EARTH BOND

Changing the Classification of Sunsynk Inverters from Class II to Class I

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Please refrain for future reference

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1. INTRODUCTION

If you are connecting products other than a simple class to the 'LOAD' connection, you must change the 'LOAD' output from Class II to Class I. However, the problem is that the 'LOAD' output would automatically become Class I when the inverter is connected to the grid.

A simple way to solve this problem and change the 'LOAD' output from Class II to Class I is to add a bond between an inverter's neutral and earth outputs. The Line and Neutral outputs have the same potential in the islanding mode, but their potential in the grid-connected mode is different. Therefore, the Line pin would be a reference to live the new chubby reference to the Neutral.

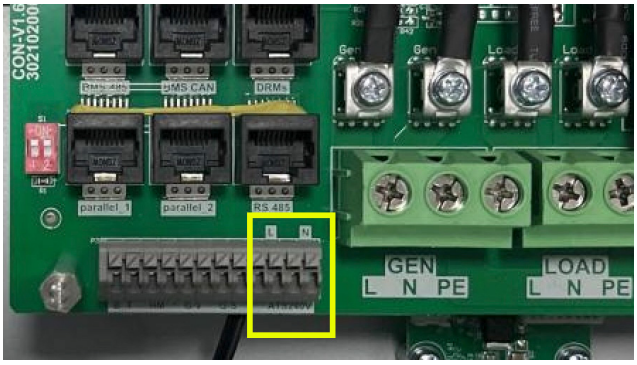
We need to add a temporary bond to systems that work both on-grid and off-grid, which is accomplished by adding a relay. For Sunsynk inverters, there are basically two ways to do this:

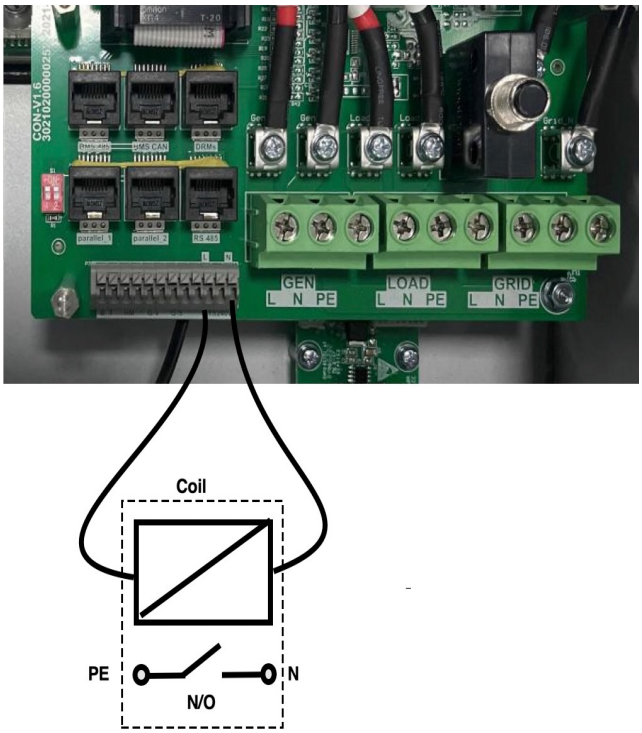
1. Certain Inverters have an output that can be connected directly to a contactor.
2. Other inverters have dry contacts, and in this case you need to establish whether the invert is a dry contact or a hot contact type.

2. INVERTERS WITH HOT CONTACTS

A circuit board of a Sunsynk 5.5 kW hybrid inverter is presented in the left figure. You can clearly see the L and N correspondent to the line and neutral pins.

For this inverter, which has hot contacts, you simply need to add a contactor between the line and neutral pins, as presented in the figure on the right.

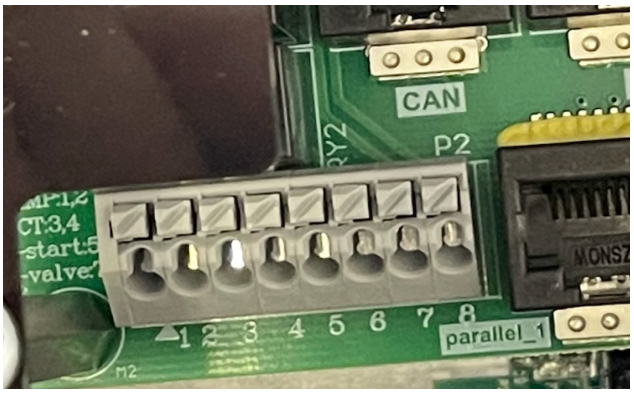


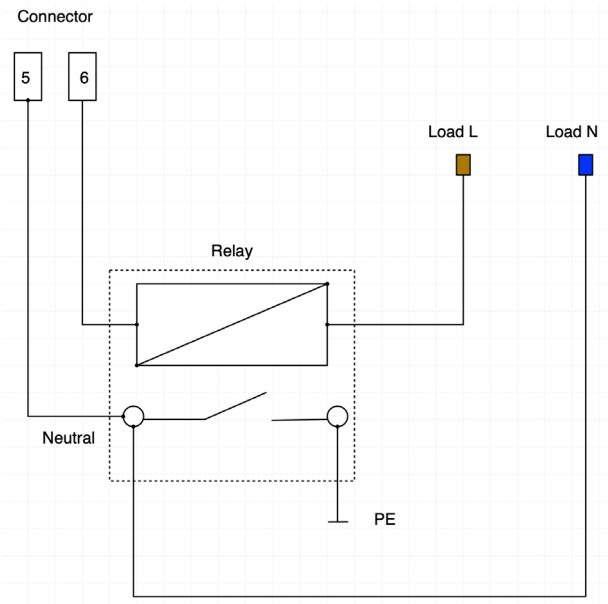


3. INVERTERS WITH DRY CONTACTS

For inverters that have dry contacts, the Gen start and the Earth bond relay are both connected to pins 5 and 6. A picture of an inverter with dry contacts is presented in the left figure.

Therefore, for these types of inverters, it is necessary to supply power to operate the contactor. Check the diagram of the figure on the right to have a better understanding of how to provide the power to the contactor.



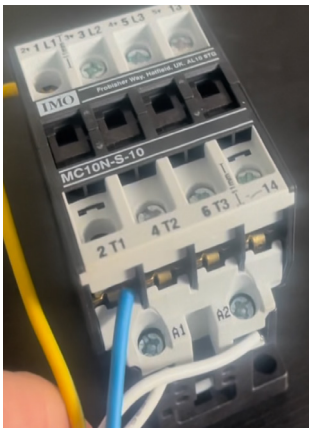


4. CONTACTOR/RELAY SIZING

It is important that you connect a contactor that matches the current and voltage of the inverter. Please check the table below to choose a compatible relay.

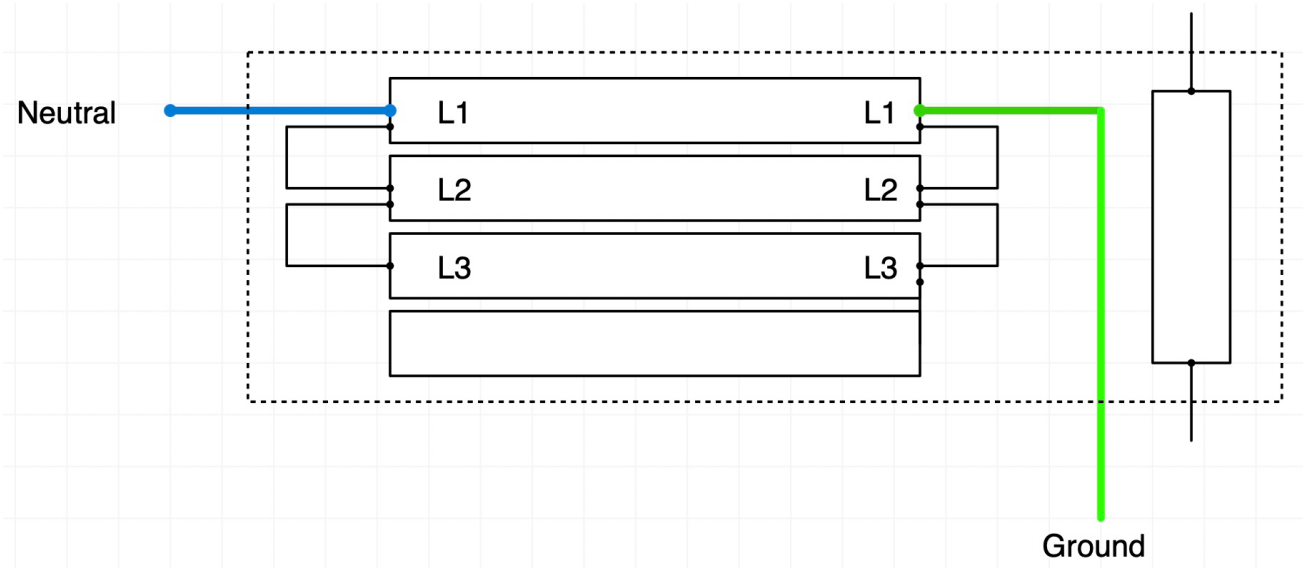
Inverter Size	Max Current	Contactor Size
3.6kW	16 Amp	20A
5.5kW	22 Amp	32A
8.8kW	36 Amp	45A
12kW	50 Amp	80A

The figures below present a 240Va.c coil.



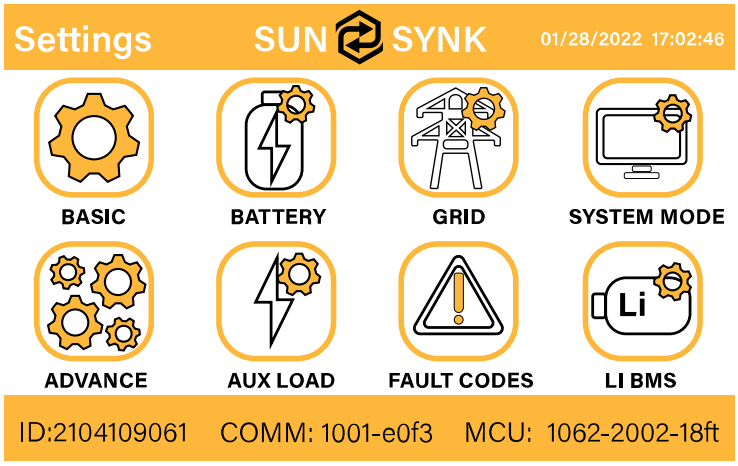
5. PARALLELING

As most contactors are three-phase, you can parallel the phases to create a larger contactor.



6. SOFTWARE VERSION

Another important point is ensuring that you have the most recent version of the inverter's software.



For more information, training videos, software upgrades, a helpline, forum, please refer to:

http://www.sunsynk.com - Tech Support (Do not forget to register first on the website).

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