



Three Phase Inverter with Synergy Technology

Quick Installation Guide

PN: xSE-DBL-USxxlxxxx,
xSE-TRI-USxxlxxxx

For North America
Version 1.1

Scan for full
installation guide



Legend

NOTE

This symbol denotes information intended to assist the user in making optimum use of the product.

CAUTION!

Denotes a hazard. It calls attention to a procedure that, if not correctly performed or adhered to, could result in damage or destruction of the product. Do not proceed beyond a caution sign until the indicated conditions are fully understood and met.

WARNING!

Denotes a hazard. It calls attention to a procedure that, if not correctly performed or adhered to, could result in injury or loss of life. Do not proceed beyond a warning note until the indicated conditions are fully understood and met.



Do not cut the wire connectors.



This symbol appears at grounding points on the SolarEdge manuals and equipment.

OFF (0) ON (1)



Turn **OFF** the P/1/0 Switch. After turning off the switch, wait at least 5 minutes for DC Voltage to decrease to safe level before removing the front panel.



Turn **OFF** the DC Disconnect Switch. After turning off the switch, wait at least 5 minutes for DC Voltage to decrease to safe level before removing the front panel.



Turn **OFF** the main circuit board AC switch. After turning off the switch, wait at least 5 minutes for DC Voltage to drop to safe level before removing the front panel.



Before connecting aluminum wires to terminals:

1. Remove oxide from the exposed wires with emery paper or a steel wire brush.
2. Clean dust with a cloth and Isopropyl alcohol (IPA).
3. Coat wires with a designated antioxidant aluminum wire grease immediately after cleaning.



CAUTION! Connection of oxidize aluminum wires may result in resistance and high temperatures at contact points. Improper execution of the following procedure may cause damage to the unit.

SAVE THESE INSTRUCTIONS – This manual contains important instructions for the Three Phase Inverter with Synergy Technology that should be followed during installation and maintenance. Using this equipment in a manner not specified in this guide by SolarEdge may impair the protection provided by this equipment.

WARNING! Upon servicing or replacing equipment, instructions in the installation manual must be followed to maintain the integrity of the PV hazard control system. SolarEdge commercial optimizers and three phase inverters should only be replaced with SolarEdge commercial optimizers and inverters. Third party equipment is not compatible.

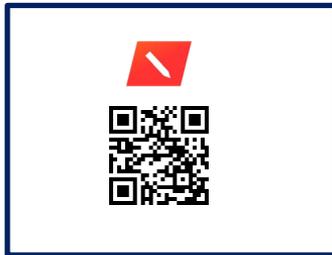
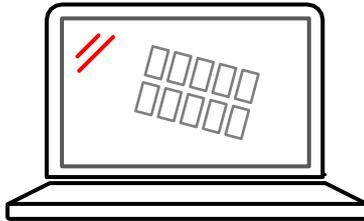
WARNING! SYNERGY UNIT, PN: xSESUK-USRxxxxx INCLUDE A PHOTOVOLTAIC RAPID SHUTDOWN SYSTEM (PVRSS). SUCH UNITS, INCORPORATE ONE OR MORE PIECES OF EQUIPMENT THAT EXERCISE THE RAPID SHUTDOWN CONTROL OF PV SYSTEM CONDUCTORS REQUIRED BY SECTION 690.12 OF THE NEC (NFPA 70). OTHER EQUIPMENT INSTALLED IN OR ON THIS PV SYSTEM MAY ADVERSELY AFFECT THE OPERATION OF THIS PVRSS. IT IS THE RESPONSIBILITY OF THE INSTALLER TO ENSURE THAT THE COMPLETED PV SYSTEM MEETS THE APPLICABLE RAPID SHUT DOWN FUNCTIONAL REQUIREMENTS. THIS EQUIPMENT MUST BE INSTALLED ACCORDING TO THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.

Install the Power Optimizers

1

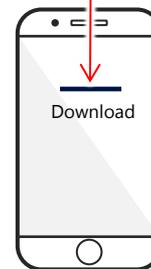
1

Use [SolarEdge Designer](#) to design the system



2

Download SolarEdge Mapper to map Power Optimizers

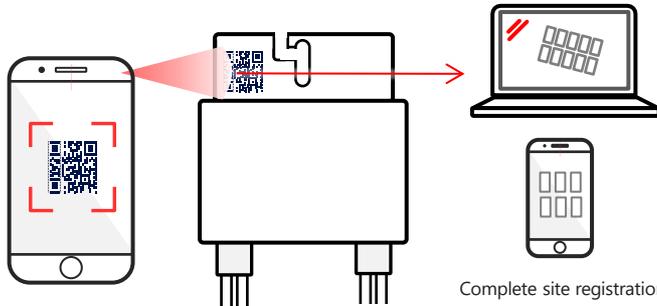


1

Install the Power Optimizers

3

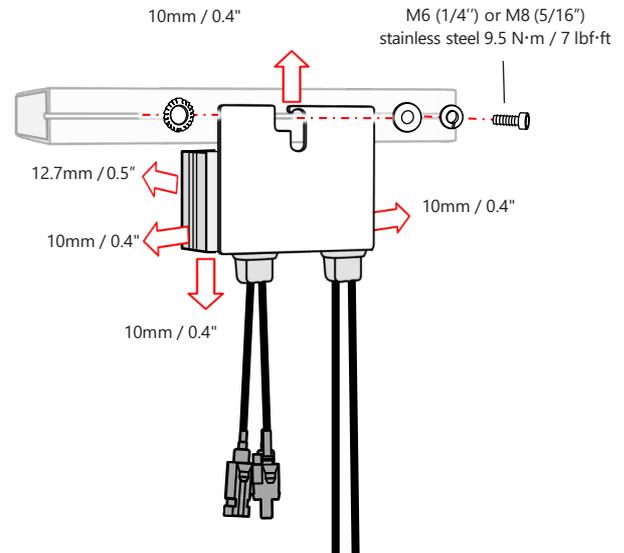
Scan QR code using Mapper



Complete site registration
and physical layout in the
Monitoring platform

4

Install Power Optimizer



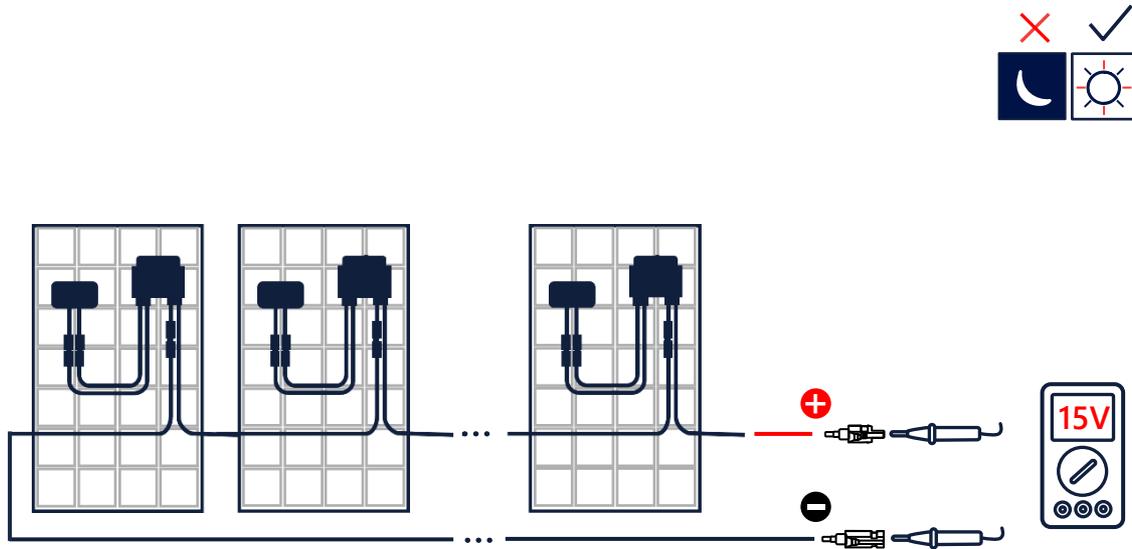
Star washers for the C-series optimizer are not included and can be purchased in large quantities. SolarEdge part numbers: OPT-Washer-100 or OPT-Washer-500.



The Power Optimizer must be grounded. For details, see [Grounding SolarEdge Power Optimizers – Application Note](#)

2

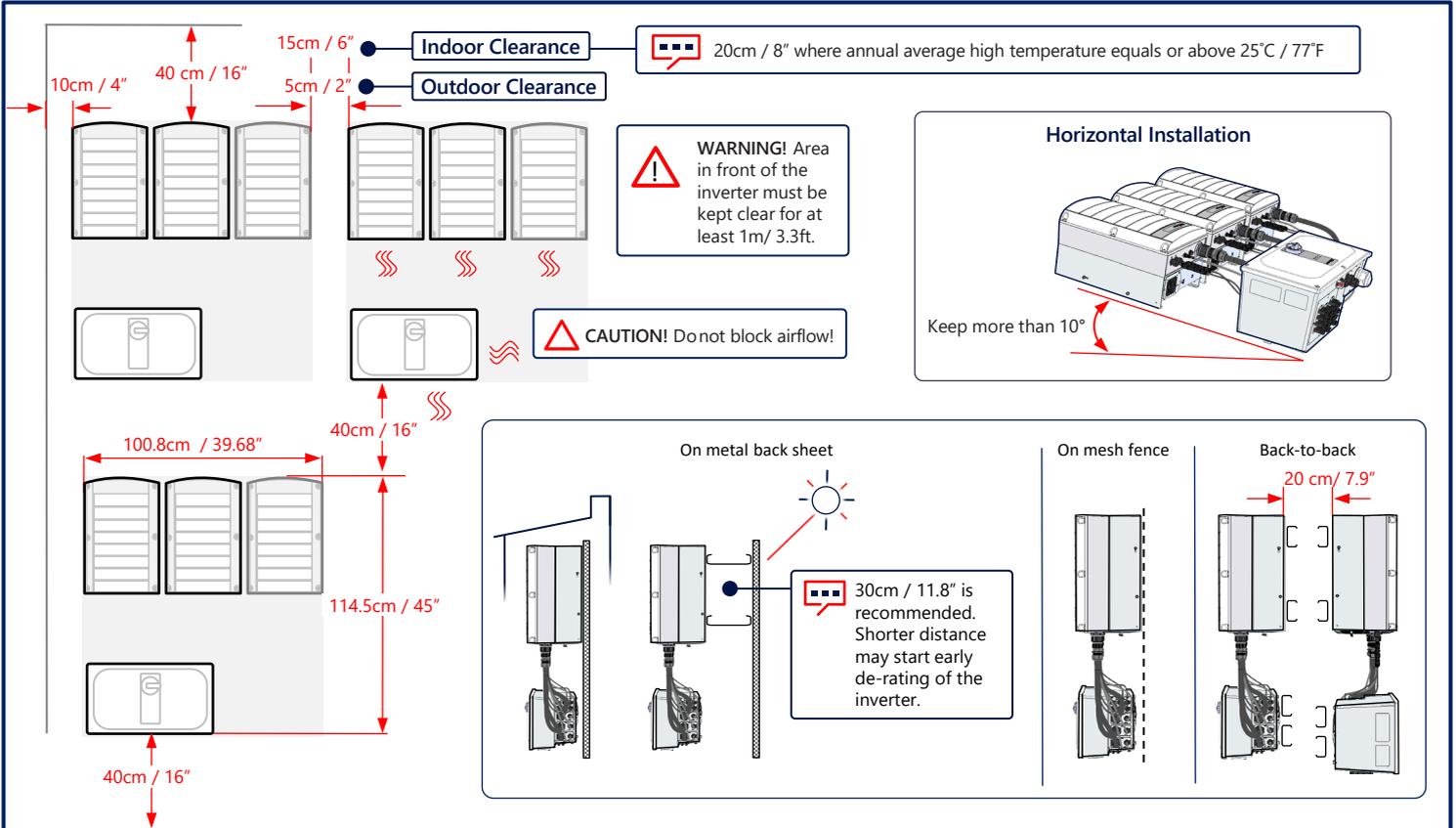
Connect the PV Array



Check array polarity.
Verify $0.5 \pm 0.075V$ per optimizer
Example: 30 optimizers = ~15V

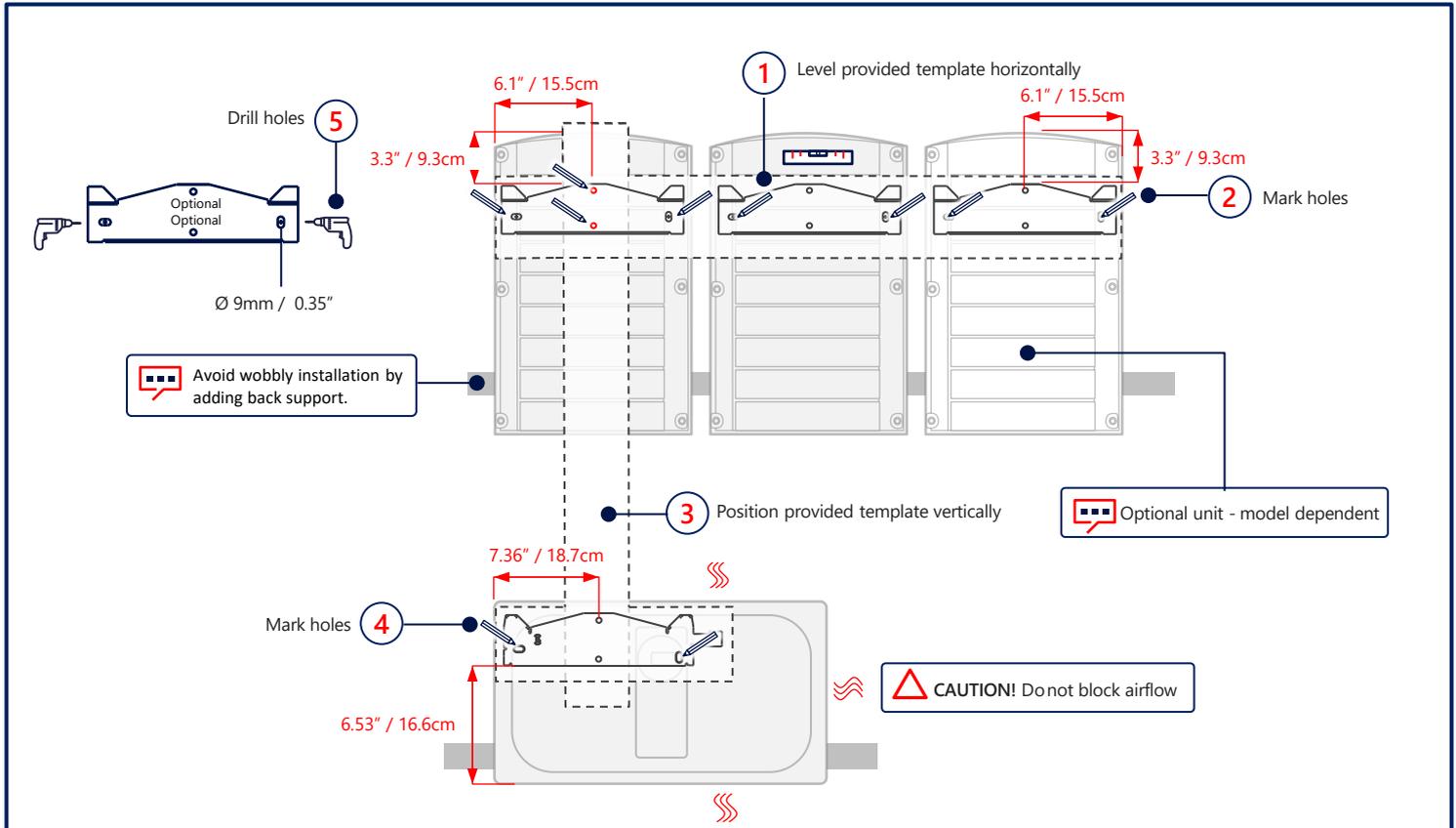
Maintain Clearance

3



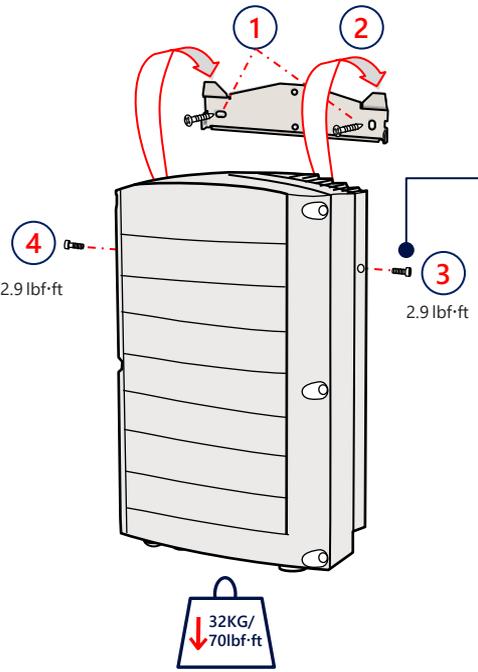
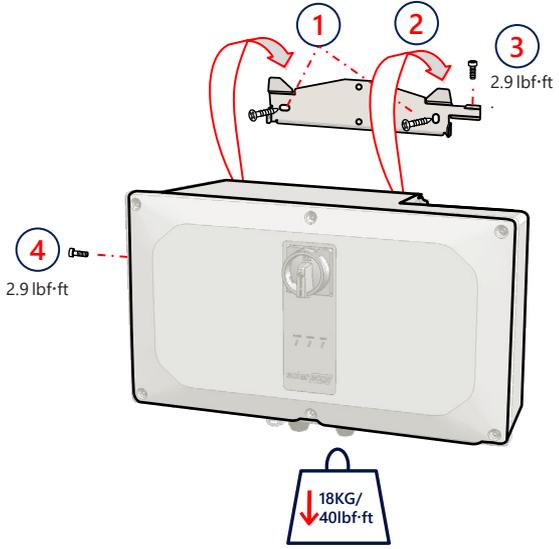
4

Mark and Drill Holes



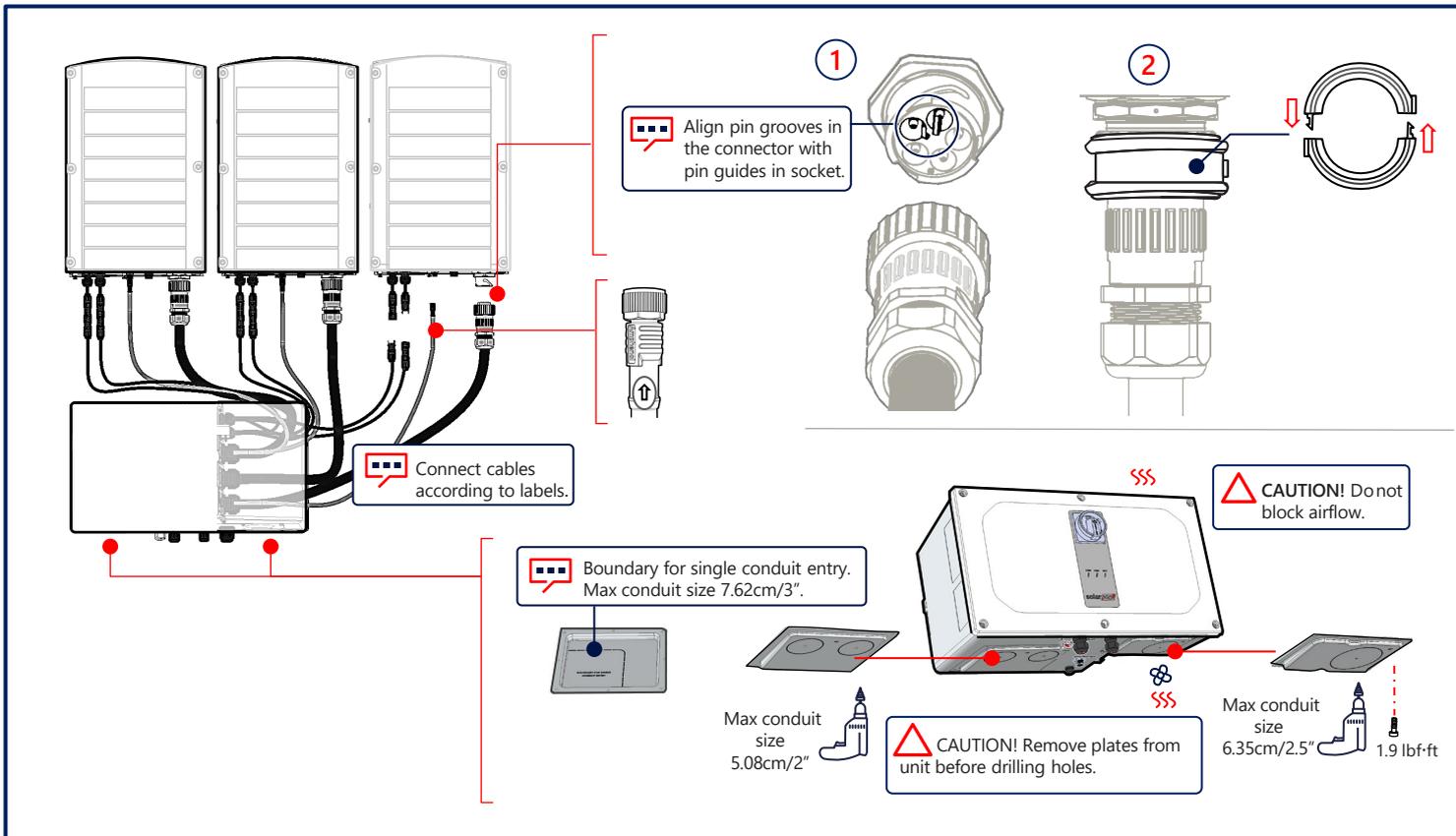
Mount the Units

5



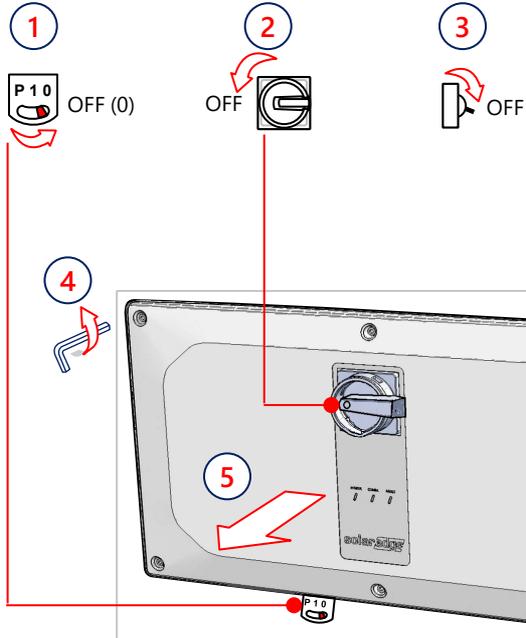
For left or right units, use only the outer screw.

6 Connect Cables



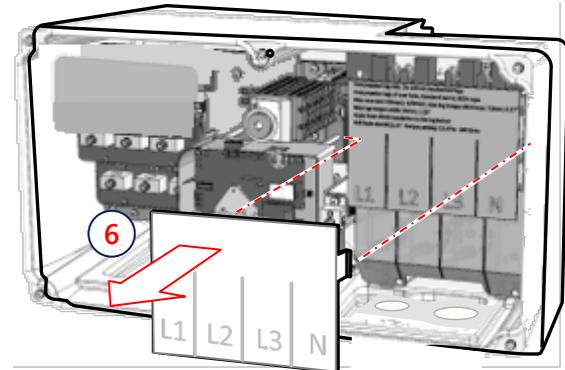
Remove Covers

7



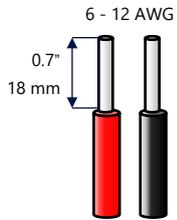
WARNING!

DISCONNECT POWER BEFORE BEGINNING INSTALLATION

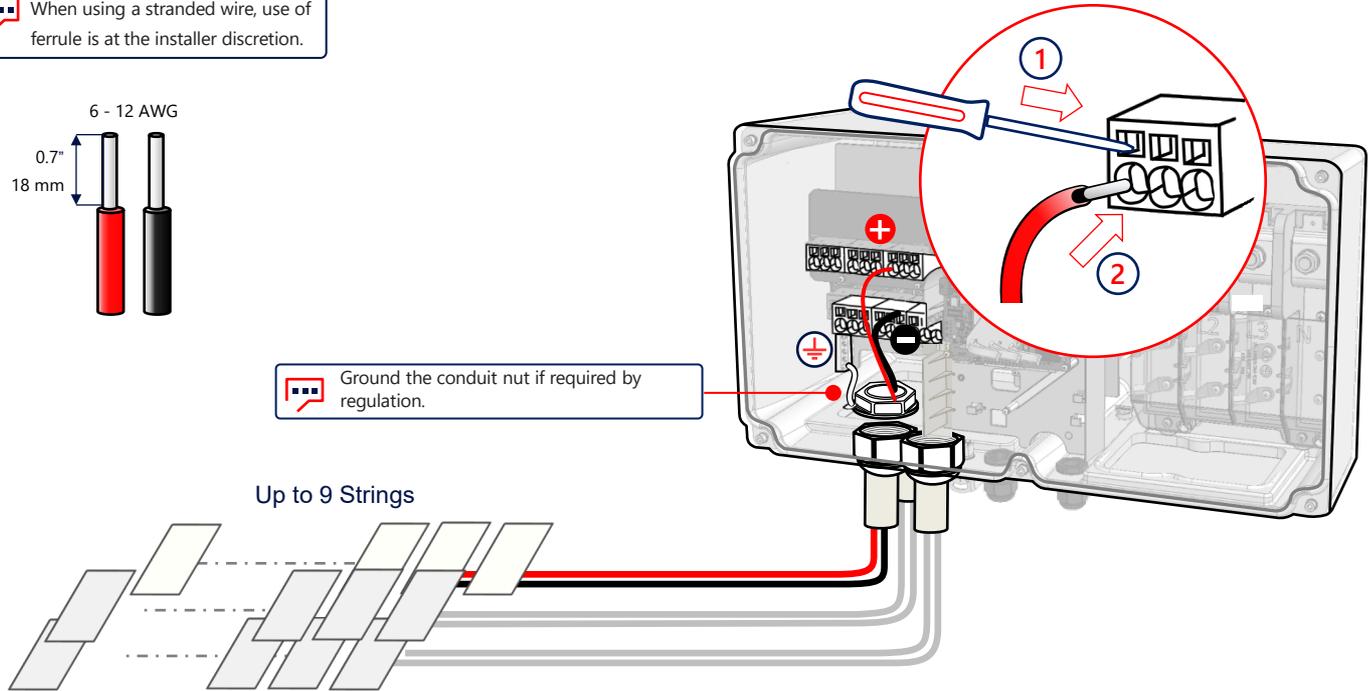


8 Connect PV Strings (Multi-Input Synergy Manager)

When using a stranded wire, use of ferrule is at the installer discretion.



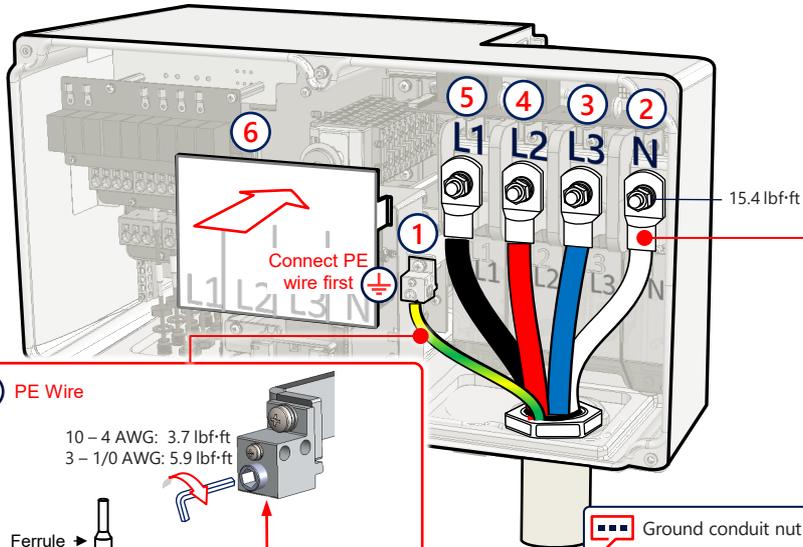
Ground the conduit nut if required by regulation.



9 Connect AC and Protective Earth

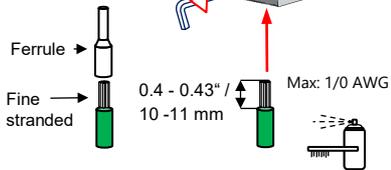
The inverter can either support 4 wire + PE or 3 wire + PE connection.

Overcurrent protection for the AC output must be provided by others, see manual for guidance.

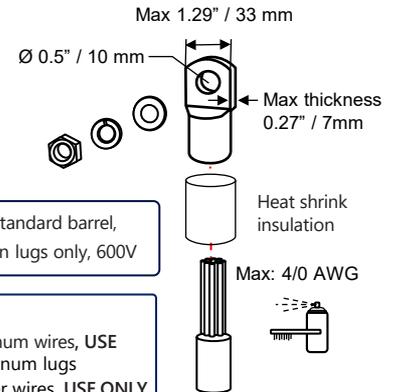


PE Wire

10 – 4 AWG: 3.7 lbf-ft
3 – 1/0 AWG: 5.9 lbf-ft



Ground conduit nut if required by regulation



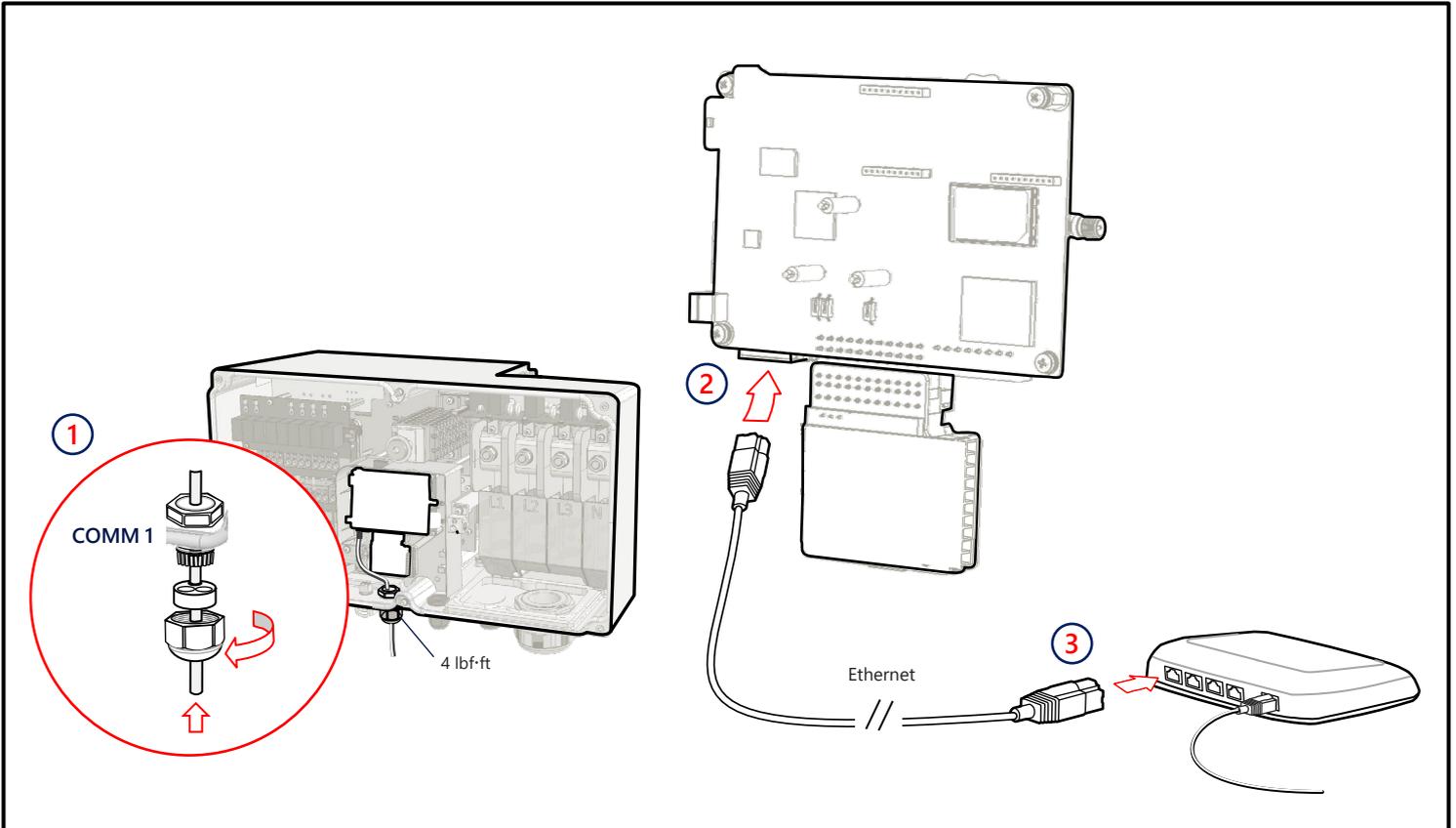
One-hole, standard barrel, compression lugs only, 600V

CAUTION!

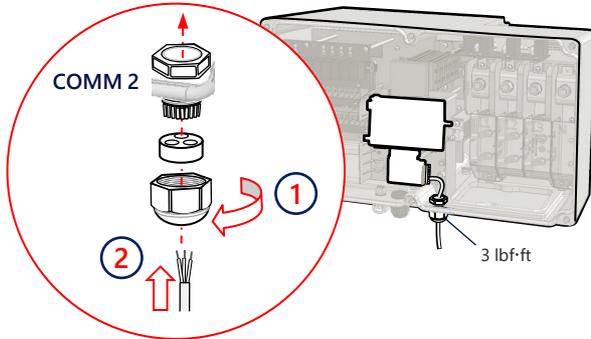
- For aluminum wires, USE ONLY aluminum lugs
- For copper wires, USE ONLY copper tin-plated lugs

Set up Communication

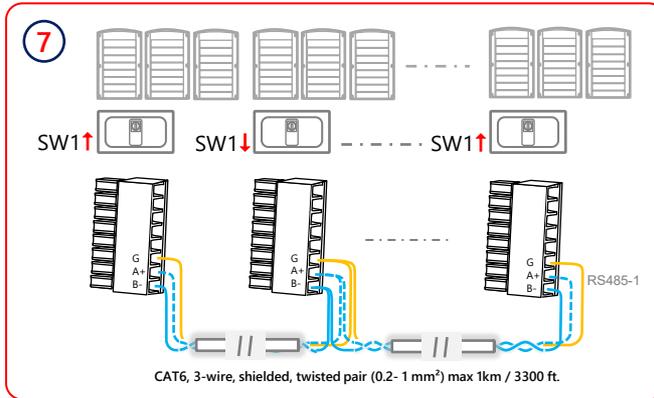
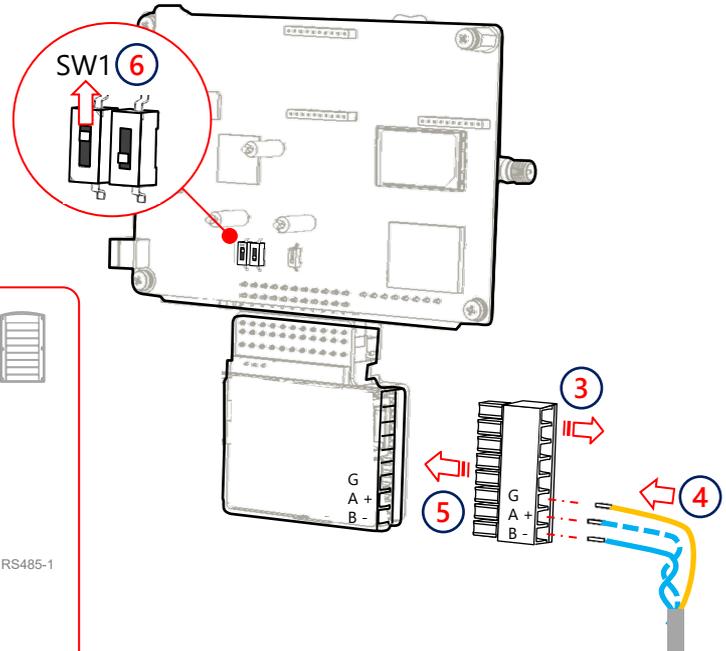
10



11 Establish RS485 Connection of Multiple Inverters

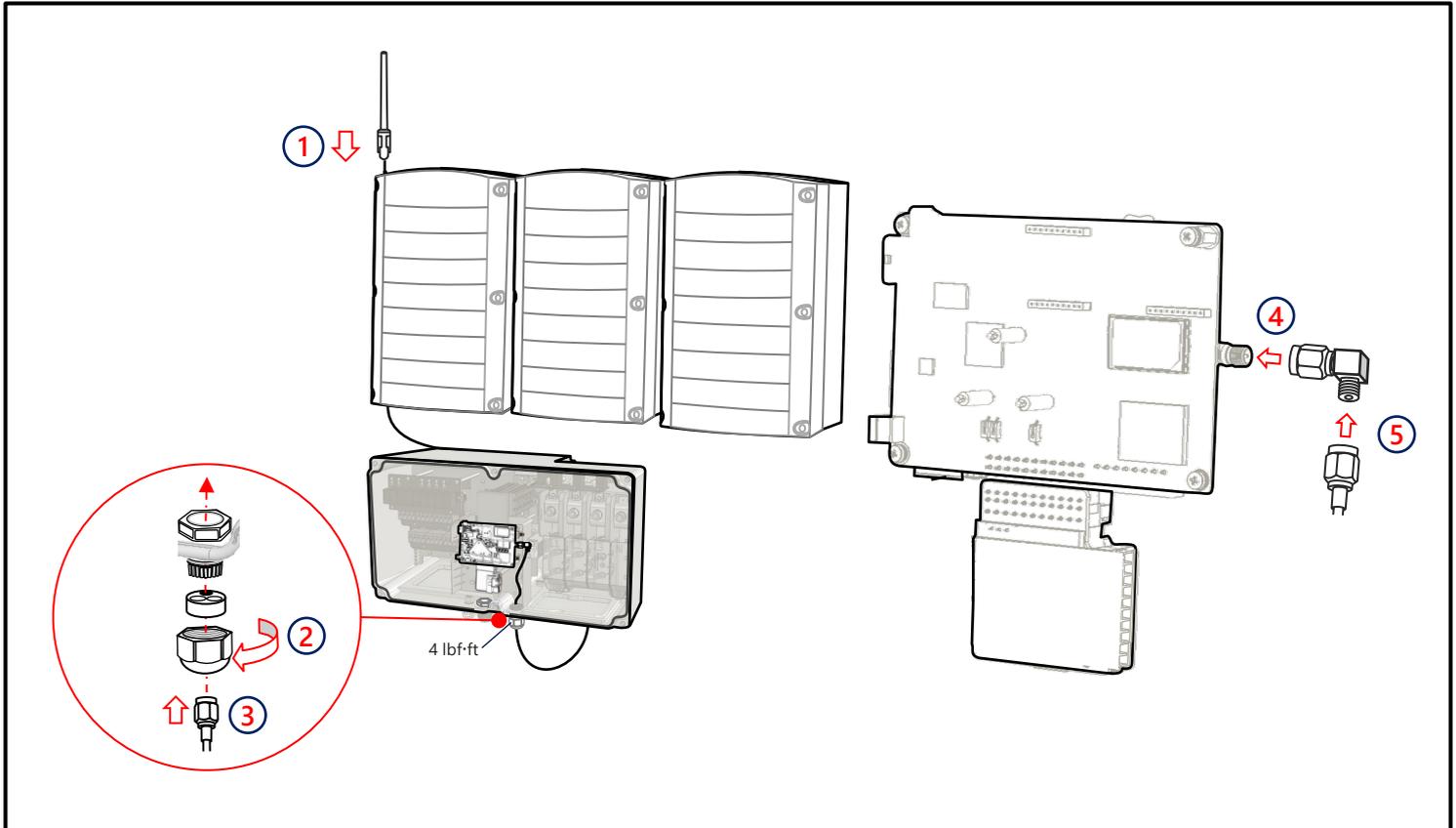


Move SW1 switch to ON (up) to terminate first and last inverters on RS485 bus.



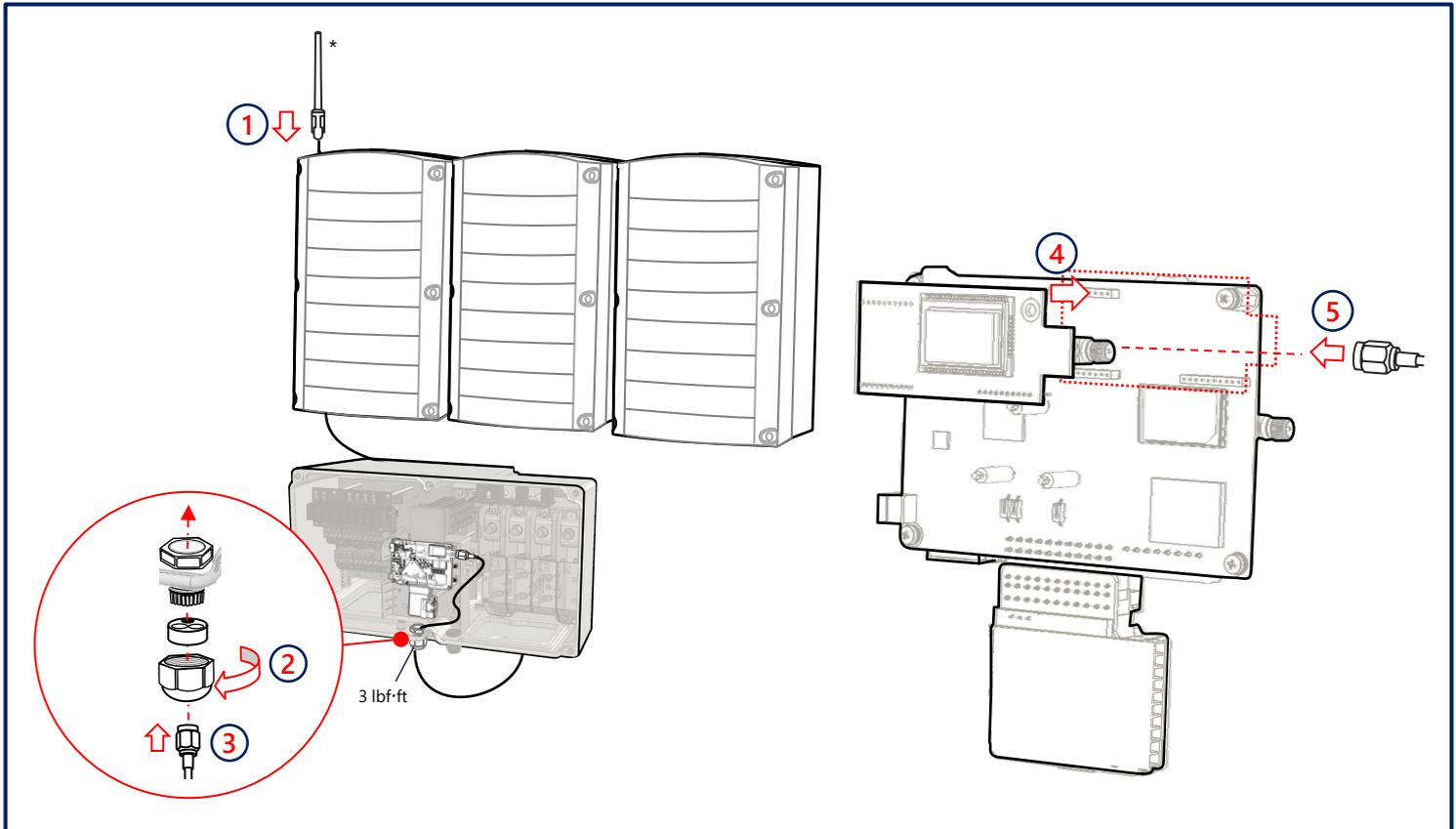
Connect Wi-Fi Communication (Optional)

12



13

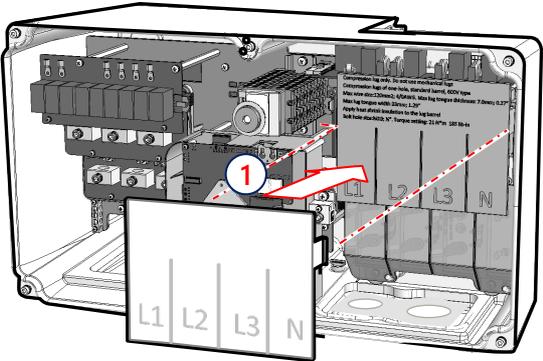
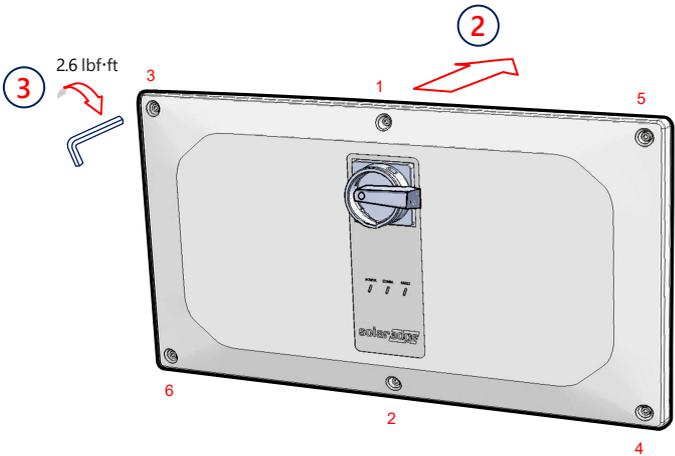
Connect Cellular Communication (Optional)



*The antenna is optional.

Install Covers

14



15 Pre-commission when AC Power is Not Connected (Option 1)

1

Download SolarEdge
SetApp



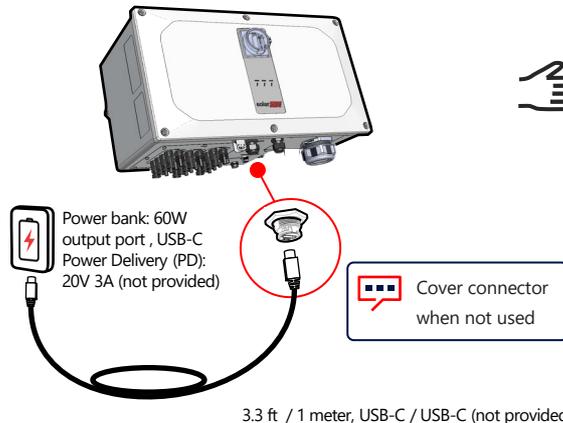
2

Turn DC Disconnect
switch to ON



3

Connect power bank



4

Start and follow
SetApp



5

Disconnect and remove power bank

6

Turn switches to OFF

7

Wait until inverter turns-off (all LEDs turn-off)

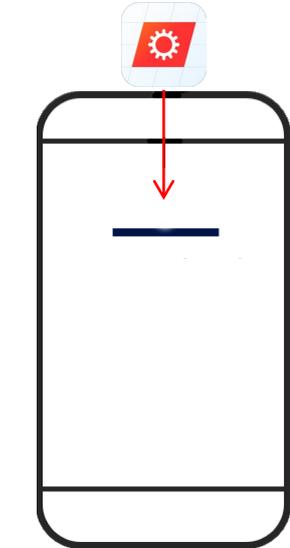


Commission with DC and AC Power (Option 2)

16

1

Download SolarEdge SetApp



GET IT ON
Google Play



Download on the
App Store



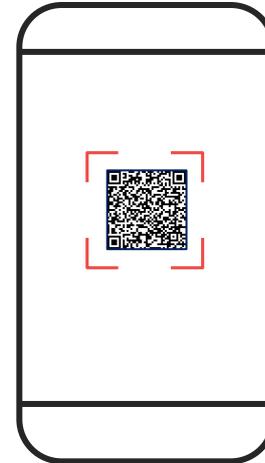
2

Turn ON



3

Scan inverter QR code (for RS485 bus scan leader inverter first)

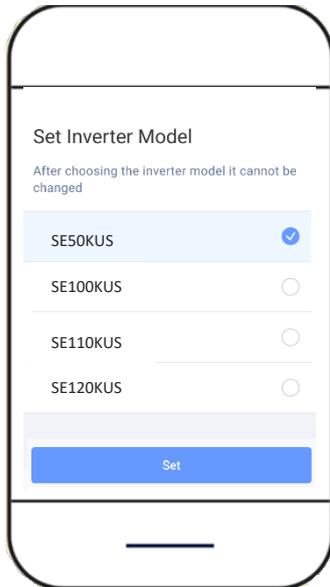


16

Commission with DC and AC Power (Option 2)

4

Set inverter model



After confirming the inverter model in SetApp, only the SolarEdge support team can modify the inverter model.

5

Peel off the tab next to the selected inverter model

solaredge****

Grid Support Utility Interactive
Non-Isolated 3PH Photovoltaic Inverter

Make sure to properly mark the correct configuration.
Wrong marking may revoke the product's limited warranty

Model SE50KUS

Input Operating Voltage Range	370-600 Vdc
Max Input Current	3x46.5 Adc
Max Continuous Output Power	50000 VA
Voltage Min-Nom-Max	183-208-229 Vac,L-L
Max Continuous Output Current	139.5 Aac
Max Output Fault Current	206 Aac

Model SE100KUS

Input Operating Voltage Range	840-1000 Vdc
Max Input Current	3x40 Adc
Max Continuous Output Power	100000 VA
Voltage Min-Nom-Max	422.5-480-529 Vac,L-L
Max Continuous Output Current	120 Aac
Max Output Fault Current	175.6 Aac

Model SE110KUS

Input Operating Voltage Range	840-1000 Vdc
Max Input Current	3x48.25 Adc
Rated AC Active Output Power	110000 W
Maximum AC Apparent Output Power	120000 VA
Voltage Min-Nom-Max	422.5-480-529 Vac,L-L
Max Continuous Output Current	144.3 Aac
Max Output Fault Current	213.3 Aac

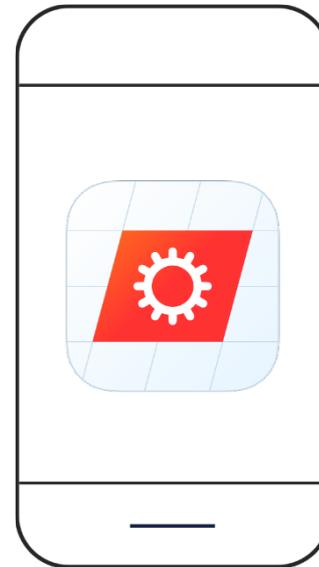
Model SE120KUS

Input Operating Voltage Range	840-1000 Vdc
Max Input Current	3x48.25 Adc
Max Continuous Output Power	120000 VA
Voltage Min-Nom-Max	422.5-480-529 Vac,L-L
Max Continuous Output Current	144.3 Aac
Max Output Fault Current	213.3 Aac

The rated operating current and voltage of this system may be controlled electronically.
See manufacturer's instructions and configuration information.

6

Start and follow SetApp





13:53

solar_{edge}
SN 7C17FC-8F

Commissioning

- 1 **Country & Language** >
- 2 **Pairing** >
- 3 **Site Communication** >
- Monitoring Communication** >
- Power Control** >
- Grid Protection** >
- Device Manager - ZigBee Not Connected**
- Maintenance** >
- Information** >
- Central Setting** >
- 4 **Status** >

III □ <

RS485-1 → Protocol → SolarEdge → **Solaredge Leader**
 RS485-1 → **Follower Detect**

Site		
Production 1.00 MW	Limit 1.00 MW	Inverters 10/10
Inverter		
SN 07318000C		
Power 100kW	Voltage 277 Vac	Frequency 60.9 Hz
P_OK: 141 of 141 Connected	Server Comm. S_OK (LAN)	
Status Production	Switch On	
Cos Phi 1.00	Limit No Limit	Country USA2



Inverter Units		
Left SN 07318000D	Center SN 07318000C	Right SN 07318000E
Power 33.3 kW	Power 33.3 kW	Power 33.3 kW
Voltage 850 Vdc	Voltage 850 Vdc	Voltage 850 Vdc
P_OK 47 Of 47	P_OK 47 Of 47	P_OK 47 Of 47
Temperature 156 F	Temperature 156 F	Temperature 156 F
Fan OK	Fan OK	Fan OK
Isolation 100 kOhm	Isolation 100 kOhm	Isolation 100 kOhm

18

View System Status

POWER	COMM	FAULT	
Green	Blue	Red	
			System is producing Power
			AC is connected but the system is not producing power
			Inverter is communicating with the monitoring platform
			System error

For the latest updates, see:

Quick Installation Guide (online)



Datasheet



SolarEdge Customer Support





Support Contact Information

If you have technical problems concerning SolarEdge products, please contact us:

<https://www.solaredge.com/service/support>

Subject to change without notice.

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