Panasonic

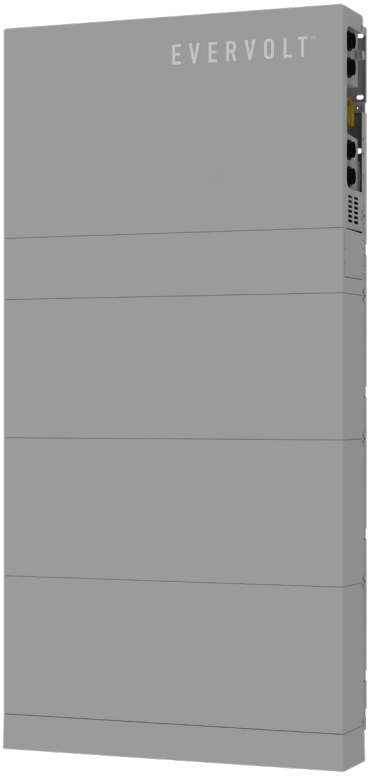
EVERVOLT®

EVERVOLT HOME BATTERY

PRELIMINARY

The EVERVOLT® home battery system integrates a powerful lithium-ion battery and hybrid inverter with your solar panels, generator and the utility grid to provide your own personal energy store. Produce and store an abundance of renewable energy while substantially reducing or eliminating your electric bill.

EVERVOLT connects with existing and new solar PV systems, or use without solar panels as a standalone energy storage system that protects you when the unexpected happens. Manage, monitor and control capacity and usage with an intuitive mobile app for greater energy independence.



SYSTEM FEATURES

- Supports DC and AC input suitable for new and existing PV systems
- Allows up to 15.2kW of DC input with three Maximum Power Point Trackers (MPPT) for higher yields and flexible design.
- Expandable modular design for growing energy needs and easier installation. Available in three cabinet sizes: 9kWh, 13.5kWh, and 18 kWh.
- Stackable – connect up to four units together to achieve up to 72kWh of usable storage capacity for whole-home power.
- Best-in-class power output during grid outages vs. competing models. Delivers up to 7.6kW continuous backup power with a single 18 kWh-cabinet and up to 30kW with four cabinets.
- Compact and sleek design that can be installed indoors or outdoors, wall mounted or floor mounted
- Seamless integration with Panasonic solar panels for a complete total home energy system, all supported and warrantied by one of America's most trusted brands.
- Integrated transmitter enables easy installation of rapid shut down devices for safe PV array connections

* Transmitter is compatible with APSmart Rapid Shutdown devices.

EVERVOLT HOME BATTERY

PRELIMINARY

INVERTER SPECIFICATIONS

ELECTRICAL SPECIFICATIONS	
Model Number	EVHB-I7
Nominal AC Power	7600W
Rated Grid Voltage	240V
Nominal AC Frequency	60Hz
Nominal AC Current	31.7A
Displacement Power Factor	0.8
Total Harmonic Distortion (THD)	< 3%

SOLAR INPUT	
Maximum Power (DC)	15200W (200% oversizing)
Maximum Input Voltage	550V
MPPT Voltage Range (DC)	90 - 500V
Minimum Start Voltage (DC)	120 V
Maximum Input Current (DC)	16A per string
Maximum Short Circuit Current (DC)	20A
No. of MPPTs / Strings per MPPT	3 / 1

MECHANICAL SPECIFICATIONS	
Dimensions (HxWxD)	33.5x15.7x5.8in (850x400x148mm)
Weight	75lb (34kg)
Protection Rating	NEMA 4X
Operating Temperature	–13 to 140°F (–25 to 60°C)
Storage Temperature	–13 to 167°F (–25 to 75°C)
Relative humidity	0 to 95%
Cooling	Natural convection

EFFICIENCY	
CEC weighted efficiency	97.50%
Maximum inverter efficiency	98.00%

OTHER SPECIFICATIONS	
Typical Noise Level	< 30dB
Overvoltage Category	IV (electric supply side), II (PV side)
Inverter Communication Interface	RS485, CAN, WIFI, Dry Contact
Battery Communication Interface	RS485 / CAN2.0
Installation Method	Floor or wall mounted
Maximum Altitude	9843 ft (3000m)
Warranty	12 years

STANDARDS & CERTIFICATIONS	
Inverter Certifications	UL1741, UL1741 SA, UL1699B, CSA - C22.2 No. 107.1-01, Canadian AFCI according to T.I.L. M-07
Battery Certifications	UN38.3, UL1973 (UL1642)
System Certifications	UL9540, UL9540A
Hazardous Material Classification	Class 9
Emissions	FCC Part 15 Class B
Grid Connection Standards	IEEE1547, CA Rule 21, Rule14 (HI)

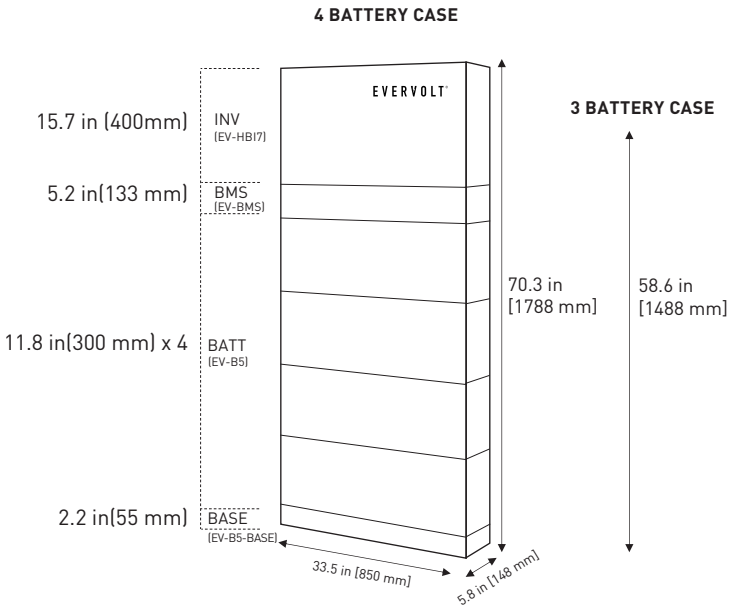
[1] At the beginning of battery life, AC-to-AC at 50% power rating.
[2] At the beginning of battery life, DC-to-AC at 50% power rating.

BATTERY SPECIFICATIONS

ELECTRICAL SPECIFICATIONS			
Battery Model Number	EV-B5		
System Model Number	EVHB-I7-X10	EVHB-I7-X15	EVHB-I7-X20
Total Energy	10kWh	15kWh	20kWh
Useable Capacity	9.0kWh	13.5kWh	18.0kWh
Continuous Backup Power (Off-grid w/o Solar)	5.5kW	7.6kW	7.6kW
Continuous Backup Power (Off-grid w/ Solar)	7.6kW	7.6kW	7.6kW
Maximum Battery Charge/Discharge	5.5kW	8.3kW	11.1kW
BMS Voltage	102.4V	153.6V	204.8V
Maximum Charge / Discharge Current	54A		
Battery Input Voltage Range	75 - 450V		
Battery Chemistry	Lithium Ferrite Phosphate		
Battery Roundtrip Efficiency	AC coupled 89%[1] / DC coupled 94%[2]		
Depth of Discharge (DOD)	90%		
Cycle Life (90%DOD)	6000 cycles		
Energy Capacity at the end of 12 years	70%		

MECHANICAL SPECIFICATIONS			
Model Number	EVHB-I7-X10	EVHB-I7-X15	EVHB-I7-X20
Assembled System Dimensions (W*H*D)	33.5 x 46.7 x 5.8in (850 x 1188 x 148mm)	33.5 x 58.6 x 5.8in (850 x 1488 x 148mm)	33.5 x 70.3 x 5.8in (850 x 1788 x 148mm)
Assembled System Weight	335lbs (152kg)	454lbs (206kg)	573lbs (260kg)
Battery Module Dimensions	33.5 x 11.8 x 5.8in (850 x 300 x 148mm)		
Battery Module Weight	121lbs / unit (55kg / unit)		
Protection Rating	NEMA 4X		
Charge temperature range	32 to 122°F (0 - 50°C)		
Discharge temperature range	14 to 122°F (-10 to 50°C)		
Storage Temperature	3 months: 4 to 122°F (-20 to 50°C) 1 year: 32 to 104 °F (0 to 40°C)		

DIMENSIONS



EVERVOLT SMARTBOX

PRELIMINARY

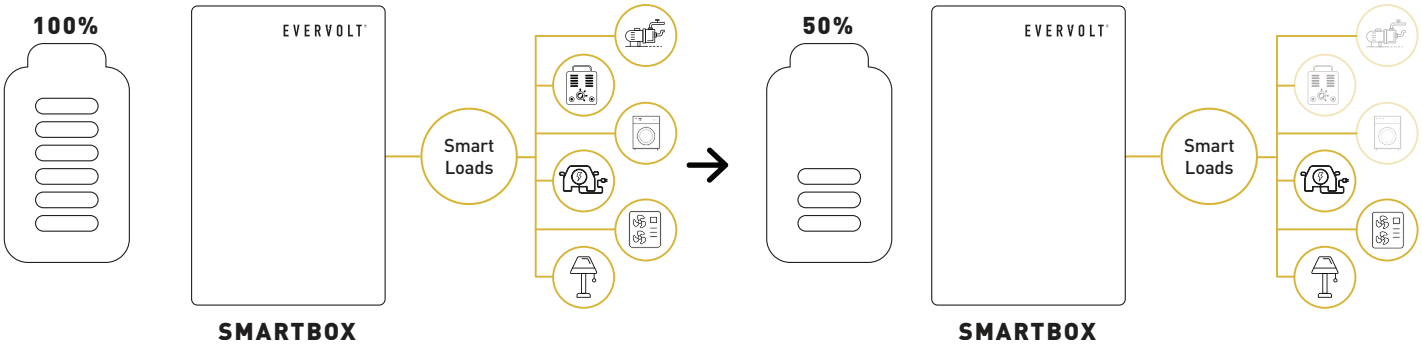
The EVERVOLT® SmartBox energy management device connects the battery, home loads, grid power and solar PV system all in one place. SmartBox controls the connection to the grid and provides a seamless transition to backup power during power outages. SmartBox also provides control of up to six loads[1] to optimize your energy consumption and prolong battery life.

SMARTBOX SPECIFICATIONS

- Smart circuits, transfer switch, backup connection all in one box
- Seamless transfer to battery backup during a grid failure or power outage
- Indoor/outdoor rated durable weatherproof design
- Supports Wi-Fi communication for convenient remote monitoring of energy production & consumption
- Built in generator support for longer power outages[2]
- Switch to different operating modes from the mobile app to maximize energy usage
- Complete 12-year product warranty from Panasonic

STATE OF CHARGE

Turn off less critical loads automatically and extend battery usage time.



[1] The 6 x Smart Loads[1] and Generator[2]. [1] Up to 6 x 120 V loads can be connected to the SmartBox - 4 x 50 A loads and 2 x 80 A loads.
[2] Generator integration may require installation of additional components and intended application must be approved prior to installation.

EVERVOLT SMARTBOX

PRELIMINARY

GRID INPUT / OUTPUT TO MAIN DISTRIBUTION PANEL AT GRID TERMINAL	
AC Input Voltage(Nominal)	120/240Vac Split Phase
AC Output Voltage Range	105.5-132 / 211-264Vac
AC Frequency(Nominal)	60Hz
AC Frequency Range	59.3-60.5Hz
Maximum input overcurrent protection device[1]	200A
Maximum Continuous Input / Output Current Rating	160A
AC Short Current (RMS)	22000A

OUTPUT TO MAIN DISTRIBUTION PANEL AT LOAD TERMINAL	
AC Output Voltage(Nominal)	120/240Vac Split Phase
AC Output Voltage Range	105.5-132 / 211-264Vac
AC Frequency(Nominal)	60Hz
AC Frequency Range	59.3-60.5Hz
Split Phase Imbalance	41.7A

INVERTER INPUTS	
Max No. of Inverter Inputs[2]	4
Maximum input overcurrent protection device[1]	200A
Communication Cable Distance Between SmartBox and Inverter	164ft / 50m
Power Section (+12V/GND) of Communication Cable	18-16 AWG
Signal Section (CAN/RS485) of Communication Cable	24-16 AWG

GENERATOR	
Maximum Rated AC Power[3]	24000W
Maximum AC Input Overcurrent Protection[1]	125A
Maximum AC Continuous Input Current	100A
Auto Generator Start	Yes

SMART LOAD CONTROL	
Maximum Input Overcurrent Protection for Solar Inverter[1]	1 x 80A
Solar Inverter Production Meter	Optional
Maximum Load Overcurrent Protection (120V)[1]	2 X 80A / 4 x 50A up to 6 loads)
Combine 120V branches to 240V branch	Yes

INSTALLATION SPECIFICATIONS	
AC from Grid Conduit Size / AWG Range	2" Conduit / #0-4/0 AWG
AC Inverter Conduit Size / AWG Range	1" Conduit / 14-4 AWG
AC Generator Input Conduit Size / AWG Range	1" conduit / 8-3 AWG
Communication Conduit Size / AWG Range	3/4" conduit / 24-10 AWG

[1] Breakers are not included.
[2] Additional sub-panel is required for stacked systems
[3] Generator integration may require installation of additional components and intended application must be approved prior to installation. Other constraints may apply based on the electrical design.
[4] When Auto Generator Start Function is used, this value is expected to vary
[5] Sections from these standards were used during the safety evaluation and included in the UL1741 listing.

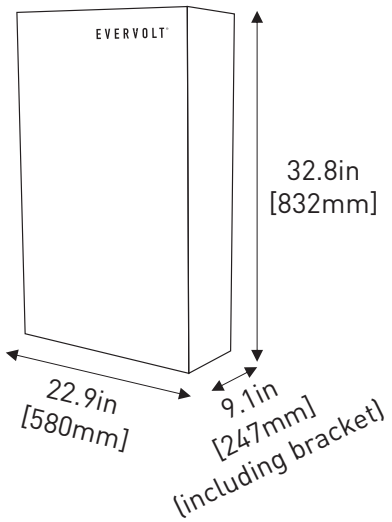
OTHER SPECIFICATIONS	
Switchover Time	~100ms
Built-in Consumption Meter	Yes
Number of Dry Contact A	3
Dry Contact A[4]	30V/3A
Number of Dry Contact B	1
Dry Contact B[4]	30V/2A
Number of Communication RS485 Ports	2
Number of CT input	1
Maximum Distance Between SmartBox and CT	50m
Manual Control Over Micro-grid Interconnection Device	Yes
LED Indicators	3

STANDARD COMPLIANCE[3]	
Safety	UL1741, CSA 22.2 NO.107
	IEC62109-1
	UL67[5], UL916[5], UL869A[5]
	CSA C22.2 No.29 CSA22.2 205 CSA 22.2 0.19
Emissions	FCC part 15 Class B, ICES 003

MECHANICAL SPECIFICATIONS	
Weight	77.2lbs / 35kg
Cooling	Fan (user replaceable)
Maximum Elevation	9842ft / 3000m
Noise	< 40db
Operating Temperature Range	-4°F to 113°F (-20°C to +45°C)
Protection Rating	NEMA 3R
Dimensions (H x W x D)	32.8 x 22.9 x 9.1in (832 x 580 x 247mm)
Warranty	12 Years

DIMENSIONS

SMARTBOX
(EV-SB)



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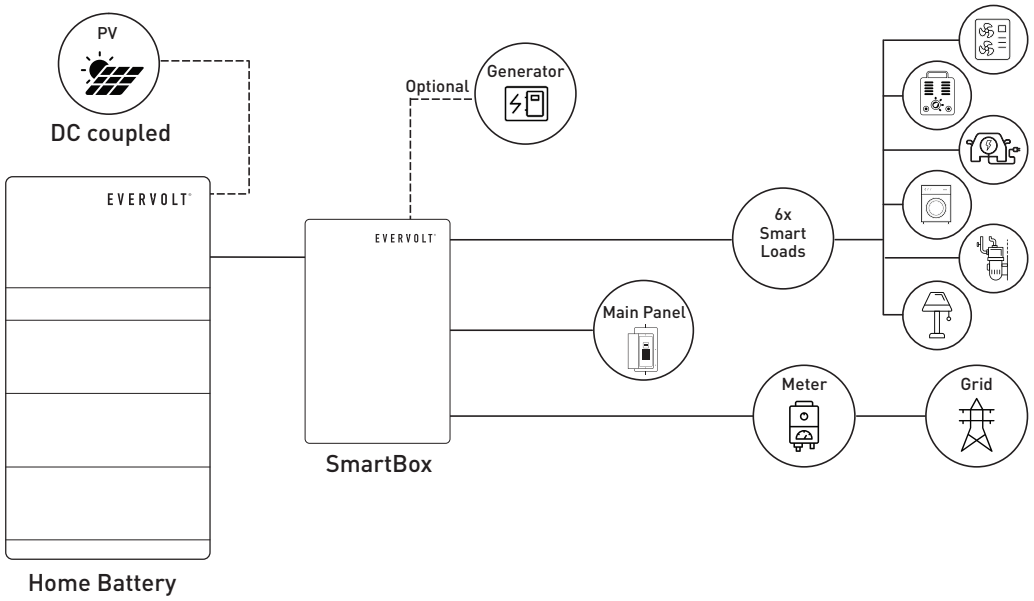
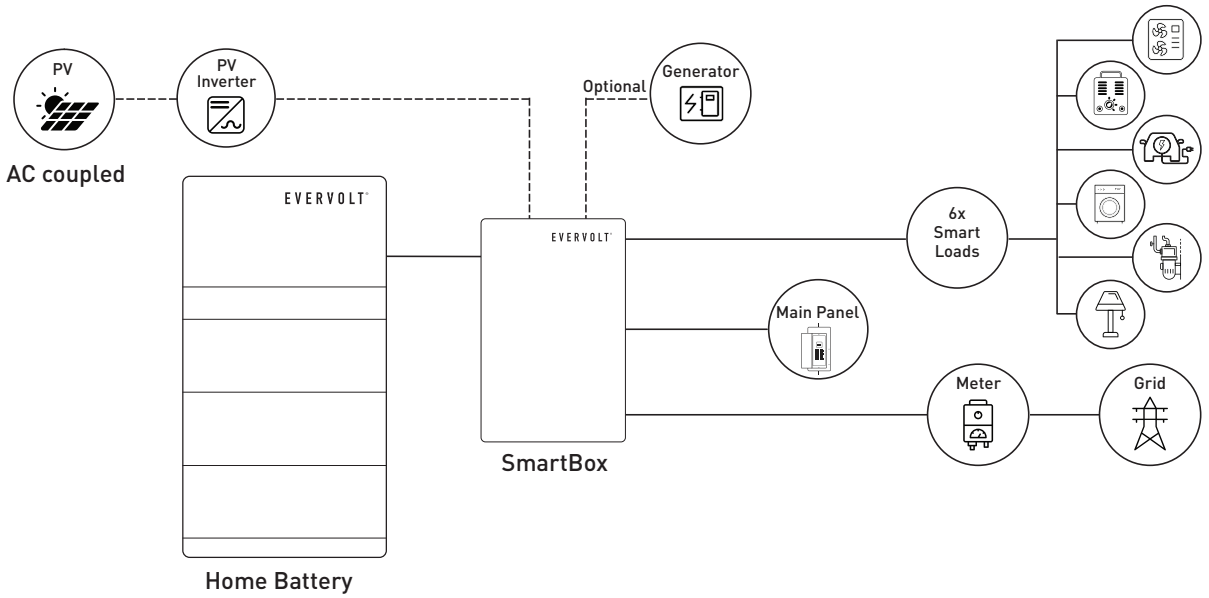
PRELIMINARY

DC COUPLING WHOLE HOME BACKUP SYSTEM DIAGRAM



AC COUPLING WHOLE HOME BACKUP SYSTEM DIAGRAM



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