
Xantrex AC to DC Converter Installation Instructions

XADC

975-0301-01-01 Revision E

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About These Installation Instructions

Purpose

The purpose of these Installation Instructions is to provide explanations and procedures for installing the Xantrex AC to DC Converter (XADC).

The Installation Instructions provide safety guidelines and procedures for installing the XADC.

Audience

These Installation Instructions are intended for qualified installers, who need to be certified technicians or electricians.

Conventions Used

The following conventions are used in this guide.



WARNING

Warnings identify conditions or practices that could result in personal injury or loss of life.



CAUTION

Cautions identify conditions or practices that could result in damage to the unit or to other equipment.

Important: These notes describe an important action item or an item that you must pay attention to.

This Guide contains information for three versions of the Xantrex AC to DC Converter.

The 40 Amp Xantrex AC to DC Converter will be referred to as the XADC-40 when it is being referenced individually.

The 60 Amp Xantrex AC to DC Converter will be referred to as the XADC-60 when it is being referenced individually.

The 80 Amp Xantrex AC to DC Converter will be referred to as the XADC-80 when it is being referenced individually.

When the Xantrex XADC-40, XADC-60 and XADC-80 are being referenced together, they will be referred to as the XADC.

Important Safety Instructions

**WARNING: Limitations on Use**

The Xantrex AC to DC Converter is not intended for use in connection with life support systems or other medical equipment or devices.

**WARNING**

This section contains important safety and operating instructions. Read and keep these Installation Instructions for future reference.

1. Before installing and using the XADC, read all instructions and cautionary markings on the XADC, the batteries, and all appropriate sections of this guide.
2. Do not expose the XADC to rain, snow, spray, or water. To reduce risk of fire hazard, do not cover or obstruct the ventilation openings. Do not install the XADC in a zero-clearance compartment. Overheating may result.
3. To avoid a risk of fire and electric shock, make sure that existing wiring is in good condition and that wire is not undersized. Do not operate the XADC with damaged or substandard wiring.
4. Do not operate the XADC if it has received a sharp blow, been dropped, or otherwise damaged in any way. If the XADC is damaged, see the Warranty section.
5. Do not disassemble the XADC. It contains no user-serviceable parts and attempting to service the XADC will void your warranty. See Warranty for instructions on obtaining service. Attempting to service the XADC yourself may result in a risk of electrical shock or fire as the XADC remains charged after all power is disconnected.
6. To reduce the risk of electrical shock, disconnect both AC and DC power from the XADC before attempting any maintenance or cleaning or working on any circuits connected to the XADC.
7. Never place the charger directly above or below the battery being charged: gases or fluids from the battery will corrode and damage the charger. Locate the charger as far away from the battery as the DC cables permit

Explosive Gas Precautions



WARNING: Explosion hazard

1. Working in the vicinity of batteries may be dangerous. Batteries generate explosive gases during normal operation, therefore, you must read this guide and follow the instructions exactly before installing or using your XADC.
 2. This equipment contains components which tend to produce arcs or sparks. To prevent fire or explosion, do not install the XADC in compartments containing batteries or flammable materials, or in locations that require ignition-protected equipment. This includes any space containing gasoline-powered machinery, fuel tanks, as well as joints, fittings, or other connections between components of a fuel system.
-

Precautions When Working With Batteries



WARNING: Explosion or fire hazard

3. Make sure the area around the battery is well ventilated.
4. Never smoke or allow a spark or flame near the engine or batteries.
5. Use caution to reduce the risk of dropping a metal tool on the battery. It could spark or short circuit the battery or other electrical parts and could cause an explosion.
6. Remove all metal items, like rings, bracelets, and watches when working with lead-acid batteries. Lead-acid batteries produce a short circuit current high enough to weld metal to skin, causing a severe burn.
7. Have someone within range of your voice or close enough to come to your aid when you work near a lead-acid battery.
8. Have plenty of fresh water and soap nearby in case battery acid contacts skin, clothing, or eyes.
9. Wear complete eye protection and clothing protection. Avoid touching your eyes while working near batteries.
10. If battery acid contacts skin or clothing, wash immediately with soap and water. If acid enters your eye, immediately flood it with running cold water for at least twenty minutes and get medical attention immediately.
11. If you need to remove a battery, always remove the ground terminal from the battery first. Make sure all accessories are off so you don't cause a spark.

12. Use the XADC for charging a lead-acid battery only. Do not use the XADC to charge nickel-cadmium or dry-cell batteries commonly used with home appliances and electronic equipment. These batteries may burst and cause injury to persons and damage to property.
13. Never attempt to charge a frozen battery. Charging a battery when its temperature is below 32 °F (0 °C) is inefficient and ineffective. If possible, warm the battery above 32 °F (0 °C) before charging.

FCC Information to the User

This equipment has been tested and found to comply with the limits for a Class B 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 residential environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction guide, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment on and off, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and the receiver
- Connect the equipment into an outlet on a circuit different from that which the receiver is connected
- Consult the dealer where the XADC was purchased or an experienced radio/TV technician for help

Installation

Main Components

Figure 1 and Figure 2 show the main components of the XADC.

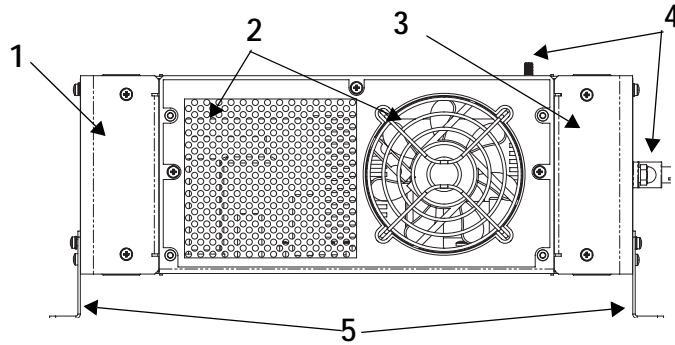


Figure 1 XADC External Components

Item	Description
1	AC wiring compartment
2	Intake and outflow vents (do not obstruct)
3	DC wiring compartment
4	Ground connection (2 possible connection locations)
5	Mounting flanges

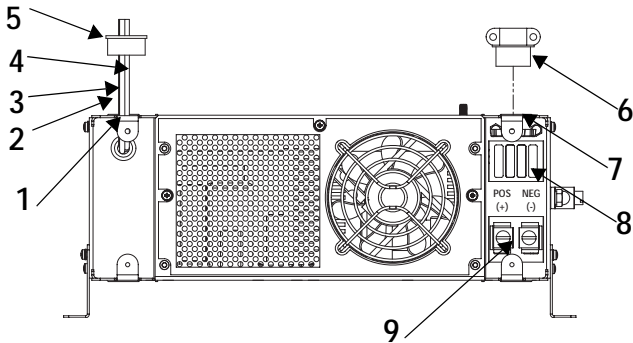


Figure 2 XADC Internal Components

Item	Description
1	AC wiring compartment hole
2	Black AC line cable
3	White AC neutral cable
4	Green AC ground cable
5	Grommet (supplied)
6	Strain relief (not supplied)
7	DC wiring compartment hole ½ in. - 3/8 in. trade size (with ¾ in. knockout)
8	DC fuses
9	DC positive (+) and negative (-) connection lugs

AC/DC Distribution Panel

The XADC may be pre-installed with an AC/DC Distribution Panel. The panel is available in two configurations which provides the approved wiring boxes for AC and DC connections:

30A (Part Number: 810-0030-00 XADC P30) – eight output breakers

50A (Part Number: 810-0050-00 XADC P50) – 10 output breakers

In each configuration there are also 11 unassigned DC fuses and four reserved fuses for the battery connections.

Figure 3 and Figure 5 show the main components of the XADC with AC/DC Distribution Panel.

Important: The XADC P30 and XADC P50 panels are not intended for use with rigid conduit systems.

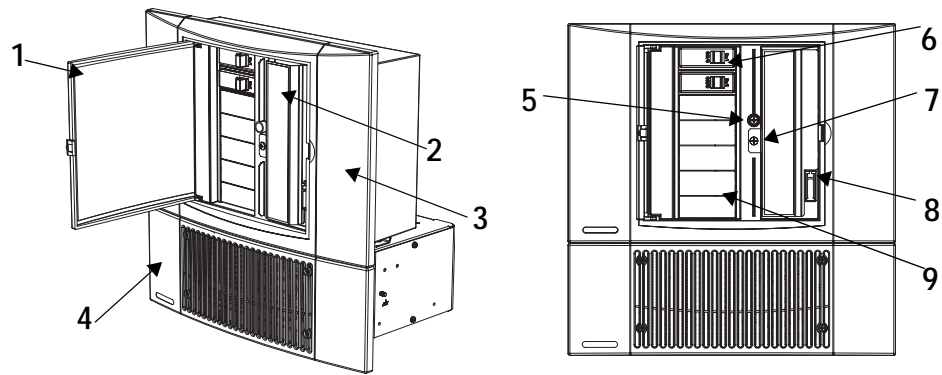


Figure 3 AC/DC Distribution Panel Components

Item	Description
1	DC fuse/AC breaker access panel (swings open with thumb latch)
2	Removable DC fuse access panel with DC circuit designation label.
3	Removable AC/DC Distribution Panel faceplate (service technician only)
4	Removable faceplate for XADC converter (service technician only)
5	Screw for removing panel faceplate (service technician only)
6	AC breakers (not included)
7	Screw for removing DC fuse access panel
8	Fuse puller
9	AC breaker knockouts

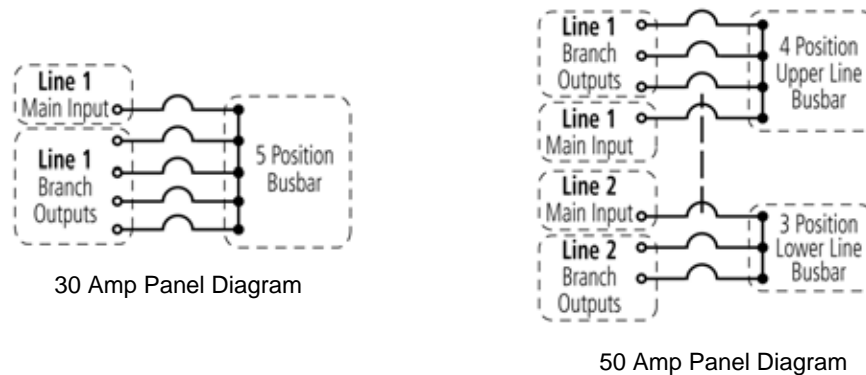


Figure 4 30A and 50A Panel Connection Diagrams

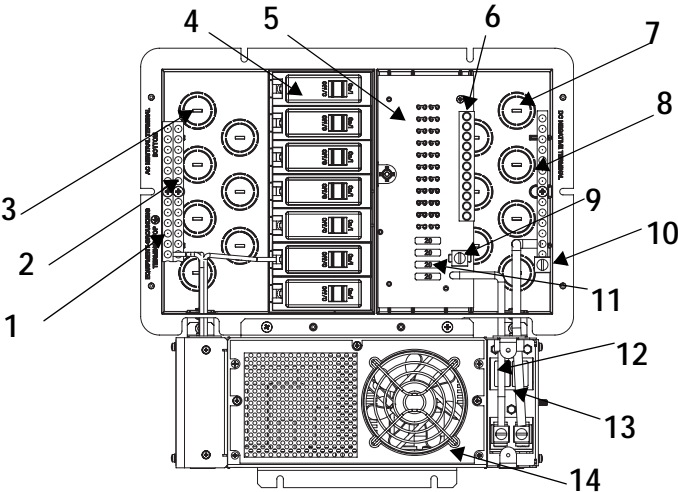


Figure 5 AC/DC Distribution Panel and XADC Internal Components

Item	Description
1	Equipment Grounding Terminal bus (front)
2	AC Neutral Terminal bus (rear)
3	AC wiring knockouts (½ in. - 3/8 in. trade size - and ¾ in. nested) (7 positions)
4	AC breakers (not included) (50 A panel shown fully populated)
5	DC branch circuit fuses (not included) maximum 20 amps per branch
6	DC positive terminal strip (11 positions)
7	DC wiring knockouts (½ in. - 3/8 in. trade size - and ¾ in. nested) (7 positions)
8	DC negative bus
9	DC positive lug (battery)
10	DC negative lug (battery)
11	DC battery fuses (bottom four locations - not included).
12	DC positive cable (to XADC positive (+))
13	DC negative cable (to XADC negative (-))
14	Mounting flange

Installation Codes

Governing installation codes vary depending on the specific location and application of the installation. It is the installer's responsibility to ensure that all applicable installation requirements are met. Some examples include the following:

- The U.S. National Electrical Code (NEC)
- The Canadian Electrical Code (CEC)
- The U.S. Code of Federal Regulations (CFRs)
- Canadian Standards Association (CSA) and the RV Industry Association (RVIA) for installations in RVs

Installation Tools and Materials

You will need the following items to install the XADC and panel:

- #2 Phillips screwdriver for removal of AC and DC wiring compartment panels
- Torque screwdriver (20 – 50 in-lb range) with flat head socket insert (optional robertson for AC and DC bus bars)
- Pliers for strain relief installation
- 4 × #6 or #8 pan head, round head or washer head screws suitable for mounting the standalone XADC unit onto particleboard or wood and the equivalent screwdriver, or 6 × #6 or #8 pan head, round head or washer head screws suitable for mounting the attached XADC and AC/DC Distribution Panel installation and the equivalent screwdriver
- All strain reliefs must be UL/CSA approved ½ in. or ¾ in. trade size strain relief:
 - One strain relief for DC wires for standalone XADC
 - Four strain reliefs for separated mounting
 - Up to 14 additional strain reliefs as required for full AC and DC circuit population (dependent on wire sizing)
- Four DC battery fuses and up to 11 additional DC load fuses
- One breaker for installing the XADC, one AC breaker for installing the panel and up to six additional AC load breakers.

The following items are shipped with the XADC.

- XADC converter
- Xantrex AC to DC Converter Owner's Manual (Part #: 975-0305-01-01)
- Xantrex AC to DC Converter Installation Instructions (Part #: 975-0301-01-01)

The following items are shipped with the AC/DC Distribution Panel.

- AC/DC Distribution Panel
- AC/DC Distribution Panel Safety Instructions sheet

- XADC converter faceplate and mounting hardware
- Plastic bag containing two mounting tabs and related hardware, one top mounting flange and related hardware

Choosing a Location

The XADC and AC/DC Distribution Panel must only be installed in a location that is:

Dry	Do not allow water or other liquids to drop or splash on the XADC.
Cool	While the unit will safely operate at ambient air temperatures between 14 °F and 86 °F (-10 °C and 30 °C) and will operate de-rated between 86 °F and 140°F (30 °C and 60 °C) — the cooler the better within this range. At ambients in excess of 140°F (60°C) the XADC may shut down.
Ventilated	Allow at least 18 inches (45.7 cm) of clearance at the front of the XADC for air flow. Ensure that the ventilation openings are not obstructed.
Safe	Do not install the XADC or panel in the same compartment as batteries or in any compartment capable of storing flammable liquids like gasoline.
Protected from battery gases	Do not mount the XADC or panel where it will be exposed to gases produced by batteries. Battery gases are corrosive, and prolonged exposure to battery gases will damage them.

The XADC may be mounted in 3 orientations:

- horizontally on a flat surface
- vertically on a wall with fan vent facing left
- vertically on a wall with fan vent facing right

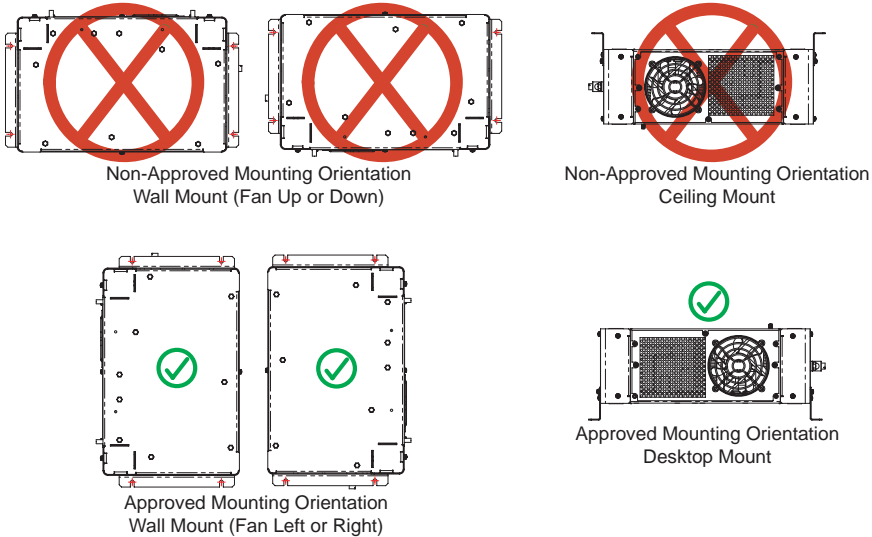


Figure 6 Installation Configurations

Installing the XADC (stand-alone unit)

Follow the procedures in the order given:

1. “Preparing to Install”
2. “Preparing the Mounting Location for the XADC”
3. “Connecting the DC Battery”
4. “Connecting the AC Input”
5. “Mounting the XADC”

Preparing to Install

To prepare the XADC for installation:

1. Plan your wire routing to and from the AC input breaker and the DC battery using the wire lengths recommended in Table 2 on page 24.
2. Attach the two mounting flanges to the XADC. Tighten until the lock washer is flat plus $\frac{1}{4}$ turn.

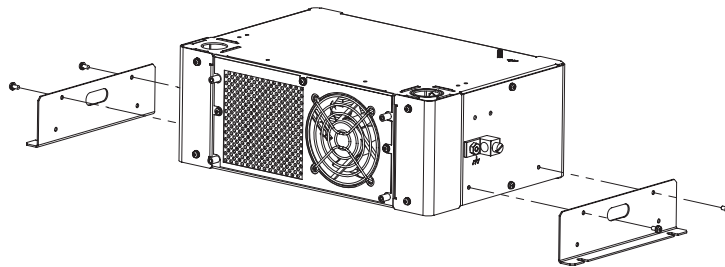


Figure 7 Mounting Flanges

3. Remove the AC and DC wiring compartment panels by unscrewing the two screws in each of the panels (see Figure 8).

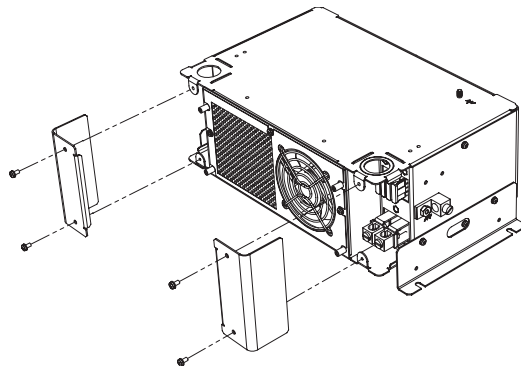


Figure 8 AC and DC Wiring Compartment Removal

Preparing the Mounting Location for the XADC

To prepare the XADC mounting location:

1. Place the XADC into the intended mounting position and hold it against the mounting surface.
2. Mark the positions of the four side flange mounting screws, and then remove the XADC.
3. Drill pilot holes for the mounting screws in the marked positions.

Connecting the DC Battery

When following the procedure, see Table 2 on page 24 for wire lengths and Table 1 on page 24 for torque values.



WARNING: Shock hazard

Ensure that the DC battery is physically disconnected, or that the DC disconnect or breaker is open before attempting any installation.

Important: Ensure that a main battery fuse is installed within 18 in. (450 mm) of the battery of a rating corresponding to the battery wire size/gauge used.

Important: Ensure that a suitable rated disconnect switch is installed between the main battery fuse and the battery.

To connect the DC:

1. Loosen the positive and negative screws on the DC connection lugs (see Figure 9).
2. If you plan to use the 3/4 in. knockout for the DC wiring, remove the outer knockout.
3. Install a UL/CSA approved strain relief on the incoming DC cables. Tighten the clamping ring (but not the clamp screws) on the strain relief.
4. Route the incoming cables through the DC wiring compartment knockout in the top of the XADC.
5. Remove 1/2 in. (12 mm) of insulation from the ends of the incoming cables.
6. Make the DC ground connections to either of the ground lugs shown in Figure 9.
7. Slide the incoming negative (-) black cable into the XADC negative DC connection lug. Tighten the DC negative screw.
8. Slide the incoming positive (+) red cable into the XADC positive DC connection lug. Tighten the DC positive screw.
9. Tighten the clamp screws on the strain relief to secure the DC wires.
10. Reattach the DC wiring compartment panel.
11. Reconnect vehicle battery connections.

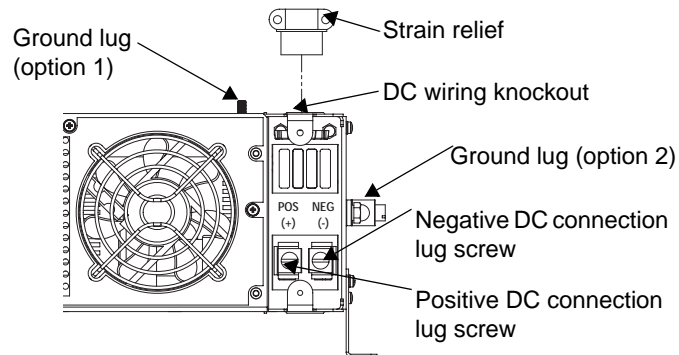


Figure 9 XADC DC Connections

Connecting the AC Input

When following the procedure, see Table 1 on page 24 for torque values.



WARNING: Shock hazard

Ensure that the AC disconnect or breaker is open on the AC line before attempting any installation.

To connect the AC input:

1. Route AC wires through the AC wiring compartment hole.
2. If you plan to use the 3/4 in. knockout for the AC wiring, remove the outer knockout.
3. Connect the XADC ground (green cable) to the incoming ground. It is recommended that you use marrettes for this as they have built in insulation.
4. Connect the XADC AC neutral (white cable) to the incoming neutral. It is recommended that you use marrettes for this as they have built in insulation.
5. Connect the XADC AC line (black cable) to the incoming line. It is recommended that you use marrettes for this as they have built in insulation.
6. Reattach the AC wiring compartment panel.
7. Reconnect the AC by closing or engaging the main AC disconnect breaker.

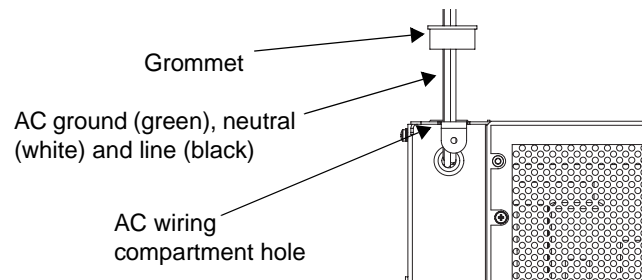


Figure 10 XADC AC Connections

Mounting the XADC

To mount the XADC using the mounting plates:

1. Align the XADC with the 4 previously marked mounting positions.
2. Fasten the XADC using $4 \times \#6$ or $\#8$ pan head, round head or washer head screws suitable for mounting unit onto particleboard or wood. Tighten until the unit is secure to the mounting surface.

Installing XADC with the AC/DC Distribution Panel

Follow this procedure if you are planning to install the XADC with the optional AC/DC Distribution Panel (called panel for the purposes of these instructions).

Follow the procedures in the order given:

1. “Preparing to Install”
2. “Connecting the XADC and Panel Together”
3. “Preparing the Mounting Location for the XADC and Panel”
4. “Connecting the DC to the Panel”
5. “Connecting the Panel to the XADC DC Side”
6. “Connecting the Panel to the XADC AC Side”
7. “Connecting the AC to the Panel”
8. “Mounting the XADC and Panel Remotely”
9. “Mounting the XADC and Panel when Connected”

Configurations

The XADC and panel may either be connected together and mounted in a single mounting hole, or they may be mounted in separate mounting positions.

Important: If you intend to mount the XADC and panel remotely, remember that twice the distance between the XADC and the panel is to be calculated as part of the DC cable run length as recommended in Table 2 on page 24.

Preparing to Install

To prepare the panel for installation:

1. Open the door on the panel and remove the center screw.
2. Remove the panel faceplate.
3. Remove the correct number of AC and DC knockouts for your installation from the back of the panel.

4. AC breaker positions 1 and 2 have been removed from the removable faceplate on the panel. Remove extra positions from the panel by twisting the knockouts back and forth. Any knockouts that have been accidentally removed can be replaced with one of the following parts: ITE Gould QF-3 or Cutler Hammer/Bryant/Westinghouse FB-1B.
5. If you intend to mount the XADC and panel remotely, install a UL/CSA approved strain relief on both of the bottom AC and DC wiring compartment holes.
6. If you intend to mount the XADC and panel remotely, you may need to increase the length and gauge of the DC cables from the panel to the XADC (see “Configurations” on page 15).

To prepare the XADC for remote installation:

Make the following changes to the XADC if you intend to mount the XADC and panel remotely.

1. Remove the plastic wire protection grommets from the AC and DC wiring compartment holes.
2. Install a UL/CSA approved strain relief on both the AC and DC wiring compartment holes.
3. You may need to increase the length of the AC cables from the XADC to the panel (use a minimum of 14 AWG wire for any such extensions).

To prepare the XADC for connected installation:

See Figure 11 for additional information.

Make the following changes to the XADC if you intend to connect the XADC and panel and mount them in a single mounting hole (12 in. × 12 1/8 in. – 30.5 cm × 30.7 cm).

1. Remove the four screws from the XADC faceplate and remove the faceplate.
2. Remove the two side mounting flanges and keep them for re-use.
3. Take one of the mounting flanges from the mounting hardware bag in the panel shipping box (see Figure 11) and screw it to the top of the XADC. The mounting flange screw holes will line up with the corresponding pilot holes in the XADC.

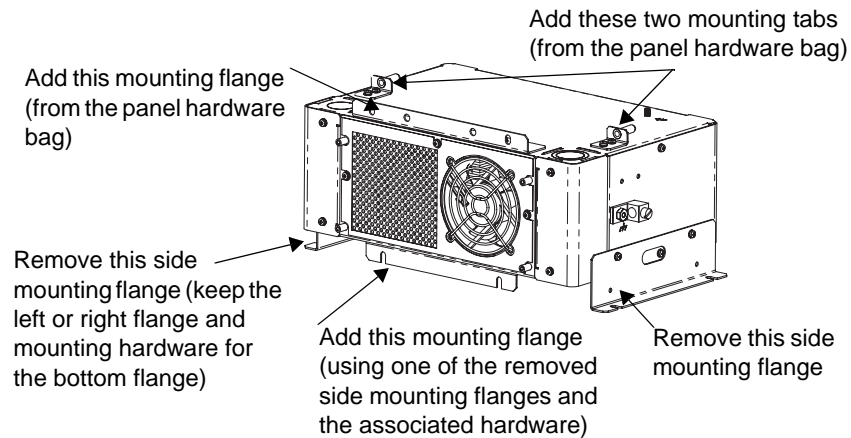


Figure 11 Mounting Flanges for Installation

4. Take one of the side mounting flanges that you removed in step 2 above, and screw it to the bottom of the XADC.
The mounting flange screw holes will align with the two pilot holes in the XADC.
5. Take the two small mounting tabs (with pilot pin attached) from the mounting hardware bag in the panel shipping box and screw them to the top of the XADC, behind the AC and DC wiring compartment holes, see Figure 11.

Connecting the XADC and Panel Together

To connect the XADC and panel together:

1. Slide the XADC under the panel until the pilot pins on the mounting tabs on the top of the XADC slide in to the corresponding holes on the mounting clips on the bottom of the panel, see Figure 12.
2. Using the hardware provided in the panel hardware bag, screw the panel to the XADC using the holes on the panel that have lined up with the holes on the top of the XADC mounting flange.

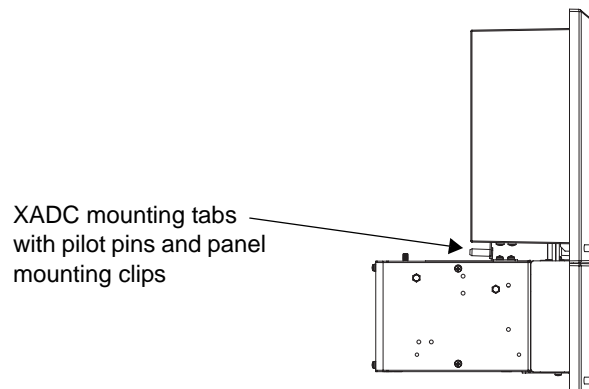


Figure 12 Connecting the XADC and Panel

Preparing the Mounting Location for the XADC and Panel

To prepare the XADC and panel mounting location:

1. Cut a mounting hole (12 in. × 12 1/8 in. – 305 mm × 307 mm) for the connected XADC and panel, **or** follow the instructions in “Preparing the Mounting Location for the XADC” on page 13 for the XADC and cut a mounting hole (12 in. × 8 in. – 305 mm × 203 mm) for the panel, **or** use an existing hole from a previous converter installation.
2. Place the XADC and panel into the mounting hole and hold them against the mounting surface.
3. Mark the positions of the mounting screws, and then remove the XADC and panel from the mounting hole.

Connection Types for AC and DC

Both the AC and DC busses use a screw-in lug type of connection.

To perform connections with the screw-in type lug:

1. Ensure the screw is loosened.
2. Slide the cable into the hole behind the screw.
3. Tighten the screw (see Table 1 on page 24 for torque values).

Connecting the DC to the Panel

See “Connection Types for AC and DC” on page 18 for information on the connections used on the busses.

When following the procedure, see Table 2 on page 24 for wire lengths and battery DC fuse ratings and Table 1 on page 24 for torque values.



WARNING: Shock hazard

Ensure that the DC battery is physically disconnected, or that the DC disconnect or breaker is open before attempting any installation.

To connect the DC loads:

See Figure 14 for additional information.

1. Install a UL/CSA approved strain relief on the incoming negative (-) black cables and incoming positive (+) red cables. Tighten the clamping ring (but not the clamp screws) on the strain relief.

Important: Multiple cables can be placed into a strain relief. Check the strain relief manufacturer’s datasheet for maximum number of cables allowed.

2. Route the incoming negative (-) black cables and incoming positive (+) red cables through the knockouts in the back of the panel.

3. Connect the incoming negative (-) black cable from each of the loads to the negative DC bus.
4. Connect the incoming positive (+) red cable from each of the loads to the positive DC bus.
5. Install fuses for the DC loads and the DC battery. The bottom four DC fuses are for the battery. Fuses for DC loads should be Littelfuse Type 257 or equivalent and the maximum allowed fuse for the DC loads is 20 A.

Important: You may remove the PCB with the positive DC bus and fuse holders (by removing the three screws) for ease of connection. Keep the screws for reconnecting the PCB. See Figure 13.

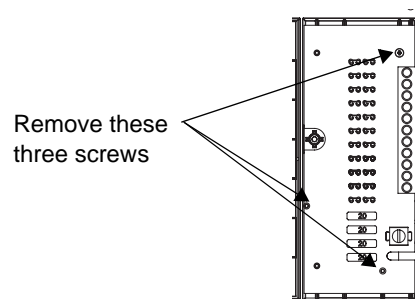


Figure 13 DC PCB Removal

6. Connect the incoming negative (-) black cable from the battery to the negative DC battery lug.
7. Connect the incoming positive (+) red cable from the battery to the positive DC battery lug.
8. Tighten the clamp screws on the strain relief to secure the DC wires.

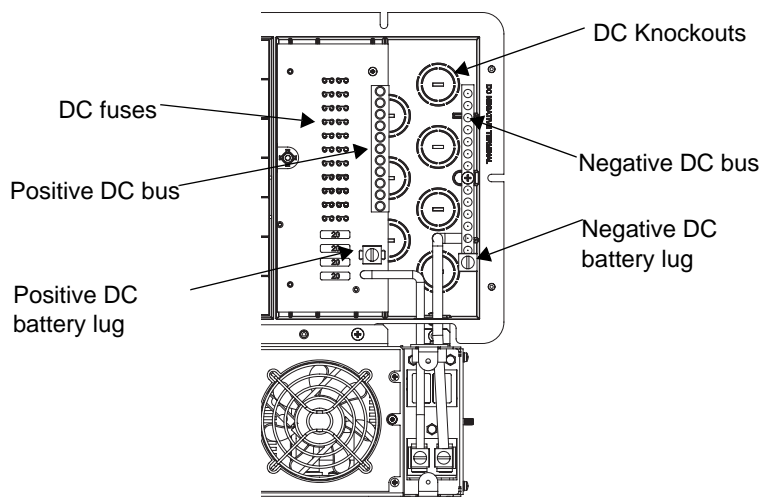


Figure 14 Connecting DC to the Panel

Connecting the Panel to the XADC DC Side

When following the procedure, see Table 2 on page 24 for wire lengths and Table 1 on page 24 for torque values.

To connect the panel to the XADC DC side:

1. Remove the DC wiring compartment panel on the XADC (see Figure 8).
2. Loosen the positive and negative screws on the DC connection lugs (see Figure 15).
3. Route the large positive (+) red cable and negative (-) black cable from the panel through the DC wiring compartment hole to the XADC.
4. Make the DC ground connections to the ground lug on the right hand side or the top of the XADC, see Figure 10.
5. Slide the negative (-) black cable into the XADC negative DC connection lug and tighten the DC negative screw.
6. Slide the positive (+) red cable into the XADC positive DC connection lug and tighten the DC positive screw.

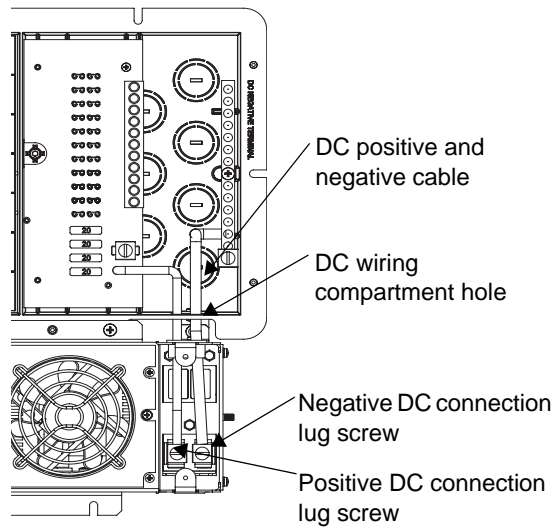


Figure 15 Connecting Panel to XADC DC Side

Connecting the Panel to the XADC AC Side

When following the procedure, see Table 2 on page 24 for wire lengths and Table 1 on page 24 for torque values. See Figure 4 on page 8 for panel electrical connection diagrams. Refer to local electrical codes for wire gauge sizes.

To connect the panel to the XADC AC side:

1. Remove the AC wiring compartment panel on the XADC (see Figure 8).
2. Route the all AC cables from the XADC, through the AC wiring compartment hole in the top of the XADC. Ensure factory-installed grommet is still present.
3. Connect the AC ground (green) cable from the XADC to the front AC bus on the panel, marked “Equipment Grounding Terminal”.
4. Connect the neutral (white) cable from the XADC to the rear AC bus on the panel, marked “AC Neutral Terminal”.
5. Connect the AC line black cable from the XADC to the any breaker on the panel that is not reserved for the AC main line. Tighten as per the manufacturer’s recommended torque rating (usually located on the side of breakers).

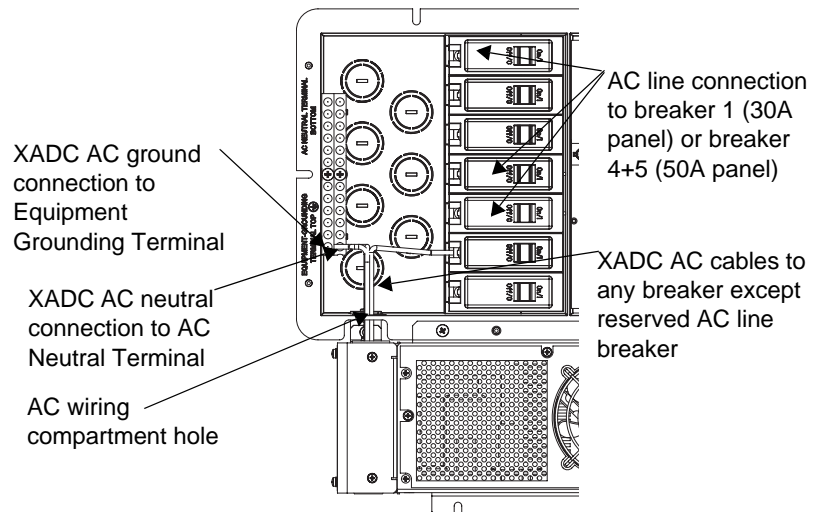


Figure 16 Connecting Panel to XADC AC Side

Connecting the AC to the Panel

See “Connection Types for AC and DC” on page 18 if you are not familiar with the connections used on the breakers.

When following the procedure, see Table 2 on page 24 for wire lengths and Table 1 on page 24 for torque values.

See Figure 4 on page 8 for panel electrical connection diagrams.



WARNING: Shock hazard

Ensure that the AC disconnect or breaker is open on the AC line before attempting any installation.

To connect the AC input:

1. Install a UL/CSA approved strain relief on the AC input cables.
 2. Route the AC input cables through the knockouts in the back of the panel.
 3. Install breaker(s) for your AC input source. See the documentation for your breaker to determine how it installs.
-



CAUTION

Breakers can be damaged if forced onto the AC “stab-lok” bus bar. Breakers should slide easily into position without excess force.

Important: The following breakers are suitable for each circuit:

MAIN: Cutler Hammer/Bryant/Westinghouse Type BR Series and ITE Gould QP Series. The maximum current rating for the main breaker is not to exceed the rating of the panelboard.

BRANCH: Cutler Hammer/Bryant/Westinghouse Type BR, BD Series and ITE Gould QP, QT Series. The maximum current rating for the branch breaker is not to exceed 20A.

WIRE GAUGE: In order to remain within the manufacturer’s specifications for the above breakers, the gauge of wire used must be selected based on 75°C ratings from your local electrical code. Wiring with temperature ratings higher than 75°C may be used, however, the gauge must align with that of 75°C wire.

4. Connect the AC input ground (bare copper) cable from the AC input source to the front AC bus on the panel, marked “Equipment Grounding Terminal”.
 5. Connect the AC input neutral (white) cable from the AC input source to the rear AC bus on the panel, marked “AC Neutral Terminal”.
 6. Connect the AC line (black cable) to the top breaker (30A panel) or breaker 4+5 (50A panel). See Figure 4 on page 8.
-

Important: Main AC line must go into breaker location 1 (top breaker) for the 30A panel and into breaker location 4 and 5 for the 50A panel, where breakers 4 and 5 must employ a ganging mechanism. Bus bars have a protective tab to prevent non-certified breakers from being installed.

AC Loads

To install the AC loads:

1. Route the AC load cables through the knockouts in the back of the panel.
2. Install breaker(s) for your AC loads. See the documentation for your breaker to determine how it installs.
3. Connect the hot lead (black) from each AC load to a breaker.
4. Connect the neutral lead (white) from each AC load to the rear AC bus on the panel, marked “AC Neutral Terminal”.
5. Connect the ground lead (green or bare) from each AC load to the front AC bus on the panel, marked “Equipment Grounding Terminal”.

Important: Make a note of which AC load has been connected to which breaker using the provided label on the panel to the side of the breakers. Use pencil in case the circuit is changed in the future.

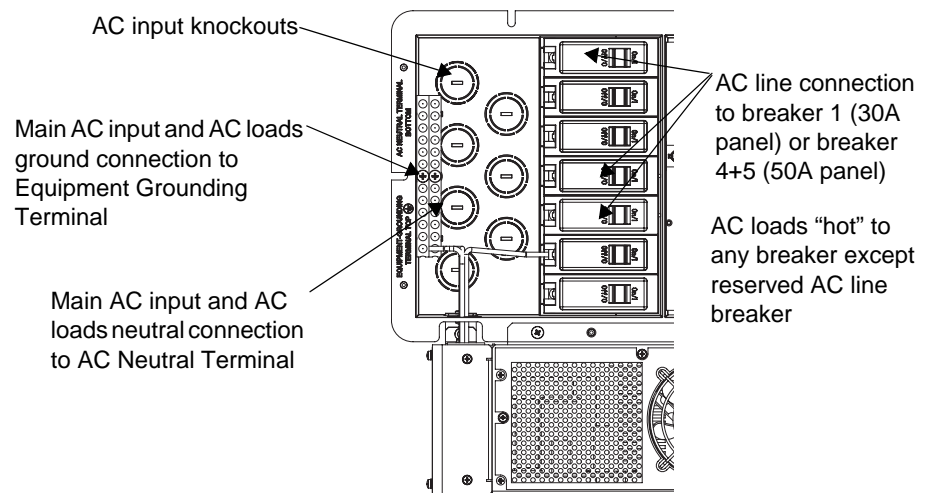


Figure 17 XADC AC Connections

Mounting the XADC and Panel when Connected

To mount the XADC and panel when connected:

1. Slide the complete unit into the mounting cutout.
2. Fasten the complete unit into the cutout and secure using $6 \times \#6$ or $\#8$ pan head, round head or washer head screws suitable for mounting the unit onto particleboard or wood.
3. Install the XADC faceplate and tighten the four screws (do not overtighten as this may cause stripping of the screw threads).
4. Install the DC fuse cover.
5. Install the panel faceplate and tighten the center screw (do not overtighten as this may cause stripping of the screw threads).
6. Close the hinged door.

Mounting the XADC and Panel Remotely

To mount the XADC and panel remotely:

1. Slide the panel into the mounting cutout (12 in. × 8 in. – 305 mm × 203 mm).
2. Fasten the panel to the mounting surface using 6 × #6 or #8 pan head, round head or washer head screws suitable for mounting the panel onto particleboard or wood.
3. Install the panel faceplate and tighten the center screw (do not overtighten as this may cause stripping of the screw threads).
4. Install the DC fuse cover.
5. Follow the instructions in “Mounting the XADC” on page 15 to mount the XADC.

DC Wire Size and Torque Values

Table 1 Torque Requirements

Connection	Torque Value
DC (+) Load Output Terminal	12 in-lbs (12-14 AWG)
DC (+) Battery Terminal Lug	30 in-lbs (2 AWG) 28 in-lbs (4-6 AWG) 25 in-lbs (8 AWG) 25 in-lbs (10-14 AWG)
DC (-) Ground Terminal Lug	30 in-lbs (2 AWG) 28 in-lbs (4-6 AWG) 25 in-lbs (8 AWG) 25 in-lbs (10-14 AWG)
DC (-) Ground Terminal Bus	35 in-lbs (4-6 AWG) 25 in-lbs (8 AWG) 20 in-lbs (10-14 AWG)
Line/Load Terminals	See Circuit Breaker
AC Neutral/Ground Terminal Bus(s)	35 in-lbs (4-6 AWG) 25 in-lbs (8 AWG) 20 in-lbs (10-14 AWG)
Ground Terminal	45 in-lbs (6 AWG) 40 in-lbs (8 AWG) 35 in-lbs (10-14 AWG)

Table 2 DC Wire Size (to battery bank)

Converter model	Recommended minimum DC wire gauge	Recommended maximum 2-way DC cable length ^a
XADC-40	8 AWG	20 ft (610 cm)
XADC-60	6 AWG	20 ft (610 cm)
XADC-80	4 AWG	20 ft (610 cm)

a.Run lengths over 20 ft. (610 cm) are not recommended. Using larger run lengths or smaller gauge wires than recommended will result in decreased charge/load output performance as well as additional heating and interference effects.

Specifications

All specifications are subject to change without notice. Additional specifications are available in the Xantrex AC to DC Converter Owner's Manual (Part #: 975-0305-01-01).

Electrical Performance

AC Input	XADC-40	XADC-60	XADC-80
Input current (at rated output)	6 Aac	9 Aac	12 Aac
Nominal input voltage	120 Vac, 60 Hz		
Frequency	50 – 70 Hz		

DC Output	XADC-40	XADC-60	XADC-80
Recommended maximum battery bank size	220 Ah	220 Ah	400 Ah
Output current	40 Adc	60 Adc	80 Adc

Mechanical Specifications

Physical Specifications	XADC-40	XADC-60	XADC-80
Weight	7.9 lb (3.6 kg)	8.2 lb (3.7 kg)	8.3 lb (3.8 kg)
Operating temperature range	14 °F – 86 °F (-10 °C – 30 °C) de-rated 86 °F – 140°F (30 °C – 60 °C) > 140°F (60 °C) unit may shut down		
Length	11 13/16 in. (300.0 mm)		
Width	7 1/8 in. (180.0 mm)		
Height	4 3/4 in. (120.0 mm)		

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