DAUDIN CO., LTD.

2302EN
V2.0.0

iO-GRID M

and SIEMENS PLC 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
DM09-AP02CL	D-SUB adapter connected to the terminal block	Interface Module
0170-0101	8 pin RJ45 female connector/RS-485 Interface	Interface Module

1.1 Product Description

I. The interface module can convert the S7-200 Smart's RS485 port into a RJ45 connector.

II. The main controller is in charge of the management and dynamic configuration of I/O parameters and so on.

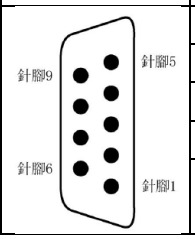
III. The power module and interface module are standard for remote I/Os and users can choose the model or brand they prefer.

2. Siemens S7-200 Smart Connection Setup

This chapter explains how to use the Step7-MicroWINSMART progam to connect S7-200 Smart to iO-GRID M .For detailed information, please refer to the *S7-200 Smart* Series Manual

2.1 Siemens S7-200 Smart Hardware Connections

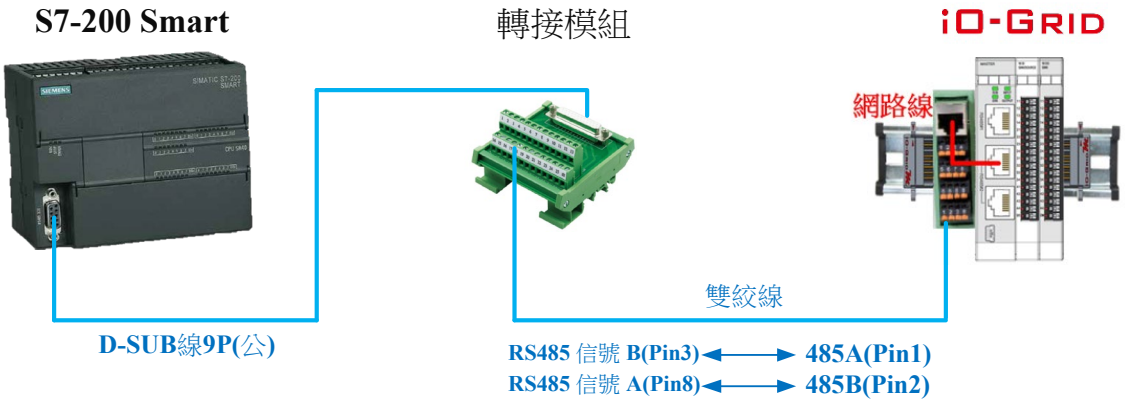
I. The connector is at Port 0 of the CPU module. and uses RS485 connections

Pin	Description	Connector	Pin	Description
1	Case ground wire		6	+5 V, 100 Ω serial resistor
2	Logic common port		7	+24V
3	RS485 (Signal B)		8	RS485 (Signal A)
4	RTS (TTL)		9	Selects 10 bit communication protocol
5	Logic common port		Connect or shell	Case grounding

Notes:

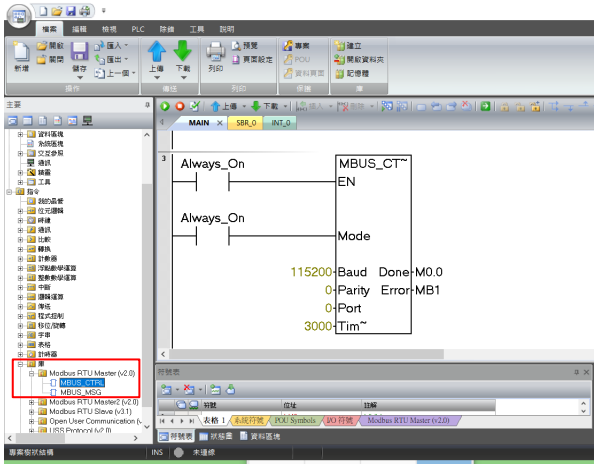
RS485 connection: Pin No.3—RS485 (Signal B) (+); Pin No.8—RS485 (Signal A) (-)

II. Connect the seriail port 0 on S7-200 Smart to the interface module (DM09-AP02CL) via a D-Sub cable. Connect the terminal block on the interface module to interface module (0170-0101) via a twisted pair cable with an Ethernet cable connecting it to iO-GRID M's port



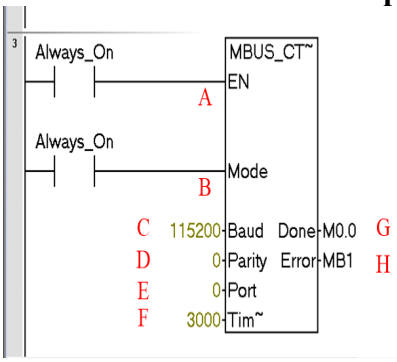
2.2 Siemens S7-200 Smart Connection Setup

I. Launch Step7-MicroWINSMART and click on “Commands” on the right side of the program



A. Click on the “Commands” menu
B. Click on the “Bases” menu
C. Click on the “Modbus RTU Master” menu
D. Click to add a new “MBUS_CTRL”

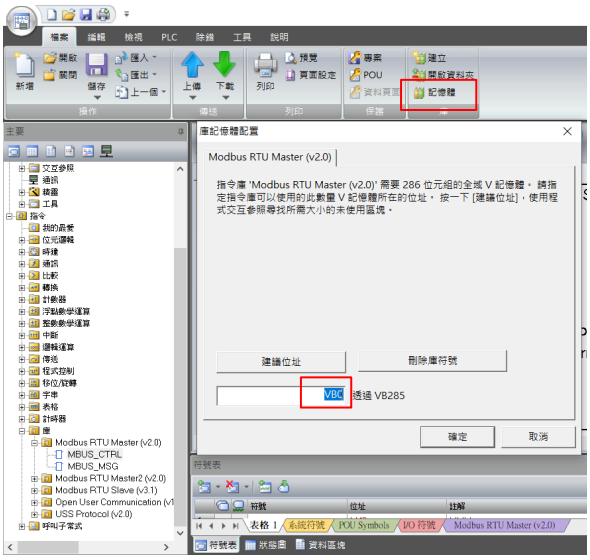
II. Communication protocol settings



Names & Definitions

	Names	Function
A	EN	Enable Bits
B	Mode	With the mode set to “1”, it is set to the Modbus protocol
C	Baud	Baud Settings
D	Parity	Check =0 (No check) =1 (odd parity check) =2 (even parity check)
E	Port	Serial Port Settings: “0” represent CPU’s RS485 port “1” representsthe communication module port
F	Time	Timeout settings (ms)
G	Done	Completed bits
H	Error	Error Code

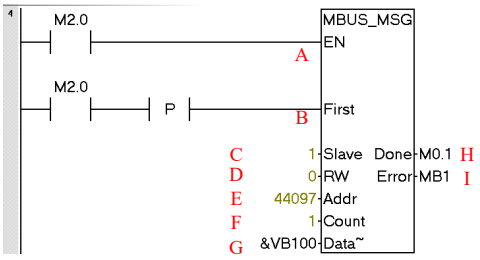
III. Command Memory Configurations



A. Click on the “Memory” menu

B. Set up a command’s starting address and once finished, click on “Confirm”

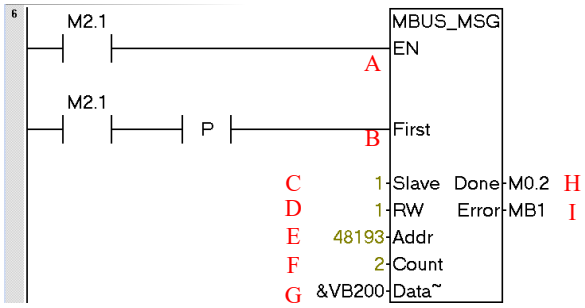
IV. Reading of the communication register



Names & Definitions

	Names	Function
A	EN	Enable Bits
B	First	Every command must be triggered with a pulse
C	Slave	Control modules’ station numbers
D	RW	Read/Write setting, with “0” representing “Read”
E	Addr	Slave Station Number The input module is set to “44097”, and Modbus 0X03 command
F	Count	Data count
G	Data	Address where the data is stored
H	Done	Completed bits
I	Error	Error Code

V. Writing of the communication register



Names & Definitions

	Names	Function
A	EN	Enable Bits
B	First	Every command must be triggered with a pulse
C	Slave	Control modules' station numbers
D	RW	Read/Write setting, with "1" representing "Write"
E	Addr	Slave Station Number, the input module is set to "48193", Modbus 0X06 and 0X10 commands
F	Count	Data count
G	Data	Address where the data is stored
H	Done	Completed bits
I	Error	Error Code

Notes:

※ iO-GRID M 's first GFDI-RM01N has the register address at 1000(HEX) converted to 4096(DEC)+1 and the starting address at 44097

※ iO-GRID M 's first GFDO-RM01N has the register address at 2000(HEX) converted to 8192(DEC)+1 and the starting address at 48193

VI. Sample Program

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