



ELECTRICAL RESIDENTIAL

910-893-7525

www.harnett.org

PERMIT NUMBER

ERES2312-0347

JOB ADDRESS: 47 JUNO DR	PERMIT SUBTYPE: RESIDENTIAL SOLAR PANELS	PARCEL NO: 9597-35-4500.000
DESCRIPTION: roof mount solar panels	DATE ISSUED: 1/8/2024	DATE EXPIRED:
PLAN NAME:	ZONING DISTRICT: RA-20R - 0.8 acres (100.0%)	

APPLICANT: JOSEY JUSTIN 47 JUNO DR BROADWAY, NC 27505 BROADWAY, NC 27505-8138	PHONE: EMAIL:
CONTRACTOR: Top Tier Solar Solutions, LLC 1530 Center Park Dr. Charlotte, NC 28217	PHONE: (855)997-1213 EMAIL: nc@toptiersolarsolutions.com
OWNER: JOSEY JUSTIN 47 JUNO DR BROADWAY, NC 27505 BROADWAY, NC 27505-8138	PHONE: EMAIL:

REQUIRED INSPECTIONS

INSPECTION TYPE	APPROVAL	DATE	COMMENTS
FINAL**			
ROUGH IN			



PV Letters

December 22, 2023

Contractor Name: Top Tier Solar Solutions
Contractor Address: 1530 Center Park Dr #2911,
Charlotte, NC 28217

Subject: Proposed Solar Panel Installation
Kimberly Josey Residence, 47 Juno Dr, Broadway, NC
DC System Size: (N) 1.580 kW
PV Letters Job #004-4672

To Whom it May Concern,

We have reviewed information, provided by you or your office, related to the proposed solar panel installation at the above-referenced address. The purpose of the review was to determine if the existing roof is structurally adequate for the proposed installation. Based on our review and analysis of the given information, and in accordance with governing building codes, it is our professional opinion that the existing structure is permitted to remain unaltered for the proposed solar installation.

Design Parameter Summary

Governing Building Code: 2018 North Carolina Residential Code
Risk Category: II
Wind Exposure: B
Design Wind Speed: 120 mph
Ground Snow Load: 15 psf

Roof Information

Roof Structure: 2x4 Manufactured Trusses @ 24" O.C.
Roofing Material: Asphalt Shingles (1 layer)
Roof Slope: 40 degrees

Roof Connection Details

Wood Screws: (2) #14 Self-Drilling Screw with a min. 2.5" embedment into roof truss top chord only, at 72" O.C. max Stagger attachments to avoid overloading any individual truss top chord.

Engineering Analysis

The proposed installation - including weight of panels, racking, mounts, and inverters where applicable - will be approximately 3 psf. In the areas where panels are installed, roof live loads will not be present. The reduction of roof live load is adequate to fully or partially compensate for the addition of the panel installation. Because the member forces in the area of the solar panels are not increased by more than 5%, and so per provisions in the adopted building codes, the structure need not be altered for gravity loading.

The proposed installation will be 6" max. above the roof surface (flush mounted) and parallel to the roof surface.

Therefore, any increase in wind loading on the building structure from the solar panel installation is expected to be negligible. Wind is the governing lateral load case. Because the increase in lateral loading is not increased by more than 10%, per provisions in the adopted building codes, the structure need not be altered for lateral loading.

Wind uplift on the panels has been calculated in accordance with the relevant provisions of ASCE 7-10. This loading has been used to verify the adequacy of the connection specified above. Connection locations should be in accordance with design drawings.

IronRidge XR10 rails will support the modules and will fasten to the roof structure with IronRidge QuickMount Halo Ultragrip along the rail.

Conclusion

The roof structure need not be altered for either gravity loading (including snow) or lateral loading (including wind). Therefore, the existing structure is permitted to remain unaltered. Connections to the roof must be made per the "Roof Connection Details" section above. Copies of all relevant calculations are enclosed.

Limitations and Disclaimers

The opinion expressed in this letter is made in reliance on the following assumptions: the existing structure is in good condition; the existing structure is free from defects in design or workmanship; and the existing structure was code-compliant at the time of its design and construction. These assumptions have not been independently verified, and we have relied on representations made by your office with respect to the foregoing. The undersigned has not inspected the structure for defects, although we have reviewed the information provided by your office, including pictures where

Electrical design is excluded from this analysis. Waterproofing is the sole responsibility of the installer and is also excluded from this analysis. Solar panels must be installed per manufacturer specifications. Structural design and analysis of the adequacy of solar panels, racks, mounts, and other components is performed by each component's respective manufacturer; the undersigned makes no statement of opinion regarding such components. This letter and the opinions expressed herein are rendered solely for the benefit of the permitting authority (city or county building department) and your office, and may not be utilized or relied on by any other party.

If you have any questions or concerns, please contact me at (208)-994-1680, or email me directly at Trevor@pvletters.com.

Sincerely,
Trevor A. Jones, P.E.



12/22/2023



PV Letters

Standard Loading Comparison

This calculation justifies the additional solar load by comparing existing to proposed gravity loads in the location of the solar panels.

	<u>Without Solar</u>	<u>With Solar</u>	
Dead Load			
Asphalt Shingles	3	3	psf
1/2" Plywood	1	1	psf
Framing	4	4	psf
Insulation	1	1	psf
1/2" Gypsum Ceiling	2	2	psf
M,E, & Misc	1.5	1.5	psf
Solar Panel	0	3	psf
Total Dead Load	12.5	15.5	psf
Snow Load			
Ground Snow Load, P_g	15		psf
Exposure Factor, C_e	0.90		
Thermal Factor, C_t	1.1		
Importance Factor, I_s	1		
Flat Roof Snow Load	10		Eqn. 7.3-1 or jurisdiction min.
Slope	40		degrees
Unobstructed Slippery Surface?	No	No	
Slope Factor, C_s	0.92	0.92	
Sloped Roof Snow Load	9.6	9.6	psf
Live Load			
Roof Live Load	20	0	psf
Load Combination			
D + L _r	32.5	15.5	psf
D + S	22.1	25.1	psf
Max. Load			
	32.5	25.1	psf
% of original		77.21%	

Result:

Because the total forces are decreased, per the relevant code provisions stated in the body of the letter, the existing roof structure is permitted to remain unaltered.



PV Letters

Wood Screw Calculation (per ASCE 7-10)

This calculation justifies the connection of the solar panels to existing roof members, by showing the connection capacity is equal to or greater than the uplift force demands.

Connection Demand

Spacing perpendicular to rail, in	38
Roof Angle, degrees	40
Roof Layout	Gable
Wind Speed, mph	120
Exposure Coefficient, K_z	0.67
Topographic Factor, K_{zt}	1.00
Directionality Factor, K_d	0.85
Elevation Factor, K_e	1.00
Velocity Pressure q_z , psf	20.8

Zones:

	<u>1</u>	<u>2</u>	<u>3</u>
Spacing parallel to rail, in	72	72	72
GC_p (max)	1.00	2.00	2.00
Exposed Panels? ($\gamma_E = 1.5$)	No	No	No
Effective Wind Area on each con., ft^2	18.8	18.8	18.8
Pressure Equalization Factor, γ_a	0.69	0.69	0.69
Uplift Force, psf	16.0	28.7	28.7
Max. Uplift Force / Connection (0.6 WL), lbs	180.2	323.0	323.0
Solar Dead Load (0.6 DL). Lbs	33.8	33.8	33.8
Max. Uplift Force (0.6 WL - 0.6 DL), lbs	146.4	289.2	289.2

Connection Capacity

Attachment FTG	IronRidge QuickMount Halo Ultragrip
Attachment location	Framing
Fastener Type	Wood Screw
Fastener Diameter, in	0.242
Embedment Length, in	2.5
Lumber Species & Grade	SPF #2 (Assumed)
Nominal Withdrawal Capacity W , lbs	304
# of Screws	2
Load Duration Factor C_d	1.6
Screw Adj. Withdrawal Cap. W' , lbs	973
Attachment FTG Strength with C_d , lbs	1606
Max applied load, lbs	289
Max allowable load, lbs	973

Compare Adjusted Withdrawal Capacity to ASD Factored Demand

<u>Zones:</u>	<u>1</u>	<u>2</u>	<u>3</u>
	O.K.	O.K.	O.K.



PV Letters

March 12, 2024

Subject: Kimberly Josey Solar Panel Installation
47 Juno Dr, Broadway, NC

Contractor Name: Top Tier Solar Solutions
Contractor Address: 1530 Center Park Dr #2911, Charlotte, NC

To Whom It May Concern,

This letter is submitted on behalf of my client, EnergyScape Renewables.

I am a North Carolina registered Professional Engineer. A field inspection of the installation has been performed by a person under my direct supervisory control. I hereby affirm the following:

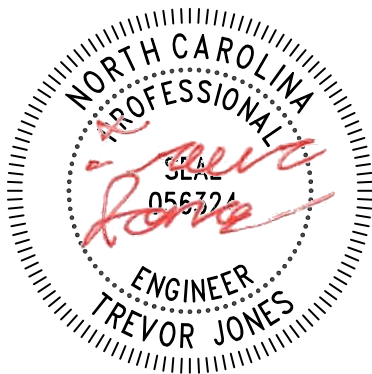
1. The PV equipment's structural installation has been designed and inspected,
2. The equipment will not create a negative impact on the building's structural design, including any additional loads imposed (dead, snow, wind), and
3. The installation is in compliance with the North Carolina Residential Code.

Limitations and Disclaimers

Electrical design is excluded from this analysis. Structural design and analysis of the adequacy of solar panels, racks, mounts, rails, and other components is performed by each component's respective manufacturer. This letter and the opinions expressed herein are rendered solely for the benefit of the permitting authority (city or county building department) and my client's office and may not be utilized or relied on by any other party.

Sincerely,

Trevor Jones, P.E.

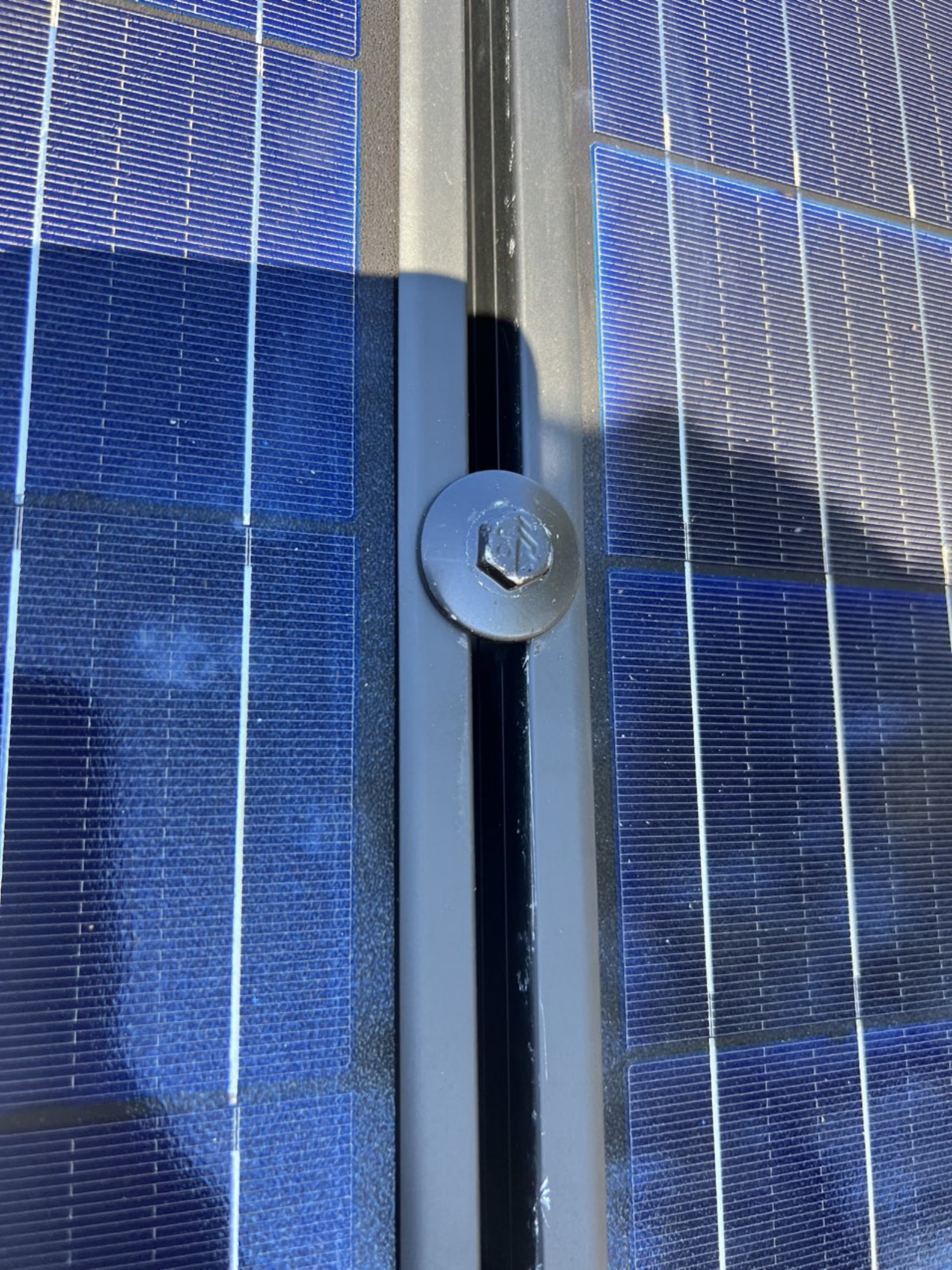


March 12, 2024













Solar
JINKO
4000 Valley View Dr., Dallas, TX 75244
1-800-390-8888
www.jinkosolar.com

PHOTOVOLTAIC MODULE
Module assembled in the USA from solar cells made in Vietnam
See datasheet for more details

Module Type	JN60-360W-72H5-F
Max Power (P _{max})	360W
Power (P _{max})	37%
Max Power Voltage (V _{mp})	31.5V
Max Power Current (I _{mp})	11.4A
Open-Circuit Voltage (V _{oc})	40.0V
Short-Circuit Current (I _{sc})	11.94A
Max System Voltage	1500VDC
Max System Power (P _{max})	324W
Operating Temperature	-40°C ~ +85°C
Max Wind Speed	24m/s
Max Snow Load	2.4kN/m ²
Weight	22.5kg
Dimensions (L x W x H)	2280 x 1132 x 40mm
Cell Technology	156mm ² Mono-Si, PERC

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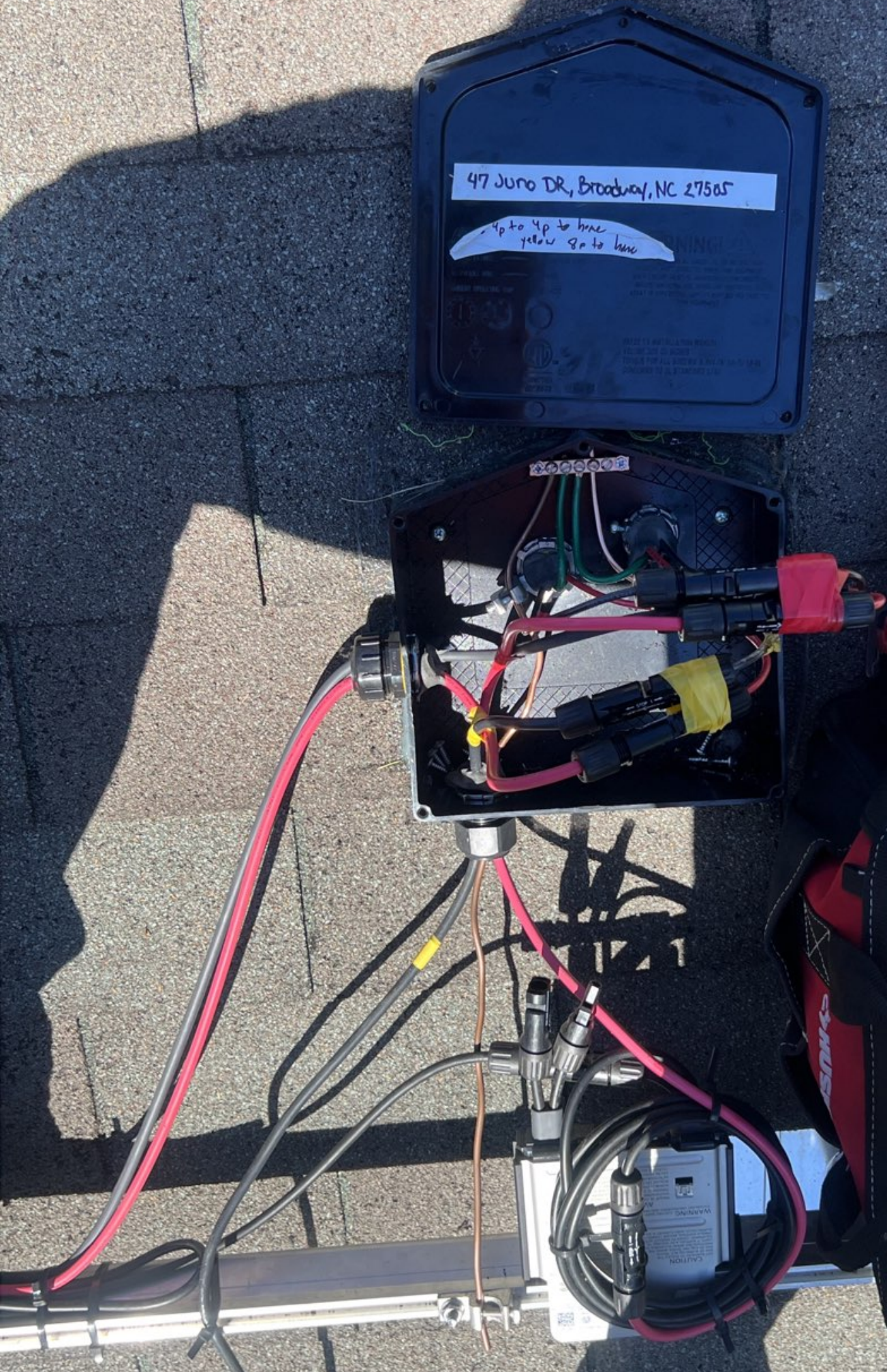
WARNING
This product is not to be used in applications where it is exposed to fire, explosion, or other hazardous conditions. It is not to be used in applications where it is exposed to fire, explosion, or other hazardous conditions. It is not to be used in applications where it is exposed to fire, explosion, or other hazardous conditions.

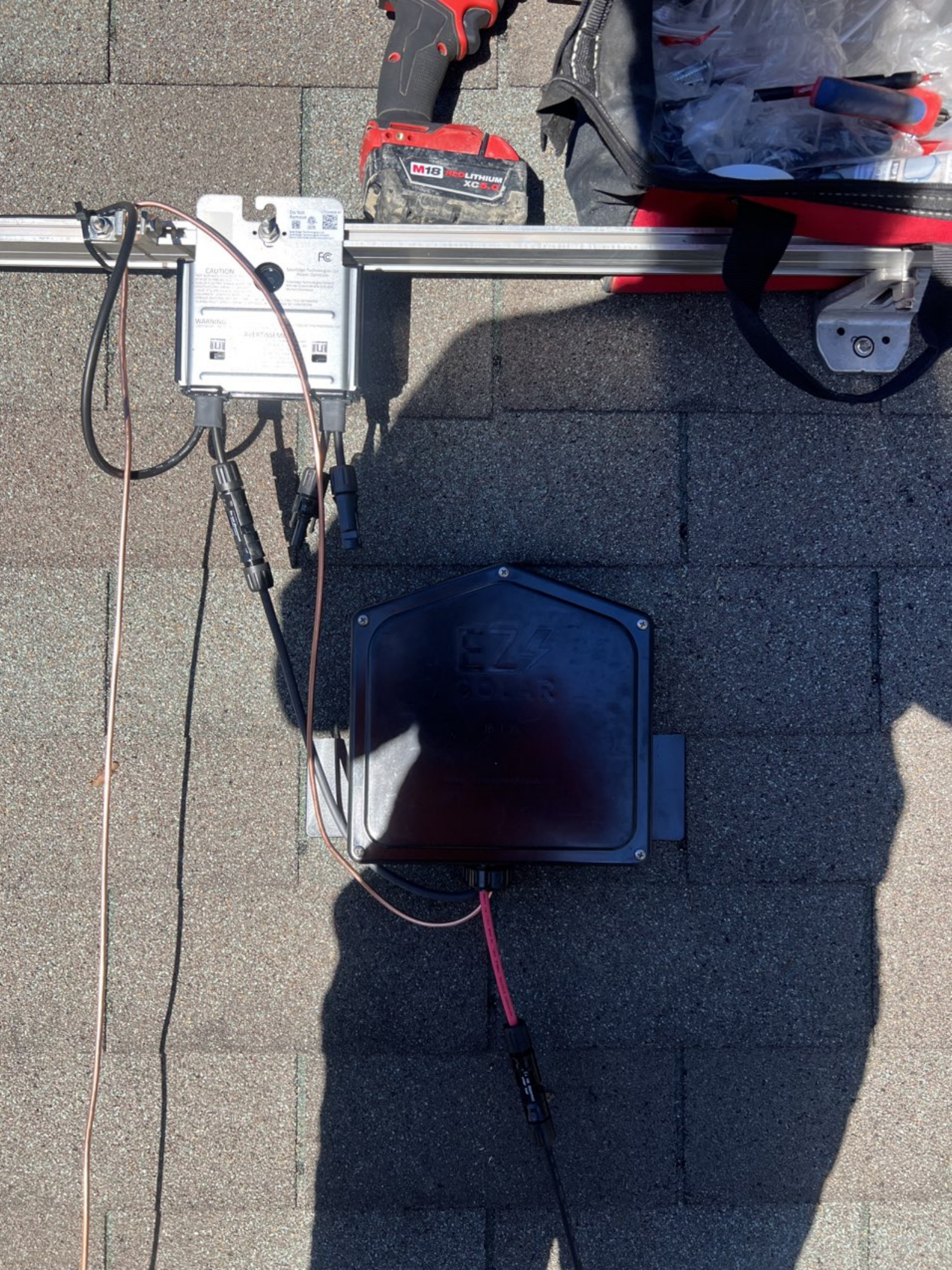
AVERTISSEMENT
Ce produit n'est pas à utiliser dans des applications où il est exposé à la chaleur, à l'explosion, à la foudre, ou à d'autres conditions dangereuses. Ce produit n'est pas à utiliser dans des applications où il est exposé à la chaleur, à l'explosion, à la foudre, ou à d'autres conditions dangereuses. Ce produit n'est pas à utiliser dans des applications où il est exposé à la chaleur, à l'explosion, à la foudre, ou à d'autres conditions dangereuses.



47 Juro DR, Broadway, NC 27505

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yellow go to hmc





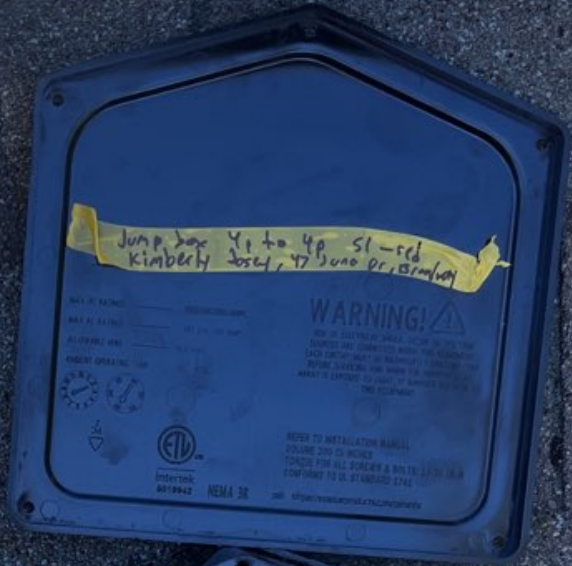
CAUTION
WARNING

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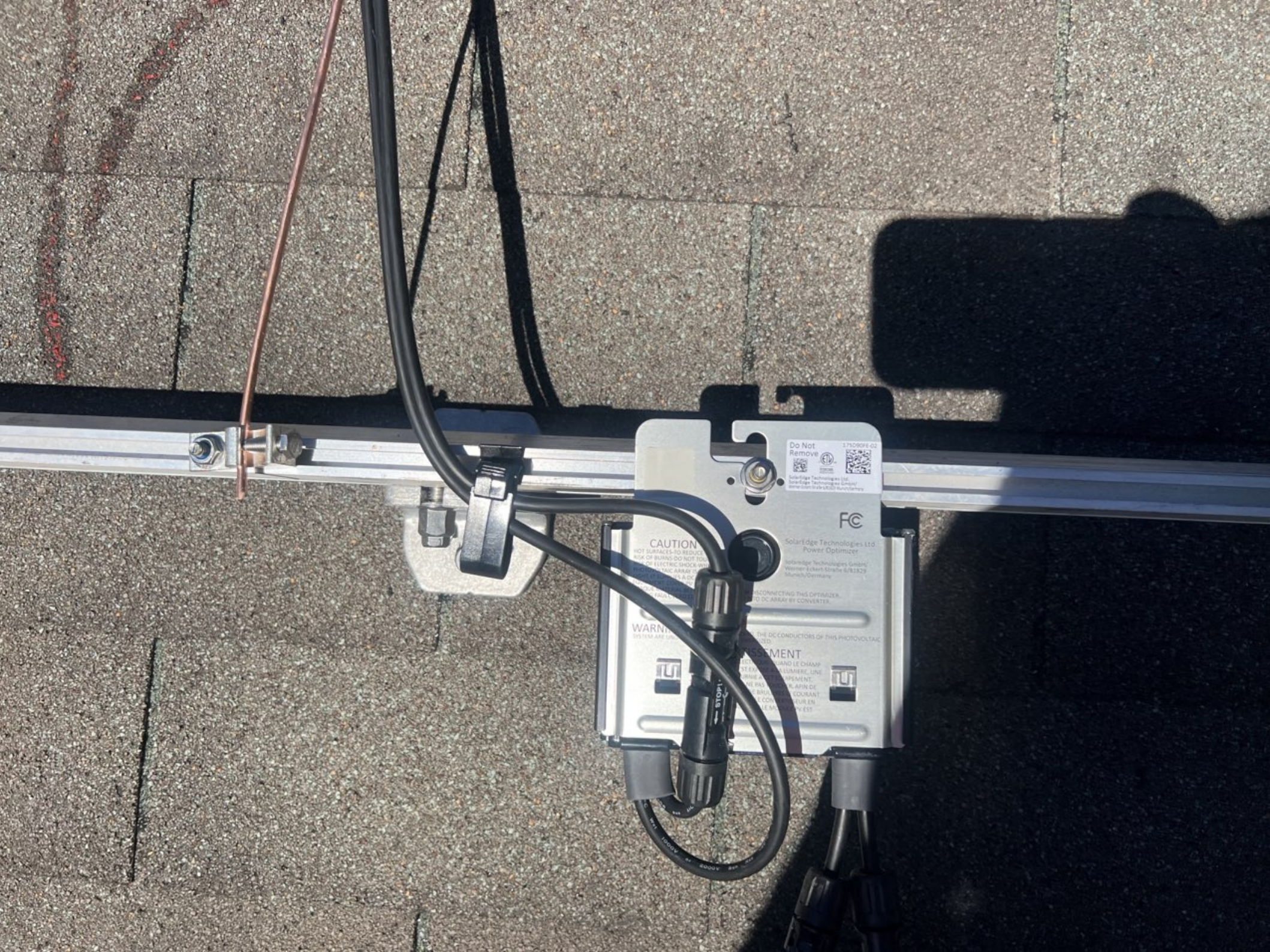
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RED LITHIUM
XC5.0







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SolarEdge Technologies Ltd
SolarEdge Technologies GmbH
www.solar-edge.com

FC

SolarEdge Technologies Ltd
Power Optimizer
SolarEdge Technologies GmbH
Werner-Lothar-Straße 61/81829
Munich/Germany

CAUTION
DO NOT ATTEMPT TO REMOVE THE OPTIMIZER FROM THE PHOTOVOLTAIC ARRAY. THIS MAY CAUSE DAMAGE TO THE PHOTOVOLTAIC ARRAY AND THE OPTIMIZER. CONTACT A QUALIFIED ELECTRICIAN FOR ASSISTANCE.

DISCONNECTING THIS OPTIMIZER FROM THE PHOTOVOLTAIC ARRAY WILL STOP THE DC ARRAY BY CONVERTER.

WARNING
THE DC CONDUCTORS OF THIS PHOTOVOLTAIC ARRAY ARE LIVE.

AVERTISSEMENT

NE PAS DÉMONTÉR LE CHAMP PHOTOVOLTAÏQUE. CE MANIPULÉ PEUT CAUSER DES BRÛLURES ET/OU DES ÉCLAIRS DE COURANT ÉLECTRIQUE. LE MANIPULÉ EN SÉCURITÉ EST

400VDC
400VDC
400VDC





PHOTOVOLTAIC POWER SOURCE

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PHOTOVOLTAIC POWER SOURCE

SP18 No.3

WS B-1P14

WS B1

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APA
ORIENTED STRAND BOARD
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36" X 48" SHEETS
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APA
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36" X 48" SHEETS
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PHOTOVOLTAIC POWER CABLE



PHOTOVOLTAIC POWER SOURCE

MADE IN USA

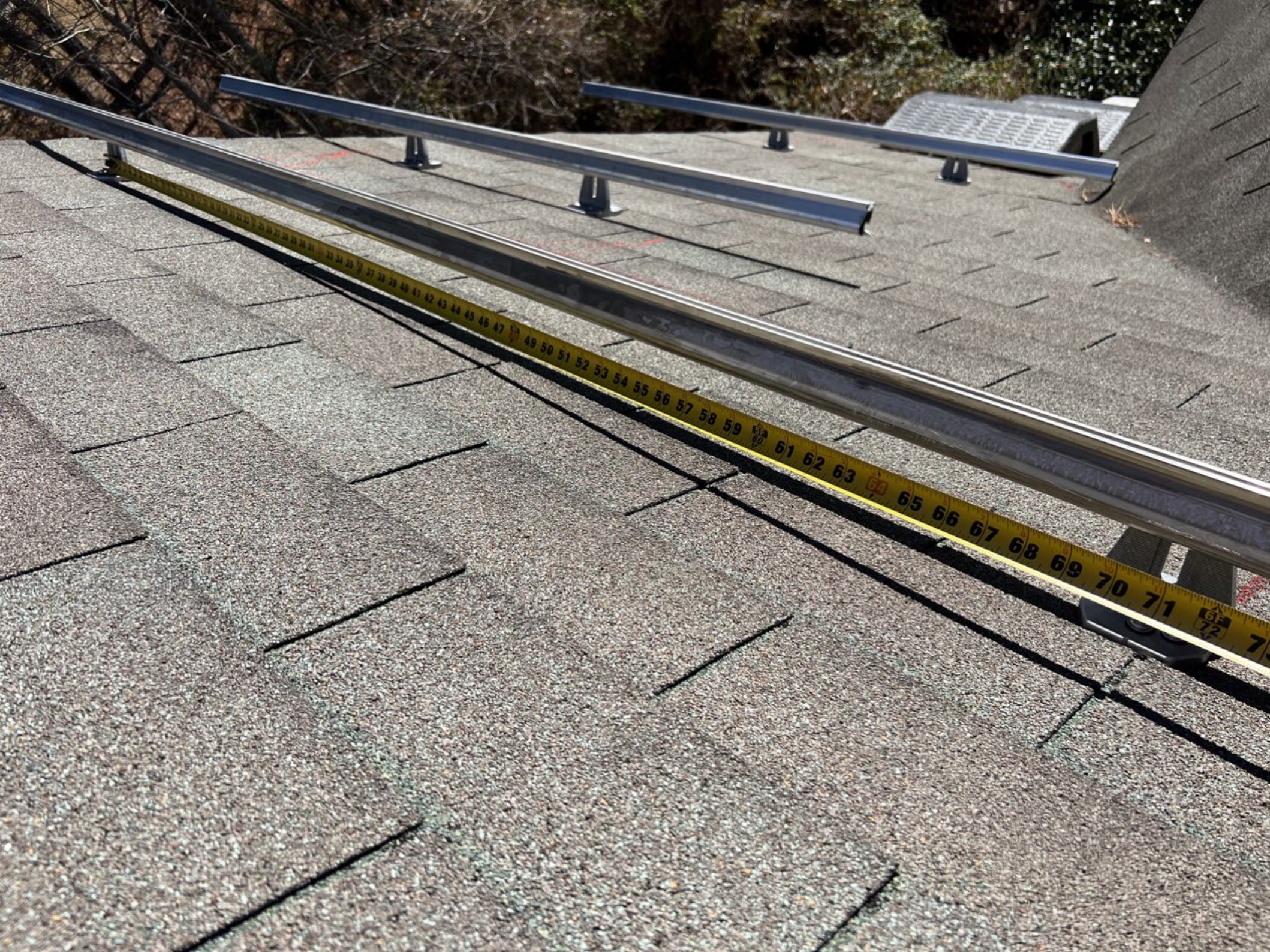
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INSTALL BY

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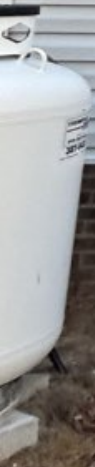
SolarEdge Technologies Ltd
Power Optimizer

SolarEdge Technologies, Limited
Windsor, Ontario, Canada
Windsor, Ontario, Canada
Windsor, Ontario, Canada

CAUTION
DO NOT TOUCH THE SURFACE OF THE OPTIMIZER. THE OPTIMIZER IS SUPPLIED AS A DC SOURCE. IT IS NOT TO BE USED AS A SOURCE OF AC POWER. THE OPTIMIZER IS SUPPLIED AS A DC SOURCE. IT IS NOT TO BE USED AS A SOURCE OF AC POWER. THE OPTIMIZER IS SUPPLIED AS A DC SOURCE. IT IS NOT TO BE USED AS A SOURCE OF AC POWER.

WARNING DO NOT TOUCH THE SURFACE OF THE OPTIMIZER. THE OPTIMIZER IS SUPPLIED AS A DC SOURCE. IT IS NOT TO BE USED AS A SOURCE OF AC POWER. THE OPTIMIZER IS SUPPLIED AS A DC SOURCE. IT IS NOT TO BE USED AS A SOURCE OF AC POWER.

AVERTISSEMENT
NE PAS TOUCHER LA SURFACE DE L'OPTIMISATEUR. L'OPTIMISATEUR EST FOURNI EN TENSION CONTINUE. IL NE DOIT PAS ÊTRE UTILISÉ COMME SOURCE DE TENSION ALTERNATIVE. L'OPTIMISATEUR EST FOURNI EN TENSION CONTINUE. IL NE DOIT PAS ÊTRE UTILISÉ COMME SOURCE DE TENSION ALTERNATIVE.





The Neuse
 Termite Control
 915
 1062
 This structure was treated for the prevention of subterranean termites. A warranty has been provided to the builder if you did not receive your copy of this warranty. For more information, contact your builder or The Neuse Termite & Pest Control for additional warranty information.
 The Neuse
 Termite & Pest Control
 Title of final treatment:

PHOTOVOLTAIC SYSTEM kWh METER

WARNING
 DUAL POWER SUPPLY
 SOURCES: UTILITY GRID AND PV SOLAR ELECTRIC SYSTEM

CAUTION: SOLAR ELECTRIC SYSTEM CONNECTED

CAUTION: SOLAR ELECTRIC SYSTEM CONNECTED

WARNING
 DUAL POWER SUPPLY
 SOURCES: UTILITY GRID AND PV SOLAR ELECTRIC SYSTEM

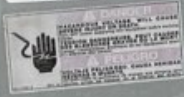
SOLAR PV SYSTEM EQUIPPED WITH RAPID SHUTDOWN



TURN RAPID SHUTDOWN SWITCH TO THE "OFF" POSITION TO SHUT DOWN PV SYSTEM AND REDUCE SHOCK HAZARD IN THE ARRAY

WARNING
 ELECTRIC SHOCK HAZARD
 TERMINALS ON THE LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION

WARNING
 THIS EQUIPMENT FED BY MULTIPLE SOURCES. TOTAL RATING OF ALL OVERCURRENT DEVICES, EXCLUDING MAIN SUPPLY OVERCURRENT DEVICE, SHALL NOT EXCEED AMPACITY OF BUSBAR



RAPID SHUTDOWN SWITCH FOR SOLAR PV SYSTEM

WARNING
 POWER SOURCE OUTPUT CONNECTION DO NOT RELOCATE THIS OVERCURRENT DEVICE

CAUTION
 SOLAR POINT OF CONNECTION

EATON

Cutler-Hammer

CATALOG NO. SERIES A SNARILLO DE RETENCIÓN

MBE4040B200BTS
SURFACE SOBRESPONER

MBE4040B200BSH
SURFACE SOBRESPONER

MBE4040B200SSHM
SURFACE SOBRESPONER

MBE4040B200BTF
SURFACE SOBRESPONER

200 AMPS MAX. MAX. 200 AMP

120/240 VAC 1 PHASE-3W

V=120/240, 60 HZ MONOFÁSICA-3 HILOS

208Y/120 VAC 1 PHASE-3W

(FROM 3 PHASE - 4W NETWORK)

V=208Y/120, 60 HZ MONOFÁSICA-3 HILOS

(DE RED TRIFÁSICA A 4 HILOS)

TYPE 3R ENCLOSURE - RAINPROOF

CABINETTE TIPO 3R A PRUEBA DE LLUVIA

SHORT CIRCUIT RATING WITH MAIN BREAKER:

(RMS 575 AMPS, 240 VAC MAX.)

CAPACIDAD DE CORTO CIRCUITO CON

INTERRUPTOR PRINCIPAL

(AMPERES SIN CORRIENTE, 240 V-MAX.)

10,000 AMPERES CON CORTACIRCUITOS PRINCIPAL

CUTLER-HAMMER TIPO 3R

22,000 AMPERES WITH CUTLER-HAMMER TYPE BWH MAIN

CIRCUIT BREAKER AND CUTLER-HAMMER

TYPE BR, BRAF, BRH, BRSH, OR GFCS BRANCH

CIRCUIT BREAKERS

22,000 AMPERES CON CORTACIRCUITOS PRINCIPAL, CUTLER-

HAMMER TIPO BWH O CORTACIRCUITOS DE BRIFURCACION

CUTLER-HAMMER TIPO BR, BRAF, BRH, BRSH O GFCS

EL WATCHDOG METER NO ESTÁ INCLUIDO EN LA

CAPACIDAD DE CORTOCIRCUITO

METER SOCKET RATED 175 AMPERE CONTINUOUS

MODULOS DE MEDICION 175A EN REGIMEN

PERMANENTE

INSTALLATION AND USE OF THIS EQUIPMENT

SHOULD BE IN ACCORDANCE WITH ALL

APPLICABLE LOCAL AND NATIONAL CODES

LA INSTALACION Y EL USO DE ESTE EQUIPO

DEBERIA AJUSTARSE A TODOS LOS CODIGOS

LOCALES Y NACIONALES APLICABLES

SUITABLE FOR UNDERGROUND OR OVERHEAD

SERVICE ENTRY

APTO PARA ENTRADAS DE SERVICIO

SUBTERRANEAS O AERIAS

ADDITIONAL GROUNDING TERMINALS ARE REQ'D.

ORDER GBK SERIES GROUND BAR KIT. MOUNTING

HOLES ARE PROVIDED FOR TWO GROUND BARS.

SI SE REQUIEREN TERMINALES DE CONEXION

A TIERRA ADICIONALES, ENCARGUE EN JUEGO

DE BARRA DE CONEXION A TIERRA DE LA

SERIE GBK. SE PROVEEN AGUJEROS DE

MONTAJE PARA DOS BARRAS DE CONEXION

A TIERRA.

IF 6TH JAW IS REQUIRED, ORDER CUTLER-

HAMMER CAT. NO. 1MMSJKOP.

SI SE REQUIERE UNA SA. MORDAZA

ENCARGAR EL NUM. DE CAT. 1MMSJKOP.

TORQUE CIRCUIT BREAKER LUGS TO THE

VALUES SPECIFIED ON CIRCUIT BREAKERS.

APRITE LAS TERMINALES DEL INTERRUPTOR

A LOS VALORES DE PAR DE APRIETE

ESPECIFICADOS EN EL INTERRUPTOR.

SUITABLE ONLY FOR USE AS SERVICE

EQUIPMENT

APTO ÚNICAMENTE PARA USARSE COMO

EQUIPO DE SERVICIO

TO CLOSE UNUSED OPENINGS IN COVER, USE CUTLER-

HAMMER CAT. NO. BWH7

PARA CERRAR LAS ABERTURAS NO EMPLEADAS EN

LA CUBIERTA, UTILIZAR EL NUM. DE CAT. BWH7 DE

CUTLER-HAMMER.

MAIN BREAKER HANDLE IN MID POSITION INDICATES

BREAKER IS TRIPPED. TO RESTORE SERVICE, MOVE

HANDLE TO EXTREME "OFF" THEN TO "ON".

LA PALANCA DEL INTERRUPTOR PRINCIPAL EN LA

POSICION MEDIA INDICQUE EL INTERRUPTOR SE HA

DESARRANCADO. PARA REESTABLECER EL SERVICIO, MUEVA

LA PALANCA A EXTREMO "OFF" Y LUEGO A "ON".

USE CUTLER-HAMMER TYPE B, B.H, BR, BRAF, BRH, BRSH, BRWH, GFCS, GFEP, OR GFCSB CIRCUIT BREAKERS.

UTILICE CORTACIRCUITOS CUTLER-HAMMER TIPO B, B.H, BR, BRAF, BRH, BRSH, BRWH, GFCS, GFEP O GFCSB.

TERMINALS OTHER THAN BREAKER TERMINALS SUITABLE FOR 60°/75° C. AL-CU WIRE. BREAKER TERMINALS SUITABLE FOR AL-CU WIRE WHEN SO MARKED. REFER TO MARKINGS ON BREAKERS.

LOS TERMINALES DEL INTERRUPTOR SON ADECUADAS PARA CONDUCTORES ALCU CUANDO ASI LO INDICAN LAS ETIQUETAS DEL MESA (VER ETIQUETAS). LAS RESTANTES TERMINALES SON ADECUADAS PARA AL-CU CONDUCTORES DE 60/75 C.

ADDITIONAL OR REPLACEMENT BREAKERS SHALL BE OF THE SAME MANUFACTURER AND TYPE AND SHALL HAVE AN INTERRUPTING RATING EQUAL TO OR GREATER THAN THE INTERRUPTING RATING OF ANY CIRCUIT BREAKER INSTALLED.

LOS INTERRUPTORES ADICIONALES O DE REPUESTO DEBERAN SER DE LA MISMA MARCA Y TIPO Y TENER UNA CAPACIDAD DE INTERRUCCION IGUAL O SUPERIOR A LA DE CUALQUIER INTERRUPTOR INSTALADO.

WHEN USED AS SERVICE EQUIPMENT, ANY UNUSED NEUTRAL HOLES MAY BE USED FOR EQUIPMENT GROUNDING. SMALL WIRE HOLES ARE SUITABLE FOR (1) #6-14 WIRE OR FOR (2) #12-14 WIRE. LARGE WIRE HOLES ARE SUITABLE FOR (1) 10 #14 OR FOR UP TO (2) #6-14 WIRES. MULTIPLE WIRES IN A SINGLE HOLE MUST BE OF THE SAME SIZE AND MATERIAL.

CUANDO ES USADO COMO EQUIPO DE SERVICIO, CUALQUIER AGUJERO NEUTRO NO UTILIZADO PUEDE SER USADO PARA LA CONEXION A TIERRA DEL EQUIPO. LOS AGUJEROS PEQUEÑOS PARA CABLES SON APROPIADOS PARA CABLE N° 6-14 C. PARA 2 CABLES N° 12-14. LOS AGUJEROS GRANDES PARA CABLES CON APROPIADOS PARA 1 CABLE N° 10-14 O PARA 2 CABLES N° 12-14. LOS CABLES MULTIPLES EN UN AGUJERO DEBEN SER DE IGUAL MEDIDA Y MATERIAL.

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WIRE RANGE RANGO DE CONDUCTOR

○ #14-8 AWG

● #14-10 AWG

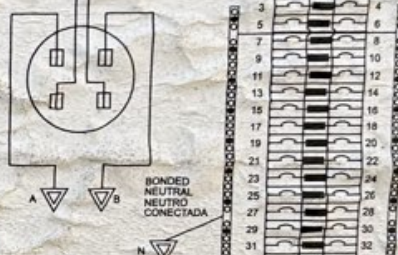
▽ #1 AWG-250 MCM

TYPICAL WIRING DIAGRAM

DIAGRAMA DE CABLEADO TÍPICO

FACTORY INSTALLED SERVICE DISCONNECT TYPE BWH

INSTALADO EN FABRICA DESCONECTOR DE SERVICIO TIPO BWH



FOR RAINPROOF FITTINGS, REFER TO TABLE BELOW.

PARA ACCESORIOS A PRUEBA DE LLUVIA, CONSULTE LA SIGUIENTE TABLA.

RAINPROOF FITTINGS PARA LOS ACCESORIOS	CATALOG NO. NUM. DE CATALOGO
3/4" HUB	DS075H1
1" HUB	DS105H2
1-1/4" HUB	DS125H2
1-1/2" HUB	DS155H2
2" HUB	DS205H1
2 1/2" HUB	DS255H2
3" HUB	DS305H2

TORQUE WIRE PRESSURE SCREW(S) AS FOLLOWS. AJUSTAR EL TORQUE DE LOS TORNILLOS DEL CABLE CON EL SIGUIENTES PAR DE FUERZAS:

WIRE SIZE CABLE CALIBRE AL-CU	U.S. INCHES	M.M.	U.S. IN. (LBS)	M.M. (N)
#14-10	20 (2.26)	35 (3.96)		
#8	25 (2.82)	40 (4.52)		
#6-4	35 (3.96)	48 (5.38)		
#5-30		50 (5.62)		
250 MCM			250 (28.25)	

* REQUIRES ADAPTER PLATE DS902AP

* REQUIERE UNA PLACA ADAPTADORA DS902AP

INSTALLED BY: _____

INSTALADO POR: _____

DATE: _____

FECHA: _____

E-52977

MADE IN USA

FABRICADO EN E.U.A.

PUB 49557

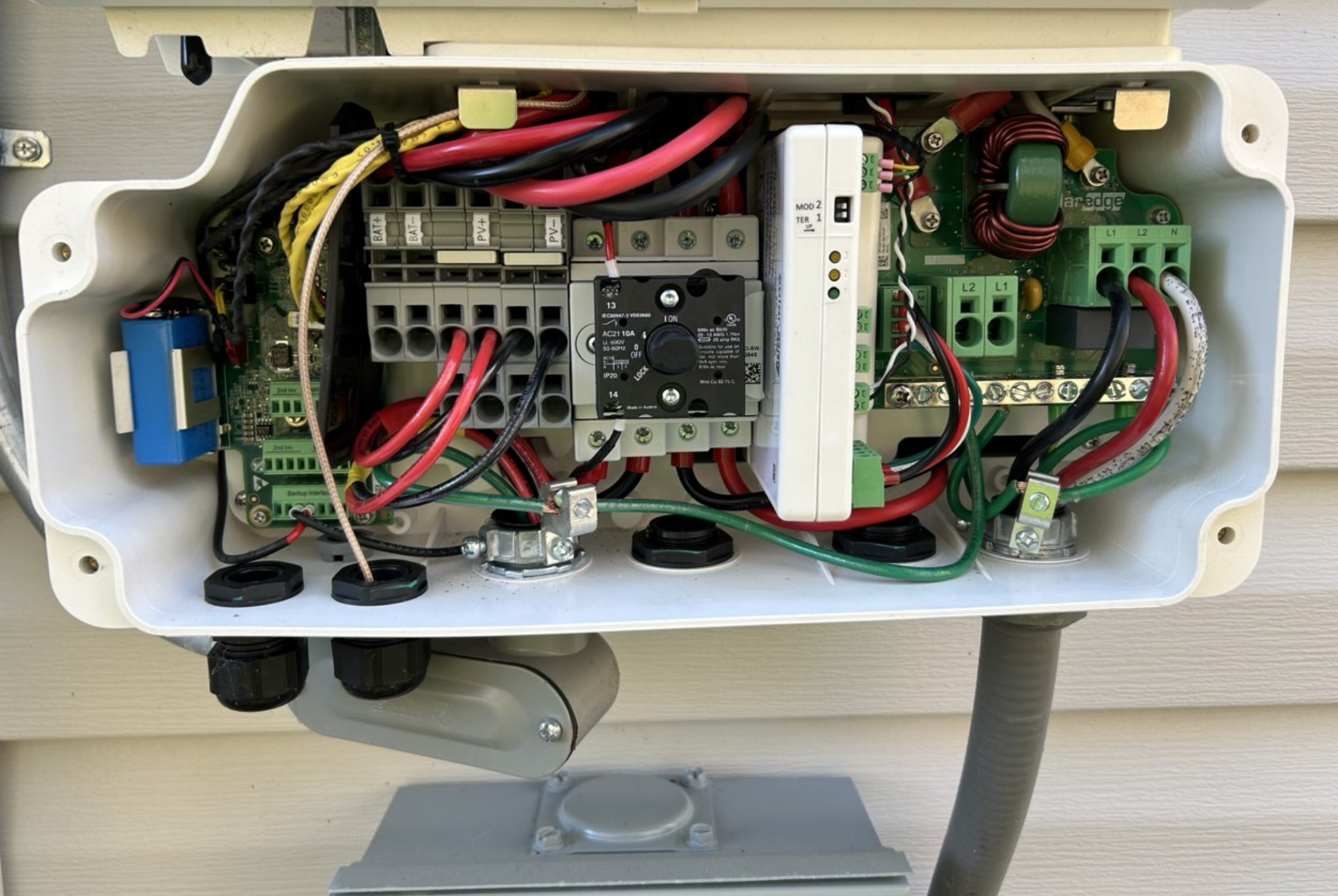
REV. 3





Solar edge

wave







KLEIN TOOLS

CL110

Ω OFF

2/20A~

200/400A~

V~



OFF

2000 Counts
400A AC Digital Clamp Meter



RANGE

MAX



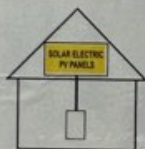
WARNING
ELECTRIC SHOCK HAZARD.
TERMINALS ON THE LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION.

DC POWER SOURCE

PHOTOVOLTAIC SYSTEM
⚠ DC DISCONNECT ⚠
OPERATING VOLTAGE 300 VDC
OPERATING CURRENT 30 AMPS

SOLAR PV SYSTEM EQUIPPED WITH RAPID SHUTDOWN

TURN RAPID SHUTDOWN SWITCH TO THE "OFF" POSITION TO SHUT DOWN PV SYSTEM AND REDUCE SHOCK HAZARD IN THE ARRAY



The diagram shows a house with solar panels on the roof. A line connects the panels to a square symbol representing a disconnect switch.

solar**edge** HD wave

P V D

ON

OFF



DC DISCONNECT

solar**edge**

The DC disconnect switch is a rotary knob with 'ON' and 'OFF' markings. The knob is currently in the 'OFF' position.

EATON

WARNING
ELECTRIC SHOCK HAZARD
TERMINALS ON THE LINE AND
LOAD SIDES MAY BE ENERGIZED
IN THE OPEN POSITION

Ground Fault Safety Switch
Interrupteur de sécurité à sensibilité élevée
Interruptor de seguridad de sensibilidad general
30 A, 240 V, 50 Hz

Complete Voltage Tester
Vérifier correctement complètement à l'extérieur
Información completa de inspección en el exterior

Further instructions inside
Autres instructions à l'intérieur
Instrucciones adicionales en el interior

Made in U.S.A. / Fabricado en E.U.A. / Hecho en E.U.A.

DANGER
ELECTRIC SHOCK HAZARD
TERMINALS ON THE LINE AND
LOAD SIDES MAY BE ENERGIZED
IN THE OPEN POSITION



The Eaton switch is a grey metal box with a circular cover on top. It has a red warning label and technical specifications.

solar edge SE7600H-US
 Grid Support Utility Interactive Non-Isolated
 Photovoltaic Inverter With Stand Alone Mode

Operating Voltage Range	270 - 480 Vdc
Max Input Current	30.5 Adc
Max Continuous Output Power Grid connected	7600 Wac
Max Continuous Output Power Stand Alone	11400 Wac
Voltage Min - Nom - Max	211 - 240 - 264 Vac
Max Continuous Output Current Grid connected	32 Adc
Max Continuous Output Current Stand Alone	47.5 Adc
Max Output Fault Current	74 Adc
Max Utility Backfeed Current	0 Adc
Frequency Min - Nom - Max	58.3 - 60.0 - 60.5 Hz
Output Power Factor	~1 - 0.85 - 1
Max Ambient Temperature	60 C
Enclosure	IP55/Type 4

With Integrated ground fault protection per NEC 690.35 (C)
 Type 1 Photovoltaic Arc-Fault Circuit-Protection




Intertek
 4004590
 WiFi Password:
 Hc9a4LRe
 Activation:
 c/w J520 12mA HKD Th2 Mx+6 ZEI =
 WiFi MAC:
 84 D6 C5 27 44 F8
 ZigBee MAC:

PN: SE7600H-USMNBBL14
 SN: SJ1622-07406BA13-47



solar edge 

**PHOTOVOLTAIC RAPID
 SHUTDOWN SYSTEM**

solar edge  7406BA13-47



ETL LISTED
 CONFORMS TO
 ANSI/UL 1741
 CERTIFIED TO
 CAN/CSA
 C22.2 NO 107

Intertek
 4004590

Contains FCC ID: 2ABDT-PINX, IC: 20818-PINX. The enclosed device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:
 (1) This device may not cause harmful interference and
 (2) This device must accept any interference received, including interference that may cause undesired operation.

PATENT MARKING NOTICE: www.solaredge.com/ipscn/patent Made in China

solaredge

StorEdge Connection Unit



Max DC Voltage (PV/Battery)	480 Vdc
Max DC Current (PV)	62 Adc
Max DC Power (PV)	23.2 kWdc
Max Continuous DC Current (Battery)	31 Adc
Max Continuous DC Power (Battery)	11.6 kWdc
Max AC Voltage	264 Vac
AC-Single Phase Frequency	50/60 Hz
Max AC Current (Grid)	48 Aac

For more details refer to the installation guide

Patent marketing notice: see WWW.SOLAREEDGE.COM/patent

DCD-1PH-US-P2H-F-1

PN:

SJ1922-19121046C-22

SN:

Made in China



Intertek
4004590



solaredge

StorEdge Connection Unit



Max AC Current (Smart EV Charger)	40 Aac
Max Continuous Output Power (Smart EV Charger)	9600 W
Max Battery Energy Storage	32 kWh
Number of AC phases	L1, L2, N
Maximum AC short circuit current	74 Aac
Weight	30.2 / 13.7 lbs/kg
Ambient Temperature:	-40°C ..60°C
Enclosure Rating:	IP65/ Type 4X

For more details refer to the installation guide

Patent marketing notice: see WWW.SOLAREEDGE.COM/patent

Use 90°C copper PV wires only.
Revenue Grade ANSI C12.20
PHOTOVOLTAIC RAPID SHUTDOWN SYSTEM

DCD-1PH-US-P2H-F-1

PN:

SJ1922-19121046C-22

SN:

Made in China



Intertek
4004590









1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75

⚠ DANGER PELIGRO **⚠ DANGER**

SEE THE PANEL WALLS CAREFULLY BEFORE WORKING ON THE WIRING.

Before going on either side of the cabinet, be aware of the location of the main service disconnect.

Do not touch any live parts, metal cover or metal parts of the cabinet or any other parts of the cabinet.

Do not touch any live parts, metal cover or metal parts of the cabinet or any other parts of the cabinet.

Do not touch any live parts, metal cover or metal parts of the cabinet or any other parts of the cabinet.

EG22URB

EATON

TERMINALS SUITABLE FOR AL-CU WIRE.

TERMINALES ADECUADAS PARA CONDUCTORES DE AL-CU.

BORNES CONVIENTOS PARA CONDUCTORES AL-CU.

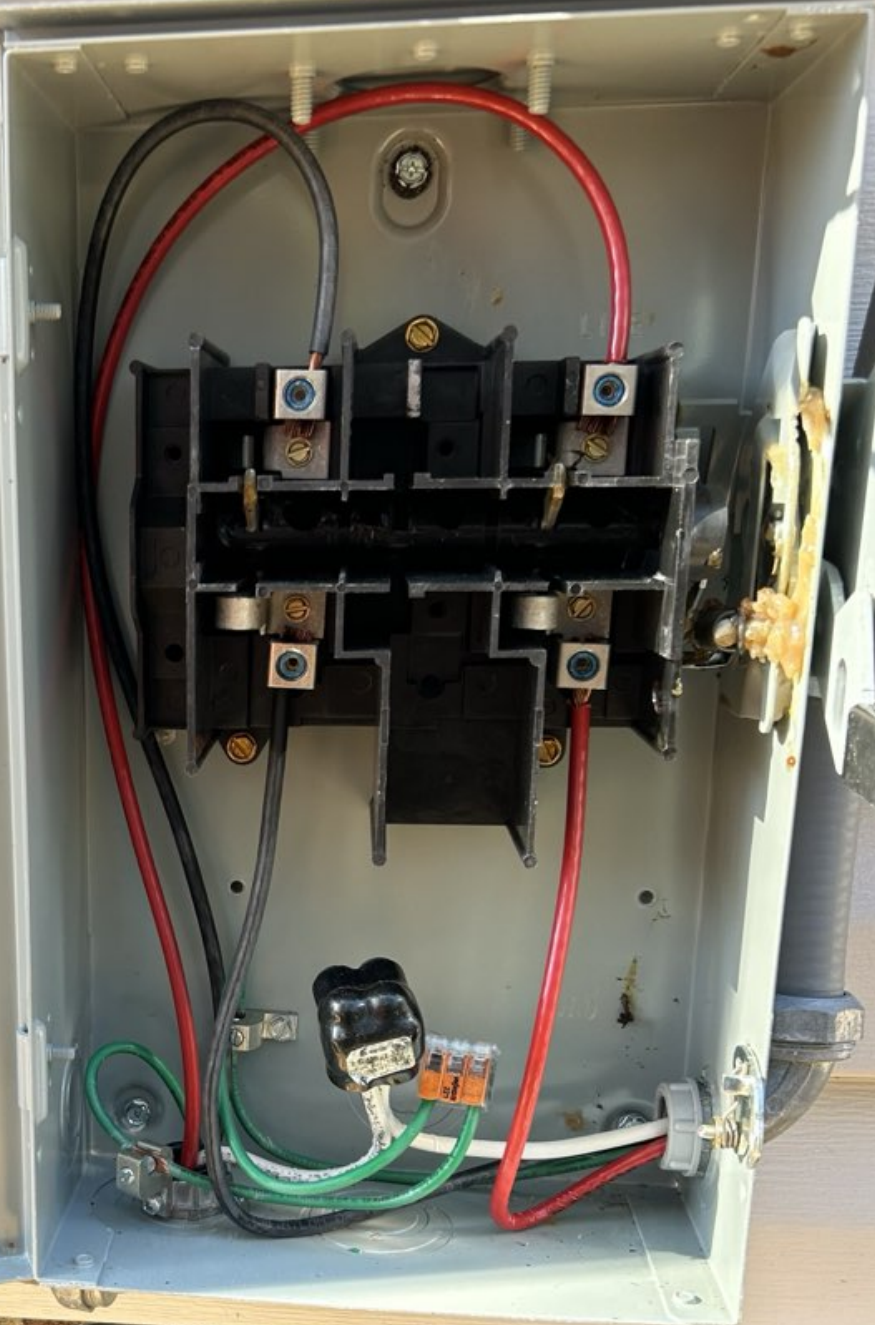
Wire Size (AWG)	Wire Size (mm ²)	Terminal Size (mm)	Terminal Size (in)
14	2.0	1.5	0.063
12	3.3	2.0	0.079
10	5.3	2.5	0.098
8	8.0	3.0	0.118
6	13.3	3.5	0.138
4	21.0	4.0	0.157

UL LISTED

NOM-367

107618

PUR03720





General Duty Safety Switch
Interrupteur de sécurité à usage général
Interruptor de seguridad de servicio general

60 A, 240 V~, 60 Hz

Complete ratings inside
Valeurs nominales complètes à l'intérieur
Información completa de capacidades en el interior

Further instructions inside
Autres instructions à l'intérieur
Instrucciones adicionales en el interior

Made in U.S.A. / Fabriqué aux É.-U. / Hecho en E.U.A.

⚠ DANGER
HAZARDOUS VOLTAGE, WILL CAUSE SEVERE INJURY OR DEATH.
• Turn OFF power ahead of switch before doing any work inside. Replace all parts. Close cover before leaving.

⚠ TENSION DANGEREUSE, PEUT CAUSER DES BLESSURES GRAVES OU LA MORT.
• Ne jamais intervenir l'interrupteur lorsque le couvercle est ouvert.
• Remplacer toutes les pièces.
• Fermer le couvercle avant de quitter le site.
• Remplacer toutes les pièces.
• Fermer le couvercle avant de quitter le site.

⚠ PELIGRO
VOLTAJE PELIGROSO, PUEDE CAUSAR HERIDAS SEVERAS O LA MUERTE.
• Nunca opere el interruptor con el cubiertas abierta.
• Reemplazar la alimentación del interruptor antes de trabajar dentro del mismo.
• Reemplazar todas las piezas.
• Cerrar la cubierta antes de abandonar el sitio.

30-4380



⚠ WARNING
ELECTRIC SHOCK HAZARD
TERMINALS ON THE LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION

ON

OFF

AC DISCONNECT
PHOTOVOLTAIC SYSTEM
POWER SOURCE

RATED AC OUTPUT CURRENT **32** AMPS

NOMINAL OPERATING AC VOLTAGE **240** VOLTS

RAPID SHUTDOWN SWITCH FOR SOLAR PV SYSTEM

