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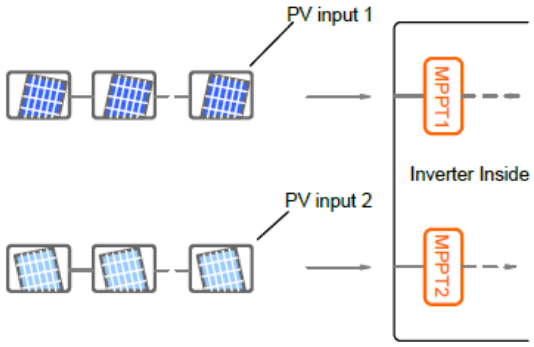
service@sungrowpower.com.au | www.sungrowpower.com.au

# Parallel connection of PV strings
## (Dual MPPT inverters)

Sungrow grid-connected solar inverters SG3KTL-D, SG5KTL-D, SG3K-D and SG5K-D and hybrid inverter SH5K+ and SH5K-20 are equipped with two MPP trackers. The inverters can automatically determine independent or parallel input modes, refer to the figure below for independent and parallel connections.

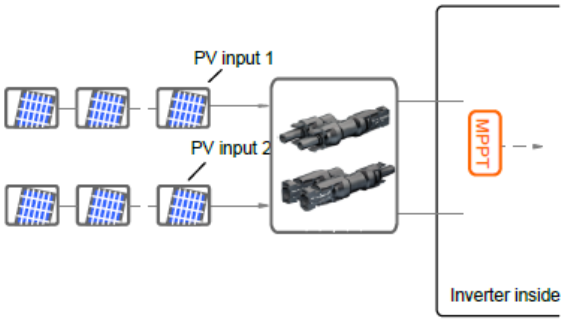
- Independent Mode

The two PV inputs work independently, each with its own MPPT. The two PV inputs can be different from each other in PV module types, numbers of PV panels in PV string, tilt angles and orientation angle of PV modules.




- Parallel Mode

All PV strings should have the same type, the same number of PV panels, identical tilt and identical orientation.




The independent mode is a recommended way of dual MPPT inverters. No special requirements as long as the voltage and current are in the range of the inverter's specification for each individual PV string.

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**In the case that two PV strings are paralleled on the rooftop and then split at the DC isolator or split at the inverter side with T shape PV connectors.** The number of PV panels shall be the same in each string, and all the panels shall have the same type, identical tilt and identical orientation. Any shade or mismatch on any panel in one string will affect the performance of solar system.

Therefore, the requirements for the parallel connection of PV strings for installers:

**Grid-connected inverters:**

Make sure the open circuit voltage is lower than 560 V, short circuit current is less than 24A. The strings can be parallel and the inverter will work properly.

**Hybrid inverters:**

No special requirements as long as the voltage (560V) and current (24A) are in the range of the inverter's specification. The copper bar (included in the delivery package) shall be installed inside the inverter in parallel connection.