

## VO Installation : iStar VPO

Effective 1<sup>st</sup> July 2025

### INSTALLATION

The VPO Unit is rated IP22. It should be installed in a clean and dry area, free from dripping water. It should not be installed in an area prone to flooding. The VPO Unit should be installed on a level surface in a well-ventilated area.

Every installation will be different and should be considered on its own merits. Installation design must be completed by a suitably qualified electrical contractor.

The VPO Unit is typically installed after the Supply Meter on the incoming mains supply feed and before the main switchboard.

The Mains Supply must be isolated before installation of the VPO Unit.

The VPO Unit does not have any overcurrent protection of its own (unless option C is specified). If option C is not specified it may be necessary to install a suitable additional protective device such as a MCCB or ACB.

The VPO Unit incorporates as standard an Aluminium roof to allow fitting of top entry cable glands. The roof must be removed when drilling holes for cable glands to ensure no drilling swarf falls inside the VPO Unit.

Incoming supply cables should be rated in accordance with AS3000 or with local wiring rules and regulations. They should be adequately supported. If incoming and outgoing cables are to be laid in the same cable tray / ladder cable sizes should be calculated as a grouped circuit with simultaneous overload.

The VPO Unit requires a Neutral Supply Connection. This needs to be rated for a minimum of 20% of the Rated Maximum Current of the unit.

### TYPICAL INSTALLATION

The VPO Unit is typically installed after the Supply Meter on the incoming mains supply feed and before the main switchboard. A Neutral connection rated at minimum 20% of the rated maximum current must be made to the VPO Unit.

Neutral and Earth MUST be connected to the VPO unit on the Neutral and Earth Bars provided

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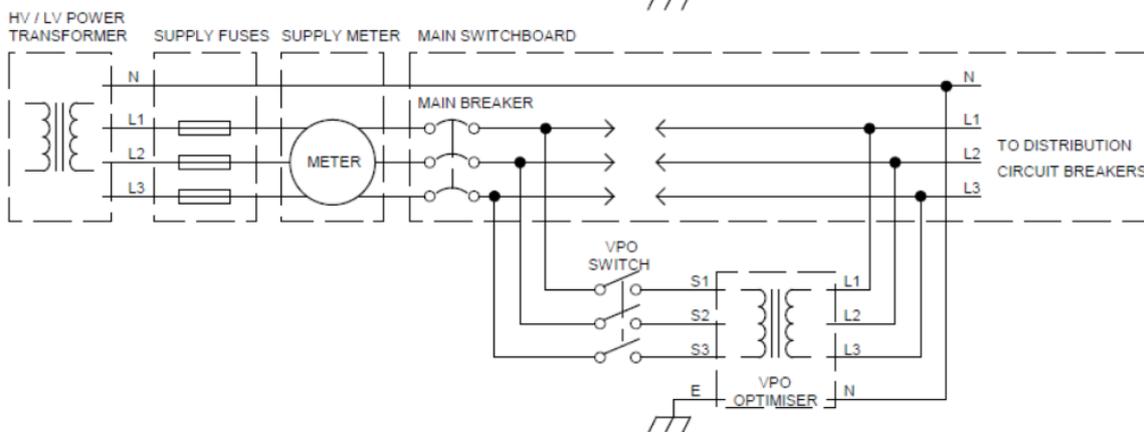
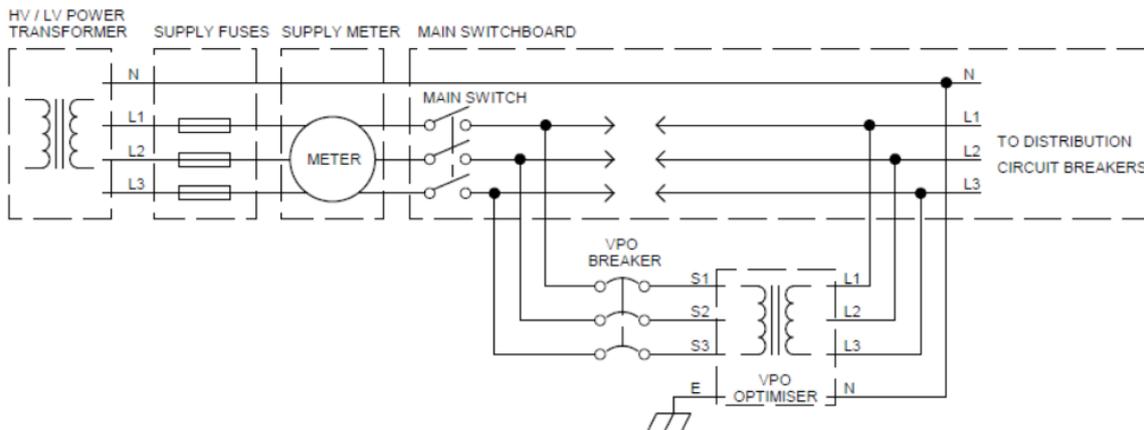
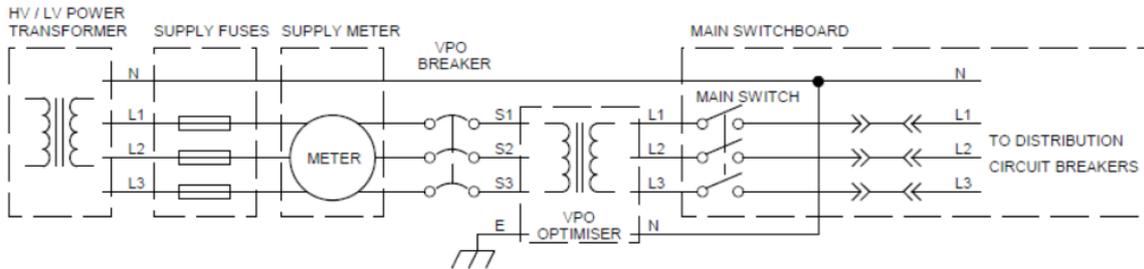
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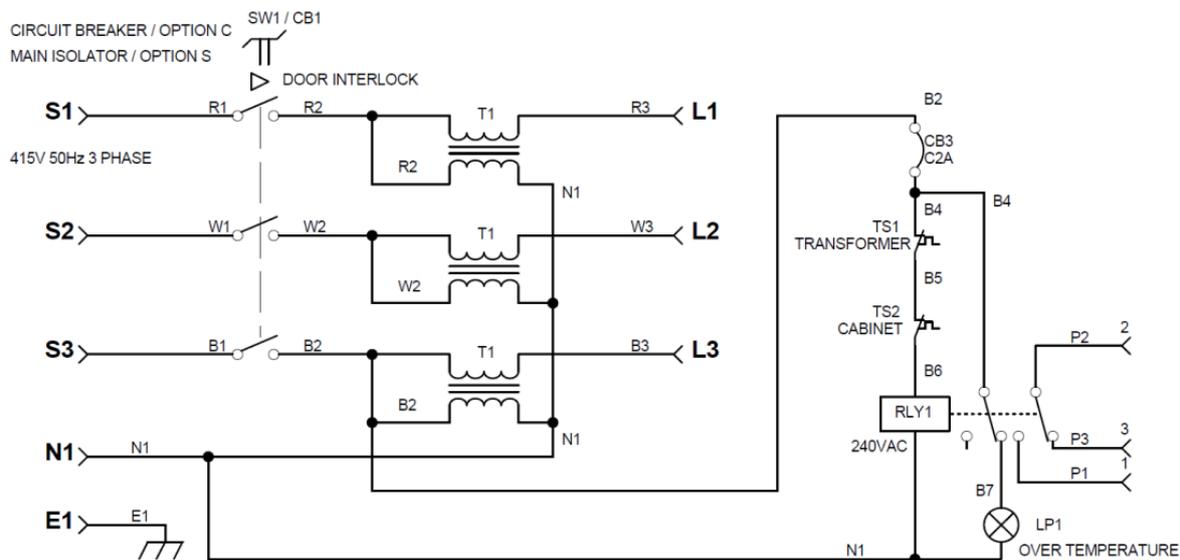
## EXAMPLE INSTALLATION CONFIGURATIONS



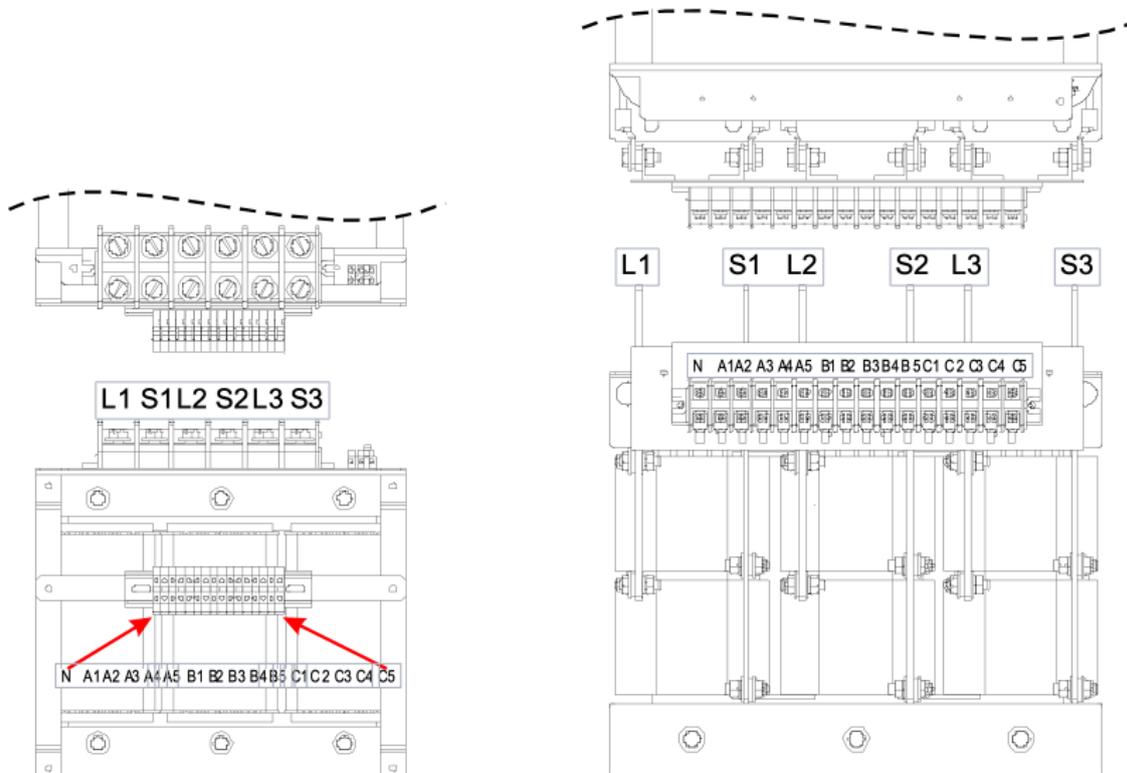
The VPO unit may be connected directly to the output of the Supply Meter, in this case a supply Circuit Breaker must be fitted to the input of the VPO unit.

If the Switchboard main switch is not a circuit breaker, it is recommended to fit a circuit breaker on the input to the VPO Unit. If the Switchboard main switch is a circuit breaker, an isolator switch or circuit breaker may be fitted on the input to the VPO Unit.

## VOLTAGE OPTIMISATION INTERNAL CONNECTIONS



## VOLTAGE OPTIMISATION SUPPLY AND LOAD CONNECTIONS



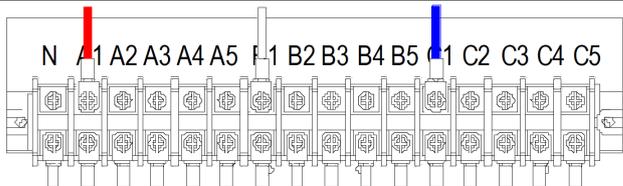
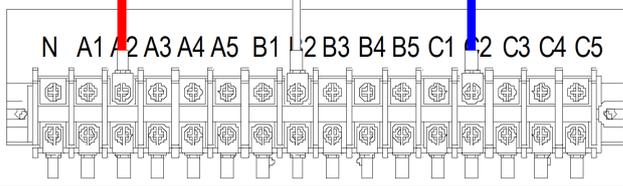
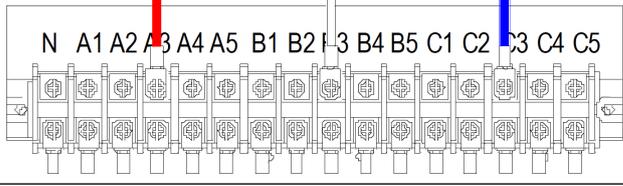
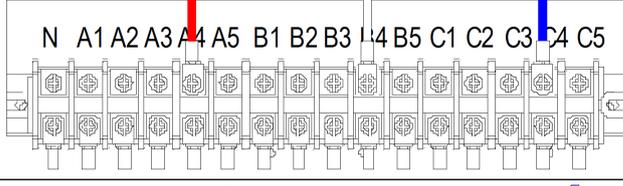
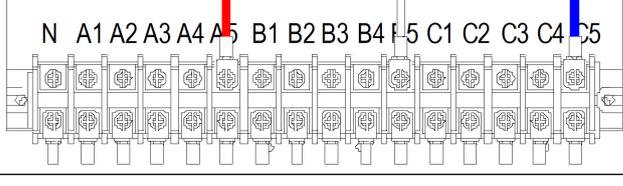
## VOLTAGE OPTIMISATION TAP SETTING

The VPO Unit is configured with the “midpoint” Voltage Optimisation Tap connected to A3, B3, C3.

The Voltage Optimisation Tap will need to be set to the appropriate setting as per a Supply Voltage Audit.

To change the Voltage Optimisation Tap from 10.0V to 7.5V reduction (for Optimisation Range -1):

- Isolate the mains supply to the VPO unit and remove the front panel.
- Disconnect the wire from A3 and connect it to A4. Disconnect the wire from B3 and connect it to B4. Disconnect the wire from C3 and connect it to C4.
- Refit the front panel and reconnect the mains supply.

	Optimisation Range - 1 Voltage Reduction	Optimisation Range - 2 Voltage Reduction	Optimisation Range - 3 Voltage Reduction
 <p>N A1 A2 A3 A4 A5 F-1 B1 B2 B3 B4 B5 F-1 C1 C2 C3 C4 C5</p>	-15.0 VAC	-20.0 VAC	-25.0 VAC
 <p>N A1 A2 A3 A4 A5 B1 F-2 B3 B4 B5 C1 F-2 C3 C4 C5</p>	-12.5VAC	-17.5VAC	-22.5VAC
 <p>N A1 A2 A3 A4 A5 B1 B2 F-3 B4 B5 C1 C2 F-3 C4 C5</p>	-10.0 VAC	-15.0 VAC	-20.0 VAC
 <p>N A1 A2 A3 A4 A5 B1 B2 B3 F-4 B5 C1 C2 C3 F-4 C5</p>	-7.5 VAC	-12.5 VAC	-17.5 VAC
 <p>N A1 A2 A3 A4 A5 B1 B2 B3 B4 F-5 C1 C2 C3 C4 C5</p>	-5.0 VAC	-10.0 VAC	-15.0 VAC

## FINAL CHECKS BEFORE APPLYING POWER

- Ensure the Mains Supply to the VPO unit is isolated
- Ensure the Mains Supply Input is connected to S1, S2 and S3
- Check the connection of the Neutral and Earth to the VPO unit
- Check no foreign objects have been left inside the VPO unit
- Ensure the Voltage Optimisation Tap setting is set correctly and all phases are set to the same tap
- Ensure all connections are tight
- Fit the front panel to the unit
- Apply power to the VPO unit by closing the Mains Supply Isolator. Check the output L1, L2, L3 are at the required voltages.

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