

DVPEN01-SL

Instruction Sheet

安裝說明 安 装 说 明

Ethernet Communication Module

Ethernet 通訊模組

Ethernet 通讯模块



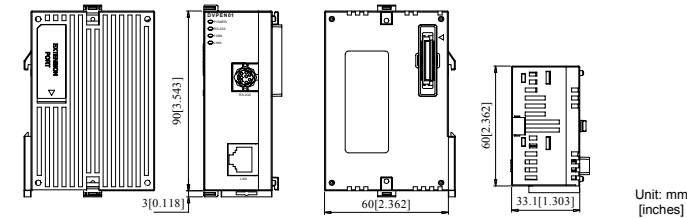
Transmission cable	DVPACAB215 DVPACAB2A30 DVPACAB2B10	Power supply voltage	24VDC (-15% ~ 20%) (Power is supplied by the internal bus of MPU)
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Environment

Noise immunity	ESD (IEC 61131-2, IEC 61000-4-2): 8kV Air Discharge EFT (IEC 61131-2, IEC 61000-4-4): Power Line: 2kV, Communication I/O: 1kV Damped-Oscillatory Wave: Power Line: 1kV, Digital I/O: 1kV RS (IEC 61131-2, IEC 61000-4-3): 26MHz ~ 1GHz, 10V/m
Environment	Operation: 0°C ~ 55°C (temperature), 5 ~ 95% (humidity), Pollution degree 2; Storage: -25°C ~ 70°C (temperature), 5 ~ 95% (humidity)
Vibration/shock resistance	Standard: IEC61131-2, IEC68-2-6 (TEST Fc)/IEC61131-2 & IEC68-2-27 (TEST Ea)
Certificates	

Installation

Dimension

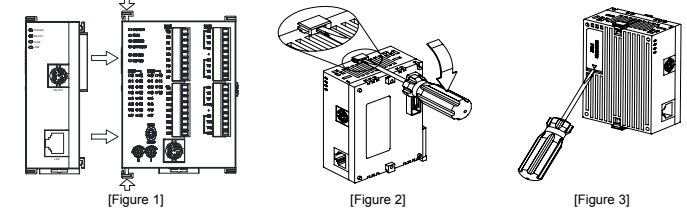


How to Connect DVPEN01-SL to PLC

- Adjust the I/O module clip on the left side of the PLC.
- Meet the I/O module port on the PLC with DVPEN01-SL and connect them as shown in [Figure1].
- Fasten the I/O module clip.

Connect DVPEN01-SL to Other Modules

To connect DVPEN01-SL to other I/O modules, lift up the I/O module clip on the I/O module by a screwdriver and open the side cover, as shown in [Figure 2] and [Figure3].



[Figure 1]

[Figure 2]

[Figure 3]

Control Registers

CR#	Type	Content	Explanation
#0	R	Model name	Read only; The model code of DVPEN01-SL = H'4050
#1	R	Firmware version	Displaying the current firmware version in hex, e.g. V1.00 is indicated as H'0100.

CR#	Type	Content	Explanation
#2	R	Communication mode	0: Disabled; 1: Enabled b0 Setting for MODBUS TCP mode b1 Setting for data exchange mode
#3	W	Trigger E-Mail Event 1	1: Send E-mail 1
#4	W	Trigger E-Mail Event 2	1: Send E-mail 2
#5	W	Trigger E-Mail Event 3	1: Send E-mail 3
#6	W	Trigger E-Mail Event 4	1: Send E-mail 4

CR#3 ~ CR#6: After the E-Mail is sent, the CR will automatically be set to 0. Please use differential commands to trigger CR#3 ~ CR#6 to avoid continual sending of e-mails.

CR value	E-Mail status	CR value	E-Mail status
0	Not being sent	11	Incorrect e-mail address of recipient
1	Processing	12	SMTP server communication error
2	Successfully sent	13	No available TCP connections
10	Unable to connect to SMTP server		

CR#	Type	Content	Explanation
#7	R	Status of E-Mail 1, 2	b0-b7 Status of E-Mail 2 b8-b15 Status of E-Mail 1
#8	R	Status of E-Mail 3, 4	b0-b7 Status of E-Mail 4 b8-b15 Status of E-Mail 3

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CR#	Type	Content	Explanation
#9	R/W	Code after title of E-Mail 1	Filled in by the user.
#10	R/W	Code after title of E-Mail 2	Filled in by the user.
#11	R/W	Code after title of E-Mail 3	Filled in by the user.
#12	R/W	Code after title of E-Mail 4	Filled in by the user.
#13	R/W	Data exchange enabled flag	1: Execute data exchange mode (1) or (2) one time 2: Execute data exchange mode (3) continually 3: Execute data exchange mode (3) once
#14	R	Status of data exchange	Status of data exchange mode (1) or (2)
#15	R/W	RTU mapping enabled flag	1: Enabled; 0: Disabled (Default)
#16	R/W	Status of slave connection in RTU mapping	b0: Connection status of RTU slave 1 b1: Connection status of RTU slave 2 b2: Connection status of RTU slave 3 b3: Connection status of RTU slave 4
#17	R/W	Data exchange cycle time	Min. cycle time (ms) for executing data exchange mode (3) command
#18	R	Error status of slaves in data exchange	CR#19 b0 ~ b15: Error in slave 1 ~ 16 CR#18 b0 ~ b8: Error in slave 17 ~ 24 1: Error occurs
#25	R/W	Destination IP	Destination IP address for data exchange
#26	R	Status of data exchange	Status of data exchange mode (1) or (2)
#27	R/W	Function code for data exchange mode (3)	0: The function code for the reading of data and the writing of data is "17". 1: The function codes for the reading of data is "03, and the function code for the writing of data is "10".
#28	R/W	Slave IP list	Select an IP for slave from the list.
#48 ~ #29	R/W	Data exchange buffer (sending)	For data exchange mode (1)
#68 ~ #49	R	Data exchange buffer (receiving)	For data exchange mode (1)

CR#	Type	Content	Explanation
#81	R/W	Read address in data exchange	Buffer address sent from slave in data exchange mode (2)
#82	R/W	Read data length in data exchange	Number of registers read in data exchange mode (2) Range: K1 ~ K100
#83	R/W	Received address in data exchange	Buffer address received by master in data exchange mode (2)
#84	R/W	Written address in data exchange	Buffer address received by slave in data exchange mode (2)
#85	R/W	Written data length in data exchange	Number of registers sent in data exchange mode (2) Range: K1 ~ K100
#86	R/W	Sent address in data exchange	Buffer address sent from master in data exchange mode (2)
#87	R/W	Mode of setting an IP address	0: Static IP address 1: DHCP
#88	R/W	IP address	Setting an IP address If an IP address is 192.168.1.5, the value in CR#88 will be H0105, and the value in CR#89 will be HCOA8.
#89	R/W	Netmask	Setting a netmask If a netmask is 255.255.255.0, the value in CR#90 will be HFF00, and the value in CR#91 will be HFFFF.
#90	R/W	Gateway IP address	Setting a gateway IP address If a gateway IP address is 192.168.1.5, the value in CR#92 will be H0105, and the value in CR#93 will be HCOA8.
#91	R/W	Enabling the setting of an IP address	Executing the setting of an IP address
#92	R	Status of setting an IP address	0: The setting of an IP address is successful. 1: The setting of an IP address fails.
#111	R/W	8-bit processing mode	Set the MODBUS TCP transmission of slave to 8-bit mode.
#112	R/W	MODBUS TCP keep-alive time-out	Unit: second
#113	R	Status of MODBUS TCP connection	The current status of MODBUS TCP connection
#114	R/W	MODBUS TCP communication time-out	Unit: ms
#115	R/W	Sending MODBUS TCP command	1: Send MODBUS TCP command
#116	R/W	MODBUS TCP status	Current status of the MODBUS TCP mode
#117 ~ #118	R/W	Destination IP in MODBUS TCP mode	The destination IP address in MODBUS TCP mode
#119	R/W	Data length in MODBUS TCP mode	The length of data in the communication in MODBUS TCP mode
#120	R/W	MODBUS TCP status	Current status of the MODBUS TCP mode

CR#	Type	Content	Explanation
#219 ~ #120	R/W	Buffers for data transmission in MODBUS TCP mode	Buffers for sent/received data in MODBUS TCP mode
#251	R	Error code	b0: Not connected to the network b3: CR#13 is set to sending data but the data exchange mode has not been enabled. b7: Connecting to SMTP server fails. b8: DHCP did not acquire correct network parameters.

Symbols:
R: Able to read data through the use of FROM instruction; W: Able to write data through the use of TO instruction
The No. for left-side high-speed I/O modules: 100 ~ 107 (m1 = 100 ~ 107)

LED Indicators & Troubleshooting

LED	LED Status	Indication	How to correct
POWER (green)	Constantly ON	Power supply is normal.	--
	Constantly OFF	No power supply	Check whether the CPU module supplies power normally, and DVPEN01-SL is connected tightly.
RS-232 (red)	Flashing	There are data being transmitted in the serial port	--
	Constantly OFF	No data transmission	Check whether the RS-232 cable is connected to the COM port on DVPEN01-S when in RS-232 communication.
100M (orange)	Constantly ON	Connected to Ethernet at 100Mbps	--
	Constantly OFF	Connected to Ethernet at 10Mbps	Check whether the network cable is connected correctly, the transmission speed is 100Mbps, and the RJ45 connector is connected normally.
LINK (green)	Constantly ON	The network connection is normal.	--
	Flashing	Network in operation	--
LINK (green)	Constantly ON	The network connection is normal.	--
	Constantly OFF	The network is not connected	Check whether the network cable is connected correctly, and the RJ45 connector is connected normally.

Troubleshooting

Abnormality	Cause	How to correct
Unable to locate a module	DVPEN01-SL is not connected to the network. The PC and DVPEN01-SL are on different networks and blocked by a firewall.	Check whether DVPEN01-SL is correctly connected to the network. Use a specific IP address to locate a module or use RS-232 for relevant settings.
Unable to open the DVPEN01-SL setup page	DVPEN01-SL is not connected to a network. Incorrect communication settings in WPLSoft	Check whether DVPEN01-SL is correctly connected to a network. Check whether "Ethernet" is selected in the communication settings.
Able to open DVPEN01-SL setup page but fail to upload/download program and monitor by WPLSoft	The PC and DVPEN01-SL are on different networks and blocked by a firewall.	Set DVPEN01-SL by RS-232.
Unable to send emails	The network setting for DVPEN01-SL is incorrect. Incorrect CR settings Incorrect settings for e-mail server	Check whether the network setting for DVPEN01-SL is correct. Consult the IT staff if you are using the Intranet in the company or refer to the network setting instructions provided by your ISP. Check whether the CR is used correctly. Confirm the IP address of the SMTP server.

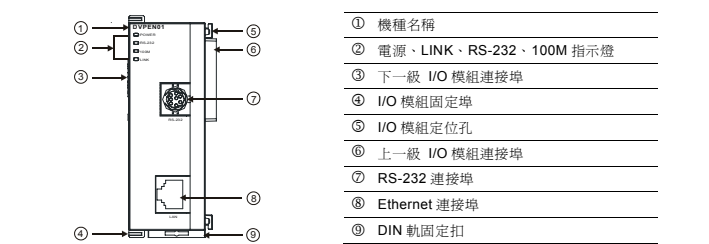
注意事項

- 此安裝手冊只提供電氣規格、一般規格、安裝及配線等。詳細關於 DVPEN01-SL 所包含的網路協定內容，請參閱相關的專業文章或書籍資料。
- 本機為開放型 (OPEN TYPE) 機殼，因此使用者使用本機時，必須將之安裝於具防塵、防潮及免於電擊/衝擊意外之外殼配線箱內。另必須具備保護措施 (如：特殊之工具或鑰匙才可打開)，防止非維護人員操作或意外衝擊本體，造成危險及損壞，且請勿在上電時觸碰任何端子。
- 請務必仔細閱讀本使用手冊，並依照本手冊指示進行操作，以免造成產品受損，或導致人員受傷。

產品簡介

- 支援 MODBUS TCP 協定
- 主站與從站間資料交換同步化
- 自動校正 PLC 主機的萬年曆
- 發送電子郵件通知訊息
- RS-232/Ethernet 組態設定
- 傳輸速率 10/100Mbps

產品外觀部位介紹



- 1 機種名稱
- 2 電源、LINK、RS-232、100M 指示燈
- 3 下一級 I/O 模組連接埠
- 4 I/O 模組固定埠
- 5 I/O 模組定位孔
- 6 上一級 I/O 模組連接埠
- 7 RS-232 連接埠
- 8 Ethernet 連接埠
- 9 DIN 軌固定扣

功能規格

網路介面

接頭	RJ-45 with Auto MDI/MDIX
埠數	1 Port
傳輸方式	IEEE 802.3, IEEE 802.3u
傳輸線	Category 5e (TIA/EIA-568-A, TIA/EIA-568-B)
傳輸速率	10/100 Mbps Auto-Detect
網路協定	ICMP, IP, TCP, UDP, DHCP, SMTP, SNMP, NTP, MODBUS TCP

串列通訊介面

接頭	RS-232	重量	92g
埠數	1 Port	絕緣電壓	500V
傳輸線	DVPACAB230, DVPACAB215, DVPACAB2A30, DVPACAB2B10	消耗電力	1.5W
		電源電壓	24VDC (-15% ~ 20%) (由主機經由內部匯流排供應)

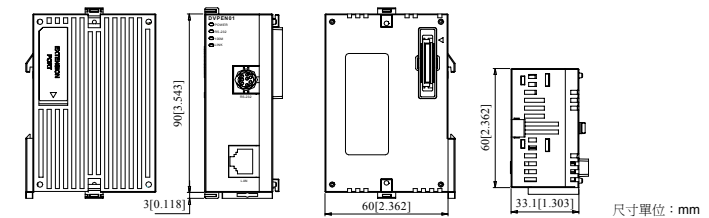
電氣規格

環境規格

雜訊免疫力	ESD (IEC 61131-2, IEC 61000-4-2): 8kV Air Discharge EFT (IEC 61131-2, IEC 61000-4-4): Power Line: 2kV, Communication I/O: 1kV Damped-Oscillatory Wave: Power Line: 1kV, Digital I/O: 1kV RS (IEC 61131-2, IEC 61000-4-3): 26MHz ~ 1GHz, 10V/m
操作/儲存環境	操作: 0°C ~ 55°C (溫度), 5 ~ 95% (濕度), 污染等級 2 儲存: -25°C ~ 70°C (溫度), 5 ~ 95% (濕度)
耐振動/衝擊	國際標準規範 IEC61131-2, IEC 68-2-6 / IEC61131-2 & IEC 68-2-27
標準	

安裝

外觀尺寸

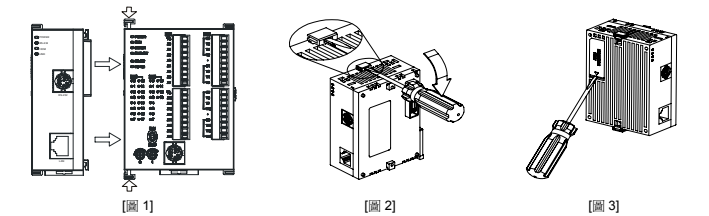


PLC 主機與 DVPEN01-SL 結合

- 調整主機連接左側模組扣環。
- 對準左側模組與主機連接埠，接著依照圖 1 所示方式將左側模組與主機結合。
- 扣緊主機連接左側模組扣環。

下一級 I/O 模組與 DVPEN01-SL 結合

與下一級左側模組連接安裝時，需使用螺絲起子將左側模組固定扣往上撥，並打開擴充側蓋，如圖 2 ~ 3 所示。



控制暫存器 CR

CR 編號	屬性	暫存器名稱	設定值
#0	R	機種代號	系統內定，唯讀：DVPEN01-SL 機種編碼=H'4050
#1	R	系統版本	系統版本指示，16 進位表示，例如：H'0100，表示軟體版