solaredge S440 PV Power Optimizer Owner's Manual

Contents

solaredge S440 PV Power Optimizer

Product Information

- The S-Series Power Optimizer is designed to optimize power output in photovoltaic systems.
- It features improved connector wire lengths compared to the P-Series Power Optimizer, enhancing installation and weather resistance.
- Connect the Plus (+) output connector of the module to the Plus (+) input connector of the Power Optimizer.
- Connect the Minus (-) output connector of the module to the Minus (-) input connector of the Power Optimizer.
- Repeat the connection steps for each S-Series Power Optimizer in the string.

FAQ

- **Q:** Can I connect multiple S-Series Power Optimizers together?
- **A:** Yes, you can connect multiple S-Series Power Optimizers together in a string following the provided guidelines.
- **Q:** What is the purpose of the improved connector wire lengths in the S-Series Power Optimizer?
- **A:** The longer Plus output connector wire and shorter Minus output connector wire in the S-Series Power Optimizer facilitate a neater installation and protect the connectors from exposure during wet weather.

Application Note-S-Series Power Optimizer Specifications and Connections

Version History

- Version 1.4 June 2022
- Added Comparing the S1200 and P1100 Power Optimizers
- Version 1.3 Oct 2021
- Updated the Maximum short circuit current value for the S440
- Version 1.2 Aug 2021

- Updated to refer to S-Series Power Optimizers
- Version 1.1 Mar 2021
- Version 1.0 Feb 2021 – Initial release

The S-Series Power Optimizer

- This application note describes product differences between the S-Series and P-Series Power Optimizers.
- This note also provides guidelines for connecting the S-Series Power Optimizer to a PV module, and for connecting S-Series Power Optimizers in a string

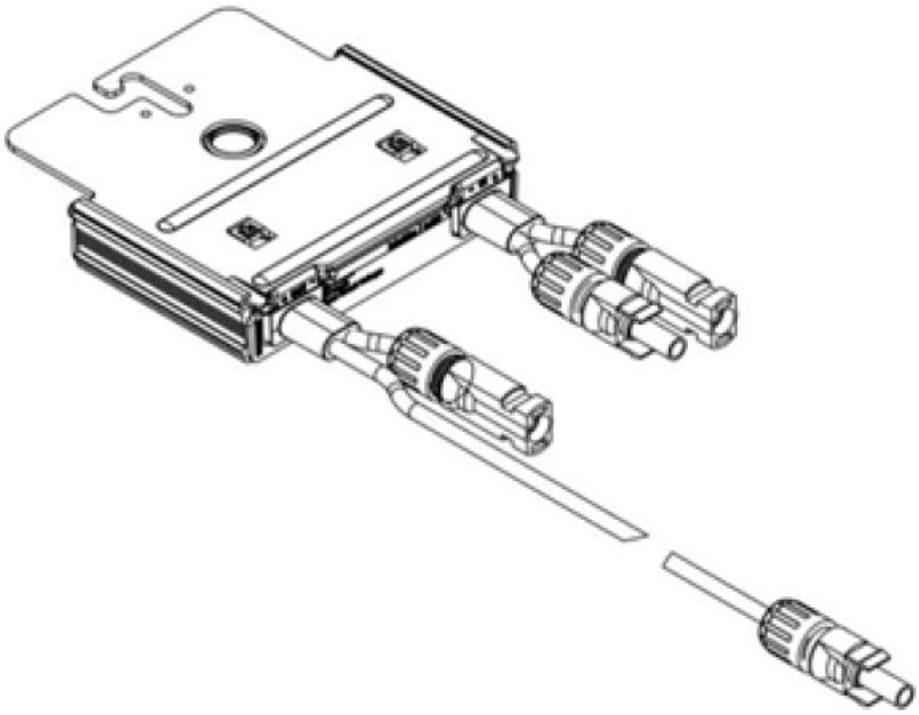


Figure 1: S-Series Power Optimizer

NOTE
S-Series Power Optimizers with Part Numbers that match – SXXX-XXXXX.

Comparing the S440 and P401 Power Optimizers

Specification	S440	P401	Unit
Absolute maximum input voltage (Voc at lowest temperature)	60	60	V
Maximum short circuit current (Isc)	14.5	11.75	A
Input Wire Length	0.1 / 0.32	0.16 / 0.52	m / ft
Output Wire Length	(+)2.3, (-)0.1 / (+)7.54, (-)0.32	1.2 / 3.9	m / ft

Comparing the S1200 and P1100 Power Optimizers

Specification	S1200	P1100	Unit
Absolute maximum input voltage (Voc at l owest temperature)	125	125	V
Maximum short circuit current (Isc)	15.0	14.1	A
Input Wire Length	0.1 / 0.32 or 1.6 / 4.26	0.16 / 0.52	m / ft
Output Wire Length	(+)5.3, (-)0.1 / 17.38, (-)0.32	2.4 / 7.8	m / ft

- Refer to the respective product datasheet for all other specifications.

Comparing the S-Series and P-Series Power Optimizer Connector Wires
One improvement in the S-Series Power Optimizer over the P-Series Power Optimizer is the difference in length between the Plus and Minus output connector wires. The Plus output connector wire in the S-Series Power Optimizer is long, while the Minus output connector wire is short. The arrangement positions the connection between the two wires close to the Power Optimizer. This prevents the connector from dangling on the roof and prevents the connector from being exposed during wet weather.

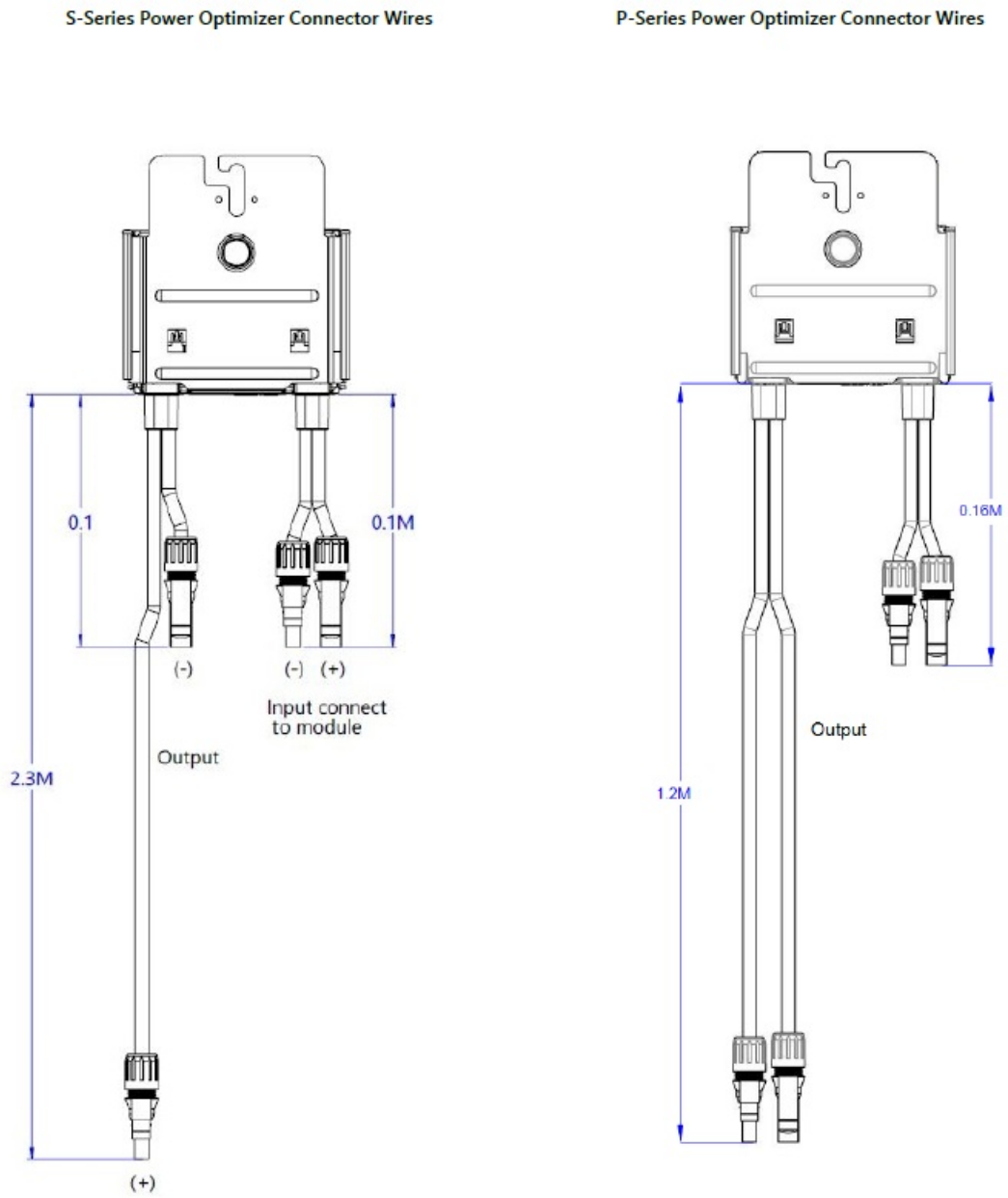


Figure 2: Comparing the S-Series and P-Series Power Optimizer Input and Output Wires and Dimensions.

Connecting

Connecting the S-Series Power Optimizer to a PV Module

Connect S-Series Power Optimizers to a PV module by connecting the PV module output connectors to the Power Optimizer input connectors as indicated in the steps in this section and inFigure 2 S-Series Input and Output Wires and Dimensions schematic drawing.

To connect an S-Series Power Optimizer to a PV module

1. Connect the Plus (+) output connector of the module to the Plus (+) input connector of the Power Optimizer.
2. Connect the Minus (-) output connector of the module to the Minus (-) input connector of the Power Optimizer.
3. Repeat the connection steps for each S-Series Power Optimizer.

Connecting S-Series Power Optimizers in Strings

This section guides you through the process of connecting S-Series Power Optimizers in strings.

To connect S-Series Power Optimizers in Strings

1. Extend the Plus (+) output connector of the first Power Optimizer towards the Minus (-) output connector of the second Power
2. Optimizer and insert the Plus (+) output connector into the Minus (-) output connector to make the connection.
3. Connect the rest of the Power Optimizers in the string in the same manner.

Refer to SolarEdge inverter installation manual for all installation guidelines.

NOTE
Figure 3 illustrates the input wiring connection pattern between S-Series Power Optimizers and a PV module, and output wiring connections between Power Optimizers in a string. Refer to the label on the product to identify the plus and minus input and output connectors.

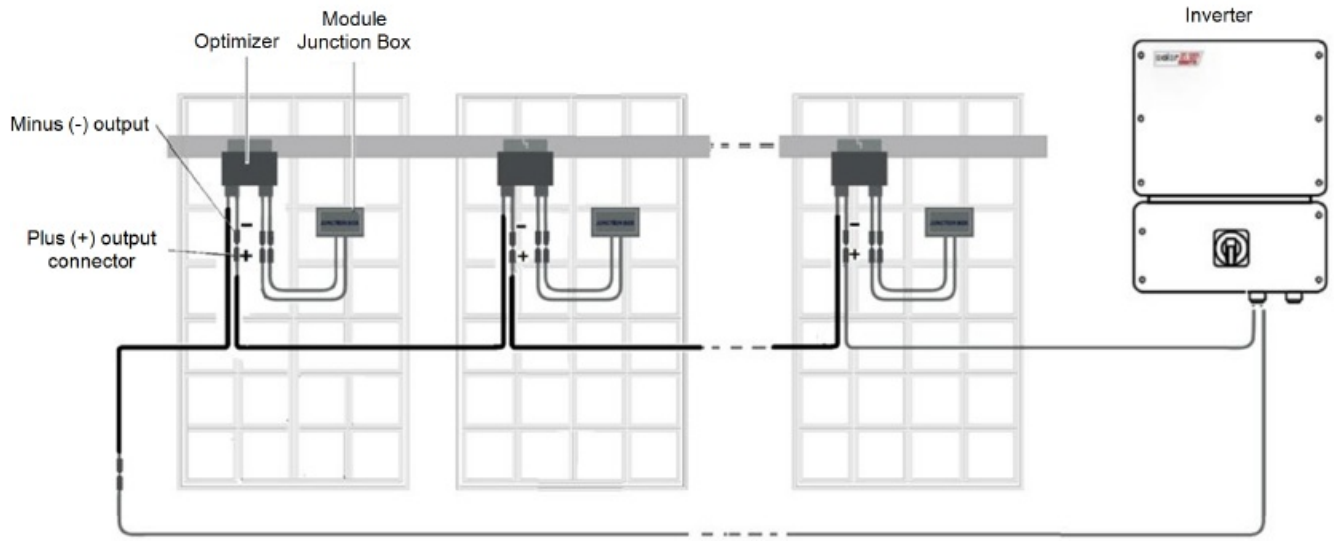
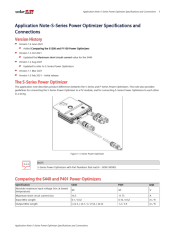


Figure 3: S-Series Input and Output Wire Connection Schematic.

NOTE
The S-Series Power Optimizer can be installed with single and split junction box modules.

Application Note-S-Series Power Optimizer Specifications and Connections

Documents / Resources

	solaredge S440 PV Power Optimizer [pdf] Owner's Manual S440, S440 PV Power Optimizer, PV Power Optimizer, Power Optimizer, Optimizer

References

- User Manual