



**CONNECT AND PROTECT**

# Solar Catalog

  
nVent

**HOFFMAN**

# Product and Service Advantages

Contact us today to learn more about our comprehensive solar product offering.

## Fiberglass is our Standard

Our expertise is fiberglass. We believe that fiberglass sets the standard for durable materials which have a 20-year service life in outdoor light. Resistant to rust, lower weight, and able to provide the best thermal characteristics, fiberglass combiner boxes set the gold standard for any solar project, large or small. Solar combiner boxes have the lowest O&M costs over the lifetime of the system, ensuring peace-of-mind for investors, owners, and EPCs.

## Lightweight and Easy to Install

Lighter boxes make the finished product easier to install, and reduce overall product costs incurred during shipping and transportation. Fiberglass combiner boxes are between 35-50% lighter than their metallic counterparts, making them easier to install and ship, thereby reducing the bottom line cost.

## Highest Efficiency Thermal Design

Fiberglass has the highest emissivity value among nonmetallic and metallic components used for solar combiner box construction. This results in more heat escaping the enclosure during operation. Our intelligent and innovative design utilize up to 20% more copper than the average competitor's combiner. We also utilize nonmetallic materials whenever possible for both safety and thermal efficiency. By combining intelligent materials and innovative combiner box design, Solar combiners enable EPCs to install more efficient systems which outperform the competition and run cooler and more efficiently.

## Shortest Lead Times

We streamlined our manufacturing process to be centered around the needs of the installer. We strive to meet the needs of our installers by providing accurate lead times, sometimes as short as 1 week, for most standard configuration orders.

## Customizability

Our value-added services enable installers to reduce time spent during construction. From custom labeling, customized holes, custom assembly such as cord grips, whips, or pre-wiring, Solar products can be customized to the needs of any installer.

Choose the right enclosure for your next solar project.

# RJ-1

## Residential Transition Box

The Solar RJ-1 rooftop junction box with flashing provides a safe, secure, and NEMA 4X watertight solution for the Solar installer to penetrate the roof for attic runs and make the proper wire connections. The product is designed to be simple to install, minimize time on the roof, while additionally providing higher levels of protection for the point of penetration in the roof as well as electrical connections inside the junction box.



## Key Features

- **Designed specifically for solar installations**
- **Light weight**
- **Non-metallic ---Will NOT rust/corrode**
- **Easy to drill/modify**
- **Captive screws in cover- will not fall out**
- **Minimal design, small footprint**
- **NEMA 4X rated**
- **All roof penetrations cover by Nema 4x enclosure**

## Specifications

### Enclosure

Material: Polycarb blend w/ UV inhibitors  
UV Stabilized: Yes  
Impact Resistance: Yes  
Weight: 2.73lb  
Color: Graphite Black

### Dimensions

Flashing Dimensions (Approximate): 13" x 18"  
Enclosure Dimensions (Approximate): 8" x 8"  
Total Product Height: 3.5"  
Cubic Inches: 224 Cubic Inches



# RJ-1 Features & Benefits

Solar's new RJ-1 is a junction box with integrated flashing to be used on residential solar installs with composite shingle roofing.



Ground bar included in standard offering

Fewer mounting holes equal better seal

Captive screws in cover will not fall out

NEMA 4X –poured in place gasket

## Key Features

- Cost effective
- Light weight (2.73 lbs)
- Dark Graphite color- blends in with any rooftop
- Non-metallic: will not rust/corrode
- Easy to drill/modify
- Designed specifically with solar installer in mind



# RU-1-LP

## Residential AC String Transition Box

The Solar RU-1-LP Box enables installers to transition up to two microinverter strings to a single conduit, reducing costs by enabling installers to switch to standard building wire. The low profile enclosure is designed to be mounted beneath the array using the optional box bracket accessory or adjacent to the array using racking system accessories and provides a touch-safe and secure means to transition strings.



## Key Features

- Mountable beneath the PV array.
- Works with most microinverter brands.
- NEMA 4X enclosure with 20 year usable outdoor life.
- Reduces overall cable and wire BOS costs.
- Simplifies installation and commissioning while reducing labor costs.
- More reliable than using wire nuts, U-joints, or wire taps.

## Electrical Specifications

Maximum Voltage: 600V AC / DC  
 Terminal Wire Size Range (One Conductor) : (1) #6-#24  
 Wire Size Range (Two Conductors): (2) #20-#12  
 Connector Type: Screw Clamp  
 Maximum Current Per Terminal: 57A

## Physical Specifications

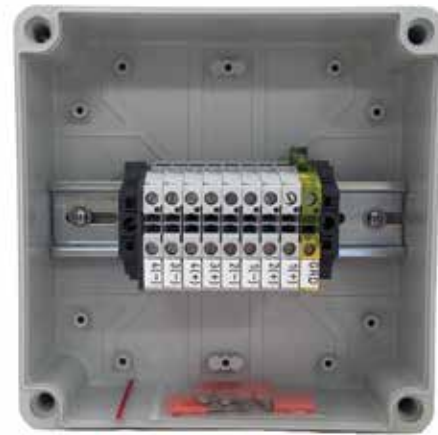
Enclosure Rating: NEMA 4X  
 Enclosure Material: VALOX™ Polycarbonate  
 Outer Dimensions: 6.72" x 3.17" x 3.61"  
 Shipping Carton Size: 7" x 4" x 4"  
 Shipping Weight: 1.07lb



# RU-2-LP

## Residential DC String Transition Box

The Solar RU-2-LP Box enables installers to transition and/or combine one to four DC strings to a single conduit, reducing costs by enabling installers to switch to standard building wire and simplifying connections in the enclosure. The low profile enclosure is designed to be mounted beneath the array using the optional box bracket accessory or adjacent to the array using racking system accessories.



### Key Features

- Mountable beneath the PV array.
- Works with string inverters and optimizers.
- NEMA 4X enclosure with 20 year usable outdoor life.
- Reduces overall cable and wire BOS costs.
- Simplifies installation and commissioning while reducing labor costs.
- More reliable than using wire nuts, U-joints, or wire taps.

### Electrical Specifications

Maximum Voltage: 600V AC / DC  
Terminal Wire Size Range (One Conductor) : (1) #6-#24  
Wire Size Range (Two Conductors): (2) #20-#12  
Connector Type: Screw Clamp  
Jumpers: (4) 2-Prong Jumpers  
Maximum Current Per Terminal: 57A  
Maximum Combined Current Per Terminal: 57A

### Physical Specifications

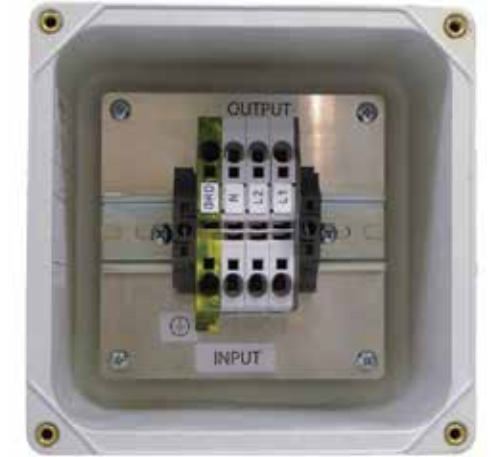
Enclosure Rating: NEMA 4X  
Enclosure Material: VALOX™ Polycarbonate  
Outer Dimensions: 7.01" x 7.01" x 3.13"  
Shipping Carton Size: 7" x 8" x 4"  
Shipping Weight: 1.37lb



# RU-1

## Residential AC String Transition Box

The Solar RU-1 Box enables installers to transition up to two microinverter strings to a single conduit, reducing costs by enabling installers to switch to standard building wire. The low profile enclosure is designed to be mounted adjacent to the array using standard racking system accessories and provides a touch-safe and secure means to transition strings.



### Key Features

- Mountable adjacent to the array.
- Works with most microinverter brands.
- NEMA 4X enclosure with 20 year usable outdoor life.
- Reduces overall cable and wire BOS costs.
- Simplifies installation and commissioning while reducing labor costs.
- More reliable than using wire nuts, U-joints, or wire taps.

### Electrical Specifications

Maximum Voltage: 600V AC / DC  
Terminal Wire Size Range (One Conductor) : (1) #6-#24  
Wire Size Range (Two Conductors): (2) #20-#12  
Connector Type: Spring Clamp  
Maximum Current Per Terminal: 57A

### Physical Specifications

Enclosure Rating: NEMA 4X  
Enclosure Material: Vyncopreg V5010(f1) Fiberglass  
Outer Dimensions: 7.31" x 7.31" x 4.92"  
Shipping Carton Size: 8" x 8" x 5"  
Shipping Weight: 1.07lb



# RU-2

## Residential DC String Transition Box

The Solar RU-2 Box enables installers to transition and/or combine one to four DC strings to a single conduit, reducing costs by enabling installers to switch to standard building wire and simplifying connections in the enclosure. The low profile enclosure is designed to be mounted beneath the array using the optional box bracket accessory or adjacent to the array using racking system accessories.



### Key Features

- Mountable to rail using standard rail attachments.
- Works with string inverters and optimizers.
- NEMA 4X enclosure with 20 year usable outdoor life.
- Reduces overall cable and wire BOS costs.
- Simplifies installation and commissioning while reducing labor costs.
- More reliable than using wire nuts, U-joints, or wire taps.

### Electrical Specifications

Maximum Voltage: 600V AC / DC  
Terminal Wire Size Range (One Conductor) : (1) #6-#24  
Wire Size Range (Two Conductors): (2) #20-#12  
Connector Type: Screw Clamp  
Jumpers: (4) 2-Prong Jumpers  
Maximum Current Per Terminal: 57A  
Maximum Combined Current Per Terminal: 57A

### Physical Specifications

Enclosure Rating: NEMA 4X  
Enclosure Material: Vyncopreg V5010(f1) Fiberglass  
Outer Dimensions: 9.31" x 7.31" x 3.13"  
Shipping Carton Size: 7" x 8" x 4"  
Shipping Weight: 1.37lb

# RF-2-3, RF-2-4, RF-2-6

## Residential Ungrounded Combiner Boxes

The Solar RF-2-3, RF-2-4, and RF-2-6 Combiner Boxes support the combination of up to three, four, or six strings. In ungrounded combiner boxes, fuses are provided for both the positives and negatives. Housed in a fiberglass enclosure, the Solar combiner boxes offer unparalleled protection against the elements and the sun. The large and oversized busbars reduce losses and offer improved efficiency for connections.



Model RF-2-4 Shown

### Key Features

- Mountable on solar rail using brackets.
- Works with grounded string inverters.
- NEMA 4X fiberglass enclosure with 20 year usable outdoor life.
- Touch-Safe fuse holders.

### Electrical Specifications

Maximum Voltage: 1000V AC / DC  
Number of Inputs : 3 (RF-2-3), 4 (RF-2-4), 6 (RF-2-6)  
Input Wire Size Range: #6 - #14 AWG  
Output Wire Size Range: #6 - 250MCM AWG  
Connector Type: Screw Clamp  
Maximum Current Per Terminal: 24A  
Maximum Fuse Size: 30A  
Maximum Combined Current (RF-3): 72A  
Maximum Combined Current (RF-4): 96A  
Maximum Combined Current (RF-6): 144 A

### Physical Specifications

Enclosure Rating: NEMA 4X  
Enclosure Material: Vyncopreg V5010(f1) Fiberglass  
Outer Dimensions (RF-2-3, RF-2-4): 11.32" x 9.32" x 5.39"  
Outer Dimensions (RF-2-6): 13.32" x 11.32" x 5.52"  
Shipping Carton Size (RF-2-3, RF-4): 12" x 10" x 6"  
Shipping Carton Size (RF-6): 14" x 12" x 6"  
Shipping Weight: 5.10 lb (RF-3), 5.25 lb (RF-4)  
Shipping Weight: 6.55 lb (RF-6)



# RF-8, RF-12

## Large Residential Grounded DC String Combiner Boxes

The Solar RF-8 and RF-12 Combiner Boxes support the combination of up to eight or twelve strings. Housed in a fiberglass enclosure, the Solar combiner boxes offer unparalleled protection against the elements and the sun. The large and oversized busbars reduce losses and offer improved efficiency for connections.



Model RF-12 Shown

### Key Features

- Mountable on solar rail using brackets.
- Works with grounded string inverters.
- NEMA 4X fiberglass enclosure with 20 year usable outdoor life.
- Touch-Safe fuse holders and negative terminals.

### Electrical Specifications

Maximum Voltage: 1000V AC / DC  
Number of Inputs : 8 (RF-8), 12 (RF-12)  
Input Wire Size Range: #6 - #14 AWG  
Output Wire Size Range: 3/0 - 350MCM AWG  
Connector Type: Screw Clamp  
Maximum Current Per Terminal: 24A  
Maximum Fuse Size: 30A  
Maximum Combined Current: 192 A (RF-8), 288 A (RF-12)

### Physical Specifications

Enclosure Rating: NEMA 4X  
Enclosure Material: Vyncopreg V5010(f1) Fiberglass  
Outer Dimensions: 17.32" x 15.32" x 6.65"  
Shipping Carton Size: 18" x 16" x 7"  
Shipping Weight: 7.10 lb (RF-8), 7.37 lb (RF-12)



# RF-3, RF-4, RF-6

## Residential Grounded DC String Combiner Boxes

The Solar RF-3, RF-4, and RF-6 Combiner Boxes support the combination of up to three, four, or six strings. Housed in a fiberglass enclosure, the Solar combiner boxes offer unparalleled protection against the elements and the sun. The large and oversized busbars reduce losses and offer improved efficiency for connections.



Model RF-4 Shown

### Key Features

- Mountable on solar rail using brackets.
- Works with grounded string inverters.
- NEMA 4X fiberglass enclosure with 20 year usable outdoor life.
- Touch-Safe fuse holders and negative terminals.

### Electrical Specifications

Maximum Voltage: 1000V AC / DC  
Number of Inputs : 3 (RF-3), 4 (RF-4), 6 (RF-6)  
Input Wire Size Range: #6 - #14 AWG  
Output Wire Size Range: #6 - 250MCM AWG  
Connector Type: Screw Clamp  
Maximum Current Per Terminal: 24A  
Maximum Fuse Size: 30A  
Maximum Combined Current (RF-3): 72A  
Maximum Combined Current (RF-4): 96A  
Maximum Combined Current (RF-6): 144 A

### Physical Specifications

Enclosure Rating: NEMA 4X  
Enclosure Material: Vyncopreg V5010(f1) Fiberglass  
Outer Dimensions (RF-3, RF-4): 11.32" x 9.32" x 5.39"  
Outer Dimensions (RF-6): 13.32" x 11.32" x 5.52"  
Shipping Carton Size (RF-3, RF-4): 12" x 10" x 6"  
Shipping Carton Size (RF-6): 14" x 12" x 6"  
Shipping Weight: 5.10 lb (RF-3), 5.25 lb (RF-4)  
Shipping Weight: 6.55 lb (RF-6)





## Commercial Transition Boxes CUF Series

The CUF Series solar transition boxes (also known as pass through or pass thru boxes) provide a convenient location for transitioning wires in a commercial array when fusing is not required.

### Specifications

#### Electrical

- Maximum Voltage: 1000 V
- Maximum Current: 75 A
- Number of Pairs: 4 - 20
- Wire Size (Input and Output): #24 - #3 AWG
- Max Operating Temperature: 50°C

#### Enclosure

- Material: Fiberglass Reinforced Polyester (FRP)
- Environmental Rating: NEMA 4X



## Commercial Part Number Format

Whether it's 600V DC, 1000V DC, or 1500V DC, Solar combiner has a product that meets the needs of your system design.

**Sample Solar Part Number: CDF-U-400-12-30-1-N-N-N-N-N**

#### Series Selection:

Solar Series	CDF	CDF-U	CDF-AFCI	CDF-HV	CDF-U-HV
Voltage	600V DC / 1000V DC				
AFCI	Non-AFCI		AFCI		Non-AFCI
Topology	Grounded	Ungrounded	Grounded	Ungrounded	Ungrounded

#### Part Number Composition:

Example Value	CDF-U	400	12	30	1	N	N	N	N	
<b>Assembly Part Number</b>	Solar Series	Main Disconnect Size [Amps]	Number of Fuses	Fuse Size [Amps]	Lug Option	Surge Protective Device	Drain / Vent	Fuse Holder	Installed Strut	Lexan Dead Front
<b>Acceptable Options</b>	From Above	400, 350*, 320, 250, 200, 100	6 to 40	5, 6, 8, 10, 12, 15, 20, 25, 30	1,2,3	1 or N	1 or N	1 or N	1 or N	1 or N
<b>Notes:</b>		1500V: 400,320, and 250 Only. *350A: is reserved for series ending in "-AFCI" only. 350A denotes contactor ampacity.	600V/1000V: Number can only be even (not odd). Round up to nearest even number. Note: For ungrounded systems, provide number of fuses per polarity (not total).		1: Single Hole Mechanical Lug 2: Double Hole Mechanical Lug 3: Terminal for Compression Lug			1500V: An indicating fuse holder is not available. (i.e. option "1" is not available)		

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