

iO-GRID™ and AS300 Series 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

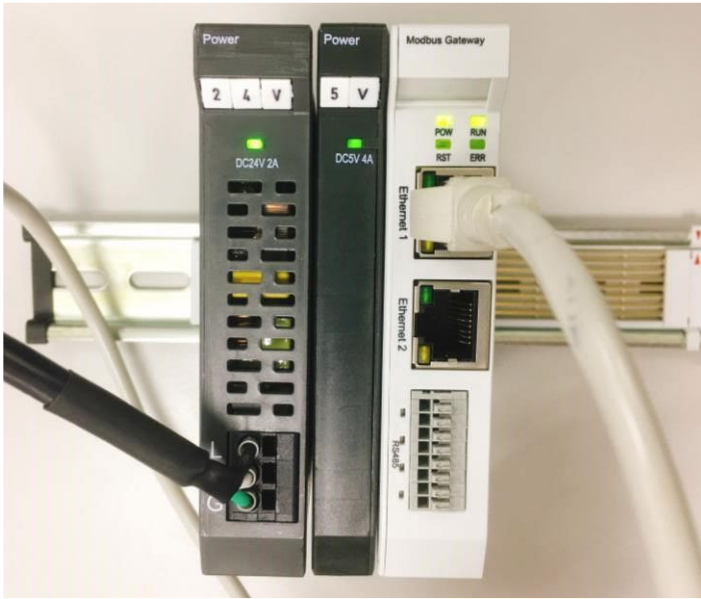
- I. The gateway is used externally to connect with AS300's communication port (Modbus TCP)
- II. The main controller is in charge of the management and dynamic configuration of I/O parameters and so on.
- III. The power module and interface module are standard for remote I/Os and users can choose the model or brand they prefer.

2. Gateway Parameter Settings

This section details how to connect a gateway to AS300. For detailed information regarding **iO-GRID^M**, please refer to the [iO-GRID^M-Series Product Manual](#)

2.1 i-Designer Program Setup

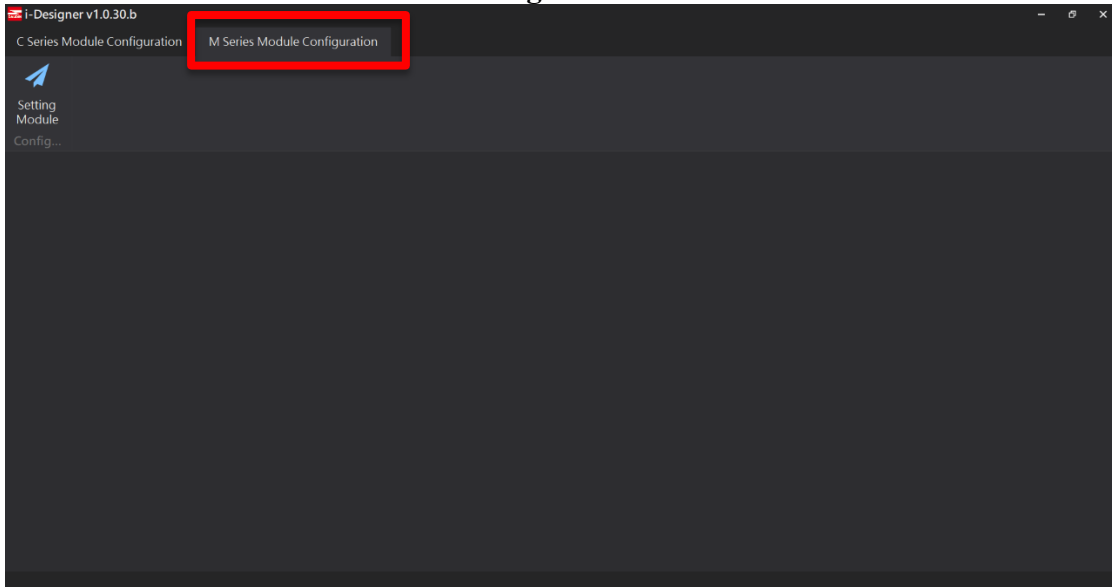
- I. Make sure that the module is powered and connected to the gateway module using an Ethernet cable



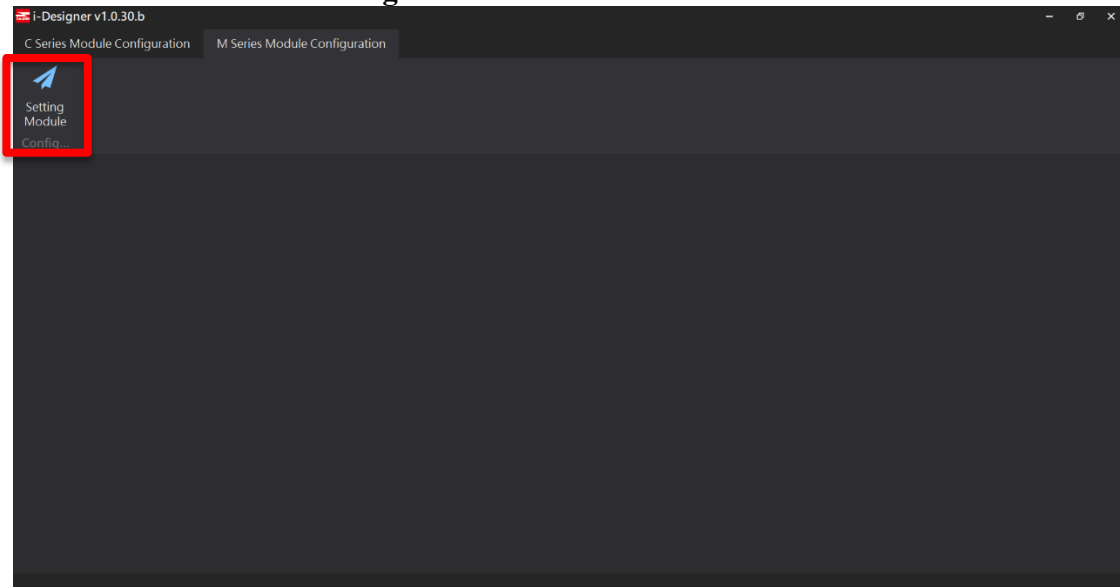
- II. Click to launch the software



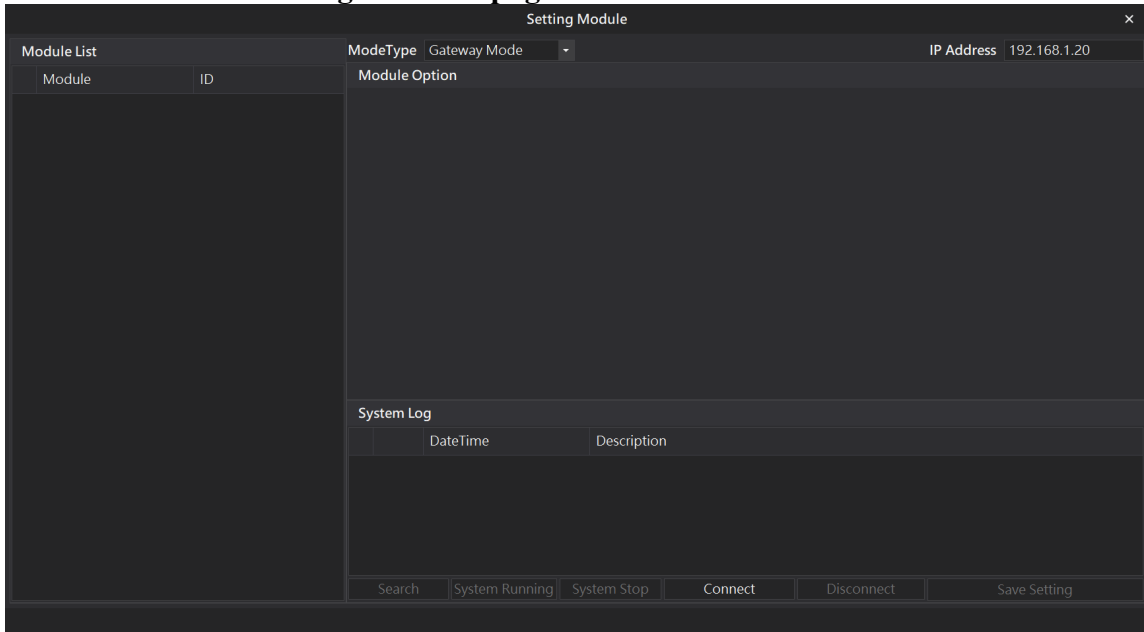
III. Select “M Series Module Configuration”



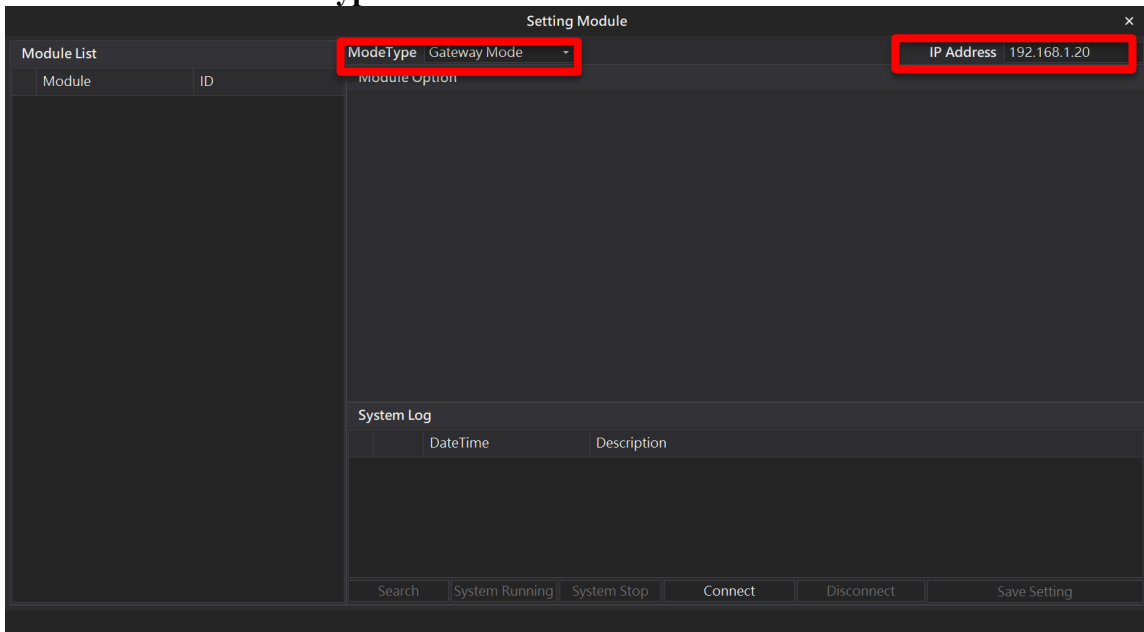
IV. Click on the “Setting Module” icon



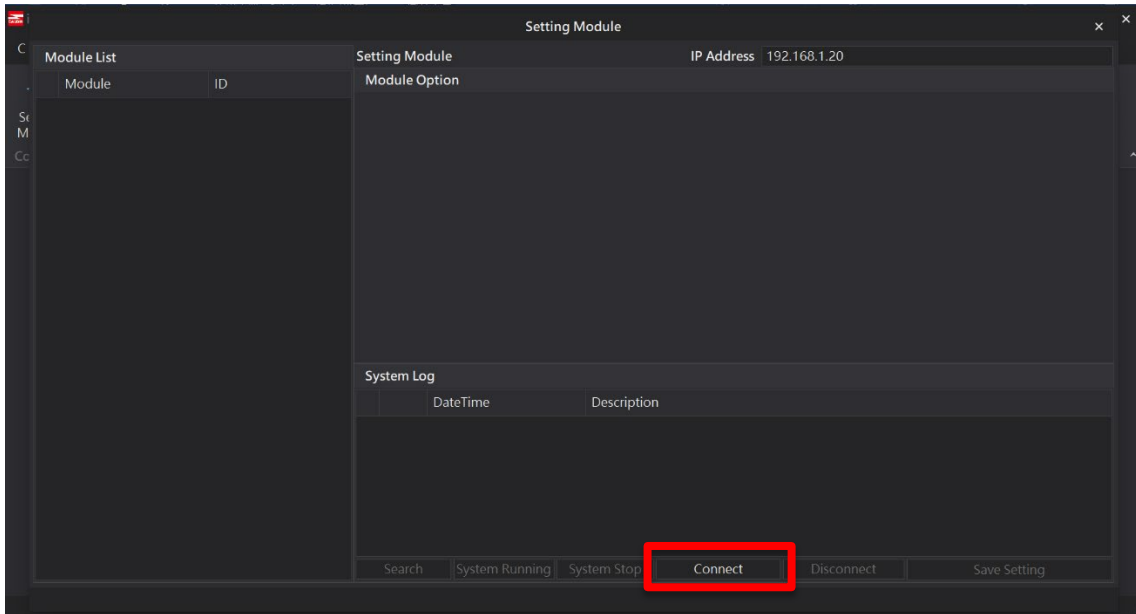
V. Enter the “Setting Module” page for M-series



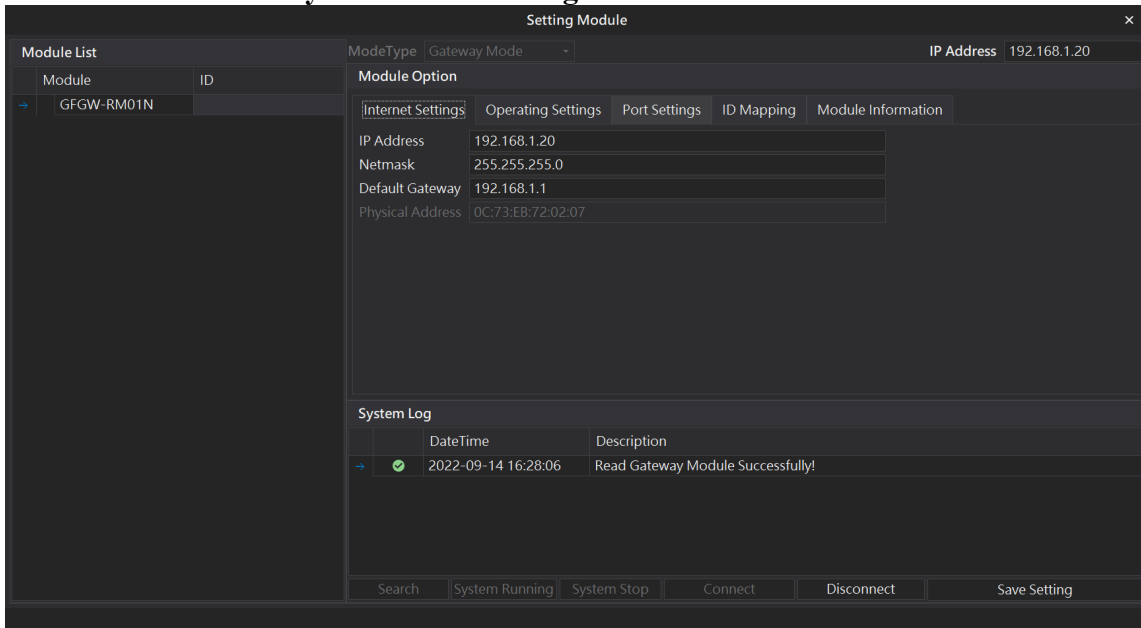
VI. Select the mode type based on the connected module



VII. Click on “Connect”

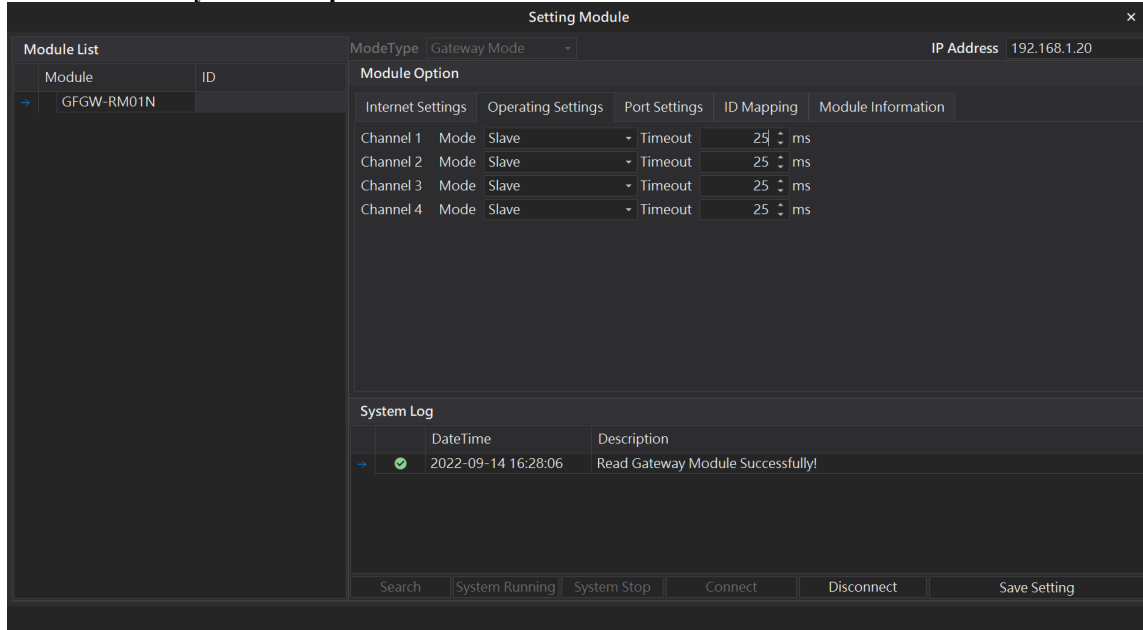


VIII. Gateway Module IP Settings



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' interface with the following details:

- Module List:** A table with columns 'Module' and 'ID'. The entry 'GFGW-RM01N' is selected.
- ModeType:** Gateway Mode
- IP Address:** 192.168.1.20
- Module Option:**
 - Internet Settings
 - Operating Settings
 - Port Settings
 - ID Mapping
 - Module Information
- Channel Configuration:**

Channel	Mode	Slave	Timeout	Value
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:**

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

Note:

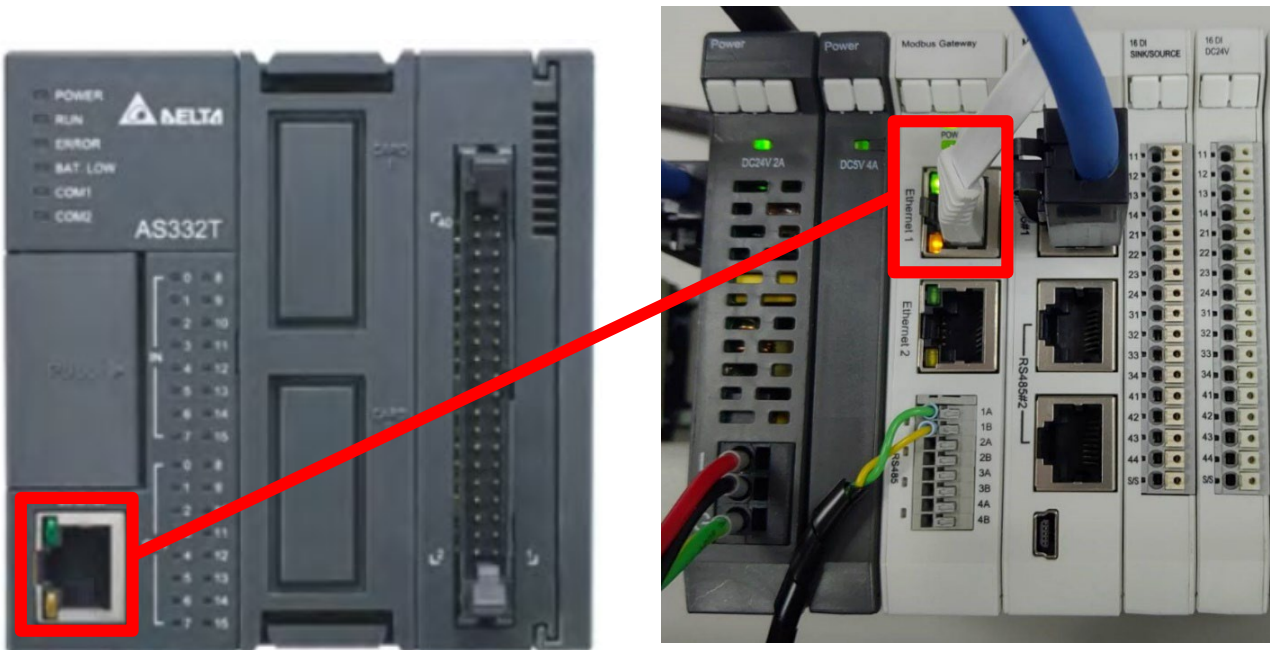
Set Group 1 as Slave and set the gateway to use the first set of RS485 port to connect to the main controller (GFMS-RM01N)

3. AS300 Connection Setup

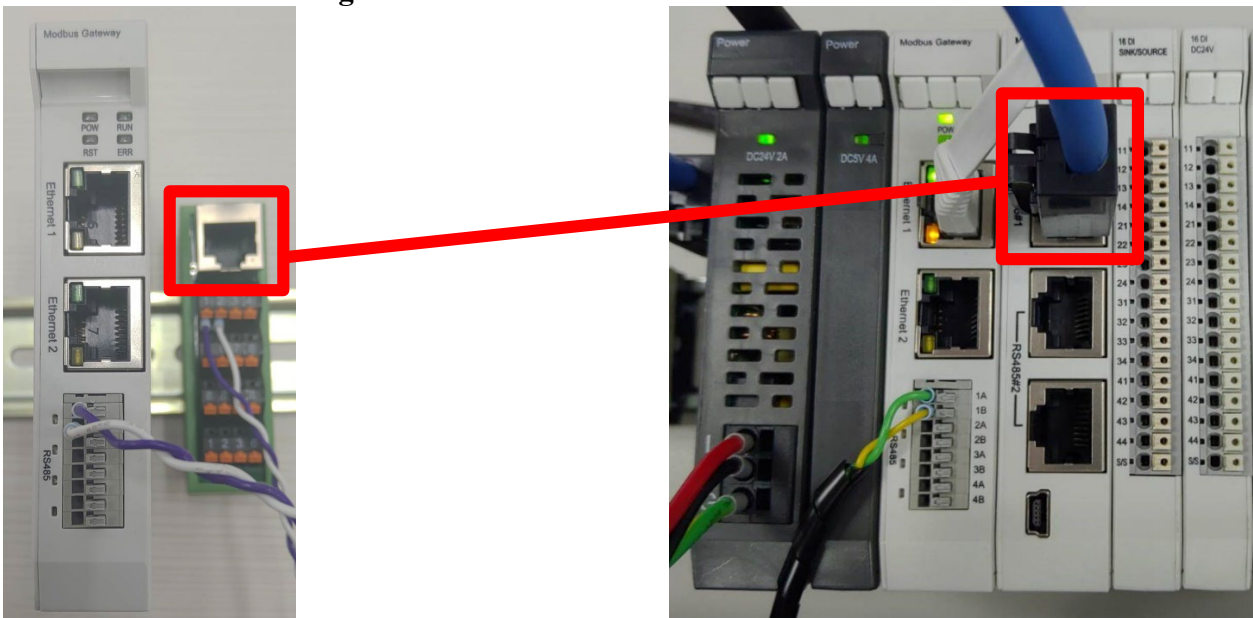
This chapter explains how to use the ISPSOft program to connect AS300 with **iO-GRID™**. For detailed information, please refer to the *ISPSOft User Manual*

3.1 AS300 Hardware Connection

I. The Ethernet port is on the top of AS300 and can be connected to the gateway

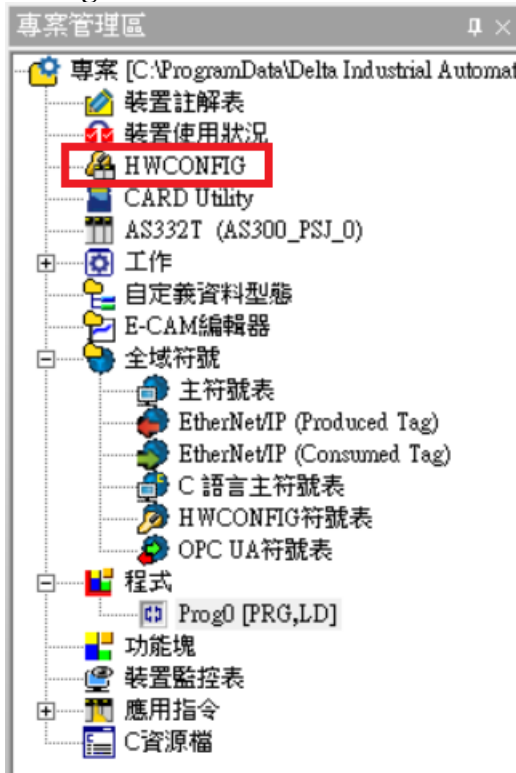


II. The gateway's first 485 port is connected to the interface module 0170-0101 before being connected to the control module via an Ethernet cable

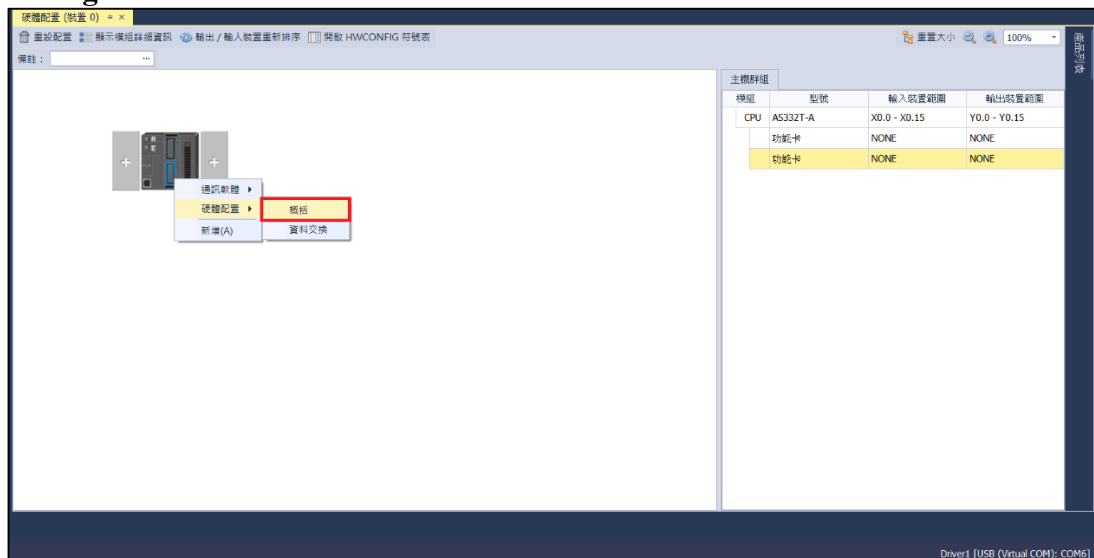


3.2 AS300 Connection Setup

- I. Launch ISPSOft, create a new file and double-click “HWCONFIG” on the project management section on the left to enter the configuration page



- II. Right click on the PLC icon and select “Summary” under “Hardware Configuration”

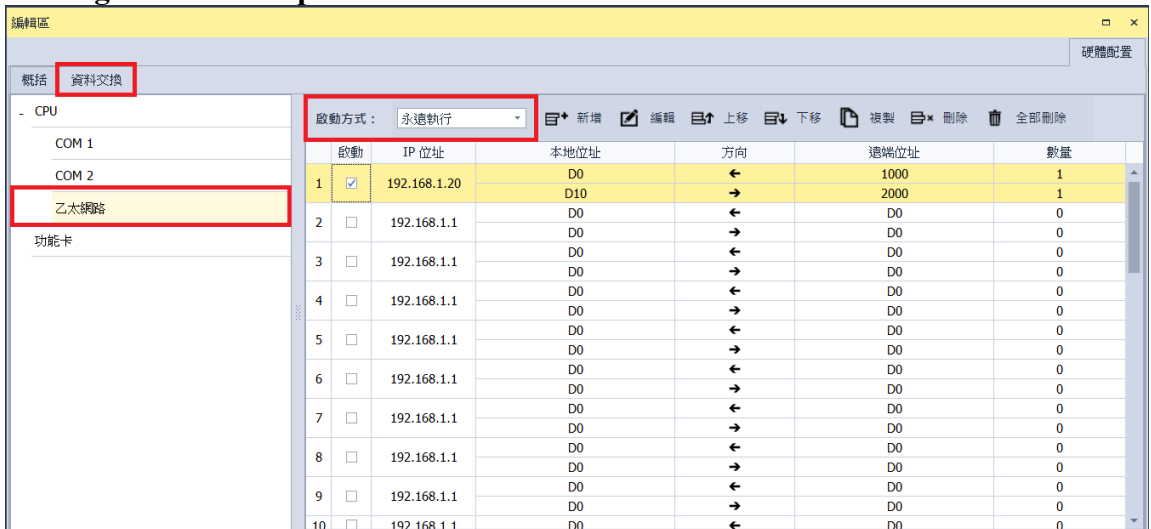


III. For this demonstration, click on “Ethernet - Basic Settings”



IP Address: To be set the same as the gateway domain at 192.168.1.XXX.

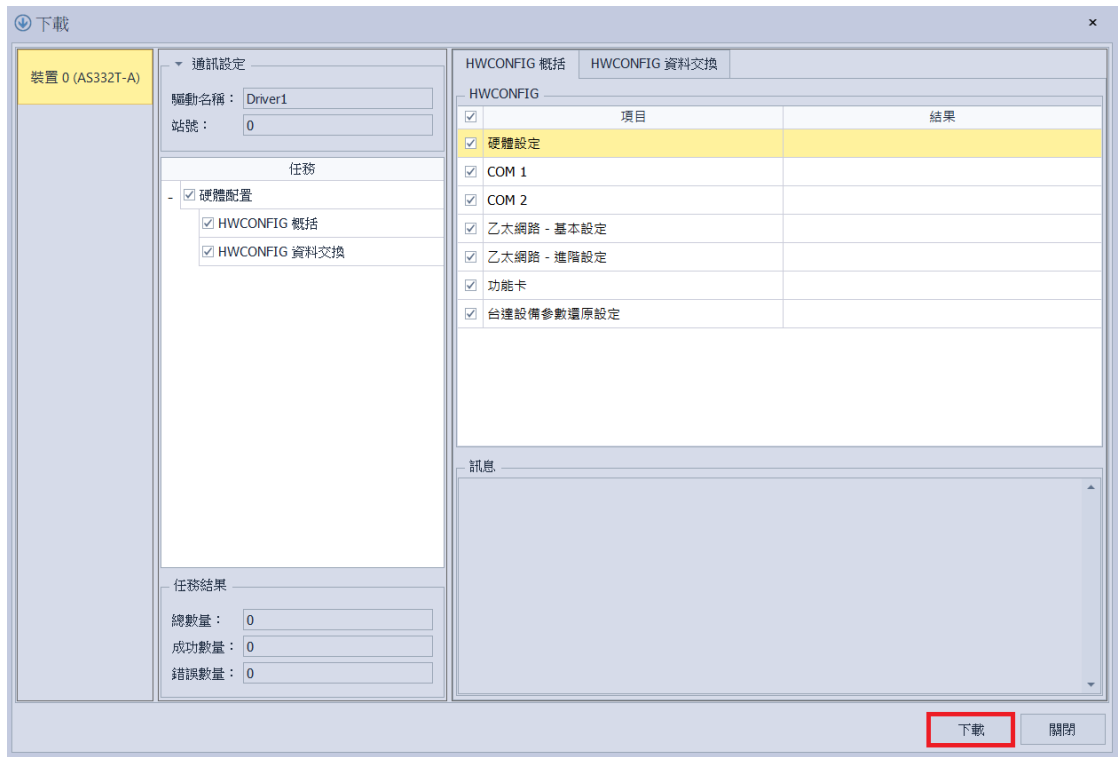
IV. Click on “Data Exchange” on the left to switch to the Data Exchange page and select the desired COM PORT (Ethernet in this case). **Make sure to select “啟動方式”**, otherwise the data communication will not be initiated. Select “Add” or modify existing fields to set up the communication



V. “Data Exchange Settings” image and details:

1. To use that communication, **make sure to check “Initiate”**
 2. When there are too many addresses to read and write, increase the “Minimum Refresh Cycle”.
 3. **iO-GRID™** control module can accept 0x17 function code while reducing the communication time by one writing and one reading
 4. The IP address should be the IP address of the gateway you want to connect
 5. For “Remote Device Type”, select “Standard Modbus Device”
- ※ **iO-GRID™**’s first GFDI-RM01N has the register address at 1000(HEX)
 - ※ **iO-GRID™**’s first GFDO-RM01N has the register address at 2000(HEX)

VI. Once the setup is complete, click on “Download” for the setting to be incorporated in PLC



VII. Once the register for data storage is set up following the instructions above in the ISPSOFT program, it is ready to use

