

2017-04-24



5014002903-6P03

DVP04PT-S

DVP06PT-S

Instruction Sheet

Bilgi Dökümanı

安 裝 說 明

安 裝 說 明

Temperature Measurement Module

Sıcaklık Ölçüm Modülü

溫度量測模組

溫度量測模块

Thank you for choosing Delta DVP series PLC. DVP04/06PT-S is able to receive 4/6 points of RTDs and convert them into 16-bit digital signals. Besides, through FROM/TO instructions in DVP Slim series MPU program, the data can be read and written. There are many 16-bit control registers (CR) in the modules. The power unit is separate from it and is small in size and easy to install.

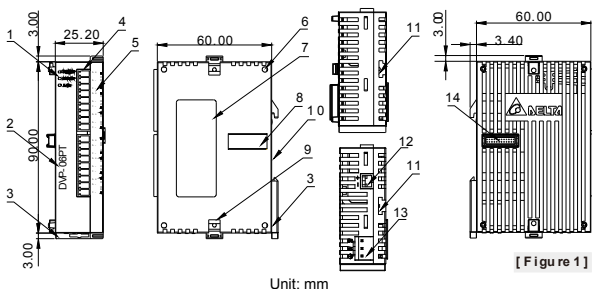
EN ✗ DVP04/06PT-S is an OPEN-TYPE device. It should be installed in a control cabinet free of airborne dust, humidity, electric shock and vibration. To prevent non-maintenance staff from operating DVP04/06PT-S, or to prevent an accident from damaging DVP04/06PT-S, the control cabinet in which DVP04/06PT-S is installed should be equipped with a safeguard. For example, the control cabinet in which DVP04/06PT-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 DVP04/06PT-S is powered up. After DVP04/06PT-S is disconnected, Do NOT touch any terminals in a minute. Make sure that the ground terminal (⊕) on DVP04/06PT-S is correctly grounded in order to prevent electromagnetic interference.

FR ✗ DVP04/06PT-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 DVP04/06PT-S pourra être endommagé. Merci de vérifier encore une fois le câblage avant la mise sous tension du DVP04/06PT-S. 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.

■ Product Profile & Dimension



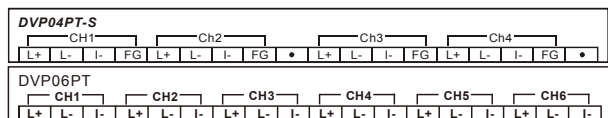
1. Status indicator (POWER, RUN and ERROR)

2. Model name

3. DIN rail clip

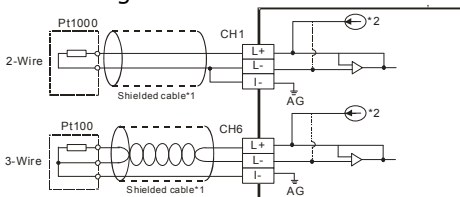
4. I/O terminals	5. I/O point indicator	6. Mounting holes
7. Specification label	8. I/O module connection port	9. I/O module clip
10. DIN rail (35mm)	11. I/O module clip	12. RS-485 communication port (DVP04PT-S)
13. Power connection port (DVP04PT-S)	14. I/O connection port	

■ I/O Terminal Layout



[Figure 2]

■ External Wiring



Note1: Use only the wires that are packed with the temperature sensor for analog input and separate from other power line or any wire that may cause noise.

Note2: 3-wire RTD sensor provides a compensation loop that can be used to subtract the wire resistance while 2-wire RTD sensor has no mechanism to compensate.

Note3: If there is noise, please connect the shielded cables to the system earth point, and then ground the system earth point or connect it to the distribution box.

Note4: Please keep wires as short as possible when connecting the module to a device whose temperature is going to be measured, and keep the power cable used as far away from the cable connected to a load as possible to prevent noise interference.

Note5: Please connect Ⓧ on a power supply module and Ⓧ on the temperature module to a system ground, and then ground the system ground or connect the system ground to a distribution box.

■ Electrical Specifications

Max. rated power consumption	2W
Operation/storage	Operation: 0°C~55°C (temp.), 5~95% (humidity), pollution degree 2 Storage: -25°C~70°C (temp.), 5~95% (humidity)
Vibration/shock resistance	International standards: IEC61131-2, IEC 68-2-6 (TEST Fc)/ IEC61131-2 & IEC 68-2-27 (TEST Ea)
Series connection to DVP-PLC MPU	The modules are numbered from 0 to 7 automatically by their distance from MPU. No.0 is the closest to MPU and No.7 is the furthest. Maximum 8 modules are allowed to connect to MPU and will not occupy any digital I/O points.

■ Functional Specifications

DVP06PT-S	Celsius (°C)	Fahrenheit (°F)
Analog input channel	6 channels per module	
Sensors type	2-wire/3-wire Pt100 / Pt1000 3850 PPM/°C (DIN 43760 JIS C1604-1989) / Ni100 / Ni1000 / LG-Ni1000 / Cu100 / Cu50	
Current excitation	1.53mA / 204.8uA	
Temperature input range	Please refer to the temperature/digital value characteristic curve.	
Digital conversion range	Please refer to the temperature/digital value characteristic curve.	
Resolution	16 bits (0.1°C)	16 bits (0.1°F)

DVP06PT-S	Celsius (°C)	Fahrenheit (°F)
Overall accuracy	±0.6% of full scale during 0 ~ 55°C (32 ~ 131°F)	
Response time	DVP04PT-S: 200ms/channel; DVP06PT-S: 160ms/channel	
Isolation method	Isolation between digital and analog circuitry. There is no isolation between channels. 500VDC between digital circuits and Ground 500VDC between analog circuits and Ground 500VDC between analog circuits and digital circuits 500VDC between 24VDC and Ground	
Digital data format	2's complement of 16-bit	
Average function	Yes (DVP04PT-S: CR#2 ~ CR#5 / DVP06PT-S: CR#2)	
Self diagnostic function	Every channel has the upper/lower limit detection function.	
RS-485 Communication Mode	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 while connected to CPU series PLCs. Refer to Communication Format Setup in the appendix of the DVP programming manual for more details.	

■ Control Register

CR#	Address	Latched	Attribute	Register content	Description								
#0	H'4064	O	R	Model name (Set up by the system)	DVP04PT-S model code= H'8A DVP06PT-S model code = H'CA								
#1	H'4065	X	R/W	CH1~CH4 Mode setting	<table border="1"> <thead> <tr> <th>b15~12</th> <th>b11~8</th> <th>b7~4</th> <th>b3~0</th> </tr> </thead> <tbody> <tr> <td>CH4</td> <td>CH3</td> <td>CH2</td> <td>CH1</td> </tr> </tbody> </table>	b15~12	b11~8	b7~4	b3~0	CH4	CH3	CH2	CH1
					b15~12	b11~8	b7~4	b3~0					
CH4	CH3	CH2	CH1										
Take CH1 mode (b3,b2,b1,b0) for example. 1. (0,0,0,0): Pt100 (default) 2. (0,0,0,1): Ni100 3. (0,0,1,0): Pt1000 4. (0,0,1,1): Ni1000 5. (0,1,0,0): LG-Ni1000 6. (0,1,0,1): Cu100 7. (0,1,0,0): Cu50 8. (1,1,1,1): The channel is disabled.													
#2	H'4066	O	R/W	DVP04PT-S: CH1 average number	Number piece of readings used for the calculation of "average" temperature on CH1. Setting range: K1~K20. Default setting is K10.								
	--			DVP06PT-S: CH1~CH6 average number	Number piece of readings used for the calculation of "average" temperature on CH1 ~ 6. Setting range: K1~K20. Default setting is K10.								
#3	H'4067	O	H'4067	DVP04PT-S: CH2 average number	Number piece of readings used for the calculation of "average" temperature on CH2. Setting range: K1~K20. Default setting is K10.								
#4	H'4068	O	H'4068	DVP04PT-S: CH3 average number	Number piece of readings used for the calculation of "average" temperature on CH3. Setting range: K1~K20. Default setting is K10.								
#5	H'4069	O	H'4069	DVP04PT-S: CH4 average number	Number piece of readings used for the calculation of "average" temperature on CH4. Setting range: K1~K20. Default setting is K10.								
#6	H'406A	X	R	CH1 average degrees	DVP04PT-S: Average degrees for CH1 ~ 4								
#7	H'406B	X	R	CH2 average degrees									

CR#	Address	Latched	Attribute	Register content	Description
#8	H'406C	X	R	CH3 average degrees	(Unit: 0.1°C).
#9	H'406D	X	R	CH4 average degrees	DVP06PT-S:
#10	--	X	R	CH5 average degrees	Average degrees for CH1 ~ 6
#11	--	X	R	CH6 average degrees	(Unit: 0.1°C).
#12	H'4070	X	R	CH1 average degrees	DVP04PT-S:
#13	H'4071	X	R	CH2 average degrees	Average degrees for CH1 ~ 4
#14	H'4072	X	R	CH3 average degrees	(Unit: 0.1°F).
#15	H'4073	X	R	CH4 average degrees	DVP06PT-S:
#16	--	X	R	CH5 average degrees	Average degrees for CH1 ~ 6
#17	--	X	R	CH6 average degrees	(Unit: 0.1°F).
#18	H'4076	X	R	Present temp. of CH1	DVP04PT-S:
#19	H'4077	X	R	Present temp. of CH2	Present temperature of
#20	H'4078	X	R	Present temp. of CH3	CH1 ~ 4 (Unit: 0.1°C).
#21	H'4079	X	R	Present temp. of CH4	DVP06PT-S:
#22	--	X	R	Present temp. of CH5	Present temperature of
#23	--	X	R	Present temp. of CH6	channels CH1 ~ 6
#24	H'407C	X	R	Present temp. of CH1	(Unit: 0.1°C).
#25	H'407D	X	R	Present temp. of CH2	DVP04PT-S:
#26	H'407E	X	R	Present temp. of CH3	Present temperature of
#27	H'407F	X	R	Present temp. of CH4	CH1 ~ 4 (Unit: 0.1°F).
#28	--	X	R	Present temp. of CH5	DVP06PT-S:
#29	--	X	R	Present temp. of CH6	Present temperature of
					channels CH1 ~ 6
#29	H'4081	X	R/W	DVP04PT-S: PID mode setup	(Unit: 0.1°F)..
					Set H'5678 as PID mode and
					other values as normal mode
					Default value is H'0000.
#30	H'4082	X	R	Error status	Data register stores the error
					status. Refer to the error code
					chart for details.
#31	H'4083	O	R/W	DVP04PT-S: Communication address setup	Set up the RS-485
	--	X	R/W	DVP06PT-S: CH5~CH6 Mode setting	communication address; setting
					range: 01~254. Default: K1
32	H'4084	O	R/W	DVP04PT-S: Communication baud rate setting	CH5 mode: b0 ~ b3
	--	X	R/W	DVP06PT-S: CH5~CH6 Reset to default setting And Error LED indicator setting	CH6 mode: b4 ~ b7
					See CR#1 for reference
					Communication format: ASCII
					mode is 7 bits, even bit, 1 stop
					bit (7, E, 1), while RTU mode is
					8 bits, even bit, 1 stop bit (8, E,
					1). 6 types of baud rate:
					b0: 4,800 bps (bit/sec)
					b1: 9,600 bps (factory setting)
					b2: 19,200 bps (bit/sec)
					b3: 38,400 bps (bit/sec)
					b4: 57,600 bps (bit/sec)
					b5: 115,200 bps (bit/sec)
					b6 ~ b13: reserved
					b14: exchange low and high
					byte of CRC check code (only
					for RTU mode)
					b15: ASCII/RTU selection
					b15~12 b11~9 b8~6 b5~3 b2~0
					ERR reserved CH6 CH5
					LED
					If b2~b0 are set to 100, all the
					setting values of CH5 will be
					reset to the default settings. To
					reset CH5 and CH6 to default
					settings, set b5~b0 to H'24.
					b12~13 correspond to CH5~6,
					when bit is ON, the scale
					exceeds the range, and the Error
					LED indicator flashes.
#33	H'4085	O	R/W	DVP04PT-S: CH1~CH4 Reset to default setting	b15~12 b11~9 b8~6 b5~3 b2~0
					ERR CH4 CH3 CH2 CH1
					LED

CR#	Address	Latched	Attribute	Register content	Description
				And Error LED indicator setting	If b2~b0 are set to 100, all the setting values of CH1 will be reset to the default settings. To reset CH1~4 to default settings, set b11~0 to H'924. b12~15 correspond to CH1~4, when bit is ON, the scale exceeds the range, and the Error LED indicator flashes.
	--	X	R/W	DVP06PT-S: CH1~CH4 Reset to default setting And Error LED indicator setting	
#34	H'4086	O	R	Firmware version	Display version in hexadecimal. ex: H'010A = version 1.0A

#35 ~ #48 For system use

Symbols: O means latched. X means not latched. R means can read data by using FROM instruction or RS-485. W means can write data by using TO instruction or RS-485.

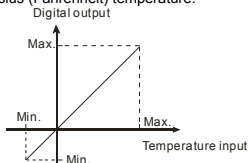
- CR#30 is the error code register.

Note: Each error code will have a corresponding bit and should be converted to 16-bit binary numbers (Bit0~15). Two or more errors may happen at the same time. Refer to the chart below:

Bit number	0	1	2	3
Description	Power source abnormal	The contact is not connected to anything.	Reserved	Reserved
Bit number	4	5	6	7
Description	Hardware malfunction	Reserved	average number error	Instruction error
Bit number	8	9	10	11
Description	CH1 Abnormal conversion	CH2 Abnormal conversion	CH3 Abnormal conversion	CH4 Abnormal conversion
Bit number	12	13	14	15
Description	CH5 Abnormal conversion	CH6 Abnormal conversion	Reserved	Reserved

■ Temperature/Digital Value Characteristic Curve

The mode of measuring Celsius (Fahrenheit) temperature:



Platinum resistor	Temperature range		Digital value conversion range	
	°C (Min./Max.)	°F (Min./Max.)	°C (Min./Max.)	°F (Min./Max.)
Pt100	-180 ~ 800°C	-292 ~ 1,472°F	K-1,800 ~ K8,000	K-2,920 ~ K14,720
Ni100	-80 ~ 170°C	-112 ~ 338°F	K-800 ~ K1,700	K-1,120 ~ K3,380
Pt1000	-180 ~ 800°C	-292 ~ 1,472°F	K-1,800 ~ K8,000	K-2,920 ~ K14,720
Ni1000	-80 ~ 170°C	-112 ~ 338°F	K-800 ~ K1,700	K-1,120 ~ K3,380
LG-Ni1000	-60 ~ 200°C	-76 ~ 392°F	K-600 ~ K2,000	K-760 ~ K3,920
Cu100	-50 ~ 150°C	-58 ~ 302°F	K-500 ~ K1,500	K-580 ~ K3,020
Cu50	-50 ~ 150°C	-58 ~ 302°F	K-500 ~ K1,500	K-580 ~ K3,020

感謝您採用台達 DVP 系列產品。DVP04/06PT-S 溫度量測模組可接受外部 4/6 點熱阻溫度感測器，將之轉換成 16 位元之數位信號。透過 DVP 薄型系列 (Slim type) PLC 主控程式以指令 FROM/TO 來讀寫模組內之資料，模組內具有多個 CR (Control Register) 暫存器，每個暫存器有 16 bits。電源單元與模組分離，體積小，安裝容易。

- ✓ 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。另必須具備保護措施 (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體，造成危險及損壞。
- ✓ 交流輸入電源不可連接於輸入/輸出信號端，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。

■ 產品外觀尺寸與部位介紹

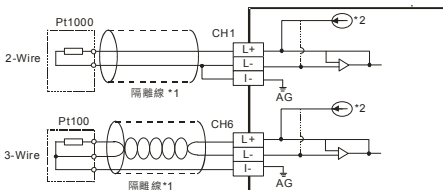
詳細部位指示圖與外觀尺寸請參閱英文版[Figure1]，單位：mm。

1. 電源、錯誤及運行指示燈	2. 機種型號	3. DIN 軌固定扣
4. 端子	5. 端子配置	6. I/O 模組定位孔
7. 銘牌	8. I/O 模組連接口	9. I/O 模組固定扣
10. DIN 軌槽 (35mm)	11. I/O 模組固定槽	12. RS-485 通訊口 (DVP04PT-S)
13. 電源輸入口 (DVP04PT-S)	14. I/O 模組連接口	

■ 輸入/輸出端子台配置

請參閱英文版[Figure2]之端子台配置示意圖。

■ 外部配線



註1：使用於類比輸入的配線應採用溫度感測器之連接線或雙絞隔離線且應與其他電源線或可能引起雜訊之接線分開。

註2：3線式RTD感測器有線材阻抗補償；2線式RTD感測器沒有線材阻抗補償。

註3：如果雜訊過大，請將隔離線連接到系統接地點，再將系統接點作第三種接地或接到配電箱之機殼上。

註4：由待測物到模組間的配線路請用最短距離配線，為了避免雜訊及誘導的影響儘可能將電源線和負載配線分開。

註5：請將電源模組之 (Ⓣ) 端及DVP04PT-S溫度量測模組之 (Ⓣ) 端連接到系統接地點，再將系統接點作第三種接地或接到配電箱之機殼上。

■ 電氣規格

額定最大消耗功率	2W
操作/儲存環境	1. 操作：0°C ~ 55°C (溫度) · 5 ~ 95% (濕度) · 污染等級 2 2. 儲存：-25°C ~ 70°C (溫度) · 5 ~ 95% (濕度)

耐振動衝擊	國際標準規範IEC61131-2 · IEC 68-2-6 (TEST Fc) / IEC61131-2 & IEC 68-2-27 (TEST Ea)
與DVP-PLC主機串接說明	模組編號以靠近主機右側之順序自動編號由0到7 · 最大可連接8台且不佔用數位I/O點數。

■ 功能規格

DVP04/06PT-S	攝氏 (°C)	華氏 (°F)
類比訊號輸入通道	4/6通道/台	
適合感應器形式	2線/3線 Pt100 / Pt1000 3850 PPM/°C (DIN 43760 JIS C1604-1989) / Ni100 / Ni1000 / LG-Ni1000 / Cu100 / Cu50	
驅動電流	1.53mA / 204.8uA	
輸入溫度範圍	請參閱溫度/數位特性曲線附表	
數位轉換範圍	請參閱溫度/數位特性曲線附表	
解析度	16 bits (0.1°C)	16 bits (0.1°F)
總和精密度	±0.6% 在 (0 ~ 55°C · 32 ~ 131°F) 範圍內滿刻度時。	
響應時間	DVP04PT-S : 200ms/通道 ; DVP06PT-S : 160ms/通道	
隔離方式	數位區與類比區有隔離 · 通道間未隔離。 數位電路與接地之間 : 500VDC 類比電路與接地之間 : 500VDC 類比電路與數位電路之間 : 500VDC 24VDC與接地之間 : 500VDC	
數位資料格式	16位元二補數	
平均功能	有 (DVP04PT-S : CR#2 ~ CR#5 / DVP06PT-S : CR#2)	
自我診斷功能	上下極限偵測/通道	
通訊模式 (RS-485) (適用DVP04PT-S)	有 · 包含 ASCII/RTU 模式 · 預設通訊格式為 9600, 7, E, 1, ASCII · 詳細通訊格式請參考 CR#32 說明。 備註 1 : 當與 PLC 主機串接時 · RS-485 通訊無法使用。 備註 2 : 其通訊格式只可採用RS-485通訊修改 · 無法由主機連接模組方式 · 下達TO指令修改 · 詳細內容請參考DVP程式篇手冊之附錄"模組通訊設定"篇。	

■ 控制暫存器 (CR)

CR#	通訊位址	保持型	屬性	暫存器名稱	說明								
#0	H'4064	O	R	機種型號 (系統內定)	DVP04PT-S機種編碼= H'8A。 DVP06PT-S機種編碼= H'CA。								
#1	H'4065	O	R/W	CH1~CH4模式設定	<table border="1"> <tr> <td>b15~12</td> <td>b11~8</td> <td>b7~4</td> <td>b3~0</td> </tr> <tr> <td>CH4</td> <td>CH3</td> <td>CH2</td> <td>CH1</td> </tr> </table> 以 CH1 設定 (b3 · b2 · b1 · b0) 說明 : 1. 設為 (0 · 0 · 0 · 0) 時 · 選用 Pt100 (出廠預設值) 2. 設為 (0 · 0 · 0 · 1) 時 · 選用 Ni100 3. 設為 (0 · 0 · 1 · 0) 時 · 選用 Pt1000 4. 設為 (0 · 0 · 1 · 1) 時 · 選用 Ni1000 5. 設為 (0 · 1 · 0 · 0) 時 · 選用 LG-Ni1000	b15~12	b11~8	b7~4	b3~0	CH4	CH3	CH2	CH1
b15~12	b11~8	b7~4	b3~0										
CH4	CH3	CH2	CH1										

CR#	通訊位址	保持型	屬性	暫存器名稱	說明
					6. 設為 (0 · 1 · 0 · 1) 時 · 選用 Cu100 7. 設為 (0 · 1 · 1 · 0) 時 · 選用 Cu50 8. 設為 (1 · 1 · 1 · 1) 時 · 通道關閉 (Disable)
#2	H'4066	O	R/W	(DVP04PT-S) CH1平均次數	通道CH1訊號的平均次數設定： 可設定範圍K1 ~ K20。出廠設定值為K10。
	--			(DVP06PT-S) CH1~CH6共用平均次數	通道CH1 ~ CH6訊號共用的平均次數設定： 可設定範圍K1 ~ K20。出廠設定值為K10。
#3	H'4067	O	R/W	(DVP04PT-S) CH2平均次數	通道CH2 訊號的平均次數設定： 可設定範圍K1 ~ K20。出廠設定值為K10。
#4	H'4068	O	R/W	(DVP04PT-S) CH3平均次數	通道CH3 訊號的平均次數設定： 可設定範圍K1 ~ K20。出廠設定值為K10。
#5	H'4069	O	R/W	(DVP04PT-S) CH4平均次數	通道CH4 訊號的平均次數設定： 可設定範圍K1 ~ K20。出廠設定值為K10。
#6	H'406A	X	R	CH1量測攝氏溫度平均值	通道CH1 ~ CH6量測攝氏溫度平均值顯示。 (DVP04PT-S只有CH1~CH4通道) 單位0.1°C。
#7	H'406B	X	R	CH2量測攝氏溫度平均值	
#8	H'406C	X	R	CH3量測攝氏溫度平均值	
#9	H'406D	X	R	CH4量測攝氏溫度平均值	
#10	--	X	R	CH5量測攝氏溫度平均值	
#11	--	X	R	CH6量測攝氏溫度平均值	
#12	H'4070	X	R	CH1量測華氏溫度平均值	通道CH1 ~ CH6量測華氏溫度平均值顯示。 (DVP04PT-S只有CH1~CH4通道) 單位0.1°F。
#13	H'4071	X	R	CH2量測華氏溫度平均值	
#14	H'4072	X	R	CH3量測華氏溫度平均值	
#15	H'4073	X	R	CH4量測華氏溫度平均值	
#16	--	X	R	CH5量測華氏溫度平均值	
#17	--	X	R	CH6量測華氏溫度平均值	
#18	H'4076	X	R	CH1量測攝氏溫度現在值	通道CH1 ~ CH6量測攝氏溫度現在值顯示。 (DVP04PT-S只有CH1~CH4通道) 單位0.1°C。
#19	H'4077	X	R	CH2量測攝氏溫度現在值	
#20	H'4078	X	R	CH3量測攝氏溫度現在值	
#21	H'4079	X	R	CH4量測攝氏溫度現在值	
#22	--	X	R	CH5量測攝氏溫度現在值	
#23	--	X	R	CH6量測攝氏溫度現在值	
#24	H'407C	X	R	CH1量測華氏溫度現在值	通道CH1 ~ CH6量測華氏溫度現在值顯示。 (DVP04PT-S只有CH1~CH4通道) 單位0.1°F。
#25	H'407D	X	R	CH2量測華氏溫度現在值	
#26	H'407E	X	R	CH3量測華氏溫度現在值	
#27	H'407F	X	R	CH4量測華氏溫度現在值	
#28	--	X	R	CH5量測華氏溫度現在值	
#29	--	X	R	CH6量測華氏溫度現在值	
#29	H'4081	X	R/W	(DVP04PT-S) PID模式設定	設定H'5678進入PID模式，其他設定值皆為一般模式。出廠設定值H'0000。
#30	H'4082	X	R	錯誤狀態	儲存所有錯誤狀態的資料暫存器，詳細內容請參照錯誤代碼說明。
#31	H'4083	O	R/W	(DVP04PT-S)	設定 RS-485 通訊位址，設定範圍 01 ~

CR#	通訊位址	保持型	屬性	暫存器名稱	說明										
				通訊位址設定	254。出廠設定值為 K1。										
	--	X	R/W	(DVP06PT-S) CH5~CH6模式設定	CH5 模式：b3 ~ b0 CH6 模式：b7 ~ b4 設定值請參考CR#1說明										
#32	H'4084	O	R/W	(DVP04PT-S) 通訊速率 (Baud rate) 設定	包含ASCII/RTU模式。ASCII 模式資料格式為 7 bits、偶位元、1 stop bit (7 · E · 1)；RTU 模式資料格式為 8 bits、偶位元、1 stop bit (8 · E · 1)。 通訊速率設定共有六種： b0：4,800 bps b1：9,600 bps (出廠設定值) b2：19,200 bps b3：38,400 bps b4：57,600 bps b5：115,200 bps b6 ~ b13：保留 b14：CRC檢查碼高低位交換 (僅RTU模式有效) b15：ASCII/RTU模式切換										
	--	X	R/W	(DVP06PT-S) CH5~CH6恢復出廠設定 與ERR燈顯示啟動/關閉	<table border="1"> <thead> <tr> <th>b15~b12</th> <th>b11~b9</th> <th>b8~b6</th> <th>b5~b3</th> <th>b2~b0</th> </tr> </thead> <tbody> <tr> <td>ERR燈</td> <td>保留</td> <td>保留</td> <td>CH6</td> <td>CH5</td> </tr> </tbody> </table> <p>舉例：b2~b0=100時，表示CH5恢復為出廠設定。若需CH5、CH6一起恢復出廠設定值，則對b5~b0寫入H'24。 b12~b13 分別對應 CH5~CH6 錯誤顯示啟動/關閉，當設定該 bit 為 ON (預設) 時，即表示通道有錯誤發生，ERR 燈以閃爍方式顯示錯誤發生。設 OFF 表示關閉。</p>	b15~b12	b11~b9	b8~b6	b5~b3	b2~b0	ERR燈	保留	保留	CH6	CH5
b15~b12	b11~b9	b8~b6	b5~b3	b2~b0											
ERR燈	保留	保留	CH6	CH5											
#33	H'4085	O	R/W	(DVP04PT-S) CH1~CH4恢復出廠設定 與ERR燈顯示啟動/關閉	<table border="1"> <thead> <tr> <th>b15~b12</th> <th>b11~b9</th> <th>b8~b6</th> <th>b5~b3</th> <th>b2~b0</th> </tr> </thead> <tbody> <tr> <td>ERR燈</td> <td>CH4</td> <td>CH3</td> <td>CH2</td> <td>CH1</td> </tr> </tbody> </table> <p>舉例：b2~b0=100時，表示CH1恢復為出廠設定。若需4通道一起恢復出廠設定值，則對b11~b0寫入H'924。 b12~b15 分別對應 CH1~CH4 錯誤顯示啟動/關閉，當設定該 bit 為 ON (預設) 時，即表示通道有錯誤發生，ERR 燈以閃爍方式顯示錯誤發生。設 OFF 表示關閉。</p>	b15~b12	b11~b9	b8~b6	b5~b3	b2~b0	ERR燈	CH4	CH3	CH2	CH1
	b15~b12	b11~b9	b8~b6	b5~b3	b2~b0										
ERR燈	CH4	CH3	CH2	CH1											
--	X	R/W	(DVP06PT-S) CH1~CH4恢復出廠設定 與ERR燈顯示啟動/關閉	<table border="1"> <thead> <tr> <th>b15~b12</th> <th>b11~b9</th> <th>b8~b6</th> <th>b5~b3</th> <th>b2~b0</th> </tr> </thead> <tbody> <tr> <td>ERR燈</td> <td>CH4</td> <td>CH3</td> <td>CH2</td> <td>CH1</td> </tr> </tbody> </table> <p>舉例：b2~b0=100時，表示CH1恢復為出廠設定。若需4通道一起恢復出廠設定值，則對b11~b0寫入H'924。 b12~b15 分別對應 CH1~CH4 錯誤顯示啟動/關閉，當設定該 bit 為 ON (預設) 時，即表示通道有錯誤發生，ERR 燈以閃爍方式顯示錯誤發生。設 OFF 表示關閉。</p>	b15~b12	b11~b9	b8~b6	b5~b3	b2~b0	ERR燈	CH4	CH3	CH2	CH1	
b15~b12	b11~b9	b8~b6	b5~b3	b2~b0											
ERR燈	CH4	CH3	CH2	CH1											
#34	H'4086	O	R	韌體版本	16進制，顯示目前韌體版本，如1.0A則H'010A。										
#35 ~ #48 系統內部使用															
符號定義： O表示為保持型；X表示為非保持型。(利用RS-485通訊控制時支援，連接主機時不支援) R表示為可使用FROM指令讀取資料，或利用RS-485通訊讀取資料。 W表示為可使用TO指令寫入資料，或利用RS-485通訊寫入資料。															

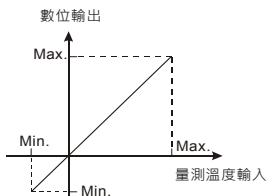
● CR#30 錯誤代碼說明：

此錯誤代碼需轉換為 16-bit 的 2 進制數值 (Bit 0~15)。每一個 bit 為 ON 時，即表示有一種錯誤狀態發生，因此發生錯誤狀況時，可能會有 2 個以上 bit 為 ON。舉例：bit1=ON，bit8=ON，也就表示有通道的接點空接，而且是 CH1 空接；詳細每個 bit 為 ON 的錯誤狀況如下表格所示：

Bit 編號	0	1	2	3
錯誤說明	模組電源異常	通道接點空接	系統保留	系統保留
Bit 編號	4	5	6	7
錯誤說明	自檢測硬體損壞	系統保留	平均次數錯誤	主機命令錯誤
Bit 編號	8	9	10	11
錯誤說明	CH1 轉換異常	CH2 轉換異常	CH3 轉換異常	CH4 轉換異常
Bit 編號	12	13	14	15
錯誤說明	CH5 轉換異常	CH6 轉換異常	系統保留	系統保留

■ 溫度/數位特性曲線

攝 (華) 氏溫度量測模式：



鉑金 電阻	輸入溫度範圍		數位轉換範圍	
	°C (Min. / Max.)	°F (Min. / Max.)	°C (Min. / Max.)	°F (Min. / Max.)
Pt100	-180 ~ 800°C	-292 ~ 1,472°F	K-1,800 ~ K8,000	K-2,920 ~ K14,720
Ni100	-80 ~ 170°C	-112 ~ 338°F	K-800 ~ K1,700	K-1,120 ~ K3,380
Pt1000	-180 ~ 800°C	-292 ~ 1,472°F	K-1,800 ~ K8,000	K-2,920 ~ K14,720
Ni1000	-80 ~ 170°C	-112 ~ 338°F	K-800 ~ K1,700	K-1,120 ~ K3,380
LG-Ni1000	-60 ~ 200°C	-76 ~ 392°F	K-600 ~ K2,000	K-760 ~ K3,920
Cu100	-50 ~ 150°C	-58 ~ 302°F	K-500 ~ K1,500	K-580 ~ K3,020
Cu50	-50 ~ 150°C	-58 ~ 302°F	K-500 ~ K1,500	K-580 ~ K3,020

感谢您采用台达 DVP 系列产品。DVP04/06PT-S 温度测量模块可接受外部 4/6 点热阻温度传感器，将之转换成 16 位的数字信号。透过 DVP 薄型系列 (Slim type) 主机程序以指令 FROM/TO 来读写模块内的数据。模块内具有多个 CR (Control Register) 寄存器，每个寄存器有 16 bits。电源单元与模块分离，体积小，安装容易。

- ✓ 本机为开放型 (OPEN TYPE) 机壳，因此使用者使用本机时，必须将其安装于具防尘、防潮及免于电击/冲击意外的外壳配线箱内。另必须具备保护措施 (如：特殊的工具或钥匙才可打开) 防止非维护人员操作或意外冲击本体，造成危险及损坏。
- ✓ 交流输入电源不可连接于输入/出信号端，否则可能造成严重的损坏，因此请在上电之前再次确认电源配线。输入电源切断后，一分钟之内，请勿触摸内部电路。本体上的接地端子 (Ⓧ) 务必正确的接地，可提高产品抗噪声能力。

■ 产品外观尺寸与部位介绍

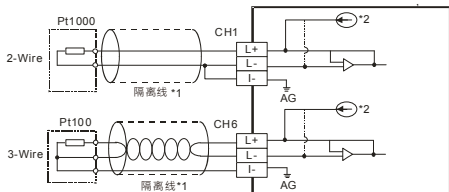
详细部位指示图与外观尺寸请参阅英文版[Figure1]，单位：mm。

1. 电源、错误及运行指示灯	2. 机种型号	3. DIN 轨固定扣
4. 端子	5. 端子配置	6. I/O 模块定位孔
7. 铭牌	8. I/O 模块连接口	9. I/O 模块固定扣
10. DIN 轨槽 (35mm)	11. I/O 模块固定槽	12. RS-485 通讯口 (DVP04PT-S)
13. 电源输入口 (DVP04PT-S)	14. I/O 模块连接口	

■ 输入输出端子台配置

请参阅英文版[Figure2]的端子台配置示意图。

■ 外部配线



注1：使用于模拟输入的配线应采用温度传感器的连接线或双绞隔离线且应与其它电源线或可能引起干扰之接线分开。

注2：3线式RTD传感器有线材阻抗补偿；2线式RTD传感器没有线材阻抗补偿。

注3：如果干扰过大，请将隔离线连接到系统接地点，再将系统接点作第三种接地或接到配电箱的机壳上。

注4：由待测物到模块间的配线路请用最短距离配线，为了避免干扰及诱导的影响尽可能将电源线和负载配线分开。

注5：请将电源模块的 (Ⓧ) 端及DVP04PT-S温度测量模块的 (Ⓧ) 端连接到系统接地点，再将系统接点作第三种接地或接到配电箱的机壳上。

■ 电气规格

额定最大消耗功率	2W
操作/储存环境	1. 操作：0°C ~ 55°C (温度) · 5 ~ 95% (湿度) · 污染等级 2 2. 储存：-25°C ~ 70°C (温度) · 5 ~ 95% (湿度)

耐振动冲击	国际标准规范 IEC61131-2 · IEC 68-2-6 (TEST Fc) / IEC61131-2 & IEC 68-2-27 (TEST Ea)
与DVP-PLC主机串接说明	模块编号以靠近主机右侧的顺序自动编号由0到7 · 最大可连接8台且不占用数字I/O点数。

■ 功能规格

DVP04/06PT-S	摄氏 (°C)	华氏 (°F)
模拟讯号输入通道	4/6通道台	
适合感应器形式	2线/3线PT100 / PT1000 3850 PPM/°C (DIN 43760 JIS C1604-1989) / Ni100 / Ni1000 / LG-Ni1000 / Cu100 / Cu50	
驱动电流	1.53mA / 204.8uA	
输入温度范围	请参阅温度/数字特性曲线附表	
数字转换范围	请参阅温度/数字特性曲线附表	
分辨率	16 bits (0.1°C)	16 bits (0.1°F)
总和精度	±0.6% 在 (0 ~ 55°C · 32 ~ 131°F) 范围内满刻度时。	
响应时间	DVP04PT-S : 200ms/通道 ; DVP06PT-S : 160ms/通道	
隔离方式	数字电路与模拟电路有隔离 · 通道间未隔离。 数字电路与接地之间 : 500VDC 模拟电路与接地之间 : 500VDC 模拟电路与数字电路之间 : 500VDC 24VDC与接地之间 : 500VDC	
数字数据格式	16位二补码	
平均功能	有 (DVP04PT-S : CR#2 ~ CR#5 / DVP06PT-S : CR#2)	
自我诊断功能	上下极限侦测/通道	
通讯模式 (RS-485) (适用DVP04PT-S)	有 · 包含 ASCII/RTU 模式 · 默认通讯格式为 9600, 7, E, 1, ASCII · 详细通讯格式请参考 CR#32 说明。 备注 1 : 当与 PLC 主机串接时 · RS-485 通讯无法使用。 备注 2 : 其通讯格式只可采用RS-485通讯修改 · 无法由主机连接模块方式 · 下达TO指令修改 · 详细内容请参考DVP程序篇手册之附录“模块通信设置”篇。	

■ 控制寄存器 (CR)

CR#	通讯地址	保持型	属性	寄存器名称	说明								
#0	H'4064	O	R	机种型号 (系统内定)	DVP04PT-S机种编码= H'8A · DVP06PT-S机种编码= H'CA ·								
#1	H'4065	O	R/W	CH1~CH4模式设定	<table border="1"> <tr> <td>b15~12</td> <td>b11~8</td> <td>b7~4</td> <td>b3~0</td> </tr> <tr> <td>CH4</td> <td>CH3</td> <td>CH2</td> <td>CH1</td> </tr> </table> 以 CH1 设定 (b3 · b2 · b1 · b0) 说明 : 1. 设为 (0 · 0 · 0 · 0) 时 · 选用 Pt100 (出厂默认值) 2. 设为 (0 · 0 · 0 · 1) 时 · 选用 Ni100 3. 设为 (0 · 0 · 1 · 0) 时 · 选用 Pt1000 4. 设为 (0 · 0 · 1 · 1) 时 · 选用 Ni1000 5. 设为 (0 · 1 · 0 · 0) 时 · 选用 LG-Ni1000 6. 设为 (0 · 1 · 0 · 1) 时 · 选用 Cu100	b15~12	b11~8	b7~4	b3~0	CH4	CH3	CH2	CH1
b15~12	b11~8	b7~4	b3~0										
CH4	CH3	CH2	CH1										

CR#	通讯地址	保持型	属性	寄存器名称	说明
					7. 设为 (0 · 1 · 1 · 0) 时 · 选用 Cu50 8. 设为 (1 · 1 · 1 · 1) 时 · 通道关闭(Disable)
#2	H'4066	O	R/W	(DVP04PT-S) CH1平均次数	通道CH1讯号的平均次数设定： 可设定范围K1 ~ K20。出厂设定值为K10。
	--			(DVP06PT-S) CH1~CH6共享平均次数	通道CH1 ~ CH6讯号共享的平均次数设定： 可设定范围K1 ~ K20。出厂设定值为K10。
#3	H'4067	O	R/W	(DVP04PT-S) CH2平均次数	通道CH2 讯号的平均次数设定： 可设定范围K1 ~ K20。出厂设定值为K10。
#4	H'4068	O	R/W	(DVP04PT-S) CH3平均次数	通道CH3 讯号的平均次数设定： 可设定范围K1 ~ K20。出厂设定值为K10。
#5	H'4069	O	R/W	(DVP04PT-S) CH4平均次数	通道CH4 讯号的平均次数设定： 可设定范围K1 ~ K20。出厂设定值为K10。
#6	H'406A	X	R	CH1量测摄氏温度平均值	通道CH1 ~ CH6量测摄氏温度平均值显示。 (DVP04PT-S只有CH1~CH4通道) 单位0.1°C。
#7	H'406B	X	R	CH2量测摄氏温度平均值	
#8	H'406C	X	R	CH3量测摄氏温度平均值	
#9	H'406D	X	R	CH4量测摄氏温度平均值	
#10	--	X	R	CH5量测摄氏温度平均值	
#11	--	X	R	CH6量测摄氏温度平均值	
#12	H'4070	X	R	CH1量测华氏温度平均值	通道CH1 ~ CH6量测华氏温度平均值显示。 (DVP04PT-S只有CH1~CH4通道) 单位0.1°F。
#13	H'4071	X	R	CH2量测华氏温度平均值	
#14	H'4072	X	R	CH3量测华氏温度平均值	
#15	H'4073	X	R	CH4量测华氏温度平均值	
#16	--	X	R	CH5量测华氏温度平均值	
#17	--	X	R	CH6量测华氏温度平均值	
#18	H'4076	X	R	CH1量测摄氏温度现在值	通道CH1 ~ CH6量测摄氏温度现在值显示。 (DVP04PT-S只有CH1~CH4通道) 单位0.1°C。
#19	H'4077	X	R	CH2量测摄氏温度现在值	
#20	H'4078	X	R	CH3量测摄氏温度现在值	
#21	H'4079	X	R	CH4量测摄氏温度现在值	
#22	--	X	R	CH5量测摄氏温度现在值	
#23	--	X	R	CH6量测摄氏温度现在值	
#24	H'407C	X	R	CH1量测华氏温度现在值	通道CH1 ~ CH6量测华氏温度现在值显示。 (DVP04PT-S只有CH1~CH4通道) 单位0.1°F。
#25	H'407D	X	R	CH2量测华氏温度现在值	
#26	H'407E	X	R	CH3量测华氏温度现在值	
#27	H'407F	X	R	CH4量测华氏温度现在值	
#28	--	X	R	CH5量测华氏温度现在值	
#29	--	X	R	CH6量测华氏温度现在值	
#29	H'4081	X	R/W	(DVP04PT-S) PID模式设定	设定H'5678进入PID模式，其他设定值皆为一般模式。出厂设定值H'0000。
#30	H'4082	X	R	错误状态	储存所有错误状态的数据寄存器，详细内容请参照错误代码说明。
#31	H'4083	O	R/W	(DVP04PT-S) 通讯地址设定	设定 RS-485 通讯地址，设定范围 01 ~ 254。出厂设定值为 K1。
	--	X	R/W	(DVP06PT-S)	CH5 模式：b3 ~ b0

CR#	通讯地址	保持型	属性	寄存器名称	说明
				CH5~CH6模式设定	CH6 模式：b7 ~ b4 设定值请参考CR#1说明
#32	H'4084	O	R/W	(DVP04PT-S) 通讯速率 (Baud rate) 设定	包含ASCII/RTU模式·ASCII 模式数据格式为 7 bits·偶位·1 stop bit(7 · E · 1) ; RTU 模式数据格式为 8 bits·偶位·1 stop bit (8 · E · 1) 。 通讯速率设定共有六种： b0 : 4,800 bps b1 : 9,600 bps (出厂设定值) b2 : 19,200 bps b3 : 38,400 bps b4 : 57,600 bps b5 : 115,200 bps b6 ~ b13 : 保留 b14 : CRC检查码高低位交换 (仅RTU模式有效) b15 : ASCII/RTU模式切换
	--	X	R/W	(DVP06PT-S) CH5~CH6恢复出厂设定 与ERR灯显示启动/关闭	b15~b12 b11~b9 b8~b6 b5~b3 b2~b0 ERR灯 保留 保留 CH6 CH5 举例：b2~b0=100时·表示CH5恢复为出厂设定。若需CH5、CH6一起恢复出厂设定值·则对b5~b0写入H'24。 b12~b13 分别对应 CH5~CH6 错误显示启动/关闭·当设定该 bit 为 ON (默认) 时·即表示通道有错误发生·ERR 灯以闪烁方式显示错误发生。设 OFF 表示关闭。
#33	H'4085	O	R/W	(DVP04PT-S) CH1~CH4恢复出厂设定 与ERR灯显示启动/关闭	b15~b12 b11~b9 b8~b6 b5~b3 b2~b0 ERR灯 CH4 CH3 CH2 CH1 举例：b2~b0=100时·表示CH1恢复为出厂设定。若需4通道一起恢复出厂设定值·则对b11~b0写入H'924。
	--	X	R/W	(DVP06PT-S) CH1~CH4恢复出厂设定 与ERR灯显示启动/关闭	b12~b15 分别对应 CH1~CH4 错误显示启动/关闭·当设定该 bit 为 ON (默认) 时·即表示通道有错误发生·ERR 灯以闪烁方式显示错误发生。设 OFF 表示关闭。
#34	H'4086	O	R	固件版本	16进制·显示目前固件版本·如1.0A则H'010A。
#35 ~ #48 系统内部使用					
符号定义： O表示为保持型；X表示为非保持型。(利用RS-485通讯控制时支持·连接主机时不支持) R表示为可使用FROM指令读取数据·或利用RS-485通讯读取数据。 W表示为可使用TO指令写入数据·或利用RS-485通讯写入数据。					

● CR#30 错误代码说明：

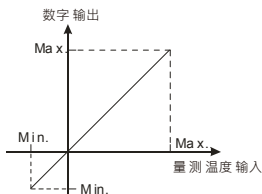
此错误代码需转换为 16-bit 的 2 进制数值 (Bit 0~15)·每一个 bit 为 ON 时·即表示有一种错

误状态发生，因此发生错误状况时，可能会有 2 个以上 bit 为 ON，举例：bit1=ON，bit8=ON，也就表示有通道的接点空接，而且是 CH1 空接；详细每个 bit 为 ON 的错误状况如下表格所示：

Bit 编号	0	1	2	3
错误说明	模块电源异常	通道接点空接	系统保留	系统保留
Bit 编号	4	5	6	7
错误说明	自检测硬件损坏	系统保留	平均次数错误	主机命令错误
Bit 编号	8	9	10	11
错误说明	CH1 转换异常	CH2 转换异常	CH3 转换异常	CH4 转换异常
Bit 编号	12	13	14	15
错误说明	CH5 转换异常	CH6 转换异常	系统保留	系统保留

■ 温度/数字特性曲线

摄氏 (华) 氏温度量测模式：



铂电阻	输入温度范围		数字转换范围	
	°C (Min. / Max.)	°F (Min. / Max.)	°C (Min. / Max.)	°F (Min. / Max.)
Pt100	-180 ~ 800°C	-292 ~ 1,472°F	K-1,800 ~ K8,000	K-2,920 ~ K14,720
Ni100	-80 ~ 170°C	-112 ~ 338°F	K-800 ~ K1,700	K-1,120 ~ K3,380
Pt1000	-180 ~ 800°C	-292 ~ 1,472°F	K-1,800 ~ K8,000	K-2,920 ~ K14,720
Ni1000	-80 ~ 170°C	-112 ~ 338°F	K-800 ~ K1,700	K-1,120 ~ K3,380
LG-Ni1000	-60 ~ 200°C	-76 ~ 392°F	K-600 ~ K2,000	K-760 ~ K3,920
Cu100	-50 ~ 150°C	-58 ~ 302°F	K-500 ~ K1,500	K-580 ~ K3,020
Cu50	-50 ~ 150°C	-58 ~ 302°F	K-500 ~ K1,500	K-580 ~ K3,020

Delta DVP serisi PLC'leri seçtiğiniz için teşekkürler. DVP04/06PT-S modülüne 4/6 adet RTD sıcaklık sensörü bağlanabilir ve 16-bit dijital değere çevirir. Ayrıca DVP PLC CPU'da FROM/TO komutları kullanılarak modülünün içine veri yazılabilir veya okunabilir. Modüllerin içinde çok adet 16-bit kontrol register (CR) vardır. Ürünün beslemesi ayrı olup küçük boyutlu ve kurulumu kolaydır.

- ✓ DVP04/06PT-S ürünü AÇIK TİP bir aygıt olup toz, rutubet, elektrik şoku ve titreşimden uzak kapalı yerlerde muhafaza edilmelidir. Yanlış kullanım sonucu DVP04/06PT-S ürününün zarar görmesini önlemek için yetkili olmayan kişiler tarafından DVP04/06PT-S ürününe müdahale edilmesini önleyecek koruyucu önlemler alınmalıdır. (DVP04/06PT-S ürününün bulunduğu panoya kilit konulması gibi).
- ✓ Ürünün I/O terminallerine AC power bağlamayınız, aksi halde ürün zarar görebilir. DVP04/06PT-S ürününe enerji vermeden önce bağlantıları kontrol ediniz. DVP04/06PT-S ürününün enerjisi kesildikten sonra 1dk boyunca terminallere dokunmayınız. Elektromanyetik gürültüyü engellemek için, DVP04/06PT-S ürününün topraklama terminalinin (⊕) topraklamasının doğru olduğuna emin olunuz.

■ Ürün Görünüşü & Ölçüler

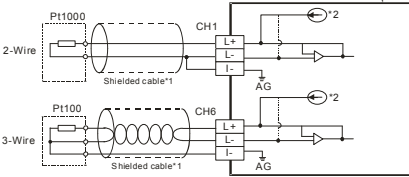
Lütfen sayfa 1'de (Şekil 1)'ye bakınız., Birim: mm.

1. Durum indikatör (POWER, RUN ve ERROR)	2. Model adı	3. DIN ray klipsi
4. I/O terminaller	5. I/O nokta indikatör	6. Montaj delikleri
7. Ürün Özellik Etiketi	8. I/O modul bağlantı portu	9. I/O modul klipsi
10. DIN ray (35mm)	11. I/O modul klipsi	12. RS-485 haberleşme portu (DVP04PT-S)
13. Power bağlantı portu (DVP04PT-S)	14. I/O bağlantı portu	

■ I/O Terminal Yerleşimi

Lütfen İngilizce versiyonu için sayfa 1 'ye bakınız.

■ Harici Bağlantı



- Not 1:** Ürüne giriş bağlantısı yaparken sıcaklık sensörünün orijinal kablolarını kullanınız ve bu kabloları gürültüden etkilenmemesi için güç kablolarından uzak tutunuz.
- Not 2:** 3-kablolu RTD sensör kablo direncini çıkarmak için bir kompanzasyon döngüsü sağlar. 2-kablolu sensör bu kompanzasyon mekanizmasına sahip değildir.
- Not 3:** Eğer gürültü varsa, ekran kablolarını sistem toprağına bağlayınız ve sistem toprağına topraklayınız veya dağıtım panosunun toprak terminaline bağlayınız.
- Not 4:** Lütfen sensör bağlantılarını sıcaklığı ölçülecek aygıtta mümkün olduğunca yakın tutunuz ve elektriksel gürültü etkileşimini azaltmak için yüke bağlanan güç kablolarını mümkün olduğunca uzak tutunuz.
- Not 5:** Lütfen güç kaynağı üzerindeki (⊕) terminali ile sıcaklık modülü üzerindeki (⊕) terminali sistem toprağına bağlayınız ve sonra sistem toprağına topraklayınız veya dağıtım panosunun sistem toprağına bağlayınız.

■ Elektriksel Özellikler

Max. güç tüketim oranı	2W
Çalışma/saklama	Çalışma: 0°C~55°C (sıcaklık), 5~95% (rutubet), kirlenme derecesi 2 Saklama: -25°C~70°C (sıcaklık), 5~95% (rutubet)
Titreşim/şok direnci	Uluslararası standartlar: IEC61131-2, IEC 68-2-6 (TEST Fc)/ IEC61131-2 & IEC 68-2-27 (TEST Ea)
DVP-PLC MPU'ya seri bağlantı	Modül CPU'ya bağlandığında uzaklığına göre sırasıyla otomatik olarak 0 - 7 arası numaralandırılır. En yakın modülün numarası "0" ve en uzaktaki modülün numarası "7" dir. Maksimum 8 adet özel modül bağlanabilir ve dijital I/O işgal etmezler.

■ Fonksiyonel Özellikler

DVP06PT-S	Celsius (°C)	Fahrenheit (°F)
Analog giriş kanalı	Modül başına 6 kanal	
Sensors tipi	2-telli/3-telli Pt100 / Pt1000 3850 PPM/°C (DIN 43760 JIS C1604-1989) / Ni100 / Ni1000 / LG-Ni1000 / Cu100 / Cu50	
Akım uyarıtım	1.53mA / 204.8uA	
Sıcaklık giriş aralığı	Lütfen sıcaklık/dijital değer karakteristik eğrisini inceleyiniz.	
Dijital dönüşüm aralığı	Lütfen sıcaklık/dijital değer karakteristik eğrisini inceleyiniz.	
Çözünürlük	16 bit (0.1°C)	16 bit (0.1°F)
Genel doğruluk	±0.6% tam skala 0 ~ 55°C (32 ~ 131°F)'de	
Cevap zamanı	DVP04PT-S: 200ms/kanal; DVP06PT-S: 160/ms/kanal	
İzolasyon metodu	Digital ve analog devreler arasında izolasyon mevcut. Kanallar arası izolasyon yok. 500VDC Dijital devreler ve Toprak (Ground) arasında 500VDC Analog devreler ve Toprak (Ground) arasında 500VDC Analog devreler ve Dijital devreler arasında 500VDC 24VDC ve Toprak (Ground) arasında	
Dijital data formatı	16-bit, 2'nin komplementi	
Ortalama fonksiyonu	Mevcut (DVP04PT-S: CR#2 ~ CR#5 / DVP06PT-S: CR#2)	
Self diagnostic fonksiyonu	Her kanal üst/alt limit algılama fonksiyonuna sahiptir.	
RS-485 Haberleşme Modu	Desteklenir. ASCII/RTU mod. Varsayılan haberleşme formatı: 9600, 7, E, 1, ASCII; haberleşme formatı detayları için CR#32 bakınız. Not1: PLC CPU'suna bağlandığında RS-485 kullanılamaz. Not2: Haberleşme formatı sadece RS-485 aracılığı ile değiştirilebilir ve PLC CPU'suna bağlı iken TO komutu ile değiştirilemez. Haberleşme formatı ayar hakkında daha fazla bilgi için DVP programlama manueli ek bölümüne bakınız.	

■ Kontrol Register

1. CR#30 hata kodu (error code) register. Aşağıdaki tabloyu inceleyiniz:

CR#	Adres	Kalıcı	Özellik	Register içeriği	Açıklama																																												
#0	H'4064	O	R	Model adı (Sistemden ayarlıdır)	DVP04PT-S model kod= H'8A DVP06PT-S model kod= H'CA																																												
#1	H'4065	X	R/W	CH1~CH4 Mod ayarı	<table border="1"> <thead> <tr> <th>b15~12</th> <th>b11~8</th> <th>b7~4</th> <th>b3~0</th> </tr> <tr> <th>CH4</th> <th>CH3</th> <th>CH2</th> <th>CH1</th> </tr> </thead> <tbody> <tr> <td colspan="4">Örneğin CH1 için (b3,b2,b1,b0)</td> </tr> <tr> <td colspan="4">9. (0,0,0,0): Pt100 (default)</td> </tr> <tr> <td colspan="4">10. (0,0,0,1): Ni100</td> </tr> <tr> <td colspan="4">11. (0,0,1,0): Pt1000</td> </tr> <tr> <td colspan="4">12. (0,0,1,1): Ni1000</td> </tr> <tr> <td colspan="4">13. (0,1,0,0): LG-Ni1000</td> </tr> <tr> <td colspan="4">14. (0,1,0,1): Cu100</td> </tr> <tr> <td colspan="4">15. (0,1,0,0): Cu50</td> </tr> <tr> <td colspan="4">16. (1,1,1,1): Bu kanal pasif.</td> </tr> </tbody> </table>	b15~12	b11~8	b7~4	b3~0	CH4	CH3	CH2	CH1	Örneğin CH1 için (b3,b2,b1,b0)				9. (0,0,0,0): Pt100 (default)				10. (0,0,0,1): Ni100				11. (0,0,1,0): Pt1000				12. (0,0,1,1): Ni1000				13. (0,1,0,0): LG-Ni1000				14. (0,1,0,1): Cu100				15. (0,1,0,0): Cu50				16. (1,1,1,1): Bu kanal pasif.			
					b15~12	b11~8	b7~4	b3~0																																									
CH4	CH3	CH2	CH1																																														
Örneğin CH1 için (b3,b2,b1,b0)																																																	
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14. (0,1,0,1): Cu100																																																	
15. (0,1,0,0): Cu50																																																	
16. (1,1,1,1): Bu kanal pasif.																																																	
#2	H'4066	O	R/W	DVP04PT-S: CH1 ortalama adet	CH1 "Ortalama" sıcaklığın hesaplanmasında kullanılacak okuma adet sayısı. Ayar aralığı: K1~K20. Default ayarı K10.																																												
	--			DVP06PT-S: CH1~CH6 ortalama adet	CH1 ~ 6 "Ortalama" sıcaklığın hesaplanmasında kullanılacak okuma adet sayısı. Ayar aralığı: K1~K20. Default ayarı K10.																																												
#3	H'4067	O	H'4067	DVP04PT-S: CH2 ortalama adet	CH2 "Ortalama" sıcaklığın hesaplanmasında kullanılacak okuma adet sayısı. Ayar aralığı: K1~K20. Default ayarı K10.																																												
#4	H'4068	O	H'4068	DVP04PT-S: CH3 ortalama adet	CH3 "Ortalama" sıcaklığın hesaplanmasında kullanılacak okuma adet sayısı. Ayar aralığı: K1~K20. Default ayarı K10.																																												

CR#	Adres	Kalıcı	Özellik	Register içeriği	Açıklama
#5	H'4069	O	H'4069	DVP04PT-S: CH4 ortalama adet	CH4 "Ortalama" sıcaklığın hesaplanmasında kullanılacak okuma adet sayısı. Ayar aralığı: K1~K20. Default ayarı K10.
#6	H'406A	X	R	CH1 Ortalama Sıcaklık	DVP04PT-S: CH1 ~ 4 Ortalama Sıcaklık Okuma (Birim: 0.1°C). DVP06PT-S: CH1 ~ 6 Ortalama Sıcaklık Okuma (Birim: 0.1°C).
#7	H'406B	X	R	CH2 Ortalama Sıcaklık	
#8	H'406C	X	R	CH3 Ortalama Sıcaklık	
#9	H'406D	X	R	CH4 Ortalama Sıcaklık	
#10	--	X	R	CH5 Ortalama Sıcaklık	
#11	--	X	R	CH6 Ortalama Sıcaklık	
#12	H'4070	X	R	CH1 Ortalama Sıcaklık	DVP04PT-S: CH1 ~ 4 Ortalama Sıcaklık Okuma (Birim: 0.1°F). DVP06PT-S: CH1 ~ 6 Ortalama Sıcaklık Okuma (Birim: 0.1°F).
#13	H'4071	X	R	CH2 Ortalama Sıcaklık	
#14	H'4072	X	R	CH3 Ortalama Sıcaklık	
#15	H'4073	X	R	CH4 Ortalama Sıcaklık	
#16	--	X	R	CH5 Ortalama Sıcaklık	
#17	--	X	R	CH6 Ortalama Sıcaklık	
#18	H'4076	X	R	CH1 Mevcut Sıcaklık	DVP04PT-S: CH1 ~ 4 Mevcut Sıcaklık Okuma (Birim: 0.1°C). DVP06PT-S: CH1 ~ 6 Mevcut Sıcaklık Okuma (Birim: 0.1°C).
#19	H'4077	X	R	CH2 Mevcut Sıcaklık	
#20	H'4078	X	R	CH3 Mevcut Sıcaklık	
#21	H'4079	X	R	CH4 Mevcut Sıcaklık	
#22	--	X	R	CH5 Mevcut Sıcaklık	
#23	--	X	R	CH6 Mevcut Sıcaklık	
#24	H'407C	X	R	CH1 Mevcut Sıcaklık	DVP04PT-S: CH1 ~ 4 Mevcut Sıcaklık Okuma (Birim: 0.1°F). DVP06PT-S: CH1 ~ 6 Mevcut Sıcaklık Okuma (Birim: 0.1°F).
#25	H'407D	X	R	CH2 Mevcut Sıcaklık	
#26	H'407E	X	R	CH3 Mevcut Sıcaklık	
#27	H'407F	X	R	CH4 Mevcut Sıcaklık	
#28	--	X	R	CH5 Mevcut Sıcaklık	
#29	--	X	R	CH6 Mevcut Sıcaklık	
#29	H'4081	X	R/W	DVP04PT-S: PID mod ayarı	PID mod için H'5678 olarak ayarlanır. Diğer değerler normal mod. Default ayarı H'0000.
#30	H'4082	X	R	Hata Durumu	Data register hata durumunu kaydeder. Hata kodları bölümünü inceleyiniz.
#31	H'4083	O	R/W	DVP04PT-S: Haberleşme Adresi Ayarı	RS-485 haberleşme adresi ayarı; ayar aralığı: 01~254. Default: K1
	--	X	R/W	DVP06PT-S: CH5~CH6 Mod ayarı	CH5 mod: b0 ~ b3 CH6 mod: b4 ~ b7 Bilgi için CR#1 inceleyiniz.
32	H'4084	O	R/W	DVP04PT-S: Haberleşme hızı ayarı	Haberleşme formatı: ASCII modda iken 7 bit, even bit, 1 stop bit (7, E, 1), RTU modda iken 8 bits, even bit, 1 stop bit (8, E, 1). 6 baud rate: b0: 4,800 bps (bit/sn) b1: 9,600 bps (fabrika ayarı) b2: 19,200 bps (bit/sn) b3: 38,400 bps (bit/sn) b4: 57,600 bps (bit/sn) b5: 115,200 bps (bit/sn) b6 ~ b13: rezerve b14: CRC yüksek ve düşük byte yeri değişimi (Sadece RTU mod) b15: ASCII/RTU seçimi
	--	X	R/W	DVP06PT-S: CH5~CH6 Fabrika ayarlarına reset ve Error LED ayarı	b15~12 b11~9 b8~6 b5~3 b2~0 ERR LED rezerve CH6 CH5 Eğer b2~b0 – 1,0,0 ayarlanırsa, CH5 ayarları fabrika değerine döner. CH5 ve CH6 fabrika ayarına alınmak istenirse b5~b0 H'24 ayarlanmalıdır. b12~13 ON olduğu zaman CH5~6 karşılık gelir, ölçüm aralığı aşıldığı zaman Error LED flash yapar.
#33	H'4085	O	R/W	DVP04PT-S: CH1~CH4	b15~12 b11~9 b8~6 b5~3 b2~0

CR#	Adres	Kalıcı	Özellik	Register içeriği		Açıklama				
				Fabrika ayarlarına reset ve Error LED ayarı		ERR LED	CH4	CH3	CH2	CH1
	--	X	R/W	DVP06PT-S: CH1~CH4 Fabrika ayarlarına reset ve Error LED ayarı		Eğer b2~b0 – 1,0,0 ayarlanırsa, CH1 ayarları fabrika değerine döner. CH1~4 fabrika ayarına alınmak istenirse b11~b0 H'924 ayarlanmalıdır. b12~15 ON olduğu zaman CH1~4 karşılık gelir, ölçüm aralığı aştığı zaman Error LED flash yapar.				
#34	H'4086	O	R	Yazılım versiyonu		Heksadesimal olarak versiyonu gösterir. Ör: H'010A = versiyon 1.0A				

#35 ~ #48 Sistem kullanır

Semboller: **O** kalıcı. **X** kalıcı değil. **R** FROM komutu ile veya RS-485'ten okunabilir data. **W** TO komutu ve RS-485 ile yazılabilir data.

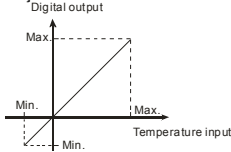
● CR#30 Hata kodu registeri.

Not: Her bir hata kodu bir bite karşılık gelir ve 16-bit binary sayıya çevrilmelidir (Bit0~15). İki veya daha fazla hata aynı anda meydana gelebilir. Lütfen Aşağıdaki tabloyu inceleyiniz.:

Bit numarası	0	1	2	3
Açıklama	Güç kaynağı anormal	Kontak hiçbir yere bağlı değil.	Rezerve	Rezerve
Bit numarası	4	5	6	7
Açıklama	Hardware hatası	Rezerve	Ortalama adet hatası	Komut hatası
Bit numarası	8	9	10	11
Açıklama	CH1 Anormal dönüşüm	CH2 Anormal dönüşüm	CH3 Anormal dönüşüm	CH4 Anormal dönüşüm
Bit numarası	12	13	14	15
Açıklama	CH5 Anormal dönüşüm	CH6 Anormal dönüşüm	Rezerve	Rezerve

■ Sıcaklık/Dijital Değer Karakteristik Eğrisi

Santigrat (Fahrenheit) sıcaklık ölçme modu:



Platinyum rezistör	Sıcaklık aralığı		Dijital değer dönüşüm aralığı	
	°C (Min./Max.)	°F (Min./Max.)	°C (Min./Max.)	°F (Min./Max.)
Pt100	-180 ~ 800°C	-292 ~ 1,472°F	K-1,800 ~ K8,000	K-2,920 ~ K14,720
Ni100	-80 ~ 170°C	-112 ~ 338°F	K-800 ~ K1,700	K-1,120 ~ K3,380
Pt1000	-180 ~ 800°C	-292 ~ 1,472°F	K-1,800 ~ K8,000	K-2,920 ~ K14,720
Ni1000	-80 ~ 170°C	-112 ~ 338°F	K-800 ~ K1,700	K-1,120 ~ K3,380
LG-Ni1000	-60 ~ 200°C	-76 ~ 392°F	K-600 ~ K2,000	K-760 ~ K3,920
Cu100	-50 ~ 150°C	-58 ~ 302°F	K-500 ~ K1,500	K-580 ~ K3,020
Cu50	-50 ~ 150°C	-58 ~ 302°F	K-500 ~ K1,500	K-580 ~ K3,020

TÜRKİYE
İTHALATÇI FİRMA

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