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High Color • Wide Screen • User-Friendly HMI Products

DOP-*B10*

No.18, Xinglong Rd., Taoyuan City
33068, Taiwan

Instruction Sheet

(1) Preface

Thank you for purchasing DELTA's DOP-B series. This instruction sheet will be helpful in the installation, wiring and inspection of Delta HMI. Before using the product, please read this instruction sheet to ensure correct use. You should thoroughly understand all safety precautions before proceeding with the installation, wiring and operation. Place this instruction sheet in a safe location for future reference. Please observe the following precautions:

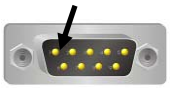
- Install the product in a clean and dry location free from corrosive and inflammable gases or liquids.
- Ensure that all wiring instructions and recommendations are followed.
- Ensure that HMI is correctly connected to a ground. The grounding method must comply with the electrical standard of the country (Please refer to NFPA 70: National Electrical Code, 2005 Ed.).
- Do not disassemble HMI, modify or remove wiring when power is applied to HMI.
- Do not touch the power supply during operation. Otherwise, it may cause electric shock.

If you have any questions 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 most updated version at http://www.delta.com.tw/ia.

(2) Pin Definition of Serial Communication

DOP-B10S411 / DOP-B10S511/ DOP-B10E515 COM1 Port

COM Port	PIN	MODE1
		RS-232
PIN1 	1	
	2	RXD
	3	TXD
	4	
	5	GND
	6	
	7	RTS
	8	CTS
	9	

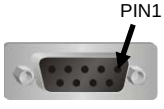
Note1: Blank = To avoid malfunction, it must be left unconnected.

DOP-B10S411 / DOP-B10S511 COM2 Port

COM Port	PIN	MODE1		MODE2		MODE3	
		COM2	COM3	COM2	COM3	COM2	COM3
		RS-232	RS-232	RS-485	RS-485	-	RS-422
PIN1 	1			D+			TXD+
	2	RXD					
	3	TXD					
	4				D+		RXD+
	5	GND		GND		GND	
	6			D-			TXD-
	7		TXD				
	8		RXD				
	9				D-		RXD-

Note1: Note1: Blank = To avoid malfunction, it must be left unconnected.
Note2: DOP-B10S411 / DOP-B10S511 models do not support RS-422 flow control.

DOP-B10E515 COM2 Port

COM Port	PIN	MODE1	MODE2	MODE3
		RS-232	RS-422	RS-485
PIN1 	1		TXD+	D+
	2	RXD		
	3	TXD		
	4		RXD+	
	5	GND	GND	GND
	6		TXD-	D-
	7	RTS		
	8	CTS		
	9		RXD-	

Note1: Note1: Blank = To avoid malfunction, it must be left unconnected.
Note2: When COM2 port is used for RS-232 flow control (RTS, CTS is set), COM3 port cannot be used.
Note3: When COM2 port is used for RS-422 flow control, for the pin settings it needs, please refer to the pin definitions of MODE 2 in DOP-B10E515 COM3 port table.

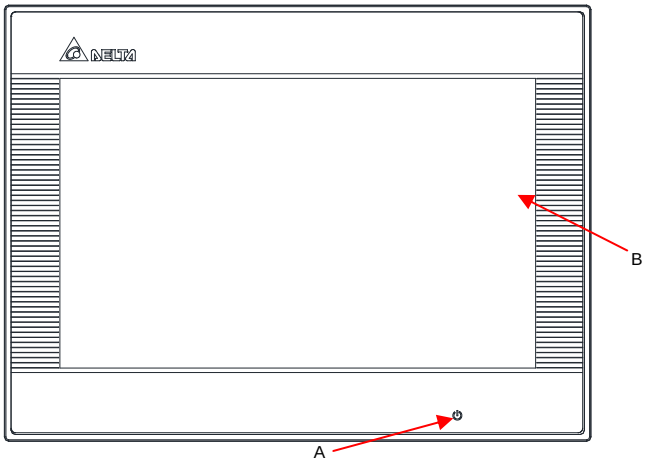
DOP-B10E515 COM3 Port

COM Port	PIN	MODE1	MODE2	MODE3
		RS-232	RS-422	RS-485
PIN1 	1		TXD+(RTS+)	D+
	2	RXD		
	3	TXD		
	4		RXD+(CTS+)	
	5	GND	GND	GND
	6		TXD-(RTS-)	D-
	7			
	8			
	9		RXD-(CTS-)	

Note1: Note1: Blank = To avoid malfunction, it must be left unconnected.
Note2: When COM2 port is used for RS-422 flow control, for the pin settings it needs, please refer to the pin definitions of MODE 2 in DOP-B10E515 COM3 port table.

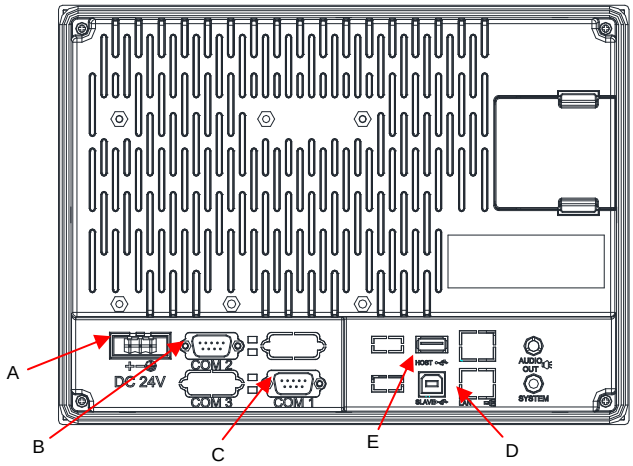
(3) Parts Names

DOP-B10S411 (Front View)



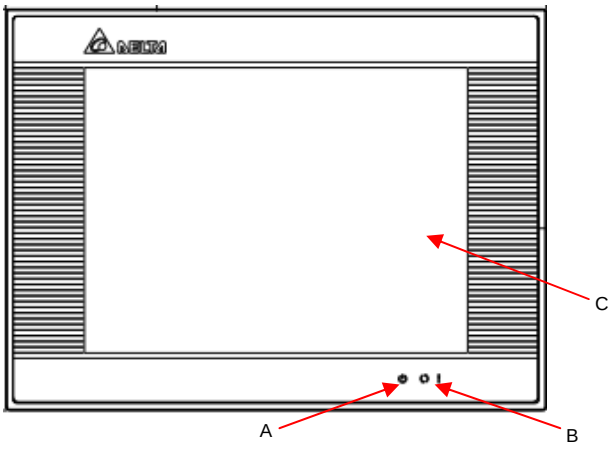
A	Power LED Indicator (⏻)	Note: ⏻ Lights in green when HMI works normally.
B	Touch Screen / Display	

DOP-B10S411 (Rear View)



A	Power Input Terminal	D	USB Slave
B	COM2	E	USB Host
C	COM1	Please note DOP-B10S411 model has not system key, user could press at blank space for 3 seconds, and then will hear Buzzer sound. After hearing the Buzzer sounded, please press left top corner to enter system menu.	

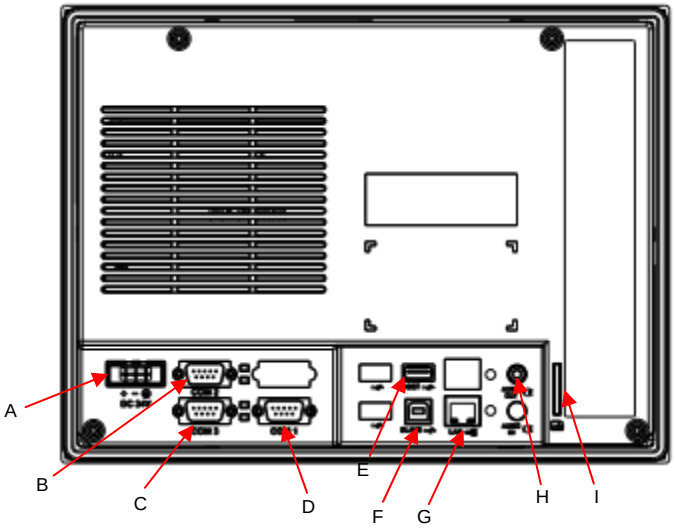
DOP-B10S511 / DOP-B10E515 (Front View)



A	Power LED Indicator (⏻)	⏻ Lights in green when HMI works normally.
B	Operation LED Indicator (↻) / Alarm LED Indicator (!)	↻ Lights in blue: the communication is carried out / the data is accessing. (Please refer to the "Note" below for explanation). ! Lights in red: one of the alarms is on.
C	Touch Screen / Display	Note: The definition of the operation LED indicator (Blue) can be determined by the users freely.

Please note that DOP-B10S511 model only has Power LED Indicator (A) and Touch Screen / Display (C).

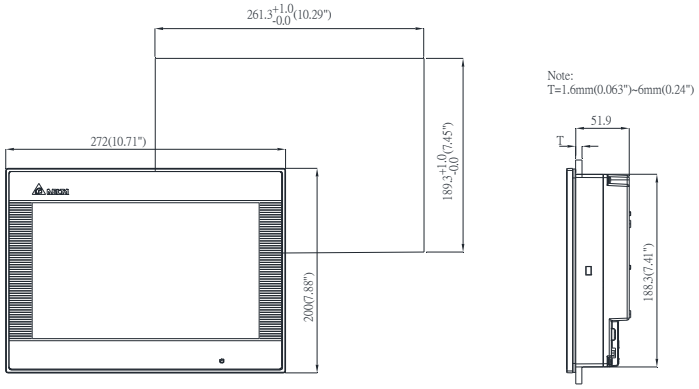
DOP-B10S511 / DOP-B10E515 (Rear View)



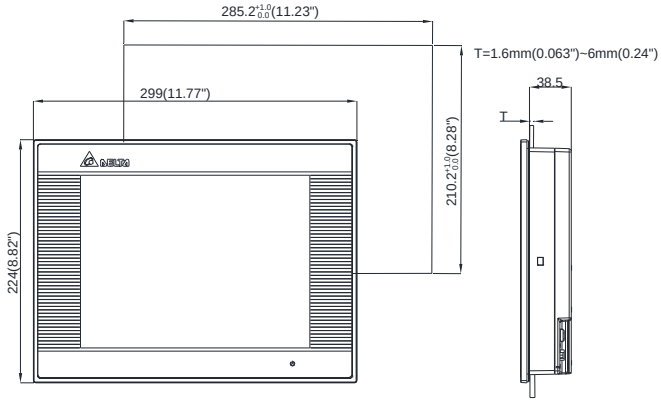
A	Power Input Terminal	F	USB Slave
B	COM2 (It is provided with two LED indicators to indicate that HMI is in Read or Write status during the communication process.)	G	Ethernet Interface (LAN) Note: DOP-B10E515 only.
C	COM3 (It is provided with two LED indicators to indicate that HMI is in Read or Write status during the communication process.) Note: DOP-B10E515 only.	H	Audio Output Interface Note: DOP-B10E515 only.
D	COM1	I	Memory Card Slot Note: DOP-B10E515 only.
E	USB Host	Please note DOP-B10S511 / DOP-B10E515 model has not system key, user could press at blank space for 3 seconds, and then will hear Buzzer sound. After hearing the Buzzer sounded, please press left top corner to enter system menu.	

(4) Dimensions

DOP-B10S411



DOP-B10S511 / DOP-B10E515



(5) Specifications

Model Name		DOP-B10S411	DOP-B10S511	DOP-B10E515
LCD MODULE	Display Type	10.1" Widescreen TFT LCD (65536 colors)	10.4" TFT LCD (65536 colors)	10.4" TFT LCD (65536 colors)
	Resolution	800 x 480 pixels	800 x 600 pixels	800 x 600 pixels
	Backlight	LED Back Light (less than 20,000 hours half-life at 25°C) (Note 1)		
	Display Size	219.6 x 131.76mm	211.2 x 158.4mm	211.2 x 158.4mm
Operation System		Delta Real Time OS		
MCU		32-bit RISC Micro-controller		
Flash ROM		Flash ROM 128 MB (OS System: 30MB / Backup: 16MB / User Application: 82MB)		
SDRAM		64Mbytes		
Backup Memory		32Kbytes		
Audio Output	Buzzer	Multi-Tone Frequency (2K ~ 4K Hz) / 85dB		
	AUX	N/A		Stereo Output
Ethernet Interface		N/A		IEEE 802.3, IEEE 802.3u
		N/A		10/100 Mbps auto-sensing (has built-in isolated power circuit (Note 3))
Memory Card		N/A		SD Card (supports SDHC)
USB		1 USB Slave Ver 2.0 1 USB Host (Note 2) Ver 1.1		
Serial COM Port	COM1	RS-232 (supports hardware flow control)		
	COM2	RS-232/485	RS-232/485	RS-232/422/485 (has built-in isolated power circuit (Note 3))
	COM3	RS-232/422/485	RS-232/422/485	RS-232/422/485 (has built-in isolated power circuit (Note 3))
Perpetual Calendar (RTC)		Built-in		
Cooling Method		Natural air circulation		
Safety Approval		UL (Note 4) / CE (Note 4)		
Waterproof Degree		IP65		
Operation Voltage (Note3)		DC +24V (-10% ~ +15%)		
Voltage Endurance		AC500V for 1 minute (between charging (DC24V terminal) and FG terminals)		
Power Consumption (Note 3)		6.6W	6.1W	9.6W
Backup Battery		3V lithium battery CR2032 × 1		
Backup Battery Life		It depends on the temperature used and the conditions of usage, 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 5Hz≦f < 8.3Hz = Continuous: 3.5mm, 8.3Hz≦f ≦150Hz = Continuous: 1.0g		
Shock		IEC 60068-2-27 compliant 15g peak for 11 ms duration, X, Y, Z directions for 6 times		
Dimensions (W) x (H) x (D) mm		272 x 200 x 61	299 x 224 x 46.8	299 x 224 x 46.8
Panel Cutout (W) x (H) mm		261.3 X 189.3	285.2 x 210.2	285.2 x 210.2
Weight		Approx. 1520g	Approx. 1735g	Approx. 1600g

NOTE

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 normal temperature and humidity conditions.
2) USB Host port can provide up to 5V/ 100mA of power.
3) The value of the power consumption indicates the electrical power consumed by HMI only without connecting to any peripheral devices. In order to ensure the normal operation, it is recommended to use a power supply which the capacity is 1.5 ~2 times the value of the power consumption.
4) Some models are in the process of application to UL and KCC certification. For more information, please consult our distributors.
5) The content of this instruction sheet may be revised without prior notice. Please consult our distributors or download the most updated version at http://www.delta.com.tw/ia.