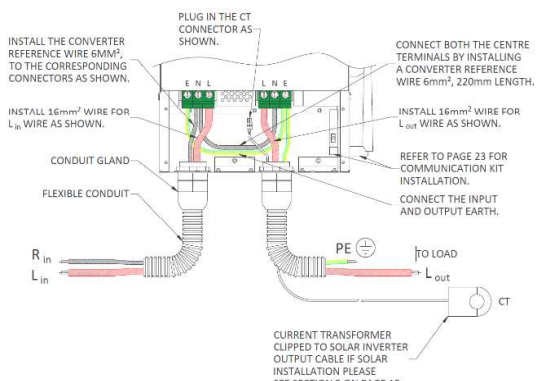
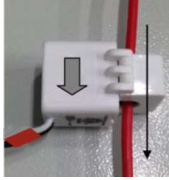
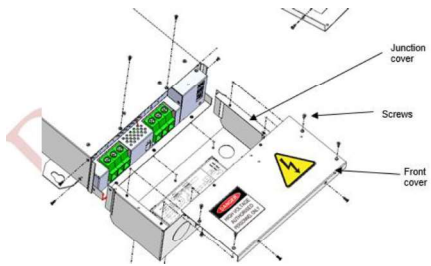
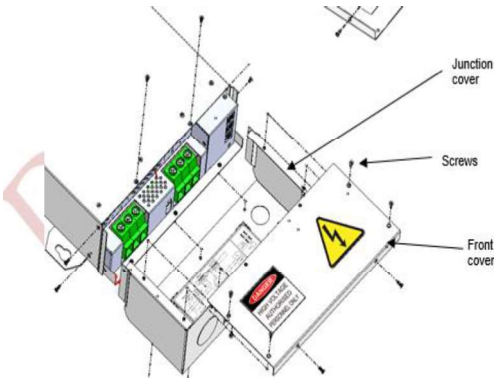


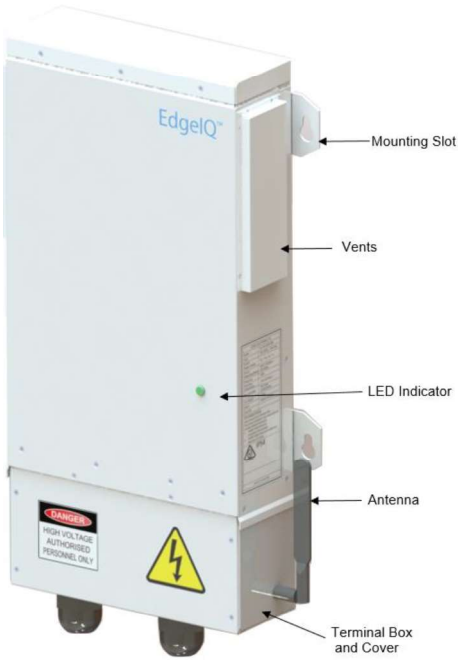
8. Appendix B: Commissioning checklist

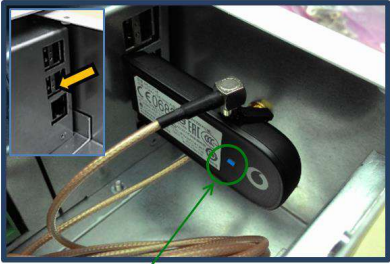
| Item | Checklist |
|--|---|
| A | Visual inspection |
| <p>A.1</p> <p>Ensure power is NOT connected to the EdgeIQ unit.</p> <p><i>EdgeIQ will be connected in series from the main switch circuit breaker to the installation load</i></p> | <p>Please confirm:</p> <p><u>ALL</u> energy sources have been safely ISOLATED from the EdgeIQ device</p> <p>Yes <input type="radio"/></p> |
| <p>A.2</p> <p>Cables from the main switch board to EdgeIQ unit correctly marked and terminated at both ends.</p> <p><i>Ensure cables are correctly supported, mechanically protected with insulation intact with glands and lugs tightened.</i></p> | <p>Please confirm:</p> <p>Yes <input type="radio"/></p> |
| <p>A.3</p> <p>Cables from the EdgeIQ unit going back to the main switch board correctly marked and terminated at both ends.</p> <p><i>Ensure cables are correctly supported, mechanically protected with insulation intact with glands and lugs tightened.</i></p> | <p>Please confirm:</p> <p>Yes <input type="radio"/></p> |
| <p>A.4</p> <p>The line, neutral and earth wire from the main switch board are connected properly to the EdgeIQ unit?</p>  <p><i>The screw holding the cable of line and neutral has been correctly torque. (torque setting: 20.4Kgf.cm minimum)</i></p> | <p>Please confirm:</p> <p>Yes <input type="radio"/></p> <p>Note: Both the input and output of the EdgeIQ must have an earth connected (at the same potential)</p> |

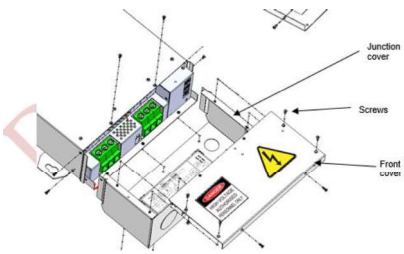
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| <p>A.5</p> | <p>The line, neutral and earth wire from the output of the EdgeIQ are properly connected to the connection on the main switch board load side?</p> <p><i>The screw holding the cable of line and neutral has been correctly torque. (torque setting: 20.4Kgf.cm minimum)</i></p> | <p>Please confirm:</p> <p>Yes <input type="radio"/></p> <p>Note: Both the input and output of the EdgeIQ must have an earth connected (at the same potential)</p> |
| <p>A.6</p> | <p>M2M modem should be connected to the correct port as shown on sticker in unit</p> <p>Modem / Comms Indicator Light</p> | <p>Please tick when this step is completed:</p> <p>Yes <input type="radio"/></p> <p>Note: Port for the M2M modem (dongle) is the back left, closest to the middle of the unit</p> |
| <p>A.7</p> | <p>External comms antenna connected has been connected properly to M2M modem</p> <p>Modem / Comms Indicator Light</p> | <p>Please tick when this step is completed:</p> <p>Yes <input type="radio"/></p> <p>Ensure locking nut of the antenna cable and the rubber seal washer are correctly installed</p> |
| <p>A.8</p> | <p>Confirm that the CT is clamped to the line wire of the solar inverter line cable?</p> | <p>Please tick when this step is completed:</p> <p>Yes <input type="radio"/></p> |

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| |  | <p>Ensure the CT <u>direction</u> is correct and cable insulation is undamaged. (Arrow is in the direction of current flow)</p> |
| B Electrical testing | | |
| B.1 | <p>Perform continuity test and confirm that polarity is correct for all cables</p> <p>Note: Do not close cover of the EdgeIQ unit yet as further test required</p>  | <p>Please tick when this step is completed:</p> <p>Line YES <input type="radio"/></p> <p>Neutral YES <input type="radio"/></p> <p>Earth YES <input type="radio"/></p> |
| B.2 | <p>Perform visual inspection:</p> <p>Check that all cables are secure and undamaged, cable support systems and cable protection are also secure and undamaged.</p> | <p>Please tick when this step is completed:</p> <p>Yes <input type="radio"/></p> |
| B.3 | <p>Perform insulation resistance test on cables <u>supplying</u> EdgeIQ</p> <p>Note: Disconnect wires from terminals, use 250v setting only. Reconnect wires once test has been completed.</p> | <p>Please tick when this step is completed:</p> <p>Yes <input type="radio"/></p> <p>Result Active & Neutral to Earth: _____ MΩ</p> |
| B.4 | <p>Perform insulation resistance test on cables from EdgeIQ <u>back</u> to switchboard</p> <p>Note: Disconnect wires from terminals, use 250v setting only. Reconnect wires once test has been completed.</p> | <p>Please tick when this step is completed:</p> <p>Yes <input type="radio"/></p> <p>Result Active & Neutral to Earth: _____ MΩ</p> |
| B.5 | <p>Perform a prospective short circuit current test on the incoming mains supply (between Active and Neutral):</p> <ol style="list-style-type: none"> 1. Connect your installation testing device (e.g. Fluke 1664) to the incoming active (line side terminal of the main switch) 2. Connect second test lead to the main neutral Bar 3. On PSSC / High Current setting perform test | <p>Please tick when this step is completed:</p> <p>Yes <input type="radio"/></p> <p>Supply A – N Result: _____ Amps</p> <p>Note: Circuit breaker main switch fault rating must be rated higher than test result.</p> |

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| | and record result | Note: Circuit breaker as an isolator can be installed immediately after main switch to avoid a network disconnection / reconnection. |
| B.6 | <p>With installation isolated at main switch, perform an external earth fault loop impedance test between incoming active supply (line side terminal of main switch) to the main earthing conductor:</p> <ol style="list-style-type: none"> 1. Disconnect main earthing conductor from the earth bar in the main switchboard. 2. Connect your installation testing device (e.g. Fluke 1664) to the incoming active (line side terminal of the main switch) 3. Perform external impedance test and record result. 4. Re-connect the main earthing conductor 5. With main earth re-connected to the Earth bar, perform the impedance test again to confirm that Earth is correctly connected, <p>(note: second impedance test result may be lower due to parallel earth paths being connected, meaning that your device may indicate a higher fault current)</p> | <p>Result : _____ Ohms Ze (External impedance)</p> <p>Result : _____ Amps</p> <p>Please tick when this step is completed: Yes <input type="radio"/></p> <p>Note: Circuit breaker main switch fault rating <u>must</u> be rated higher than earth impedance test result when calculated in amps</p> |
| C Post power-on commissioning | | |
| C.1 | <p>Re-energise the main switch isolator supplying EdgelQ when all electrical testing in Part B has been completed</p>  | <p>Please tick when this step is completed: Yes <input type="radio"/></p> <p>Note: Do not close the wire junction box of the EdgelQ unit yet as you will need to test line and load voltages (live testing). Do not allow unauthorised personnel near the opened junction box cover in this condition</p> |

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| C.2 | <p>Wait 2 to 5 minutes before the Green status LED indicator presents.</p> <p>Refer to Appendix C for the complete list of LED Status.</p>  | <p>Please tick when status LED is green:</p> <p>Yes <input type="radio"/></p> <p>If status LED does not turn green within 5 minutes, turn-off the main isolation switch supplying the EdgeIQ and return to items A1 to A5</p> |
| C.3 | <p>With the status LED green: Measure the voltage between active and neutral on the input terminals, check the input voltage is reading between 216v – 264v?</p> | <p>Please confirm active to neutral voltage on the EdgeIQ input terminals are between 216v and 264v</p> <p>Yes <input type="radio"/></p> |
| C.4 | <p>With the status LED green: Measure the voltage between active and earth on the input terminals, check the input voltage is reading between 216v – 264v?</p> | <p>Please confirm active to earth voltage on the EdgeIQ's input terminals are between 216v and 264v</p> <p>Yes <input type="radio"/></p> |
| C.5 | <p>With the status LED green: Measure the voltage between Neutral and Earth on the input terminals of the EdgeIQ confirming that the input voltage is reading between approximately zero volts</p> | <p>Please confirm that input voltage between neutral and earth is approximately zero volts:</p> <p>Yes <input type="radio"/></p> |
| C.6 | <p>Perform an internal earth fault loop impedance test between output of the EdgeIQ and the EdgeIQ earthing conductor:</p> <ol style="list-style-type: none"> 1. Connect one test lead of your installation testing device (e.g. Fluke 1664) to the active output terminal of the EdgeIQ 2. Connect the next test lead to the output / | <p>Please tick when this step is completed:</p> <p>Yes <input type="radio"/></p> <p>Result: _____ Ohms Zs (circuit impedance)</p> |

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| | bridged earth terminal of the EdgeIQ 3. Perform fault loop impedance test | Note: Impedance at the output of the EdgeIQ (Zs) must be lower than the maximum value of impedance for the type of cabling used. |
| Note | Completion of Steps C1 to C6 confirms the EdgeIQ unit is energised but in <i>bypass mode</i> only and therefore is not yet regulating the input voltage | |
| C.7 | <p>Check the signal of the M2M.</p> <p>Solid Blue means that signal is good</p> <p>Note: This should be <u>solid blue</u> not flashing</p>  <p>Modem / Comms Indicator Light</p> | <p>Please tick when this step is completed:</p> <p>Yes <input type="radio"/></p> <p>If solid blue signal cannot be obtained, re-check the signal strength of the VODAFONE to the installed site. If signal is still low on Vodafone signal coverage map, consult Edge Electronics for possible solution.</p> |
| C.8 | <p>Turn-on all circuit breakers at the main.</p> <p>Note: Only the use circuit breaker should be turned-on.</p> | <p>Please tick when this step is completed:</p> <p>Yes <input type="radio"/></p> |
| D | CLOUD (Positive external communications) | |
| D.1 | <p>For the customer to register their EdgeIQ unit on-line and receive remote monitoring services, the unit <u>must</u> have a positive communication connection to the Edge Electronics “CLOUD” server</p> <p>Check the unit has a positive communication by:</p> <ol style="list-style-type: none"> 1. Entering the below URL into your phone/internet https://www.edgecustomerportal.com/utility/online-status/ 2. Entering the unit serial number as requested on the URL page and hit “Search” 3. Positive communication established when ‘Online’ status is returned <p>Serial number: <input type="text" value="EE2020050004000021"/> <input type="button" value="Search"/></p> <p>EdgeIQ EE2020050004000021 (da953fe6) Online 244.91V 2018-May-09 09:50 UTC marginal -99dBm 2018-May-09 08:45 UTC</p> | <p>Please tick when this step is completed:</p> <p>Yes <input type="radio"/></p> |

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| | 4. No positive communication established when 'Unknown' status is returned | |
| D.2 | Should 'Unknown' status be returned, try and relocate the antenna to a location where optimal signal strength can be obtained. Should the 'Unknown' status still be returned, the unit does not have positive communications with the Cloud and you must contact Edge Electrons (customersupport@edgeelectrons.com) to rectify. | Please tick when this step is completed: Yes <input type="radio"/> |
| G | Operational Testing – Confirmation of voltage regulation | |
| G.1 | Call Edge Electrons representative for assistance | |
| G.2 | With the status LED green, measure the voltage between active and neutral on the Edge IQ output, confirm that the output voltage is reading 230V | Please confirm Active to Neutral voltage on the Edge IQ output terminals is 230v: Yes <input type="radio"/> |
| G.3 | With the status LED green, measure the voltage between Active and earth on the Edge IQ output, confirm that the output voltage is reading 230V | Please confirm Active to Earth voltage on the Edge IQ output terminals is 230v: Yes <input type="radio"/> |
| G.4 | With the status LED green, measure the voltage between neutral and earth on the input terminals of the Edge IQ confirming that the input voltage is reading between <u>approximately zero volts</u> | Please confirm that input voltage between neutral and earth is approximately zero volts: Yes <input type="radio"/> |
| G.5 | Place the cover of the termination area and tighten screws holding the cover.  | Please tick when this step is completed: Yes <input type="radio"/> |
| G.6 | <u>Provide completed checklist to the customer</u> | |
| COMMISSIONING COMPLETE | | |