Powerwall 3

Power Everything

Powerwall 3 is a fully integrated solar and battery system, designed to accelerate the transition to sustainable energy. Customers can receive whole home backup, cost savings, and energy independence by producing and consuming their own energy while participating in grid services. Once installed, customers can manage their system using the Tesla App to customize system behavior to meet their energy goals.

Powerwall 3 achieves this by supporting up to 20 kW DC of solar and providing 11.5 kW AC of continuous power per unit. It has the ability to start heavy loads up to 185 A LRA, meaning a single unit can support the power needs of most homes. Powerwall 3 is designed for mass production, fast and efficient installations, easy system expansion, and simple connection to any electrical service.



Powerwall 3 Technical Specifications

System Technical	Model Number	1707000-хх-у	
Specifications	Nominal Grid Voltage (Input & Output)	120/240 VAC	
	Grid Type	Split phase	
	Frequency	60 Hz	
	Overcurrent Protection Device	Configurable up to 60 A	
	Solar to Battery to Home/Grid Efficiency	89% 1,2	
	Solar to Home/Grid Efficiency	97.5% ³	
	Supported Islanding Devices	Backup Gateway 2, Backup Switch	
	Connectivity	Wi-Fi (2.4 and 5 GHz), Dual-port switched Ethernet, Cellular (LTE/4G ⁴)	
	Hardware Interface	Dry contact relay, Rapid Shutdown (RSD) certified switch and 2-pin connector, RS-485 for meters	
	AC Metering	Revenue Grade (+/- 0.5%)	
	Protections	Integrated arc fault circuit interrupter (AFCI), Isolation Monitor Interrupter (IMI), PV Rapid Shutdown (RSD) using Tesla Mid-Circuit Interrupters	
	Customer Interface	Tesla Mobile App	
	Warranty	10 years	

Solar Technical Specifications	Maximum Solar STC Input	20 kW
	Withstand Voltage	600 V DC
	PV DC Input Voltage Range	60 — 550 V DC
	PV DC MPPT Voltage Range	150 – 480 V DC
	MPPTs	6
	Maximum Current per MPPT (I _{mp})	13 A ⁵
	Maximum Short Circuit Current per MPPT (I _{sc})	15 A ⁵

Battery Technical Specifications	Nominal Battery Energy	13.5 kWh AC ²	
	Maximum Continuous Discharge Power	11.5 kW AC	
	Maximum Continuous Charge Power	5 kW AC	
	Output Power Factor Rating	0 - 1 (Grid Code configurable)	
	Maximum Continuous Current	48 A	
	Maximum Output Fault Current	10 kA	
	Load Start Capability (1 s)	185 A LRA	
	Power Scalability	Up to 4 Powerwall 3 units supported	

¹Typical solar shifting use case.

² Values provided for 25°C (77°F), at beginning of life. 3.3 kW charge/discharge power.

³ Tested using CEC weighted efficiency methodology.

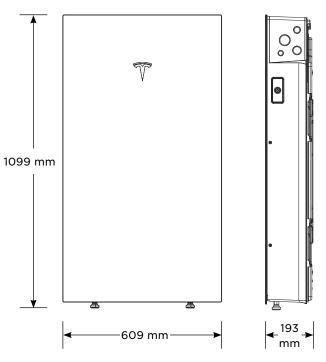
⁴ Cellular connectivity subject to network service coverage and signal strength.

 $^{\rm 5}$ Where the DC input current exceeds the MPPT rating, a jumper can be used to combine two MPPTs into a single input to intake DC current up to 26 A $\rm I_{MP}$ / 30 A $\rm I_{sc}.$

Powerwall 3 Technical Specifications

Environmental	Operating Temperature	-20°C to 50°C (-4°F to 122°F) ⁶
Specifications	Operating Humidity (RH)	Up to 100%, condensing
	Storage Temperature	-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 Rating	NEMA 3R
	Ingress Rating	IPX7 (Battery & Power Electronics) IPX5 (Wiring Compartment)
	Pollution Rating	PD3
	Operating Noise @ 1 m	<50 db(A) typical <62 db(A) maximum
Compliance Information	Certifications	UL 1642, UL 1699B, UL 1741, UL 1741 SA, UL 1741 SB, UL 3741, UL 1973, UL 1998, UL 9540, IEEE 1547-2018, IEEE 1547.1, UN 38.3
	Grid Connection	
	ond connection	United States
	Emissions	United States FCC Part 15 Class B
	Emissions	FCC Part 15 Class B
	Emissions Environmental	FCC Part 15 Class B RoHS Directive 2011/65/EU
Mechanical	Emissions Environmental Seismic	FCC Part 15 Class B RoHS Directive 2011/65/EU AC156, IEEE 693-2005 (high) Meets the unit level performance criteria

Mounting C	Options		



Floor or wall mount

Solar Shutdown Device Technical Specifications

The Solar Shutdown Device is a Mid-Circuit Interrupter (MCI) and is part of the PV system rapid shutdown (RSD) function in accordance with Article 690 of the applicable NEC. When paired with Powerwall 3, solar array shutdown is initiated by any loss of AC power.

Electrical	Model	MCI-1	MCI-2
Specifications	Nominal Input DC Current Rating (I _{MP})	12 A	13 A
	Maximum Input Short Circuit Current (I _{sc})	19 A	17 A
	Maximum System Voltage (PVHCS)	600 V DC	1000 V DC ⁷
	⁷ Maximum System Voltage is limited by Powerwall to	600 V DC.	
RSD Module	Maximum Number of Devices per String	5	5
Performance	Control	Power Line Excitation	Power Line Excitation
	Passive State	Normally Open	Normally Open
	Maximum Power Consumption	7 W	7 W
	Warranty	25 years	25 years
Environmental Specifications	Operating Temperature	-40°C to 50°C (-40°F to 122°F)	-45°C to 70°C (-49°F to 158°F)
opeemeations	Storage Temperature	-30°C to 70°C (-22°F to 158°F)	-30°C to 70°C (-22°F to 158°F)
	Enclosure Rating	NEMA 4X / IP65	NEMA 4X / IP65
Mechanical	Electrical Connections	MC4 Connector	MC4 Connector
Specifications	Housing	Plastic	Plastic
	Dimensions	125 x 150 x 22 mm (5 x 6 x 1 in)	173 x 45 x 22 mm (6.8 x 1.8 x 1 in)
	Weight	350 g (0.77 lb)	120 g (0.26 lb)
	Mounting Options	ZEP Home Run Clip M4 Screw (#10) M8 Bolt (5/16″) Nail / Wood screw	Wire Clip
Compliance Information	Certifications	UL 1741 PVRSE, UL 3741, PVRSA (Photovoltaic Ra	pid Shutdown Array)
	RSD Initiation Method	External System Shutdown Switch or Powerwall 3 Enable Switch	

UL 3741 PV Hazard Control (and PVRSA) Compatibility

The following categories of solar module meet the UL 3741 PVHCS listing when installed with Powerwall 3 and Solar Shutdown Devices.

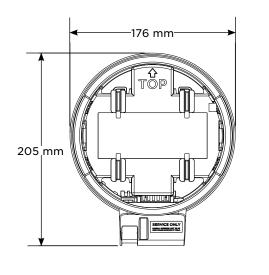
Tesla Solar Roof	PV Hazard Control System: BIPV compliance document
Tesla or Hanwha (Q.Peak Duo BLK or BLK-G6+) Modules certified for use with ZEP racking	PV Hazard Control System: ZS PVHCS compliance document
Other module and racking combinations	PV Hazard Control System: Generic PV Array compliance document

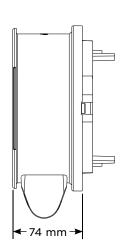
Backup Switch

The Tesla Backup Switch controls connection to the grid in a Powerwall system, and can be easily installed behind the utility meter or in a standalone meter panel downstream of the utility meter.

The Backup Switch automatically detects grid outages, providing a seamless transition to backup power. It communicates directly with Powerwall, allowing home energy usage monitoring from any mobile device with the Tesla app.

Performance	Model Number	1624171-xx-y	
Specifications	Continuous Load Rating	200 A, 120/240 V split phase	
	Maximum Supply Short Circuit Current	22 kA with breaker ¹⁰	
	Communication	CAN	
	AC Meter	Revenue accurate (+/- 0.5%)	
	Expected Service Life	21 years	
	Warranty	10 years	
	⁸ Breaker maximum supply short circuit current rati	ng must be equal to or greater than the available fault current.	
En line and entel	Oncysting Temperature		
Environmental	Operating Temperature	-40°C to 50°C (-40°F to 122°F)	
Specifications	Storage Temperature	-40°C to 85°C (-40°F to 185°F)	
	Enclosure Rating	NEMA 3R	
	Pollution Rating	PD3	
Compliance	Safety Standards	USA: UL 414, UL 2735, UL 916, CA Prop 65	
Information	Emissions	FCC, ICES	
Mechanical	Dimensions	176 x 205 x 74 mm (6.9 x 8.1 x 2.9 in)	
Specifications	Weight	2.8 lb	
	Meter and Socket Compatibility	ANSI Type 2S, ringless or ring type	
	External Service Interface	Contactor manual override "	
		Reset button	
	Conduit Compatibility	1/2-inch NPT	
	⁹ Manually overrides the contactor position during a service event.		





Backup Gateway 2

Backup Gateway 2 controls connection to the grid when paired with Powerwall 3, automatically detecting outages and providing seamless transition to backup power. Backup Gateway 2 also provides energy metering for solar self-consumption, time-based control, and backup operation.

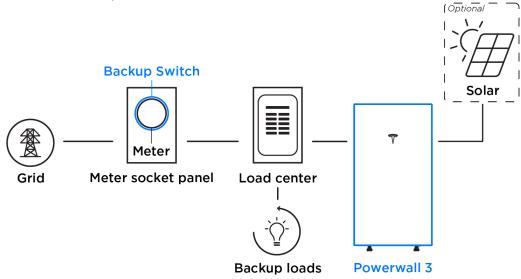
In this system configuration, Powerwall 3 acts as the Site Controller, with the Backup Gateway 2 Site Controller disabled.

Performance	Model Number	1232100-xx-y	User Interface	Tesla App
Specifications	AC Voltage (Nominal)	120/240 V		Support for solar self-
	Feed-in Type	Split phase		consumption, time-based control, and backup
	Grid Frequency	60 Hz	Backup Transition	Automatic disconnect for
	Current Rating	200 A		seamless backup
	Maximum Supply Short Circuit Current	10 kA ⁸	Modularity	Supports up to 10 AC- coupled Powerwalls
	Overcurrent Protection Device	100 - 200 A, Service entrance rated ⁹	Optional Internal 200 A 6-space / 12 Panelboard circuit breakers Siemens OP or Squar	• •
	Overvoltage Category	Category IV		D HOM breakers rated
	Internal Primary AC Meter	Revenue accurate (+/- 0.2%)	_	10 - 80A or Eaton BR breakers rated 10 - 125A
	Internal Auxiliary	Revenue accurate	Warranty	10 years
	AC Meter	(+/- 2%)		lass J fuses, Backup Gateway 2
	Primary Connectivity	Ethernet, Wi-Fi	 is suitable for use in circuits capable of deliverin more than 22kA symmetrical amperes. 	
	Secondary Connectivity	Cellular (3G, LTE/4G) ¹⁰	connectivity for Back be used as the primar	cted to provide internet up Gateway 2; cellular should not y mode of connectivity. Cellular to network operator service
Environmental Specifications	Operating Temperature Operating Humidity (RH)		-20°C to 50°C (-4°F Up to 100%, condens	· · · · · · · · · · · · · · · · · · ·
Specifications	Maximum Elevation	п) 	3000 m (9843 ft)	ing
	Environment		Indoor and outdoor rated	
	Enclosure Type		NEMA 3R	
			NEMA 3R	
Compliance Information	Certifications		UL 67, UL 869A, UL 9 CSA 22.2 0.19, CSA 2	
internation	Emissions		FCC Part 15, ICES 00	3
Mechanical Specifications	Dimensions	660 x 411 x 149 mm (26 x 16 x 6 in)	41	1 mm → + 149 mm →
	Weight	20.4 kg (45 lb)	-	
	Mounting options	Wall mount, Semi-flush mount	- _ T 3	5 L A
			660 mm	

Powerwall 3 Example System Configurations

Powerwall 3 with Backup Switch





Powerwall 3 with Backup Gateway 2

Partial Home Backup

