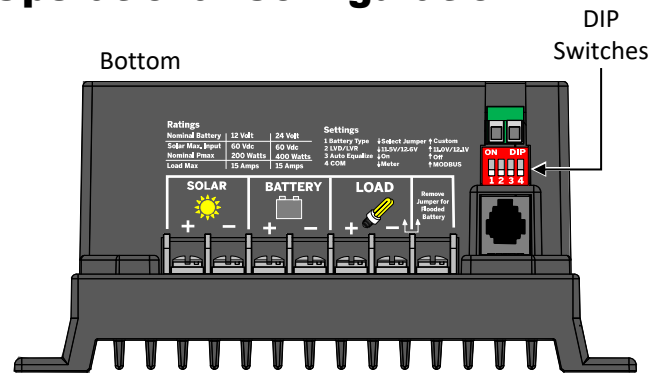
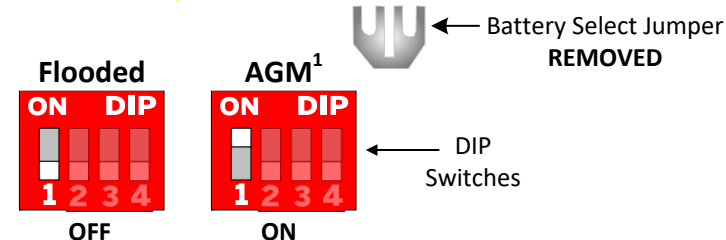
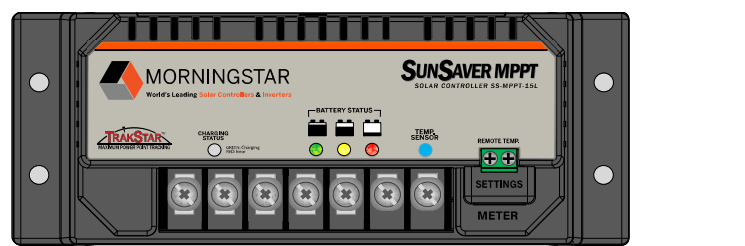
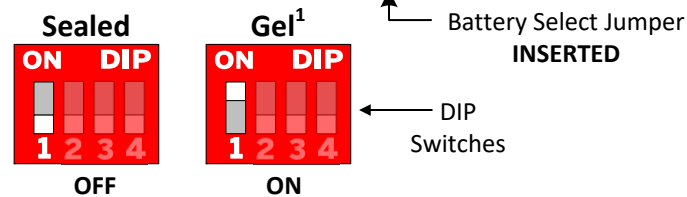
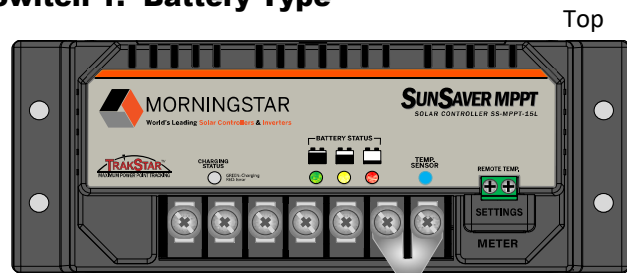


Specifications:	SS-MPPT-15L
Nominal Battery Voltage	12 V or 24 V
Max. Solar Input Voltage	60 V
Nominal Maximum Input Power	200 W / 400 W
Maximum Battery Current	15 A
Battery Voltage Range	7 – 36 V
Rated Load Current	15 A

Operational Configuration:



Switch 1: Battery Type



¹ Set points for this switch setting can be modified with custom programming.

Contact Information:

Technical Support: Support.morningstarcorp.com
Phone: 1-215-321-4457

BATTERY SET POINTS 12-volt (24-volt)				
Set Point	GEL	Sealed	AGM	Flooded
Absorption Voltage	14.0 V (28.0 V)	14.1 V (28.2 V)	14.3 V (28.6 V)	14.4 V (28.8 V)
Float Voltage	13.7 V (27.4 V)	13.7 V (27.4 V)	13.7 V (27.4 V)	13.7 V (27.4 V)
Time until Float	3 hours	3 hours	3 hours	3 hours
Equalize Voltage	N/A	N/A	14.5 V	14.9 V
Equalize Duration	N/A	N/A	3 hours	3 hours
Equalize Calendar (days)	N/A	N/A	28	28
Maximum Regulation Voltage*	15 V (30 V)			
LVD**/LVR** (Switch 2 OFF)	11.5 V / 12.6 V @ 12 V (23.0 V / 25.2 V @ 24 V)			
LVD**/LVR** (Switch 2 ON)	11.0 V / 12.1 V @ 12 V (22.0 V / 24.2 V @ 24 V)			
Load HVD**	15.3 V (30.6 V)			
Load HVR**	14.5 V (29 V)			
Array HVD (Temp. Comp.)	Highest voltage set point + 0.5 V			
Array HVR (Temp. Comp.)	13.8 V (27.6 V)			

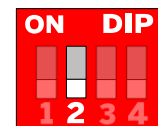
*Not temperature compensated. 15 V @ 12 V nominal, 30 V @ 24 V nominal.
**Adjustable by DIP Switch 2. Not temperature compensated. Can be modified in custom settings.

For Custom Programming:

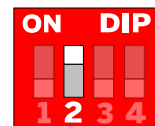
Use the software available at <https://www.morningstarcorp.com/msview/>.

See the SunSaver MPPT Installation, Operations, and Maintenance Manual for additional information/guidance.

Switch 2: Load Control / Low Voltage Disconnect/Reconnect



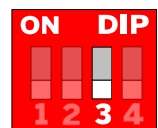
LVD = 11.5 V
LVR = 12.6 V



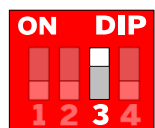
LVD = 11.0 V
LVR = 12.1 V

² These values can be modified with custom programming.

Switch 3: Auto-Equalization

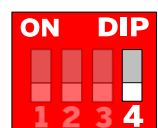


Auto-Equalize OFF

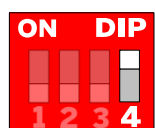


Auto-Equalize ON
(AGM, Flooded Battery Types only)

Switch 4: Communication Mode - Meter/MODBUS®



Remote Meter, & Relay Driver



MODBUS® Protocol for MSView, Ethernet Meterbus Converter, 3rd-Party Devices



SUNSAVER MPPT

SOLAR CONTROLLER SS-MPPT-15L

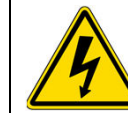
Quick Start Guide



Scan QR Code to go directly to the SunSaver MPPT Installation Manual and warranty information online.

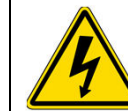


Safety Information:



WARNING: Shock Hazard

The SunSaver MPPT controller must be installed by a qualified technician in accordance with the electrical regulations of the country of installation.



WARNING: Shock Hazard

This unit is not provided with a GFDI device. This charge controller must be used with an external GFDI device as required by the Article 690 of the National Electrical Code for the installation location.



IMPORTANT: READ the SunSaver MPPT Installation Manual for safety and regulatory information, instructions on configuration and operation, and warranty information.



Warranty Registration: <https://www.morningstarcorp.com/product-registration/>

In the Box:



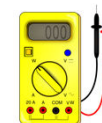
SunSaver MPPT Charge Controller



Mounting Screws (x4)

Tools Required:

- #2 Philips Screwdriver
- 3/16 (5 mm) & 3/32" (2.5 mm) Flathead Screwdriver
- Drill with a 3/32" (2.5 mm) bit
- Multimeter



Optional Accessories:



Remote Temperature Sensor (RTS)



Relay Driver (RD-1)



Remote Meter (RM-1)



Ethernet MeterBus Converter (EMC-1)

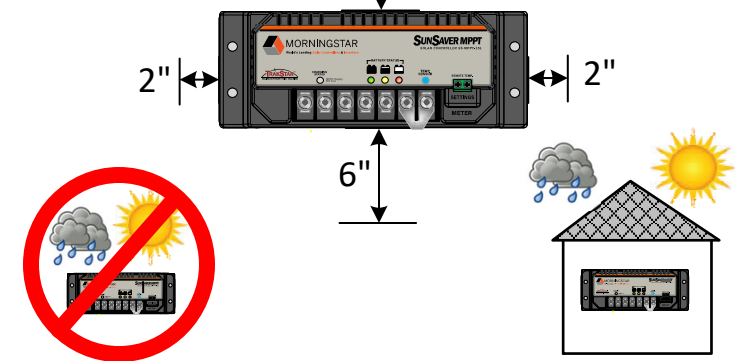


PC MeterBus Adapter (MSC)



USB Communications Adapter (UMC-1)

Minimum Clearance Requirements:



WARNING: Explosion Hazard

Never install the SunSaver MPPT in an enclosure with vented/flooded batteries. Battery fumes are flammable and will corrode and destroy the SunSaver circuits.

WARNING: Risk of Fire

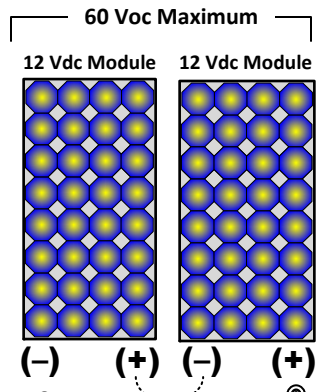
If a Remote Temperature Sensor (RTS) is NOT connected, locate the SunSaver MPPT within 3 m (10 ft) of the batteries. Internal temperature compensation will be used if the RTS is not connected. Use of the RTS is strongly recommended.

CAUTION: Equipment Damage

Do not expose the SunSaver MPPT to weather. Locate in a dry, protected area to prevent equipment damage. Ensure the minimum clearance requirements are followed to provide adequate ventilation and prevent the unit from overheating.

Photovoltaic (PV) Array

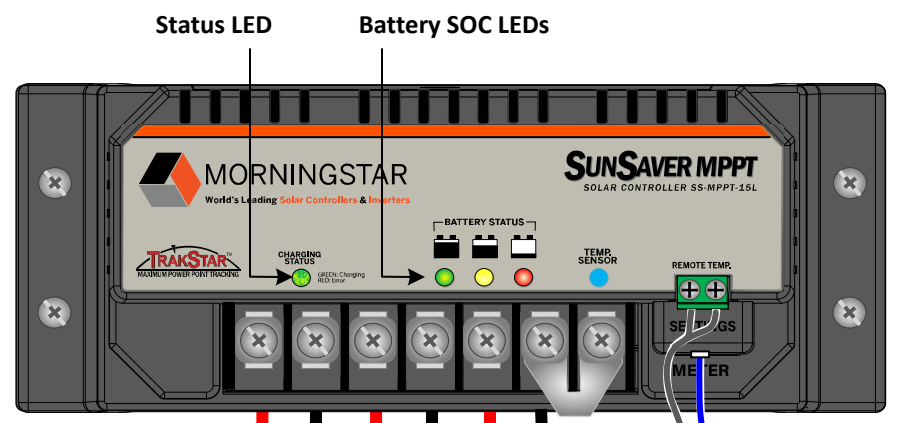
See the Morningstar PV String Calculator at: <http://string-calculator.morningstarcorp.com/>



IMPORTANT: Array Voltage should NEVER exceed the maximum input voltage.

STATUS LED		
Color	Indication	Operating State
None	OFF (with heartbeat ¹)	Night
Green	ON Solid (with heartbeat ²)	Charging
Red	Flashing	Error
Red	ON Solid (with heartbeat ²)	Critical Error

¹ heartbeat indication flickers the Status LED **ON** briefly every 5 seconds
² heartbeat indication flickers the Status LED **OFF** briefly every 5 seconds



IMPORTANT: Example only. Actual wiring may vary. *READ the SunSaver MPPT Installation, Operations, and Maintenance Manual for mandatory safety requirements.* All configuration must comply with local and national electric codes. Consult your local electric authority to ensure compliance.

Optional Accessories



BATTERY STATE-OF-CHARGE (SOC) LEDs			
SOC LED	Indication	Battery Status	Load Status
Green	Fast Flashing (2 Flash / sec)	Equalize Charge	Load ON
Green	Medium Flashing (1 Flash / sec)	Absorption Charge	Load ON
Green	Slow Flashing (1 Flash / 2 sec)	Float Charge	Load ON
Green	ON Solid	Nearly Full	Load ON
Yellow	ON Solid	Half Full	Load ON
Red	Flashing (1 Flash / sec)	Battery Low	LVD Warning (Load On)
Red	ON Solid	Battery Empty	LVD (Load Off)



Mounting:

Step 1: Choose Mounting Location

Locate the SunSaver MPPT on a vertical surface protected from direct sun, high temperatures, and water.

Step 2: Check for Clearance and Ventilation

Place the SunSaver MPPT in the location where it will be mounted. Verify that there is sufficient room to run wires and that there is ample room above and below the controller for air flow.

Step 3: Mark Holes

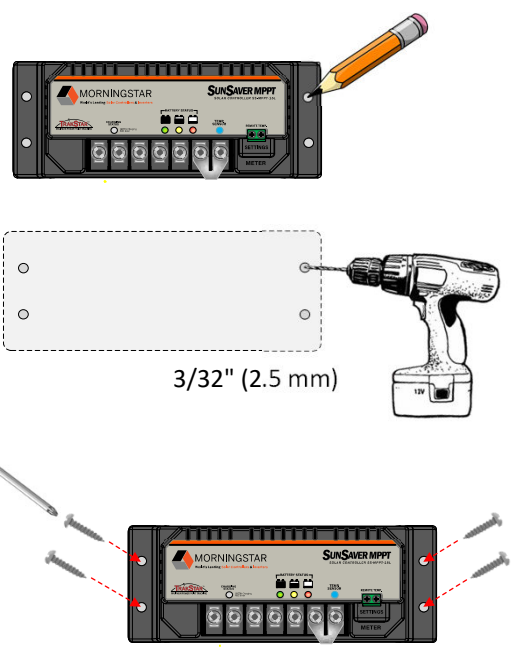
Use a pencil or pen to mark the four (4) mounting hole locations on the mounting surface.

Step 4: Drill Holes

Remove the controller and drill 3/32" (2.5 mm) holes in the marked locations.

Step 5: Secure Controller

Place the controller on the surface and align the mounting holes with the drilled holes in step 4. Secure the controller in place using the Mounting screws (included).



Recommended Order of Installation	Wiring and Torque Requirements					
	Component	Wire Size (Solid)	Wire Size (multistrand)	Wire Size (fine strand)	Torque (Maximum)	Tool Required
1	Load Terminals	#6 AWG	#6 AWG	#8 AWG	10.6 in-lbs. (1.2 Nm)	3/16" (5 mm) Flathead Screwdriver
2	Battery Terminals	16 mm ² (Maximum)	16 mm ² (Maximum)	10 mm ² (Maximum)		
3	Solar Terminals					
4	Remote Temperature Sensor	#22 AWG / 0.3 mm ² (Minimum)		#12 AWG / 3.0 mm ² (Maximum)	3.5 in-lbs. (0.4 Nm)	3/32" (2.5 mm) Flathead Screwdriver
5	Fuses or Disconnects	*Fuse or breaker sizing must be based on required wire ampacity. If using a fuse, do NOT insert the fuse in the fuse-holder until after all the other connections have been completed.				

WARNING: Shock Hazard
 Test between all terminals and ground before touching. Power or accessory terminals are NOT electrically isolated from DC input and may be energized with hazardous solar voltage.

WARNING: Shock Hazard
 Fuses, circuit breakers, and disconnect switches never open grounded system conductors. Only GFDI devices are permitted to disconnect grounded conductors.

IMPORTANT:
 Ensure there is only 1 DC Negative-to-Ground Bond in the entire system.

LEGEND
Negative (-)
Positive (+)
Ground

Power UP Sequence:
 1. Connect Battery/Battery Bank.
 2. Connect Solar.

Power DOWN Sequence:
 1. Disconnect Solar.
 2. Disconnect Battery/Battery Bank.