Tesla Powershare Home Backup and Powershare Grid Support

Tesla products with the Tesla Powershare feature support bidirectional power transfer, allowing compatible Tesla electric vehicles (EVs) to supply electrical power when they are not being used for transportation. Compatible Tesla EVs with the Powershare feature can power the home (Vehicle-to-Home, or V2H), providing backup power and ensuring resilience for several days in the event of a grid outage; they can also power the grid (Vehicle-to-Grid, or V2G), providing support to the grid when needed.



Tesla Powershare Hardware Specifications

Powershare Electrical Specifications

Nominal Grid Voltage (Input & Output)	120/240 VAC Split Phase
EVSE Voltage	240 VAC
Grid Frequency	60 Hz
Continuous Neutral Current	18A[1]
Neutral Balancer Apparent Power	4.32 kVA
Maximum Continuous Current	48 A RMS
Maximum Continuous Real Power	11.5 kW
Maximum Continuous Apparent Power	11.5 kVA
Peak Current	90A RMS for 0.5 s[2]
Load Start Capability (1 s)	110 A LRA
EV to EVSE Communication	PLC over Control Pilot Power
Powershare Compatible EV Hardware	EV Inverter: 1999990-XX-Y
Powershare DER System	Powershare Gateway: 1841000-x2-y Universal Wall Connector: 1734412-xx-y Powershare Compatible EV

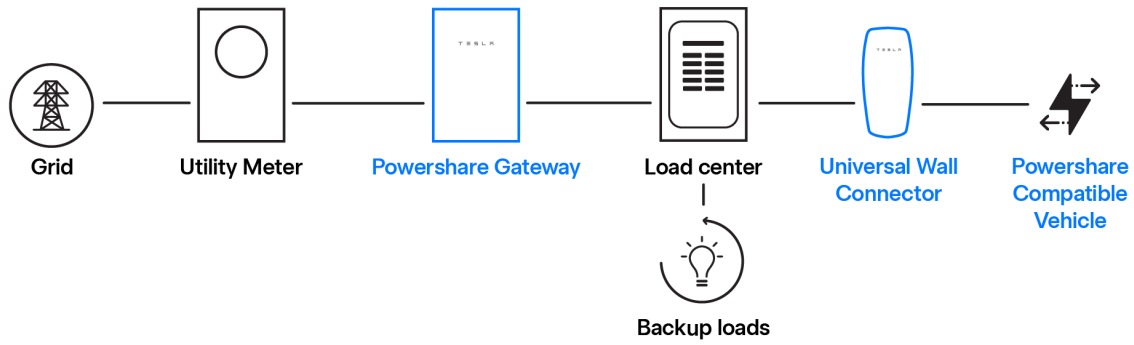
[1]Transformer provides neutral balancing.
[2]Values provided for ambient conditions 25°C (77°F).

Compliance Information

Safety Certifications	UL 9741, UL 1741, UL 916, UL 2594, UL 1741 CRD for Multi-Mode (MM), CSA C22.2#107.1 (Standalone requirements)
Grid Performance Certifications	UL 1741 SB

Note: A Powershare system can be configured as a V2G system with V2H capabilities, or as a V2H only system.

Powershare-Capable System (Standard)



Powershare Gateway Specifications

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Tesla Powershare Gateway controls connection to the grid, automatically detecting outages and transitioning to backup power. It also provides energy metering, allowing home energy usage monitoring from any mobile device with the Tesla app.

Performance Specifications

Model Number	1841000-x2-y
Continuous Current Rating	200 A
Maximum Supply Short Circuit Current	22 kA with Square D or Eaton main breaker 25 kA with Eaton main breaker[3]
IEC Protective Class	Class I
Overvoltage Category	Category IV at 150V
AC Meter	Revenue accurate (+/- 0.5%)
Connectivity	Wi-Fi (2.4 and 5 GHz), Dual-port switched Ethernet, Cellular (LTE/4G)[4]
Communication with Wall Connector	RS-485
User Interface	Tesla app
Installer Interface	Tesla installer app
Backup Transition	Automatic disconnect
Overcurrent Protection Device	100–200 A Service entrance rated Eaton CSR, BWH, or BW, or Square D QOM breakers
Internal Panelboard	200 A 8-space/16 circuit breakers Eaton BR, Siemens QP, or Square D HOM breakers rated to 10–125A
Warranty	10 years

[3]Only Eaton CSR or BWH main breakers are 25 kA rated.

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

Environmental Specifications

Operating Temperature	–30°C to 50°C (–22°F to 122°F)
Storage Temperature	–30°C to 60°C (–22°F to 140°F)
Operating Humidity (RH)	Up to 100%, condensing
Maximum Elevation	3000 m (9843 ft)
Environment	Indoor and outdoor rated
Enclosure Type	NEMA 3R

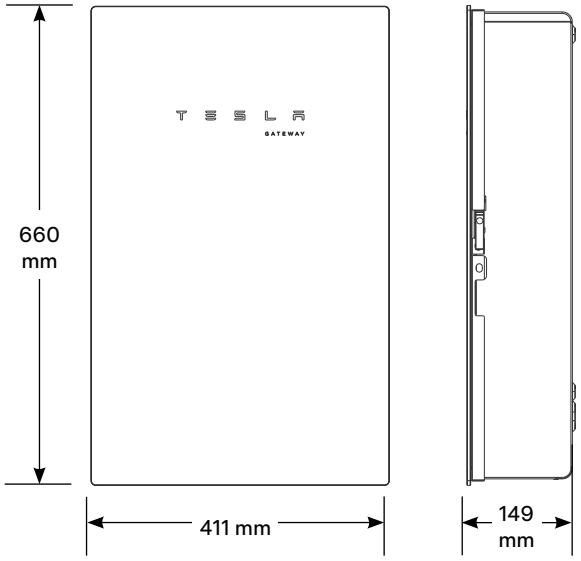
Compliance Information

Certifications	UL 1741, UL 67, UL 869A, UL 916, CSA C22.2#205, 29
Emmissions	FCC 47 Part 15 Subpart B, ICES 003, CISPR 25, IEC 61851-21-2
Environmental	CA Prop 65, UL 50, UL 50E, CSA C22.2#94, CSA C22.2#94.1 & .2

Powershare Gateway Specifications

Mechanical Specifications

Dimensions	660 x 411 x 149 mm (26 x 16 x 6 in)
Weight	30 kg (66.1 lb)
Mounting options	Wall mount



Universal Wall Connector Specifications

The Universal Wall Connector enables bi-directional charging, meaning that when an EV is plugged in it can either charge or power the home.

Electrical Specifications

Model Number	1734412-xx-y
Nominal Grid Voltage	240 V
Grid Configuration	L-L 1-phase
Current	Maximum 48 A (adjustable by installer)
Grounding Scheme	TN
Means of Disconnect	External branch circuit breaker
Residual Current Detection	Integrated, CCID20
Connectors	NACS, J1772
Connectivity	Wi-Fi (2.4 GHz, 802.11b/g/n)
Communication with Powershare Gateway	RS-485
User Interface	Tesla app
Installer Interface	Tesla installer app
Warranty	4 years (residential use)

Environmental Specifications

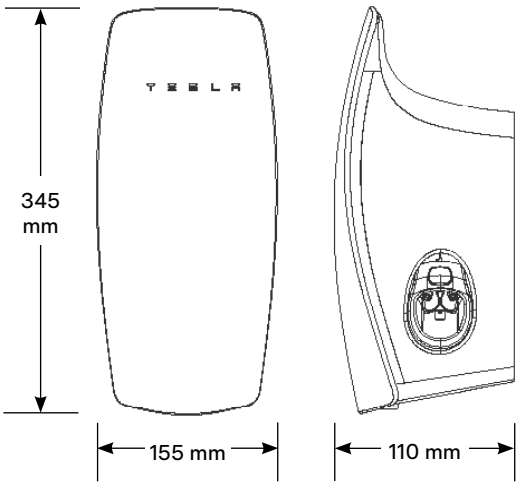
Operating Temperature	–30°C to 50°C (–22°F to 122°F)
Storage Temperature	–40°C to 85°C (–40°F to 185°F)
Enclosure Type	NEMA 3R

Compliance Information

Certifications	UL 2594 / CSA C22.2#280, UL 2251 / CSA C22.2#280, UL 2231-1 & -2 / CSA C22.2#281.1 & .2, UL 916
Emmissions	FCC 47 Part 15 Subpart B, ICES 003
Environmental	CA Prop 65, UL 50, UL 50E, CSA C22.2#94, CSA C22.2#94.1 & .2

Mechanical Specifications

Wall Connector Dimensions	345 x 155 x 110 mm (13.6 x 6.1 x 5.9 in)
Wire Box Bracket Dimensions	250 x 120 x 50 mm (9.8 x 4.7 x 2 in)
Weight (including bracket)	6.8 kg (15 lb)
Cable Length	1734412-x2-y: 7.3 m (24 ft) 1734412-x3-y: 4 m (13.1 ft)



Backup Switch Specifications

The Tesla Backup Switch controls connection to the grid, and can be easily installed behind the utility meter or in a standalone meter panel downstream of the utility meter. The Backup Switch is optional in Powershare home backup systems, and may be installed depending on system configuration.

The Backup Switch automatically detects grid outages and transitions to backup power. It also provides energy metering, allowing home energy usage monitoring from any mobile device with the Tesla app.

Performance Specifications

Model Number	1624171-xx-y
Continuous Load Rating	200 A, 120/240 V split phase
Maximum Supply Short Circuit Current	22 kA with breaker[5]
Communication	CAN
AC Meter	Revenue accurate (+/- 0.5%)
Expected Service Life	21 years
Warranty	10 years

[5]Breaker maximum supply short circuit current rating must be equal to or greater than the available fault current.

Environmental Specifications

Operating Temperature	–40°C to 50°C (–40°F to 122°F)
Storage Temperature	–40°C to 85°C (–40°F to 185°F)
Enclosure Rating	NEMA 3R
Pollution Rating	PD3

Compliance Information

Safety Standards	USA: UL 414, UL 414 SB, UL 2735, UL 916, CA Prop 65
Emissions	FCC, ICES

Mechanical Specifications

Dimensions	176 x 205 x 74 mm (6.9 x 8.1 x 2.9 in)
Weight	2.8 lb
Meter and Socket Compatibility	ANSI Type 2S, ringless or ring type
External Service Interface	Contactor manual override[6] Reset button
Conduit Compatibility	1/2-inch NPT

[6]Manually overrides the contactor position during a service event.

