

OUTBACK PIONEER

SPECIFICATIONS

Reliable. Efficient. Built for
Australian Conditions.



Low-yield bores



AC/DC hybrid controller



Medium head requirements



AUSTRALIAN DESIGNED



QUALITY ASSURED



LOCAL SUPPORT



outbacksolarpumps.com.au



WHAT'S INCLUDED IN THE KIT

Every Outback Solar Pump kit comes complete with premium components, carefully selected for performance, reliability and ease of installation.

1



OUTBACK SOLAR PUMP & MOTOR

High efficiency helical rotor pump with brushless DC motor & 40m pre-wired cable

2



AC/DC MPPT SOLAR PUMP CONTROLLER

Advanced MPPT technology for maximum water output and built-in system protection.

3



2 X 450W SOLAR PANEL

High efficiency, durable panel built to perform in tough Australian conditions.

4



40M SUBMERSIBLE PUMP CABLE

Heavy duty submersible cable with plug & play connector

5



40M STAINLESS LOW LEVEL BORE PROBE

Stainless steel probe with 40m cable for dry run protection.

6



2 X 3M MC4 CONNECTORS

Pre-terminated, waterproof connectors for quick and secure solar connections.

7



25MM 304SS CHECK VALVE

Stainless steel check valve to prevent backflow and protect your pump.

8



INSTALLATION GUIDE

Step-by-step guide to help you install with confidence.

9



PREMIUM PACKAGING

All components securely packed to ensure safe delivery.



BUILT FOR RELIABILITY

Every component in this kit is selected for quality and compatibility, so you can install with confidence and pump with peace of mind.



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QUALITY ASSURED



LOCAL SUPPORT



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RELIABLE. EFFICIENT.
BUILT FOR AUSTRALIAN CONDITIONS.

PIONEER

3" 600 W



MEDIUM-DEPTH BORE SUBMERSIBLE SOLAR PUMP KIT

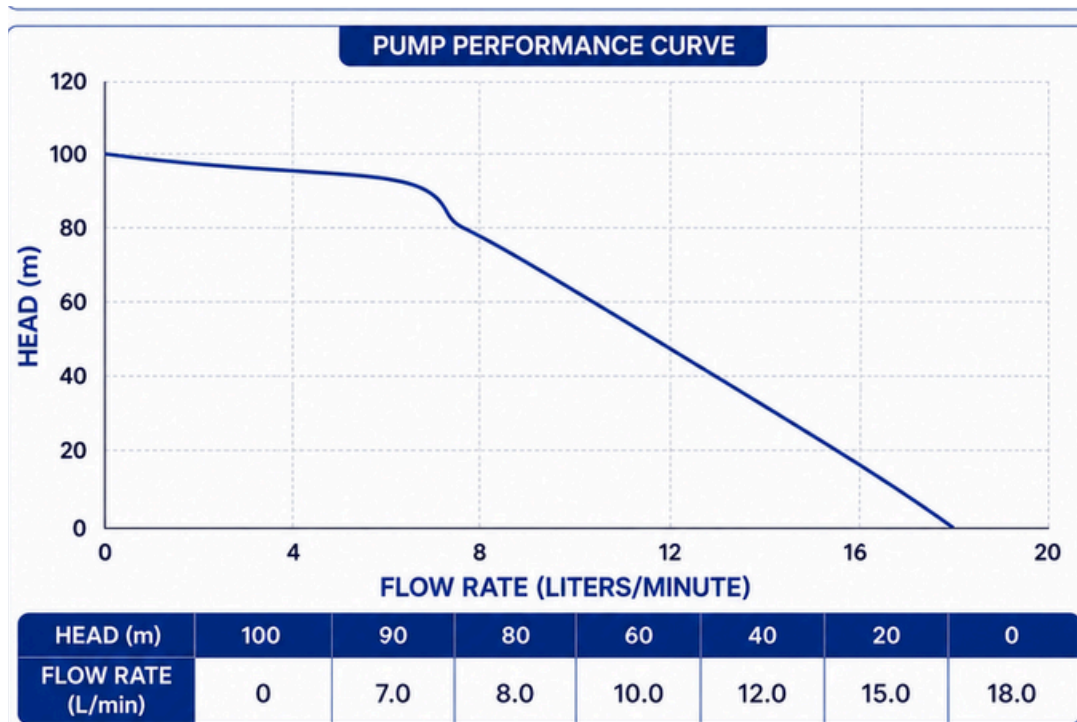
The Outback Pioneer is a high-efficiency 3" AC/DC hybrid solar submersible pump kit designed for medium-depth bores and higher pressure applications where entry-level systems reach their limits. With a powerful brushless motor, helical rotor pump end, and intelligent MPPT solar control, Pioneer delivers reliable pressure up to 100 metres of head while offering the flexibility of solar or generator power when required. Built from corrosion-resistant stainless steel and engineered for continuous submersion, Pioneer is ideal for remote Australian installations that demand performance, durability, and simplicity.



SPECIFICATIONS

Model	Pioneer 1-100
Power	600 W
Voltage (Vmp)	50 – 380 VDC
Maximum Input Current	10 A
Outlet Size	1" (25 mm)
Maximum Flow	18 L/min
Maximum Head	100 m
Pump Diameter	75 mm (3")
Pump Length	350 mm
Net Weight	4.3 kg
Protection Rating	IPX8
Insulation Class	F
Water Temperature	0 – 40 °C
Sand Tolerance	120 g/m3 Max

PERFORMANCE CURVE



Specifications are subject to change without notice.

KEY FEATURES

- Brushless DC motor
- Run-Dry protection
- High efficiency
- Low start voltage

APPLICATIONS

- Solar MPPT controller
- Stock Watering
- Light Irrigation Support
- Domestic Water Supply
- Off-Grid Locations



TECHNICAL SPECIFICATIONS

The Outback Pioneer features a stainless steel 3" pump body, brushless motor and helical rotor pump end designed to provide reliable pressure performance under higher lift conditions.

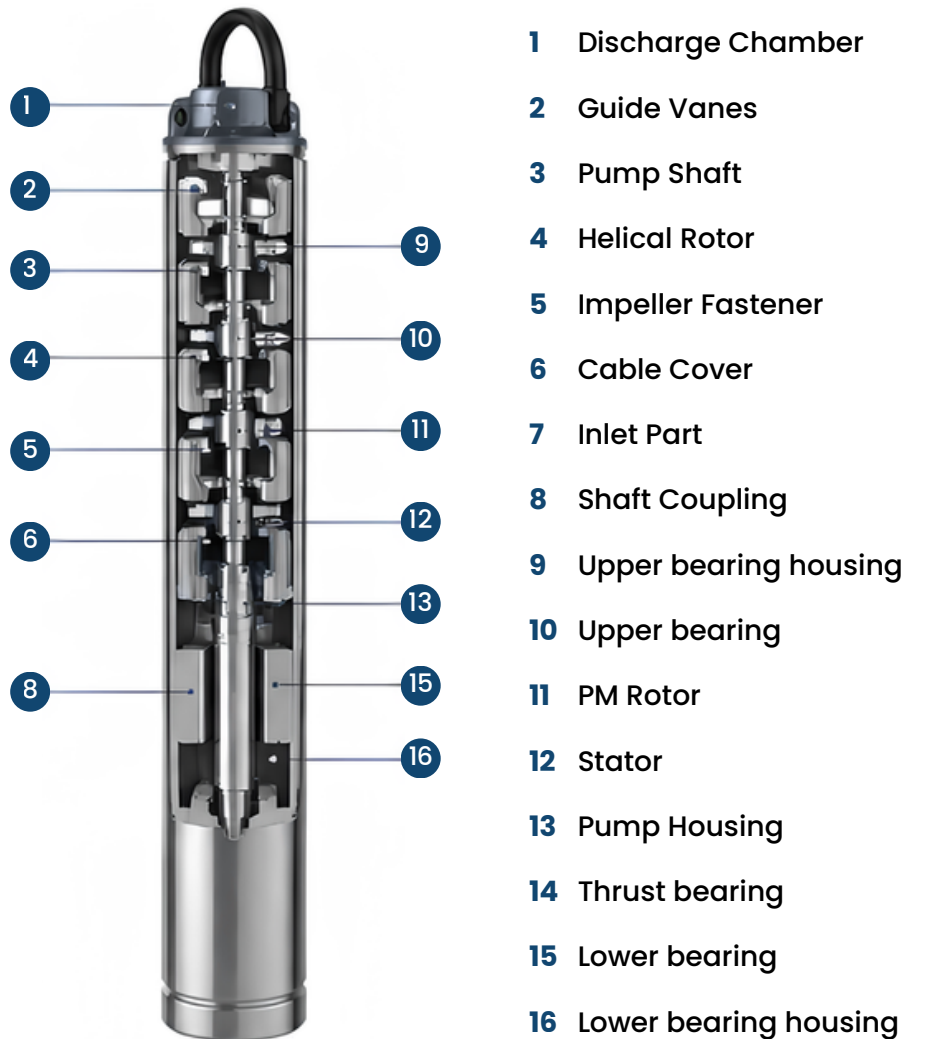
HYDRAULIC DESIGN

Pump Type	Submersible bore pump
Pump Design	Helical rotor
Water Source	Bore, well or low-yield
Application	Stock watering, tank filling
Operating Style	Direct solar operation
Water Delivery	At steady pressure

MOTOR & PUMP CONSTRUCTION

- ✓ Brushless DC (BLDC) motor
- ✓ Rated Power: 600W (0.6 kW)
- ✓ Motor Efficiency: Up to 85%
- ✓ Motor Speed: 500 – 4000 RPM
- ✓ Waterfilled encapsulated motor for superior cooling
- ✓ Maximum Water Temperature: 40°C
- ✓ Helical rotor design with AISI 304 stainless steel and thrust bearing system for reliable pressure performance

PUMP CONSTRUCTION OVERVIEW



MATERIALS & BUILD QUALITY

- 🛡️ 304 Stainless steel construction
- 💧 Corrosion-resistant internal components
- 🔧 Silicon carbide mechanical seals
- ⚙️ Heavy-duty thrust bearing system


Built for durability in harsh environments where reliability and longevity are critical.

HELICAL ROTOR ADVANTAGE


The helical rotor design provides consistent pressure at lower flow rates, making it ideal for shallow bores and low-yield water sources where traditional centrifugal pumps struggle.



Performance figures are based on optimal conditions. Actual performance will vary depending on installation, solar input, and system configuration.

 **MAXIMUM ENERGY YIELD**
More power output throughout the day, every day.

 **TRUSTED RELIABILITY**
Built to perform in tough Australian conditions.

 **ENGINEERED TO LAST**
Proven technology for long-term peace of mind.

 **SMART INVESTMENT**
Lower operating costs and higher return over time.









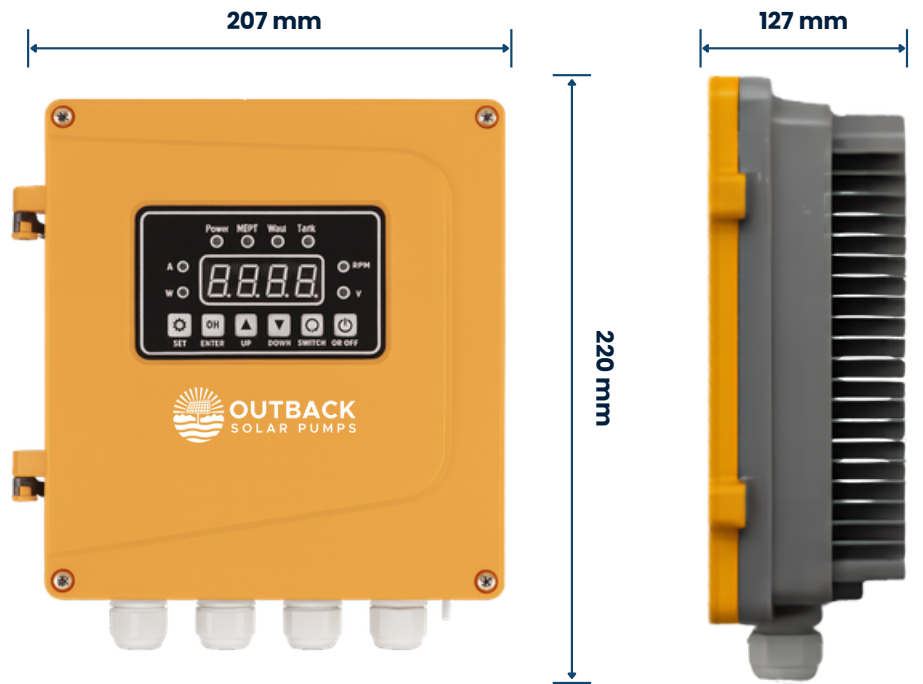
SOLAR PUMP CONTROLLER SPECIFICATIONS

OUTBACK MPPT SOLAR PUMP CONTROLLER

Dedicated DC MPPT controller designed specifically for submersible solar bore pumps. Optimises solar input under varying sunlight conditions while protecting the pump system from electrical and hydraulic faults. Designed for direct solar operation without batteries or inverters.

KEY FEATURES

-  MPPT solar tracking for maximum daily water output
-  Direct solar operation (no batteries or inverter required)
-  Soft start to reduce mechanical and electrical stress
-  Automatic restart after fault or low sunlight recovery
-  Digital display for real-time system status
-  Installer-friendly terminal layout







ELECTRICAL SPECIFICATIONS

Specification	Value
Controller Type	AC/DC MPPT Solar Controller
MPPT Efficiency	Up to 98%
Operating Voltage (Vmp)	50 - 380 V DC
Max Open Circuit Voltage (Voc)	450V DC
Maximum Input Current	10 A
Output	DC (matched to pump motor)







Voltage range varies by model. Refer to individual pump kit specifications.






INSTALLATION NOTES

-  Verify solar panel open circuit voltage (Voc) does not exceed controller limits
-  Follow recommended panel configuration only
-  Mount controller in a shaded, ventilated location
-  Ensure all connections are secure and weatherproof

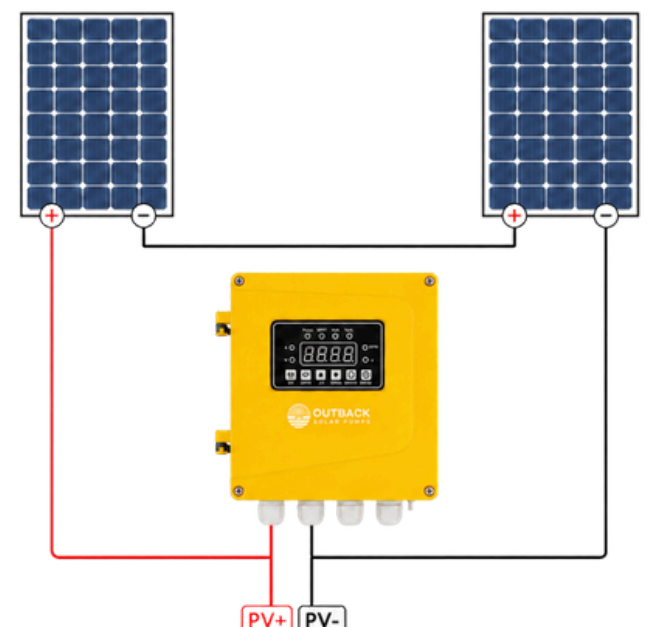
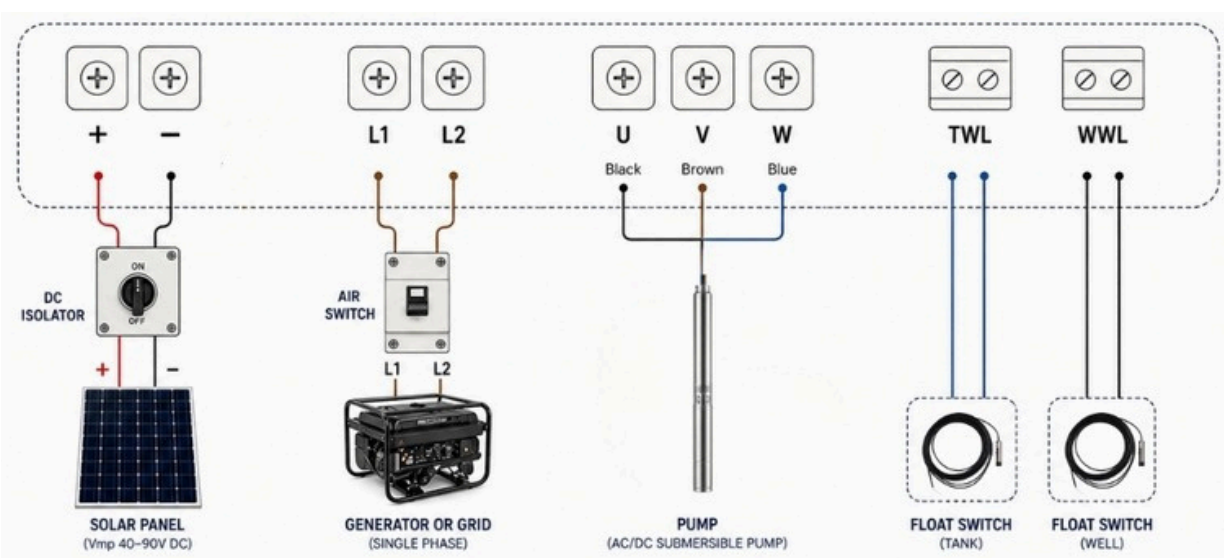
INTEGRATED PROTECTION FUNCTIONS

-  Dry-run protection
-  Overcurrent and overload protection
-  High and low voltage protection
-  Thermal protection
-  Reverse polarity alarm
-  Automatic shutdown with auto-restart

CONTROL INPUTS & AUTOMATION

-  Tank float switch (Normally Open - N/O)
-  Pressure switch (Normally Open - N/O)
-  Remote start / stop terminals

TYPICAL SYSTEM CONNECTION





HIGH EFFICIENCY N-TYPE SOLAR PANEL SPECIFICATIONS

OUTBACK 440-460 WATT BIFACIAL MODULE PANEL

Every solar panel supplied with an Outback Solar Pump kit is selected for durability, consistency, and long-term output, not just headline wattage. These panels are built to perform reliably in demanding outdoor environments where heat, wind, dust, and exposure are a daily reality.

- 

N-TYPE TOPCON TECHNOLOGY
The N-type module with Hot 2.0 technology has better reliability and lower LID/LETID.
- 

EXCELLENT ANTI- PID PERFORMANCE
Excellent Anti-Pid performance guarantee via optimized mass-production process and materials control.
- 

SUPERIOR WEAK LIGHT PERFORMANCE
More power output in weak light condition, such as cloudy, morning and sunset.
- 

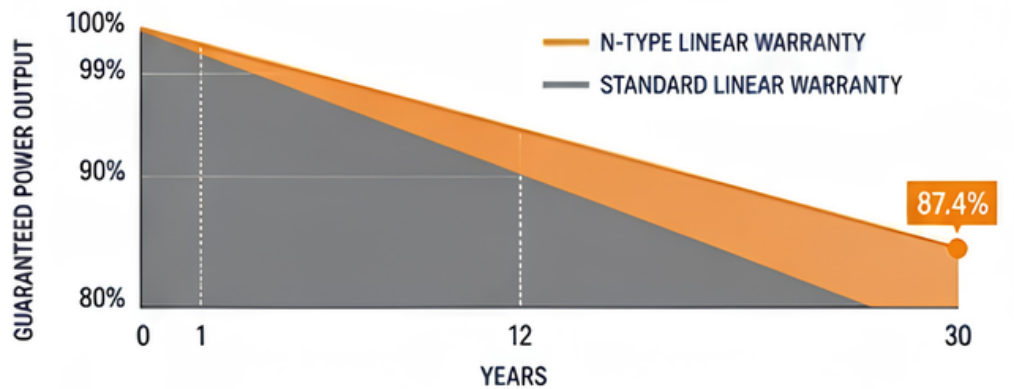
HIGHER BIFACIALITY
Higher bifaciality, higher power output and lower BOS cost.
- 

HOT 2.0 TECHNOLOGY
Better light trapping and current collection to improve module power output and reliability.
- 

EXTREME WEATHER RESISTANCE
Module certified to withstand extreme wind (2400 Pascal) and snow loads (5400 Pascal)*.



LINEAR PERFORMANCE WARRANTY



 **15**
YEAR
PRODUCT WARRANTY

 **30**
YEAR
LINEAR POWER WARRANTY


***0.4% Annual Degradation over 30 Years**
***15 Year Product Warranty**
***30 Year Linear Power Warranty.**

KEY FEATURES


-  **High Module Efficiency**
Up to 22.5%
-  **Low Temperature Coefficient**
Better performance in heat
-  **PID Resistance**
Enhanced durability and reliability
-  **Wind & Snow Load Certified**
2400 Pa/ 5400 Pa*
-  **Premium Build Quality**
Robust frame and strict quality control
-  **Lower LCOE**
More energy yield and long-term savings

CERTIFICATIONS



 **MAXIMUM ENERGY YIELD**
More power output throughout the day, every day.

 **TRUSTED RELIABILITY**
Built to perform in tough Australian conditions.

 **ENGINEERED TO LAST**
Proven technology for long-term peace of mind.

 **SMART INVESTMENT**
Lower operating costs and higher return over time.



SMARTER WATER. POWERED BY THE SUN.

Engineered for independence.
Built for the outback.



THE OUTBACK SOLAR PUMPS DIFFERENCE

We design and supply solar pumping solutions that deliver reliable performance where it matters most. Proudly Australian owned and operated, we understand the demands of remote living because we live it too.



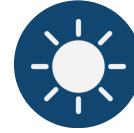
AUSTRALIAN DESIGNED

Engineered specifically for harsh Australian conditions.



RELIABLE & BUILT TO LAST

Quality solar panels and proven designs you can depend on.



MAXIMISE WATER OUTPUT

MPPT technology extracts more power from your solar panels.



SIMPLE & EASY TO INSTALL

Straight forward setup with clear instructions and local support.



LOCAL SUPPORT

We're here to help before, during and after your purchase.



WARRANTY YOU CAN COUNT ON

All Outback Pioneer kits are backed by comprehensive warranties for complete peace of mind.



2 YEAR PRODUCT WARRANTY

We stand behind our products with confidence.



30 YEAR LINEAR POWER WARRANTY

Long-term performance you can rely on.

BUILT FOR AUSTRALIAN CONDITIONS



DUST & SAND RESISTANT



EXTREME WEATHER TESTED



HIGH TEMPERATURE TOLERANT



CORROSION RESISTANT

*Full warranty terms and conditions available on our website.

“Outback Solar Pumps are our go-to for remote properties. Reliable, efficient and backed by real local support.”

– Outback Customer

“Installed our Pioneer kit last summer and it has been faultless. Great water pressure and simple to set up.”

– Verified Buyer

“Excellent product and service. The team really understands off-grid living. Highly recommended.”

– Outback Customer

READY TO POWER YOUR WATER SUPPLY?

Let's make it simple.

Contact our team today for expert advice or to find the right kit for your needs.



1300 884 097



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outbacksolarpumps.com.au



Proudly Australian Owned and Operated



OUTBACK SOLAR PUMPS

Thank you for supporting Australian business.

G'day!



TRUSTED BY AUSTRALIANS



BUILT FOR THE OUTBACK



POWERED BY THE SUN