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IMPORTANT SAFETY INSTRUCTIONS SAVE THESE INSTRUCTIONS

INSTRUCTIONS IMPORTANTES CONCERNANT LA SÉCURITÉ

Before maintaining or servicing the DISCOM 3R String Combiner Box, please read all instructions and caution markings in this guide, as well as on the String Combiner box, on the PV modules and PV inverter or Charge Controller.

This manual contains important instructions that shall be followed during maintenance and servicing of DISCOM 3R String Combiner Boxes. To reduce the risk of electrical shock, and to ensure the safe maintenance and service 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

All electrical installations, including the wiring method shall be performed in accordance with all local and national electrical codes, including ANSI/NFPA 70 and the Canadian Electric Code Part 1



WARNING - The DISCOM 3R fused string combiner contains no user serviceable parts. For maintenance, please contact Solectria Renewables or an authorized installer by visiting <http://www.solectria.com> or by calling +1-978-683-9700.



WARNING - Disconnect all PV modules or follow your site specific instructions when connecting the array. PV arrays produce electrical energy when exposed to light and could create a hazardous condition.



AVERTISSEMENT-COUPER TOUTES LES SOURCES D'ALIMENTATION AVANT LE DÉPANNAGE



WARNING - Connection of the DISCOM 3R String Combiner Box with PV modules and a PV inverter to the electric utility grid must be performed only by qualified personnel.



WARNING - The DISCOM 3R String Combiner Box is designed to be used with a PV system where one of the two DC source conductors is grounded at the inverter. This guide assumes a negative grounded PV system.

If connecting the DISCOM 3R String Combiner Box to a charge controller, substitute the term "charge controller" for inverter throughout this guide.

1.0 Product Overview

The DISCOM 3RString Combiner Box is designed for combining multiple strings of Photovoltaic (PV) modules for connection to an inverter. In a large PV array, each string of PV modules must be fused before being paralleled and connected to an inverter. The DISCOM 3R String Combiner Box is available in configurations from 8 to 30 source circuits and each source circuit is designed to utilize a fuse that is rated at least 156% of its short circuit current rating. The fuse value for any source circuit should not exceed the lowest PV module fuse rating specified for any module within the source circuit string.

1.1 Disconnect Switch Operation

The DISCOM 3R String 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 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 the DISCOM 3R Installation and Operations guide and all warnings and ratings are observed.

2.0 Ratings Table

MODEL	DISCOM-3R-08
Maximum Input Voltage (VDC)	600
Voltage Range (VDC)	0-600
Maximum Continuous DC Current (ADC)	100
Maximum Fuse Rating (A)	15
NEMA Rating	3R
Ambient Operating Temperature	-40° F to +122°F (-40°C to +50°C)
Weight (LBS)	18 lbs (8.2 kg)
Height (Inches)	18.375 in. (466.725 mm)
Width (Inches)	10.0 in. (254 mm)
Depth (Inches)	5.125 in. (130.175 mm)

3.0 Servicing Instructions



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

3.1 Re-Torquing Connections

All terminal connections should be periodically inspected and re-torqued to recommended settings.

A thermal scan following 2-3 hours of high current system output is recommended as an annual maintenance step.



WARNING – PV Circuits conduct dangerous voltage and current levels any time there is light present. Cover or disconnect PV modules with an opaque covering before proceeding.

1. Tighten each ungrounded source conductor at the fuse holder to the torque ratings specified in the Torque Table. The proper bit is #2 Phillips.



WARNING – Removing the plastic guard exposes service personnel to dangerous voltage and shock hazards.

2. Remove the plastic guard.
3. Verify the ungrounded output conductor(s) to the torque ratings specified on the Torque Table.
4. Verify the grounded source conductor(s) to the torque ratings specified in the Torque Table.
5. Verify the equipment grounding conductors to the torque ratings specified in the Torque Table.
6. Verify the main equipment grounding conductor to the torque rating specified in the Torque Table.
7. Re-install the plastic guard. Affix the guard with the two #10 screws originally provided.

4.0 Torque Table

REF	COMPONENT	Cond. Types	DISCOM-3R-08
A	EGC Ground Bar Terminations	Cu or Al	30
B	Ungrounded Source Terminations	Cu	25
C	Ungrounded Output Lug	Cu or Al	45
D	Grounded Source Terminations	Cu	35
E	Grounded Output Lug	Cu or Al	45

See Diagram 1 (next page) for Component Identification. All Torque Values Specified in inches and lbs.

DIAGRAM 1 – Component Identification Diagram

