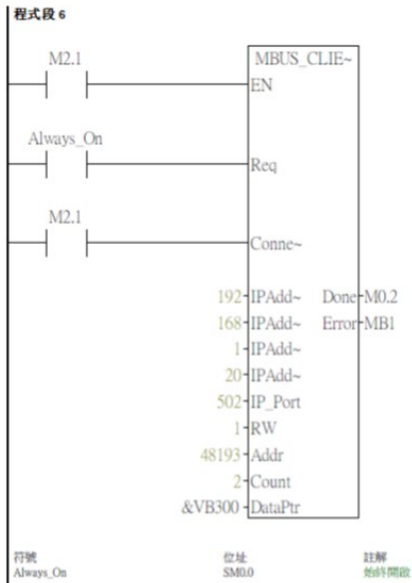
- ※ **iD-GRID^M**’s first GFDI-RM01N has the register address at 1000(HEX) converted to 4096(DEC)+1 and the starting address at 44097
- ※ **iD-GRID^M**’s first GFDO-RM01N has the register address at 2000(HEX) converted to 8192(DEC)+1 and the starting address at 48193

IV. Sample Program

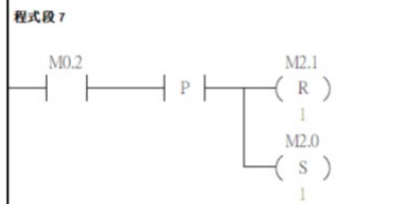
Control with one GFDI-RM01N and one GFDO-RM01N

When the first point of DI has received a signal and is triggered, the first point of DO will output a signal as it is connected





Modbus TCP
寫入設定



單點控制

