

2302EN V2.0.0



iD-GRIDM and Schneider 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
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 can convert the gateway's RS485 port into a RJ45 connection.
- 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. Schneider TM241 Connection Setup

This section details how to connect a gateway to Schneider TM241. For detailed information regarding $_{1}$, please refer to the $_{1}$ -GRID \mathcal{M} .



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"

🔤 i-Designer v1.0.30.b				
C Series Module Configuration	M Series Module Configuration			
1				
Setting Module				

IV. Click on the "Setting Module" icon

C Series Module Configuration M Series Module Configuration	
Setting Module Config	



		Setti	ng Module				
Module List	ModeType	Gateway Mode			IP Address	192.168.1.20	
Module	Module Op	tion					
	System Log						
		DateTime	Description				
				Connect			

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

VI. Select the mode type based on the connected module

		Settin	g Module			<u>^</u>
Module List	ModeType G	ateway Mode 🔷 י	•		IP Address	192.168.1.20
Module	wodule Opti	on				
	System Log					
	D	ateTime	Description			
				Connect		



VII. Click on "Connect"

CALOR		Set	tting Module				
	Module List	Setting Module		IP Address	192.168.1.20		
	Module	Module Option					
St M Cc							
		System Log					
		DateTime	Description				
			g System Stop	Connect	Disconnect		

VIII. Gateway Module IP Settings

		Setting Mod	lule					×
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	192.168.1.20						
	Netmask	255.255.255.0						
	Default Gateway	192.168.1.1						
	System Log							
	DataT	mo F	loscription					
	→ Ø 2022-	19-14 16·28·06 R	ead Gateway Mo	dule Successfull	vi			
		55 14 10.20.00 N	cad Gateway Mo	uule successiuli	y:			
					Disconnect	Sa	ave Setting	

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

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IX. Gatew	ay Module	Operatio	nal Mod	es				
			Setting N	1odule				
Module List						IP Address	192.168.1.20	
Module		Module Option						
→ GFGW-RM01N		Internet Settings	Operating Settin	igs Port Settings	ID Mapping	Module Information		
		Channel 1 Mod Channel 2 Mod Channel 3 Mod Channel 4 Mod	e Slave e Slave e Slave e Slave	 Timeout Timeout Timeout Timeout Timeout 	25 : ms 25 : ms 25 : ms 25 : ms			
		System Log						
		DateT	ime	Description				
		→ ⊘ 2022-	09-14 16:28:06	Read Gateway Mo	odule Successfully	!		
						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)



2.2 Schneider TM241 Hardware Connections

This section details how to use the SoMachine program to connect TM241 and in-GRID M

I. Modbus TCP connects with the gateway via the Ethernet cable going through the Ethernet port on the TM241

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2.3 Schneider TM241 Connection Setup

I. Launch SoMachine and click on "指令" on the right side of the program



- 1. Click on "Ethernet 1 (EthernetNetwork)"
- 2. Under "fixed IP Address", set up the controller's IP Address and Subnet Mask
- 3. Right-click on "Ethernet_1 (EthernetNetwork)" and then click on "Add Device..."
- 4. In "Protocol Managers", click to add a new "Industrial Ethernet Manager"



II. Add New Devices

vices tree 🔹 👻 🗸 🗙	Ethernet_1 POU MyController Mudustria	Add Device X
Adobu, 7/0°, Sample Adobu, 7	Scorer settings Hechank Manager Scorer Resources (DSCorer 1/0 Mapon Hechank Settings Schreit Allers Schreit Allers Schreit Allers Potiscal Settings Perfered protocol: EtherHeck/IP The Interprotect by Anflick Herm Anfling a Gave Server EtherHeck/IP Settings EtherHeck/IP Settings Back messaging (b): ether soperties consect scores.t	Nexe: Severi Modul, 109 Seve Actor: Report device Dater device Plug device Update device Device: Vendor: Vendor: Vendor: Vendor: Morectlerator:
	de contraction de contraction de la contractione	Display all versions (for separts only) Display outlated versions Information: Wandow Schneder Electric Categories: Other Versions: 10.221 Order Handber: Descryption: A grant: Photos device that is configured as Silve for a Modus To? Hence Append selected device as last child of Information_L themeet, Jonagor Order extra durbe tope for explanation table the surdeus is ports.

- 1. Right-click on "Industrial Ethernet Manager" and then select "Add Device..."
- 2. Under "Modbus TCP Slaves", click to add a new "Generic Modbus TCP Slave"

III. Set up gateway IP address

	Modbus_TCP_Sample.project* - SoMachine Logic Builder - V4.3
File Edit View Project ETEST Build Online Debug	Tools Window Help
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unions have a T M	a sharest to the post of a second and the second states of the second states and the second states as
	j emernet_i te POO j myControler j industria emernet_Manager j Generic_Modbus_ICP_slave X
4	Nodbus ICP save Configuration Modbus TCP Channel Configuration Status Information
Modbus_TCP_Sample	
- FdtConnections (FDT Connections)	MUBBUS
MyController (TM241CEC24T/U)	Slave TD Addresser 192 168 1 20
DI (Digital Inputs)	
Counters (Counters)	Health Imeout (ms)
	\smile
Cartridge_1 (Cartridge)	
IO_Bus (IO bus - TM3)	
COM_Bus (COM bus)	
Ethernet_1 (Ethernet Network) Ethernet_Kapager (Industrial Ethernet)	
Generic Modbus TCP Slave (Generic Mo	
Senal_Line_1 (Senai line)	
* 💖 Serial_Line_2 (Serial line)	
CAN_1 (CANopen bus)	

1. Select "Generic Modbus TCP Slave"

2. Select "Modbus TCP Slave Configuration" and set up the gateway IP address under "Slave IP Address"



IV. Reading Register Setup

	Modbur, TCP-, Semple project + - Sohlachine Legic Builder - V43	-8-
Bie Edit View Broject ETEST Buld Online Debug Inn on X To Bit X 144 124 (Ball In - D' Devices tree • 9 X	Tel: (2) (2) (2) (2) (2) (2) (2) (2) (2) (2)	• ×
Control Control Control Control Control C	Webs to Overweider Verweider Tage: Mental O 0 Dawer B 1 20 3 User B 1 10000 4 Verweider Verweider 5 6 Verweider Verweider 6 Verweider Verweider Verweider 10 Verweider Verweider Verweider 10 Verweider Verweider Verweider 10 Verweider Verweider Verweider <	× 2
Use DTM Connection		i i
Devices tree 🖸 Applications tree 🞽 Tools tree	Add Chamel	Delete Edit
Messages - Totally 11 error(s), 0 warning(s), 0 message(s)		

- 1. Select "Modbus TCP Channel Configuration"
- 2. Select "Add Channel..."
- 3. Set up the Master ID under "Unit ID"
- 4. Under "Function Code", select "Read Holding Registers (Function Code 03)"
- 5. In the "Offset" field, enter "4096" for the read register's IP address
- 6. In the "Length" field, set up the data amount for reading

V. Write Register Setup

	Modbus_TCP_Sample.project* - SoMachine Logis Builder - V4.3	
de Edit Yew Brojett ETES Edid Gebre Get Brinn na X Ra Ra × IAA Call Call (a) (a) (a) nvoestree - 4 3	Hos Teol 2040 gbb G' Hill (G' Hill = a [1] (1) (1) = 2 ≥ (a + (a	•
Adulu, (75-Seree Concentration) Adults (75-Seree Seree) Adults (75-Seree Seree)	Control Construction provide control from a field of the control field of the contr	1 Mt/Overd_ Bette. 66.

- 1. Select "Add Channel..."
- 2. Set up the Master ID under "Unit ID""
- 3. Under "Function Code", select "Write Multiple Registers (Function Code 16)"
- 4. In the "Offset" field, enter "8192" for the Write register's IP address
- 5. In the "Length" field, set up the data amount for writing



VI. Command Address Mapping



- 1. Select "Modbus TCP Slave I/O Mapping"
- 2. Enter the I/O mapping name in "Input"
- 3. Enter the I/O mapping name in "Output"

Notes:

* **ID-GRID** 's first GFDI-RM01N has the register address at 1000(HEX) converted to (DEC) with the starting address at 4096

* iD-GRID/ 's first GFDO-RM01N has the register address at 2000(HEX) converted to (DEC) with the starting address at 8192



VII. 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

