

## Instructions Kit Field Upgrade

### MODELS AFFECTED

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Solahart 250E5X36 and 315E5X36

### KIT PARTS

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#### KIT POWERSTORE UPGRADE 250L – Part N° 299399

Part No.	Description	Qty
052336	RELAY AND TSTAT- POWERSTORE	1
050144	WIRING SENSE HARNESS TSTAT 250L SPARES	1
120662	INSTRUCTIONS KIT FIELD UPGRADE	1
050140	CONTROLLER ASSY POWERSTORE GI	1
090206	INSULATION EPS ELEMENT COVER	1
126124	LABEL POWERSTORE 3 UPGRADE	1

#### KIT POWERSTORE UPGRADE 315L – Part N° 299400

Part No.	Description	Qty
052336	RELAY AND TSTAT- POWERSTORE	1
050141	WIRING SENSE HARNESS TSTAT 315L SPARES	1
120662	INSTRUCTIONS KIT FIELD UPGRADE	1
050140	CONTROLLER ASSY POWERSTORE GI	1
090206	INSULATION EPS ELEMENT COVER	1
126124	LABEL POWERSTORE 3 UPGRADE	1

### SAFETY PRECAUTIONS

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***This kit must only be installed by a suitably licensed electrical worker***

Safety precautions or areas where extra care should be observed when conducting tests outlined in this work instruction are indicated by print in ***bold italics*** and/or a warning symbol. Take care to observe the recommended procedure.

#### Live Testing

***The isolation procedure detailed within this work instruction requires potential 'live' testing to be conducted.***



***All State and Territory Authorities stipulate requirements that must be met before working live i.e. conducting a risk assessment and/or preparing a safe work method statement and wearing appropriate PPE.***

***It is the responsibility of the service person to be aware of and comply with the requirements of the State or Territory where the water heater is installed before working 'live'.***



***Hot surface or liquid. Personal Protective Clothing (PPE) shall be worn to reduce the risk of scalding.***



***General warning symbol. Observe the instructions accompanying the symbol.***

### WORK INSTRUCTION



1. **Isolate power to the water heater in the main electrical switchboard.**
2. **Remove upper and lower electrical covers (refer Fig 1).** Note: The upper cover will not be reused and can be discarded.
3. **Confirm no power present at the main terminal block inside the lower electrical cover on the heater, by checking voltage between the active and neutral terminals, and between active and earth terminals (refer Fig 2).**
4. Disconnect all wiring from the top thermostat, remove the thermostat and discard (refer Fig 3).



Fig 1

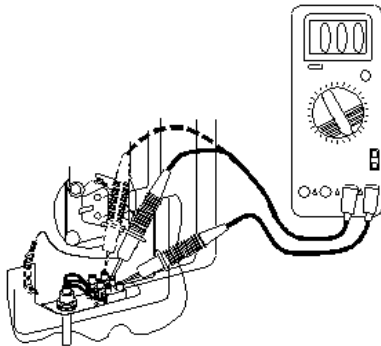


Fig 2

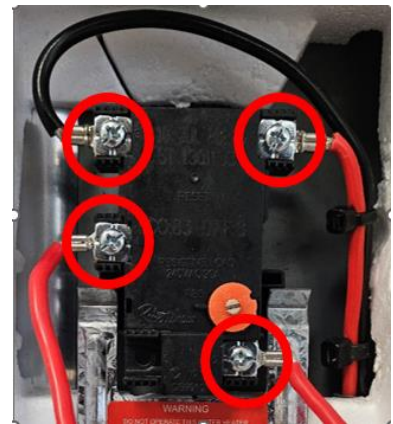


Fig 3

5. In the lower electrical opening remove the earth wire from the 6 Pin plug at the earth terminal on the water heater jacket (refer Fig 4).
6. Disconnect the main active and neutral wiring from lower terminal block and remove terminal block (refer Fig 5).
7. Disconnect 4 and 6 pin plugs from base of master controller (refer Fig 6).

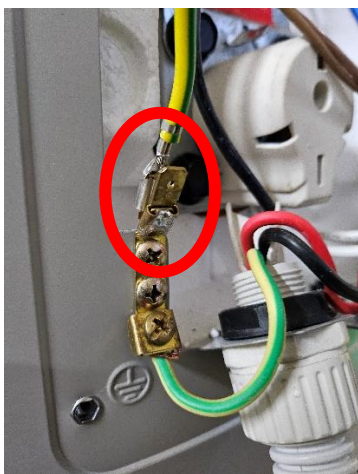


Fig 4



Fig 5

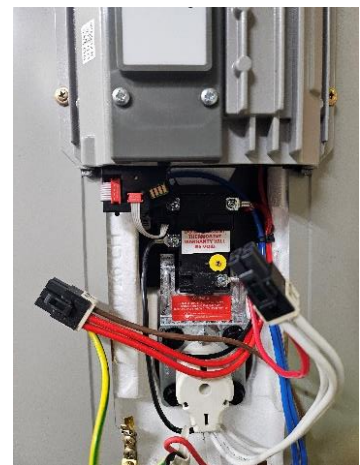


Fig 6

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8. Disconnect the sensor strip ribbon and ELS ribbon from bottom of the master controller (refer Fig 7).
9. Remove 5 screws retaining master controller and discard master controller (refer Fig 8).
10. Disconnect all wiring and unclip the ELS Assy from bottom thermostat and discard thermostat. Set ELS sensor aside to be refitted later in step 18 (refer Figs 9 & 10).



Fig 7

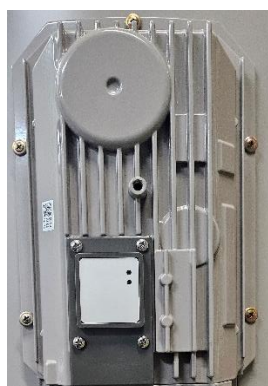


Fig 8



Fig 9

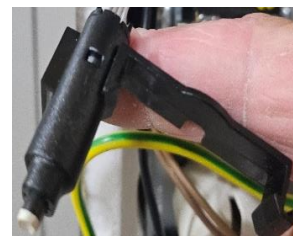


Fig 10

11. In the upper electrical compartment attach a draw wire to the neutral wire (refer Fig 11) and withdraw the wiring gently from the bottom and discard wiring loom. NOTE the cable ties need to be orientated correctly to pass through the conduit
12. In lower opening connect draw wire to the white, blue and brown wires of the replacement wiring loom (refer Fig 12) and draw the 4 wires up through the tank conduit (refer Fig 13).
13. Clip the replacement top thermostat and relay board from the kit into the thermostat bracket (refer Fig 14).



Fig 11



Fig 12

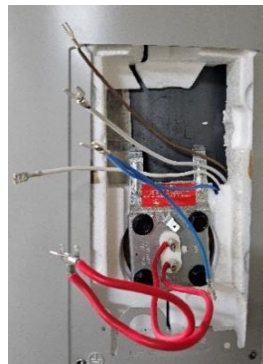


Fig 13

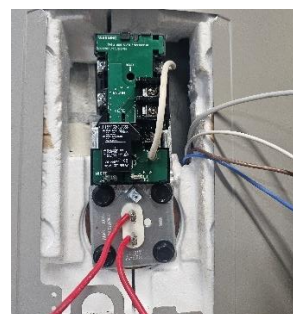


Fig 14

14. Cut cable tie and plastic bag containing plastic connector plugs from relay board and fit the insulators onto blue and white cables with small spade terminals (refer Figs 15 & 16).
15. Connect element wiring and fork connectors on new wiring loom to relay board as marked (refer Fig 17).
16. Connect blue and white wires with plastic insulators to relay board and retain wiring with the cable tie at top right of relay board (refer Fig 18).



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Fig 15



Fig 16



Fig 17

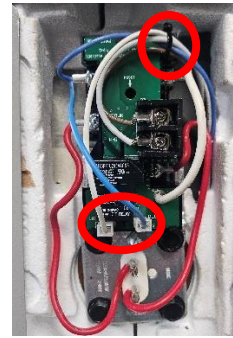


Fig 18

17. In the lower electrical cover clip replacement thermostat into the thermostat bracket (refer Figs 19).
18. Clip ELS sensor (previously set aside in step 10) onto lower thermostat (refer Fig 20).
19. Clip new terminal block to jacket (refer Fig 21).
20. Mount replacement master controller, using screws previously removed in step 9 (refer Fig 22).
21. Connect Brown active cable with shoelace terminal from master controller to the terminal block (refer Fig 23).

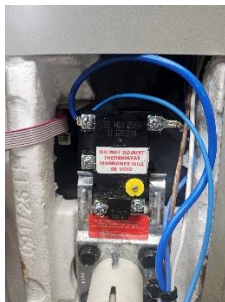


Fig 19



Fig 20

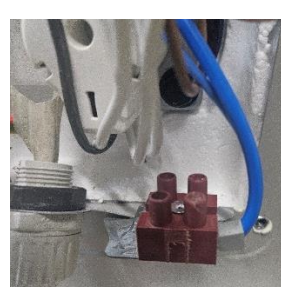


Fig 21



Fig 22

22. Connect brown active cable with fork terminal from the master controller to lower left of thermostat (ring terminal with 2 brown wires already in place refer Fig 24).
23. Connect ELS and Sensor strip Ribbon cables to the master controller (refer Fig 25).
24. Connect 4 and 6 pin plugs to master controller (refer Fig 26).

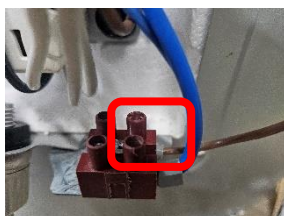


Fig 23



Fig 24

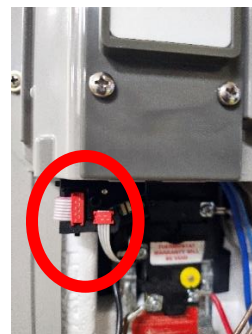


Fig 25

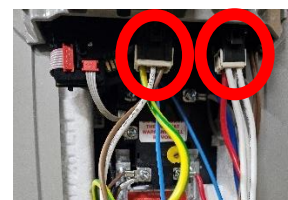


Fig 26

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25. Clip earth cable from 6pin plug to earth terminal on the water heater jacket (refer Fig 27).



Fig 27

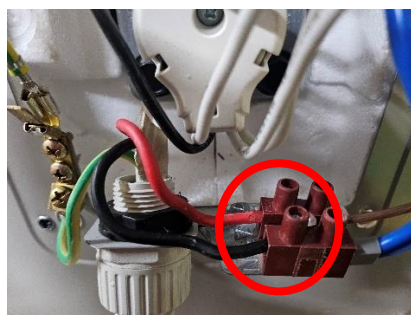


Fig 28



Fig 29

26. Conduct an insulation test to ensure water heater is electrically safe per steps 27 to 32. Note: DO NOT MEGGA BETWEEN ACTIVE & NEUTRAL.

**Insulation resistance of the water heater Neutral Circuit. (Reading not to be below 1 mega-ohm).**

27. Connect megger leads to the neutral of the water heater wiring and earth.

28. Operate megger. A reading above 1 mega-ohm should be obtained.

29. If a reading below 1 mega-ohm is indicated, all component parts will need to be individually tested to locate the fault.

**Insulation resistance of the water heater Active Circuit. (Reading not to be below 1 mega-ohm).**

30. Connect megger leads to the active of the water heater wiring and earth.

31. Operate megger. A reading above 1 mega-ohm should be obtained.

32. If a reading below 1 mega-ohm is indicated, all component parts will need to be individually tested to locate the fault.

33. Connect main active and neutral wiring to terminal block (refer Fig 28).

34. Install lower electrical access cover (removed in step 2) & upper electrical access cover supplied in kit using the 4 screws removed in step 2 with hand tools only.

35. Fix label 126124, supplied in the kit, adjacent to the master controller (refer Fig 29).

36. Restore power to water heater and contact CET by logging in to <https://onsite.combined.energy/> and using the 'Request Support' feature in the menu. CET will re map and confirm water heater operation.