BMPRO

OWNER'S MANUAL

POWERCORE3K100

TEAMBMPRO.COM

SAFETY PRECAUTIONS

Please read the Safety Precautions before installing or using the PowerCore3K100. Be sure to observe all precautions without fail. Failure to observe these instructions properly may result in personal damage or personal injury which, depending on the circumstances, may be serious and cause loss of life.

⚠ WARNING
Do not cover or obstruct any air vent openings and/or install in a zero-clearance compartment.
When working with electrical equipment or lead-acid batteries, have someone nearby in case of an emergency.
Study and follow all the battery manufacturer's specific precautions when installing, using and servicing the battery connected to the inverter.
Wear eye protection and gloves.
Avoid touching your eyes while using this unit.
Keep fresh water and soap on hand in the event battery acid comes in contact with eyes. If this occurs, cleanse right away with soap and water for a minimum of 15 minutes and seek medical attention.
Batteries produce explosive gases. **DO NOT** smoke or have an open spark or fire near the system.
Keep unit away from moist or damp areas.
Avoid dropping any metal tool or object on the battery. Doing so could create a spark or short circuit which goes through the battery or another electrical tool that may create an explosion.

REV **1.0**
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Designed by BMPRO, one of Australia's leading power solution experts, the BMPRO product range is proudly designed and manufactured in Melbourne, Australia, and represent a high-quality product that will provide years of service.

DISCLAIMER: BMPRO accepts no liability for any loss or damage which may occur from the improper or unsafe use of its products. Warranty is only valid if the unit has not been modified or misused by the customer.

⚠ WARNING

⚠	Avoid moisture. Never expose unit to snow, water, etc.
⚠	The PowerCore3K100 provides high voltage AC. Treat the AC output socket the same as regular wall AC sockets at home.
⚠	**DO NOT** install the unit near flammable fumes or gases (such as propane tanks or large engines).
⚠	AVOID covering the ventilation openings. Always operate unit in an open area.
⚠	Prolonged exposure to high heat or freezing temperatures will decrease the working life of the unit.
⚠	**DO NOT** connect AC power sources like utility power or generator to the AC outputs of the unit. It will damage the unit and may cause fire. Feeding AC to the AC output of the unit is not covered by warranty.
⚠	The PowerCore3K100 is designed for use on 12V House Battery System only. Use on a higher house battery system will damage the unit and lead to unit explosion.
⚠	**DO NOT** use in connection with life support systems or other medical equipment or devices.

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ABOUT THE POWERCORE3K100

The PowerCore is a high-performance inverter-charger, designed to power your caravan with seamless efficiency and reliability. This versatile device combines the functionality of an inverter and a battery charger, converting DC battery power to AC to run household appliances, while also keeping your batteries fully charged when connected to shore power or a generator.

Engineered for life on the road, it features advanced protections against overloads, overtemperature, and short-circuits, ensuring your power system remains safe and steady in all conditions.

Ideal for extended off-grid adventures, this inverter-charger provides the flexibility, durability, and power you need to make your caravan feel just like home.

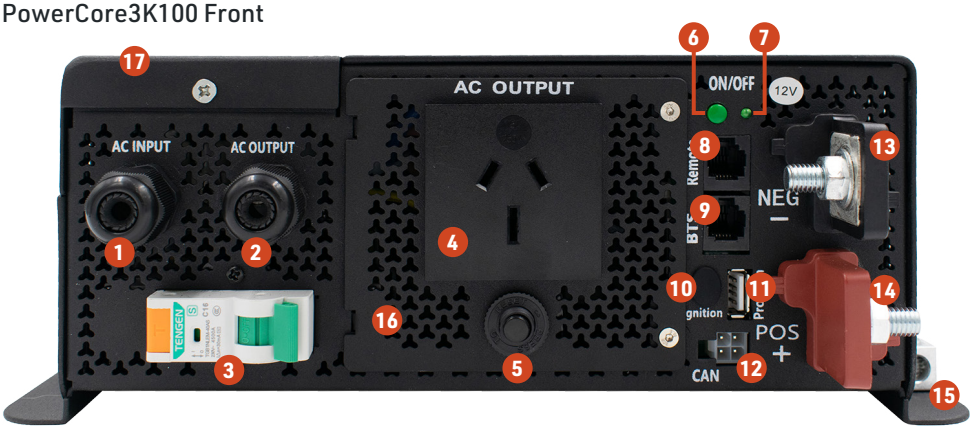
KEY FEATURES

- Pure 240V sine wave output
- Charging current adjustable up to 100A
- Included remote control and display panel
- 16A AC automatic transfer switch
- Integrated RCD protection
- Compact size
- Easy installation
- Compatible with lead-acid, GEL, AGM, flooded and lithium LiFePO4 batteries
- Multi-stage battery charging

DESCRIPTION OF PARTS

POWERCORE3K100 MAIN UNIT

PowerCore3K100 Front



1. **AC Input Hardwire Cable Strain Relief**
   Cable strain relief for AC hardwire input cable.

2. **AC Output Hardwire Cable Strain Relief**
   Cable strain relief for AC hardwire output cable.

3. **RCD Switch**
   Provides earth leakage protection for the AC output.

4. **AC Output Socket**
   Single AC output socket for direct AC output from the PowerCore3K100.

5. **AC Output Socket Ciruit Breaker**

6. **Power Button**
   Used to turn the PowerCore3K100 on or off. Press and hold for about one second until the unit beeps.

7. **Power Indicator**
   The power indicator is lit when the PowerCore3K100 is on.

8. **Remote Port**
   Used to connect the remote control display to the PowerCore3K100.

9. **Battery Temperature Sensor Port**
   Used to connect the battery temperature sensor to the PowerCore3K100.

10. Ignition Start Port

Used to connect to the ignition start signal from a vehicle.

Providing 12V to the ignition start port will turn on the inverter, and removing 12V will turn off the inverter.

11. Program Port

USB port for system firmware upgrade use only. An additional program port with the same functionality is located on the back of the remote control display.

⚠ WARNING

The program port CANNOT be used for USB charging or for USB powered devices. Misuse of this port can potentially damage the PowerCore3K100 and is not covered by warranty.

12. CAN Bus Port

Used for unit communication through the CAN interface. An additional CAN Bus port with the same functionality is located on the back of the remote control display.

⚠ WARNING

Misuse of the CAN Bus port can potentially damage the PowerCore3K100 and is not covered by warranty.

13. DC Negative Terminal

14. DC Positive Terminal

15. Chassic Groud Connector

16. AC Output Wiring Compartment

17. AC Input & Output Wiring Compartment

PowerCore3K100 Rear

18. Fans and Fan Guards

REMOTE CONTROL DISPLAY

Remote Control Display Front

1. **Power Button**
   Used to turn the PowerCore3K100 on or off. Press and hold for about one second until the unit beeps.

2. **Menu Button**
   Used to configure the PowerCore3K100's unit settings.

3. **Up Button**
   Used to navigate the PowerCore3K100's unit settings.

4. **Down Button**
   Used to navigate the PowerCore3K100's unit settings.

5. **Escape Button**
   Used to exit the PowerCore3K100's unit settings.

6. **Power Indicator**
   Indicator is lit when the PowerCore3K100 is on.

7. **AC Output Indicator**
   Indicator is lit when AC output is available.

8. **Status Indicator**
   Indicator is lit depending on active status of the PowerCore3K100.

   For more information, refer to **Remote Control Display LED Status Indicators.**

Remote Control Display Rear

9. Remote Panel Socket

Used to connect the remote control display to the PowerCore3K100.

10. Program Port

USB port for system firmware upgrade use only. An additional program port with the same functionality is located on the PowerCore3K100 unit itself.

⚠ WARNING

The program port CANNOT be used for USB charging or for USB powered devices. Misuse of this port can potentially damage the PowerCore3K100 and is not covered by warranty.

11. CAN-BUS Port

Used for unit communication through the CAN interface. An additional CAN Bus port with the same functionality is located on the back of the remote control display.

⚠ WARNING

Misuse of the CAN Bus port can potentially damage the PowerCore3K100 and is not covered by warranty.

INSTALLING THE POWERCORE3K100

MOUNTING THE POWERCORE3K100

⚠ WARNING

EXPLOSION HARZARD: DO NOT install the unit near flammable fumes or gases (such as propane tanks or large engines).

Avoid covering any ventilation openings. Always operate the unit in an open area.

The PowerCore3K100 must be mounted in an indoor area away from direct sunlight, heat, moisture or conductive contaminants. The ambient temperature must be between -20°C and 40°C (4°F and 104°F).

To avoid overheating, ensure the PowerCore3K100 is installed in a well-ventilated area with at least 80mm / 3 inches of free space around all sides air circulation.

Securely mount the PowerCore3K100 and the remote control display to any sturdy surface using the four pre-drilled mounting slots.

The unit can be mounted in any direction.

DC CONNECTIONS TO THE POWERCORE3K100

⚠ WARNING

Ensure all wiring is completed by a certified technician or electrician to ensure adherance to all applicable electrical safety wiring regulations and installation codes. Failure to follow these instructions can damage the unit and could also result in personal injury or loss of life.

DC Input Connection

⚠ WARNING

Electrical Shock Hazard: The On/Off switch on the PowerCore3K100 does not disconnect DC power from the battery. To disconnect DC power from the battery, use an isolation switch or disconnect the DC input cables. Failure to follow these instructions can result in death or serious injury.

⚠ CAUTION

Reversing the DC input terminals will cause unrepairable damage to the PowerCore3K100. Damage from reverse polarity connection is not covered by the warranty.

All DC input wires should be insulated, multi-strand, low-resistance copper wires with a minimum rating of 105°C.

It is recommended to limit the positive and negative wire lengths to 1.5 meters or less. If longer wires are needed, use a thicker gauge to prevent voltage drop.

DISTANCE	MINIMUM WIRE GUAGE
≤1.5m (recommended)	120mm² AWG 0000
≤2m	150mm² 300 kcmil (MCM)
≤3m	200mm² 400kcmil (MCM)

⚠ WARNING

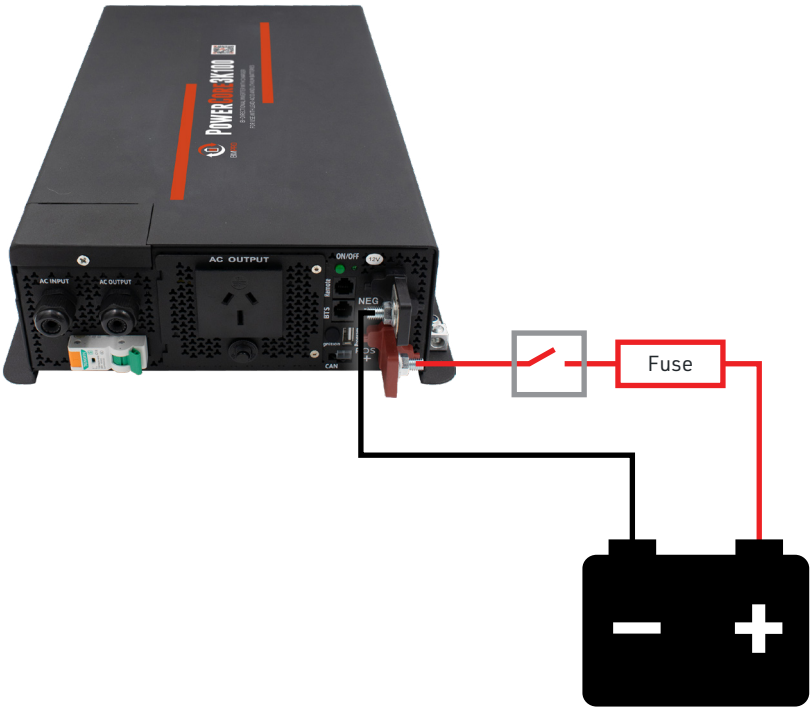
Using thinner wires than recommended can cause the PowerCore3K100 to shut down under heavy loads, melt the wire insulation, and potentially start a fire. Always match or exceed the rating of the DC fuse and holder.

To wire the DC input connection:

1. Connect a negative DC input cable between the unit's DC negative terminal and the battery's negative terminal.
2. Ensure the isolation switch is in the OFF position.
3. Connect a positive DC input cable between the unit's DC positive terminal and one terminal of the isolation switch.
4. Connect another DC input cable between the other terminal of the isolation switch and one side of the fuse holder or DC-rated circuit breaker (in the OFF position).
5. Connect another DC input cable between the other terminal of the fuse holder or DC-rated circuit breaker and the battery's positive terminal.

Ensure all cable connections are tightened to 12-13Nm

6. Install the selected fuse into the fuse holder.



DC Fuse/Circuit Breaker

A 400ADC-rated fuse or circuit breaker must be used on the DC positive line.

The fuse or circuit breaker must be sufficient to handle short circuit current rating of your battery bank.

Check with the battery manufacturer to determine the short circuit current rating of your battery bank.

For battery banks with a total capacity under 500Ah, use an ANL or MEGA fuse.

Battery Isolation Switch

A battery isolation switch is recommended to be installed along the DC positive line. This switch should have a rating that matches or exceeds the rating of the fuse or circuit breaker. Use ignition-protected switches if required by local codes.

The isolation switch is used to disconnect the positive terminal of the battery bank from the unit's positive terminal during maintenance or repair, when the system is not in use, or during troubleshooting.

A/B/A+B/OFF type switches can also be used to select between two battery banks or to use both in parallel.

Chassis DC Ground Connection

To wire the chassis DC ground connection, connect the grounding wire to the PowerCore3K100 chassis DC ground lug.

The chassis DC ground lug is located near the DC input terminal and the other side of the cable to the common grounding point.

For RVs, the common ground point is usually the vehicle chassis or a dedicated DC ground bus.

In marine applications, the common ground point is usually the DC ground bus or engine negative bus.

⚠ WARNING

Do not use the chassis DC ground lug for AC grounding.

If you are using the DC supplied cable and the recommended fuse sizes, the thinnest wire gauge is 10mm² (AWG #8) for recreational vehicles or AWG #3/0 for marine use.

Refer to the relevant installation code for DC grounding details.

In marine applications, the main AC-DC ground bonding may require galvanic isolators to prevent galvanic corrosion. Always check your local electrical codes.

⚠ WARNING

The chassis must be properly grounded before use. Never operate the PowerCore3K100 without proper grounding. Failure to do so can result in serious injury or death.

AC CONNECTIONS TO THE POWERCORE3K100

⚠ WARNING

Before making any AC input and AC output hardwire connections, ensure the AC input source is not energised and the DC disconnect switch is off. Double-check the location of the AC input connector inside the wiring compartment. Connecting to the AC output connector instead of the AC input connector inside the same compartment will damage the unit and may cause a fire.

The PowerCore3K100 can be connected to any AC input source, such as grid power or an AC generator.

The acceptable voltage range for AC input is 180-260VAC. The frequency range is 30-100Hz.

A 20A maximum AC input circuit breaker is required. The AC input wire must be at least 4mm² (#12 AWG). Follow electrical or building codes when selecting the AC branch breaker and AC input wire size.

If you are using a lower amperage rated AC input circuit breaker upstream, you can use smaller AC input wires. The PowerCore3K100 can accept non-sinewave AC input from a generator.

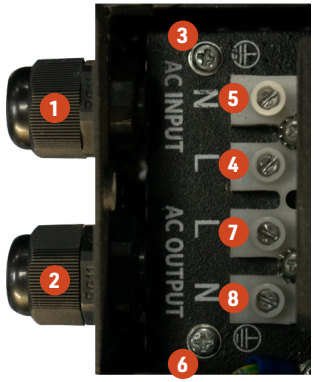
AC Input Source in Bypass Mode

When the PowerCore3K100 is in Bypass mode, the AC input source powers the AC output load and provides current for the charger to charge the battery.

AC Source Selector Switch

An automatic or manual AC source selector switch can be used to switch between different shore power sources. Usually, the AC Main Panel has a main circuit breaker for overcurrent protection and disconnecting the AC shore power supply line. Additional AC circuit breakers serve individual circuits, with one dedicated to the unit.

AC Wiring Compartment



1. AC Input Strain Relief
2. AC Output Strain Relief
3. AC Input Ground
4. AC Input Live
5. AC Input Neutral
6. AC Output Ground
7. AC Output Live
8. AC Output Neutral

Wiring AC Connections

1. Remove the AC wiring compartment cover by unscrewing the screw located at the front of the AC wiring compartment cover.

2. Remove the AC wiring compartment cover.
3. Insert the AC input cable through the AC input strain relief.
4. Connect the AC main panel AC ground wire to the AC input ground terminal.
   If you are using a solid ground wire, connect it directly under the screw head.
   If you are using astranded ground wire, connect it to the ring terminals.
5. Connect the AC main panel AC live wire to the AC input live terminal (shown as AC INPUT L).
6. Connect the AC main panel AC neutral wire to the AC input neutral terminal (shown as AC INPUT N).
7. Tighten the strain relief to secure the AC input wire.

Wiring AC Output Hardwire Connections

1. Insert the AC output cable through the AC output strain relief.
2. Connect the AC sub-panel AC ground wire to the AC output ground terminal
   If you are using a solid ground wire, connect it directly under the screw head.
   If you are using astranded ground wire, connect it to the ring terminals.
3. Connect the AC sub-panel AC live wire to the AC output live terminal (shown as AC OUTPUT L).
4. Connect the AC sub-panel AC neutral wire to the AC output neutral terminal (shown as AC OUTPUT N).
5. Tighten the strain relief to secure the AC output wire.

AC Sub-Panel

It is recommended to use an AC sub-panel for the AC hardwire output.

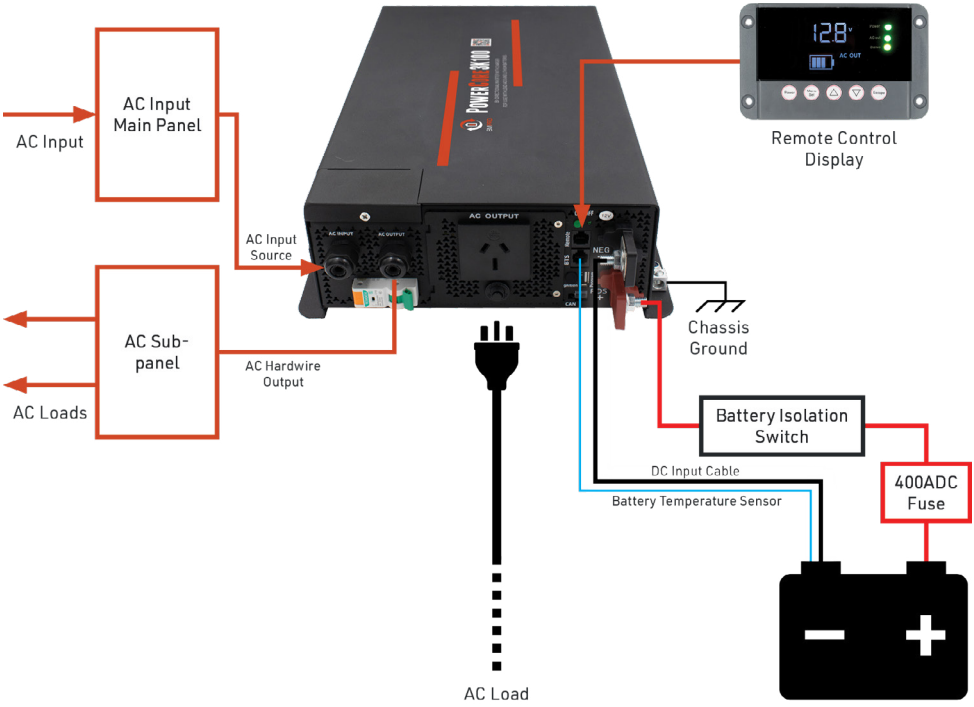
The sub-panel should have an AC output circuit breaker and individual breakers for each load circuit.

Use the same wire size that was used for the AC input wire.

CONNECTING THE REMOTE CONTROL DISPLAY

1. Route the RJ12 Cable from the main unit to the location where you want to place the remote control display.
2. Connect one end of the RJ12 cable into the remote port on the main unit.
3. Connect the other end of the RJ12 cable into the port on the back of the remote control display.

TYPICAL WIRING BLOCK DIAGRAM OF POWERCORE3K100



CONNECTING BATTERY TEMPERATURE SENSOR

1. Connect the RJ12 end of the battery temperature sensor cable to the BTS port on the main unit.
2. Install the ring terminal end of the battery temperature sensor cable to the negative terminal of the battery bank.

POST-INSTALLATION TEST

Once the PowerCore3K100 is installed and wired, you should perform a test of the unit.

To perform a post-installation test:

1. Connect a small AC load, such as a 60W light bulb, to the AC output of the unit.
2. Turn the battery isolation switch to the on position to provide battery power to the unit.
3. Turn on the unit by pressing and holding for 1 second either the on/off button on the main unit or the 'Power' button on the remote control display.
   When on, the 'Status' LED on the remote control display should turn amber. The AC Output LED should turn green, indicating that AC power is available.
4. Ensure the 60W light bulb is on.
5. Switch on the main circuit breaker on the AC input panel.
6. Switch on the AC input circuit breaker that provides AC input power to the unit.
   If an AC input source is available, the 'Status' LED will flash amber for about 10 seconds, indicating the AC input source is available. It will then turn solid green or flash green, indicating the unit is running from the AC input source.
7. Ensure the 60W light bulb remains on.

If all these steps are successful, the PowerCore3K100 is installed and functioning properly.

OPERATING THE POWERCORE3K100

The PowerCore3K100 comes pre-configured with factory default settings that meet the basic requirements for inverter charger operation.

The remote control display is used to operate the PowerCore3K100 and displays the status of the unit. Functions on the remote control display can be customised.

REMOTE CONTROL DISPLAY LED STATUS INDICATORS

INDICATOR	FUNCTION
Flashing green	AC output is running from utility and the battery charger is charging the battery.
Amber	AC output is running from the inverter.
Flashing amber	Utility is detected and is under verification. AC output is still running from inverter and will switch to utility in about 10 seconds.
Red	Error or warning detected. The remote control display will display the error or warning code.

NORMAL OPERATION USING THE REMOTE CONTROL DISPLAY

When the PowerCore3K100 is on, the remote control display shows the battery voltage (V).

Pressing any button will illuminate the display backlighting for about 10 seconds.

Power Button

The power button is used to turn the PowerCore3K100 on or off. It shares the same functionality as the green On/Off push button on the main unit.

To turn the PowerCore3K100 on, press and hold the power button for about 1 second until a beep is heard. All icons in the remote control display turn on, followed by the display revision levels (shown as 'Dx.x' and 'rx.x', where x is any number).

To turn the PowerCore3K100 off, press and hold the power button for about 1 second until a beep is heard. The remote control display will turn off. The unit cannot be turned on again for about 3 seconds.

To stop battery charging, press and hold the power button until 2 beeps are heard. Repeat to restart battery charging.

When AC input is available, the power button cannot be used to turn off the PowerCore3K100.

Menu/Set Button

Press the Menu/Set button once to view the unit settings on the remote control display.

For more information on unit settings, refer to the section **Viewing and Changing Unit Settings.**

Up and Down Buttons

The Up and Down buttons are used to scroll through DC current (A), AC output power (KW) and battery voltage (V).

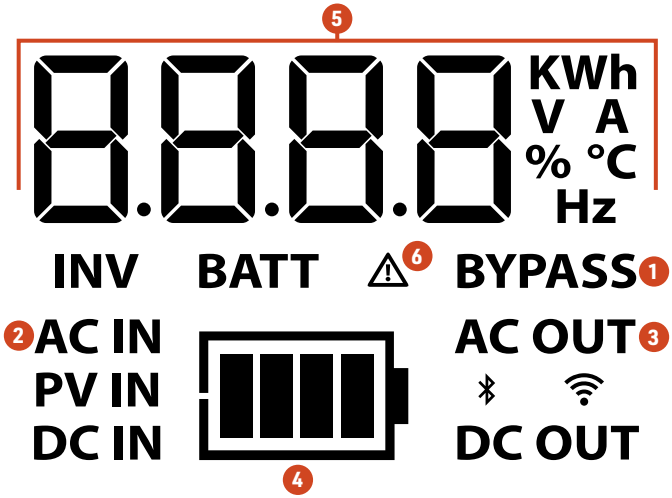
Press and hold the Up and Down buttons together for 2 seconds to show firmware revision numbers.

Escape Button

Press the Escape button once to return back to normal operation from unit settings

Press and hold the Escape button for 5 seconds to turn on or off a connected AC output switch.

DISPLAY ICONS



1. BYPASS
   If solid, the PowerCore3K100 is running in Bypass mode. The transfer switch is switched to AC input source.

   AC output power is running from AC input source, and AC output is available at both the AC output socket and the AC output hardwire terminal, indicated by the AC Output indicator on the remote control display.

2. AC IN
   If solid, AC input is available and is in the operating range.

   If flashing, AC input has been detected and is under verification before switching to Bypass mode. This normally takes about 10 seconds.

3. AC OUT
   If solid, the PowerCore3K100 is running in Battery mode. AC power is available at both the AC output socket and the AC output hardwire terminal.

4. Battery Bar

If the battery bars are solid, the PowerCore3K100 is running in Battery mode. The number of solid bars shows the estimated remaining battery power. This can vary based on battery health or type of battery used:

- 4 solid bars: battery is full
- 3 solid bars: battery at approximately 75%
- 2 solid bars: battery at approximately 50%
- 1 solid bar: battery at approximately 25%
- No bars: battery is empty. The inverter will shut down when it reaches the undervoltage shutdown point.

If the battery bars are flashing, the PowerCore3K100 is running in Bypass mode and battery charging is in progress. The number of flashing bars shows the battery charging stage:

- 4 flashing bars: the battery is fully charged and is in the float stage.
- 3 flashing bars: the battery is in the bulk charging stage and is at >13.5V.
- 2 flashing bars: the battery is in the bulk charging stage and is at >12.5V.
- 1 flashing bar: the battery is in the bulk charging stage and is at >11.5V.
- No bars: the battery is in the bulk charging stage and is at >10.5V.
- Battery icon itself flashing: the battery is in the bulk charging stage and is at <10.5V.

5. Value

The shown value, usually along with the displayed unit symbol on the right indicates what information is being displayed.

6. Warning Icon

When displayed, an error or warning has been triggered. The value will display the error/warning code.

RECOMMENDED BATTERIES

It is highly recommended to use deep-cycle or lithium ion batteries with the PowerCore3K100.

The appropriate battery size is dependent on how much and how long the PowerCore3K100 is required to provide AC power to loads. It is recommended to have as much battery capacity as possible.

BATTERY CHARGING CYCLE

BATTERY TYPE	BULK VOLTAGE	FLOAT VOLTAGE	RECHARGE VOLTAGE
GEL	13.8-14.8V	13.0-14.0V	12.8-14.0V
Flooded	12.8-14.8 & 15.8V	13.0-14.0V	12.8-14.0V
AGM	13.8-14.8V	13.0-14.0V	12.8-14.0V
Lithium	13.8-14.8V	13.0-14.0V	12.8-14.0V
Program	13.8-14.8V	13.0-14.0V	12.8-14.0V
Power Supply		13.0-14.0V	

When the battery charging process begins, the PowerCore3K100 will measure the battery voltage. If the voltage is below 9.5V, the charger current will automatically reduce to less than 25A.

Once the battery is charged above 9.5V within 15 minutes, the PowerCore3K100 will resume the set current.

The PowerCore3K100 will automatically restart a full charging cycle if the float stage is maintained for 7 days.

AC OUTPUT SOCKET

The PowerCore3K100 has a single AC output socket for direct AC output.

The AC output socket current is limited by a 15A AC output thermal breaker connected in series with the AC output socket to prevent excessive current draw.

CURRENT	TOTAL AC OUTPUT	AC OUTPUT HARDWIRE	AC OUTPUT SOCKET
Bypass Mode Current	16A	16A	15A
Inverter Mode Current	13A	13A	13A

⚠ WARNING

When operating at temperatures between 45°C to 50°C, the total AC output current in inverter mode is reduced to 10A.

POWERCORE3K100 UNIT SETTINGS

VIEWING AND CHANGE UNIT SETTINGS

When the PowerCore3K100 is in normal operation mode, press the Menu/Set button once to view unit settings.

Use the Up and Down buttons to scroll through each unit setting.

To change a setting, press and hold the Menu/Set button for 5 seconds. The setting will start flashing on the remote control display. Use the Up and Down buttons to scroll through the available settings. Once the appropriate setting is displayed, press and hold the Menu/Set button again until you hear a beep. This confirms that the new setting is saved.

To return to normal operation, press the Escape button once.

If no buttons are pressed for about 5 seconds while in unit settings mode, the remote control display will automatically return to normal operation.

⚠ WARNING

Refer to the battery manufacturer's specifications before changing unit settings.

F01 - BATTERY LOW DISCONNECT

The battery low disconnect voltage can be set between 10.5V and 12.0V.

The battery low disconnect voltage must be at least 0.5V below the battery low warning voltage (F02).

F02 - BATTERY LOW WARNING

The battery low warning voltage can be set between 11.0V and 12.5V.

The battery low warning voltage can only be set to be at least 0.5V above the battery low disconnect voltage (F01), and be at least 0.5V below the battery low recovery voltage (F03).

F03 - BATTERY LOW RECOVERY

The battery low recovery voltage can be set between 11.5V and 13.0V.

The battery low recovery voltage can only be set to be at least 0.5V above the battery low warning voltage (F02).

F04 - POWER SAVING SHUTDOWN TIME

The power saving shutdown time setting can be enabled or disabled, and can be set between 1 and 25. When enabled, the unit will shut down this many hours after the wattage drops below 25W.

F05 - LOAD SENSE

Load sense is active only when the PowerCore3K100 is in inverter (battery power) mode. Load sense can help to reduce battery power consumption when the unit is running as an inverter and the AC load demand is low.

This can be set between Off, 15 and 25.

- **Off:** The PowerCore3K100 provides continuous AC output.
- **15:** The PowerCore3K100 provides continuous AC output only when the AC load connected to the AC output is greater than 15W. If the load is approximately 12W or less, the output will switch to pulsing AC every few seconds.
- **25:** The PowerCore3K100 provides continuous AC output only when the AC load connected to the AC output is greater than 25W. If the load is approximately 20W or less, the output will switch to pulsing AC every few seconds.

F06 - AUDIBLE ALARM

If enabled, an audible alarm sounds if a warning or error occurs.

The alarm can be enabled or disabled.

F07 - INVERTER

The inverter can be set between four different modes: ATO, MBU, OFF and INU.

- **ATO:** Automatic power source transfer.

  When AC input is available, the PowerCore3K100 runs in Bypass mode.

  When AC input is unavailable, the PowerCore3K100 runs in Inverter mode.

- **MBU:** Manual power source transfer.

  When AC input is available, the PowerCore3K100 runs in Bypass mode.

  When AC input is unavailable, the PowerCore3K100 does not automatically switch Inverter mode. If AC has been disconnected, the unit will shut down after 10 seconds.

  To manually switch to Inverter mode, press and hold the Power button until you hear a beep.

- **OFF:** Inverter disabled, unit can act as charger and AC bypass only.
- **INU:** Inverter only with no bypass or battery charger.

F08 - AC CHARGER

If enabled, the battery will be charged when AC input is available.

If disabled, the battery will not be charged through AC, even if AC input is available.

When the charger is disabled, a small current draw from the batteries is expected.

F09 - BATTERY TYPE

Several different battery types can be selected. Each has a different charging algorithm.

⚠ WARNING

The factory default battery type setting is **GEL**. If you are not using a gel battery, this setting must be changed to the appropriate battery type. If this setting is not changed and you are not using a gel battery, the PowerCore3K100 will not operate correctly.

- **GEL:** Used for gel batteries. In this setting, the default bulk charge is 14.2V, and the default float voltage is 13.8V.
- **AGM:** Used for absorbent glass mat (AGM) batteries. In this setting, the default bulk charge is 14.3V, and the default float voltage is 13.4V.
- **FLD:** Used for flooded batteries. In this setting, the default bulk charge is 14.4V, and the default float voltage is 13.5V.
- **LI:** Used for lithium batteries. In this setting, the default bulk charge is 13.9V, and the default float voltage is 13.5V.
- **PGM:** Program mode. In this mode, the default bulk charge is 13.8V, and the default float voltage is 13.2V.
- **PSY:** Power Supply mode. The default power supply voltage is 13.8V. In this mode, the charger will provide a constant voltage to charge the battery bank.

F10 - BULK CURRENT

Bulk current can be set as 100A, 80A, 60A, 40A or 25A.

Consult the battery manufacturer before changing the bulk current setting.

For a sealed lead-acid battery, the maximum charging current is usually 1/5 of the battery capacity.

⚠ WARNING

When operating at temperatures between 45°C to 50°C, the maximum bulk current output is reduced to 80A DC.

F11 - BULK/ABSORPTION VOLTAGE

Bulk/absorption voltage can be set between 13.8V and 14.8V.

Consult the battery manufacturer before changing the bulk/absorption voltage setting.

F12 - ABSORPTION TO FLOAT CURRENT

Absorption to float current can be selected as 20A, 15A, 10A, 5A or 2A.

The absorption to float stage current determines when the battery transitions from the absorption stage to the float stage.

If you have an external DC load connected to the battery bank, set a higher current to compensate for the additional current drawn by the load.

F13 - FLOAT VOLTAGE

Float voltage can be set between 13.0V and 14.0V.

Float voltage can only be set to be a minumum 0.4V below the bulk/absorption voltage (F11).

Consult the battery manufacturer before changing the float voltage setting.

F14 - RECHARGE VOLTAGE

The battery recharge voltage can be set between 12.8V and 14.0V.

The recharge voltage setting determines the restart cycle of the battery bank. The charger will go through a full recharge cycle when the battery voltage drops to the set recharge voltage value.

The recharge voltage can only be set to be a minumum 0.4V below the float voltage (F13).

F15 - BATTERY TEMPERATURE

No battery temperature sensor installed

The battery temperature setting can be set to Low, Nor (Normal) or Hi (High).

- **Low**: Increases charging voltage by:
  - 0.675V for gel and flooded batteries
  - 0.525V for AGM batteries
- **Nor**: No change to the charging voltage.
- **Hi**: Decreases charging voltage by:
  - 0.27V for gel and flooded batteries
  - 0.21V for AGM batteries

Battery temperature sensor installed

If the measured temperature is below 25°C, charging voltage is increase by:

- 0.027V per °C for gel and flooded batteries
- 0.021V per °C for AGM batteries

If the measured temperature is above 25°C, charging voltage is decreased by:

- 0.027V per °C for gel and flooded batteries
- 0.021V per °C for AGM batteries

No voltage adjustment is made for lithium batteries, or when the PowerCore3K100 is in Program or Power Supply mode.

F16 - AUTOMATIC TRANSFER SWITCH

The automatic transfer switch can be selected between 16A and 4A.

This setting limits the total AC current draw from the AC source during Bypass Mode to avoid tripping the AC source circuit breaker.

The selected value must be the same or less than the rating of the AC source circuit breaker.

F17 - EQUALISE CHARGING (FLOODED BATTERIES ONLY)

This setting is available only for flooded batteries and allows for a one-hour equalization charge. When set, the PowerCore3K100will fully charge the battery before starting the equalisation process. Always follow the battery manufacturer's instructions when performing an equalisation.

Before performing a flooded battery equalisation, you must ensure the battery type is set to FLD (flooded). This can be changed using the unit setting F09.

To perform an equalisation, under the setting F17, select 1H.

The PowerCore3K100 will start a full flooded battery charging cycle first before the equalisation begins. The equalisation voltage is set to 15.8V and the current is limited to 1/10 of the set bulk stage charging current.

During the equalisation process, the remote control display will show F17 and the battery voltage.

The PowerCore3K100 cannot determine when to automatically terminate battery equalisation. A one-hour timeout is set as a safety feature. Once completed, you must check the batteries manually, and if further equalisation is required, you must start a new equalisation as necessary.

To end the equalisation process early, set the battery type to something else, such as AGM or GEL, and then change it back to FLD.

F18 - OUTPUT FREQUENCY

The output frequency can be set as either 50Hz or 60Hz.

After changing the output frequency setting, the PowerCore3K100 must be restarted before the change will take affect.

F19 - OUTPUT VOLTAGE

The output voltage can be set as either 240V, 230V or 220V.

After changing the output voltage setting, the PowerCore3K100 must be restarted before the change will take affect.

F20 - FACTORY DEFAULT

Select Yes to reset all settings to factory default.

The setting for battery type is GEL. If another battery type is used, select 'Yes' to set all the parameter to factory default, then proceed to the battery type and make change to the new battery type.

⚠ WARNING

Performing a factory default reset will set the battery type setting to **GEL**. If you are not using a gel battery, this setting must be changed to the appropriate battery type, otherwise the PowerCore3K100 will not operate correctly.

DEFAULT UNIT SETTINGS

UNIT SETTING	DEFAULT VALUE
F01 - Battery Low Disconnect	10.5V
F02 - Battery Low Warning	11.0V
F03 - Battery Low Recovery	12.0V
F04 - Power Saving Shutdown Time	Disabled
F05 - Load Sense	Off
F06 - Audible Alarm	On
F07 - Inverter	ATO
F08 - AC Charger	On
F09 - Battery Type	GEL
F10 - Bulk Current	100A
F11 - Bulk/Absorption Voltage	**Gel batteries:** 14.2V **AGM batteries:** 14.3V **Flooded batteries:** 14.4V **Lithium batteries:** 13.9V **Program mode:** 13.8V
F12 - Absorption to Float Current	10A
F13 - Float Voltage	**Gel batteries:** 13.8V **AGM batteries:** 13.4V **Flooded batteries:** 13.5V **Lithium batteries:** 13.5V **Program mode:** 13.2V
F14 - Recharge Voltage	**Gel batteries:** 12.8V **AGM batteries:** 12.8V **Flooded batteries:** 12.8V **Lithium batteries:** 13.2V **Program mode:** 12.8V
F15 - Battery Temperature	Nor
F16 - AC Input Source Circuit Breaker	16A
F17 - Equalise Charging	Off
F18 - Output Frequency	50Hz
F19 - Output Voltage	230V

POWERCORE3K100 ERROR CODES

If an error or warning is detected by the PowerCore3K100, an error code will be shown on the remote control display. If the alarm is enabled, an audible alarm will also sound.

ERROR CODE	FAULT	SOLUTION
E01 (Battery Mode)	No AC output. The inverter has shut down due to low battery voltage. E01 will display for about 30 seconds before the unit shuts down completely.	Recharge the battery and restart the PowerCore3K100.
E01 (Bypass Mode)	Either no battery is connected, or battery voltage remains at <9.5V. If ignored, the charger will terminate the charging process with error E11 after 15 minutes.	Check the battery connection. Remove or turn off DC loads connected to the battery to minimise charging time.
E02	In Battery/Inverter mode, battery voltage is too high, causing a shutdown.	Check the battery voltage and any external chargers connected to the battery bank.
E03	In Battery/Inverter mode, AC output is overloaded or short-circuited, causing a shutdown. E03 will display for about 30 seconds before the unit shuts down completely.	Reduce loads and restart the PowerCore3K100.
E04	In Battery/Inverter mode, internal temperature is too high, causing a shut down.	Turn off the unit and wait 15 minutes before restarting. Check for blocked airflow.
E05	In Battery/Inverter mode, input battery voltage is low. The PowerCore3K100 will soon shut down.	Recharge the battery.
E06	In Battery/Inverter mode, high AC output load close to 2800W has been detected. The PowerCore3K100 is close to the shutdown limit.	Reduce the AC load.
E07	In Battery/Inverter mode, high internal temperature has been detected. The PowerCore3K100 is close to the shutdown limit.	Reduce the load and check for blocked ventilation.
E10	In Bypass mode, battery charging voltage is too high.	Check battery settings and any other DC power sources connected to the battery.

ERROR CODE	FAULT	SOLUTION
E11	In Bypass mode, bad battery classification has been detected, causing a charger shutdown.	Check the battery connection. Remove or turn off DC loads connected to the battery. Restart the charging process by removing and reconnecting the AC input source. If necessary, replace the battery.
E12	In Bypass mode, high internal transfer switch temperature has been detected, causing a shutdown.	Reduce the load and check for blocked ventilation.
E14	Communication error with the remote control dissplay.	Check the RJ12 cable connection between the main unit and the remote display panel.
E15	AC back feed to the PowerCore3K100's AC output.	Check AC input and AC output wiring.
E16	Internal fault or unit damage.	Contact BMPRO customer service for assistance.
E17 (optional)	AC input current close to set AC circuit breaker rating.	Reduce AC load. Ensure the AC circuit breaker rating matches the external AC input source branch breaker rating.
E18 (optional)	AC input current exceeds 16A transfer switch rating.	Reduce the AC load connected to the PowerCore3K100.
E19	Battery temperature >60°C, causing charging cycle termination.	Cool down the battery. Charging will resume when temperature drops below 50°C.
E20	Battery temperature >55°C and is close to thermal shutdown.	Check battery and environmental temperature. Add ventilation if necessary.
E21	Battery temperature <0°C, causing charging cycle termination.	Check battery and environmental temperature. Charging will resume when temperature rises above 5°C.

TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE/CONDITION	SOLUTION
No AC output at AC output socket	The thermal breaker on the unit is tripped.	Reset the thermal breaker.
	AC input source is available but outside the acceptable range (180 - 260VAC).	Check AC input source. Ensure it is within the operating range.
	Unit is set to Inverter Off.	Check the the Inverter setting (F07).
	Inverter may be overloaded.	Reduce AC load.
	DC overvoltage, undervoltage, or other type of shutdown error.	Check battery voltage.
Charger did not supply charging current	Charger may be set to Off.	Set Charger function to On (F08).
	PowerCore3K100 has determined the battery is bad.	Check battery and remove the DC load connected to the battery. Restart the PowerCore3K100.
	Battery temperature is too high (Error E19).	Check battery temperature or environmental temperature. Charging will resume when the battery cools down.
	Battery temperature is too low to accept charge (Error E21).	Check battery temperature or environmental temperature. Charging will resume when the battery warms up.

SPECIFICATIONS

RUNNING AS INVERTER	
AC Output Power	3000W
AC Output Current	13.0A
AC Surge Power (Peak)	6000W
AC Output Voltage/Frequency	230VAC / 50Hz
AC Output Waveform	Sinewave (<3% THD)
Nominal DC Input Voltage	12.5 VDC
No Load Battery Draw (Inverter Mode)	< 4.0 ADC
No Load Current (Power Saving Mode)	< 0.8 ADC
DC Input Voltage Operating Range	10.5-16.5 VDC
Under Voltage Alarm	11.0-12.5 VDC
Under Voltage Alarm Recovery	11.5-13.0 VDC
Under Voltage Shutdown	10.5-12.0 VDC
Under Voltage Recovery	11.5-13.0 VDC
Over Voltage Shutdown / Recovery	16.5 / 16.0 VDC

AC TRANSFER SWITCH	
Transfer Time	< 30 ms
Transfer Relay Rating	16A
AC Input Source Setting (optional)	10, 13, 16A
AC Output Hardwire (max.)	30A
AC Output Socket (max.)	15A

REMOTE PANEL DISPLAY	
Display Port	RJ12
Inverter Mode	Battery Voltage, DC Current, AC Output Power
Charger Mode	Charging Voltage, Charging Current, AC Input Power

RUNNING AS CHARGER	
Charging Voltage Range	13.8-14.8 VDC
Float Voltage Range	13.0-14.0 VDC
Recharge Voltage Range	12.8-13.6 VDC
Bulk Charge Current Range	25-100A
Absorption-Float Current Range	2-20A
Battery Type	Gel, Flooded, AGM, Lithium, Program, Power Supply
Charge Cycle Stages	Bulk/Absorption/Float/Recharge
Maintenance Recharge Cycle	7 days
Power Factor Correction	>95%
Efficiency	>87%

SAFETY AND ENVIRONMENTAL	
Safety	AS 62040.1, AS/NZS 60335.1, AS/NZS 60335.29
EMI/EMC	AS/NZS CISPR 11
Agency Markings	RCM
Electrical Supply System	TN system
Operating Temperature	0°C to 45°C (32°F to 114°F)
Storage Temperature	-20°C to 60°C (-4°F to 140°F)
IP Rating	IP20
Relative Humidity	5-90% non-condensing
Operating Altitude	Up to 2000m (6,561ft) above sea level

PHYSICAL	
Weight	7.7 kg
Dimensions	433 x 287 x 106 mm

WARRANTY TERMS AND CONDITIONS

Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

This warranty is provided by SETEC BMPRO Pty Ltd (59 646 354 127) ("BMPRO") for its products. Warranty benefits are applied along with any rights and remedies required by Australian State and Federal legislation that cannot be excluded. No part of this warranty excludes, restricts or modifies any State or Federal legislation relating to the supply of goods and services which cannot be excluded, restricted or modified.

WARRANTY

BMPRO warrants that the product will be free from any faults in materials and workmanship beginning from the original date of purchase under standard application, installation, use and service conditions, subject to the exclusions and limitations detailed below. The warranty period of the product is two years.

If, before the warranty period has ended, a fault occurs with the product and BMPRO finds the product is defective in materials or workmanship, BMPRO at its discretion will subject to further rights accorded by the Australian Consumer Law to either:

- Repair the defective product
- Replace the defective product
- Provide a refund to the purchaser for the price paid at purchase for the defective product.

WARRANTY CLAIMS

Refer to your manual before using the product. Most BMPRO products are designed to be installed by a suitably qualified installer. The products should be carefully inspected by you or your installer before installation for any visible manufacturing faults. If a product has been installed incorrectly, BMPRO accepts no responsibility on top of our consumer guarantee obligations.

1. If a fault covered by warranty occurs, the purchaser must either contact the dealer where the product was purchased within 7 days, or BMPRO at the contact details listed.
2. All warranty claims must include: (a) proof of purchase of the product; (b) complete details of the alleged fault; (c) any relevant documentation related to the fault (such as photographs or maintenance records); (d) return material authorisation (RMA) number.
3. The product must be made available to BMPRO or its authorised installer for inspection and testing within 14 days of contacting BMPRO or the dealer.
4. The reasonable cost of delivery and installation of any products or components of products that have been repaired or replaced to the place of purchase notified to BMPRO is covered by the warranty provided by BMPRO, along with the reasonable costs of removal and return of any products determined by BMPRO to be defective.
5. If, on return to BMPRO or on investigation by BMRPO, inspection and testing determines there is no fault in the product, the purchaser must pay BMPRO's reasonable costs of testing and investigating the product, as well as transportation and shipping costs.

REGISTER A WARRANTY OR REPAIR WITH BMPRO

To register a warranty or repair with BMPRO:

1. Lodge a support request via teambmpro.com/technical-support or email customerservice@teambmpro.com
2. If agreed with the BMPRO Product Specialist team, register a warranty claim or repair via teambmpro.com/warranty-claim or email customerservice@teambmpro.com to obtain a Return Material Authorisation (RMA) number.
3. Package and send the product to:

   BMPRO Warranty Department
   19 Henderson Road
   Knoxfield, VIC 3180

   Please mark RMA details on the outside of the packaging.

4. Ensure your package also includes a copy of the proof of purchase, a complete description of the fault and your contact details including phone number and return address.

EXCLUSIONS

This warranty will not be applicable where: (a) the product has been altered, modified or repaired by someone other than BMPRO, an authorised installer or a qualified auto electrician; (b) the product has not been installed properly by either the user or manufacturer; (c) BMPRO cannot establish a fault in the product after inspection and testing; (d) the product has been used for purposes other than that for which it was designed; (e) the fault in the product has occurred due to a failure by the purchaser to ensure proper use and maintenance of the product according to BMPRO's instructions, recommendations and specifications (including maintenance); (f) the product has been subjected to abnormal conditions, such as environmental, temperature, water, fire, humidity, pressure, stress or similar; (g) the fault has been caused by abuse, misuse, neglect or accident; (h) the fault has been caused by a power surge or other kind of fault in the supply of electricity; (i) unauthorised parts or accessories have been used on or in relation to the product; (j) the appearance of the Product has deteriorated; or (k) the fault is a result of common wear & tear.

LIMITATIONS

No express warranties or representations are made by BMPRO other than what is set out in this warranty. The absolute limit of BMPRO's liability under this express warranty is the repair or replacement of the product or part of the product.

CONTACT

BMPRO's contact details for warranty claims are:

SETEC BMPRO Pty Ltd
19 Henderson Road,
Knoxfield, VIC 3180
Phone: (03) 9763 0962
Email: **customerservice@teambmpro.com**

Warranty Claim and Product Repair Form:
https://teambmpro.com/warranty-claim/

Registering your BMPRO product is an important step to ensure that you receive all the benefits you are entitled to.

Please complete the online registration form at **https://teambmpro.com/product-registration/** for your new product today.

LIMITED WARRANTY TERMS AND CONDITIONS (USA)

Registering your BMPRO product is an important step to ensure that you receive all the benefits you are entitled to. Please visit **teambmpro.com** to complete the online registration form for your new product today.

WHAT THIS LIMITED WARRANTY COVERS

This warranty covers any defect or malfunction in your BMPRO product. Under this warranty you are entitled to have such goods replaced, repaired or refunded.

WHAT THIS LIMITED WARRANTY DOES NOT COVER

This warranty does not extend to product failures or defects caused by, or associated with, but not limited to:

- Failure to install or maintain correctly, unsuitable physical or operating environment, accident, acts of God, hazard, misuse, unauthorized repair, modification or alteration, natural disaster, corrosive environment, insect or vermin infestation and failure to comply with any additional instructions supplied with the product.
- BMPRO may seek reimbursement of any costs incurred when a product is found to be in proper working order or damaged as a result of any of the warranty exclusions listed above.
- BMPRO will not be liable for any costs, charges or expenses incurred in the process of returning a product to initiate a warranty claim.

HOW LONG THE WARRANTY LASTS

BMPRO warrants products against defects for a period of two years, commencing from the original date of purchase.

CLAIMS PROCESS

Proof of purchase is required before the product can be deemed to be within the warranty period.

To enquire or make a claim under this warranty, please follow these steps:

A. Prior to returning a BMPRO product, please email **service@teambmpro.com** to obtain a Return Material Authorisation (RMA) number.

B. Package and send the product to:

BMPRO WARRANTY DEPARTMENT
UNIT 1 821 E WINDSOR AVE
ELKHART IN 46514

Please mark RMA details on the outside of the packaging.

C. Please ensure the package also includes: a copy of the proof of purchase, a detailed description of the fault and your contact details including phone number and return address.

HOW STATE LAW APPLIES

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

COMPLIANCE

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna,
- Increase the separation between the equipment and receiver,
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected,
- Consult the dealer or an experienced radio/TV technician for help.

Warning: Any changes or modifications not expressly approved by BMPRO could void the user's authority to operate this equipment.

POWERING YOUR ADVENTURES.

BMPRO
customerservice@teambmpro.com
19 Henderson Rd, Knoxfield VIC 3180 Australia | Unit 1, 821 E Windsor Ave, Elkhart IN 46514 USA
teambmpro.com