

# **iO-GRID™** and KV-7500 Series Modbus RTU Connection Operating Manual



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## 1. Remote I/O Module System Configuration List

Part No.	Specification	Description
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 is used externally to convert KV-XL402's communication module (Modbus RTU) to 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/Os and users can choose the model or brand they prefer.

## 2. KV-7500 Connection Setup

This section details how to use the KV STUDIO software to connect KV-7500 and **iO-GRID™**.  
For more details, please refer to the [KV-XL202/XL402 User Manual](#)

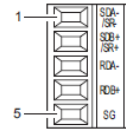
### 2.1 KV-7500 Hardware Connection

I. The connector is on the top of the KV-XL402 module and uses RS485 connections

#### ■KV-XL402 配線圖

(PORT1/PORT2 通用)

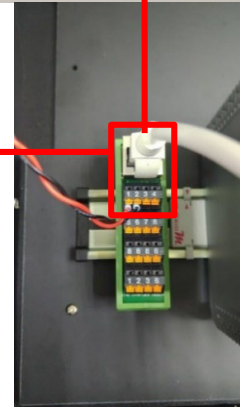
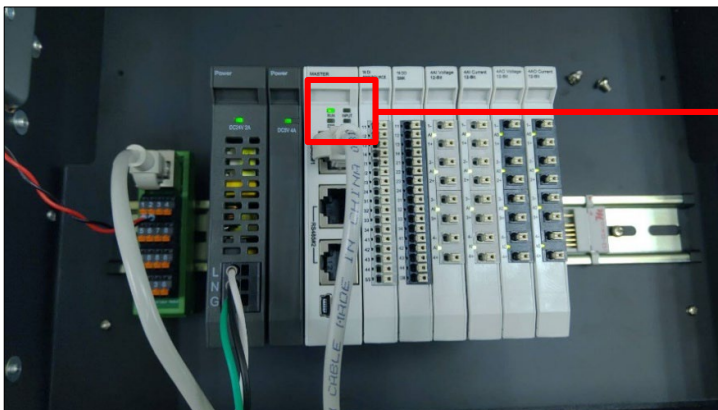
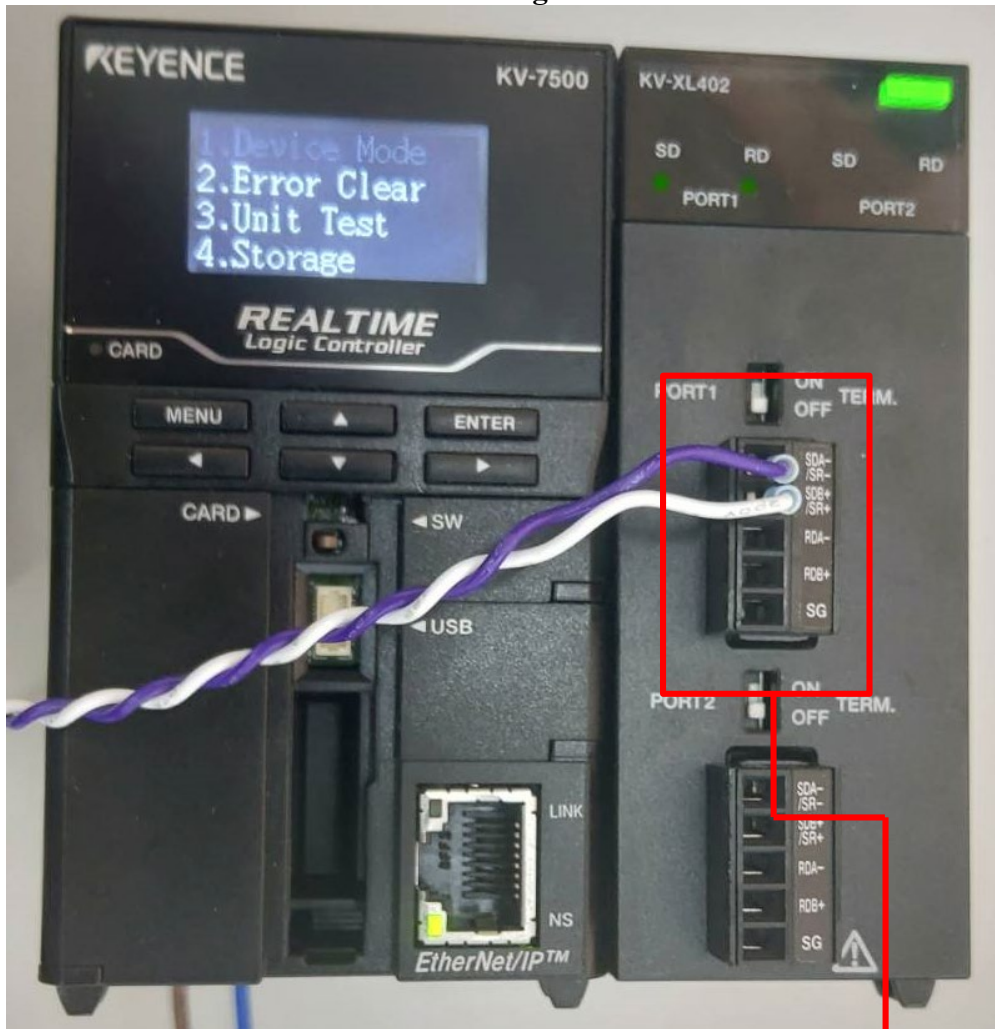
針編號	RS-422A/485 (4 線制)		RS-422A/485 (2 線制)	
	信號名稱	信號方向	信號名稱	信號方向
1	SDA -	輸出	SR -	輸入輸出
2	SDB +	輸出	SR +	輸入輸出
3	RDA -	輸入	-	-
4	RDB +	輸入	-	-
5	SG	-	SG	-



纜線的接出方向為連接器正面側。



II. Connect KV-XL402's SR- to the interface module's pin 2 and SR+ to pin 1 to convert them to RJ45 connectors before connecting them to the main controller

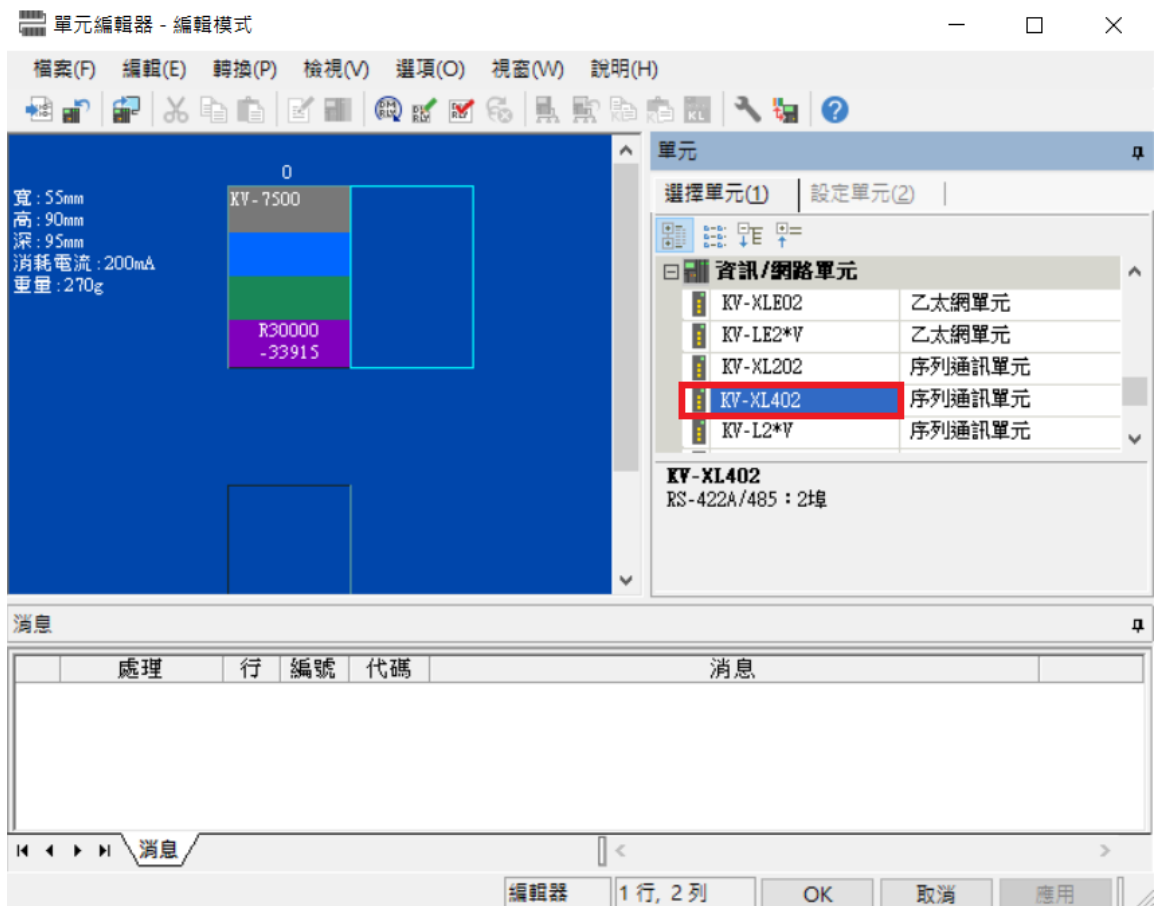


## 2.2 KV-7500 Connection Setup

I. Launch KV STUDIO, click on “Unit Configuration” on the left and select “KV-7500”



II. Within the Unit Editor, add “KV-XL402”



III. Click on “KV-XL402” and in this demonstration, we will use Port 1

單元編輯器 - 編輯模式

檔案(F) 編輯(E) 轉換(P) 檢視(V) 選項(O) 視窗(W) 說明(H)

寬: 91mm  
高: 90mm  
深: 95mm  
消耗電流: 350mA  
重量: 460g

0	1
KV-7500	KV-XL402
R30000 -33915	R34000 -35315

單元

選擇單元(U) 設定單元(S)

[1] KV-XL402

CPU元件讀取 ----

埠 1

動作模式	PROTOCOL STUDIO 模式
通訊指令使用量	標準(※)
元件分配類型	DM (資料記憶體)(※)
介面	RS-422A/485(2 線制)
鮑率	115200bps
資料位元長度	8 位元(※)
起始位元	1 位元(※)
停止位元	1 位元(※)
同位元	偶(※)
核對總和	無(※)

鮑率  
設定鮑率。

消息

處理	行	編號	代碼	消息

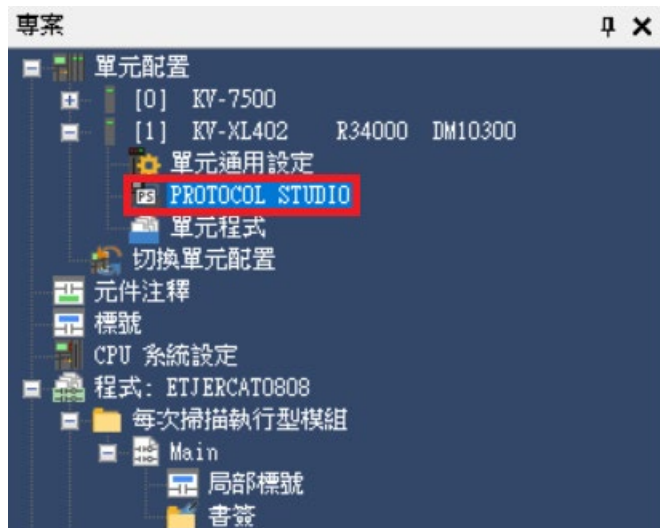
編輯器 1行, 2列 OK 取消 應用

Operation Mode: Select “Protocol Studio”  
Interface: RS-485 (2-wire)  
Baud: Select 115200bps  
Stop Bit: 1  
Parity Bit: None

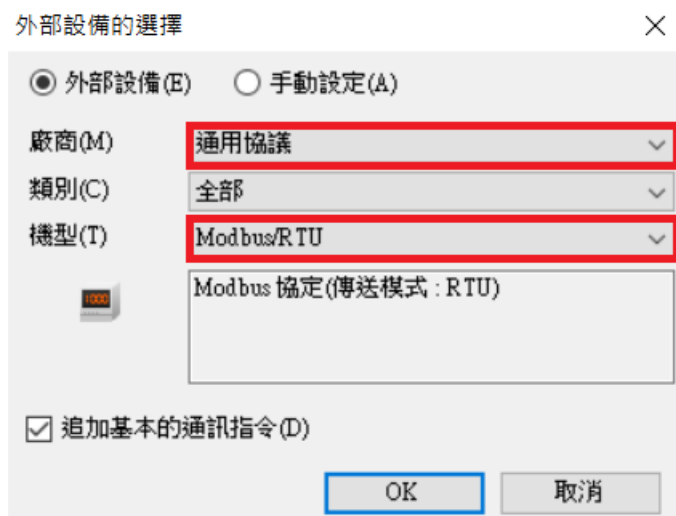
**Notes:**

※ The communication format setting must be consistent with iD-GRID™

- IV. Click on “Unit Configuration” on the left, select “KV-XL402” and then “PROTOCOL STUDIO”

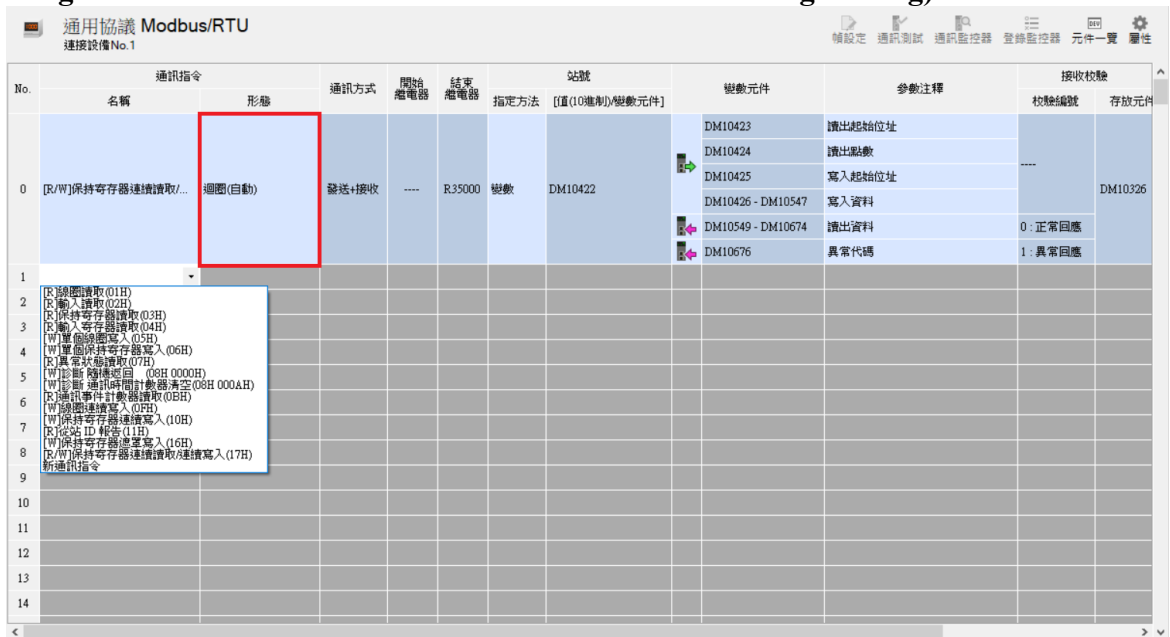


- V. Select “Universal Protocol” and “Modbus RTU”

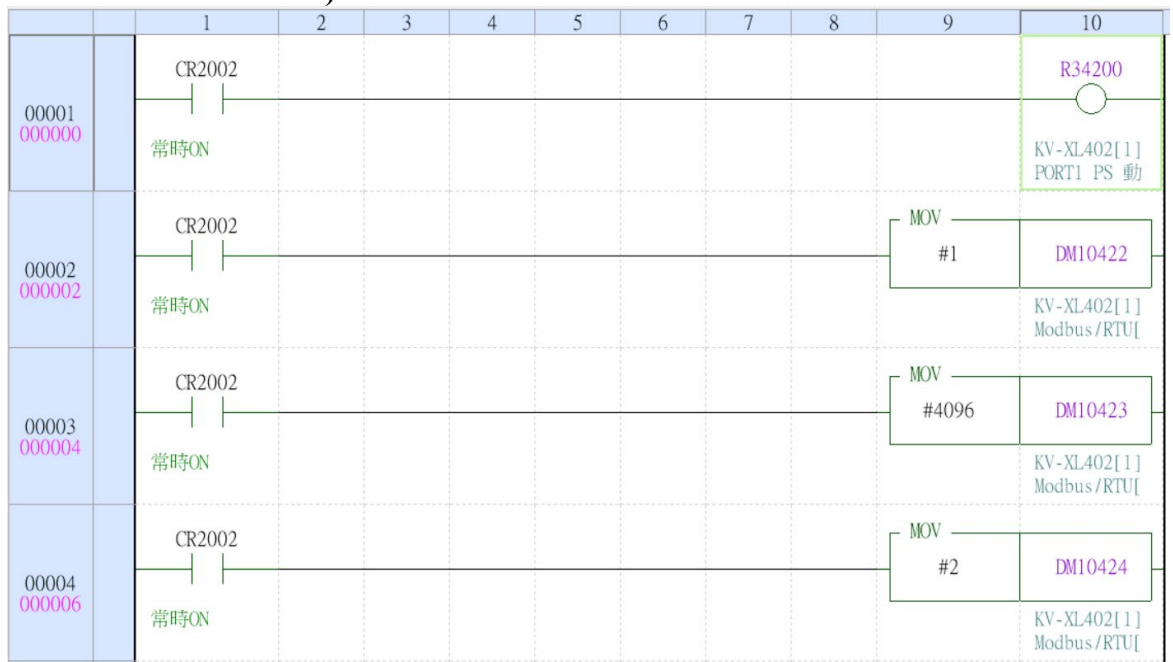


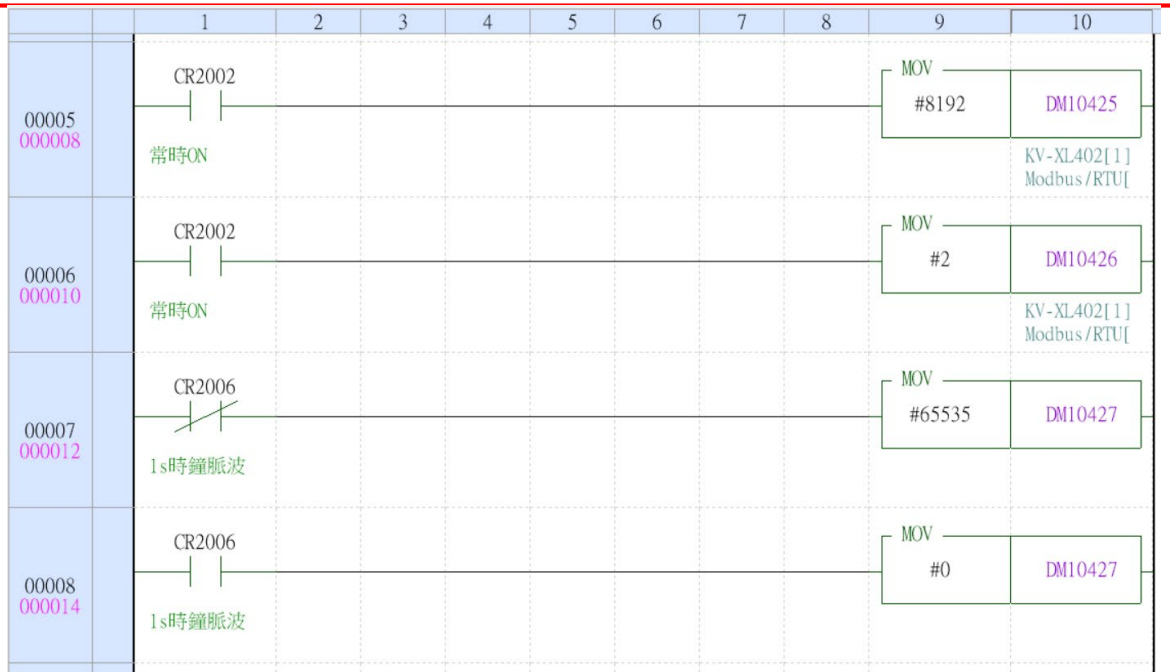


**VI. Add the desired communication commands and select “Auto” under “Type” (the image is a demonstration of 17 hours of continuous reading/writing)**



**IV. Enter the values for register components (register settings should be based on the set communication commands)**





※To use POTOCOL STUDIO's communication functions, we must initiate the bit for PS  
 The address of the Port 1 in this demonstration is R34200.