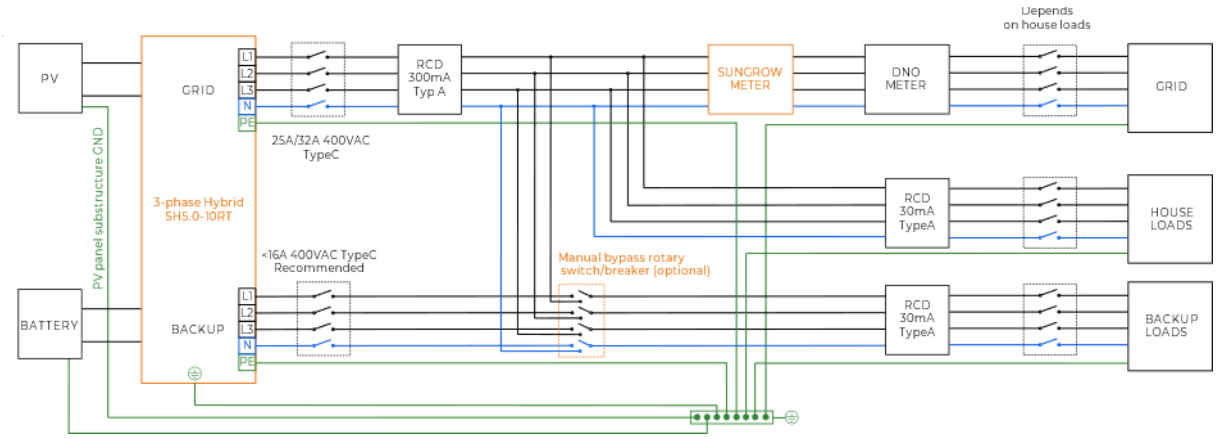
3-phase Hybrids-FAQ

How to supply the house backup loads if the SHxxRT is in fault mode or needs replacement

Applicable to: SHxxRT series

The backup loads are normally supplied by the grid through the 3-phase Hybrid. In case of certain faults or error like internal hardware failure or measurement failure, the 3-phase Hybrid needs to shut down and the breaker between backup and grid port will open. This will cause the backup loads to shut down.

To provide a chance to the end user to supply his backup load in this situation, Sungrow advises to install an external Manual Bypass rotary switch or breaker that will be connected between the normal house loads and the backup loads, in orange in the schematic below.



In this case a 4-pole rotary switch would be recommended like the one in the picture below. For example, position 1 would keep the backup loads connected to the backup port of the inverter, while position 2 would connect the backup load to the house load. The advantage of this switch is that the transition to position 0 (disconnected) allows a safe (volt-free) operation.

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Before this switch can be turned, the hybrid inverter should be shutdown properly, making sure it is completely powered off; backup loads should be disconnected from the inverter using the input circuit breaker and the backup connector cable should be removed from the inverter.

Both the house load circuit and backup circuit shall have the same earthing TN-S or TN-C system, and they both must be protected with 30mA Type A RCD and breakers depending on the load size. A maximum of 16A Type C 4 pole breaker is suggested for backup loads.

The grounding connection shall still be to a common grounding point connecting battery, PV module substructure, backup loads, house loads, grid, and inverter chassis.

For further information, please download the user manual here.

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.