



SMA America, LLC
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To whom it may concern,

RE: Sunny Boy and Sunny Tripower Inverters: Neutral Specifications

This notice is applicable to the following inverter types:

Sunny Boy 9000/10000/11000TL-US

Sunny Boy 3000/3800/4000/5000/6000/7000/7700TL-US

Sunny Boy 3.0/3.8/5.0/6.0/7.0/7.7US

Sunny Tripower 12000/15000/20000/24000/30000-US

Sunny Tripower CORE1/US

Type designation: SB x000TL-US-12

Type designation: SB xx00TL-US-22

Type designation: SB x.x-1SP-US-40/-41

Type designation: STP xx000TL-US-10

Type designation: STP 50-US-40

STP 33/50/62-US-41

Neutral Specifications:

All SMA inverters have a neutral connection point where the installer can interconnect the inverter to the local utility grid.

The transformer-less series of inverters named Sunny Boy TL-US-12, Sunny Boy TL-US-22 and Sunny Tripower 12/15/20/24000TL-US-10 have a neutral connection that is required at installation for **instrumentation, voltage and phase detection only**.

When connecting two ungrounded AC conductors and a single grounded conductor to the Sunny Boy inverter, **the neutral will not carry current as it is only used as a voltage reference point and instrumentation purposes**. The neutral conductor will operate the same as mentioned before when connecting three ungrounded AC conductors and a single grounded conductor to the Sunny Tripower.

The Sunny Boy x.x-1SP-US-40/41 series have the option of not utilizing the neutral terminal when a 120V line to neutral reference is not present. That is, you can forego the neutral when connecting to a 240V or 208V delta grid or a 240V high leg (aka stinger ground). However, when connecting to a 120V / 240V split-phase grid, or a 120V/208V grounded WYE grid, a neutral conductor is required to be connected to the inverter.

Residential String Inverters	120V / 240V Split Phase	120V / 208V Grounded WYE	240V Delta	208V Delta
Sunny Boy TL-US-12	×	×		
Sunny Boy TL-US-22	×	×		
Sunny Boy x.x-1SP-US-40/-41	×	×	×	×

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The Sunny Tripower 12/15/20/24000TL-US-10 series is only compatible with a 277V / 480V grounded WYE grid, a neutral conductor is required to be connected to the inverter.

The Sunny Tripower 30000TL-US-10 series have the option of using the neutral conductor when connecting to the utility. That is, you can forego the neutral when connecting to a 480V delta grid. However, when connecting to a 277V / 480V grounded WYE grid, a neutral conductor is required to be connected to the inverter.

Lastly, although the Sunny Tripower 50-US-40 and STP 33/50/62-US-41 series is only compatible with a 277V / 480V grounded WYE grid, a neutral conductor is not required to be connected to the inverter (as long as the installed grounded jumper is left in the neutral terminal).

Commercial String Inverters	277V / 480V Grounded WYE	480V Delta
Sunny Tripower 12/15/20/24000TL-US-10	×	
Sunny Tripower 30000TL-US-10	×	×
Sunny Tripower 50-US-40	×	
Sunny Tripower 33/50/62-US-41	×	

Neutral conductor selection must be made in accordance with the local standards and the National Electrical Code® ANSI/NFPA 70 or the Canadian Electrical Code® CSA C22.1.