


|  | | Inverters 4 or 5 kW / 5 kVA (Single) (High Voltage) Installation & start-up checklist | |
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| Checklist prior to start-up | | | ✓ |
| <i>AC</i> | AC input circuit breaker | 32A double pole | |
| | AC output circuit breaker | 20A double pole | |
| | 3 core copper wire | Cable size to be specified by electrician, recommend 4mm ² minimum | |
| | Inverter AC supply | From main supply, before earth leakage | |
| | Inverter AC output | Supplies the earth leakage in the DB board | |
| | Neutral / Earth wires on AC output | Needs to be bonded, before the earth leakage device | |
| | AC surge arrestor / AVS / AVR (for generators) | Recommended. | |
| <i>Battery</i> | Lead acid battery | Any type, minimum 4x 200AH. Recommend 8x 200AH to achieve the inverter rated capacity. | |
| | Lithium battery | Battery BMS need to supply at least 100A continuously. If more than one battery, connect battery no 1 positive to the inverter and last battery negative to inverter. | |
| | Battery cable | 25mm ² or 35mm ² copper cable, max 2m length, equal length for + and - wires | |
| | DC battery circuit breaker / fuse | 125A | |
| | Battery balancer | Connected to each 12V battery to ensure balance between batteries. Not applicable if 48V Lithium battery is used. | |
| <i>Solar</i> | Solar panels in series | Open circuit voltage (Voc) < 450V. Check with multi-meter on a sunny day 120V < Max. power voltage (Vmp) < 430V. Calculate this value: Vmp x # of panels in series | |
| | Solar strings | Max 2 strings / Max 20A from panels to inverter. Do not share panels between inverters. | |
| | Solar panels | Total panel power < 5500W _p | |
| | Fuse / DC circuit breaker | 15A per parallel string | |
| | DC surge arrestor | Recommended | |
| | Solar cable | Recommend 6mm ² cable, max 3 strings per cable | |
| | Solar panel array grounding | All solar panels frames are connected to copper wire and is grounded properly | |
| | Aux. fittings | MC4 connectors single/parallel, PV solar panel mounting rails, anti-theft clips, roof brackets, etc. | |
| General notes: | | | |
| Do not make live connections. Switch off AC supply when connecting AC wires. Disconnect Solar panels when connecting solar wires. Switch off battery circuit breakers when connecting battery wires. | | | |
| Prior to switching on circuit breakers / fuses / inverter, double and triple check that the wires are in the correct places and positions. Having 2 wires switched will cause damage to the inverter. It takes a few moments to double check all connections. | | | |
| When your electrician issues a CoC, please ensure that the inverter is disconnected from AC wires when a "Megger" or any other high voltage testing device is used. | | | |
| Start-up | | | |
| Ensure all circuit breakers / fuses are switched off. This includes AC supply, AC output, battery and solar panels. | | | |
| Switch on the battery circuit breaker / fuse. | | | |
| Switch on the inverter by means of "stand-by" button below / on the side the inverter. | | | |
| Enter the settings menu and set the correct settings for the inverter. This will affect how the inverter will behave (ie UPS / hybrid / offgrid) and will determine how long the batteries will last. The inverter user manual has a detailed description of each setting and it's purpose. Ask the battery supplier of charge settings for the batteries (charge voltage / float voltage / charge current / cut-off voltage). | | | |
| After all settings was changed to the desired values, switch off the inverter by means of the "Stand-by" switch and battery circuit breaker. | | | |
| The system is now ready to be used. Power the system up by starting with batteries, inverter, AC in, AC out and finally solar panels. | | | |
| If a TSP lithium battery is used, TSP Solar Bot can be used to activate battery communication using a Raspberry Pi and the online monitoring platform. | | | |