

# Grid Configurations

Overview of the compatibility between common grid configurations and SMA inverters

**SUNNY BOY / SUNNY MINI CENTRAL / SUNNY TRIPOWER /  
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## Contents

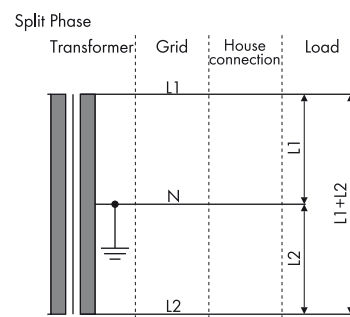
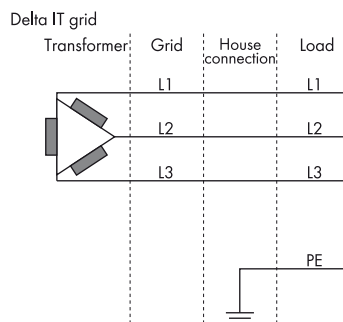
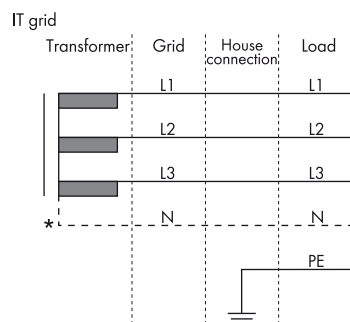
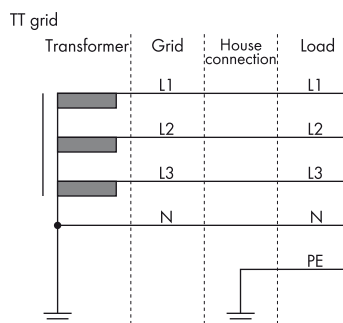
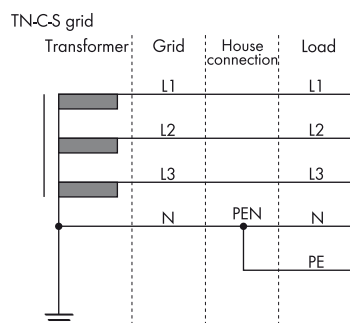
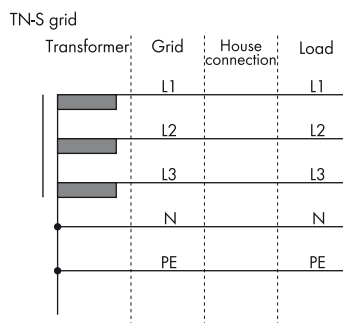
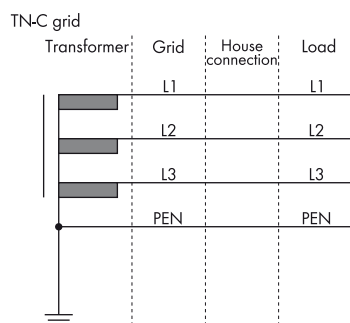
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There are various possibilities, or grid configurations, for the setup of a public electricity grid. The respective grid configurations at the installation site can therefore differ. However, not all inverters can be connected to all grid configurations.

This document gives an overview of the common grid configurations and the compatible SMA inverters.

# 1 Common Grid Configurations

In the following you will find an overview of the most common grid configurations.



\* There are IT electricity grids both with and without a neutral conductor

## 2 Compatibility Table

The following table gives an overview of which SMA inverters are compatible with which grid configurations.

Inverter	IT	Delta IT	TN-C	TN-S	TN-C-S	TT	Split phase
<b>Single-phase, with transformer</b>							
SB 1100	Yes <sup>1</sup>	Yes <sup>1</sup>	Yes	Yes	Yes	Yes	Yes
SB 1200 / WB 1200	Yes <sup>1</sup>	Yes <sup>1</sup>	Yes	Yes	Yes	Yes	Yes
SB 1700 / WB 1700	Yes <sup>1</sup>	Yes <sup>1</sup>	Yes	Yes	Yes	Yes	Yes
SB 2000HF-30	Yes <sup>1,2</sup>	Yes <sup>1,2</sup>	Yes	Yes	Yes	Yes	Yes
SB 2500HF-30	Yes <sup>1,2</sup>	Yes <sup>1,2</sup>	Yes	Yes	Yes	Yes	Yes
SB 3000HF-30	Yes <sup>1,2</sup>	Yes <sup>1,2</sup>	Yes	Yes	Yes	Yes	Yes
SB 2500 / WB 2500	Yes <sup>1</sup>	Yes <sup>1</sup>	Yes	Yes	Yes	Yes	Yes
SB 3000 / WB 3000	Yes <sup>1</sup>	Yes <sup>1</sup>	Yes	Yes	Yes	Yes	Yes
SB 3300-11 / WB 3300-11	Yes <sup>1</sup>	Yes <sup>1</sup>	Yes	Yes	Yes	Yes	Yes
SB 3800-11 / WB 3800-11	Yes <sup>1</sup>	Yes <sup>1</sup>	Yes	Yes	Yes	Yes	Yes
SMC 4600A-11	Yes <sup>1</sup>	Yes <sup>1</sup>	Yes	Yes	Yes	Yes	Yes
SMC 5000A-11 / WB 5000A-11	Yes <sup>1</sup>	Yes <sup>1</sup>	Yes	Yes	Yes	Yes	Yes
SMC 6000A-11 / WB 6000A-11	Yes <sup>1</sup>	Yes <sup>1</sup>	Yes	Yes	Yes	Yes	Yes
SMC 7000HV	Yes <sup>1</sup>	Yes <sup>1</sup>	Yes	Yes	Yes	Yes	Yes
SMC 7000HV-11	Yes <sup>1</sup>	Yes <sup>1</sup>	Yes	Yes	Yes	Yes	Yes
<b>Single-phase, without transformer</b>							
SB 1300TL	Yes <sup>3,4</sup>	Yes <sup>3,4</sup>	Yes	Yes	Yes	Yes, if $U_{N\_PE} < 30\text{ V}$	Yes <sup>3,4</sup>
SB 1600TL	Yes <sup>3,4</sup>	Yes <sup>3,4</sup>	Yes	Yes	Yes	Yes, if $U_{N\_PE} < 30\text{ V}$	Yes <sup>3,4</sup>
SB 2100TL	Yes <sup>3,4</sup>	Yes <sup>3,4</sup>	Yes	Yes	Yes	Yes, if $U_{N\_PE} < 30\text{ V}$	Yes <sup>3,4</sup>

Inverter	IT	Delta IT	TN-C	TN-S	TN-C-S	TT	Split phase
SB 2500TLST-21	Yes <sup>3</sup>	Yes <sup>3</sup>	Yes	Yes	Yes	Yes, if $U_{N\_PE} < 20\text{ V}$	Yes <sup>3</sup>
SB 3000TLST-21	Yes <sup>3</sup>	Yes <sup>3</sup>	Yes	Yes	Yes	Yes, if $U_{N\_PE} < 20\text{ V}$	Yes <sup>3</sup>
SB 3300TL HC	No	No	Yes	Yes	Yes	Yes, if $U_{N\_PE} < 30\text{ V}$	No
SB 3000TL-20	No	No	Yes	Yes	Yes	Yes, if $U_{N\_PE} < 30\text{ V}$	No
SB 3000TL-21 / WB 3000TL-21	Yes <sup>3</sup>	Yes <sup>3</sup>	Yes	Yes	Yes	Yes, if $U_{N\_PE} < 20\text{ V}$	Yes <sup>3</sup>
SB 3600TL-20	No	No	Yes	Yes	Yes	Yes, if $U_{N\_PE} < 30\text{ V}$	No
SB 3600TL-21 / WB 3600TL-21	Yes <sup>3</sup>	Yes <sup>3</sup>	Yes	Yes	Yes	Yes, if $U_{N\_PE} < 20\text{ V}$	Yes <sup>3</sup>
SB 4000TL-20	No	No	Yes	Yes	Yes	Yes, if $U_{N\_PE} < 30\text{ V}$	No
SB 4000TL-21 / WB 4000TL-21	Yes <sup>3</sup>	Yes <sup>3</sup>	Yes	Yes	Yes	Yes, if $U_{N\_PE} < 20\text{ V}$	Yes <sup>3</sup>
SB 5000TL-20	No	No	Yes	Yes	Yes	Yes, if $U_{N\_PE} < 30\text{ V}$	No
SB 5000TL-21 / WB 5000TL-21	Yes <sup>3</sup>	Yes <sup>3</sup>	Yes	Yes	Yes	Yes, if $U_{N\_PE} < 20\text{ V}$	Yes <sup>3</sup>
SMC 6000TL	No	No	Yes	Yes	Yes	Yes, if $U_{N\_PE} < 30\text{ V}$	No
SMC 7000TL	No	No	Yes	Yes	Yes	Yes, if $U_{N\_PE} < 30\text{ V}$	No
SMC 8000TL	No	No	Yes	Yes	Yes	Yes, if $U_{N\_PE} < 30\text{ V}$	No
SMC 9000TL-10	No	No	Yes	Yes	Yes	Yes, if $U_{N\_PE} < 30\text{ V}$	No
SMC 10000TL-10	No	No	Yes	Yes	Yes	Yes, if $U_{N\_PE} < 30\text{ V}$	No
SMC 11000TL-10	No	No	Yes	Yes	Yes	Yes, if $U_{N\_PE} < 30\text{ V}$	No
SMC 9000TLRP-10	No	No	Yes	Yes	Yes	Yes, if $U_{N\_PE} < 30\text{ V}$	No

Inverter	IT	Delta IT	TN-C	TN-S	TN-C-S	TT	Split phase
SMC 10000TLRP-10	No	No	Yes	Yes	Yes	Yes, if $U_{N\_PE} < 30\text{ V}$	No
SMC 11000TLRP-10	No	No	Yes	Yes	Yes	Yes, if $U_{N\_PE} < 30\text{ V}$	No
<b>Three-phase, without transformer</b>							
STP 5000TL-20 / WTP 5000TL-20	No	No	Yes	Yes	Yes	Yes, if $U_{N\_PE} < 20\text{ V}$	No
STP 6000TL-20 / WTP 6000TL-20	No	No	Yes	Yes	Yes	Yes, if $U_{N\_PE} < 20\text{ V}$	No
STP 7000TL-20 / WTP 7000TL-20	No	No	Yes	Yes	Yes	Yes, if $U_{N\_PE} < 20\text{ V}$	No
STP 8000TL-20 / WTP 8000TL-20	No	No	Yes	Yes	Yes	Yes, if $U_{N\_PE} < 20\text{ V}$	No
STP 9000TL-20 / WTP 9000TL-20	No	No	Yes	Yes	Yes	Yes, if $U_{N\_PE} < 20\text{ V}$	No
STP 8000TL-10	No	No	Yes	Yes	Yes	Yes	No
STP 10000TL-10	No	No	Yes	Yes	Yes	Yes	No
STP 12000TL-10	No	No	Yes	Yes	Yes	Yes	No
STP 15000TL-10	No	No	Yes	Yes	Yes	Yes	No
STP 17000TL-10	No	No	Yes	Yes	Yes	Yes	No
STP 15000TLEE-10	No	No	Yes	Yes	Yes	Yes	No
STP 20000TLEE-10	No	No	Yes	Yes	Yes	Yes	No
STP 15000TLHE-10	No	No	Yes	Yes	Yes	Yes	No
STP 20000TLHE-10	No	No	Yes	Yes	Yes	Yes	No

<sup>1</sup> IT electricity grids are often set up in areas with special requirements, for example personnel or supply security. Through the normal operating behaviour of the inverter (e.g. possible power-up and power-down procedures based on irradiation conditions) unwanted effects on other devices (e.g. medical devices) could occur.

<sup>2</sup> These inverters may only be operated in an IT electricity grid with a non-earthed PV array.

<sup>3</sup> When used in these electricity grids, the protective conductor monitoring must be deactivated. In addition, the connection of a second protective conductor is necessary.

<sup>4</sup> Valid from May 16, 2013