| www TheSunPays co.za | Inverters<br>6 kW / 6 kVA **(Single) (High Voltage)**<br>Installation & start-up checklist | |
|---|---|---|
| **Checklist prior to start-up** | | ✓ |
| *AC* | AC input circuit breaker | 40A double pole | |
| | AC output circuit breaker | 25A double pole | |
| | 3 core copper wire | Cable size to be specified by electrician, recommend 6mm$^2$ 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 | Internally bonding relay contactor | |
| | AC surge arrestor / AVS / AVR (for generators) | Recommended. | |
| *Battery* | 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. 2 x 100Ah lithium batteries recommended. | |
| | | If more than one battery, connect battery no 1 positive to the inverter and last battery negative to inverter. Busbar recommended for 2 or more batteries and inverters on the system. | |
| | Battery cable | 35mm$^2$ copper cable, max 2m length, equal length for + and - wires | |
| | DC battery circuit breaker / fuse | At least 125A. 200A recommended. | |
| | Battery balancer | Connected to each 12V battery to ensure balance between batteries. Not applicable if 48V Lithium battery is used. | |
| Solar | 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 16A +16A from panels to inverter. Do not share panels between inverters. | |
| | Solar panels | Total panel power < 4000W$_p$ + 4000W$_p$ | |
| | Fuse / DC circuit breaker | 15A per string | |
| | DC surge arrestor | Recommended | |
| | Solar cable | Recommended 4mm$^2$ PV cable per string. | |
| | 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 its purpose. Ask the battery supplier for 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. | | |
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Full warranty terms and conditions: https://shop.thesunpays.co.za/pages/product-warranty
User manual: https://shop.thesunpays.co.za/pages/technical-support