Tesla Solar Inverter
with Site Controller

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Tesla Solar Inverter completes the Tesla home solar system, converting DC power from solar to AC power for home consumption. Tesla's renowned expertise in power electronics has been combined with robust safety features and a simple installation process to produce an outstanding solar inverter that is compatible with both Solar Roof and traditional solar panels. Once installed, homeowners use the Tesla mobile app to manage their solar system and monitor energy consumption, resulting in a truly unique ecosystem experience.

KEY FEATURES

- Built on Powerwall technology for exceptional efficiency and reliability
- Wi-Fi, Ethernet, and cellular connectivity with easy over-the-air updates
- Designed to integrate with Tesla Powerwall and Tesla App
- 0.5% revenue-grade metering for Solar Renewable Energy Credit (SREC) programs included

May 12, 2023

Tesla Solar Inverter Technical Specifications

Electrical Specifications: Output (AC)

Model Number	1538000-xx-y			
Output (AC) [1]	3.8 kW	5 kW	5.7 kW	7.6 kW
Nominal Power	3,800 W	5,000 W	5,700 W	7,600 W
Maximum Apparent Power	3,840 VA	5,040 VA	6,000 VA	7,680 VA
Maximum Continuous Current	16 A	21 A	24 A	32 A
Breaker (Overcurrent Protection)	20 A	30 A	30 A	40 A
Nominal Power Factor	1 - 0.9 (leading / lagging			
THD (at Nominal Power)	<5%			

Electrical Specifications: Input (DC)

MPPT	4
Input Connectors per MPPT	1-2-1-2
Maximum Input Voltage	600 VDC
DC Input Voltage Range	60 - 550 VDC
DC MPPT Voltage Range	60 - 480 VDC[1]
Maximum Current per MPPT (I_{MP})	13 A[2]
Maximum Short Circuit Current per MPPT (I_{SC})	17 A[2]

[1]Maximum current.

[2]Where the DC input current exceeds an MPPT rating, jumpers can be used to allow a single MPPT to intake additional DC current up to 26 A I_{MP} / 34 A I_{SC}.

Performance Specifications

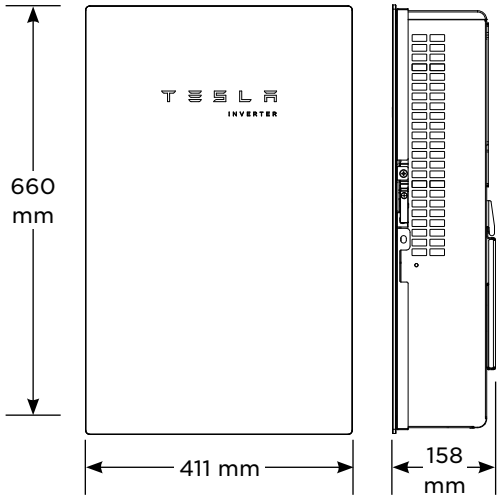
Peak Efficiency	98.6% at 240 V
CEC Efficiency	98.0% at 240 V
Allowable DC/AC Ratio	1.7
Customer Interface	Tesla Mobile App
Internet Connectivity	Wi-Fi (2.4 GHz, 802.11 b/g/n), Ethernet, Cellular (LTE/4G)[3]
Revenue Grade Meter	Revenue Accurate (+/- 0.5%)
AC Remote Metering Support	Wi-Fi (2.4 GHz, 802.11 b/g/n), RS-485
Protections	Integrated arc fault circuit interrupter (AFCI), Rapid Shutdown
Supported Grid Types	60 Hz, 240 V Split Phase
Warranty	12.5 years

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

Tesla Solar Inverter Technical Specifications

Mechanical Specifications

Dimensions	660 mm x 411 mm x 158 mm (26 in x 16 in x 6 in)



Weight	52 lb[4]
Mounting Options	Wall mount (bracket)

[4]Door and bracket can be removed for a mounting weight of 37 lb.

Environmental Specifications

Operating Temperature	–30°C to 45°C (–22°F to 113°F)[5]
Operating Humidity (RH)	Up to 100%, condensing
Storage Temperature	–30°C to 70°C (–22°F to 158°F)
Maximum Elevation	3000 m (9843 ft)
Environment	Indoor and outdoor rated
Enclosure Rating	Type 3R
Ingress Rating	IP55 (Wiring compartment)
Pollution Rating	PD2 for power electronics and terminal wiring compartment, PD3 for all other components
Operating Noise @ 1 m	< 40 db(A) nominal, < 50 db(A) maximum

[5]Performance may be de-rated to 6.2 kW at 240 V when operating at temperatures greater than 45°C.

Compliance Information

Grid Certifications	UL 1741, UL 1741 SA, UL 1741 SB, UL 1741 PCS, IEEE 1547-2018, IEEE 1547.1
Safety Certifications	UL 1741 PVRSS, UL 1699B, UL 1998 (US), UL 3741
Emissions	EN 61000-6-3 (Residential), FCC 47CFR15.109 (a)

Solar Shutdown Device Technical Specifications

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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 Tesla Solar Inverter, solar array shutdown is initiated by any loss of AC power.

Electrical Specifications

Model	MCI-1	MCI-2
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[6]

[6]Maximum System Voltage is limited by Tesla Solar Inverter to 600 V DC.

RSD Module Performance

Maximum Number of Devices per String	5	5
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)
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 Specifications

Electrical Connections	MC4 Connector	MC4 Connector
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 Rapid Shutdown Array)
RSD Initiation Method	PV System AC Breaker or Switch

UL 3741 PV Hazard Control (and PVRSA) Compatibility

The following categories of solar module meet the UL 3741 PVHCS listing when installed with Tesla Solar Inverter 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