



iO-GRID[™]與MELSEC-Q

Modbus TCP 連線操作手冊

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1. 遠端 I/O 模組配套清單

料號	規格	說明
GFGW-RM01N	Modbus TCP-to-Modbus RTU/ASCII, 4 Ports	閘道器
GFMS-RM01S	Master Modbus RTU, 1 Port	主控制器
GFDI-RM01N	Digital Input 16 Channel	數位輸入
GFDO-RM01N	Digital Output 16 Channel / 0.5A	數位輸出
GFPS-0202	Power 24V / 48W	電源
GFPS-0303	Power 5V / 20W	電源

1.1 產品描述

- I. 閘道器用於外部與 MELSEC-Q series 通訊介面(Modbus TCP)。
- II. 主控制器負責管理並組態配置 I/O 參數...等。
- III. 電源模組為遠端 I/O 標準品，使用者可自行選配。



2. 閘道器參數設定

本章節主要說明閘道器如何與MELSEC-Q series連接，[iO-GRIDTM](#)詳細說明請參考 [iO-GRIDTM系列產品手冊](#)

2.1 i-Designer 軟體設定

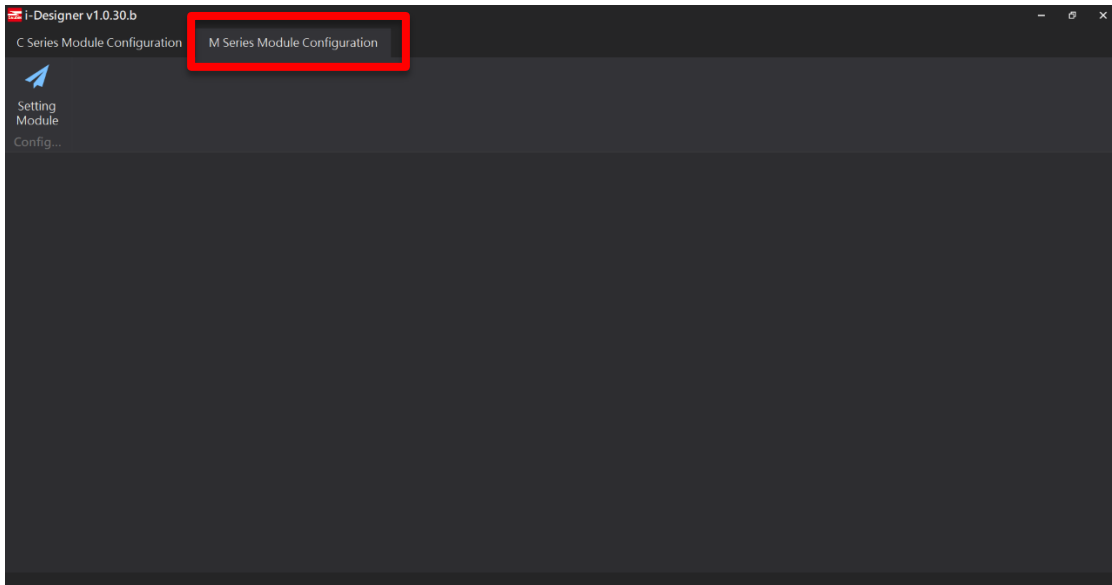
I. 確認模組上電以及使用網路線連接閘道器模組



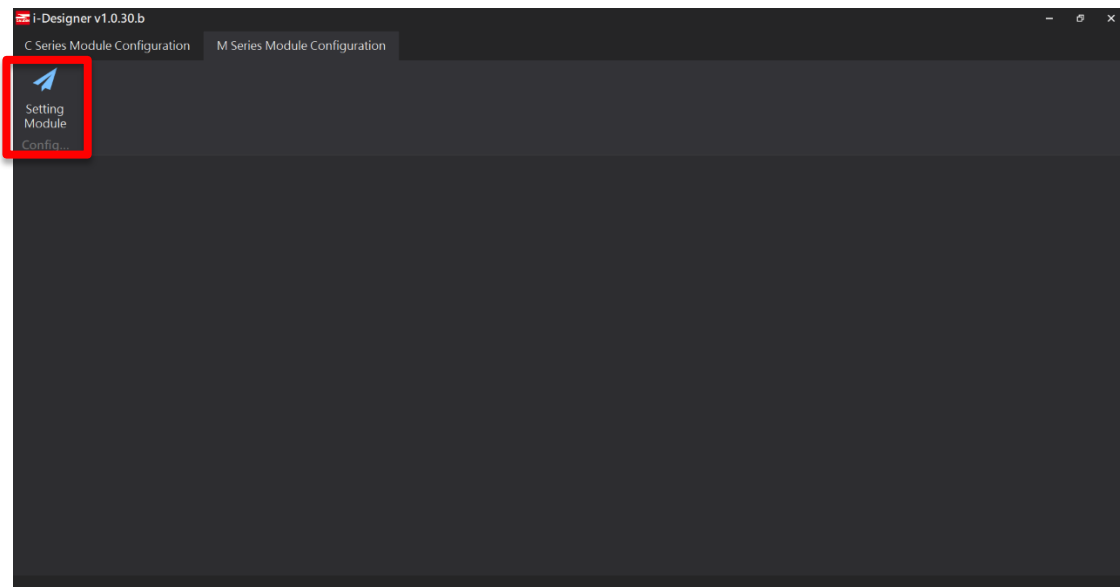
II. 點擊並開啟軟體



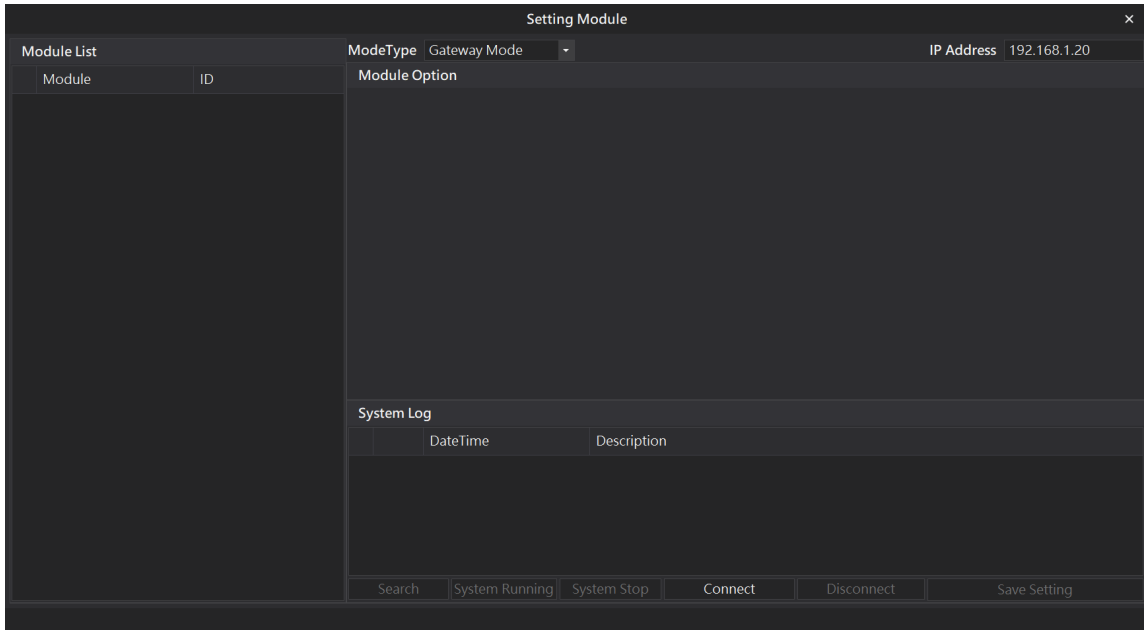
III. 選擇 M 系列頁籤



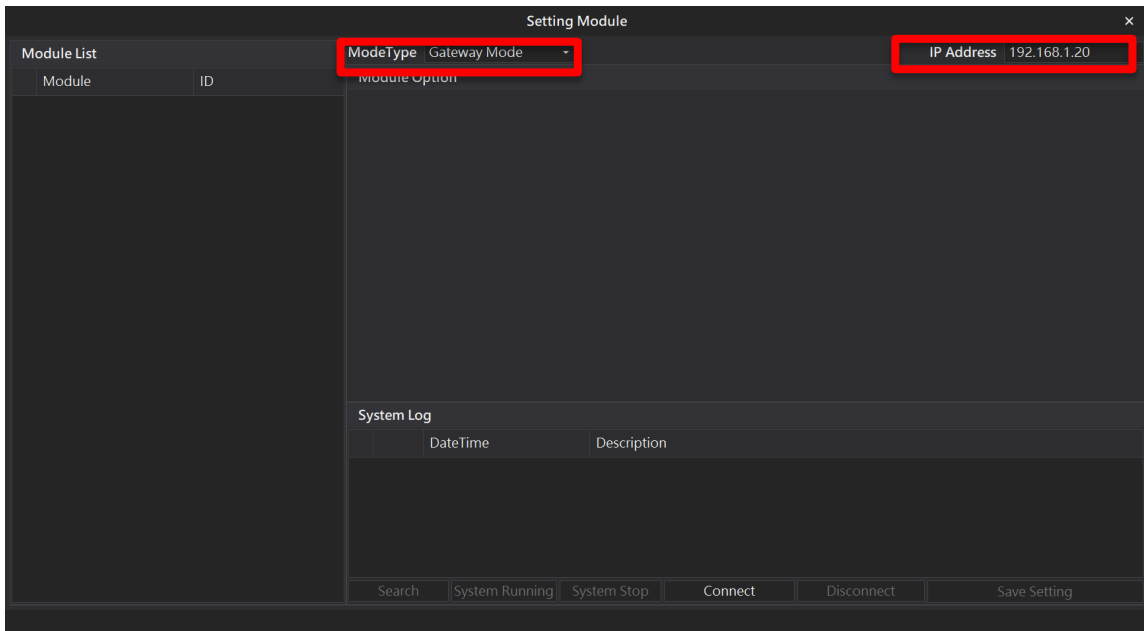
IV. 點擊設定模組圖示



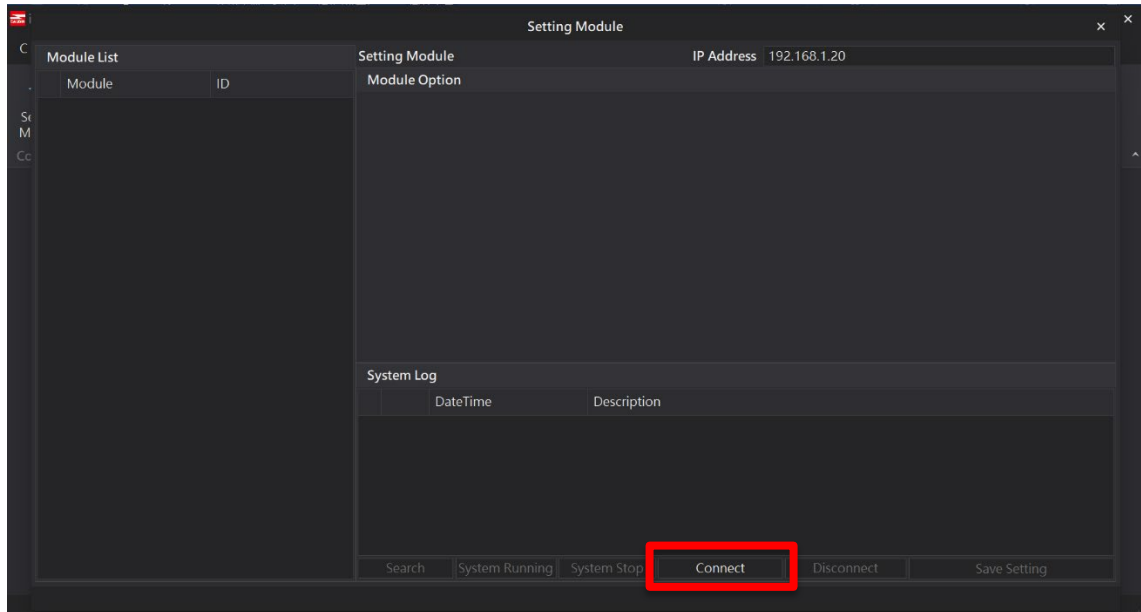
V. 進入 M 系列設定頁面



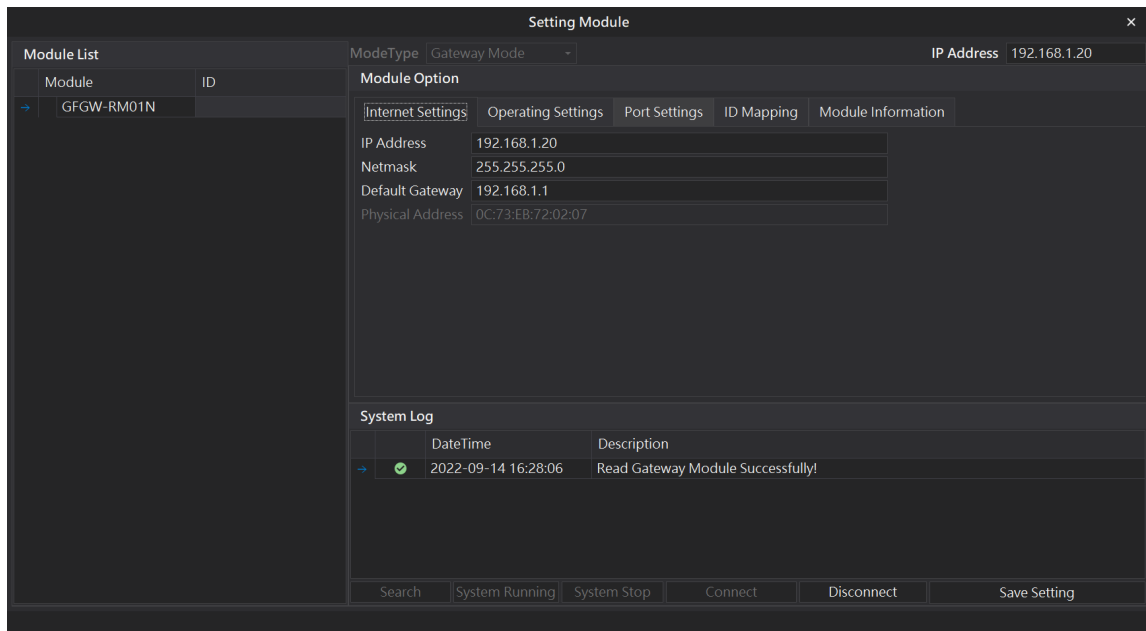
VI. 根據連線模組選擇模式



VII. 點擊”連線”

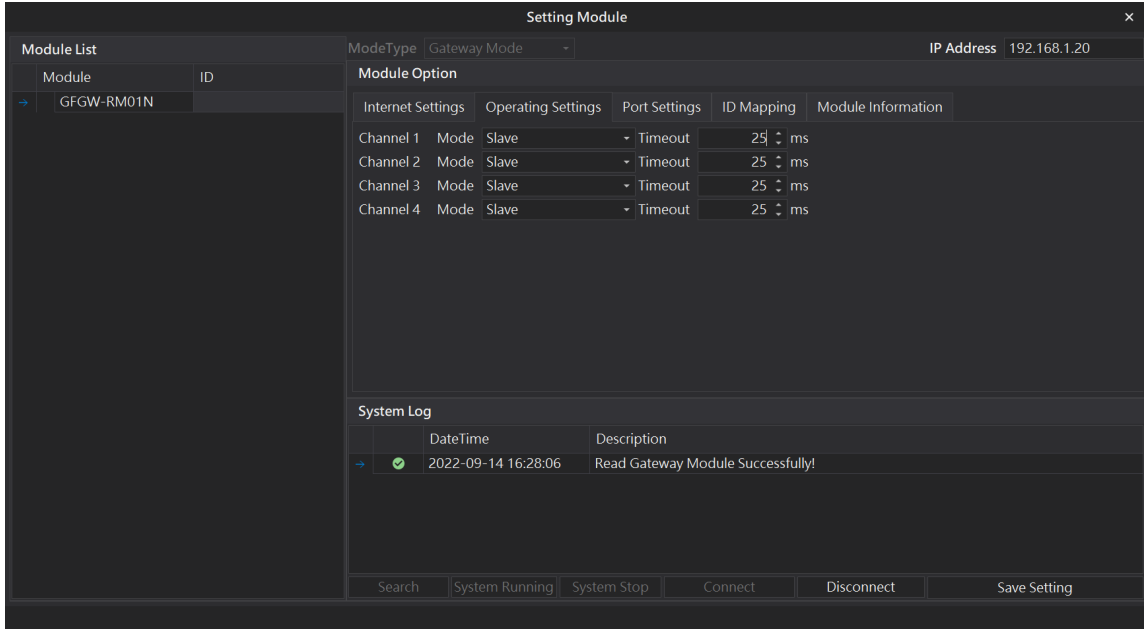


VIII. 閘道器模組 IP 設定



註: IP 位址需與 MELSEC-Q 控制器相同網域

X. 閘道器操作模式



註: 設定 Group1 為 Slave，閘道器使用第一組RS485

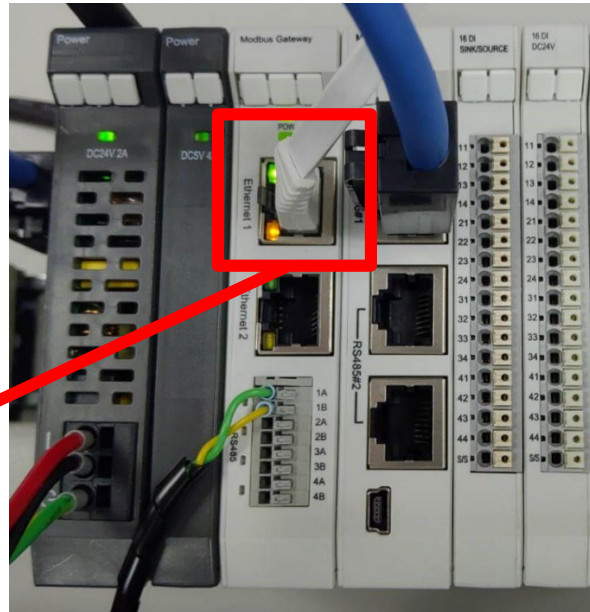
與主控制器 (GFMS-RM01N) 對接

3. MELSEC-Q series 連結設定

本章節說明如何使用GX Works2 軟體，將MELSEC-Q series使用模組QJ71MT91與閘道器模組進行連結，並增設遠程 I/O 模組，詳細說明請參考說明書 MELSEC-Q series

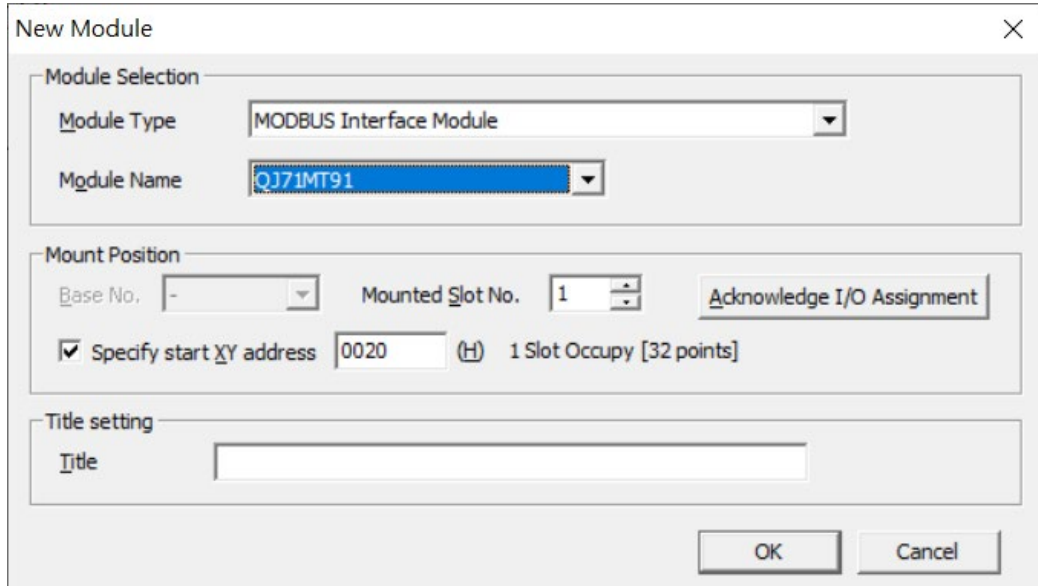
3.1 MELSEC-Q series 硬體接線

I. QJ71MT91模組網口位於中下方，並模組下方網口與閘道器網口對接

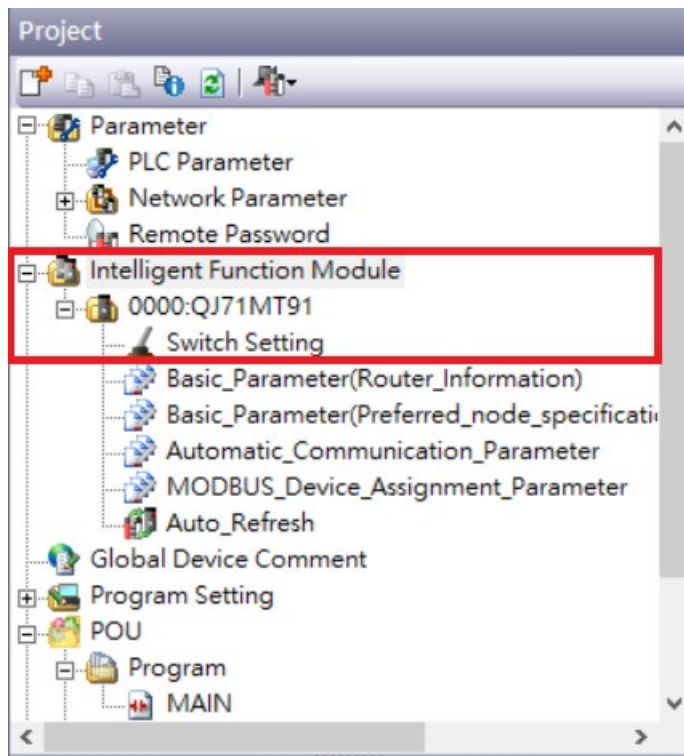


3.2 MELSEC-Q series IP 位置以及連線設定

- I. 開啟 GX Works2 從左方” Project”右鍵點選” Intelligent Function Module”選單，點擊”New Module”創建 QJ71MB91 模組



- II. 左方” Project”點選” Intelligent Function Module”選單，點擊” QJ71MT91”選單內的”Switch Setting ”



III. 將 "IP 地址" 設定為與閘道器同網域 192.168.1.XXX

Switch Setting 0000:QJ71MT91

IP Address Setting
192 . 168 . 1 . 10

Operation Mode Setting
Online

Communication Condition Setting/Redundant Setting

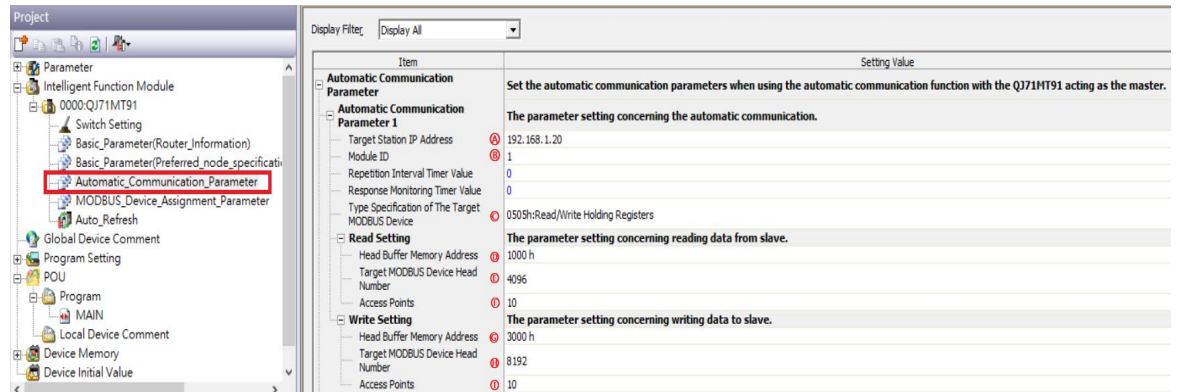
	Item	Setting Value
Communication Condition Setting	Basic parameter starting method	User Setting Parameter
	MODBUS device assignment parameter starting method	User Setting Parameter
	Online change enable/disable setting	Online Change Disabled
	Send frame specification	Data are sent in the Ethernet(V2.0)-compliant frame
Redundant Setting	Enable/Disable Redundant Setting	Disable
	IP mode type	Fixed IP Mode
	System switching at disconnection	Disable
	System switching at communication error	Disable
	System switching at communication error	Disable
	Disconnection detection time	4

Redundant setting is available for Product Information 16102000000000-D or later.
The range of 'disconnection detection time' is 0 to 60 (unit : x500ms)

* This dialog setting is linked to the Switch Setting of the PLC parameter.
Default value will be shown in the dialog if the Switch Setting of the PLC parameter contains an out-of-range value.

OK Cancel

IV. 點擊”Automatic_Communication_Parameter”設置讀取以及寫入方式



- Ⓐ 連線設備 IP 設置，網關模組預設”192.168.1.20”
- Ⓑ 欲連線的 **iO-GRID^M** 站號
- Ⓒ 下拉式選單選取”0505h:Read/Write Holding Registers”
- Ⓓ 設定為 1000h
- Ⓔ 讀取目標暫存器起始位址設定為 4096
- Ⓕ 讀取數量
- Ⓖ 設定為 3000h
- Ⓗ 寫入目標暫存器起始位址設定為 8192
- Ⓘ 寫入數量

備註:

- ※ **iO-GRID^M** 第一組 GFDI-RM01N，暫存器位址1000(HEX)轉成4096
- ※ **iO-GRID^M** 第一組 GFDO-RM01N，暫存器位址2000(HEX)轉成8192

V. 點擊”Auto_Refresh”設置讀取以及寫入的內部暫存器

The screenshot displays the software's configuration environment. On the left, the 'Project' tree shows the 'Auto_Refresh' parameter under the '0000:QJ71MT91' device. The main window is divided into two sections: 'Transfer to PLC' and 'Transfer to Intelligent Function Module'. The 'Transfer to PLC' section is active, showing 'Auto Communication Function Buffer Input' with a value of 'D0 (0, 10)'. The 'Transfer to Intelligent Function Module' section shows 'Auto Communication Function Buffer Output Area' with a value of 'D300 (0, 10)'. A dialog box titled 'Input Device 0000:QJ71MT91' is open, showing the 'Auto Communication Function Buffer Input Area' configuration. The dialog includes the following fields:

- Device Specification:
- Offset Value:
- Transfer Word Counts:

Buttons for 'OK' and 'Cancel' are visible at the bottom of the dialog. The background text in the dialog reads: 'The QJ71MT91 store the data in auto communication buffer input area sequentially from large address in unit of 1 word (16 bit) when receive response from the slave.'

4. MELSEC-Q series 使用 iO-GRID^M 簡易範例程式

在上方有定義讀取 iO-GRID^M 暫存器位址4096 儲存在對應內部暫存器D0開始

以及寫入iO-GRID^M 暫存器位址8192從對應內部暫存器D300開始寫入

所以當您需要程式控制時，只需要使用內部暫存器控制寫入以及讀取即可

