

# TP04G-AS2

## Instruction Sheet

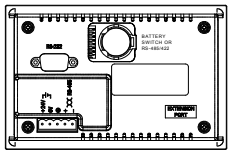
## 安裝說明

Text Panels  
文本顯示器系列  
文本文显示器系列



Panel component	Explanation
Function keys	F3/F8: It is used to be constant 3 (F3) and 8 (Shift+F3) when it is in the system menu, the user can use it to define functions separately when they are in user page. F4/F9: It is used to be constant 4 (F4) and 9 (Shift+F4) when it is in the system menu, the user can use it to define functions separately when they are in user page.

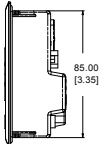
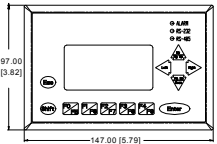
### Back Panel



5 PIN terminal/Wire gauge: 12-24 AWG/Torque: 4.5 lb.-inch

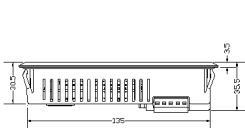
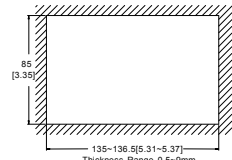
### Dimension

Front panel (unit: mm [inch])      Right side diagram (unit: mm [inch])



Mounting dimension (unit: mm [inch])

Vertical view (unit: mm)

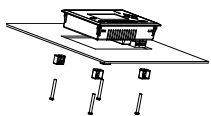


### Installation

Please insert TP04 series to the opening hole of panel and tighten the screws. However, if a firm mounting TP04 series to the panel is needed, please use the mounting fixed support accessory which is packed together with TP04 series, then insert the fixed support in the back and tighten the screws.

△ If the fixed support is not installed well, Delta will not guarantee the waterproof function. The screw torque should be 4-5(kg-cm). DO NOT exceed this specification when tightening the screws; otherwise TP04 series may be damaged.

Notes: The flat surface should be a UL Type 4 "Indoor Use Only" enclosure or equivalent (IP65/NEMA4). Please refer to the figures below.



## Warning

EN TP04G-AS2 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 TP04G-AS2, or to prevent an accident from damaging TP04G-AS2, the control cabinet in which TP04G-AS2 is installed should be equipped with a safeguard. For example, the control cabinet in which TP04G-AS2 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 TP04G-AS2 is powered up. After TP04G-AS2 is disconnected, Do NOT touch any terminals in a minute. Make sure that the ground terminal on TP04G-AS2 is correctly grounded in order to prevent electromagnetic interference.

FR TP04G-AS2 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 TP04G-AS2 pourra être endommagé. Merci de vérifier encore une fois le câblage avant la mise sous tension du TP04G-AS2. 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.

## Introduction

### Model Explanation

Thank you for choosing Delta TP Series. TP04G-AS2 has the features of high resolution 128x64 dots and is able to display 8x4 Chinese character. It provides multilingual display and two built-in communication ports, one is for RS-232/RS-422 and the other is for RS-485. RS-232 and RS-485 can be used simultaneously. Besides, it also supports built-in RTC, communication/alarm LED indicators. The user can purchase program copy card (optional) to copy settings and programs quickly and save download time. Regarding the editing software, there are various objects and images for the user's requirements.

### Product Outline



### Panel Function Explanation

Panel component	Explanation
Alarm LED indicator (RED)	Status 1: When power is on, LED will start to blink slowly Status 2: When there is an abnormal situation, LED will blink quickly along with an alarm sound.
RS-232 LED indicator (yellow)	LED will blink when transmits program and communicates via RS-232.
RS-485/RS-422 LED indicator (green)	LED will blink when communicates via RS-485/RS-422.
Displaying area	Liquid Crystal Module display area. It is used to display current program status.
Escape/Exit key	It is used to cancel an incorrect input, or to exit a programming step.
Shift key	It is used to select function keys F0 ~ F9 and other keys for special function. UP/Pg Up: It is used to increase the value or move up one page. Pg Dn/DOWN: It is used to decrease the value or move down one page. Left: This key is left direction key and it can be used to select the position of the value. Right: This key is right direction key and it can be used to select the position of the value.
Arrow keys	
Enter key	It is used to input a value or accept a programming command. F0/F5: It is used to be constant 0 (F0) and 5 (Shift+F0) when it is in the system menu, the user can use it to define functions separately when they are in user page.
Function keys	F1/F6: It is used to be constant 1 (F1) and 6 (Shift+F1) when it is in the system menu, the user can use it to define functions separately when they are in user page. F2/F7: It is used to be constant 2 (F2) and 7 (Shift+F2) when it is in the system menu, the user can use it to define functions separately when they are in user page.

## Password Function

- If the user forgot the password, the password can be cleared by using the following code: **8888**. This universal code will clear the password and all TP04 series internal programs. The TP04 series will be reset to the factory settings by using this code also. Please pay close attention when using it.
- The password can be the alphabet from A to Z or the number from 0 to 9. But it must use the function keys F0 ~ F9 to input the password characters. Please refer to the following table.  
F0/F5: Scrolls in a loop as follows 0→5→A→B→C→D→E→F→0  
F1/F6: Scrolls in a loop as follows 1→6→G→H→I→J→K→1  
F2/F7: Scrolls in a loop as follows 2→7→L→M→N→O→P→2  
F3/F8: Scrolls in a loop as follows 3→8→Q→R→S→T→U→V→3  
F4/F9: Scrolls in a loop as follows 4→9→W→X→Y→Z→4

## Hardware Operation

When the user wants to startup TP04 series, a 24V DC power is needed. After applying 24V DC power to TP04 series, it will enter into the startup display and then enter the user-designed program. Pressing Esc key and holding on for 5 seconds can return to system menu. There are five selections in the system menu and are described below.

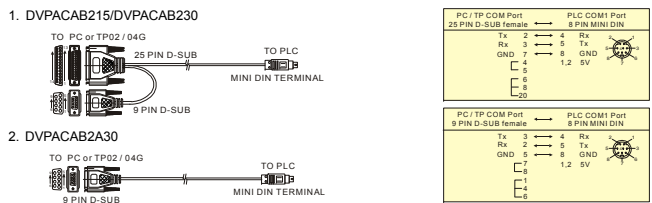
Selections	Explanation
Download program	Use the connection cable (DVPACAB530) to connect the TP04 serial communication port RS-232 to a PC. Then use the TPEditor software to download an application program to TP04.
Upload program	Use the connection cable (DVPACAB530) to connect the TP04 serial communication port RS-232 to a PC. Then use the TPEditor software to upload an application program from TP04.
Copy program	Transfer a program between two TP04 units. 1: transmit programs. 2: receive programs When transmit programs and data between two TP04 units. Set one TP04 to "Receive Program" mode and the other TP04 to "Transmit Program" mode. Please use twisted pair wires to connect the two units via the RS-485 ports.
TP04 settings	There are 9 items that used to modify TP04 system settings: 1. Communication protocol: Setting the address of TP04, the control port of PLC, and the communication string for either RS-232 or RS-485. 2. Contrast: Adjust the contrast of LCM display screen. 3. Back-light: adjust the automatic turn off time of LCM. Setting range is 00 ~ 99 minutes. If set to 00, the LCM Back-light will not turn off. 4. Date and Time: It is used to set the TP04 built-in RTC including year, month, day, hour, minute, second and week. Also the internal battery capacity display is shown here. 5. Buzzer: Used to set the buzzer sound, normal mode or quiet mode. 6. Language Setting: Used to set the displayed language. English, Traditional Chinese, Simplified Chinese or user defined language. 7. Password setting: Used to set, enable, and disable the password function. If the password function is enabled, it will require the user to input a password before entering any system menu. The factory password is <b>1234</b> . 8. Startup display: Used to select the TP04 startup display. User can select "user defined" to use the file that designed by TPEditor and download to TP04. 9. Comm. indicator: The user can determine if the RS-232 and RS-485 LEDs will blink or not during communication.
PLC connection	There are three methods to connect to PLC: 1. Using TP04 serial communication port (COM1) RS-232: set 8-pin DIP switch to RS-485 mode and connect the cable (DVPACAB215 or DVPACAB230) to program communication I/O RS-232C of PLC. 2. Using extension communication port (COM2): set 8-pin DIP switch to RS-485 mode and connect 5-pin removal terminal of extension communication port to RS-485 of PLC with twisted pair. 3. Using extension communication port (COM2): set 8-pin DIP switch to RS-422 mode and connect four pins (6, 7, 8, 9) of 9 PIN D-SUB male to RS-422 of PLC with 4-wire cable.
Execution	Execute the internal program that download from TPEditor or transmitted from other TP04 units. When program is in execution, the user can return to system menu by pressing Escape/Exit (Esc) key for 5 seconds.

## Communication Connection

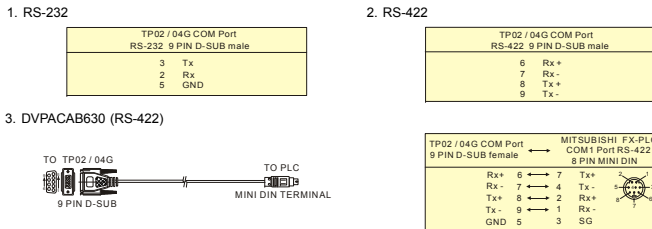
### TP04G may connect to a PC by using connection cable DVPACAB515



### TP04G may connect to a DVP-PLC by using connection cable DVPACAB215/DVPACAB230/DVPACAB2A30



### The Pin definition of 9 PIN D-SUB



### Switch between RS-422/RS-485 (by using 8-PIN DIP switch)

8-PIN DIP switch	RS-485	RS-422
SW1 ~ SW4	On	Off
SW5 ~ SW8	Off	On

## Battery Life and Precision of Calendar Timer

### Battery Life

Temperature (°C)	-20	0	20	60
Life (Year)	1,972	2,466	2,712	2,835

### Precision of Calendar Timer

- At 0°C/32°F, less than -117 seconds error per month.
- At 25°C/77°F, less than 52 seconds error per month.
- At 55°C/131°F, less than -132 seconds error per month.

## 注意事項

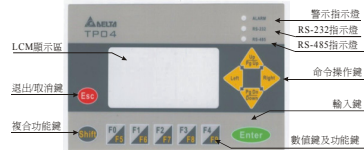
- 請在使用之前，詳細閱讀本使用說明書。
- 實施配線，務必關閉電源。
- 本機顯示操作面板防水，但對油污或具腐蝕性之液體不具防護作用，避免以尖銳之物品刮傷面板使用時請注意。
- 本機輸入電源為直流 24V，不可連接於 RS-485 通訊口信號端，否則可能造成嚴重的損壞，因此請在上電之前再次確認電源配線。
- 輸入電源切斷後，一分鐘之內，請勿觸摸內部電路。請勿在上電時觸摸任何端子。
- 本體上之接地端子務必正確的接地，可提高產品抗雜訊能力。
- 利用原廠包裝附件之固定架，鎖緊面板固定螺絲時，請勿太緊以免造成機殼損壞。

## 產品簡介

### 型號說明

- 謝謝您採用台達終端顯示器系列產品。TP04G-AS2，解析度 128\*64，最大可顯示 8\*4 個中文字，支援多國文字顯示。
- 內建兩個通訊口 (RS-232 及 RS-485/RS-422，可同時使用)。
- 內建萬年曆、通訊/警告指示 LED。
- 可外接程式複製單元，快速移植程式，節省程式下載時間。
- 內建多種物件圖形可供使用者選用。

### 產品外觀及各部介紹

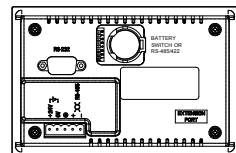


### 面板功能說明

面板元件	說明
警示指示燈 (紅燈)	狀態一：當啟動電源時，指示燈慢慢開始閃爍。 狀態二：當異常狀態發生，指示燈會重複持續亮一秒並發出警報聲。
RS-232 指示燈 (黃燈)	傳送程式及使用 RS-232 通訊時持續閃爍。
RS-485/RS-422 指示燈 (綠燈)	使用 RS-485/RS-422 通訊時持續閃爍。
LCM 顯示區	液晶顯示模組，顯示目前程式狀態。
退出取消鍵	進入系統選單或輸入值錯誤時可按此鍵，刪除文字敘述等。 UP/Pg Up: 此鍵為向上方向鍵，可作為數值遞增輸入或換至上頁等操作。 Pg Dn/DOWN: 此鍵為向下方向鍵，可作為數值遞減輸入或換至下頁等操作。 Left: 此鍵為左方向鍵，可作為選擇數值位置操作。 Right: 此鍵為右方向鍵，可作為選擇數值位置操作。
命令操作鍵	此鍵是搭配功能鍵 F0 ~ F9 及其他按鍵作為特殊功能的使用。
複合功能鍵	當輸入值確認正確無誤時，即可按下此鍵。
輸入鍵	F0/F5: 在系統選單操作時可作為 0 (F0) 或 5 (Shift+F0) 的常數輸入鍵，在使用者頁面時可由使用者定義其個別功能。 F1/F6: 在系統選單操作時可作為 1 (F1) 或 6 (Shift+F1) 的常數輸入鍵，在使用者頁面時可由使用者定義其個別功能。
功能鍵	F2/F7: 在系統選單操作時可作為 2 (F2) 或 7 (Shift+F2) 的常數輸入鍵，在使用者頁面時可由使用者定義其個別功能。

面板元件	說明
F3/F8:	在系統選單操作時可作為 3 (F3) 或 8 (Shift+F3) 的常數輸入鍵，在使用者頁面時可由使用者定義其個別功能。
F4/F9:	在系統選單操作時可作為 4 (F4) 或 9 (Shift+F4) 的常數輸入鍵，在使用者頁面時可由使用者定義其個別功能。

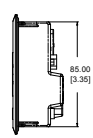
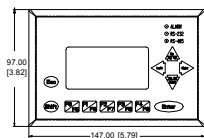
### 背面介紹



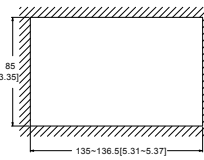
5 PIN 端子座 / 線徑: 12-24 AWG / 扭力: 4.5 lb.-inch

### 外觀尺寸

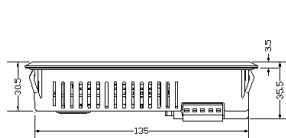
正面圖 (單位: mm, [ ]: inch)      右側圖 (單位: mm, [ ]: inch)



嵌入開孔尺寸 (單位: mm, [ ]: inch)



俯視圖 (單位: mm)



### 安裝方法

人機介面安裝於控制盤的方法，請直接將人機由盤面的正面直接放入即可 (嵌入式)，若要固定更牢固，可再利用原廠包裝附件之固定架，嵌入後蓋直接四端凹槽處固定，並上、下平均鎖緊面板固定螺絲即可，如下圖為正確安裝：(△ 固定螺絲時請以扭力: 4-5 (kg-cm) 鎖緊，請勿超過此範圍以免破壞面板)

注意：該安裝的平面必須是要適用 Type 4 室內使用或相等條件的配電盤外殼。

