

DVP06AD-S

Instruction Sheet

安裝說明 安 装 说 明

Analog Input Module

類比輸入模組

模拟输入模块



Warning

EN DVP06AD-S 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 DVP06AD-S, or to prevent an accident from damaging DVP06AD-S, the control cabinet in which DVP06AD-S is installed should be equipped with a safeguard. For example, the control cabinet in which DVP06AD-S 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 DVP06AD-S is powered up. After DVP06AD-S is disconnected, Do NOT touch any terminals in a minute. Make sure that the ground terminal is correctly grounded in order to prevent electromagnetic interference.

FR DVP06AD-S 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 DVP06AD-S pourra être endommagé. Merci de vérifier encore une fois le câblage avant la mise sous tension du DVP06AD-S. Lors de la déconnexion 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.

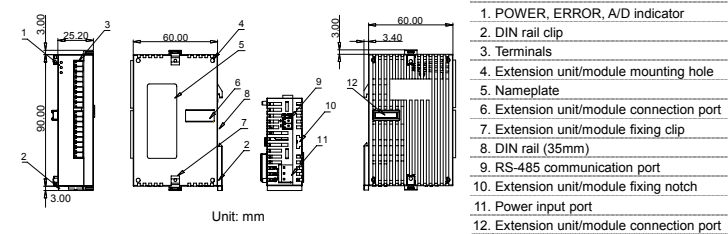
1 Introduction

Model Explanation & Peripherals

Thank you for choosing Delta DVP series. The analog signal input module DVP06AD-S is able to receive 6 points of external analog signal inputs (both in voltage and current) and convert the signals into 14-bit digital ones. It is able to read and write the data in the module through FROM/TO instructions given by the program of DVP-PLC SS/SA/SX/SC/SV series MPU. There are 49 16-bit control registers in the module.

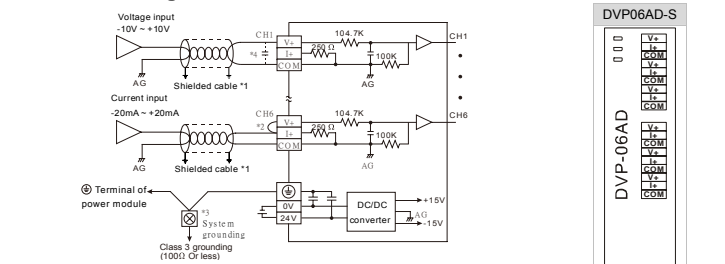
The user can select voltage or current output by wiring. Range of voltage output: ±10V DC (resolution: 1.25mV). Range of current output: ±20mA (resolution: 5µA).

Product Profile & Outline



- 1. POWER, ERROR, A/D indicator
2. DIN rail clip
3. Terminals
4. Extension unit/module mounting hole
5. Nameplate
6. Extension unit/module connection port
7. Extension unit/module fixing clip
8. DIN rail (35mm)
9. RS-485 communication port
10. Extension unit/module fixing notch
11. Power input port
12. Extension unit/module connection port

External Wiring



- *1: When performing analog input, please isolate other power wirings.
*2: When connecting to current signals, please make sure to short-circuit "I+" and "I-" terminals.
*3: Please connect the terminal on both the power module and DVP06AD-S to the system earth point and ground the system contact or connect it to the cover of power distribution cabinet.
*4: If the ripple voltage of the input terminal of the load connected is large, and results in interference with the wiring, please connect a 0.1~0.47 µF and 25 V capacitor.
Note: DO NOT wire empty terminals

2 Specifications

Functions

Table with columns: Analog/Digital (6A/D) module, Voltage input, Current input. Rows include Power supply voltage, Range of analog input, Resolution, Overall accuracy, Response time, Isolation, Range of absolute input, Digital data format, Self-diagnosis, Communication mode (RS-485), and When connected to DVP-PLC MPU in series.

Others

Table with columns: Power supply, Environment. Rows include Max. rated power consumption and Operation/storage conditions.

Table with columns: Environment. Rows include Vibration/shock immunity and International standards.

3 Installation & Wiring

Mounting Arrangements and Wiring Notes

How to install DIN rail

DVP-PLC can be secured to a cabinet by using the DIN rail of 35mm in height and 7.5mm in depth. When mounting PLC to DIN rail, be sure to use the end bracket to stop any side-to-side movement of PLC and reduce the chance of wires being loose.

Wiring

- 1. Use 22-16AWG (1.5mm) single or multiple core wire on I/O wiring terminals.
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.

4 Control Registers

Table with columns: CR #, RS-485 parameter address, Latched, Register content, b15-b0. Rows #0 to #17 describe register settings for channels and gain/offset.

CR#1: The working mode of the 6 channels in the analog input module. There are 4 modes for each channel which can be set up separately. For example, if the user needs to set up CH1: mode 0 (b2 ~ b0=00) and CH2: mode 1 (b5 ~ b3=01), CH3: mode 2 (b8 ~ b6=10), CH4: mode 3 (b11 ~ b9=11), CH5: mode 0 (b11 ~ b9=00), CH6: mode 1 (b11 ~ b9=01), CR#1 has to be set as H04EA and the higher bits (b12 ~ b15) have to be reserved. Default value=H0000.

CR#2 ~ CR#4: Range of settings in CH1 ~ CH6: K1 ~ K20. The settings of average times of the signals at CH1 ~ CH6. Range: K1 ~ K20. For example, if the average time at CH1 is to be set as K10 and CH2 as K18, CR#2 has to be set as H120A. CR#3 ~ 4 apply the same rule. The default setting of each channel=K10. Default settings of CR#2 ~ CR#4 are all H0A0A.

Table with columns: #, RS-485 parameter address, Latched, Register content, b15-b0. Rows #6 to #17 describe averaging and present value registers for channels 1-6.

Table with columns: CR #, RS-485 parameter address, Latched, Register content, b15-b0. Rows #18 to #29 describe offset and gain registers for channels 1-6.

CR#18 ~ CR#29: Please note that: GAIN value - OFFSET value = +800,LSB ~ +12,000,LSB (voltage) or +800,LSB ~ +6,400,LSB (current) When GAIN - OFFSET is small (steep oblique), the resolution of input signal will be finer and variation on the digital value will be greater.

Table with columns: Error status, Content, b15-b8, b7-b0. Rows #30 to #33 describe error status registers.

Table with columns: CR #, RS-485 parameter address, Latched, Register content, b15-b0. Rows #31 to #33 describe communication address and speed setting registers.

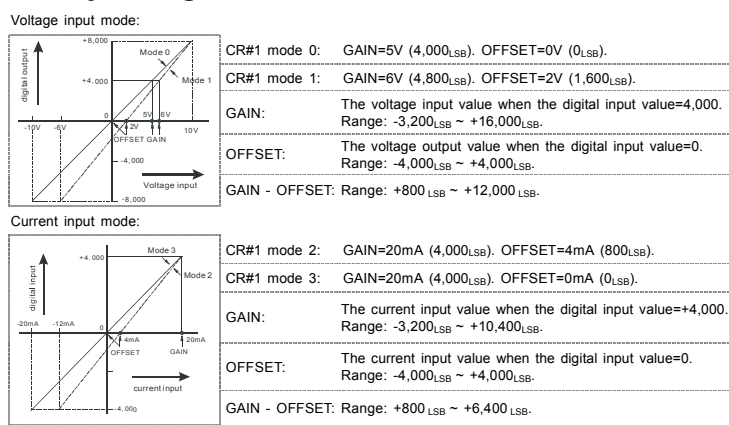
Table with columns: CR #, RS-485 parameter address, Latched, Register content, b15-b0. Row #33 describes return to default setting register.

Table with columns: CR #, RS-485 parameter address, Latched, Register content, b15-b0. Row #34 describes firmware version register.

LSB (Least Significant Bit): 1. For voltage input: 1LSB=10V/8,000=1.25mV. 2. For current input: 1LSB=20mA/4,000=5µA.

- * CR#0 ~ CR#34: The corresponding parameter addresses H'4000 ~ H'4022 are for users to read/write data by RS-485 communication.
a. Function codes: 03'H (read register data); 06'H (write 1 word datum to register); 10'H (write many words data to register).
b. Latched CR should be written by RS-485 communication to stay latched. CR will not be latched if written by MPU through TO/DTO instruction.

5 Adjusting A/D Conversion Curve



The user can adjust the OFFSET/GAIN curves according to the actual needs by changing the OFFSET value (CR#18 ~ CR#23) and GAIN value (CR#24 ~ CR#29).

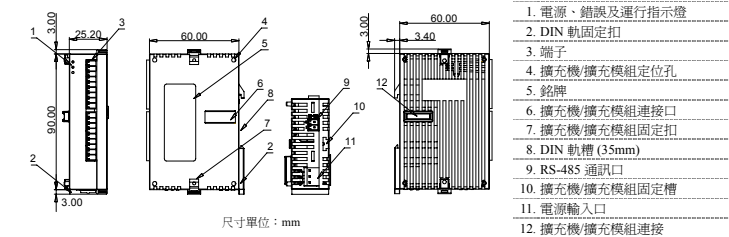
- 注意事項: 請在使用之前, 詳細閱讀本使用說明書。請勿在上電時觸摸任何端子。務必關閉電源。本機為開放型 (OPEN TYPE) 機殼, 因此使用者使用本機時, 必須將之安裝於具防塵、防潮及免於電擊/衝擊意外之外殼配線箱內。必須具備保護措施 (如: 特殊之工具或鑰匙才可打開) 防止非維護人員操作或意外衝擊本機, 造成危險及損壞。交流輸入電源不可連接於輸入/輸出端, 否則可能造成嚴重的損壞, 因此請在上電之前再次確認電源配線。輸入電源切斷後, 一分鐘之內, 請勿觸摸內部電路。本體上之接地端子 務必正確的接地, 可提高產品抗雜訊能力。

1 產品簡介

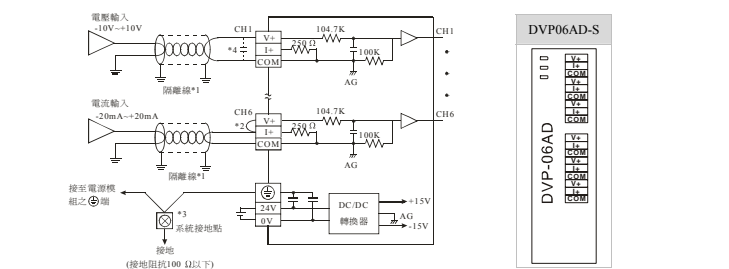
說明及週邊裝置

- 謝謝您採用台達 DVP 系列產品。DVP06AD-S 類比信號輸入模組可接受外部 6 點類比信號輸入 (電壓或電流皆可), 將之轉換成 14 位元之數位信號。透過 DVP-PLC SS/SA/SX/SC/SV 主機程式以指令 FROM/TO 來讀寫模組內之資料, 模組內具有 49 個 CR (Control Register) 暫存器, 每個暫存器為 16 位元。使用者可經由配線選擇電壓輸入或電流輸入。電壓輸入範圍 ±10V DC (解析度為 1.25mV), 電流輸入範圍 ±20mA (解析度為 5µA)。

產品外觀及各部介紹



外部配線



- 註 1: 類比輸入請與其他電源線隔離。
註 2: 如果連接電信號時, V+ 及 I+ 端子請務必短路。
註 3: 請將電源模組之 端及 DVP06AD-S 類比信號輸入模組之 端連接到系統接地點, 再將系統接點作三種接地或接到配電箱之機殼上。
註 4: 如果負載之輸入端連波太大造成配線受雜訊干擾時, 請連接 0.1 ~ 0.47µF 25V 之電容。
注意: 空端子 請勿配線。

2 規格

功能規格

Table with columns: 類比/數位 (6A/D) 模組, 電壓輸入 (Voltage input), 電流輸入 (Current input). Rows include 電源電壓, 類比訊號輸入通道, 類比輸入範圍, 數位轉換範圍, 解析度, 輸入阻抗, 總和精密度, 響應時間, 隔離方式, 絕對輸入範圍, 數位資料格式, 平均功能, 自我診斷功能, and 與 DVP-PLC 主機串接說明.

其他規格

Table with columns: 電源規格, 環境規格. Rows include 額定最大消耗功率 and 操作/儲存環境.

