NELT/ **DOP-103WQ DOP-107WV** DOP-110WS

Instruction Sheet

(1) Preface

Thank you for purchasing DOP-107WV. This instruction sheet provides information about DOP-107WV. Before using the product, please read through this manual carefully in order to ensure the correct use of the product. In addition, please place this manual safely for quick reference whenever is needed. Please follow the rules below if you have not finished reading this manual yet.

- Install the product in a clean and dry location free from corrosive and inflammable gases or liquids, indoor use only.
- Ensure that all wiring instructions and recommendations are followed.
- Ensure that HMI is correctly connected to the ground. The grounding method must comply with the national electrical standard (Please refer to NFPA 70: National Electrical Code, 2005 Ed.
- Do not modify the wiring or disassemble HMI interface when HMI is connected to the power.
- Do not touch the power supply during operation. Otherwise, it may cause electric shock.
- When HMI displays low power notification and requires battery changes, please contact local distributors or DELTA customer service center for the replacement. Do not change batteries by vourself
- DOP-100 series can be used for industrial automation equipment. Please read through this manual carefully and install the product according to the instructions in order to avoid danger.
- Cleaning method: Please use dry cloth to clean the product.
- The product should be used at an altitude below 2000 m.
- If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.
- For repairing and maintenance, please contact DELTA Electronics, Inc. Address: No.18, Xinglong Rd., Taoyuan City, Taiwan. TEL: +886-3-3626301.

If you have any enquiry during operation, please contact our local distributors or Delta sales representatives. The content of this instruction sheet may be revised without prior notice. Please consult our distributors or download the latest version at http://www.delta.com.tw/ia.



DOP-103WQ COM Port

COM Port	Pin	MODE1		MODE2		MODE3	
		COM1	COM2	COM1	COM2	COM1	COM2
		RS-232	RS-485	RS-485	RS-485	RS-232	RS-422
	1			D+			TXD+
	2	RXD				RXD	
	3	TXD				TXD	
	4		D+		D+		RXD+
	5	GND		GND		GND	
	6			D-			TXD-
	7	RTS				RTS	
	8	CTS				CTS	
	9		D-		D-		RXD-

DOP-107WV / DOP-110WS COM1 Port

COM Port	Pin	MODE1
		RS-232
	1	
	2	RXD
	3	TXD
	4	
$\bigcirc \left(\begin{smallmatrix} 1 & \circ & \circ & \circ & \circ \\ 0 & \circ & \circ & \circ & \circ \\ 6 & \circ & \circ & \circ & \circ \\ 6 & & & g \end{smallmatrix}\right) \bigcirc$	5	GND
	6	
	7	RTS
	8	CTS
	9	

COM Port Pin COM2 COM3 COM2 RS-232 RS-485 RS-485 1 D+ RXD 2 3 TXD 4 D+ D+ 5 GND GND 00000

A DELTA

9

DOP-107WV / DOP-110WS COM2 Port

Note 1: Blank means connection is not required

A

(3) Part names

DOP-103WQ (Front view)

DOP-103WQ (Rear view)

COM3 COM2 COM3 RS-485 RS-232 RS-422 TXD+ RXD TXD RXD+ GND 10 6 D-TXD-RTS RTS 7 CTS CTS 8

D-

MODE2

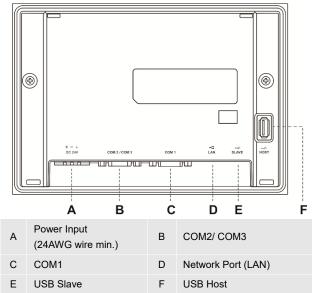
D-

MODE3

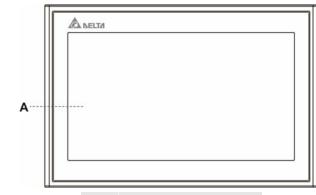
RXD-

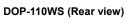
MODE1

DOP-107WV (Rear view)



DOP-110WS (Front view)

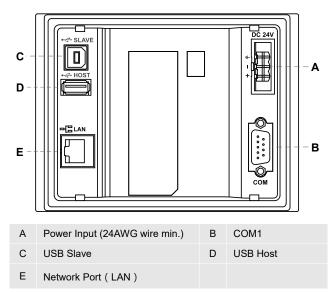






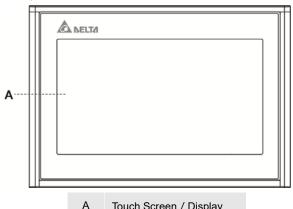
A С

- Е



A Touch Screen / Display

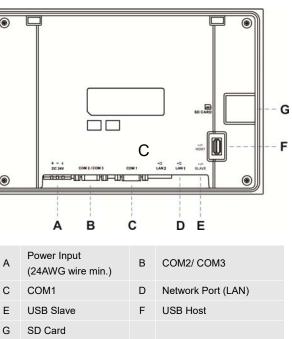
DOP-107WV (Front view)



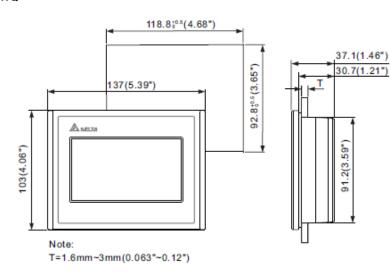
Touch Screen / Display



Touch Screen / Display

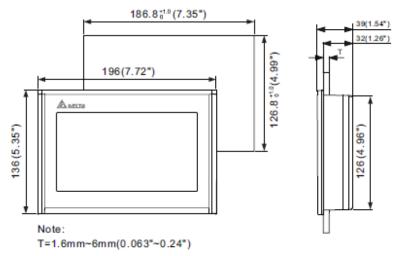


(4) Dimensions for Installation DOP-103WQ



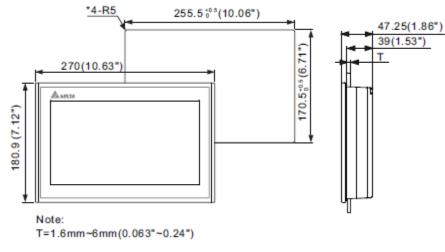
Operation Temperature is 0°C to 50°C and Storage Temperature is -20°C to +60°C

DOP-107WV



Operation Temperature is 0°C to 50°C and Storage Temperature is -20°C to +60°C

DOP-110WS



Operation Temperature is 0°C to 50°C and Storage Temperature is -20°C to +60°C

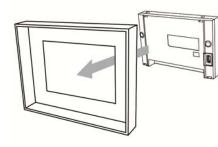
(5) Installation and Wiring

Installation Notes:

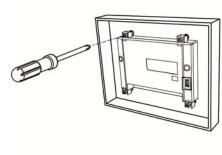
- Improper installation will result in malfunction and greatly reduce the life of the HMI. Be sure to follow the guidelines in this quick start when installing the HMI.
- In order to ensure the HMI being well ventilated, make sure that the ventilation holes are not obstructed and provide sufficient clearance for the HMI.
- To protect the panel, be sure to install a waterproof gasket into HMI.
- For use on a flat surface of a Type 4X "Indoor Use Only" enclosure or equivalent. If Enclosure with lower type rating will cause de-rating.
- The allowable thickness of the panel for mounting should be less than 5 mm.

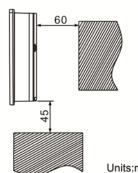
Installation Method:

Step 1: Put the waterproof gasket into HMI and then insert the HMI into the panel cutout.



Step 3: Tighten the screws with torque less than 0.5N-M / For heat dissipation, please keep a minimum 0.7N-M to avoid damage to the plastic case. DOP-107/DOP-110 Torque: 6.17 lb-inch (0.7N-M) DOP-103 Torque: 4.41 lb-inch (0.5N-M)

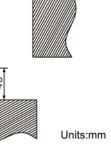




clearance of 60 mm on the rear of the HMI.

Place the fasteners into slots and tighten the

screws till reaching the panel cutouts.



Recommended wiring is as follows:

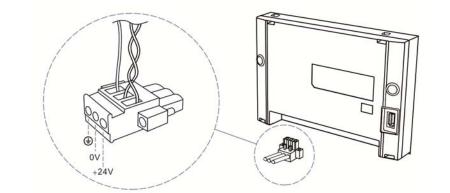
Туре	Wire Gauge (AWG)	Stripped length	Torque
Solid	24 ~ 12	7 ~ 8 mm	5 kg-cm (4.3 lb-in)
Stranded	24 ~ 12	7 ~ 8 mm	5 kg-cm (4.3 lb-in)



Be sure to perform wiring by referring to the following figure (power supply connector), wiring must be rated 75℃ min.

Step 2:

Step 4:



(6) Specifications

opocinicatione						
Model		DOP-103WQ	DOP-107WV	DOP-110WS		
	Display Type	4.3" TFT LCD (65535 colors)	7" TFT LCD (65535 colors)	10.1" TFT LCD (65535 colors)		
	Resolution	480 x 272 pixels	800 x 480 pixels	1024 x 600 pixels		
LCD Module	Backlight	LED Back Light (less than 10,000 hours half-life at 25°C) ^(Note 1)	LED Back Light (less than 20,000 hours half-life at 25°C) ^(Note 1)	LED Back Light (less than 30,000 hours half-life at 25 °C) ^(Note 1)		
	Display Size	95.04 x 53.856 mm	154.08 x 85.92 mm	225.52 x 128.10 mm		
	Brightness	400 cd/m² (Typ.)	450 cd/m² (Typ.)	450 cd/m² (Typ.)		
CPU		ARM Cortex-A8 (800MHz)				

Model		DOP-103WQ	DOP-107WV	DOP-110WS	
Flash ROM			256 Mbytes	I	
RAM		512 Mbytes			
Touch Screen		4-wire resistive touch screen > 10,000,000 operated			
Buzzer		Multi-Tone Frequency (2 K ~ 4 K Hz) / 80 dB			
Ethernet Interface		10/100 Mbps Auto sensing (with built-in isolated power circuit ^(Note 2))			
USB		1 USB Slave Ver 2.0 1 USB Host Ver 2.0			
SD		N/A SD * 1			
Serial Communication Port	COM1	RS-232 (supports flow control) / RS-485 ^(Note 2))	RS-232 (supports flow control) ^(Note 2))		
	COM2	RS-422 / RS-485 ^(Note 2) RS-232 (supports flow control) /		control) / RS-485 ^(Note 2))	
	COM3	N/A RS-422 / RS-485 ^(Note 2))			
Function Keys		N/A			
Perpetual Calendar		Built-in			
Cooling Method		Natural cooling			
Safety Approval		CE / UL (Please use shielding Ethernet cable and the magnetic ring with filter of 300 ohm/100 MHz)			
Waterproof Level of Panel Display		IP65(Not be evaluated by UL)/NEMA4/ Type 4X indoor use only			
Operation Voltage (Note2)		+24 V_{DC} (-15% ~ +15%) (with built-in isolated power supply unit) Supplied by Class 2 or SELV circuit (isolated from MAINS by double insulation)			
Voltage Endur		500 V _{AC} for 1 minute (between charging (DC24V terminal) and FG terminals)			
Power Consumption (Note 2)		5.8W (Max) ^(Note 3)	8.4W (Max) (Note 3)	11W (Max) ^(Note 3)	
Backup Batte	ery	3V lithium battery CR2032 × 1			
Backup Battery Life		About 3 years or more at 25°C but subjects to the temperature and the conditions during usage.			
Operation Temp	erature	0°C ~ 50°C			
Storage Tempe	rature	-20°C ~ +60°C			
Operating Enviro	onment	10% ~ 90% RH [0 ~ 40°C], 10% ~ 55% RH [41 ~ 50°C]; Pollution degree: 2			
Vibration Resistance		Conforms to IEC61131-2; Continuous: 5 Hz ~ 8.3 Hz 3.5 mm, 8.3 Hz ~ 150 Hz 1 C			
Shock Resistance		Conforms to IEC60068-2-27: 11 ms, 15 G Peak , X, Y, Z direction for 6 times			
Dimension (W) x (H) x (D) mm		137 x 103 x 37.1	196 x 136 x 39	270 x 180.9 x 47.25	
Dimension for Installation (W) x (H) mm		118.8 x 92.8	186.8 x 126.8	255 x 170	
Weight		Approx.280g	Approx. 560 g	Approx. 1.1 Kgs	

Note:

normal temperature and humidity conditions.

1. The half-life of backlight is defined as original luminance being reduced by 50% when the maximum driving current is supplied to HMI. The life of LED backlight shown here is an estimated value under 25°C

2. The withstand voltage of the isolated power circuit is 1500 V peak for 1 minute.

3. Power consumption of HMI is the power consumed when not connecting to any peripheral devices. To ensure normal operation of HMI, the recommended power supply is: power consumption x 1.5 ~ 2.

 Isolated power supply is recommended.
DOPSoft, the program editor for DOP-100 series products and user manuals can be downloaded at our website. In addition, the content of this instruction sheet may be revised without prior notice.

Please consult our distributors or download the latest version at http://www.delta.com.tw/ia.

6. DOP-100 series can be used for industrial automation equipment. Please read through this manual carefully and install the product according to the instructions to avoid danger.