

## **XLR8-CB-400-1500**

### *User's Manual – Combiner Box*



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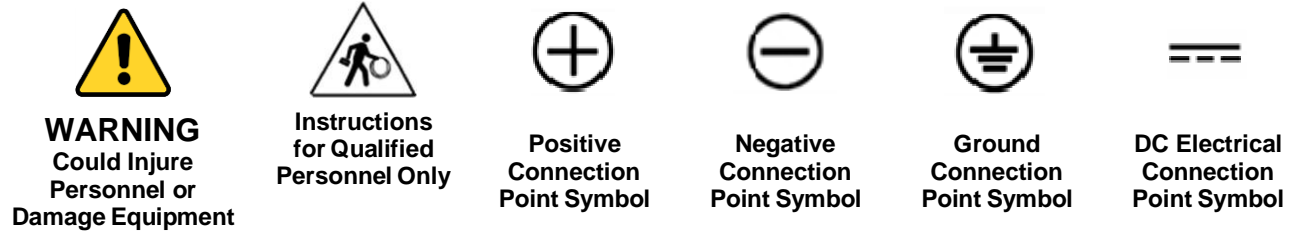
# 1. IMPORTANT SAFETY INSTRUCTIONS

## SAVE THESE INSTRUCTIONS

The XLR8 PV Combiner (XLR8-CB-400-1500) is compatible with and intended for part of a complete Energy Storage System in which is both: properly rated and installed. In addition, the XLR8-CB-400-1500 Combiner family may also be used with any PV array and inverter for which it is suitably rated.

Before using the XLR8-CB-400-1500Combiner, please read all instructions and caution markings in this manual and product and warning label within the XLR8 Combiner product, as well as all other instructions and warnings for associated equipment.

This manual contains important instructions that must be followed during installation and operation of the XLR8-CB-400-1500 Combiner. To reduce the risk of electrical shock and to ensure the safe installation and operation of the Combiner, the following safety symbols are used to indicate dangerous conditions and important safety instructions.



**WARNING:** Electric Shock Hazard. This equipment is to be serviced by trained personnel.

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**WARNING:** Disconnect all PV modules before wiring. PV arrays produce dc voltage when exposed to light and could create a hazardous condition. Always verify the absence of voltage before performing work on the XLR8 1500-400 Combiner.

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**WARNING:** Connecting PV output circuits to the input of the Combiner and making the connection to the DC Re-Combiner, must only be done after receiving approval from the utility company, and should only be performed by qualified persons, following the guidelines found within this manual.

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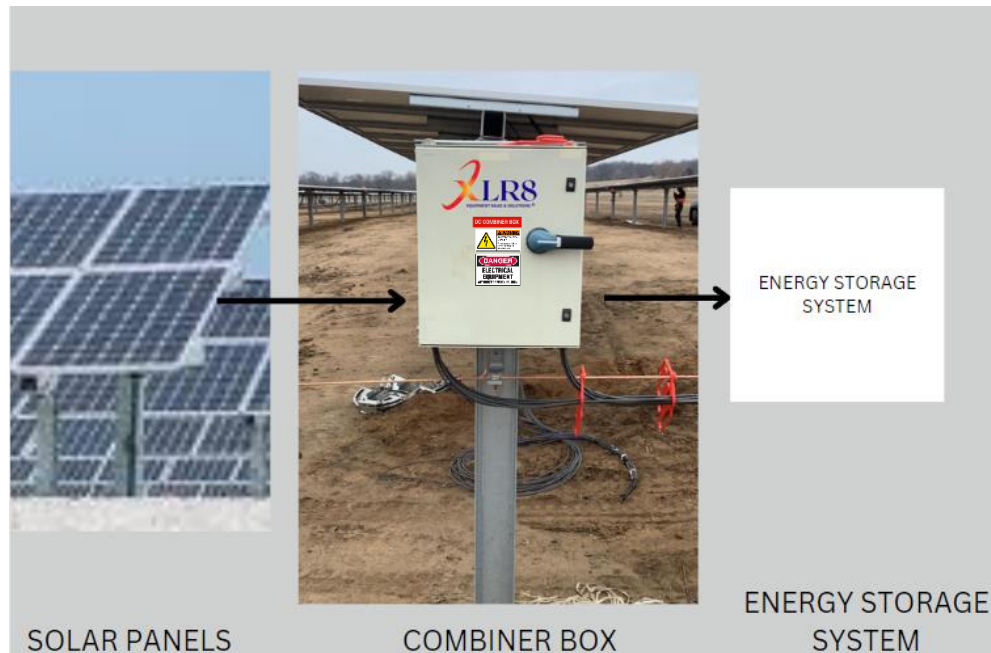


**WARNING:** The XLR8-CB-400-1500 Combiner is intended to be used in any PV array as part of the energy storage system for which it is suitably rated.

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## 2. PRODUCT OVERVIEW

The primary function of the XLR8-CB-400-1500 Combiner is to combine PV Source Circuits from a PV array in parallel, safely, and form a resulting PV Output Circuit for connection to downstream equipment. The XLR8-CB-400-1500 is intended for use as part of an Energy Storage System. Enclosure options available are NEMA 3R, or 4 enclosures in Painted Steel XLR8-CB-400-1500-STL and Non-metallic (Fiberglass) XLR8-CB-400-1500-FRP.



**Figure 2.1**

**Figure 2.1 – Illustrated Example Usage of the CR1500-400 Combiner in an Energy Storage System Application**

The XLR8-CB-400-1500 Combiners (see Fig 2.2) perform the following functions:

**(1) PV Source Circuit Connections:**

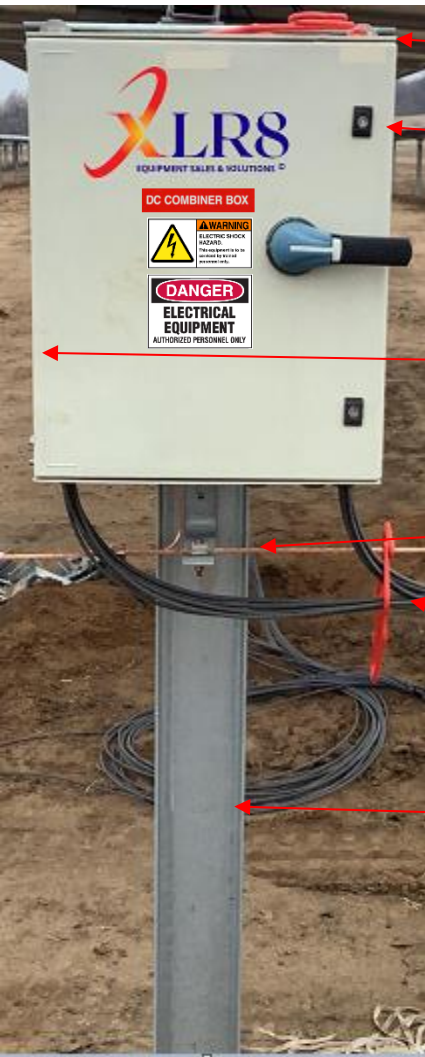
- Touch-safe fuse holders; models offered are 1 – 25 String positive-polarity PV Source Circuit conductors with -STL enclosure
- Overcurrent protection provided by PV Fuses sized accordingly.
- A 36-position bus for termination of the negative-polarity PV Source Circuit conductors with -STL enclosure, with a 25 string configuration.
- Connection from all PV Source Circuit conductors to the internal DC bus

**(2) DC Disconnect Switch:**

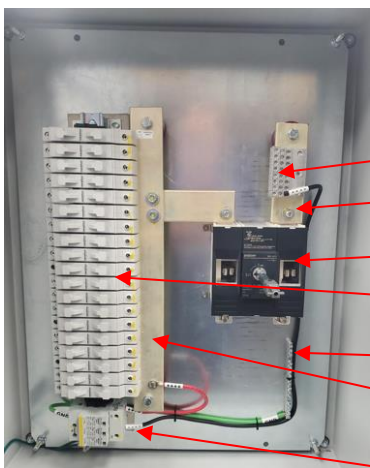
- DC disconnect switch, 400A, two-pole, fully integrated and externally operable; separates the combined PV Source Circuits from the PV Output Circuit terminals and conductors.

**(3) PV Output Circuit Connections:**

- Terminals accommodating single 750kcmil conductors or dual 500kcmil conductors per pole, for the field-installed PV Output Circuit conductors.
- Type II surge protection, factory installed.



- Mounting Tabs, Four Places
- ¼ Turn Integrated Fastener, Two Places
- 400A, 1500V, 2-POLE DC DISCONNECT SWITCH
- HINGED COVER
- FIELD GROUNDING EXAMPLE (Customer Supplied)
- BOTTOM ENTRY CABLING (Customer Supplied)
- MOUNTING POLE EXAMPLE (Customer Supplied)



- Enclosure (Steel or Fiberglass)
- NEGATIVE PV CONDUCTOR CONNECTION POINT
- NEGATIVE BUS BAR
- 400A DC SWITCH (Output power connection point is on bottom of DC Switch)
- FUSING up to 25 strings in Steel (-STL) & 20 for Fiberglass (-FRP) enclosures
- GROUND LUG
- POSITIVE BUS BAR
- SURGE PROTECTOR

**FIGURE 2.2 The XLR8 1500-400 DC Combiner**



### 3. RATINGS AND SPECIFICATIONS

<b>XLR8 1500-400 SPECIFICATIONS</b>	
<b>PV SOURCE CIRCUIT CONNECTIONS</b>	
Maximum Voltage	1500VDC
Fuse holder <ul style="list-style-type: none"> <li>• Wire Compatibility</li> <li>• Required Torque</li> <li>• Temperature Rating</li> <li>• Other</li> </ul>	<ul style="list-style-type: none"> <li>• 10 AWG, PV-Rated, Copper Wire Only</li> <li>• 22 in-lb (2.5 N-m)</li> <li>• -40°C to +125°C</li> <li>• Touch-safe, lock-out/tag-out feature</li> </ul>
Fuse <ul style="list-style-type: none"> <li>• Rating</li> <li>• Type</li> </ul>	<ul style="list-style-type: none"> <li>• 1500VDC</li> <li>• Replace only with SPXV SERIES SOLAR FUSE, or equivalent photovoltaic fuse, sized accordingly</li> </ul>
Number of Fuse Positions	Up To 25 Positions
Fuse Configuration	Fusing for Positive Polarity Only
<b>DC DISCONNECT SWITCH</b>	
Configuration	2-pole, 400A, 1500VDC, externally operable
Maximum Current Rating	400A
<b>PV OUTPUT CIRCUIT CONNECTIONS</b>	
Maximum Voltage	1500VDC
Maximum Wire Size Compatibility	Cu: 1 cond, 750 kcmil; 2 cond, 500 kcmil Al: 1 cond, 750 kcmil; 2 cond, 500 kcmilIEGC Range: 14 AWG – 2/0 AWG
<b>MECHANICAL, ENVIRONMENTAL, SAFETY</b>	
Enclosure Dimensions (not including mounting tabs, see Fig. 4.1)	STEEL 30HX24WX10D FIBERGLASS 24HX20WX9D
Enclosure Material & Rating	Two options: 1) Steel - Type 4 2) Fiberglass – Type 4X
Weight	50 - 85 lbs (Will vary based on # of strings & enclosure selected)
Ambient Temperature Range	-40°F to 130°F (-40°C to +54°C)
Surge Protection (Optional)	Type 2, +/-GND, Common/Differential Modes
Safety Certification & Listing / Certification Agency	Intertek, UL1741 Control # 5028779
Standard Warranty	1 Year Standard
Recommended Ground Conductor Size	#10/1C TYPE PV 2KV Rated

**Table 3.1 – XLR8 1500-400 Combiner Specifications**

## 4. INSTALLATION

The steps for successful installation of the XLR8 1500-400 Combiners are:

- (1) Unpacking and Inspection
- (2) Mounting
- (3) Conduit and Fittings
- (4) Wiring and Conductor Installation
- (5) Testing and Commissioning

### 4.1 Unpacking and Inspection

#### 4.1.1 Check for Damage

XLR8 thoroughly inspects and rigorously tests each XLR8-CB-400-1500 Combiner Boxes before it is shipped. Even though the Combiners are delivered in rugged packaging, damage could occur to the Combiners during shipment.

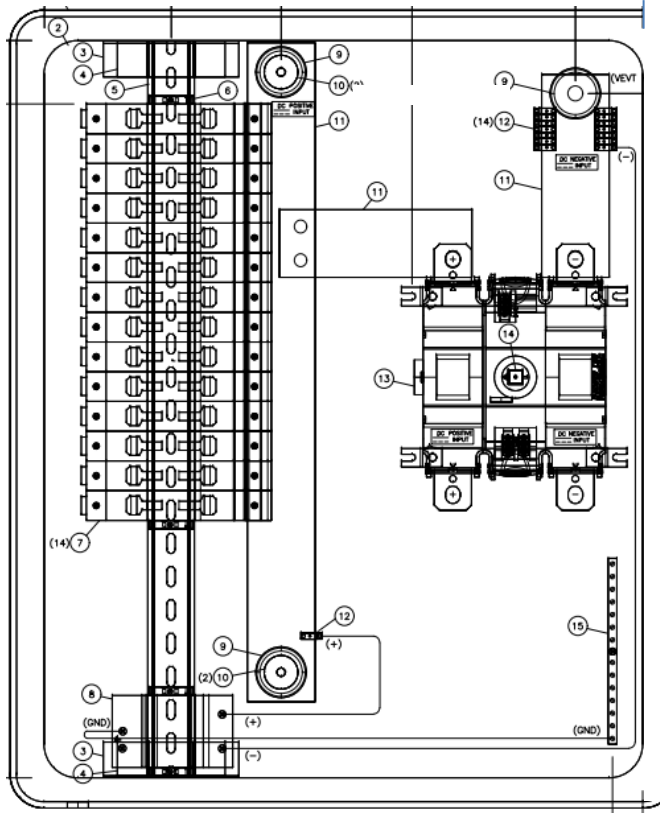
- ✓ Inspect the Combiner after removing it from its packaging. Take care not to set the Combiner on gravel or other surface that could scratch the paint.
- ✓ If damage is observed, take digital photos to document the damage and immediately report the damage to the shipping company.
- ✓ If the recipient has any question about the potential shipping damage, contact Accelerate (XLR8) Equipment Sales & Solutions (see Section 6 for contact information).
- ✓ If Accelerate (XLR8) Equipment Sales & Solutions determines that the Combiner must be returned, obtain an RMA number from Accelerate (XLR8) Equipment Sales & Solutions and instructions for returning the unit.

#### 4.1.2 Remove Packing Material Inside the Combiner

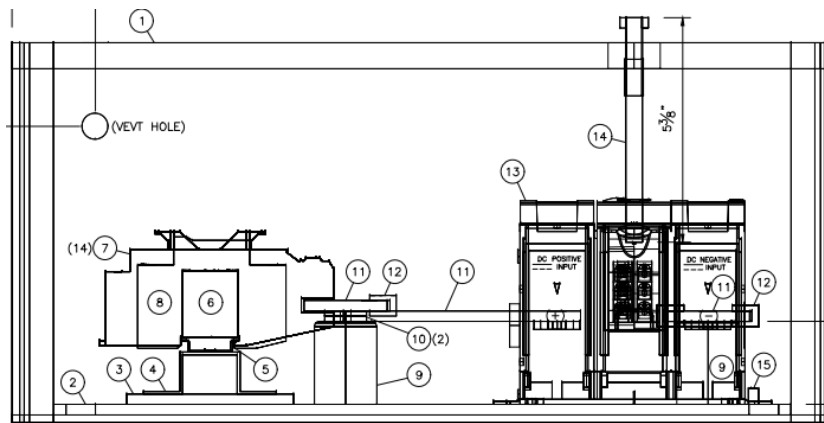
Remove and properly dispose of all cardboard, tape and other packing material that may be inside the Combiner enclosure.

### 4.2 Mounting

The XLR8 Combiner Box is designed to mount in any convenient location. Typically, the XLR8-CB-400-1500 Combiner will be mounted in the PV array, close to the input PV Source Circuits and some distance from the Energy Storage System equipment. The XLR8-CB-400-1500 is equipped with four integrated mounting tabs (see Fig. 4.1 and Fig 4.2) to understand major components used & to facilitate attachment for mounting. The XLR8-CB-400-1500 enclosure is rated Type 4 and will maintain this rating when the user follows appropriate installation methods.

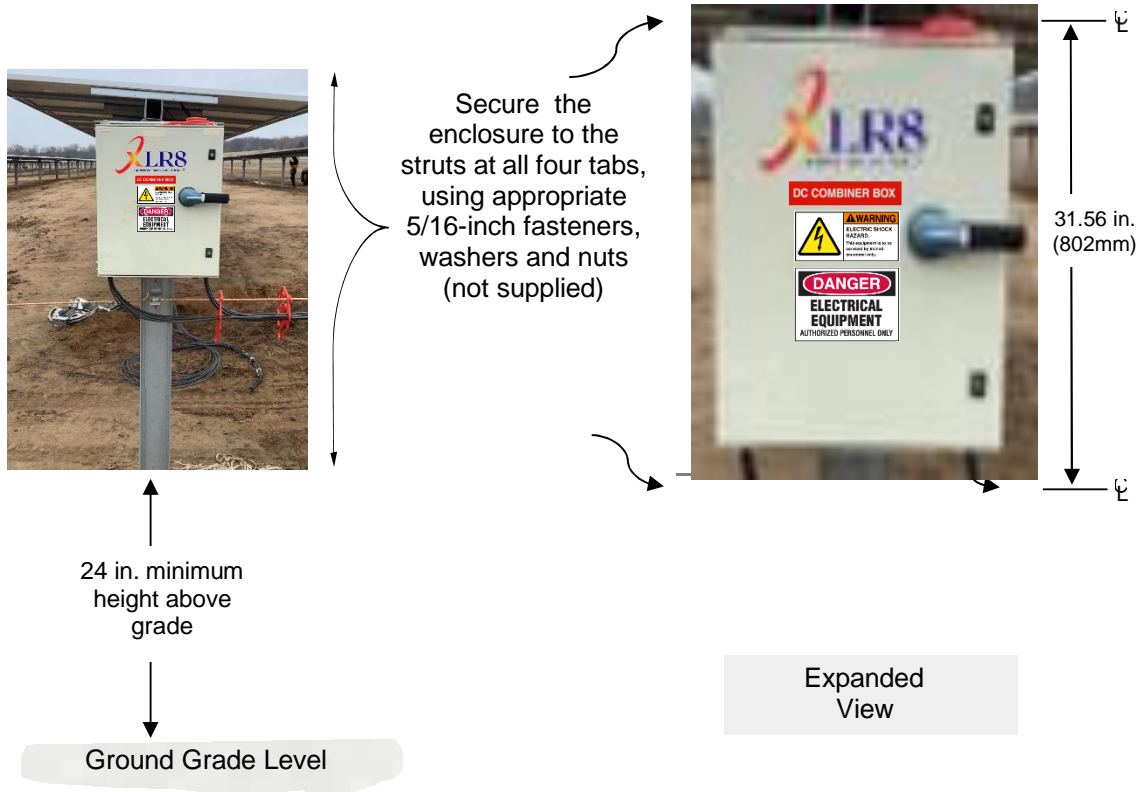


		COMBINER BOX
NO.	QTY	DESCRIPTION
1	1	1500VDC COMBINER BOX, ENCLOSURE, 23 $\frac{3}{8}$ "H x 19 $\frac{1}{8}$ "W x 9 $\frac{1}{2}$ "D, 400A TYPE 4X
2	1	ENCLOSURE BACK PLATE, 21 $\frac{3}{8}$ "H x 17 $\frac{1}{8}$ "W x $\frac{1}{8}$ "D
3	2	FLAT BAR, 4" x 1" x $\frac{1}{8}$ "
4	2	DIN RAIL STANDOFF BRACKET
5	A/R	DIN RAIL, 35MM X 7.5MM SLOTTED
6	4	TERMINAL BLOCK, END BRACKET
7	14	POSITIVE TERMINAL, 32A, 1500VDC, FUSE HOLDER
8	1	DP50PVS - 1500/51, SURGE PROTECTION DEVICE
9	3	INSULATOR
10	4	WASHER
11	A/R	SV 3580 BUSBAR E-CU, 1/4" x 2"
12	15	TERMINAL, CONDUCTOR CONNECTION CLAMP SV 3555
13	1	PV/DC SWITCH, INOSYS LBS
14	1	DIRECT HANDLE
15	1	GROUND STRIP



**Fig. 4.1 XLR8 1500-400 Major Component Identification and Location (as shown above 14-string configuration)**





**Fig. 4.2 XLR8-CB-400-1500 Combiner Recommended Installation**

## 4.3 Wiring

Completing the installation of the XLR8-CB-400-1500 Combiner Box requires: (1) field wiring of the PV Source Circuits (up to 25) -- positive polarity conductors to the fuse holders, negative polarity conductors to the 25-position negative terminal block, and equipment ground wires to the equipment ground terminals, and (2) field wiring of conductors from the PV Output Circuit terminals and the equipment ground lug to the Energy Storage System Components (ESSC, Not Supplied by Accelerate (XLR8) Equipment Sales & Solutions). **Installation according to the National Electrical Code (NEC) NFPA 70.**

### STEP 1: Confirm That No Wiring is Connected to the Combiner

- ✓ This is the first step of the installation, and no wiring should be present into or out of the XLR8-CB-400-1500 Combiner. No input PV Source Circuits conductors should be present, and no PV Output Circuit conductors should be present.
- ✓ If there is ESSC components in place, confirm that the DC disconnect(s) switch is/are on the OFF position. All other equipment should be disconnected even though the wiring between the XLR8-CB-400-1500 Combiner and other equipment may or may not yet be in place. The window on the disconnect switch body will show the "O" (Off) switch status.
- ✓ Ensure that all fuse holders are pulled into their open position (Not pressed into the body of the fuse terminal) and that no fuses are installed. If there are fuses installed, remove fuses from all the touch-safe fuse holders in the XLR8-CB-400-1500 and safely store the fuses for later re-installation.

### STEP 2: Prepare the Enclosure for Conduits

- ✓ Conduit and strain reliefs can be located anywhere suitable on the bottom face of the Combiner as shown in Figure 4.3.
- ✓ Add the necessary holes for the conduit and fittings. The XLR8-CB-400-1500 Combiner provides adequate space for strain reliefs, readily accommodating up to 25 pairs of conductors from 25 input PV Source Circuits, the maximum allowable.
- ✓ Remove all metal shavings and all debris from the inside of the Combiner.



Remove all metal shavings and debris from the inside of the XLR8-CB-400-1500 enclosure.



**Fig 4.3 Bottom of the XLR8-CB-400-1500 Enclosure**  
(As shown above, two enclosures are offered: Steel & Fiberglass)

### Conduit Connections



Conduits connected to an outdoor enclosure can introduce water vapor into the enclosure and lead to the formation of condensation inside. Failure to follow these guidelines can result in water intrusion into the unit through the conduit connections and may void the warranty.

Follow these instructions and best practices when securing conduits to the Re-Combiner.

1. Use UL514B certified water-tight conduit fittings and proper installation methods to provide a water-tight connection that will maintain the NEMA rating of the enclosure.
2. Use an appropriately rated sealant and seal the conduits fully to prevent the exchange of air between the conduit and the enclosure. Sealing the conduit will help prevent condensation in the enclosure.

### STEP 3: PV Source Circuit Connections



Do not attempt to make connections to the XLR8-CB-1500-400 Combiner if you are not qualified for electrical work.

FUSEHOLDER SPECIFICATIONS	
<b>Wire Compatibility</b>	14 AWG – 6 AWG stranded 14 AWG – 10 AWG solid 90°C Copper Conductors Only
<b>Voltage Rating</b>	1500 VDC
<b>Ampere Range</b>	Up to 32A
<b>Torque Setting</b>	22 in-lb, #2 Phillips

**Table 4.1 – Fuse holder Specifications**

- ✓ Verify absence of voltage in PV Source Circuit conductors.
- ✓ Run the PV Source Circuit conductors into the Combiner either through conduit or strain-relief connectors, following the WARNING above to prevent condensation within the enclosure.
- ✓ Connect the positive conductors to the touch-safe fuse holders, one conductor per fuse holder.
- ✓ Connect the negative conductors to the negative polarity terminals (not fused).
- ✓ Connect equipment ground conductors to the equipment ground terminals.
- ✓ Torque each PV Source Circuit conductor to 22 in-lb with a #2 Phillips screwdriver.

Only replace fuses in the XLR8-CB-400-1500 Combiner fuse holders with appropriately-rated 10x85mm, 1500Vdc photovoltaic fuses. An example fuse is identified in the table below.

Fuse Rating	Part Number
<b>25A</b>	Littelfuse SPXV 25A - M

**Table 4.2 – Example 1500VDC Replacement PV Fuse**

Negative PV Source Circuit conductors terminate on the 25-position terminal block, with the following specifications. Note total # of terminals determined by number of PV Strings, as shown is 19-String.



- 25 position
- 4 – 14 AWG
- Copper and Aluminum
- 90C Rating

## STEP 4: PV Output Circuit Connections

The XLR8 1500-400 Combiner provides tabs, as part of the 400A DC Switch (mounting plates, and lugs are not supplied), just below the DC disconnect switch body. The terminals are rated for 90°C. Refer to NEC Articles 310 and 690 for proper sizing of conductors. Basic specifications are in Table 4.3.

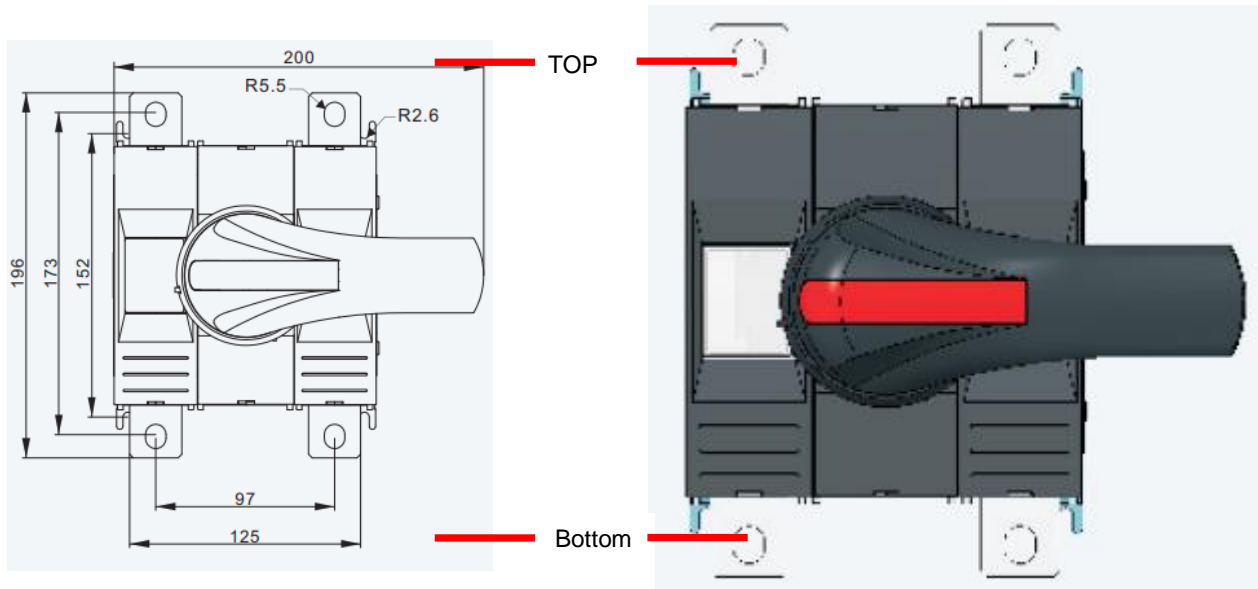
Wire Terminal Temperature Rating	Number of Terminals	Number of Wires per Terminal Allowed	Max Conductor Size Allowed (Copper or Aluminum Conductors)
90°C	1 per pole	1 – 2	(2) 500 kcmil or (1) 750 kcmil

**Table 4.3 – PV Output Circuit Terminal Specifications**

Compression lugs & mounting plates are NOT provided with the XLR8-CB-400-1500 Combiner Box. The lugs must conform to the specifications given in the table below:

Lug Type	Stud Spacing	Plating	Max. Tongue Width
Two-hole	1.75 in	Tin Plated	1.95 in

**Table 4.4 – Compression Lug Specifications**



**Figure 4.4 – PV Output Circuit Stud Plates (top view)**  
(Dimension listed in mm)

For the hardware mounted to the bottom side of the DC Switch, use the following.

**Fasteners** 8mm flanged nut, SS  
Torque: 90 in-lb (10 Nm)

Conductor Size	Stud Size	Color Code	Dimensions (mm)					
			O.D.	I.D.	A	A1	B	C
6AWG	5/16	Gray	8.60	5.10	51.00	21.80	14.40	2.50
4AWG	5/16	Green	11.20	6.40	58.60	27.00	14.40	4.80
2AWG	3/8	Pink	13.50	7.90	63.50	30.50	18.00	5.50
2AWG	1/2	Pink	13.50	7.90	63.50	30.50	18.00	5.50
1AWG	3/8	Gold	13.50	8.90	63.50	30.50	18.50	4.50
1AWG	1/2	Gold	13.50	8.90	63.50	30.50	18.50	4.50
1/0AWG	3/8	Tan	16.00	9.90	71.30	30.50	21.50	6.10
1/0AWG	1/2	Tan	16.00	9.90	71.30	30.50	21.50	6.10
2/0AWG	1/2	Clive	17.50	11.20	71.30	33.00	23.80	6.10
3/0AWG	1/2	Ruby	19.30	12.20	76.20	35.60	26.10	7.10
4/0AWG	1/2	White	21.30	14.00	87.10	35.60	29.20	7.30
4/0AWG	5/8	White	21.30	14.00	87.10	35.60	29.20	7.30
250MCM	1/2	Red	23.40	15.00	88.90	38.10	32.00	8.10
300MCM	1/2	Dark Blue	25.70	16.50	101.60	40.60	34.80	8.80
350MCM	1/2	Brown	28.40	18.30	107.90	48.30	38.60	9.90
400MCM	1/2	Green	30.20	19.30	118.80	58.40	40.80	10.60
500MCM	5/8	Pink	33.50	21.30	120.60	63.50	45.40	11.90
600MCM	1/2	Black	36.60	23.30	130.00	65.00	49.70	12.90
750MCM	5/8	Yellow	40.60	26.20	155.40	81.30	55.60	12.90
1000MCM	5/8	Brown	45.98	29.40	155.40	81.30	63.50	15.00

**NOTE:**

1) Many manufacturers use Color-Keyed connectors are banded by colored stripes or engraving to indicate location of die on connector for compression. As shown above.



2) Always refer back to latest codes (NEC) that govern best practices for conductor sizing and lug sizing.

**Figure 4.5 – Compression Lug Connections, Single Conductors**



## Aluminum Conductors



Aluminum oxidizes quickly when exposed to the atmosphere. An oxidized layer is a poor conductor that could lead to thermal issues, production loss, or damage to the XLR8-CB-400-1500 Combiner Box & not recommended.

For Reference:

NFPA Code - Table 310.16

Ampacities of Insulated Conductors with Not More Than Three Current-Carrying Conductors in Raceway, Cable, or Earth (Directly Buried)

NFPA Code – Table 310.4


Temperature Rating of Conductor

National Electrical Code (NEC)

The National Electrical Code, or NFPA 70, is a regionally adoptable standard for the safe installation of electrical wiring and equipment in the United States.

## STEP 5: Equipment Ground Wire Connections

Terminals are provided in the XLR8-CB-400-1500 Combiner Box for all equipment associated with the PV Source Circuits. Torque each EGC for the PV Source Circuits per the specifications below.

Ground Lug Provided within each XLR8 Combiner Box	DETAILS:
	<ul style="list-style-type: none"><li>• 15 position</li><li>• 4 – 14 AWG</li><li>• Copper</li><li>• 90°C Rating</li><li>• Torque Tightening: 20 lb.in, AWG 14...AWG 10, copper 25 lb.in, AWG 14...AWG 12, copper</li><li>• Flat-head screwdriver</li></ul>

**Fig. 4.6 - Equipment Ground Terminals**

## Final Steps



Verify the proper polarity of each conductor. Polarity reversal can lead to dangerous conditions capable of harming personnel and damaging equipment.



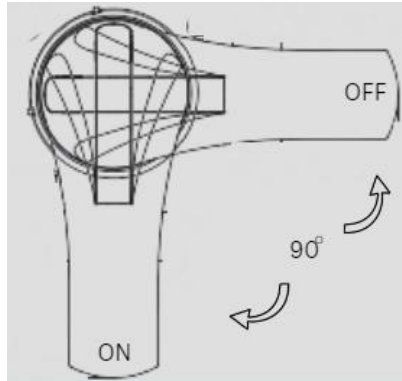
Check the Combiner for tools and debris; ensure that the unit is clean and orderly.

- ✓ Return the fuses to the fuse holders, but do not close the fuse into the fuse holder. Closing the fuse holders will be accomplished during system commissioning and start-up.
- ✓ Verify that all connections meet the requirements of this User's Manual.
- ✓ Secure the XLR8-CB-400-1500 Combiner Box cover, ensuring that both ¼-turn fasteners are fully secured.

## 5. OPERATION



Do not operate the disconnect handle switch with the Combiner Box door open.



Travel of Handle



OFF Position

**Figure 5.1 – Switch Handle Positions for OFF (Right) and ON (Left)**

The XLR8-CB-400-1500 Combiner Box contains a user-operable disconnect switch. When this disconnect switch handle is in the OFF position, the circuit is open between the ungrounded PV Source Circuit conductors and the ungrounded PV Output Circuit conductors. The disconnect handle can be locked in the OFF position with user-supplied safety locks. The plastic tab on the face of the disconnect handle can be lifted to reveal the locking provisions.

When the disconnect switch is in the ON position, the PV Source Circuit is closed between the ungrounded PV Source Circuit conductors and the ungrounded PV Output Circuit conductors.

The disconnect switch is rated for 400A, fully load-break rated and can be safely operated under normal operating conditions when installation is per this User's Manual and all warnings and ratings are observed.



All Disconnect Switches must be OFF before working on the Combiner Box.



Be Aware That Voltage Is Still Present on the Line Side (TOP) of the Switch, When the breaker is OFF and Fuses are still inserted into the fuse holder.

## 6. WARRANTY & RMA INSTRUCTIONS

For warranty information, please contact Accelerate Equipment Sales & Solutions.

## 7. APPENDICES

### **Appendix A – Contact Information**

Accelerate Equipment Sales & Solutions  
12611 Fern Creek Trail  
Humble, TX. 77346  
US 1+ 832-269-2668

Sales/General Info:

james.cowan@aessus.com

Customer Support: US 1+832-269-2668

Website: [aessus.com](http://aessus.com)

## Appendix B - UL1741 Authorization to Mark



# DC COMBINER BOX

Conforms to UL STD 1741

Model Number	XLR8 1500-400
Number of Strings	1 - 25
Rated Voltage	1500Vdc
Rated Input Current of Each Fuse	32Amps MAX
Max Dc Current Rating	400Amps
Enviromental Rating	Type 3R
Temperature Rating of Unit	-40°F to 130°F (-40°C to +54°C)
Temperature Rating of Wire (Use AWG, 90°C Copper Wire)	194°F (90°C)

**MANUFACTURE CODE**

Assembled by: RT Technical Solutions  
4484 Hodgson Rd, Nederland, TX 77627

**MADE IN THE USA**



**XX-XX-XX-RTT**

Accelerate Equipment Sales & Solutions  
12611 Fern Creek Trail  
Humble, TX 77346 (832)269-2668

## Appendix C – UL969 Labels

	<h1 style="margin: 0;">PV- COMBINER BOX</h1> <p style="margin: 5px 0 0 0;">MODEL: XLR8-CB-400-1500</p>						
WARNING - For Continued Protection Against Risk of Fire - Replace Only With Same Type and Rating Of Fuse							
FUSE RATING SIZE MAXIMUM CURRENT MAXIMUM VOLTAGE	<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr> <td style="width: 30%;">25</td> <td>AMPS</td> </tr> <tr> <td>400</td> <td>AMPS</td> </tr> <tr> <td>1500</td> <td>VOLTS DC</td> </tr> </table>	25	AMPS	400	AMPS	1500	VOLTS DC
25	AMPS						
400	AMPS						
1500	VOLTS DC						
Temperature Rating of Wire (Use AWG, 90°C Copper Wire Only)    194°F (90°C)							
<span style="font-weight: bold; font-size: 1.2em;">CAUTION</span> <b>RISK OF ELECTRIC SHOCK</b> Buss Bars and Electrical Connections are live. Disconnect all power before servicing.							
<b>MADE IN THE USA</b>	ACCELERATE EQUIPMENT SALES & SOLUTIONS LIMITED WARRANTY IS VALID ONLY FOR PROPER INSTALLATIONS INFO@AESSUS.COM						



# DC COMBINER BOX



PHOTOVOLTAIC  
⚠ SYSTEM ⚠  
DC DISCONNECT

The manufacturer's label is mounted on the right side of the enclosure (side panel) on the outside near the top.

Other labels are as shown with guide for placement. Location provided.



**The MFG Label is mounted on the right side of the enclosure**

## Appendix D – BOM (Major Components)

### BOM

Item	Qty	Description	Vendor	UL Efile or Other Listed #
1	0	BENY SWITCH 1500VDC 1-P 400A UL	Factory	E516504
2	0	BENY Handle Type 4, 4X BLK 0-1	Factory	E516505
3	0	BENY, Shaft Extension 320MM	Factory	E516506
4	0	Surge Protector	Factory	E326289
5	0	Fuse	Factory	E339112
6	0	Terminal block - Fuseable	Factory	E364954
7	0	Terminal block - Non-Fuseable	Factory	ZMVV.E129884
8	0	SPCL GINS30613E Insulator Block (Apple)	Factory	E354884, E249670
9	0	DIN Rail Standoff Bracket IBOCO STS25	Factory	N/A
10	0	Din rail 6' MTG Rail TS 35X7.5 Perf 18MM	Factory	N/A
11	0	Grey Drain Vent (2 pc) (fiberglass enclosure option only)	Factory	CSA File No 217184 (accessory), IEC 60529
12	0	Breather ECDB50HP (Steel enclosure option only)	Appleton	E-34997
13	0	30D PK15GTA Load Center Ground Bar Kit 15 Terminals	Factory	E-6294 (accessory)
14	0	Wire PV131001-03 #10/1C XLPE 2KV Type PV 13STR Red	Factory	UL 4703 E-316334
15	0	Wire PV131001 #10/1C XLPE 2KV Type PV 13STR Blk	Factory	UL 4703 E-316334
16	0	Wire #10/1C XLPE 2KV TYPE PV 13STR Green	Factory	UL 4703 E-316334
17	0	Enclosure (Steel)	Rittal	E170282
18	0	Enclosure (Fiberglass)	Factory	NON-UL
19	0	Labor, testing, prep for shipping	Factory	N/A
20	0	Busbar Farmers BR1002500 02000Silver 1/4X2 C11000 Round Edge Silver Plated Copper Bus Bar	Factory	EN102054:2004-3.1
21	0	Labels (XLR8 Product Labels)	PV Labels	UL969 PGGU2.MH10170