

User Manual

SPC-815(M)
SPC-821(M)
BOR-DE115W
BOR-DE121W
顯示器

W15.6" / W21.5" TFT LED LCD
Standalone Multi-Touch
Industrial Monitor with
Extension Units

VICPAS
HMI Parts Center

ADVANTECH

Enabling an Intelligent Planet

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<http://support.advantech.com/>

This Manual Covers the Following Models:

- SPC-821-M
SPC-821-MXXXXXXXXXXXXXXXXXX
SPC821MXXXXXXXXXXXXXXXXXX

SPC-815-M
SPC-815-MXXXXXXXXXXXXXXXXXX
SPC815MXXXXXXXXXXXXXXXXXX
(Where “x” may be any alphanumeric character, “-” or blank)

BOR-DE115WXXXXXXXXXXXXXXXXXX
BOR-DE121WXXXXXXXXXXXXXXXXXX
(Where “x” may be any alphanumeric character, “-” or blank)

Product Warranty (2 years)

Advantech warrants the original purchaser that each of its products will be free from defects in materials and workmanship for two years from the date of purchase.

This warranty does not apply to any products that have been repaired or altered by persons other than repair personnel authorized by Advantech, or products that have been subject to misuse, abuse, accident, or improper installation. Advantech assumes no liability under the terms of this warranty as a consequence of such events.

Because of Advantech's high quality-control standards and rigorous testing, most customers never need to use our repair service. If an Advantech product is defective, it will be repaired or replaced at no charge during the warranty period. For out-of-warranty repairs, customers are billed according to the cost of replacement materials, service time, and freight. Please consult your dealer for more details.

If you suspect that your product is defective product, follow the steps outlined below.

1. Collect all the information about the problem encountered (for example, CPU speed, Advantech products used, other hardware and software used, etc.). Note anything abnormal and list any onscreen messages displayed when the problem occurs.
2. Call your dealer and describe the problem. Please have your manual, product, and any helpful information readily available.
3. If your product is diagnosed as defective, obtain a return merchandise authorization (RMA) number from your dealer. This allows us to process your return more quickly.
4. Carefully pack the defective product, a completed Repair and Replacement Order Card, and a proof of purchase date (such as a photocopy of your sales receipt) into a shippable container. Products returned without a proof of purchase date are not eligible for warranty service.
5. Write the RMA number clearly on the outside of the packaging, and ship the package prepaid to your dealer.

Declaration of Conformity

CE

This product has passed the CE test for environmental specifications when shielded cables are used for external wiring. We recommend the use of shielded cables. This type of cable is available from Advantech. Please contact your local supplier for ordering information.

FCC Class A

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference. In such cases, users are required to correct the interference at their own expense.

警告使用者

這是甲類測試產品，在居住的環境中使用時，可能會造成射頻干擾，在這種情況下，使用者會被要求採取某些適當的對策。

Technical Support and Assistance

1. Visit the Advantech website at www.advantech.com/support to obtain the latest product information.
2. Contact your distributor, sales representative, or Advantech's customer service center for technical support if you need additional assistance. Please have the following information ready before you call:
 - Product name and serial number
 - Description of your peripheral attachments
 - Description of your software (operating system, version, application software, etc.)
 - A complete description of the problem
 - The exact wording of any error messages

Safety Precaution - Static Electricity

Follow these simple precautions to protect yourself from harm and the products from damage.

- To avoid electrical shock, always disconnect the power from the PC chassis before manual handling. Do not touch any components on the CPU card or other cards while the PC is powered on.
- Disconnect the power before making any configuration changes. The sudden rush of power when connecting a jumper or installing a card may damage sensitive electronic components.

Safety Instructions

1. Read these safety instructions carefully.
2. Retain this user manual for future reference.
3. Disconnect this equipment from any AC outlet before cleaning. Use a damp cloth for cleaning. Do not use liquid or spray detergents.
4. For pluggable equipment, the power outlet socket should be located near the equipment and easily accessible.
5. Protect the equipment from humidity.
6. Place the equipment on a reliable surface during installation. Dropping or letting the equipment fall may cause damage.
7. The openings on the enclosure are for air convection. Protect the equipment from overheating. Do not cover the openings.
8. Ensure that the voltage of the power source is correct before connecting the equipment to a power outlet.
9. Position the power cord away from high-traffic areas. Do not place anything over the power cord.
10. All cautions and warnings on the equipment should be noted.
11. If the equipment is not used for a long time, disconnect it from the power source to avoid damage from transient overvoltage.
12. Never pour liquid into an opening. This may cause fire or electrical shock.
13. Never open the equipment. For safety reasons, the equipment should be opened only by qualified service personnel.
14. If one of the following occurs, have the equipment checked by service personnel:
 - The power cord or plug is damaged.
 - Liquid has penetrated the equipment.
 - The equipment has been exposed to moisture.
 - The equipment is malfunctioning or does not operate according to the user manual.
 - The equipment has been dropped and damaged.
 - The equipment shows obvious signs of breakage.
15. Do not leave this equipment in an environment with a storage temperature of below -20 °C (-4 °F) or above 60 °C (140 °F).
16. Batteries that are incorrectly replaced are at risk of exploding. Replace only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.
17. In accordance with IEC 704-1:1982 specifications, the sound pressure level at the operator's position does not exceed 70 dB (A).
18. Please Keep the monitor out of direct sunlight, very strong bright lights and away from any other heat source. Lengthy exposure to this type of environment may result in discoloration and damage to the monitor.

DISCLAIMER: These instructions are provided according to the IEC 704-1. Advantech disclaims all responsibility for the accuracy of any statements contained herein.

Caution! *Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.*



Consignes de sécurité

1. Lire attentivement les instructions de sécurité
2. Conserver ce manuel pour utilisation ultérieure
3. Débranchez cet équipement de toute prise secteur avant de le nettoyer. Utilisez seulement un chiffon humide. N'utilisez pas de détergent liquide ou pulvérisé pour le nettoyage.
4. Gardez cet équipement à l'abri de l'humidité.
5. Placez cet équipement sur une surface fiable pendant l'installation. Le faire ou bien le laisser tomber peut causer des dégâts.
6. Les ouvertures sur l'enceinte servent à la convection de l'air. Protégez l'équipement contre la surchauffe. **NE COUVREZ PAS LES OUVERTURES.**
7. Assurez-vous que la tension de la source d'alimentation est correcte avant de connecter l'équipement à l'alimentation.
8. Placez le câble d'alimentation de manière à ce que personne ne puisse marcher dessus. Ne placez rien sur le câble d'alimentation.
9. Toutes les mises en garde et tous les avertissements sur l'équipement doivent être notés.
10. Si l'équipement n'est pas utilisé pendant une longue période, débranchez-le de la source d'alimentation pour éviter tout endommagement dû à une surtension transitoire.
11. Ne jamais verser de liquide dans une ouverture. Cela pourrait provoquer un incendie ou un choc électrique.
12. N'ouvrez jamais l'équipement. Pour des raisons de sécurité, l'équipement doit être ouvert uniquement par du personnel qualifié.
13. Si l'une des situations suivantes se présente, faites vérifier l'équipement par le personnel de service:
 - Un liquide a pénétré dans l'équipement.
 - L'équipement a été exposé à l'humidité.
 - L'équipement ne fonctionne pas bien, ou vous ne pouvez pas le faire fonctionner selon le manuel de l'utilisateur.
 - L'équipement est tombé et endommagé.
 - L'équipement présente des signes évidents de rupture.
14. **NE LAISSEZ PAS CET ÉQUIPEMENT DANS UN ENVIRONNEMENT OU LA TEMPÉRATURE DE STOCKAGE PEUT ÊTRE INFÉRIEURE À -20 ° C (-4 ° F) OU BIEN SUPÉRIEURE À 60 ° C (140 ° F). CECI POURRAIT ENDOMMAGER L'EQUIPEMENT. L'ÉQUIPEMENT DEVRAIT ÊTRE DANS UN ENVIRONNEMENT CONTRÔLÉ.**
15. **ATTENTION: DANGER D'EXPLOSION SI LA BATTERIE EST INCORRECTEMENT REMPLACÉE. REMPLACER SEULEMENT AVEC LE MÊME TYPE OU ÉQUIVALENT RECOMMANDÉ PAR LE FABRICANT, JETER LES BATTERIES USÉES SELON LES INSTRUCTIONS DU FABRICANT. VEUILLEZ CONTACTER LE FABRICANT, ADVANTECH, POUR LE REMPLACER.**

Le niveau de la pression acoustique à la position de l'opérateur, conformément à la norme CEI 704-1: 1982, ne dépasse pas 70 dB (A).

AVIS DE NON-RESPONSABILITÉ: Cet ensemble d'instructions est donné conformément à la CEI 704-1. Advantech décline toute responsabilité quant à l'exactitude des déclarations contenues dans ce document.

- "Si l'équipement est utilisé d'une manière non spécifiée par le fabricant, la protection fournie par l'équipement peut être compromise"
- Instructions pour l'installation dans un environnement de degré de pollution 2 (pour l'usage d'intérieur, altitude jusqu'à 2.000m) ou déclaration équivalente.

Avertissement! *DANGER D'EXPLOSION SI LA BATTERIE EST INCORRECTEMENT REMPLACÉE. REMPLACER SEULEMENT AVEC LE MÊME TYPE OU ÉQUIVALENT RECOMMANDÉ PAR LE FABRICANT, JETER LES BATTERIES USÉES SELON LES INSTRUCTIONS DU FABRICANT. VEUILLEZ CONTACTER LE FABRICANT, ADVANTECH, POUR LE REMPLACER.*



ATTENTION! *Pour éviter les chocs. Ne pas retirer le couvercle. Aucune pièce réparable par l'utilisateur. Pour l'entretien adressez-vous aux personnes qualifiées, s.v.p.*



安全指示

1. 請仔細閱讀此安全操作說明。
2. 請妥善保存此用戶手冊供日後參考。
3. 用濕抹布清洗設備前，請確認拔除電源線。請勿使用液體或去污噴霧劑清洗設備。
4. 對於使用電源線的設備，設備周圍必須有容易接觸到的電源插座。
5. 請勿在潮濕環境中試用設備。
6. 請在安裝前確保設備放置在可靠的平面上，意外摔落可能會導致設備損壞。
7. 設備機殼的開孔適用於空氣對，從而防止設備過熱。請勿覆蓋開孔。
8. 當您連接設備到電源插座前，請確認電源插座的電壓符合要求。
9. 請將電源線佈置在人們不易絆倒的位置，請勿在電源線上覆蓋任何雜物。
10. 請注意設備上所有的警告標示。
11. 如果長時間不使用設備，請拔除與電源插座的連結，避免設備被超標的電壓波動損壞。
12. 請勿讓任何液體流入通風口，以免引起火災或短路。
13. 請勿自行打開設備。為了確保您的安全，請透過經認證的工程師來打開設備。
14. 如遇下列情況，請由專業人員維修：
 - 電源線或插頭損壞；
 - 設備內部有液體流入；
 - 設備曾暴露在過度潮濕環境中使用；
 - 設備無法正常工作，或您無法透過用戶手冊來正常工作；
 - 設備摔落或損壞；
 - 設備有明顯外觀損；
15. 請勿將設備放置在超出建議溫度範圍的環境，即不要低於 -20°C (-4°F) 或高於 60°C (140°F)，否則可能會造成設備損壞。
16. 注意：若電池更換不正確，將有爆炸危險。因此，只可以使用製造商推薦的同一種或者同等型號的電池進行替換。請按照製造商的指示處理舊電池。
17. 根據 IEC 704 - 1:1982 規定，操作員所在位置音量不可高於 70 分貝。
18. 限制區域：請勿將設備安裝於限制區域使用。
19. 免責聲明：請安全訓示符合 IEC 704 - 1 要求。研華公司對其內容之準確性不承擔任何法律責任。
20. 使用過度恐傷害視力。
21. 使用 30 分鐘請休息 10 分鐘。
22. 未滿 2 歲幼兒不看螢幕，2 歲以上每天看螢幕不要超過 1 小時。
23. 請避免顯示器遭受陽光直射，並遠離強光及其他熱源。若長時間接觸此類環境，顯示器可能會褪色及損壞。

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Chapter 1

General Information

1.1 Introduction

The SPC-800(M) series devices use a brand-new ID design in an all-around IP65 waterproof casting design with general I/O connectors and I/O cover in which all the wiring and cabling can be hidden to ensure reliability and simplicity in the field. SPC-800(M) is a HMI product which supports industrial grade ARM/VESA mount systems and push button extension support. It is designed to integrate seamlessly with general purpose industrial equipment product suppliers such as Rittal and Bernstein. SPC-800(M) can be used as a ubiquitous HMI in any kind of smart factory. SPC-800(M) can be a great visualization solution in different application in rugged regions.

The following are the key features:

- 15.6" HD (Full HD) /21.5" Full HD TFT LED LCD display
- 16:9 wide screen with PCT multi-touch
- Built-in function and home key button used for intuitive UI
- Anti-scratch touch surface: 7H hardness
- All-round IP65 protection with pole mount support
- Front LED indicator to show operating status
- Silicone-free for enclosure
- Supports ARM and VESA mount
- Supports Rittal's CP40 & Bernstein's CS-480 B.flex mounting dimensions
- Front USB & Re-set Button to allow easily maintenance
- Supports RAFI FS22+ series push buttons



1.2 Packing List

1.2.1 Packing List for SPC-800(M) Series

- 1 x System
- 1 x Plug-In block
- 1 x Ground Wire (100CM)
- 1 x IO cover
- 1 x Registration and warranty card
- 4 x Pole mounting blake screws

1.2.2 Packing List for BOR-DE Series (Customize model)

- 1 x System
- 1 x Plug-In block
- 1 x 6 PIN plug-in block
- 1 x 10 PIN plug-in block
- 1 x Customer's safety and warning instructions

1.3 Specifications

1.3.1 Without Button Extension & IO RJ-45 Port for Built In SPC-815-M7AG & SPC-821-M7AG Multi Touch Industrial Monitor

Advantech Part Number		SPC-815-M7AG		SPC-821-M7AG	
General	Weight	6.8g (w/o Arm Mount) 7.2g (w/ Arm Mount) 7.6Kg (w/ Vesa Mount)		9.6g (w/o Arm Mount) 10Kg (w/ Arm Mount) 10.4Kg (w/ Vesa Mount)	
	System Dimension (W x D x H mm)	402.19mm x 333.19mm x 67mm (w/o Arm Mount) 402.19mm x 333.19mm x 160mm (w/ Arm Mount) 402.2mm x 333.2mm x 86.6mm (w/ Vesa Mount)		546.69mm x 420.34mm x 67mm (w/o Arm Mount) 546.69mm x 420.34mm x 160mm (w/ Arm Mount) 546.69mm x 420.34mm x 86.6mm (w/ Vesa Mount)	
	Board Dimension (W x D x H mm)	145 x 104 x 20 mm			
	Enclosure	Front bezel: Die cast aluminum alloy Back housing: Die cast aluminum alloy			
	Mounting	Arm mounting (Pendant and Pedestal) Vesa mounting			
	Power Input Voltage	24VDC +25%/- 20%			
	Power Consumption (DP+HDM)	20.6W		32W	
	System Design	Fanless			
I/O	USB	2 x USB 2.0 (Type A), 1 x USB 2.0 (Type B), 1 x USB 2.0 (Front)			
	Display Port	1 x DP Port			
	HDMI Port	1 x HDMI Port			
Display	Backlight Control	OSD setting brightness			
	Display Type	TFT LCD		TFT LCD	
	Display Size	15.6" 16:9		21.5" 16:9	
	Max. Resolution	HD 1366 x 768	FHD 1920 x 1080 (option)	FHD 1920 x1080	
	LCD Luminance (cd/m ²)	400	450	250	
	Backlight MTBF (hrs)	50,000			
	Touch Screen	Projected capacitive 10 point multitouch			
	View Angel	Horizontal	170°	170°	178°
Vertical		130°	170°	178°	
Other	LED	Power Off - "No Light"			
		Power ON -"Blue"			
		Standby –"orange"			

Button	Emergency button	Without Emergency Button
	Push button	Without Push
	Button Cable SPEC	Without Button
	Button Cover Color	Without Button
Environment	Humidity	85% @ 40°C (non-condensing)
	Operating Temperature	0 ~ 55°C (without airflow)
	Storage Temperature	-20 ~ 60°C
	Degree and class of protection	IP65 (All around)
	Shock Protection	IEC 60068-2-27
	Vibration Protection	IEC 60068-2-64 (Random 2G)
Certificates	CE MARK	YES
	UL62368 approval	YES
	FCC Class A	YES

1.3.2 Without Button Extension For Built In SPC-815-MLAG & SPC-821-MLAG Multi Touch Industrial Monitor

Advantech Part Number		SPC-815-MLAG		SPC-821-MLAG	
General	Weight	6.8g (w/o Arm Mount) 7.2g (w/ Arm Mount) 7.6Kg (w/ Vesa Mount)		9.6g (w/o Arm Mount) 10Kg (w/ Arm Mount) 10.4Kg (w/ Vesa Mount)	
	System Dimension (W x D x H mm)	402.19mm x 333.19mm x 67mm (w/o Arm Mount) 402.19mm x 333.19mm x 160mm (w/ Arm Mount) 402.2mm x 333.2mm x 86.6mm (w/ Vesa Mount)		546.69mm x 420.34mm x 67mm (w/o Arm Mount) 546.69mm x 420.34mm x 160mm (w/ Arm Mount) 546.69mm x 420.34mm x 86.6mm (w/ Vesa Mount)	
	Monitor Board Dimension (W x D x H mm)	145 x 104 x 20 mm			
	Enclosure	Front bezel: Die cast aluminum alloy Back housing: Die cast aluminum alloy			
	Mounting	Arm mounting (Pendant and Pedestal) Vesa mounting			
	Power Input Voltage	24VDC +25%/- 20%			
	Power Consumption (DP+HDM+RX)	20.6W		32W	
	System Design	Fanless			
I/O	USB	2 x USB 2.0 (Type A), 1 x USB 2.0 (Type B), 1 x USB 2.0 (Front)			
	Display Port	1 x DP Port			
	HDMI Port	1 x HDMI Port			
	Optional Interface for Long Distance	RX:RJ-45 port*1 Chip: Valens VS2010, 100M For Long distance function, please use CAT6 Ethernet Cable			
Display	Backlight Control	OSD setting brightness			
	Display Type	TFT LCD		TFT LCD	
	Display Size	15.6" 16:9		21.5" 16:9	
	Max. Resolution	HD 1366 X 768	FHD 1920 X1080 (option)	FHD 1920x1080	
	LCD Luminance (cd/m ²)	400	450	250	
	Backlight MTBF (hrs)	50,000			
	Touch Screen	Projected capacitive 10 point multitouch			
	View Angel	Horizontal	170°	170°	178°
	Vertical	130°	170°	178°	
Other	LED	Power Off - "No Light"			
		Power ON - "Blue"			
		Standby - "orange"			

Button	Emergency button	Without Emergency Button
	Push button	Without Push Button
	Button Cable SPEC	Without Button
	Button Cover Color	Without Button
Environment	Humidity	85% @ 40°C (non-condensing)
	Operating Temperature	0 ~ 55°C (without airflow)
	Storage Temperature	-20 ~ 60°C
	Degree and class of protection	IP65 (All around)
	Shock Protection	IEC 60068-2-27
Certificates	Vibration Protection	IEC 60068-2-64 (Random 2G)
	CE MARK	YES
	UL62368 approval	YES
	FCC Class A	YES

1.3.3 Button Extension & Without IO RJ-45 Port for Built In SPC-815-M7AP & SPC-821-M7AP Multi Touch Industrial Monitor

Advantech Part Number		SPC-815-M7AP		SPC-821-M7AP		
General	Weight	6.8g (w/o Arm Mount) 7.2g (w/ Arm Mount) 7.6Kg (w/ Vesa Mount)		9.6g (w/o Arm Mount) 10Kg (w/ Arm Mount) 10.4Kg (w/ Vesa Mount)		
	System Dimension (W x D x H mm)	402.19mm x 333.19mm x 67mm (w/o Arm Mount) 402.19mm x 333.19mm x 160mm (w/ Arm Mount) 402.2mm x 333.2mm x 86.6mm (w/ Vesa Mount)		546.69mm x 420.34mm x 67mm (w/o Arm Mount) 546.69mm x 420.34mm x 160mm (w/ Arm Mount) 546.69mm x 420.34mm x 86.6mm (w/ Vesa Mount)		
	Monitor Board Dimension (W x D x H mm)	145 x 104 x20 mm				
	Enclosure	Front bezel: Die cast aluminum alloy Back housing: Die cast aluminum alloy				
	Mounting	Arm mounting (Pendant and Pedestal) Vesa mounting				
	Power Input Voltage	24VDC +25%/- 20%				
	Power Consumption (DP+HDM+RX)	20.6W		32W		
	System Design	Fanless				
I/O	USB	2 x USB 2.0 (Type A), 1 x USB 2.0 (Type B), 1 x USB 2.0 (Front)				
	Display Port	1 x DP Port				
	HDMI Port	1 x HDMI Port				
Display	Backlight Control	OSD setting brightness				
	Display Type	TFT LCD		TFT LCD		
	Display Size	15.6" 16:9		21.5" 16:9		
	Max. Resolution	HD 1366 X 768	FHD 1920 X1080 (option)	FHD 1920x1080		
	LCD Luminance (cd/m ²)	400	450	250		
	Backlight MTBF (hrs)	50,000				
	Touch Screen	Projected capacitive 10 point multitouch				
	View Angel	Horizontal	170°	170°	178°	
		Vertical	130°	170°	178°	
Other	LED	Power Off - "No Light"				
		Power ON -"Blue"				
		Standby -"orange"				
Button	Emergency button	RAFI 22 FS+ (2NC) 1.30.273.511/0300 Emergency Stop button *1				
	Push button	RAFI 22 FS+ Push button (1NC1NO) ,Green(1.30.270.021/2500),Red (1.30.270.021/2300),Blue (1.30.270.021/2600)				
	Button Cable SPEC	28#, support 24V 0.5A				

Environment	Humidity	85% @ 40°C (non-condensing)
	Operating Temperature	0 ~ 55°C (without airflow)
	Storage Temperature	-20 ~ 60°C
	Degree and class of protection	IP65 (All around)
	Shock Protection	IEC 60068-2-27
	Vibration Protection	IEC 60068-2-64 (Random 2G)
Certificates	CE MARK	YES
	UL62368 approval	YES
	FCC Class A	YES

1.3.4 Button Extension for Built In SPC-815-MLAP & SPC-821-MLAP Multi Touch Industrial Monitor

Advantech Part Number		SPC-815-MLAP		SPC-821-MLAP	
General	Weight	6.8g (w/o Arm Mount) 7.2g (w/ Arm Mount) 7.6Kg (w/ Vesa Mount)		9.6g (w/o Arm Mount) 10Kg (w/ Arm Mount) 10.4Kg (w/ Vesa Mount)	
	System Dimension (W x D x H mm)	402.19mm x 333.19mm x 67mm (w/o Arm Mount) 402.19mm x 333.19mm x 160mm (w/ Arm Mount) 402.2mm x 333.2mm x 86.6mm (w/ Vesa Mount)		546.69mm x 420.34mm x 67mm (w/o Arm Mount) 546.69mm x 420.34mm x 160mm (w/ Arm Mount) 546.69mm x 420.34mm x 86.6mm (w/ Vesa Mount)	
	Monitor Board Dimension (W x D x H mm)	145 x 104 x20 mm			
	Enclosure	Front bezel: Die cast aluminum alloy Back housing: Die cast aluminum alloy			
	Mounting	ARM mounting (Pendant and Pedestal) VESA mounting			
	Power Input Voltage	24VDC +25%/- 20%			
	Power Consumption (DP+HDM+RX)	20.6W		32W	
	System Design	Fanless			
I/O	USB	2 x USB 2.0 (Type A), 1 x USB 2.0 (Type B), 1 x USB 2.0 (Front)			
	Display Port	1 x DP Port			
	HDMI Port	1 x HDMI Port			
	Optional Interface for Long Distance	RX:RJ-45 port*1 Chip: Valens VS2010, 100M For Long distance function, please use CAT6 Ethernet Cable			
Display	Backlight Control	OSD setting brightness			
	Display Type	TFT LCD		TFT LCD	
	Display Size	15.6" 16:9		21.5" 16:9	
	Max. Resolution	HD 1366 X 768	FHD 1920 X1080 (option)	FHD 1920x1080	
	LCD Luminance (cd/m ²)	400	450	250	
	Backlight MTBF (hrs)	50,000			
	Touch Screen	Projected capacitive 10 point multitouch			
	View Angel	Horizontal	170°	170°	178°
	Vertical	130°	170°	178°	
Other	LED	Power Off - "No Light"			
		Power ON -"Blue"			
		Standby -"orange"			

Button	Emergency button	RAFI 22 FS+ (2NC) 1.30.273.511/0300 Emergency Stop button *1
	Push button	RAFI 22 FS+ Push button (1NC1NO) ,Green(1.30.270.021/2500),Red (1.30.270.021/2300),Blue (1.30.270.021/2600)
	Button Cable SPEC	28# , supports 24V 0.5A
Environment	Humidity	85% @ 40°C (non-condensing)
	Operating Temperature	0 ~ 55°C (without airflow)
	Storage Temperature	-20 ~ 60°C
	Degree and class of protection	IP65 (All around)
	Shock Protection	IEC 60068-2-27
	Vibration Protection	IEC 60068-2-64 (Random 2G)
Certificates	CE MARK	YES
	UL62368 approval	YES
	FCC Class A	YES

1.3.5 Button Extension for Built In BOR-DE115W & BOR-DE121W Multi Touch Industrial Monitor (Customized model)

Advantech Part Number		BOR-DE115W-B100A	BOR-DE121W-B100A
General	Weight	6.8g (w/o Arm Mount) 7.2g (w/ Arm Mount) 7.6Kg (w/ Vesa Mount)	9.6g (w/o Arm Mount) 10Kg (w/ Arm Mount) 10.4Kg (w/ Vesa Mount)
	System Dimension (W x D x H mm)	402.19mm x 333.19mm x 67mm (w/o Arm Mount) 402.19mm x 333.19mm x 160mm (w/ Arm Mount) 402.2mm x 333.2mm x 86.6mm (w/ Vesa Mount)	546.69mm x 420.34mm x 67mm (w/o Arm Mount) 546.69mm x 420.34mm x 160mm (w/ Arm Mount) 546.69mm x 420.34mm x 86.6mm (w/ Vesa Mount)
	Monitor Board Dimension (W x D x H mm)	145 x 104 x20 mm	
	Enclosure	Front bezel: Die cast aluminum alloy (RAL9011) Back housing: Die cast aluminum alloy (RAL9011)	
	Mounting	Arm mounting (Pendant and Pedestal) Vesa mounting	
	Power Input Voltage	24VDC +25%/- 20%	
	Power Consumption (DP+HDM+RX)	20.6W	32W
	System Design	Fanless	
I/O	USB	2 x USB 2.0 (Type A), 1 x USB 2.0 (Type B), 1 x USB 2.0 (Front)	
	Video output	1 x DP port, 1 x HDMI	
	CDI+ port	RX: RJ-45 port x1 Chip: Valens VS2010 , 100M For Long distance function, please use CAT6 Ethernet Cable	
Display	Backlight Control	Software(API) under Windows, need to connect PR4000 or PR3100 Box PC	
	Display Type	TFT LCD	TFT LCD
	Display Size	15.6" 16:9	21.5" 16:9
	Max. Resolution	HD 1366 X 768	FHD 1920x1080
	LCD Luminance (cd/m ²)	400	250
	Backlight MTBF (hrs)	50,000	
	Touch Screen	Projected capacitive 10 point multitouch	
	View Angel	Horizontal	170°
	Vertical	130°	178°
Other	LED	Power Off - "No Light"	
		Power ON -"Green"	
		Standby -"orange"	

Button	Emergency button	RAFI 22 FS+ (2NC) 1.30.273.511/0300 Emergency Stop button *1
	Push button	RAFI 22 FS+ Push button (1NC1NO) ,White(1.30.270.021/2200),Black (1.30.270.021/0100),Blue (1.30.270.021/2600)
	Button Cable SPEC	28#, support 24V 0.5A
	Button cover color	RAL 7035
Environment	Humidity	85% @ 40°C (non-condensing)
	Operating Temperature	0 ~ 55°C (without airflow)
	Storage Temperature	-20 ~ 60°C
	Degree and class of protection	IP65 (All around)
	Shock Protection	IEC 60068-2-27
Certificates	Vibration Protection	IEC 60068-2-64 (Random 2G)
	CE MARK	YES
	UL62368 approval	YES
	FCC Class A	YES

Note! There might be several bright or dark pixels on the LCD. This phenomenon is normal in today's LCD manufacturing.



1.4 Power

- **Input Voltage:** 24VDC (Typical)
- **Power Consumption:** 35W (Typical)

This product is intended to be supplied by a Listed Power Adapter or DC power source, rated 24Vdc, 2.5A minimum and TMA 55 degree C minimum, if need further assistance, please contact Advantech for further information.

1.5 I/O Ports

The arrangement of the I/O ports is shown in Figure 1.1.

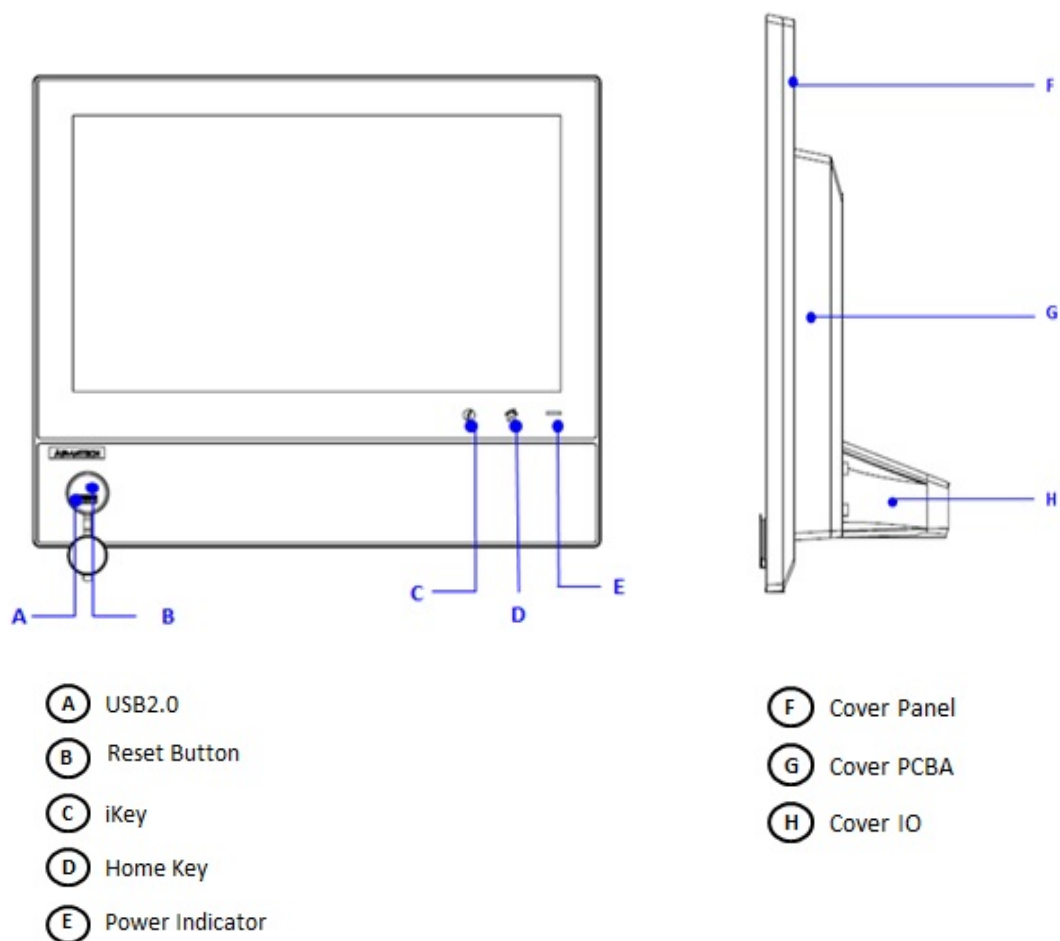


Figure 1.1 Front view and Side view

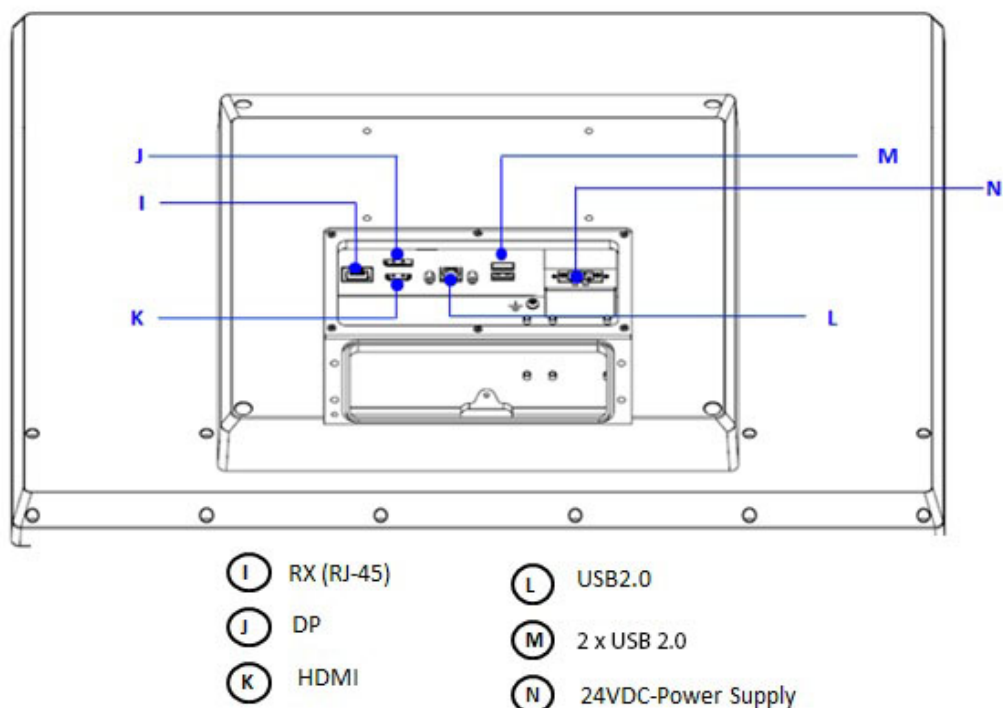


Figure 1.2 Rear view for SPC-800-MLAG/SPC-800-MLAP Series

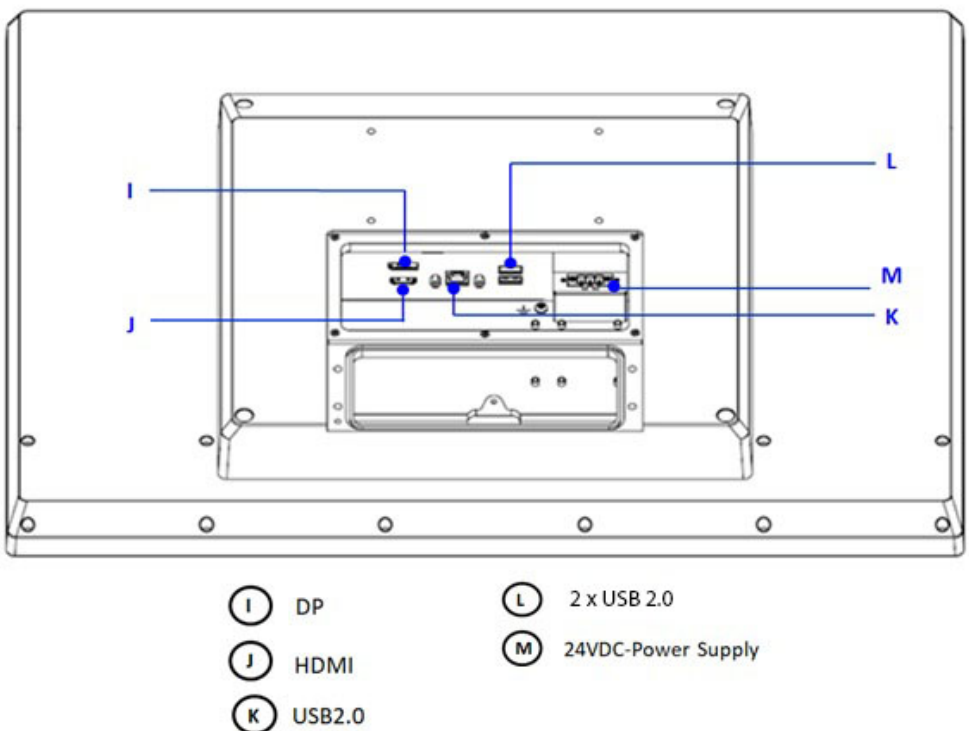


Figure 1.3 Rear view for SPC-800-M7AG/SPC-800-M7AP Series

1.6 Dimensions

SPC-815(M), BOR-DE115W

- **Weight:** 7.83kg
- **Dimensions (W x H x D):** 402 x 333 x 67mm (15.83" x 13.11" x 2.64")

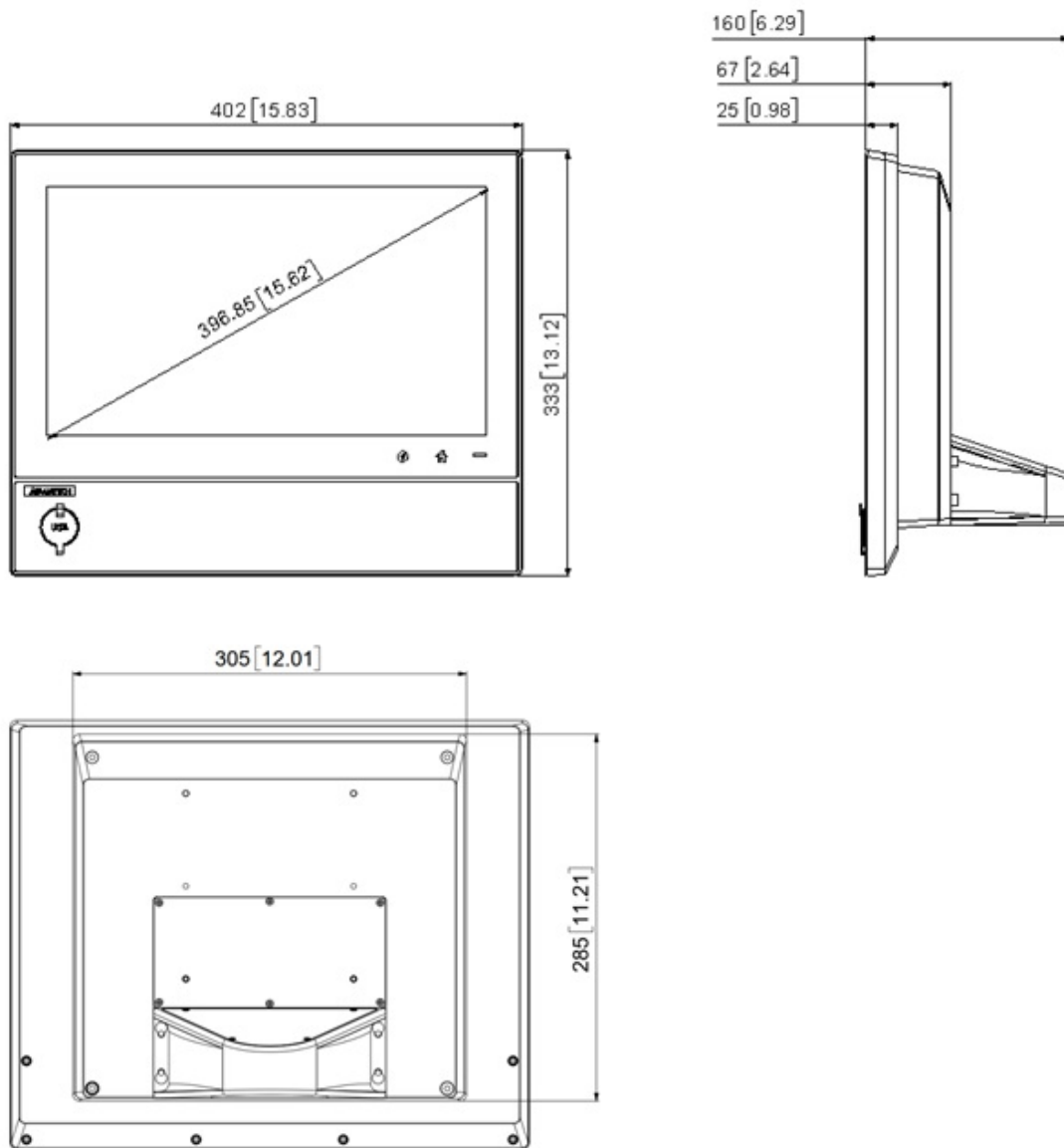


Figure 1.4 SPC-815 (M)& BOR-DE115W Dimensions

SPC-821(M) & BOR-DE121W

- **Weight:** 10.63kg
- **Dimensions (W x H x D):** 547 x 420 x 67 mm (21.54" x 16.54" x 2.64")

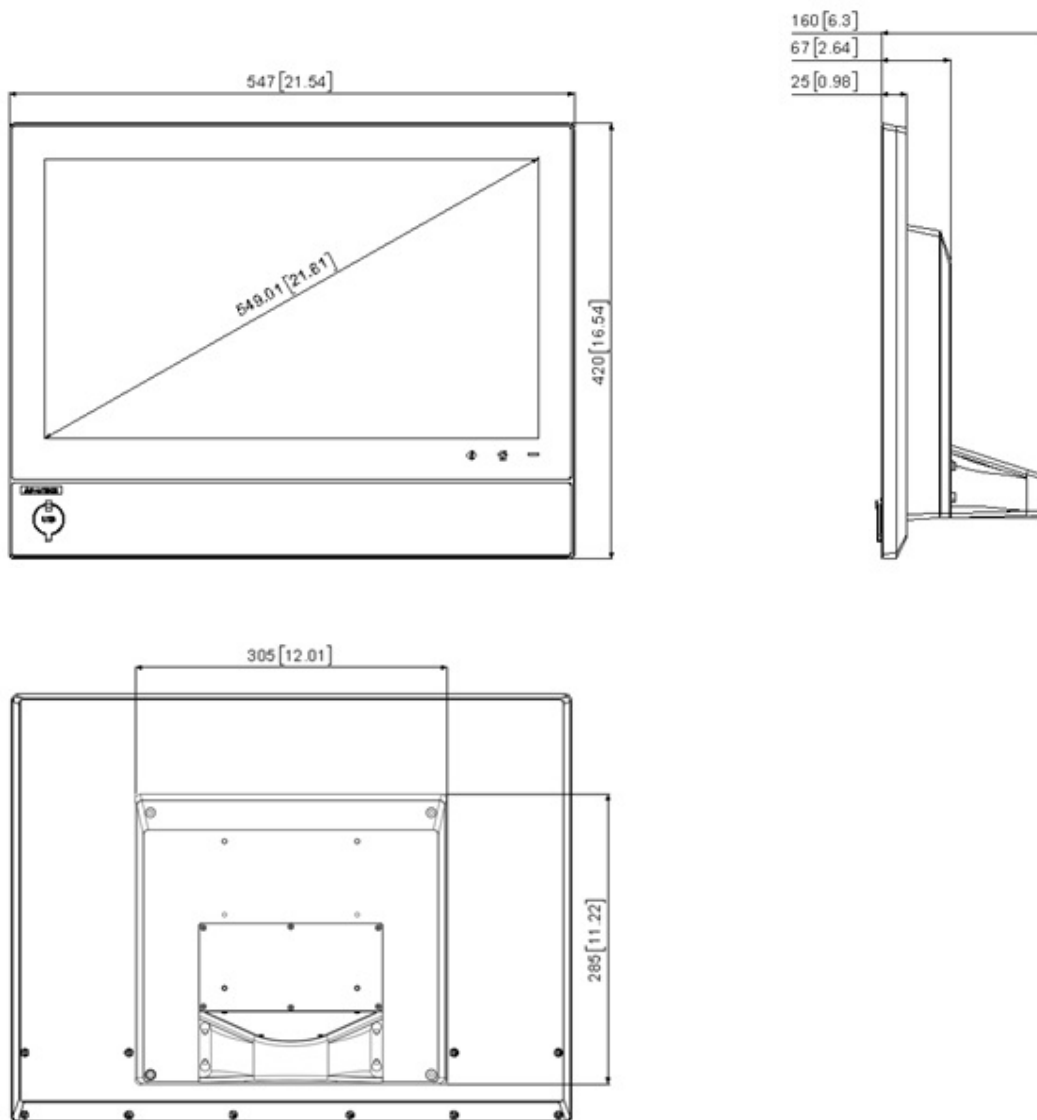


Figure 1.5 SPC-821(M) & BOR-DE121W Dimensions

Chapter 2

System Setup

2.1 Scope of Delivery

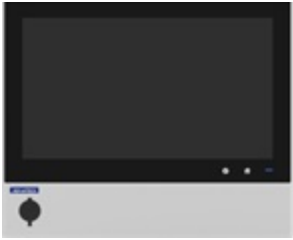



Quickly setup SPC-800(M) by following these steps. Unpack the SPC package and check the packing list at the beginning of this manual to make sure all items have been included.



Figure 2.1 Unpack the Package

The following components are included with SPC-800(M).

2.1.1 Accessory Box

Name	Figure	Qty	Name	Figure	Qty
Base Unit device		1	Ground Wire (100CM)		1
Plug-In Block		1	Registration and Warranty Card		1

2.1.2 ARM Mount Kit BOX

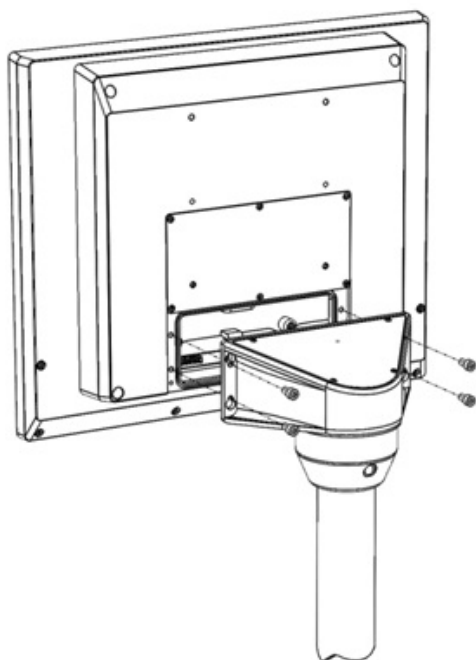
Name	Figure	Qty	Name	Figure	Qty
IO cover		1	Pole Mounting Black Screw		4

2.2 System Setup

SPC-800(M) installing IO cover

1. The base unit standard product contains SPC-800 device, IO cover, and ARM screws. Attach the 10 x M5 screws on the IO cover screw hole location (do not fasten screws)
2. Place IO cover onto product and fasten with 2 x screws.
3. Tighten the screws on the IO cover to finish.

The following figure shows an example.



2.3 Mounting the SPC-800(M) device

The section describes the mounting of the device to a support ARM or VESA systems. SPC-815 and SPC-821 are the same design and use the same components for Pendant and Pedestal mounting (no additional component is needed). VESA mount is optional. We use icotek cable solutions for cable entry fixings and we've designed 100 x 100mm standard VESA compliant holes to allow wall and accessory mounting options.

Warning! *Make sure that fasteners are adequately dimensioned during installation. Make sure to consider the weight of the device and the forces acting on the device when dimensioning.*



Inadequately dimensioned fasteners or insufficient locking may cause the device to fall - serious physical injury may result.

The device must be mounted securely.

2.3.1 SPC-800 device for support ARM Mounting

Note! *Base Unit Product accessory without a pole mounting*



The SPC-800 devices (M)/BOR-DE1000 series are designed for mounting with the base IO cover. If you install the device with an ARM mounting, you must use the corresponding size and screws and make sure the hole positions can support the weight of the device. Alternatively, purchase a pole mount from Advantech

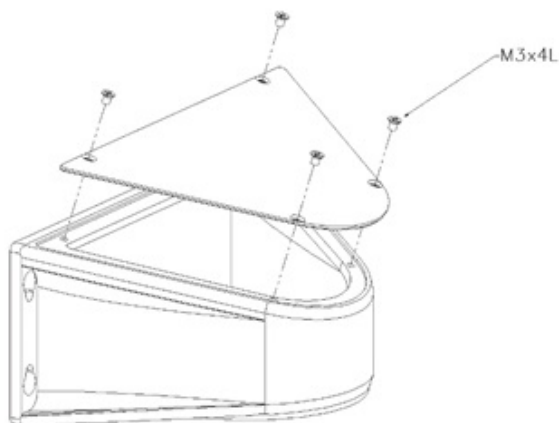
Requirement

- 1 x Pole Mount

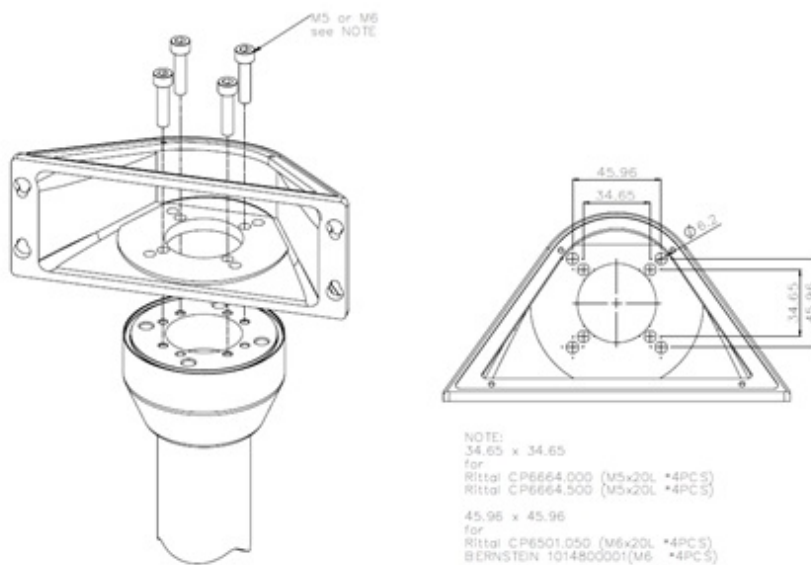


Installation Procedure

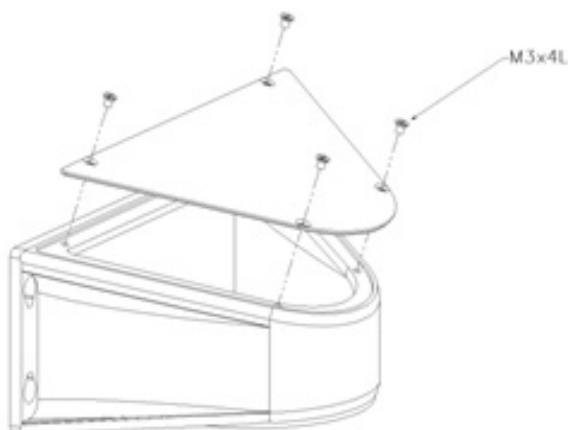
1. Loosen the 4 x M3 screws on the IO bracket.



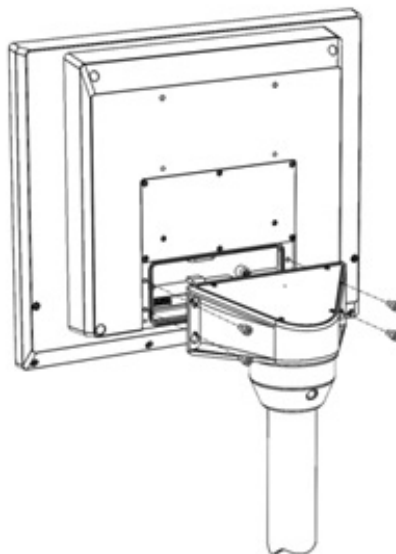
- Attach the IO bracket with 4 x M5 or M6 screws to the interface of the support pole mount.



- Fasten the OP bracket onto the IO cover.

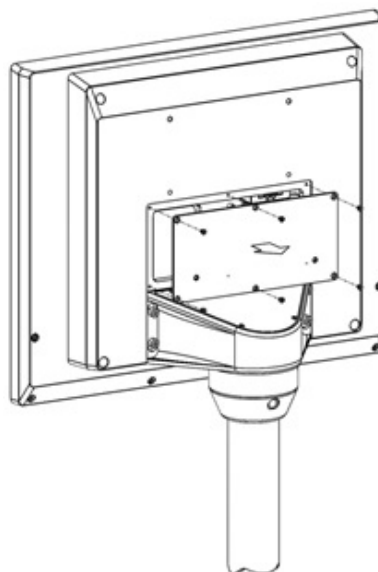


4. Attach the device to the pole mount with M5 screws then onto the IO cover from the back side. Make sure that the connection cables are carefully placed into the mount.

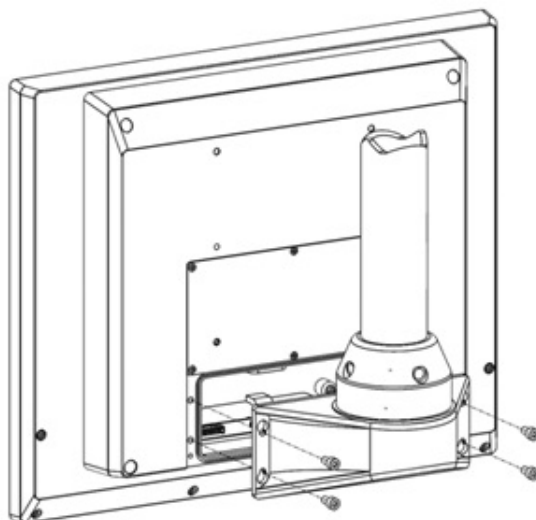


Installation Procedure (Pendant and Pedestal mounting)

1. Loosen the M5 screws from the IO cover (Pedestal mount)



2. Attach the device with M5 screws to the IO from the back side. Make sure that the connection cables are carefully placed into the Pendant mount.



2.3.2 SPC-800(M)/BOR-DE1000 Series Device for Support VESA Mounting

Note! *Base unit product accessory without a VESA mounting and cable entry*



SPC-800(M) & BOR-DE1000 series devices are designed for mounting with the base IO cover. If you install the device with a VESA mounting, you must use 100 x100 standard VESA compliant holes to allow wall and accessory mounting options or you can purchase a cable suitable for you through Advantech.

Requirement

- 1 x VESA Kit






- 4 x VESA screws








- 1 x cable entry cover






- 1 x cable entry (choose according to your equipment application)

Item	Product Specifications	Figure	IP Rating
1	Split cable entry system KEL-ER-E5 for routing and Sealing up to 5 cables with connector (cable diameters from 1 to 16 mm)		IP65 IP66
2	Split cable entry system KEL-ER 10 for routing and sealing cables with connectors, (cable diameters from 1 to 16 mm and 16 to 35 mm)		IP65 IP66
3	Split cable entry system KEL-ER 24 for routing and sealing cables with connectors (cable diameters from 1 to 16 mm and 16 to 35 mm)		IP65 IP66

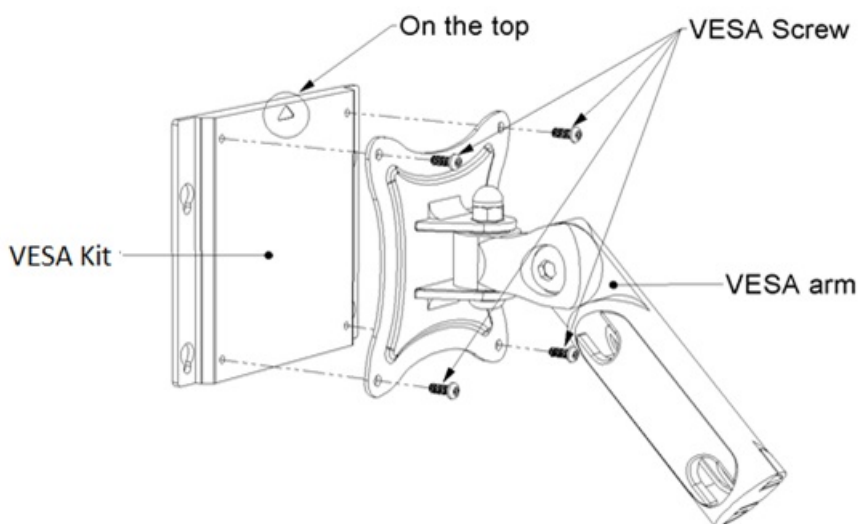
- Round cable of type

Product Specifications	Figure
icoteck round cable 13-14 mm 41313 KT13 bk	
icoteck round cable 9-10 mm 41309 KT 9 bk	
icoteck round cable 7-8 mm 41307 KT 7 bk	
icoteck round cable 6-7 mm 41306 KT 6 bk	
icoteck round cable 5-6 mm 41305 KT 5 bk	

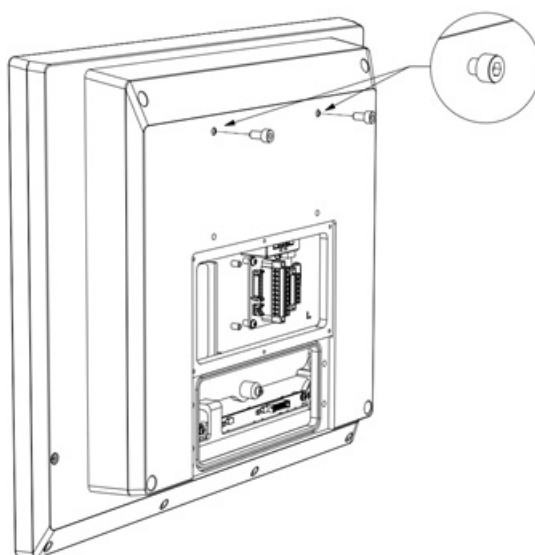
icoteck round cable 4-5 mm 41304 KT 4 bk	
icoteck round cable 3-4 mm 41303 KT 3 bk	
icoteck blank grommet 41351 BTK bk	

Installation Procedure

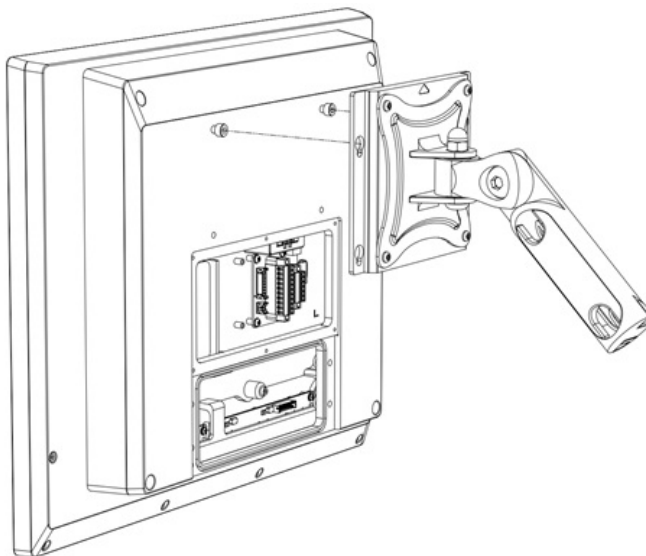
1. Install VESA ARM onto the VESA adapter with 4 x M4 screws.



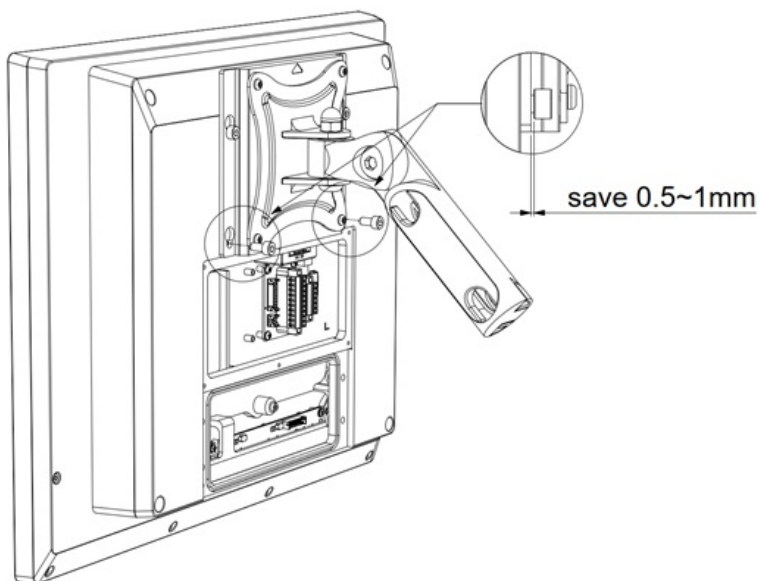
2. Place 2 x M5 screws into top side screw holes.



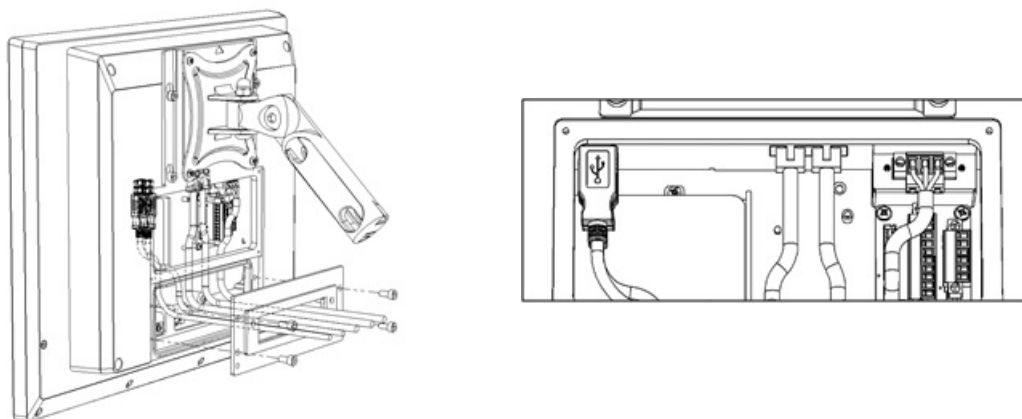
3. Attach the mount onto the two screws



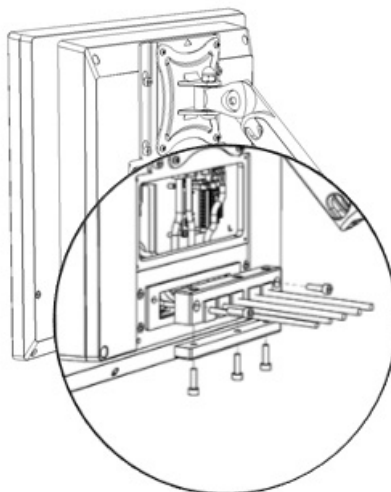
4. Fasten 2 x screws onto the body through the bottom holes of the VESA mount.



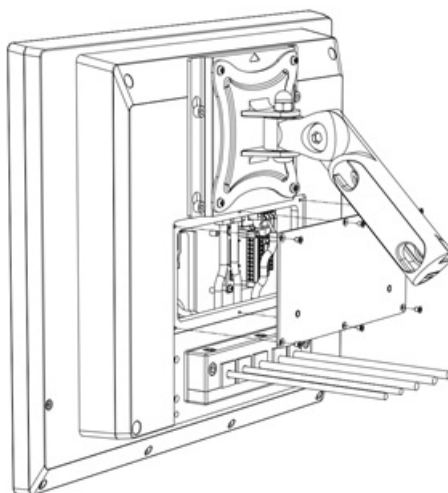
5. Arrange the cables through the opening of the cover and fix the cover with screws.



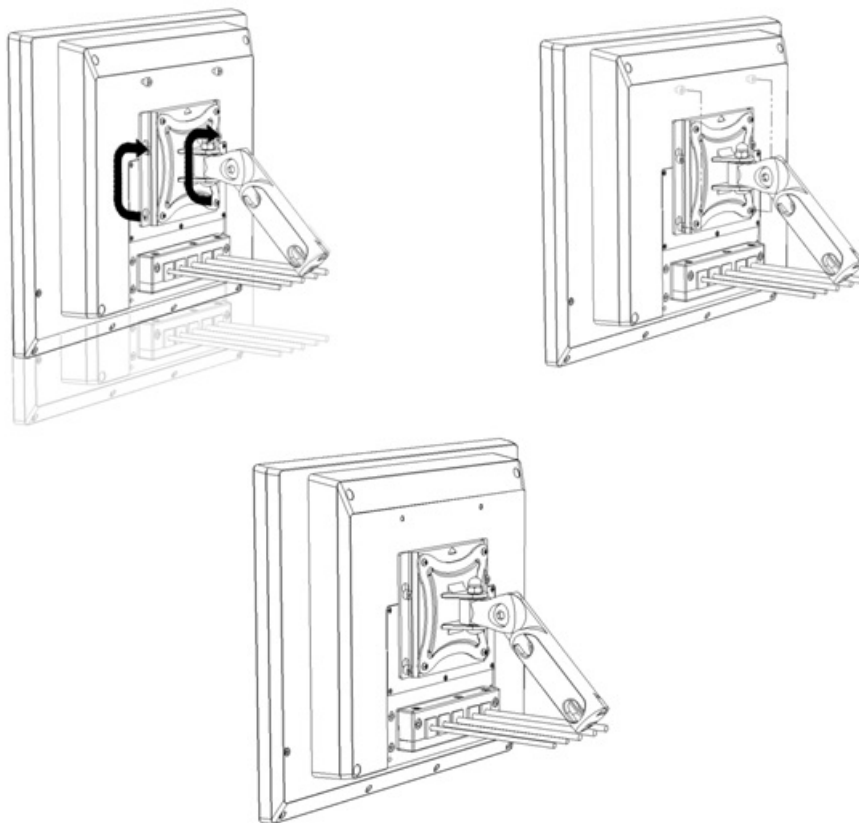
6. Place the cables in the entry frame with 3 x M5 screws and fix the frame to the body with 2 x M5 screws.



7. Fasten the cover to the body with 6 x M3 screws.



8. Move the unit from bottom to the top of the VESA kit. Then move the 2 top screws to the screw holes on the bottom of the VESA kit. Finally, tighten the 4 screws.



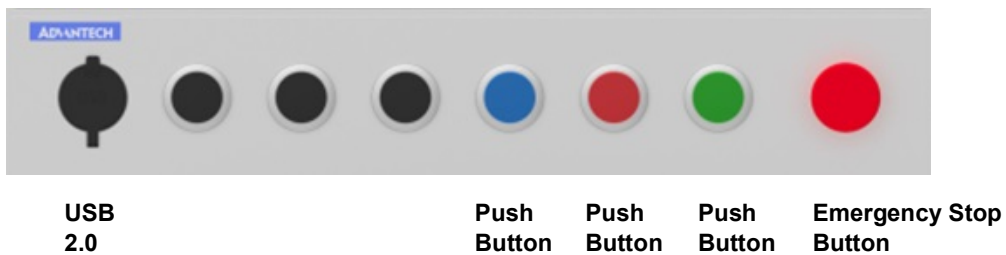
2.4 SPC-800(M) Extension with Operator Controls

The following example shows a SPC-800(M) device with an extension unit. SPC-800(M) device with operator controls extensions (push button, PCBA, terminal plug and screw). Do it yourself assembly or choose assembly via Advantech's (Build To Order) service.



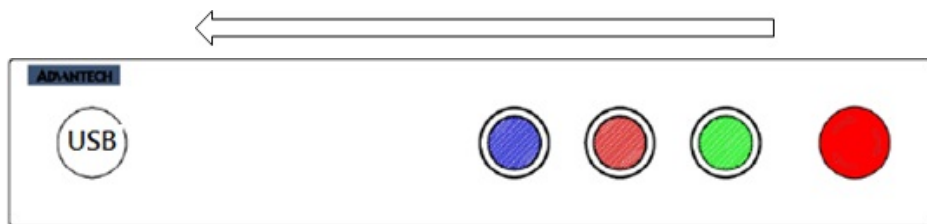
Base Unit design for Extension Unit

The base unit design supports RAFI RAFIX 22 buttons. The rightmost button is reserved for emergency stop button push-button. The other side design for front USB location.

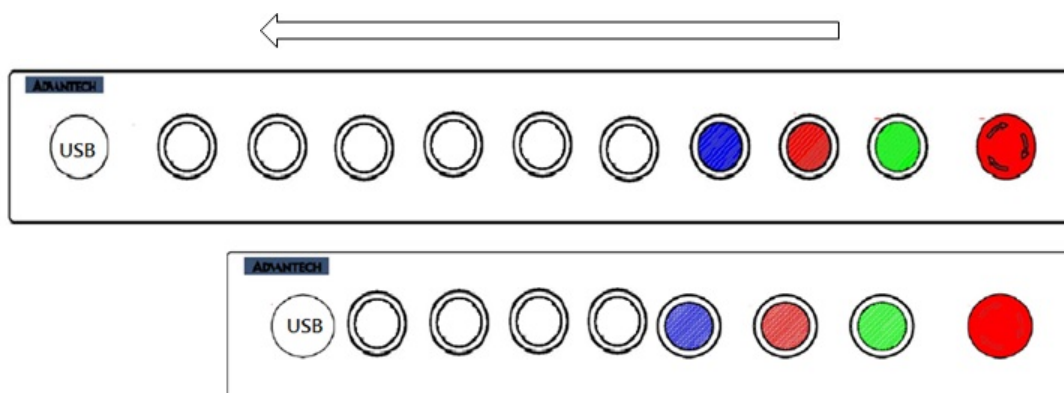


Customized For Your Plant With Operator Controls

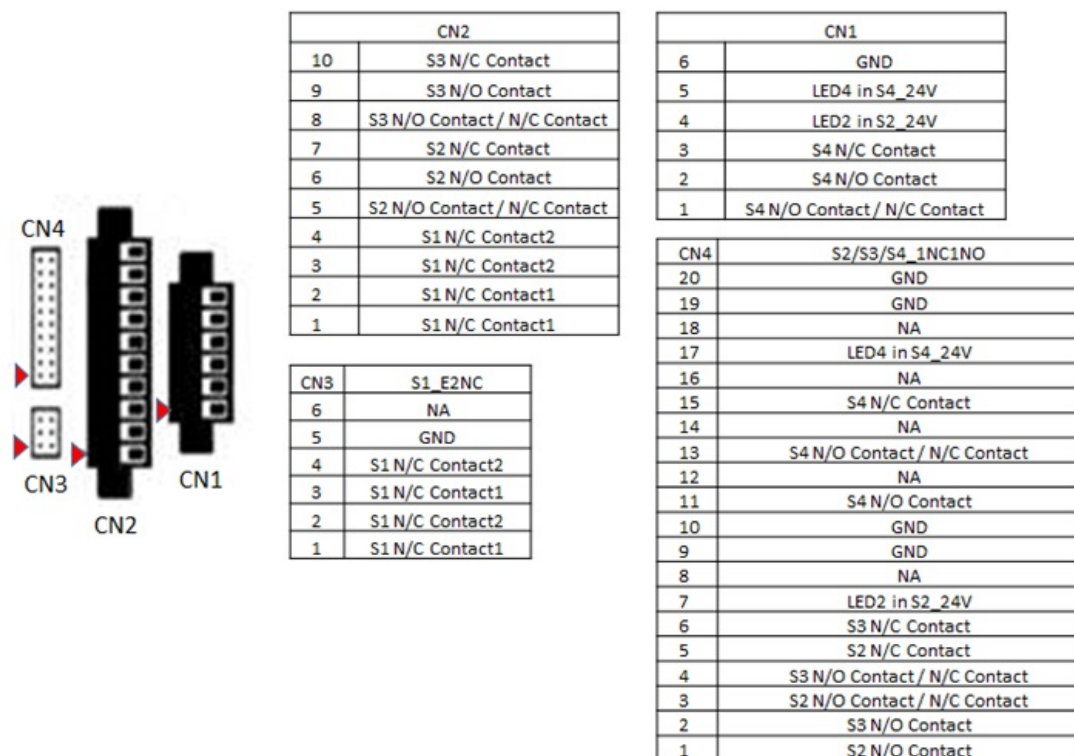
- **Extension unit size:** SPC-800(M) standard device with an operator is 15" and 21"
- **Push button hole:** SPC-800(M) operator controls design has pre-hole
 - (1.) 15" with seven pre-hole and USB location.
 - (2.) 21" with ten pre-hole and USB location.
- **Push button with extension unit (use four button):** extension unit 15" and 21", base unit operator controls from right to left location design is emergency stop button, green push button, red push button, blue push button and USB.



- **Push button with extension unit (use all button):** extension unit 15" and 21", base unit operator controls from right to left location design is emergency stop button, red push button, black push button, blue push button, the other button color is white and USB






- Freely configure do it yourself assembly
- Terminal board PIN definition





- Push Button of Type

Description	Picture
<p>RAFIX 22 FS+ - Emergency stop pushbutton, not illuminable, reset by rotation, red arrows 1.30.273.511/0300</p>	
<p>RAFIX 22 FS+ - Pushbutton, illuminated, flush lens, round collar, metal front ring, momentary 1.30.270.021/2200</p>	
<p>RAFIX 22 FS+ - Drucktaster nicht beleuchtbar , flache Blende, Bund rund, Frontring Metall, tastend 1.30.270.021/0100</p>	
<p>RAFIX 22 FS+ - Pushbutton, illuminated, flush lens, round collar, metal front ring, momentary 1.30.270.021/2600</p>	
<p>RAFIX 22 FS+- Pushbutton, illuminated, flush lens, round collar, metal front ring, momentary 1.30.270.021/2300</p>	
<p>RAFIX 22 FS+- Pushbutton, illuminated, flush lens, round collar, metal front ring, momentary 1.30.270.021/2500</p>	

<p>RAFIX 22 FS+- Pushbutton, illuminated, flush lens, round collar, metal front ring, momentary 1.30.270.021/2400</p>	
<p>RAFIX 22 FS+- Pushbutton, non-illuminated, flush lens, round collar, metal front ring, momentary 1.30.270.021/0700</p>	
<p>RAFIX 22 FS+ - Keylock switch, round collar 1.30.255.321/0100 (Black) 1.30.255.321/0300 (Red) 1.30.255.321/0400 (Yellow) 1.30.255.321/0500 (Green) 1.30.255.321/0600 (Blue) 1.30.255.321/0700 (Grey) 1.30.255.321/0800 (silver-grey)</p>	


- Type of Button's PCBA (include PCBA/Lamp Optional)

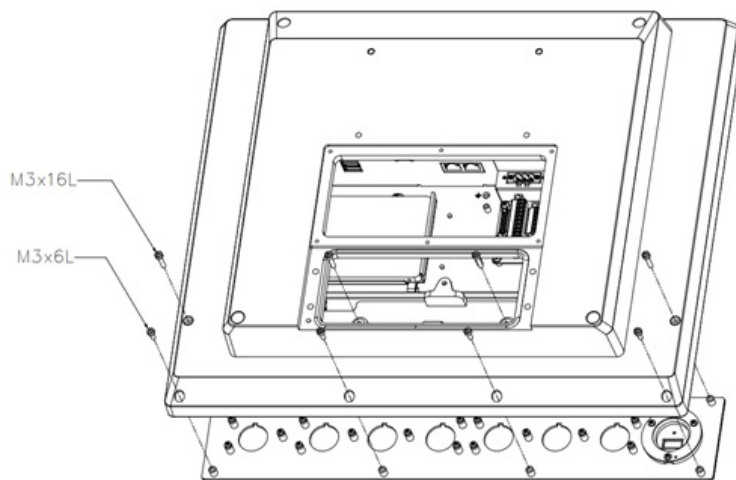
Description	Picture
<p>RAFIX 22 FS+- Universal contact block, silver contacts, 1 NC, 1NO 1.20.126.203/0000</p>	
<p>RAFIX 22 FS+- Emergency stop contact block, silver contacts, 2 NC 1.20.126.604/0000</p>	

Installation Procedure

1. First loosen the 4 x M5 screws on the IO and remove.
2. First loosen the 6 x screws on the OP back side.

Note! *On SPC-815 series you need to first loosen 4 x M3 x16L and 4 x M3 x 6L screws on the OP back side*

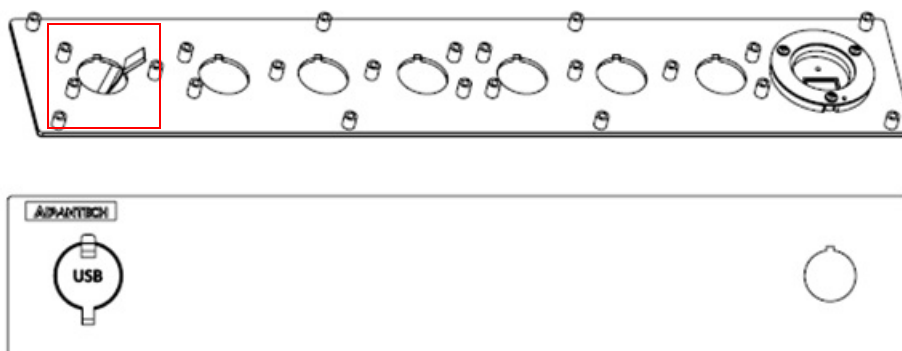
 *On SPC-821 series you first need loosen 6 x M3 x16L and 6 x M3 x 6L screws on the OP back side*



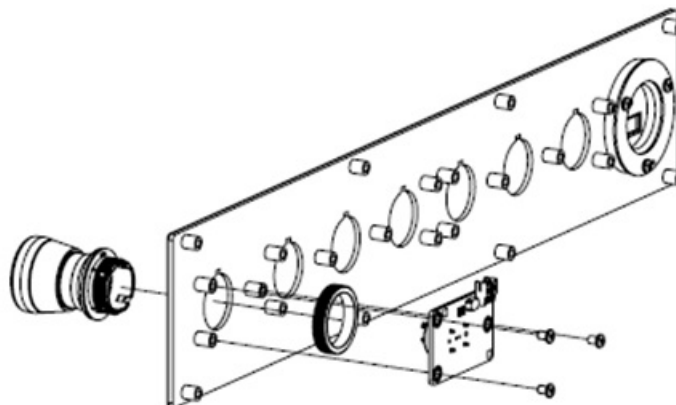
SPC-815
M3x16L *4 PCS
M3x6L *4 PCS

SPC-821
M3x16L *6 PCS
M3x6L *6 PCS

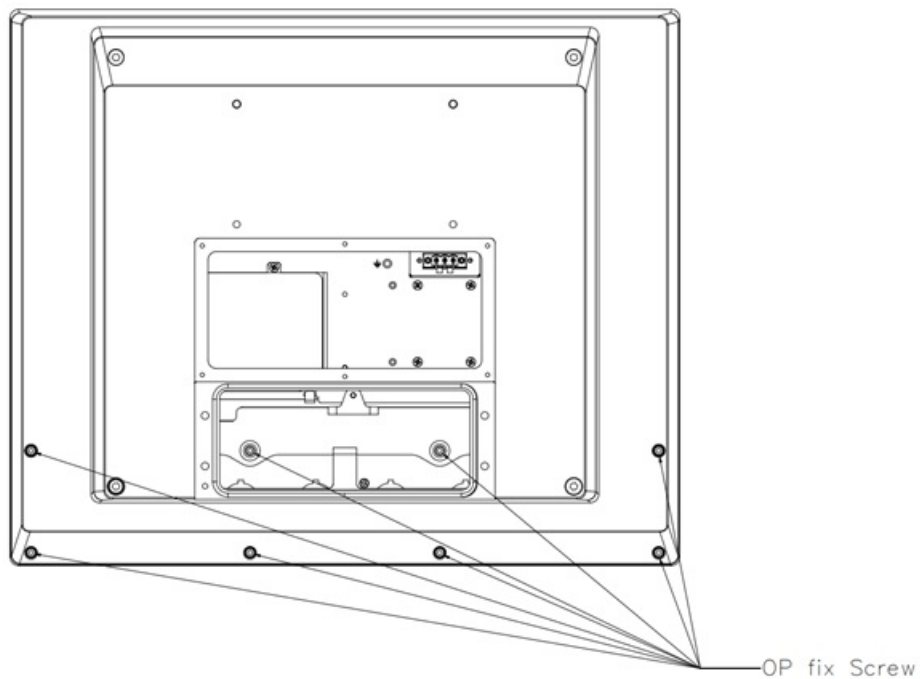
3. Pre-hole cut-outs



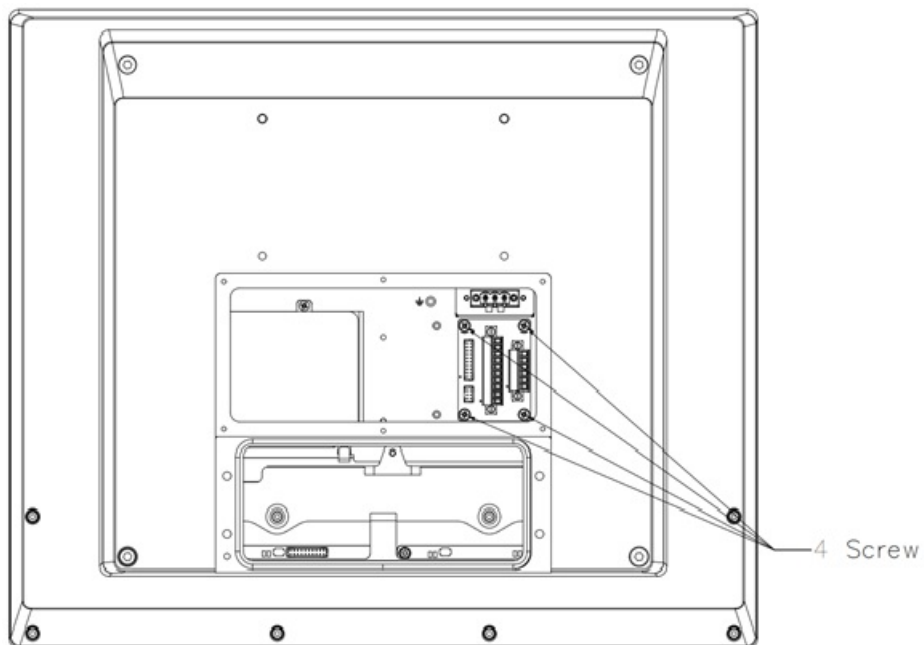
4. Fix the RAFI button assembly onto the threaded ring.
5. Attach the button PCBA with 4 x screws onto the OP back side.



6. Fasten the OP back side with screws.



7. Install the terminal board with 4 x M3 screws.



Appendix **A**



OSD Operating Process

A.1 OSD Board Overview (SPC-800)

The OSD keypad, including two keys and a two-color indicator is designed as the HMI touch glass printing device.



A.1.1 OSD Button Description

icon	Indicator	Status
	intelligent	Selected option
	Home	Activate the OSD menu Enter/confirm the selected option Decreases and Increases brightness Changes Input video source Changes PIP source Changes Touch turn off type function Exit menu




A.1.2 LED Functions

Indicator	Status
Blue	Power on
Orange	Stand By
No lights	Power Off

A.2 OSD Key Functions

Each selected value is stored into LCD memory after SEL signal input or time out. The stored values are not affected if the power is turned off. But the selected value is not available in case a selected mode is changed before time out or power is turned off before time out. TIME OUT .. 5-6 seconds (Can be set in OSD Manager) The default definition of input keys is shown as following:


A.2.1 Menu Start

Press  home key button in OSD function key

- **Brightness:** Adjust brightness of the display (0%~100%)
- **Video Input:** To change the video input
- **PIP:** PIP ON/OFF and adjust the size and position of the smaller screen in PIP mode
- **Touch:** To change the touch function
- **Exit**




A.2.2 Brightness Select

Select “Brightness” function by Press  Home key, and continue press home key for selection confirmation (Range: 0~100)
A higher value will make the picture appear brighter



A.2.3 Video Input

Select “Video Input” function by Press  Home key, Press the Input Selection that corresponds with the video source device. Please be noted that if the selected mode is not matching with the existing input source, the “No Signal” message would appear.

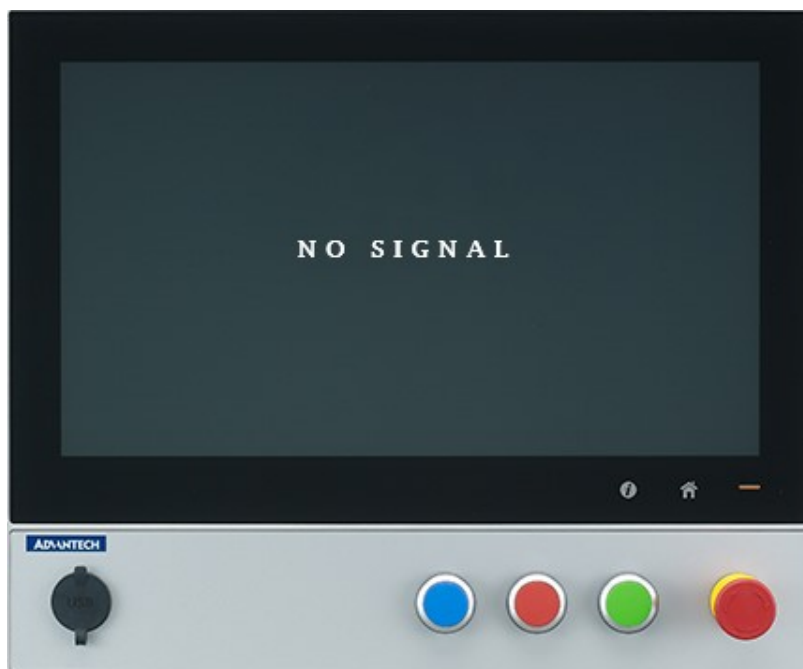


Note! *The No Signal message means and LED indicator is Orange that the device isn't getting any video input from the currently selected source.*




If “No Signal” message appear, please try to adjust the current selected video input mode:

- DP Source: Make sure the DP connection is enable on the device. To do it, Press Home key (show to OSD Menu) > Select “Video Input” > Select “Input DP” > Press Intelligent key
- HDMI Source: Make sure the HDMI connection is enable on the device. To do it, Press Home key (show to OSD Menu) > Select “Video Input” > Select “Input HDMI” > Press Intelligent key
- RX Source: Make sure the CDI+(Input RX) with Box PC connection is enable on the device. To do it, Press Home key (show to OSD Menu) > Select “Video Input” > Select “Input RX” > Press Intelligent key



A.2.4 PIP (Picture-in-Picture)

Select “PIP” function by Press  Home key and selection that corresponds with the PIP connection mode. The size and position of the smaller screen can all be adjusted in PIP function.

There is limited combination of video input to fulfill PIP, listed below:

- DP + HDMI
- DP + RX



A.2.5 Touch

Select "Touch" function by Press  Home key and can adjust Touch function mode.

Always Off: to disable touch function to ensure mis-touch.

Off for 60 sec: to disable touch function and after 60 seconds the touch function will be enabled automatically.

Always On: default setting of touch function.



Note! Select "Always Off" or "Off for 60 Sec" the device's LED indicator is Blue Blinking.



If you want to return Touch settings, Press "Home" key" > Select "Touch" function.

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