

DVPSCM12-SL



5012607002-SCM2

Instruction Sheet

Bilgi Dökümanı

安 裝 說 明
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RS-485/RS-422 Serial Communication Module

RS-485/RS-422 Seri Haberleşme Modulu

RS-485/RS-422 串列通訊模組

RS-485/RS-422 串行通訊模块

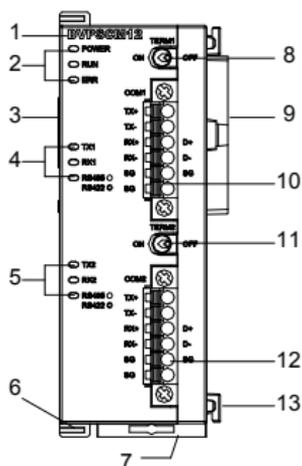


- EN ✗ DVPSCM12-SL is an OPEN-TYPE device. It should be installed in a control cabinet free of airborne dust, humidity, electric shock and vibration. To prevent non-maintenance staff from operating DVPSCM12-SL, or to prevent an accident from damaging DVPSCM12-SL, the control cabinet in which DVPSCM12-SL is installed should be equipped with a safeguard. For example, the control cabinet in which DVPSCM12-SL is installed can be unlocked with a special tool or key.
- EN ✗ DO NOT connect AC power to any of I/O terminals, otherwise serious damage may occur. Please check all wiring again before DVPSCM12-SL is powered up. After DVPSCM12-SL is disconnected, Do NOT touch any terminals in a minute. Make sure that the ground terminal (⊕) on DVPSCM12-SL is correctly grounded in order to prevent electromagnetic interference.
- FR ✗ DVPSCM12-SL est un module OUVERT. Il doit être installé que dans une enceinte protectrice (boîtier, armoire, etc.) saine, dépourvue de poussière, d'humidité, de vibrations et hors d'atteinte des chocs électriques. La protection doit éviter que les personnes non habilitées à la maintenance puissent accéder à l'appareil (par exemple, une clé ou un outil doivent être nécessaire pour ouvrir a protection).
- FR ✗ Ne pas appliquer la tension secteur sur les bornes d'entrées/Sorties, ou l'appareil DVPSCM12-SL pourra être endommagé. Merci de vérifier encore une fois le câblage avant la mise sous tension du DVPSCM12-SL. Lors de la déconnection de l'appareil, ne pas toucher les connecteurs dans la minute suivante. Vérifier que la terre est bien reliée au connecteur de terre (⊕) afin d'éviter toute interférence électromagnétique.

■ Features

- Two RS-485/RS-422 ports (COM1 and COM2)
- Full isolation between the RS-485/RS-422 communication and the power supply
- Two built-in 120Ω terminal resistors driven by external switches
- Every port can be connected to 32 devices at most.
- MODBUS ADVANCE: easy software setting interface for MODBUS data exchange
- UD Link: user-defined communication protocol and procedure planning

■ Product Profile



[Figure 1]

1.	Model name
2.	POWER, RUN, ERR LED
3.	Extension port for left-side module
4.	TX1, RX1, RS-485/RS-422 LED
5.	TX2, RX2, RS-485/RS-422 LED
6.	Fixing clip for left-side module
7.	DIN rail clip
8.	Switch for Terminal Resistor 1
9.	Extension port for MPU/left-side module
10.	RS-485/RS-422 Port 1
11.	Switch for Terminal Resistor 2
12.	RS-485/RS-422 Port 2
13.	Positioning hole for I/O module

■ Specifications

◆ RS-485/RS-422 Interface

Type	Feed-through terminals, with spring plugs		
Baud rate	1,200, 2,400, 4,800, 9,600, 19,200, 38,400, 57,600, 115,200, 230,400, 460,800 bps		
Communication Format	Stop bit: 1, 2	Parity bit: None, Odd, Even	Data bit: 7, 8
Protocol	MODBUS ASCII/RTU, UD Link		

◆ Electrical Specifications

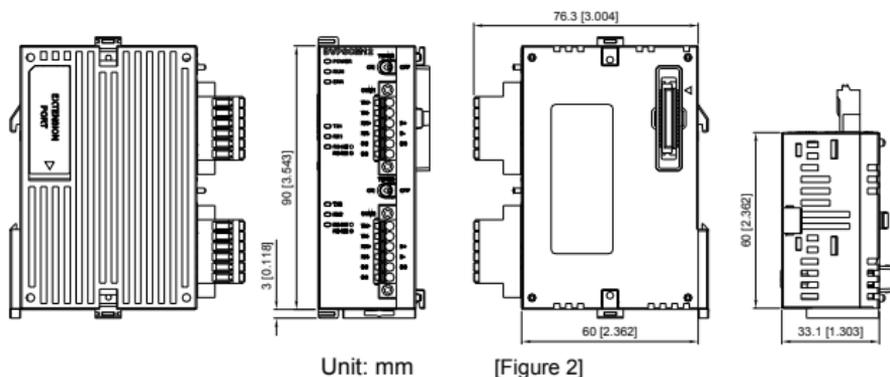
Power supply voltage	24 VDC (-15 to 20%), supplied by internal bus through the MPU
Power consumption	1.5 W
Insulation voltage	2,500 VDC
Weight	95g

◆ Environment

Noise immunity	ESD (IEC 61131-2, IEC 61000-4-2): 8 kV Air Discharge EFT (IEC 61131-2, IEC 61000-4-4): Communication I/O: ± 1 kV CS (IEC 61131-2, IEC 61000-4-6): 0.15 to 80 MHz, 3 Vrms RS (IEC 61131-2, IEC 61000-4-3): 80 to 100 MHz, 10V/m, 1.4 to 2.0 GHz
Operation/storage	Operation: 0 to 55°C (temperature), 5 to 95% (humidity), pollution degree 2 Storage: -25 to 70°C (temperature), 5 to 95% (humidity)
Shock/vibration	International standards: IEC61131-2, IEC68-2-6 (TEST Fc)/IEC61131-2 & IEC 68-2-27(TEST Ea)
Certificates	

■ Installation

◆ Dimensions

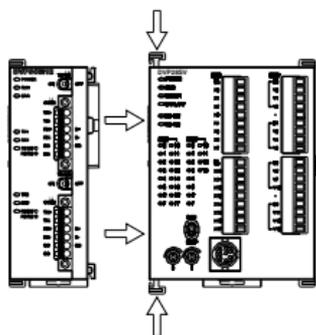


◆ Connecting DVPSCM12-SL with PLC MPU

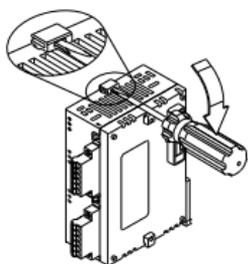
1. Adjust the left-side module fixing clip on the PLC MPU.
2. Aim the left-side module at the extension port on the PLC MPU. See [Figure 3].
3. Clip up the fixing clips.

◆ Connecting DVPSCM12-SL with Left-Side Module

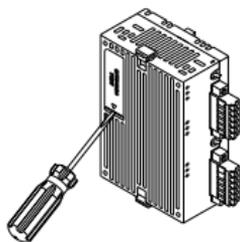
To connect DVPSCM12-SL with a left-side module, poke up the left-side fixing clip by a screwdriver and open the extension port cover on the side of DVPSCM12-SL.



[Figure 3]



[Figure 4]



[Figure 5]

◆ PIN Definitions of RS-485/RS-422 Ports



PIN	RS-485	RS-422
1	—	TX+
2	—	TX-
3	D+	RX+
4	D-	RX-
5	SG	SG
6	—	SG

■ Control Registers (CR)

CR#	Attribute	Content	Description
0	R	Model name	Set up by the system. DVPSCM12-SL model code = H'4041.
1	R	Firmware version	Displayed in hex. Ex: H'0100 indicates firmware version V1.00.
2	Reserved		
3	R/W	Group No. triggered by COM1 UD Link	The Group No. triggered by COM1 UD Link
4	R/W	The reference address for UD Link data sending in COM1	For use with Operand in COM1 UD Link. "Reference address + Operand" defines the actual source device for data sending.
5	R/W	The reference address for UD Link data receiving in COM1	For use with Operand in COM1 UD Link. "Reference address + Operand" defines the actual source device for data receiving.
6	Reserved		
7	R/W	Group No. triggered by COM2 UD Link	The Group No. triggered by COM2 UD Link
8	R/W	The reference address for UD Link data sending in COM2	For use with Operand in COM2 UD Link. "Reference address + Operand" defines the actual source device for data sending.
9	R/W	The reference address for UD Link data sending in COM2	For use with Operand in COM2 UD Link. "Reference address + Operand" defines the actual source device for data receiving.

CR#	Attribute	Content	Description
10	R	Module status	RUN or STOP
11 ~ 19	R	Error flag	Flag for errors in DVPSCM12-SL
20 ~ 27	R	UD Link status	UD Link execution status
28 ~ 29	Reserved		
30	R/W	UD Link Sequence Trigger Setting	0: Not triggered, 1 ~ 254: Triggered times, 255: Always triggered
31	R/W	Triggers data exchange in COM1 to read bits/words	High byte: bit ; Low byte: word 0: Not triggered, 1: Triggered once, 2: Always triggered
32	R/W	Triggers data exchange in COM2 to read bits/words	High byte: bit ; Low byte: word 0: Not triggered, 1: Triggered once, 2: Always triggered
33	R/W	Triggers data exchange in COM1 to write bits/words	High byte: bit ; Low byte: word 0: Not triggered, 1: Triggered once, 2: Always triggered
34	R/W	Triggers data exchange in COM2 to write bits/words	High byte: bit ; Low byte: word 0: Not triggered, 1: Triggered once, 2: Always triggered
35 ~ 36	R/W	Bit reading setting for COM1	Bit = 0: COM1 bits reading disabled Bit = 1: COM1 bits reading enabled
37 ~ 38	R/W	Word reading setting for COM1	Bit = 0: COM1 words reading disabled Bit = 1: COM1 words reading enabled
39 ~ 40	R/W	Bit reading setting for COM2	Bit = 0: COM2 bits reading disabled Bit = 1: COM2 bits reading enabled
41 ~ 42	R/W	Word reading setting for COM2	Bit = 0: COM2 words reading disabled Bit = 1: COM2 words reading enabled
43 ~ 44	R/W	Bit writing setting for COM1	Bit = 0: COM1 bits writing disabled Bit = 1: COM1 bits writing enabled
45 ~ 46	R/W	Word writing setting for COM1	Bit = 0: COM1 words writing disabled Bit = 1: COM1 words writing enabled
47 ~ 48	R/W	Bit writing setting for COM2	Bit = 0: COM2 bits writing disabled Bit = 1: COM2 bits writing enabled
49 ~ 50	R/W	Word writing setting for COM2	Bit = 0: COM2 words writing disabled Bit = 1: COM2 words writing enabled
51 ~ 115	Reserved		
116	R/W	Sends a MODBUS command	1: Enable, reset to 0 when the sending is completed
117	R/W	Status of a MODBUS command	0: Not yet received, 1: Processing, 2: Received, 3: Reception failure
118	R/W	Destination of a MODBUS command	1: COM1, 2: COM2
119	R/W	Length of a MODBUS command	For setting up the length of a MODBUS command
120 ~ 249	R/W	Contents of a MODBUS command	Space for storing the sent/received a MODBUS command

■ LED Indicators & Trouble-Shooting

◆ LED Indicators

LED	Status	Indication	How to correct	
POWER	Green light	On	Power supply is normal	--
		Off	No power supply	Check if the power is on
RUN	Green light	On	DVPSCM12-SL in RUN status	--
		Off	DVPSCM12-SL in STOP status	--
ERR	Red light	On	Hardware error	Contact factory
		Flashes	1. Errors in system settings or communication 2. Returning to Factory Setting	Reset to default values
		Off	No errors	--
TX1/TX2	Orange light	Flashes	RS-485/RS-422 in transmission	--
		Off	No RS-485/RS-422 transmission	--
RX1/RX2	Orange light	Flashes	RS-485/RS-422 in reception	--
		Off	No RS-485/RS-422 reception	--
RS-485/RS-422	Green light	On	RS-485 mode	--
		Off	RS-422 mode	--

◆ Trouble-Shooting

Abnormality	Cause	How to correct
POWER LED off	PLC MPU not powered	Check the power supply for the PLC MPU
	DVPSCM12-SL not connected with the PLC MPU	Check if DVPSCM12-SL is tightly connected with the PLC MPU