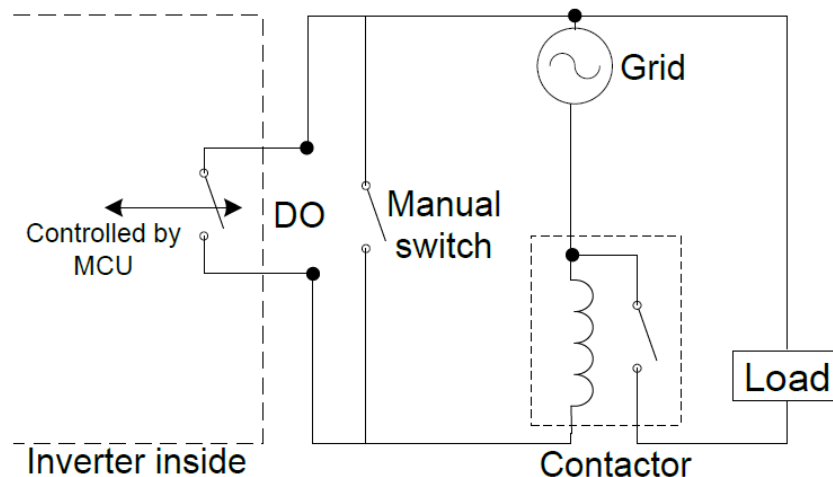


## Load Control Function

The Sungrow Hybrid inverters (SH5K+ and SH5K-20) is fitted with a 'LOAD CONTROL' circuit for the purpose of controlling external loads under certain circumstances.

When the 'Load Control' is triggered, a relay output closes the contacts on the internal DO1 port inside the inverter. *This port is designed to trigger an external relay or contactor to energise the external load i.e. Hot Water Heater or Pump etc.*

The maximum current output of the DO control is 3 Amps. Do not connect loads directly to the DO terminals. The DO outputs are not energised when the inverter is in the 'Off' state, so an external manual switch may also be required.



### Important:

The AC relay/contacter must be fitted between the DO port and the load.

The max current of the DO dry contact is 3 Amps.

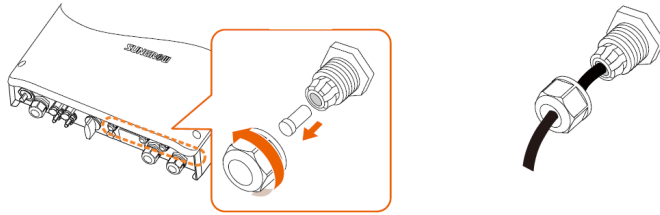
The DO node does not operate when the inverter is off.

### Cable and connection requirements:

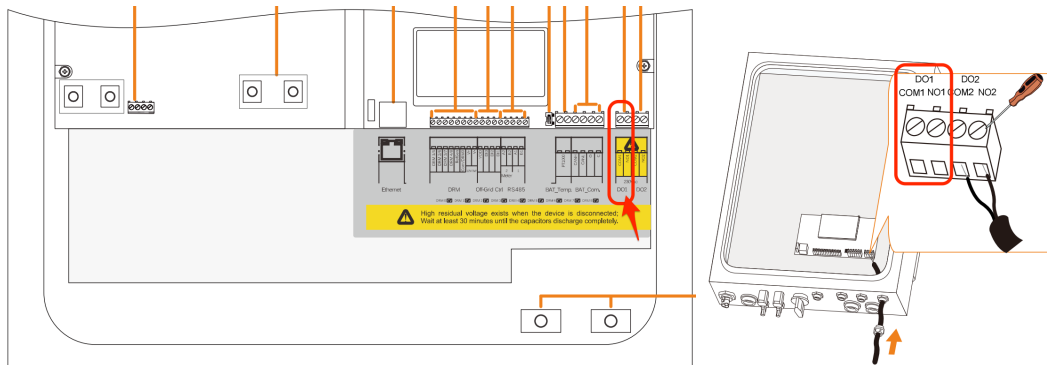
Cable CSA = 1mm - 2 core

Cable diameter = 3mm - 5.3mm

Unscrew the cable clamp nut from any cable gland and pass cable through.



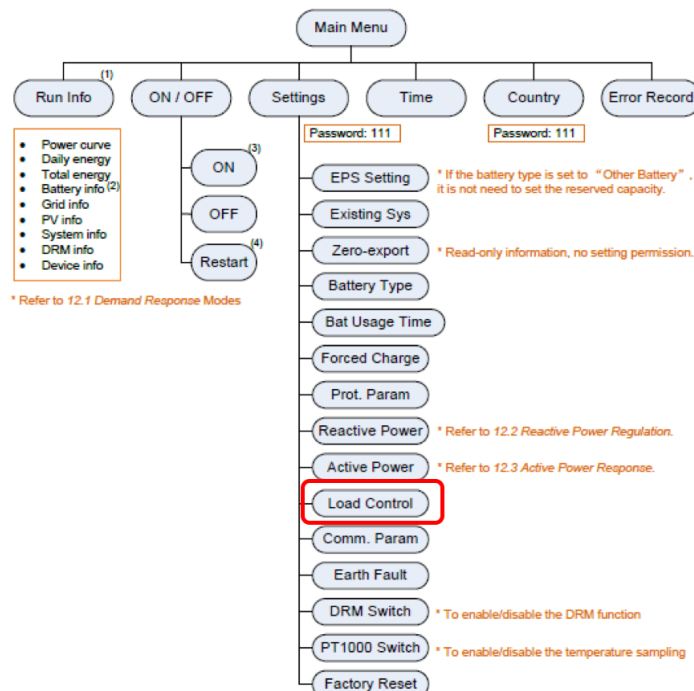
Strip the cable and connect to DO1 terminals inside the inverter.



Tighten the cable gland to ensure IP rating.

## Commissioning:

Enter the 'Menu' and select "Load Control" under Setting (password: 111)



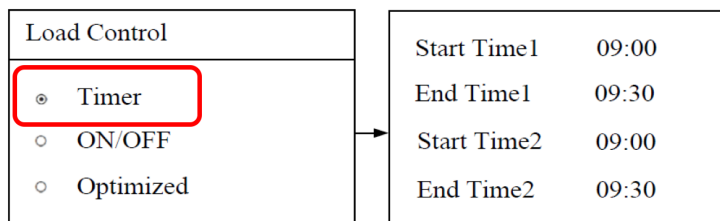
**There are three modes in Load Control:**

- Timer Control
- On/Off Control
- Optimised\*

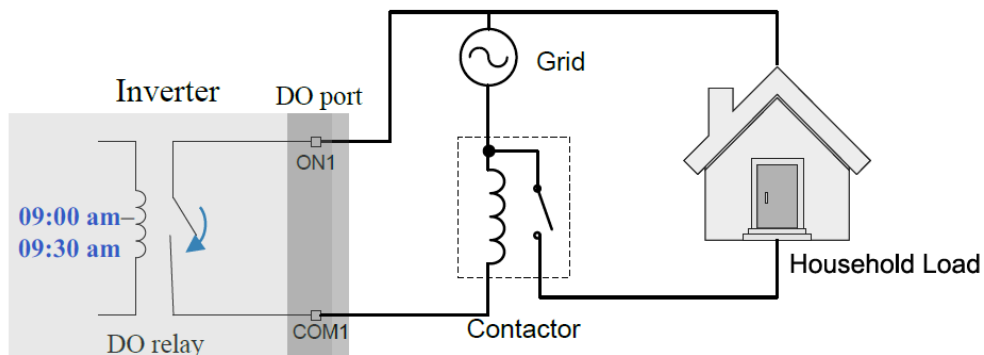
**Timer Control**

In this mode, the DO control will operate during the selected time(s).

In this example, 09.00 – 09.30 am have been selected.

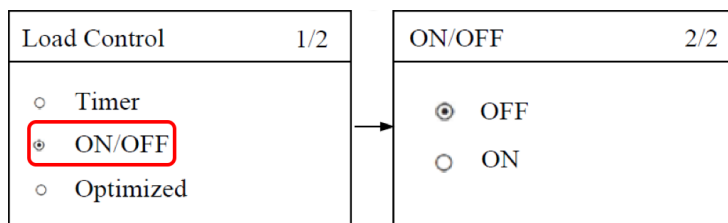


DO 1 relay will close during 09.00 till 09.30 am



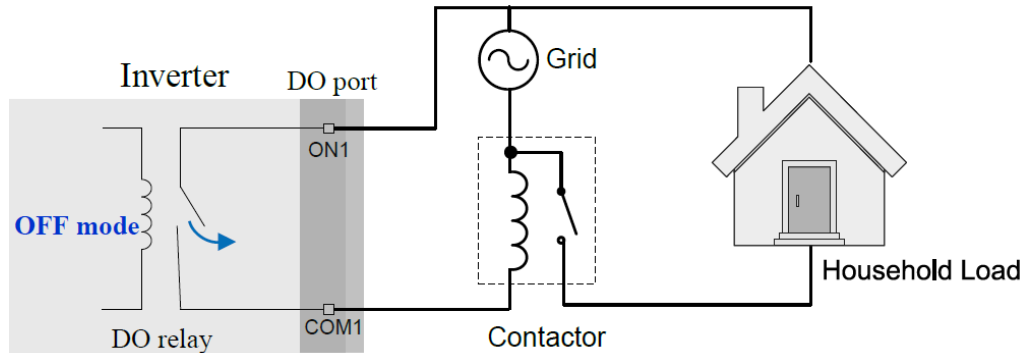
**ON/OFF Control**

Example – set to “OFF”



In this mode, the DO 1 relay is always in the “OFF” position.

In the “ON” mode the output is always ‘ON’ as long as the inverter is operational.



**Optimised Control\***

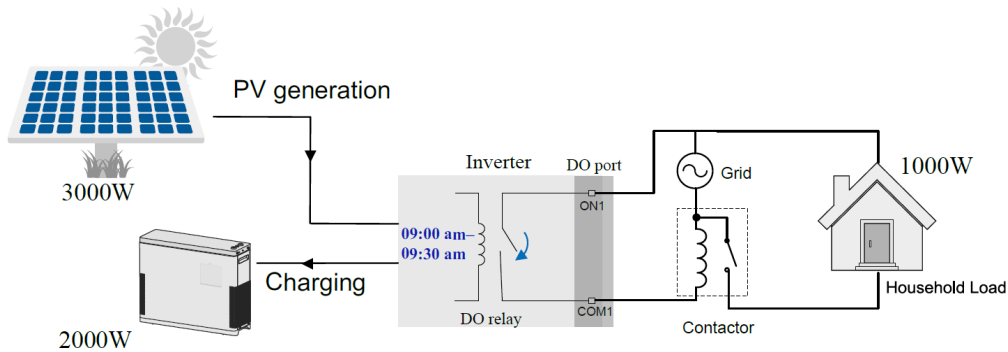
The system will control the load according to the power optimisation algorithm of the energy management.

During the pre-set time, the DO function will be enabled to power the load if the excess PV energy (Export) exceeds the optimised power value.

For example, the setting is to run between 09.00 and 09.30 when the PV is producing more than 1000 Watts excess energy.

Load Control	1/2
<ul style="list-style-type: none"> <li><input type="radio"/> Timer</li> <li><input type="radio"/> ON/OFF</li> <li><input checked="" type="radio"/> Optimized</li> </ul>	
Optimized	P2/2
Start time	09:00
End time	09:30
Power[W]	1000

**\*Please note: Optimised mode is disabled in the ‘Off-Grid’ mode.**



The PV is producing 3000 watts. The battery is charging at 2000 watts. Surplus = 1000 watts so the relay is enabled.

Once the DO 1 relay is enabled, **it will remain enabled for 20 minutes regardless, unless the inverter switches off.**

**Existing System:**

When 'Existing System' is enabled, the upper limit of the optimised power is the sum of the hybrid inverters' rated power and the existing system rated power.

NOTE: Where there is an existing system, it must normally be enabled otherwise faulty energy meter readings may occur.