



SolarEdge Home Hub and Backup Solution – Single Phase

- // SolarEdge Home Hub Inverter
- // SolarEdge Home Battery
- // SolarEdge Home Backup Interface

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Your Presenters



Richard Fuell

UK Sales Manager

M: +44 7490 238 737

E: Richard.Fuell@solaredge.com



Jason Kirrage

Technical Marketing Manager

M: +44 7776 102 858

E: jason.kirrage@solaredge.com

SOLAREEDGE HOME WAVE INVERTER



SolarEdge Home Wave
Inverter - Single Phase

Our award-winning single phase inverters that maximize energy production and deliver enhanced safety

- High DC-AC oversize ratio (up to 200%)
- Serve as Home Energy Manager
 - Manage PV, Battery, EV charging, Hot water and other smart energy devices
- Faster installation and commissioning using SolarEdge SetApp
- Seamless connection with SolarEdge Home Network
- Available sizes:
 - Single Phase inverter range: 2.2-10kW

SOLAREEDGE HOME HUB INVERTERS



SolarEdge
Home Hub
Inverter - Single
Phase



SolarEdge
Home Hub
Inverter - Three
Phase

The ultimate home energy managers in charge of PV production, battery storage, backup applications*, EV charging, and our smart energy devices

- High DC-AC oversize ratio - up to 200% (up to 150% 3ph)
- Backup-ready inverter
 - Backup operation requires Backup Interface & Battery
- Serves as the home energy manager
 - Manages battery, backup power, EV charging, Hot water and other smart energy devices
- Seamless connection with SolarEdge Home Network
- Available sizes:
 - Single Phase inverter range: 3 – 10kW
 - Three Phase inverter range: 5-10kW

* Backup applications are subject to local regulations and require connection with the SolarEdge Home Backup Interface.



Stay On When The Grid Is Off

solar**edge**

Life is unpredictable.
Home energy shouldn't be.

Flexible Home Backup

Maximize energy independence by adding multiple batteries and connecting a generator

Smart Backup

Last longer and stay in control of your power through mySolarEdge app

The One. For All.

The Ultimate Power Couple

SolarEdge Home
Hub inverter



SolarEdge Home
Battery

PV



Module level
monitoring



SolarEdge
Home Backup
Interface



SolarEdge Energy
Meter



SolarEdge EV
Charger

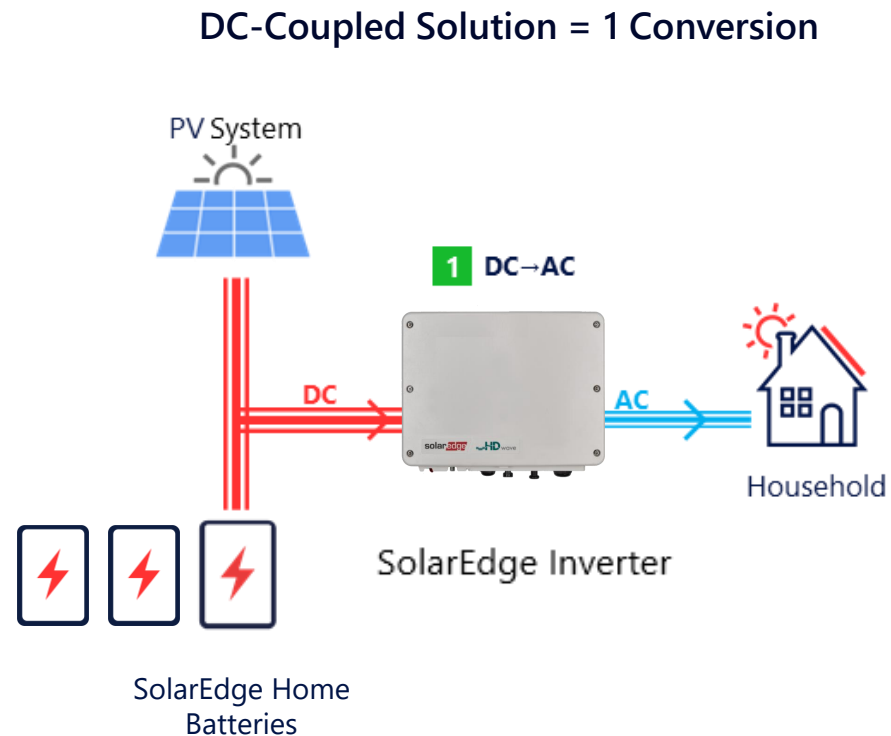


Smart Energy
devices

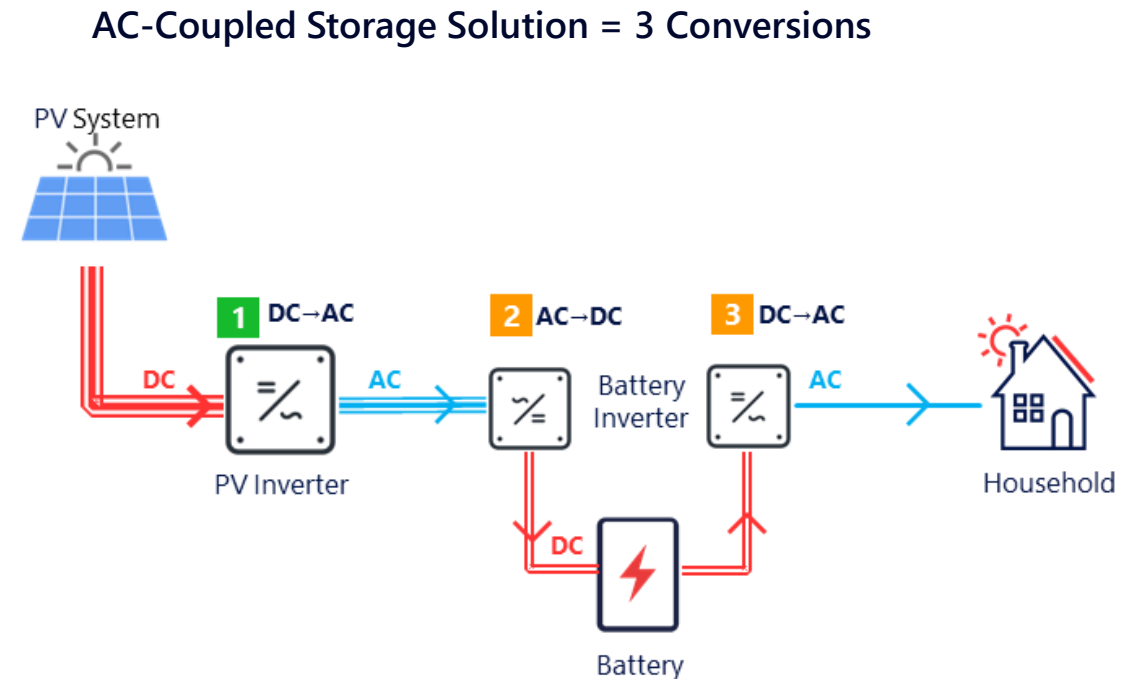


SolarEdge DC coupled technology

- DC-Coupled = Fewer Conversions + Higher Efficiency = More Energy

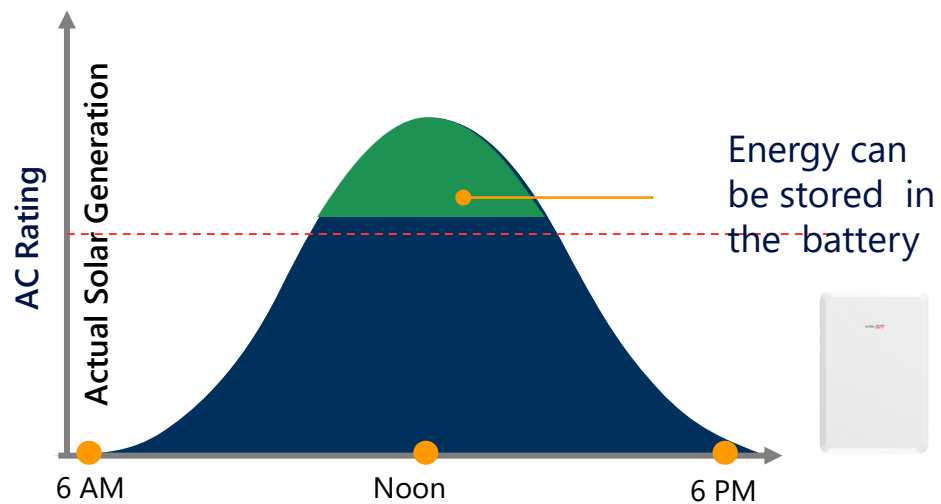


VS.



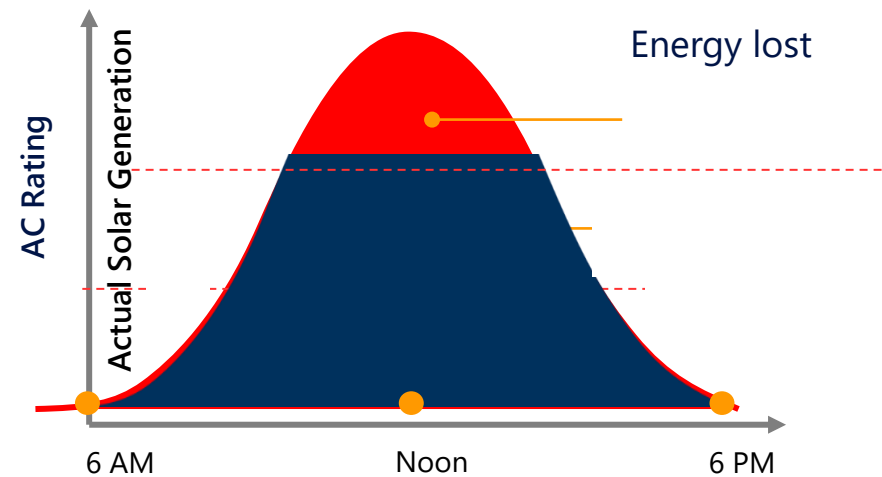
DC Coupling
+
200% DC Oversizing

DC-Coupled Storage Solution with SolarEdge



vs.

AC-Coupled Storage Solution



Benefits	DC-Coupled Energy Hub and SolarEdge Battery Solution	Third-party AC-Coupled Solution
More consumable energy	With up to 200% oversizing, all the unclipped energy goes into the battery which results in more savings for the homeowner	DC oversizing beyond 120% often results in clipping. Clipped energy is lost; can't be stored in a battery
Sell a larger PV system	Ability to install a larger PV system from the get-go or expand easily later. Additional 6 kW can be installed: revenue of ~ \$20,000 ^{(1) (2)}	Potential loss of opportunity
Higher efficiency	94.5% ⁽³⁾ system efficiency. Only 1 conversion is necessary to create usable energy	Less efficient because 3 conversions are required to get usable energy.
G100 issue 2 (1 st May 2023)	Having one manufacturer for PV, Storage, EV and Smart Energy is a huge advantage for controlling the import.	Having more than one manufacturer on a site for PV, Storage, EV, and Smart Energy could lead to issues with under performance, lockouts, and general disappointment.

(1) Calculated based on a 7.6 kW AC system

(2) Calculated at \$3.18 per watt (Source: Solar-Estimate.org). The actual revenue depends on the PV rates applicable in your market

(3) 93.3% is the system efficiency calculated with LG-Chem battery and Energy Hub Inverter, refer to backup slides for calcs

(4) Customer Limitation Scheme (G100 issue 2) controls the import and export of PV, Battery, EV, and Smart Energy Devices on the site.

The SolarEdge Integrated Solution

Simple, Flexible & Future Proof

- Seamless operation of all system components
- Flexibility to 'mix & match' from multiple products
- Seamless communication between all devices (G100 issue 2)

SolarEdge Home Backup Interface



SolarEdge Home battery



SolarEdge Home Hub inverter



mySolarEdge



SolarEdge Energy Meter



Hot Water



Sensor



Relays



Socket

Smart EV Charger

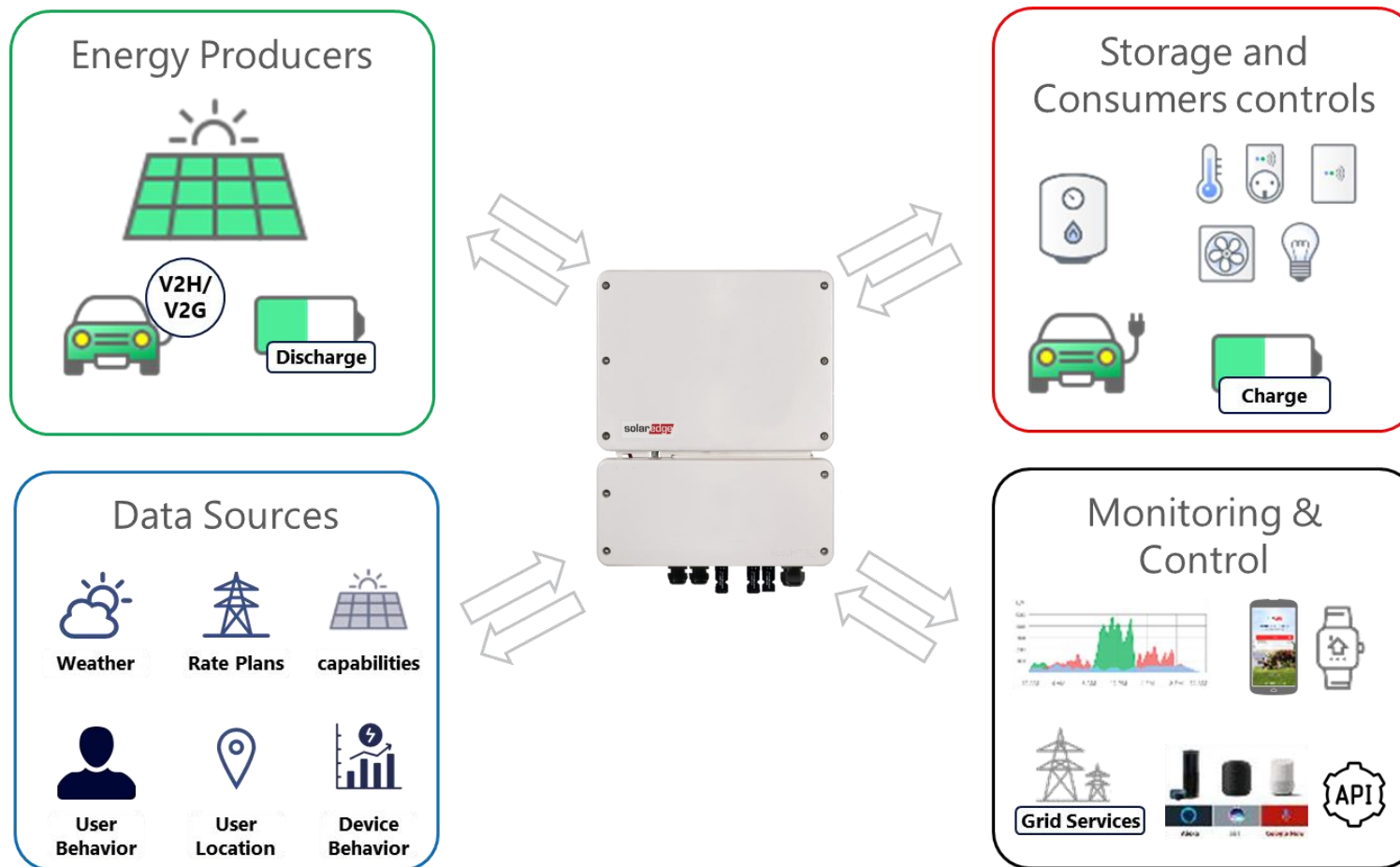


Smart Modules



SolarEdge Home Hub Inverter

The Complete Home Energy Manager



Seeing Is Saving with mySolarEdge

- Real-time insight into energy production
 - Understand how to keep bills low
 - Know when its time to upgrade/expand (EV Charger, Hot Water, batteries)



Dynamic Outage Management

With the SolarEdge Home Backup Interface

1 Set Preferences

- Backup reserve settings
- Backup mode settings

2 Prepare Backup Event

- Backup reserve manual configuration
- Outage alert/notifications

3 Manage Backup Event

- Power flow & battery status view
- Notifications with backup time prediction & suggestions
- Consumption & backup time optimization
- Overload protection & generator trigger

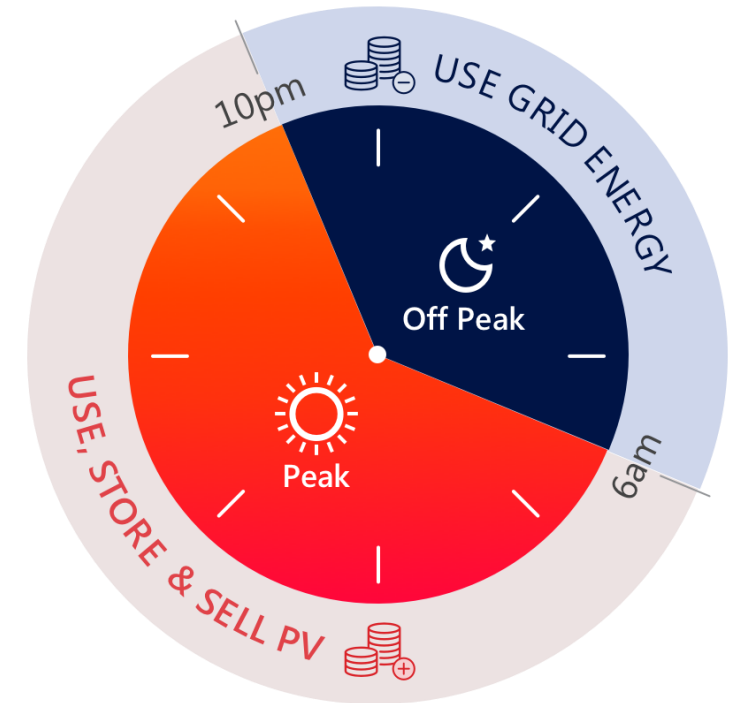
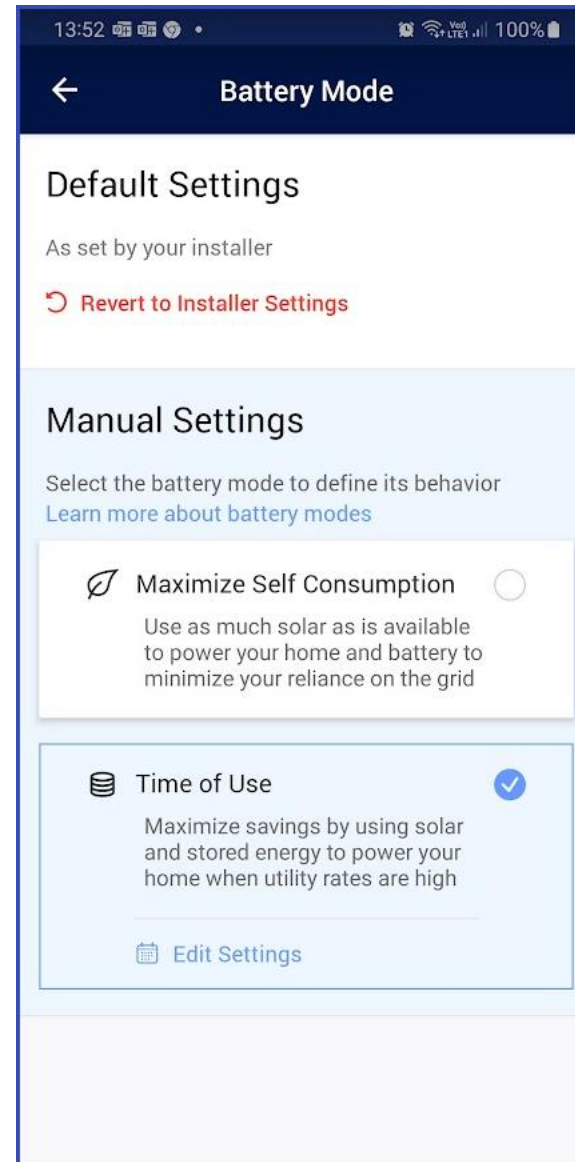
4 Post Event

- Return to steady state mode
- Event summary and notifications
- Recommendations for future outages



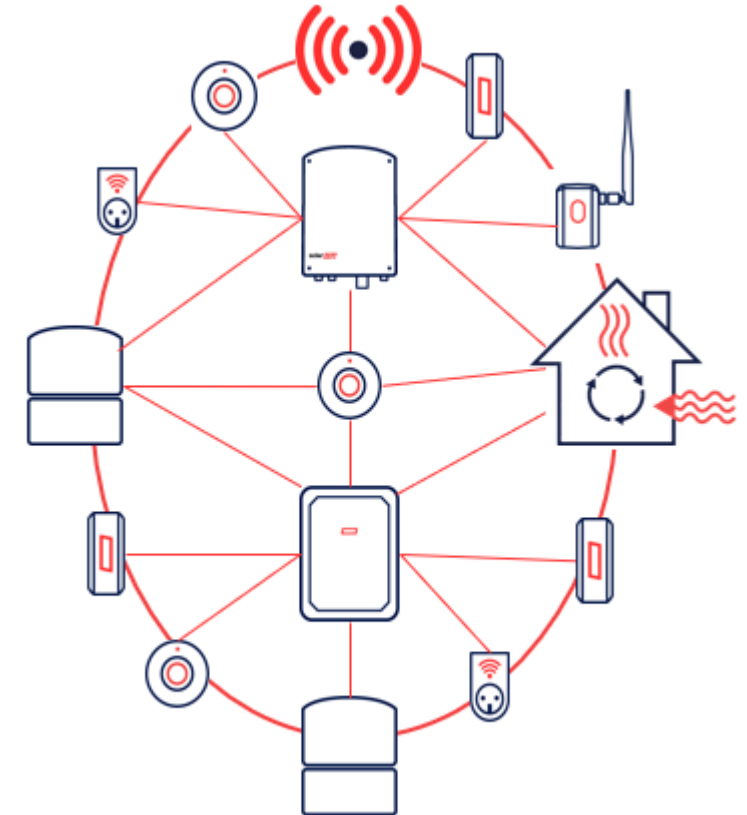
Battery Profile Programming For TOU Markets

- ▀ Charge the battery when electricity prices are low
- ▀ Discharge to supply the house when prices are high
- ▀ During each time slot the system operates according to one of seven modes
 - ▀ Charge the battery from solar or the grid or discharge it according to your needs



Seamless Communication with SolarEdge Network

- Wireless communication between the inverter, battery and all other SolarEdge smart devices with wireless sub-GHz mesh network infrastructure
- Reducing wiring and connections work
 - No messy cables, conduits, or drilling
 - Reduces installation time & risk of errors
- Automatic device detection – devices pop up on application when powered
 - Rapid discovery process
- Overcomes distance or physical limitations for seamless connection between devices in the home



SOLAREEDGE HOME NETWORK

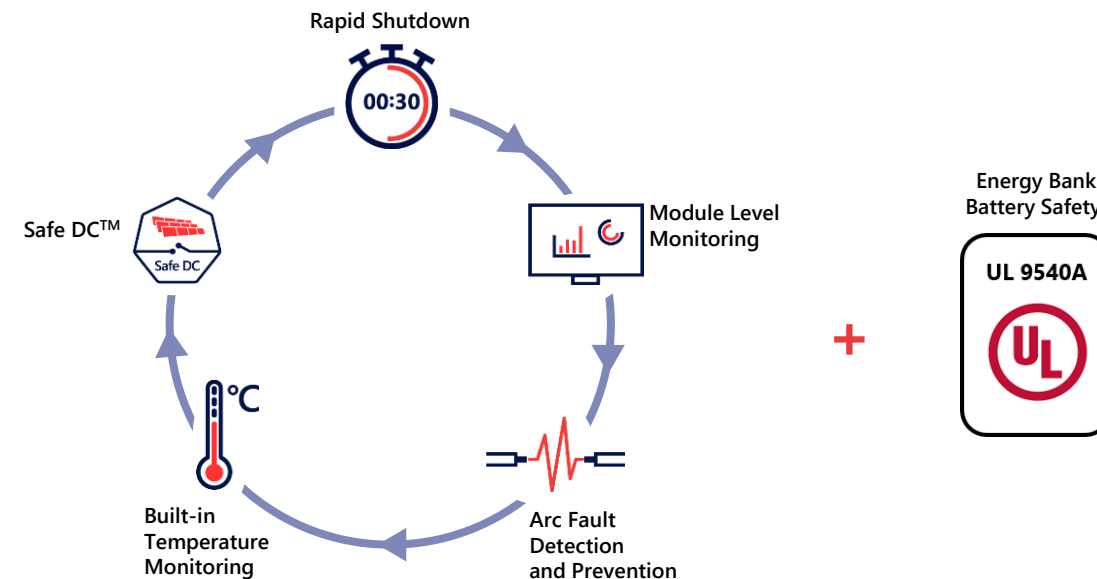


Wirelessly connects the devices in the SolarEdge Home smart energy management ecosystem, with sub-GHz mesh network infrastructure

- Reducing wiring and connections work
- No cables, conduits, or drilling
- Minimizes installation time & risk of errors
- Automatic device detection - devices pop up on application when powered
- Rapid discovery process
- Longer transmission ranges and more reliable and robust communications

Comprehensive Safety Solution From PV to Battery

- SolarEdge is setting industry-leading safety measures for battery protection
- The SolarEdge Home Battery includes advanced features to maximize battery safety
 - Continuous protection through measurement and monitoring of battery current and voltage levels
 - A built-in array of multi-point temperature sensors to mitigate battery overheating
 - A unique combination of software and hardware mechanisms
 - Pressure release mechanism
- Compliant with the most advanced safety regulations UL9540, UL9540A, UL1973 & UN38.3



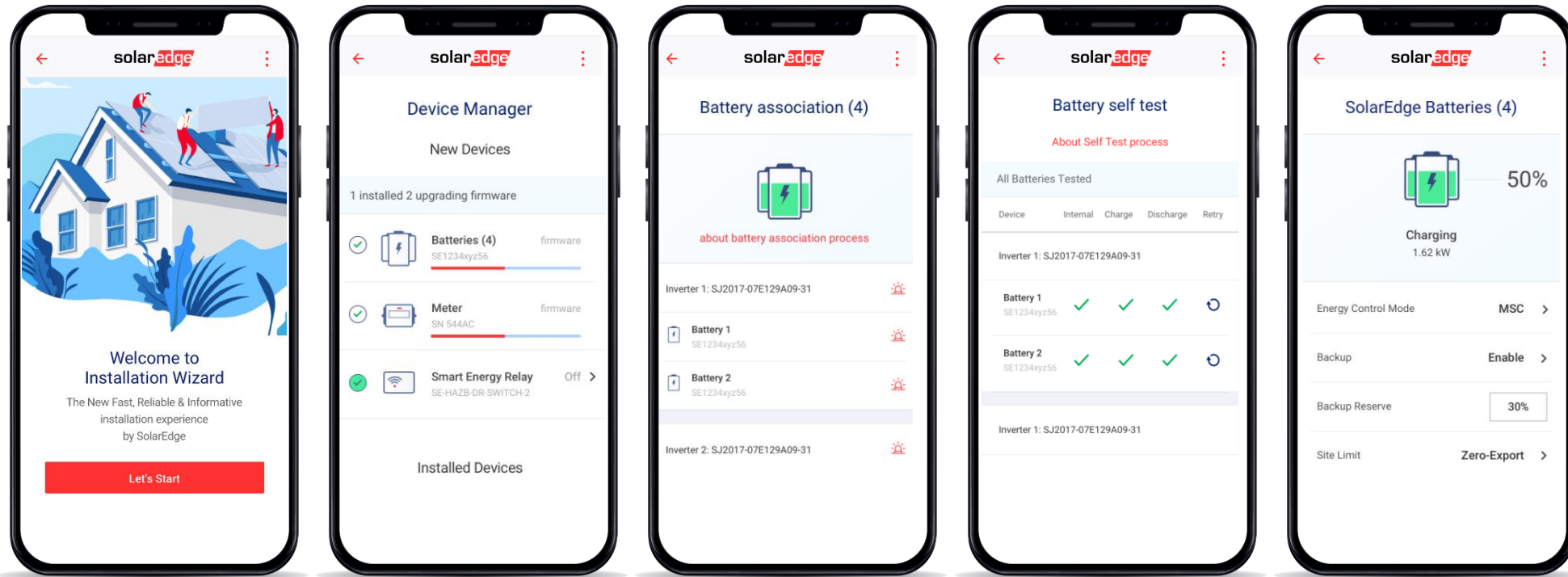
Easy O&M with SolarEdge's monitoring platform

- Full visibility of system's performance, including interactive charts and site layout
- Real-time data at the module-level, battery-level, and system level
- Automatic pinpointed module-level alerts for all installed components (modules, Power Optimizers, inverters, and batteries):
 - Detailed battery and backup alerts
 - Backup failures
 - Battery internal failures
 - Battery below min SOE
 - Battery communication error
 - Troubleshooting recommendations for each alert



Time-Saving Configuration with SetApp

- Easy and fast commissioning of new sites, including auto detection of devices
- Reduces configuration errors



More Revenue with Add-ons or System Expansion

Battery Stacking

- / Simpler, flexible install
- / 200% DC oversizing allows to sell more PV, more batteries



SolarEdge EV Charger

- / Simple connection to SolarEdge EV Charger



Smart Devices

- / From Smart Energy Hot Water to Smart Sockets and beyond



Streamline And Simplify Your Business



One Number To Call

- █ Dedicated virtual & onsite solar+ storage support team



One Vendor

- █ Supply chain controlled by single reliable vendor



One Warranty

- █ Comprehensive Industry-leading warranty with up to 25 years coverage*



One Software Suite

- █ Remote software upgrades for all devices from single point
- █ Monitor & troubleshoot systems remotely
- █ A single Homeowner app to monitor and manage all devices



One Source of Training

- █ World-class sales and technical training
- █ Battery Certification Courses



The One. For All.

Full featured functionality to meet energy needs today. Flexibility to expand and meet growing needs for tomorrow.



More Energy To Store And Use

High efficiency solar energy production, stored directly in the battery to minimize power losses



Future Proof

Manage a growing range of features, including future smart energy add-ons



Stay In Charge

Control your energy usage with battery EV charger and smart devices



Always Have Power

Be ready for any event – ensure battery levels are right where you need them



Safety First

Compliant with the most advanced safety regulations and includes multiple safety features for all-time protection



Home-friendly

Aesthetic solution with classic design and no messy cables



solaredge

Products Overview

SolarEdge Hub Inverter

- Record-breaking efficiency (99% CEC)
- High DC-AC oversize ratio (200%)
- Backup ready inverter with Backup Interface & Battery
- Serves as Home Energy Manager
 - Will manage battery, backup power, EV charging, and additional energy management
 - Built-in import/export meter (this will be G100 issue 2 compliant) in the BUI.
- Available sizes: 3, 3.68, 4, 5, and 6



SolarEdge Hub Inverter

- MCB will we need rated for 5400 kW.
 - $5400/230=23.47$ amps
- For retro fit, larger cable, increased MCB, and earth rod.

	SE2500H	SE3000H	SE3680H	SE4000H	SE5000H	SE6000H	Units
OUTPUT – AC ON GRID							
Rated AC Power	2500	3000	3680	4000	5000	6000	VA
Maximum AC Power Output	2500	3000	3680	4000	5000	6000	VA
AC Output Voltage (Nominal)	220 – 230						Vac
AC Output Voltage (Range)	184 – 264.5						Vac
AC Frequency Range (Nominal)	50/60 ± 5						Hz
Maximum Continuous Output Current RMS	11.5	14.0	16.0	18.5	23.0	27.5	A
Total Harmonic Distortion (THD)	< 3						%
Power Factor	1, adjustable -0.8 to 0.8						
Utility Monitoring, Islanding Protection, Country Configurable Thresholds	Yes						
Charge Battery from AC (if allowed)	Yes						
Typical Nighttime Power Consumption	< 2.5						W
OUTPUT – AC BACKUP							
Rated AC Power in Backup Operation	5400						W
AC Output Voltage (Nominal)	220 – 230						Vac
AC Output Voltage (Range)	184 – 264.5						Vac
AC Frequency	50/60 ± 5						Hz
Maximum Continuous Output Current in Backup Operation	25.0						A
INPUT – DC (PV AND BATTERY)							
Transformer-less, Ungrounded	Yes						
Maximum Input Voltage	480						Vdc
Nominal DC Input Voltage	380						Vdc
Ground-Fault Isolation Detection	600kΩ Sensitivity per Unit						
Maximum DC PV Power	5000	6000	7360	8000	10000	12000	W
Maximum Input Current	7.0	9.0	10.5	11.5	13.5	16.5	Adc
Isc PV	7.0	9.0	10.5	11.5	13.5	16.5	Adc
Maximum Inverter Efficiency	99.2						%
European Weighted Efficiency	98.3	98.8			99		%
Reverse-Polarity Protection	Yes						

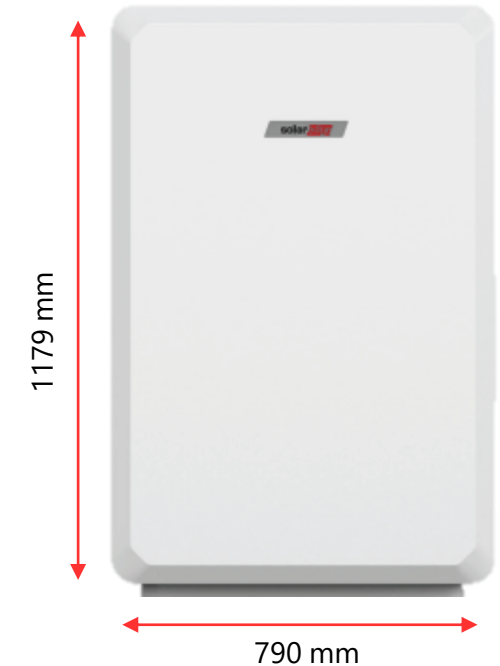
SolarEdge Hub Inverter

- How many batteries per site?
- How many inverters per site?

BATTERY STORAGE		
Supported Battery Types	SolarEdge Home Battery 400V	
Number of Batteries per Inverter	Up to 3	
Continuous Power	5000W per battery, total continuous discharge power is limited up to the inverter rated AC power for on-grid and backup applications	W
SMART ENERGY CAPABILITIES		
Consumption Metering	Not included	
Battery Storage	With Backup Interface (purchased separately) for service up to 100A; up to 3 inverters	
ADDITIONAL FEATURES		
Supported Communication Interfaces	RS485, Ethernet, Wi-Fi (optional), SolarEdge Home Network	
Integrated AC, DC and Communication Connection Unit	Built-in	
Inverter Commissioning	Inverter Commissioning with the SetApp mobile application using built-in Wi-Fi Access Point for local connection	
STANDARD COMPLIANCE		
Safety	IEC-62109	
Grid Connection Standards	VDE-AR-N 4105, Tor Erzeuger Typ A, EN50549-1, CEI 0-21, G98 Type A, G98 NI Type A, RD1699 / RD413 / NTS, VDE-V 0126-1-1, VFR 2019, C10/11, EN50438	
Electromagnetic Compatibility (EMC)	IEC61000-6-2, IEC61000-6-3, IEC61000-3-11, IEC61000-3-12, EN55011	
INSTALLATION SPECIFICATIONS		
AC Output – Supported Cable Diameter	9 – 16	mm
AC – Supported Wire Cross Section	1 – 13	mm ²
Dimensions with Connection Unit (H x W x D)	450 x 370 x 174	mm
DC Input	2 x MC4 pairs for PV input; 1 x MC4 pair for battery input	
Weight	12	kg
Cooling	Natural convection	
Noise	< 25	dBA
Operating Temperature Range	-40 to +60	°C
Protection Rating	IP65 – outdoor and indoor	

SolarEdge energy bank Battery

Attribute	Value	
Usable capacity	9,700	Wh
Continuous power	5,000	W
Peak power (<10sec)	7,500	W
Peak Roundtrip Efficiency (including chemistry)	>94.5	%
Warranty	10 years	
Operating temperature	-10 to 50	°C
Storage temperature	-30 to 60	°C
Weight	121	kg
Dimensions	790 x 1179 x 250	mm
Mounting	Floor and wall mount	
Enclosure protection rating	IP65	
Communication	Wireless / RS485 (secondary)	
Supported inverter	Setapp Enabled SolarEdge Energy Hub Inverter	
Max system configuration	Up to 3 x batteries per inverter for power scale-up and capacity expansion	
Safety regulations	UL9540A, UL1973, UN38.3	



Backup Interface – Connecting The Home Hub, And SolarEdge Home Battery 400V

- ▀ Controls the disconnection of house loads from the grid in backup mode
- ▀ Rated for service-side connection, up to 100A
- ▀ Multi-inverter support – Up to 3 Inverters each with 3 Batteries = 88.2kWh storage, 30kW backup power



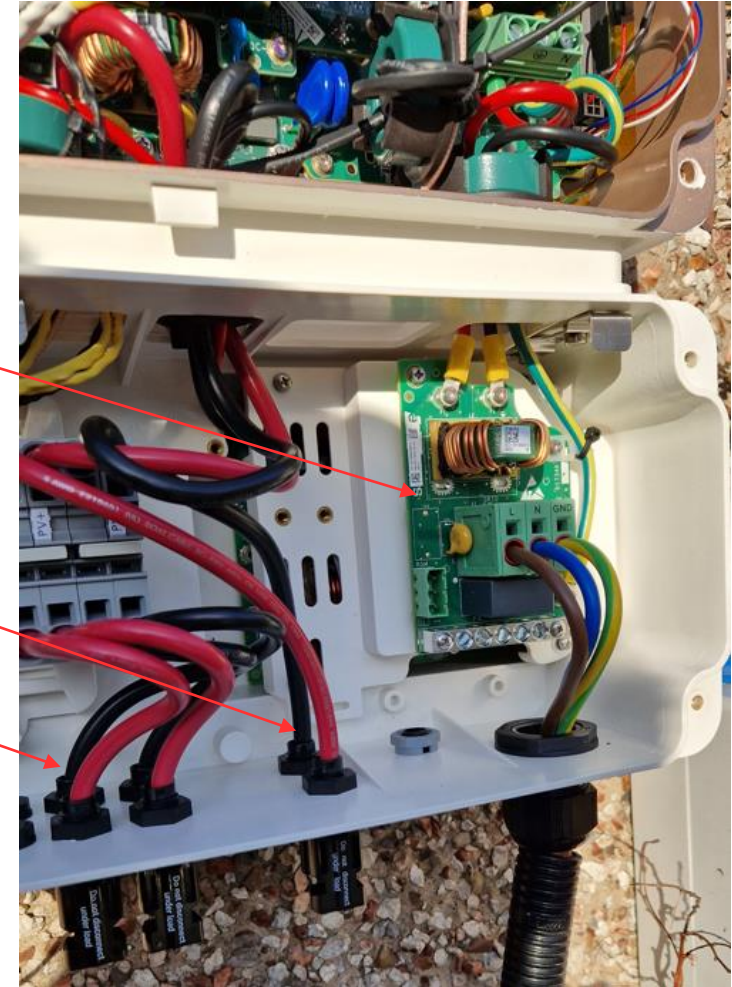
SolarEdge Hub Inverter

- Antenna for the Home Network is attached.
- MC4 plugs are separate.
 - Battery
 - PV



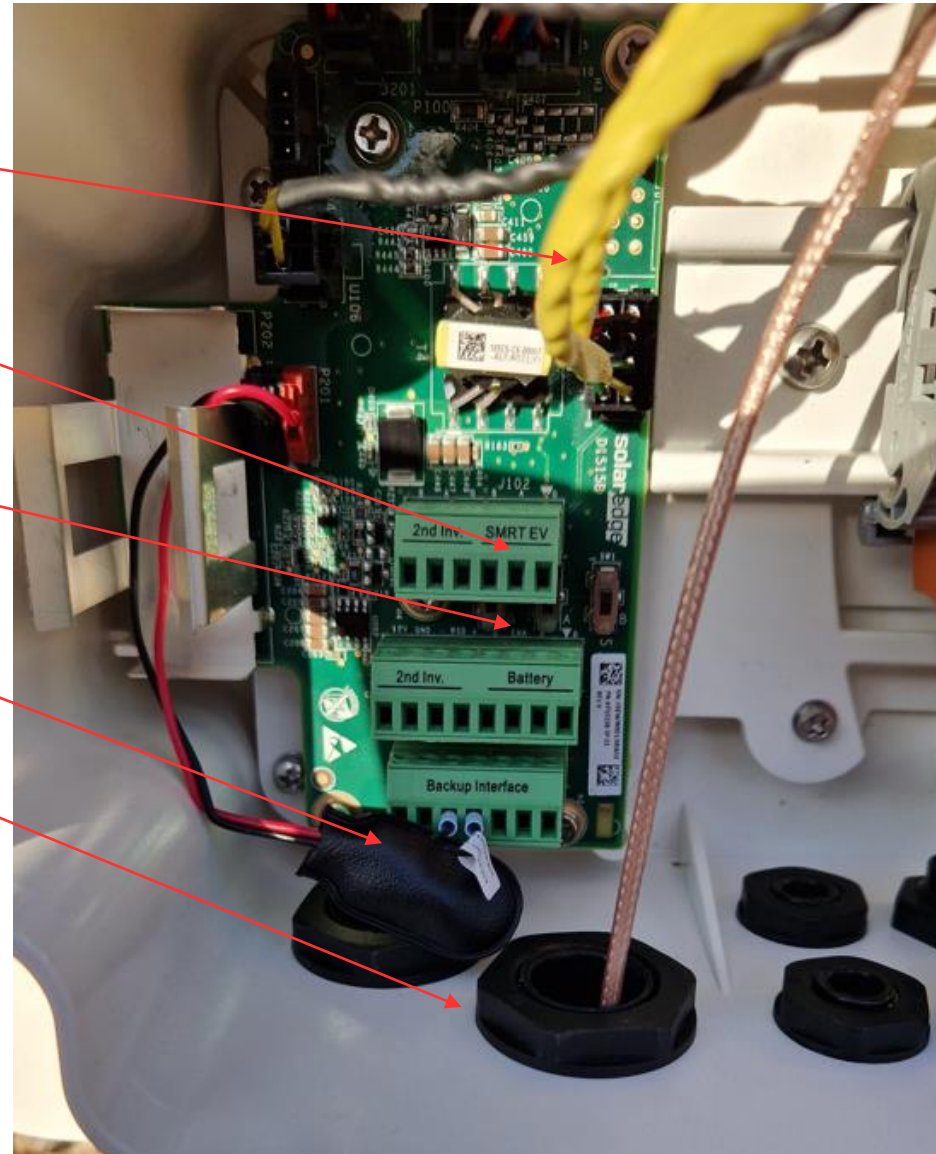
SolarEdge Hub Inverter

- AC connection
- MC4 plugs are separate.
 - Battery
 - PV



SolarEdge Hub Inverter

- RS485 connection to Communication board.
- Meter connection.
 - You will not see the Smart EV written on these.
- Dip switches should be down (x 3)
- 9 volt rechargeable battery connection
- Two communication glands.



SolarEdge BUI

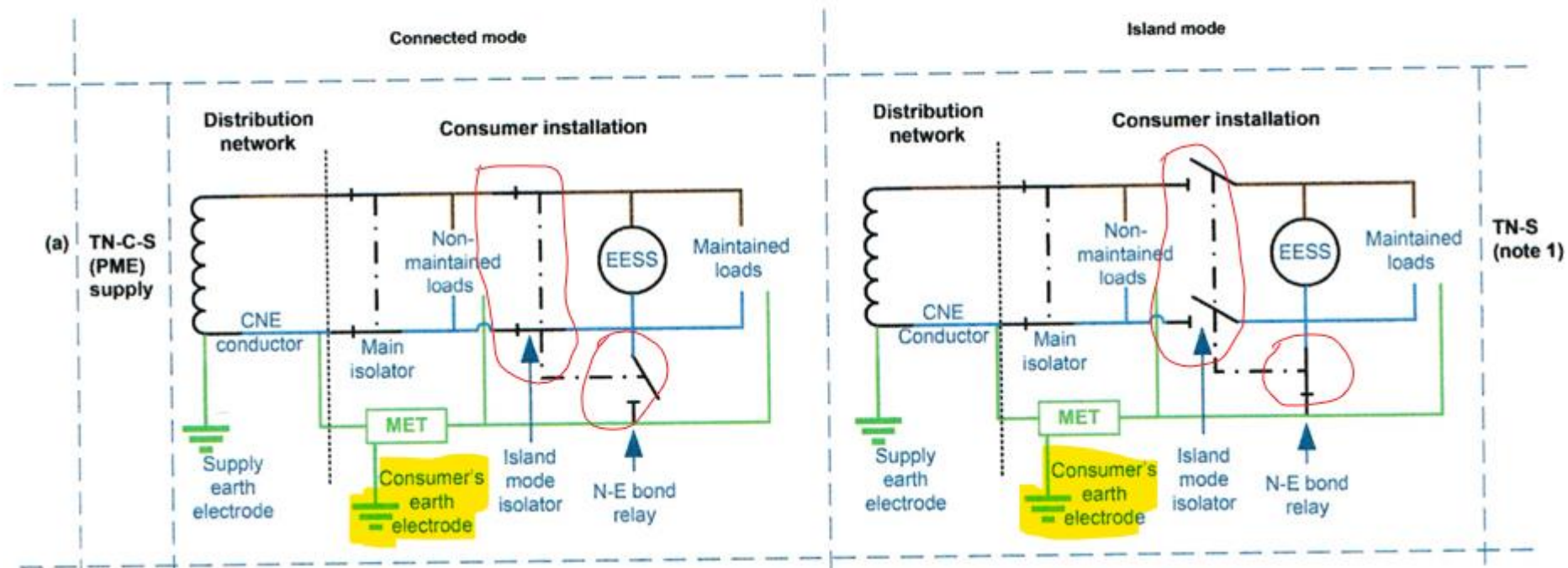
- █ Basically a contactor which disconnects the live and neutral, then connects the Earth and Neutral when in backup mode.
- █ Communication gland.
- █ Incoming.
- █ Outgoing.



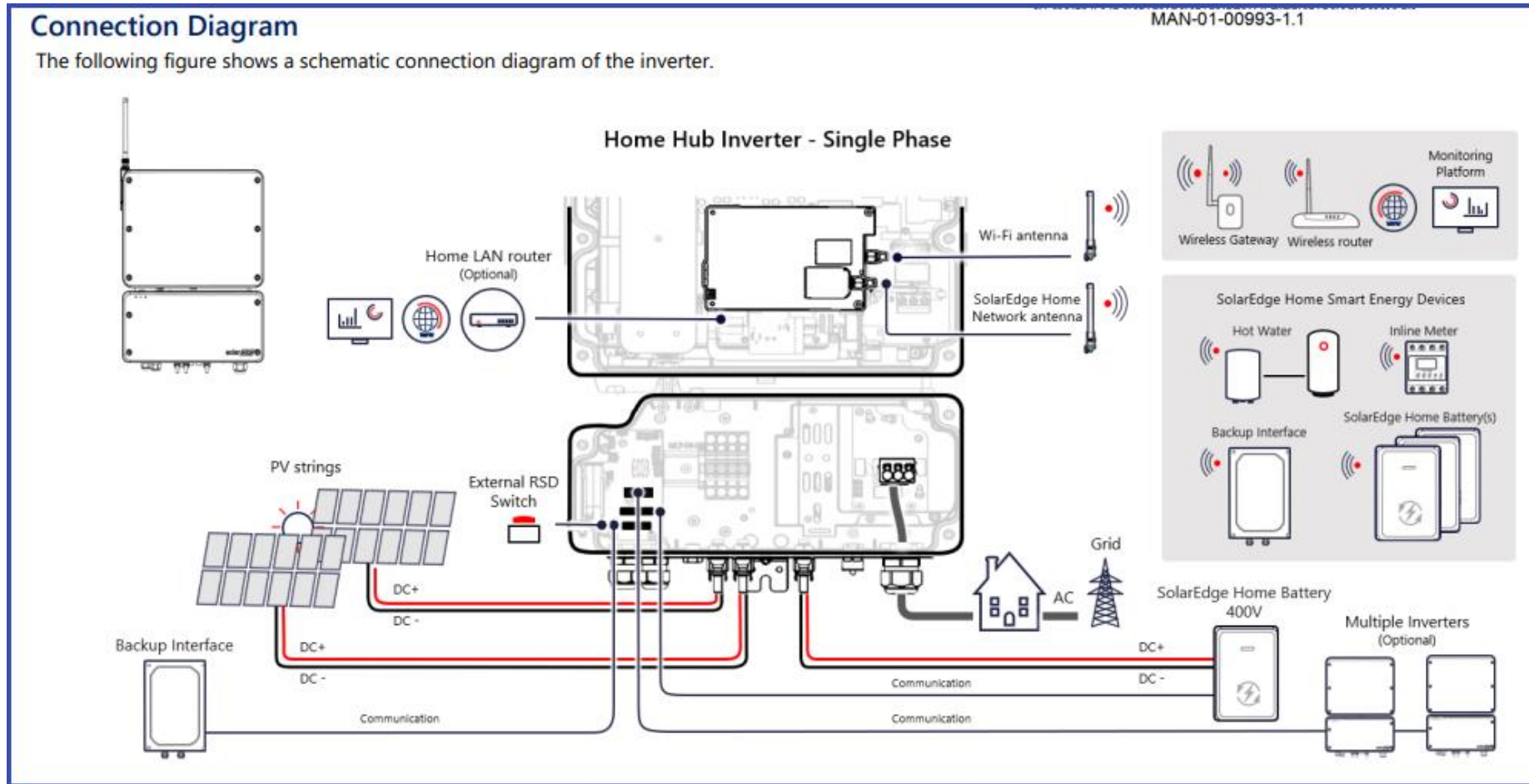
SolarEdge BUI (regulations)

- Each installation will require a TT earth rod to be installed, this will be connected to the Main Earthing terminal (MET).

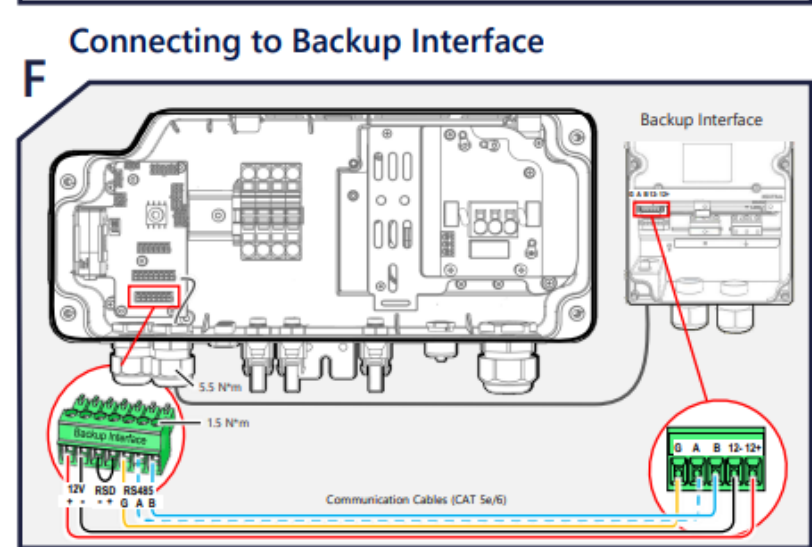
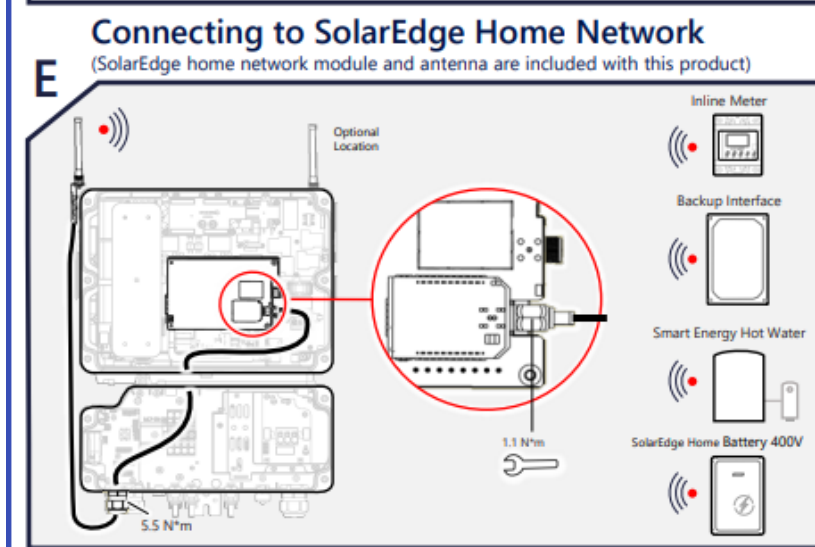
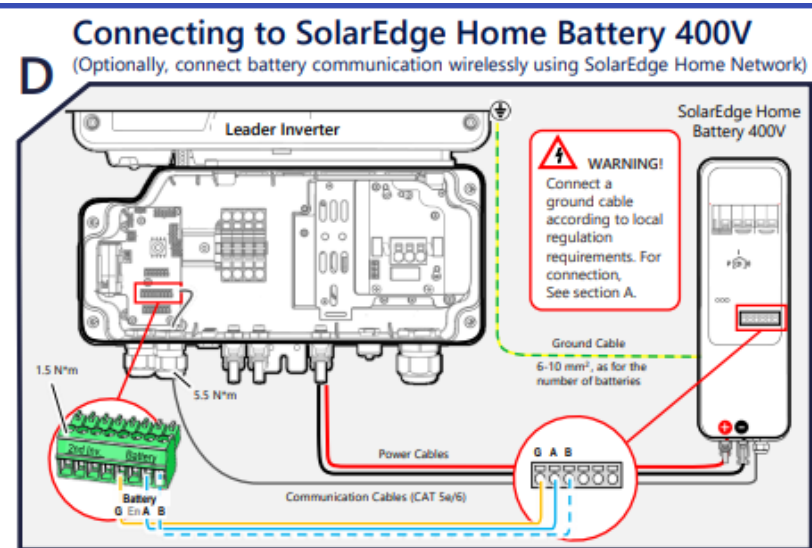
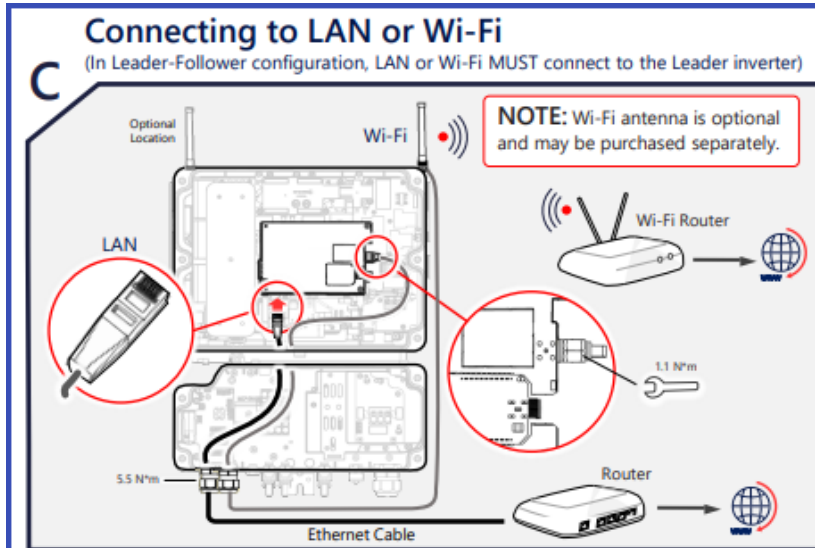
Figure 9.5 Simplified illustration showing earthing and switch-over arrangements in connected mode and island mode, for TN-S island-mode arrangement



SolarEdge Home Hub connections



SolarEdge Home Hub connections



SolarEdge Home Hub connections

G Connecting Multiple Inverters

H Connecting to Meter and External RSD Switch

I Commissioning the Inverter

J LED Indications

- Red: fault
- Green: power production,
- Blinking Green: Grid connection ok
- Blue: communication ok

For more indications refer to:
<https://www.solaredge.com/leds>

For remote status, fault indications, and system performance, refer to Remote Monitoring at:
<https://www.solaredge.com/products/pv-monitoring#/>

Questions?



Thank You!

Cautionary Note Regarding Market Data & Industry Forecasts

This power point presentation contains market data and industry forecasts from certain third-party sources. This information is based on industry surveys and the preparer's expertise in the industry and there can be no assurance that any such market data is accurate or that any such industry forecasts will be achieved. Although we have not independently verified the accuracy of such market data and industry forecasts, we believe that the market data is reliable and that the industry forecasts are reasonable.

Version #: V.1.0

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