



# *DDPA*

**DELTA *DDPA* Series  
Human Machine Interface**



TermoProcesos e Instrumentación, SA. de CV.  
Filósofos 301-101A Col. Tecnológico  
Monterrey, NL. México      [ventas@termoprocessos.com](mailto:ventas@termoprocessos.com)  
[www.termoprocessos.com](http://www.termoprocessos.com)      [tpisysmx@intercable.net](mailto:tpisysmx@intercable.net)  
52 (81) 83 59 61 30 - 52 (81) 83 59 62 29 - Fax 52 (81) 83 58 37 77

# Human Machine Interface

## Features

### Multiple Port Communication

DOP-A series provides two built-in COM ports which can let the user communicate to two different controllers simultaneously to construct multiple-drop link.

(AE series provides three built-in COM ports.)



### On-line / Off-line Simulation

Simulation function allows the user to develop and debug the software on PC before downloading it to HMI.



### SMC Card for Retrieving / Storing Data

Just insert a SMC Card and the user can retrieve data from or save data to HMI.

The user can easily copy or backup HMI program without executing PC download and upload.



### USB Client Port for Rapid Upload / Download

Upload / Download program and data can be executed via either COM port or USB client port.

The user can transfer program via USB client port when operating HMI. It is user-friendly interface and provides better upload / download speed.



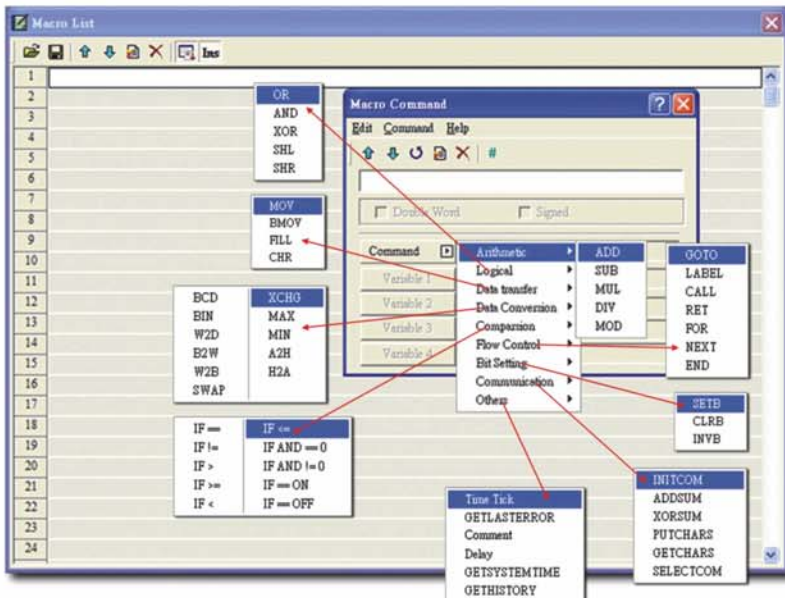
## Support Modbus Slave Communication to Construct Control Network



## Macro Editing Function

Macro editing is a function which allows the user to perform programming like programming in BASIC language. It provides the same program syntax as BASIC.

The user can test Macro and check if it is correct with off-line / on-line simulation on PC in development and can also edit communication protocol for those controllers that Screen Editor Software does not support.



## Macro Types / Macro Instructions

- Screen Open Macro
- Screen Close Macro
- Screen Cycle Macro
- Button ON Macro
- Button OFF Macro
- System Background Macro
- System Initial Macro
- System Clock Macro
- Sub Macro

# Human Machine Interface

## Features

### USB Host Port Equipped (AE series only)

DOP-AE series 8 and 10.4 inch display size models have a built-in USB Host Ver. 1.1 interface for the connection to USB disk, card reader and printer. The user can save data, copy program and print the screen immediately and has no hardware incompatibility problem.



### Multi-Language Support

Eight available languages can be selected and used without installing a multilingual operating system. It is easy for the user to switch the desired language via HMI or the external controller. Furthermore, Unicode editing is supported, and therefore it is convenient for the user to create and edit more quickly.



### 16bits Full Color Display (AE series only)

16bits (65,536 colors) TFT LCD display provided in DOP-AE series 8 and 10.4 inch display size models can help the user to produce the colorful, bright and high-resolution images, and accurately redisplay the same quality images show on PC or captured by digital cameras.



### Screen Print Function (AE series only)

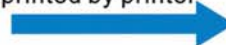
DOP-AE series support screen print function. Screen data and images can be printed through print optional card. Also, DOP-AE series 8 and 10.4 inch display size models have a built-in USB Host Ver. 1.1 interface, when connecting to a printer, screen data and images can be printed immediately.

Supported printers are:

EPSON STYLUS C65  
EPSON STYLUS PHOTO  
HP DESKJET 400  
Micro Printer MP-A16



Data and images can be printed by printer



## HMI Software Editor

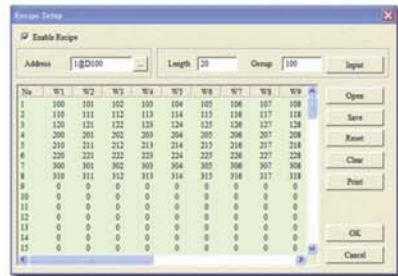
### ■ Software Editor--Screen Editor

- Provide screen editing and program self-debug capability. Also support Windows fonts.
- Built-in rich objects library and build-your-own pictures library.
- Support text and graphics editing tools
- Multi-function objects library to meet industry requirements.
- Windows operation interface
- Support serial communication protocol for many controllers of various brands.



### ■ Recipe Download

User-friendly recipe editing function provides 64K registers memory capacity for storing recipe data. The extension name of a recipe file is rcv. The user can input recipes simultaneously by different programs requirements.



### ■ Screen Preview

At the early stage of programming, the user can select different screen for previewing and copy / delete them directly for page management.



Human Machine Interface  
Screen Editor

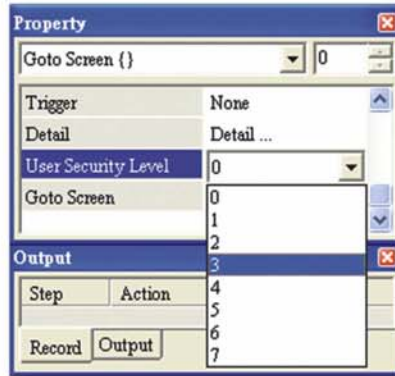


# Human Machine Interface

## Screen Editor

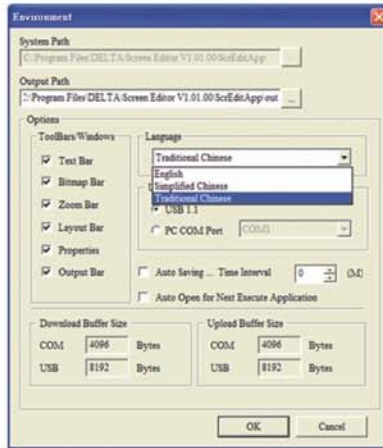
### ■ User Security Level

Eight security levels for password setting give programmer the highest priority password and project protection.



### ■ Software Language Selection

Simply install Screen Editor once and the user can easily select and switch different languages. Three viewable languages are provided: Traditional Chinese, Simplified Chinese and English



### ■ Alarm Display

Here are four alarm displays provided, including alarm history table, current alarm table, alarm frequency table and active alarm list. 8K memory are supported for alarm records saving and display.



Human Machine Interface



## ■ Screen Saver

The user can enable the screen saver function in screen management. To rich the display, the user can add screens for using in screen saver.



## ■ Multi-Screen Display

The user can define sub screens for the error and warning message display of multi-alarm system. Sub screens can also be easily resized or moved.



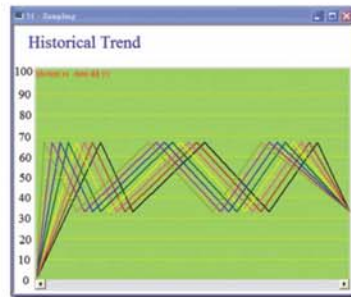
## ■ Property and Output Window

In property dialog window, the user can find and change all objects' attributes and the compiling result will be shown on the output window. Should any error and warning messages show, the user can go to where the problem is by clicking the message directly.



## ■ Sampling Record

There are three sampling records, including historical trend graphic, historical data table and historical event table. It also provides eight curves max. for the user to record 8 sets of historical data.



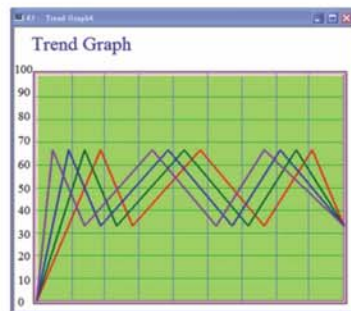
## ■ I/O Output Overview

Programmer can view communication addresses of all objects in full screen output format for a quick overview of memory layout and can improve the efficiency of communication.



## ■ Curve Display

Two graphs can be displayed on the screen, trend graph and X-Y chart. The user can show 1 to 4 curves with different definition in a graph.



# Human Machine Interface



## TP Software Editor

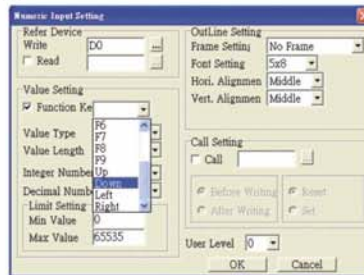
### Property Table Setting

For better and faster settings, a detachable property table is provided for the user to view and edit in HMI more efficiently. The user can choose traditional method of editing the programs and objects or use property table to work in HMI.

Property	
Basic Info	{Left,Top,Width,H
Write Device Ad	D0
HMI Port	COM1
Unit Addr	1
Read Setting	No
Call Setting	No
Function Key Set	No
User Level	0
Frame Setting	No Frame
Font Setting	5x8
Hori. Alignment	Middle
Vert. Alignment	Middle
Value Type	Unsigned
Value Length	16 Bits
Integer Number	5
Decimal Number	0
Max Value	65535
Min Value	0

### Operator Keys

There are programmable functions keys, four movement keys (up, down, left and right), an Enter key, and Escape key on the panel. These operator keys can be user-defined and offer more flexible operation.



### System Power On Marco

TP Editor has simple Marco command editing function. When HMI power on, after a predefined time interval, Marco command will be executed automatically. This is very convenient for initial state setup.

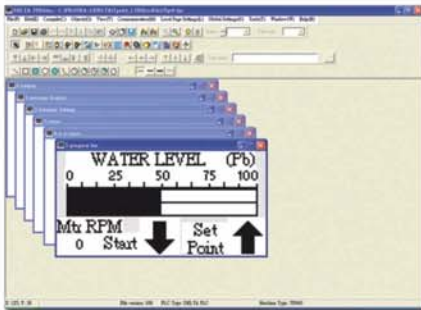


Operation Panel  
Interface



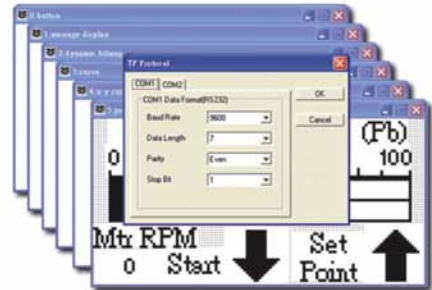
## Software Editor--TPEditor

TPEditor provides Windows fonts for editing and page program self-debug. It has numerous functions, including button, numeric input / display, meter, lamp, messages display with both text and graphs and it supports multiple brands' controllers.



## Communication

COM1 and COM2 can be used for the same communication protocol with different format controllers to construct single or multiple-drop link.



## Page Change Control

Page can be set as invisible. The user can change page by different conditional controls.



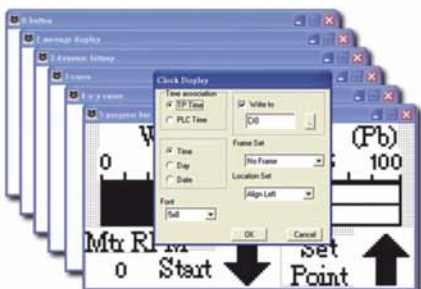
## Page Management

It is convenient for the user to preview page quickly and execute add, delete and insert functions for page.



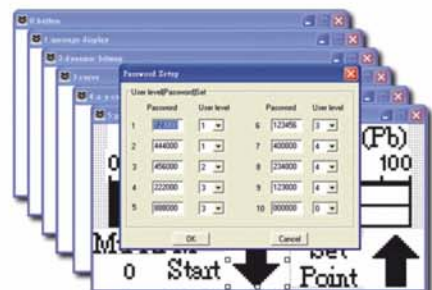
## Real Time Clock

It's built-in real time clock (Not for TP02G). It can transfer time data to the PLC that doesn't have real time clock function to have time control function.



## User Security Level

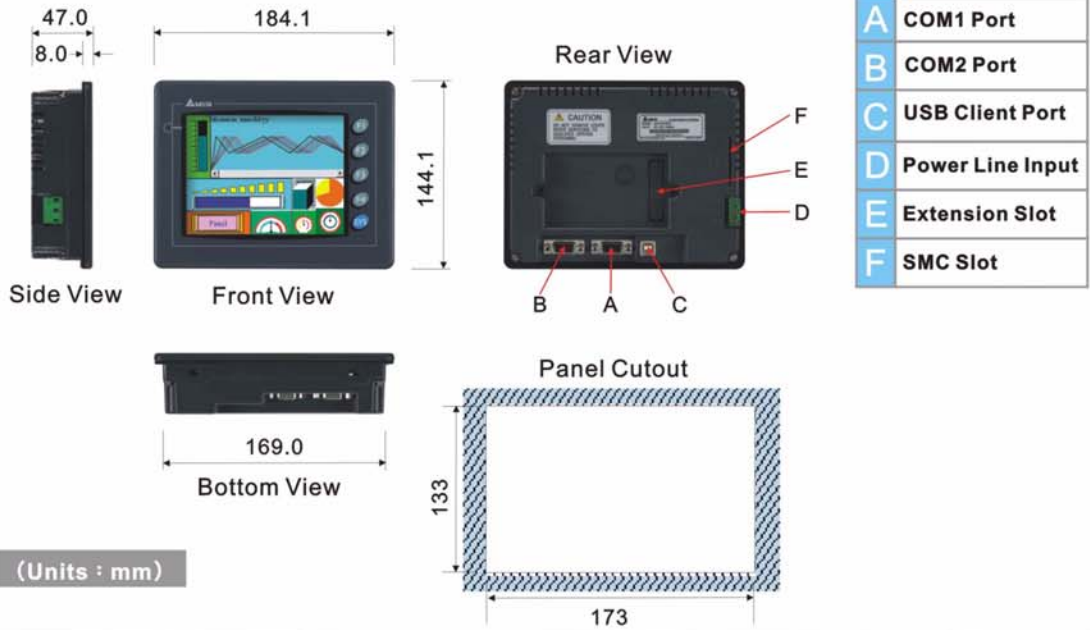
It provides 5 security levels with password protection and 10 sets of user passwords for flexible handling.



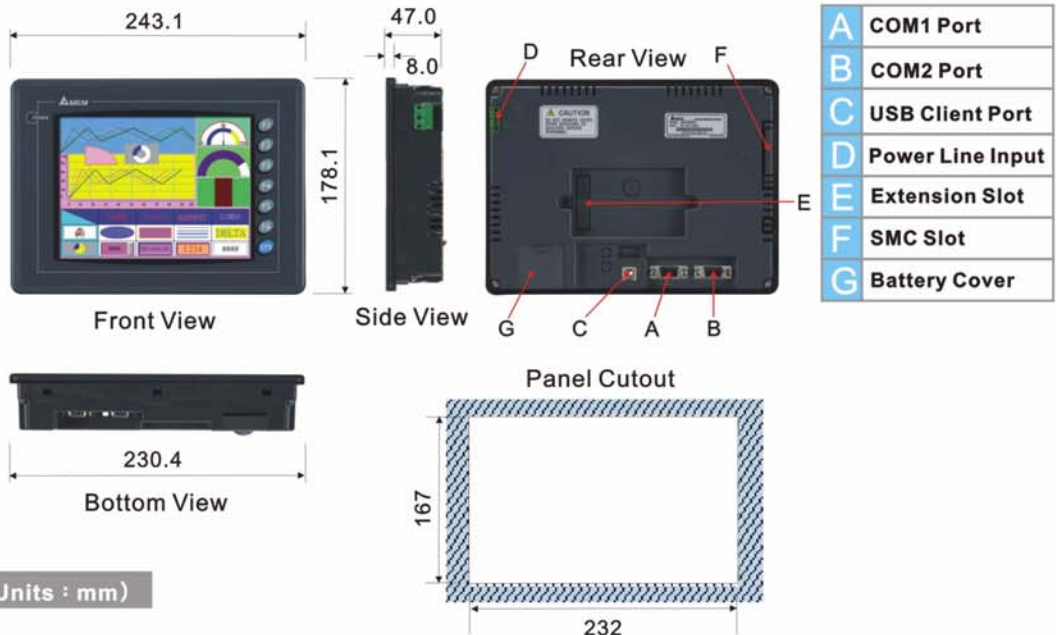
# Human Machine Interface

## Dimensions

### DOP-A(E)57BSTD/A(E)57GSTD/A(E)57CSTD



### DOP-A75CSTD



# Human Machine Interface



## DOP Hardware Specifications

	Model	DOP-A(E)57BSTD	DOP-A(E)57GSTD	DOP-A(E)57CSTD
				
Display	Display Type	STN	FSTN	STN
	Display Color	8 grays	16 grays	256 colors
	Screen Pixels	320x240 pixels		
	Back-light Life	about 50 thousand hours at 25°C		
	Display Size	5.7(118.2x89.4mm)		
System Specifications	CPU Type	32-bit RISC 202.8MHz		
	Program Memory	3M Byte		
	Backup Battery	256K Bytes (AE Series:512k Bytes)		
	Ports for Download	USB Client Ver1.1&COM1,COM2		
	Communication Port	COM1(RS-232),COM2&COM3(RS-485/RS-422/RS-232),(AE Series:COM3)		
	Extension Slot	SMC Card		
	Real Time Clock	Built-in		
	Editor Software	Screen Editor		
Auxiliary Keys	Type	Touch Key		
	System Keys	1		
	Function Keys	4		
Electrical Specifications	Operation Voltage	DC+24V(-10%~+15%)		
	Consumption Power	7.2W max		
	Backup Battery	3V lithium battery CR2032*1		
	Buzzer	85dB		
Operation Environment and Specifications	Operating Temp.	0~50°C		
	Storage Temp.	-20~60°C		
	Ambient Humidity	Relative humidity 10-90% RH(non-codensing)		
	Vibration Resistance	IEC61131-2 compliant When vibration is NOT continuous: 10Hz-57Hz 0.0075mm, 57Hz-150Hz 1G When vibration is continuous: 10Hz-57Hz 0.0035mm, 57Hz-150Hz 0.5G X, Y, Z directions for 10 times		
	Cooling Method	Natural air cooling		
	External/ Cutout Dimensions (W)×(H)×(D)	184.1x144.1x39mm/173x133mm		
	Weight	650g		
	Waterproof Class of Front Panel & Agency Approval	IP65/NEMA4 & CE, UL,C-tick ( except AE series)		

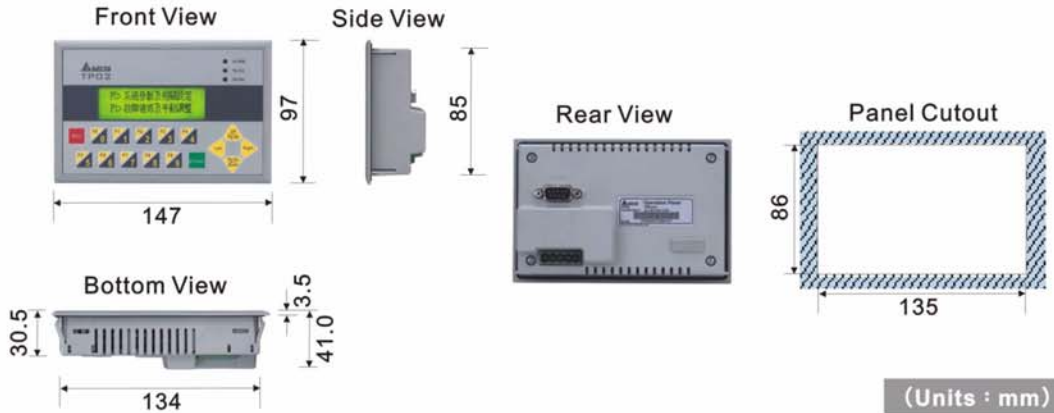
DOP-A75CSTD	DOP-AE80THTD	DOP-A10TCTD/AE10THTD
		
STN	TFT LCD	
256 colors	256 colors(AE series:65536 colors)	
640 x 480 pixels		
about 20 thousand hours at 25°C	about 50 thousand hours at 25°C	About 30 thousand hours at 25°C
7.5" (158.0 x 118.0mm)	7.5" (158.0 x 118.0mm)	10.4" (215.2 x 162.4mm)
32-bit RISC 202.8MHz		
7M Byte		
256K Bytes (AE Series:512K Bytes)		
USB Ver1.1 & COM1,COM2		
COM1(RS-232),COM2&COM3(RS-485/RS-422/RS-232),(AE Series:COM3)		
SMC Card/USB Host Ver1.1(AE Series only)		
Built-in		
Screen Editor		
Touch Key		
1		
6	6	7
DC +24V (-10%~+15%)		
10W max	14W max	15W max
3V lithium battery CR2032*1		
85dB		
0~50°C		
-20~60°C		
Relative humidity 10-90% RH(non-condensing)		
IEC61131-2 compliant		
When vibration is NOT continuous: 10Hz-57Hz 0.0075mm, 57Hz-150Hz1G		
When vibration is continuous: 10Hz-57Hz 0.0035mm, 57Hz-150Hz 0.5G		
X, Y, Z directions for 10 times		
Natural air cooling		
243.1 x 178.1 x 39 mm/ 232 x 167 mm	243.1 x 178.1 x 44.4 mm/ 232 x 167 mm	297.1 x 222.1 x 43.1 mm/ 286 x 211 mm
950g	1120g	1420g
IP65/NEMA4 & CE,UL,C-tick (except AE series)		

# Human Machine Interface

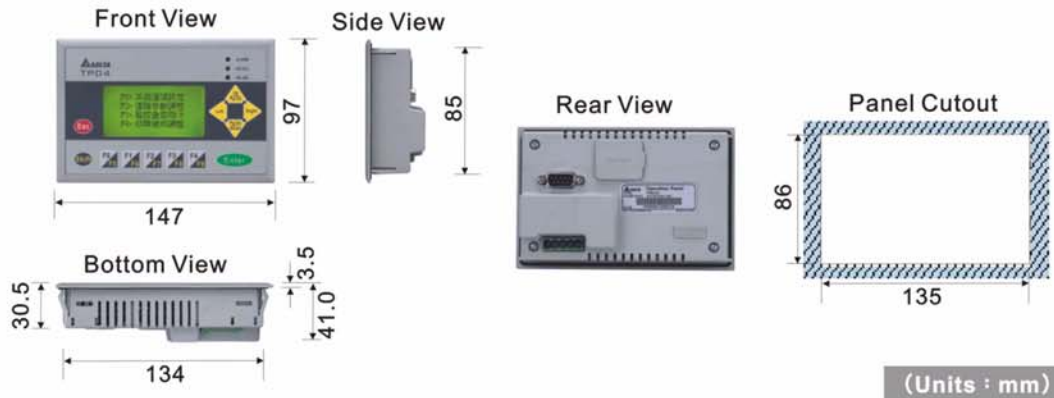
## TP Hardware specifications

		TP02G-AS1	TP04G-AS2
<b>Model</b>			
<b>Display</b>	Display Type	STN LCD	
	Display Color	Monochromatic	
	Screen Pixels	160 X 32 pixels	128 X 64 pixels
	Back-light Life	About 50 thousand hours at 25°C	
	Display Size	72mm x 22mm	3.00" (67x32mm)
<b>System Specifications</b>	CPU Type	Hitachi MAX002	Hitachi 3064
	Program Memory	256K Bytes	
	Backup Battery	32K Bytes	
	Ports for Download	COM1(RS-232)	
	Communication Port	COM1(RS-232) COM2(RS-485)	COM1(RS-232/RS-422) COM2(RS-485)
	Extension Slot	Slot for Program Copy Card	
	Real Time Clock	None	Built-in
	Editor Software	TPEditor	
<b>Auxiliary Keys</b>	Type	Membrane Key	
	System Keys	6	7
	Function Keys	10	5
<b>Electrical Specifications</b>	Operation Voltage	DC +24V (-10%~+20%)	
	Consumption Power	3W Max.	3.5W Max.
	Backup Battery	3V lithium battery CR2032*1	
	Buzzer	85dB	
<b>Operation Environment and Specifications</b>	Operating Temp.	0~50°C	
	Storage Temp.	-20~60°C	
	Ambient Humidity	Relative humidity 20-90% RH (non-condensing)	
	Vibration Resistance	0.5mm displacement, 10-55Hz, X, Y, Z three directions and two hours for each direction 10G, 11ms, from X, Y, Z three directions and three times for each direction	
	Cooling Method	Natural air cooling	
	External/Cutout Dimensions (W)×(H)×(D)	147x97x35.5 mm/136x85 mm	
	Weight	240g	
	Waterproof Class of Front Panel & Agency Approval	IP65/NEMA4 & CE,UL	

## TP02G-AS1



## TP04G-AS2



### DOP Series Accessories

**Screw Locker**



**DOP-SCLKAM5**

**Power Terminal**



**DOP-CNPWRD1**

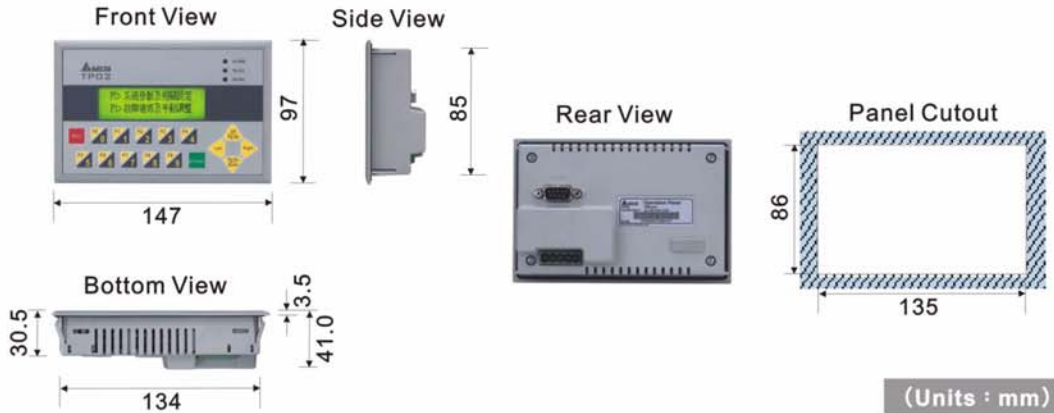
### Optional Units

**Printer Function Card**

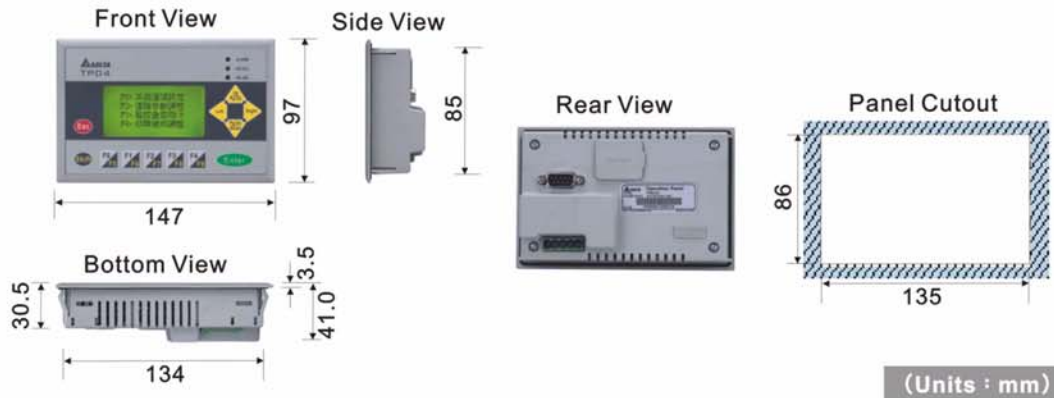


**DOP-EXPM110**

## TP02G-AS1



## TP04G-AS2



### DOP Series Accessories

#### Screw Locker



**DOP-SCLKAM5**

#### Power Terminal



**DOP-CNPWRD1**

### Optional Units

#### Printer Function Card



**DOP-EXPM110**