



TESLA

## POWERWALL+

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Powerwall+ is an integrated solar battery system that stores energy from solar production. Its integrated design and streamlined installation allow for simple connection to any home, and improved surge power capability brings whole home backup in a smaller package. Smart system controls enable owners to customize system behavior to suit their renewable energy needs.

### KEY FEATURES

- Integrated battery, inverter, and system controller for a more compact install
- A suite of application modes, including self-powered, time-based control, and backup modes
- Wi-Fi, Ethernet, and LTE connectivity with easy over-the-air updates

## POWERWALL+

Powerwall+ is an AC battery system with solar integration. It supports up to four solar strings for increased design flexibility and production on complex roofs. Its rechargeable lithium-ion battery pack provides energy storage for solar self-consumption, time-based control, and backup applications.

### PHOTOVOLTAIC (PV) AND BATTERY ENERGY STORAGE SYSTEM (BESS) SPECIFICATIONS

Nominal Battery Energy	13.5 kWh
Nominal Grid Voltage (Input / Output)	120/240 VAC
Grid Voltage Range	211.2 - 264 VAC
Frequency	60 Hz
Phase	240 VAC: 2W+N+GND
Maximum Continuous Power On-Grid	7.6 kW full sun / 5.8 kW no sun <sup>1</sup>
Maximum Continuous Power Off-Grid	9.6 kW full sun / 7 kW no sun <sup>1</sup>
Peak Off-Grid Power (10 s)	22 kW full sun / 10 kW no sun <sup>1</sup>
Maximum Continuous Current On-Grid	32 A output
Maximum Continuous Current Off-Grid	40 A output
Load Start Capability	118 A LRA
PV Maximum Input Voltage	600 VDC
PV DC Input Voltage Range	60 - 550 VDC
PV DC MPPT Voltage Range	60 - 480 VDC
MPPTs	4
Input Connectors per MPPT	1-2-1-2
Maximum Current per MPPT ( $I_{mp}$ )	13 A
Maximum Short Circuit Current per MPPT ( $I_{sc}$ )	15 A
Overcurrent Protection Device	50 A breaker
Maximum Supply Fault Current	10 kA
Output Power Factor Rating	+/- 0.9 to 1
Round Trip Efficiency	90% <sup>2</sup>
Customer Interface	Tesla Mobile App
Internet Connectivity	Wi-Fi, Ethernet, Cellular LTE/4G <sup>3</sup>
PV AC Metering	Revenue grade (+/-0.5%)
Protections	Integrated arc fault circuit interrupter (AFCI), Rapid Shutdown (RSD)
Warranty	10 years

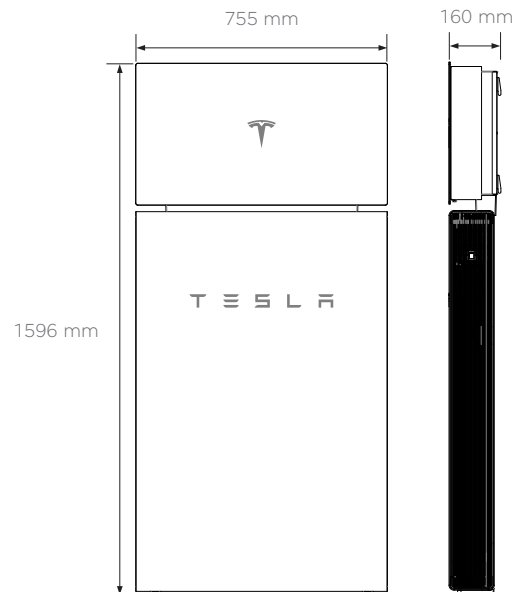
### COMPLIANCE INFORMATION

PV Certifications	UL 1699B, UL 1741, UL 1741 SA, UL 1998 (US), IEEE 1547, IEEE 1547.1
Battery Energy Storage System Certifications	UL 1642, UL 1741, UL 1741 PCS, UL 1741 SA, UL 1973, UL 9540, IEEE 1547, IEEE 1547.1, UN 38.3
Grid Connection	United States
Emissions	FCC Part 15 Class B
Environmental	RoHS Directive 2011/65/EU
Seismic	AC156, IEEE 693-2005 (high)



### MECHANICAL SPECIFICATIONS

Dimensions	1596 x 755 x 160 mm (62.8 x 29.7 x 6.3 in)
Total Weight	156 kg (343.9 lb) <sup>4</sup>
Battery Assembly	125 kg (275.6 lb)
Solar Assembly	31 kg (68.3 lb)
Mounting options	Floor or wall mount



### ENVIRONMENTAL SPECIFICATIONS

Operating Temperature	-20°C to 50°C (-4°F to 122°F) <sup>5</sup>
Recommended Temperature	0°C to 30°C (32°F to 86°F)
Operating Humidity (RH)	Up to 100%, condensing
Storage Conditions	-20°C to 30°C (-4°F to 86°F) Up to 95% RH, non-condensing State of Energy (SoE): 25% initial
Maximum Elevation	3000 m (9843 ft)
Environment	Indoor and outdoor rated
Enclosure Type	Type 3R
Noise Level @ 1 m	< 40 db(A) optimal, < 50 db(A) maximum

<sup>1</sup>Values provided for 25°C (77°F).

<sup>2</sup>AC to battery to AC, at beginning of life.

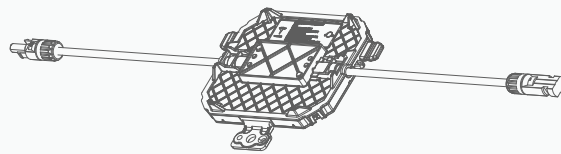
<sup>3</sup>Cellular connectivity subject to network service coverage and signal strength.

<sup>4</sup>The total weight does not include the Powerwall+ bracket, which weighs an additional 10.5 kg (23 lb).

<sup>5</sup>Performance may be de-rated at operating temperatures below 10°C (50°F) or greater than 43°C (109°F).

## SOLAR SHUTDOWN DEVICE

The Tesla Solar Shutdown Device is part of the PV system rapid shutdown (RSD) function in accordance with Article 690 of the applicable NEC. When paired with Powerwall+, solar array shutdown is initiated by any loss of AC power.



### ELECTRICAL SPECIFICATIONS

Nominal Input DC Current Rating ( $I_{MP}$ )	12 A
Maximum Input Short Circuit Current ( $I_{SC}$ )	15 A
Maximum System Voltage	600 V DC

### RSD MODULE PERFORMANCE

Maximum Number of Devices per String	5
Control	Power Line Excitation
Passive State	Normally open
Maximum Power Consumption	7 W
Warranty	25 years

### COMPLIANCE INFORMATION

Certifications	UL 1741 PVRSS PVRSA (Photovoltaic Rapid Shutdown Array)
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### PVRSA

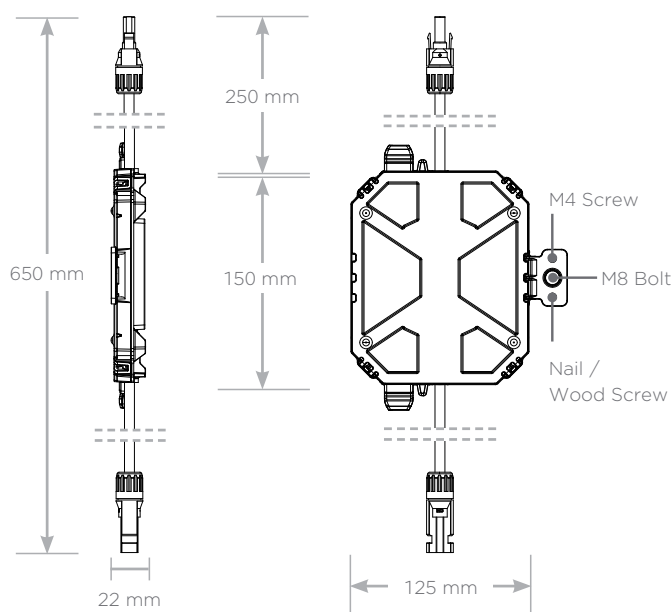
RSD Initiation Method	Loss of AC power
Compatible Equipment	Powerwall+

### ENVIRONMENTAL SPECIFICATIONS

Ambient Temperature	-40°C to 50°C (-40°F to 122°F)
Storage Temperature	-30°C to 70°C (-22°F to 158°F)
Enclosure Rating	NEMA 4 / IP65

### MECHANICAL SPECIFICATIONS

Electrical Connections	MC4 Connector
Housing	Plastic
Dimensions	125 mm x 150 mm x 22 mm (5 in x 6 in x 1 in)
Weight	350 g (0.77 lb)
Mounting Options	ZEP Home Run Clip M4 Screw (#10) M8 Bolt (5/16") Nail / Wood screw



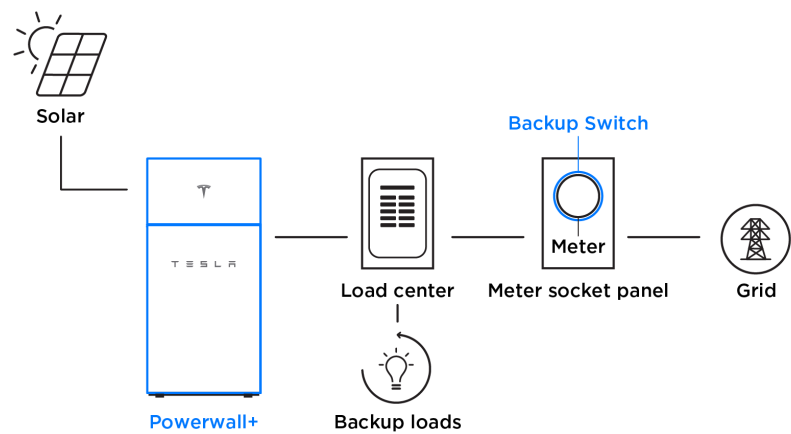
### SOLAR SHUTDOWN DEVICE REQUIREMENTS PER MODULE

The following modules have been certified as part of a PV Rapid Shutdown Array (PVRSA) when installed together with Powerwall+ and Tesla Solar Shutdown Devices. See the Powerwall+ Installation Manual for guidance on installing Powerwall+ and Solar Shutdown Devices with other modules.

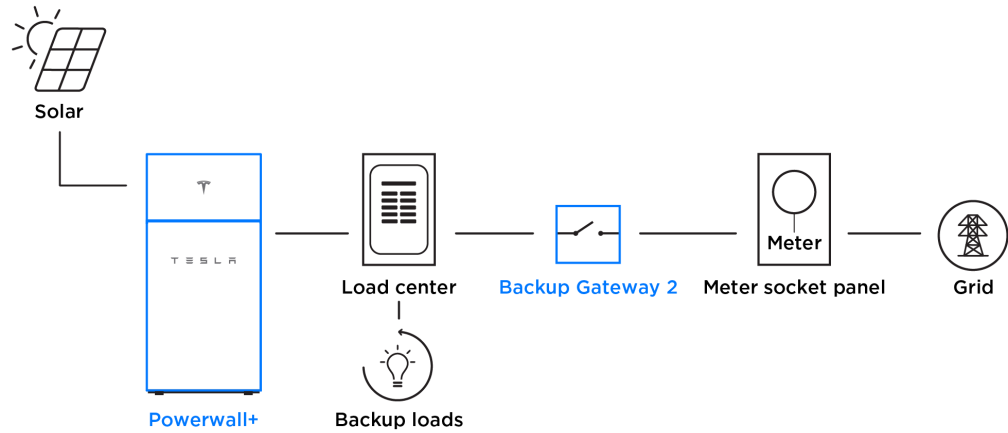
Brand	Model	Required Solar Shutdown Devices
Tesla	Solar Roof V3	1 Solar Shutdown Device per 10 modules
Hanwha	Q.PEAK DUO BLK-G5	1 Solar Shutdown Device per 3 modules
Hanwha	Q.PEAK DUO BLK-G6+	1 Solar Shutdown Device per 3 modules

SYSTEM LAYOUTS

Powerwall+ with Backup Switch for Whole Home Backup



Powerwall+ with Backup Gateway 2 for Whole Home Backup



Powerwall+ with Backup Gateway 2 for Partial Home Backup

