



DELTA ELECTRONICS, INC.

[www.delta.com.tw/industrialautomation](http://www.delta.com.tw/industrialautomation)

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\*Slight variations in appearance and specifications may exist between the catalogue and the actual product.  
We reserve the right to change the information in this catalogue without prior notice.



# DOP-B

## Human Machine Interface



# DOP-B



## One Touch Give You Limitless Possibilities with HMI

Meet Customer Needs. Satisfy Various Applications. Provide Many Functions. Create Ultimate FA Equipment.

### Energy Saving and Environmental Automation

All models are equipped with LED backlights which provide energy-efficient lighting that is made without mercury, reduces energy use and CO2 emissions, and protects the environment.

### High Quality and Full-color Display

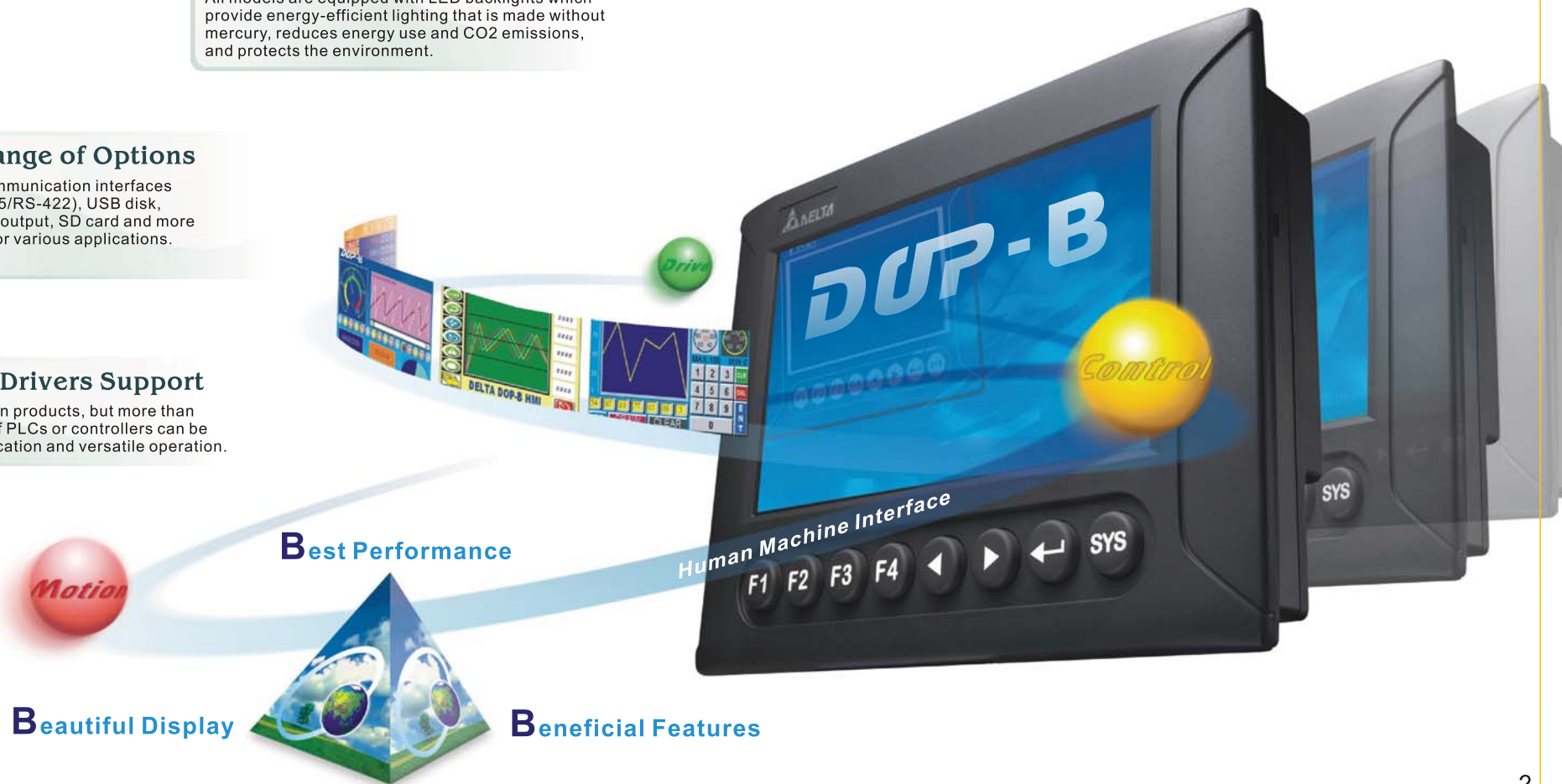
A full 65,536-color display is available on all models. With a whole new 2D drawing technique, the screen resolution is enhanced for more realistic images and for more colorful and vivid displays.

### A Wide Range of Options

Three serial communication interfaces (RS-232/RS-485/RS-422), USB disk, Ethernet, audio output, SD card and more are supported for various applications.

### Powerful Controller Drivers Support

Not just Delta industrial automation products, but more than 30 brands, and over 100 models of PLCs or controllers can be connected for effortless communication and versatile operation.



## B05 Standard

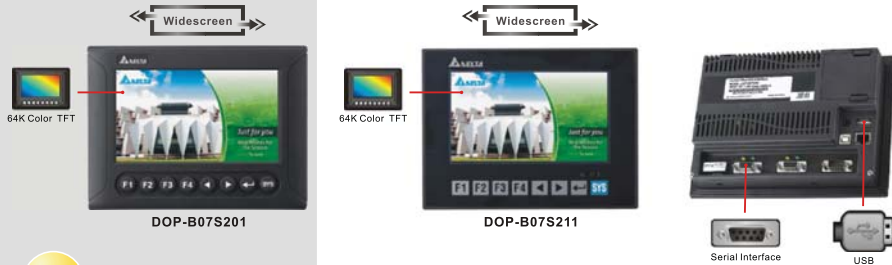
| Model Name  | Display Size | Display Type     | Resolution | ROM  | Ethernet | USB Host | USB Client | Memory Card | Audio Output |
|-------------|--------------|------------------|------------|------|----------|----------|------------|-------------|--------------|
| DOP-B05S100 | 5.6          | 65536 Colors TFT | 320x234    | 4 MB | N/A      | v1.1 * 1 | v1.1 * 1   | N/A         | N/A          |
| DOP-B05S101 | 5.6          | 65536 Colors TFT | 320x234    | 8 MB | N/A      | v1.1 * 1 | v1.1 * 1   | N/A         | N/A          |



DOP-B05S100

## B07 Standard Widescreen

| Model Name  | Display Size | Display Type     | Resolution | ROM  | Ethernet | USB Host | USB Client | Memory Card | Audio Output |
|-------------|--------------|------------------|------------|------|----------|----------|------------|-------------|--------------|
| DOP-B07S201 | 7            | 65536 Colors TFT | 480x234    | 4 MB | N/A      | v1.1 * 1 | v1.1 * 1   | N/A         | N/A          |
| DOP-B07S211 | 7            | 65536 Colors TFT | 480x234    | 4 MB | N/A      | v1.1 * 1 | v1.1 * 1   | N/A         | N/A          |

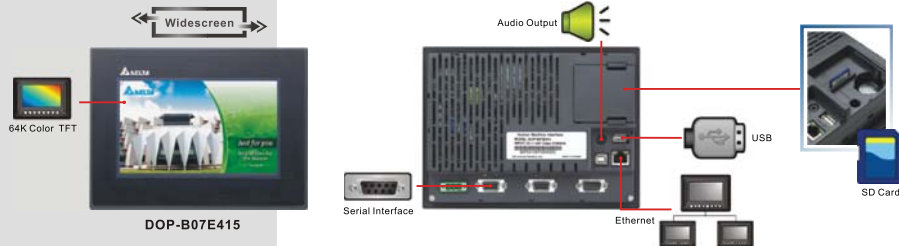


DOP-B07S201

DOP-B07S211

## B07 High Resolution Widescreen

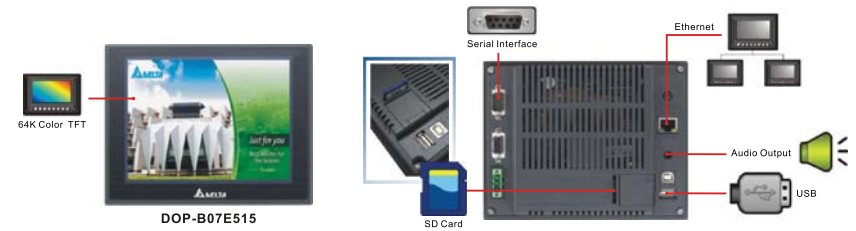
| Model Name  | Display Size | Display Type     | Resolution | ROM   | Ethernet      | USB Host | USB Client | Memory Card | Audio Output |
|-------------|--------------|------------------|------------|-------|---------------|----------|------------|-------------|--------------|
| DOP-B07S415 | 7            | 65536 Colors TFT | 800x480    | 128MB | N/A           | v1.1 * 1 | V2.0 * 1   | SD          | N/A          |
| DOP-B07E415 | 7            | 65536 Colors TFT | 800x480    | 128MB | 10/100 Base-T | v1.1 * 1 | V2.0 * 1   | SD          | YES          |



DOP-B07E415

## B07 High Resolution

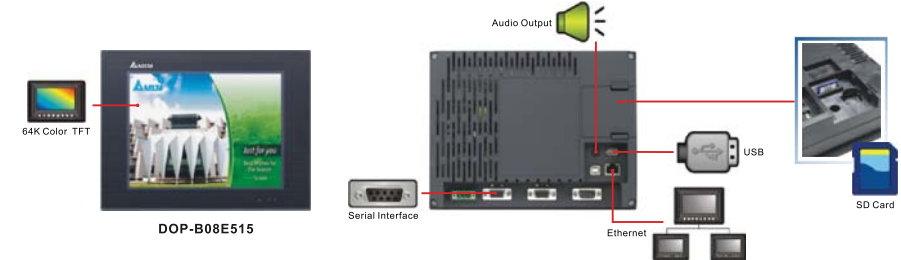
| Model Name  | Display Size | Display Type     | Resolution | ROM   | Ethernet      | USB Host | USB Client | Memory Card | Audio Output |
|-------------|--------------|------------------|------------|-------|---------------|----------|------------|-------------|--------------|
| DOP-B07S515 | 7            | 65536 Colors TFT | 800x600    | 128MB | N/A           | v1.1 * 1 | V2.0 * 1   | SD          | N/A          |
| DOP-B07E515 | 7            | 65536 Colors TFT | 800x600    | 128MB | 10/100 Base-T | v1.1 * 1 | V2.0 * 1   | SD          | YES          |



DOP-B07E515

## B08 High Resolution

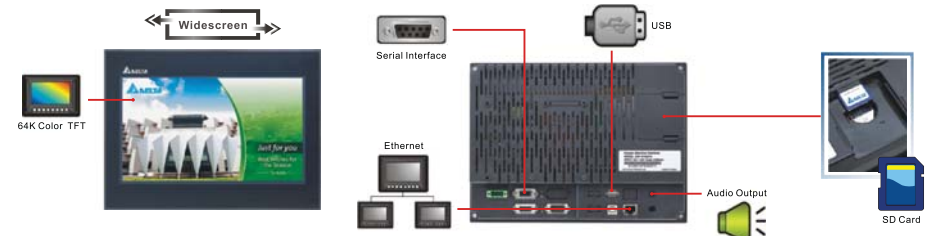
| Model Name  | Display Size | Display Type     | Resolution | ROM   | Ethernet      | USB Host | USB Client | Memory Card | Audio Output |
|-------------|--------------|------------------|------------|-------|---------------|----------|------------|-------------|--------------|
| DOP-B08S515 | 8            | 65536 Colors TFT | 800x600    | 128MB | N/A           | v1.1 * 1 | V2.0 * 1   | SD          | N/A          |
| DOP-B08E515 | 8            | 65536 Colors TFT | 800x600    | 128MB | 10/100 Base-T | v1.1 * 1 | V2.0 * 1   | SD          | YES          |



DOP-B08E515

## B10 High Resolution Widescreen

| Model Name  | Display Size | Display Type     | Resolution | ROM   | Ethernet      | USB Host | USB Client | Memory Card | Audio Output |
|-------------|--------------|------------------|------------|-------|---------------|----------|------------|-------------|--------------|
| DOP-B10S615 | 10           | 65536 Colors TFT | 1024x600   | 128MB | N/A           | v1.1 * 1 | V2.0 * 1   | SD          | N/A          |
| DOP-B10E615 | 10           | 65536 Colors TFT | 1024x600   | 128MB | 10/100 Base-T | v1.1 * 1 | V2.0 * 1   | SD          | YES          |





## High Quality Display



65,536-color high quality TFT display offers more realistic and vivid images to capture and visualize system and manufacturing processes more quickly.

## Audio Output Interface

Alarm!



Support built-in amplified speaker of Ø3.5mm stereo mini jack

In case of errors, an alarm alerts users via an audio message in real time.

As the broadcast of alarms is triggered by the corresponding bit, the alarm messages can be played and output in different sound files through the setting value of word registers.



| D100 | Sound Files | Audio Messages |
|------|-------------|----------------|
| 1    | A.wav       | Overcurrent    |
| 2    | B.wav       | Overvoltage    |
| 3    | C.wav       | Overload       |

## Supports Various Peripherals via USB Hub

### Slave (USB-type B)

Compatible with Windows Vista / Windows 7



Up to 480Mbps high-speed data transfer via USB v2.0



PLC Programming Software: WPLSoft

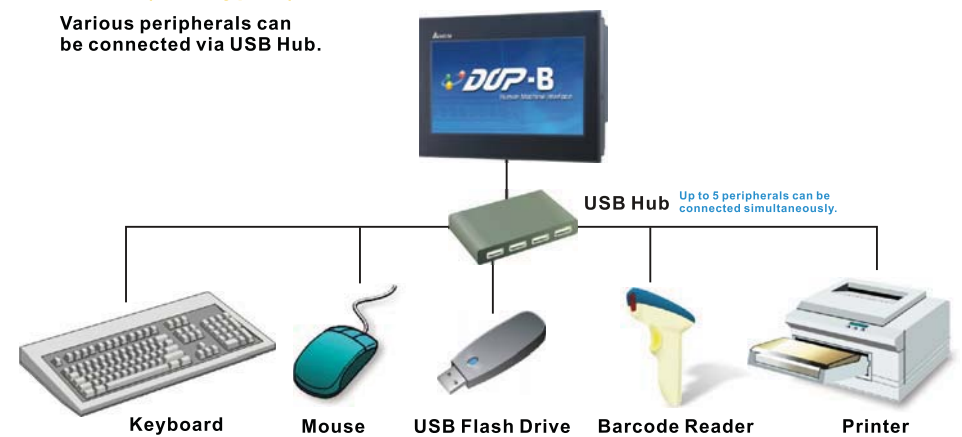


\*Support Delta DVP series PLC only.

Using bypass function, it is possible to enable monitoring function and modify PLC programs directly via USB connection.

### Master (USB-type A)

Various peripherals can be connected via USB Hub.



Up to 5 peripherals can be connected simultaneously.

Support the printer that is compatible with PictBridge.



## SD Card / USB Disk Versatile Storage Interface

- Exploiting the convenience of SD card and USB disk, screen data transfer and collection can be quickly performed and the storage capacities of HMI can be easily increased as well. No need to worry about data capacity of excessive history and recipe data.
- SD card and USB disk are in FAT32 format, fully compatible with Microsoft Windows and allow filenames that exceed eight characters in length.



The recipe data can be saved in CSV format and easily edited on an external PC in Excel so as to save the memory of PLC effectively.



History and alarm information can also be saved in CSV format and stored to the SD card / USB disk.

- Multiple project screen data can be saved in SD card / USB disk simultaneously and transferred to HMI. No need to connect to PC.
- The data saved in SD card / USB disk can be encrypted and the number of copies can be limited to protect the programs from unauthorized use.



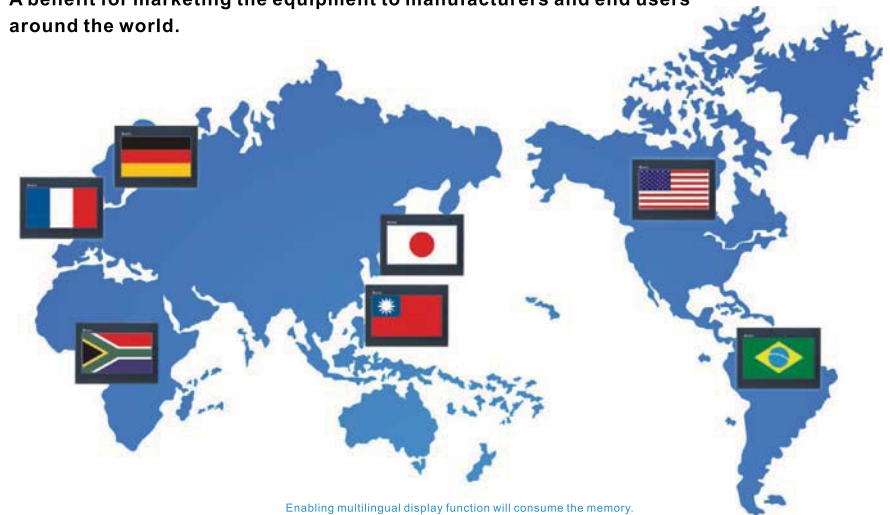
- PLC ladder diagrams can be transferred and backup via SD card / USB disk even in a location where an external PC is not available.
- SD card / USB disk are capable of storing several PLC ladder diagrams.



Support Delta DVP series PLC only.

## Multilingual Display

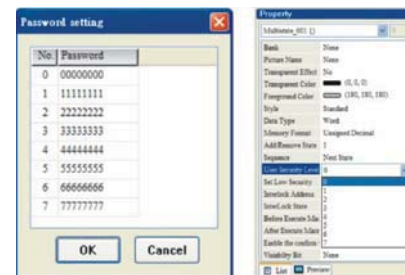
Up to 16 languages are available. No need to redesign the screen data! A benefit for marketing the equipment to manufacturers and end users around the world.



Enabling multilingual display function will consume the memory.

## Password Settings

Provide 8 levels of passwords to set user security to prevent improper use. Only the security level that is equal to or higher than the current setting can use the element.



## Element Invisible Function

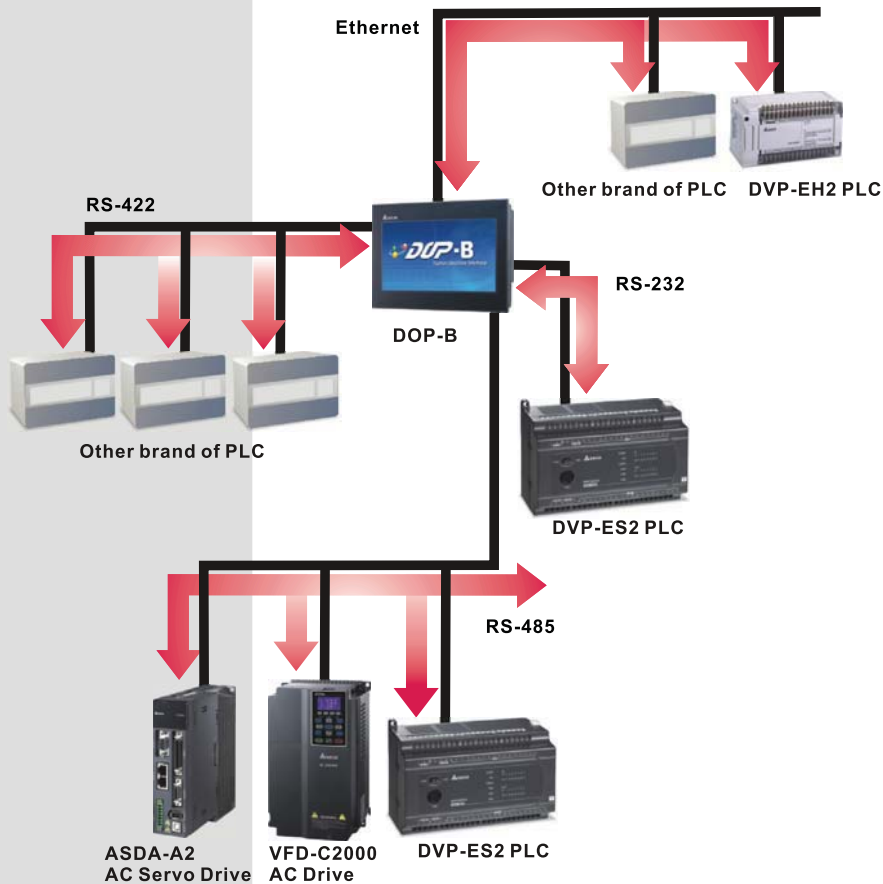
The element on the screen can be hidden by triggering the corresponding bit.



## Provide Diverse Communication Interfaces

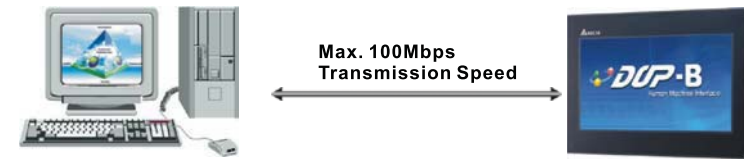
### Easy to communicate with more than 30 brands of PLCs/Controllers

All DOP-B series models support RS-232/485/422 communication interfaces and over 20 different PLC/Controller drivers. With the aid of an Ethernet interface, it is possible to use four communication interfaces at the same time, easily connecting to various industrial automation devices for a complete communication network link managed by Delta's new DOP-B series.



## Ethernet Ubiquitous High Speed Communication

### Ethernet Upload and Download

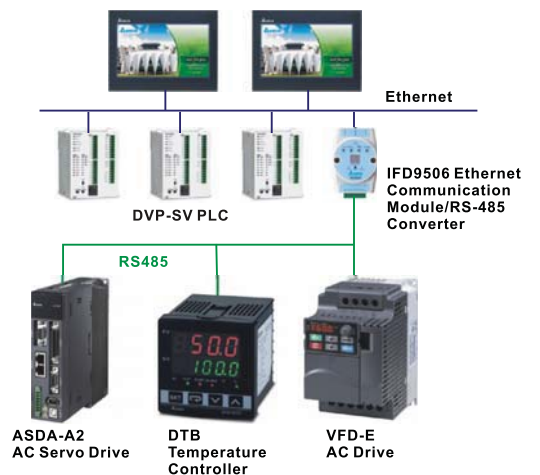


Easy to maintain and upgrade programs no matter where you are in the world.

### Best Solution for Network Monitoring

Using an Ethernet connection can easily establish an N:N communication link and create the desired communication link according to different application requirements.

The DOP-B series HMI can use the IFD9506 Ethernet communication module, which is able to switch Ethernet and RS-485 interfaces quickly, to connect Delta's AC servo drive, AC motor drive, temperature controller and other industrial automation products via the Ethernet and control the entire network for a complete and ultimate network monitoring solution.





## Screen Editor 2.00

The all new and upgraded configuration software provides complete functions and a user-friendly operator interface. Make the editing easier than ever with a whole new level of design.

### 1 Toolbar

Actions such as edit, save, upload and compile can be executed easily just by clicking the attractive easy-to-see icons on the toolbar.

### 2 Element Tool Window

The Element Tool window provides a wide variety of element icons for selection. Use the mouse to select the desired element icon and drag it onto the work place to create a new element.

### 3 Output Window

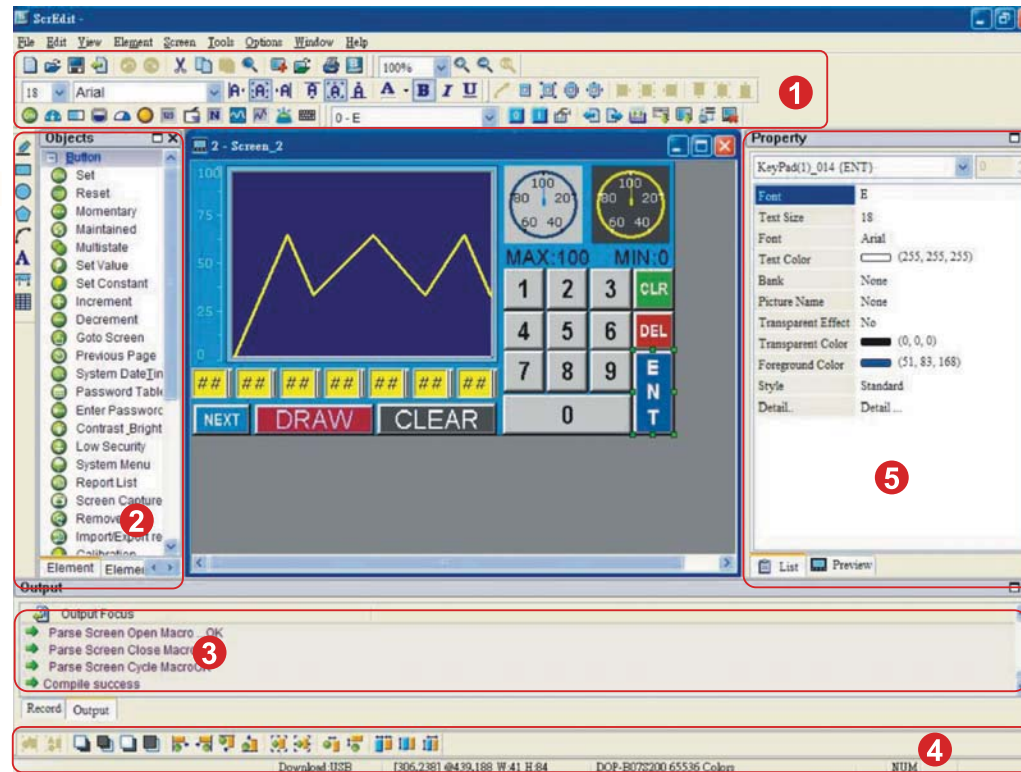
The Output Window displays all the editing actions and output messages when the compile function is enabled. Once an error occurs, the error messages are displayed in Output Window as well.

### 4 Layout Toolbar

The Layout Toolbar offers Bring to Front, Send to Bottom, Align, Across/Down Space Evenly, Make Same Size and other functions for the benefit of creating intricate and beautiful elements.

### 5 Property Table

The Property Table displays the element property settings for each element.



### Picture Bank

Newly designed picture bank offers more colorful and attractive elements.



### Convenient Screen Data Conversion

Compatible with the existing Screen Editor 1.05 for the DOP-A series HMI. The project file created by Screen Editor 1.05 can be opened by Screen Editor 2.00. It is therefore easy to upgrade and convert projects from DOP-A series HMI to DOP-B series HMI.



The screen data can be converted to different models even if the display size is not the same. The same project can be applied on different models.



\* After the screen data is converted, it still needs to confirm the element position, text size and other settings.

### Minimum System Requirements of Screen Editor 2.00

| Hardware / Software | System Requirements   |
|---------------------|---|
| CPU                 | Pentium III, 500MHz or greater is recommended                                 |
| Memory              | 256MB and above is recommended  |
| Hard Disk           | Capacity: 400MB and above   |
| Monitor             | Support resolution: 800 x 600 or higher full-color display.                   |
| Printer             | Printer compatible with Windows 2000 / Windows XP / Windows Vista / Windows 7 |
| Operating System    | Windows 2000 / Windows XP / Windows Vista / Windows 7                         |

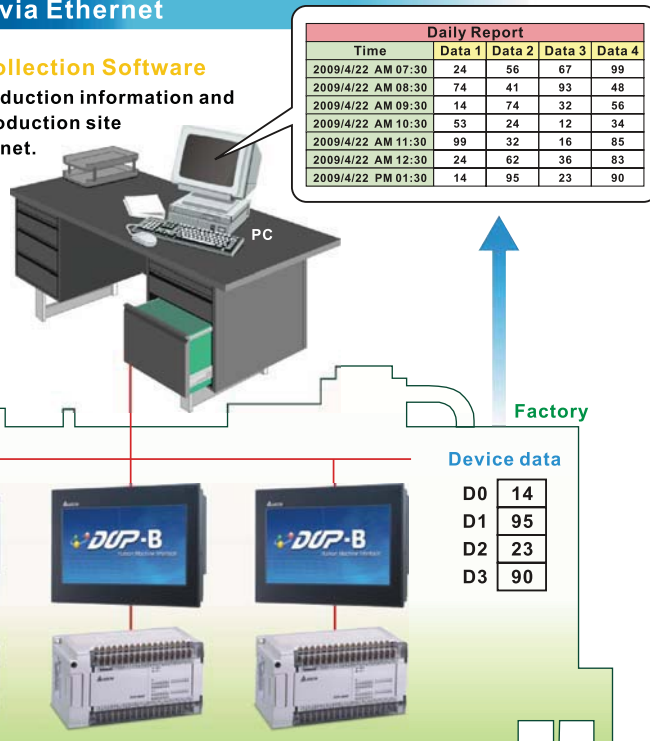
\* Users can download the Screen Editor configuration software and the user manual at Delta's website via the following link: <http://www.delta.com.tw/industrialautomation/>.



## Solution for Constructing a Network between Office and Production Site via Ethernet

### DOP-eServer Data Collection Software

eServer lets you transfer production information and history data directly from production site to a PC in the office via Ethernet.



### 1) Excel Sampling Data

- Collected data can be saved in user-defined Excel files according to purpose and to easily create production reports.
- If the formulas in the Excel file are set in advance, the production data, i.e. defective rate, average working hours and capacity utilization rate, etc. can be calculated simultaneously while production data is recorded.
- Production data can be saved in daily reports, weekly reports and monthly reports, etc. automatically under different settings.

### 2) Database Sampling Data

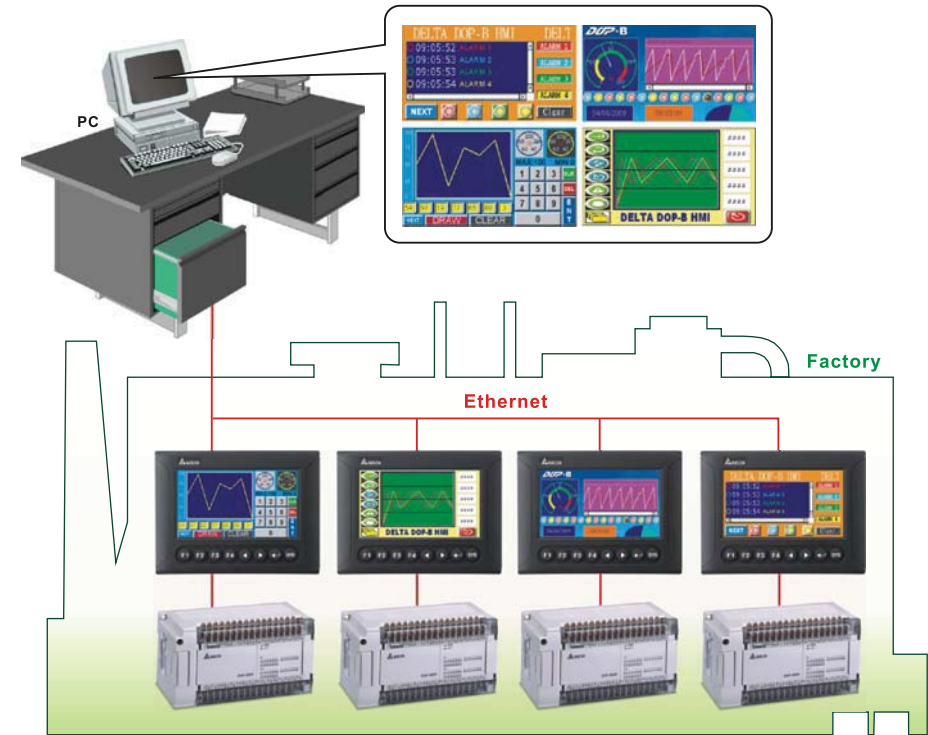
- Users can access any database via ODBC interface.

### 3) Recipe Data Transfer

- Users can transfer and backup the recipe data via eServer easily.

### DOP-eRemote Remote Control Software

eRemote lets you view and check the same screen shown on the HMI at the production site, and control the manufacturing process via Ethernet. No matter where you are, remote control is easily accomplished.



## Minimum System Requirements for DOP-eRemote / DOP-eServer

| Hardware / Software | System Requirements   |
|---------------------|---|
| CPU                 | Pentium 4, 1.6GHz or greater is recommended                                   |
| Memory              | 1G MB and above is recommended  |
| Hard Disk           | Capacity: 50MB and above  |
| Monitor             | Support resolution: 1024 x 768 or higher full-color display.                  |
| Printer             | Printer compatible with Windows 2000 / Windows XP / Windows Vista / Windows 7 |
| Operating System    | Windows 2000 / Windows XP / Windows Vista / Windows 7                         |

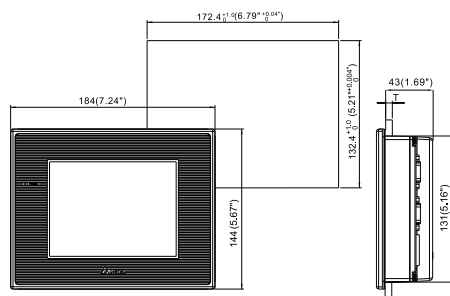
\* Users can download the DOP-eRemote / DOP-eServer software and the user manual at Delta's website via the following link:  
<http://www.delta.com.tw/industrialautomation/>



## Dimensions

Units: mm (inches)

- DOP-B05S100
- DOP-B05S101

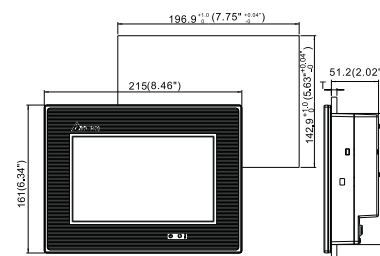


Note:  
T=1.6mm(0.063")-6mm(0.24")

## Dimensions

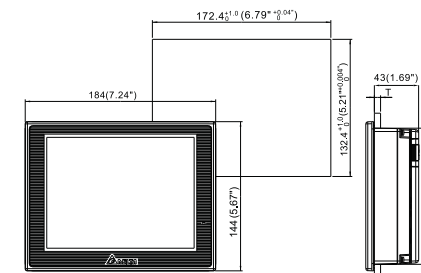
Units: mm (inches)

- DOP-B07E415



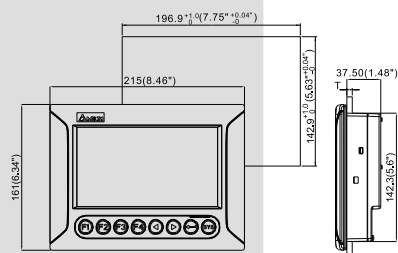
Note:  
T=1.6mm(0.063")-6mm(0.24")

- DOP-B07E515



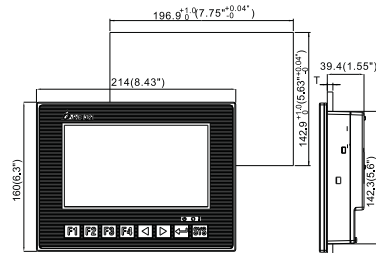
Note:  
T=1.6mm(0.063")-6mm(0.24")

- DOP-B07S201



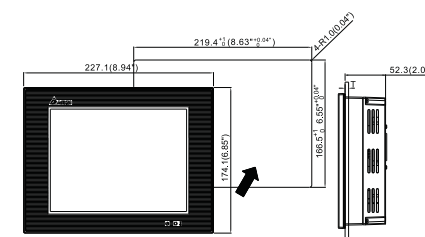
Note:  
T=1.6mm(0.063")-6mm(0.24")

- DOP-B07S211



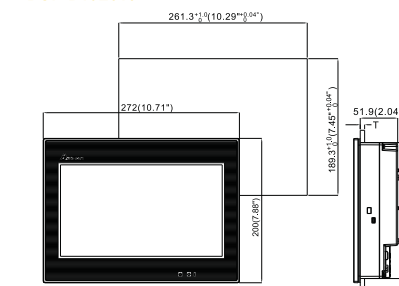
Note:  
T=1.6mm(0.063")-6mm(0.24")

- DOP-B08E515



Note:  
T=1.6mm(0.063")-5.0mm(0.19")

- DOP-B10E615



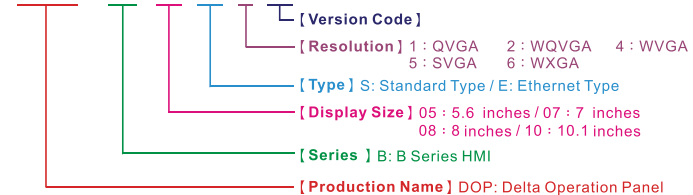
Note:  
T=1.6mm(0.063")-6mm(0.24")

## Optional Accessories

| Model Name  | Explanation  |
|-------------|--|
| DOP-CA232DP | DOP-CA232DP: RS-232 Communication Cable for DVP Series PLC (Female Socket) |
| DVPACAB2A30 | DVPACAB2A30: RS-232 Communication Cable for DVP Series PLC (Male Socket)   |
| DOP-CAUSBAB | DOP-CAUSBAB: USB Communication Cable                                       |

## Ordering Information

DOP - B 07 S 4 15



## Specifications

| MODEL                                 | DOP-B05S100   | DOP-B05S101   | DOP-B07S201   | DOP-B07S211   | DOP-B07S415  | DOP-B07E415  |
|---------------------------------------|---|---|---|---|--|--|
| LCD MODULE                            | Display Type  | 5.6" TFT LCD (65536 colors)   |   | 7" Widescreen TFT LCD   |  |  |
|                                       | Resolution  | 320 x 234 pixels  |   | 480 x 234 pixels  |  | 800 x 480 pixels   |
|                                       | Backlight   | LED Back Light (less than 20,000 hours half-life at 25°C) <sup>(Note 1)</sup> |   |   |  |  |
|                                       | Display Size  | 113.28 x 84.70mm  |   | 154.08 x 86.58mm  |  | 152.4 x 91.44mm  |
| Operating System                      | Delta Real Time OS  |   |   |   |  |  |
| MCU                                   | 32-bit RISC Micro-controller  |   |   |   |  |  |
| NOR Flash ROM                         | Flash ROM 4 MB (OS System: 2MB / User Application: 2MB)   | Flash ROM 8 MB (OS System: 2MB / User Application: 6MB)                       | Flash ROM 4 MB (OS System: 2MB / User Application: 2MB) |   | Flash ROM 128 MB (OS System: 30MB / Backup: 16MB / User Application: 82MB) |  |
| SDRAM                                 | 8Mbytes   |   | 16Mbytes  |   | 64Mbytes   |  |
| Backup Memory (Bytes)                 | 128Kbytes   |   | 256Kbytes   |   | 16Mbytes   |  |
| Sound Effect Output                   | Buzzer  | Multi-Tone Frequency (2K ~ 4K Hz)/85dB  |   |   |  |  |
|                                       | AUX   | N/A   | N/A   | N/A   | N/A  | Stereo output  |
| Ethernet Interface                    | N/A   | N/A   | N/A   | N/A   | N/A  | IEEE 802.3/IEEE 802.3u 10/100 Mbps Auto-sensing (has built-in isolated power circuit <sup>(Note 3)</sup> ) |
| Memory Card                           | N/A   | N/A   | N/A   | N/A   | SD card (support SDHC)   |  |
| USB                                   | 1 USB Host <sup>(Note 2)</sup> Ver 1.1 / 1 USB Client Ver 1.1   |   |   | 1 USB Host <sup>(Note 2)</sup> Ver 1.1 / 1 USB Client Ver 2.0 |  |  |
| Serial COM Port                       | COM1  | RS-232 (supports hardware flow control)                                       |   |   |  |  |
|                                       | COM2  | RS-232 / RS-485   | RS-232 / RS-422 / RS-485                                |   | RS-232 / RS-422 RS-485   | RS-232 / RS-422 RS-485 (has built-in isolated power circuit <sup>(Note 3)</sup> )                          |
|                                       | COM3  | RS-422 / RS-485   | RS-232 / RS-422 / RS-485                                |   | RS-232 / RS-422 RS-485   | RS-232 / RS-422 RS-485 (has built-in isolated power circuit <sup>(Note 3)</sup> )                          |
| Function Key                          | N/A   | N/A   | User defined key x 4 + System key x 4                   |   |  | N/A  |
| Perpetual Calendar (RTC)              | Built-in  |   |   |   |  |  |
| Cooling Method                        | Natural air circulation   |   |   |   |  |  |
| Safety Approval                       | CE / UL <sup>(Note 4)</sup> / KCC <sup>(Note 4)</sup>   |   |   |   |  |  |
| Waterproof Degree                     | IP65 / NEMA4  |   |   |   |  |  |
| Operation Voltage <sup>(Note 5)</sup> | DC +24V (-10% ~ +15%) (please use isolated power supply)  |   |   |   | DC +24V (-10% ~ +15%) (please use isolated power supply)                   | DC +24V (-10% ~ +15%) (has built-in isolated power circuit <sup>(Note 3)</sup> )                           |
| Voltage Endurance                     | AC500V for 1 minute (between charging DC24 terminal and FG terminals)   |   |   |   |  |  |
| Power Consumption <sup>(Note 5)</sup> | 3.0W  | 3.0W  | 4.8W  | 4.8W  | 5W   | 7.5W   |
| Backup Battery                        | 3V lithium battery CR2032 x 1   |   |   |   |  |  |
| Backup Battery Life                   | It depends on the temperature used and the conditions of usage, about 3 years or more at 25°C   |   |   |   |  |  |
| Operation Temp                        | 0°C ~ 50°C  |   |   |   |  |  |
| Storage Temp                          | -20°C ~ +60°C   |   |   |   |  |  |
| Ambient Humidity                      | 10% ~ 90% RH [0 ~ 40°C] · 10% ~ 55% RH [41 ~ 50°C] · Pollution Degree 2   |   |   |   |  |  |
| Vibration Resistance                  | IEC 61131-2 Compliant 5Hz ≤ f < 9Hz = Continuous: 1.75mm / Occasional: 3.5mm<br>9Hz ≤ f ≤ 150Hz = Continuous: 0.5g / Occasional: 1.0g X, Y, Z directions for 10 times |   |   |   |  |  |
| Dimensions (W) x (H) x (D) mm         | 184 x 144 x 50  | 184 x 144 x 50  | 215 x 161 x 50  | 215 x 161 x 48  | 215 x 161 x 50   | 215 x 161 x 50   |
| Panel Cutout (W) x (H) mm             | 172.4 x 132.4   | 172.4 x 132.4   | 196.9 x 142.9   | 196.9 x 142.9   | 196.9 x 142.9  | 196.9 x 142.9  |
| Weight                                | Approx. 670g  | Approx. 670g  | Approx. 880g  | Approx. 840g  | Approx. 970g   | Approx. 970g   |

- The half-life of backlight is defined as original luminance being reduced by 50% when the maximum driving current is supplied to HMI.
- USB Host port can provide up to 5V/500mA of power.
- The isolated power circuit can withstand a 1500V voltage peak for 1 minute.
- Some models are in the process of application for UL and KCC certification. For more information, please consult our distributors.
- The value of the power consumption indicates the electrical power consumed by HMI with no peripheral devices connected. To ensure normal operation, it is recommended using a power supply with a capacity 1.5 ~ 2 times the value of the power consumption.
- Users can download the Screen Editor V2.00, the program editor of Delta HMI product and the user manual via the following link: <http://www.delta.com.tw/industrialautomation/>.
- The content of this catalogue may be revised without prior notice. Please consult our distributors or download the most updated version at <http://www.delta.com.tw/industrialautomation/>.

| MODEL                                 | DOP-B07S515   | DOP-B07E515  | DOP-B08S515   | DOP-B08E515  | DOP-B10S615   | DOP-B10E615  |
|---------------------------------------|---|--|---|--|---|--|
| LCD MODULE                            | Display Type  | 7" TFT LCD (65536 colors)  |   | 8" TFT LCD (65536 colors)  |   | 10" Widescreen TFT LCD   |
|                                       | Resolution  | 800 x 600 pixels   |   | 800 x 600 pixels   |   | 1024 x 600 pixels  |
|                                       | Backlight   | LED Back Light (less than 10,000 hours half-life at 25°C) <sup>(Note 1)</sup>                              |   |  |   |  |
|                                       | Display Size  | 141 x 105.75mm   |   | 162 x 121.5mm  |   | 226 x 128.7mm  |
| Operating System                      | Delta Real Time OS  |  |   |  |   |  |
| MCU                                   | 32-bit RISC Micro-controller  |  |   |  |   |  |
| NOR Flash ROM                         | Flash ROM 128MB (OS System: 30MB / Backup: 16MB / User Application: 82MB)   |  | Flash ROM 128MB (OS System: 30MB / Backup: 16MB / User Application: 82MB)         |  | Flash ROM 128 MB (OS System: 30MB / Backup: 16MB / User Application: 82MB)        |  |
| SDRAM                                 | 64Mbytes  |  |   |  |   |  |
| Backup Memory (Bytes)                 | 16Mbytes  |  |   |  |   |  |
| Sound Effect Output                   | Buzzer  | Multi-Tone Frequency (2K ~ 4K Hz)/85dB   |   |  |   |  |
|                                       | AUX   | N/A  | Stereo output   | N/A  | Stereo output   | N/A  |
| Ethernet Interface                    | N/A   | IEEE 802.3/IEEE 802.3u 10/100 Mbps Auto-sensing (has built-in isolated power circuit <sup>(Note 3)</sup> ) | N/A   | IEEE 802.3/IEEE 802.3u 10/100 Mbps Auto-sensing (has built-in isolated power circuit <sup>(Note 3)</sup> ) | N/A   | IEEE 802.3/IEEE 802.3u 10/100 Mbps Auto-sensing (has built-in isolated power circuit <sup>(Note 3)</sup> ) |
| Memory Card                           | SD card (support SDHC)  |  |   |  |   |  |
| USB                                   | 1 USB Host <sup>(Note 2)</sup> Ver 1.1 / 1 USB Client Ver 2.0   |  |   |  |   |  |
| Serial COM Port                       | COM1  | RS-232 (supports hardware flow control)  |   |  |   |  |
|                                       | COM2  | RS-232 / RS-422 RS-485   | RS-232 / RS-422 RS-485 (has built-in isolated power circuit <sup>(Note 3)</sup> ) | RS-232 / RS-422 RS-485   | RS-232 / RS-422 RS-485 (has built-in isolated power circuit <sup>(Note 3)</sup> ) | RS-232 / RS-422 / RS-485 (has built-in isolated power circuit <sup>(Note 3)</sup> )                        |
|                                       | COM3  | RS-232 / RS-422 RS-485   | RS-232 / RS-422 RS-485 (has built-in isolated power circuit <sup>(Note 3)</sup> ) | RS-232 / RS-422 RS-485   | RS-232 / RS-422 RS-485 (has built-in isolated power circuit <sup>(Note 3)</sup> ) | RS-232 / RS-422 / RS-485 (has built-in isolated power circuit <sup>(Note 3)</sup> )                        |
| Function Key                          | N/A   |  |   |  |   |  |
| Perpetual Calendar (RTC)              | Built-in  |  |   |  |   |  |
| Cooling Method                        | Natural air circulation   |  |   |  |   |  |
| Safety Approval                       | CE / UL <sup>(Note 4)</sup> / KCC <sup>(Note 4)</sup>   |  |   |  |   |  |
| Waterproof Degree                     | IP65 / NEMA4  |  |   |  |   |  |
| Operation Voltage <sup>(Note 5)</sup> | DC +24V (-10% ~ +15%) (please use isolated power supply)  | DC +24V (-10% ~ +15%) (has built-in isolated power circuit <sup>(Note 3)</sup> )                           | DC +24V (-10% ~ +15%) (please use isolated power supply)                          | DC +24V (-10% ~ +15%) (please use isolated power supply)   | DC +24V (-10% ~ +15%) (has built-in isolated power circuit <sup>(Note 3)</sup> )  | DC +24V (-10% ~ +15%) (has built-in isolated power circuit <sup>(Note 3)</sup> )                           |
| Voltage Endurance                     | AC500V for 1 minute (between charging DC24 terminal and FG terminals)   |  |   |  |   |  |
| Power Consumption <sup>(Note 5)</sup> | 7.68W   |  | 5.2W  |  | 7.8W  | 12W  |
| Backup Battery                        | 3V lithium battery CR2032 x 1   |  |   |  |   |  |
| Backup Battery Life                   | It depends on the temperature used and the conditions of usage, about 3 years or more at 25°C   |  |   |  |   |  |
| Operation Temp                        | 0°C ~ 50°C  |  |   |  |   |  |
| Storage Temp                          | -20°C ~ +60°C   |  |   |  |   |  |
| Ambient Humidity                      | 10% ~ 90% RH [0 ~ 40°C] · 10% ~ 55% RH [41 ~ 50°C] · Pollution Degree 2   |  |   |  |   |  |
| Vibration Resistance                  | IEC 61131-2 Compliant 5Hz ≤ f < 9Hz = Continuous: 1.75mm / Occasional: 3.5mm<br>9Hz ≤ f ≤ 150Hz = Continuous: 0.5g / Occasional: 1.0g X, Y, Z directions for 10 times |  |   |  |   |  |
| Dimensions (W) x (H) x (D) mm         | 184 x 144 x 50  | 184 x 144 x 50   | 227.1 x 174.1 x 61  | 227.1 x 174.1 x 61   | 272 x 200 x 61  | 272 x 200 x 61   |
| Panel Cutout (W) x (H) mm             | 172.4 x 132.4   | 172.4 x 132.4  | 219.4 x 166.5   | 219.4 x 166.5  | 261.3 x 189.3   | 261.3 x 189.3  |
| Weight                                | Approx. 800g  | Approx. 800g   | Approx. 1226g   | Approx. 1228g  | Approx. 1520g   | Approx. 1520g  |

- The half-life of backlight is defined as original luminance being reduced by 50% when the maximum driving current is supplied to HMI.
- USB Host port can provide up to 5V/500mA of power.
- The isolated power circuit can withstand a 1500V voltage peak for 1 minute.
- Some models are in the process of application for UL and KCC certification. For more information, please consult our distributors.
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