Installation Manual and Operating Instructions

TRUE BLUE POWER

TA245 SERIES

45-WATT
USB CHARGING PORT

Manual Number
9020198

Revision C • November 03, 2025

FOREWORD

This manual provides information intended for use by persons who, in accordance with current regulatory requirements, are qualified to install this equipment. If further information is required, please send inquiries per the contact information below.

We welcome your comments concerning this manual. Although every effort has been made to keep it free of errors, some may occur. When reporting a specific problem, please describe it briefly and include the manual part number, the paragraph/figure/table number and the page number. Send your comments to:

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REVISION HISTORY

Rev	Date	Detail	Approved
A	06/30/2025	Initial Release	ESH
B	08/14/2025	Move 18AWG Connector Kit to Optional Equipment	BAW
C	11/03/2025	Updated images for Figure 3.5 & 3.7	DCS

SECTION 1 GENERAL DESCRIPTION

1.1 INTRODUCTION

The TA245 Series USB Charging Port is a certified accessory that charges any electronic device that uses either a USB Type-A or USB Type-C charging connector.

The TA245 smart charger provides intelligent negotiation with the connected device to supply variable voltage and up to 3 amps, allowing up to a total of 45 watts of charging power for the type-C port and 36 watts for the type-A port. This provides maximum charging speed to a wide variety of the latest electronic devices, including earbuds, mobile phones, tablets - even laptops - and more. The TA245 can determine the maximum power the device can support and will charge the device at the maximum speed allowed, while preventing the device from being overcharged or charged incorrectly. In addition to the latest charging protocols, the TA245 features our Smart Halo status light, displaying blue when ready, green when charging, and yellow if the device encounters a fault.

The TA245 utilizes multiple USB charging protocols to maximize compatibility with all major brands and types of mobile personal electronic devices. By incorporating USB Power Delivery (PD), USB Programmable Power Supply (PPS), and Qualcomm's Quick Charge™ (QC) 3.0 standards, the TA245 is designed to meet the needs of current and future devices. The TA245 is available with latest USB Type-C connector, offering a small, reversible port connection in either a single or dual port configuration. Another dual port version is available that includes both a Type-C and traditional Type-A port to support both legacy and newer cables and devices. Each version has user-adjustable lighting brightness, from off to bright, to conveniently locate the charging ports in low-light conditions. The unit has built-in protections for short circuit, over-current, and low voltage conditions. It is designed to protect against reverse polarity installation and has temperature monitoring and shutdown capability, allowing the unit to handle unforeseen conditions safely.

The TA245 is certified to FAA/TSO-C71 and qualified to multiple RTCA DO-160G environmental conditions to meet regulatory requirements and demonstrate robust and reliable performance on any class or type of aircraft. By accepting an input of 12-32 volts DC, it is equally suited for installation in 14 or 28V aircraft electrical systems. The unit is easily mounted with two screws and a two-wire power input and can be installed throughout the aircraft, including the cockpit, cabin, galley, or other locations. The common mounting features and harness with legacy True Blue Power USB Chargers make upgrading to the TA245 a simple logbook entry.

Small, compact, powerful, and with plenty of installation flexibility, the TA245 is an ideal choice in any aircraft to charge the latest electronic devices at maximum speed.

1.2 TECHNICAL SPECIFICATIONS

Electrical Attributes	
Input Voltage	12-32 VDC
Input Power	105 watts max; 3.5 amps @ 28 VDC
Output Voltage (Type-C)	Fixed 5VDC, 9VDC, 15VDC, 20VDC per port Variable 3.3V-20VDC per port
Output Voltage (Type-A)	Fixed 5VDC, 9VDC, 12VDC per port Variable 3.6V-12VDC per port
Output Power	Type-A: 36 watts max Type-C: 45 watts max
Efficiency	~94% nominal

Table 1.1

Physical Attributes	
Weight	0.9 oz (26 g) (single Type-C port) 1.9 oz (54 g) (dual Type-A/Type-C port) 1.9 oz (54 g) (dual Type-C port)
Dimensions (Single Port Units) (not including mating connector)	1.50 inches wide X 0.52 inches high X 1.25 inches deep (38mm wide X 13mm high X 32mm deep)
Dimensions (Dual Port Units) (not including mating connector)	1.50 inches wide X 1.03 inches high X 1.25 inches deep (38mm wide X 26mm high X 32mm deep)
Charging Port Connector	USB Type-A or USB Type-C
Input Connector Kit	MCIA P/N 9017960
Mounting	Panel mount; rear

Table 1.2

Qualifications	
Certification:	FAA/TSO-C71
Environmental Qualification:	RTCA/DO-160G (See Section 5 for Categories/Levels)
USB Power Delivery (PD)	PD3.0 Version 1.1, PPS enabled
QualComm Quick Charge (QC)	QC 3.0

Table 1.3

Configurations			
Part Numbers	**Lighted**	**USB Connector**	**Power (W)**
	6430245-11	Dual: Type-A +Type-C	36 + 45
	6430245-13	Dual: Type-C +Type-C	45 + 45
	6430360-17	Single: Type-C	45

Table 1.4

SECTION 2 PRE-INSTALLATION

2.1 COOLING

No external cooling is required. The unit will become warm when in use. This is normal and within operational parameters. No special mounting considerations are required; however, mounting to a metal surface can help dissipate any heat generated and extend the life of the product. For continuous 90W operation of a dual Type-C unit, mounting to a metal surface or other thermal management approach is recommended. If a metal surface is unavailable, installing the unit in a location with air movement would be one such thermal management option.

2.2 EQUIPMENT LOCATION

The TA245 Series USB Charging Port is designed for mounting flexibility, allowing for installation in the cockpit or in the cabin. It is designed for panel mounting and can be installed in a rectangular configuration or, with an available installation kit, can be mounted with a round or rectangular cosmetic cover plate. An instrument mounting adapter bracket is also available to easily mount the unit in a standard 2-inch round instrument opening that may already exist in the cockpit panel.

The unit can be mounted in any orientation. Clearance should be provided for the mating connector which may require up to an additional inch beyond the rear of the unit.

2.3 ROUTING OF CABLES

Avoid sharp bends in cabling and routing near aircraft control cables. Avoid close proximity and contact with aircraft structures, avionics equipment or other obstructions that could chafe wires during flight and cause undesirable effects.

2.4 LIMITATIONS

Environmental qualifications were verified to equal or better levels per RTCA DO-160, Revision G in lieu of those identified within the minimum performance standards (MPS) of the TSO.

The conditions and tests for TSO approval of this article are minimum performance standards. Those installing this article, on or in a specific type or class of aircraft, must determine that the aircraft installation conditions are within the TSO standards, specification of the article and deviations as listed above. TSO articles must have separate approval for installation in an aircraft. The article may be installed only according to 14 CFR part 43 or the applicable airworthiness requirements.

Installation recommendations provided in section 2.1. should be considered for units when used in continuous operation under high-power conditions.

The TA245 Series USB Charging Port contains extremely capable new technology for personal electronic devices. Beyond the physical format of the Type-C connector, it also allows for a variety of interface options when communicating with compatible devices. However, manufacturers of consumer electronic devices and/or cables may choose to implement proprietary versions or modifications of the USB standards to operate specifically with their own charging equipment. The TA245 has been tested with and supports a wide variety of devices now emerging on the open market. However, compatibility with all devices may not be guaranteed. True Blue Power continues to be proactive in evaluating new devices and strives to continually improve the product as needed to serve the vast majority of USB-charged electronic products.

2.5 MODIFICATIONS

This product has a nameplate that identifies the manufacturer, part number, description, certification(s) and technical specifications of the unit. It also includes the "MOD" or modification number representing notable changes in the hardware design of the unit.

Modification (MOD) 0 is the initial release of the product and is identified on the nameplate by the lack of marking on the MOD numbers 1 through 9 (i.e. 1-9 are visible). All subsequent modifications are identified on the nameplate by the marking/blacking out of that particular MOD number (i.e. for MOD 1, the number 1 is not visible and 2-9 are visible - see Figure 2.1 for examples). MODs do not have to be sequentially inclusive and may be applied independent of each other.

For additional details regarding specific changes associated with each MOD status refer to the product published Service Bulletins at www.truebluepowerusa.com.

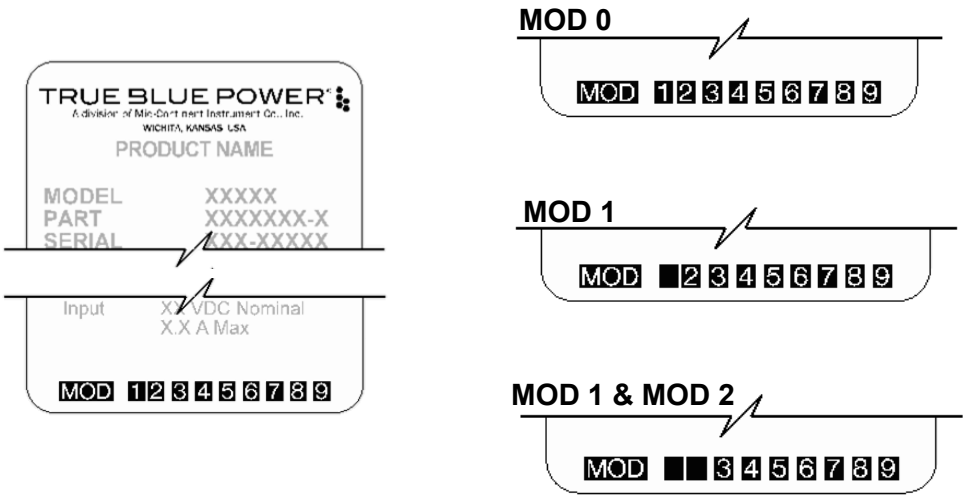


Figure 2.1
Nameplate and MOD Status Example

SECTION 3 INSTALLATION

3.1 GENERAL INFORMATION

This section contains interconnect diagrams, mounting dimensions and other information pertaining to the installation of the TA245 Single and Dual USB Charger. After installation of cabling and before installation of the equipment, ensure that power and ground are applied to the proper pins specified in Section 3.3.2, Pin Assignment Information.

3.2 UNPACKING AND INSPECTING EQUIPMENT

When unpacking this equipment, make a visual inspection for evidence of any damage that may have occurred during shipment. The following parts are included:

A. USB Charging Port	MCIA P/N 6430245-( )
B. Installation Manual (online)	MCIA P/N 9020198
C. Connector Kit	MCIA P/N 9017960
i. Power Connector kit	
ii. Mounting screws	

Optional Equipment Available:

A. Dual Port Front Mount Faceplate Kit	MCIA P/N 9020386-1
B. Dual Port Rear Mount Faceplate Kit	MCIA P/N 9019351-2
C. Single Port Rear Mount Faceplate Kit	MCIA P/N 9019351-1
D. Single Port Rear Mount Circular Faceplate	MCIA P/N 9019384-3
E. Dual Port Rear Mount Circular Faceplate	MCIA P/N 9019384-4
F. Dual Port Instrument Mount Adapter Kit	MCIA P/N 9017947
G. Single Port Multi-Unit DZUS Mount Adapter, Black	MCIA P/N 9010361-1
H. Dual Port Multi-Unit DZUS Mount Adapter, Black	MCIA P/N 9010361-2
I. Single Port Multi-Unit DZUS Mount Adapter, Gray	MCIA P/N 9010361-3
J. Dual Port Multi-Unit DZUS Mount Adapter, Gray	MCIA P/N 9010361-4
K. Single Right Angle Adapter Kit	MCIA P/N 9010360-1
L. Power Connector Kit, 18 Gauge Option	MCIA P/N 9017960-2

Equipment Not Provided:

A. Cable Harness Wire	Section 3.3.1 for specifications
B. Circuit Breaker	See Table 3.2

3.3 CABLE HARNESS

Construct the cable harness following the instructions outlined below and per Figure 3.1. Refer to Section 2: Pre-Installation Considerations, for routing precautions.

3.3.1 Wire Gauge and Circuit Breaker Selection

Use of PTFE, ETFE, TFE, Teflon or Tefzel insulated wire is recommended for aircraft use. The wire harness should use 20-22 AWG stranded wire depending on model. Refer to table 3.1 below. If additional length is required, consider use of the optional 18 AWG Power Connector Kit. This table is provided to aid in the consideration of voltage drop due to harness length. Other wiring standards that are applicable to the installation should be considered.

		Max Wire Length (ft) Recommended		
BUS	**AWG**	**C**	**CA**	**CC**
14 V	24	3	1.8	1.5
	22	5	3.0	2.5
	20	8	4.5	4.0
28 V	24	79	46	40
	22	122	72	61
	20	192	113	97

**18 AWG can be used if a longer harness is needed, see kit 9017960-2*

Table 3.1
Wire Gauge and Length

		Circuit Breaker Recommendations	
		28V Breaker (Amps)	**14V Breaker (Amps)**
Part Number	6430245-11	5	10
	6430245-13	5	10
	6430245-17	3	5

Table 3.2
Circuit Breaker Recommendations

3.3.2 Pin Assignment Information

Pin A (keyed): +28VDC
Pin B: Ground

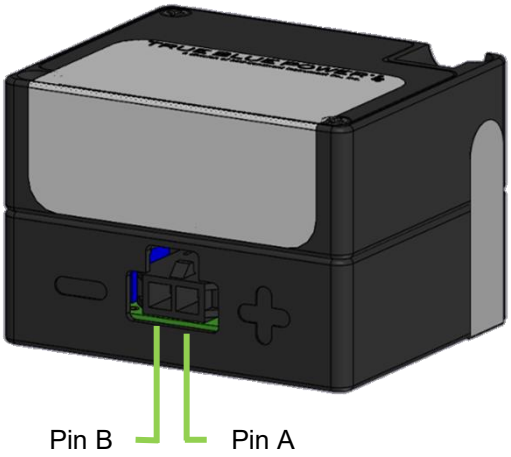


Figure 3.1
Power Input

Note: Pins should be crimped using Molex Hand Crimp Tool 63819-0000 (Preferred), 63811-2800 (obsolete) or 11-01-0200 (obsolete). See the Molex Hand Crimp Tool User Manual for crimp procedures.

3.3.3 Harness Verification

Once the cable harness is prepared, prior to connecting the TA245, activate the aircraft power bus and use a multimeter to verify that aircraft power and ground is supplied with appropriate voltage on the proper pins within the mating harness.

Note: The TA245 has built-in reverse polarity protection for the power connector. If Pins A and B are swapped, the unit will not function but will not be damaged.

3.4 MOUNTING

The TA245 can be installed in one of five ways:

- front mount, decorative faceplate [1 2 4]
- rear mount, decorative faceplate [1 4]
- rear mount, rectangular
- rear mount, circular faceplate [1 3]
- instrument mount [1 2 3]
- DZUS mount adapter[1 3 6]
- right angle adapter [5]

[1] Installation kit required. See Section 3.2, Optional Equipment Available for part number reference
[2] Dual port units only
[3] Black anodized
[4] Brushed aluminum, bare (appropriate for additional plating/finish)
[5] Single port units only
[6] Gray Painted

3.4.1 Mounting Considerations

- Under a continuous high power load, particularly for dual port units or 14V aircraft, the unit can get very warm. Refer to section 2.1 for recommendations on the type and location of the mounting surface to reduce temperature and help prevent activation of the thermal protections.
- Prepare the panel cutout as shown in Figures 3.3 thru 3.12 per the selected mounting option.
- Countersinks shown in the panel cutouts for flat head screws are optional. However, flat head screws (82°) are provided in the kits for flush appearance. For Rear Mount Cover Plate Installations, countersinks in the panel are required.
- For Rear Mount Installations: Mounting screws length MUST be between (PT + 0.150”) and (PT + 0.210”). [PT = panel thickness]
  Mounting screws provided with the unit are 0.24” and 0.31”. (Accommodates 0.030” to 0.160” PT) For PT greater than 0.125, the USB connector will be below the surface of the panel (below flush).
- For Rear Mount Installation with Cover Plate: Panel thickness greater than 0.065 will cause the USB connector to be below the surface of the Cover Plate (below flush).
- Set the Smart Halo brightness before completing installation. See section 4.2.1.

3.5 INSTALLATION COMPLETION

In order to verify installation, once power is applied to the unit, confirm that the Smart Halo is blue (if light is not set to off). Attach a cable and (not fully charged) device to the port and verify that the Smart Halo turns green and that the device is charging.

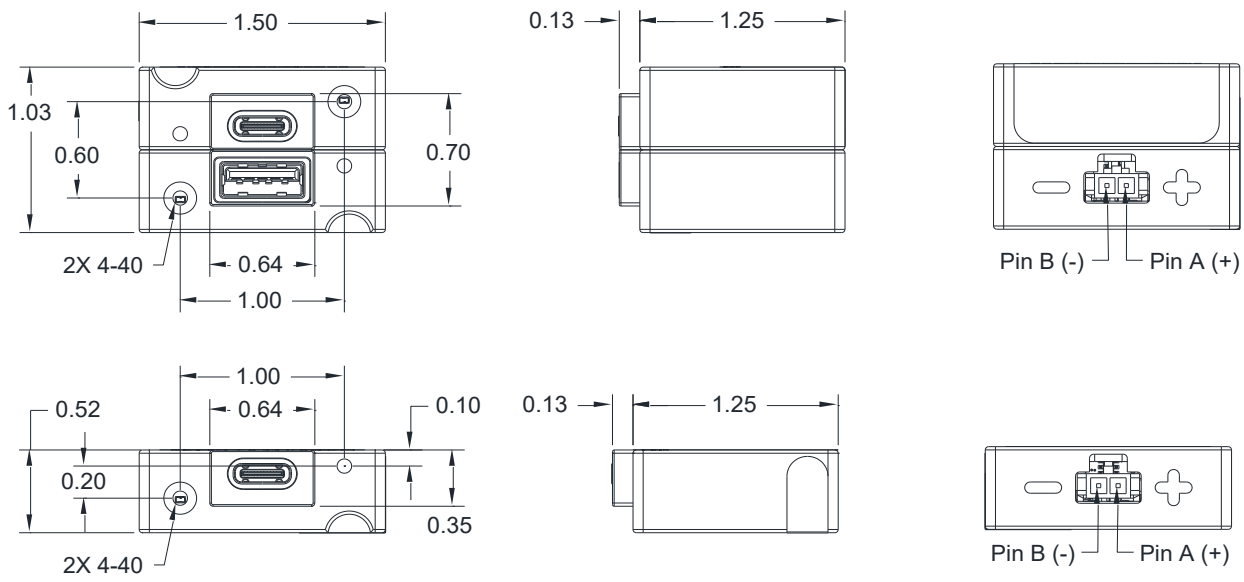


Figure 3.2
TA245 Outline Drawing

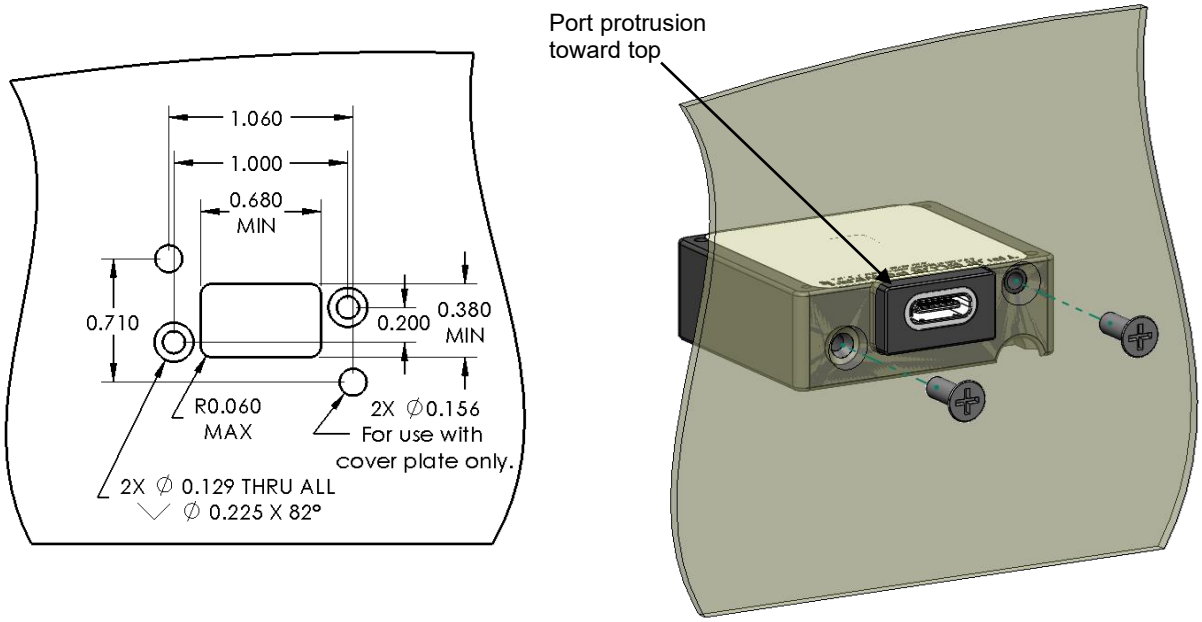
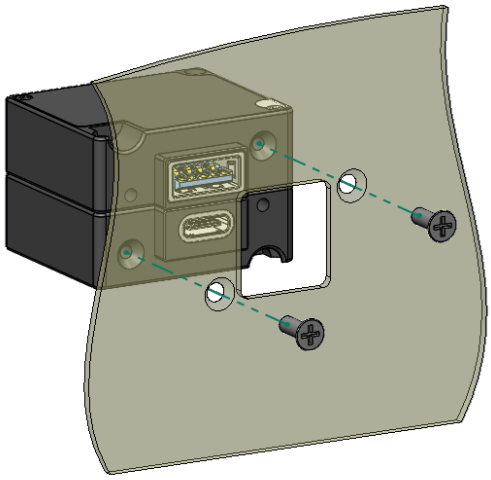


Figure 3.3
Single Port Rear Mount Installation



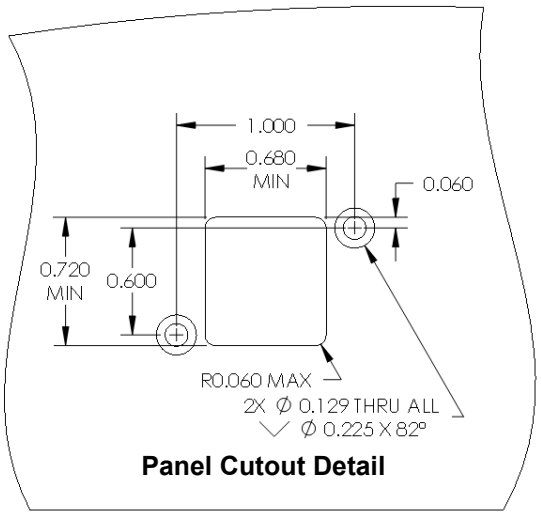


Figure 3.4
Dual Port Rear Mount Installation

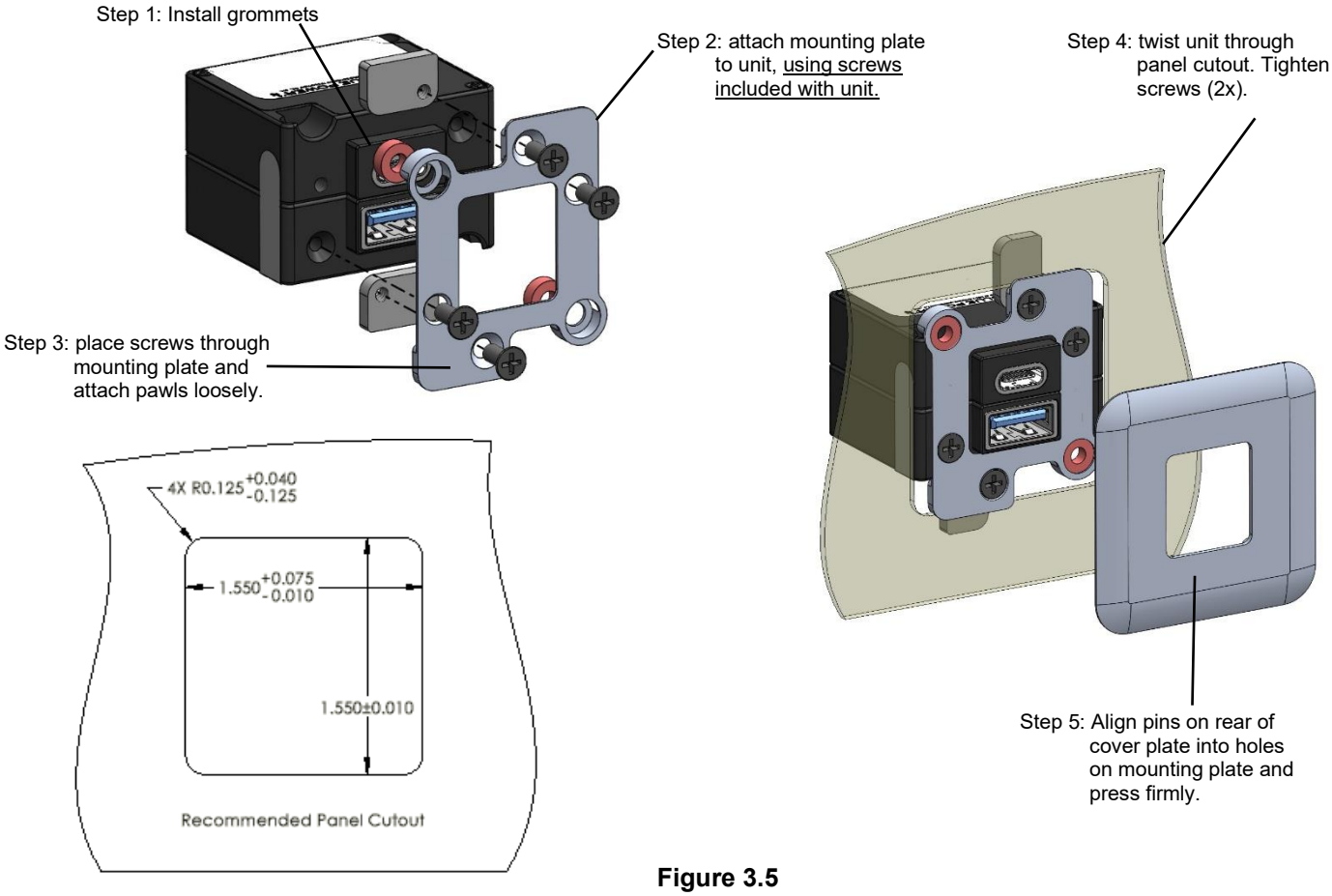


Figure 3.5
Dual Port Front Mount Installation Kit with Faceplate

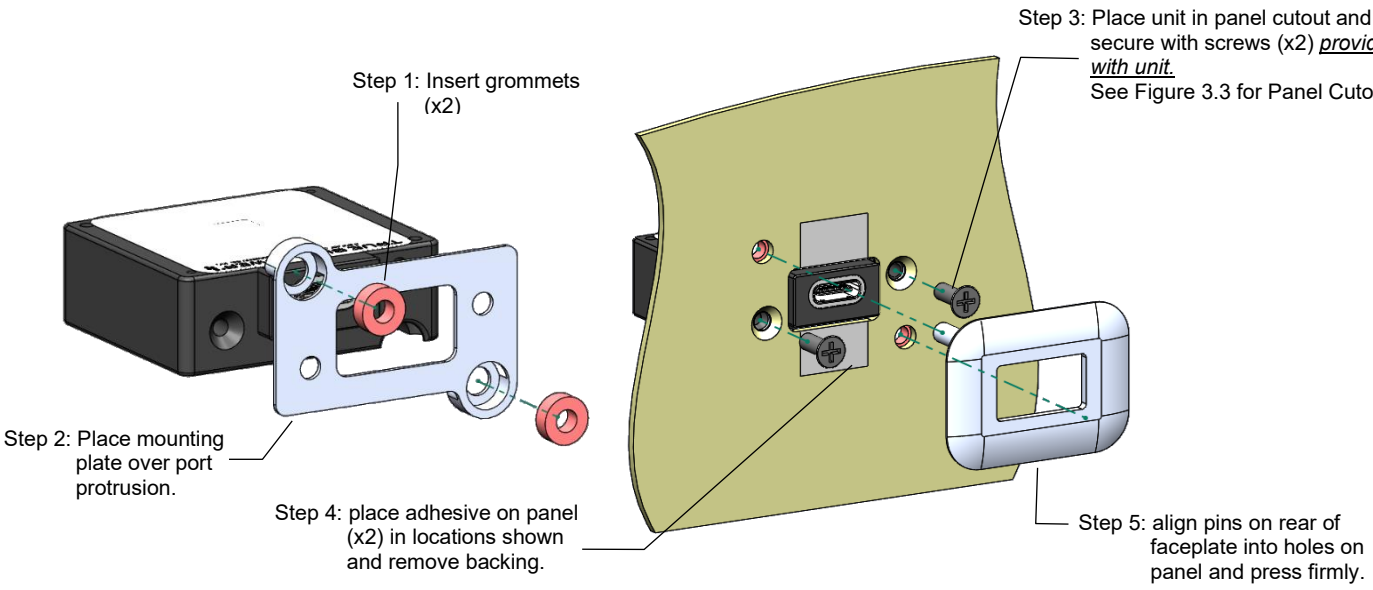


Figure 3.6
Single Port Rear Mount Installation Kit with Faceplate

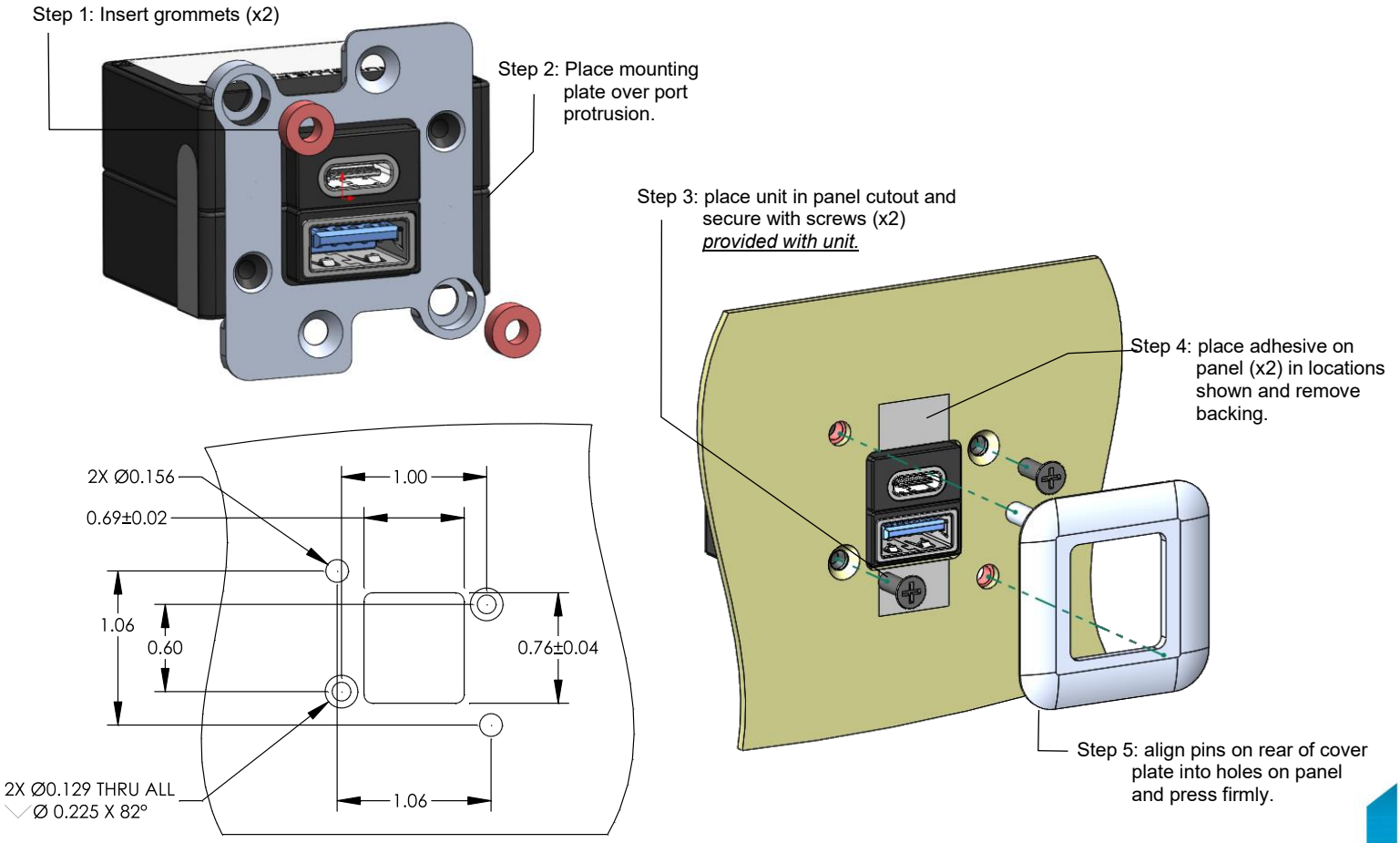


Figure 3.7
Dual Port Rear Mount Installation Kit with Faceplate

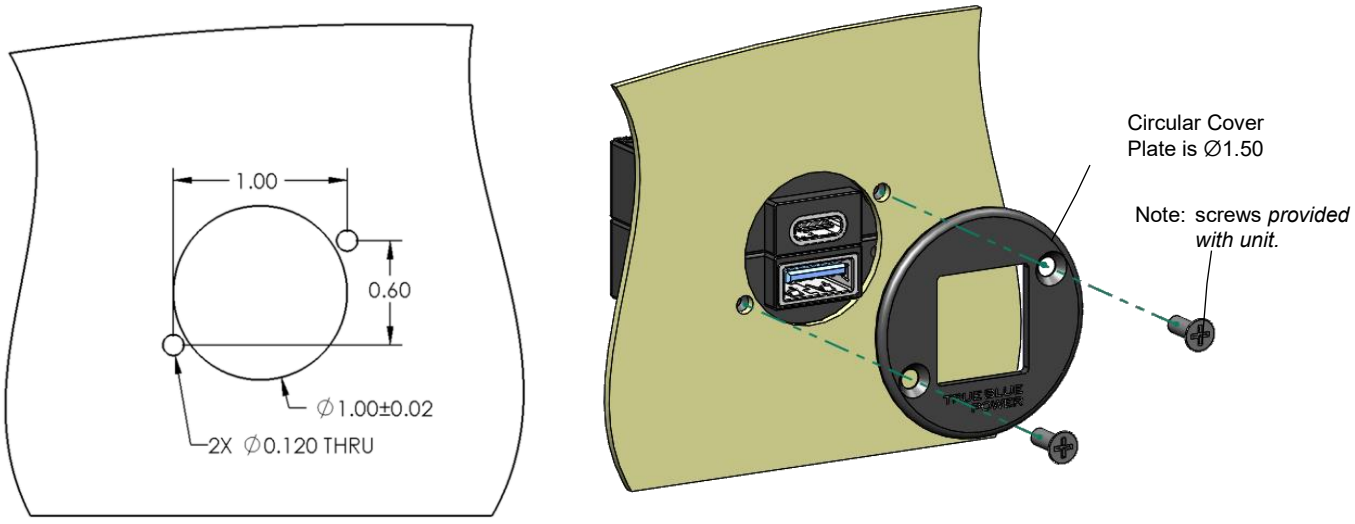


Figure 3.8
Dual Port Rear Mount Circular Faceplate

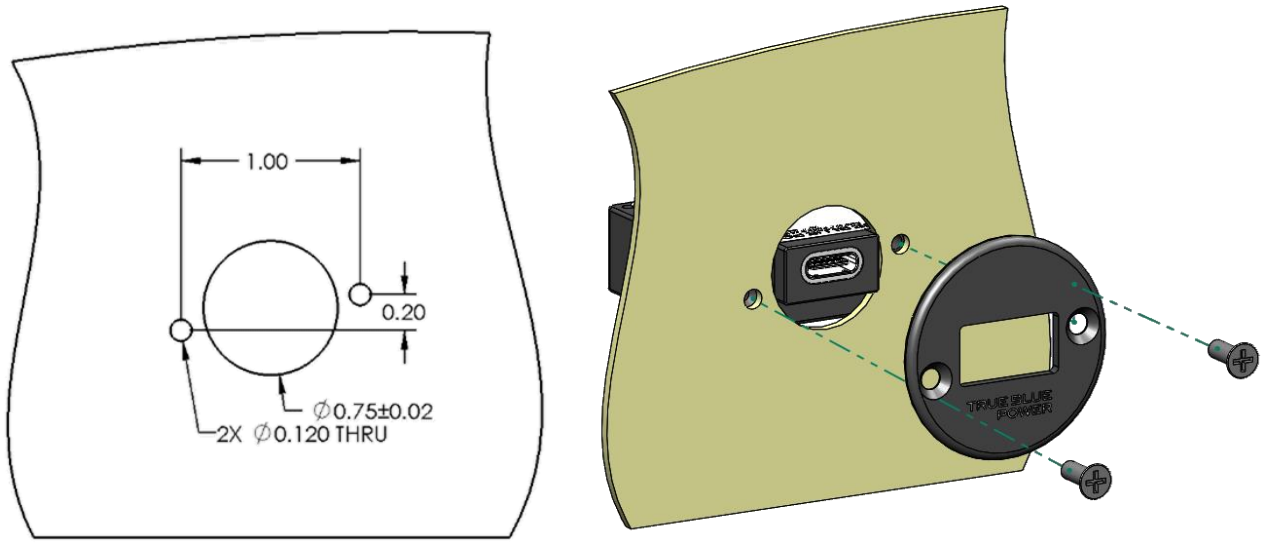


Figure 3.9
Single Port Rear Mount Circular Faceplate

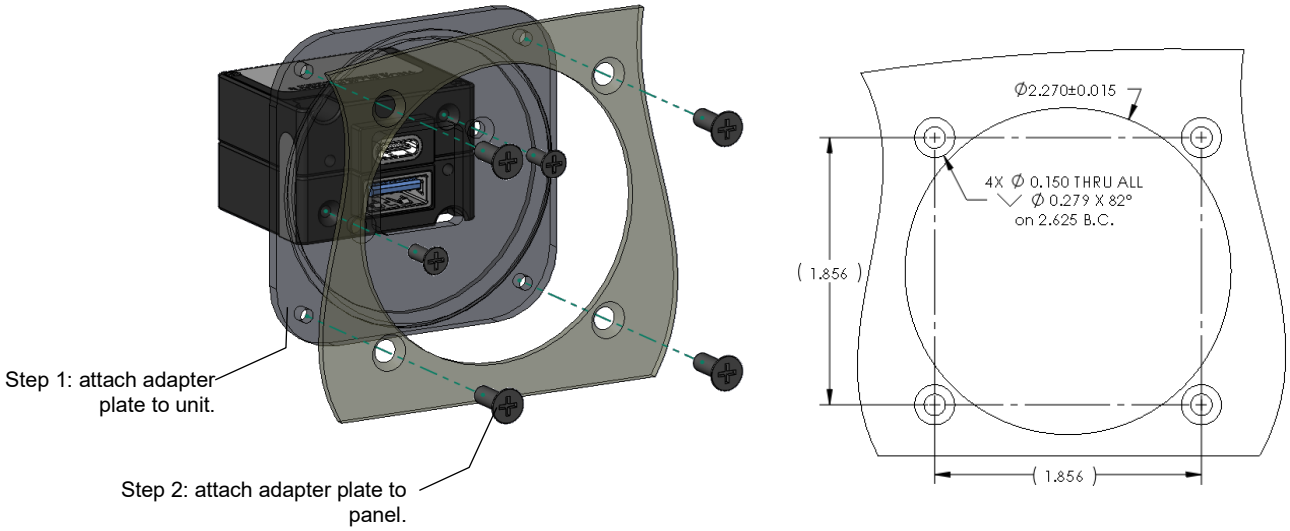


Figure 3.10
Dual Port Instrument Mount Adapter Kit

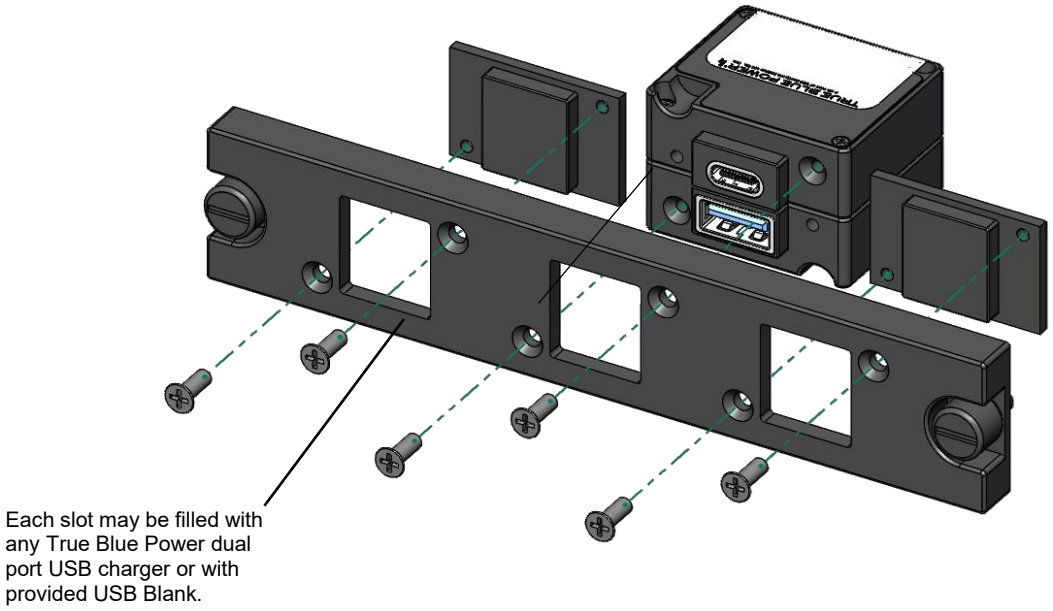


Figure 3.11
Dual Port Multi-Unit DZUS Mount Adapter Kit, Black or Gray

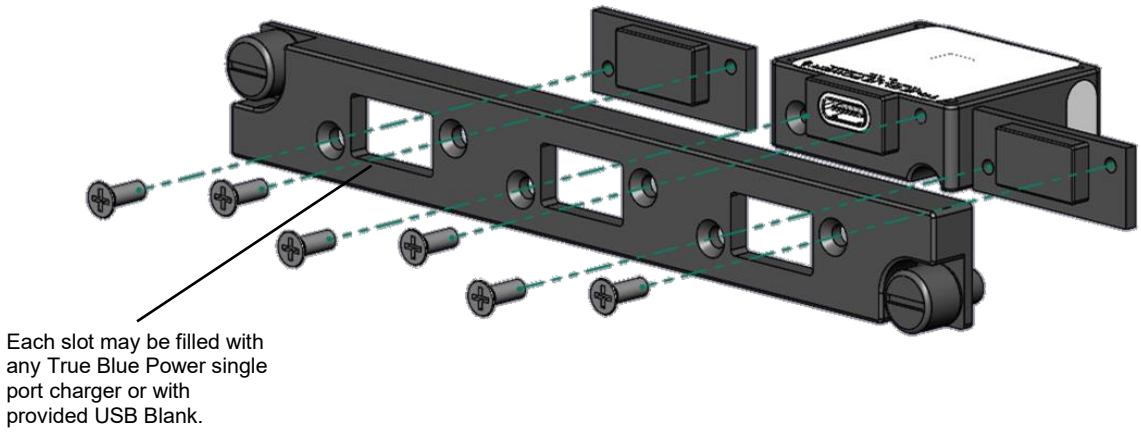


Figure 3.12
Single Port Multi-Unit DZUS Mount Adapter Kit, Black or Gray

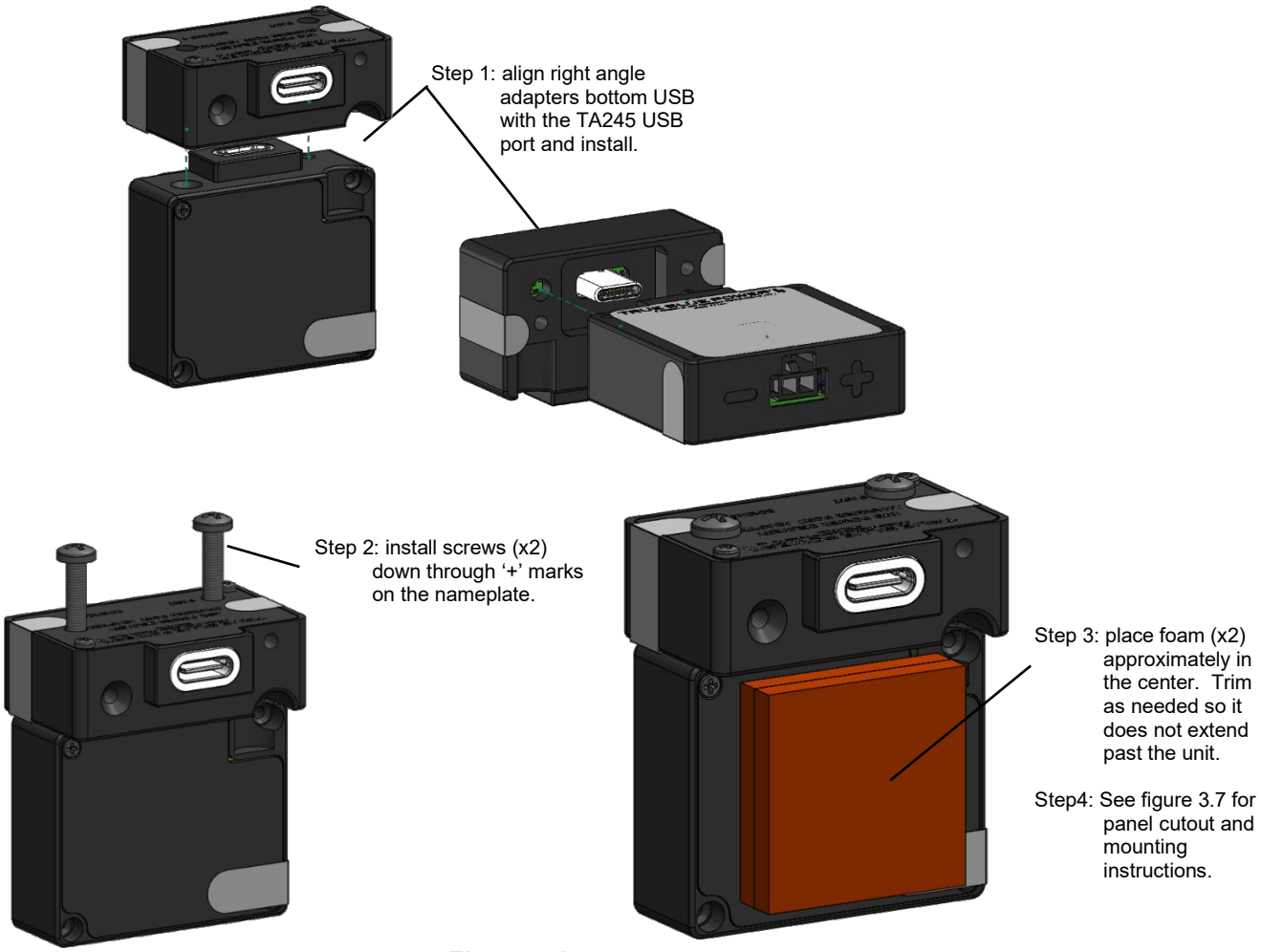


Figure 3.13
Right Angle Adapter Installation

SECTION 4 OPERATION

4.1 ELECTRICAL PERFORMANCE

The TA245 Series USB Charging Port converts a DC input voltage within the specified range to various output voltages, depending on the port type and device being charged. Type-A ports supply 5V by default, or use the QC3.0 protocol to provide 3.6V-12V with a maximum current of 3A, or 36W at 12V. Type-C ports use USB PD or PPS to provide fixed or variable voltages between 3.3V-20V, with a maximum current of 3A, and a maximum power of 45W. Type-C current is limited to 2.25A at 20V output to stay within the rated operating power. Both ports will communicate to the user device to identify its capability and respond with the charger's maximum allowable power that the device can receive - to provide the fastest charge rate possible.

4.2 SMART HALO STATUS INDICATOR

4.2.1 Setup

The TA245 units come with the integrated True Blue Power Smart Halo that provides convenient lighting for identifying the port location in low light and communicates the unit's operating status. The lighting of the Smart Halo can be set to variable brightness, from Low, Medium, High, or Off. All units ship with the brightness level set to Medium as the default factory setting.

The brightness level is user-configurable and must be setup prior to, or during, installation. Each port, including both ports for dual units, must be configured individually. To select your preferred light level, you will need a small screwdriver and access to the front of the unit. The adjustment button is inside the chamfered hole on the front of the unit, per Figure 3.2. With power applied to the unit, press the button lightly with a slight click to cycle through each of the four pre-programmed brightness options: low, medium, high, off; in that order.

When completing installation, the adjustment access hole will be used for mounting the unit. For some of the installation options, the screw may still be accessible and can be removed and the brightness changed at any time without removing the unit from panel.

4.2.2 Color Descriptions

The Smart Halo status indicator can display Blue, Green or Yellow.

- **Blue:** The unit is on and ready to charge
  (or the phone is fully charged and will be maintained at 100%)
- **Green:** The unit is charging (current is greater than 200mA)
- **Yellow:** The unit is in a faulted state. If the fault clears, the yellow light will go away after about 2 seconds.

4.2.3 General Fault Behavior

The Smart Halo will turn yellow when a fault is detected, and it will stay yellow for as long as the fault condition persists. Once the fault condition clears, the LED will stay yellow for an additional 2 seconds before returning to normal behavior.

If a fault is encountered, try one of two options for clearing the fault. First, unplug the charging cable from the charger, wait to see if the fault clears, and replug it. If the fault persists, turn off power to the TA245, wait 5 seconds or more, and turn it back on. If the fault still persists, see section 5.1.

All faults are indicated by the same yellow light. Any one (or more) of seven different built-in protections could trigger a fault. The built-in protections are input overvoltage, input undervoltage, over-temperature, over-current, output overvoltage, output undervoltage, and short circuit. See the next section for further descriptions.

4.3 PROTECTIVE FEATURES

4.3.1 Over-Current Protection

The TA245 monitors power individually on each port. During an over-current condition, the output power is disabled and the Smart Halo will be yellow for at least two seconds. If the device that caused the failure is still plugged in, the TA245 will immediately try to re-establish connection. The fault will remain until the condition clears.

4.3.2 Short Circuit Protection

The TA245 will survive a short circuit event without permanent damage. The unit disables output power as it would for over-current protection. It will then try to re-establish connection for a maximum of ten times. If the short circuit conditions persist after ten retries, the system will stay in a fault condition until power cycled.

4.3.3 Low/High Input Voltage Shutdown

If the input voltage applied to the TA245 drops below 9.6 VDC the unit will shut down until the applied voltage returns to 9.65 VDC or higher.

If the input voltage applied to the TA245 moves above 34.4 VDC the unit will shut down until the applied voltage returns to 33.5 VDC or lower.

Note, if the voltage falls below 7.4 VDC or rises above 34.7 VDC, the Smart Halo will shut off completely as the input protection circuit prevents any power from getting into the board. Under/overvoltage conditions between 7.4V-9.6VDC and 34.4-34.7VDC will still not charge devices, but will display the yellow light on the Smart Halo.

4.3.4 Over-Temperature

When the internal temperature of the TA245 exceeds design thresholds, the unit will shut down and stop providing power. When the temperature returns to an acceptable level the unit will automatically begin providing power as requested. If this happens continuously, consider adding some ventilation or metal to the installation to aid in heat dissipation.

4.3.5 Reverse Polarity

The TA245 will protect itself against being installed with the input power wires reversed.

SECTION 5 CONFORMANCE

5.1 INSTRUCTIONS FOR CONTINUED AIRWORTHINESS

No periodic scheduled maintenance or calibration is necessary for continued airworthiness of the TA245 Series USB Charging Port. If the unit fails to perform to specifications, the unit must be removed and serviced by Mid-Continent Instruments and Avionics or their authorized designee.

5.2 ENVIRONMENTAL QUALIFICATION FORM

MODEL NUMBER: TA245 Series **PART NUMBER:** 6430245-( )
DESCRIPTION: USB Charging Port **CERTIFICATION:** FAA TSO-C71
MANUFACTURER: True Blue Power, a division of Mid-Continent Instrument Co., Inc.
ADDRESS: 9400 E. 34th St. North, Wichita, KS 67226, USA.
SPECIFICATION: Test Specification (TS) 845 Test Data Sheet (TDS) 845
STANDARD: RTCA DO-160, Rev G, dated 12/08/10

CONDITIONS	SECTION	DESCRIPTION OF TEST
Temperature and Altitude	4	Category F1
Temperature Variation	5	Category S2
Humidity	6	Category B
Operational Shock and Crash Safety	7	Category B(5R)
Vibration	8	Category R; Curves C, C1
Explosion	9	Category X
Waterproofness	10	Category W
Fluids	11	Category X
Sand and Dust	12	Category X
Fungus	13	Category F
Salt Spray	14	Category X
Magnetic Effect	15	Category Z
Power Input	16	Category B(XX)
Voltage Spike	17	Category B
Audio Frequency Conducted Susceptibility	18	Category Z
Induced Signal Susceptibility	19	Category X
Radio Frequency Susceptibility	20	Category X
Emission of Radio Frequency Energy	21	Category M
Lightning Induced Transient Susceptibility	22	Category X
Lightning Direct Effects	23	Category X
Icing	24	Category X
ESD	25	Category A
Fire, Flammability	26	Category C

REMARKS:
Section 13 Fungus: By analysis
Section 26 Fire, Flammability: By analysis