Digitized Automation for a Changing World

Delta Human Machine Interface
DOP-100 Series

www.deltaww.com

Advanced Human Machine Interface for

Delta's Human Machine Interface DOP-100 Series includes four categories for different applications: Basic, Standard, Advanced, and Handheld. The Basic, Standard, and Handheld HMI adopt the latest Cortex-A8 (800 MHz), while the 12"/15" Advanced HMI adopts the Dual Core Cortex-A7 1Ghz high-speed processor. The DOP-100 Series employs 16-bit or 24-bit color LCD screens with high brightness and contrast. In addition, the series is equipped with the HMI programming software DIAScreen and built-in Lua editor for easy programming as well as alarm / history log / user authority functions for highly efficient management.

With advanced communication capabilities and enhanced functions, the DOP-100 Series enhances machine efficiency to bring more value to our customers, and to achieve "Automation for a Changing World"!

Standard HMI
Features General and Ethernet Types for various applications

Advanced HMI
Features narrow frame design, supports various network communications, multilingual input and multimedia functions

Future Industry

Basic HMI
Simple operating structure for harsh environments

Handheld HMI
Customized for the teaching needs of various motion platforms such as robotic arms

Table of Contents

DELTA

Easy Model Selection

The DOP-100 Series offers diverse models for different applications. Users can easily select a suitable HMI based on size or function

S Type
- ▶ **Serial Communication Port x2 (D-sub x1)**

B Type
- ▶ **Serial Communication Port x2 (D-sub x1)**

D Type
- ▶ **Serial Communication Port x2 (D-sub x1)**
- ▶ **Ethernet port x1 (RJ45 x1)**

C Type
- ▶ **Serial Communication Port x3 (D-sub x2)**

P Type
- ▶ **Serial Communication Port x3 (D-sub x2)**
- ▶ **Ethernet Port x1 (RJ45 x1)**

E Type
- ▶ **Serial Communication Port x3 (D-sub x2)**
- ▶ **Ethernet Port x1 (RJ45 x1)**

I Type
- ▶ **Serial Communication Port x3 (D-sub x3)**
- ▶ **Ethernet Port x1 (RJ45 x1)**

H Type
- ▶ **Serial Communication Port x1 (D-sub x1) or Ethernet Port x1 (RJ45 x1)**

W Type
- ▶ **Serial Communication Port x2~4 (D-sub x1~2)**
- ▶ **Narrow frame design , Multi-language**
- ▶ **Ethernet Port x1~2 (RJ45 x1~2)**

M Type
- ▶ **Serial Communication Port x4 (D-sub x2)**
- ▶ **Narrow frame design , Multi-language, Multi-media**
- ▶ **Ethernet Port x2 (RJ45 x2)**

Type Definition

DOP-107 W V

W Type

Advanced HMI

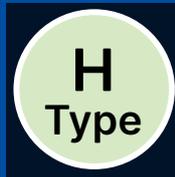At least 2 Serial
Communication Ports &
1 Ethernet Port included

W Type

Advanced Narrow Frame

M Type

Advanced Multimedia

Handheld HMI

1 Serial Communication
Port (RS-422 / RS-485) or
1 Ethernet Port

H Type

Handheld

Standard HMI

3 Serial Communication
Ports included

C Type

**Standard
General**

P Type

**Standard
Premium**

E Type

**Standard
Ethernet
(2COM)**

I Type

**Standard
Ethernet
(3COM)**

Basic HMI

2 Serial Communication
Ports included

S Type

Simple

B Type

Basic

D Type
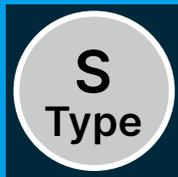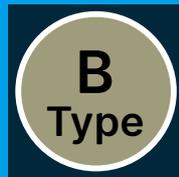
Basic Ethernet

Advanced HMI

The Advanced HMI adopts a wide screen and narrow frame design. It supports Ethernet communication & multilingual inputs. The Multimedia Type DOP-112 / 115 offers multimedia functions to meet different applications.

Features

Narrow Frame
Enlarged visual display for a better user experience

LUA Language
Simple and easy structural programming language to meet various demands

Pressing Times >10,000,000
Effective pressing times validated by strict endurance tests

IP65 Rating
Protects the HMI from rain and dust

Multilingual Input
16 different languages input for easy operation

Diagnostics Function
Collects and troubleshoots issues remotely

Power Isolation
Protects the HMI from accidental surge interference

VNC Remote Monitoring
Remote control with mobile devices

QRcode Scanning
Generates QRcodes for mobile device identification

Supports GIF Graphic Elements
Easy setting to play vivid GIF elements

Embedded Linux System
Open system for flexible and stable program development

DIAScreen
New software DIAScreen offers more functions and a better interface

Operating Temperature 0ºC ~ 50ºC
Applicable in various industrial operating environments

CE / UL Certified
Compliant with CE and UL standards

Multimedia Functions
Captures images with an external camera or replays important recordings

M Type Only

Ethernet Communication
Connects to a master device or PLC with high-speed Ethernet communication

Communication Isolation
Serial Communication Ports and Ethernet Ports with built-in isolation circuits enhance communication stability

OPC UA
Supports M2M communication and data transmission among machines from various manufacturers for diverse industries

FTP/eMail Supported
Simple data transmission and real-time status update

Supports PDF and TXT Reader
PDF and TXT files supported

Camera & Video Play
Multimedia Functions

Analog Camera

IP Camera

Analog Camera

Supports external camera via analog signals, suitable for capturing fast and short-distanced images

Applications: Textiles │ Pharmaceutical │ Rubber & Plastics

IP Camera

Supports IP Camera via Ethernet, suitable for capturing remote and wide-range images

Applications: Packaging │ Logistics │ Mining │ Power Generation │ Oil & Gas

VGA Input

Displays images from external devices such as machine vision systems, PCs or notebooks

Video Play

Views mpeg4 files captured by analog or IP camera from internal storage or USB disk / SD card

Event Trigger

Responds to preset event trigger conditions to capture images and archive as mpeg4 files

Multi-Language
Input for Localization

▶ The Advanced HMI supports multilingual inputs for:

- Recipe Name (ENRCPG)

- Recipe Group Name (ENRCPNONAME)

- Recipe Content (Char)

- User Name

▶ Supports 16 languages: English,
Traditional Chinese, Simplified Chinese,
French, German, Russian, Japanese
(Fullwidth or Halfwidth), Korean, Spanish,
Portuguese, Hindi, Turkish, Arabic, Persian,
Italian and Polish
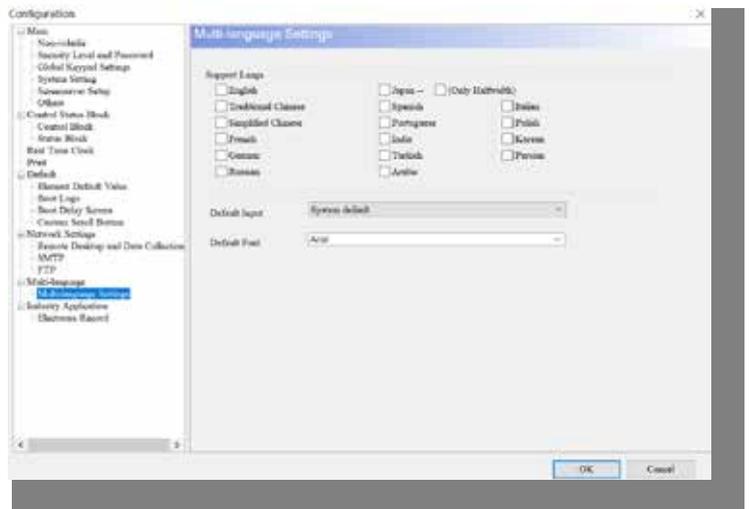
Delta's HMI can implement M2M communication and data transmission
for diverse industries by means of OPC UA. Communication among
different manufacturers' machines is enabled through information
modeling.

Standard HMI

The Standard HMI is equipped with Serial Communication Ports to meet most applications. It also offers Ethernet Types for fast and easy connection with other equipment.
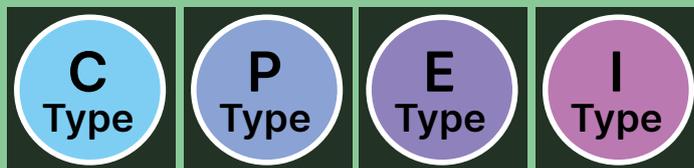
Features

Embedded Linux System
Open system for flexible and stable program development

LUA Language
Simple and easy structural programming language to meet various demands

DIAScreen
New software DIAScreen offers more functions and a better interface

Pressing Times >10,000,000
Effective pressing Times validated by strict endurance tests

Operating Temperature 0ºC ~ 50ºC
Applicable in various industrial operation environments

IP65 Rating
Protects the HMI from rain and dust

CE / UL Certified
Compliant with CE and UL standards

Diagnostics Function
Collects and troubleshoots issues remotely

Ethernet Communication
Connects to master device or PLC with high-speed Ethernet communication

P Type E Type I Type

Power Isolation
Protects the HMI from accidental surge interference

C Type E Type I Type

Communication Isolation
Serial Communication Ports and an Ethernet Port with built-in isolation circuits enhance communication stability

E Type I Type

VNC Remote Monitoring
Remote control with mobile devices

P Type E Type I Type

FTP/eMail Supported
Simple data transmission and real-time status update

P Type E Type I Type

Supports PDF and TXT Reader
PDF and TXT files supported

Supports GIF Graphic Elements
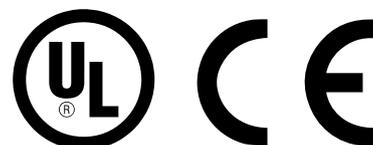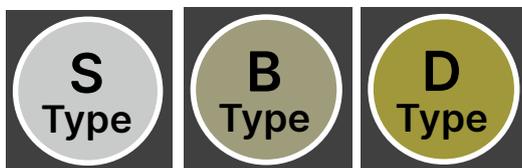Easy setting to play vivid GIF elements

User-Friendly
Intuitive operation interfaces for users

DELTA

Basic HMI

The Basic HMI is easy to install and offers basic functions
for general industrial applications. With an IP65 rating,
it is suitable for harsh environments.

Features

Embedded Linux System
Open system for flexible and stable program development

LUA Language
Simple and easy structural programming language to meet various demands

DIAScreen
New software DIAScreen offers more functions and a better interface

Pressing Times >10,000,000
Effective pressing times validated by strict endurance tests

Operating Temperature 0ºC ~ 50ºC
Applicable in various industrial operating environments

IP65 Rating
Protects the HMI from rain and dust

CE / UL Certified
Compliant with CE and UL standards

Diagnostics Function
Collects and troubleshoots issues remotely

Ethernet Communication
Connects to master device or PLC with high-speed Ethernet communication

D Type Only

FTP/eMail Supported
Simple data transmission and real-time status update

D Type Only

Communication Isolation
An Ethernet Port with built-in isolation circuits enhances communication stability

D Type Only

VNC Remote Monitoring
Remote control with mobile devices

D Type Only

Supports PDF and TXT Reader
PDF and TXT files supported

Supports GIF Graphic Elements
Easy setting to play vivid GIF elements

User-Friendly
Intuitive operation interfaces for users

Handheld HMI

The Handheld HMI adopts a lightweight handheld design and supports Serial Communication Port (RS-422 / RS-485) or Ethernet communication. Meet the teaching needs of various motion platforms such as robotic arms.

Features

Embedded Linux System
Open system for flexible and stable program development

LUA Language
Simple and easy structural programming language to meet various demands

DIAScreen
New software DIAScreen offers more complete functions and a better interface

Pressing Times >10,000,000
Effective pressing Times validated by strict endurance tests

Operating Temperature 0ºC ~ 50ºC
Applicable in various industrial operating environments

IP54 Rating
Protects the HMI from rain and dust

CE Certified
Compliant with CE standards

Diagnostics Function
Collects and troubleshoots issues remotely

Ethernet Communication
Connects to a master device or PLC with high-speed Ethernet communication

Power Isolation
Protects the HMI from accidental surge interference

Communication Isolation
Serial Communication Port / Ethernet Port with built-in isolation circuits enhance communication stability

FTP/eMail Supported
Simple data transmission and real-time status update

Supports PDF and TXT Reader
PDF and TXT files supported

QRcode Scanning
Generates QRcodes for mobile device identification

User-Friendly
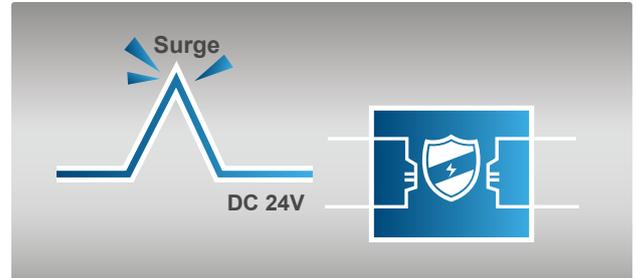Intuitive operation interfaces for users

Supports GIF Graphic Elements
Easy setting to play vivid GIF elements

Robust Hardware

Power Isolation

▶ The HMI with built-in power isolation circuits provides protection against accidental external spikes

Isolated Communication Interface

▶ The HMI with built-in Serial Communication Port and Ethernet isolation circuits to protect against noise that can occur from the grounding of various devices such as PLCs, servo drives, motor drives and others

PCB Coating

▶ The DOP-100 series has PCB coating for enhanced durability and to protect against humidity and dust for applications in a range of environments

Moisture Proof Layer
Dust Proof Layer
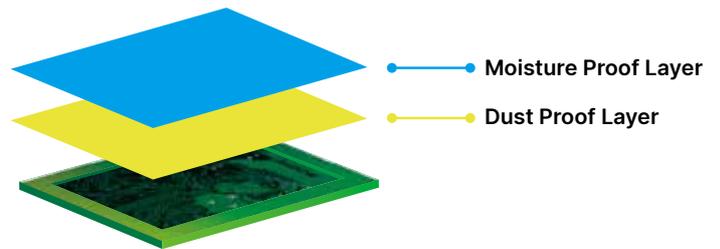
Model	Power Isolation	Serial Communication Port Isolation	Ethernet Isolation
Advanced HMI (Multimedia Type)			
DOP-112/115 MX	Yes	Yes	Yes
Advanced HMI			
DOP-103WQ/107WV/110WS	Yes	Yes	Yes
DOP-112/115 WX	Yes	Yes	Yes
Handheld HMI			
DOP-107H	Yes	Yes	Yes
Standard HMI (Ethernet Type)			
DOP-107IV	Yes	Yes	Yes
DOP-108IG/110IG	Yes	Yes	Yes
DOP-110IS	Yes	Yes	Yes
DOP-107EV	Yes	Yes	Yes
DOP-107EG	Yes	Yes	Yes
DOP-107PV	No	No	Yes
Standard HMI			
DOP-105CQ	Yes	No	No
DOP-107CV	Yes	No	No
DOP-110CS	Yes	No	No
DOP-110CG	Yes	No	No
Basic HMI (Ethernet Type)			
DOP-103DQ	Yes	Yes	Yes
DOP-107DV	No	No	Yes
Basic HMI			
DOP-103SQ	No	No	No
DOP-103BQ	No	No	No
DOP-107BV	No	No	No

Programming Software – DIAScreen

Abundant Elements

▶ Abundant built-in element graphics for vivid interface display for a variety of industrial applications
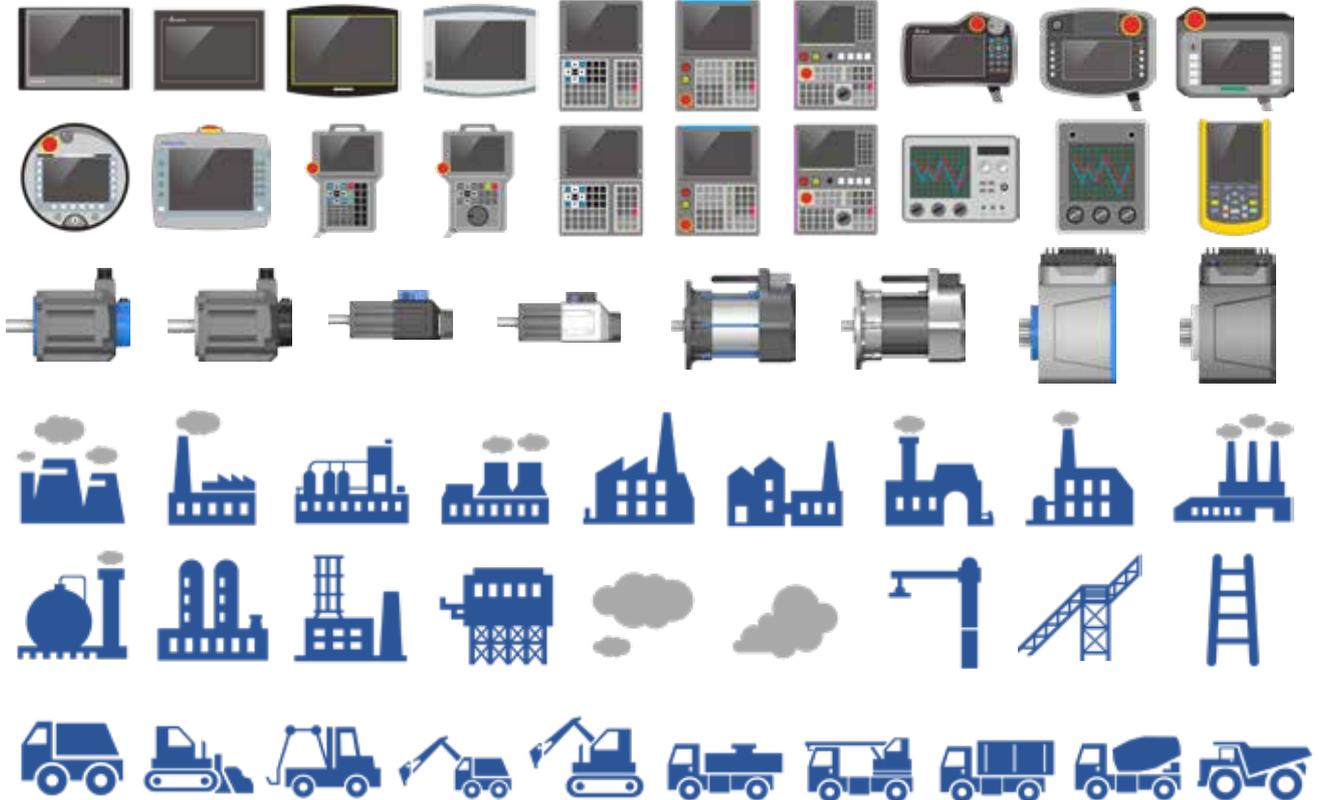
Smooth Animation

▶ New smooth animation technology for realistic dashboard display

Programming Software - DIAScreen

User-Friendly Programming Interface
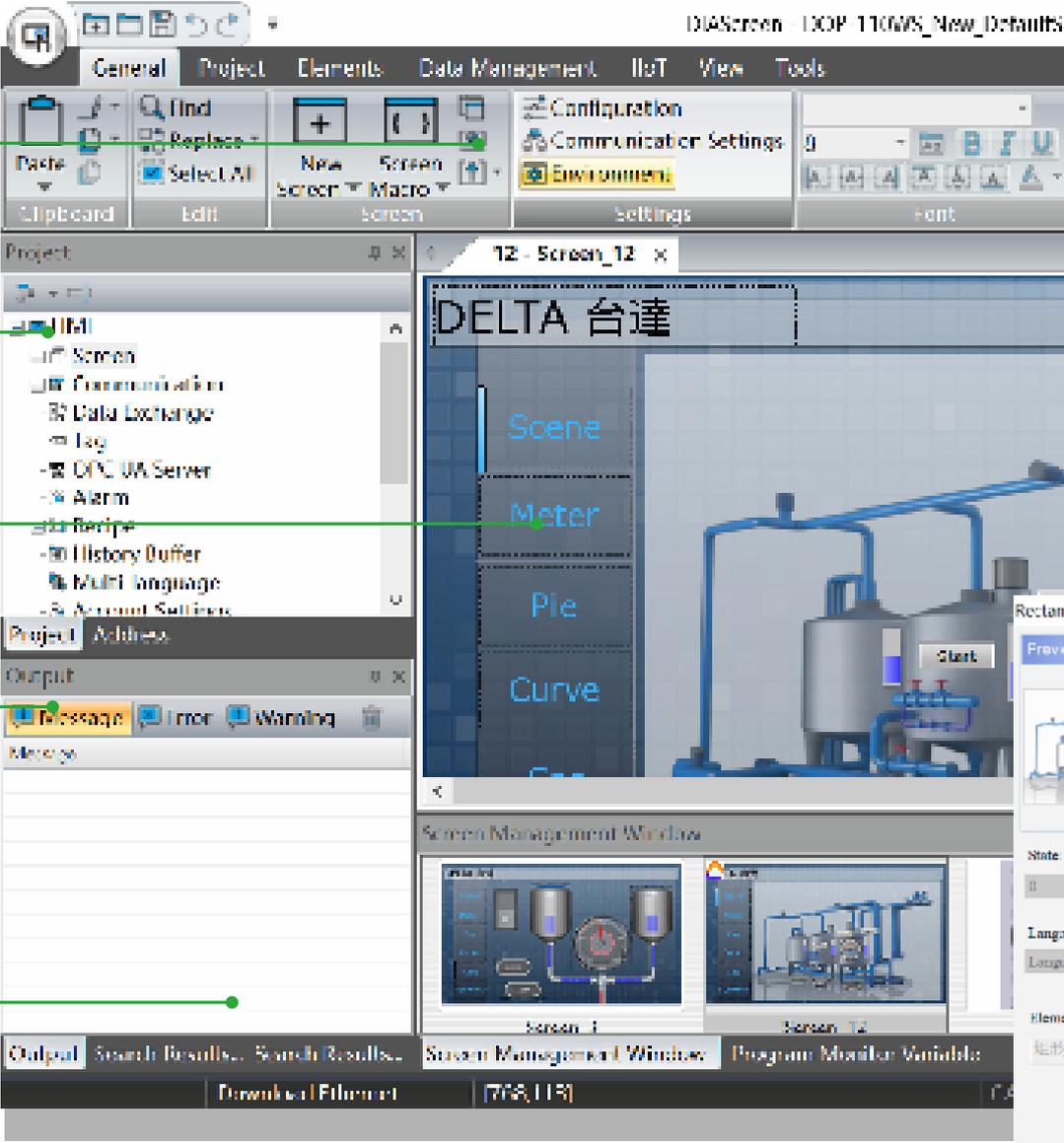
Bookmark Management

Bookmark menu allows users to switch pages easily

Project Management Batch

Users can quickly switch items via the project branch feature

Editing Area

Provides real-time display of users' edits

Output List

Automatically displays edit results of each screen. Users can review and troubleshoot by clicking screens

Edit Preview

Users can quickly browse the overall project via edit preview

Customized keyboard

Abundant Accessories

Process paradigms

Field devices
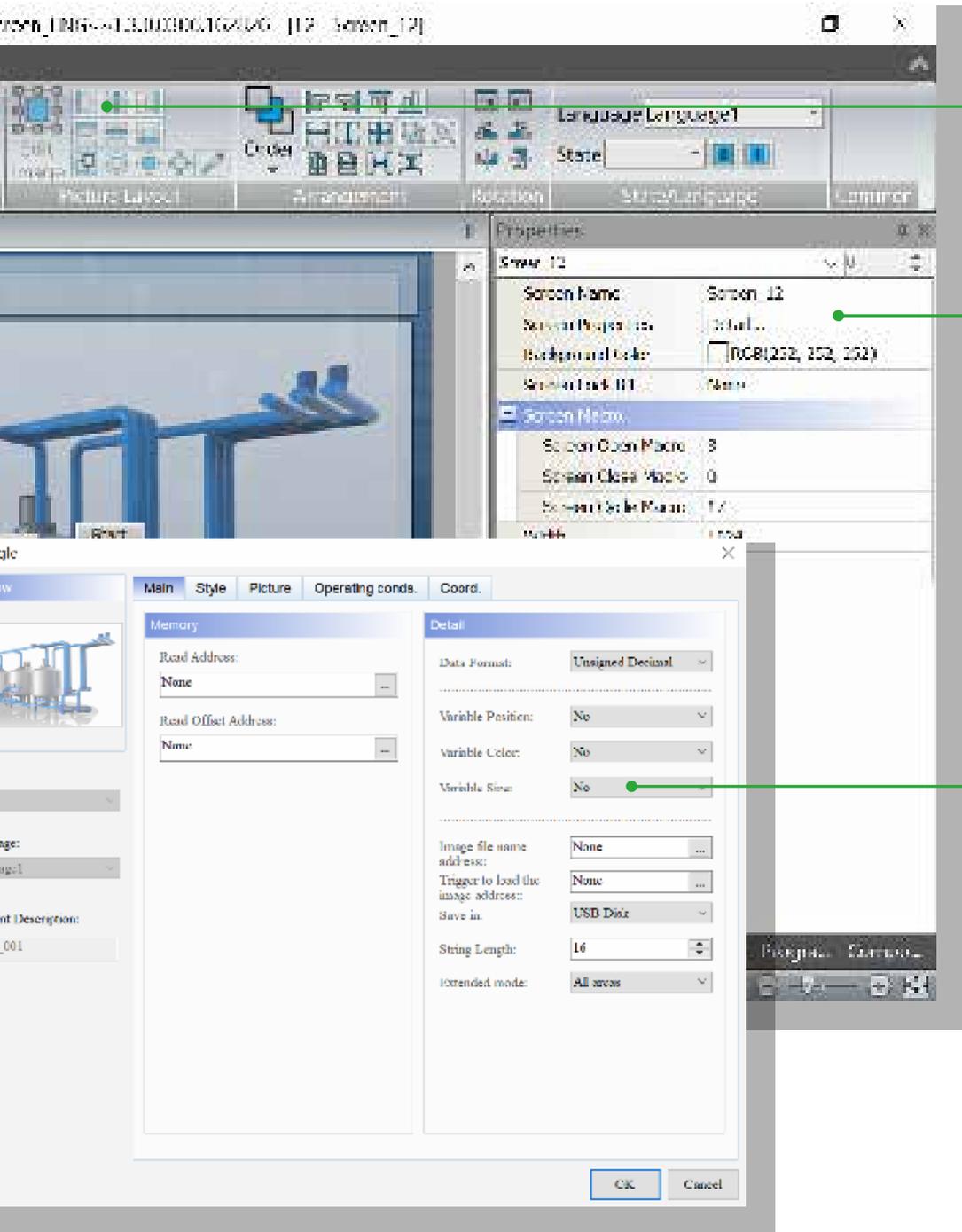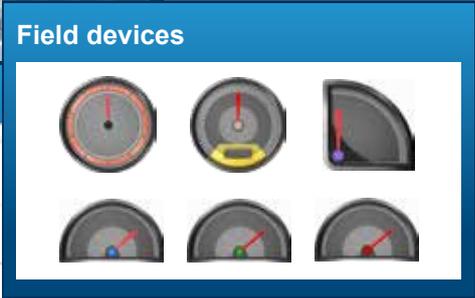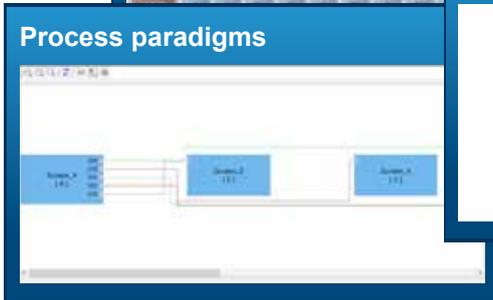
General Tool

Shortcut icons help enhance efficiency

Property

Provides easier property setup via group lists

Property Window

Standard accessory dialog box with built-in preview and quick-edit functions

ΔNELTA

Programming Software - DIAScreen
Editing Windows
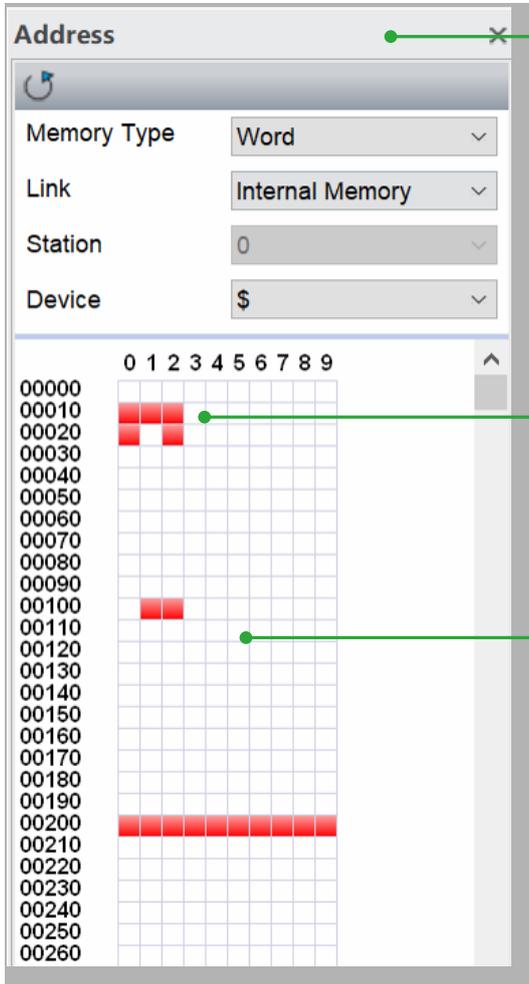
Register View Window

The color blocks of red and white allow users to view the memory register status

Red blocks indicate the used registers

White blocks indicate empty registers

Macro Management Window

Users can view all types of macros in the project
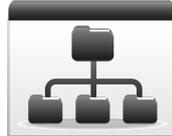
Select a macro via the list

Directly edit the macro after clicking
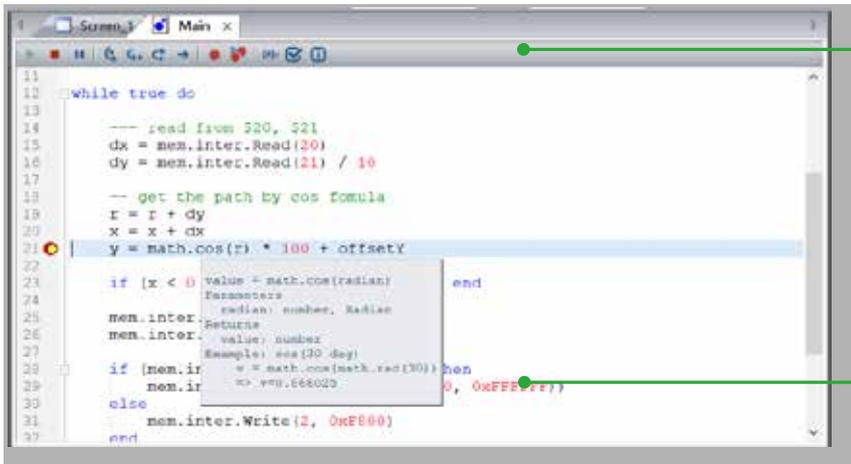
Lua Tool Bar

▷ Program debug

▭ Stops program debug

⬤ Program break point

Online Coding Tips

Lua editor displays tip windows of the codes when users move the mouse to the selected codes
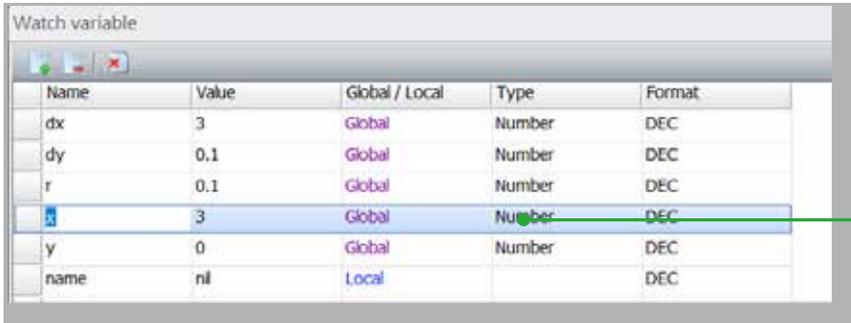
Parameter Monitoring Window

Allows users to monitor parameter variation during program development
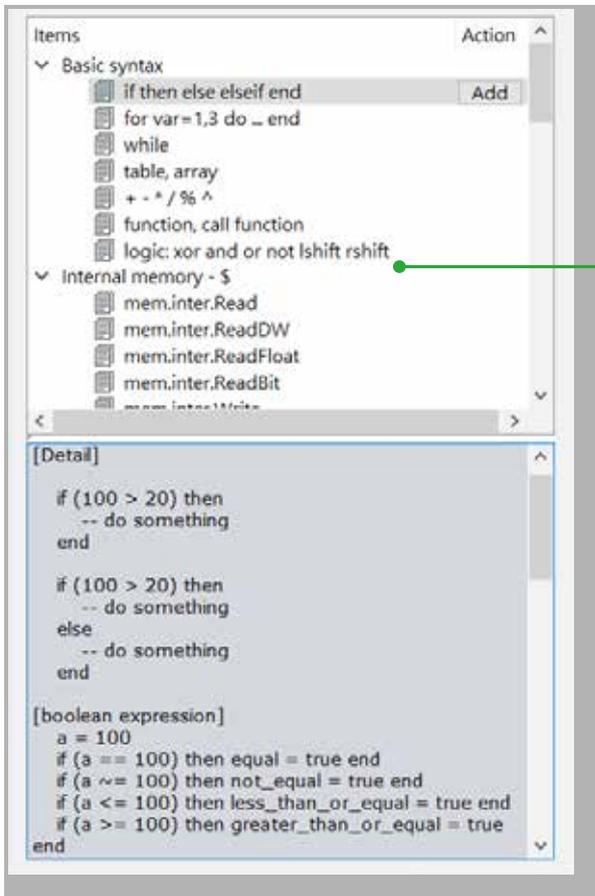
Programming Assistance Window

Provides online assistance as follows:

- Lua code templates
- Program usage and properties
- Program samples

ΔELTA

Advanced Alarm

Strengthened alarm functions allow users to easily manage machine operations and quickly troubleshoot problems

▶ Alarm messages contain current register data for issue analysis

Alarm Sorting
Alarm sorting via a "Sorting" function based on alarm attributes for quick information inquiries

Supports Compound Address Monitoring
Monitors Word and Bit documents at the same time

Versatile Alarm Triggering Conditions
Triggering conditions can be setup via a built-in function, no external editing programs required
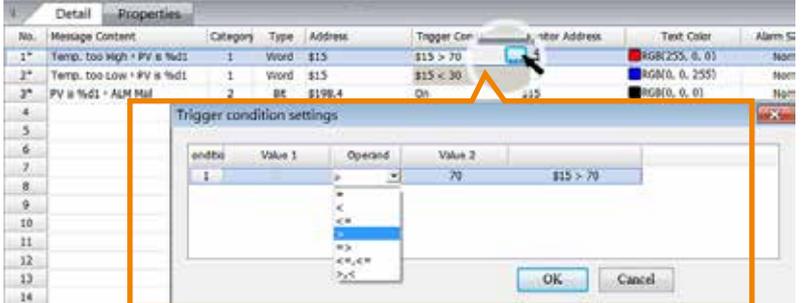
Alarm Notification

Automatically sends out alarm notification emails to logged-in recipients when alarms occur and supports the Secure Sockets Layer (SSL) protocol to ensure safe data transmission

Alarm

Email

SSL

Office

▶ Indicates the alarm trigger and recovery time, and provides alarm acknowledge time / date (Ack) to confirm and monitor troubleshooting progress

Message	Trigger	Ack	Recovery
Temp. too Low • PV is 12	15:07:12 02/03/2017		15:07:15 02/03/2017
Temp. too High • PV is 91	15:07:15 02/03/2017	15:07:56 02/03/2017	15:07:22 02/03/2017
Temp. too Low • PV is 15	15:07:22 02/03/2017		15:07:25 02/03/2017
Temp. too Low • PV is 23	15:07:28 02/03/2017	15:07:58 02/03/2017	15:07:34 02/03/2017

Alarm Filtering

Advanced address control filtering allows users to find specified alarm messages according to user needs

Action	
Address control filtering allows users to find specified alarms	
No.	Action
0	Preset state, shows all triggered alarms
1	Hide alarms with "Recover Time" and "Ack Time"
2	Hide alarms with "Recover Time"
3	Hide alarms with "Recover Time" or "Ack Time"
4	Hide alarms with "Ack Time"

Alarm Ordering

Displays alarms in the order of Trigger Time / Ack Time / Recover Time

Order by Trigger time
Order by ACK time
Order by Recover time

Order by Recover time
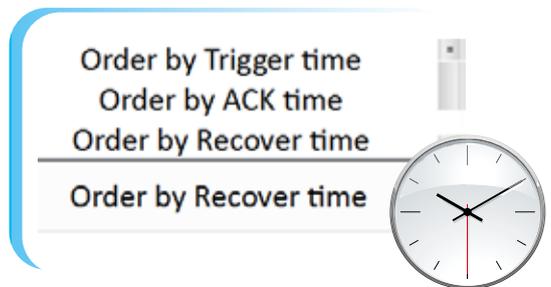
Data Management

Historical Data

▶ Generates historical reports with user-defined file names and timestamps through Bit Control

Bit On Output   **Data Backup**

Save As Mul

File Date

None ▼   %m ▼   %d ▼

File Time

%H ▼   %M ▼   None ▼

File Name   DOP

Saving trigger $175.0   ...

Historical Data Review

▶ Allows historical data review on backup in USB disk or SD cards

Zoom In / Out Display

▶ Zoom in / out function for convenient data viewing
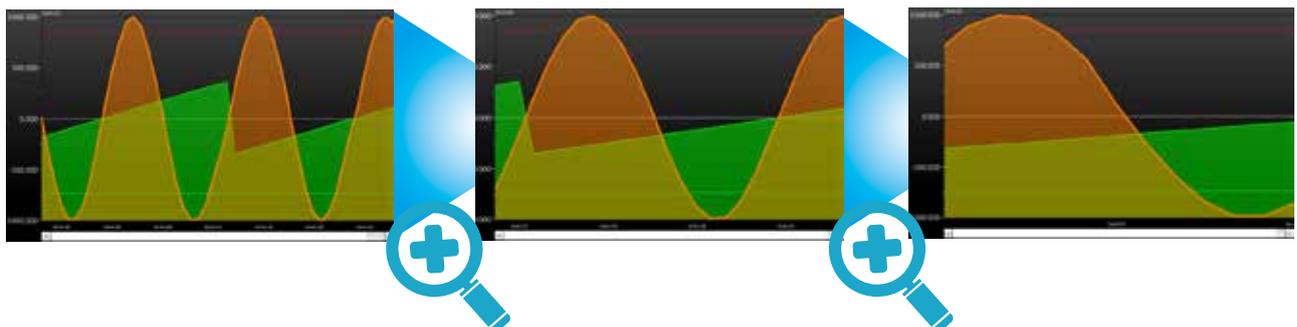
Recipes

▶ Supports 2D and 3D recipe grouping, for more flexibility in building recipe database

▶ Various recipe formats, including text format (Unicode) which can also be used as formula notes

	D100	D101	D102	D103	D104	D105	D106	
	D100	**D101**	**D102**	**D103**	**D104**	**D105**	**D106**	50.7
Cake Recipe 1	Strawberry	300	0	0	221.56	533.1	150.7	63.9
Cake Recipe 2	Chocolate	0	300	0	387.98	490.8	163.9	79.8
Cake Recipe 3	Vanilla	0	0	300	120.14	505.3	279.8	
		Strawberry	Chocolate	Vanilla	Sugar	Flour	Milk	
	Char	**Unsigned DEC**			**Floating**			

Recipe Group 2

Recipe Group 1

▶ Recipes can be saved in CSV files for convenient editing on PCs

▶ Allows recipe update or backup through USB disks, SD cards or FTP
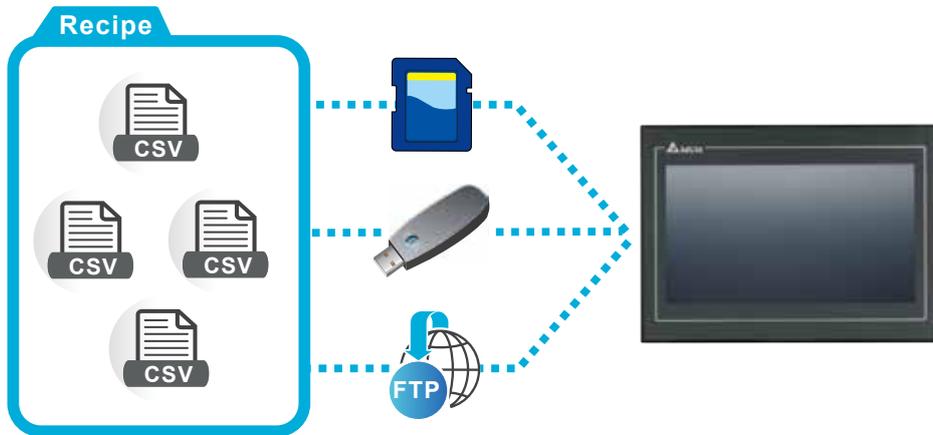
PDF for Data Review

▶ Users can save manuals or instruction PDF files in USB disks or SD cards for reference anytime

User Authority Management

Account and Authorization Management

▶ Supports 8 levels of authority and allows 20 accounts (account name/password) for each level to enhance operation safety

▶ Different function and operation access for each authority level to enhance operation safety

▶ Automatically logs out inactive users to ensure data security
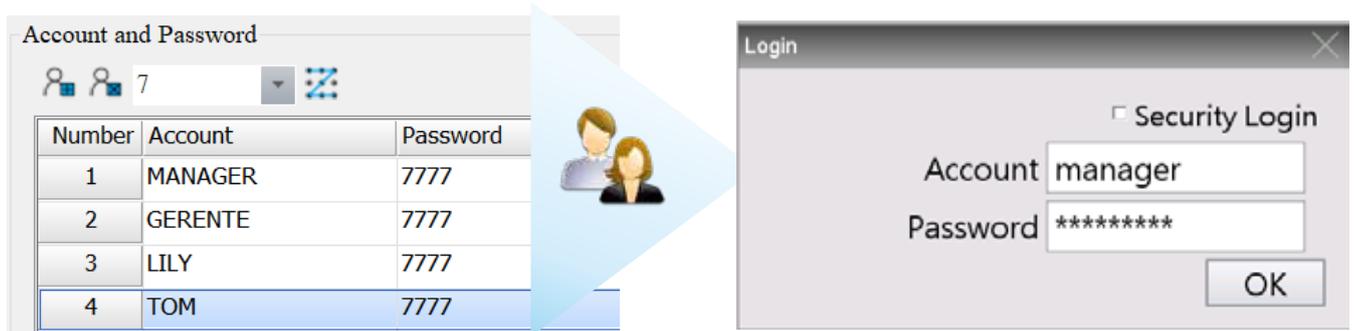
Operation Log

▶ Operation log for different user accounts to trace/analyze possible causes of malfunctions

▶ Provides comprehensive information for managers to analyze the operating habits of different users and enhance efficiency

Time	Date	User	Level	Screen Description	Action	Address	Pre Value	Change
13:02:08	09/29/2020		0	Screen_Maintained_0	Set Val	$0.0	0	1
13:02:20	09/29/2020		0	Screen_Maintained_0	Login	$10.0		11
13:02:20	09/29/2020	11	1	Screen_Maintained_0	Set Val	$10.0	0	1
13:02:23	09/29/2020	11	1	Screen_Numeric Entry	Set Val	$100	0	99
13:02:28	09/29/2020	11	1	Screen_Maintained_0	Set Val	$10.0	1	0
13:02:31	09/29/2020	11	1	Screen_Maintained_0	Set Val	$10.0	0	1
13:02:34	09/29/2020	11	1	Screen_Numeric Entry	Set Val	$100	99	88
13:02:37	09/29/2020	11	1	Screen_Maintained_0	Set Val	$0.0	0	1
13:03:04	09/29/2020	11	1	Screen_Numeric Entry	Set Val	$100	88	55
13:03:09	09/29/2020	11	1	Screen_Numeric Entry	Set Val	$100	55	33
13:03:10	09/29/2020	11	1	Screen_Maintained_0	Set Val	$10.0	1	0
13:03:12	09/29/2020	11	1	Screen_Maintained_0	Set Val	$10.0	0	1
13:03:16	09/29/2020	11	1	Screen_Numeric Entry	Set Val	$100	33	123

Network Functions

| M Type | W Type | H Type | I Type | E Type | P Type | D Type |
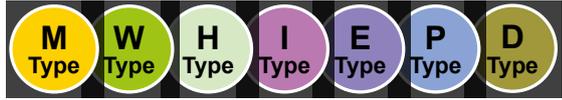
Only With Ethernet

FTP Server

▶ Built-in FTP server to update recipes or PDF files, and backup historical data, operation log and alarms
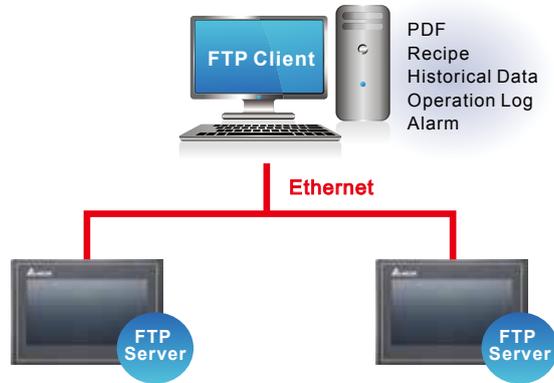
VNC Server

▶ Built-in VNC server allows remote monitoring and operating of the DOP-100 Series via VNC Client APP (Windows, iOS, Android)

▶ Lock function: blocks remote operation during on-site operation to avoid unsynchronized commands. The VNC server allows remote monitoring but not remote operation when the lock function is on
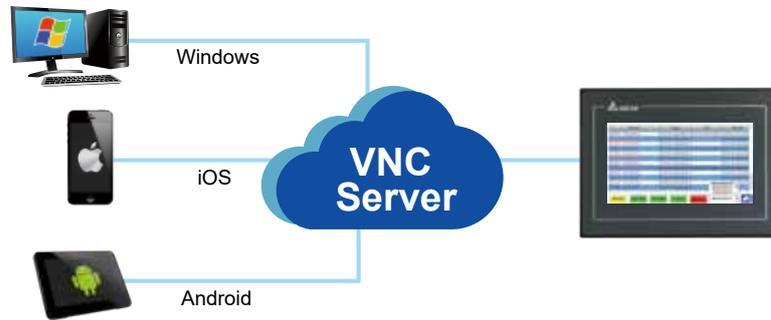
Web Monitoring

▶ Allows direct monitoring of register data via web page, and requires no additional software installation
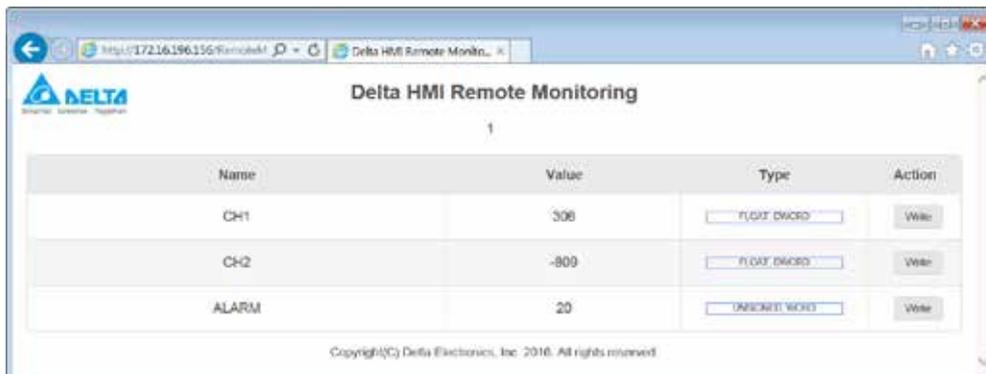
Hardware Specifications

Advanced HMI

Model	Advanced Narrow Frame Type		
	DOP-103WQ	DOP-107WV	DOP-110WS
LCD Module — Display	4.3" TFT LCD	7" TFT LCD	10.1" TFT LCD
Color	16-bit		
Resolution (Pixels)	480 x 272	800 x 480	1,024 x 600
Back Light	LED Back Light		
Back Light Brightness (cd/m^2)	400	450	450
Back Light Life (Hour)[1]	10,000	20,000	30,000
Display Area	95.04 x 53.856 mm	154.08 x 85.92 mm	225.52 x 128.10 mm
MCU	ARM Cortex-A8 (800 MHz)		
Flash ROM (Bytes)	256 MB		
RAM (Bytes)	512 MB		
Touch Panel	Four-wire resistor, over 10,000,000 pressing times		
Buzzer	Multi-Tone Frequency (2K ~ 4K Hz) / 80 dB		
Ethernet Interface	1 Port[2], 10/100 Mbps auto-sensing		
USB	1 USB Slave Ver 2.0 / 1 USB Host Ver 2.0		
SD	N/A		SD x 1
Serial COM Port — COM1	RS-232 (supports hardware flow control) / RS-485[2]	RS-232 (supports hardware flow control)[2]	
COM2[2]	RS-422 / RS-485[2]	RS-232 (supports hardware flow control) / RS-485[2]	
COM3[2]	N/A	RS-422 / RS-485[2]	
RTC	Built-in		
Cooling	Natural air circulation		
Certification	CE / UL (please use shielding Ethernet cables and magnetic rings with filters of 300 ohm / 100 MHz)		
Waterproof	IP65 / NEMA4 / UL Type 4X (indoor use only)		
Operation Voltage[3]	DC +24V (-15% ~ 15%)[2], supplied by Class 2 or SELV circuit (isolated from MAINS by double insulation)		
Voltage Endurance	AC500 V for 1 minute (between charging DC24 terminal and FG terminals)		
Power Consumption[5]	Max. 5.8 W[3]	Max. 8.4 W[3]	Max. 11 W[3]
Backup Battery	3V lithium battery CR2032 × 1		
Backup Battery Life	Depends on the temperature used and the conditions of usage, usually about 3 years or more at 25° C		
Operating Temperature	0 °C ~ 50 °C		
Storage Temperature	-20 °C ~ 60 °C		
Ambient Humidity	10% ~ 90% RH (0 ~ 40 °C), 10% ~ 55% RH (41 ~ 50 °C), Pollution Degree 2		
Vibration	IEC 61131-2 compliant 5 Hz ~ 8.3 Hz = Continuous: 3.5 mm, 8.3 Hz ~ 150 Hz = Continuous: 1g		
Shock	IEC 60068-2-27 compliant 15 g peak for 11 ms duration, X, Y, Z, directions for 6 times		
Dimensions (W) x (H) x (D) mm	137 x 103 x 37.1	196 x 136 x 39	270 x 180.9 x 47.25
Mounting Dimensions (W) x (H) mm	118.8 x 92.8	186.8 x 126.8	255 x 170.5
Weight	280 g	560 g	1,100 g

1) The half-life of a backlight is defined as the original luminance being reduced by 50% when the maximum driving current is supplied to an HMI.
2) Built-in power isolation
3) An isolated power supply is recommended.
4) Some models are in the process of application for UL and KCC certification. For more information, please consult our distributors.
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Advanced HMI

Model	Advanced Narrow Frame Type		Advanced Multimedia Type	
	DOP-112WX	DOP-115WX	DOP-112MX	DOP-115MX
LCD Module — Display	12" TFT LCD	15" TFT LCD	12" TFT LCD	15" TFT LCD
Color	24-bit			
Resolution (Pixels)	1,024 x 768			
Back Light	LED Back Light			
Back Light Brightness (cd/m^2)	500	450	500	450
Back Light Life (Hour)[1]	50,000			
Display Area	245.76 x 184.32 mm	304.1 x 228.1 mm	245.76 x 184.32 mm	304.1 x 228.1 mm
MCU	Cortex-A7, Dual Core 1 GHz			
Flash ROM (Bytes)	8 GB			
RAM (Bytes)	DDR3 1,000 MHz 1 GB			
Touch Panel	Four-wire resistor, over 10,000,000 pressing times			
Buzzer	Multi-Tone Frequency (2K ~ 4K Hz) / 85 dB			
Ethernet Interface	2 Ports[2], 10 / 100 Mbps Auto sensing			
USB	1 Mini USB Slave Ver 2.0 / 1 USB Host Ver 2.0			
SD	SD x 1			
Serial COM Port — COM1	RS-232 (supporting flow control) / RS-485[2]			
COM2	RS-422 / RS-485[2]			
COM3	RS-232 (supporting flow control) / RS-485[2]			
COM4	RS-422 / RS-485[2]			
RTC	Built-in			
Cooling	Natural air circulation			
Certification	CE / UL (please use shielding Ethernet cables and magnetic rings with filters of 300 ohm / 100 MHz)			
Waterproof	IP65 / NEMA4 / UL Type 4X (indoor use only)			
Operation Voltage[3]	DC +24V (-15% ~ 15%)[2], supplied by Class 2 or SELV circuit (isolated from MAINS by double insulation)			
Voltage Endurance	AC500 V for 1 minute (between charging DC24 terminal and FG terminals)			
Power Consumption[5]	Max. 16.08 W	Max. 21.12 W	Max. 16.08 W	Max. 21.12 W
Backup Battery	3V lithium battery CR2032 × 1			
Backup Battery Life	Depends on the temperature used and the conditions of usage, usually about 3 years or more at 25 °C			
Operation Temperature	0 °C ~ 50 °C			
Storage Temperature	-20 °C ~ 60 °C			
Ambient Humidity	10% ~ 90% RH (0 ~ 40 °C), 10% ~ 55% RH (41 ~ 50 °C), Pollution Degree 2			
Viberation	IEC 61131-2 compliant 5 Hz ~ 8.3 Hz = Continuous: 3.5 mm, 8.3 Hz ~ 150 Hz = Continuous: 1 g			
Shock	IEC 60068-2-27 compliant 15 g peak for 11 ms duration, X, Y, Z, directions for 6 times			
Dimensions (W) x (H) x (D) mm	317.4 x 246.4 x 52.7	387.7 x 295.7 x 63.5	317.4 x 246.4 x 52.7	387.7 x 295.7 x 63.5
Mounting Dimensions (W) x (H) mm	302.7 x 228.7	372.4 x 283.7	302.7 x 228.7	372.4 x 283.7
Weight	2,110 g	3,200 g	2,110 g	3,200 g

1) The half-life of a backlight is defined as the original luminance being reduced by 50% when the maximum driving current is supplied to an HMI.
4) Built-in power isolation
5) An isolated power supply is recommended.
4) Some models are in the process of application for UL and KCC certification. For more information, please consult our distributors.
7) The value of the power consumption indicates the electrical power consumed by the HMI with no peripheral devices connected.
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Hardware Specifications

Standard HMI

Model		Standard General Type			
		DOP-105CQ	DOP-107CV	DOP-110CS	DOP-110CG
LCD Module	Display	5.6" TFT LCD	7" TFT LCD	10.1" TFT LCD	10.4" TFT LCD
	Color	16-bit			
	Resolution (Pixels)	320 x 234	800 x 480	1,024 x 600	800 x 600
	Back Light	LED Back Light			
	Back Light Brightness (cd/m^2)	200	400	300	300
	Back Light Life (Hour)[1]	20,000			
	Display Area	113.28 x 84.70 mm	154.08 x 85.92 mm	226 x 128.7 mm	211.2 x 158.4 mm
MCU		ARM Cortex-A8 (800 MHz)			
Flash ROM (Bytes)		256 Mbytes			
RAM (Bytes)		256 Mbytes			
Touch Panel		Four-wire resistor, over > 10,000,000 pressing times		Four-wire resistor, over > 1,000,000 pressing times	
Audio Output	Buzzer	Multi-Tone Frequency (2K ~ 4K Hz) / 80 dB			
	AUX	N/A			
USB		1 USB Slave Ver 2.0 / 1 USB Host Ver 2.0			
SD		N/A			
Serial COM Port	COM1	RS-232 (supports hardware flow control)			
	COM2	RS-232 (supports hardware flow control) / RS-485			
	COM3	RS-422 / RS-485			
RTC		Built-in			
Cooling		Natural air circulation			
Certification		CE / UL (please equip shielding cables and line filters with capacity of 300 ohm / 100 MHz)			
Waterproof		IP65 / NEMA4 / UL Type 4X (indoor use only)(105CQ &110CG non UL Type 4X)			
Operation Voltage[3]		DC +24V (-15% ~ +15%)[2], supplied by Class 2 or SELV circuit (isolated from MAINS by double insulation)			
Voltage Endurance		AC500 V for 1 minute (between charging DC24 terminal and FG terminals)			
Power Consumption[5]		Max. 6.86 W [3]	Max. 8.5 W [3]	Max. 10.4 W [3]	Max. 8 W [3]
Backup Battery		3V lithium battery CR2032 × 1			
Backup Battery Life		Depends on the temperature used and the conditions of usage, usually about 3 years or more at 25 °C			
Operation Temperature		0 °C ~ 50 °C			
Storage Temperature		-20 °C ~ 60 °C			
Ambient Humidity		10% ~ 90% RH (0 ~ 40 °C), 10% ~ 55% RH (41 ~ 50 °C), Pollution Degree 2			
Vibration		IEC 61131-2 compliant 5 Hz ~ 8.3 Hz = Continuous: 3.5 mm, 8.3 Hz ~ 150 Hz = Continuous: 1g			
Shock		IEC 60068-2-27 compliant 15 g peak for 11 ms duration, X, Y, Z, directions for 6 times			
Dimensions (W) x (H) x (D) mm		184 x 144 x 50	215 x 161 x 61.2	272 x 200 x 61	299 x 224 x 46.8
Mounting Dimensions (W) x (H) mm		172.4 x 132.4	196.9 x 142.9	261.3 x 189.3	285.2 x 210.2
Weight		670 g	970 g	1,330 g	1,735 g

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2) Built-in power isolation
3) An isolated power supply is recommended.
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Standard HMI

Model	Standard Premium	Standard Ethernet Type (2 COM)	
	DOP-107PV	DOP-107EG	DOP-107EV
LCD Module — Display	7" TFT LCD	7" TFT LCD	7" TFT LCD
Color	24-bit	16-bit	
Resolution (Pixels)	800 x 480	800 x 600	800 x 480
Back Light	LED Back Light		
Back Light Brightness (cd/m^2)	400	450	400
Back Light Life (Hour)[1]	20,000		
Display Area	154.08 x 85.92 mm	141 x 105.75 mm	154.08 x 85.92 mm
MCU	ARM Cortex-A8 (800 MHz)		
Flash ROM (Bytes)	256 MB		
RAM (Bytes)	256 MB		
Touch Panel	Four-wire resistor, over > 1,000,000 pressing times	Four-wire resistor, over > 10,000,000 pressing times	
Audio Output — Buzzer	Multi-Tone Frequency (2K ~ 4K Hz) / 80dB		
AUX	N/A	Stereo output	N/A
Ethernet Interface	1 Port[2], 10/100 Mbps auto-sensing		
USB	1 USB Slave Ver 2.0; 1 USB Host Ver 2.0		
SD	N/A	SD x 1	N/A
Serial COM Port — COM1	RS-232 (supports hardware flow control)[2] (107PV non-isolated circuit)		
COM2	RS-232 (supports hardware flow control) / RS-485[2] (107PV non-isolated circuit)		
COM3	RS-422 / RS-485[2] (107PV non-isolated circuit)		
RTC	Built-in		
Cooling	Natural air circulation		
Certification	CE/UL (please use shielding Ethernet cables and magnetic rings with filters of 300 ohm / 100 MHz)		
Waterproof	IP65 / NEMA4 / UL Type 4X (indoor use only)		
Operation Voltage[3]	DC +24V (-15% ~ +15%)[2] (107PV non-isolated circuit) Supplied by Class 2 or SELV circuit (isolated from MAINS by double insulation)		
Voltage Endurance	AC500 V for 1 minute (between charging DC24 terminal and FG terminals)		
Power Consumption[5]	Max. 8.3 W[3]	Max. 8.4 W[3]	Max. 8.76 W[3]
Backup Battery	3V lithium battery CR2032 × 1		
Backup Battery Life	Depends on the temperature used and the conditions of usage, usually about 3 years or more at 25°C		
Operating Temperature	0°C ~ 50°C		
Storage Temperature	-20°C ~ 60°C		
Ambient Humidity	10% ~ 90% RH (0 ~ 40°C), 10% ~ 55% RH (41 ~ 50°C), Pollution Degree 2		
Vibration	IEC 61131-2 compliant 5 Hz ~ 8.3 Hz = Continuous: 3.5 mm, 8.3 Hz ~ 150 Hz = Continuous: 1g		
Shock	IEC 60068-2-27 compliant 15 g peak for 11 ms duration, X, Y, Z, directions for 6 times		
Dimensions (W) x (H) x (D) mm	196.6 x 136.6 x 38.8	184 x 144 x 51.5	215 x 161 x 61.2
Mounting Dimensions (W) x (H) mm	186.8 x 126.8	172.4 x 132.4	196.9 x 142.9
Weight	650 g	800 g	970 g

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2) Built-in power isolation
3) An isolated power supply is recommended.
4) Some models are in the process of application for UL and KCC certification. For more information, please consult our distributors.
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Hardware Specifications

Standard HMI

Model	Standard Ethernet Type (3 COM)			
	DOP-107IV	**DOP-108IG**	**DOP-110IS**	**DOP-110IG**
LCD Module — Display	7" TFT LCD	8" TFT LCD	10.1" TFT LCD	10.4" TFT LCD
Color	16-bit			
Resolution (Pixels)	800 x 480	800 x 600	1024 x 600	800 x 600
Back Light	LED Back Light			
Back Light Brightness (cd/m^2)	400	250	300	300
Back Light Life (Hour)[1]	20,000	10,000	20,000	10,000
Display Area	152.4 x 91.44 mm	162 x 121.5 mm	226 x 128.7 mm	211.2 x 158.4 mm
MCU	ARM Cortex-A8 (800 MHz)			
Flash ROM (Bytes)	256 MB			
RAM (Bytes)	256 MB			
Touch Panel	Four-wire resistor, over > 10,000,000 pressing times			
Audio Output — Buzzer	Multi-Tone Frequency (2 K ~ 4 K Hz) / 80 dB			
AUX	N/A	Stereo output		
Ethernet Interface	1 Port[2], 10/100 Mbps auto-sensing			
USB	1 USB Slave Ver 2.0 / 1 USB Host Ver 2.0			
SD	SD x 1			
Serial COM Port — COM1	RS-232 (supports hardware flow control)[2]			
COM2	RS-232 (supports hardware flow control) / RS-485[2]			
COM3	RS-232 (supports hardware flow control) / RS-422 / RS-485[2]			
RTC	Built-in			
Cooling	Natural air circulation			
Certification	CE/UL (please use shielding Ethernet cables and magnetic rings with filters of 300 ohm / 100 MHz)			
Waterproof	IP65 / NEMA4 (indoor use only) (110IG with UL Type 4X)			
Operation Voltage[3]	DC +24V (-15% ~ +15%)[2], supplied by Class 2 or SELV circuit (isolated from MAINS by double insulation)			
Voltage Endurance	A500V for 1 minute (between charging DC24 terminal and FG terminals)			
Power Consumption[5]	Max. 12 W[3]	Max. 9.88 W[3]	Max. 9.6 W[3]	Max. 9.6 W[3]
Backup Battery	3V lithium battery CR2032 x 1			
Backup Battery Life	Depends on the temperature used and the conditions of usage, usually about 3 years or more at 25 °C			
Operation Temperature	0 °C ~ 50 °C			
Storage Temperature	-20 °C ~ 60 °C			
Ambient Humidity	10% ~ 90% RH (0 ~ 40 °C), 10% ~ 55% RH (41 ~ 50 °C), Pollution Degree 2			
Vibration	IEC 61131-2 compliant 5 Hz ~ 8.3 Hz = Continuous: 3.5 mm, 8.3 Hz ~ 150 Hz = Continuous: 1g			
Shock	IEC 60068-2-27 compliant 15 g peak for 11 ms duration, X, Y, Z, directions for 6 times			
Dimensions (W) x (H) x (D) mm	215 x 161 x 61.2	227.1 x 174.1 x 61	272.6 x 200.6 x 54	299 x 224 x 46.8
Mounting Dimensions (W) x (H) mm	196.9 x 142.9	219.4 x 166.5	261.3 x 189.3	285.2 x 210.2
Weight	970 g	1,226 g	1,130 g	1,600 g

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2) Built-in power isolation
3) An isolated power supply is recommended.
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Basic HMI

Model	Simple Type	Basic Type	
	DOP-103SQ	DOP-103BQ	DOP-107BV
LCD Module	Display	4.3" TFT LCD	4.3" TFT LCD	7" TFT LCD
	Color	16-bit		
	Resolution (Pixels)	480 x 272	480 x 272	800 x 480
	Back Light	LED Back Light		
	IPS	Yes	N/A	N/A
	Back Light Brightness (cd/m^2)	400		
	Back Light Life (Hour)[1]	20,000		
	Display Area	95.04 x 53.856 mm	95.04 x 53.856 mm	154.08 x 85.92 mm
MCU		ARM Cortex-A8 (800 MHz)		
Flash ROM (Bytes)		256 MB		
RAM (Bytes)		256 MB		
Touch Panel		Four-wire resistor, over > 10,000,000 pressing times		
Audio Output	Buzzer	Multi-Tone Frequency (2K ~ 4K Hz) / 80 dB		
	AUX	N/A		
Ethernet Interface		N/A		
USB		1 USB Slave Ver 2.0 / 1 USB Host Ver 2.0		
SD		N/A		
Serial COM Port	COM1	RS-232 (supports hardware flow control) / RS-485		
	COM2	RS-422 / RS-485		
	COM3	N/A		
RTC		Built-in		
Cooling		Natural air circulation		
Certification		CE / UL (please equip shielding cables and line filters with capacity of 300 ohm / 100 MHz)		
Waterproof		IP65 / NEMA4 / UL Type 4X (indoor use only)		
Operation Voltage[3]		DC +24V (-15% ~ +15%)[2], supplied by Class 2 or SELV circuit (isolated from MAINS by double insulation)		
Voltage Endurance		AC500V for 1 minute (between charging DC24 terminal and FG terminals)		
Power Consumption[5]		Max. 5.67 W[3]	Max. 5.67 W[3]	Max. 8.6 W[3]
Backup Battery		3V lithium battery CR2032 × 1		
Backup Battery Life		Depends on the temperature used and the conditions of usage, usually about 3 years or more at 25 °C		
Operation Temperature		0 °C ~ 50 °C		
Storage Temperature		-20 °C ~ 60 °C		
Ambient Humidity		10% ~ 90% RH (0 ~ 40 °C), 10% ~ 55% RH (41 ~ 50 °C), Pollution Degree 2		
Vibration		IEC 61131-2 compliant 5 Hz ~ 8.3 Hz = Continuous: 3.5 mm, 8.3 Hz ~ 150 Hz = Continuous: 1g		
Shock		IEC 60068-2-27 compliant 15 g peak for 11 ms duration, X, Y, Z, directions for 6 times		
Dimensions (W) x (H) x (D) mm		129 x 103 x 37.8	137 x 103 x 37.1	215 x 161 x 35.5
Mounting Dimensions (W) x (H) mm		118.8 x 92.8	118.8 x 92.8	196.9 x 142.9
Weight		280 g	280 g	700 g

1) The half-life of a backlight is defined as the original luminance being reduced by 50% when the maximum driving current is supplied to an HMI.6
2) Built-in power isolation
3) An isolated power supply is recommended.
4) Some models are in the process of application for UL and KCC certification. For more information, please consult our distributors.
5) The value of the power consumption indicates the electrical power consumed by the HMI with no peripheral devices connected.
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Hardware Specifications

Basic HMI

Model		Basic Ethernet Type	
		DOP-103DQ	**DOP-107DV**
LCD Module	Display	4.3" TFT LCD	7" TFT LCD
	Color	16-bit	
	Resolution (Pixels)	480 x 272	800 x 480
	Back Light	LED Back Light	
	IPS	Yes	N/A
	Back Light Brightness (cd/m^2)	400	
	Back Light Life (Hour)[1]	10,000	20,000
	Display Area	95.04 x 53.856 mm	154.08 x 85.92 mm
MCU		ARM Cortex-A8 (800 MHz)	
Flash ROM (Bytes)		256 MB	
RAM (Bytes)		512 MB	256 MB
Touch Panel		Four-wire resistor, over > 10,000,000 pressing times	Four-wire resistor, over > 1,000,000 pressing times
Audio Output	Buzzer	Multi-Tone Frequency (2K ~ 4K Hz) / 80dB	
	AUX	N/A	
Ethernet Interface		1 Port[2], 10/100 Mbps auto-sensing	
USB		1 USB Slave Ver 2.0 / 1 USB Host Ver 2.0	
SD		N / A	
Serial COM Port	COM1	RS-232 (supports hardware flow control)[2]/RS-485[2] (107DV non-isolated circuit)	
	COM2	RS-422 / RS-485[2] (107DV non-isolated circuit)	
	COM3	N/A	
RTC		Built-in	
Cooling		Natural air circulation	
Certification		CE/UL (please use shielding Ethernet cables and magnetic rings with filters of 300 ohm / 100 MHz)	
Waterproof		IP65 / NEMA4 / UL Type 4X (indoor use only)	
Operation Voltage[3]		DC +24V (-15% ~ +15%)[2] (107DV non-isolated circuit), supplied by Class 2 or SELV circuit (isolated from MAINS by double insulation)	
Voltage Endurance		AC500V for 1 minute (between charging DC24 terminal and FG terminals)	
Power Consumption[5]		Max. 5.8 W[3]	Max. 8.8W[3]
Backup Battery		3V lithium battery CR2032 × 1	
Backup Battery Life		Depends on the temperature used and the conditions of usage, usually about 3 years or more at 25 $^\circ$C	
Operation Temperature		0 $^\circ$C ~ 50 $^\circ$C	
Storage Temperature		-20 $^\circ$C ~ 60 $^\circ$C	
Ambient Humidity		10% ~ 90% RH (0 ~ 40 $^\circ$C), 10% ~ 55% RH (41 ~ 50 $^\circ$C), Pollution Degree 2	
Vibration		IEC 61131-2 compliant 5 Hz ~ 8.3 Hz = Continuous: 3.5 mm, 8.3 Hz ~ 150 Hz = Continuous: 1g	
Shock		IEC 60068-2-27 compliant 15 g peak for 11ms duration, X, Y, Z, directions for 6 times	
Dimensions (W) x (H) x (D) mm		129 x 103 x 37.8	215 x 161 x 35.5
Mounting Dimensions (W) x (H) mm		118.8 x 92.8	196.9 x 142.9
Weight		280 g	700 g

1) The half-life of a backlight is defined as the original luminance being reduced by 50% when the maximum driving current is supplied to an HMI.6
2) Built-in power isolation
3) An isolated power supply is recommended.
4) Some models are in the process of application for UL and KCC certification. For more information, please consult our distributors.
5) The value of the power consumption indicates the electrical power consumed by the HMI with no peripheral devices connected.
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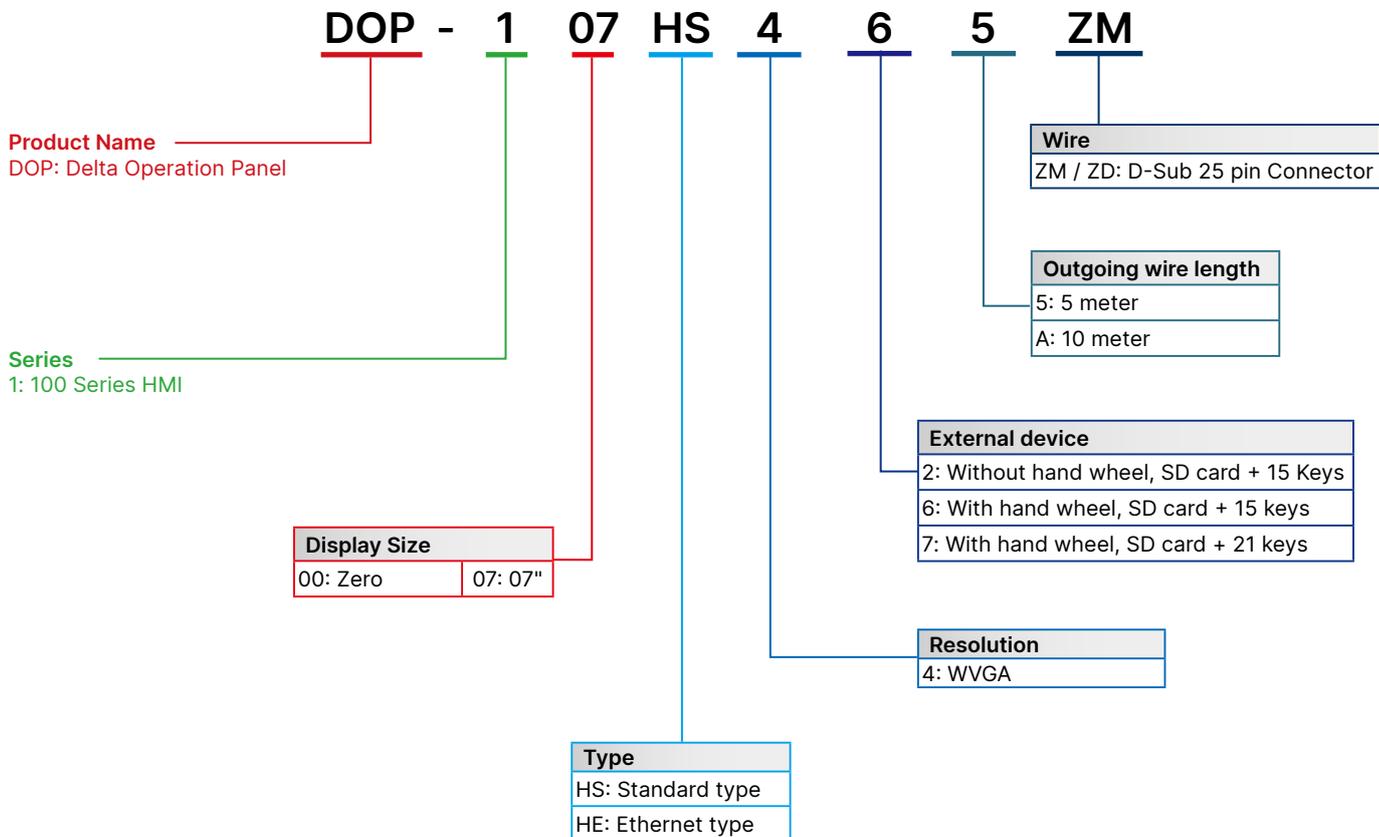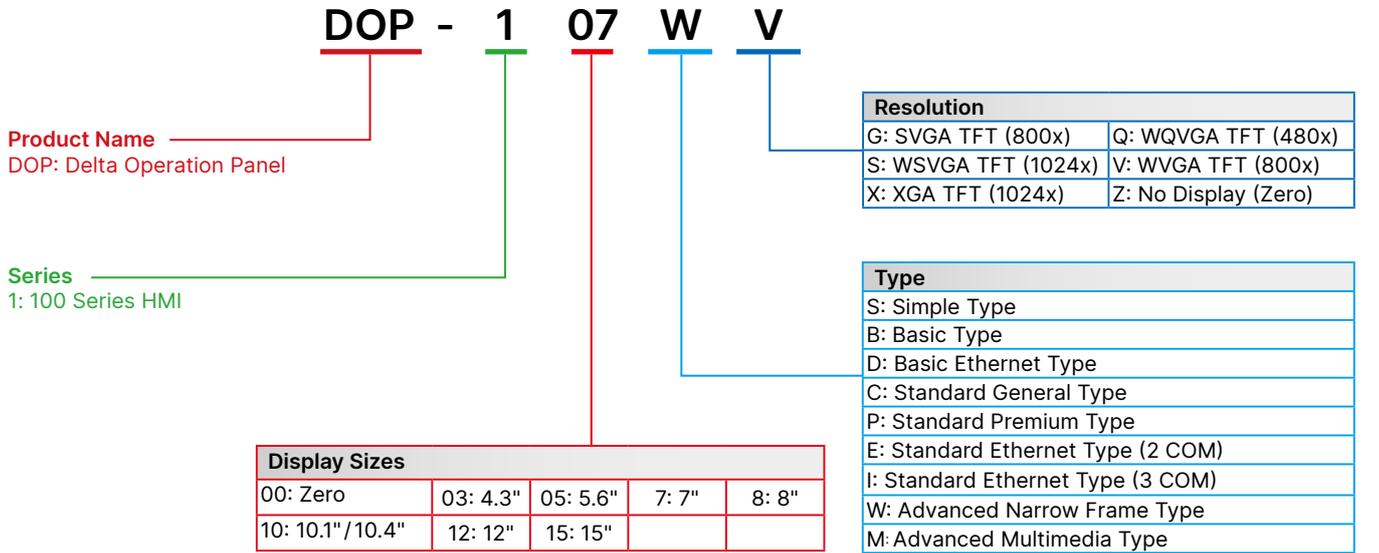
Handheld HMI

Model	Handheld HMI			
	DOP-107HS4xx	DOP-107HE4xx	DOP-107HE4xxZM	DOP-107HE47xZD
LCD Module — Display	7" TFT LCD			
LCD Module — Color	16-bit			
LCD Module — Resolution (Pixels)	800 x 480			
LCD Module — Back Light	LED Back Light			
LCD Module — Back Light Brightness (cd/m^2)	400	450	450	
LCD Module — Back Light Life (Hour)[1]	20,000			
LCD Module — Display Area	154.08 x 85.92 mm			
MCU	ARM Cortex-A8 (800 MHz)			
Flash ROM (Bytes)	256 MB			
RAM (Bytes)	256 MB			
Touch Panel	Four-wire resistor, over > 10,000,000 pressing times			
Buzzer	Multi-Tone Frequency (2 K ~ 4 K Hz) / 80 dB			
Ethernet Interface	N / A	1 Port[2], 10 / 100 Mbps auto-sensing		
USB	1 USB Slave Ver 2.0			
SD	SD / SDHC			
Serial COM Port/Communication	RS-422 / RS-485	N / A		
Emergency Stopswitch	B contact x 2	A contact x 1 / B contact x 1		
Emergency Stopswitch	Rated voltage: < DC 30 V; Maximum rated current: 1A; Minimum allowable load: DC 5 V / 1 mA Complies with IEC60947-5-1, EN60947-5-1, IEC60947-5-5, EN60947-5-5, UL 508, CSA C22.2 No.14, GB 14085.5			
3-Position Operation Switch	A contact x 1			
3-Position Operation Switch	Rated voltage: < DC 30 V; Maximum rated current: 700 mA; Minimum allowable load: DC 3V / 5 mA Complies with EN/IEC60947-5-8, IEC60947-5-1, EN60947-5-1, JIS C8201-5-1, UL508, CSA C22.2 NO.14 Applicable standards for use with ISO12100-1 & -2/EN12100-1 & -2, IEC60204-1/EN60204-1, ISO11161/prEN11161, ISO10218/EN775, ANSI/RIA R15.06, ANSI B11.19			
MPG	DOP-107HE42x, DOP-107HS42x, DOP-107HE42xZM do not support MPG Rated voltage: < DC 24V Resolution: 50(P/R) Output waveform: square wave; Output phase: A, B Phase difference between A and B: 90° ± 45° Maximum frequency response: 200 Hz			
Auxiliary Keyboard	15 Function Keys			21 Function Keys
Cable Length	5 m (when end of model name = 5) 10 m (when end of model name = A)			
Calendar	Built-in			
Cooling Method	Natural cooling			
Certification	CE (please use shielding Ethernet cables and magnetic rings with filters of 300 ohm / 100 MHz)			
Protection Rating	IP54			
Operating Voltage[3]	DC +24V (-15% ~ +15%)[2], supplied by SELV circuits (isolated from MAINS by double insulation)			
Voltage Endurance	AC500V for one minute (between DC24 and FG terminals)			
Power Consumption[5]	4.896 W[3]			
Backup Battery	3V lithium battery CR2450 × 1			
Backup Battery Life	About 5 years or more at 25 ℃ (77 ℉) (subject to operation temperature and condition)			
Operation Temperature	0 ℃ ~ 40 ℃			
Storage Temperature	-10 ℃ ~ 60 ℃			
Operating Environment	10% ~ 90% RH (0 ~ 40 ℃), 10% ~ 55% RH (41 ~ 50 ℃), Pollution Degree 2			
Vibration	IEC 61131-2 compliant 5 Hz ~ 8.3 Hz = Continuous: 3.5 mm, 8.3 Hz ~ 150 Hz = Continuous: 1g			
Shock	IEC 60068-2-27 compliant 15g peak for 11ms duration, X, Y, Z, directions for 6 times			
Dimensions (W) x (H) x (D) mm	257.4 x 170.3 x 71.8 (emergency stop switch and hook included)			
Weight	750 g (cable excluded)			

1) The half-life of a backlight is defined as the original luminance being reduced by 50% when the maximum driving current is supplied to an HMI.6
2) Built-in power isolation
3) An isolated power supply is recommended.
4) Some models are in the process of application for UL and KCC certification. For more information, please consult our distributors.
5) The value of the power consumption indicates the electrical power consumed by the HMI with no peripheral devices connected.
6) The content of this catalogue may be revised without prior notice. Please consult our distributors or download the most updated version at http://www.deltaww.com
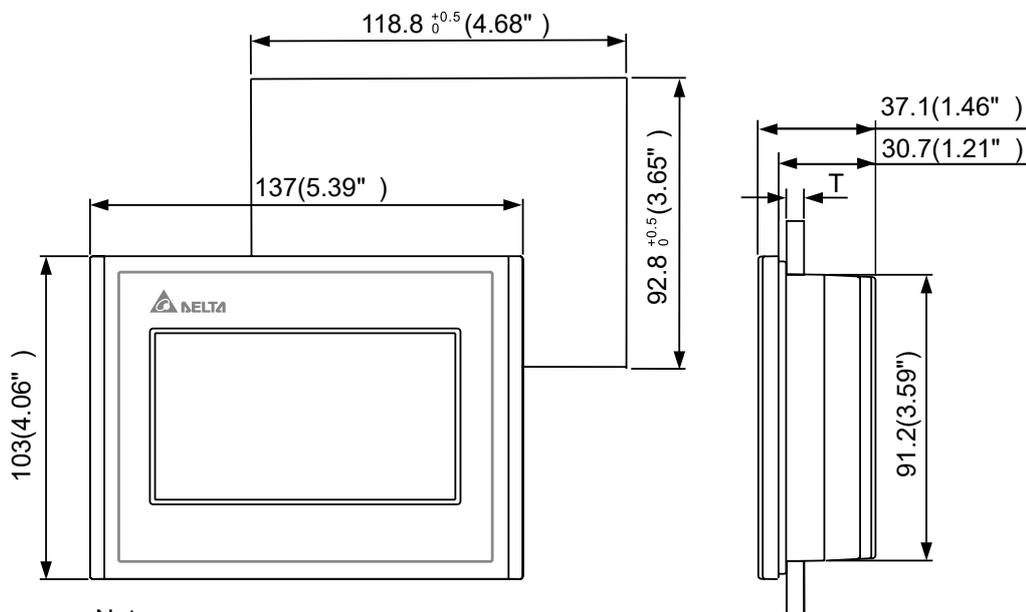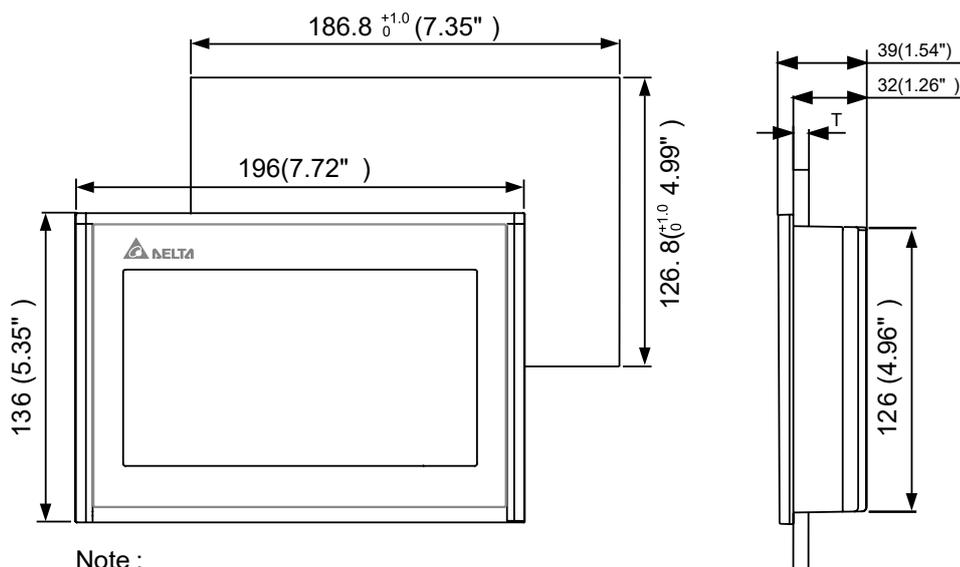
Model Description

DOP - 1 07 W V

Product Name
DOP: Delta Operation Panel

Series
1: 100 Series HMI

Resolution	
G: SVGA TFT (800x)	Q: WQVGA TFT (480x)
S: WSVGA TFT (1024x)	V: WVGA TFT (800x)
X: XGA TFT (1024x)	Z: No Display (Zero)

Type
S: Simple Type
B: Basic Type
D: Basic Ethernet Type
C: Standard General Type
P: Standard Premium Type
E: Standard Ethernet Type (2 COM)
I: Standard Ethernet Type (3 COM)
W: Advanced Narrow Frame Type
M: Advanced Multimedia Type

Display Sizes				
00: Zero	03: 4.3"	05: 5.6"	7: 7"	8: 8"
10: 10.1"/10.4"	12: 12"	15: 15"		

DOP - 1 07 HS 4 6 5 ZM

Product Name
DOP: Delta Operation Panel

Series
1: 100 Series HMI

Wire
ZM / ZD: D-Sub 25 pin Connector

Outgoing wire length
5: 5 meter
A: 10 meter

External device
2: Without hand wheel, SD card + 15 Keys
6: With hand wheel, SD card + 15 keys
7: With hand wheel, SD card + 21 keys

Resolution
4: WVGA

Display Size	
00: Zero	07: 07"

Type
HS: Standard type
HE: Ethernet type

Dimensions Unit: mm (inches)

•DOP-103WQ

Note :
T=1.6mm~3mm(0.063"~0.12")

•DOP-107WV

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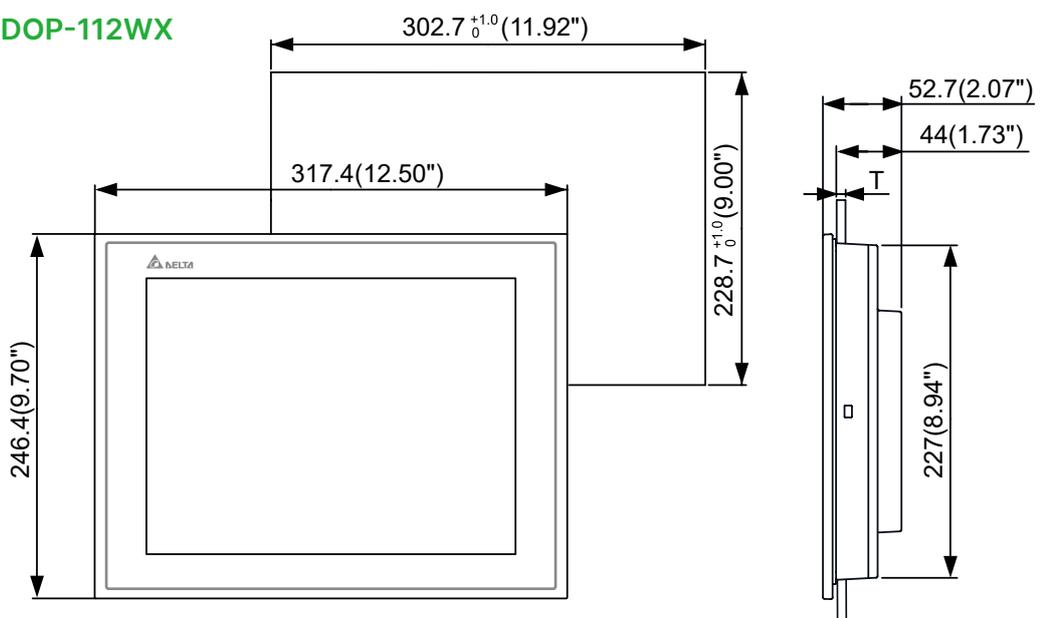T=1.6mm~6mm(0.063"~0.24")

Dimensions Unit: mm (inches)

- **DOP-110WS**

*4-R5

255.5 $^{+0.5}_{0}$(10.06")

270(10.63")

170.5 $^{+0.5}_{0}$(6.71")

180.9 (7.12")

47.25(1.86")

39(1.53")

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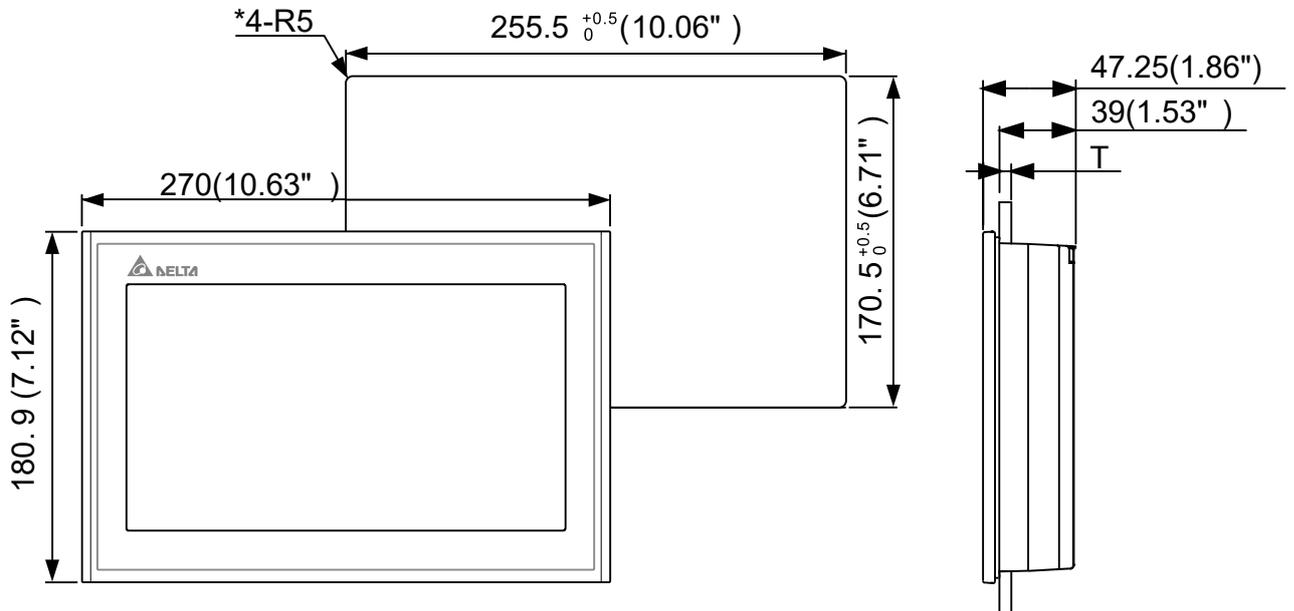
Note :
T=1.6mm~6mm(0.063"~0.24"   )

- **DOP-112MX / DOP-112WX**

302.7 $^{+1.0}_{0}$(11.92")

317.4(12.50")

228.7 $^{+1.0}_{0}$(9.00")

246.4(9.70")

52.7(2.07")

44(1.73")

T

227(8.94")

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

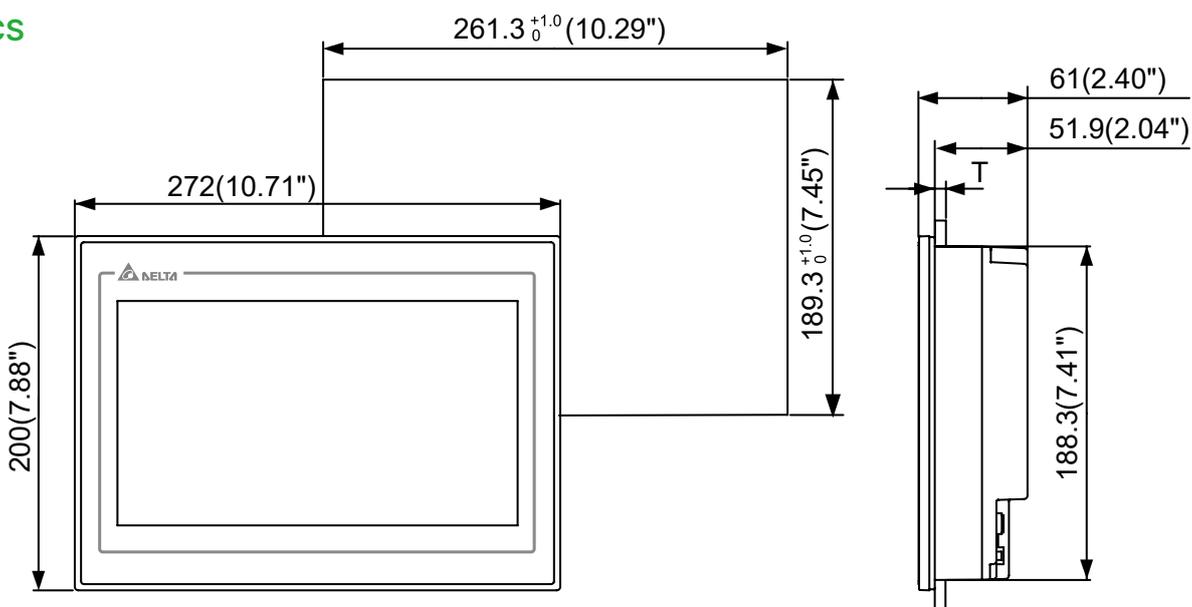# Dimensions Unit: mm (inches)

• DOP-115MX / DOP-115WX

*4-R8

$372.4^{+0.5}_{0}$(14.66")

387.7(15.26")

$283.7^{+0.5}_{0}$(11.17")

295.7(11.64")

63.5(2.5")

55(2.17")

T

282.4(11.12")

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

• DOP-105CQ

$172.4^{+1.0}_{0.0}$(6.79")

184(7.24")

$132.4^{+1.0}_{0.0}$(5.21")

144(5.67")

NOTE:
T=1.6mm(0.063")~6mm(0.24")

50.6(1.99")

43.3(1.70")

T

131.4(5.17")

NELTA

Dimensions Unit: mm (inches)

•DOP-107CV

196.9 $_{0}^{+1.0}$ (7.75")

215(8.46")

142.9 $_{0}^{+1.0}$ (5.63")

161(6.34")

61.2(2.41")

51.2(2.02")

T

142.3(5.6")

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

•DOP-110CS

261.3 $_{0}^{+1.0}$ (10.29")

272(10.71")

189.3 $_{0}^{+1.0}$ (7.45")

200(7.88")

61(2.40")

51.9(2.04")

T

188.3(7.41")

Note:
T=1.6 mm ~ 6 mm(0.063" ~ 0.24")
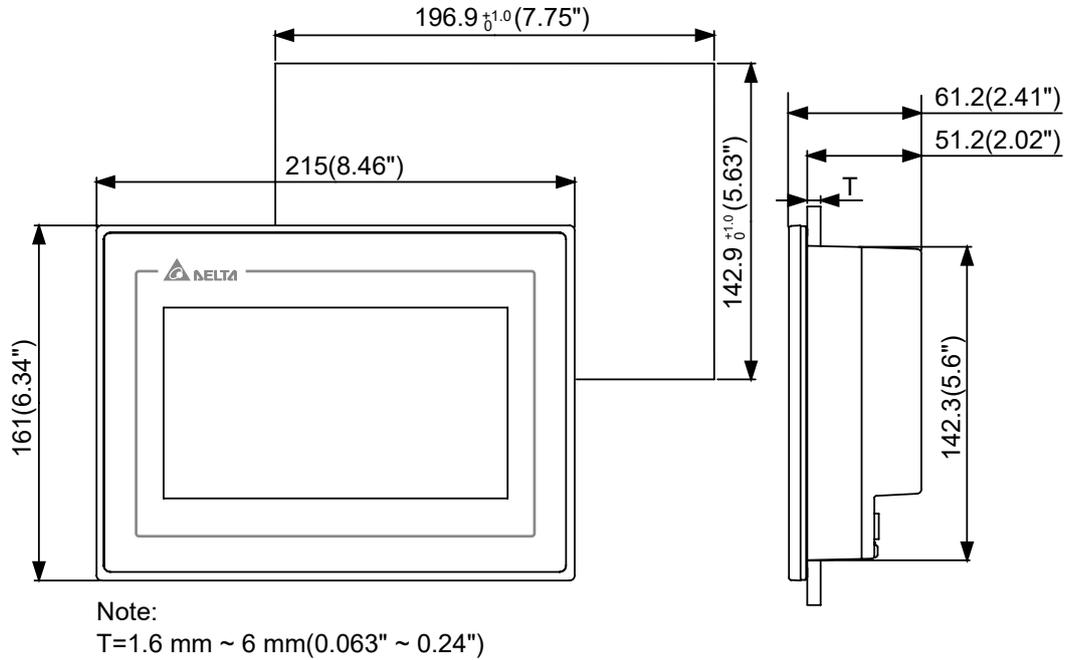
Dimensions Unit: mm (inches)

• DOP-110CG

285.2$^{+1.0}_{0.0}$(11.23")

T=1.6mm(0.063")~6mm(0.24")

299(11.77")

210.2$^{+1.0}_{0.0}$(8.28")

224(8.82")

46.75(1.84")

38.5(1.52")

T

209.1(8.23")

• DOP-107PV

186.8$^{+1.0}_{0.0}$ (7.35")

196.6(7.76")

126.8$^{+1.0}_{0.0}$ (4.99")

138.6(5.38")

38.8(1.53")

30.3(1.19")

T

125.3(4.93")

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

NELTA

Dimensions Unit: mm (inches)

• DOP-107EG

172.4$^{+1.0}_{0}$(6.79")

132.4$^{+1.0}_{0}$(5.21")

184(7.24")

144(5.67")

51.5(2.03")

42.8(1.69")

T

131.4(5.17")

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

• DOP-107EV

196.9$^{+1.0}_{0}$(7.75")

142.9$^{+1.0}_{0}$(5.63")

215(8.46")

161(6.34")

61.2(2.41")

51.2(2.02")

T

142.3(5.6")

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

Dimensions Unit: mm (inches)

• **DOP-107IV**

$196.9\,^{+1.0}_{0}$(7.75")

215(8.46")

$142.9\,^{+1.0}_{0}$ (5.63")

161(6.34")

61.2(2.41")

51.2(2.02")

T

142.3(5.6")

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

• **DOP-108IG**

T=1.6mm(0.063")~5mm(0.2")

$219.4\,^{+1}_{0}$(8.64")

4-R1

227.1(8.94")

$166.5\,^{+1}_{0}$(6.56")

174.1(6.85")

T

61(2.4")

52.3(2.06")

165.5(6.52")

Dimensions Unit: mm (inches)

•DOP-110IS

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

261.3$^{+1.0}_{-0.0}$(10.29")

272.6(10.73")

189.3$^{+1.0}_{-0.0}$(7.45")

200.6(7.90")

54(2.13")

46(1.81")

T

187.75(7.39")

•DOP-110IG

285.2$^{+1.0}_{-0.0}$(11.23")

T=1.6mm(0.063")~6mm(0.24")

299(11.77")

210.2$^{+1.0}_{-0.0}$(8.28")

224(8.82")

46.75(1.84")

38.5(1.52")

T

209.1(8.23")

Dimensions **Unit: mm (inches)**

• **DOP-103SQ**

• **DOP-103BQ**
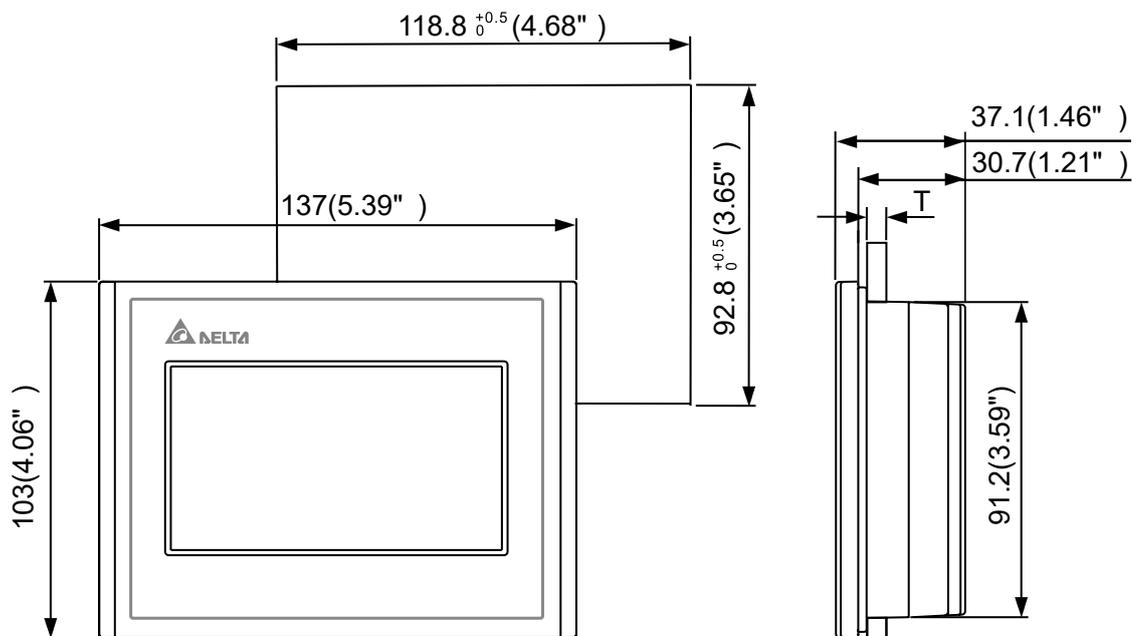
Note :
T=1.6mm~3mm(0.063"~0.12")

Dimensions Unit: mm (inches)

- **DOP-107BV**

$196_0^{+1.0}$(7.75")

215(8.46")

$142.9_0^{+1.0}$(5.63")

161 (6.34")

35.5(1.40")

26.2(1.03")

T

142.1 (5.59")

Note:
T=1.6 mm~6 mm(0.06"~0.24")

- **DOP-103DQ**

118.8(4.66")

123(5.06")

82.9(3.66")

103(4.06")
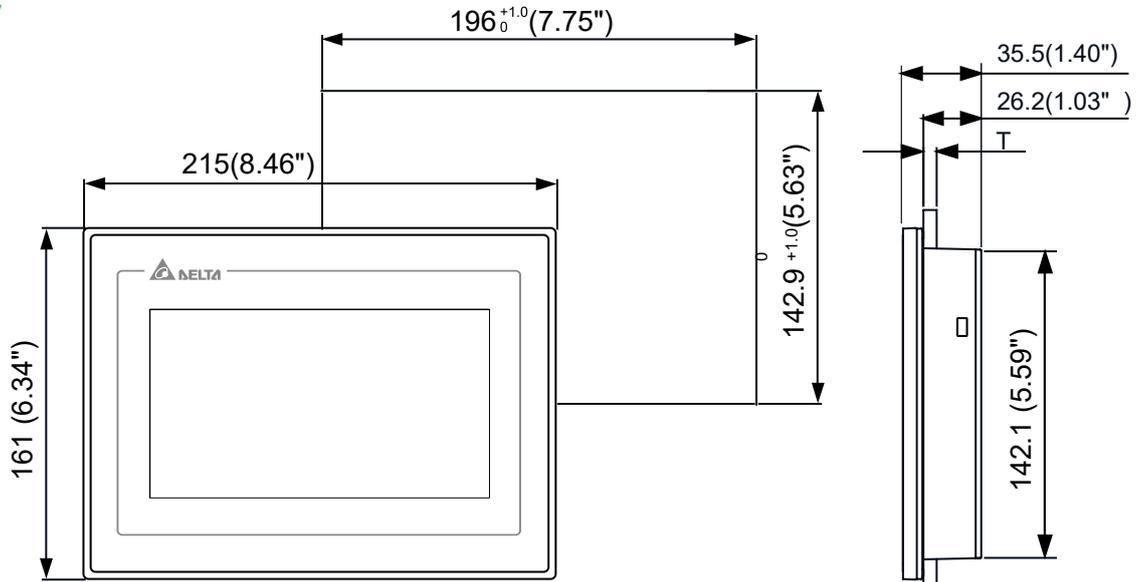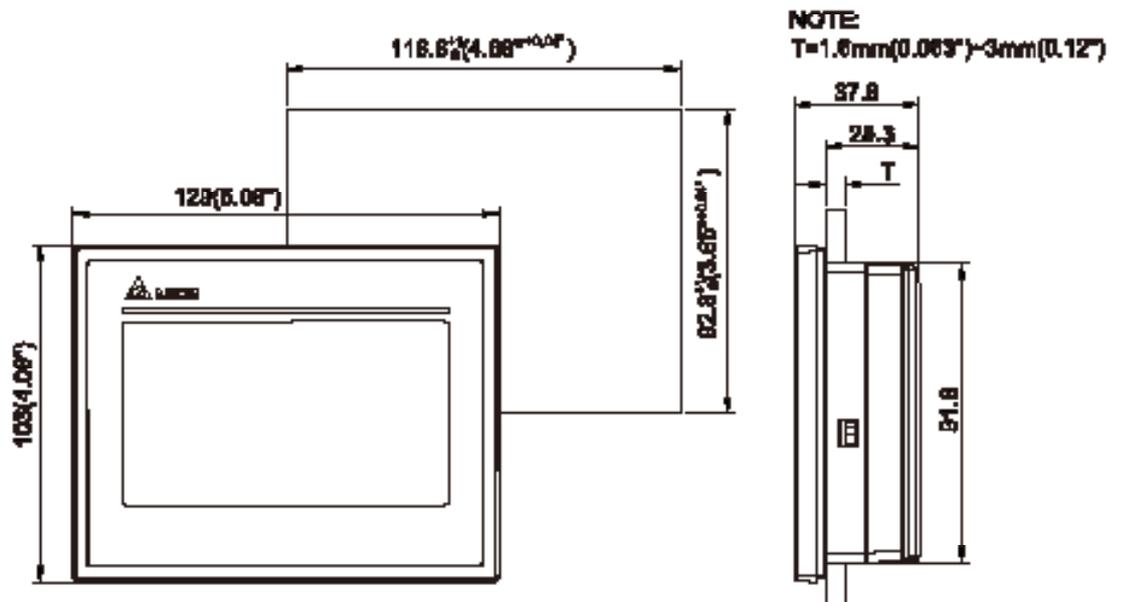
NOTE:
T=1.6mm(0.063")~3mm(0.12")

37.8

28.3

T

51.8

Dimensions **Unit: mm (inches)**

• **DOP-107DV**

$196_0^{+1.0}$(7.75")

215(8.46")

$142.9_{+1.0}$(5.63")

161 (6.34")

35.5(1.40")

26.2(1.03")

T

142.1 (5.59")
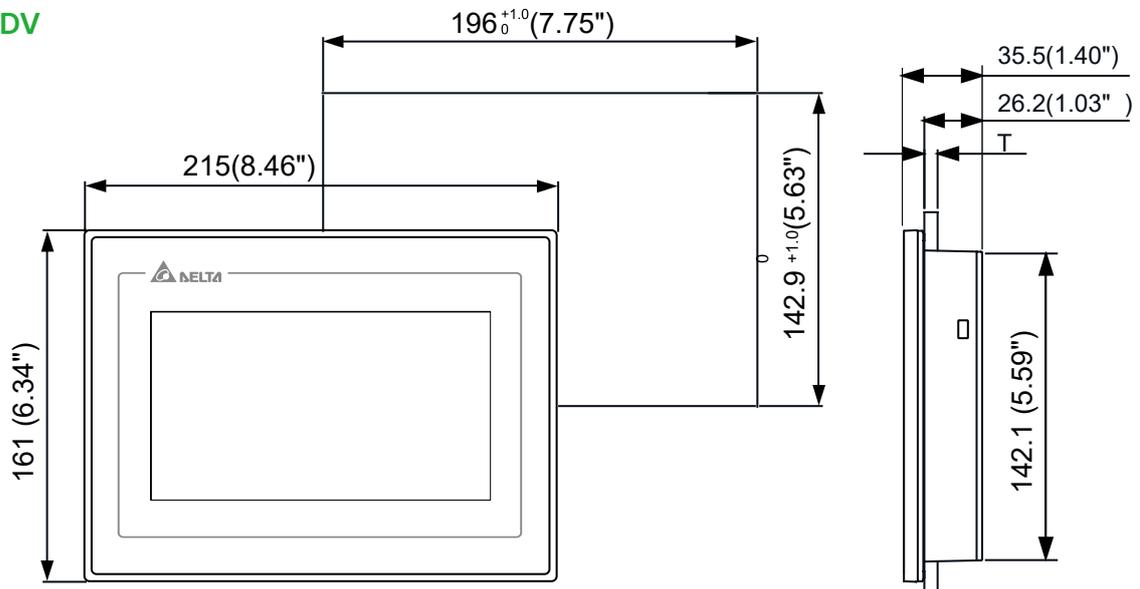
Note:
T=1.6 mm~6 mm(0.06"~0.24")

• **DOP-107HS4 / DOP-107HE4**

53.5(2.11")

51.3(2.02")

71.8(2.83")

12.5(0.5")

0.72"

257.4(10.13")

170.3(6.7")

41(1.61")

27.8(1.1")

Smarter. Greener. Together.
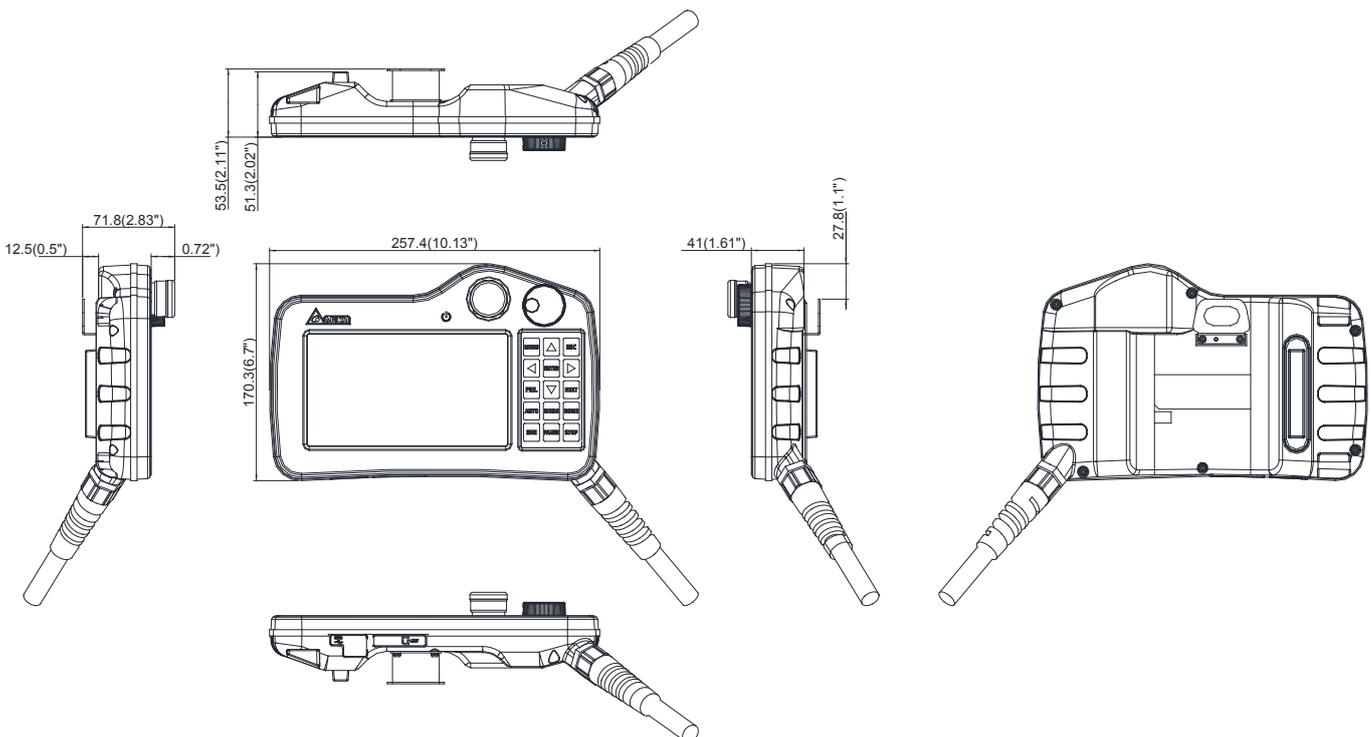
Industrial Automation Headquarters

Taiwan: Delta Electronics, Inc.
Taoyuan Technology Center
No.18, Xinglong Rd., Taoyuan District,
Taoyuan City 33068, Taiwan
TEL: +886-3-362-6301 / FAX: +886-3-371-6301

Asia

China: Delta Electronics (Shanghai) Co., Ltd.
No.182 Minyu Rd., Pudong Shanghai, P.R.C.
Post code : 201209
TEL: +86-21-6872-3988 / FAX: +86-21-6872-3996
Customer Service: 400-820-9595

Japan: Delta Electronics (Japan), Inc.
Industrial Automation Sales Department
2-1-14 Shibadaimon, Minato-ku
Tokyo, Japan 105-0012
TEL: +81-3-5733-1155 / FAX: +81-3-5733-1255

Korea: Delta Electronics (Korea), Inc.
1511, 219, Gasan Digital 1-Ro., Geumcheon-gu,
Seoul, 08501 South Korea
TEL: +82-2-515-5305 / FAX: +82-2-515-5302

Singapore: Delta Energy Systems (Singapore) Pte Ltd.
4 Kaki Bukit Avenue 1, #05-04, Singapore 417939
TEL: +65-6747-5155 / FAX: +65-6744-9228

India: Delta Electronics (India) Pvt. Ltd.
Plot No.43, Sector 35, HSIIDC Gurgaon,
PIN 122001, Haryana, India
TEL: +91-124-4874900 / FAX: +91-124-4874945

Thailand: Delta Electronics (Thailand) PCL.
909 Soi 9, Moo 4, Bangpoo Industrial Estate (E.P.Z),
Pattana 1 Rd., T.Phraksa, A.Muang,
Samutprakarn 10280, Thailand
TEL: +66-2709-2800 / FAX: +66-2709-2827

Australia: Delta Electronics (Australia) Pty Ltd.
Unit 2, Building A, 18-24 Ricketts Road,
Mount Waverley, Victoria 3149 Australia
Mail: IA.au@deltaww.com
TEL: +61-1300-335-823 / +61-3-9543-3720

Americas

USA: Delta Electronics (Americas) Ltd.
5101 Davis Drive, Research Triangle Park, NC 27709, U.S.A.
TEL: +1-919-767-3813 / FAX: +1-919-767-3969

Brazil: Delta Electronics Brazil Ltd.
Estrada Velha Rio-São Paulo, 5300 Eugênio de
Melo - São José dos Campos CEP: 12247-004 - SP - Brazil
TEL: +55-12-3932-2300 / FAX: +55-12-3932-237

Mexico: Delta Electronics International Mexico S.A. de C.V.
Gustavo Baz No. 309 Edificio E PB 103
Colonia La Loma, CP 54060
Tlalnepantla, Estado de México
TEL: +52-55-3603-9200

EMEA

EMEA Headquarters: Delta Electronics (Netherlands) B.V.
Sales: Sales.IA.EMEA@deltaww.com
Marketing: Marketing.IA.EMEA@deltaww.com
Technical Support: iatechnicalsupport@deltaww.com
Customer Support: Customer-Support@deltaww.com
Service: Service.IA.emea@deltaww.com
TEL: +31(0)40 800 3900

BENELUX: Delta Electronics (Netherlands) B.V.
Automotive Campus 260, 5708 JZ Helmond, The Netherlands
Mail: Sales.IA.Benelux@deltaww.com
TEL: +31(0)40 800 3900

DACH: Delta Electronics (Netherlands) B.V.
Coesterweg 45, D-59494 Soest, Germany
Mail: Sales.IA.DACH@deltaww.com
TEL: +49 2921 987 238

France: Delta Electronics (France) S.A.
ZI du bois Challand 2, 15 rue des Pyrénées,
Lisses, 91090 Evry Cedex, France
Mail: Sales.IA.FR@deltaww.com
TEL: +33(0)1 69 77 82 60

Iberia: Delta Electronics Solutions (Spain) S.L.U
Ctra. De Villaverde a Vallecas, 265 1º Dcha Ed.
Hormigueras – P.I. de Vallecas 28031 Madrid
TEL: +34(0)91 223 74 20

Carrer Llacuna 166, 08018 Barcelona, Spain
Mail: Sales.IA.Iberia@deltaww.com

Italy: Delta Electronics (Italy) S.r.l.
Via Meda 2–22060 Novedrate(CO)
Piazza Grazioli 18 00186 Roma Italy
Mail: Sales.IA.Italy@deltaww.com
TEL: +39 039 8900365

Turkey: Delta Greentech Elektronik San. Ltd. Sti. (Turkey)
Şerifali Mah. Hendem Cad. Kule Sok. No:16-A
34775 Ümraniye – İstanbul
Mail: Sales.IA.Turkey@deltaww.com
TEL: + 90 216 499 9910

MEA: Eltek Dubai (Eltek MEA DMCC)
OFFICE 2504, 25th Floor, Saba Tower 1,
Jumeirah Lakes Towers, Dubai, UAE
Mail: Sales.IA.MEA@deltaww.com
TEL: +971(0)4 2690148

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