

Connecting Multiple PV Modules to SolarEdge Power Optimizers

Connecting multiple PV modules to SolarEdge power optimizers (in series or in parallel) is allowed, as long as:

- All modules are of the same type
- The cumulative module power does not exceed the power optimizer rated input DC power
- The maximum input voltage (V_{oc}) at lowest temperature does not exceed the absolute maximum input voltage of the power optimizer (refer to the power optimizer datasheet to determine the absolute maximum input voltage). If connecting multiple modules in series, the cumulative voltage should be used.

**NOTE**

Connection of high voltage PV modules in series to SolarEdge power optimizers may result in a cumulative open circuit voltage that will exceed the maximum input voltage and may potentially damage power optimizers.

- The maximum input current does not exceed the maximum input short circuit current of the power optimizer (refer to the power optimizer datasheet to determine the maximum input short circuit current). If connecting multiple modules in parallel, the cumulative current should be used.

**NOTE**

Connection of PV modules with high short circuit current in parallel to SolarEdge power optimizers may result in a cumulative current that will exceed the maximum input current and may potentially damage power optimizers.

The SolarEdge Site Designer can be used to check the compatibility of the modules with the different power optimizers. The Site Designer can be downloaded at the following link: <http://www.solaredge.com/groups/installer-tools/site-designer>.

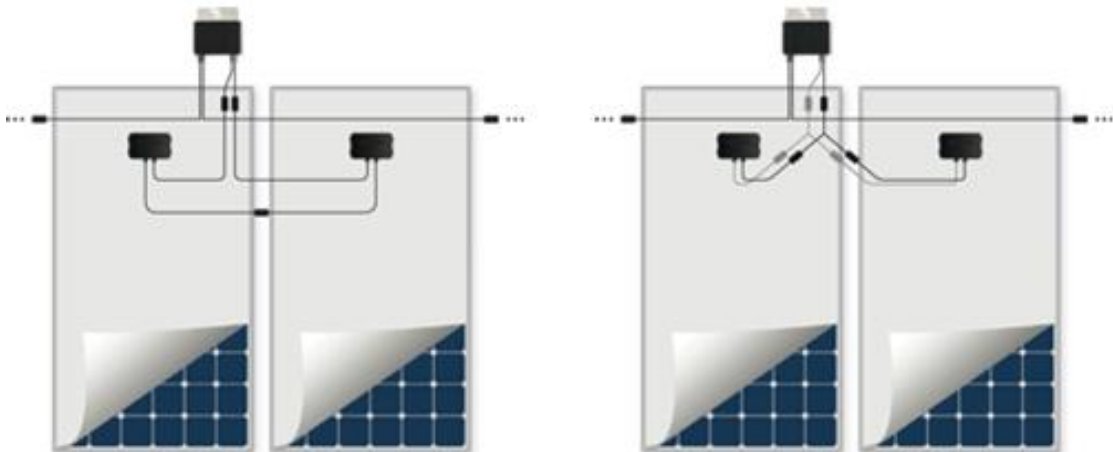


Figure 1: Serial and parallel connection of multiple PV modules to a power optimizer

**NOTE**

Branch cables must be used to connect multiple modules in parallel to the input of the power optimizer. Branch cables may be purchased from SolarEdge; for additional details refer to the branch cable datasheet in the following link: http://www.solaredge.com/files/pdfs/products/power-optimizers/se_branch_cables_datasheet.pdf.

When connecting 2 modules to 1 optimizer (P405,P600,P700,P800s,P800p), make sure the combined Voc or Isc don't exceed the optimizer rating.



Example 1:
Low power crystalline modules



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	✓	✗
	Series	Parallel
P_{MAX}	370W ✓	370W ✓
V_{OC} @ -20°C	68.8V ✓	34.4V ✓
I_{SC}	8.4A ✓	16.8A ✗
V_{OC} @ -20°C	34.4V ✓	34.4V ✓
I_{SC}	8.4A ✓	16.8A ✗



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When connecting 2 modules to 1 optimizer (P405,P600,P700,P800s,P800p), make sure the combined Voc or Isc don't exceed the optimizer rating.



P405 and P800p optimizers are available with dual inputs

Example 2:
Thinfilmm modules

2x

	P_{MAX}	145W
	V_{OC} @ -20°C	121.4V
	I_{SC}	2.2A
	I_{SC}	2.2A

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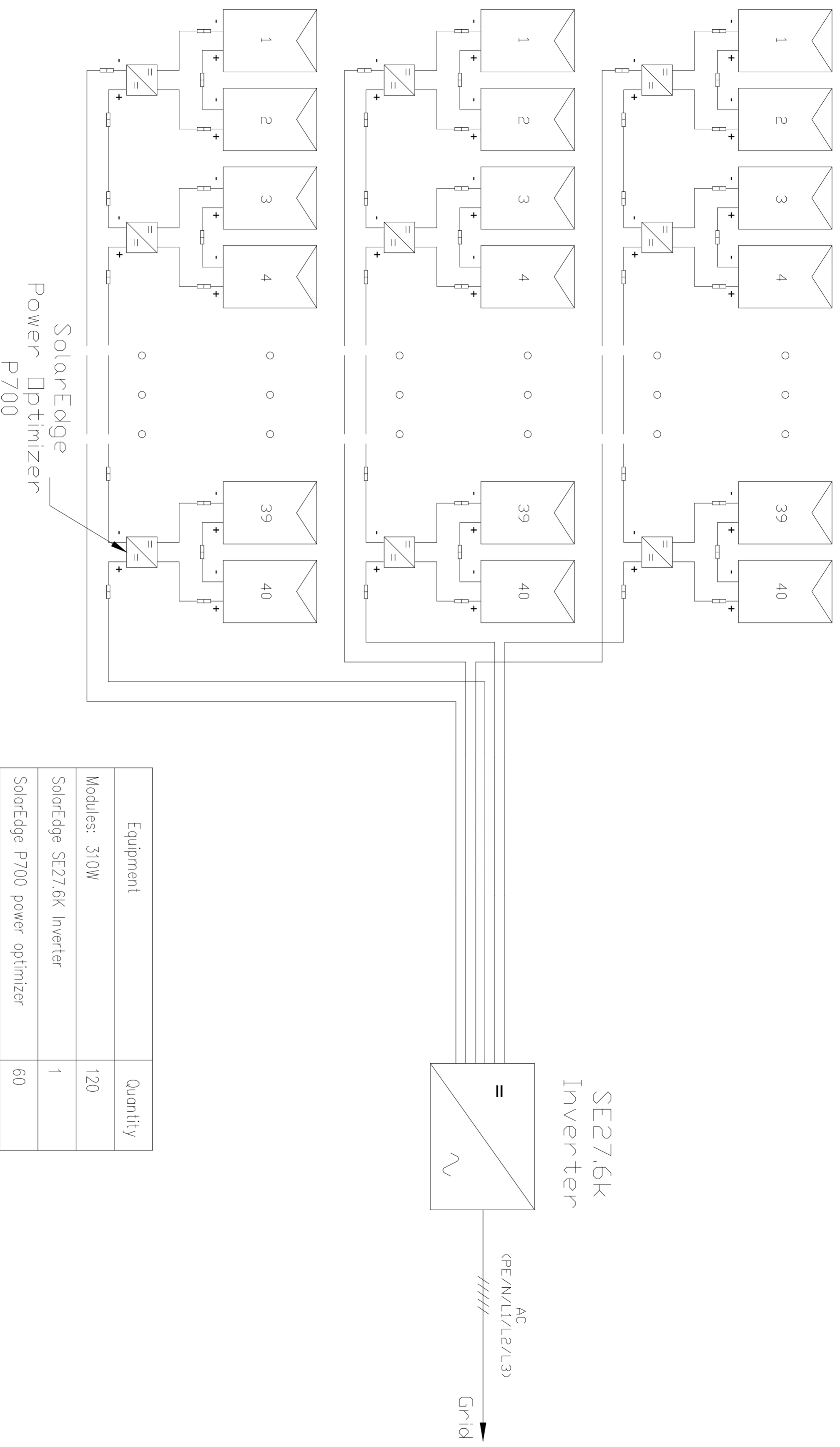
	Series	Parallel
P_{MAX}	290W ✓	290W ✓
V_{OC} @ -20°C	242.8V ✗	121.4V ✓
I_{SC}	2.2A ✓	4.4A ✓
V_{OC} @ -20°C	242.8V ✗	121.4V ✓
I_{SC}	2.2A ✓	4.4A ✓



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Example Only:
Please advise a certified electrical designer



Equipment	Quantity
Modules: 310W	120
SolarEdge SE27.6K Inverter	1
SolarEdge P700 power optimizer	60

WIRING DIAGRAM
SolarEdge inverter and power optimizers



Ha/Harash St. 6
Hod Hasharon, 45240 Israel

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