



SOLOBOX COMP INSTALLATION GUIDE



UNIRAC Code-Compliant Installation Manual

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READ ALL INSTRUCTIONS AND SAFETY WARNINGS PRIOR TO INSTALLATION**SAVE THESE INSTRUCTIONS**

This manual details important instructions that must be followed prior to installation, during installation and during service and/or maintenance. This manual must always be readily available.



IDENTIFIES CONDITIONS OR PROCEDURES, WHICH IF NOT FOLLOWED, COULD RESULT IN SERIOUS INJURY, DEATH OR PROPERTY DAMAGE.



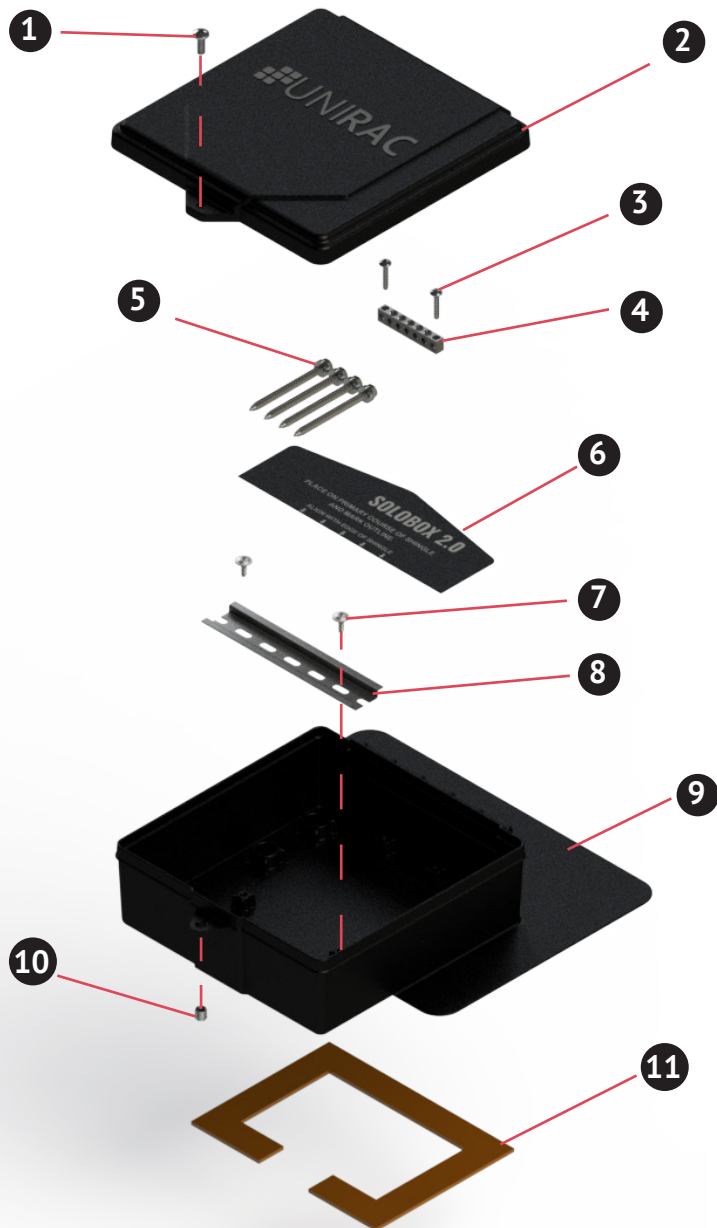
IDENTIFIES CONDITIONS OR PROCEDURES, WHICH IF NOT FOLLOWED, COULD RESULT IN SERIOUS DAMAGE OR FAILURE OF EQUIPMENT.

SAFETY WARNINGS AND CAUTIONS:

- All instructions contained in this manual must be performed by a licensed electrician or qualified personnel and the installation must comply with all applicable national, federal, state, municipal and local codes. All wiring methods must be in accordance with the National Electric Code, ANSI/NFPA 70.
- Lethal voltages may be present prior to installation, during installation, maintenance and/or operation of this equipment, ensure that all electrical connections are at zero voltage and properly disconnected before installing or when performing maintenance.
- Always de-energize circuits prior to installation or service. When disconnecting inverter, allow the appropriate amount of time for all electrical storage components to discharge before servicing.
- Proper safety equipment and personal protective equipment must be worn at all times.
- Do not install this equipment in wet conditions or if roof surface is wet or when covered in frost, ice or snow.
- Prior to drilling into attic, ensure no electrical wires, circuits or components are on the other side.
- This equipment must be installed as specified in this manual. Failure to do so may result in a roof leak, void the warranty or cause property damage.
- Do not exceed maximum voltage or wire sizes specified in this manual.
- Spacings not less than the minimum required in UL 1741 shall be provided between uninsulated live parts and a conduit bushing installed at any location on the enclosure.
- Bonding between conduit connections is not automatic and shall be provided as a part of the installation.
- Maintain a spacing of at least 1 inch between uninsulated live parts and fittings for conduit, armored cable, and uninsulated live parts of opposite polarity.

SAFETY WARNINGS AND CAUTIONS (Cont.):

- All wires are to be copper conductors with insulation rated to 90°C or higher.
- The hub shall be connected to the conduit before the hub is connected to the enclosure.
- Ensure all proper jumpers or other bonding mechanisms of SOLOBOX are in place per NEC.
- Wiring shall conform to wire bending space as listed in UL1741.
- The PV system grounding shall be installed per the requirements of Sections 690.41 through 690.47 of the National Electrical Code, ANSI/NFPA 70, UL1741.



Part Number: SOLOBOX2-D

ITEM NO.	DESCRIPTION	QTY
1	SCREW, 0.25-20 x .625 PAN HEAD PHILLIPS SS	1
2	SOLOBOX TOP	1
3	THREAD FORMING SCREW, #10-16 x.875	2
4	SOLOBOX GROUNDING BAR	1
5	SCREW, HWH, SS, 14-14X250, TYPE AB	4
6	SOLOBOX TEMPLATE	1
7	THREAD FORMING SCREW, #10-16 x .5	2
8	35mm x 7.5mm SLOTTED DIN RAIL	1
9	SOLOBOX BOTTOM	1
10	INSERT, 0.25 x 20 PRESS FIT TWIST RESISTANT	1
11	BUTYL TAPE	1

Other typical components (not included with SOLOBOX COMP)

- ½" - 1" Conduit Hub/Fittings
- 14 AWG – 6 AWG (PV/THHN Wire)
- 14 AWG – 6 AWG (Ground Wire)
- Terminal Blocks, fuse holder, rail stop and/or end plates
- Standard Wire Nuts
- Push-In Wire Connectors
- Grounding Lugs
- Conduit Hub Grounding Bushings



SOLOBOX COMP Specifications and Ratings

- Product Certifications:
 - UL 1741
- Enclosure Rating: Type 3R
- Maximum Voltage: 1000 Volts
- Maximum Current: 120 Amps
- Maximum Current per Circuit: 60A
- Maximum number of Input Circuits: 8
- Allowable Wire:
 - Inputs: 14 AWG – 6 AWG
 - Outputs: 14 AWG – 6 AWG
 - Ground: 14 AWG – 6 AWG
- Mounting Positions:
 - On Roof: Slope Range: 1:12 – 12:12
 - On vertical wall
- Max Side Wall Fitting Size: 1"
- Max Attic Pass-Through Fittings: 3
- Attic Pass-Through Fitting Size Range: ½" - 1"
- Ambient Operating Conditions: -35°C to 75°C
- Wire connectors requirement:
 - UL486C or UL486D Listed wire connectors for wire gauge 14 AWG to 6 AWG

⚠ WARNING

DO NOT EXCEED MAXIMUM VOLTAGE, CURRENT OR FITTING SIZES. FAILURE TO DO SO COULD RESULT IN SERIOUS INJURY, DEATH OR PROPERTY DAMAGE.

⚠ CAUTION

ALL CONDUIT HUBS AND CABLE FITTINGS MUST BE RAIN TIGHT, RATED FOR WET LOCATIONS AND COMPLY WITH THE UL STANDARD FOR CONDUIT, TUBING AND CABLE FITTINGS, UL 514B.

DETERMINE LOCATION: It is best practice to determine the location of the junction box during the system design process to ensure proper installation and code compliance. Note the following requirements to determine the proper location.

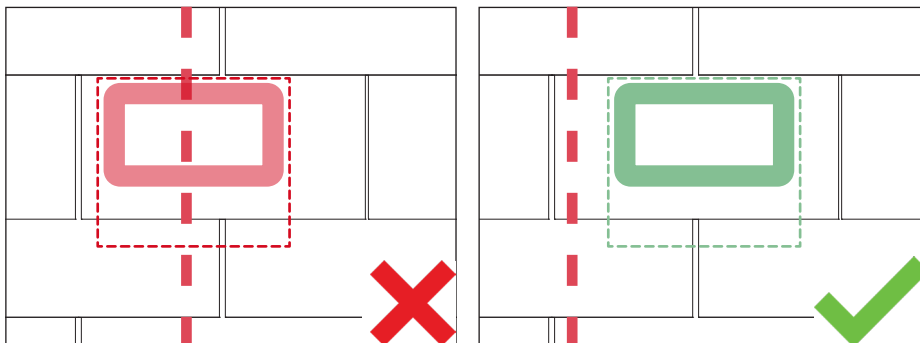
LOCATION REQUIREMENTS:

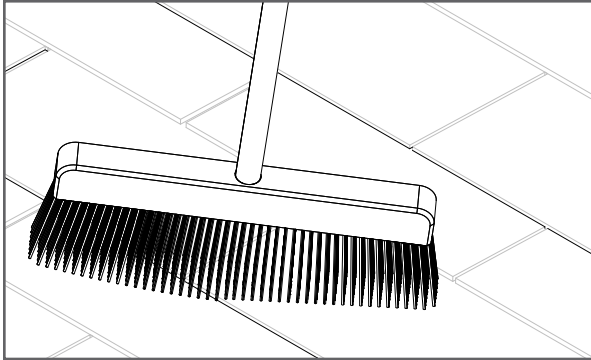
- Junction box must be installed between rafters. Do not install junction box directly over rafter.
- The sealing area of the junction box must be installed on a flat surface. Do not install the junction box sealing area directly on top of seam, vertical joint or on two shingle courses or layers. See below.
- Prior to drilling into the attic ensure no electrical wires, circuits or components are on the other side.



If installing junction box underneath modules, ensure the system ground path will not be disturbed or broken during servicing. Failure to do so could result in serious injury, death or property damage.

DO NOT PLACE JUNCTION BOX DIRECTLY OVER RAFTER.

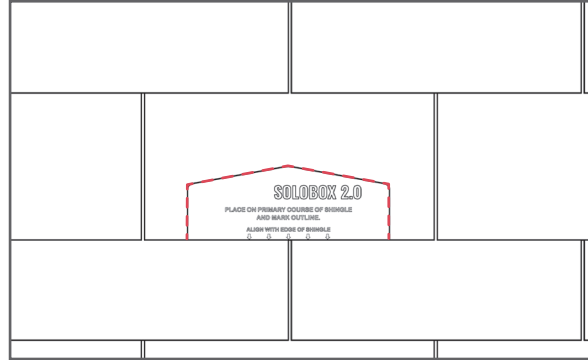




STEP 1: CLEAN ROOF SURFACE:

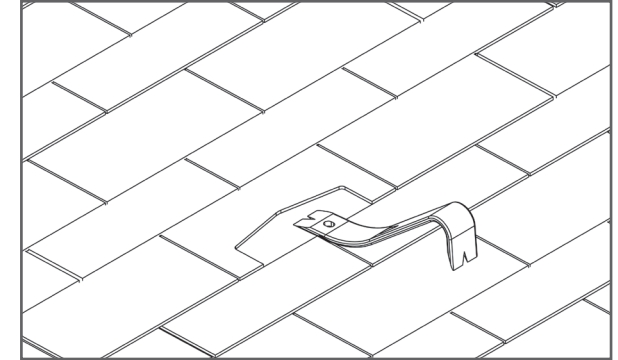
Clean roof surface properly. Roof surface must be free of Debris, Frost, Ice and Snow.

Note: To maintain butyl flashing performance, Unirac does not recommend installing when ambient and/or roof temperatures are below 5°F or above 180°F.



STEP 2: POSITION GUIDE TEMPLATE:

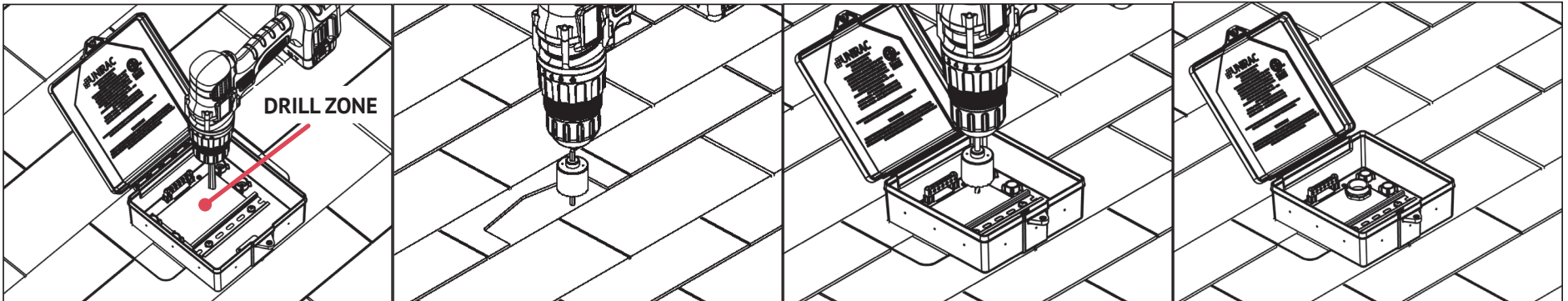
Use the guide template provided in the box and flush widest side to the bottom of 2nd shingle course and trace the perimeter of the guide template



STEP 3: TRIM THE SHINGLE COURSE

Trim out the roofing materials as marked, use a roofing bar to loosen shingles, and remove nails that would interfere with the Solobox Comp flashing structure.

NOTE: Ensure that the cut area fits around the Solobox Comp



STEP 4: DRILL HOLES:

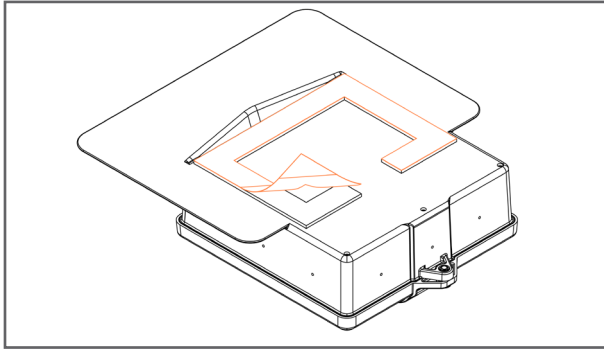
- Slide Solobox Comp into place. Using a drill bit, drill through the box and roof simultaneously within the approved drill zone.
- Verify that the penetration hole is not over or through a rafter/truss.
- Remove the Solobox Comp and drill appropriately sized holes in the box and decking for required conductor fittings.
- Clean off burs and install conductor fittings to Solobox Comp

TOOLS REQUIRED: Drill, spade bit or hole drill (1-7/8" max), brush, lumber crayon, #3 Philips screwdriver/bit, 5/16" socket head.

SOLOBOX COMP

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INSTALLATION GUIDE : PAGE

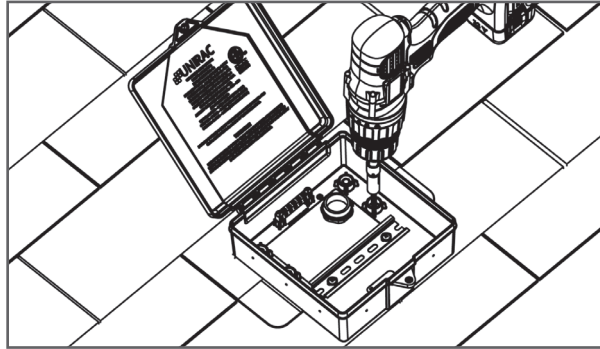


STEP 5: PEEL OFF BUTYL COVER

Gently peel butyl release paper off on the bottom of the Solobox Comp. No need to apply roofing sealant.

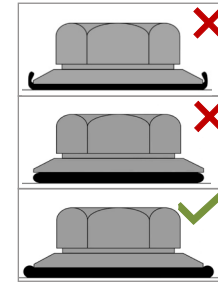


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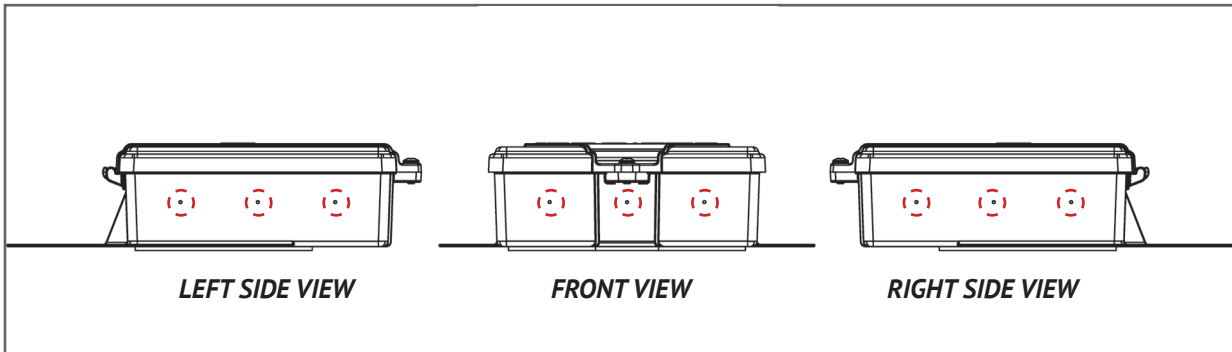
STEP 6: SECURE SOLOBOX COMP TO ROOF

Slide the Solobox Comp into place and secure it to the roof decking through the mounting holes using the 4 provided decking screws. Torque until EPDM washers expand.



Do not over-torque the deck screws.

When proper torque is applied, the EPDM washer should slightly expand out from the sides as shown in the image.

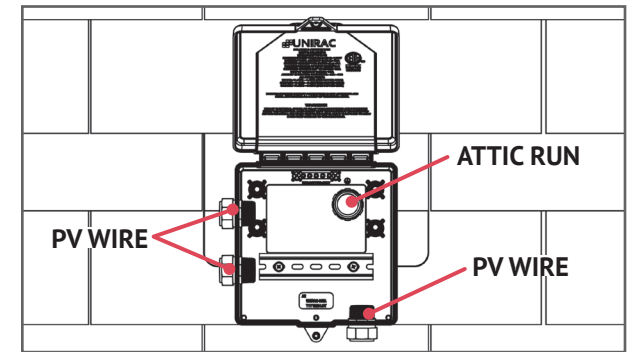


STEP 7: CABLE FITTING LOCATIONS

Install outdoor-rated, UL514B, NEMA 3R approved fittings and/or strain reliefs to the side walls as mentioned above and complete wiring installation. Raintight fittings up to 1" are acceptable.



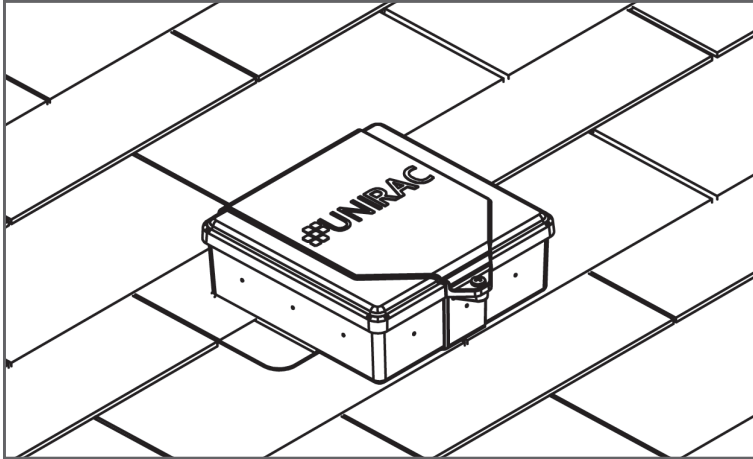
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STEP 8: PROVIDE CONNECTIONS

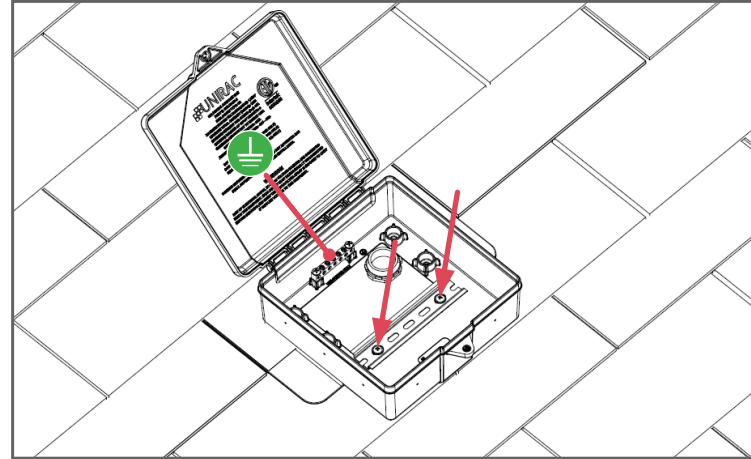
Apply the appropriate wire connectors, terminal blocks, and/or other needed components inside the Solobox Comp.

NOTE: Ensure that terminal blocks never contact conduit hubs.



STEP 9: CLOSE LID:

Close the lid once all connections are given inside the box. Hand tight 0.25-20 x .625" Phillips pan head screw into bottom of box until the top and bottom tabs are flush and secured.



DIN RAIL INSTALLATION

Din rail can also be installed into a box at site if it is not pre-assembled. Din rail should be positioned as shown in the image above and secure it with two (2) #10-16 x .5" thread forming screws.