

2302EN V2.0.0



in-Grid and Yaskawa PLC 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
GFAI-RM11	Analog Input 4 Channel	Analog Input
GFAO-RM11	Analog Output 4 Channel	Analog 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 Yaskawa MP3300'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 is standard for remote I/Os and users can choose the model or brand of power module they prefer.

2. Gateway Parameter Settings

This section details how to connect a gateway to Yaskawa MP3300. For detailed information regarding $_{\text{ID-GRID}}\mathcal{M}$, please refer to the $_{\underline{\text{ID-GRID}}}\mathcal{M}$ -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"

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1					
Satting					
Module					

IV. Click on the "Setting Module" icon

🚟 i-Designer v1.0.30.b				- 6	ı ×
C Series Module Configuration	M Series Module Configuration				
Setting Module Config					



		Sett	ing Module				
Module List	ModeType	Gateway Mode			IP Address	192.168.1.20	
Module	Module Op	otion					
	System Log	3					
		DateTime	Description				
				Connect			

V. Enter the "Setting Module" page for M-series

VI. Select the mode type based on the connected module

		Setting	Module			×
Module List	ModeType G	ateway Mode 🛛 👻			IP Address	192.168.1.20
Module	woaule Opti	ion				
	System Log					
	D	PateTime	Description			
				Connect		



VII. Click on "Connect"

i a			Settin	g Module				
	Module List	Setting Module			IP Address	192.168.1.20		
	Module	Module Optic	n					
Sc M Cc								
		System Log						
		Da	teTime	Description				
				System Stop	Connect	Disconnect		
				-system stop	connect			

VIII. Gateway Module IP Settings

		Setting Mo	dule				×
Module List					IP .	Address	192.168.1.20
Module	Module Option						
→ GFGW-RM01N	Internet Settings	Operating Settings	Port Settings	ID Mapping	Module Information		
	IP Address Netmask Default Gateway Physical Address	192.168.1.20 255.255.255.0 192.168.1.1 OC:73:EB:72:02:07					
	System Log						
	DateT	ime [Description				
	→ ⊘ 2022-	09-14 16:28:06 F	lead Gateway Mo	dule Successfull	y!		
					Disconnect	Sa	we Setting

Note: The IP address must be in the same domain as the controller equipment

IX. Gateway Module Operational Modes

		Setting M	lodule			:	×
Module List					IP Addre	ss 192.168.1.20	
Module ID	Module Option						
→ GFGW-RM01N	Internet Settings	Operating Setting	gs Port Settings	ID Mapping	Module Information		
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	Channel 2 Mode	Slave	 Timeout 	25 🗘 ms			
	Channel 3 Mode	Slave	 Timeout 	25 🗘 ms			
	Channel 4 Mode	Slave	 Timeout 	25 🗘 ms			
	System Log						
	DateTi	ne	Description				
	→ 🥝 2022-0	9-14 16:28:06	Read Gateway Mod	dule Successfully	d.		
					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. Yaskawa MP3300 Connection Setup

This chapter explains how to use the MPE720 program to connect MP3300 to a gateway and add a remote I/O module. For detailed information, please refer to the <u>MP3000 Communication Function</u> <u>User Manual</u>

3.1 Yaskawa MP3300 Hardware Connection

I. The connection port is at the bottom of the middle section of the machine



II. Connect the port at the bottom of the machine to the gateway's port



3.2 Yaskawa MP3300 IP Address and Connection Setup

I. Launch the MPE720 program and select "System" on the left and then click on "Module Structure Definition"





II. Click on "218IFD" settings to enter the "Detailed Definition" section. Set up the controller IP at the IP Address field (must be the same as the gateway domain). Next, initiate I/O message communication and then click on "Simple Settings"

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III. For the "Simple Settings", please refer to the procedure below. Once this is set up, you can start writing your program. You can refer to the sample program in section 3.3.



- 1. Define your input and output register addresses
- 2. Set "<mark>資料更新時機</mark>" to "High"

3. Set up the port numbers (input and output ports must not share the same number)

4. For the protocol, select "MODBUS/TCP"

5. Set up the number of data bytes for the register to read/write;

For digital module, 1 piece of data is 1Word; for analog module, 1 piece of data is 4Word

- 6. Gateway port number: 502
- 7. Set up gateway IP; the factory default IP address is 192.168.1.20

8. The starting address for the register to be read is 4097

and the starting address for the register to be written is 8193

Notes:

 \approx iD-GRID**/***m*'s first GFDI-RM01N has the register address at 1000(HEX) converted to 4096(DEC)+1 and the starting address at 4097

 \approx iD-GRID**M**'s first GFDO-RM01N has the register address at 2000(HEX) converted to 8192(DEC)+1 and the starting address at 8193

**** MP3300** controller can only connect to 1 Slave IP and the Slave's station number must remain at 1

3.3 Sample Program

Connect AO's first channel to AI's first channel;

When the first point of DI(IB01000) is triggered, it will also trigger the first point of DO(OB02000);

When the second point of DI(IB01001) is triggered, AO(OW0201) will start output and read the first channel of AI(IW0101)



		H主程式	
0	IB01000		OB02000
0/0	_		-
1 2/2	IB01001	STORE	[MLFQD]Src [MLFQD]Dest 01000 OVV0201 1000 1000
2	IB01002	STORE	WLFQDjSrc [WLFQDjDest W0101 IVV0000 1002 1002