



# DOP-103WQ DOP-107WV DOP-110WS

High Color • Widescreen •  
User-Friendly HMI Products  
Delta Electronics Inc,  
No.18, Xinglong Rd., Taoyuan City  
33068, Taiwan

## 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.

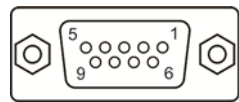
- Install the product in a clean and dry location free from corrosive and inflammable gases or liquids, indoor use only.
- Ensure that all wiring instructions and recommendations are followed.
- Ensure that HMI is correctly connected to the ground. The grounding method must comply with the national electrical 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 yourself.
- 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>.

### (2) Communication Port Pin Assignment

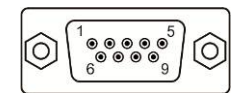
#### DOP-103WQ COM Port

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-



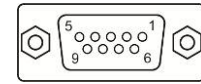
#### DOP-107WV / DOP-110WS COM1 Port

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



#### DOP-107WV / DOP-110WS COM2 Port

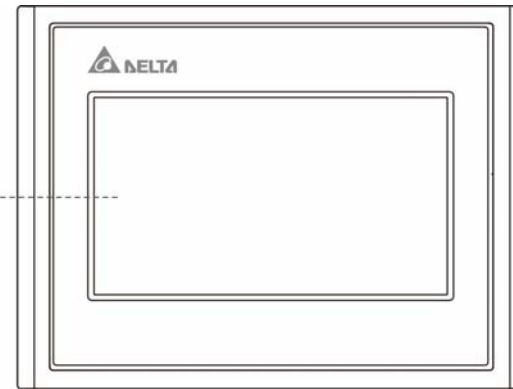
COM Port	Pin	MODE1		MODE2		MODE3	
		COM2	COM3	COM2	COM3	COM2	COM3
		RS-232	RS-485	RS-485	RS-485	RS-232	RS-422
	1			D+			TXD+
	2	RXD				RXD	
	3	TXD				TXD	
	4		D+		D+		RXD+
	5	GND		GND		GND	
	6			D-			TXD-
	7	RTS				RTS	
	8	CTS				CTS	
	9		D-		D-		RXD-



Note 1: Blank means connection is not required.

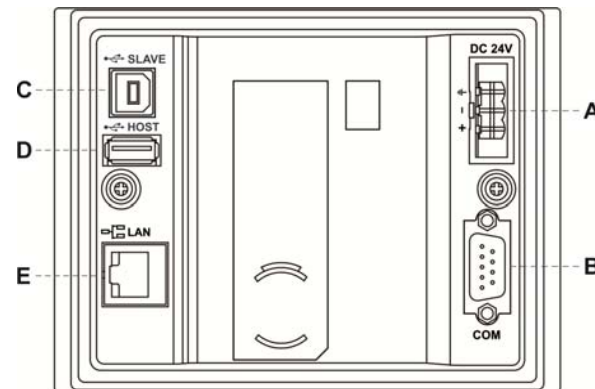
### (3) Part names

#### DOP-103WQ (Front view)



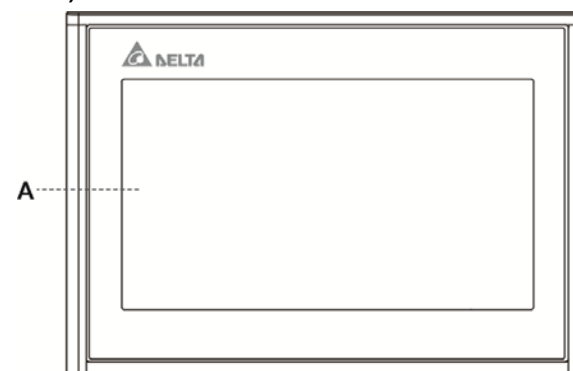
A Touch Screen / Display

#### DOP-103WQ (Rear view)



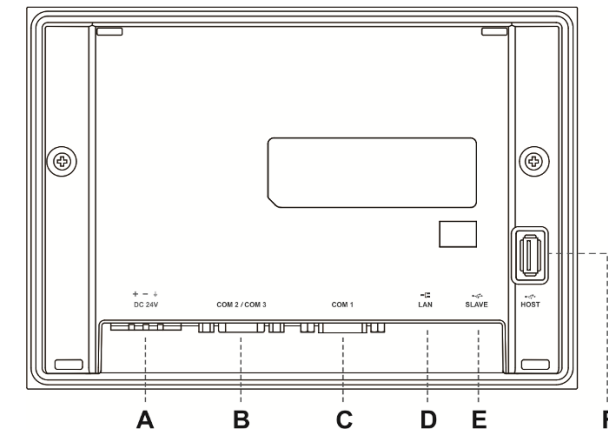
A	Power Input (24AWG wire min.)	B	COM1
C	USB Slave	D	USB Host
E	Network Port ( LAN )		

#### DOP-107WV (Front view)



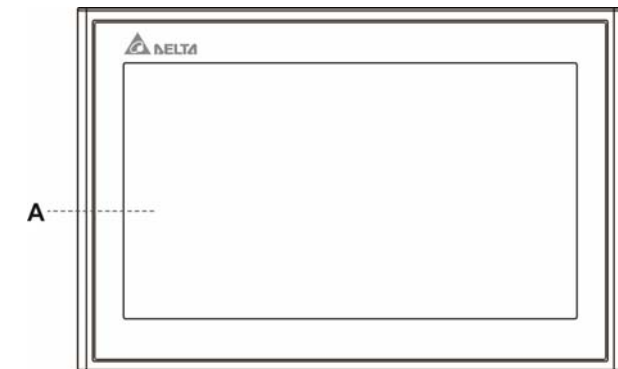
A Touch Screen / Display

#### DOP-107WV (Rear view)



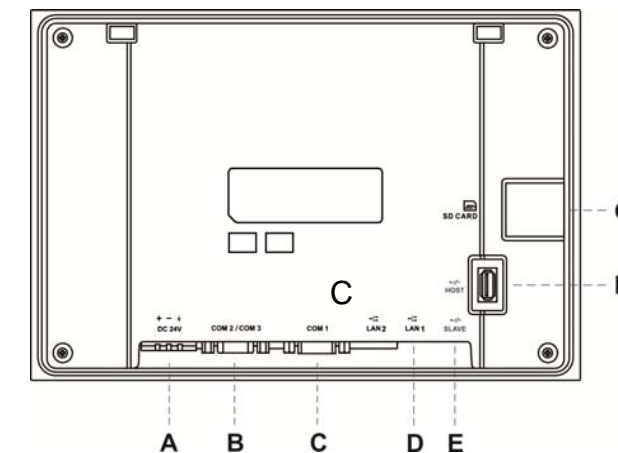
A	Power Input (24AWG wire min.)	B	COM2/ COM3
C	COM1	D	Network Port (LAN)
E	USB Slave	F	USB Host

#### DOP-110WS (Front view)



A Touch Screen / Display

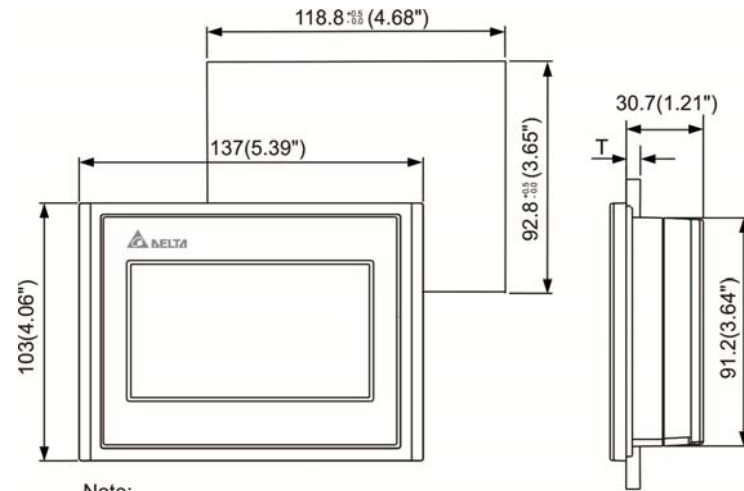
#### DOP-110WS (Rear view)



A	Power Input (24AWG wire min.)	B	COM2/ COM3
C	COM1	D	Network Port (LAN)
E	USB Slave	F	USB Host
G	SD Card		

#### (4) Dimensions for Installation

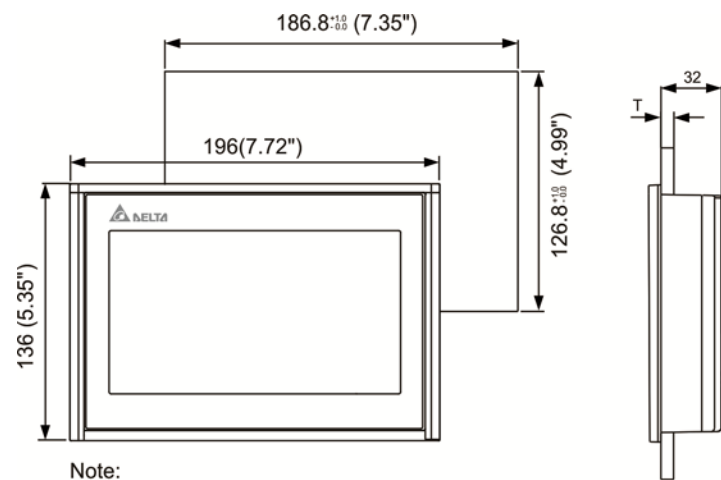
##### DOP-103WQ



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

Keep temperature of the control box below 50°C.

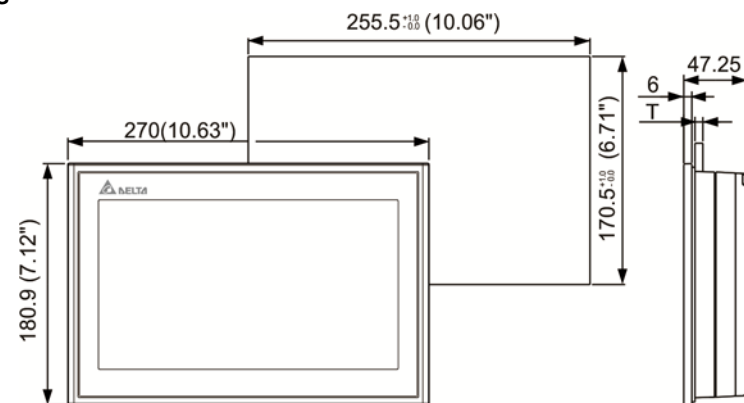
##### DOP-107WV



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

Keep temperature of the control box below 50°C.

##### DOP-110WS



Note:  
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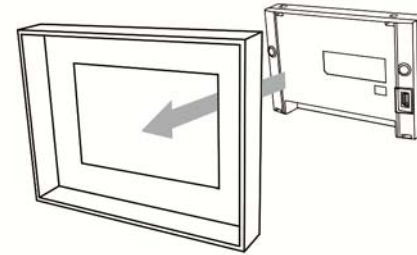
#### (5) Installation and Wiring

##### Installation Notes:

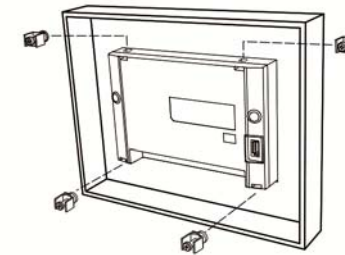
- Improper installation will result in malfunction and greatly reduce the life of the HMI. Be sure to follow the guidelines in this quick start when installing the HMI.
- In order to ensure the HMI being well ventilated, make sure that the ventilation holes are not obstructed and provide sufficient clearance 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.

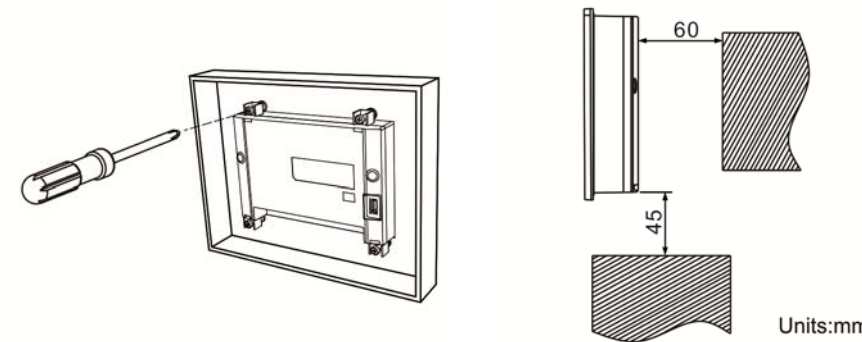


Step 2:  
Place the fasteners into slots and tighten the screws till reaching the panel cutouts.



Step 3:  
Tighten the screws with torque less than 0.5N-M / 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)

Step 4:  
For heat dissipation, please keep a minimum clearance of 60 mm on the rear of the HMI.

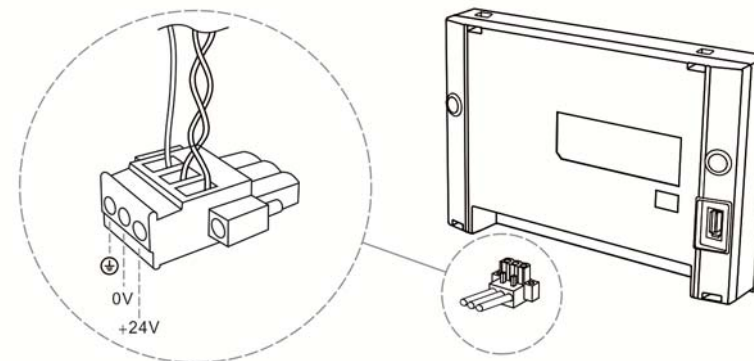


Recommended wiring is as follows:

Type	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°C min.



#### (6) Specifications

Model		DOP-103WQ	DOP-107WV	DOP-110WS
LCD Module	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
	Backlight	LED Back Light (less than 10,000 hours half-life at 25°C) <sup>(Note 1)</sup>	LED Back Light (less than 20,000 hours half-life at 25°C) <sup>(Note 1)</sup>	LED Back Light (less than 30,000 hours half-life at 25°C) <sup>(Note 1)</sup>
	Display Size	95.04 x 53.856 mm	154.08 x 85.92 mm	225.52 x 128.10 mm
	Brightness	400 cd/m <sup>2</sup> (Typ.)	450 cd/m <sup>2</sup> (Typ.)	450 cd/m <sup>2</sup> (Typ.)
CPU		ARM Cortex-A8 (800MHz)		
Flash ROM		256 Mbytes		
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) <sup>(Note 2)</sup>		
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 <sup>(Note 2)</sup>	RS-232 (supports flow control) <sup>(Note 2)</sup>	
	COM2	RS-422 / RS-485 <sup>(Note 2)</sup>	RS-232 (supports flow control) / RS-485 <sup>(Note 2)</sup>	
	COM3	N/A	RS-422 / RS-485 <sup>(Note 2)</sup>	
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 <sup>(Note 2)</sup>		+24 V <sub>DC</sub> (-15% ~ +15%) (with built-in isolated power supply unit) Supplied by Class 2 or SELV circuit (isolated from MAINS by double insulation)		
Voltage Endurance		500 V <sub>AC</sub> for 1 minute (between charging (DC24V terminal) and FG terminals)		
Power Consumption <sup>(Note 2)</sup>		5.8W (Max) <sup>(Note 3)</sup>	8.4W (Max) <sup>(Note 3)</sup>	11W (Max) <sup>(Note 3)</sup>
Backup Battery		3V lithium battery CR2032 x 1		
Backup Battery Life		About 3 years or more at 25°C but subjects to the temperature and the conditions during usage.		
Operation Temperature		0°C ~ 50°C		
Storage Temperature		-20°C ~ +60°C		
Operating Environment		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 G		
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	255.5 x 170.5
Weight		Approx.280g	Approx. 560 g	Approx. 1.1 Kgs

##### Note:

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



DOP-103WQ  
DOP-107WV  
DOP-110WS

Yüksek Renk • Geniş Ekran • Kullanıcı  
Dostu HMI Ürünleri

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

## Bilgi Dokümanı

### (1) Önsöz

DOP-100 ürünlerini satın aldığınız için teşekkürler. Bu bilgi dokümanı DOP-100 serileri için bilgiler sağlar. Ürünü kullanmadan önce, doğru kullanım için lütfen dokümanı tamamen okuyunuz. Ayrıca daha sonra ihtiyaç duyulduğunda kullanabilmek için bu dokümanı iyi muhafaza ediniz. Eğer okumayı tamamladıysanız lütfen aşağıda yazılı olan kuralları uygulayınız.

- Ürünün kurulumunu aşındırıcı veya yanıcı gaz veya sıvılardan uzak, temiz ve kuru yerlere yapınız. Sadece iç mekanda kullanınız
- Tüm bağlantıların dokümanda belirtildiği gibi olduğuna emin olunuz.
- HMI toprak bağlantısının doğru olduğuna emin olunuz. Topraklama metodu uluslararası elektrik standardına uyumlu olmalıdır. (NFPA 70: National Electrical Code).
- HMI ürünü enerjili iken bağlantılara müdahale etmeyiniz.
- Çalışma sırasında güç kaynağına dokunmayınız. Aksi halde elektrik şoku meydana gelebilir.
- HMI düşük pil uyarısı gösterirse ve pil değişimi gerekirse firmamız ile temasa geçiniz, kendiniz değiştirmeyiniz.
- DOP-100 serisi endüstriyel otomasyon ekipmanı olarak kullanılır. Lütfen bu dokümanı dikkatli okuyun ve tehlikeli durumları önlemek için ürünü belirtilen direkliflere uygun kurunuz.
- Temizleme metodu: Ürünü temizlemek için kuru bir bez kullanınız.
- Ürün 2000m altında bir rakımda kullanılmalıdır.
- Ürünle ilgili sorularınız için firmamız ile kontak kurabilirsiniz.

Ürünün kullanımı ile ilgili sorularınız için teknik servisimize kontak kurabilirsiniz. Bu bilgi dokümanının içeriği herhangi bir bildirim gerek duyulmadan değiştirilebilir. Dokümanın son versiyonunu internetten indirebilirsiniz. <http://www.delta.com.tw/ta>.

### (2) Haberleşme Pinleri

#### DOP-103WQ COM Pinleri

COM Port	Pin	MODE1		MODE2		MODE3	
		COM1	COM2	COM1	COM2	COM1	COM2
	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 Pinleri

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

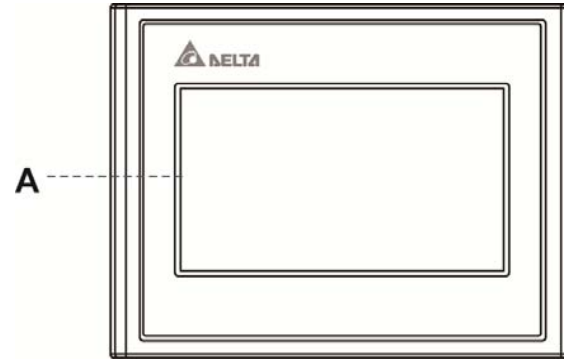
#### DOP-107WV / DOP-110WS COM2 Pinleri

COM Port	Pin	MODE1		MODE2		MODE3	
		COM2	COM3	COM2	COM3	COM2	COM3
	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-

Not 1: Boş olan terminalere bağlantı yapılmaz.

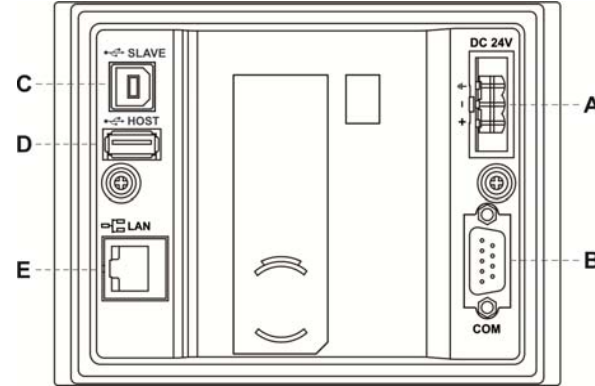
### (3) Parça isimleri

#### DOP-103WQ (Ön Görünüm)



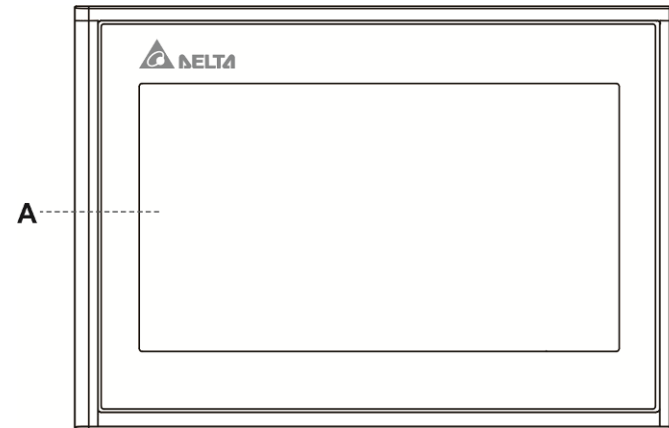
A Dokunmatik Ekran / Display

#### DOP-103WQ (Arka Görünüm)



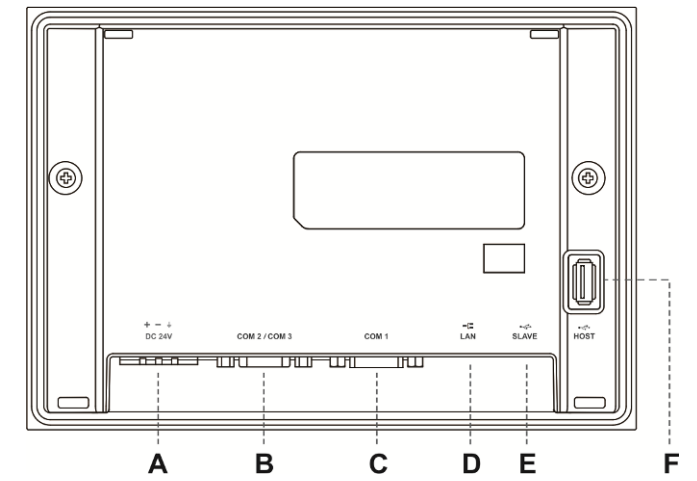
A	Power Girişi (24AWG wire min.)	B	COM1
C	USB Slave	D	USB Host
E	Network Port (LAN)		

#### DOP-107WV (Ön Görünüm)



A Dokunmatik Ekran / Display

#### DOP-107WV (Arka Görünüm)



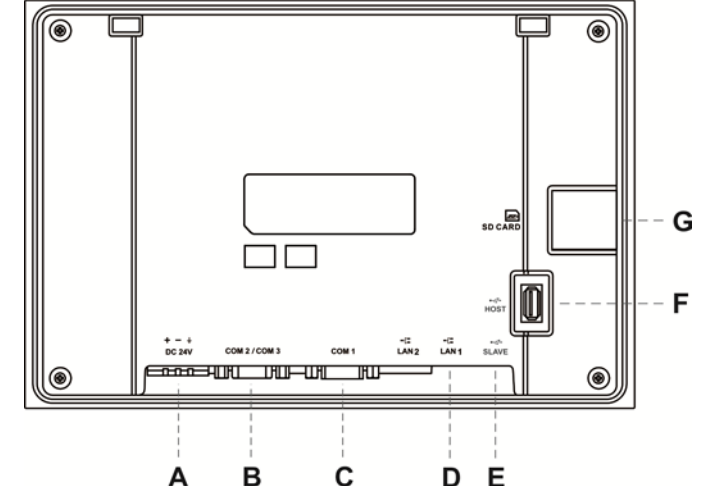
A	Power Girişi (24AWG wire min.)	B	COM2 / COM3
C	COM1	D	Network Port (LAN)
E	USB Slave	F	USB Host

#### DOP-110WS (Ön Görünüm)



A Dokunmatik Ekran / Display

#### DOP-110WS (Arka Görünüm)

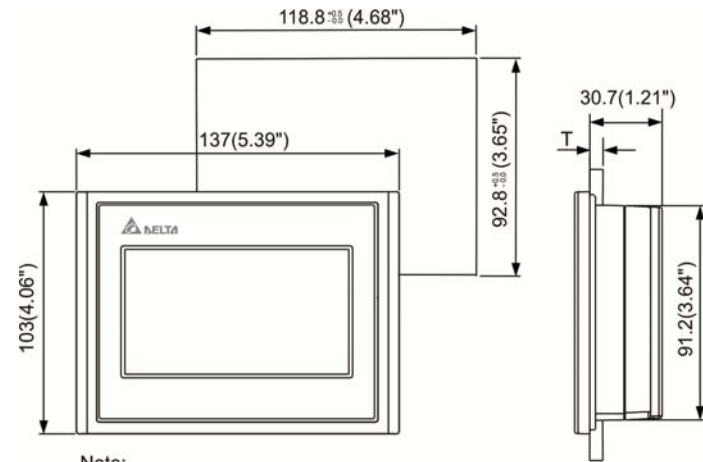


A	Power Girişi (24AWG wire min.)	B	COM2/ COM3
C	COM1	D	Network Port (LAN)
E	USB Slave	F	USB Host
G	SD Card		



#### (4) Kurulum için Ölçüler

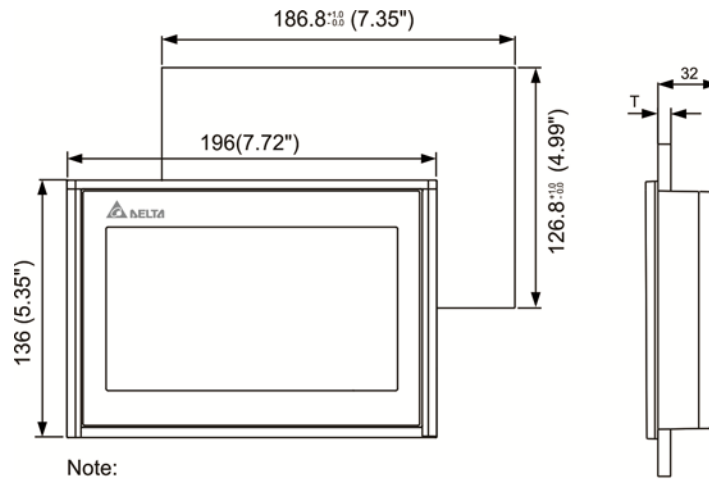
##### DOP-103WQ



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

Tüm Yüklü Ortam sıcaklığı 50 °C geçemez.

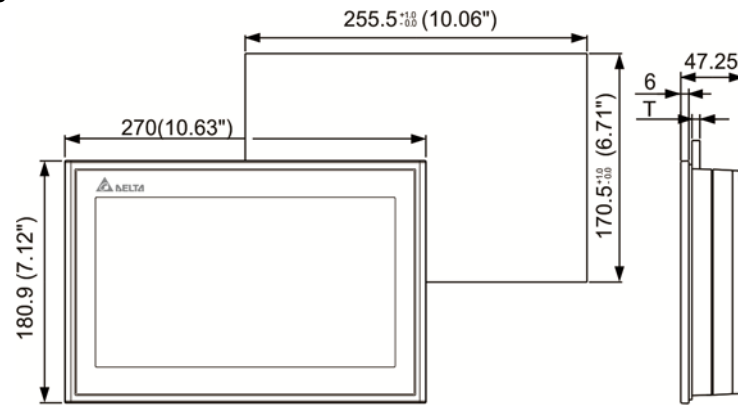
##### DOP-107WV



Note:  
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Tüm Yüklü Ortam sıcaklığı 50 °C geçemez.

##### DOP-110WS



Note:  
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Tüm Yüklü Ortam sıcaklığı 50 °C geçemez.

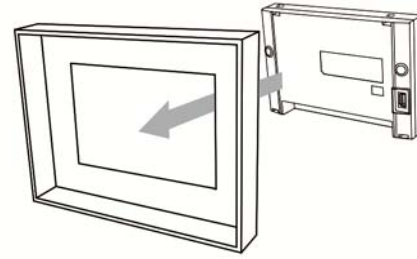
#### (5) Kurulum ve Bağlantı

##### Kurulum Notları:

- Yanlış kurulum yapılması ürünün zarar görmesini veya çalışma ömrünün kismalmasına sebep olur. HMI kurulumunun doküman da belirtildiği gibi yapılması gerekir
- HMI'nın havalandırmasının doğru olduğuna emin olmak için, havalandırma deliklerinin tıkalı olmadığına ve HMI etrafında gerekli boşluğun bırakıldığına emin olunuz
- Panelin iyi korunduğuna emin olmak için, HMI içine su geçirmez conta koyduğunuza emin olunuz.
- Düz yüzey, Tip 4X "Sadece kapalı alanda kullanım" ve eşdeğer ortamlarda kurulum yapılmalıdır.
- Montaj için kullanılan panelin kalınlığı 5 mm'den az olmalıdır.

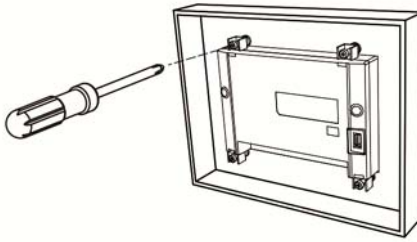
##### Kurulum Metodu:

Adım 1:  
HMI içine su geçirmez contanın takıldığına emin olunuz ve sonra pano boşluğuna yerleştiriniz.

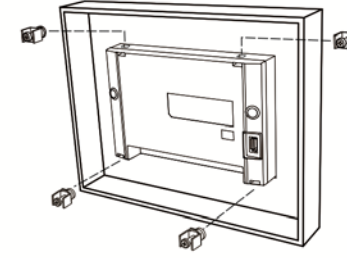


Adım 3:  
Plastik kasaya zarar vermemek için vidayı 0.5N-M / 0.7N-M'den az bir tork ile sıkınız.

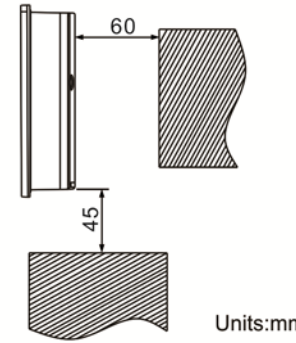
DOP-107 / DOP-110 Tork: 6.17lb-inch(0.7N-M)  
DOP-103 Tork: 4.41lb-inch (0.5N-M)



Adım 2:  
Montaj aparatlarını HMI'nın yuvalarına yerleştiriniz ve sonra panoya değene kadar vidaları sıkınız.



Adım 4:  
Isı dağılımı sağlanabilmesi için HMI arka paneli ile duvar, kurulum yüzeyi veya başka kontrol cihazı arasında en az 60 mm boşluk bırakınız.

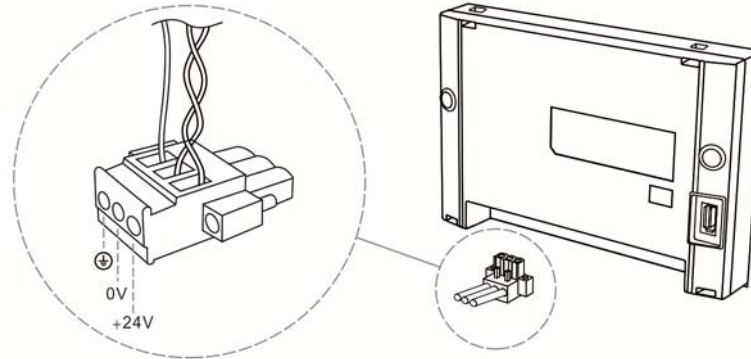


Bağlantı özelliklerini aşağıdaki tabloda görebilirsiniz:

Tip	Kablo Ölçüsü (AWG)	Soyma Uzunluğu	Tork
Tek damarlı	24~12	7~8 mm	5 kg-cm (4.3 lb-in)
Çok damarlı	24~12	7~8 mm	5 kg-cm (4.3 lb-in)



Bağlantının aşağıdaki şekilde gösterildiği gibi yapıldığına emin olunuz. (Besleme konnektörü)



#### (6) Özellikler

Model	DOP-103WQ	DOP-107WV	DOP-110WS
Display Tipi	4.3" TFT LCD (65535 renk)	7" TFT LCD (65535 renk)	10.1" TFT LCD (65535 renk)
Çözünürlük	480 x 272 piksel	800 x 480 piksel	1024 x 600 pixels
Aydınlatma	LED Aydınlatma (Yarım ömürde 25°C'de 10,000 saatten az) <sup>(Not 1)</sup>	LED Aydınlatma (Yarım ömürde 25°C'de 20,000 saatten az) <sup>(Not 1)</sup>	LED Back Light (less than 30,000 hours half-life at 25 °C) <sup>(Note 1)</sup>
Display Ölçüsü	95.04 x 53.856 mm	154.08 x 85.92 mm	225.52 x 128.10 mm
Parlaklık	400 cd/m <sup>2</sup> (Tipik)	450 cd/m <sup>2</sup> (Tipik)	450 cd/m <sup>2</sup> (Tipik)
CPU	ARM Cortex-A8 (800 MHz)		
Flash ROM	256 Mbyte		
Dahili Hafıza	512 Mbyte		

Dokunmatik Ekran	4-telli rezistif dokunmatik ekran > 10,000,000 işleme		
Buzzer	Multi-Tone Frekans (2 K ~ 4 K Hz) / 80 dB		
Ethernet Arabirimi	10/100 Mbps Otomatik Algılama (dahili izoleli güç devresi) <sup>(Not 2)</sup>		
USB	1 USB Slave Ver 2.0 1 USB Host Ver 2.0		
SD	N/A		SD * 1
Seri Haberleşme Portu	COM1	RS-232 (Flow kontrol destekler) / RS-485 <sup>(Not 2)</sup>	RS-232 (Flow kontrol destekler) <sup>(Not 2)</sup>
	COM2	RS-422 / RS-485 <sup>(Not 2)</sup>	RS-232 (Flow kontrol destekler) / RS-485 <sup>(Not 2)</sup>
	COM3	N/A	RS-422 / RS-485 <sup>(Not 2)</sup>
Fonksiyon Tuşları	N/A		
Sürekli Takvim	Dahili		
Soğutma Metodu	Doğal Soğutma		
Güvenlik Onayı	CE / UL (Lütfen ekranlı Ethernet kablosu ve 300 ohm/100 MHz filtre ile manyetik halka kullanınız)		
Panel Display Su Geçirmezlik Seviyesi	IP65/NEMA4		
Çalışma Voltajı <sup>(Not 2)</sup>	+24 VDC (-15% ~ +15%) (Dahili izoleli güç kaynağı ile) (SELV devresi tarafından beslenir (Şebeke hattından çift yalıtım ile izole edilmiştir))		
Voltaj Dayanıklılığı	1 dakika için 500 V <sub>AC</sub> (DC24V terminal ve FG terminaleri arası)		
Güç Tüketimi <sup>(Not 2)</sup>	5.8W (Max) <sup>(Not 3)</sup>	8.4W (Max) <sup>(Not 3)</sup>	11.04 W (Max) <sup>(Not 3)</sup>
Backup Pili	3V lityum pil CR2032 x 1		
Backup Pii Ömrü	Normal koşullarda 25°C'de 3 yıl veya daha fazla.		
Çalışma Sıcaklığı	0°C ~ 50°C		
Saklama Koşulları	-20°C ~ +60°C		
Çalışma Ortamı	10% ~ 90% RH [0 ~ 40°C], 10% ~ 55% RH [41 ~ 50°C]; Kirlenme derecesi: 2		
Titreşim Direnci	IEC61131-2 ile uyumlu; Sürekli: 5 Hz ~ 8.3 Hz 3.5 mm, 8.3 Hz ~ 150 Hz 1 G		
Şok Direnci	IEC60068-2-27 ile uyumlu: 11 ms, 15 G Pik, X, Y, Z yönünde 6 kere		
Ölçüler (W) x (H) x (D) mm	137 x 103 x 37.1	196 x 136 x 39	270 x 180.9 x 47.25
Kurulum Yeri Ölçüleri (W) x (H) mm	118.8 x 92.8	186.8 x 126.8	255.5 x 170.5
Ağırlık	Yaklaşık 280 g	Yaklaşık 560 g	Yaklaşık 1.1 Kgs

#### NOTE

- Arka ışık yarı-ömrü, maksimum besleme akımı HMI'ya uygulandığında orijinal parlaklığın %50 oranında azaltılmış olması olarak tanımlanır. Burada gösterilen LED aydınlatma ömrü 25°C normal sıcaklık ve nem koşullarında tahmini bir değerdir.
- İzoleli güç devresi dayanma voltajı 1 dakika için 1500 V pik.
- HMI güç tüketimi herhangi bir cihaza bağlı değil iken tükettiği güçtür. Normal çalışma için tavsiye edilen güç kaynağı tüketilen gücün 1.5 ~ 2 katıdır.
- İzoleli güç kaynağı kullanılması tavsiye edilir
- DOP-100 serisi ürünlerin program editörü olan DOPSoft programı ve kullanıcı manüel web sayfamızdan indirilebilir.
- DOP-100 serisi endüstriyel otomasyon donanımı olarak kullanılabilir. Tehlikeleri önlemek için bu bilgi dokümanını dikkatlice okuyun ve belirtilen direktiflere göre kurulumu gerçekleştirin.

#### TÜRKİYE İTHALATÇI FIRMA

#### FABRİKA AYGITLARI SİSTEM TEKNOLOJİSİ BİLGİSAYAR YAZILIM VE ELEKTRONİK PAZARLAMA İTHALAT İHRACAT ANONİM ŞİRKETİ

FAST Plaza Küçükbakkalköy Mh. Dereyolu Sk. No:4  
ATAŞEHİR / İSTANBUL  
T: +(90) 216 574 94 34 F: +(90) 216 574 16 60  
E: satis@fasttld.net W: www.fasttld.net

#### Üretici Firma Delta Electronics, Inc.

**Taiwan**  
31-1 Xingbang Road,  
Guishan Industrial Zone,  
Taoyuan County 33370,  
Taiwan  
TEL: 886-3-362-6301  
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**China**  
1688 Jiangxing East Road,  
Wujiang Economic Development Zone  
Wujiang City, Jiang Su Province,  
People's Republic of China (Post code: 215200)  
TEL: 86-512-6340-3008  
FAX: 86-769-6340-7290



# DOP-103WQ DOP-107WV DOP-110WS

高彩·寬螢幕·友善人機介面  
Delta Electronics Inc,  
No.18, Xinglong Rd., Taoyuan City  
33068, Taiwan

## 安裝說明

### (1) 一般注意事項

感謝您使用本產品。本人機介面安裝說明書提供 DOP-100 系列人機介面的相關資訊。在使用之前，請您仔細詳讀本說明書以確保使用上的正確。此外，請妥善將其放置在明顯的地點以便隨時查閱。下列事項在您尚未讀完本說明書前，請務必遵守：

- 安裝的環境必須沒有水氣、腐蝕性氣體及可燃性氣體，室內安裝環境(indoor use only)。
- 接線時，請依接線圖說明施工。
- 接地工程必須確實實施，接地時須遵照國家現行相關電工法規之規定施行（請參考 NFPA 70: National Electrical Code, 2005 Ed.）。
- 在通電時，請勿拆解人機介面或更改配線。
- 在通電運作時，請勿接觸電源處，以免觸電。
- 當程式顯示電量不足時須更換電池並請聯絡台達電子或當地經銷商，請勿自行更換。
- 此產品適用於工業自動化設備，請詳細閱讀此說明，並依指示安裝避免產生危險。
- 清潔方式：請以乾布擦拭清潔。
- 適用之海拔高度為 2000 米以下。
- If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.
- 維修請聯絡：台達電子工業股份有限公司，台灣桃園市興隆路 18 號，TEL: 03-3626301。

如果您在使用上仍有問題，請洽詢經銷商或者本公司客服中心。由於產品精益求精，當內容規格有所修正時，請洽詢代理商或至台達網站 (<http://www.delta.com.tw/ia>) 下載最新版本。

### (2) 通訊腳位定義

#### DOP-103WQ COM 定義

COM Port 示意圖	腳位	MODE1		MODE2		MODE3	
		COM1	COM2	COM1	COM2	COM1	COM2
	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 定義

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

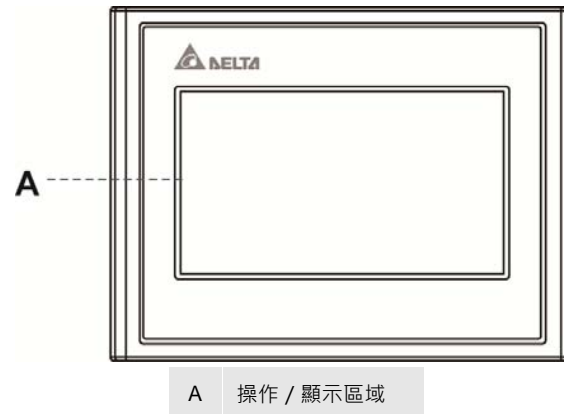
#### DOP-107WV / DOP-110WS COM2 定義

COM Port 示意圖	腳位	MODE1		MODE2		MODE3	
		COM2	COM3	COM2	COM3	COM2	COM3
	1						
	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-

註 1：空白 = 不需連接

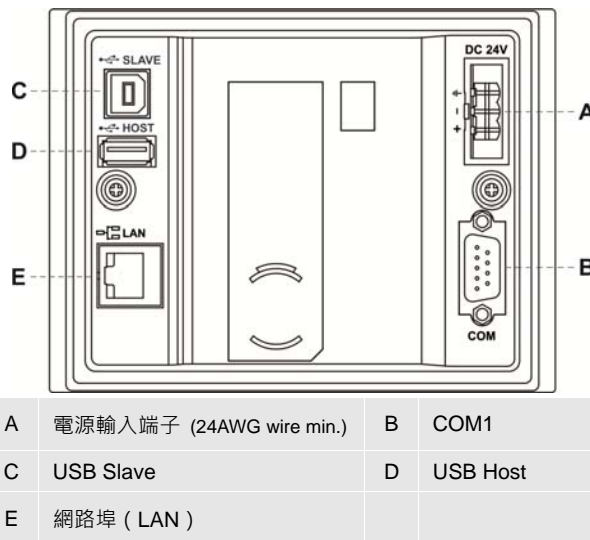
### (3) 各部位說明

#### DOP-103WQ (正面)



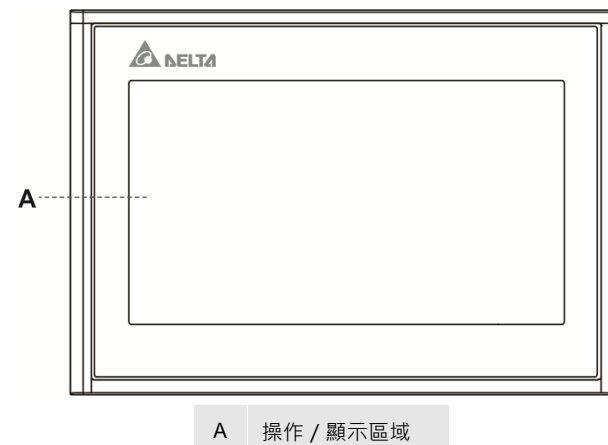
A 操作 / 顯示區域

#### DOP-103WQ (背面)



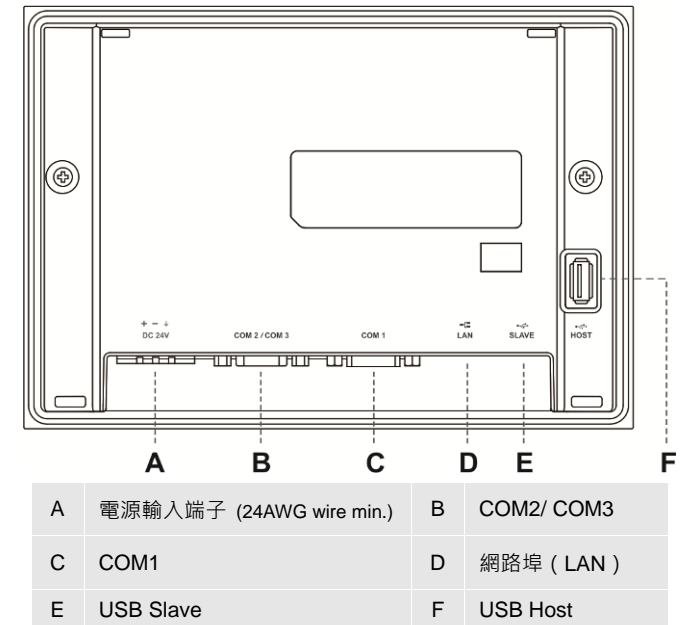
A 電源輸入端子 (24AWG wire min.)	B COM1
C USB Slave	D USB Host
E 網路埠 (LAN)	

#### DOP-107WV (正面)



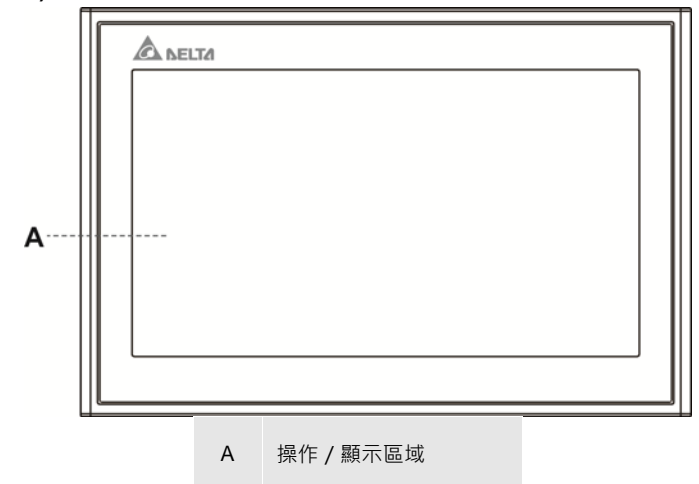
A 操作 / 顯示區域

#### DOP-107WV (背面)



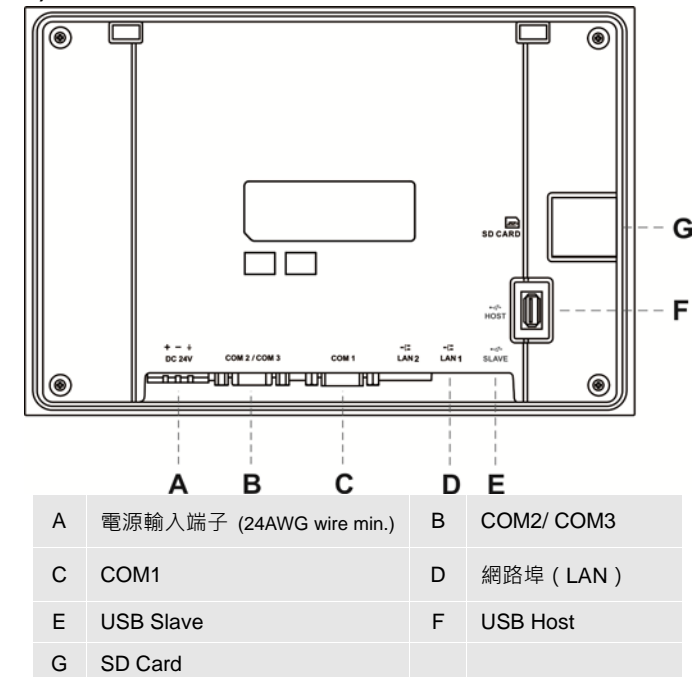
A 電源輸入端子 (24AWG wire min.)	B COM2/ COM3
C COM1	D 網路埠 (LAN)
E USB Slave	F USB Host

#### DOP-110WS (正面)



A 操作 / 顯示區域

#### DOP-110WS (背面)

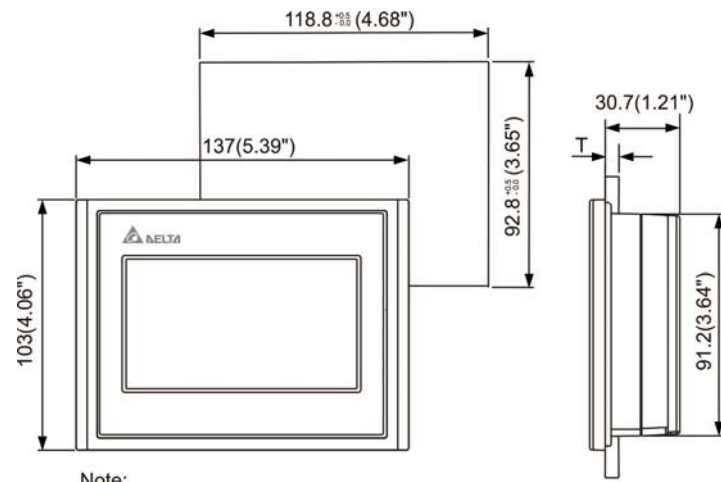


A 電源輸入端子 (24AWG wire min.)	B COM2/ COM3
C COM1	D 網路埠 (LAN)
E USB Slave	F USB Host
G SD Card	



#### (4) 開孔尺寸

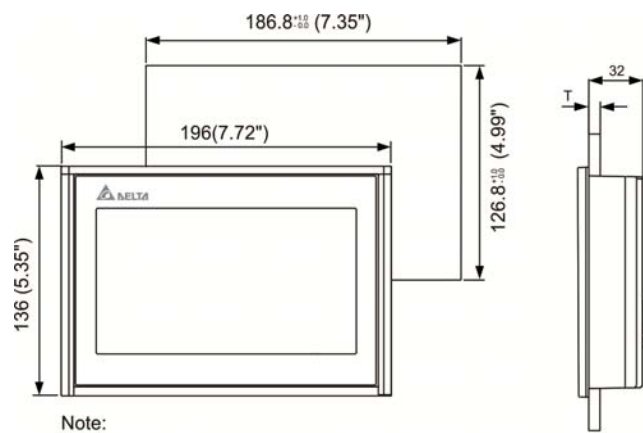
##### DOP-103WQ



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

安裝箱體溫度請勿超過 50 度 C

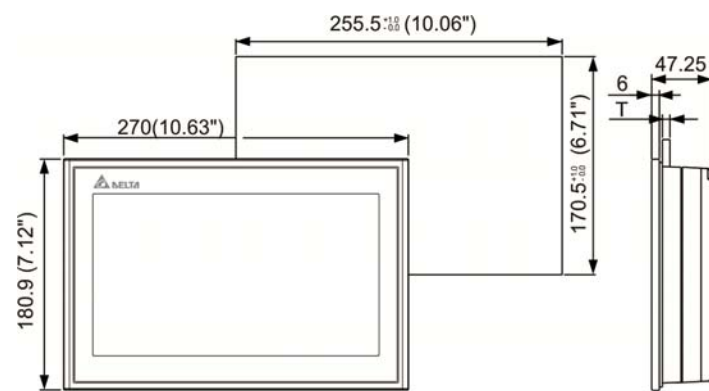
##### DOP-107WV



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

安裝箱體溫度請勿超過 50 度 C

##### DOP-110WS



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

安裝箱體溫度請勿超過 50 度 C

#### (5) 安裝方向與配線

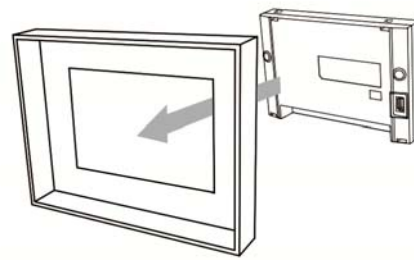
注意事項：

- 安裝方向必須依規定，否則會造成故障。
- 為了使冷卻循環效果良好，安裝人機介面時，其上下左右與相鄰的物品和擋板(牆)必須保持足夠的空間，否則會造成散熱不良。
- 使用於 Type 4X 室內用等級之外殼平面。
- 安裝面板最大板厚請勿超過 5mm。

安裝示意圖：

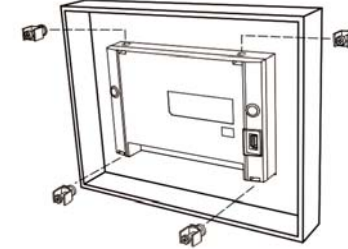
步驟一：

請確實將防水墊圈裝入，然後再安裝人機介面



步驟二：

請確實將固定片螺絲組裝入內，然後下方鉤住前蓋螺絲頭頂住控制箱內側



步驟三：

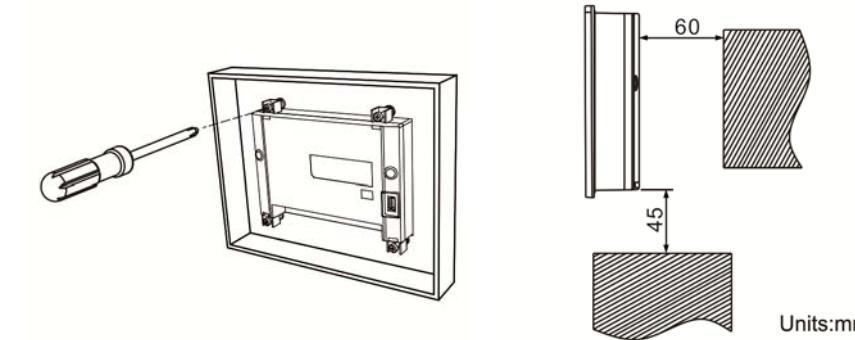
請以 0.5N-M / 0.7N-M 扭力鎖緊，切記不可超過此。安裝時，人機後方請預留 60mm 散熱空間

扭力，否則將造成塑膠外殼的損壞

DOP-107 / DOP-110 扭力: 6.17lb-inch ( 0.7N-M )

DOP-103 扭力: 4.41lb-inch ( 0.5N-M )

步驟四：

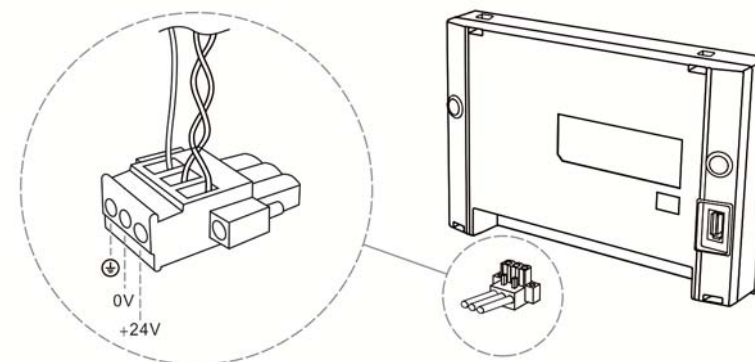


配線：

種類	電源配線(AWG)	剝線長度	扭力
單芯線	24~ 12	7 ~ 8 mm	5 kg-cm (4.3 lb-in)
多芯線	24 ~ 12	7 ~ 8 mm	5 kg-cm (4.3 lb-in)



請參考下圖電源接頭端子進行配線，安裝與配線要求至少使用等級 75 度以上：



#### (6) 硬體規格

型號	DOP-103WQ	DOP-107WV	DOP-110WS
面板種類	4.3" TFT LCD ( 65535 色 )	7" TFT LCD ( 65535 色 )	10.1" TFT LCD ( 65535 colors )
解析度	480 x 272 pixels	800 x 480 pixels	1024 x 600 pixels
背光燈	LED Back Light ( 常溫 25°C 下半衰期>1 萬小時 ) (Note 1)	LED Back Light ( 常溫 25°C 下半衰期>2 萬小時 ) (Note 1)	LED Back Light ( 常溫 25°C 下半衰期>3 萬小時 ) (Note 1)
顯示範圍	95.04 x 53.856 mm	154.08 x 85.92 mm	225.52 x 128.10 mm
亮度	400 cd/m <sup>2</sup> (Typ.)	450 cd/m <sup>2</sup> (Typ.)	450 cd/m <sup>2</sup> (Typ.)
中央處理器	ARM Cortex-A8 (800MHz)		

Flash ROM	256 Mbytes		
RAM	512 Mbytes		
觸控面板	四線電阻式 > 10,000,000 operated		
蜂鳴器	Multi-Tone Frequency ( 2K ~ 4K Hz ) / 80dB		
網路介面	1 Port, 10/100 Mbps 自動偵測 ( 內建隔離電路 (Note 2) )		
USB	1 USB Slave Ver 2.0 1 USB Host Ver 2.0		
SD	N/A		SD * 1
串列通訊埠	COM1	RS-232(支援流量控制) / RS-485 <sup>(Note 2)</sup>	RS-232(支援流量控制) <sup>(Note 2)</sup>
	COM2	RS-422 / RS-485 <sup>(Note 2)</sup>	RS-232(支援流量控制) / RS-485 <sup>(Note 2)</sup>
	COM3	N/A	RS-422 / RS-485 <sup>(Note 2)</sup>
輔助鍵	N/A		
萬年曆	內建		
冷卻方式	自然冷卻		
安規認證	CE / UL (請使用 shielding 網路線與使用磁環 300ohm/100MHz 濾波)		
面板防水等級	IP65/NEMA4		
工作電壓 (Note2)	DC +24V ( -15% ~ +15% ) ( 請使用隔離式電源供應器 ) Supplied by Class 2 or SELV circuit (isolated from MAINS by double insulation)		
絕緣耐力	DC24V 端子與 FG 端子間：AC500V, 1 分鐘		
消耗功率 (Note 2)	5.8W (Max) <sup>(Note 3)</sup>	8.4W (Max) <sup>(Note 3)</sup>	11W (Max) <sup>(Note 3)</sup>
記憶體備份電池	3V 鋰電池 CR2032 x 1		
備份電池壽命	依使用環境溫度及使用條件而不同，常溫 25°C 下壽命約三年以上		
操作溫度	0°C ~ 50°C		
儲存溫度	-20°C ~ +60°C		
工作環境	10% ~ 90% RH [ 0 ~ 40°C ] · 10% ~ 55% RH [ 41 ~ 50°C ] · 污染等級 2		
耐震動	IEC61131-2 規定連續震動 5Hz~8.3Hz 3.5mm, 8.3Hz~150Hz 1G		
耐衝擊	IEC60068-2-27 規定耐衝擊 11ms, 15G Peak, X, Y, Z 方向各 6 次		
尺寸 ( W ) x ( H ) x ( D ) mm	137 x 103 x 37.1	196 x 136 x 39	270 x 180.9 x 47.25
開孔尺寸 ( W ) x ( H ) mm	118.8 x 92.8	186.8 x 126.8	255.5 x 170.5
重量	約 280g	約 560g	約 1.1 Kgs

#### NOTE

- 1) 背光模組半衰期的定義：最大驅動電流下，背光亮度衰退到最大亮度的一半時，即為半衰期。所標示之壽命時間為 25°C 常溫常濕工作環境下之預估值。
- 2) 隔離電路耐受規格：可承受 1 分鐘 1500V 高壓突波。
- 3) 消耗功率為無外接週邊設備時，人機本體所消耗的功率。建議選用的電源供應器容量為標示消耗功率之 1.5~2 倍，以確保人機工作正常。
- 4) 建議使用隔離式電源供應器。
- 5) DOP-100 系列編輯軟體 DOPSoft 系列及其使用操作手冊，可由台達網站下載取得，網址為 <http://www.delta.com.tw/ia>。
- 6) DOP-100 系列適用於工業自動化設備，請詳細閱讀此說明，並依指示安裝避免產生危險。



DOP-103WQ  
DOP-107WV  
DOP-110WS

高彩·宽屏幕·友好人机界面  
Delta Electronics Inc,  
No.18, Xinglong Rd., Taoyuan City  
33068, Taiwan

## 安装说明

### (1) 一般注意事项

感谢您使用本产品，本人机界面安装说明书提供 DOP-100 系列人机界面的相关资讯。在使用之前，请您仔细阅读本说明书以确保使用上的正确。此外，请妥善将其放置在明显的地方以便随时查阅。下列事项在您尚未读完本说明书前，请务必遵守：

- 安装的环境必须没有水气，腐蚀性气体及可燃性气体，室内安装环境(indoor use only)。
- 接线时，请依接线图说明施工。
- 接地工程必须确实实施，接地时须遵照国家现行相关电工法规之规定施行（请参考 NFPA 70: National Electrical Code, 2005 Ed.）。
- 在通电时，请勿拆解人机接口或更改配线。
- 在通电运作时，请勿接触电源处，以免触电。
- 当程序显示电量不足时须更换电池并请联络台达电子或当地经销商，请勿自行更换。
- 此产品适用于工业自动化设备，请仔细阅读此说明，并依指示安装避免产生危险。
- 清洁方式：请以干布擦拭清洁。
- 适用之海拔高度为 2000 米以下。
- 维修请联络：台达电子工业股份有限公司，台湾桃园市兴隆路 18 号，TEL: 03-3626301。

如果您在使用上仍有问题，请咨询经销商或者本公司客服中心。由于产品精益求精，当内容规格有所修正时，请咨询代理商或至台达网站 (<http://www.delta.com.tw/ia>) 下载最新版本。

### (2) 通讯脚位定义

#### DOP-103WQ COM 定义

COM Port 示意图	脚位	MODE1		MODE2		MODE3	
		COM1	COM2	COM1	COM2	COM1	COM2
	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 定义

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

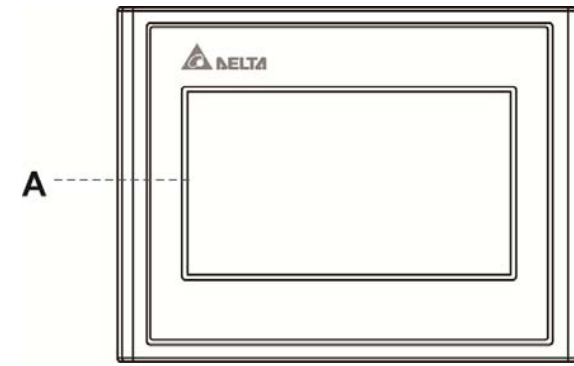
#### DOP-107WV / DOP-110WS COM2 定义

COM Port 示意图	脚位	MODE1		MODE2		MODE3	
		COM2	COM3	COM2	COM3	COM2	COM3
	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-

注 1: 空白=请勿接线

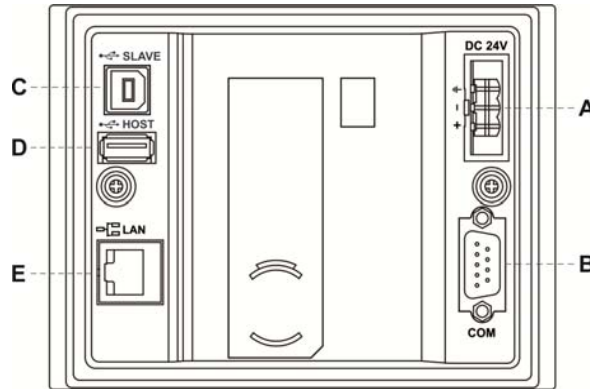
### (3) 各部位说明

#### DOP-103WQ (正面)



A 操作 / 显示区域

#### DOP-103WQ (背面)



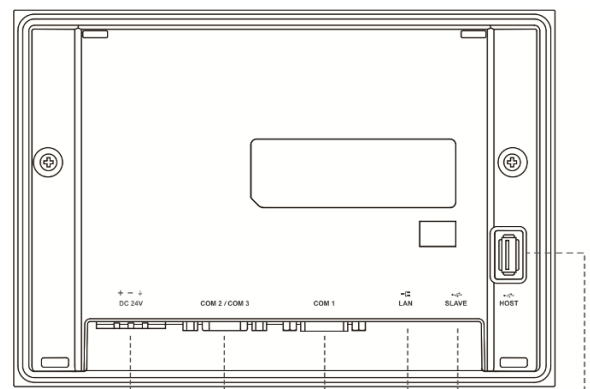
A	电源输入端子(24AWG wire min.)	B	COM1
C	USB Slave	D	USB Host
E	网络口 (LAN)		

#### DOP-107WV (正面)



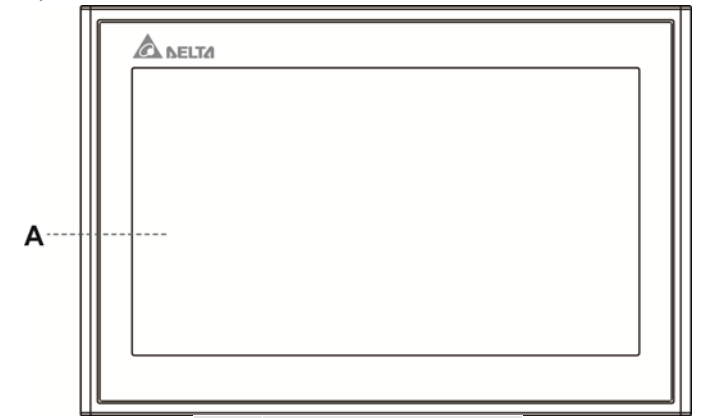
A 操作 / 显示区域

#### DOP-107WV (背面)



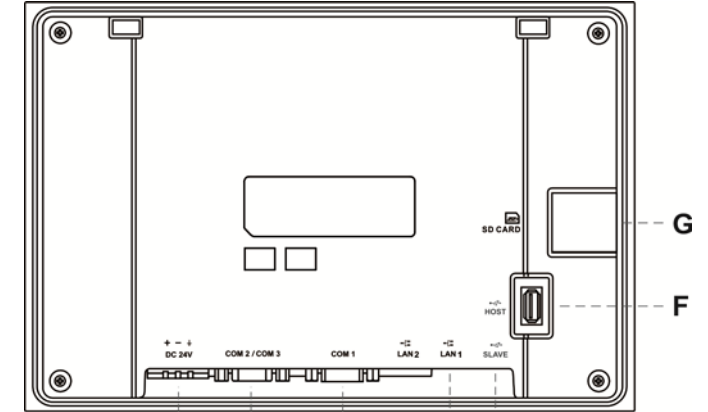
A	电源输入端子(24AWG wire min.)	B	COM2/ COM3
C	COM1	D	网络口 (LAN)
E	USB Slave	F	USB Host

#### DOP-110WS (正面)



A 操作 / 显示区域

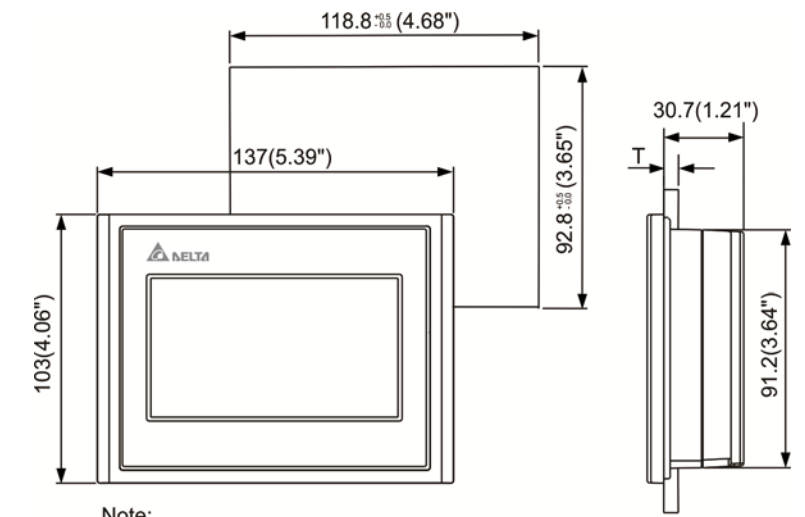
#### DOP-110WS (背面)



A	电源输入端子 (24AWG wire min.)	B	COM2/ COM3
C	COM1	D	网络口 (LAN)
E	USB Slave	F	USB Host
G	SD Card		

### (4) 开孔尺寸

#### DOP-103WQ

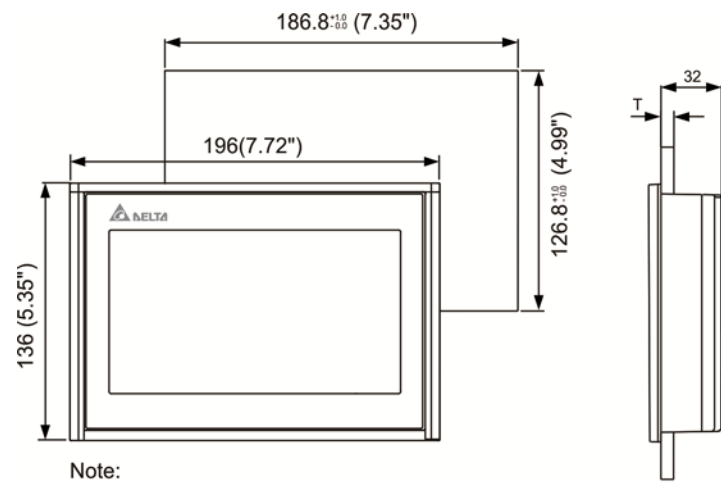


Note:  
T=1.6mm~6mm(0.063"~0.24")

安装箱体温度请勿超过 50 度 C

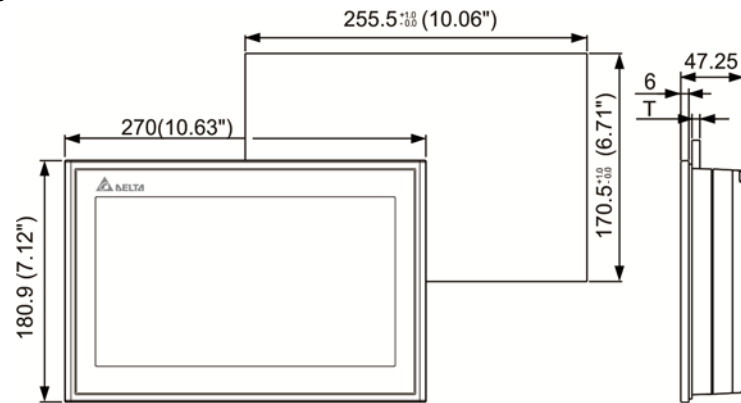


## DOP-107WV



Note:  
T=1.6mm~6mm(0.063"~0.24")  
安装箱体温度请勿超过 50 度 C

## DOP-110WS



Note:  
T=1.6mm~6mm(0.063"~0.24")  
安装箱体温度请勿超过 50 度 C

## (5) 安装方向与配线

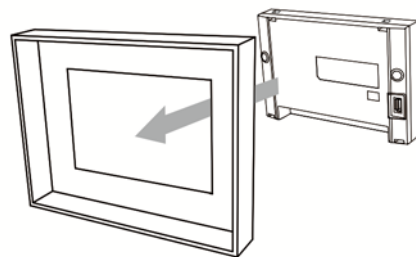
注意事项：

- 安装方向必须依规定，否则会造成故障。
- 为了使冷却循环效果良好，安装人机界面时，其上下左右与相邻的物品和挡板(墙)必须保持足够的空间，否则会造成散热不良。
- 使用于 Type 4X 室内用等级的外壳平面。
- 安装面板最大板厚请勿超过 5mm。

安装示意图：

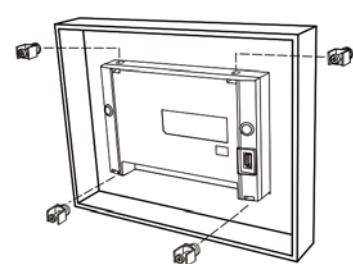
步骤一：

请确实将防水垫圈装入，然后再安装人机界面



步骤二：

请确实将固定片螺丝组装入内，然后下方钩住前盖螺丝头顶住控制箱内侧

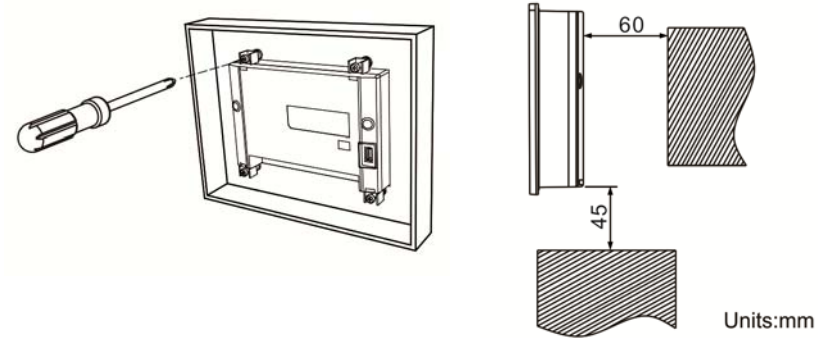


步骤三：

请以 0.5N-M / 0.7N-M 扭力锁紧，切记不可超过此 安装时，人机后方请预留 60mm 散热空间 扭力，否则将造成塑胶外壳的损坏

DOP-107 / DOP-110 扭力: 6.17lb-inch ( 0.7N-M )

DOP-103 扭力: 4.41lb-inch ( 0.5N-M )

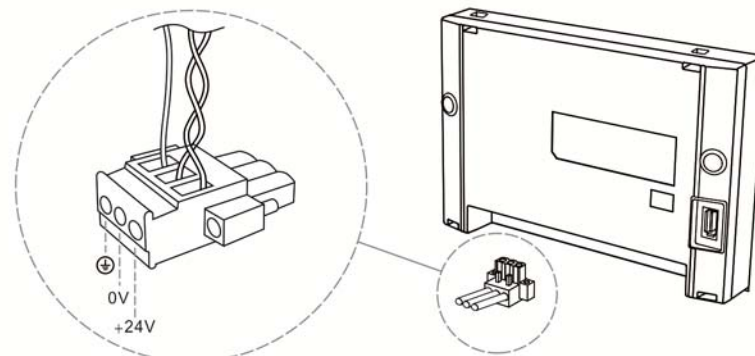


配线：

种类	电源配线(AWG)	剥线长度	扭力
单芯线	24~ 12	7 ~ 8 mm	5 kg-cm (4.3 lb-in)
多芯线	24 ~ 12	7 ~ 8 mm	5 kg-cm (4.3 lb-in)



请参考下图电源接头端子进行配线：



## (6) 硬件规格

	型号	DOP-103WQ	DOP-107WV	DOP-110WS
显示器	面板种类	4.3" TFT LCD ( 65535 色 )	7" TFT LCD(65535 色)	10.1" TFT LCD (65535 色)
	解析度	480 x 272 pixels	800 x 480 pixels	1024 x 600 pixels
	背光灯	LED Back Light ( 常温 25°C 下半衰期>1 万小时 ) <sup>(Note 1)</sup>	LED Back Light ( 常温 25°C 下半衰期>2 万小时 ) <sup>(Note 1)</sup>	LED Back Light ( 常温 25°C 下半衰期>3 万小时 ) <sup>(Note 1)</sup>
	显示范围	95.04 x 53.856 mm	154.08x85.92 mm	225.52 x 128.10 mm
	亮度	400 cd/m <sup>2</sup> (Typ.)	450 cd/m <sup>2</sup> (Typ.)	450 cd/m <sup>2</sup> (Typ.)
中央处理器	ARM Cortex-A8 (800MHz)			
Flash ROM	256 Mbytes			
RAM	512 Mbytes			
触控操作器	四线电阻式 > 10,000,000 operated			
蜂鸣器	Multi-Tone Frequency ( 2K ~ 4K Hz ) / 80dB			
网络界面	10/100 Mbps 自动侦测 ( 内建隔离电路 ) <sup>(Note 2)</sup>			
USB	1 USB Slave Ver 2.0 1 USB Host Ver 2.0			
SD	N/A		SD * 1	
串行通讯口	COM1	RS-232(支援流量控制) / RS-485 <sup>(Note 2)</sup>	RS-232(支援流量控制) <sup>(Note 2)</sup>	
	COM2	RS-422 / RS-485 <sup>(Note 2)</sup>	RS-232(支援流量控制) / RS-485 <sup>(Note 2)</sup>	
	COM3	N/A	RS-422 / RS-485 <sup>(Note 2)</sup>	
辅助键	N/A			
万年历	内建			
冷却方式	自然冷却			

安规认证	CE / UL (请使用 shielding 网络线及使用磁环 300ohm/100MHz 滤波)		
面板防水等级	IP65/NEMA4		
工作电压 <sup>(Note2)</sup>	DC +24V (-15% ~ +15%) (请使用隔离式电源供应器) Supplied by Class 2 or SELV circuit (isolated from MAINS by double insulation)		
绝缘耐力	DC24V 端子与 FG 端子间: AC500V, 1 分钟		
消耗功率 <sup>(Note 2)</sup>	5.8W (Max) <sup>(Note 3)</sup>	8.4W (Max) <sup>(Note 3)</sup>	11W (Max) <sup>(Note 3)</sup>
存储器备份电池	3V 锂电池 CR2032 x 1		
备份电池寿命	依使用环境温度及使用条件而不同, 常温 25°C 下寿命约三年以上		
操作温度	0°C ~ 50°C		
储存温度	-20°C ~ +60°C		
工作环境	10% ~ 90% RH 【0 ~ 40°C】, 10% ~ 55% RH 【41 ~ 50°C】, 污染等级 2		
耐震动	IEC61131-2 规定连续震动 5Hz~8.3Hz 3.5mm, 8.3Hz~150Hz 1G		
耐冲击	IEC60068-2-27 规定耐冲击 11ms, 15G Peak, X, Y, Z 方向各 6 次		
尺寸 (W) x (H) x (D) mm	137 x 103 x 37.1	196 x 136 x 39	270 x 180.9 x 47.25
开孔尺寸 (W) x (H) mm	118.8 x 92.8	186.8 x 126.8	255.5 x 170.5
重量	约 280g	约 560g	约 1.1 Kgs

## NOTE

- 1) 背光模块半衰期的定义：最大驱动电流下，背光亮度衰退到最大亮度的一半时，即为半衰期。所标示的使用寿命为 25°C 常温常湿工作环境下的预估值。
- 2) 隔离电路耐受规格：可承受 1 分钟 1500V 高压突波。
- 3) 消耗功率为无外接外围设备时，人机本体所消耗的功率。建议选用的电源供应器容量为标示消耗功率的 1.5~2 倍，以确保人机工作正常。
- 4) 建议使用隔离式电源供应器。
- 5) DOP-100 系列编辑软件 DOPSoft 系列及其使用操作手册，可从台达网站下载取得，网址为 <http://www.delta.com.tw/ia>。
- 6) DOP-100 系列适用于工业自动化设备，请仔细阅读此说明，并依指示安装避免产生危险。

部件名称 Part Name	有毒物质 -Hazardous Substances					
	铅(Pb)	汞(Hg)	镉(Cd)	六价铬 (Cr Vi)	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
金属部件 Metal Part	X	O	O	O	O	O
塑料部件 Plastic Part	O	O	O	O	O	O
电子件 Electronic	X	O	O	O	O	O
触点 Contacts	O	O	X	O	O	O
线缆和线缆附件 Cable & Cabling accessories	X	O	O	O	O	O
电池 Bttery	O	O	O	O	O	O

本表格依据 SJ/T 11364 的规定编制。

O: 表示该有害物质在该部件所有均质材料中的含量均在 GB/T 26572 规定的限量要求以下。  
X: 表示该有害物质至少在该部件的某一均质材料中的含量超出 GB/T 26572 规定的限量要求。

This table is made according to SJ/T 11364.  
O: Indicates that the concentration of hazardous substance in all of the homogeneous materials for this part is below the limit as stipulated in GB/T 26572.  
X: Indicates that concentration of hazardous substance in at least one of the homogeneous materials used for this part is above the limit as stipulated in GB/T 26572.



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