

2211TW V2.0.0



i D-GRID 加與Schneider PLC Modbus TCP 連線操作手冊



1.		遠端 I/O 模組配套清單	3
	1.1	產品描述	3
2.		Schneider TM241連結設定	4
	2.1 i-D	Designer 軟體設定	5
	2.2	Schneider TM241 硬體連接	10
	本章餌	節說明如何使用SoMachine軟體,將TM241與 ID-GRID 702 進行連結	10
	2.3	Schneider TM241 連線設定	11



放伴智能股份有限公司

1.遠端 I/O 模組配套清單

料號	規格	說明
GFGW-RM01N	Modbus TCP-to-Modbus RTU/ASCII, 4 Ports	閘道器
GFMS-RM01S	Master Modbus RTU, 1 Port	主控制器
GFDI-RM01N	Digital Input 16 Channel	數位輸入
GFDO-RM01N	Digital Output 16 Channel / 0.5A	數位輸出
GFPS-0202	Power 24V / 48W	電源
GFPS-0303	Power 5V / 20W	電源
0170-0101	8 pin RJ45 female connector/RS-485 Interface	轉接模組

產品描述 1.1

- I. 轉接模組可將閘道器的 RS485 連接埠轉換成 RJ45 接口。
- II. 主控制器負責管理並組態配置 I/O 參數...等。
- III. 電源模組以及轉接模組為遠端 I/O 標準品,使用者可自行選配。



2. Schneider TM241 連結設定

本章節主要說明閘道器如何與Schneider TM241連接,iD-GRID**加**詳細說明 請參考 <u>iD-GRID **加**系列產品手冊</u> DAUDIN 放伴智能股份有限公司 DAUDIN CO., LTD.

2.1 i-Designer 軟體設定

I. 確認模組上電以及使用網路線連接閘道器模組



II. 點擊並開啟軟體





III. 選擇 M 系列頁籤

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

IV. 點擊設定模組圖示

🚾 i-Designer v1.0.30.b		- @ ×
C Series Module Configuration	M Series Module Configuration	
Setting Module Config		



V. 進入 M 系列設定頁面

		Settir	g Module				×
Module List	ModeType Gat	eway Mode			IP Address	192.168.1.20	
Module	Module Option	ı					
	System Log						
	Dat	eTime	Description				
				Connect			

VI. 根據連線模組選擇模式

		Settin	g Module					
Module List	ModeType	Gateway Mode				IP Address	192.168.1.20	
Module	wodule Op	lion						
	System Log							
		DateTime	Description					
				Connect				



VII. 點擊"連線"

CALCULATION OF			Settir	g Module				
C	Module List	Setting Mode	ule		IP Address	192.168.1.20		
	Module	Module Op	tion					
Sc								
М								
Cc								
		System Log						
			DateTime	Description				
						_		
				System Stop	Connect			

VIII. 閘道器模組 IP 設定

		Setting Mo	dule					×
Module List					IP A	ddress	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 0C:73:EB:72:02:07						
	System Log							
	DateTi	me l	Description					
	→ 🔮 2022-	09-14 16:28:06 F	Read Gateway Mod	dule Successfull	y!			
					Disconnect	S	ave Setting	

註: IP 地址需與 控制設備相同網域



X. 閘道器操作模式

Module List ID Module ID Module Option Internet Settings Operating Settings Operating Settings ID Apping Module Information 25 \$ ms Channel 1 Mode Slave Timeout 25 \$ ms Channel 3 Mode Mode Slave Timeout 25 \$ ms Channel 4 Mode Mode Slave Timeout 25 \$ ms System Log DateTime DateTime DateTime DateTime DateTime DateTime DateTime			Setting Mod	ule					×
Module ID OFGW-RM01N Internet Settings Operating Settings Port Settings Internet Settings Operating Settings Internet Settings Internet Se	Module List					IP /	Address	192.168.1.20	
GFGW-RM01N Channel 1 Mode Slave Timeout 25 : ms Channel 3 Mode Slave Timeout 25 : ms Channel 4 Mode Slave Timeout 25 : ms Channel 4 Mode Slave Timeout 25 : ms Channel 4 Mode Slave Timeout 25 : ms Channel 4 Mode Channel 4 System Log	Module	Module Option							
Channel 1 Mode Slave Timeout 25 ± ms Channel 2 Mode Slave Timeout 25 ± ms Channel 4 Mode Slave Timeout 25 ± ms Channel 4 Mode Slave Timeout 25 ± ms Channel 4 Mode Slave Timeout 25 ± ms Channel 5 System Log 25 ± ms System Log DateTime Description Ø 2022-09-14 16:28:06 Read Gateway Module Successfully! 	→ GFGW-RM01N	Internet Settings	Operating Settings	Port Settings	ID Mapping	Module Information			
Channel 2 Mode Slave → Timeout 25 \$ ms Channel 4 Mode Slave → Timeout 25 \$ ms Channel 4 Mode Slave → Timeout 25 \$ ms 25 \$ ms		Channel 1 Mode	Slave	- Timeout	25 🗘 ms				
Channel 3 Mode Slave Timeout 25 \$ ms 25 \$ m		Channel 2 Mode	Slave	- Timeout	25 🗘 ms				
Channel 4 Mode Slave		Channel 3 Mode	Slave	 Timeout 	25 ‡ ms				
System Log System Log DateTime Description → ② 2022-09-14 16:28:06 Read Gateway Module Successfully!		Channel 4 Mode	Slave	- Timeout	25 🗘 ms				
DateTime Description → 2022-09-14 16:28:06 Read Gateway Module Successfully!		System Log							
		DateTir	ne D	escription					
		→ ⊘ 2022-0	9-14 16:28:06 Re	ad Gateway Mo	dule Successfully	/!			
Search System Running System Stop Connect Disconnect Save Setting						Disconnect	Sa	ive Setting	

註:設定 Group1 為 Slave, 閘道器使用第一組RS485

與主控制器 (GFMS-RM01N) 對接



2.2 Schneider TM241 硬體連接

本章節說明如何使用SoMachine軟體,將TM241與iD-GRID 加進行連結

I. Modbus TCP是透過TM241主機上的乙太網口,經由網路線連接至閘道器



2.3 Schneider TM241 連線設定

I. 開啟 SoMachine 從程式右方點選"指令"



- 1. 點擊"Ethernet_1(EthernetNetwork)"
- 2. fixed IP Address 處設定控制器 IP Address、Subnet Mask
- 3. 右鍵"Ethernet_1(EthernetNetwork)"點擊"Add Device..."
- 4. 在"Protocol Managers"點擊新增"Industrial Ethernet Manager"



II. 新增裝置

If is the Orace Configuration Based THESE, BAB give globe from globes their I tage Configuration Interview I tage Configuration I tage Configuration I tage Configuration Interview I tage Configuration I tage Configuration I tage Configuration Interview I tage Configuration I tage Configuration I tage Configuration Interview	tet jee generg Configuration beside filter auf der Golg fiele Worke geb	Bit Beer Device Onlynome treat TRUE Build give blog Tool growt treat Bit Beer X Mar & Bit Beer Hand Bit Beer X Mar & Bit Beer Hand Bit Beer X Mar & Bit Beer Hand Bit Beer X Mar & Bit Beer Hand Bit Beer X Mar & Bit Beer Hand Bit Beer X Mar & Bit Beer Hand Bit Beer X Mar & Bit Beer Hand Bit Beer X Mar & Bit Beer Hand	88?		Modbus_TCP_Sample.project* - SoMachine Logic Builder - V4.3
Webu (Declamping) Webu<	a transmission of the network of	State <pre></pre>	le Edit View Device Configuration Project	ETEST Build Online Debug Tools Window Help	half a land further the
Next :: Image: Some status Modul, 170, Super Modul, 170, Super, Modul, 170, Super Modul, 170, Super, Mod	Bited • 9 K C thermet_1 @ PoO iii My-Curvider @ Inductor Mode_n_VP_Supple C andre statung litetack Hanger Scores Resource (Discore (D) New Mathematics Inductor (D) Status III (D) Status IIII (D) Status IIII (D) Status IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	Bote Proceeding of the second of t			ect val • Logic Comiguration •
Worker, 107, 2008 Source setting iterative Manage: Source Researce: DScource (D Manage) Worker, 107, 2008 Source Setting iterative Manage: Source Researce: DScource (D Manage) Worker, 107, 2008 Source Setting iterative Manage: Source Researce: DScource (D Manage) Worker, 100, 2008 Source Setting iterative Manage: Source Researce: DScource (D Manage) Worker, 100, 2008 Total Setting:	Wedu V20_Stord Monte string intents through Score Resource IDScore (DStore (DSto	CM: 27.5 and Module 27.5 and <th>vices tree</th> <th>• • X / Ethernet_1 POU MyController Indust</th> <th>Tia f Add Device X</th>	vices tree	• • X / Ethernet_1 POU MyController Indust	Tia f Add Device X
Wetch VD: Spring Wetch VD: Spring Wetch VD: Spring Spring VD: Spring VD: Spring Wetch VD: Spring VD: Spring VD: Spring Spring VD: S	Worker, Kroz-Ander Moder, Kroz-Ander Predom Setting: Structure (MEXELCENTOR) <	Module, Cirol Scaled		Scanner settings Network Manager Scanner Resources IOScanner I/O Map	piny Name: Centric Modeur TCP Since
We def becacher 2 Mart Devacher 2 Mart Devacher 2 Connet Device 2 Dable Versite 2	Ad Obece from Tenglate Coment Devices Som From Devices Som From Devices Datadd Evene Som From Devices Dodd Evene Som From Devices Som From Devices Dodd Evene Som From Devices	Ad Decker Decky al vesion (for experts only) Decky outleted vesions Decky outleted vesi	Medue, 702-Series Medue, 702-Series Modue, 702-Series		Name Vendor CP Bree Scheder Becks: Vendor Venion Name Vendor Venion Mare Venion Ma
Use DTM Connection Use DTM Conne	Roll Concercion Indiastral_thereint_Vanager Indiastral_thereint_Vanager I (for can select another target note in the navigator while this window is open.) Add Device Add Device Cose	Connection C		Add Colorest Add Device Sear For Porces Deable Device Uddate Device Doable Dev	Deploy all versions (for experts only) Deploy autilated versions Momentation Manuel Generic Modula 10° Silve Yedomator: Categories: Offer: Categories: Offer: Categories: Offer: Descriptions: Agrin: Modula device that is configured as Silve for a Modus TO* Master. Append selected device as last child of
Use DTM Connection (You can select another target node in the navigator while this window is open.)	e DTM Constant Nices tee © Applications the M Tools tee Add Device Constant of the many start while this window is open.) Add Device Const	epit Connection epit Connection end end end end end end end end end en		Auvances configuration	Industrial_tthemet_Manager
	Notes tee 🖗 Applications tee 🖉 Tools tree Add Device Coore	Add Device Cose Add Device Cose Add Device Cose	Use DTM Connection		(You can select another target node in the navigator while this window is open.)
Devices tree 🖗 Applications tree 📶 Tools tree	Terrane Table II and America America	ssages - Totally Li erro(s), 0 warning(s), 0 message(s)	Devices tree 🍄 Applications tree 🞽 Tools tree	e	Add Device Close

- 1. 右鍵 "Industrial Ethernet Manager"選取"Add Device..."
- 2. Modbus TCP Slaves中,點擊新增"Generic Modbus TCP Slave"

III.設定閘道器 IP 位址

	Modbus_TCP_Sample.project* - SoMachine Logic Builder - V4.3
le Edit View Project ETEST Build Online Debug ۇ∣⊷∽∛ № 1088 × MA ∰ ∰ ∭ ∞ G°	Tools Window Help ﷺ \$\$\$ \$\$ → [] \$\$ \$\$ 43 \$\$ \$ *' *} [] \$\$ Lagic Configuration •] Logic Configuration •
ices tree	Ethernet_1 POU Generic_Modbus_TCP_Slave x Modbus TCP Slave Configuration Modbus TCP Modbus TCP Modbus TCP Modbus TCP MODBUS
Feltonnectors (FDT connections) Hycontroller (TH241ECC4T/U) Counters (Cunters) Counters (Cunters) Counters (Cunters) Counters (Counters) Counters	Slave IP Address: 192 160 1 20 Health Timeout (ms) 1000

- 1. 選取"Generic Modbus TCP Slave",
- 2. 選取"Modbus TCP Slave Configuration",在"Slave IP Address"設定閘道器 IP 位址



IV.讀取暫存器設定

<pre>bit ip both fill juic juic juic juic juic juic juic juic</pre>		Modbus, ILP, sample project* - sofwactive Logic Busider - V4.3	
	(M processing) (M proce	1 1	
Add Diameters	Chan DTM Connection		
	Use DTM Connection		

- 1. 選取"Modbus TCP Channel Configuration"
- 2. 選取"Add Channel..."
- 3. 在"Unit ID"中設定 Master ID
- 4. 在"Function Code" 選取 03 讀取命令
- 5. 在"Offset"設定讀取暫存器位址為 4096
- 6. 在"Length"設定讀取數量
- V. 寫入暫存器設定

b B La De text TRE pår per den me geter pår best TRE pår per den me geter pår per den me geter pår best TRE pår per den me geter pår per den me geter pår best TRE pår per den me geter pe	
attri • There	
Andre, Tor, Jager Marker, Tor, Jager Port Data School (The United Marker Control (The United Marker (The United Marker))) Port Data School (The United Marker) Port Data School (The	-
m Gransfar	
Add Channel Delete	Edit

- 1. 選取"Add Channel..."
- 2. 在"Unit ID"中設定 Master ID"
- 3. 在"Function Code" 選取 16 寫入命令
- 4. 在"Offset"設定寫入暫存器位址為 8192
- 5. 在"Length"設定寫入數量



VI.指令位址配對

							Modbus_TCP_	Sample	project* - SoMachi	ne Logic Builder - !
Ele Edit View Broject ETESI Build (Online Deprig	Tools Window Help								
● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●	1 - 6 1	5 IQ\$ 05 → ±1		¢ ½	01000	Select All		Log	Configuration	
evices tree	- = x	Ethernet 1	POU R N	VController	RI 1	dustrial E	hernet Manager	1	neric Hodbus	CP Slave X
	0	Indust TCB Since Configu	ration Modeur TCB (hannel Confe	Mod	h STCPSIA	+ 1/O Magging C+	1	-	a protection in [
		"hannele	House for c	ne ne com	0.010			1	, <u> </u>	
Modbus_TCP_Sample		Variable	Manadan	Channel	Address	T	DefaultMalue	-	Description	
FdtConnections (FDT Connections)		Vanable	Mapping	Channel	Address	type	Default Value	Unit	Description	
MyController (TM241CEC24T/U)		= inputs	- 1)					Input Channels	
DI (Digital Inputs)		≅-19 RD_1		nnel 0	%IW7	WORD				
- 🙀 DQ (Digital Outputs)			(-	10	%DC1	BOOL	FALSE			
Counters (Counters)		- *	-	Bit 1	%DC1	BOOL	FALSE			
- Pulse_Generators (Pulse Generato	rs)	- 19		Bit 2	%DX1	BOOL	FALSE			
Cartridge_1 (Cartridge)		- *9		Bit 3	%D(1	BOOL	FALSE			
10_Bus (IO bus - TM3)		*9		Bit 4	%D(1	BOOL	FALSE			
COM_Bus (COM bus)		-*9		Bit S	%DX1	BOOL	FALSE			
Ethernet_1 (Ethernet Network)		- *9		Bit 6	%DX1	BOOL	FALSE			
😑 🗐 Industrial_Ethernet_Manager	(Industrial Ethe	- *9		Bit 7	%DC1	BOOL	FALSE			
Generic_Modbus_TCP_Sla	we (Generic Mo	*		Bit 8	%D(1	BOOL	FALSE			
* Serial_Line_1 (Serial line)		- *0		Bit 9	%DC1	BOOL	FALSE			
* 49 Serial Line 2 (Serial line)		- *9		Bit 10	%D(1	BOOL	FALSE			
(iii CAN_1 (CANopen bus)		- *9		Bit 11	%DC1	BOOL	FALSE			
-		- *9		Bit 12	%D(1	BOOL	FALSE			
		- 10		Bit 13	%DX1	BOOL	FALSE			
		*		Bit 14	%DX1	BOOL	FALSE			
		**	-	Bit 15	%D(1	BOOL	FALSE			
		E Ca Outputs	-12)					Output Channels	
		8 % WR_1		nnel 1	%QW2	WORD				
				ho	%QX4.0	BOOL	FALSE			
			\sim	Bit 1	%0X4.1	BOOL	FALSE			
		10		Bit 2	%0X4.2	BOOL	FALSE			
				Bit 3	%0X4.3	BOOL	FALSE			
		50		Rit-4	56.0394.4	80.01	FALSE			
		5.		RitS	%0X4.5	8001	FALSE			
				Die 6	11. OXA 6	8001	EALCE			
				Dit 7	R OVA 7	ROOL	ENICE			
				Die 0	NOVE C	BOOL	EALCE			
				DIL O	10000	8000	EN CE			
				Dit 9	160/0.1	BOOL	PALSE			
				DIE TO	76QX5.4	BUUL	PALSE			
				Dit 11	%005.3	DUOL	FALSE			
				Bit 12	%QX5.4	BOOL	FALSE			
				Bit 13	%QX5.5	BOOL	FALSE			
				Bit 14	%QX5.6	BOOL	FALSE			
				Die 4E	er ove t	BAAI	EAL OF			

- 1. 選取"Modbus TCP Slave I/O Mapping"
- 2. 在"Input"中建立輸入 I/O 配對名稱
- 3. 在"Output"中建立輸出 I/O 配對名稱

備註:

- ※ i□-GRID**개** 第一組 GFDI-RM01N ,暫存器位址1000(HEX)轉成(DEC) 起始位址為 4096
- ※ ¡□-GRID**洲** 第一組 GFDO-RM01N , 暫存器位址2000(HEX)轉成(DEC) 起始位址為 8192



VII. 範例程式

以一組 GFDI-RM01N 以及一組 GFDO-RM01N 控制

當 DI 的第一個點收到訊號觸發時, DO 的第一個點輸出導通

	Modbus_TCP_Sample.project* - SoMachine Logic Builder - V4.3	- 6
Edit Vew Broject FED,LD,Q. ETEST Build	Onime Denka Tool Window Help Mark 120 Mark (2019) - −112 On to to 12 Io to to 13 Markat - Incentrationation -	
For Low 23 42 43 49 49 49 49 19 49		
tee + 0 x	Eternet_1 P FOU x @ McControle @ Industris_Eternet_Hanager @ Generic_Modula_TOF_Stave	
Tel C.C. Action/ctrice (FC Connection) Connection (FC Connection) Connection (FC Connection) Connection (FC Connection)	■ The set of the set	點位
3 DTM Connection		▶ + Q. 100 % Ø