CX series-FAQ

Guidance to enable Parallel and Partial-Parallel Mode

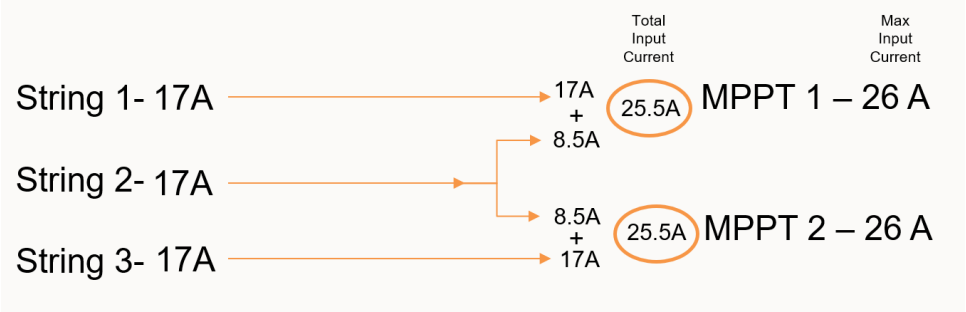
Applicable to: SGxxCX series

In order to help customers to realize Multi-MPPT operating as a single MPPT for CX inverter series, one should follow the instructions given as below and understand the differences between independent, parallel and partial parallel mode.

Independent mode is the default set-up in which the inverter operates, meaning each MPPT has as input full strings.

Parallel mode is usually used when all PV strings are located and oriented equally, have the same length and provide equal power output in the same period of time, in these cases all strings can share a single MPPT by combining in parallel mode all the MPPTs from the inverter, this will help to minimize the energy consumption from all booster circuits from each MPPT. By using MPPT in parallel mode, when it is applicable, inverter energy consumption can be reduced.

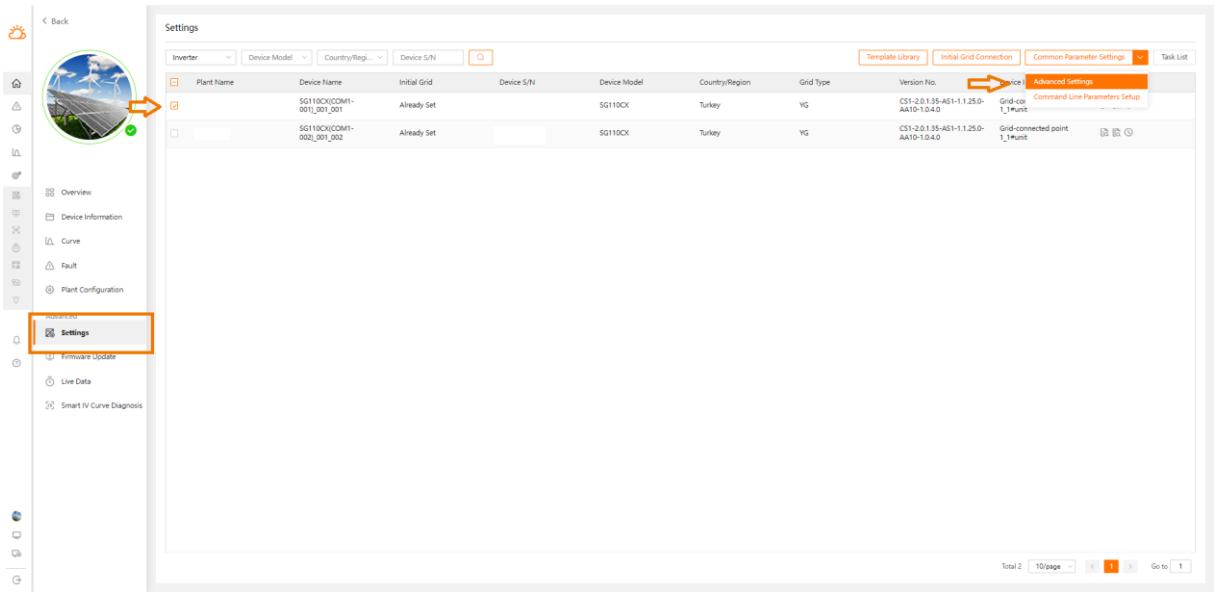
Partial parallel mode can be enabled for high current PV modules. In these cases, e.g., three high current strings will be connected to two MPPT. (instead of connecting four strings)
Therefore one of the three strings will be connected with Y terminals and the amperage will be equally distributed between the two MPPT. Please refer to the diagram below as an example of how strings in a SG110CX inverter should be connected in partial parallel mode:

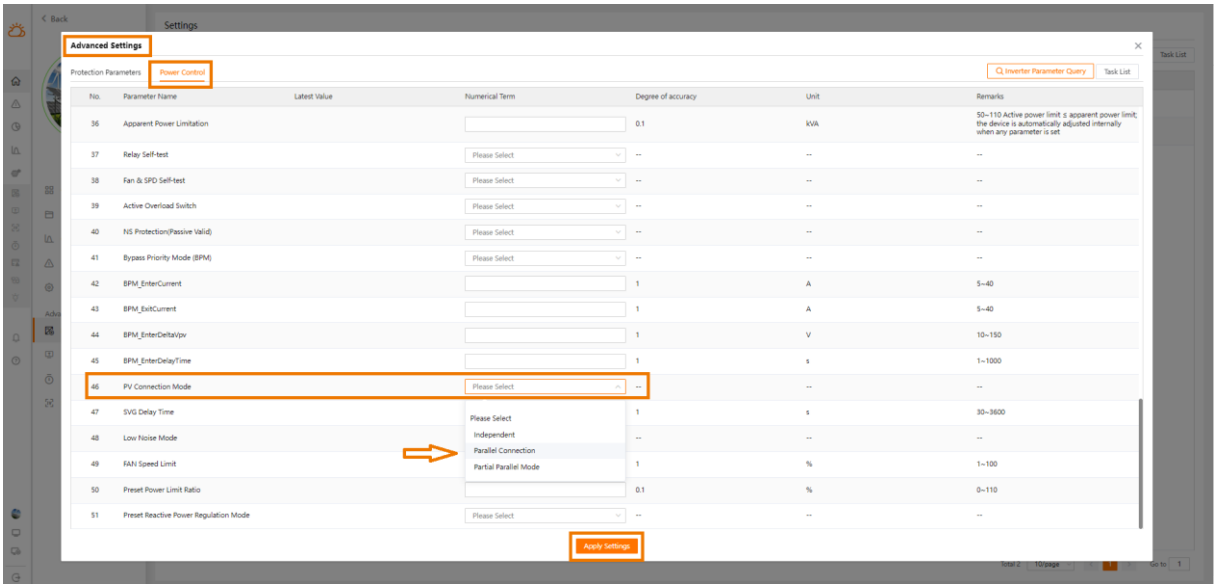


Preparations for parallel mode:

1. Update firmware of CX inverter to latest version on iSolarCloud app or website.
2. All MPPT entries must be fully connected.
3. All inputs of CX inverter must be connected from PV strings, located and oriented equally, having the same length and providing equal power output in the same period of time as possible as it could, to ensure parallel input.
4. All DC switches of the inverter must be closed first.
5. The length and diameter of each input cable from the PV strings to the inverter should be the same as possible as it could, so as to ensure the impedance of each input cable is the same, otherwise uneven flow current may be caused during operation.
6. Need to set the input mode of the inverter in iSolarCloud to parallel mode.

Steps to choose parallel mode from iSolarCloud web interface:



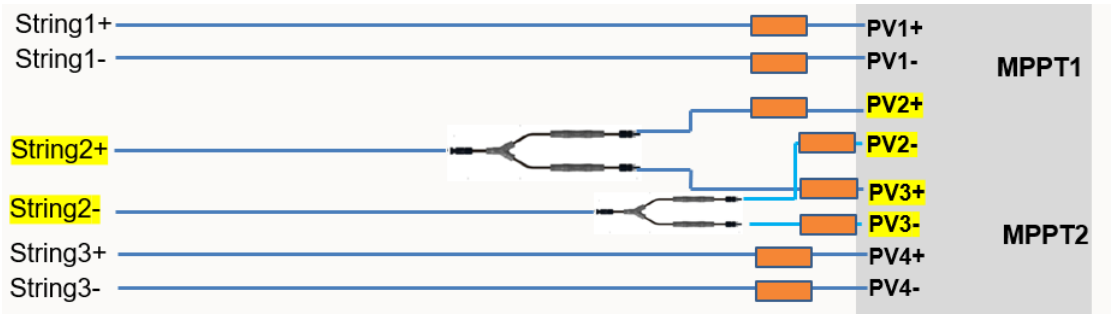


Preparations for partial parallel mode:

1. Update firmware of CX inverter to latest version on iSolarCloud app or website.
2. Connect pairs of MPPT in parallel, with the use of Y terminals. The MPPT should be paired as shown in the table below. (All inputs must be fulfilled, and the last MPPT should be left independent)

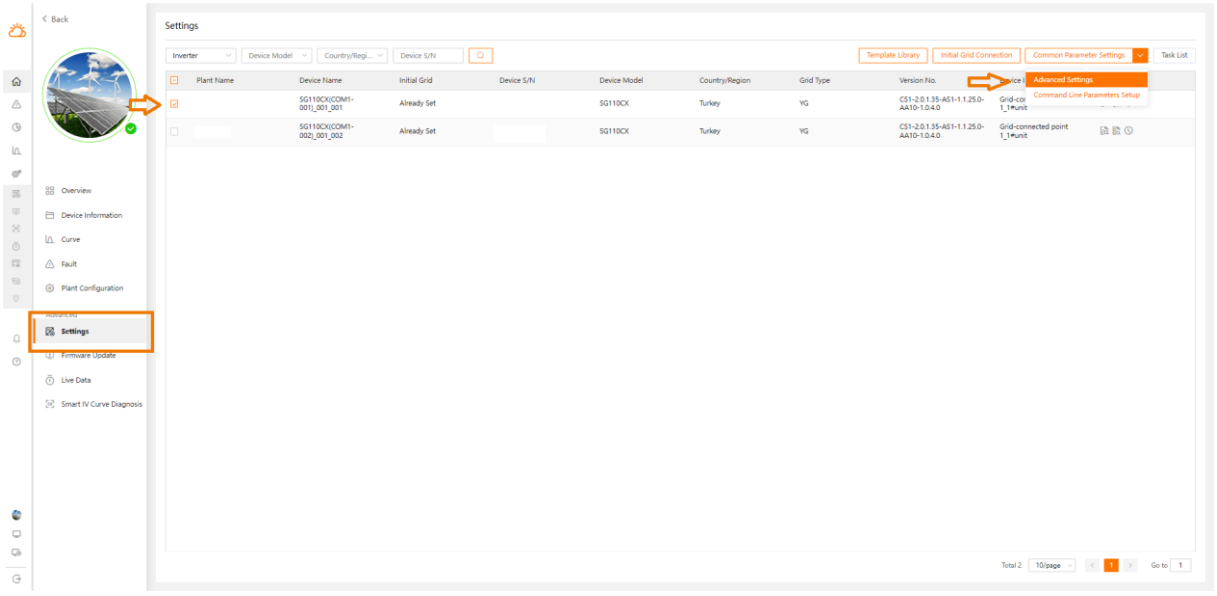
SG33CX	SG50CX	SG110CX
MPPT1&MPPT2	MPPT1&MPPT2	MPPT1&MPPT2
MPPT3	MPPT3&MPPT4	MPPT3&MPPT4
	MPPT5	MPPT5&MPPT6
		MPPT7&MPPT8
		MPPT9

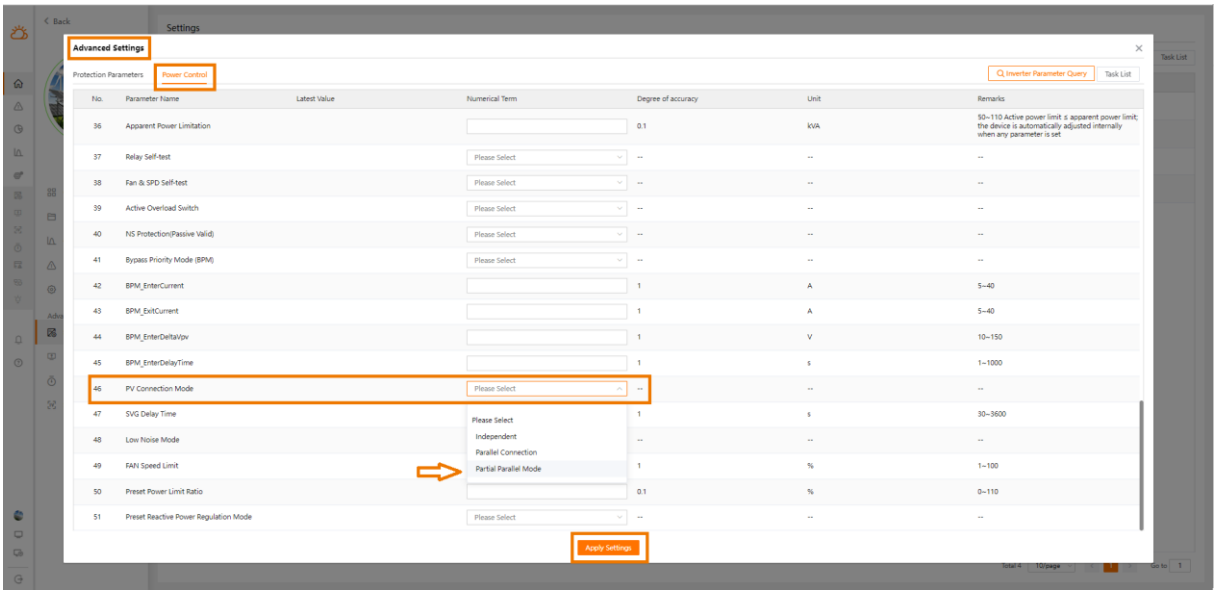
3. Please follow the schematic example below to connect the strings with the use of Y terminals, to each MPPT input (each pair of MPPT will share one string between each other):



4. Paired MPPT inputs of CX inverter must be connected from PV strings,
5. located and oriented equally, having the same length and providing equal power output in the same period of time as possible as it could, to ensure parallel input.
6. All DC switches of the inverter must be closed first. Fuse-size, should be about 1.5 times of Isc.
7. The length and diameter of each input cable from the PV strings to the inverter should be the same, so as to ensure the impedance of each input cable is the same, otherwise uneven flow current may be caused during operation.
8. Need to set the input mode of the inverter in iSolarCloud to partial parallel mode.

Steps to choose partial parallel mode from iSolarCloud web interface:





For further information, please download the user manual for:
SG30/50CX
SG110CX

Sungrow Deutschland GmbH | Balanstr. 59 | 81541 München | www.sungrowpower.com

This manual is intended for professional technicians who are responsible for installation, operation, maintenance and troubleshooting of inverters, and users who need to check inverter parameters. The inverter must only be installed by professional technicians.

The professional technician is required to meet the following requirements:

- Know electronic, electrical wiring and mechanical expertise, and be familiar with electrical and mechanical schematics.
- Have received professional training related to the installation, commissioning and troubleshooting of electrical equipment.
- Be able to quickly respond to hazards or emergencies that occur during installation, commissioning and troubleshooting.
- Be familiar with local standards and relevant safety regulations of electrical systems.
- Read this manual thoroughly and understand the safety instructions related to operations.

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