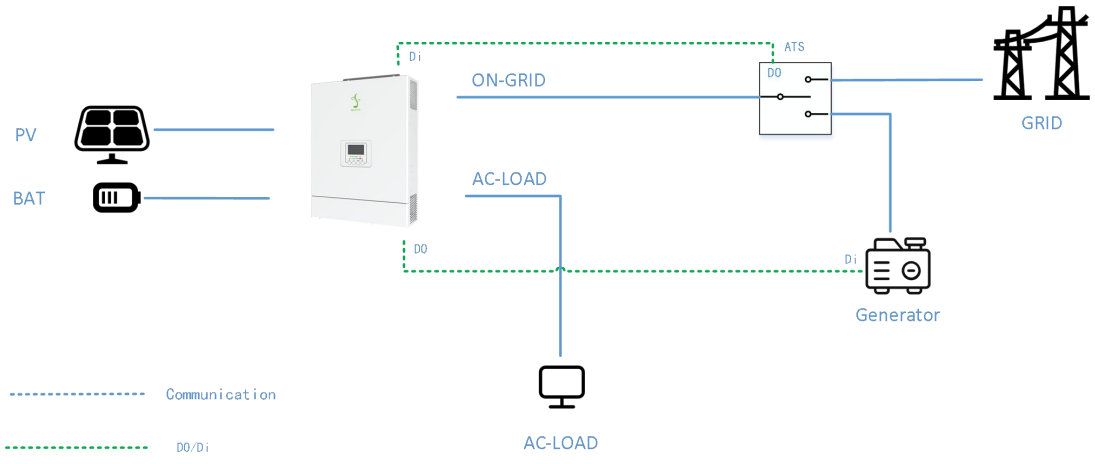
Isuna6000SO Generator Control Instruction Manual

This user manual aims to help you understand and correctly utilize this function. Please read this manual carefully before use and operate according to the instructions.

1. Product Overview

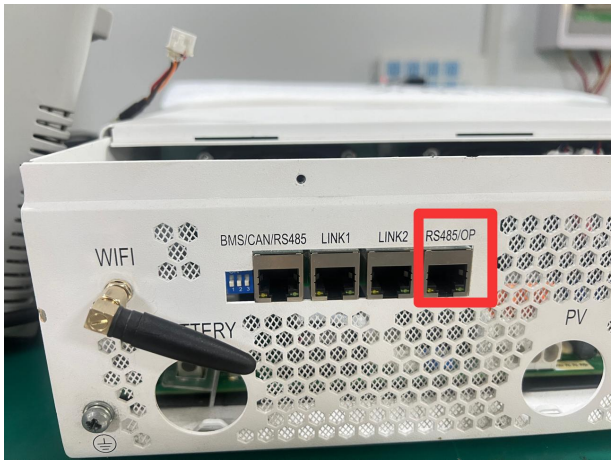
This generator adaptation solution is designed to meet the demand in regions such as South Africa where unstable grids require approximately 10% or more of residential energy storage users to be equipped with generators. Users can select the appropriate mode and configuration based on actual needs.



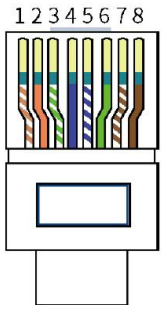
2. Installation Guide

2.1 Inverter DO Communication

(1) The DO is located at the inverter's RS485/OP network port.



(2) The network port pinout is as follows:



Note: The inverter has two DO ports for controlling the generator, named SG and EVU. The control states of these two ports are opposite. Users must select one group to connect to the generator control port based on their generator's control method.

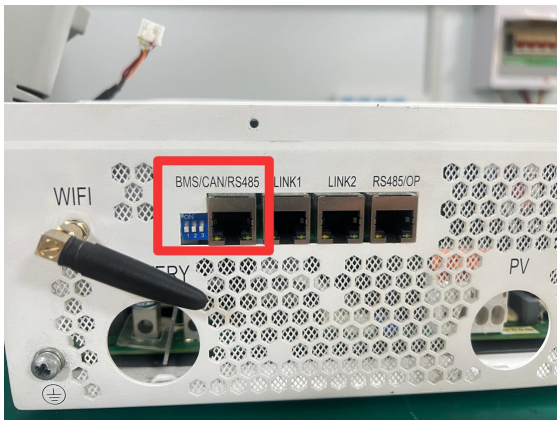
The generator control DO port SG corresponds to PIN3 and PIN4 (Green-White and Dark Blue) as shown in the diagram. When the inverter needs to control the generator to start, the relay connected to SG closes, and PIN3 and PIN4 become conductive. When the inverter needs to control the generator to stop, the relay connected to SG opens, and PIN3 and PIN4 become non-conductive.

The logic of the generator control DO port EVU is exactly opposite to SG. Its control pins are PIN1 and PIN2 (Brown-White and Brown) as shown in the diagram. When the inverter needs to control the generator to start, the EVU relay opens, and PIN1 and PIN2 become non-conductive. When the inverter needs to control the generator to stop, the relay connected to EVU closes, and PIN1 and PIN2 become conductive.

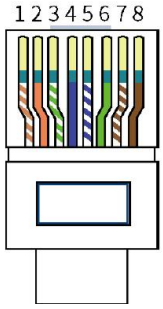
Note: Ensure the DO is set to "Generator" to guarantee this control port operates the generator with the correct start/stop logic. If the DO is set to "Heat Pump" or "Disabled", it may cause the generator's switch state to be incorrect.

2.2 Inverter DI Communication

(1)The DI is located at the inverter's BMS/CAN/RS485 network port.



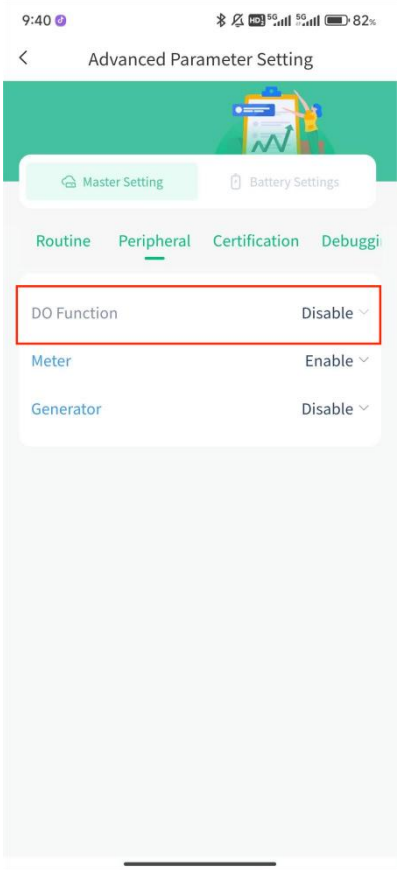
(2) Network cable wiring is as follows:

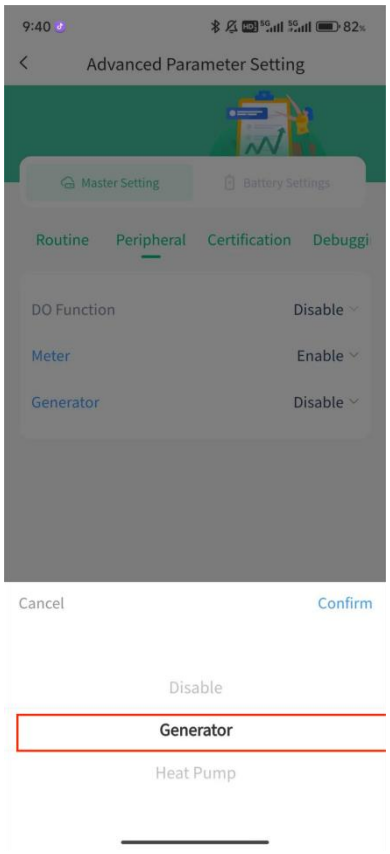


The DI signal corresponds to the PIN1 and PIN6 (Blue and Green) of the network port cable shown in the diagram. PIN1 is the ATS signal sampling port, PIN6 is GND.

3. APP Settings and Operation Modes

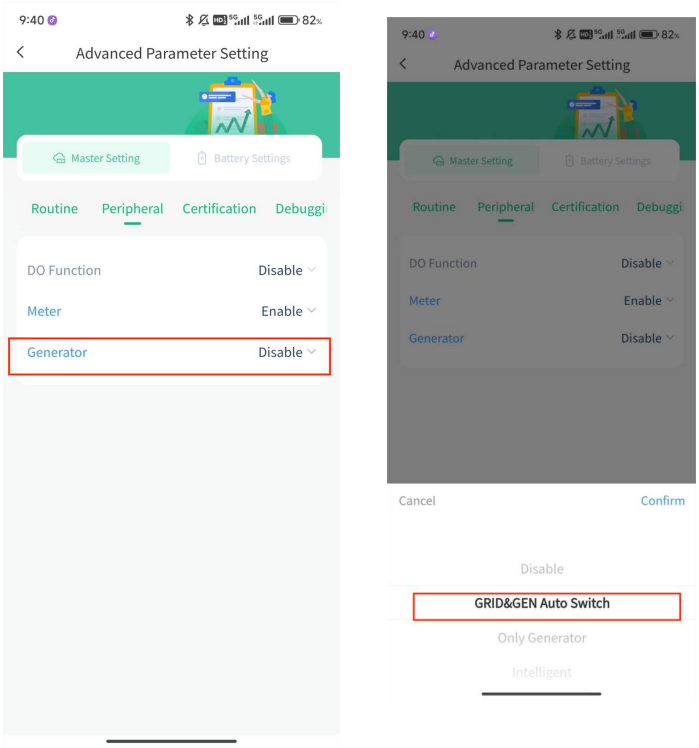
Enabling the Function: To enable the generator function, the DO function value must be set to "Generator". The generator control execution logic differs under various modes. Please read the details below.





Note: When the battery type is set to Lead-Acid and the Lead-Acid battery NTC sampling function is enabled, the generator function only takes effect when set to "Generator Only".

3.1. Auto Switchover

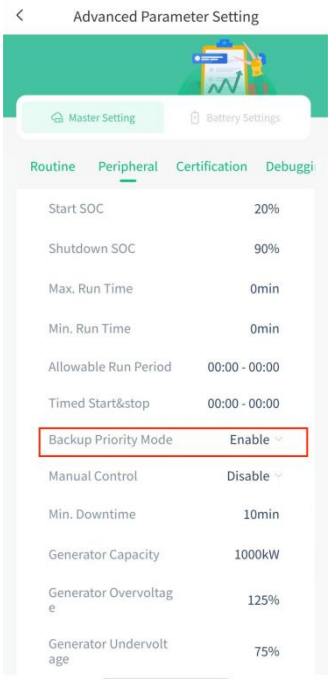


Note: Grid-Generator auto switchover requires an external ATS.

Generator function related settings:

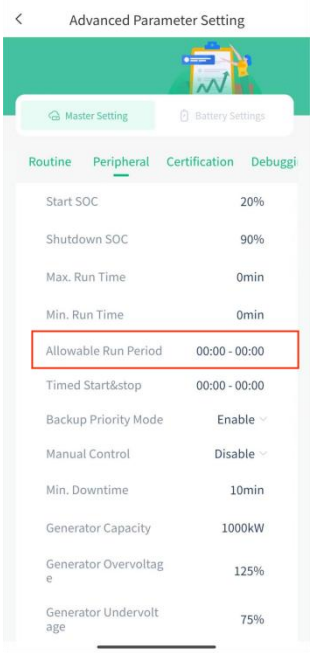
Backup Power Priority Mode

Enabled by default, allowing the generator to charge the battery while operating. If set to Disabled, the generator cannot charge the battery



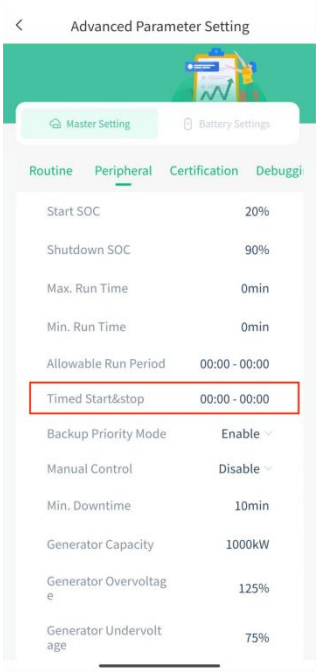
Allowable Run Period

The default time is 0:00-0:00, and the generator is allowed to run throughout the day. Note: The subsequent oil engine scheduled start and stop or soc start and stop function will only take effect during the allowed working time period.



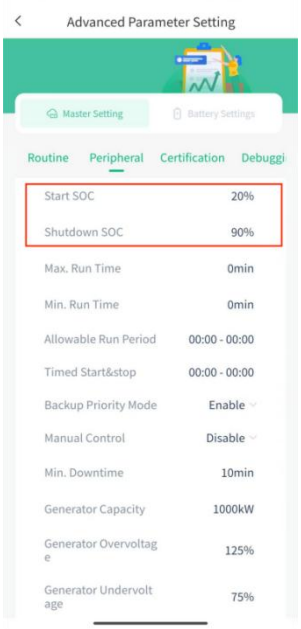
Timed Start&stop

The default time is 0:00-0:00, that is, the Timed Start&stop function is not effective. If the start and stop soc is set, it will work according to the set start and stop soc



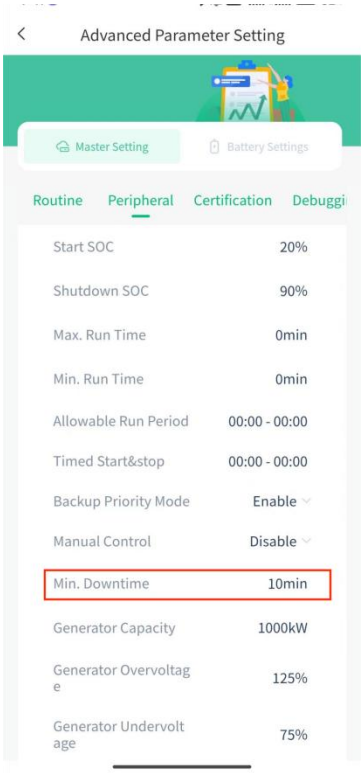
Start SOC&Shutdown SOC

When the soc is less than or equal to the start soc, the generator starts to work, and when the soc is greater than the set maximum soc, it stops working.



Min DownTime

Since frequent start and stop will cause great damage to the generator, the default minimum downtime is 10 minutes. Only when the downtime is greater than 10 minutes can it be restarted. This time can be set by yourself.



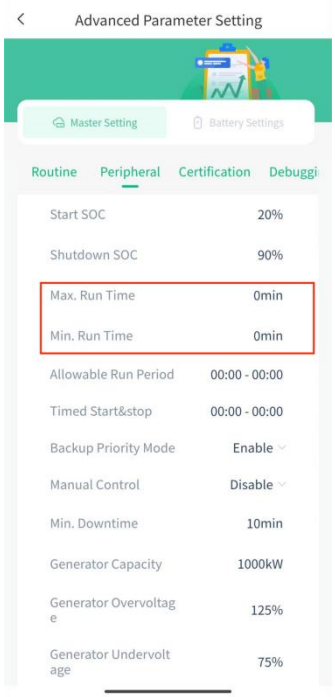
Max/Min Runtime

This mode allows you to set the maximum and minimum operating time of the oil engine. The default values are both 0, which means that there is no limit on the oil engine operating time. When the single operating time is greater than the maximum operating time, it cannot run anymore, the oil engine shuts down, and will not be started again on the same day. When the single operating time does not reach the minimum operating

time, the oil engine will not shut down even when the timing end time or shutdown soc is reached.

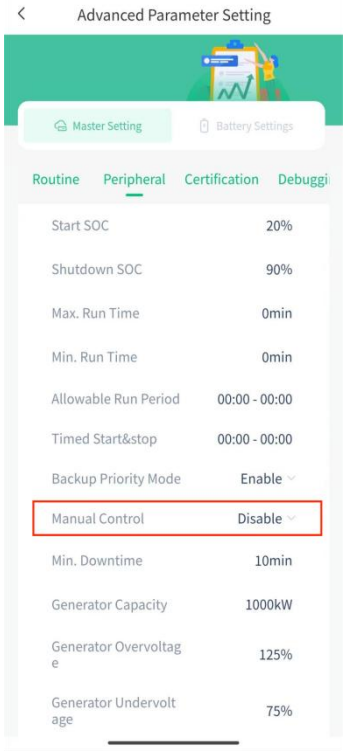
Note: The maximum operating time and the minimum operating time must follow

Maximum operating time > minimum operating time. If the set minimum operating time is less than or equal to the maximum operating time, and the maximum operating time is not 0 at this time, the setting will fail.



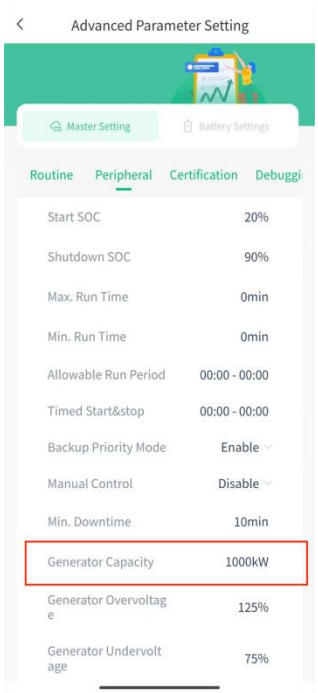
Manual Control

The default value is disabled, manual start and stop are not enabled, and the set timed start and stop and soc start and stop are followed. When set to start, the oil engine starts and no longer follows the set timed start and stop and soc start and stop. When set to stop, the oil engine shuts down and no longer follows the set timed start and stop and soc start and stop.

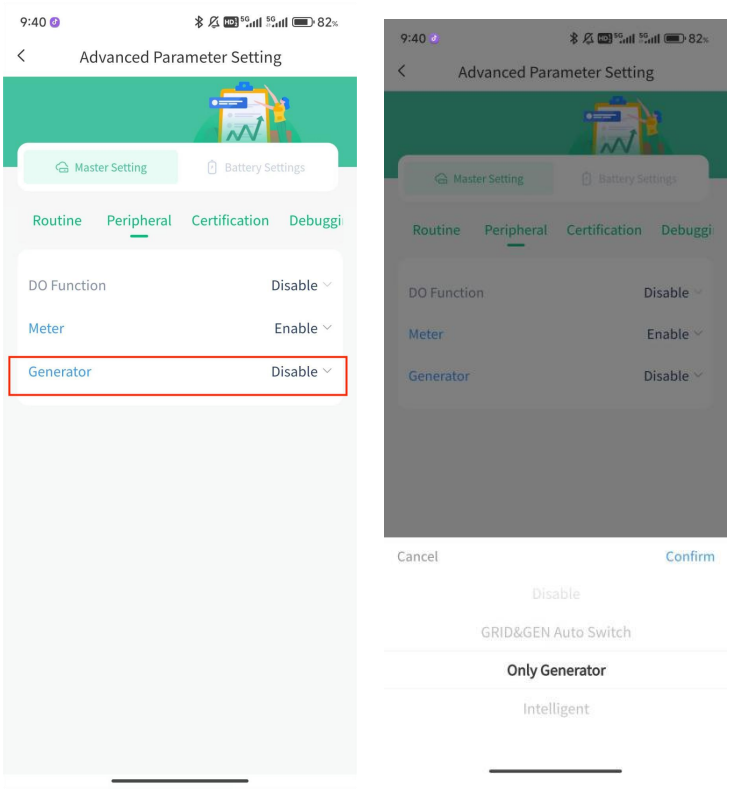


Generator Capacity

The user can set the generator capacity by himself, and the inverter will not exceed this power during operation.



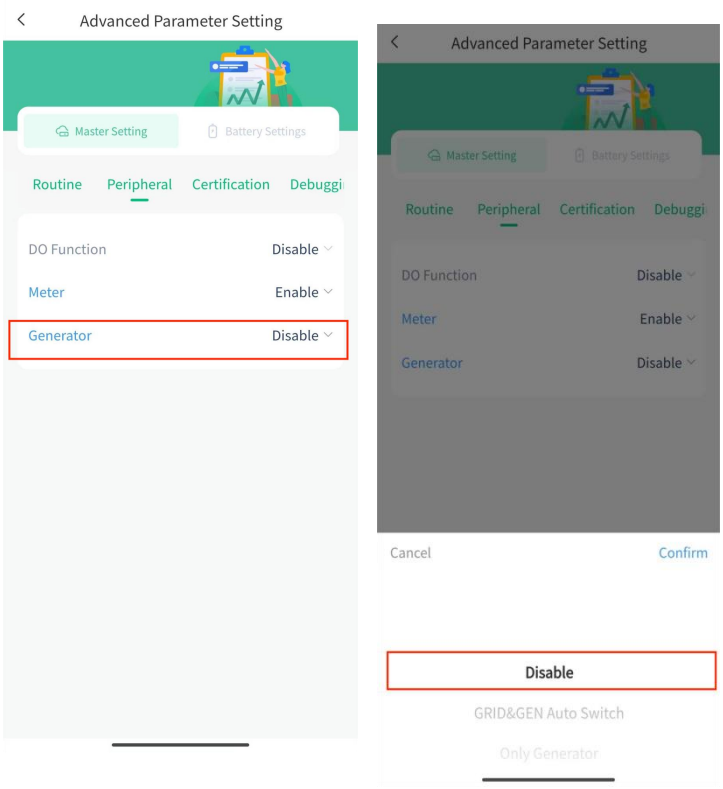
3.2 Generator Only



When there is no ATS and the oil generator is directly connected to the inverter grid port, this option needs to be selected. The relevant

setting logic of the oil generator under this option is the same as that of GRID&GEN Auto Switch

3.3 Disable



In addition to the above two modes, there is also a disable option. In this mode, the inverter defaults to the grid access mode.

Note: When connecting to the generator, it must not be set to disable