

# BATTERY SYSTEM OWNER'S MANUAL



Congratulations on the purchase of your battery powered system. You are helping to lower your carbon footprint, reduce global warming and lessen the impacts of climate change. You are also protecting yourself from future rises in the cost of electricity.

Your system is designed to meet all Australian Standards, Regulations and Codes at the time of install. Although the system is considered low-maintenance, it does generate electricity and we must encourage you to not service the system yourself and seek someone suitably qualified. Quality and safety are our primary concerns.

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**ICONIC SOLAR  
& BATTERIES**

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### Battery System Information

**System Size:** Often ranges between 5kWh and 40kWh of storage.

Please visit the relevant manufacturers website for most up-to-date servicing contact details. This may be by phone number or email.

**UN Number:** Lithium based products are all listed as **UN3480**.

#### System Provider Contact Details:

- Company: Iconic Solar
- Phone: **0479 170 789**
- Email: [office@iconicsolar.com.au](mailto:office@iconicsolar.com.au)

## Installed Equipment

The equipment installed will always match the quotation / proposal initially sent.

Equipment Type	Model/Description	Serial Number	Quantity
Battery Module			
Battery Management System			
Inverter / Power Conversion (PCE)			
Monitoring System			
Protection Equipment			

## System Performance and Operation Configuration

The proposal contains the data sheet, specifications, and warranty conditions of all equipment installed.

Specifically, the data sheets contain further information on

- Maximum continuous power
- Peak power output (discharged kW for X duration)
- Operating response time (typically 0-3 seconds)

### Expected Battery Life:

- Design life of 10 years
- Cycle life, applicable cycles at the relevant depth of discharge
- State of Health monitoring

### End of Life Parameters:

- System reaches end of life when capacity degrades to approximately 70% of original capacity
- Expected replacement timeframe: 10-15 years

## Operating Instructions

**Battery System Function:** The battery system stores electrical energy and releases it on demand. The system automatically charges during periods of excess generation (or low electricity rates if using wholesale electricity) and discharges to supply power during peak demand or outages.

### Key Components Operation:

- **Battery Modules:** Store DC electrical energy in lithium-ion cells
- **Battery Management System (BMS):** Monitors cell voltages, temperatures, and current flow to ensure safe operation
- **Power Conversion Equipment (Inverter):** Converts DC battery power to AC for household use and AC grid power to DC for charging
- **Monitoring System:** Provides real-time system status and performance data

**Normal Operation:** System operates automatically based on programmed settings. No manual intervention required during normal operation. System status can be monitored via the relevant manufacturers monitoring platform / app when connected to wifi.

\*NOTE: It may be part of some manufacturers warranty conditions that the battery system is provided with a constant internet connection.

## Operational Instructions for Alarm Response

### Earth Fault Alarms:

- **Indication:** Audible noise and message displayed on screen, or red lights
- **Action:** Immediately isolate system using emergency shutdown procedure. Do not attempt repairs. Contact system provider immediately.

### Battery Management System Alarms:

- **High Temperature:** System will automatically reduce power or shut down. Ensure adequate ventilation. Contact system provider if alarm persists.
- **Low Voltage:** System will automatically disconnect to protect batteries. Check for excessive loads. Contact system provider if issue continues.
- **Cell Imbalance:** System may reduce performance. Contact system provider for assessment.

### Ventilation Alarms:

- **Action:** Check ventilation systems are operating. Ensure air vents are not blocked. Contact system provider if ventilation cannot be restored.

### General Alarm Response:

1. Note alarm type and time
2. Follow specific procedure above

3. Do not reset alarms without addressing underlying cause
4. Contact system provider: 0479 170 789
5. Record incident in maintenance log

## State of Health Measurements

State of Health (SOH) Definition: State of Health indicates the current condition of the battery compared to its original specifications, expressed as a percentage.

### SOH Measurements:

**Capacity SOH:** Current usable capacity as percentage of original capacity

**Power SOH:** Current power delivery capability as percentage of original specification

**Internal Resistance:** Measure of battery degradation (higher resistance indicates aging)

### SOH Display:

Available through contact with your original installer or current service technician.

SOH below 80% indicates approaching end of useful life

SOH below 70% requires system evaluation by qualified technician

## Shutdown and Isolation Procedure for Emergency

### Emergency Shutdown Procedure:

1. **AC Isolation:** Switch OFF AC isolator located at the Main Switchboard or adjacent to the inverter.
2. **DC Isolation:** Switch OFF DC isolator located at the inverter
3. **Battery Isolation:** Switch OFF battery isolator located at the side of or adjacent to the battery
4. **Verify Isolation:** Confirm all indicator lights are OFF
5. **Secure Area:** Prevent unauthorized access until system is safe

**Emergency Contact: 0479 170 789**

**Warning:** Only qualified personnel should re-energize the system after emergency shutdown.

# Start-up Procedure and Verification Checks

## Pre-Start Checks:

1. Verify all isolators are in OFF position
2. Check for visible damage to equipment
3. Ensure adequate ventilation
4. Confirm area is clear of personnel

## Start-up Sequence:

1. Switch ON battery isolator
2. Switch ON DC isolator
3. Switch ON AC isolator
4. Activate system via control panel/app
5. Allow system initialization (approximately 3 minutes)

## Verification Checks:

- System status indicators show normal operation
- No active alarms present
- Battery voltage within normal range: \_\_\_\_\_ V
- System communication active
- Temperature readings normal: \_\_\_\_\_ °C

## Post-Start Monitoring:

Monitor system for the first hour after restart to ensure stable operation.

# System Failure Identification and Response

## Signs System is Not Operating Correctly:

- Persistent alarm conditions
- Unusual noises (clicking, humming, buzzing)
- Visible damage, corrosion, or burning smell
- System not charging or discharging as expected
- Monitoring system showing errors or offline status
- Abnormal temperature readings
- Reduced performance compared to historical data

## System Failure Response:

1. Document Issue: Record symptoms, time, and conditions
2. Check Simple Causes: Verify isolators, circuit breakers, and connections
3. Review Alarms: Check alarm history in monitoring system
4. Safe Isolation: If safety concern, follow emergency shutdown procedure
5. Contact Support: Call system provider with fault details
6. Avoid DIY Repairs: Do not attempt repairs unless specifically qualified

### **Installed Alarm Systems:**

- Battery Management System alarms (notification via app)
- Temperature monitoring (internally managed)
- Smoke detection (optional if indoors)
- Earth fault protection (integral to system)

## **Maintenance Procedures and Schedule**

### **Monthly Maintenance:**

- Visual inspection of all equipment for damage or corrosion
- Check ventilation systems are clear and operating
- Verify system status via monitoring interface
- Check and record State of Health measurements

### **Quarterly Maintenance:**

- Clean dust from ventilation areas (power OFF during cleaning)
- Inspect electrical connections for tightness and corrosion
- Test emergency shutdown procedure

### **Annual Maintenance (Qualified Technician Required):**

- Comprehensive system inspection and testing
- Battery capacity and performance assessment
- Firmware and software updates
- Calibration of monitoring systems
- Replacement of wear and tear items as required

### **Maintenance Hazard Mitigation:**

- Always follow isolation procedure before maintenance
- Use appropriate PPE: safety glasses, insulated gloves
- Work with qualified electrician for electrical tasks
- Ensure adequate ventilation and clearance during battery maintenance

# Commissioning Records and Installation Checklist

## Initial System Settings:

Battery type: Lithium UN3480

System capacity: \_\_\_\_\_ kWh

Maximum charge current: \_\_\_\_\_ A

Maximum discharge current: \_\_\_\_\_ A

Low voltage disconnect: \_\_\_\_\_ V

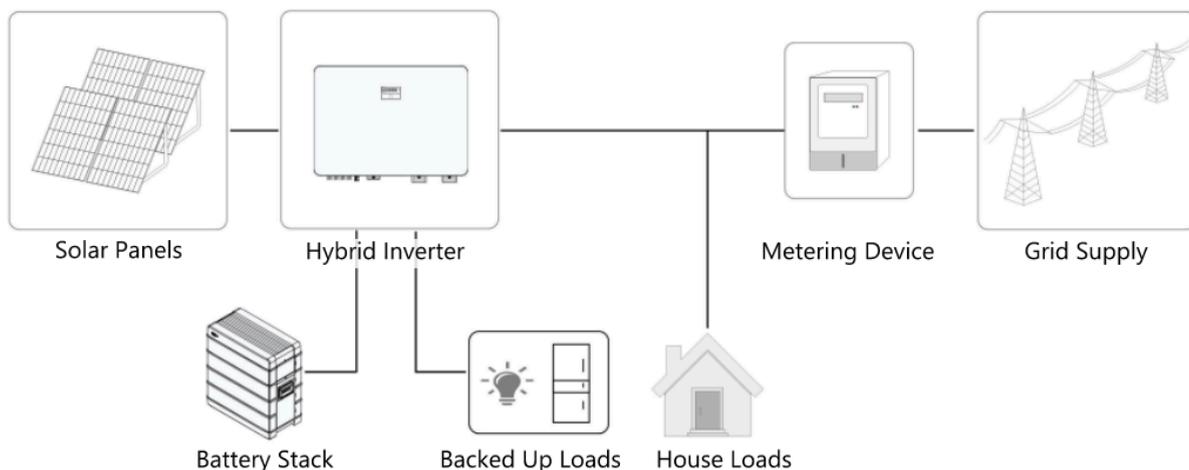
High voltage disconnect: \_\_\_\_\_ V

## Installation Checklist Completed:

- Electrical connections verified
- Grounding system installed and tested
- Ventilation adequate and operational
- Safety systems installed and tested
- Commissioning tests completed successfully
- System documentation provided

## System Connection Diagram

Refer to the relevant manufacturers User Manual to understand the specific interconnection of electrical components and wiring diagram.



Commercial Diagram Reference: Drawing No. \_\_\_\_\_

Revision: \_\_\_\_\_

Date: \_\_\_\_\_

## Equipment Manufacturer's Documentation

### Included Documentation:

- Battery module technical specifications and warranty information
- Power Conversion Equipment installation and operating manual
- Battery Management System user guide (if applicable)
- Monitoring system setup and operation manual
- Safety Data Sheets (SDS) for all battery components (also available on the Iconic Solar website)

### Data Interface Information:

- Connection type: Ethernet/WiFi/RS485
- Network requirements: 2.4GHz wireless channel
- Monitoring platform access: Manufacturer specific app
- Remote monitoring capabilities: Monitored by the installer
- Digital Documentation Access: All manufacturer documentation also available at: [www.iconicsolar.com.au/msds/](http://www.iconicsolar.com.au/msds/)

## Specific Risk Requirements

### Toxic Fume Response:

- If toxic fumes detected: Evacuate immediately, call 000, ventilate area
- Re-entry: Only after area declared safe by emergency services
- Prevention: Ensure ventilation systems operational at all times

### Fire Risk Mitigation:

- Never use water on battery fires
- Evacuation route as per safest egress method
- Evacuate immediately, call 000

### Electrical Shock Prevention:

- High voltage present - only qualified personnel to service
- Use lockout/tagout procedures during maintenance
- Insulated tools required for any electrical work

### Chemical Spill Response:

- Call 000 and monitor spread if safe to do so

## Spare Parts Provided

Spare Parts Not Included: Contact system provider for availability of additional spare parts and replacement components.

## **Decommissioning Information**

### **Battery Replacement Procedure:**

1. System must be professionally decommissioned by qualified technician
2. Follow complete isolation procedure before battery removal
3. Batteries contain hazardous materials - handle with appropriate PPE
4. Use proper lifting equipment - batteries are heavy

### **Battery Recycling:**

Approved Recyclers: Contact battery recycling facility relevant to your LGA

Transport Requirements: Batteries are classified as dangerous goods

Documentation: Certificate of destruction/recycling required

### **System Removal:**

Electrical disconnection must comply with AS/NZS 3000

Structural mounting removal may require building permits

Environmental assessment may be required for ground-mounted systems

### **End of Life Planning:**

Typical system life: 12-15 years

Plan replacement 12 months before end of design life

Budget for recycling costs in total cost of ownership

**Warranty and Disposal:** Check warranty terms - some manufacturers offer take-back programs for end-of-life batteries.