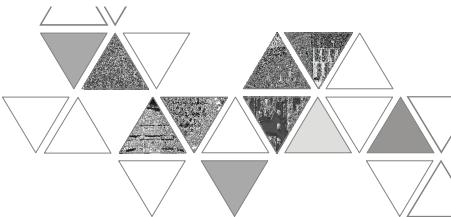




2007-08-17  
5011668900-EH20



# DVP-EH2

## INSTRUCTION SHEET

### 安裝說明 安装说明

▲ High-Speed, Multi-Functional  
Programmable Logic Controller  
▲ 高速・多機能 可程式控制器  
▲ 高速・多功能 可编程控制器



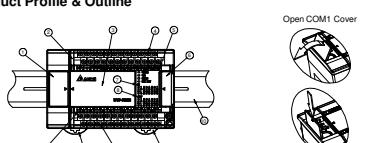
[www.deltas.com.tw/industryautomation](http://www.deltas.com.tw/industryautomation)

### Warning

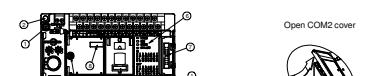
- This Instruction Sheet only provides descriptions for electrical specifications, general specifications, installation & wiring. Other detail information about programming and instructions is compatible with S1 series; please see PLC Application Manual. For more information about the optional peripherals, please see individual product instruction sheet or "DVP-PLC Application Manual: Special module".
- This is an OPEN TYPE PLC. The PLC should be kept in an enclosure away from airborne dust, humidity, electric shock risk and vibration. 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.
- Do NOT connect the AC main circuit power supply to any of the input/output terminals, or it may damage the PLC. Check all the wiring prior to power up. To prevent any electromagnetic noise, make sure the PLC is properly grounded. Do NOT touch terminals when power on.

### Introduction

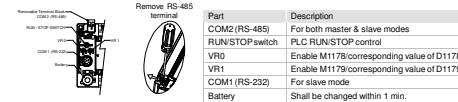
#### Product Profile & Outline



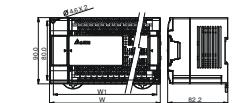
① Communication port cover	⑤ Extension module connection port cover
② I/O terminal cover	⑥ Input indicator
③ Function card memory card cover	⑦ Output indicator
④ I/O terminals	⑧ DIN rail clip



① Mounting screw	⑤ Memory card port
② Direct mounting hole	⑥ POWER/RUN/BAT/LOW/ERROR indicator
③ Battery socket	⑦ Extension module connection port
④ Function card mounting hole	



#### Dimension



Model	W (mm)	W1 (mm)
DVP1EH0R02/T2	113	103
DVP2EH0R02/T2	113	103
DVP3EH0R02/T2	143.5	133.5
DVP4EH0R02/T2	158.8	153.8
DVP5EH0R02/T2	174	164
DVP6EH0R02/T2	212	202
DVP8EH0R02/T2	276	256

#### Specifications

Item	Model	16EH0R02/T2	20EH0R02/T2	32EH0R02/T2	40EH0R02/T2	48EH0R02/T2	64EH0R02/T2	80EH0R02/T2
Power supply voltage		100 ~ 240V AC (-15% ~ 10%); 50/60Hz ± 5%						
Fuse capacity		2A/250V AC						
Power consumption		50VA	50VA	60VA	60VA	60VA	80VA	80VA
DC24V current supply		500mA	500mA	500mA	500mA	500mA	500mA	500mA
Power protection		DC24V, output short-circuited						
Withstand voltage		1,500V AC (Primary-Secondary); 1,500V AC (Primary-PE); 500V AC (Secondary-PE)						
Insulation resistance		> 5 MΩ (all I/O point-to-ground; 500V DC)						
Noise immunity		ESD: 8kV Air Discharge: EFT: Power Line: 2KV; Digital I/O: 1KV; Analog & Communication I/O: 250V; Damped-Oscillatory Wave: Power Line: 1KV; Digital I/O: 1KV; RS: 2MHz - 1GHz; 10V/m						
Earth		The diameter of grounding wire shall not be less than that of L, N terminal of the power. (When many PLCs are used at the same time, please make sure every PLC is properly grounded.)						
Operation/storage		Operation: 0°C ~ 55°C (temperature); 50 ~ 95% (humidity); pollution degree 2 Storage: -40°C ~ 70°C (temperature); 30 ~ 95% (humidity)						
Vibration/shock immunity		IEC61131-2, IEC 68-2-6 (TEST Fc)/IEC61131-2 & IEC 68-2-27 (TEST Ea)						
Weight (g)		500/480	520/500	650/612	710/675	748/688	836/756	948/848

#### Input Point Specification

Spec.	24VDC single common port input	Note
Items	Spec.	
Input wiring type	Low speed	High speed (200KHz)
Input indicator	Change wiring from S/S to SINK or SOURCE	
Input voltage	24VDC	LED display, light on = ON, light off = OFF
Active Level	Off → On	X0 ~ X7, X12, X13, X16, X17, X20 ~ X47: > 18.5V DC
On → Off	X0 ~ X7: > 18.5V DC	X10, X11, X14, X15 ~ 16.5V DC
Response time/ noise immunity	10ms	0.5us
		Input point X0 ~ X7, X10 ~ X17 can conduct 10 ~ 60ms digital filter adjustment

#### Output Point Specification

Spec.	Single common port transistor output	Single common port relay output
Items	Low speed	High speed*
Max. frequency	10KHz	200KHz
Output indicator	LED display, light on = ON, light off = OFF	Power OFF control
Min. load	5 ~ 30VDC	2mA DC power supply
Working voltage	PhotoCoupler/isolation	<250V AC, 30V DC
Insulation	0.3A/1 point @ 40°C	<1KHz, 0.3A/1 point @ 40°C ≥ 1KHz, 30mA/1 point @ 40°C
Current specification	N/A	24VDC (conductive), 90W (resistive)
Max. output delay time	Off → On: 20us	0.2us
Over-current protection	N/A	10ms
Mechanical life	N/A	2×10 <sup>7</sup> times (without load)
Electrical life	N/A	1.5×10 <sup>9</sup> times (5A 30V DC); 5×10 <sup>6</sup> times (3A 120V AC); 3×10 <sup>6</sup> times (MA 250V AC)

\*High-speed output points (Y0-Y2) are only in DVP2EH2 and DVP3EH2; high-speed output points (Y0, Y1, Y2, Y3, Y4, Y5) are only in DVP4EH2.

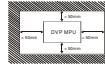
#### Installation & Wiring

##### 3.1 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 loosen. A small retainer clip is at the bottom of PLC. To secure PLC to DIN rail, place the clip onto the rail and gently push it up. To remove PLC from DIN rail, just pull the retaining clip down and gently remove PLC from DIN rail, as shown in the figure.

How to screw: Please use M4 screw according to the dimension of the product.



Please install PLC in an enclosure with sufficient space around it to allow heat dissipation as shown in the figure.

###### Wiring:

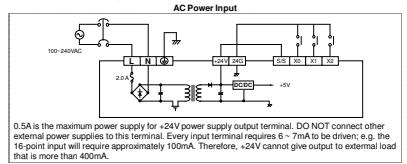
1. Use O-type or Y-type terminal. See the figure in the left hand side for its specification. PLC terminal should be tightened to 5 ~ 8 kg-cm (4.3 ~ 6.9 lb-in) and please use only 60/75°C copper conductor.
2. DO NOT wire empty terminal □. DO NOT place the input signal cable and output power cable in the same wiring circuit.
3. DO NOT drop tiny metallic conductor into the PLC while screwing and wiring. Tear off the sticker on the heat dissipation hole for preventing alien substances from dropping in, to ensure normal heat dissipation of the PLC.

##### 3.2 Wiring Notes

The power input of DVP-EH series is AC. When operating the PLC, please make sure that:

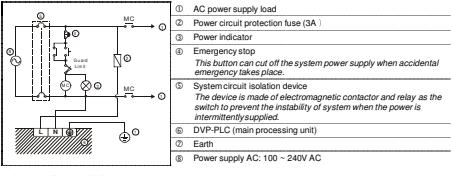
###### ■ Power Input Wiring

1. The input voltage should be current and its range should be 100 ~ 240V AC. The power should be connected to L and N terminals. Wiring AC110V or AC220V to +24V terminal or input terminal will result in serious damage on the PLC.
2. The AC power input for PLC MPU and I/O extension modules should be ON or OFF at the same time.
3. Use wires of 1.6mm<sup>2</sup> (or longer) for the grounding of PLC MPU. The power shutdown of less than 10 ms will not affect the operation of the PLC. However, power shutdown that is too long or the drop of power voltage will stop the operation of the PLC and all outputs will go OFF. When the power supply turns normal again, the PLC will automatically return to its operation. Please be aware of the latched auxiliary relays and registers inside the PLC when programming.



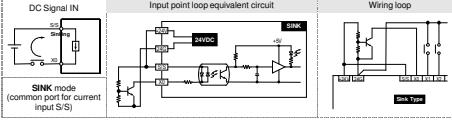
###### ■ Safety Wiring

Since a PLC controls many devices, actions of any device may affect actions of other devices, and the breakdown of any one device may cause the breakdown of the whole auto-control system and danger. Therefore, we suggest you wire a protection circuit at the power input terminal, as shown in the figure below.



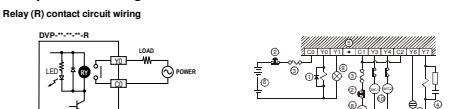
###### ■ Input Point Wiring

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

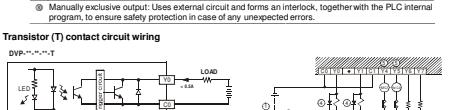


###### ■ Output Point Wiring

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



1. Flywheel diode: To extend the life span of contact
2. Emergency stop: Uses external switch
3. Fuse: Use 5 ~ 10A fuse at the common port of output contacts to protect the output circuit.
4. Varistor: To reduce the interference on AC load
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.



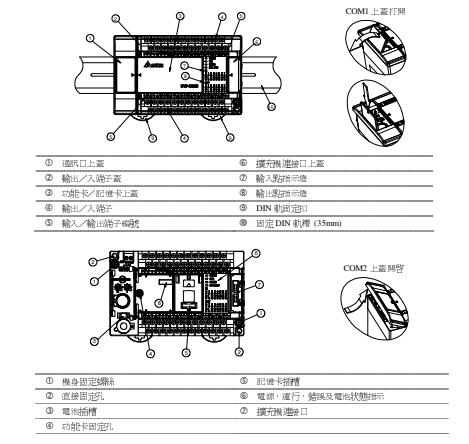
1. Flywheel diode + industry load
2. Circuit protection fuse
3. Power supply
4. LED display
5. PLC output
6. Power indicator
7. Emergency stop
8. Fuse
9. Varistor
10. DC power supply
11. AC power supply
12. Incandescent light (resistive load)
13. Manually exclusive output: Uses external circuit and forms an interlock, together with the PLC internal program, to ensure safety protection in case of any unexpected errors.

## 注意事項

- 本使用說明書僅適用於電氣接線、功能說明、安裝配線等內容，其它詳細之軟體設計及元件與今 SV 系列相容，詳請參閱 DVP-PLC 軟件技術手冊【程式編輯】。選購之遙控裝置詳見該產品隨手冊或 DVP-PLC 遠程控制手冊【荷蘭語版】。
- 本機為開架式（OPEN TYPE）機殼，因此使用者使用本機時，必須將其安置於具防塵、防潮及免於電擊之環境，並須具備保險措施（如：特殊之工具或鑰匙才可開啟），並應避免人員接觸或意外碰觸。
- 安裝前請確認所有端子均為正確無誤，否則可能造成嚴重損壞。請在上電之前再次確認端子接線，請勿在上電時接觸任何端子。本體上之後端子（COM1）務必正確的接地，可提高產品抗搖擺能力。

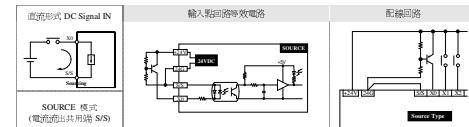
## 1 產品簡介

### ■ 產品外觀及各部介紹



## ■ 输出点规格

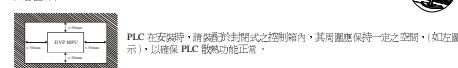
项目	低速	高速 *注
最高交换(工作频率)	10KHz	200KHz
输出动作指示	LED 显示, 亮光表示'ON', 不亮表示'OFF'	负载 ON/OFF 控制使用
最小负载	-	-
工作电压	5 ~ 30V DC	<250V AC, 30V DC
隔离方式	光耦合隔离	电气隔离
电流规格	0.3A/点 @ 40°C < 1KHz, 0.3A/点 @ 40°C ≥ 1KHz, 30mA/点 @ 40°C	24V 电源 (带感性 90W) (无负载)
最大输出 Off-On	20ms	0.2ms
反动作时间 On-Off	30ms	10ms
输出点延时保障	N/A	-
机械寿命	-	2 × 10 <sup>7</sup> 次 (SA30VDC)
接线端子	N/A	5 × 10 <sup>7</sup> 次 (SA120VAC)
*注: 高速输出 (Y0,Y2,Y4) 及 DVP2EHD2 及 DVP3EHD2 共享.		3 × 10 <sup>7</sup> 次 (SA250VAC)



## ■ 安装及配线

### 3.1 盒内安装

**DIN 板之安装方法:**  
适合 35mm DIN 板型。主板安装时, 先将 PLC 下方之固定脚片插入, 再将 PLC 由上方往上锁入机架内。锁下 PLC 时, PLC 将从下方锁住, 以防止插入, 向上锁脚时, 请勿锁住机架, 以免损坏机架。锁所有的锁片锁好后, 再将 PLC 往外方取出, 如右图所示:



**直接锁紧方式:** 请依产品外型尺寸並使用 M4 螺丝。

**端子排列:**

1. 线入/输出端子使用 O 型或 Y 型端子, 端子规格如左所示。PLC 端子螺丝扭力 6~24Nm, 扭矩 5~8 kg-cm (4.3~6.9 in-lbs), 请勿使用 60/75°C 的铜线。
2. 空空子 □ 请勿直接输入驱动器模组與输出端子驱动脉冲勿接在同一槽内。
3. 键盤及接线端子避免与微小的金属零件放入 PLC 内部, 并在拆卸完成后, 请将 PLC 上方散热量位置的防掉物放入, 以保持散热良好。

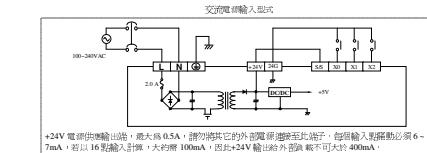
### 3.2 注意事项

#### ■ 电源端输入配线

DVP-EH 系列 PLC 电源输入为交流输入, 在使用上应注意下列事项:

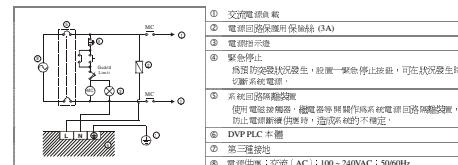
1. 交流宽范围输入电压, 范围直宽 (100 ~ 240V AC), 需衔接于 L、N 两端, 如果将 AC110V 或 AC220V 接至 +24V 或直接输入, 将造成 PLC 严重损毁, 请使用 60/75°C 的铜线。
2. 主机及 I/O 插拔机之交流电源输入请同时作 On 或 Off 的动作。
3. 主机之接地线使用 1.6mm 以上之铜线接地。
4. 当停机时间大于 10ms 时, PLC 会受到保护而继续运转, 当停机时间过长或电源电压下降将使 PLC 停止运转, 请将全量 OFF, 当电源恢复正常时, PLC 会自动恢复运转。(PLC 内部具有停电保持的辅助继电器及储存器, 使用者在程式设计时须特别注意使用)

#### ■ 交流电源输入式



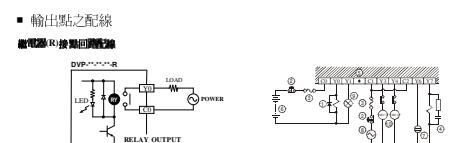
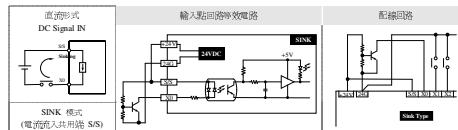
#### ■ 安全配线回路

由於 PLC 控制多类型, 任一装置的动作可能会影响到其它装置的动作, 因此任一装置的故障都可能造成整组自动控制系统的失控, 故障或危急, 所以要特别输入回路, 建议如下所示:



#### ■ 输入点配线

输入点之输入端为乾接或 DC 输入 · DC 型式共有两种接法: SINK 及 SOURCE. 其定义如下:



\*注: 高速输出 (Y0,Y2,Y4) 及 DVP2EHD2 及 DVP3EHD2 共享.

\*注: 低速输出 (Y0,Y1,Y2,Y3,Y4,Y6) 及 DVP4EHD2 共享.

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