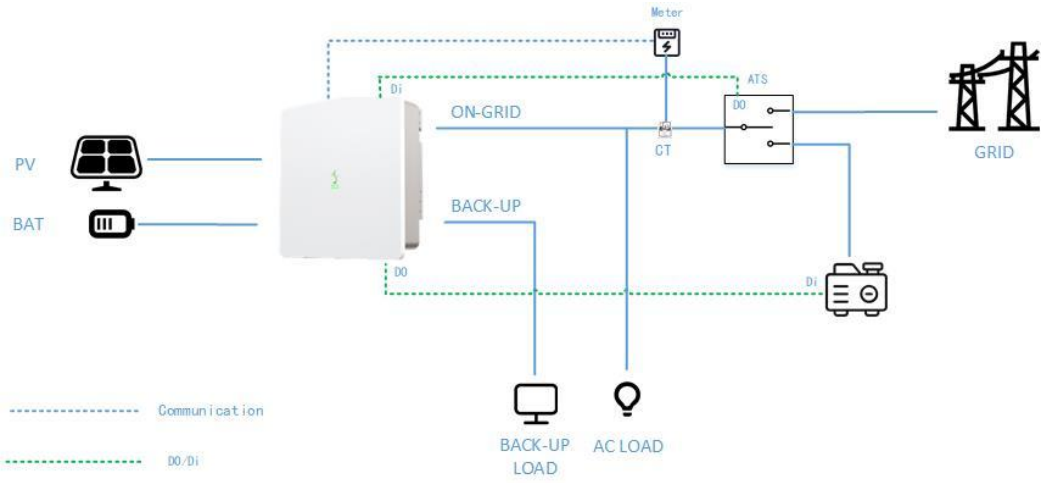
Isuna 20000T Generator Control User Manual

This user manual aims to help you understand and properly operate the system. Please read this manual carefully before use and follow the instructions.

1. Product Overview

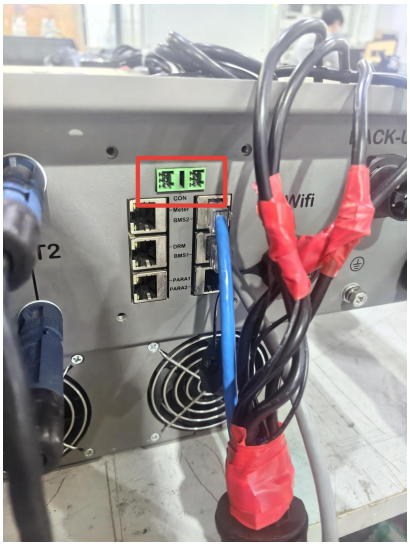
This generator compatibility solution is designed to meet the needs of regions like South Africa, where over 10% of household energy storage users require backup generators due to unstable power grids. Users can select appropriate modes and configurations based on actual needs.



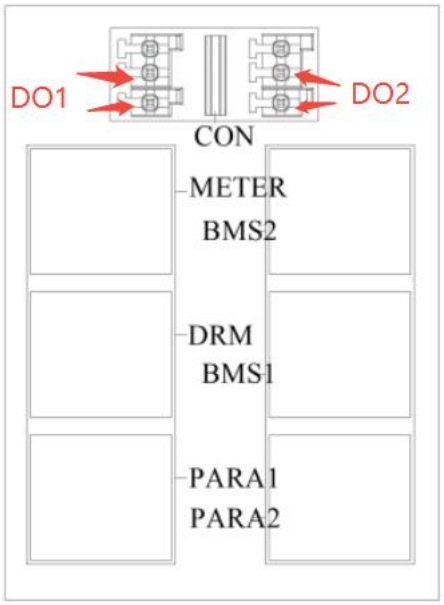
2. Installation Guide

2.1 Inverter DO Communication

The DO (Digital Output) is located at the inverter's [CT/RS485] network port



(2) The network cable sequence is as follows



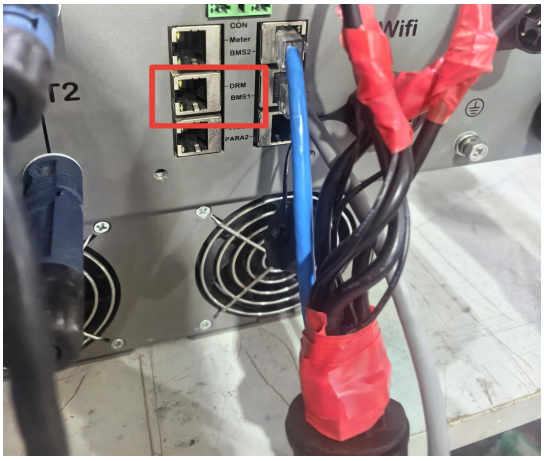
Note: The inverter has two DO ports for generator control: left side is The DO port DO1 of the GEN control corresponds to the lower pins of PIN1 and PIN2 as shown in the figure. When the inverter needs to control the GEN to start, the relay connected to DO1 closes, and the PIN1 and PIN2 pins are conductive. When the inverter needs to control the GEN to stop, the relay connected to DO1 opens, and the PIN1 and PIN2 pins are not conductive.

The GEN control DO port DO2 has logic that is exactly opposite to DO1, with the control pins being the lower pins of PIN3 and PIN4 as shown in the figure. When the inverter needs to control the GEN to start, the relay connected to DO2 opens, and the PIN3 and PIN4 pins do not conduct. When the inverter needs to control the GEN to stop, the relay connected to DO2 closes, and the PIN3 and PIN4 pins conduct.

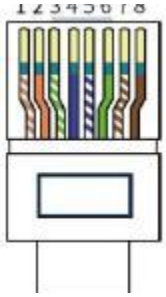
Note: Ensure the DO is set to "Generator" mode. If set to "Heat Pump" or "Disabled," the generator may malfunction.

2.2 Inverter DI Communication

The DI (Digital Input) is located at the inverter's **[DRMS]** network port.



Network cable wiring:



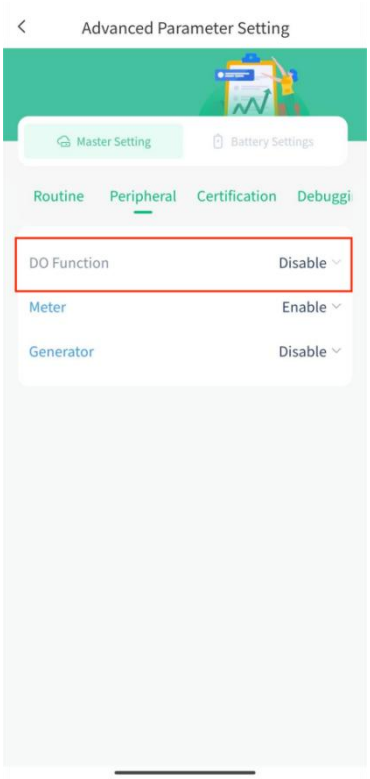
DI signals correspond to pins PIN1（orange white）DRM1/5 and PIN6(g reen).

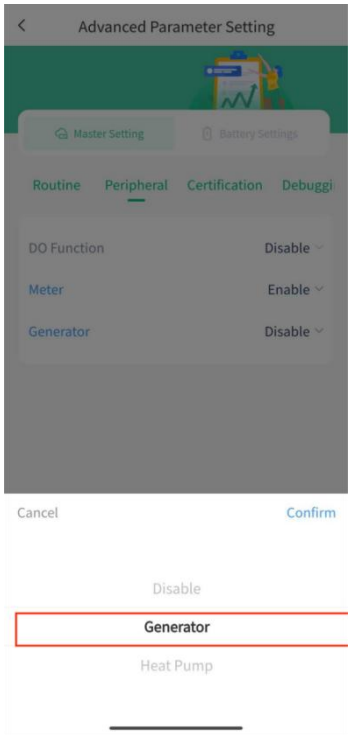
Table 6-9 Description of DRM ports

PIN	Color	Definition	Function	Note
1	Orange &White	DRM1/5	① The DRMS interface is applicable to the Australian AS-NZS-4777.2 (some European requirements) safety standard ②Chai hair function DI input ③Lead-acid battery temperature sampling	DRMs/diesel generator/lead-acid temperature sampling function multiplexed port
2	Orange	DRM2/6		
3	Green& White	DRM3/7		
4	Blue	DRM4/8		
5	Blue& White	REF GEN		
6	Green	COM LOAD		

3.APP Configuration and Operation Modes

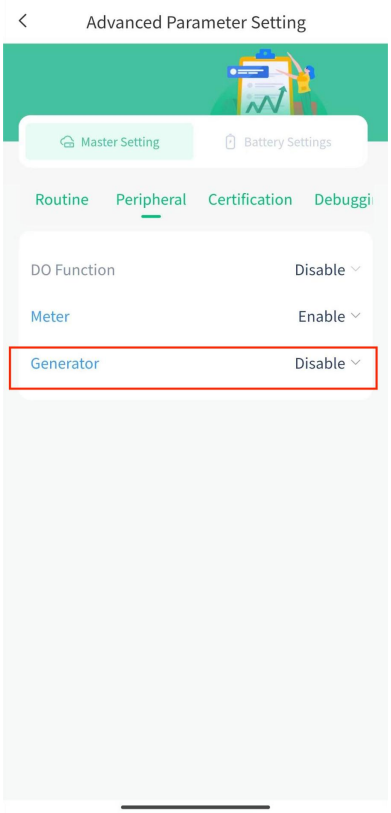
Enable Function: To activate the generator, set the DO function to "**Generator**."

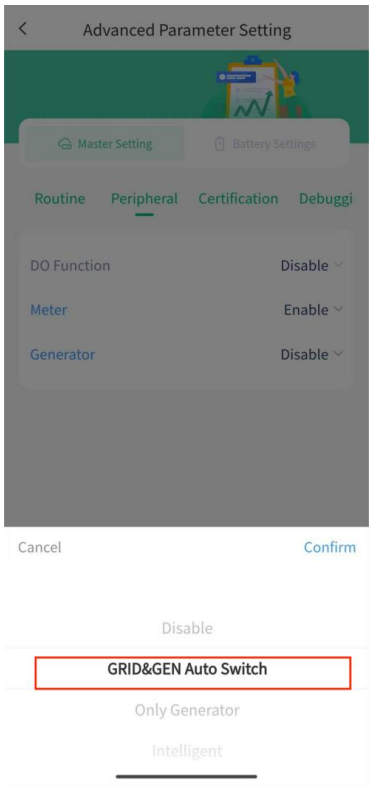




According to the application scenario, it is divided into the following three modes：

3.1 GRID&GEN Auto Switch





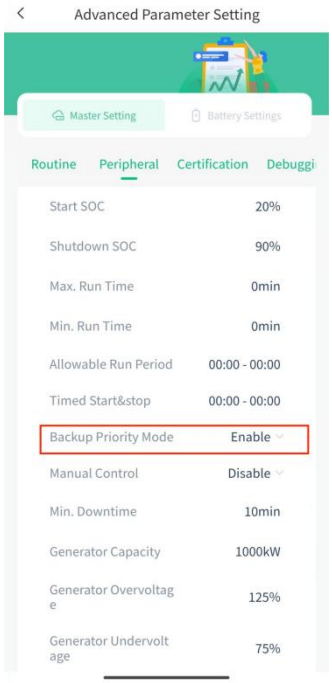
Note: The GRID&GEN Auto Switch needs to be used with an external ATS. When using automatic switching, be sure to turn off the PV before making relevant settings to prevent the oil generator from backflow due

to incorrect settings, which may cause damage to the oil generator. After ensuring that the system automatically switches normally, turn on the PV circuit breaker.

The following are the generator related settings：

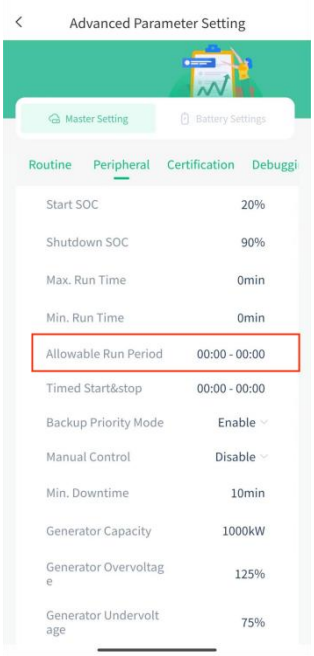
Backup Priority Mode:

Enabled by default (allows charging batteries via the generator). Disable to prohibit charging.



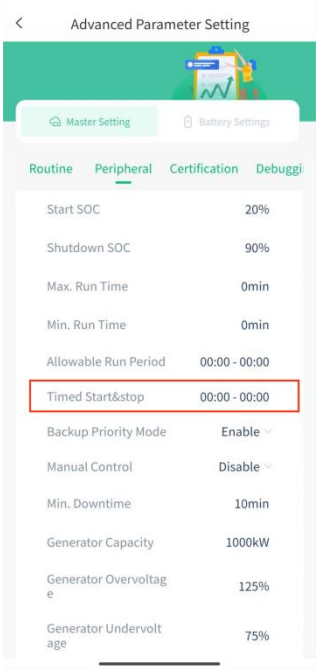
Allowable Run Period

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.



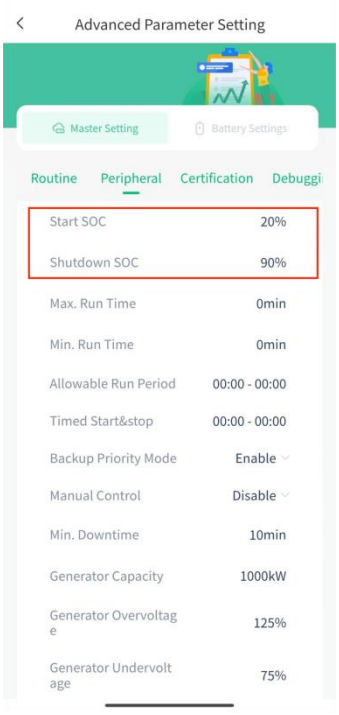
Timed Start&stop

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



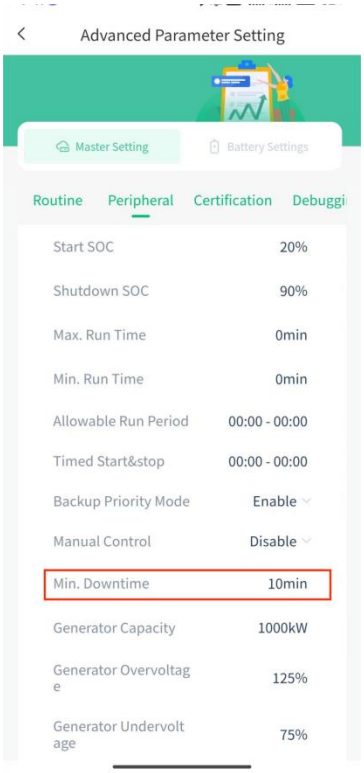
Start SOC&Shutdown SOC

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.



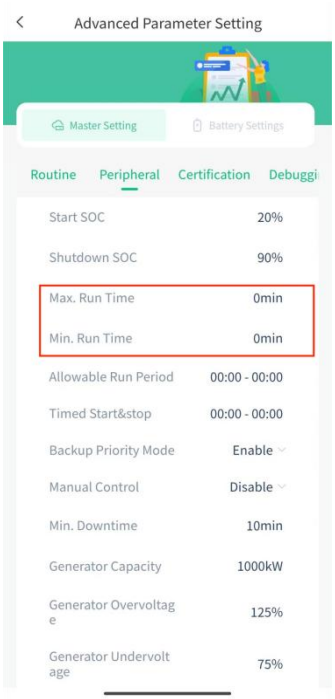
6.Max/Min Runtime

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.

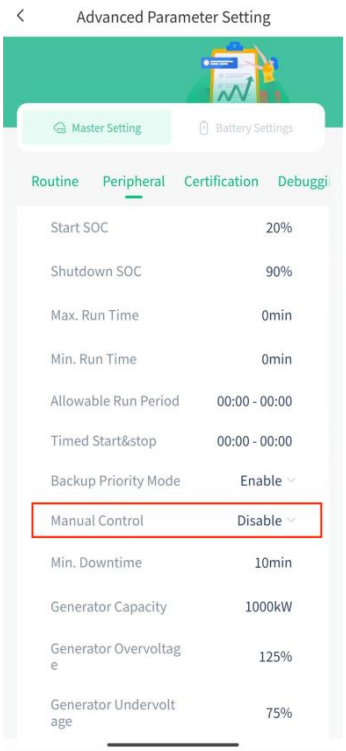
Note: The maximum operating time and the minimum operating time must follow

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.



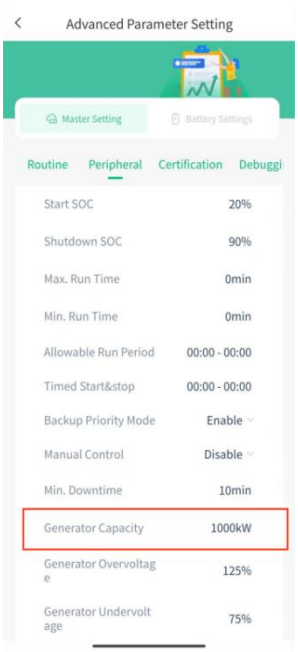
Manual Control

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.

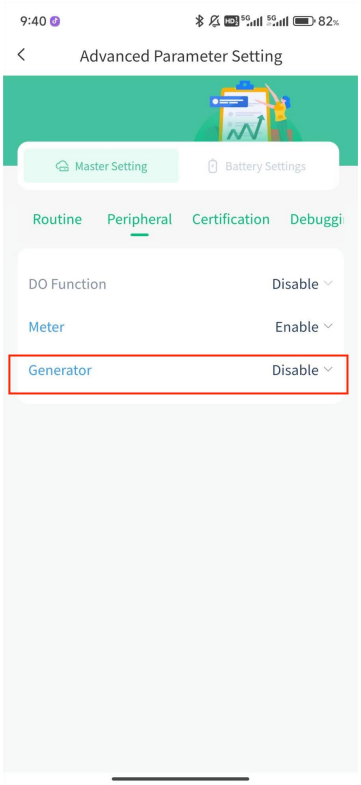


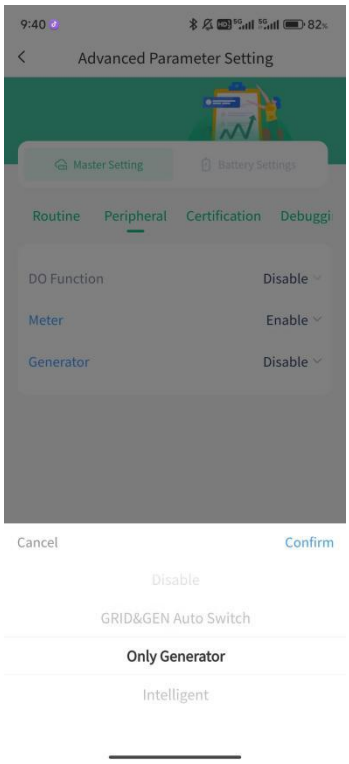
Generator Capacity

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



3.2 Generator Only

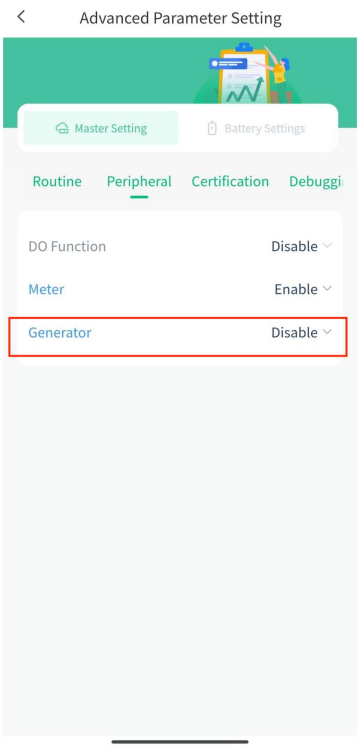


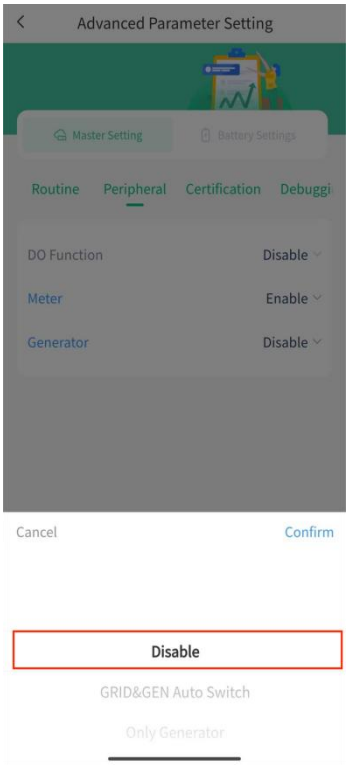


When there is no ATS and the oil generator is directly connected to the inverter grid port, this option needs to be selected. The relevant

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