

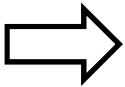
XGI 1500 Attachable Combiner (CA1500) XGI 1500 Remote Combiner (CR1500) Installation and Operation Guide

- 1.0 Product Overview
- 2.0 Ratings and Specifications
- 3.0 Installation
- 4.0 Operating Instructions
- 5.0 Warranty and RMA Instructions

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IMPORTANT SAFETY INSTRUCTIONS SAVE THESE INSTRUCTIONS



The XGI 1500 Attachable Combiner (CA1500) and XGI 1500 Remote Combiner (CR1500) are designed and listed exclusively for use with the SOLECTRIA XGI 1500 inverter. The CA1500 and CR1500 combiners are not to be used with any other solar inverter.

Before installing or using the XGI 1500 Attachable Combiner (CA1500) or XGI 1500 Remote Combiner (CR1500), please read all instructions and caution markings in this manual and on the combiner, as well as on the PV modules, PV inverter and all other associated equipment.

This manual contains important instructions that must be followed during installation and operation of CA1500 and CR1500 Combiners. 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
Could Injure
Personnel or
Damage Equipment



Instructions
for Qualified
Personnel Only



Positive
Connection
Point Symbol



Negative
Connection
Point Symbol



Ground
Connection
Point Symbol



DC Electrical
Connection
Point Symbol



WARNING: Disconnect all PV modules or completely cover the surface of all PV modules with opaque (dark) material 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 PV combiners.



WARNING: Connecting PV source circuits to the input of the CA1500 or CR1500 Combiner and connecting the output of the Combiner to the XGI 1500 inverter that is connected to the electric utility grid, must only be done after receiving approval from the utility company and AHJ, and should only be performed by qualified personnel.



WARNING: The CA1500 and CR1500 Combiners are designed and listed for use exclusively with the SOLECTRIA XGI 1500 inverters; the CA1500 and CR1500 Combiners must not be used with any other solar inverter.

1. Product Overview

The XGI 1500 Remote Combiner (CR1500) and the XGI 1500 Attachable Combiner (CA1500) are fused PV Source Circuit combiners, designed and listed exclusively for use with the SOLECTRIA XGI 1500 inverter. Refer to the illustration in Figure 1.1 showing their general usage. The Attachable Combiner mates to the SOLECTRIA XGI 1500 inverter and is intended for a Distributed PV System architecture, where the XGI 1500 inverters and the associated Attachable Combiners are located at positions throughout an array field. The Remote Combiners have similar features and models, but are designed for a Centralized or Clustered PV System architecture with multiple co-located XGI 1500 inverters and Remote Combiners distributed throughout the PV array field.

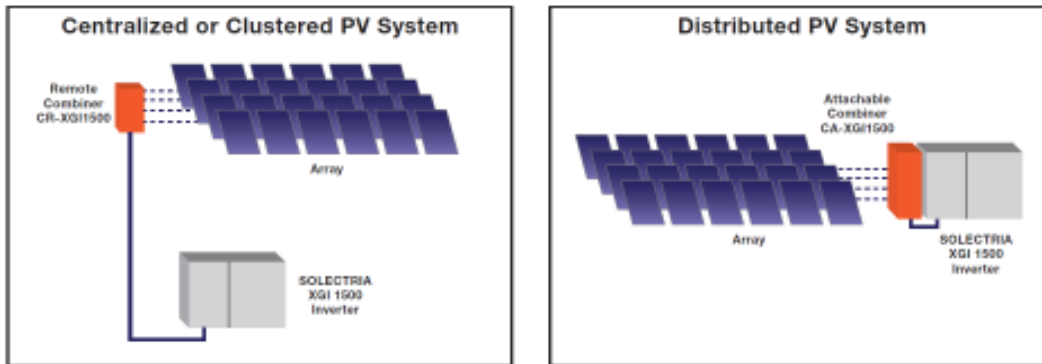
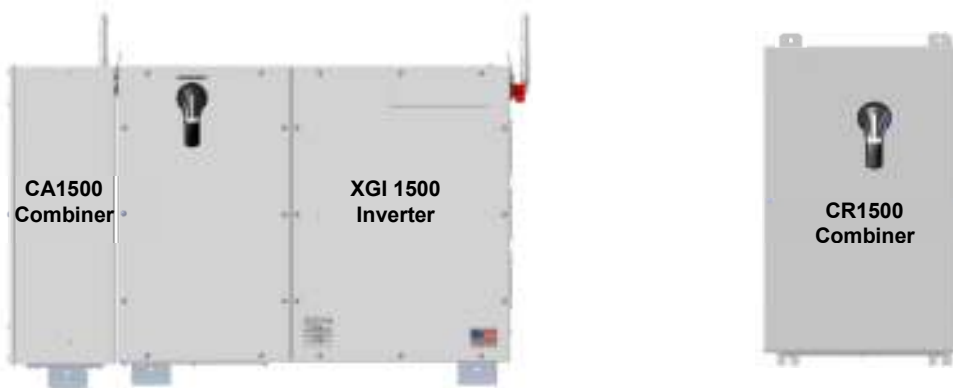


Figure 1.1 – Illustrated Usage of Remote Combiner (left) and Attachable Combiner (right)

The basic functions of the XGI 1500 Combiners are:

- (1) provide overcurrent protection (1500VDC rated fuses and touch-safe fuseholders) for multiple input *PV Source Circuits*,
- (2) bus the *PV Source Circuits* to form a single, combined *PV Output Circuit*,
- (3) provide wiring terminals for field-wired *PV Output Circuit* conductors,
- (4) provide the means to isolate the input *PV Source Circuits* from the *PV Output Circuit* (CR1500)
- (5) optionally, provide surge protection for the *PV Output Circuit* conductors.



CA1500 Attachable Combiner, alongside the XGI 1500 inverter. The DC disconnect switch serving the CA1500 resides on the XGI 1500.

CR1500 Remote Combiner, with integrated DC disconnect switch.

Figure 1.2 – Depiction of the CA1500 and CR1500 Combiners

The main differences between the CA1500 and CR1500 models (see Fig. 1.2) are:

- (1) The intended mounting and integrated mounting brackets (see Sections 3.2 and 3.3)
- (2) The location and function of the DC disconnect switch.

The Remote Combiner, CR1500, has its own integrated DC disconnect switch to isolate the input PV Source Circuits from the field-wired PV Output Circuit conductors. When the disconnect switch handle is in the OFF position, the PV Source Circuit conductors are disconnected from the PV Output Circuit conductors. When the disconnect switch is in the ON position, the PV Source Circuit conductors are connected to the PV Output Circuit conductors. The disconnect switch is fully load-break rated and can be safely operated under normal operating conditions when installation is per this guide and all warnings and ratings are observed.

The Attachable Combiner, CA1500, does not have an integrated DC disconnect, but instead utilizes the DC disconnect switch located on the XGI 1500 inverter. In this case the switch on the XGI 1500 inverter isolates the inverter from the PV Output Circuit conductors terminated in the Attachable Combiner.

Both XGI 1500 Combiner types are available in multiple configurations, with fuse protection for 16 to 28 input PV Source Circuits. The part numbers for the CA1500 and CR1500 Combiner models are defined as shown in Table 1.1; a total of 48 part numbers exists. The example is part number **CA1500-20-15S**, which is an Attachable Combiner, rated for 1500 VDC, with 20 fuse positions (both polarities are fused), 15A fuses pre-installed in the factory, and the optional DC surge protection.



Table 1.1 – XGI 1500 Combiner Part Number Definitions

2. Ratings and Specifications

1500V COMBINERS EXCLUSIVELY FOR USE WITH XGI 1500 INVERTERS	Remote Combiner CR1500 Series			Attachable Combiner CA1500 Series		
PV Source Circuit Input Wire Compatibility	14-4 AWG			1 conductor: 14-6 AWG 2 conductors: 14-10 AWG		
PV Output Circuit Wire Compatibility	Compression Terminal: 1 conductor, 1/0 – 600kcmil; 2 conductors, 1/0 – 600kcmil					
Maximum Voltage	1500 VDC					
Fuse Rating Options	15A or 20A (fuses included)	25A	30A	15A or 20A (fuses included)	25A	30A
Fused Positions	16 / 20 / 24 / 26 / 28	20	16	16 / 20 / 24 / 26 / 28	20	16
Fuse Configurations	Both Positive and Negative Polarities Fused					
Input PV Source Circuit Configuration	Ungrounded PV Source Circuits Only					
DC Disconnect	2-Pole DC Disconnect, Integrated Positive and Neg. Poles Switched, Rated: 250A Max Continuous Current: 200A			2-Pole DC Disconnect (on the XGI 1500 inverter), Pos. and Neg. Poles Switched, Rated: 250A Max Continuous Current: 200A		
Temperature Range	-40°F to +122°F (-40°C to +50°C)					
Mounting Positions	Vertical, Horizontal, or Angled			Vertical orientation, located adjacent to associated XGI 1500 inverter		
Safety Certification & Listing / Certification Agency	UL 1741 / Intertek					
Standard Warranty	5 Years					
Overall Dimensions (HxWxD)	29.5 in. x 18.1 in. x 11 in. (750 mm x 460 mm x 280 mm)			29.5 in. x 15 in. x 10.6 in. (750 mm x 380 mm x 260 mm)		
Enclosure Material, Weight and Rating	Polyester Powder Coated Aluminum 85 lbs (38.6 kg); Type 4			Polyester Powder Coated Aluminum 75 lbs (34 kg); Type 4		
Option	Surge Protection					
	Both positive and negative polarities					

Table 2.1 – Ratings and Specifications for the XGI String Combiners



WARNING: These installation instructions are for use by qualified personnel only. To reduce the risk of electric shock, do not perform any installation tasks unless qualified.



WARNING: This manual contains important instructions for all CA1500 and CR1500 Combiner models that must be followed during installation.

3. Installation

The necessary steps for successful installation of the CA1500 and CR1500 Combiners are: (1) unpacking and inspection, (2) mounting, (3) conduit installation, (4) wiring and (5) testing and commissioning.

3.1 Unpacking and Inspection

3.1.1 Check for Damage

Yaskawa Solectria Solar thoroughly inspects and rigorously tests each CA1500 and CR1500 Combiner 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 Yaskawa Solectria Solar (see Section 6 for contact information).
- ✓ If Yaskawa Solectria Solar determines that the Combiner must be returned, obtain an RMA number from Yaskawa Solectria Solar and instructions for returning the unit.

3.1.2 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.

3.2 Mounting: CA1500 Attachable Combiner

The CA1500 Attachable Combiner is designed to mount to 1 $\frac{5}{8}$ -inch strut channel next to the XGI 1500 inverter, as in Figure 3.1. Note that the CA1500 Attachable Combiner comes with factory-installed mounting brackets that mimic those on the XGI 1500 inverter (see also the SOLECTRIA XGI 1500 Users' Manual). Note also that the front cover of the CA1500 Attachable Combiner faces to the side, relative to the XGI 1500 inverter. The CA1500 enclosure is rated Type 4 and will maintain this rating when the user follows appropriate installation methods.

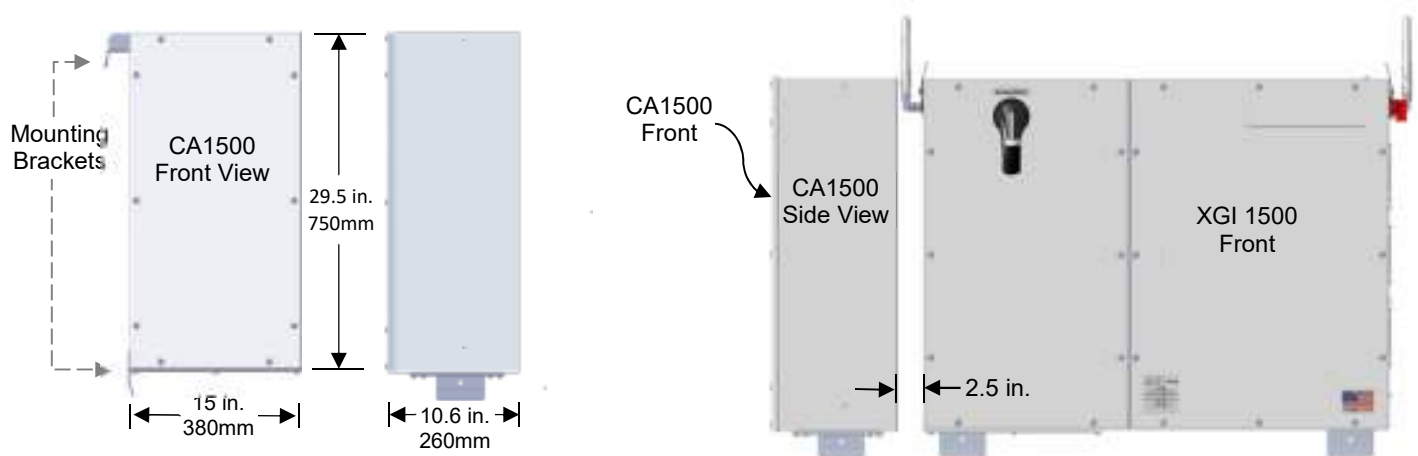


Figure 3.1 – The CA1500 combiner must be positioned next to the XGI 1500 inverter and spaced as shown



The removable front cover of the CA1500 Combiner faces to the side, relative to the XGI 1500 inverter.

The CA1500 Attachable Combiner must be mounted vertically on the same horizontal 1½-inch strut channels that also hold the XGI 1500 inverter, as in Figure 3.2 and Figure 3.3. The CA1500’s vertical dimension matches that of the XGI 1500 inverter. The upper bracket of the Combiner hangs on the upper strut channel; the lower bracket on the Combiner rests against the lower strut channel. After positioning the Combiner, secure the Combiner to the channels using appropriate 5/16-inch (8mm) bolts, washers and locknuts (fasteners are not supplied).

- ➡ See also the **SOLECTRIA XGI 1500 Users’ Manual** for additional information on installing the XGI 1500 inverter.
- ➡ A gap of 2.5 in. (63.5mm) between the CA1500 and the XGI 1500 inverter is required to accommodate the Wiring Harness Assembly supplied with the CA1500, and described in Section 3.4.4.
- ➡ The CA1500 Attachable Combiner weight ranges from 75 to 85lbs, depending on the model number. Be sure to account for this weight in the design of the structural support.

3.3 Mounting: CR1500 Remote Combiner

The CR1500 Remote Combiner is designed to mount in any convenient location. Typically the Combiner is mounted close to the input PV Source Circuits and some distance from the XGI 1500 inverter. The CR1500 is equipped with four integrated mounting tabs (see Fig. 3.4) to facilitate attachment to a variety of surfaces. The CR1500 enclosure is rated Type 4 and will maintain this rating when the user follows appropriate installation methods.

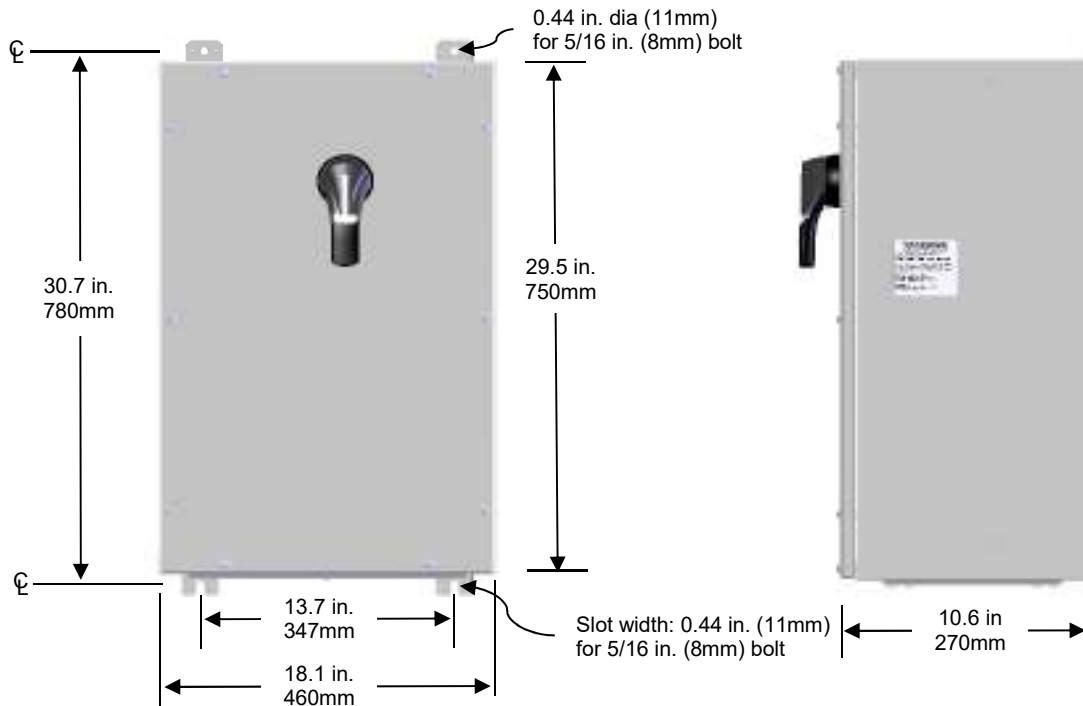


Figure 3.4 - CR1500 Remote Combiner front view (left) and side view (right) dimensions and mounting tab locations

Secure the Combiner to strut channels, or other appropriate structural members. An example mounting concept is shown in Figure 3.5.

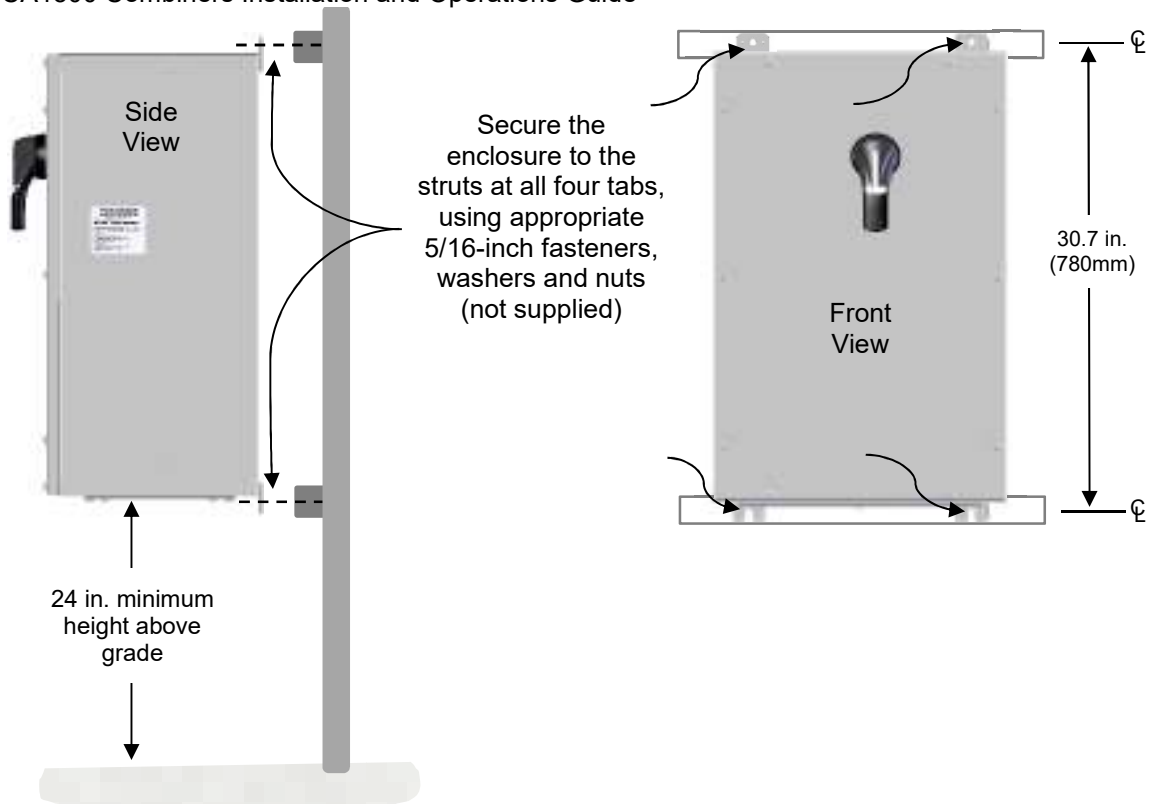


Figure 3.5 – Example mounting of CR1500 to struts

3.4 Wiring: CA1500 Attachable Combiner



Do not attempt to make connections to the CA1500 Combiner if not qualified for electrical work.

The CA1500 Attachable Combiner (see Figure 3.6) comprises:

- **Fuseholders:** Both PV Source Circuit polarities are fused. Terminate the input PV Source Circuit positive conductors on the left side, and terminate the negative PV Source Circuit conductors on the right side.
- **Fuses:** Provided with the current rating based on the specific model.
- **Terminal Plates:** For PV Output Circuit field-wiring terminations: one Positive, one Negative.
- **Equipment Ground Busbar and Ground Lug:** Input equipment ground terminations are made at the ground bus. An output equipment ground conductor should be terminated in the Ground Lug.
- **Conduit Plate and Wiring Harness:** A removable conduit plate on the bottom, comes specially configured with the supplied Wiring Harness to connect the Attachable Combiner to the XGI 1500 inverter (see Section 3.4.5)

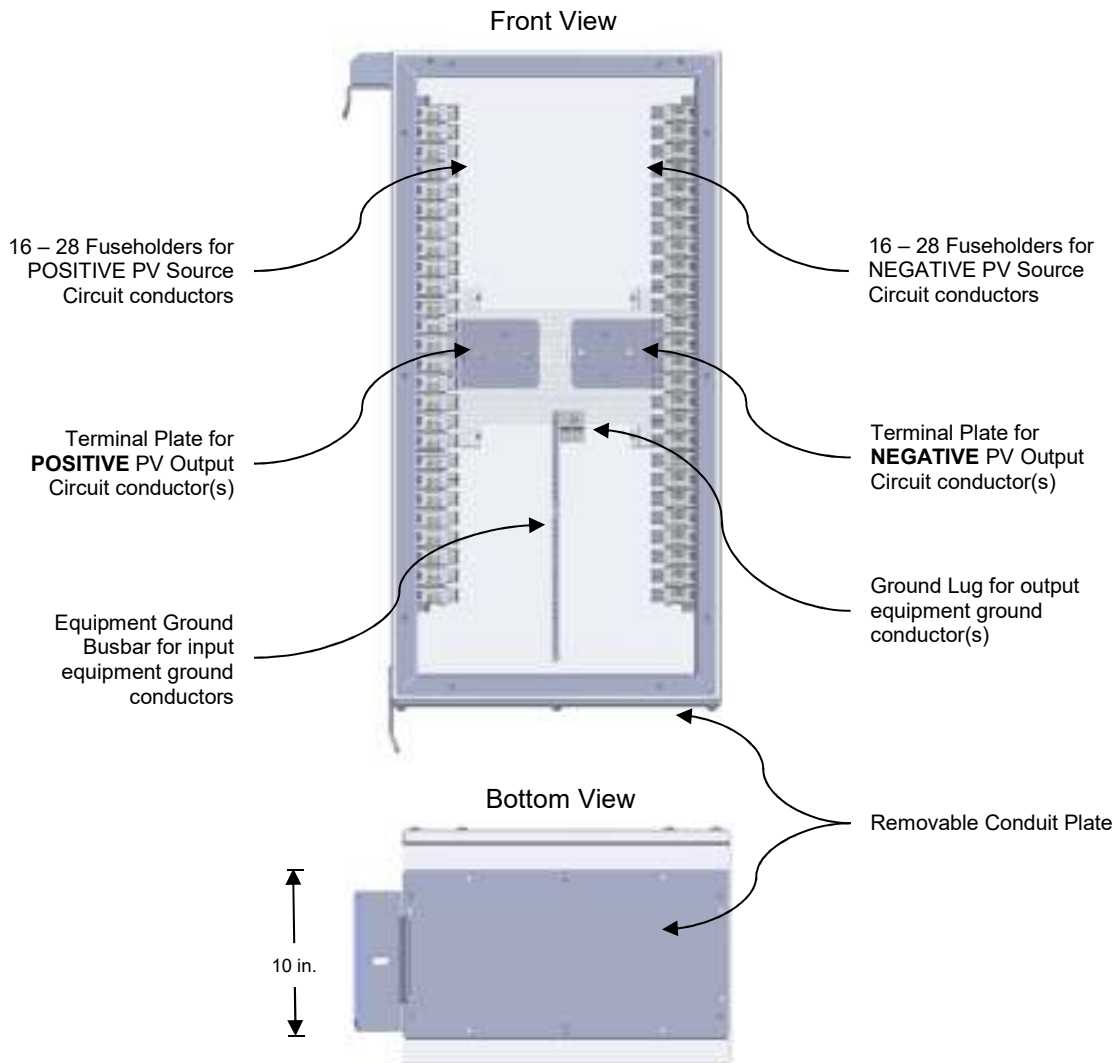


Figure 3.6 – The CA1500 Attachable Combiner

3.4.1 Remove Fuses



Removing fuses from a live circuit may create dangerous arc-flash and shock hazards. Remove all fuses before servicing this unit.

1. This is the first step of the installation and at this step no wiring should be present into or out of the Combiner. No input PV Source Circuit conductors should be present, and no PV Output Circuit conductors should be present.
2. If the XGI 1500 inverter is in place, confirm that the disconnect switch on the XGI 1500 is in the OFF position (even though the wiring between the CA1500 Combiner and the XGI 1500 inverter is not yet in place). The window on the disconnect switch body will show the “O” (Off) switch status.
3. Remove fuses from the touch-safe fuseholders for each input PV Source Circuit, both positive and negative polarities. Store the fuses for later re-installation (some models may be delivered with fuses separate and un-installed).

3.4.2 Plastic Guard Removal



Removing the plastic guard may expose the installer to dangerous DC voltage and shock hazards.

1. Remove the #10 screws holding the plastic guard, using a Phillips #2 screwdriver.
2. Gently remove the plastic guard.
3. Store the plastic guard and screws for later re-installation.

3.4.3 Prepare the Conduit Plate

1. Remove the Conduit Plate (Figure 3.7), located on the bottom of the attachable combiner.
2. The Conduit Plate comes with the large hole required for connecting the Wiring Harness Assembly (see Section 3.4.5), which includes the PV Output Circuit conductors that terminate in the Combiner and the XGI 1500 wiring compartment.
3. The Conduit Plate has space for up to six 9-conductor strain reliefs, and one additional strain relief for two conductors, accommodating up to a total of 28 pairs of conductors from 28 input PV Source Circuits.
4. Add the necessary holes for the intended number of PV Source Circuit strain-relief fittings.
5. Re-install the conduit plate to the Combiner, and attach and secure the strain-relief fittings (not supplied).

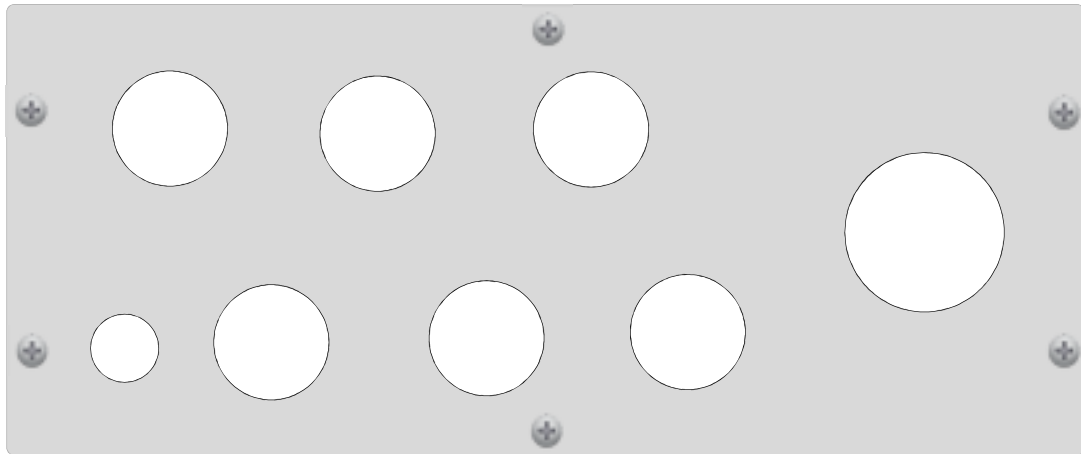


Figure 3.7 – Conduit plate and example strain relief locations, for input PV Source Circuit conductors

3.4.4 Install the PV Output Circuit Wiring Harness Assembly (CA1500)

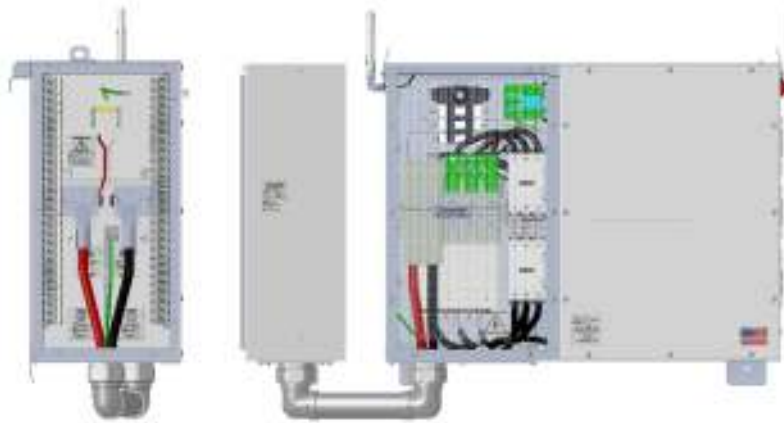


Figure 3.8 – Attachable Combiner with Wiring Harness in Place

The PV Output Circuit Wiring Harness Assembly is designed to simplify the field interconnection of the Combiner and the XGI 1500 inverter. The Wiring Harness Assembly comprises:

- A straight section of 2-inch PVC about 7 inches in length, with 90-degree elbows and threaded couplings at each end
- Two (2) 250MCM conductors for the PV Output Circuit overall positive (red) and overall negative (black), with lugs crimped on the ends of the wires to facilitate termination on posts in the Combiner and the XGI 1500 inverter, and
- A 4AWG green equipment ground wire, with stripped ends for easy termination at the busbars in the Combiner and XGI 1500 inverter.

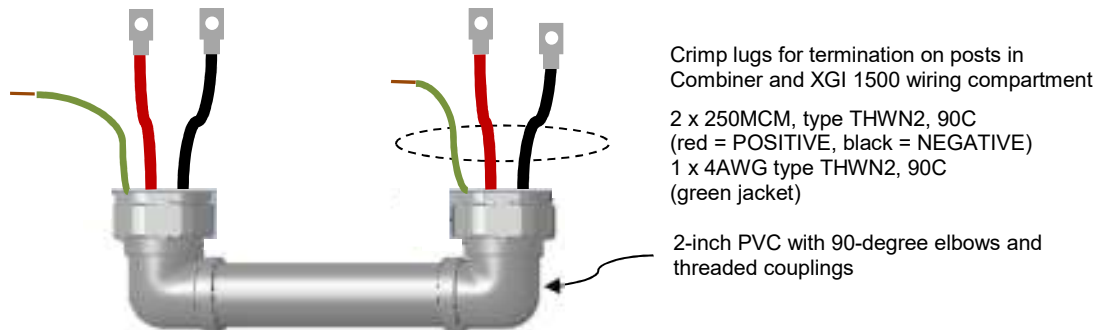


Figure 3.9 – The PV Output Circuit Wiring Harness Assembly

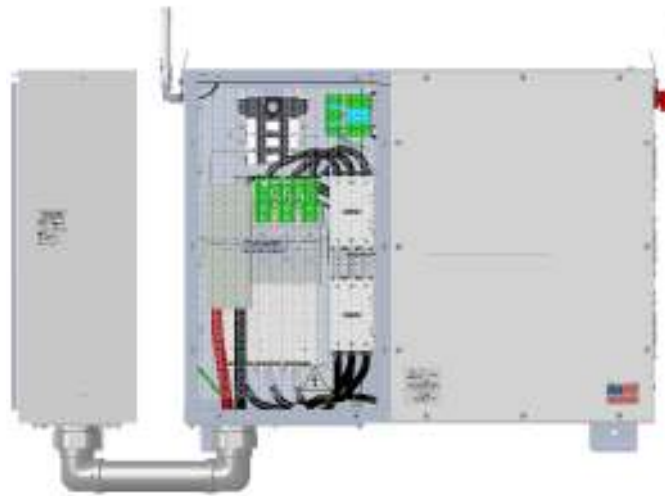


Figure 3.10 – PV Output Circuit Wiring Harness Assembly Installation



Confirm that the DC Switch and AC switch on the XGI 1500 are in the OFF position, and all fuseholders in the Combiner are in the OPEN position, with fuses removed.

1. Feed the conductors of the Wiring Harness Assembly through the openings in the Combiner and XGI 1500 wiring compartment, and position the conduit up against the bottoms of the enclosures. A slight adjustment of the position of the Combiner may be necessary to align the conduit perfectly.
2. From inside the enclosure, feed the conductors through the mating threaded fitting, then thread the fitting into the conduit coupling to secure the conduit assembly in place, in both enclosures.
3. Proceed to terminate the PV Output Circuit conductors to the lugs, noting carefully the polarity markings on the terminations and insulation color coding: red = POSITIVE, black = NEGATIVE.
4. Terminate the green-jacketed equipment ground wire on the ground terminal in the XGI 1500 wiring compartment and to the equipment ground lug in the Combiner (see Section 3.4.5).
5. Replace the plastic shield in the XGI 1500 wiring compartment. Completed wiring should appear as in Figure 3.10.

3.4.5 Equipment Ground Wiring (both CA1500 and CR1500)

See NEC Article 690 for equipment grounding requirements. A busbar is provided in the Combiner for all Equipment Grounding Conductors (EGCs) associated with the PV Source Circuits. Torque each EGC per the specifications in Table 3. Connect the Equipment Ground Conductor of the Wiring Harness Assembly to the equipment ground lug and torque the lug per Table 3.1.

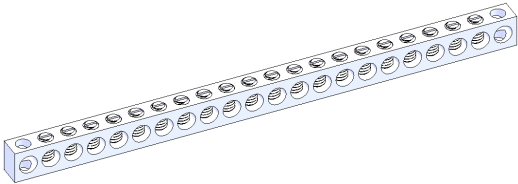

Equipment Ground Busbar	Equipment Ground Lug
	
<p>14 AWG – 4 AWG Torque to 20 in-lb, use Flathead screwdriver Cu or Al Conductors</p>	<p>(1) 14 AWG – 1/0 AWG (2) 14 AWG – 4 AWG Torque to 50 in-lb, use 3/16 Allen Hex Cu or Al Conductors</p>

Table 3.1 – Grounding Terminals

1. Connect the equipment ground wires from the PV array to the equipment ground bus.
2. Secure fasteners to the required torque values.

3.4.6 PV Source Circuit Wiring (both CA1500 and CR1500)

See NEC Articles 310 and 690 for proper PV Source Circuit conductor sizing. The rating of the fuseholders and the range of compatible conductor sizes are shown in Table 3.2.

Fuseholder Specifications	
Wire Compatibility	14 AWG – 6 AWG stranded 14 AWG – 10 AWG solid 90C Copper Conductors Only
Voltage Rating	1500 VDC
Ampere Range	Up to 32A
Torque Setting	22 in-lb, #2 Phillips

Table 3.2 – Fuseholder Specifications

PV Source Circuit Installation Instructions:

1. Verify absence of voltage in PV Source Circuit conductors
2. Run the PV Source Circuit conductors into the Combiner either through conduit or strain-relief connectors in the Conduit Plate.
3. Connect the conductors to the touch-safe fuseholders, one conductor per fuseholder.
4. Torque each PV Source Circuit conductor to 22 in-lb with a #2 Phillips screwdriver.

3.4.7 PV Source Circuit Fuses

Only replace fuses in the Combiner fuseholders with appropriately-rated 1500Vdc fuses.

Fuse Rating	Part Number
15A	Mersen HP15M15
20A	Mersen HP15M20
25A	Mersen HP15M25
30A	Mersen HP15M30

Table 3.3 – Example 1500VDC Replacement PV Fuses

3.4.8 PV Output Circuit Conductors (CR1500)

The CR1500 Combiner provides stud plates with 8mm (5/16 in.) studs for customer-supplied compression lugs for both positive and negative PV Output Circuit conductors. The terminals are rated for 90°C. Refer to NEC Articles 310 and 690 for proper sizing of conductors. One and two lugs are allowed.

Number of Fused Inputs	Wire Terminal Temperature Rating	Number of Terminals	Number of Wires per Terminal Allowed	Max Conductor Size Allowed (Copper or Aluminum Conductors)
16 - 28	90°C	1 per pole	1 - 2	(2) 500 kcmil or (1) 500 kcmil

Table 3.4 – Output Conductors

Compression lugs are NOT provided with the CR1500 Combiner. 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 3.5 – Lug Specifications



If using aluminum conductors, only use lugs that are explicitly listed for use with aluminum conductors. Use wire cleaning and anti-corrosive paste as specified by lug manufacturer.

For the hardware on the crimp lug, use the following stack-up for each stud. Studs on positive or negative output plate, crimp lug, 1 flat washer, 1 Belleville washer, and 1 nut.

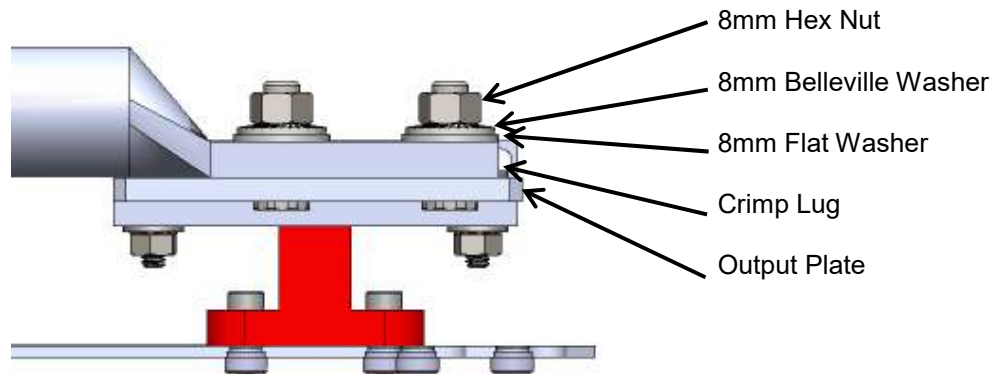


Figure 3.11 – Compression Lug Hardware Stack-up

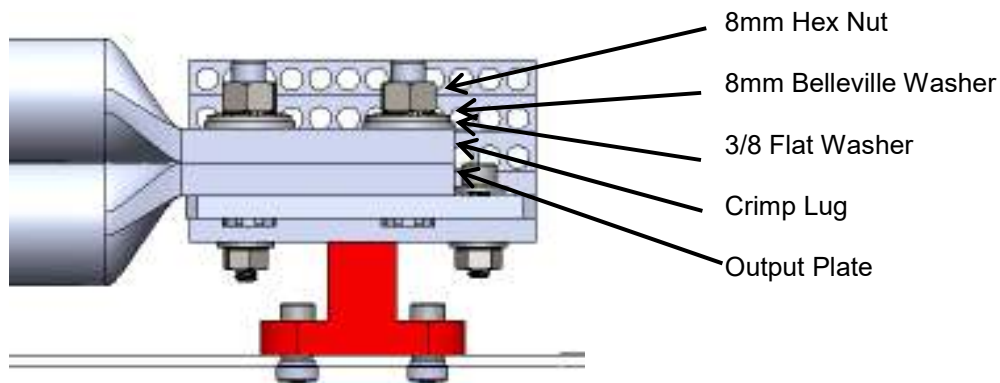


Figure 3.12 – Compression Lug Hardware Stack-up for Two Parallel Conductors

3.4.9 Final Steps



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



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

1. Verify that all connections meet the requirements of this Installation and Operations Guide.
2. Check all PV Source Circuit voltages and polarities.
3. Re-install the plastic guard.
4. Install all fuses and close all fuseholders.
5. Secure the combiner door, ensuring that all fasteners are in place.

4. Operating Instructions



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

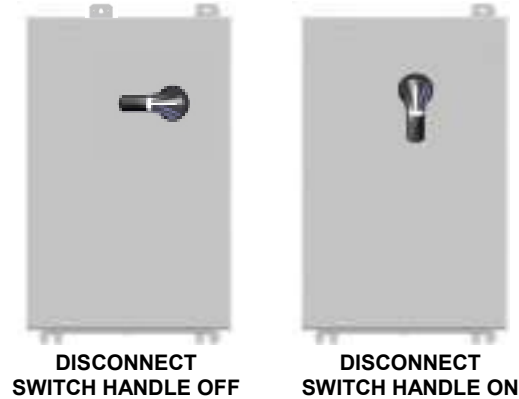


Figure 4.1 – Switch Handle Positions for OFF (left) and ON (right)

The CR1500 Combiner contains a user-operable disconnect switch. When this disconnect switch handle is in the OFF position, the circuit is open between the ungrounded source conductors and the ungrounded output conductor(s). When the disconnect switch is in the ON position, the circuit is closed between the ungrounded source conductors and the ungrounded output conductor(s).

The disconnect switch is fully load-break rated and can be safely operated under normal operating conditions when installation is per this manual and all warnings and ratings are observed.

5. Warranty & RMA Instructions

For all warranty information, please visit: <http://solectria.com/support/documentation/warranty-information/grid-tied-inverter-warranty-letter/>

6. Appendices

6.1 Appendix A – CR1500 and CA1500 Datasheet

Please visit: <https://solectria.com/string-combiners/xgi-1500-combiners/>

6.2 Appendix B – Contact Information

Yaskawa Solectria Solar
360 Merrimack Street
Building 9, 2nd Floor
Lawrence, Massachusetts 01843
USA

Tel: 978.683.9700
Fax: 978.683.9702

Sales/General Info: inverters@solectria.com
Customer Support: 978-683-9700 x2
Website: www.solectria.com

6.3 Appendix C – Authorized Distributors

See the Solectria website for a complete and updated listing of distributors: <https://solectria.com/distributors/>

7. UL1741 Authorization to Mark



AUTHORIZATION TO MARK

This authorizes the application of the Certification Mark(s) shown below to the models described in the Product(s) Covered section when made in accordance with the conditions set forth in the Certification Agreement and Listing Report. This authorization also applies to multiple listee model(s) identified on the correlation page of the Listing Report.

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Applicant: Solectria Renewables, LLC	Manufacturer: Solectria Renewables, LLC
Address: 360 Merrimack Street, Building 9, Floor 2 Lawrence, MA 01843	Address: 360 Merrimack Street, Building 9, Floor 2 Lawrence, MA 01843
Country: USA	Country: USA
Contact: Wei Zhou	Contact: Wei Zhou
Phone: (978) 683-9700	Phone: (978) 683-9700
FAX: NA	FAX: NA
Email: wei.zhou@solectria.com	Email: wei.zhou@solectria.com
Party Authorized To Apply Mark: Same as Manufacturer	
Report Issuing Office: Cortland, NY 13045	
Control Number: <u>3058249</u>	Authorized by: <u><i>Danielle DeGrueter</i></u> for Dean Davidson, Certification Manager



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Telephone 800-345-3851 or 847-439-5667 Fax 312-283-1672

Standard(s):	Inverters, Converters, Controllers And Interconnection System Equipment For Use With Distributed Energy Resources [UL 1741:2010 Ed.2+R:15Feb2018]
Product:	Remote Combiner Box
Brand Name:	Solectria
Models:	CR1500- followed by 16-, 20-, 24-, 26-, 28-; followed by 15, 20, 25, 30; may be followed by S, W, SW.



AUTHORIZATION TO MARK

This authorizes the application of the Certification Mark(s) shown below to the models described in the Product(s) Covered section when made in accordance with the conditions set forth in the Certification Agreement and Listing Report. This authorization also applies to multiple listee model(s) identified on the correlation page of the Listing Report.

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Applicant: Solectria Renewables, LLC	Manufacturer: Solectria Renewables, LLC
Address: 360 Merrimack Street, Building 9, Floor 2 Lawrence, MA 01843	Address: 360 Merrimack Street, Building 9, Floor 2 Lawrence, MA 01843
Country: USA	Country: USA
Contact: Wei Zhou	Contact: Wei Zhou
Phone: (978) 683-9700	Phone: (978) 683-9700
FAX: NA	FAX: NA
Email: wei.zhou@solectria.com	Email: wei.zhou@solectria.com

Party Authorized To Apply Mark: Same as Manufacturer
Report Issuing Office: Cortland, NY 13045

Control Number: 3058249 **Authorized by:** *Danielle Baubert*
 for Dean Davidson, Certification Manager



This document supersedes all previous Authorizations to Mark for the noted Report Number.

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Intertek Testing Services NA Inc.
 545 East Algonquin Road, Arlington Heights, IL 60005
 Telephone 800-345-3851 or 847-439-5867 Fax 312-283-1672

Standard(s):	Inverters, Converters, Controllers And Interconnection System Equipment For Use With Distributed Energy Resources [UL 1741:2010 Ed.2+R:15Feb2018]
Product:	Attachable Combiner Box
Brand Name:	Solectria
Models:	CA1500- followed by 16-, 20-, 24-, 26-, 28-; followed by 15, 20, 25, 30; may be followed by S, W, SW.