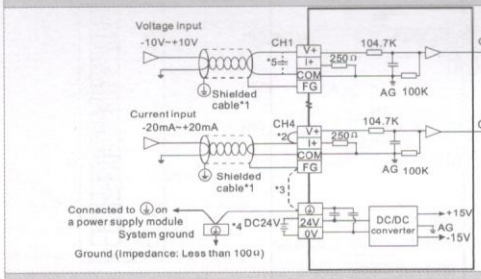
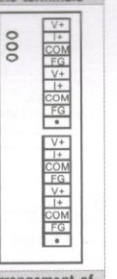
▪ External Wiring

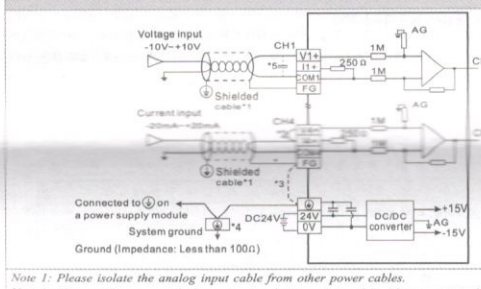
DVP04AD-S



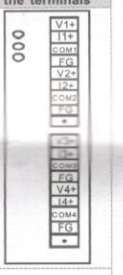
Arrangement of the terminals



DVP04AD-S2



Arrangement of the terminals



Note 1: Please isolate the analog input cable from other power cables.

Note 2: If current is connected, the connection between V+ and I+ (the connection between V4+ and I4+) needs to be a short circuit.

Note 3: If there is much noise, please connect the terminal FG to the ground terminal.

Note 4: Please connect ⏚ on a power supply module and ⏚ on the analog input module to the system ground, and then ground the system ground or connect the system ground to a distribution box.

Note 5: If ripple voltage results in interference with the wiring, please connect a 0.1~0.47 μF and 25 V capacitor.

Warning: DO NOT wire to the terminal ●.

❷ Specifications

▪ Functions

Analog/Digital (A/D) module	Voltage input	Current input
Power supply voltage	24VDC (20.4VDC ~ 28.8VDC) (-15% ~ +20%)	
Analog input channel	4 channel/each module	
Analog input range	±10V	±20mA
Digital conversion range	±8,000	±4,000
Resolution	14 bits (1_{LSB}=1.25mV)	13 bits (1_{LSB}=5μA)
Overall accuracy	±0.5% of full scale of 25°C (77°F), ±1% of full scale during 0 ~ 55°C (32 ~ 131°F)	
Input impedance (DVP04AD-S)	200KΩ	250Ω
Input impedance (DVP04AD-S2)	≧1MΩ	250Ω
Response time	3ms × Number of channels	
Isolation method	The analog circuit is isolated from the digital circuit by an optocoupler, but the analog channels are not isolated from one other.	

Analog/Digital (A/D) module	Voltage input	Current input
Absolute input range	±15V	±32mA
Digital data format	16-bit 2's complement	
Average function	Yes (CR#2 ~ CR#5 can be set and setting range is K1 ~ K20)	
Self diagnose function	Upper and lower bound detection/channels	
Communication mode (RS-485)	Supported, including ASCII/RTU mode. Default communication format: 9600, 7, E, 1, ASCII; refer to CR#32 for details on the communication format. Note1: RS-485 cannot be used when connected to CPU series PLCs. Note2: The communication format can only be changed via RS-485 and cannot be changed via the instruction TO when connected to CPU series PLCs. Refer to Communication Format Setup in the appendix of the DVP programming manual for more details.	
Connecting to a DVP series PLC	If DVP04AD-S/DVP04AD-S2 modules are connected to a PLC, the modules are numbered from 0 ~ 7. 0 is the closest and 7 is the furthest to the PLC. 8 modules is the max and they do not occupy any digital I/O points of the PLC.	

▪ Others

Power specification	
Max. rated consuming power	24VDC (20.4VDC ~ 28.8VDC) (-15% ~ +20%), 2W, supply from external power.
Environment condition	
Operation/storage	1. Operation: 0°C ~ 55°C (temperature), 5 ~ 95% (humidity), pollution degree 2 2. Storage: -25°C ~ 70°C (temperature), 5 ~ 95% (humidity)
Vibration/shock immunity	Standard: IEC61131-2, IEC68-2-6 (TEST Fc)/IEC61131-2 & IEC68-2-27 (TEST Ea)

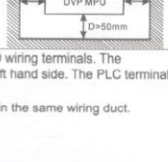
❸ Installation and Wiring

▪ Mounting Arrangements and Wiring Notes

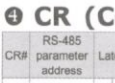
DIN Rail Installation

The DVP-PLC can be secured to a cabinet by using the DIN rail that is 35mm high with a depth of 7.5mm. When mounting the PLC on the DIN rail, be sure to use the end bracket to stop any side-to-side motion of the PLC, thus to reduce the chance of the wires being pulled loose. On the bottom of the PLC is a small retaining clip. To secure the PLC to the DIN rail, place it onto the rail and gently push up on the clip. To remove it, pull down on the retaining clip and gently pull the PLC away from the DIN rail. Please see the figure on the right.

For heat dissipation. Make sure to provide a minimum clearance of 50mm between the unit and all sides of the cabinet. (shown as below)



Wiring



1. Use 22-16AWG (1.5mm) single or multiple core wire on I/O wiring terminals. The specification of the terminal is shown in the figure on the left hand side. The PLC terminal screws shall be tightened to 1.95kg-cm (1.7 in-lbs).
2. DO NOT place the I/O signal wires and power supply wire in the same wiring duct.
3. Use 60/75°C copper wires only.

❹ CR (Control Register)

CR#	RS-485 parameter address	Latched		Register name	b15 b14 b13 b12 b11 b10 b9 b8 b7 b6 b5 b4 b3 b2 b1 b0 Reserved / CH4 / CH3 / CH2 / CH1
#0	H'4000	○	R	Model type	For system use Data length: 8 bits (b7 ~ b0) Model code of DVP04AD-S: H'88 Model code of DVP04AD-S2: H'90 Users can read the model type by means of a program to check if the expansion module exists.
#1	H'4001	○	R/W	Input mode setting	Input mode setting: The factory setting is H'0000. Mode 0: Voltage input mode (-10V ~ +10V) Mode 1: Voltage input mode (-6V ~ +10V) Mode 2: Current input mode (-12mA ~ +20mA) Mode 3: Current input mode (-20mA ~ +20mA) Mode 7: Disabling a channel (Only applicable to DVP04AD-S2)

CR#1: CR#1 is used to set 4 internal channels working mode of analog input module. Every channel has four modes to set that can be set individually. For example: if set CH1 to mode 0 (b2 ~ b0 = 000), CH2 to mode 1 (b5 ~ b3 = 001), CH3: mode 2 (b8 ~ b6 = 010), CH4: mode 3 (b11 ~ b9 = 011). Then CR#1 is set to H'0688 and the upper bit (b12 ~ b15) will reserved. The factory setting of CR#1 is H'0000.