CPS 3Phs String Inverter Compatible AC Connections


ALL INVERTERS:
1. The winding configuration on the INVERTER side of the transformer must be WYE for ALL CPS 3-Phase String Inverters.
2. The array must be floating (not grounded).
3. If the neutral on the Utility Side is grounded, the core structure must be 4 or 5 limbs to detect an open phase condition on the Inverter Side of the Transformer. Special detection configurations are required to implement Inverter shut-down on loss of utility phase if the core is a 3-limb construction.
4. The function of the neutral connection is to provide a point of reference for measurement purposes that is essentially at ground potential. The neutral conductor is for control or measurement purposes only (when required – see specific inverter requirements below). No power will flow through the neutral conductor, and as such may be sized according to NEC 2017 Article 705.95(B). The ground conductor (PE) is sized to article 250.122 (Table 250.122).

(14kW), (23kW), and (28kW) INVERTERS
These inverters are designed to be installed as 4-wire systems. As required by their UL 1741 listing, a neutral conductor from the utility-interconnect must be terminated at the Neutral terminal within the AC wiring box to ensure that the AC voltage sensing circuit can perform an individual phase voltage (line-to-neutral) measurement.

(20kW), (36kW), (50kW) and (60kW) INVERTERS
These inverters are designed to be installed as either 3-wire or 4-wire systems. Termination or connection of the neutral conductor from the utility interconnect is optional.
Common 3-Phase Transformer Wye Primary Winding Configuration

<table>
<thead>
<tr>
<th>Transformer Winding Configuration</th>
<th>Wye (Inverter) / DELTA (Utility)</th>
<th>Wye (Inverter) / WYE (Utility)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Inverter Models</strong></td>
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<tr>
<td>SCA14KTL-DO/US-208</td>
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<td>SCA23KTL-DO/US-480</td>
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<td>SCA28KTL-DO/US-480</td>
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</tbody>
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**Inverter Models**

SCA20KTL-DO/US-480
SCA36KTL-DO/US
SCA50KTL-DO/US-480
SCA60KTL-DO/US-480

**Inverter Models**

SCA12KTL-DO/US
SCA20KTL-DO/US
SCA30KTL-DO/US
SCA40KTL-DO/US
SCA50KTL-DO/US
SCA60KTL-DO/US

**NOTES:**

1. If the neutral on the Utility Side is grounded, the core structure must be 4 or 5 limbs to detect an open phase condition on the Inverter Side of the Transformer. Special detection configurations are required to implement Inverter shut-down on loss of utility phase if the core is a 3-limb construction.
   The Neutral on the Utility Side (H0) and Inverter Side (X0) may be connected internally and brought out as one terminal in the LV compartment and labeled (H0X0).
2. Transformer short-circuit impedance (Z%) should be less than 6%.
3. The transformer VA rating should be 105% of the sum of the connected inverter ratings.
4. The transformer does not require a static shield.
5. The maximum number of inverters connected to a single transformer is 70.
6. The recommended maximum voltage-drop on the Inverter to Point of Common Coupling (to the grid) is 2% at full load – including conductor temperature considerations.