

MICRO CARE



Solar Inverter & UPS Solutions

BATTERY

INVERTER



GRID



LOAD



All Microcare Inverters are Pure Sine Wave Bi-Directional Inverters designed to obtain the optimum Inverted power from the installed Solar System. Microcare Inverters come with the latest software to improve the automatic change over from the grid to the Inverter. This cutting edge software innovation allows for uninterrupted supply to a range of applications from a sensitive server room to industrial machines. The Inverter is able to anticipate grid failure and pre-charges the circuits for rapid transfer of power and change-over up to 4 times faster.

When the grid returns with a fluctuating supply voltage, the Microcare Inverter can delay the change back from batteries to grid to allow the grid to stabilise to avoid possible damage to the load. Microcare Inverters are capable of running at 200% continuous capacity when the grid is present. Should the grid fail, the Inverter will return to its rated power. Microcare Inverters use galvanic isolation which makes them highly robust and reliable with low standby current and high efficiency.

- Available for 12/24/36/48 VDC systems
- Output power up to 32kW Single-Phase and 96kW Three-Phase
- LCD display and low idle current
- High surge capacity for motor start
- Power Limiting to prevent overload
- Timed overload capacity with auto shutdown
- 3-Attempt auto restart with short circuit protection
- Built-in, high rate, multi-stage battery charger
- Minimum local service turnaround time
- Fan cooling for optimum performance
- Audible buzzer indicating faults, overload and status
- 3 Year Warranty



UPS and Power Back-up Functionality

200% Bypass Capability

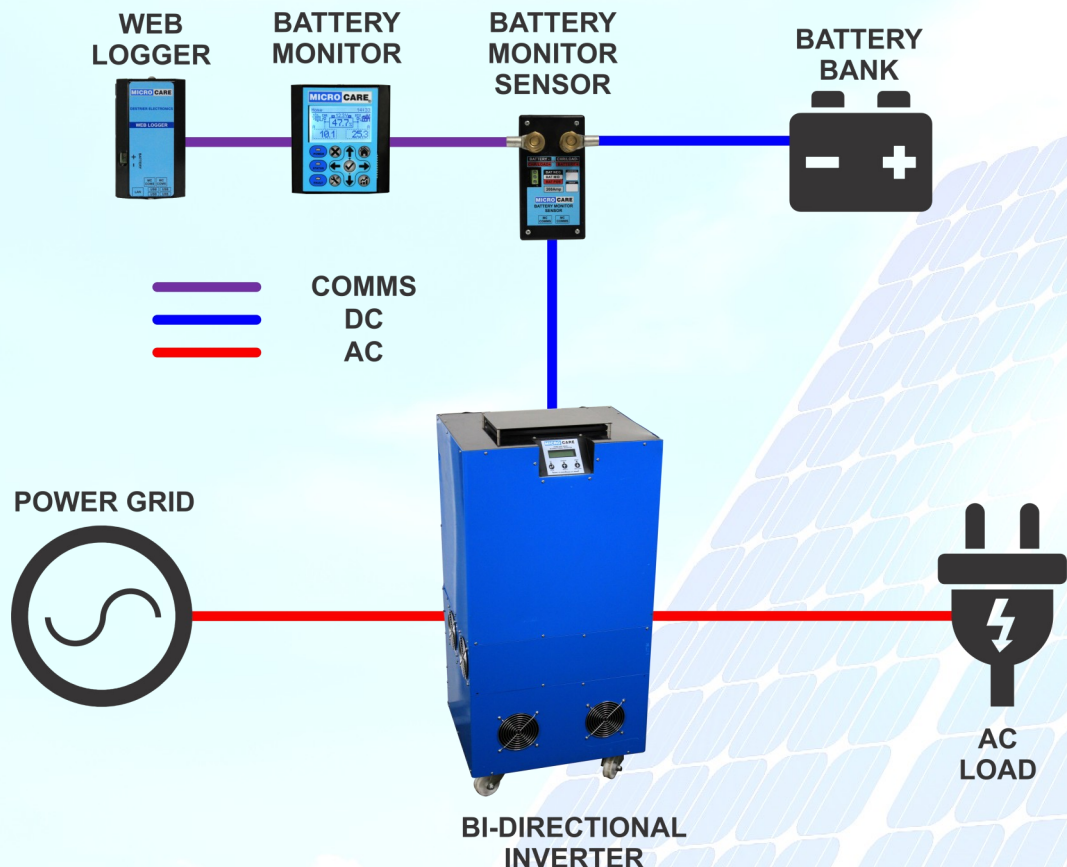
Microcare Inverters are extremely capable UPS Inverters and have a number of special features built in to assist in power back up. The Inverter can be set to run at 200% of its rated power from the grid when the grid is present.

Adjustable Sensitivity to Grid Failures

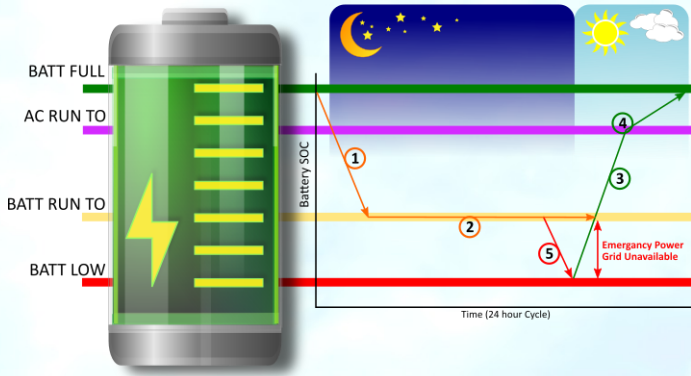
A high sensitivity to grid failures can be adjusted with up to 3ms change over from a grid failure to the load being transferred to running on batteries

Protecting your Appliances

When the Inverter is running a load on battery power and the grid returns from an interruption, a delay can be configured of up to 5 minutes before the load is transferred back to the grid. This allows the grid voltage to stabilise before the load is transferred back to the grid protecting your appliances.



Grid Interactive (Semi-Hybrid) & Grid Assist Functionality



Electricity Cost Saving

For customers looking at electricity cost saving on their monthly bills the Microcare Inverter is also a fully grid interactive solar Inverter when switched into Solar Control Mode. The Inverter will use solar power when available and also store the excess solar power in the batteries for night time use. Once all the solar power has been used the Inverter will automatically switch the load back to the grid for the rest of the night until the sun comes up the next day where the load will be automatically switched to solar power.

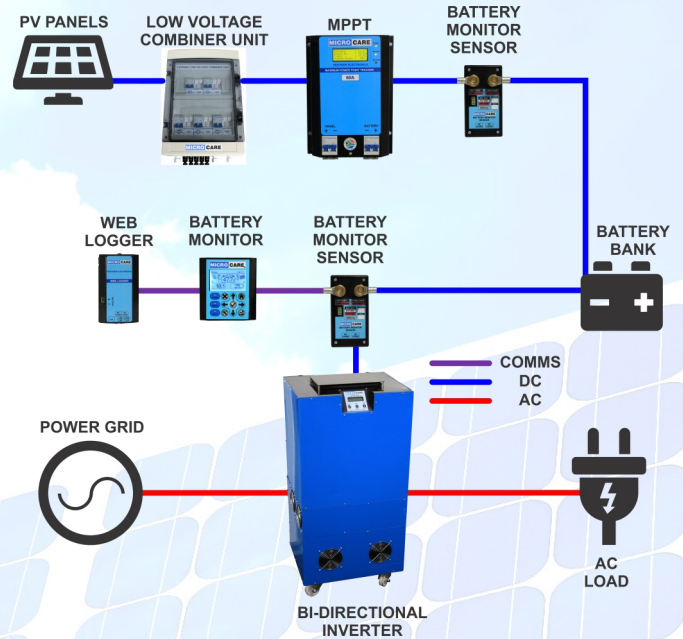
At no stage will there be any excess power to be fed back to the municipal grid and the system can safely be installed with any grid connection.

Power Usage Priority

The power usage priority of this grid interactive system is **1st Solar Power, 2nd Battery Power & 3rd Grid Power.** If the grid fails at any stage the batteries will be used and discharged using the stored emergency power supplying backup power to the load.

Grid Assisted Peak Load

The Microcare Inverter also has Grid-Assist functionality meaning that a load of up to 200% can be run through the Inverter with the assistance of grid power. If a peak load is required greater than what the Inverter is capable of supplying the Inverter will switch that load automatically back to the grid for assistance. When the peak load reduces the load is transferred back to Solar / Battery power again.



Full Off-Grid Solar Mode Functionality

Off Grid Operation

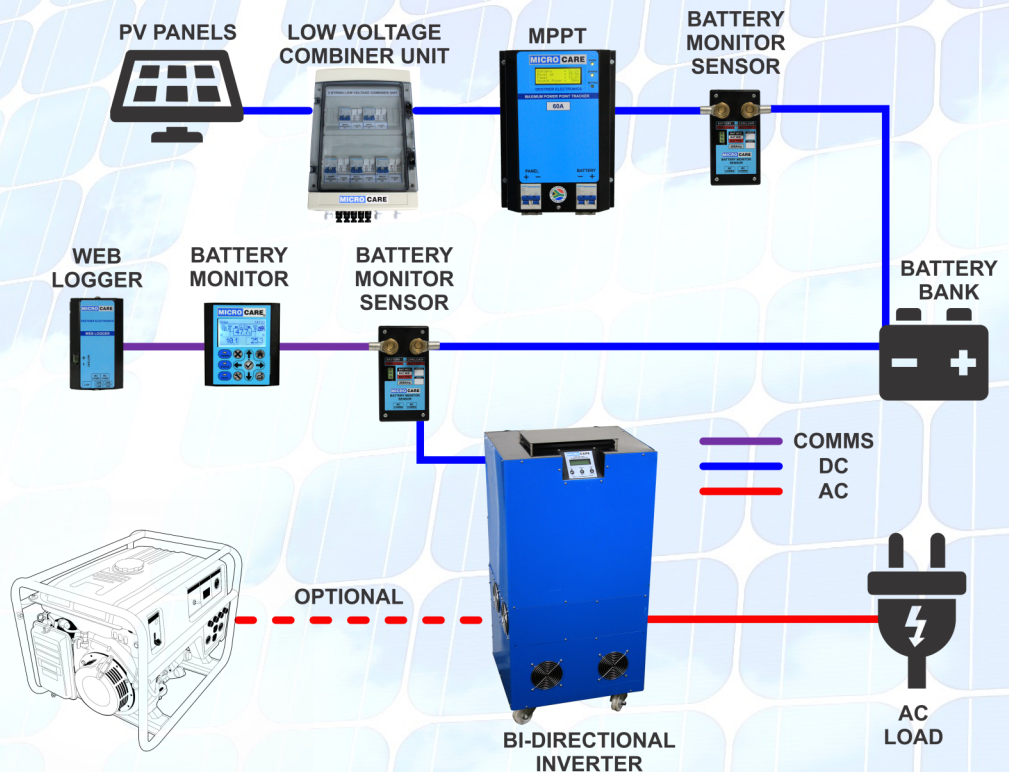
The Microcare Inverter can be used in full off grid environments where no grid is available in combination with the Microcare MPPT Regulators. The Inverters will continuously supply AC power to the load using battery/ solar power.

Fuel Generator Capability

The Microcare Inverters have functionality and sensitivity settings that can allow them to be safely connected to a fuel generator to assist in charging the batteries or supplying excess power when required.

Programmable Relay

Microcare Inverters have the capability for a programmable relay to be switched on through the use of a Microcare MPPT controller (based on battery voltages) to either load shed specific high loads if the batteries are getting low or to auto start fuel generators that have the auto start functionality to assist in charging the batteries when solar power is low.



Island Mode or Hybrid Solar Solution

Island Mode (No Grid Connection)

When a Microcare Grid-Tied Inverter is connected to the output of our Bi-directional Inverter it is known as Island Mode or Islanding. A micro-grid is created that allows the Grid-Tied Inverter to be referenced and turned on even when the main grid is not present. The Grid-Tied Inverter will start producing power from the sun during the day to supply the load directly. The excess power will be used to charge the batteries. At night the Bi-Directional Inverter will supply power to the load making use of the stored solar power in the batteries until the sun comes up again where the batteries will be re-charged.

Grid Connected Hybrid Solar Solution

When this system is connected to a grid connection it will operate as a Hybrid Solar System. The power usage priority will be set as follows, **1st - Solar Power, 2nd - Grid Power, 3rd - Battery Power** that will be used as a backup only in case of grid failure. Our **Grid-Tied Limiter** can also be used in conjunction with this option to restrict excess energy feedback to the grid making it safe to use behind electronic and pre-paid energy meters.

Advantages of this Hybrid Solar Solution

1. This system can be sized to your specific energy & load requirements unlike the ALL-IN-ONE type hybrid inverters.
2. Excess power for the load is always supplied by the grid when available up to 200% of the Bi-directional Inverters capability.
3. Smaller banks of batteries can safely be utilised for backup purposes only, bringing down the overall system cost.
4. Batteries are only cycled when the grid fails and not on a daily basis allowing the battery life to be extended.
5. PV installation is simplified due to string connection of the solar panels.



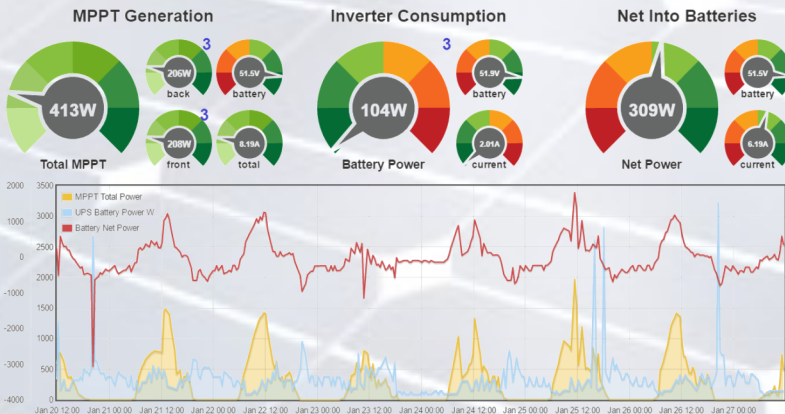
Battery Monitoring & Web Access

Battery Monitoring and Remote Access

The Microcare system also has the ability to monitor the charge and discharge of the batteries through Microcare's Battery Monitoring and Web Logger system.

The exact state of charge (SOC) of the batteries will be calculated on a daily basis with graphs of battery SOC(%), charging (kWh), discharging (kWh), peak charge & discharge amps (A) as well as maximum and minimum DC system voltages.

All this data can also be accessed on the internet or your mobile devices via the Microcare Web Logger.



Wi-Fi Connection

Microcare has now developed a Wi-Fi Module which will enable the end-user to log on, Monitor, evaluate and change performance of selected Microcare products such as, Inverters, MPPTs and Three-Phase Solar Pump Controllers.