



## INSTRUCTION SHEET

### 安裝說明 安装说明

Compact, Multi-Functional,  
Multiple Instructions

微型·多功能·豐富指令集  
微型·多功能·丰富指令集



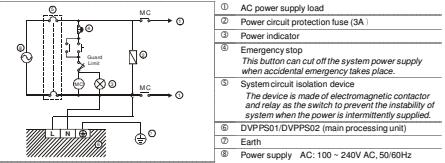
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## ② Specifications

| Item                     | Model   | DVP28SV1R   | DVP28SV1T   |   |   |
|--------------------------|---|---|---|---|---|
| Power supply voltage     | 24V DC (15% ~ 20%) (with counter-connection protection on the polarity of DC input power)   |   |   |   |   |
| Input current            | Max. 2.0A@24V DC  |   |   |   |   |
| GW                       | > 8MΩ (2 IO point-to-ground: 500V DC)   |   |   |   |   |
| Noise immunity           | ESD (IEC 61131-2, IEC 61000-4-2): 8kV Air Discharge<br>EFT (IEC 61131-2, IEC 61000-4-4): Power Line: 2kV, Digital I/O: 1kV,<br>Analog & Communication I/O: 1kV  |   |   |   |   |
| Earth                    | Damped Resonant Wave: 10V, Digital I/O: 1kV<br>RS (IEC 61131-2, IEC 61000-4-3): 20MHz ~ 10GHz, 10V  |   |   |   |   |
| Operation/storage        | The diameter of grounding wire shall not be less than that of the wiring terminal of the power-grounding terminal.  |   |   |   |   |
| Vibration/shock immunity | Operation: 0°C ~ 55°C (temperature); 50 ~ 95% (humidity); pollution degree 2<br>Storage: -40°C ~ 70°C (temperature); 5 ~ 95% (humidity)<br>International standards: IEC61131-2, IEC 68-2-6 (TEST Fc)/IEC61131-2 & IEC 68-2-7 (TEST Ea)  |   |   |   |   |
| Weight (g)               | 260g  | 240g  |   |   |   |
| <b>Input point</b>       | Type: DC 24VDC<br>Current: 5mA<br>Motion level: X0 ~ X7,X12 ~ X15<br>X0 ~ X17<br>On-Off<br>> 16.5VDC  | Type: DC 24VDC<br>Current: 5mA<br>Motion level: X0 ~ X11,X14 ~ X15<br>X0 ~ X17<br>On-Off<br>> 8VDC  | Response time: Approx. 10 ms (can be adjusted within the range of 10 ms by D1020 and D1021)   | Resonating time: Approx. 10 ms (can be adjusted within the range of 10 ms by D1020 and D1021) |   |
| <b>Output point</b>      | Type: relay-R<br>Current: 1.5A/1 point (5A/COM)<br>Max. 10KHz (resistive) 90 W<br>Mechanical life: 2~10' times (without load)<br>Electrical life: 1.5~10' times (3A 30VDC)<br>General: 0.3A/1 point<br>High-speed: c<br>transistor<br>or-T<br>Max. 10KHz for Y5, Y7,<br>Y10 ~ Y13<br>0.3A/1 point<br>40VDC<br>100W<br>30MHz for Y1, Y2,<br>Y3, Y4, Y6<br>0.2A/1 point<br>40VDC<br>90 W<br>Mechanical life: 2~10' times (without load)<br>Electrical life: 3~10' times (3A 250VAC)<br>On-Off<br>On-Off<br>0.2us<br>0.2us | Type: DC Signal IN<br>Current: 12<br>Voltage: 250VAC<br>Max. loading: 75W (resistive)<br>Mechanical life: Approx. 10 ms<br>Electrical life: 2~10' times (without load)<br>General: 0.3A/1 point<br>High-speed: c<br>transistor<br>or-T<br>Max. 10KHz for Y5, Y7,<br>Y10 ~ Y13<br>0.3A/1 point<br>40VDC<br>100W<br>30MHz for Y1, Y2,<br>Y3, Y4, Y6<br>0.2A/1 point<br>40VDC<br>90 W<br>Mechanical life: 2~10' times (without load)<br>Electrical life: 3~10' times (3A 250VAC)<br>On-Off<br>On-Off<br>0.2us<br>0.2us | Max. 10KHz for Y5, Y7,<br>Y10 ~ Y13<br>0.3A/1 point<br>40VDC<br>100W<br>30MHz for Y1, Y2,<br>Y3, Y4, Y6<br>0.2A/1 point<br>40VDC<br>90 W<br>Mechanical life: 2~10' times (without load)<br>Electrical life: 3~10' times (3A 250VAC)<br>On-Off<br>On-Off<br>0.2us<br>0.2us | Response time: Approx. 10 ms (can be adjusted within the range of 10 ms by D1020 and D1021)   | Resonating time: Approx. 10 ms (can be adjusted within the range of 10 ms by D1020 and D1021) |

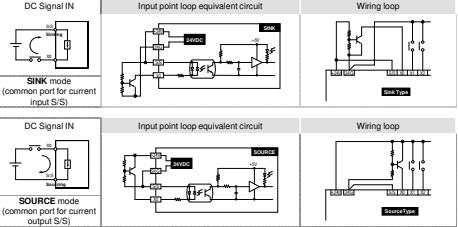
## ■ Safety wiring

Since DVP28SV is only compatible with DC power supply. Delta power supply modules (DVPPS01/DVPPS02) are suitable power supplies for DVP28SV. Users are suggested to install the protection circuit at the power supply terminal to protect DVPPS01 or DVPPS02.

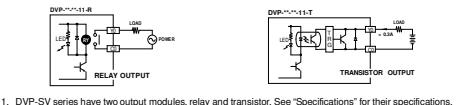


## ■ Input point wiring

There are two types of DC inputs, SINK and SOURCE.



## ■ Output point wiring



1. DVP-SV series have two output modules, relay and transistor. See "Specifications" for their specifications.
2. Be aware of the connection of shared terminals when wiring output terminals.
3. Output terminals, Y0, Y1, and Y2, of relay models use C0 common port; Y3, Y4, and Y5 use C1 common port; Y6, Y7, and Y10 use C2 common port; Y11, Y12, and Y13 use C3 common port, as shown in the next page.

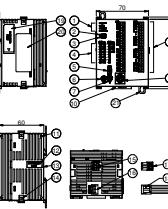
## ③ 注意事項

- 本使用說明書僅提供電氣規格、功能規格、安裝和維修部分說明，其它詳細之程式設計及指令與EH系列相容。詳細說明請見 DVP-PLC 應用技術手冊【程式篇】。遇時之選購資訊請細閱說明書或請洽產品經理手冊或 DVP-PLC 應用技術手冊【特種模組級】。
- 本商品開設保護（OPENTYPE）級別，因此使用者須使用本機時，必須將之安裝於其防塵、防腐及免於電擊/物擊之外之外殼或接線箱，否則須具備保護措施（如：特殊之工具或鑰匙才可打開）防止非操作人員操作或意外衝擊等，造成危險或損壞。
- 交流輸入電源不可直接輸入／由絶緣級，否則可能造成嚴重損壞。請在上電之前再重複電源配接，請勿在上電時直接觸碰地端子。本體上之後地端子，務必正確的接地，可提高抗干擾能力。

## ① 產品簡介

繼電器型輸出 DVP 系列可程式控制器，SV 為 28 點 (16 輸入點 + 12 輸出點) PLC 主機，提供豐富的指令集，並具有 16K Step 的程記憶，可連接 SS/SV/SC/SCV 系列擴充，包含數位輸入/輸出 (I/O) 輸入/輸出擴充點 (可達 512 點)、總線型 (AD+DA) 模擬及角度量測) 及新型光隔離的機架型機，四組高速 (20kHz) 電脈波輸出、新增兩組階梯量測，可滿足各種應用場合，並且靈活方便，安裝容易。

## ■ 產品外觀及各部介紹



| 尺寸單位:mm                        |                                     |
|--------------------------------|-------------------------------------|
| 1. 電源、運行、電池低電壓及鍵盤指示燈           | 12 接地端子連接孔                          |
| 2. COM1 (RS-232) 資訊輸出 (Rx) 指示燈 | 13 DIN 41612 (35mm)                 |
| 3. COM2 (RS-485) 資訊傳輸 (Tx) 指示燈 | 14 接地端子連接孔                          |
| 4. 輸出/入點顯示器                    | 15 COM3 (RS-485) 通訊口 (Master/Slave) |
| 5. RUN/STOP 開關                 | 16 電源輸入端子                           |
| 6. VR0 : M1178 啟動/D1178 到達值    | 17 3P 故障式端子 (標準動作)                  |
| 7. VR1 : M1179 啓動/D1179 到達值    | 18 電壓輸入連接端子 (標準動作)                  |
| 8. 輸出/入點子                      | 19 新型高正確度光隔離端子                      |
| 9. COM1 (RS-232) 程式輸出/入端子孔     | 20 鍵盤                               |
| 10. DIN 劍腳端孔                   | 21 直流電源孔                            |
| 11. 插拔固定孔                      |                                     |

## ④ Installation & Wiring

### 4.1 PLC 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 pinched. Also, it is equipped with protective methods such as some special tools or keys to open the enclosure, in order to prevent hazard to users or damage the PLC.

#### How to screw:

Please use M4 screw (see figure 2) according to the dimension of the product. Please install PLC in an enclosure with sufficient space around it to allow heat dissipation (see figure 3).



Figure 1



Figure 2 (Unit: mm)



Figure 3 (Unit: mm)

#### Wiring:

1. Use 22-18AWG (1.5mm²) single or multi-core wire on I/O wiring terminals. The specification of the terminal is shown in the figure on the left. The PLC terminal screws shall be tightened to 1.95 kg-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.

**DO NOT install PLC in an environment with:**

► Dust, sand, metallic debris, corrosive or flammable gas

► High temperature, humidity

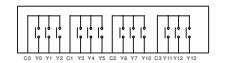
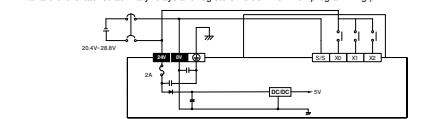
► Direct shock and vibration

### 4.2 Wiring Notes

#### ■ Power input wiring

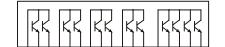
The power input of DVP-SV series is DC. When operating SV series, please make sure that:

1. The power is connected to the two terminals, 24V DC and 0V, and the range of power is 20.4 ~ 28.8V DC. If the power voltage is less than 20.4V DC, PLC will stop running, all outputs will go "Off" and ERROR indicator will flash continuously.
2. The power shutdown of less than 10 ms will not affect the operation of PLC. However, power shutdown time that is too long or the drop of power voltage will stop the operation of PLC and all outputs will go "Off". When the power supply turns normal again, PLC will automatically return to its operation. (Please be aware of the latched auxiliary relays and registers inside PLC when programming.)



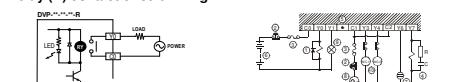
When output points are enabled, their corresponding indicators on the front panel will be on.

4. Output terminals, Y0 and Y1, of transistor models use C0 common port; Y2 and Y3 use C1 common port; Y4 and Y5 use C2 common port; Y6 and Y7 use C3 common port; Y10, Y11, Y12, and Y13 use C4 common port, as shown below.



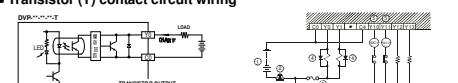
5. Isolation circuit: The optical coupler is used to isolate signals between the circuit inside PLC and input modules.

#### ■ Relay (R) contact circuit wiring



- ① Flywheel diode (SB360 3A 60V): To extend the life span of contact
- ② Emergency stop: Uses external switch
- ③ Fuse: Uses 5 ~ 10A fuse at the common port of output contacts to protect the output circuit.
- ④ Varistor: To reduce the interference on AC load (R=100~120Ω, C=0.1~0.2μF)
- ⑤ Empty terminal: not in use
- ⑥ DC power supply
- ⑦ Neon indicator
- ⑧ AC power supply
- ⑨ Incandescent light (resistive load)
- ⑩ Manually exclusive output: Uses external circuit and forms an interlock, together with the PLC internal program, to ensure safety protection in case of any unexpected errors.

#### ■ Transistor (T) contact circuit wiring



- ① DC power supply
- ② Emergency stop
- ③ Circuit protection fuse
- ④ Flywheel diode (SB360 3A 60V) + inductive load
- ⑤ Manually exclusive output: Uses external circuit and forms an interlock, together with the PLC internal program, to ensure safety protection in case of any unexpected errors.

## ② 電氣規格

| 機種      | DVP28SV1R   | DVP28SV1T |
|---------|---|-----------|
| 電壓額定    | 24V DC (15% ~ 20%) (具直流通入電壓裕量性保護)   |           |
| 空氣開關額定  | 12A@24V DC  |           |
| 電壓保險絲容量 | 2.5A/30V DC - 可恢復式 (PolySwitch)   |           |
| 浪涌抑制    | 6W  |           |
| 絕緣阻抗    | 5 MΩ (所有輸入/輸出對地/對地/對地/對地/對地/對地)   |           |
| 電源      | ESD(IEC61131-2, IEC 61000-4-2): 8kV Air Discharge<br>EFT (IEC 61131-2, IEC 61000-4-4): Power Line: 2kV, Digital I/O: 1kV, Analog & Communication I/O: 1kV |           |
| 操作/儲存環境 | Damped Resonant Wave: Power Line: 10V, Digital I/O: 1kV, RS(IEC 61131-2, IEC 61000-4-3): 20MHz ~ 10GHz, 10V/m   |           |
| 接線      | 接線端子(總線連接): 不得小於 DIN 41612 (多點 PLC 各埠使用時, 請務必單埠對地)  |           |
| 操作/儲存環境 | 操作: 0°C ~ 55°C (溫度) 50 ~ 95% (濕度) 第二級<br>儲存: -40°C ~ 70°C (溫度) 5 ~ 95% (濕度)   |           |
| 耐振動/衝擊  | IEC61131-2, IEC 68-2-6 (TEST Fc)/IEC61131-2 & IEC 68-2-7 (TEST Ea)  |           |
| 重量 (g)  | 260g  | 240g      |

## ③ 機種型號與 I/O 配置

| 標準型號主機    | 輸入/輸出規格 |    |                   | I/O 欄 |
|-----------|---------|----|-------------------|-------|
|           | 機種      | 電源 | 輸入/輸出形式           |       |
| DVP28SV1R | 24VDC   | 16 | 繼電器 Sink 或 Source | 繼電器   |
| DVP28SV1T | 24VDC   | 12 | 繼電器 R             | 繼電器   |



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