



INSTALLATION MANUAL FOR PALADIN SOLAR POWER DIVERTER

MATERIAL:

To perform this installation, you will need the following items:

1 x Paladin Solar Power Diverter (*included*)

2 x CT clamp with 3m cable and 3.5 mm plug (*included*)

1 x Thermostat probe (*included*)

1 x 3 position (manual/off/auto) switch - the PDL 687M3A/M fits most standard electrician's HWC kit switch-block (*not included*)

Or 1 x 3 position rotary change over switch. A Clipsal PS35COA or a Schneider K2B001UCH (*not included*)

A 3.5mm Male to Female stereo cable if you want to extend the CT (*not included*)

CAT5 cable and splice if you want to extend the temperature probe wire (*not included*).

ESTIMATED TIME OF INSTALLATION:

Mounting of the box: 30 mins (Switch Board mounting)

Wiring could take between 1-3h depending on the house type and distribution

PREPARATION:

Check that the phase where the hot water cylinder (HWC) is installed is the same as the PV Inverter, and that it isn't on a ripple control or separate time of use meter (Paladin must be connected to the same phase as the PV and HWC)

Select method one of the two locations to install Paladin (see below)

Select the wiring route you will follow

Install Paladin following the wiring diagram in this guide.

Note: Ideally the HWC should have a tempering valve (to prevent scalding), and a thermostat that can be increased to 72C. You should have PV approximately equal to base load + HWC element size.

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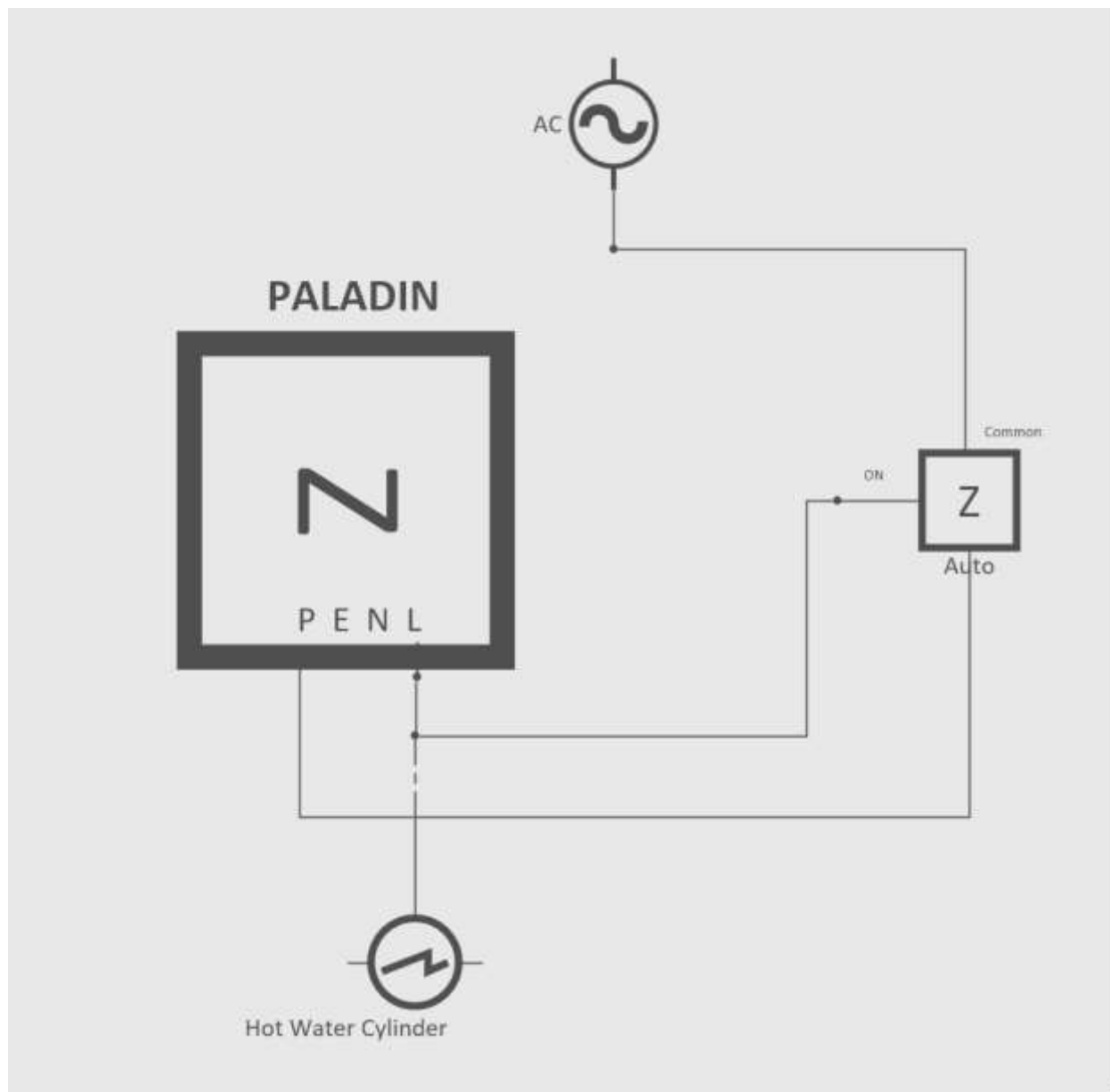
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LOCATIONS:

Paladin may be mounted in the HWC location or close to the meter board.

When Paladin is mounted next to the hot water cylinder, the Mains CT clamp needs to reach the mains input phase wire – this can be at either side of the meter (supply or load) as there is no electrical connection required. The CT clamp needs to be placed over the phase (brown or red) wire. Make sure it is completely closed (it will click). The PV Inverter connection is then downstream of this point.

Please install a bypass switch (replace the on/off switch in the HWC location) as follows:



TEMPERATURE PROBE:

When Paladin is mounted next to the meter box, the temperature probe wire may need to be extended to the water cylinder. Use network Cat5 cable to extend the wire.

Place the temperature probe into the HWC slightly higher than the thermostat location and at the opposite side in the opening. Slide the metal part of the probe diagonally upwards and away from the opening between the metal and the insulation. Used a plastic rod of about the same size as the probe, or a Phillips screwdriver, to carefully make a clearance hole for the probe to fit between the insulation and the metal.



Correct Install

Height above thermostat

Incorrect Install

The probe wire should be routed out of the element recess and the cover replaced.

Do not put the probe in a thermostat tube as it needs a good physical connection to the metal of the cylinder. Just above and to the left (or right) of the thermostat location is preferred.

CURRENT TRANSFORMER (CT) PROBE CONNECTION



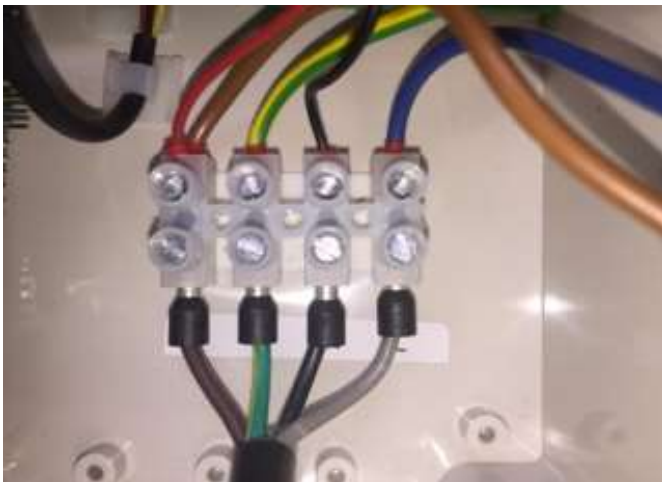
Insert the mains probe into the connector labelled “MAINS”:

Insert the solar probe into the connector labelled “SOLAR”

Ensure the cable ends are pushed home into the connectors

POWER CONNECTION:

It is best to use a 4-core mains wire with sleeves to ensure that there is an appropriately rated connection (26 Amps) with the white block:



Do not force large diameter TPS cable's wires into the block without sleeves, or the block may overheat due to a poor connection.

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TESTING YOUR INSTALLATION & TROUBLESHOOTING

Turn the power on.

Check that the temperature is showing the correct value

Check that the Mains IN or Mains Out are showing a correct value turn a jug or the oven on and make sure the Mains IN value increases. If it decreases or if is showing Mains Out, reverse the Mains Ct clamp

If the Mains value is lower than expected, check that the CT clamp is properly closed – it clicks when it is.