

2302EN V2.0.0





GRID 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 Beijer RS-485's communication port (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.

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2. Beijer HMI Connection Setup

This chapter explains how to use the iX Developer program to connect Beijer HMI with in-GRID M. For detailed information, please refer to <u>*iX Developer User Manual*</u>

2.1 Beijer HMI Hardware Connection

I. The connection port is on the right at the bottom of the machine. Take X2 control for example. It uses RS485 COM2 or COM3

Female DB-9	Pin	COM1 signal	COM2 signal	COM3 signal
	1	-	RS422 TX+/RS485 TX+/RX+	-
\bigcirc	2	RS232 RX	-	-
9 • 5	3	RS232 TX	-	-
8 • 4	4	-	R5422 RX+	RS485 TX+/RX+
7 • 3	5	GND	GND	GND
6	6	-	RS422 TX- / RS485 TX-/RX-	-
●1	7	RS232 RTS	-	-
	8	RS232 CTS	-	-
	9	-	RS422 RX-	RS485 TX-/RX-

X2 Pro X2 Control X2 Motion X2 Marine



II. Connect the COM (RS485 A/B) at the bottom of the machine to the interface module (1/2) to convert it into a RJ45 connector, which will be connected to the main controller



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2.2 Beijer HMI Connection Setup

I. Launch iX Developer and select "MODICON" and "Modbus Master" to add a new controller

選擇目標在下面的功能表中選擇您的目標	選擇控制器 在下面的功能表中選擇 制器或 OPC 伺服器	選擇位置 揮您偏好的控	案的位
 ● 控制器 ^{漫取品牌} ● MODICON ● MODICON ● MACON ● OMRON ● PROFIBUS 	選取通訊協定 Modbus Master Modbus Slave RTU	下一步(N)	

II. Click on the "Controller" tab to enter the controller setup page. Select the controller and then click on "Settings"

<mark>ら</mark> 標籤			
標識 控制器 新發 精韵群组 索引暫存器			
主頁		控制器 設定	顯示選取內容 •
Name	ID	Active	
> Dinkle		V	
設計 程式語言			使用的標籤:76



III. Connection method setup

I	Mo	odbus Master	×	
	S	ettings Stations		
	Ν	Nodbus Master 5.21.02		
		Settings	•	
		Communication mode	Serial	
		Default station (B)	1	
		Modbus protocol	RTU	
		32-bit word mapping	Little-endian	
		Addressing	Decimal	
		Start address	0-based	
		Silent time (ms)	×	
		Coils/input status bits per message (r	128	
		Coils/input status bits per message (1	
		Holding/input registers per message (16	
		Holding/input registers per message (8	
		Force function code 0x10 (E)	Enable	
		String swap (E)	Disable	
		Byte swap	Disable	
	Γ			
		確定 取消	育用(A) 說明	
A) F	From the "Communication mode" dro	p-down menu, select "Serial"	
(8) S	Setup the default station number		
C) F	From the "Modbus protocol" drop-dov	wn menu, select "RTU"	
\mathbb{D}) F	From the "32-bit World mapping" dro	pp-down menu, select "Little-endian"	
Ē) F	From the "Force function code 0x10"	drop-down menu, select "Enable"	
Ē) F	From the "String swap" drop-down m	enu, select "Disable"	



IV. Serial Settings

Modbus Master					\times
Settings Stations					
Modbus Master 5.21.02					
Force function code 0x10		Enable			
String swap		Disable			_
Byte swap		Disable			
Open new socket when recor	necting	Yes			
Use Modbus Ethernet header		Yes			
Enable broadcast		Yes			
Floating-point format		Single-precision			
Serial					
Port	Ø	COM3			
Baud	B	115200			
Parity	Ô	None			
Data bits	D	8			
Stop bits	E	1			
Advanced					
■ Routing					•
 確定	取消	〔		說明	
A Set Port to COM2 or CO	M3				
B From the "Baud" drop-d	own me	nu, select "1152	200"		
$\widehat{\mathbf{C}}$ From the "Parity" drop-c	lown me	enu, select "Nor	ne"		
D From the "Data bits" dro	p-down	menu, select "8	;"		
E From the "Stop bits" dro	p-down	menu, select "1	"		

Notes:

The demonstration in the Connection Operating Manual uses COM3

For using 485 pin with COM2 and COM3, please refer to <u>2.1 Beijer HMI Hardware</u> <u>Connection</u>



V. Click on "Tab" to enter the tab setting page. Next, click on "New" and set up the tab register's location

222 +**#192	48.23 44.901	and and the	98 - 14 - 98							
394 1至中9省音	用195次 年間18月7	1788 AN U	图1于 蒹葭							
+ F										
1.R							a 165			
*C144	muse		可見資料欄 ——				502 <u>2</u>	#21#	RZ _ ill En de 🖘	
新宿	司時	•	□ 調整刻度	V 🖡	t他			繁別表	顯示選取內谷 ▼	匯人
			☑ 資料交換							
標籤			控制器			資料交換		其他		
名稱 🔻	資料	存取權限	資料型別	Dinkle	Contr	方向	當	說明	輪詢群組	始終處
OUT_10	DEFAULT	ReadWrite	BIT	48192.9			Value Chan		PolGroup1	
OUT_1	DEFAULT	ReadWrite	BIT	48192.0			Value Chan		PolGroup1	
Modbus_DO	DEFAULT	ReadWrite	INT16	48192			Value Chan		Pol/Group1	
Modbus_DI	DEFAULT	ReadWrite	INT16	44096			Value Chan		PolGroup1	
ERROR_ID	DEFAULT	ReadWrite	INT16	420483			Value Chan		PolGroup1	
ERROR_FUN	DEFAULT	ReadWrite	INT16	420484			Value Chan		PolGroup1	
	DEFAULT	ReadWrite	BIT	44096.9			Value Chan		PolGroup1	
01_J	DEFAULT	ReadWrite	BIT	44096.8			Value Chan		PolGroup1	
DI_8	DEFAULT	ReadWrite	BIT	44096.7			Value Chan		PolGroup1	
DI_8 DI_7		ReadWrite	BIT	44096.6			Value Chan		PolGroup1	
DI_8 DI_7 DI_6	DEFAULT									

* ID-GRID *i*'s first GFDI-RM01N has the initial address at 44096 i D-GRID *i*'s first GFDO-RM01N has the initial address at 48192