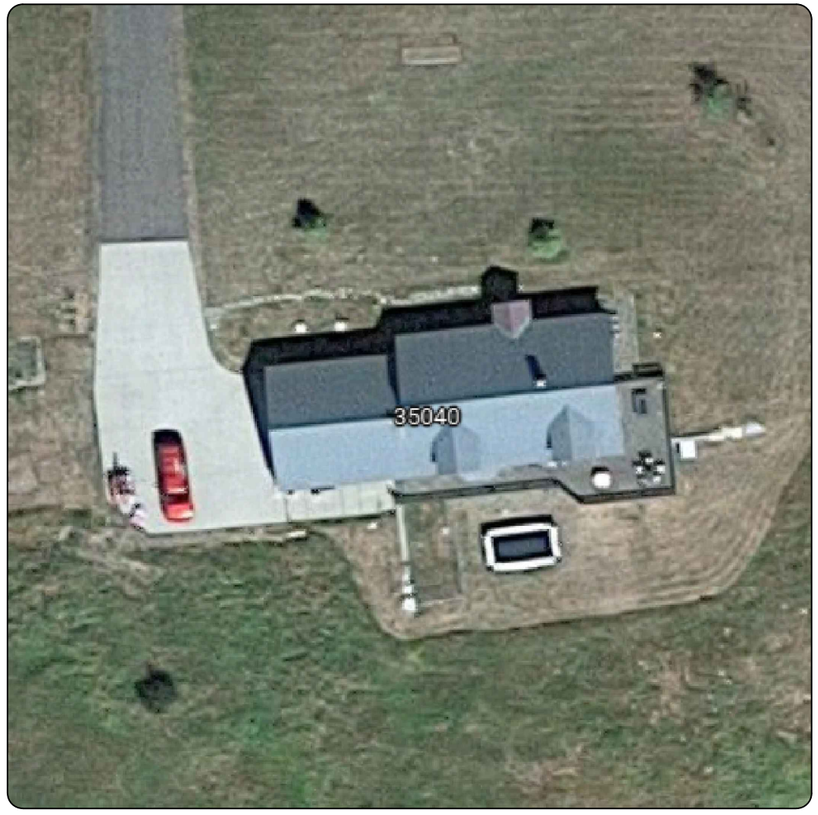
AERIAL VIEW:



STREET VIEW:

GENERAL NOTES

1. INSTALLATION OF SOLAR PHOTOVOLTAIC SYSTEM SHALL BE IN ACCORDANCE WITH NEC ARTICLE 690, AND ALL OTHER APPLICABLE NEC CODES WHERE NOTED OR EXISTING.
2. PROPER ACCESS AND WORKING CLEARANCE AROUND EXISTING AND PROPOSED ELECTRICAL EQUIPMENT WILL COMPLY WITH NEC ARTICLE 110.
3. ALL WIRES, INCLUDING THE GROUNDING ELECTRODE CONDUCTOR SHALL BE PROTECTED FROM PHYSICAL DAMAGE IN ACCORDANCE WITH NEC ARTICLE 250
4. THE PV MODULES ARE CONSIDERED NON-COMBUSTIBLE; THIS SYSTEM IS UTILITY INTERACTIVE PER UL 1741
5. ALL DC WIRES SHALL BE SIZED ACCORDING TO [NEC 690.8]
6. DC CONDUCTORS SHALL BE WITHIN PROTECTED RACEWAYS IN ACCORDANCE WITH [NEC 690.31]
7. ALL SIGNAGE TO BE PLACED IN ACCORDANCE WITH LOCAL JURISDICTIONAL BUILDING CODE.

PHOTOVOLTAIC (PV) SYSTEM SPECIFICATIONS

EQUIPMENT:
AC SYSTEM SIZE: 15.2 kW AC
DC SYSTEM SIZE: 13.752 kW DC
(191) Tesla # SR72T1 Tiles
(2)Tesla 7.6 Inverter(s)
(2) Tesla Powerwall 2 Batteries

APPLICABLE GOVERNING CODES

2018 IRC
NEC 2020 OF COLORADO (NFPA 70, 2020)
2018 IBC
2018 IFC

SITE SPECIFICATIONS

OCCUPANCY: R-3
ZONING: RESIDENTIAL

WEDDLE & SONS INC. ROOFING

Kevin Daly

35040 Country Green Ln

Steamboat Springs, Colorado 80487

AC SYSTEM SIZE: 15.2 kW AC

DC SYSTEM SIZE: 13.752 kW DC

Lat, 40.42911

Long, -106.841737

(191) Tesla # SR72T1 Tiles

(2)Tesla 7.6 Inverter(s)

SHEET INDEX:

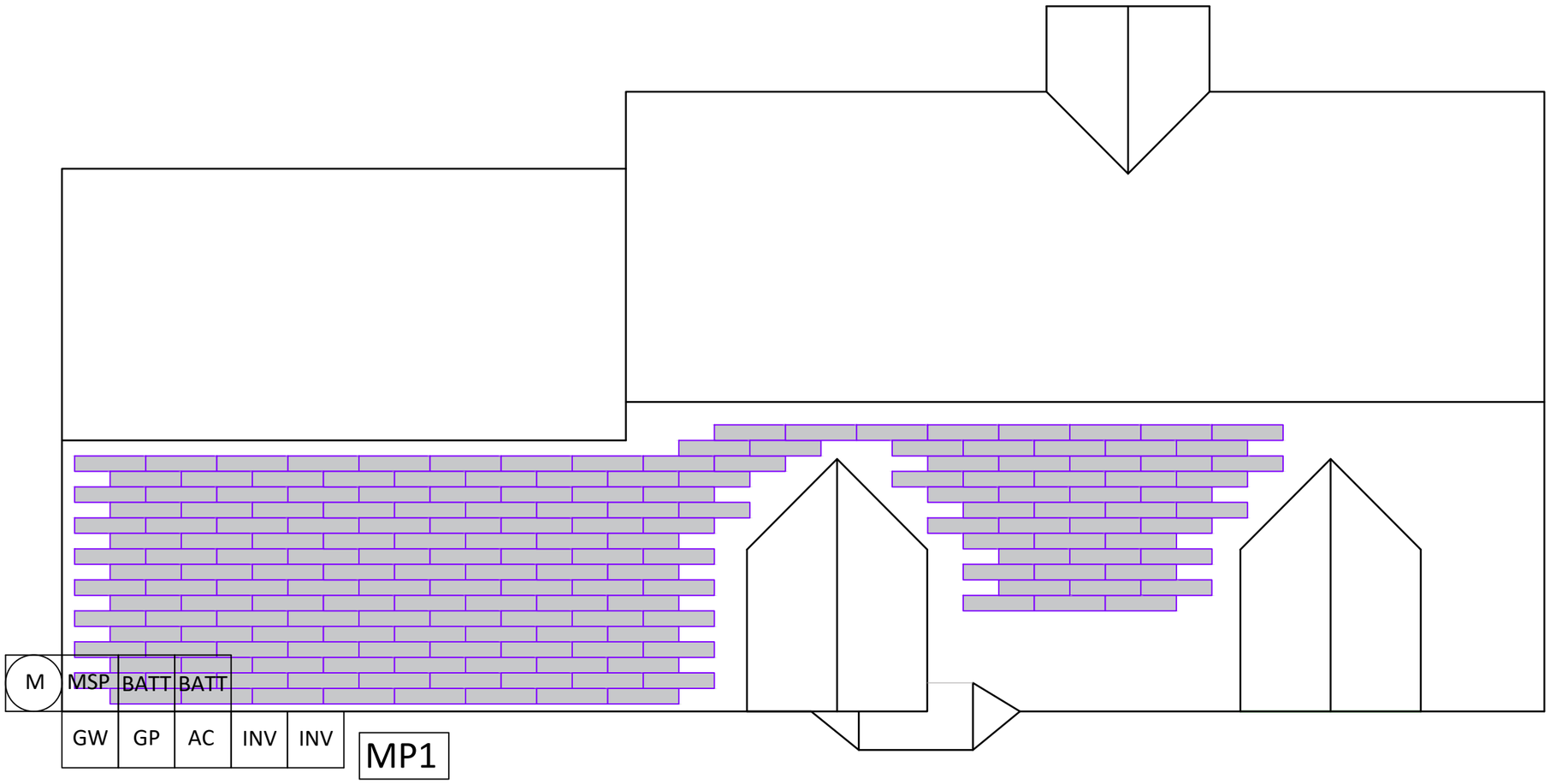
DRAWN BY: SoloCAD

DATE:
April 22, 2022

COVER - PV01

ARRAY DETAILS				
MOUNTING PLANE	STORY	TILE COUNT	AZIMUTH	PITCH
MP1	1	191	174	45

FRONT OF HOME



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Kevin Daly

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Lat, 40.42911

Long, -106.841737

(191) Tesla # SR72T1 Tiles

(2)Tesla 7.6 Inverter(s)

EQUIPMENT LEGEND:

- M — UTILITY METER
- MSP — MAIN SERVICE PANEL
- AC — VISIBLE, LOCKABLE, LABELED AC DISCONNECT
- PV — METER SOCKET (FOR UTILITY PV METER)
- INV — INVERTER
- C — COMBINER BOX
- SUB — SUB PANEL
- LC — LOAD CENTER
- BATT — BATTERY(IES)

VISIBLE, LOCKABLE, LABELED AC DISCONNECT LOCATED WITHIN 10' OF UTILITY METER

DRAWN BY: SoloCAD

DATE: April 22, 2022

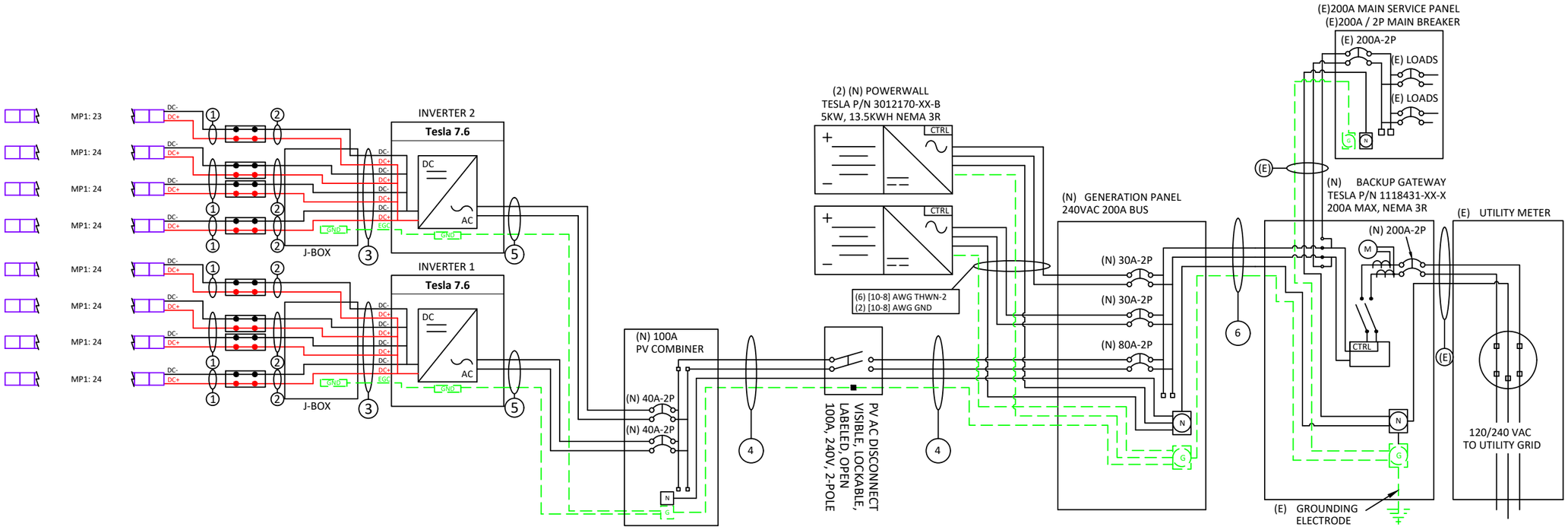
SITE PLAN - PV02

Tesla # SR72T2 Specs	
POWER MAX (PMAX):	72 W
OPEN CIRCUIT VOLTAGE (VOC):	14.2 V
MAX POWER-POINT CURRENT (IMP):	6.3 A
MAX POWER-POINT VOLTAGE (VMP):	11.3 V
SHORT CIRCUIT CURRENT (ISC):	6.8 A
SERIES FUSE RATING:	10A

Tesla 7.6 Specs	
MAX INPUT VOLTAGE:	600 V
MAX INPUT CURRENT:	13 A
NOMINAL DC INPUT VOLTAGE:	550 V
MAXIMUM OUTPUT POWER:	7600 W
NOM. OUTPUT VOLTAGE:	240 V
MAX OUTPUT CURRENT:	32 A
1-Phase, 60 HZ, UL 1741 Listed	

EQUIPMENT SCHEDULE:			
TYPE:	QTY:	DESCRIPTION:	RATING:
MODULES:	191	Tesla # SR72T1 Tiles	72 W
INVERTERS:	(2)	Tesla 7.6 Inverter(s)	15.2 kW
AC DISCONNECT(S):	(1)	PV AC DISCONNECT, 240V, 2-POLE	100 A
MCI(S)	(24)	MCI, TESLA, 600V	13 A
ENERGY STORAGE:	(2)	Tesla Powerwall 2	13.5 kWh

Conduit & Conductor Schedule				
TAG	QTY	WIRE GAUGE	DESCRIPTION	CONDUIT SIZE
1	(2)	10 AWG	PV-WIRE , USE-2, COPPER (L1, L2)	N/A - FREE AIR
	(1)	6 AWG	THWN-2 COPPER - (GROUND)	
2	(2)	10 AWG	THHN/THWN-2, COPPER - (L1, L2)	3/4" EMT
	(1)	10 AWG	THWN-2 COPPER - (GROUND)	
3	(8)	10 AWG	THHN/THWN-2, COPPER - (L1, L2)	3/4" EMT
	(1)	10 AWG	THWN-2 COPPER - (GROUND)	
4	(3)	3 AWG	THWN-2 COPPER - (L1, L2, NEUTRAL)	1" EMT
	(1)	8 AWG	THWN-2 COPPER - (GROUND)	
5	(2)	8 AWG	THWN-2 COPPER - (L1,L2)	3/4" EMT
	(1)	10 AWG	THWN-2 COPPER - (GROUND)	
6	(3)	3/0 AWG	THWN-2 COPPER - (L1,L2,NEUTRAL)	2" EMT
	(1)	6 AWG	THWN-2 COPPER - (GROUND)	



VISIBLE, LOCKABLE, LABELED AC DISCONNECT LOCATED WITHIN 10' OF UTILITY METER

INVERTER(S) ARE UL 1741 COMPLIANT WITH INTEGRATED RAPID SHUTDOWN DC DISCONNECT(S)

WEDDLE & SONS INC. ROOFING

Kevin Daly

35040 Country Green Ln

Steamboat Springs, Colorado 80487

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DC SYSTEM SIZE: 13.752 kW DC

Lat, 40.42911

Long, -106.841737

(191) Tesla # SR72T1 Tiles

(2)Tesla 7.6 Inverter(s)

DRAWN BY: SoloCAD

DATE:
April 22, 2022

LINE DIAGRAM - PV04

Conduit & Conductor Schedule

TAG	QTY	WIRE GAUGE	DESCRIPTION	CONDUIT SIZE	CONDUCTOR RATING	CONDUCTOR TEMP. RATE	AMBIENT TEMP	TEMP. DERATE	# OF CONDUCTORS DERATE	CONDUCTOR RATING W/DERATES	CONDUIT FILL
1	(2)	10 AWG	PV-WIRE , USE-2, COPPER (L1, L2)	N/A - FREE AIR	40A	90°C	30°C	1	N/A - FREE AIR	40A	N/A - FREE AIR
	(1)	6 AWG	THWN-2 COPPER - (GROUND)								
2	(2)	10 AWG	THHN/THWN-2, COPPER - (L1, L2)	3/4" EMT	40A	90°C	30°C	1	1	40A	11.9%
	(1)	10 AWG	THWN-2 COPPER - (GROUND)								
3	(8)	10 AWG	THHN/THWN-2, COPPER - (L1, L2)	3/4" EMT	40A	90°C	30°C	1	0.7	28A	35.7%
	(1)	10 AWG	THWN-2 COPPER - (GROUND)								
4	(3)	3 AWG	THWN-2 COPPER - (L1, L2, NEUTRAL)	1" EMT	100A	75°C	30°C	1	1	100A	38.1%
	(1)	8 AWG	THWN-2 COPPER - (GROUND)								
5	(2)	8 AWG	THWN-2 COPPER - (L1,L2)	3/4" EMT	50A	75°C	30°C	1	1	50A	17.73%
	(1)	10 AWG	THWN-2 COPPER - (GROUND)								
6	(3)	3/0 AWG	THWN-2 COPPER - (L1,L2,NEUTRAL)	2" EMT	200A	75°C	30°C	1	1	200A	25.46%
	(1)	6 AWG	THWN-2 COPPER - (GROUND)								

INVERTER 1

MPPT's	Strings	# of Tiles	Voc	Vmp	Isc	Imp	MPPT Voc	MPPT Vmp	MPPT Isc	MPPT Imp
MPPT 1	String 1	24	393.86	288.17	6.8	6.32	393.86	288.17	6.8	6.32
	String 2	0	0	0	0	0				
MPPT 2	String 3	24	393.86	288.17	6.8	6.32	393.86	288.17	6.8	6.32
	String 4	0	0	0	0	0				
MPPT 3	String 5	24	393.86	288.17	6.8	6.32	393.86	288.17	6.8	6.32
	String 6	0	0	0	0	0				
MPPT 4	String 7	24	393.86	288.17	6.8	6.32	393.86	288.17	6.8	6.32
	String 8	0	0	0	0	0				

INVERTER 2

MPPT's	Strings	# of Tiles	Voc	Vmp	Isc	Imp	MPPT Voc	MPPT Vmp	MPPT Isc	MPPT Imp
MPPT 1	String 1	24	393.86	288.17	6.8	6.32	393.86	288.17	6.8	6.32
	String 2	0	0	0	0	0				
MPPT 2	String 3	24	393.86	288.17	6.8	6.32	393.86	288.17	6.8	6.32
	String 4	0	0	0	0	0				
MPPT 3	String 5	24	393.86	288.17	6.8	6.32	393.86	288.17	6.8	6.32
	String 6	0	0	0	0	0				
MPPT 4	String 7	23	377.45	276.16	6.8	6.32	377.45	276.16	6.8	6.32
	String 8	0	0	0	0	0				

GROUNDING & GENERAL NOTES:

1. PV INVERTER IS UNGROUNDED, TRANSFORMER-LESS TYPE.
2. DC GEC AND AC EGC TO BE SPLICED TO EXISTING ELECTRODE
3. ANY EXISTING WIRING INVOLVED WITH PV SYSTEM CONNECTION THAT IS FOUND TO BE INADEQUATE PER CODE SHALL BE CORRECTED PRIOR TO FINAL INSPECTION.
4. JUNCTION BOX QUANTITIES, AND PLACEMENT SUBJECT TO CHANGE IN THE FIELD - JUNCTION BOXES DEPICTED ON ELECTRICAL DIAGRAM REPRESENT WIRE TYPE TRANSITIONS.
5. AC DISCONNECT NOTED IN EQUIPMENT SCHEDULE OPTIONAL IF OTHER AC DISCONNECTING MEANS IS LOCATED WITHIN 10' OF SERVICE DISCONNECT.

INTERCONNECTION NOTES

1. GROUND FAULT PROTECTION IN ACCORDANCE WITH [NEC 215.9] & [NEC 230.95]
2. SUPPLY SIDE INTERCONNECTION ACCORDING TO [NEC705.12(A)] WITH SERVICE ENTRANCE CONDUCTORS IN ACCORDANCE WITH [NEC 240.21(B)]

DISCONNECT NOTES

1. DISCONNECTING SWITCHES SHALL BE WIRED SUCH THAT WHEN THE SWITCH IS OPENED THE CONDUCTORS REMAINING LIVE ARE CONNECTED TO THE TERMINALS MARKED “LINE SIDE” (TYPICALLY THE UPPER TERMINALS)
2. AC DISCONNECT MUST BE ACCESSIBLE TO QUALIFIED UTILITY PERSONNEL, BE LOCKABLE, AND BE A VISIBLE-BREAK SWITCH.
3. FUSED AC DISCONNECT TO BE USED.

WEDDLE & SONS INC. ROOFING

Kevin Daly

35040 Country Green Ln

Steamboat Springs, Colorado 80487

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DC SYSTEM SIZE: 13.752 kW DC

Lat, 40.42911

Long, -106.841737

(191) Tesla # SR72T1 Tiles

(2)Tesla 7.6 Inverter(s)

DRAWN BY: SoloCAD

DATE:
April 22, 2022

ELECTRICAL TABLES - PV03

WARNING

ELECTRIC SHOCK HAZARD

TERMINALS ON THE LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION

LABEL 1
FOR PV DISCONNECTING MEANS WHERE THE LINE AND LOAD TERMINALS MAY BE ENERGIZED IN THE OPEN POSITION.
[NEC 690.13(B)]

WARNING

THIS EQUIPMENT IS FED BY MULTIPLE SOURCES. TOTAL RATING OF ALL OVERCURRENT DEVICES, EXCLUDING MAIN SUPPLY OVERCURRENT DEVICE, SHALL NOT EXCEED AMPACITY OF BUSBAR.

LABEL 2
PLACED ADJACENT TO THE BACK-FED BREAKER FROM THE INVERTER IF TIE IN CONSISTS OF LOAD SIDE CONNECTION TO BUSBAR.
[NEC 705.12(B)(2)(3)(b)]

WARNING

INVERTER OUTPUT CONNECTION

DO NOT RELOCATE THIS OVERCURRENT DEVICE

LABEL 3
PLACED ADJACENT TO THE BACK-FED BREAKER FROM THE INVERTER IF TIE IN CONSISTS OF LOAD SIDE CONNECTION TO BUSBAR.
[NEC 705.12(B)(2)(3)(c)]

WARNING

DUAL POWER SUPPLY

SOURCES: UTILITY GRID AND PV SOLAR ELECTRIC SYSTEM

LABEL 4
EQUIPMENT CONTAINING OVERCURRENT DEVICES IN CIRCUITS SUPPLYING POWER TO A BUSBAR OR CONDUCTOR SUPPLIED FROM MULTIPLE SOURCES SHALL BE MARKED TO INDICATE THE PRESENCE OF ALL SOURCES
[NEC 705.12(B)(3)]

PHOTOVOLTAIC AC DISCONNECT

RATED AC OUTPUT CURRENT: ##
NOMINAL OPERATING AC VOLTAGE: 13

LABEL 5
AT POINT OF INTERCONNECTION, MARKED AT AC DISCONNECTING MEANS.
[NEC 690.54, NEC 690.13 (B)]

LABELING NOTES:

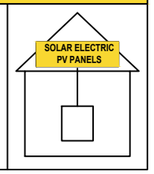
1. LABELS CALLED OUT ACCORDING TO ALL COMMON CONFIGURATIONS. ELECTRICIAN TO DETERMINE EXACT REQUIREMENTS IN THE FIELD PER CURRENT NEC AND LOCAL CODES AND MAKE APPROPRIATE ADJUSTMENTS.
2. LABELING REQUIREMENTS BASED ON THE 2017 NATIONAL ELECTRIC CODE, OSHA STANDARD 19010.145, ANSI Z535.
3. MATERIAL BASED ON THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION.
4. LABELS TO BE OF SUFFICIENT DURABILITY TO WITHSTAND THE ENVIRONMENT INVOLVED [NEC 110.21(B)(3)]
5. LABELS TO BE A MINIMUM LETTER HEIGHT OF 3/8", WHITE ON RED BACKGROUND; REFLECTIVE, AND PERMANENTLY AFFIXED [IFC 605.11.1.1]

WARNING: PHOTOVOLTAIC POWER SOURCE

LABEL 6
AT DIRECT-CURRENT EXPOSED RACEWAYS, CABLE TRAYS, COVERS AND ENCLOSURES OF JUNCTION BOXES, AND OTHER WIRING METHODS; SPACED AT MAXIMUM 10FT SECTION OR WHERE SEPARATED BY ENCLOSURES, WALLS, PARTITIONS, CEILINGS, OR FLOORS.
[NEC 690.31(G)(3&4)]

SOLAR PV SYSTEM EQUIPPED WITH RAPID SHUTDOWN

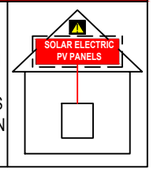
TURN RAPID SHUTDOWN SWICH TO THE "OFF" POSITION TO SHUT DOWN PV SYSTEM AND REDUCE SHOCK HAZARD IN ARRAY



LABEL 7
FOR PV SYSTEMS THAT SHUT DOWN THE ARRAY AND CONDUCTORS LEAVING THE ARRAY:
SIGN TO BE LOCATED ON OR NO MORE THAN 3 FT AWAY FROM SERVICE DISCONNECTING MEANS TO WHICH THE PV SYSTEMS ARE CONNECTED AND SHALL INDICATE THE LOCATION OF ALL IDENTIFIED RAPID SHUTDOWN SWITCHES IF NOT AT THE SAME LOCATION.
[NEC 690.56(C)(1)(A)]

SOLAR PV SYSTEM EQUIPPED WITH RAPID SHUTDOWN

TURN RAPID SHUTDOWN SWITCH TO THE "OFF" POSITION TO SHUT DOWN CONDUCTORS OUTSIDE THE ARRAY. CONDUCTORS WITHIN THE ARRAY REMAIN ENERGIZED IN SUNLIGHT

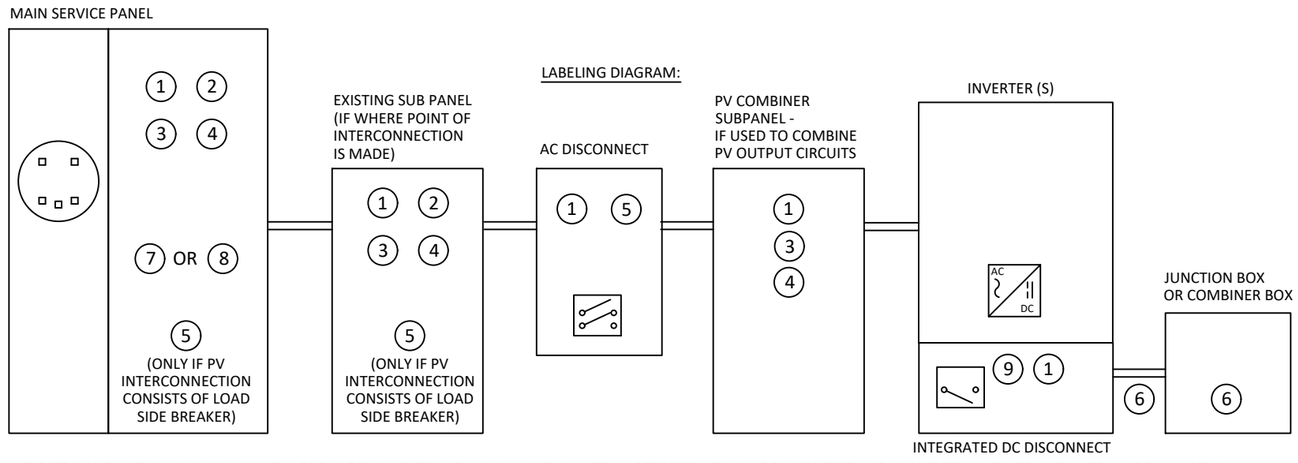


LABEL 8
FOR PV SYSTEMS THAT ONLY SHUT DOWN CONDUCTORS LEAVING THE ARRAY:
SIGN TO BE LOCATED ON OR NO MORE THAN 3 FT AWAY FROM SERVICE DISCONNECTING MEANS TO WHICH THE PV SYSTEMS ARE CONNECTED AND SHALL INDICATE THE LOCATION OF ALL IDENTIFIED RAPID SHUTDOWN SWITCHES IF NOT AT THE SAME LOCATION.
[NEC 690.56(C)(1)(b)]

RAPID SHUTDOWN SWITCH FOR SOLAR PV SYSTEM

LABEL 9
SIGN LOCATED AT RAPID SHUT DOWN DISCONNECT SWITCH [NEC 690.56(C)(3)].

LABELING DIAGRAM:



*ELECTRICAL DIAGRAM SHOWN ABOVE IS FOR LABELING PURPOSES ONLY. NOT AN ACTUAL REPRESENATION OF EQUIPMENT AND CONNECTIONS TO BE INSTALLED. LABEL LOCATIONS PRESENTED MAY VERY DEPENDING ON TYPE OF INTERCONNECTION METHOD AND LOCATION PRESENTED ON THE ELECTRICAL DIAGRAM PAGE.

WEDDLE & SONS INC. ROOFING

Kevin Daly

35040 Country Green Ln

Steamboat Springs, Colorado 80487

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DC SYSTEM SIZE: 13.752 kW DC

Lat, 40.42911

Long, -106.841737

(191) Tesla # SR72T1 Tiles

(2)Tesla 7.6 Inverter(s)

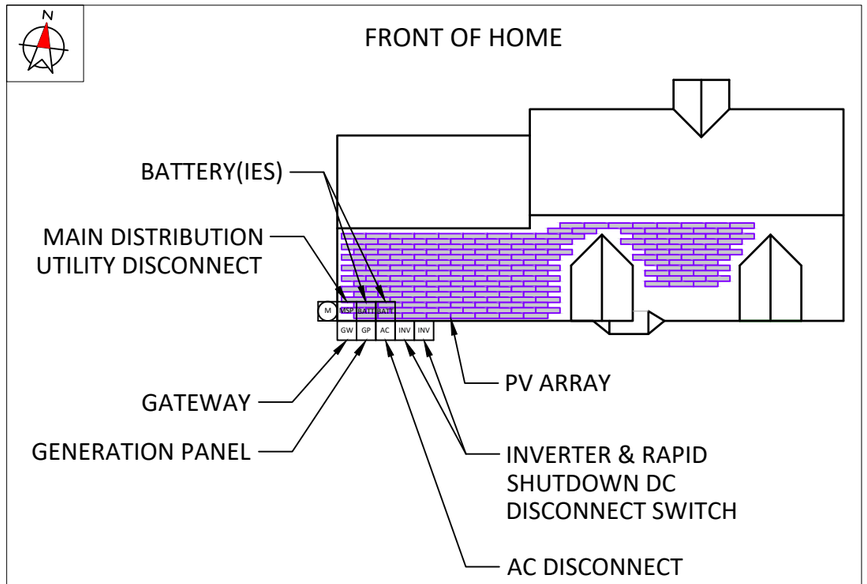
DRAWN BY: SoloCAD

DATE:
April 22, 2022

LABELS - PV05

CAUTION

POWER TO THIS BUILDING IS ALSO SUPPLIED FROM ROOF SOLAR TILES
WITH SAFETY DISCONNECTS AS SHOWN:



35040 Country Green Ln, Steamboat Springs Colorado 80487

DIRECTORY

PERMANENT PLAQUE OR DIRECTORY PROVIDING THE LOCATION OF THE SERVICE DISCONNECTING MEANS AND THE PHOTOVOLTAIC SYSTEM.

(ALL PLAQUES AND SIGNAGE WILL BE INSTALLED AS OUTLINED WITHIN: NEC 690.56(B)&(C), [NEC 705.10])

WEDDLE & SONS INC. ROOFING

Kevin Daly

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Steamboat Springs, Colorado 80487

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(2)Tesla 7.6 Inverter(s)

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DATE:
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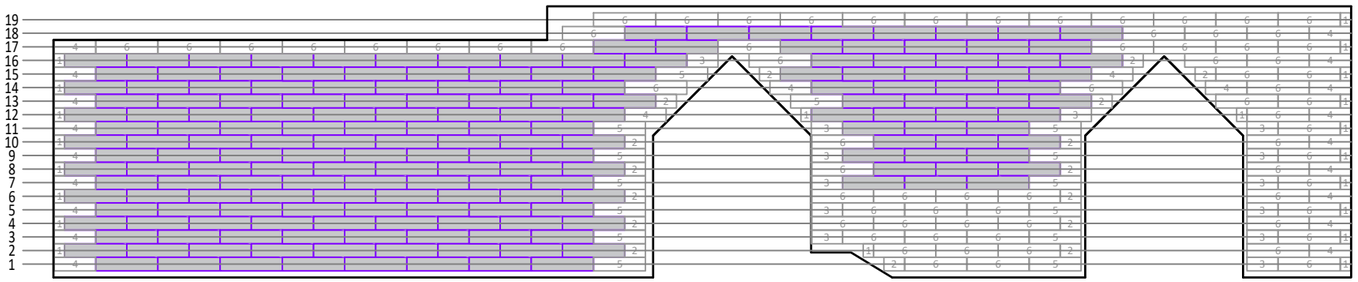
PLACARD - PV06



MP1		
STORY: 1	AZIMUTH: 174°	PITCH: 45°

MATERIALS			
SYMBOL	PART	WIDTH (INCHES)	QUANTITY
	MONOLITH PV	45 3/8	191
6	SINGLE	45 3/8	72
5	5/6	37 7/8	14
4	2/3	30 1/4	22
3	1/2	22 3/4	13
2	1/3	15 1/8	16
1	1/6	7 5/8	21

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DRAWN BY: SoloCAD

DATE:
April 22, 2022

MP1 TILE PLAN

Tesla Photovoltaic Module

SR72T2

—

Solar Roof shingle tiles are an aesthetically unparalleled solar energy solution. The combination of energy producing and non-energy tiles allows a Solar Roof to be functionally integrated and customizable to a variety of roof shapes and sizes.

Module Specifications

Electrical Characteristics	
Power Class	**SR72T2**
Test Method	STC
Max Power, P_{MAX} (W)	72
Open Circuit Voltage, V_{OC} (V) per diode	14.20
Short Circuit Current, I_{SC} (A)	6.80
Max Power Voltage, V_{MP} (V)	11.30
Max Power Current, I_{MP} (A)	6.30
STC	1000 W/m², 25°C, AM 1.5 spectrum

Mechanical Loading	
Wind Rating	Up to 87 m/s | 194 mph
Roof Snow Load	Up to 1280 kg/m² | 263 lbs/ft² surface-normal Up to 270 kg/m² | 55 lbs/ft² shear
Hailstone Rating	FM 4473 Class 3 (Intertek)

Mechanical Parameters	
Cells	14
Junction Box	IP68, 1 diodes
Cable	12 AWG PV Wire, 90 °C wet or dry, Long lead 315 mm | 12.40 in. length Short lead 280 mm | 11.02 in. length
Connector	Staubli MC4 type PV-KST4/6II-UR or type PV-KST4-EVO2 (male) and Staubli MC4 type PV-KBT4/6II-UR or type PV-KBT4-EVO2 (female)
Principal Materials	Glass, Polymers, Fiberglass and Silicon
Height From Deck	35.3 mm | 1.39 in
Installed System Weight	15 kg/m² | 3.1 lb/ ft²
Dimension	430 mm x 1140 mm x 5 mm 16.93 in x 44.88 in x .20 in

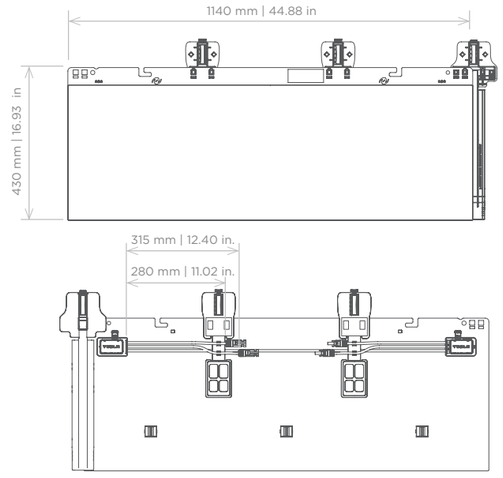
Operation Parameters	
Operational Temperature	-40 °C up to 85 °C
Power Output Tolerance	-0 /+5 %
Max System Voltage	DC 1000 V (IEC/UL) for installations above 2000m but below 3000m the system voltage is 877 V
Max Series Fuse Rating	10 A
Safety Class	Class II
Fire Rating	UL 61730 Class A

Limited Warranties	
Module Warranty	25 years

The power output capacity of your Solar Roof will be at least 95% of maximum rated output power of the Solar Roof system at 5 years after install. The power output capacity will decline by no more than 0.5% per year for the following 20 years. This warranty covers the power your Solar Roof will produce under standard test conditions.

System Certifications
UL 61730 (UL Listed)
UL 9703 (UL Listed)
UL 1741 (UL Listed)
UL 3741 (UL Listed)
UL 790 Class A (ETL Listed)
ASTM D3161 Class F (ETL Listed)
TAS100 (ETL Listed)

Temperature Rating (STC)	
Temperature Coefficient of Isc	0.038 % / °C
Temperature Coefficient of V_{OC}	-0.267 % / °C
Temperature Coefficient of P_{MAX} (W)	-0.372 % / °C

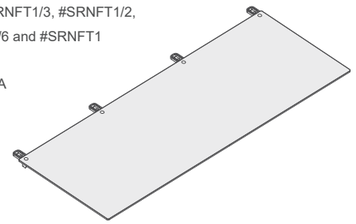


SR72T2 Module Datasheet
(TESR-DS-0413-21)

T E S L A

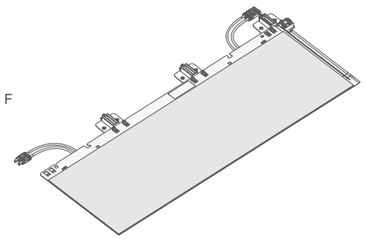
ROOFING MODULES, FULL AND PARTIAL

Model #SRNFT1/6, #SRNFT1/3, #SRNFT1/2,
#SRNFT2/3, #SRNFT5/6 and #SRNFT1
Listed to UL 61730
Listed to UL 790 Class A
ASTM D3161 Class F
TAS100



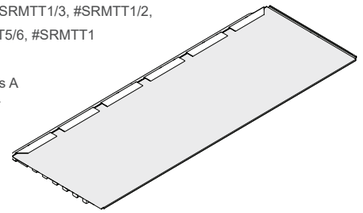
PV MODULE

Model #SR72T2
UL 61730, UL 3741
UL 790 Class A
ASTM D3161 Class F
TAS100



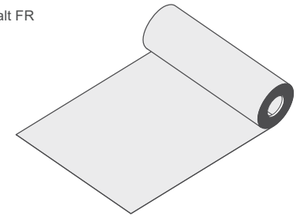
METAL TILES, FULL AND PARTIAL

Model #SRMTT1/6, #SRMTT1/3, #SRMTT1/2,
#SRMTT2/3, #SRMTT5/6, #SRMTT1
Listed to UL 1897
Listed to UL 790 Class A
ASTM D3161 Class F
TAS100



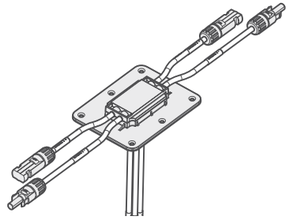
UNDERLAYMENT

Model #SR-SAUL-1 or FT Cobalt FR
ASTM D1970/ICC AC48
ICC AC188
ASTM E108 Class -A



PASS THROUGH BOX

Model #SRPTB-4
UL 1741, File #E318357



SOLAR INVERTER

3.8 kW | 7.6 kW

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 2 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
- 3.8 kW and 7.6 kW models available

SOLAR INVERTER

Tesla Solar Inverter provides DC to AC conversion and integrates with the Tesla ecosystem, including Solar Panels, Solar Roof, Powerwall, and vehicle charging, to provide a seamless sustainable energy experience.

KEY FEATURES

- Integrated rapid shutdown, arc fault, and ground fault protection
- No neutral wire simplifies installation
- 2x the standard number of MPPTs for high production on complex roofs

ELECTRICAL SPECIFICATIONS

MODEL NUMBER	1534000-xx-y	1538000-xx-y
OUTPUT (AC)	3.8 kW	7.6 kW
Nominal Power	3,800 W	7,600 W
Maximum Apparent Power	3,328 VA at 208 V 3,840 VA at 240 V	6,656 VA at 208 V 7,680 VA at 240 V
Maximum Continuous Current	16 A	32 A
Breaker (Overcurrent Protection)	20 A	40 A
Nominal Power Factor	1 - 0.9 (leading / lagging)	
THD (at Nominal Power)	<5%	
INPUT (DC)		
MPPT	2	4
Input Connectors per MPPT	1-2	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	
Maximum Short Circuit Current per MPPT (I_{sc})	15 A	

PERFORMANCE SPECIFICATIONS

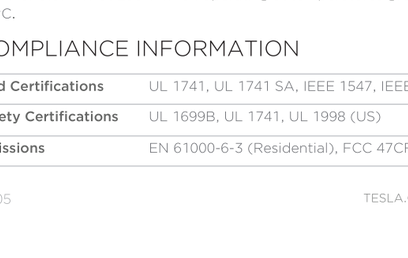
Peak Efficiency	98% at 208 V 98.1% at 240 V	98.4% at 208 V 98.6% at 240 V
CEC Efficiency	97.5% at 208 V 97.5% at 240 V	97.5% at 208 V 98.0% at 240 V
Allowable DC/AC Ratio	1.7	
Customer Interface	Tesla Mobile App	
Internet Connectivity	Wi-Fi (2.4 GHz, 802.11 b/g/n), Ethernet, Cellular (LTE/4G)[2]	
AC 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 60 Hz, 208 V Wye	
Required Number of Tesla Solar Shutdown Devices per Solar Module	See *Solar Shutdown Device Requirements per Module* on page 3	
Warranty	12.5 years	

[1] Maximum current.
[2] Cellular connectivity subject to network operator service coverage and signal strength.

MECHANICAL SPECIFICATIONS

Dimensions	660 mm x 411 mm x 158 mm (26 in x 16 in x 6 in)
Weight	52 lb[3]
Mounting options	Wall mount (bracket)

[3] 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)[4]
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

[4] For the 7.6 kW Solar Inverter, performance may be de-rated to 6.2 kW at 240 V or 5.37 kW at 208 V when operating at temperatures greater than 45°C.

COMPLIANCE INFORMATION

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

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 the Tesla Solar Inverter, 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)

PVRSA

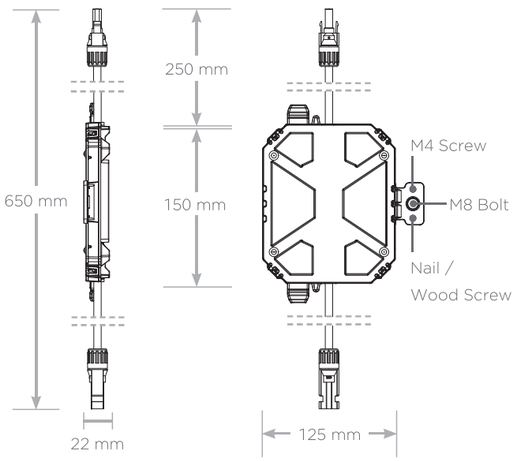
RSD Initiation Method	Loss of AC power
Compatible Equipment	Tesla Solar Inverter

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 the Tesla Solar Inverter and Tesla Solar Shutdown Devices. See the Tesla Solar Inverter Installation Manual for guidance on installing Tesla Solar Inverter and Solar Shutdown Devices with other modules.

Brand	Model	Required Solar Shutdown Devices
Tesla	Solar Roof V3	1 Solar Shutdown Device per 10 modules
Tesla	Tesla TxxxS (where xxx = 405 to 450 W, increments of 5)	1 Solar Shutdown Device per 3 modules[1]
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

[1]**Exception**: Tesla solar modules installed in locations where the max Voc for three modules at low design temperatures exceeds 165 V shall be limited to two modules between MCIs.

POWERWALL

Tesla Powerwall is a fully-integrated AC battery system for residential or light commercial use. Its rechargeable lithium-ion battery pack provides energy storage for solar self-consumption, time-based control, and backup.

Powerwall's electrical interface provides a simple connection to any home or building. Its revolutionary compact design achieves market-leading energy density and is easy to install, enabling owners to quickly realize the benefits of reliable, clean power.

PERFORMANCE SPECIFICATIONS

AC Voltage (Nominal)	120/240 V
Feed-In Type	Split Phase
Grid Frequency	60 Hz
Total Energy[1]	14 kWh
Usable Energy[1]	13.5 kWh
Real Power, max continuous	5 kW (charge and discharge)
Real Power, peak (10 s, off-grid/backup)	7 kW (charge and discharge)
Apparent Power, max continuous	5.8 kVA (charge and discharge)
Apparent Power, peak (10 s, off-grid/backup)	7.2 kVA (charge and discharge)
Load Start Capability	88 A LRA for each Powerwall
Maximum Supply Fault Current	10 kA
Maximum Output Fault Current	32 A
Overcurrent Protection Device	30 A
Imbalance for Split-Phase Loads	100%
Power Factor Output Range	+/– 1.0 adjustable
Power Factor Range (full-rated power)	+/– 0.85
Internal Battery DC Voltage	50 V
Round Trip Efficiency[1,2]	90%
Warranty	10 years

[1]Values provided for 25°C (77°F), 3.3 kW charge/discharge power.
[2]AC to battery to AC, at beginning of life.

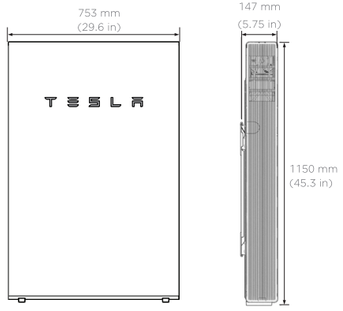
COMPLIANCE INFORMATION

Certifications	UL 1642, UL 1741, UL 1973, UL 9540, IEEE 1547, UN 38.3
Grid Connection	Worldwide Compatibility
Emissions	FCC Part 15 Class B, ICES 003
Environmental	RoHS Directive 2011/65/EU
Seismic	AC156, IEEE 693-2005 (high)
Fire Testing	Meets the unit level performance criteria of UL 9540A

MECHANICAL SPECIFICATIONS

Dimensions[3]	1150 mm x 753 mm x 147 mm (45.3 in x 29.6 in x 5.75 in)
Weight[3]	114 kg (251.3 lbs)
Mounting options	Floor or wall mount

[3]Dimensions and weight differ slightly if manufactured before March 2019. Contact Tesla for additional information.

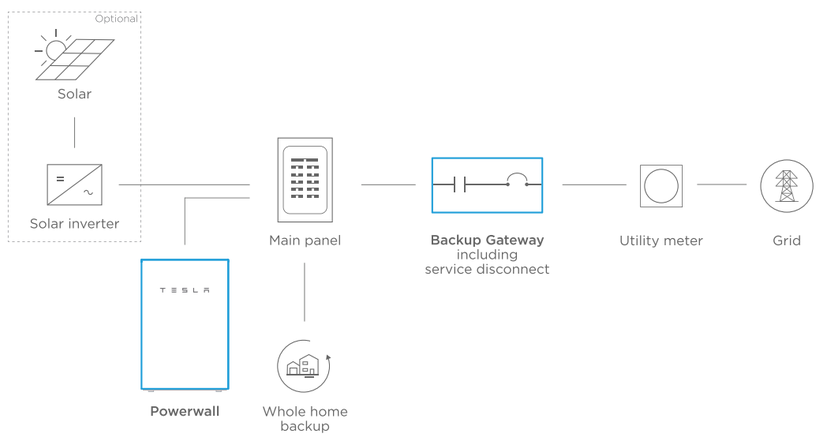


ENVIRONMENTAL SPECIFICATIONS

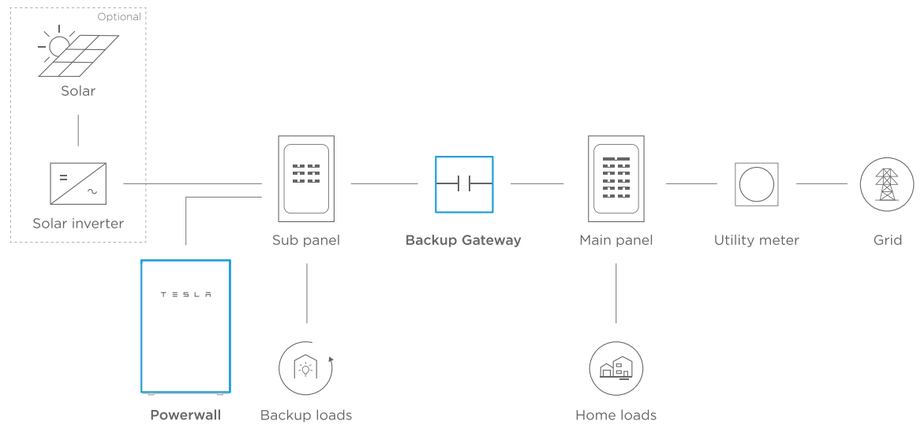
Operating Temperature	–20°C to 50°C (–4°F to 122°F)
Recommended Temperature	0°C to 30°C (32°F to 86°F)
Operating Humidity (RH)	Up to 100%, condensing
Storage Conditions	–20°C to 30°C (–4°F to 86°F) Up to 95% RH, non-condensing State of Energy (SoE): 25% initial
Maximum Elevation	3000 m (9843 ft)
Environment	Indoor and outdoor rated
Enclosure Type	NEMA 3R
Ingress Rating	IP67 (Battery & Power Electronics) IP56 (Wiring Compartment)
Wet Location Rating	Yes
Noise Level @ 1m	< 40 dBA at 30°C (86°F)

TYPICAL SYSTEM LAYOUTS

WHOLE HOME BACKUP



PARTIAL HOME BACKUP



POWERWALL
Backup Gateway 2

The Backup Gateway 2 for Tesla Powerwall provides energy management and monitoring for solar self-consumption, time-based control, and backup.

The Backup Gateway 2 controls connection to the grid, automatically detecting outages and providing a seamless transition to backup power. When equipped with a main circuit breaker, the Backup Gateway 2 can be installed at the service entrance. When the optional internal panelboard is installed, the Backup Gateway 2 can also function as a load center.

The Backup Gateway 2 communicates directly with Powerwall, allowing you to monitor energy use and manage backup energy reserves from any mobile device with the Tesla app.

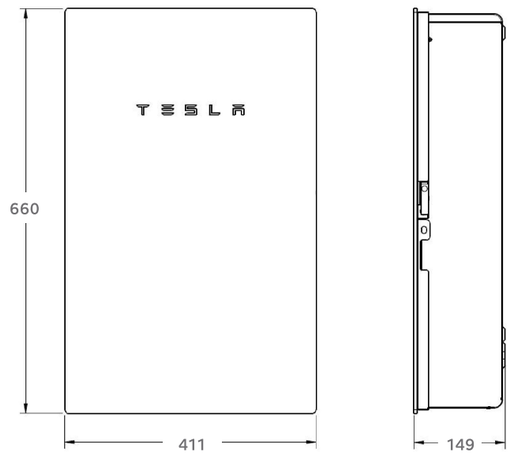
PERFORMANCE SPECIFICATIONS

AC Voltage (Nominal)	120/240V
Feed-In Type	Split Phase
Grid Frequency	60 Hz
Current Rating	200 A
Maximum Input Short Circuit Current	10 kA[1]
Overcurrent Protection Device	100-200A; Service Entrance Rated[1]
Overvoltage Category	Category IV
AC Meter	Revenue accurate (+/– 0.2 %)
Primary Connectivity	Ethernet, Wi-Fi
Secondary Connectivity	Cellular (3G, LTE/4G)[2]
User Interface	Tesla App
Operating Modes	Support for solar self-consumption, time-based control, and backup
Backup Transition	Automatic disconnect for seamless backup
Modularity	Supports up to 10 AC-coupled Powerwalls
Optional Internal Panelboard	200A 6-space / 12 circuit Eaton BR Circuit Breakers
Warranty	10 years

[1] When protected by Class J fuses, Backup Gateway 2 is suitable for use in circuits capable of delivering not more than 22kA symmetrical amperes.
[2] The customer is expected to provide internet connectivity for Backup Gateway 2; cellular should not be used as the primary mode of connectivity. Cellular connectivity subject to network operator service coverage and signal strength.

MECHANICAL SPECIFICATIONS

Dimensions	660 mm x 411 mm x 149 mm (26 in x 16 in x 6 in)
Weight	20.4 kg (45 lb)
Mounting options	Wall mount, Semi-flush mount



COMPLIANCE INFORMATION

Certifications	UL 67, UL 869A, UL 916, UL 1741 PCS CSA 22.2 0.19, CSA 22.2 205
Emissions	FCC Part 15, ICES 003

ENVIRONMENTAL SPECIFICATIONS

Operating Temperature	–20°C to 50°C (–4°F to 122°F)
Operating Humidity (RH)	Up to 100%, condensing
Maximum Elevation	3000 m (9843 ft)
Environment	Indoor and outdoor rated
Enclosure Type	NEMA 3R

BACKUP SWITCH

The Tesla Backup Switch controls connection to the grid and easily installs behind the utility meter, providing whole home backup with Powerwall.

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 SPECIFICATIONS

Model Number	1624171-xx-y
Continuous Load Rating	200A, 120/240V Split phase
Short Circuit Current Rating	10 kA with any breaker[1] 22 kA with minimum 22 kA breaker[1]
Communication	CAN
Product Compatibility	Powerwall 2 with Backup Gateway 2, Powerwall+
Expected Service Life	21 years
Warranty	10 years

[1] See section 27.12.4 in UL 414.

COMPLIANCE INFORMATION

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

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

MECHANICAL SPECIFICATIONS

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

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