

UB12220 12V BATTERY

This guide covers the major features of this product - it does not cover all of the available functions. This guide is not intended to replace the original equipment manual. Please refer to the manual for more detailed operating instructions and safety information.

SAFETY PRECAUTIONS

- Do not wire multiple batteries in series to create a higher voltage power supply without explicit permission, and the necessary safety and electrical permits to do so.
- Never mix the AGM battery with other types of batteries
- Keep the battery terminals from contact with wire, metal cabinets, metal tools. Do not wear any watches, personal jewelry, hair pins or any other metallic objects when servicing the batteries.
- Do not short circuit the terminals of the battery
- Do not solder directly to the battery terminal.
- Do not use the AGM battery in the upside-down position.
- Observe circuit polarities (positive and negative).
- Do not use organic solvents, cleaning agents, paint thinner, petroleum products to clean battery surface.
- Use an insulating blanket to cover exposed portions of the battery when performing extended maintenance that could result in personal or equipment contact with the conductors.

EQUIPMENT DESCRIPTION

The UB12220 12V Battery [1] is a deep-cycle, 12V battery. The electrolyte for storing the charge is suspended in fiberglass matt separators which act as absorbent spongers. These are known as AGM (Absorbent Glass Matt) batteries and are much safer than other batteries and require no maintenance.

Deep cycle batteries are designed to be charged and discharged over and over again, which make them ideal for renewable energy applications.

This battery has a capacity of 22 Amp hours when discharged over a 20 hour period. The capacity is lower when it is discharged faster. We can roughly calculate the capacity of the battery in Watt hours, using the following formula.

Energy (Watt hours) = Voltage (Volts) x Current (Amps) x Time (hours) = 12 Volts x 22 Amp-hours = 264 Watt hours

A fully charged 12 V battery actually has a voltage of roughly 14.2V.



Figure 1: UB12220 Battery

EQUIPMENT OPERATION

The battery is supplied with nuts, bolts and washers to enable the connection of wire terminals to the battery terminals [2].

The battery has a positive terminal [2] and a negative terminal [3]. Ensure that these are correctly wired to any device being used.



Figure 2: Bolt, washers and nut used to connect wire terminal to positive battery terminal (red with + sign)



Figure 3: Negative battery terminal (black with – sign)

Also ensure that the wire gauge being used is appropriate for the amount of current being drawn. If uncertain, please seek the advice of a qualified individual.

If using the battery with the PowerBright 200W Inverter and the Sunforce 7A Charge Controller, you can use the wire gauges shown in Tables 1 and 2.

Wire length between PV Panel and Battery (m)	Wire AWG
1	16
2	16
3	14
4	14
5	14
6	12
7	12
8	10
9	10
10	10

Table 1: Wire Gauge Chart for UB12220 Battery and Sunforce 7A Charge Controller

Wire length between Battery and Charge Controller (m)	Wire AWG
1	16
2	14
3	12
4	10
5	10

Table 2: Wire Gauge Chart for UB12220 Battery and PowerBright 200W Inverter

If using the battery with the PowerBright 200W Inverter and the Sunforce 7A Charge Controller, the circuit diagram should resemble Figure [4].

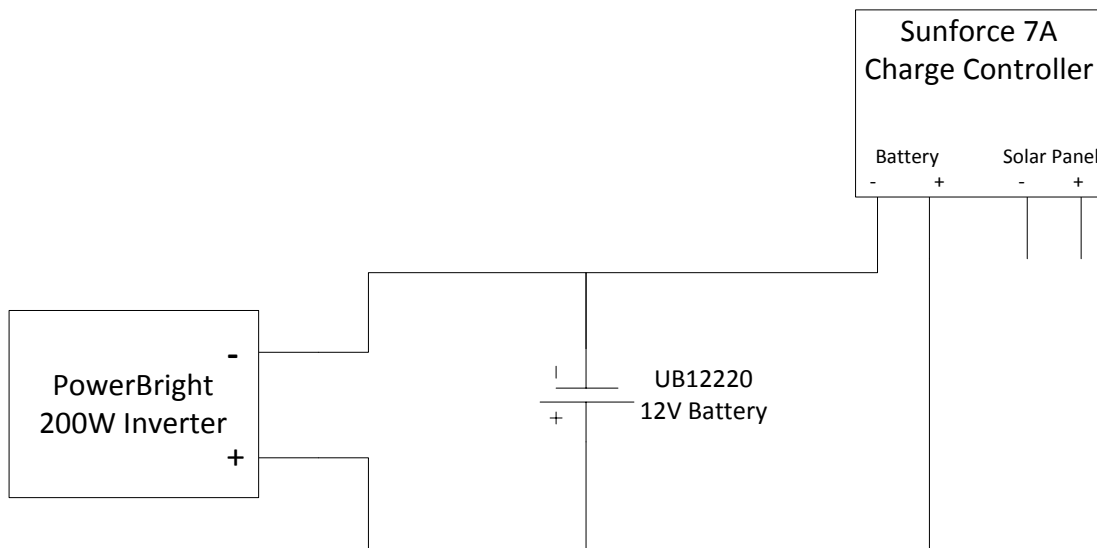


Figure 4: Circuit Diagram

BATTERY CARE

To properly care for your deep cycle battery:

- Active Users: charge daily.
- Occasional Users: Charge before any outing, after active use, or every 90 days if no use.
- Never use an automotive charge with an AGM battery

BATTERY STORAGE

- Batteries should always be stored fully charged in a cool and dry place to maintain maximum service life.
- If battery is stored for 9 months or longer without being charged, its service life may be shortened
- Never store batteries in a sealed environment