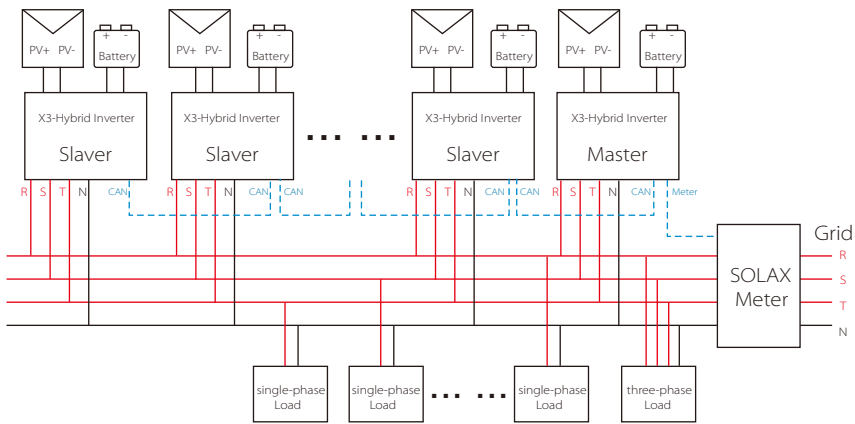


On-Grid parallel connection function

X3-Hybrid Series Inverter provides the parallel connection function which should make ten inverters maximumly connected in one system when the grid is on. In this system, one inverter will be set as the "Master inverter" which will control every other inverter's energy management and dispatch control. Only one meter needs to be connected in this system and communicate with the "Master inverter", and all other slaver inverter communicate with "Master inverter" by CAN communication-parallel connection.

 Please note the parallel connection function can only be used when the grid is on. The off-grid parallel connection function is being developed.

System Diagram




Work Modes in parallel system

There are three work modes in parallel system, and your acknowledge of different inverter's work modes will help you understand parallel system better, therefore please read it carefully before operating.

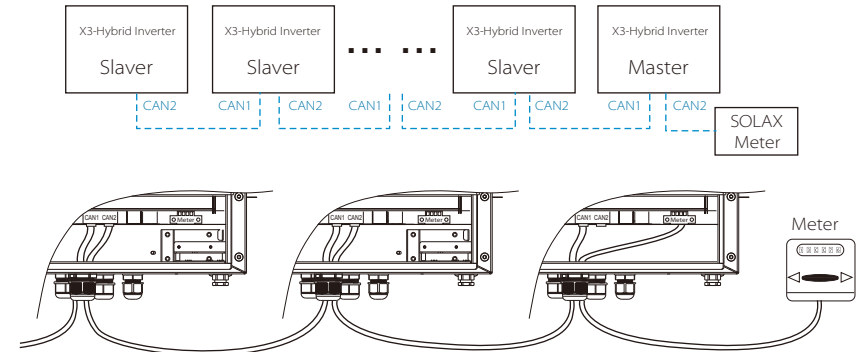
Free mode	Only if no one inverter is set as a "Master", all inverters are in free mode in the system.
Master mode	When one inverter is set as a "Master", this inverter enters master mode. Master mode can be changed to free mode or slaver mode by LCD setting.
Slaver mode	Once one inverter is set as a "Master", all other inverters will enter slaver mode automatically. Slaver mode can not be changed from other modes by LCD setting.

Wiring Operation and LCD Setting

 Note: Before operation, please ensure that all the inverters' software version must be the same, otherwise this function can not be use.

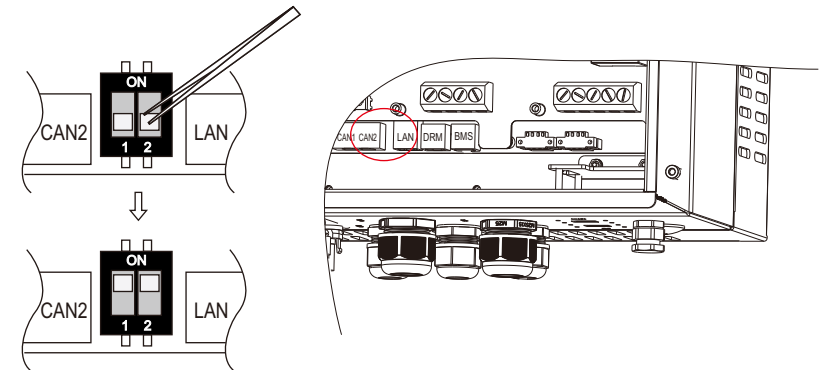
Step1: Connect all inverters' communication together by connecting network cables between CAN ports.

- Use standard CAT7 network cables for CAN-CAN connection and CAT5 cable for CAN-Meter connection.
- Insert one side of CAT7 cable into the first inverter's CAN port and the other side into the next inverter's CAN port.
- Insert one side of CAT5 cable into the COM port of meter, and the other side into the CAN 1 port of the first inverter or the CAN 2 port of the last inverter.
- (Note: PV and battery should both be connected to the inverter with meter cable plugged.)



Step2: Set the DIP switch (No need to set all inverter's DIP switch) .

- Find the inverter with meter cable plugged.
- Remove the top-down cover from this inveter, and find the DIP switch between CAN2 port and LAN port on the control board.
- Push the white DIP switch to "ON" position (from down to up) by a suitable tweezers.



Step3: Find the inverter connected with the meter ,then enter setting page of the inverter LCD display, then click parallel setting, and choose "Master".


Setting
Battery
Parallel Setting
Reset

Parallel Setting	
Status	Free
>setting	Master

How to exit from parallel system

If one inverter wants to exit from this parallel system, please do the steps as below:

- step1: Disconnect all the network cables on the CAN port.
- step2: Enter setting page and click parallel setting, and choose "Free".

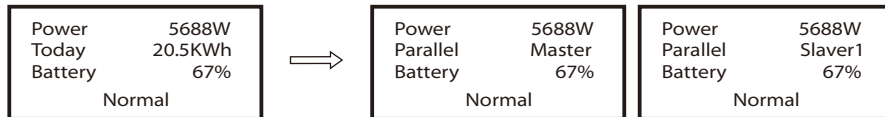
 Note:

- If a slaver inverter is set to "Free" mode but not disconnect the network cable, this inverter will return to "Slaver" mode automatically.
- If a slaver inverter is disconnected with other inverter but not be set to "Free" mode, this inverter will stop working and maintain "waiting" status.

LCD display

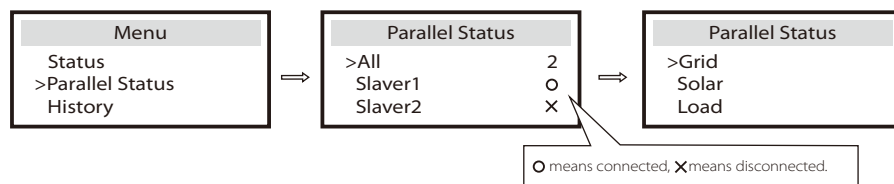
Main display:

Once inverter enters parallel system, the "today yield" will be replaced by " Inverter Class", and parallel relevant fault has a higher priority than other faults and will be showed firstly on main display.



Status display:

User can obtain all the status data from master inverter. System power and individual slaver inverter power can be obtain in status display of master inverter.



Parallel Control Function

Master inverter has an absolute lead in the parallel system to control all slaver inverter's energy management and dispatch control. Once master inverter has some error and stop working, all slaver inverter will be stoped simultaneously. But master inverter is independent of all slaver inverters to work and will not be affected by slaver inverter's fault.

Overall system will be running according to master inveter's setting parameters, and most setting parameters of slaver inverter will be kept but not be excuted. Once slaver inverter exit from system and be running as an independent unit, its all setting will be re-excuted.

The rest of this section covers several important parallel control functions, and the next page table shows which LCD options are controlled by master inverter and which can work independently.

Off mode setting:

Off mode can only be set by master inverter (long press ESC button on LCD) .

Safety setting:

System safety protection is excuted by master inverter's safety. Slaver inverter protection mechanism will only be triggered by master inverter's instructions.

Self-use setting:

If system is running as self-use mode, please note the FeedinPowerLimit set of master inverter is for the overall system and the corresponding set of slaver inverter is invalid.

Force on time setting:

If system is running as force on time mode, please note all sets about force on time are all for the overall system and the corresponding sets of slaver inverter are invalid.

Power Factor setting:

All sets about power factor are all for the overall system and the corresponding sets of slaver inverter are invalid.

Remote control setting:

The remote demand instructions received by master inverter will be interpreted as the demand instructions to overall system.

The option with ★ means it is controlled by master inverter in this parallel system.
 The option without ★ means it will be displayed or excuted independently in this parallel system.

