Diesel Generator Solutions For MHT25-50K



Solinteg Academy 2024.11

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01
Introduction & Requirements

Brief Introduction of DG Solutions

Introduction of Solinteg DG Solution

Solinteg diesel generator solutions are designed to provide a reliable and instant power supply to customers living in unstable power grid areas. It introduces another power source to ensure energy security when the power grid experiences outages, whether by accident or as informed in advance.

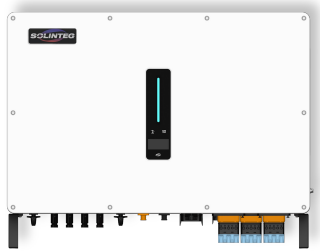
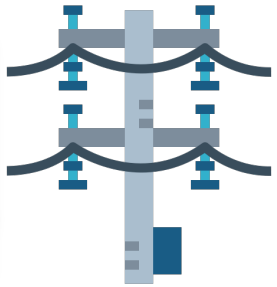
Combined with the Solinteg **MHT25-50K** three-phase hybrid inverters, the **EDA** backup box, **ATS,** and the **IntegHub** app, Solinteg provides various intelligent & efficient management of your entire energy system.

DG Solutions

Solinteg provides single-inverter and multi-inverter diesel generator solutions covering a wide application range from residential to commercial.

In our DG solution, the diesel generator can not only power the loads but also charge the battery when the grid fails, enhancing system stability. It's important to note that the DG and inverter don't supply loads at the same time, so make sure each of their outputs exceed your load needs. You can set the DG's output mode using our IntegHub2.0 app.

DG Solution Devices Requirement

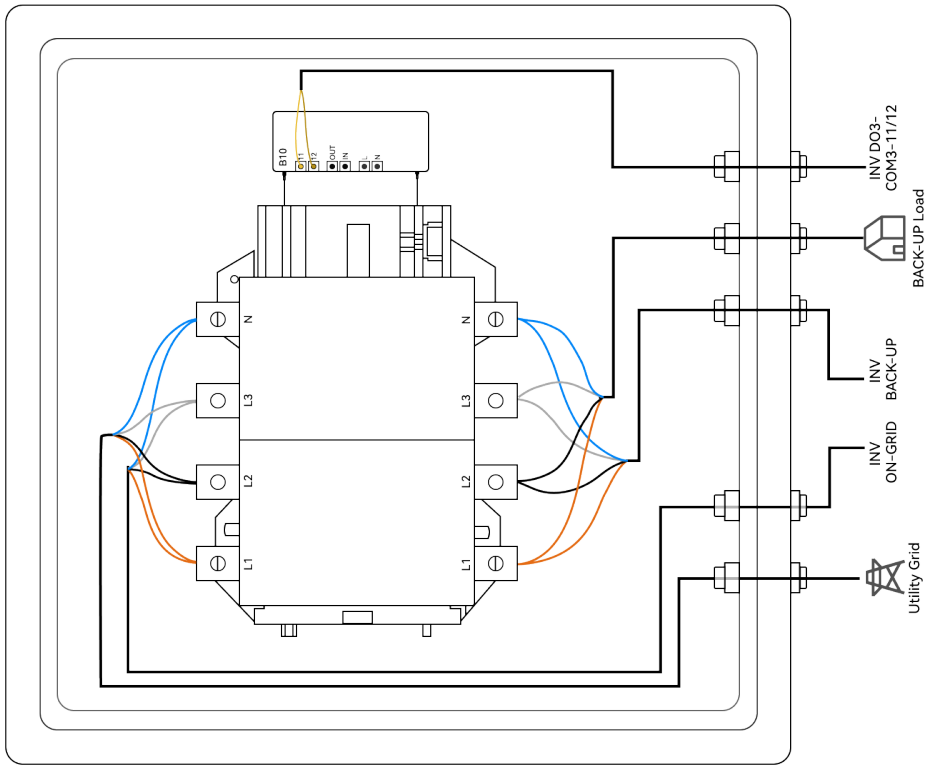




Purchase Channel		From Solinteg	/	From Market	From Market	From Solinteg	Together with Inverter	/
Solution Type	**DG Access Point**	**Support Models**	**Grid Conditions**	**Diesel Generator**	**ATS**	**EDA**	**Smart Meter**	**Firmware Version**
Single-unit	GEN	MHT25-50K From Nov 2024	On-grid/Off-grid	Three-phase DG With DI Control	No	No	RMM	ARM-03(15) DSP-03(23)
Multi-unit	GRID	MHT25-50K From 2024	Off-grid		No	Yes		TBD
	ATS	MHT25-50K From 2024	On-grid		Yes	Yes		

DG Solution Additional Devices (Optional)

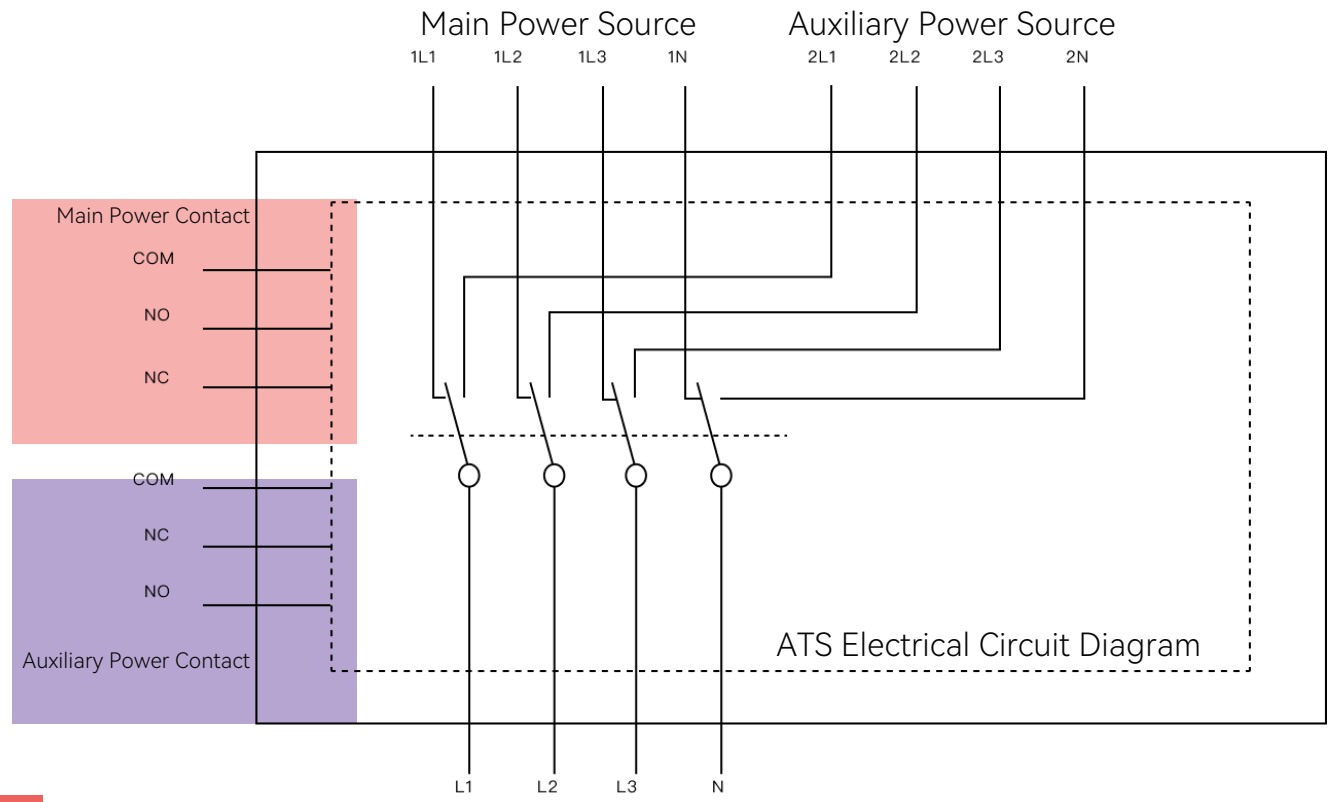
EDA Back-up Box Circuit



EDA(Back-up Box):

EDA is a controller developed by Solinteg to facilitate seamless switchover between on-grid and off-grid parallel applications, ensuring steady operation and enhancing the overall reliability and resilience of the hybrid energy system.

ATS



Device	To Inverter Com	Device	To Inverter Com
DG	COM3 7/8	EDA	COM3 11/12
ATS	COM2 15/16		

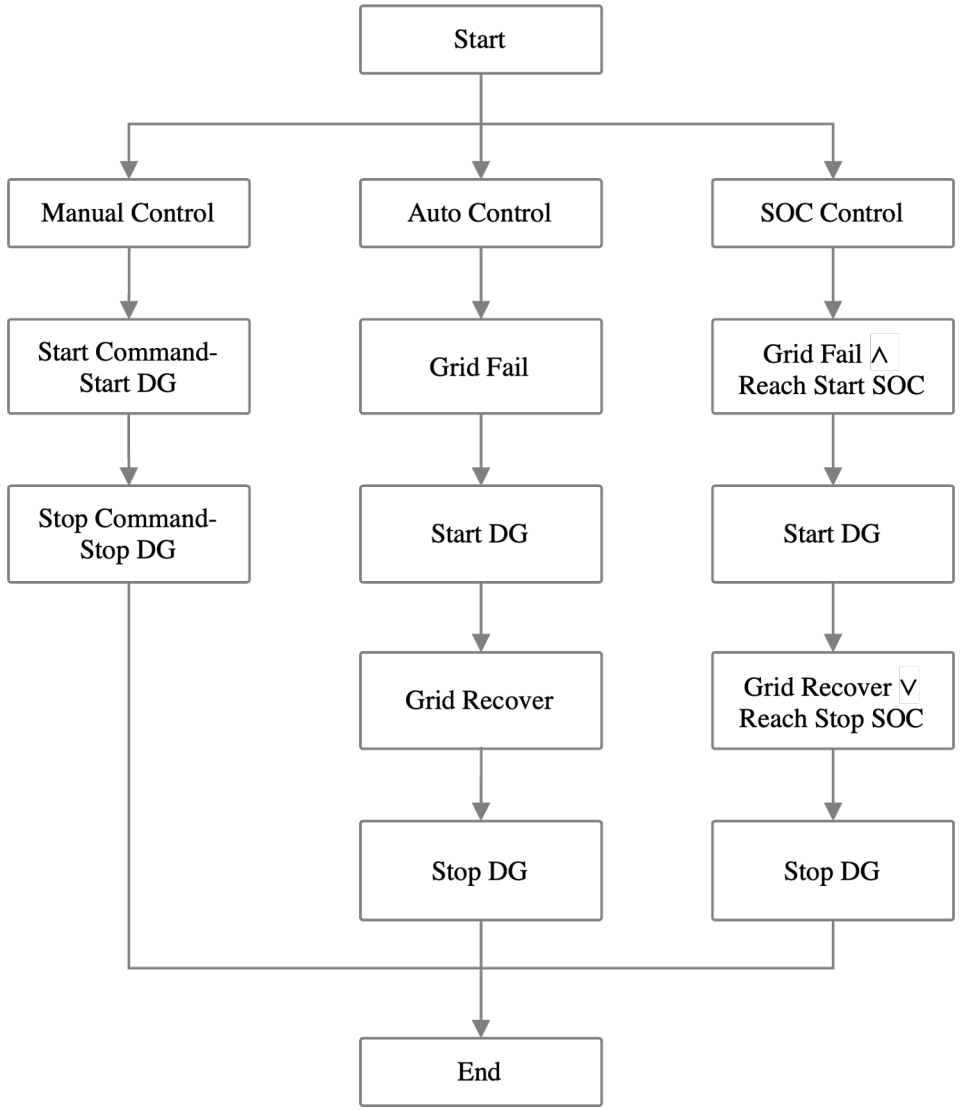


02
Strategies

Control Methods & Logic

DG Output Modes	Description
Loads Only	The diesel generator will only power the loads when required.
Loads and Battery	The diesel generator will power the loads first and charge the battery if there's excess power. Charging Power=DG Max Output Power-Load Power

DG Control Methods	Description
Manual Control	Manually turn On and Off DG through the App. Suggest to use while first commissioning.
Automatic Control	DG auto turns On when the grid fails, and DG auto turns Off when the grid recovers. This method is not working when DG directly connected to inverter grid port.
SOC Control	When the grid fails, the system will use the battery to supply the loads first and use DG when the battery SOC is lower than the preset value. DG will stop when the grid recovers or SOC reaches the preset value.

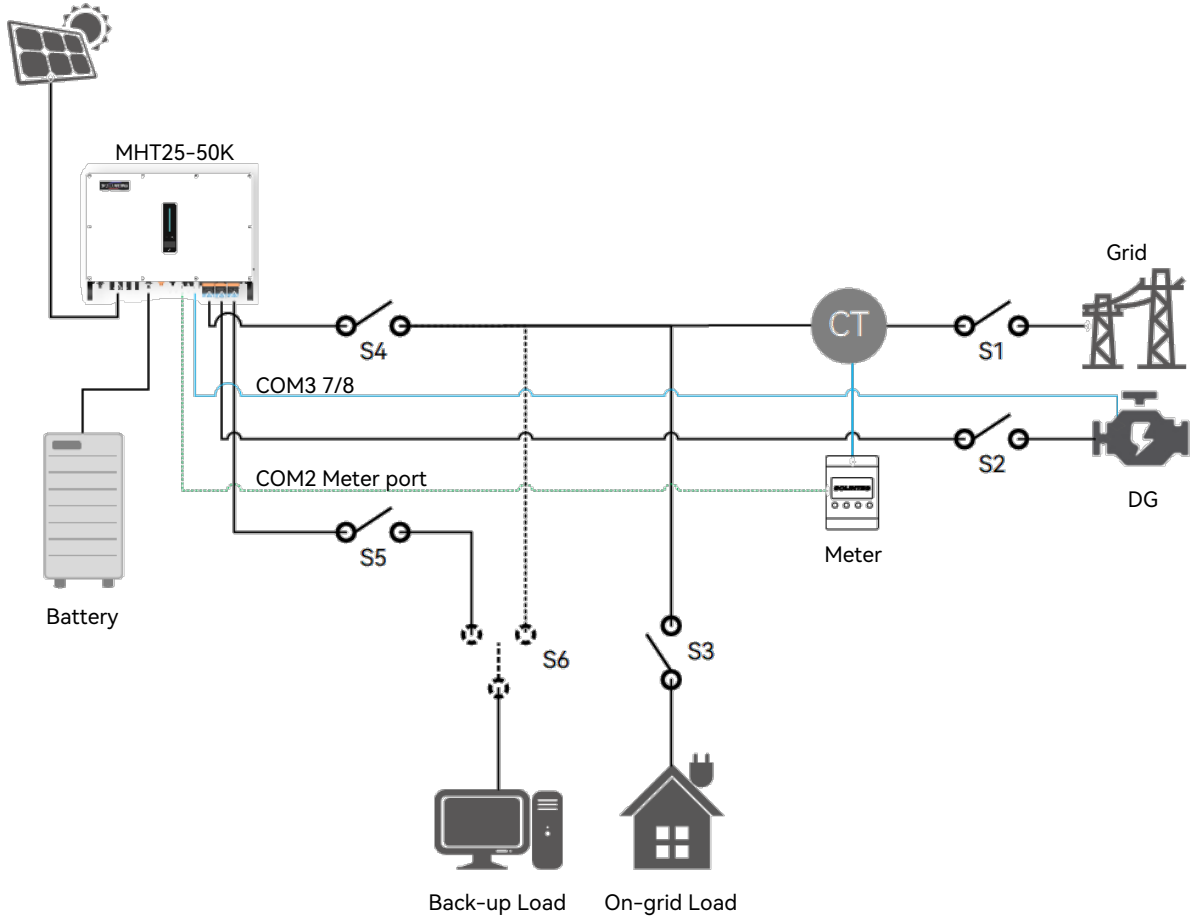




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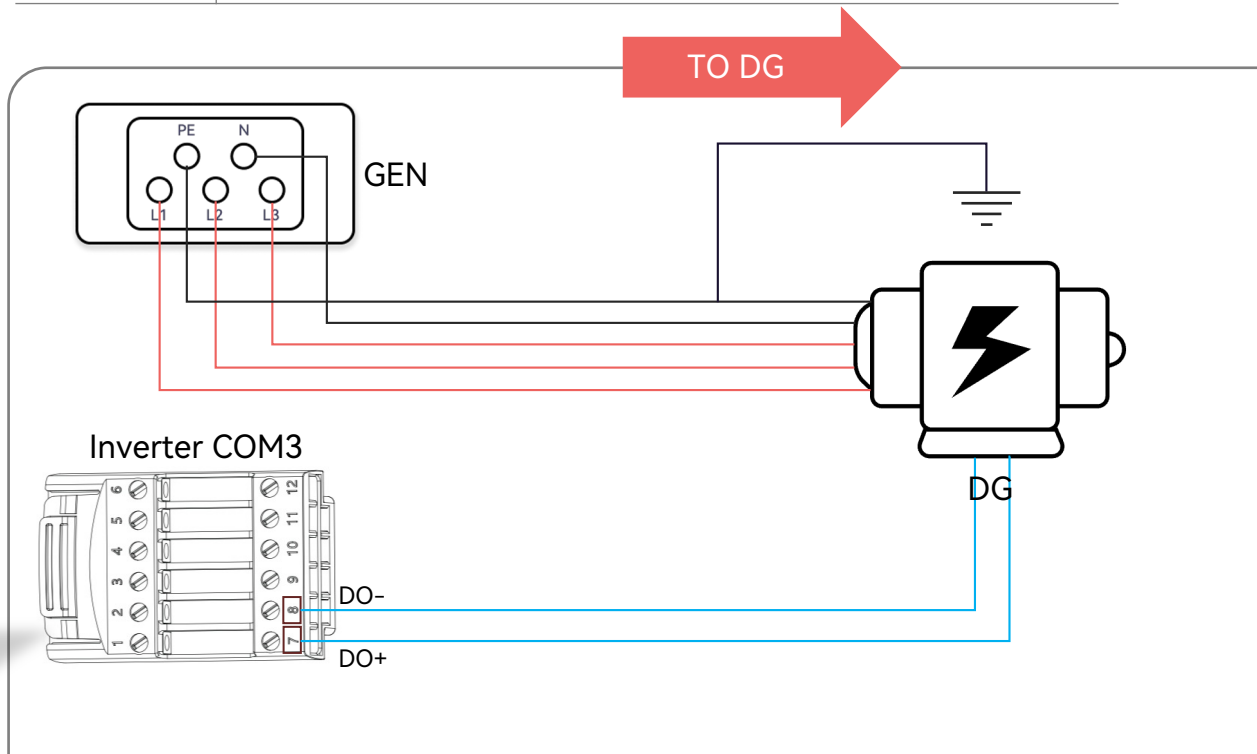
Solution Wiring

Single Inverter DG Solution/GEN Port



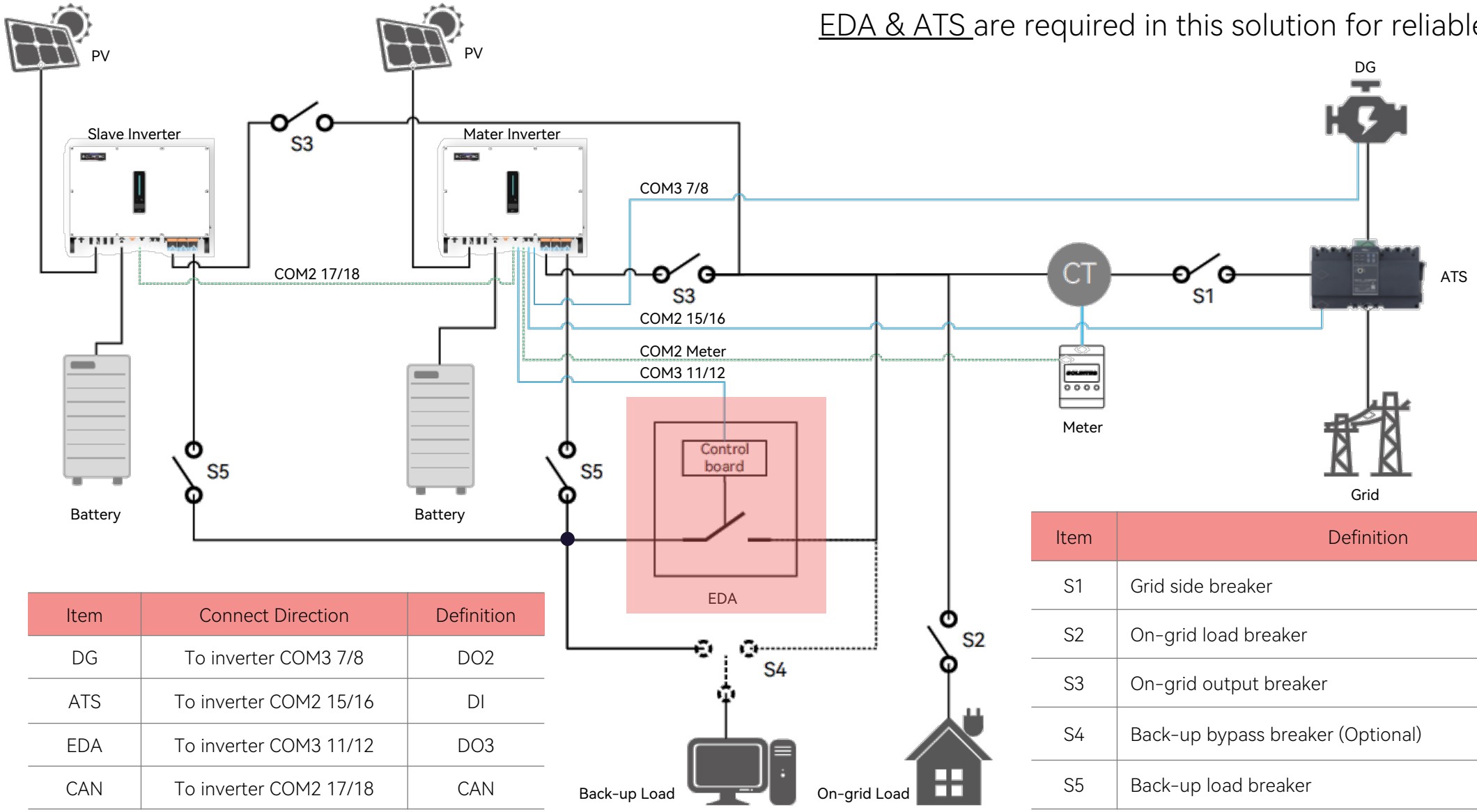
Breaker	Function
S1	Grid side breaker
S2	Generator breaker
S3	On-grid load breaker
S4	On-grid output breaker
S5	Back-up load breaker
S6	Back-up bypass breaker (Optional)

Solution Availability:
MHT25-50K inverter produced from Nov. 2024 is available for this DG solution.
DG solution for earlier produced inverter please consult our service team.



Multi Inverters DG Solutions/Scenario1/ATS

EDA & ATS are required in this solution for reliable operation



Item	Connect Direction	Definition
DG	To inverter COM3 7/8	DO2
ATS	To inverter COM2 15/16	DI
EDA	To inverter COM3 11/12	DO3
CAN	To inverter COM2 17/18	CAN

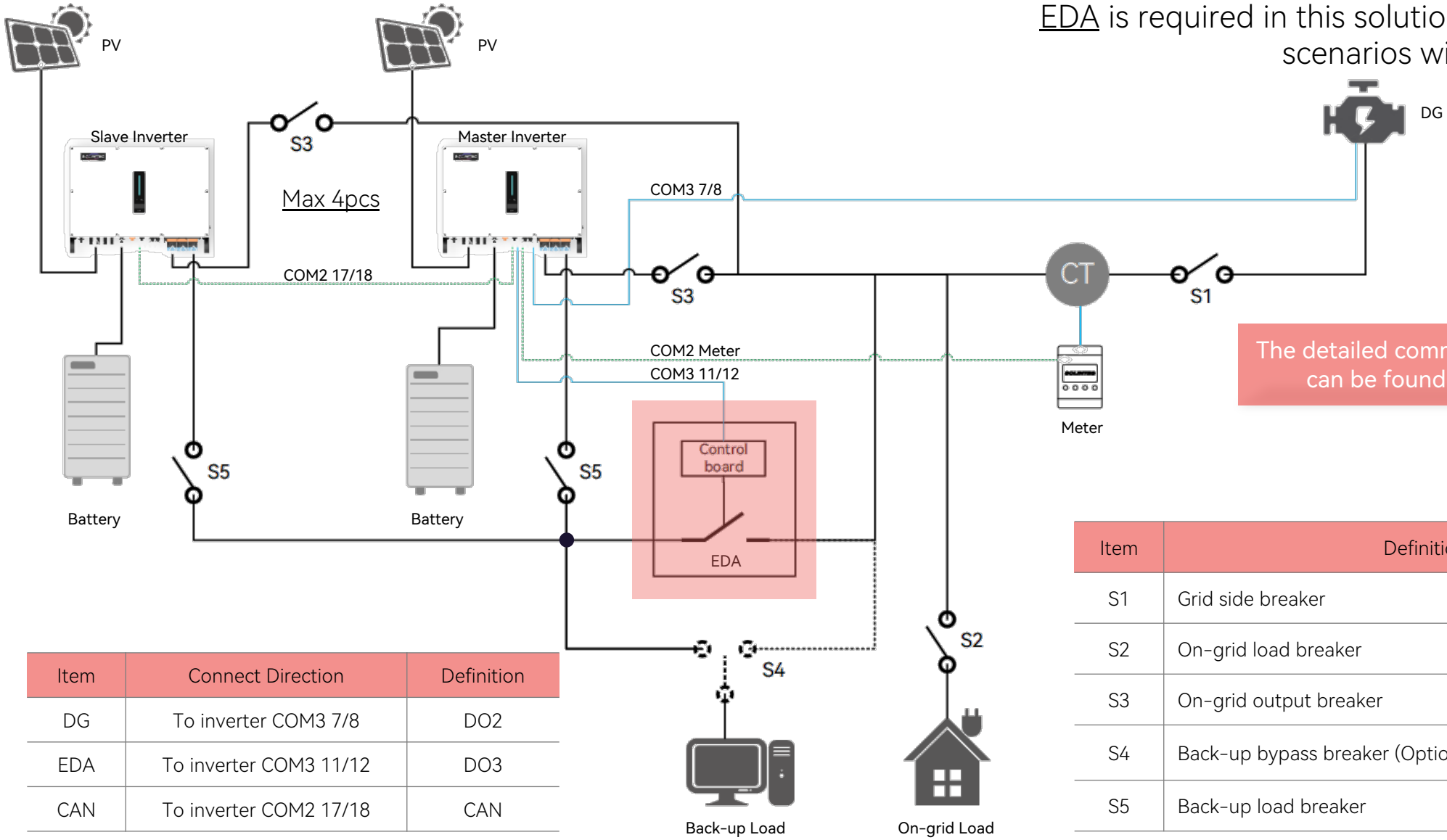
Item	Definition
S1	Grid side breaker
S2	On-grid load breaker
S3	On-grid output breaker
S4	Back-up bypass breaker (Optional)
S5	Back-up load breaker

*Note: The ATS parallel solution is not available in the situations that DI is occupied.

*Note: The parallel solution including DG in the system is under development.

Multi Inverters DG Solutions/Scenario2/Grid Port

EDA is required in this solution, suitable for the scenarios without grid access



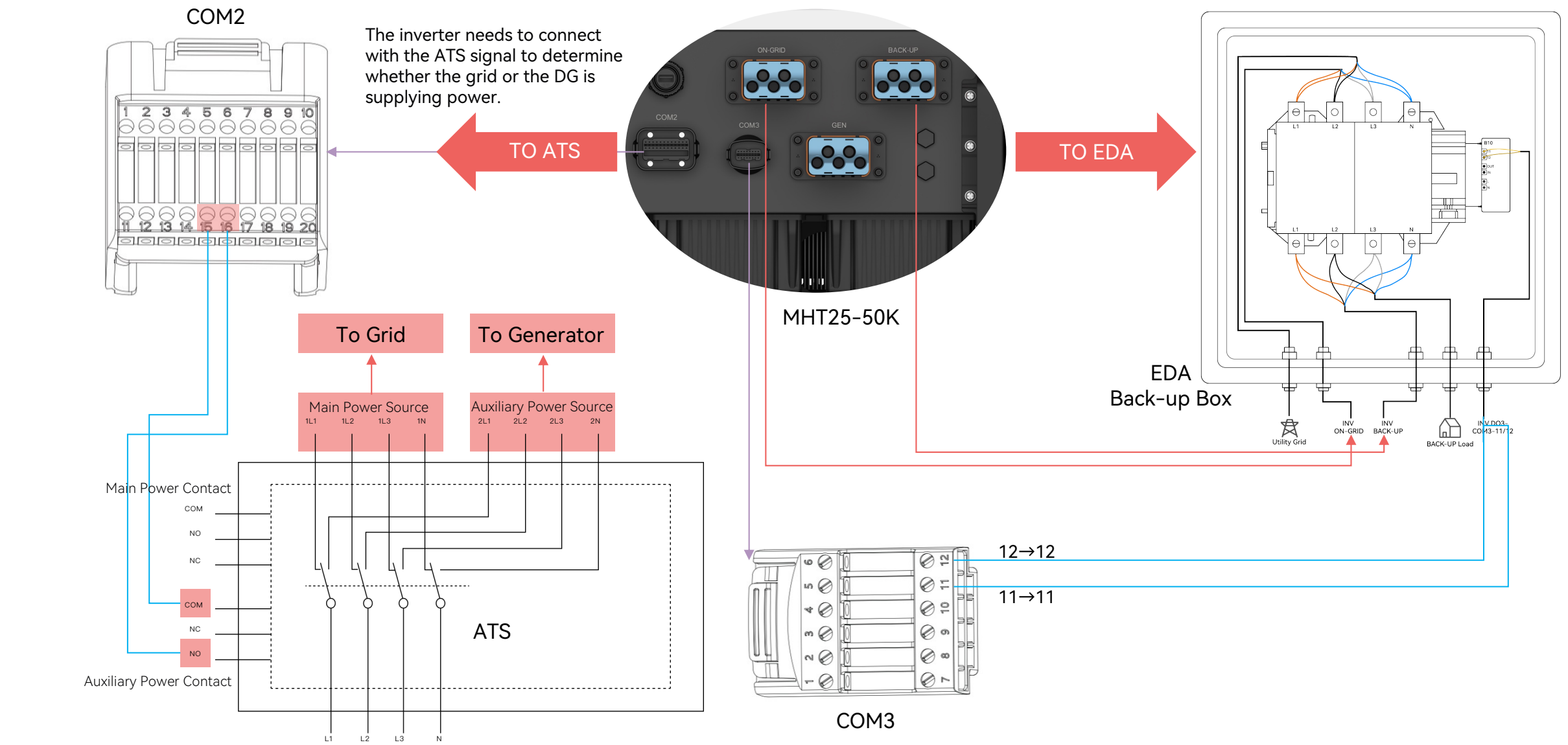
The detailed communication cable wiring can be found in following slides

Item	Connect Direction	Definition
DG	To inverter COM3 7/8	DO2
EDA	To inverter COM3 11/12	DO3
CAN	To inverter COM2 17/18	CAN

Item	Definition
S1	Grid side breaker
S2	On-grid load breaker
S3	On-grid output breaker
S4	Back-up bypass breaker (Optional)
S5	Back-up load breaker

*Note: The parallel solution including DG in the system is under development.

Multi Inverter/Solutions/Communication Wiring

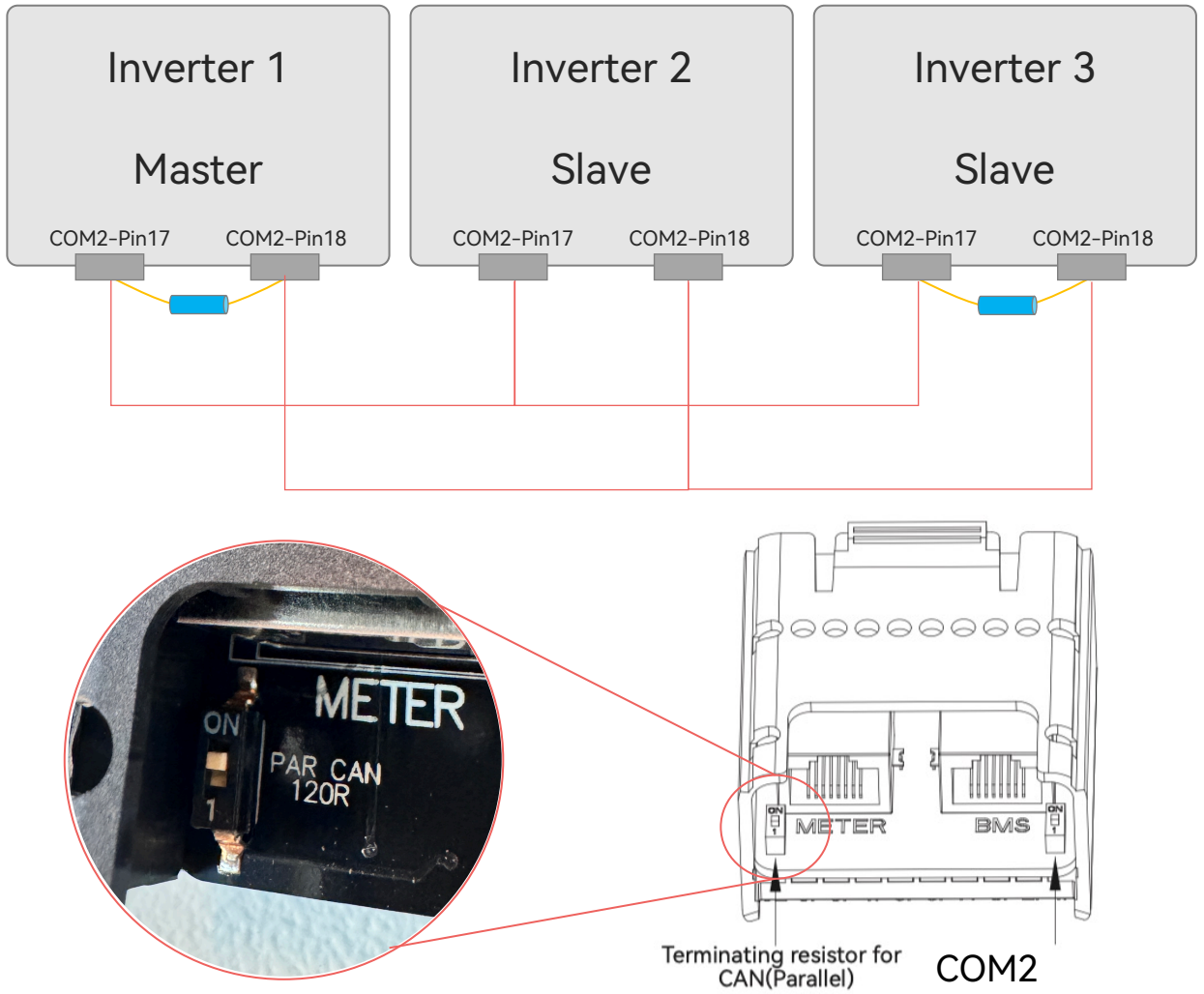


Multi Inverters/Solutions/Paralleling Wiring

Notice while using DG in a parallel system

1. The phase sequence in the On-grid side and Back-up side of parallel inverter system must be align.
2. All parallel inverters must be same power and model.
3. The PV strings and battery capacities connected to each inverter needs to be equal or basically equal.
4. Each inverter needs independent AC breaker.
5. The CAN communication of all inverters must be working properly, and terminal resistors for CAN bus at the first and last inverter needs to be turned on.
6. Parallel system works as a whole, the slave inverter can be isolated if it's failed whereas master inverter cannot.

Inverter Parallel Communication Wiring



*Note: The two parallel solutions including DG in the system are under development.

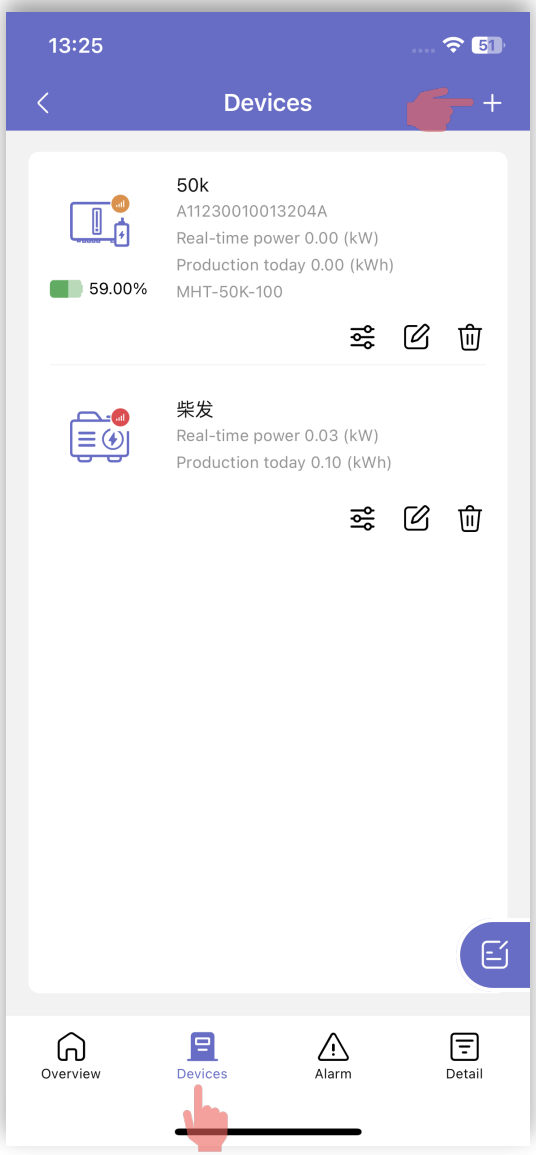


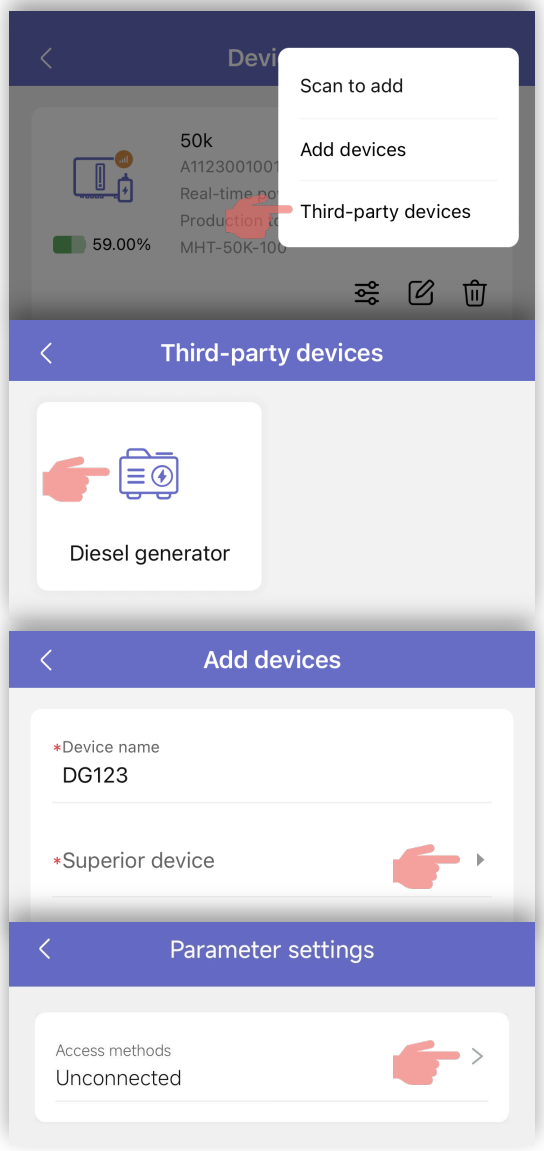
04
App Configuration

Diesel Generator APP Configuration

Diesel generator function App configuration

1. You need to have a hybrid inverter power plant on Solinteg cloud before using this function.
2. Click “+” button on “Devices” page, and choose Third-party devices from the list, touch Diesel generator icon.
3. Name the diesel generator and select inverter SN that you are going to connect with this diesel generator by clicking the Superior device.
4. Click “Unconnected”.



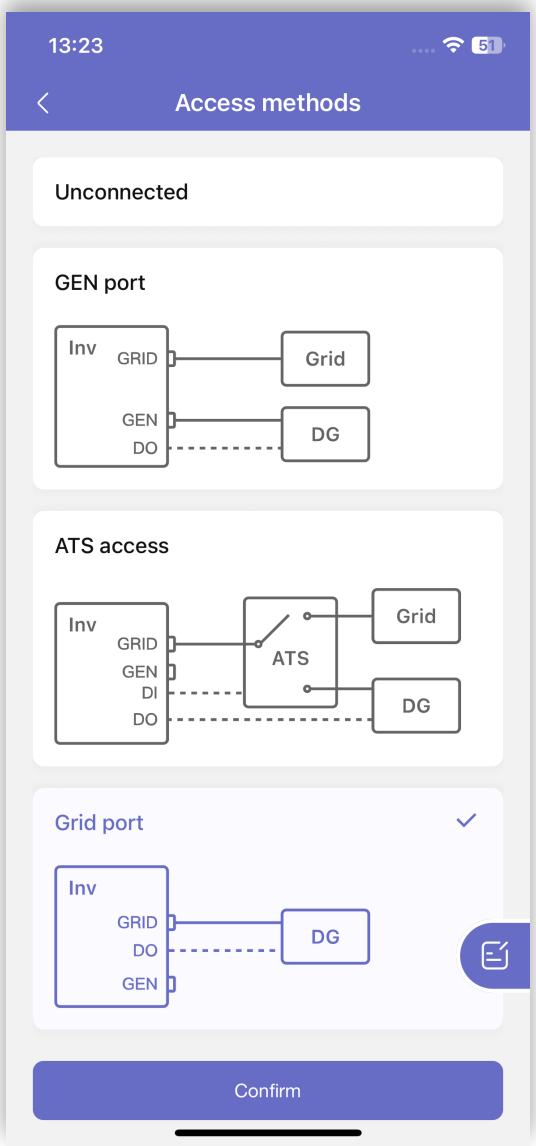


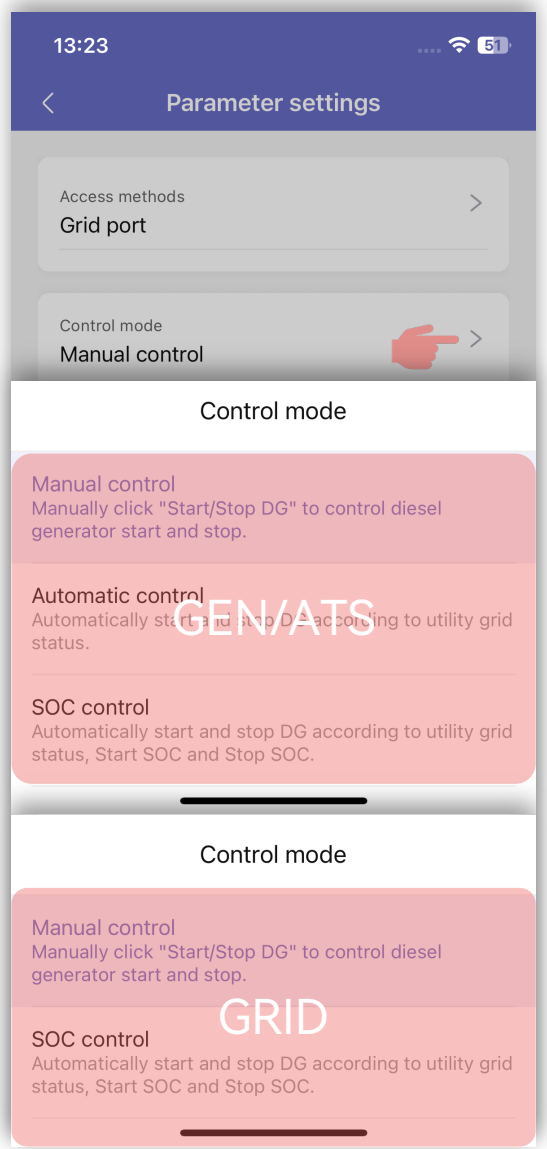
Diesel Generator APP Configuration

Diesel generator function App configuration

1. Select the diesel generator access method as per to the real case, click “Confirm”.
2. Click the “Right arrow” behind the control mode to select your preferred mode.

Note: DG connected at the inverter On-grid port only includes “Manual control” and “SOC control” two methods, while DG connected at the inverter GEN port or connecting through the ATS offer an additional ”Automatic control” method.

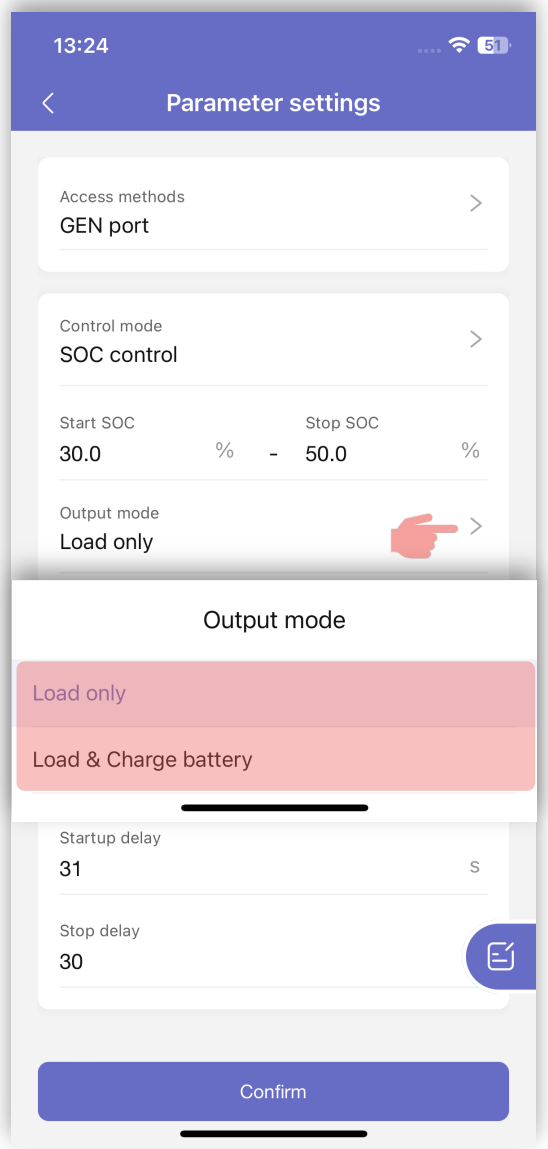


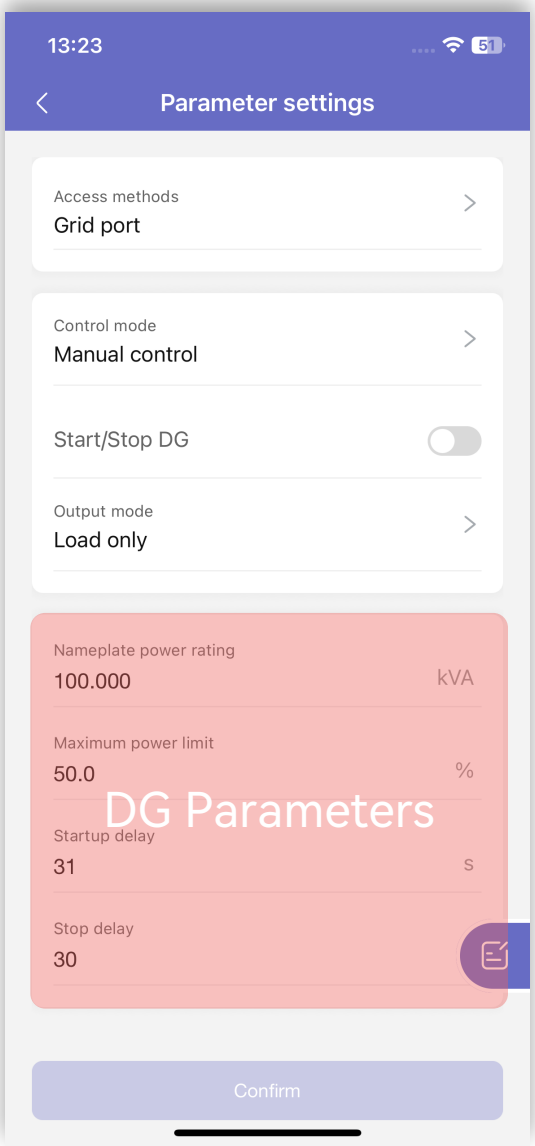


Diesel Generator APP Configuration

Diesel generator function App configuration

1. Configure the relevant parameters that appeared on the control mode that you selected.
2. Set the “Output mode” of the diesel generator according to your preference by clicking the “Right arrow” behind it. If you select the “Load only” , the diesel generator will only supply loads after it is activated, and the “Load & Charge battery” means the diesel generator can be used for loads and battery charge after it’s activated.
3. Configure the necessary diesel generator parameters according to its nameplate and real case.







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Thank You

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