

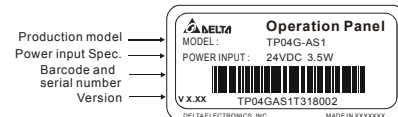
Operation Interface Panels Series

TP04G-AS1 Instruction Sheet

Warning

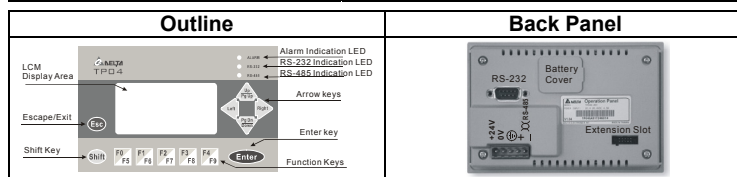
- Always read this manual thoroughly before using the TP04G.
- DANGER!** DC input power must be OFF before any maintenance. Do not connect or remove wires and connectors while power up to the circuit. Only the qualified technicians are allowed to do the maintenance.
- The display panel of the TP04G is waterproof. But please keep away grease, corrosive liquids or sharp objects from contacting the TP04G.
- DANGER!** The TP04G requires 24VDC input power. The 24VDC input power should not be connected to the RS-485 communication port. The unit may be destroyed and can't be repaired if the input power is incorrectly applied. Please confirm the input power wiring is correct before power up.
- DANGER!** An electrical charge will remain on the DC-link capacitors for 1 minute after power has been removed. This residual power may be hazardous and the TP04G should not be worked on until this charge has dissipated. To prevent personal injury, do not conduct any wiring or investigation on the TP04G until 1 minute after power off.
- CAUTION!** Always ground the TP04G using the grounding terminal. Not only will this act as a safety, but help to filter out electrical noise. The grounding method must comply with the laws of the country where the unit is to be installed.
- CAUTION!** If you turn the fixed support that is packaged together with TP04G too tight, TP04G may be damaged.

Nameplate

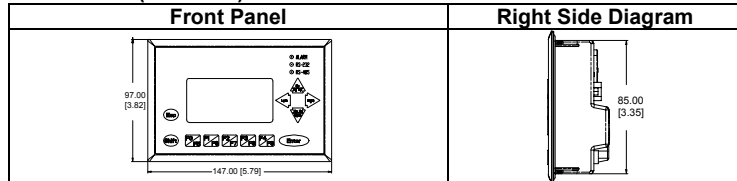


Note: The words of "MADE IN XXXXX" will be different due to the manufacturing location.

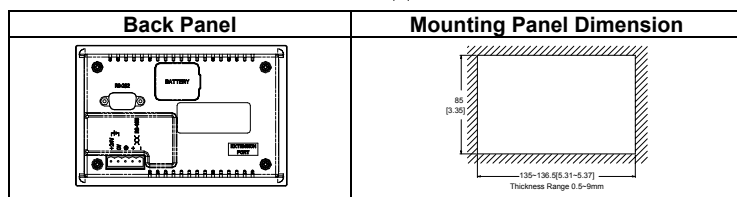
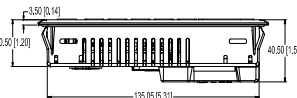
Model Explanation	Serial Number Explanation
TP 04 G - AS 1 TP: TP04G 04: Reserved G: Graphic mode AS: LCD Spec. 1: Series name	TP04GAS11318002 TP: TP04G 04: Reserved AS: LCD Spec. 1: Series name 1: Production serial number 3: Production weeks 18: Production year (2003) 002: Production factory Version Production model



Dimensions (Unit: mm)



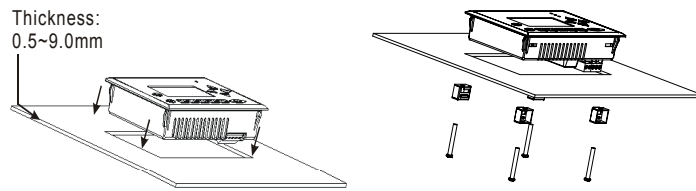
Vertical View



Installation Method

One easy way is insert TP04G to the opening hole of panel and tight up the screws. However, if a firm mounting TP04G to the panel is needed, please use the fixed support accessory which is packed together with TP04G, then infix the fixed support in the back and tight up the screws.

If you turn the screw exceeds torque: 4-5(kg-cm), TP04G may be damaged.



Panel Function

Component	Explanation
Alarm Indication LED	Status 1: When power is on, the LED will flash slowly. Status 2: When there is an abnormal situation, the LED will flash quickly along with an alarm sound.
RS-232 Indication LED (Yellow)	Will flash when transmitting program and communicating by using RS-232.
RS-485 Indication LED (Green)	Will flash when communicating by using RS-485.
LCM display Area	Liquid Crystal Module display area.
Esc (Escape/Exit)	Used to cancel an incorrect input, or to Exit a programming step.
Arrow Keys	UP/Pg Up: Used to increase the value or move screen one page up. Pg Dn/DOWN: Used to decrease the value or move screen one page down. Left: Left direction key. (move cursor to left) Right: Right direction key. (move cursor to right)
Shift Key	Used to select keys F5, F6, F7, F8, F9.
Function Keys	F0/F5: used to be a constant 0 (F0), or 5 (Shift + F0) when they are in system menu. User can define the functions separately when they are in user page. F1/F6: used to be a constant 1 (F1), or 6 (Shift + F1) when they are in system menu. User can define the functions separately when they are in user page. F2/F7: used to be a constant 2 (F2), or 7 (Shift + F2) when they are in system menu. User can define the functions separately when they are in user page. F3/F8: used to be a constant 3 (F3), or 8 (Shift + F3) when they are in system menu. User can define the functions separately when they are in user page. F4/F9: used to be a constant 4 (F4), or 9 (Shift + F4) when they are in system menu. User can define the functions separately when they are in user page.
Enter key	Used to input a value or accept a programming command.

Electrical Specification

ITEM	MODEL	TP04G-AS1
Function Key/Digital Key	F0~F4, ESC, SHIFT, ENTER and ARROW keys	
External Input Power	24V (3.5W Max.)	
Memory Capacity	256K Byte	
CPU	16 bits	
RAM of System	32K Byte	
Communication Interface	Com1: RS-232 and Com2: RS-485	
Waterproof Class of Front Panel	IP65/NEMA4	
Temperature for Hardware	0~50°C, relative humidity 20-90% RH (non-condensing)	
Storage Temperature of Hardware	-20~60°C	
Vibration	0.5mm displacement, 10-55Hz, X, Y, Z three directions and two hours for each direction	
Impact	10G, 11ms, from X, Y, Z three directions and three times for each direction	
Radiated Emission	CISPR22, Class A	
Electrostatic Discharge Immunity	EN61000-4-2/1995	
Radiated Immunity	EN61000-4-3/1995	
Electrical Fast Transient	EN61000-4-4/1995	
Weight / Dimension	0.24kg / 147*97*35.5mm (Weight(W)*Height(H)*Deep(D))	
Cooling Method	Natural air-cooling	

The Function of Program Copy Card

Function of program copy card TP04G provides to copy user program, system function and passwords is different from the regular copy program. It is used to copy the whole HMI environment settings and application programs to another HMI rapidly. It saves time and manpower. The operation is as follows.

Definition: program copy card → PCC, TP Series → TP.

Step	Copy HMI program to PCC (TP→PCC)	Copy program in PCC to HMI (PCC→TP)
1	Turn the switch on the PCC to TP→PCC	Turn the switch on the PCC to PCC→TP
2	Insert the PCC into the extension slot of TP	Insert the PCC into the extension slot of TP
3	Input the power to TP	Input the power to TP
4	It will display "remove PCC" on the screen and power on again	It will display "remove PCC" on the screen and power on again

HMI Display Message

Copy HMI program to PCC (TP→PCC)	Copy PCC program to HMI (PCC→TP)
If the model type of TP does not correspond with the model type of program of PCC, TP will display "TP series and PCC is different Press Enter to Confirm TP series→PCC Press Esc to Exit".	If there is no program in PCC, TP will display "The PCC is Empty PCC→TP series is illegal".
TP will display "TP →PCC series Please wait !" during transmission.	TP will display "PCC→TP series Please wait !" during transmission.
TP will display "Please Remove the PCC and Reboot" when completing transmitting.	TP will display "Please Remove the PCC and Reboot" when completing transmitting.

Hardware Operation

The steps to Startup the TP04G:

- Connect power line,
- Apply 24V DC power,
- Enter into the startup display,
- Enter the user-designed program
- Press ESC key and hold on for 5 seconds to return to system menu.

There are five selections in the system menu and are described below.

Download Program	Use the connection cable (DVPACAB530) to connect the serial communication port RS-232 of TP04 to a PC. Then use the TPEdit software to download an application program to the TP04.
Upload Program	Use the connection cable (DVPACAB530) to connect the serial communication port RS-232 of TP04 to a PC. Then use the TPEdit software to upload an application program from the TP04.
Copy Program	Transfer a program between two TP04 units. 1: transmit programs 2: receive programs When transmitting 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 8 items that used to modify TP04 system settings: 1. Communication protocol: Setting the address of TP04, the control port, 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. Factory setting is 01, setting range is 00~99 seconds. 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, user then needs to input a password before the system menu may be accessed. The factory password is 1234. 8. Startup display: Used to select the TP04 startup display.
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Execution	Execute the internal program. When entering execution program, you can return to system menu by pressing Escape/Exit (Esc) key for 5 seconds.
PLC Connection	There are two methods to connect to PLC: 1. Use the connection cable (DVPACAB215 or DVPACAB230) to connect program communication I/O RS-232C of PLC to serial communication port (COM1) RS-232 of TP04. 2. Use twisted cable to connect RS-485 of PLC to extension communication port (COM2) RS-485.

Password Functions

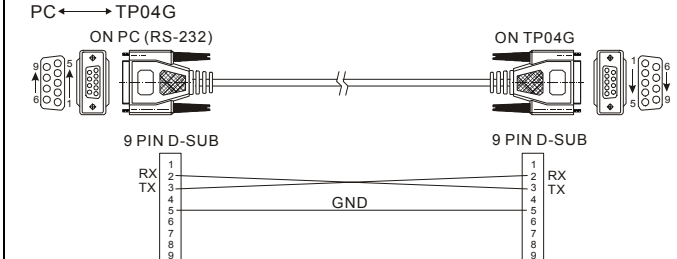
- If user forgot the password, password then can be cleared via using the following code: 8888. This universal code will clear the password and all TP04 internal programs. The TP04 will be reset to the factory settings.
- Users may use 0~9 and A~Z as characters for the password. Users must use the function keys F0~F4 to input the password characters.
F0: scrolls in a loop as follows 0 → 5 → A → B → C → D → E → F → 0
F1: scrolls in a loop as follows 1 → 6 → G → H → I → J → K → 1
F2: scrolls in a loop as follows 2 → 7 → L → M → N → O → P → 2
F3: scrolls in a loop as follows 3 → 8 → Q → R → S → T → U → V → 3
F4: scrolls in a loop as follows 4 → 9 → W → X → Y → Z → 4

Functional Specification

ITEM	MODEL	TP04G-AS1
Screen		STN-LCD
Color		Monochromatic
Back-light		The back-light automatic turn off time is 1~99 minutes (0 = do not to turn off) (back-light life is about 50 thousand hours at 25°C)
Resolution		128X64 dots
Display Range		67 mm (W) X 32 mm (H), 3" diagonal preferred
Contrast Adjustment		10-step contrast adjustment
Language Font		ASCII: characters (including European Fonts) Taiwan: (BIG 5 code) traditional Chinese character font China: (GB2324-80 code) simplified Chinese character font
Font Size(ASCII)		5 X 8, 8 X 8, 8 X 12, 8 X 16
Maximum words x rows, for each font size		5 X 8: 25 words X 8 rows 8 X 8: 16 words X 8 rows 8 X 12: 16 words X 5 rows 8 X 16: 16 words X 4 rows
ALARM Indication LED		1. Power on indication (Flash three times) 2. Flash for communication error or other alarm 3. Special Indication by user programming
RS-232 Indication LED (Yellow)		It will be flashing when transmitting program and communicating by using RS-232.
RS-485 Indication LED (Green)		It will be flashing when communicating by using RS-485.
Program Memory		256KB flash memory
Serial Communication (COM1)		Unsynchronized transmission method: RS-232 Data length: 7 or 8 bits Stop bits: 1or 2 bits Parity: None/Odd/Even Transmission speed: 9600bps~115200bps
Extension Communication port (COM2)		Unsynchronized transmission method: RS-485 Data length: 7 or 8 bits Stop bits: 1 or 2 bits Parity: None/Odd/Even Transmission speed: 9600bps~115200bps
Extension Slot		1. Update program version 2.The slot for program copy card
Battery Cover		DC 3V battery for HMI
5-pin terminal		There are DC 24V input and RS-485 input

Communication Connection

TP04G may connect to a PC by using connection cable DVPACAB530



TP04G may connect to the DVP-PLC by using cable DVPACAB215 (1.5 m) or DVPACAB230 (3.0 m without 25 pin D-SUB).

