

		<b>Inverters</b> 5.5 kW / 5.5 kVA ( <b>Parallel up to 3 inverters</b> ) Installation & start-up checklist	
<b>Checklist prior to start-up</b>			✓
<i>AC</i>	AC input circuit breaker	40A double pole <b>per inverter</b>	
	AC output circuit breaker	20A / 25A double pole <b>per inverter</b>	
	3 core copper wire	Cable size to be specified by electrician: Recommend minimum 10mm <sup>2</sup> for 2 inverters & 16mm <sup>2</sup> for 3 inverters	
	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 arrester / AVS / AVR (for generators)	Recommended.	
<i>Battery</i>	Lead acid battery	2 Inverters : 16x 200AH, recommend 20x 200AH 3 Inverters : Not recommended, use lithium batteries	
	Lithium battery	2 Inverters : Battery/s must be able to supply 230A continuously 3 Inverters : Battery/s must be able to supply 344A continuously If more than one battery, connect battery no 1 positive to the inverter and last battery negative to inverter.	
	Battery cable	35mm <sup>2</sup> copper cable from each battery connected to copper busbar. 35mm <sup>2</sup> copper cable from copper busbar to each inverter.	
	DC battery circuit breaker / fuse	125A per inverter	
	Battery balancer	Connected to each 12V battery to ensure balance between batteries. Not applicable if 48V Lithium battery is used.	
<i>Solar</i>	IMPORTANT	<b>DO NOT "SHARE" SOLAR PANELS BETWEEN INVERTERS</b>	
	Solar panels in series	Open circuit voltage (Voc) < 450V. Check with multi-meter on a sunny day 120V < Max. power voltage (Vmp) < 450V. Calculate this value: Vmp x # of panels in series	
	Solar panels	Total panel power < 5500W <sub>p</sub> per inverter	
	Solar strings	Max 2 strings / max 20A from panels to inverter. Do not share panels between inverters.	
	Fuse / DC circuit breaker	15A per parallel string	
	DC surge arrester	Recommended	
	Solar cable	Recommend 6mm <sup>2</sup> cable rated for 1500V, max 3 strings per cable	
	Solar panel array grounding	All solar panels frames are connected to copper wire and is grounded properly. <b>NB – For this inverter, ensure that the grounded wire is not connected to the inverter directly or indirectly. Special care should be taken for houses with metal roofs since the roof is usually connected with utility earth.</b>	
	Caution	This inverter is non-isolated. Do not work on the PV wires while utility is connected and/or the inverter is switched on.	
		This is a high PV voltage inverter. Care should be taken when connecting many panels in series to prevent injury at high voltages.	
Aux. fittings	MC4 connectors single/parallel, PV solar panel mounting rails, anti-theft clips, roof brackets.		
<i>Communication Cables</i>	Current sharing cables (twisted Red/Black)	Ensure that the cables are properly connected to the green connector. Ensure a proper connection between the inverters. See inverter user manual for instructions on connection positions	
	Data communication cables (grey)	Take care when inserting the cables, the pins on the male plug easily bends. See inverter user manual for instructions on connection positions	
<b>General notes:</b>			
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.			
<b>Start-up:</b>			
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 one inverter by means of "stand-by" button below / on the side the inverter.			
<b>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.</b> 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 / float / cut-off voltage & charge current).			
Ensure that the parallel settings on the inverter is set.			
After all settings was changed to the desired values, switch off the inverters by means of the "Stand-by" switch and battery circuit breaker. Repeat for the remainder of inverters.			
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.			