Digitized Automation for a Changing World

Delta Human Machine Interface
DOP-100 Series

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

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
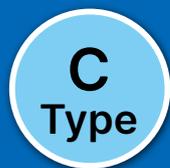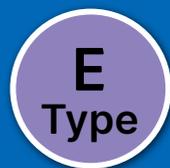
E Type
Standard Ethernet (2COM)

I Type
Standard Ethernet (3COM)

Basic HMI
2 Serial Communication Ports included

S Type
Simple

B Type
Basic

D Type
Basic Ethernet

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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

DELTA

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
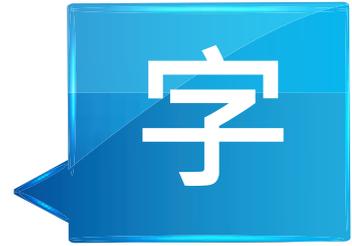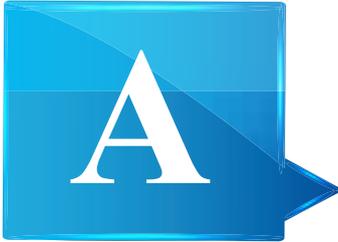
Video Play

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
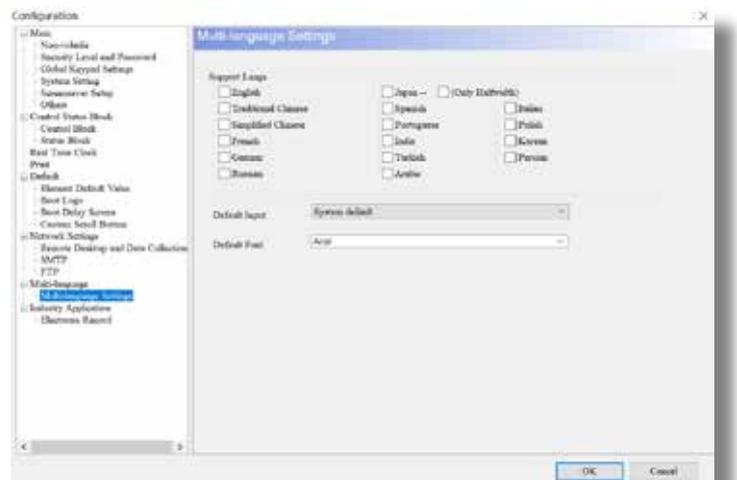
Delta's HMI can implement M2M communication and data transmission for diverse industries by means of OPC UA. Communication among different manufacturers' machines is enabled through information modeling.

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.

C Type
P Type
E Type
I Type
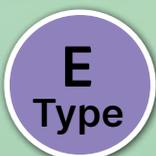
Features

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

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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.

S Type B Type D Type UL CE

Features

Embedded Linux System
Open system for flexible and stable program development

DIAScreen
New software DIAScreen offers more functions and a better interface

Operating Temperature 0°C ~ 50°C
Applicable in various industrial operating environments

CE / UL Certified
Compliant with CE and UL standards

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

D Type Only

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

D Type Only

Supports PDF and TXT Reader
PDF and TXT files supported

User-Friendly
Intuitive operation interfaces for users

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

Diagnostics Function
Collects and troubleshoots issues remotely

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

D Type Only

VNC Remote Monitoring
Remote control with mobile devices

D Type Only

Supports GIF Graphic Elements
Easy setting to play vivid GIF elements

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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: 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	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.
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)

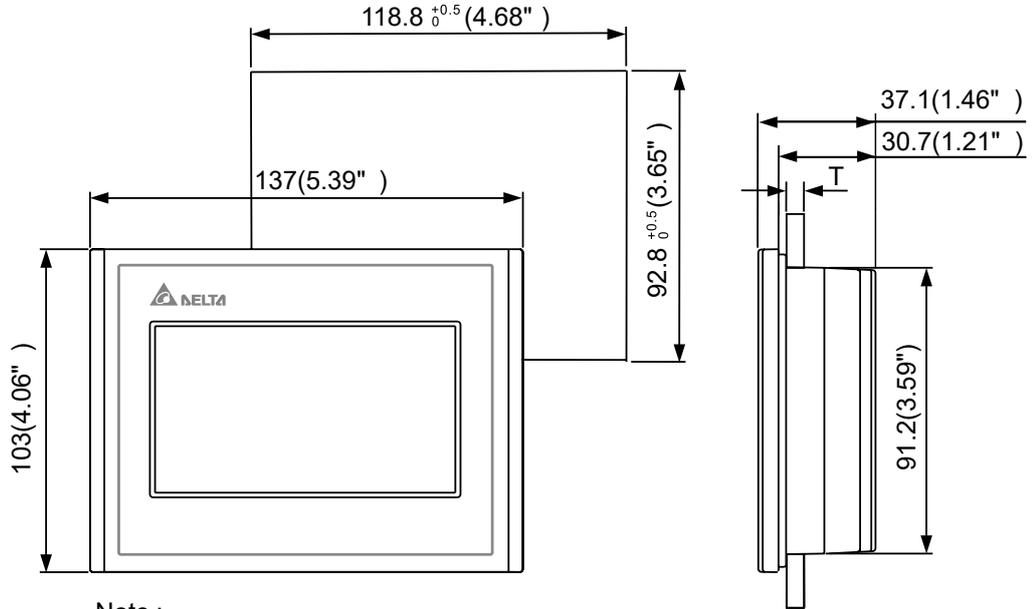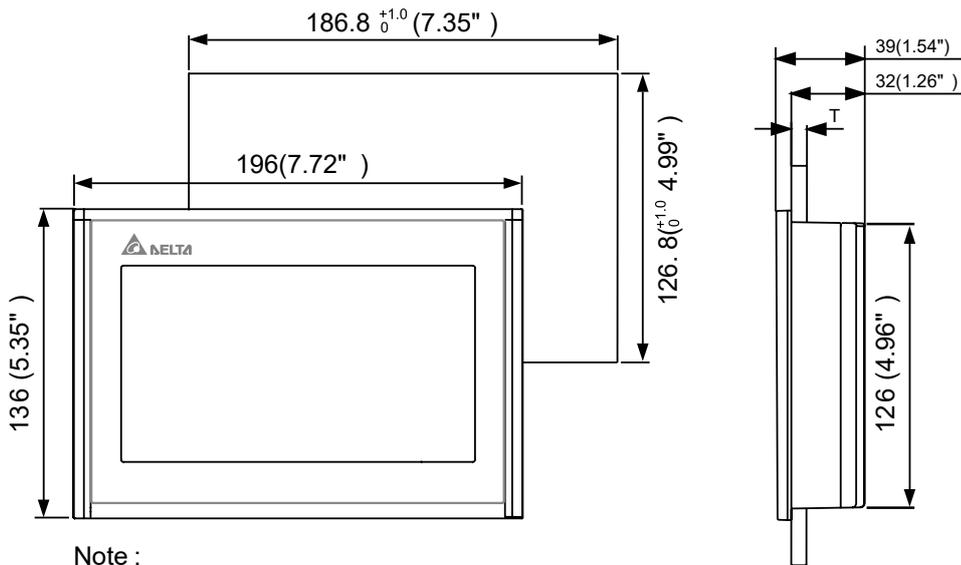| Type |
|---|
| S: Simple Type |
| B: Basic Type |
| D: Basic Ethernet Type |
| C: Standard General Type |
| P: Standard Premium Type |
| E: Standard Ethernet Type (2 COM) |
| I: Standard Ethernet Type (3 COM) |
| W: Advanced Narrow Frame Type |
| M: Advanced Multimedia Type |

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

36

Dimensions Unit: mm (inches)

● DOP-103WQ

118.8 $^{+0.5}_{0}$(4.68")

137(5.39")

103(4.06")

92.8 $^{+0.5}_{0}$(3.65")

37.1(1.46")

30.7(1.21")

T

91.2(3.59")

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

● DOP-107WV

186.8 $^{+1.0}_{0}$ (7.35")

196(7.72")

136 (5.35")

126. 8 $^{+1.0}_{0}$(4.99")

39(1.54")

32(1.26")

T

126 (4.96")

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

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Dimensions Unit: mm (inches)

- DOP-110WS

*4-R5 255.5 $^{+0.5}_{0}$ (10.06")

270(10.63")

180.9 (7.12")

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

47.25(1.86")

39(1.53")

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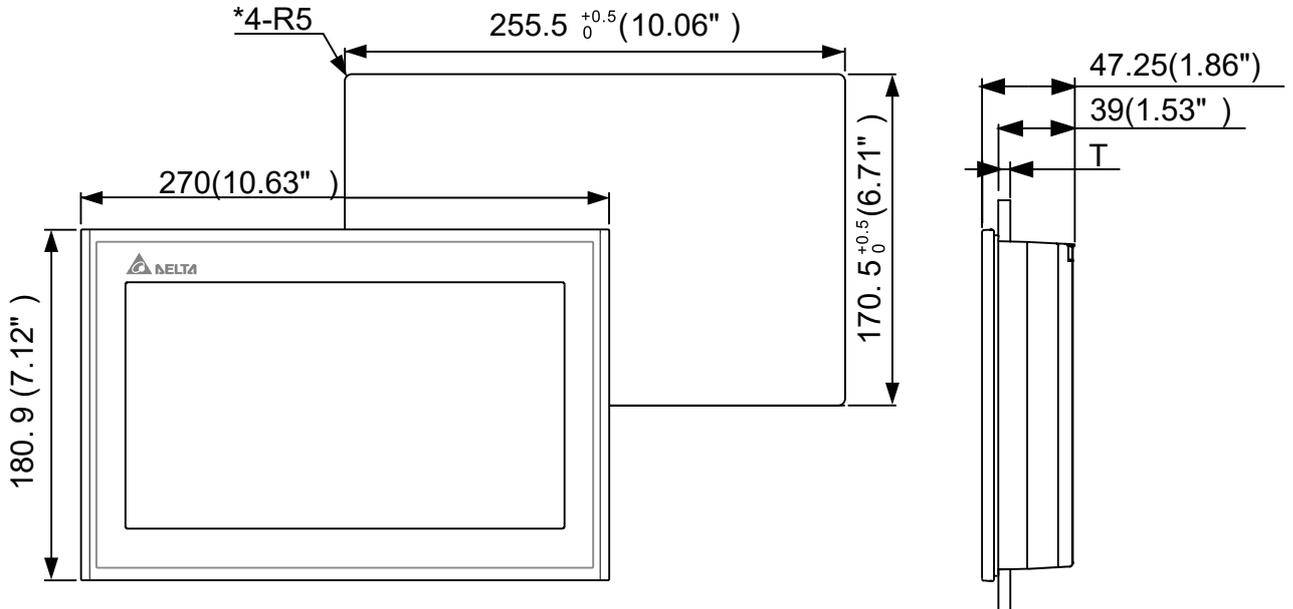
Note :
T=1.6mm~6mm(0.063"~0.24")

- DOP-112MX / DOP-112WX

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

317.4(12.50")

246.4(9.70")

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

52.7(2.07")

44(1.73")

T

227(8.94")
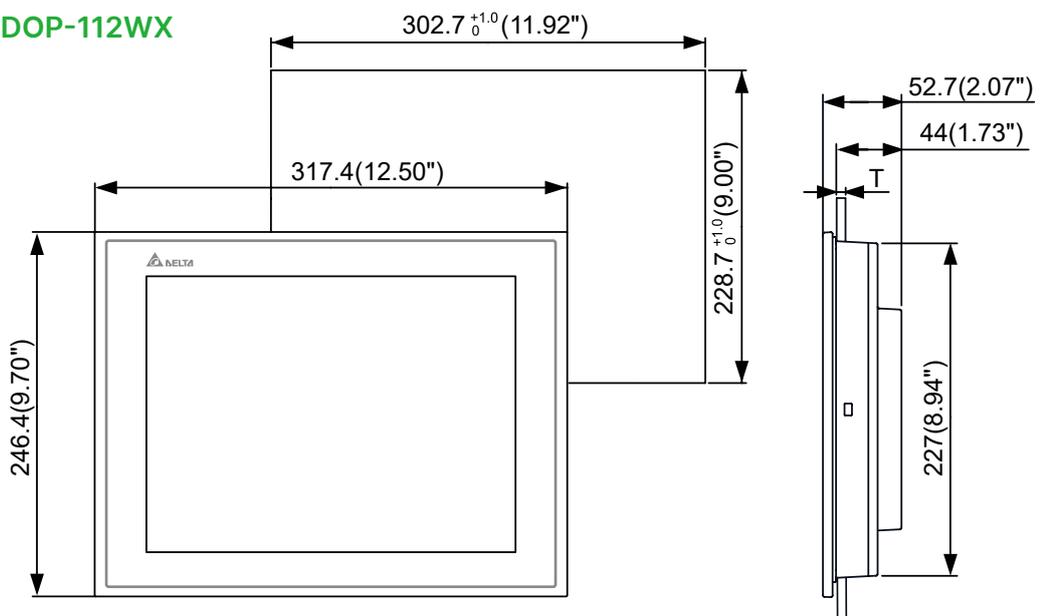
Note:
T=1.6 mm ~ 6 mm(0.063" ~ 0.24")

![DELTA logo — Smarter. Greener. Together.]

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