

iO-GRIDTM
and FATEK HMI
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

1.1 Product Description

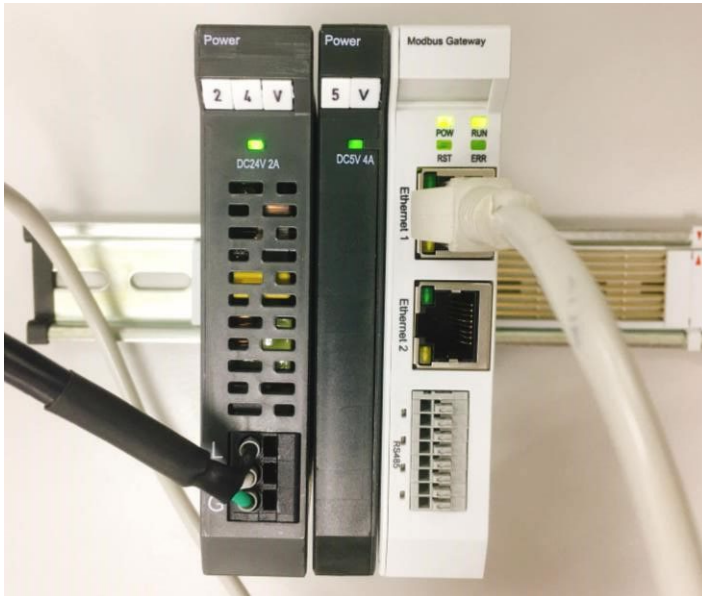
- I. The gateway is used externally to connect with FATEK HMI communication port (Modbus TCP).
- II. The main controller is in charge of the management and dynamic configuration of I/O parameters and so on.
- III. The power module is standard for remote I/Os and users can choose the model or brand of power module they prefer.

2. Gateway Parameter Settings

This section details how to connect to FATEK HMI. For detailed information, please refer to the [iD-GRID[™]-Series Product Manual](#)

2.1 i-Designer Program Setup

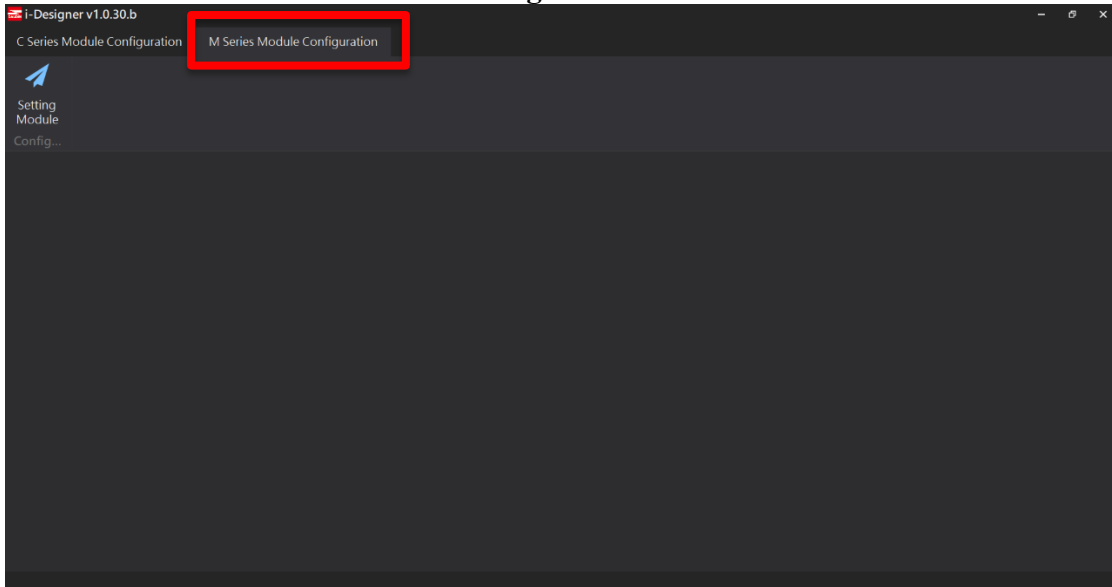
- I. Make sure that the module is powered and connected to the gateway module using an Ethernet cable



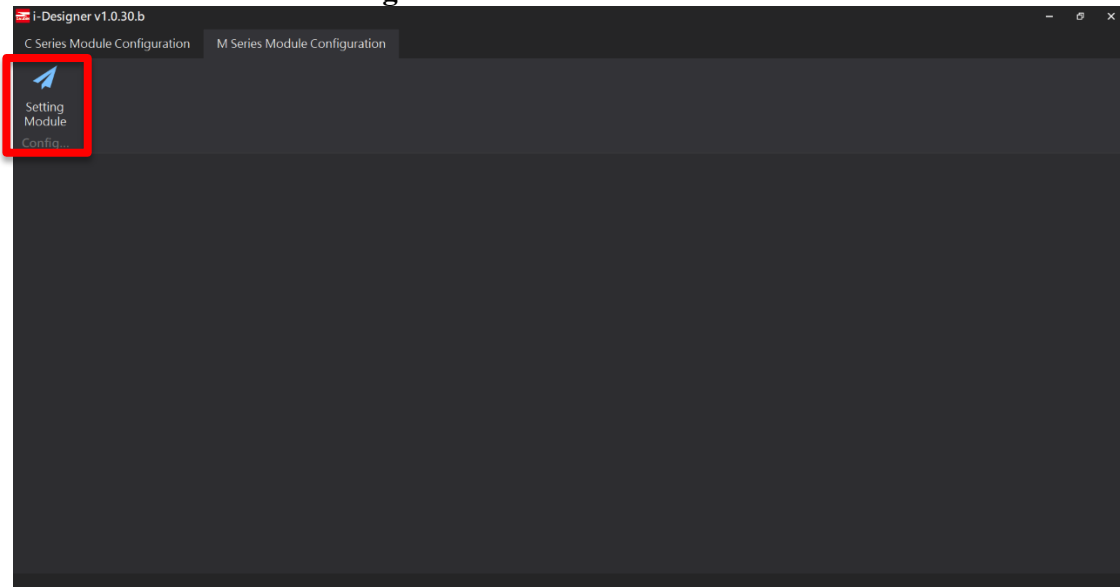
- II. Click to launch the software



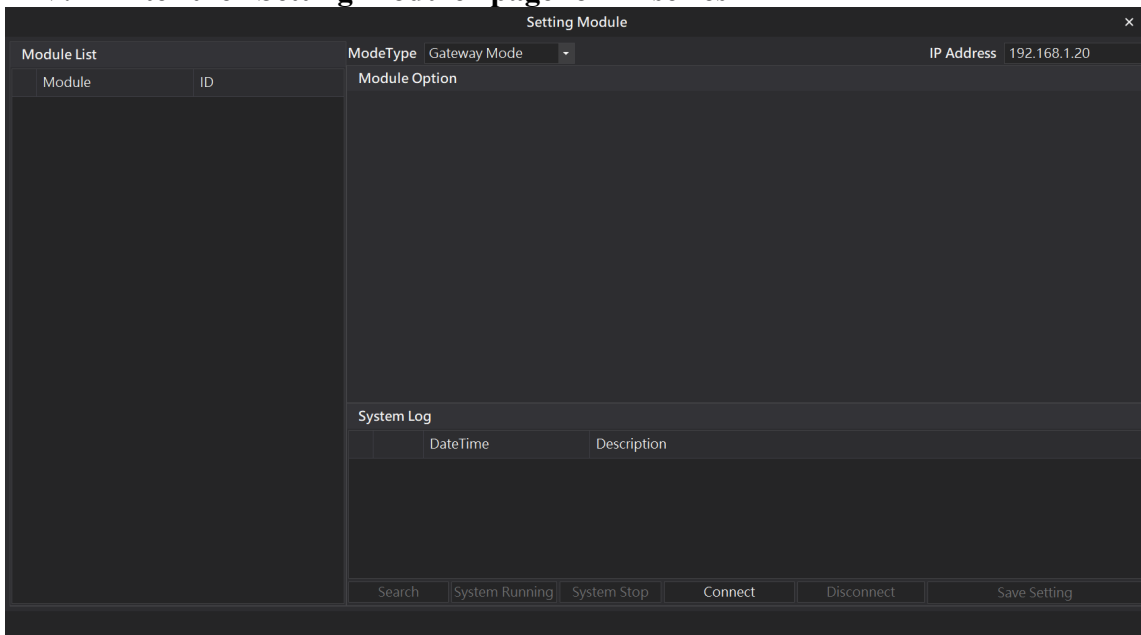
III. Select “M Series Module Configuration”



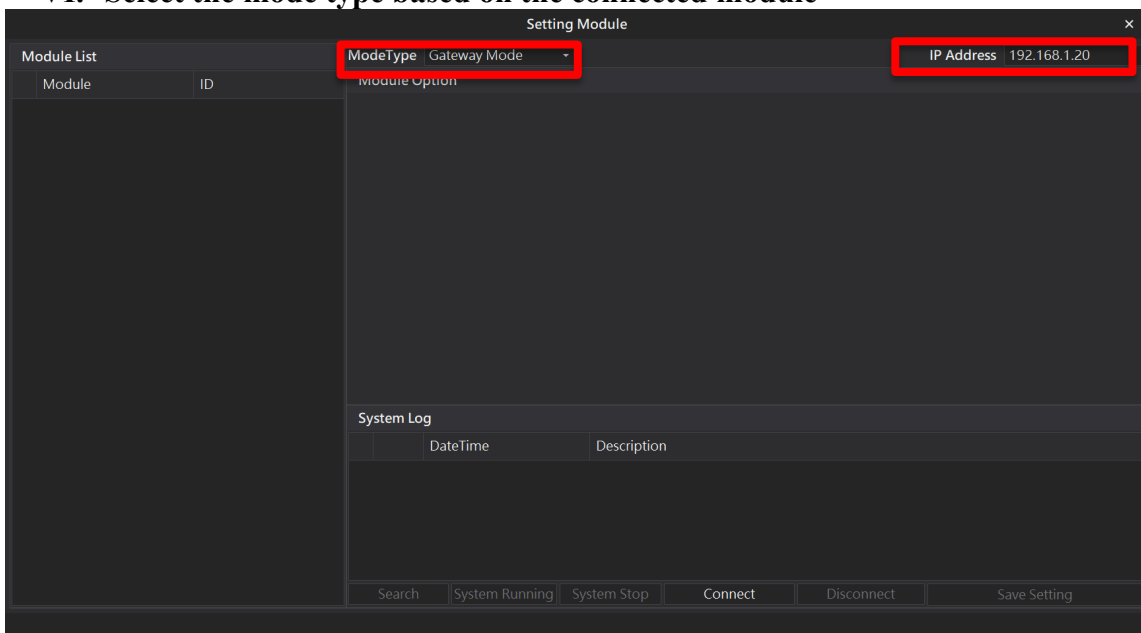
IV. Click on the “Setting Module” icon



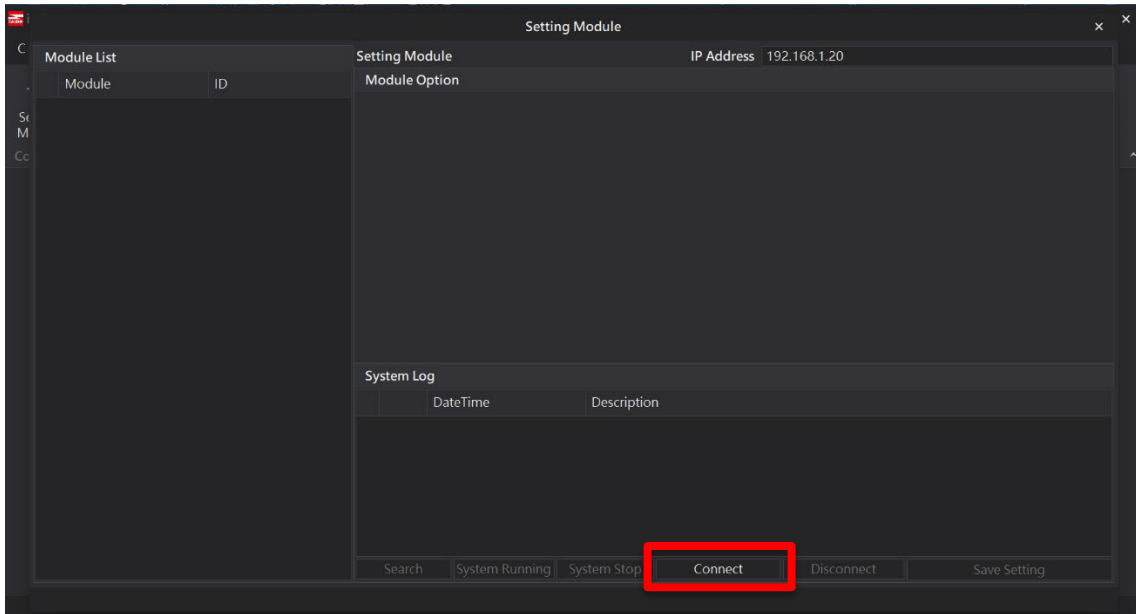
V. Enter the “Setting Module” page for M-series



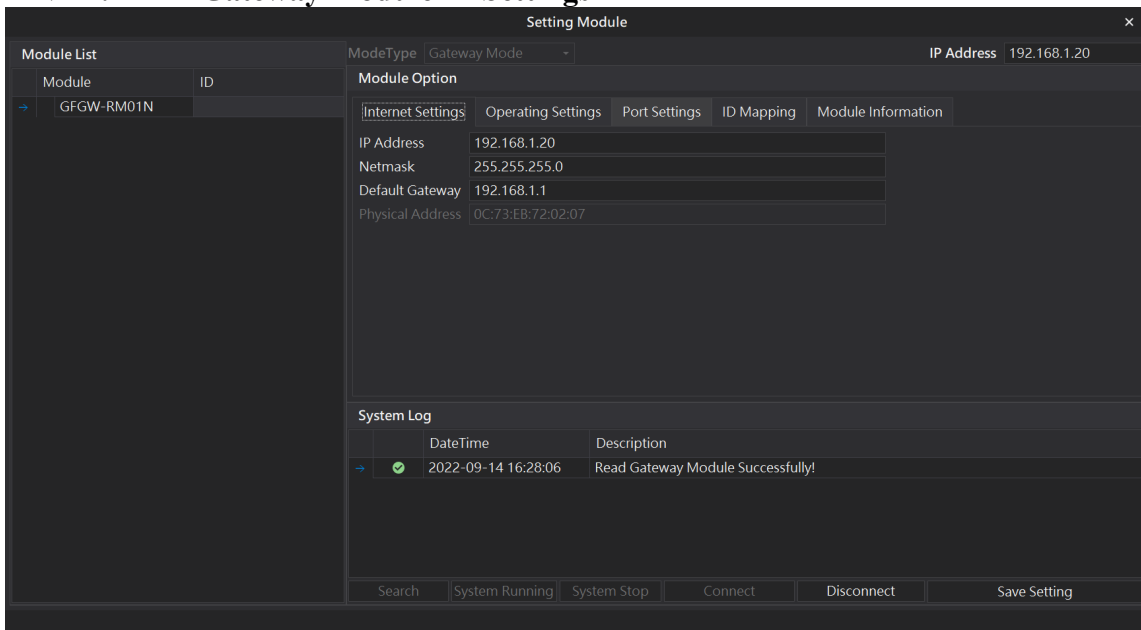
VI. Select the mode type based on the connected module



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 displays the 'Setting Module' window for a Gateway Module (GFGW-RM01N). The interface is divided into several sections:

- Module List:** A table with columns 'Module' and 'ID'. The entry 'GFGW-RM01N' is selected.
- Module Option:** A section with tabs for 'Internet Settings', 'Operating Settings', 'Port Settings', 'ID Mapping', and 'Module Information'. The 'Operating Settings' tab is active, showing a table of channel configurations:

Channel	Mode	Slave	Timeout	ms
Channel 1	Mode	Slave	Timeout	25 ms
Channel 2	Mode	Slave	Timeout	25 ms
Channel 3	Mode	Slave	Timeout	25 ms
Channel 4	Mode	Slave	Timeout	25 ms
- System Log:** A table with columns 'DateTime' and 'Description'. It shows a log entry: '2022-09-14 16:28:06' with the description 'Read Gateway Module Successfully!'.
- Buttons:** A row of buttons at the bottom: 'Search', 'System Running', 'System Stop', 'Connect', 'Disconnect', and 'Save Setting'.

Note:

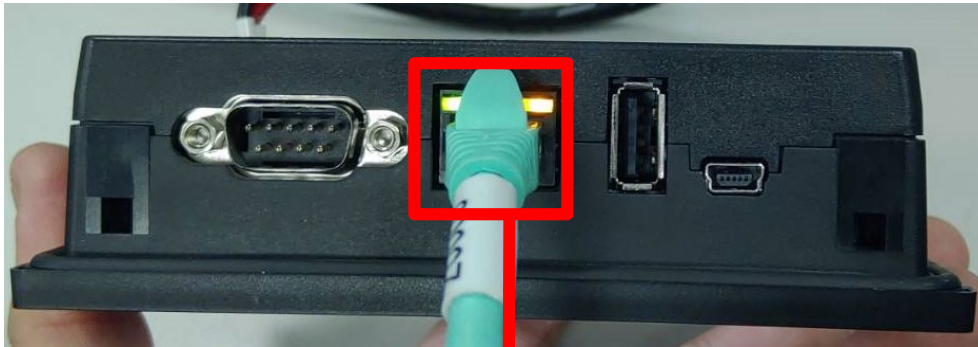
Set Group 1 as Slave and set the gateway to use the first set of RS485 port to connect to the main controller (GFMS-RM01N)

3. Beijer HMI Connection Setup

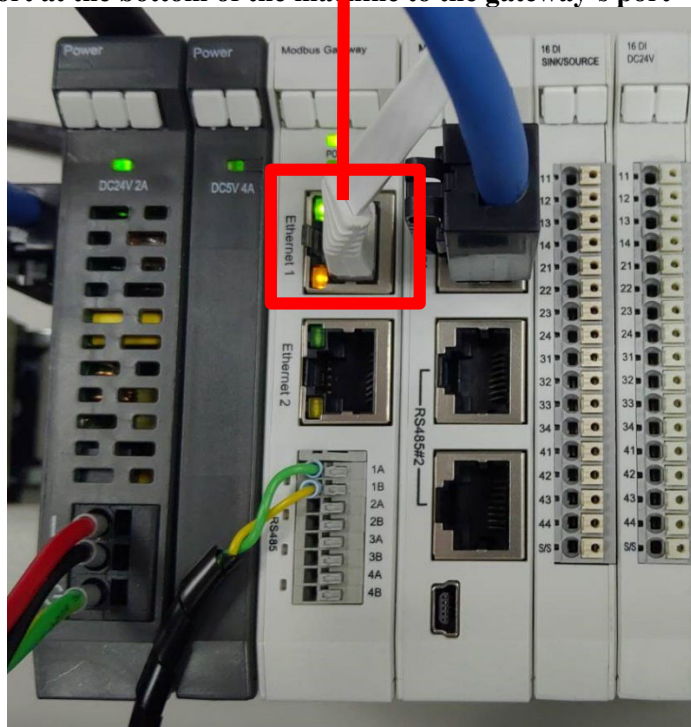
This chapter explains how to use the FvDesigner program to connect FATEK HMI with **iD-GRID^M**. For detailed information, please refer to *FATEK FvDesigner User Manual*

3.1 Beijer HMI Hardware Connection

I. The connection port is on the right at the bottom of the machine.

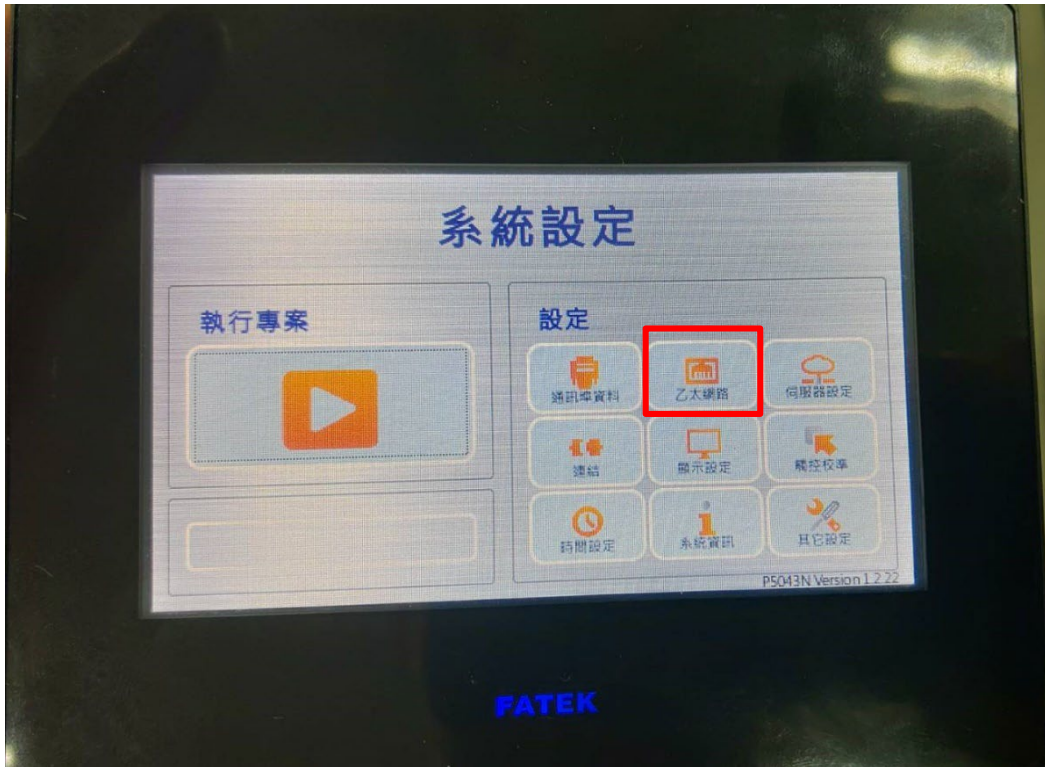


II. Connect the port at the bottom of the machine to the gateway's port

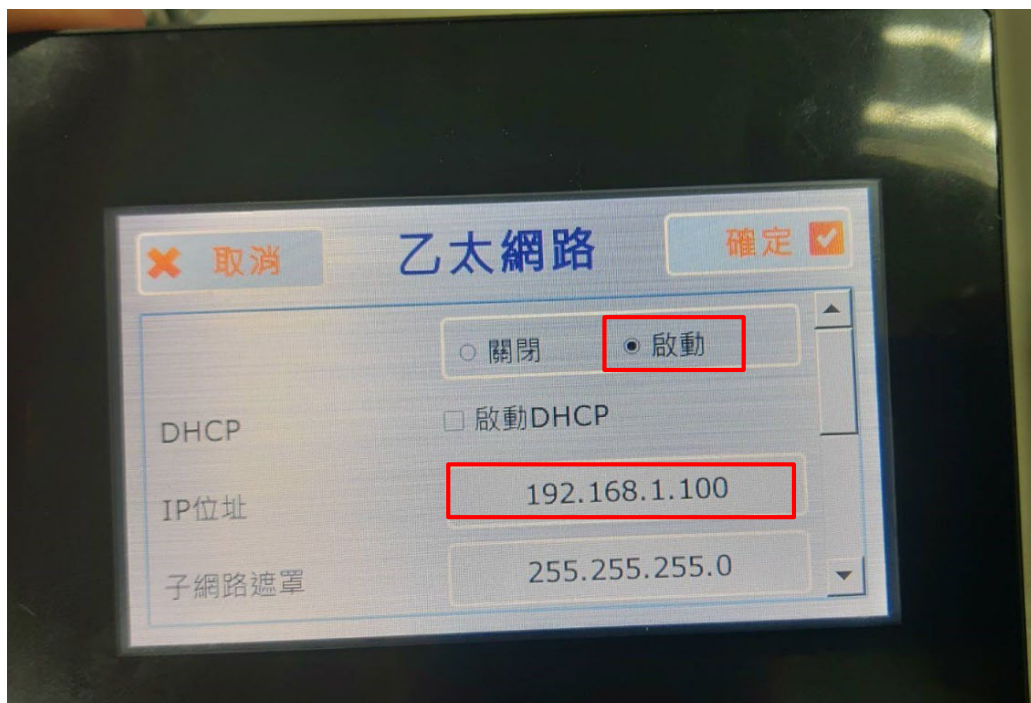


3.2 Beijer HMI IP Address and Connection Setup

- I. Once HMI is powered, press on the top-right and bottom-right areas on the HMI screen to enter the settings menu and then click on “Ethernet”.



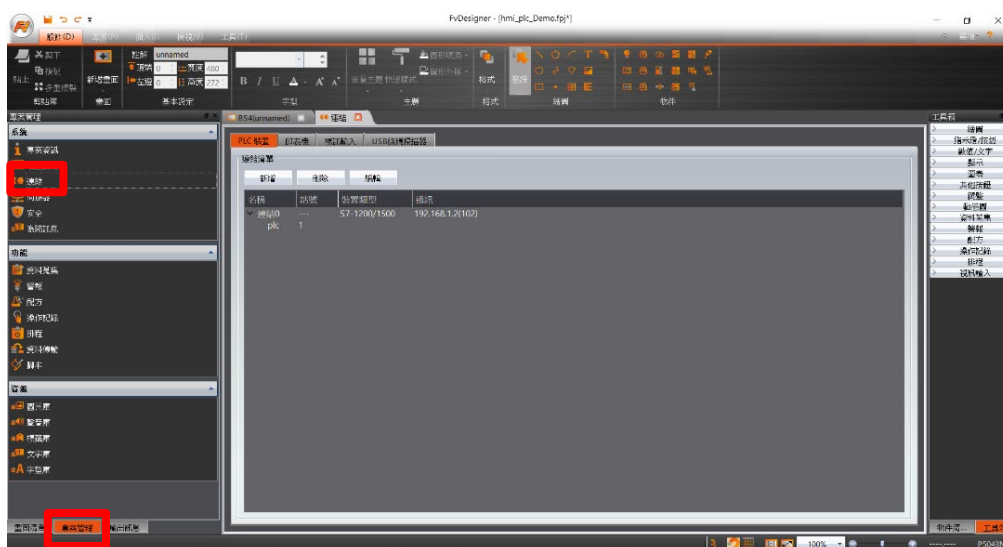
- II. Click on “Activate” and set “IP Address” to the same domain as the gateway domain at 192.168.1.XXX.



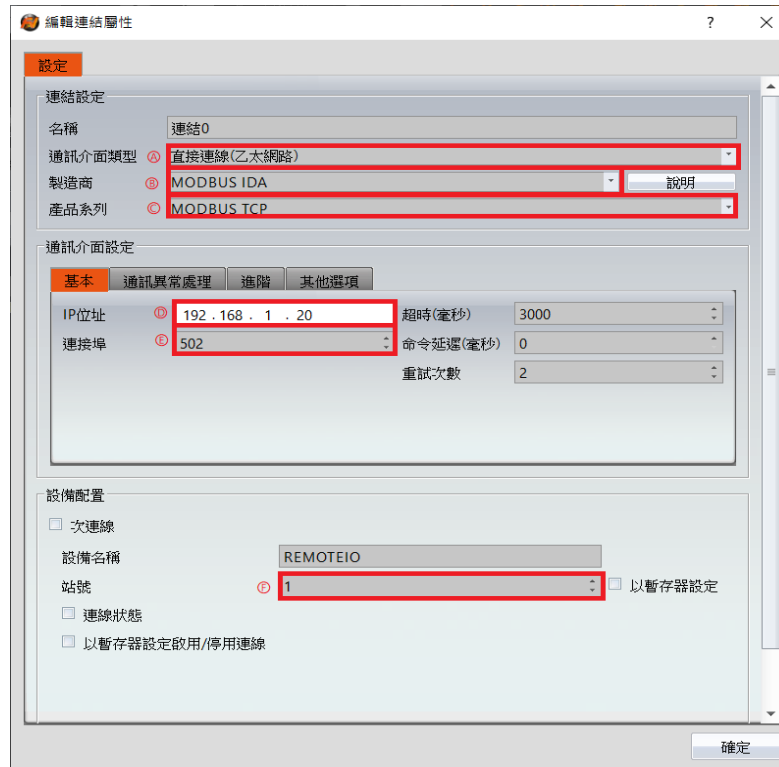
III. Launch FvDesigner, open a new file, select the controller page and then click on “Add”



IV. Or you can click to open an existing file, select “Project Management” page and then click on “Connect”



V. Connection method setup



- Ⓐ From the “Communication Interface Type” drop-down menu, select “Connect Directly (Ethernet)”
- Ⓑ From the “Manufacturer” drop-down menu, select “MODBUS IDA”
- Ⓒ From the “Product Series” drop-down menu, select “MODBUS TCP”
- Ⓓ Set the IP address to the gateway's default IP address
- Ⓔ Enter “502” for the connection port
- Ⓕ Set “Station No.” to the gateway’s default value

VI. Set up the location for the tag register



- Ⓐ From the "Device" drop-down menu, select the device to be connected
- Ⓑ From the "Type" drop-down menu, select "4x"
- Ⓒ Set up according to the plan

Example:

IO-Grid_M register address		HMI's corresponding address*
R	0x1000	4097
R	0x1001	4098
R	0x1000.0	4097.0
W	0x2000	8193
W	0x2001	8194
W	0x2000.0	8193.0

Note:

※HMI's corresponding address is:

iO-GRID^M's first GFDI-RM01N has the register address at 1000(HEX) converted to 4096(DEC)+1

iO-GRID^M's first GFDO-RM01N has the register address at 2000(HEX) converted to 8192(DEC)+1

※Regarding **iO-GRID^M**'s register address and format, please refer to **iO-GRID^M Control Module Operating Manual**