DAUDIN CO., LTD.

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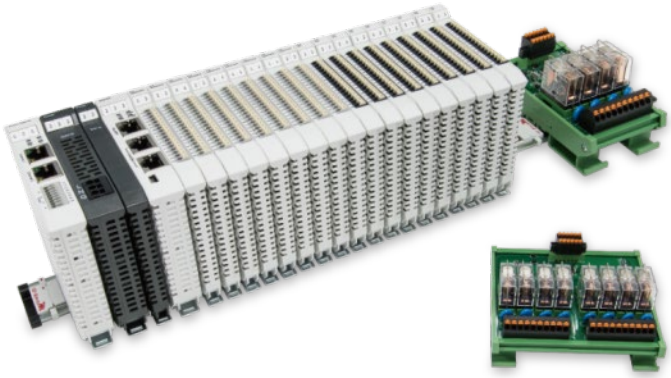
V2.0.0



iO-GRID M

and CP1H

Modbus RTU Connection Operating Manual

Table of Contents

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 Omron CP1W-CIF11'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.**

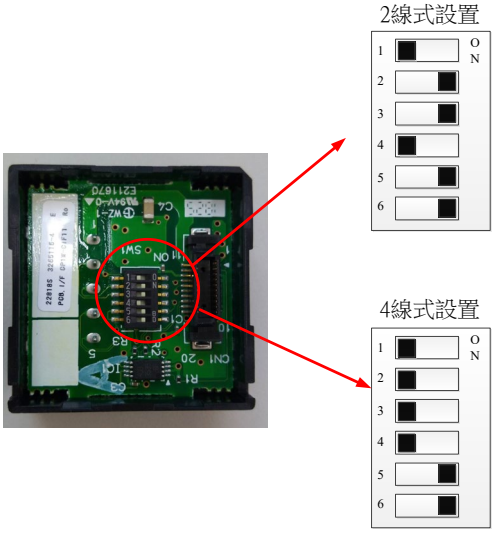
III. **The power module and interface module are standard for remote I/Os and users can choose the model or brand they prefer.**

2. Omron - CP1H Connection Setup

This section details how to use the CX-Programmer program to connect Omron CP1H using the communication module CP1W-CIF11with iO-GRID M.
For detailed information, please refer to the *CP1H CPU Unit User Manual*

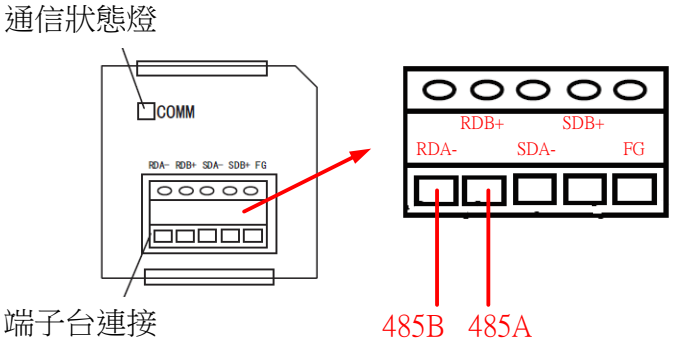
2.1 CP1H Hardware Connection

I. Switch settings on the back of the communication module CP1W-CIF11.

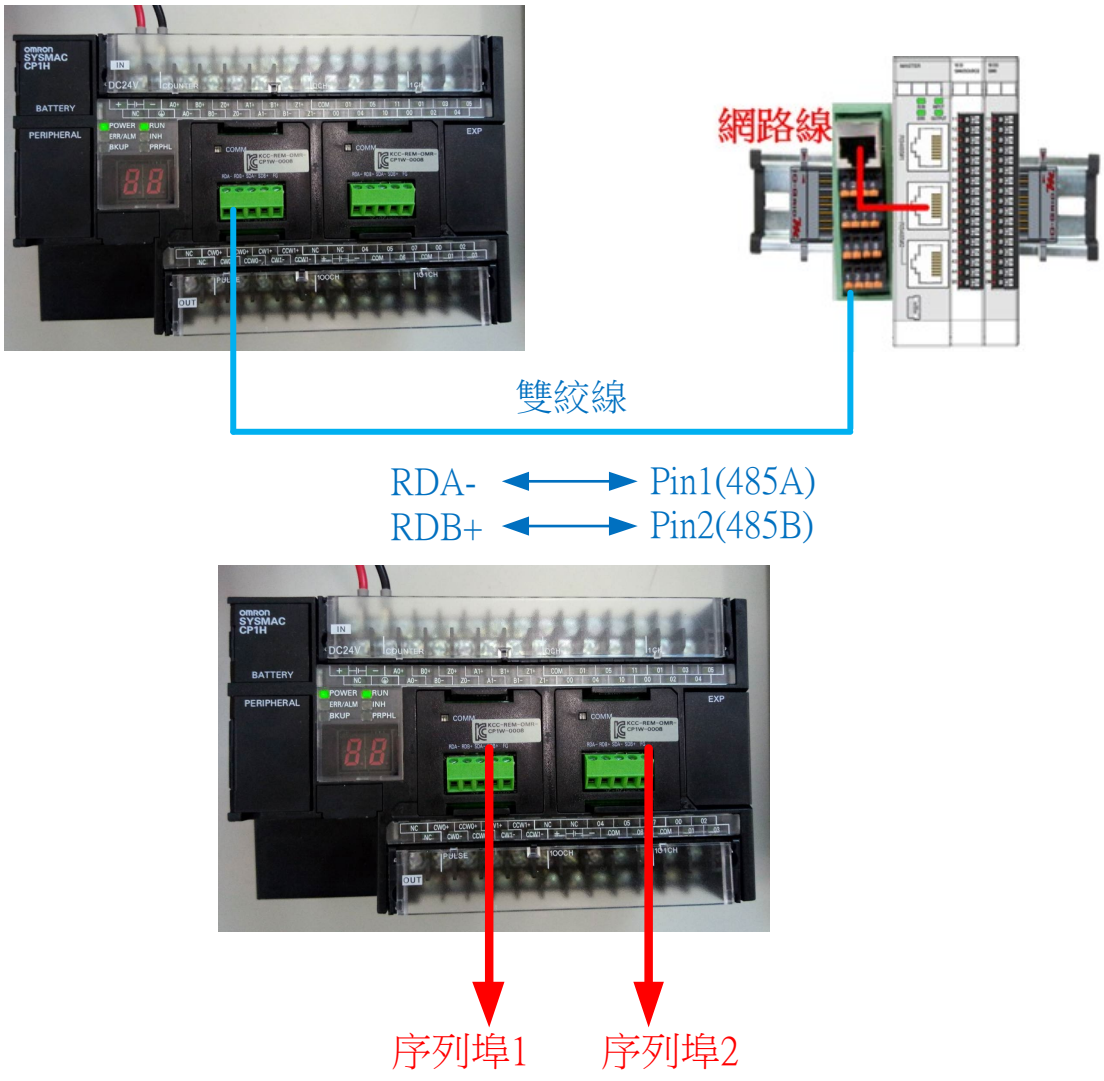


Switch	Function	Setup
1	Terminating resistor setting	"ON" with a terminating resistor and "OFF" without a terminating resistor
2	Connection type	ON-2-wire OFF-4-wire
3	Connection type	ON-2-wire OFF-4-wire
4	None	None
5	Initiate RS control	ON-Initiated OFF-Suspended (ever-receiving data)
6	Initiate RS control	ON-Initiated OFF-Suspended (ever-sending data)

II. After a communication module is set up, connect it to CP1H via RS485 and the indicator light will light up

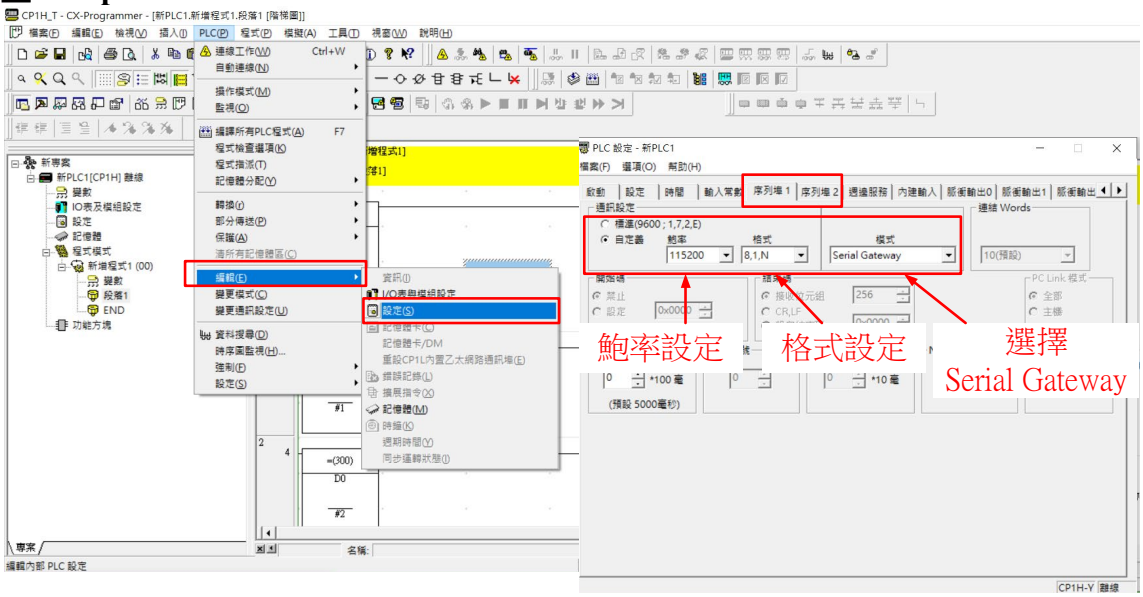


III. Connect CP1W-CIF11's terminals (RDA- and RDB+) to the interface module (Pin1 and Pin2). The interface module is connected to the control module via the Ethernet cable connected to its RJ45 port



2.2 CP1H Connection Setup

I. Launch CX-Programmer and at the function bar above: PLC□Edit□Set up the serial port□Set up the communication format



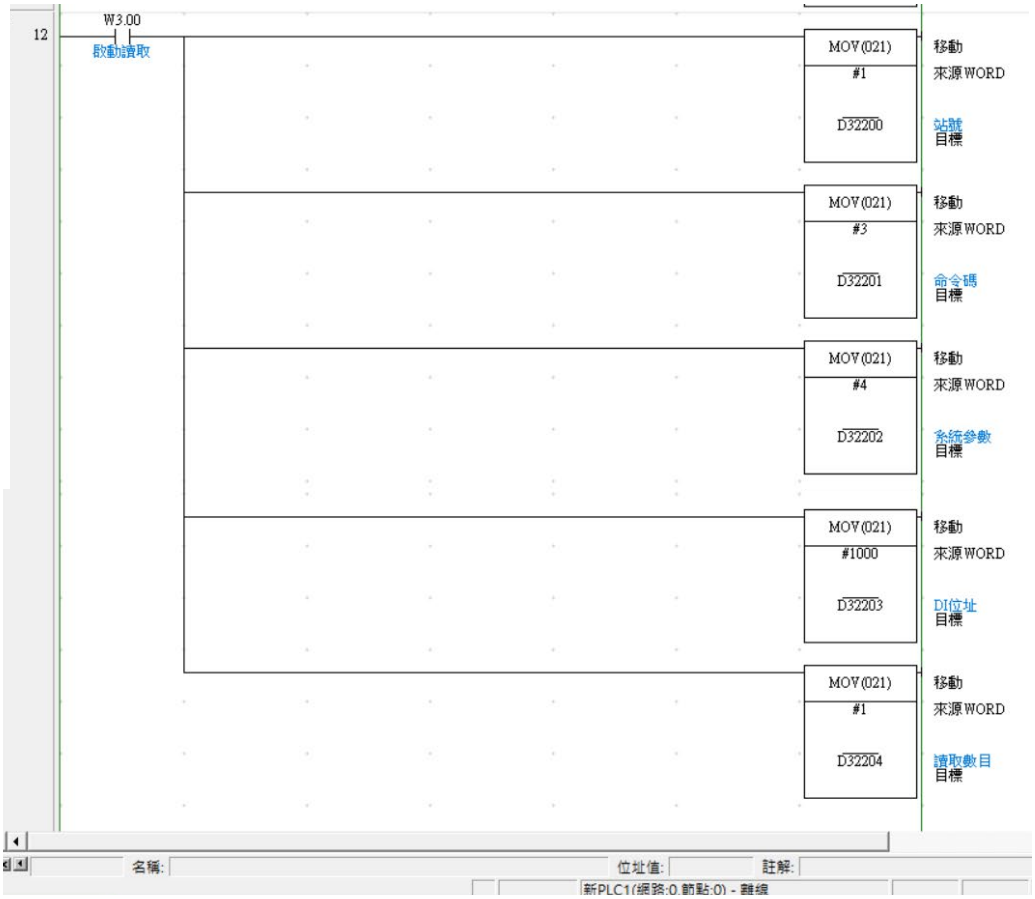
II. Program the Communication Commands

CP1H communication port register address definitions:

Word	Bit	Port	Details
A640	00	2	Modbus-RTU Master Execution Location On: Execution begins OFF: Not executing or execution completed
	01		Modbus-RTU Master Execution Normal Flag ON: Execution normal OFF: Execution error or still executing
	02		Modbus-RTU Master Execution Error Flag ON: Execution error OFF: Execution normal or still executing
A641	00	1	Modbus-RTU Master Execution Location On: Execution begins OFF: Not executing or execution completed
	01		Modbus-RTU Master Execution Normal Flag ON: Execution normal OFF: Execution error or still executing
	02		Modbus-RTU Master Execution Error Flag ON: Execution error OFF: Execution normal or still executing

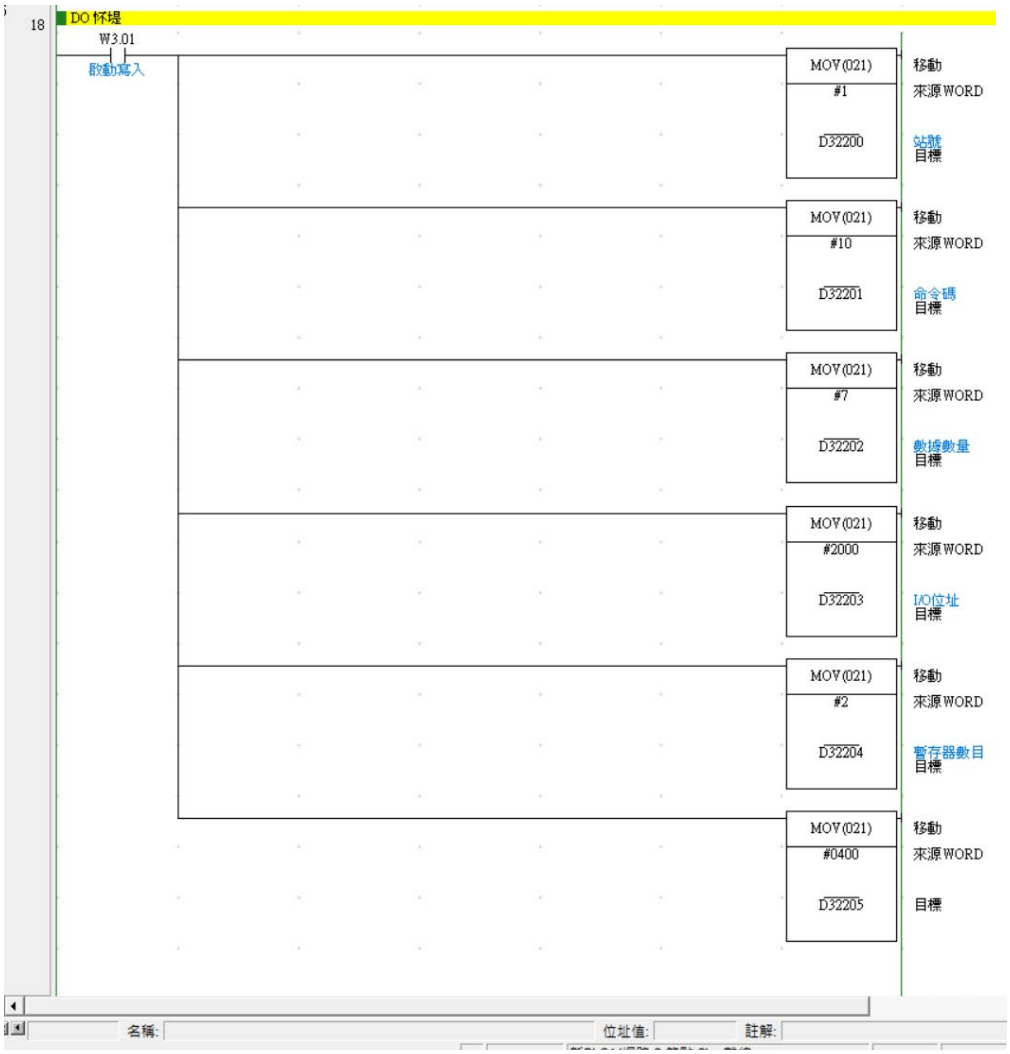
Word		Bit	Details	
Serial Port 1	Serial Port 2			
D32200	D32300	00~07	Command	Slave Address (00~F7 hex)
		08~15		reserve (always at 00)
D32201	D32301	00~07		Function Code
		08~15		reserve (always at 00)
D32202	D32302	00~15		Number of communication data bytes (0000~005E Hex)
D32203~ D32249	D32303~ D32349	00~15		Communication data (94 bytes maximum)
D32250	D32350	00~07	Response	Slave Address (00~F7 hex)
		08~15		reserve (always at 00)
D32251	D32351	00~07		Function Code
		08~15		reserve
D32252	D32352	00~07		Error Code
		08~15		reserve (always at 00)
D32253	D32353	00~15		Number of response bytes (0000~o3EA hex)
D32254~ D32299	D32354~ D32399	00~15		Response data (92 bytes maximum)

Reading of the communication register



This line of code is equivalent to Modbus Function Code			
Station No.	Function code	Register for reading	Data Amount for Reading
01	03	10 00	00 01

Writing of the communication register



This line of code is equivalent to Modbus Function Code			
Station No.	Function code	Register for writing	Data Amount for Writing
01	10	20 00	00 01

Notes:

※ iO-GRID M 's first GFDI-RM01N has the register address at 1000(HEX)

※ iO-GRID M 's first GFDO-RM01N has the register address at 2000(HEX)

III. Programming example:

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