**PowerSave servicing manual**

**Servicing process**

1) Check condition of circuit breaker

2) Internal visual inspection. Is there anything obvious that is damaged or broken?

3) Visual check of capacitors

4) Check terminals

5) Check and clean filters

6) Check comms modem status

7) Check antenna

8) Check actual readings from LCD (voltage, phase-phase voltage, current, power (kW, kVA, kVAr), power factor

9) Check temperature with thermal camera or digital thermometer.

**Service Troubleshooting**

| Item | Problem | Comment / Remark |
| --- | --- | --- |
| 0 | Device not turning on.  Symptoms: All LEDs are off / not indicating, fans not working, controller screen not booting up. | No power:  Check that the incoming Main supply is correctly connected and turned on.  Check that the Circuit Breaker Supplying the Power Save unit is turned on |
|  | Current values invalid on controller display | CTs are incorrectly wired or connected:  If two phases have negative values on the controller display, swap the CTs / Rogowskis of the two that are incorrect / negative ensuring that the current flow direction is correct. |
|  | Power Factor appears to be low or negative on the display | Potentially wrong direction of the CTs / Rogowski cables measuring the current flow.  Check that all CTs / Rogowskis are connected with current flowing in the right direction. |
|  | KVA and KW readings are negative values | Potentially wrong direction of the CTs / Rogowski cables measuring the current flow.  Check that all CTs / Rogowskis are connected with current flowing in the right direction. |
|  | No Comms signal | Review signal coverage map  Check antenna for obstructions  Check signal strength on site  Check doors are not closed  Check that customer’s stock, vehicles or furniture is not impeding antenna  Check on the portal if the unit is connected – Please contact Edge Electrons on 1300 334 329 or at [customersupport@edgeelectrons.com](mailto:customersupport@edgeelectrons.com) if unsure how to access the portal  Contact Edge if you suspect that the sim card has failed (unlikely). |
|  | Module cannot be found | Check that module has been correctly registered  Turn off device and check the physical comms connections are correct, free from damage and secure (at the back of the rack)  Check that any external physical comms connections are correct, free from damage and secure on site. |
|  | Individual PowerSave module breaker is tripping | Possibly Internal fault within one or more PowerSave modules.  Please contact Edge Electrons on 1300 334 329 or at [customersupport@edgeelectrons.com](mailto:customersupport@edgeelectrons.com) to co-ordinate a replacement module |
|  | Main Rack Isolator is tripping (inside enclosure to the right of controller display) | Possible internal fault with fan supply and the controller.  Please contact Edge Electrons on 1300 334 329 or at [customersupport@edgeelectrons.com](mailto:customersupport@edgeelectrons.com) to co-ordinate a replacement Isolator |
|  | Fans Not Working inside an individual module | Check that Module breaker is on  Check that module is correctly registered & online  Additional Step: Check that filters are not blocked  Check device is not obstructed |
|  | LEDs not indicating | Check that the main internal isolator is turned on  Check the individual module breaker is turned on and is not faulty  Please contact Edge Electrons on 1300 334 329 or at [customersupport@edgeelectrons.com](mailto:customersupport@edgeelectrons.com) to co-ordinate a replacement module |
|  | Modules not turning on | Check that the power to the PowerSave circuit is on.  Check that the rack controller is on  Check that the module circuit breaker is on  Check that module circuit breaker is not faulty |
|  | PowerSave unit cannot connect to the portal | Check that all modules have been correctly registered.  Turn off device and check the physical comms connections are correct, free from damage and secure (at the back of the rack)  Check that any external physical comms connections are correct, free from damage and secure on site.  Re-energise, Check that power is on. |
|  | Over-temperature fault | Check for external ambient temperature and heat loading from adjacent devices  Check clearances – device is free of objects and obstructions  Check that all module fans are working  Check that the rack’s main fan assembly is working |
|  | Current not sensing | Check :  CT / Rogowski loop are closed securely,  polarity of wires is correct,  connection of wires are tight, |
|  | Voltage not sensing | Check wiring from Circuit breaker to PowerSave, power cables are secure, tight and voltage is confirmed present on a multimeter  CT / Rogowski loop are closed securely  polarity of wires is correct  connection of wires are tight |
|  | Intermittent CT connection | **Check :**  That CT / Rogowski loops are closed **securely**  polarity of CT wires are correct  connection of CT wires are tight on terminal block  check that CT cabling is free from damage |
|  | Display faulty / not working | Are module LED lights still on? |
|  | High Surface Temperature | If dust filters have been installed, Dust Filters may need replacing  Check that PowerSave is clear from obstructions  Check that heat loads of other devices are not impacting the PowerSave unit |
|  | Circuit Breaker / MCCB tripping | Check that Circuit protection is adequately sized for the PowerSave unit  Check for fault / short circuit / damage in the cabling |
|  | Wires overheating | Check that Cables are adequately sized for the PowerSave unit  Check that Circuit protection is adequately sized for the cables |
|  | External Cabinet over heating | Please check that PowerSave rack is fully clear of objects and obstructions and all clearances are observed |
|  | Maximum Power Factor cannot be achieved  (i.e. less than the quoted post installation figure) | Check: has the customer recently increased load on the installation? E.g. new electrical plant and equipment, new switchboards etc  **PowerSave unit may potentially be undersized for additional loads -** **Call Edge Electrons to discuss**  Check: Is the imbalance of current between phases high? Ensure loads are balanced on the installation. Many single phase loads end up on the “A” and “B” phases.  **Call Edge Electrons representative to discuss** |
|  | Display shows greater than XX% current imbalance between the phases | Check installation that current loads are balanced to less than XX% |
|  | Rack has had unwanted movement | Rack has not been correctly secured. Please ensure rack has been installed and fixed into position correctly. |
|  | Other | Please contact Edge Electrons on 1300 334 329 or at [customersupport@edgeelectrons.com](mailto:customersupport@edgeelectrons.com) |