

Pika PV Link S2501 String Sizing Worksheet



WARNING

Never mix and match panels: each discreet sub-string should be comprised of panels of the same make and model. Substrings controlled by different PV Links may be made of different panels and connected on a single home run.

Use this worksheet to determine the maximum number of a chosen PV module will work on a PV Link controlled substring. Fewer panels can always be used. Fill in panel information first. Then, calculate an adjusted VOC for the panel you are installing in step 1 using the cold factor voltage correction table.

NEC Cold Factor Voltage Correction Notes:

Ambient temperature can have a huge impact on panel efficiency. At low temperatures, VOC can increase by up to 1.25x. If a system is designed without correcting for this cold factor, serious and permanent system damage will occur.

| Min. Temp (°C) | NEC Cold Factor | Min. Temp (°F) |
|----------------|-----------------|----------------|
| 24 to 20 | 1.02 | 76 to 68 |
| 19 to 15 | 1.04 | 67 to 59 |
| 14 to 10 | 1.06 | 58 to 50 |
| 9 to 5 | 1.08 | 49 to 41 |
| 4 to 0 | 1.10 | 40 to 32 |
| -1 to -5 | 1.12 | 22 to 14 |
| -6 to -10 | 1.14 | 22 to 14 |
| -11 to -15 | 1.16 | 13 to 5 |
| -16 to -20 | 1.18 | 4 to -4 |
| -21 to -25 | 1.20 | -5 to -13 |
| -26 to -30 | 1.21 | -14 to -22 |
| -31 to -35 | 1.23 | -23 to -31 |
| -36 and below | 1.25 | -31 and below |

Use the NEC cold-factor voltage correction table to match the record low temperature for the area of installation to the corresponding cold factor. When in doubt, use a larger factor. For the Northeast and New England, a cold factor of 1.25 is standard.

ALWAYS consider NEC cold factor. Only areas that have never been below 77° F (25° C) are exempt from this consideration.

Fill Panel Information:

Panel Make: _____ Panel VOC: _____
 Panel Model: _____ Panel VMP: _____
 Rated Power (W): _____ NEC Cold Factor: _____

1

Adjust VOC: Use an appropriate NEC cold factor to calculate an adjusted VOC for the panel you are installing

| | | | | |
|----------------------|---|----------------------|---|----------------------|
| Panel VOC | x | NEC Cold Factor | = | Adjusted VOC Result |
| <input type="text"/> | | <input type="text"/> | | <input type="text"/> |

2

Limit by VOC: Divide the S2501's VOC by the chosen panel's adjusted VOC to determine the number of panels you can connect in series to PV Link without exceeding the open circuit voltage limit.

| | | | | |
|----------------|---|----------------------|---|----------------------|
| S2501 max. VOC | ÷ | Adjusted VOC | = | VOC Limit Result |
| 420 V | | <input type="text"/> | | <input type="text"/> |

3

Limit by VMP: Divide the S2501's VMP by the chosen panel's VMP and round down to determine the number of panels you can connect in series to PV Link without exceeding the voltage at maximum power.

| | | | | |
|----------------|---|----------------------|---|----------------------|
| S2501 max. VMP | ÷ | Panel VMP | = | VMP Limit Result |
| 360 V | | <input type="text"/> | | <input type="text"/> |

4

Choose the smaller of the two limit results and round down: Choose the smaller of the two numbers from the results of steps 3 and 4. Round the number down to the nearest integer and write it here. This is the maximum number of panels of this type that you can connect to PV Link given the specified cold factor.

| |
|----------------------------|
| Max. Panels per Sub-String |
| <input type="text"/> |