DELTA TP02G-AS1 Open Type Device Instructions

Contents

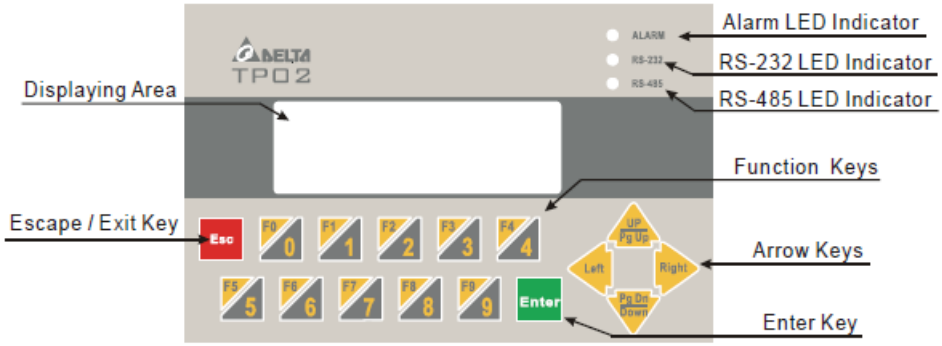
DELTA TP02G-AS1 Open Type Device

Warning

- TP02G-AS1 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 TP02G-AS1, or to prevent an accident from damaging TP02G-AS1, the control cabinet in which TP02G-AS1 is installed should be equipped with a safeguard. For example, the control cabinet in which TP02G-AS1 is installed can be unlocked with a special tool or key.
- DO NOT connect AC power to any of I/O terminals, otherwise serious damage may occur. Please check all wiring again before TP02G-AS1 is powered up. After TP02G-AS1 is disconnected, Do NOT touch any terminals in a minute. Make sure that the ground terminal on TP02G-AS1 is correctly grounded in order to prevent electromagnetic interference.

Introduction

Product Outline



Panel Function Explanation

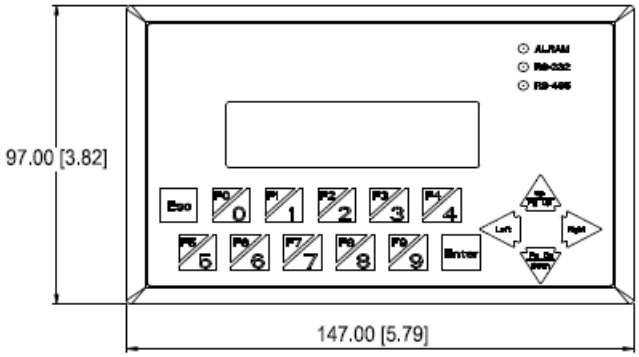
Panel component	Explanation
Alarm LED indicator (RED) RS-232 LED	Status 1: When power is on, LED will blink slowly for three times. Status 2: When there is an abnormal situation, LED will blink quickly along with an alarm sound.
	LED will blink when transmits program and communicates via RS-232.

indicator (yellow) RS-485 LED indicator (green) Displaying area Escape/Exit key Enter key	LED will blink when communicates via RS-485.
	Liquid Crystal Module display area. It is used to display current program status.
	It is used to cancel an incorrect input, or to exit a programming step.
	It is used to input a value or accept a programming command.
Arrow keys	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.
Function keys	F0/0: It is used as a constant 0, or the user can define it as function F0. F1/1: It is used as a constant 1, or the user can define it as function F1. F2/2: It is used as a constant 2, or the user can define it as function F2. F3/3: It is used as a constant 3, or the user can define it as function F3. F4/4: It is used as a constant 4, or the user can define it as function F4. F5/5: It is used as a constant 5, or the user can define it as function F5. F6/6: It is used as a constant 6, or the user can define it as function F6. F7/7: It is used as a constant 7, or the user can define it as function F7. F8/8: It is used as a constant 8, or the user can define it as function F8. F9/9: It is used as a constant 9, or the user can define it as function F9.

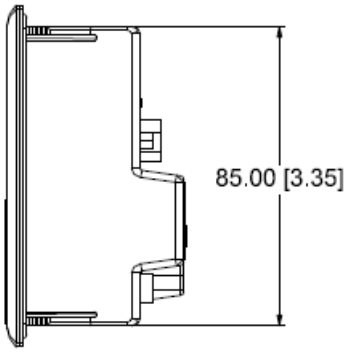
Back Panel

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

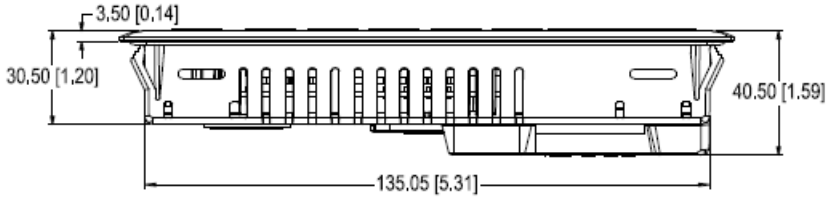
Dimension



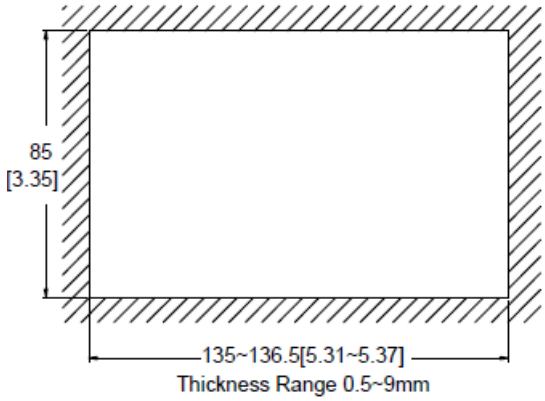
- Front panel (unit: mm [inch])



- Right side diagram (unit: mm [inch])



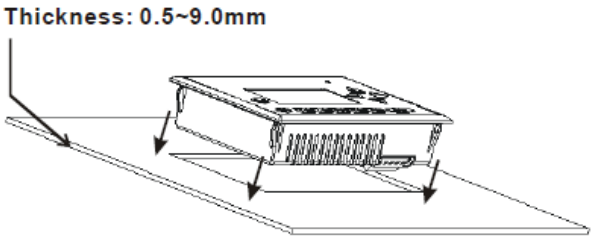
- Vertical view (unit: mm)

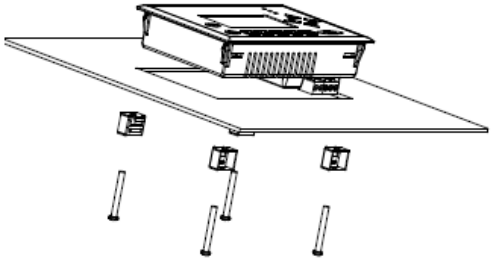


- Mounting dimension (unit: mm [inch])

Installation
Please insert the TP02 series to the opening hole of the panel and tighten the screws. However, if a firm mounting TP02 series to the panel is needed, please use the mounting fixed support accessory which is packed together with TP02 series, then insert the fixed support in the back and tighten the screws.

WARNING
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, TP02 series may be damaged. Please leave sufficient space (more than 50mm) around the unit for heat dissipation. Notes: Only the front panel is guaranteed by an ingress protection rating. The control panel itself must comply with the testing conditions required by the applied ingress protection rating.





Specifications

Function Specifications

Item		TP02G-AS1	
	Screen type	STN-LCD	
	Display color	Monochromatic	
	Backlight	The back-light automatic turn off time is 1 ~ 99 minutes (0 = DO NOT turn off) (The back-light life is about 50 thousand hours at 25°C)	
	Resolution	160 x 32 dots	5×8 dots, 25 characters×8 rows 8×8 dots, 16 characters×8 rows 8×12 dots, 16 characters×5 rows 8×16 dots, 16 characters×4 rows

	Display range	(W) x (H) = 72 x 22 (unit: mm)
Display s creen	Contrast adjustment	15 levels of adjustment
	Language/font	ASCII: Alphanumeric (including European characters) Taiwan: (Big 5 codes) Traditional Chinese Fonts China: (GB2324-80 codes) Simplified Chinese Fonts
	Font size	ASCII: 5 × 8, 8 × 8, 8 × 12, 8 × 16
	Alarm LED indicator (RED)	1. Power on indication (blink for three times) 2. Communication error alarm 3. Special indication by user programming
	RS-232 LED indicator (yellow)	It will blink when transmitting program and communicating by using RS-232.
	RS-485 LED Indicator (green)	It will blink when communicating by using RS-485.
Program memory		256KB flash memory
RAM of system		32K Byte
	Serial communication port RS-232 (COM1)	Unsynchronized transmission method: RS-232 Data length: 7 or 8 bits, Stop bits: 1 or 2 bits Parity: none/odd/even, Transmission speed: 4,800 bps ~115,200 bps RS-232: 9 PIN D-SUB male
External interface	Extension communi cation port RS-485 (COM2)	Unsynchronized transmission method: RS-485 Data length: 7 or 8 bits, Stop bits: 1 or 2 bits Parity: None/Odd/Even, Transmission speed: 4,800 bps ~115,200 bps RS-485: 5 PIN removal terminal
	Extension interface	1. Update firmware version
		2. The slot for program copy card
	5 PIN removal termi nal	Include 24V DC input and RS-485 communication input

Electrical Specifications

Specifications	TP02G-AS1
Communication interface Water proof class of front panel	COM1: RS-232 COM2: RS-485
	IP66 / NEMA4X / UL Type4X (Indoor use only)
Operating temperature for hard ware	0 ~ 50°C; 20 ~ 90%RH (non-condensing)
Storage temperature for hardware	-20 ~ 60°C

Specifications	TP02G-AS1
Vibration	5Hz≦f 9Hz = Continuous: 1.75mm / Occasional: 3.5mm 9Hz≦f≦150Hz = Continuous: 0.5g / Occasional: 1.0g
	15g peak, 11ms duration, half-sine, three shocks in each direction per axis, on 3 mutually perpendicular axes (total of 18 shocks)
Shock	CISPR11, Class A
	EN61000-4-2
Radiated emission	EN61000-4-3
Electrostatic discharge immunity Radiated immunity	EN61000-4-4
Electrical fast transient Altitude Weight/dimensions	0 ~ 2000 meters
	0.24kg; 147 × 97 × 35.5mm (Width(W) × Height(H) × Deep(D))
Cooling method	Natural air cooling

Password Function

1. 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 TP02 series internal programs. The TP02 series will be reset to the factory settings by using this code also. Please pay close attention when using it.
2. 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: scrolls in a loop as follows 0→A→B→C→D→E→F→0.
    - F1: scrolls in a loop as follows 1→G→H→I→J→K→1.
    - F2: scrolls in a loop as follows 2→L→M→N→O→P→2.
    - F3: scrolls in a loop as follows 3→Q→R→S→T→U→ V→3.
    - F4: scrolls in a loop as follows 4→W→X→Y→Z→4.
    - F5: It just can be used to be constant 5.
    - F6: It just can be used to be constant 6.
    - F7: It just can be used to be constant 7.
    - F8: It just can be used to be constant 8.
    - F9: It just can be used to be constant 9.

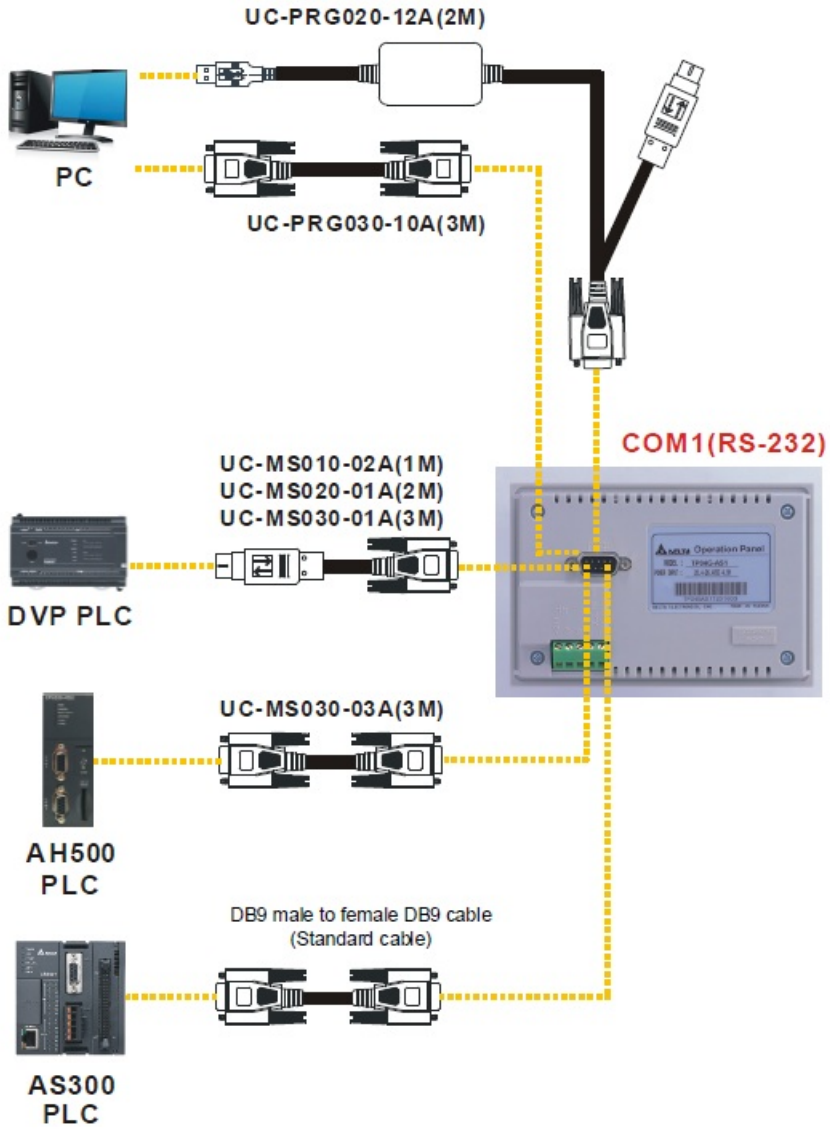
Hardware Operation

When the user wants to startup TP02 series, a 24V DC power is needed. After applying 24V DC power to TP02 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.

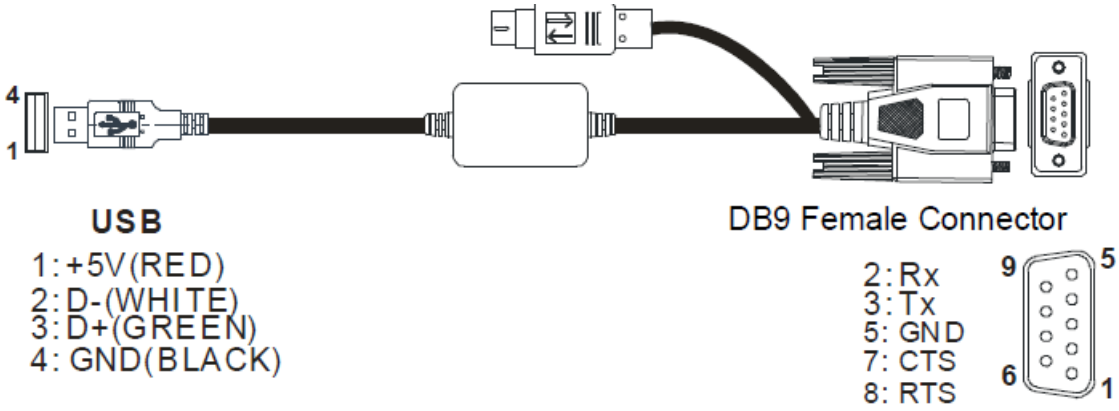
Selections	Explanation
Download program	Use the connection cable (UC-PRG020-12A (2M)) to connect the TP02 serial communication port RS-232 to a PC. Then use the TPEditor/DIAScreen software to download an application program to TP02.
Upload pro gram	Use the connection cable (UC-PRG020-12A (2M)) to connect the TP02 serial communication port RS-232 to a PC. Then use the TPEditor/DIAScreen software to upload an application program fro m TP02.
	Transfer a program between two TP02 units.
Copy progr am	1: transmit programs; 2: receive programs. When transmit programs and data between two TP02 units. Set one TP02 to “Receive Program” mode and the other TP02 to “Transmit Program” mode. Please use twisted pair wires to connect t he two units via the RS-485 ports.
TP02 settings	There are 8 items that used to modify TP02 system settings: 1. Communication protocol: Setting the address of TP02, the control port of PLC, and the communication

Selections	Explanation
	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. Buzzer: Used to set the buzzer sound, normal mode or quiet mode. 5. Language setting: Used to set the displayed language. English, Traditional Chinese, Simplified Chinese or user defined language. 6. Password setting: Used to set, enable, and disable the password function. If the password fun ction is enabled, it will require the user to input a password before entering any system menu. The factory password is 1234. 7. Startup display: Used to select the TP02 startup display. User can select “user defined” to use the file that designed by TPEditor/ DIAScreen and download to TP02. 8. Comm. indicator: The user can determine if the RS-232 and RS-485 LEDs will blink or not duri ng communication.
PLC connection	There are two methods to connect to PLC: 1. Using TP02 serial communication port (COM1) RS-232: set 8-pin DIP switch to RS-485 mod e and connect the cable (UC-MS010-02A(1M)/UC-MS020-01A(2M)/UC-MS030-01A(3M)) to prog ram communication I/O RS-232C of PLC. 2. Using extension communication port (COM2) RS-485: set 8-pin DIP switch to RS-485 mode a nd connect 5-pin removal terminal of extension communication port to RS-485 of PLC with twisted pair.
Execution	Execute the internal program that download from TPEditor/ DIAScreen or transmitted from other T P02 units. When program is in execution, the user can return to system menu by pressing Escape /Exit (Esc) key for 5 seconds.

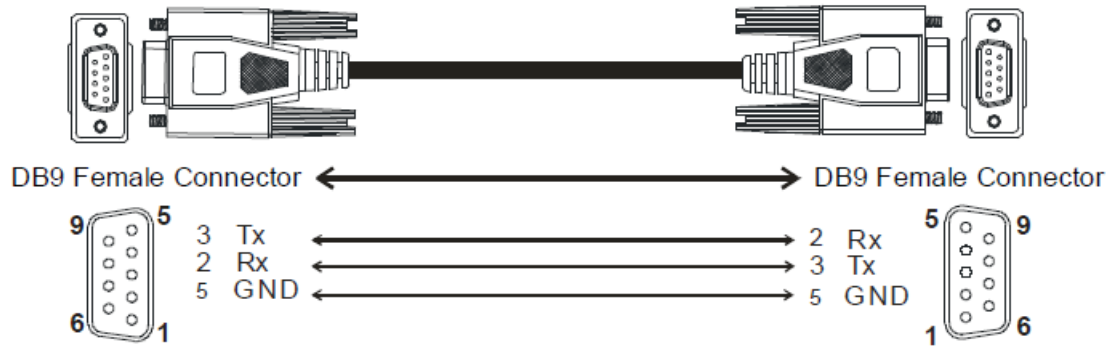
Communication Connection



Connect a PC to TP02G via connection able UC-PRG020-12A (2M) / UC-PRG030-10A(3M)

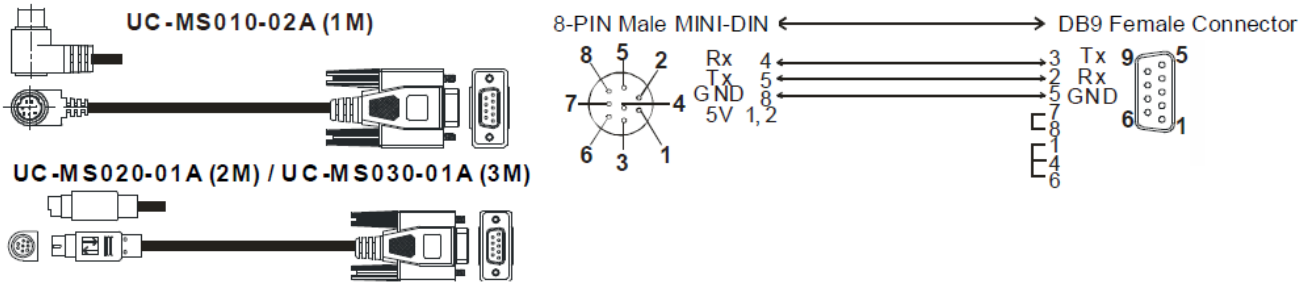


1. UC-PRG020-12A (2M)

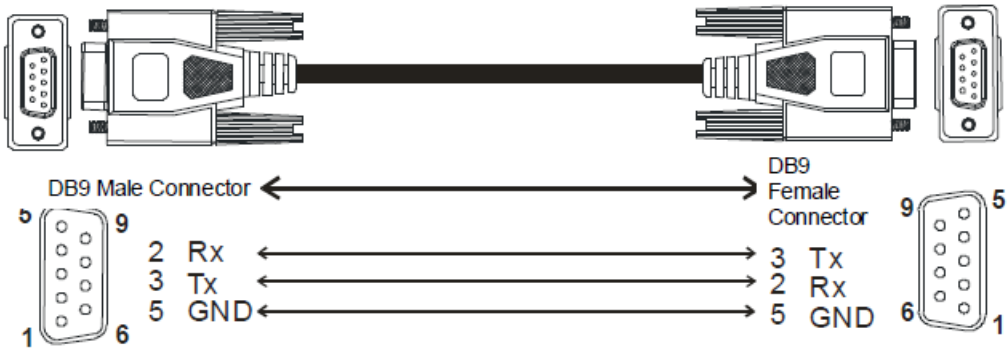


2. UC-PRG030-10A (3M)

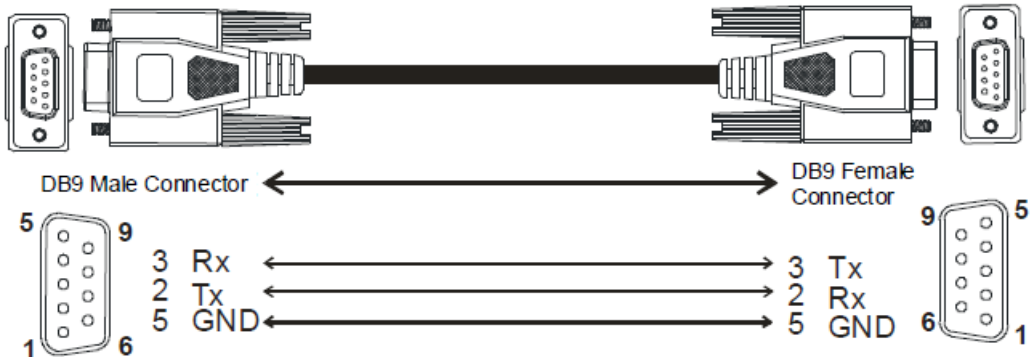
- Connect a DVP-PLC to TP02G via cable UC-MS010-02A(1M)/UC-MS020-01A(2M)/UC-MS030-01A(3M)



- Connect a AH-PLC to TP02G via cable UC-MS030-03A(3M)



- Connect a AS-PLC to TP02G via DB9 (MALE) to DB9 (FEMALE) standard cable



Documents / Resources

	DELTA TP02G-AS1 Open Type Device [pdf] Instructions TP02G-AS1, Open Type Device, TP02G-AS1 Open Type Device, TP02G-AS1 Device