

TECONNEX
POWER

ADVANCED 100

100Ah Lithium Battery

LiFePO4
12.8V

To learn more about Teconnex Power products and solutions please visit:

www.teconnexpower.com

User
Manual



MADE IN THE UK

TECONNEX
POWER



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IMPORTANT - PLEASE READ THIS ENTIRE MANUAL BEFORE HANDLING OR OPERATING THE PRODUCT

Thank you for purchasing the Teconnex Advanced 100 battery. We are confident that our Product will provide you with many years of excellent service and experience. In the interest of safety and optimal operation please read all of the following information before you start to use and enjoy the Battery.

GENERAL PRODUCT WARNINGS AND SAFETY GUIDANCE TO FOLLOW AT ALL TIMES.

The Teconnex Power Advanced 100 (the "Product" or "Battery") is a high-performance 100Ah 12.8V LiFePO4 leisure battery capable of storing, charging and discharging electricity.

Do not deliberately damage, short circuit, abuse or misuse the Product.

ATTENTION!: Failure to operate the Product as intended by the manufacturer may incur undesirable consequences which could result in electric shock, damage or fire. Do not let children or animals near the Product.

The Product should not come into contact with water or allowed to become wet.

If contact with water does occur, switch the Teconnex Power Advanced 100 "OFF" via the Teconnex Power Smart App settings (for details see later in this document). If safe to do so, carefully disconnect any wiring connections that have been made to the Battery terminals. Carefully dry the Battery using lint free absorbent cloth. **Do not switch the Battery "ON"** until the unit and the intended operating environment is completely dry and safe for normal Product use.

The Product should **NEVER** be placed near fires or sources of direct heat. This could lead to risk of explosion.

The Product is not intended to provide a power source for the propulsion of vehicles (including but not limited to; road vehicles; off highway vehicles; any form of bicycles or scooters; any marine craft; or any craft or vehicle for the purpose of flight or aviation.

The positive and negative terminals of the Teconnex Power Advanced 100 should never be connected directly together (even if this occurs accidentally) as this could result in a risk of short circuit or electric shock and result in injury or harm to any persons or animals near to the Product.

Whilst the Product has been designed and tested to the highest safety standards, Product owners and Product users should always be aware that the internal architecture of the Teconnex Power Advanced 100 is a LiFePO4 cell chemistry which may in rare or extreme situations result in a risk of fire. THE PRODUCT SHOULD ALWAYS BE HANDLED WITH CARE AND CAUTION.

If in any doubt, seek the advise of a suitably qualified electrician before using or handling the Battery.

Please remember to retain your Teconnex Advanced 100 shipping box and associated packaging should you have any reason or requirement for transporting your Product at a future time.

CHECK YOUR BATTERY IS SWITCHED "OFF" PRIOR TO HANDLING AND UNBOXING.

Each Teconnex Power Advanced 100 Battery is manufactured in a quality-controlled environment with each Product being originally shipped from the manufacturer in an "OFF" state.

The ability to switch the Battery "OFF" and "ON" is a feature of the Teconnex Power Advanced 100 (see pages 6 and 7 for more details).

The "OFF / ON" switch control feature can be performed via accessing the Teconnex Power Smart App ("App") from a suitable Android™ or Apple IOS smart device and uses Bluetooth® to communicate between the Teconnex Power Smart App and the Battery.

The Teconnex Power Smart App offers Teconnex Power Advanced 100 owners with an additional level of functional safety control that is improved over many traditional battery products.

Prior to unboxing, please first ensure that the Battery is switched "OFF" via the Power Smart App.

This Battery system status check can be performed by connecting to the Battery over Bluetooth using the Teconnex Power Smart App. Users can quickly access the Teconnex Smart App by scanning the QR code displayed on the provided product card located in the top of your packaging box.

Further instructions for using the Teconnex Power Smart App can be found in the relevant sections of this User Manual (see pages 6 and 7).

Please refer to the example connection diagram sheets also provided. These diagrams provide Product owners with examples for a general configuration of a RV / mobile caravan system and of a general configuration for a leisure boat system.

These diagrams are included for information and general awareness purposes only. Should a Product owner or user be in any doubt of the suitability of the Teconnex Power Advanced 100 Battery for their own system or specific needs, Product users should consult with qualified persons and / or the manufacturer of their specific system before making any wiring connection and before switching the Battery "ON".

Note: This includes (but is not limited to) ensuring third part devices and equipment including all electrical cabling are of a sufficient capacity, quality and design to correctly integrate the Teconnex Power Advanced 100 Battery into any proposed environment or system configuration.

Remember: After performing all required tasks to ensure the Product can be safely and correctly moved, stored, charged or connected, the device will need to be switched to an "ON" state to enable the Battery to charge and/or discharge as may be required (see page 7).

Remember: Before any use or handling of the Battery at any time, users should always assume the Battery may have been switched to an "ON" state. Therefore, Product users should always verify the actual Battery operating status before handling (and switching the unit to "OFF" via the Teconnex Power Smart App before handling if required).

Adhering to this process will help avoid risks of accident or damage.

WARNING!: Appropriate protective clothing and protective gloves should always be worn.

UNBOXING THE TECONNEX POWER ADVANCED 100

1. Open the box carefully by cutting the packaging tape and not damaging the box or foam.
2. Lift the top foam packing block from the box and take out the Teconnex Power Advanced 100 User Manual and the Teconnex Power Advanced 100 User Information Card.
3. **Read the Teconnex Power Advanced 100 User Manual in full before handling or using the Battery!**
4. Ensure the Battery is switched to “OFF” by using the Teconnex Power Smart App via your Android or IOS device (see page 6 and 7 for details). The QR codes shown on the User Information Card provide download links for compatible smart devices.
5. Without removing the supplied plastic bag that covers the Battery unit, carefully lift both the bag and the Battery simultaneously out of the packing foam and packing box and safely place the items down on a cleared table keeping the Battery inside the bag.
6. Next, lift the Battery out of the antistatic bag, placing the Battery back on to the cleared table / area.
7. Retain all Product packaging including the supplied box, bags, foam and bubble wrap for any future use. Do not discard this User Guide for future reference as required.
8. Plan the usage requirements and the installation of the Battery only once satisfied that all environmental checks to the existing system have been performed and only when the Product user is satisfied the Battery will operate correctly for the specific environment.
9. Remember the Battery should be unpacked in an “OFF” condition and the Battery should remain “OFF” during installation. The Battery will need to be switched to “ON” via the Teconnex Power Smart App for live use including the first full charge.
10. Register your Product via the Teconnex online web form within 30 days of purchase to benefit from the Teconnex Advanced 100 extended product warranty. Registration link can be found via the Teconnex Power Advanced 100 User Information Card.

Safety Reminder:

Never attempt to short circuit the Battery. Never connect the positive and negative terminals of the Battery directly together. Beware of risk of accidental contact.

Always connect the positive cable to the positive terminal and the negative cable to the negative terminal of the Battery correctly and using the M8 washers and bolts supplied.

Whenever the Battery is left disconnected or in storage, ensure the terminal cover protective washers, terminal bolts and the terminal bolt cap covers supplied are refitted into each of the Battery terminal connections

Failure to follow the guidance stated in this User Guide may result in short circuit and damage of the Battery, of other connected devices or to any people or animals close to the Product.

THE TERMINAL LOCATIONS OF THE TECONNEX POWER ADVANCED 100



Above, the top view of the Teconnex Advanced 100 Battery

⊖ Negative Terminal. This is denoted by the “-” symbol on the top lid of the Battery. ONLY connect the negative cable to this terminal.

Carefully remove the terminal bolt cap cover and the terminal cover protective washer.

Keep these items for future use. It is recommended whenever the Product is being moved or stored, that the washer followed by the terminal bolt and terminal bolt thread cap are correctly refitted as first supplied for safety and protection.

When connecting a negative cable to the Battery use the M8 thread bolt supplied to connect the negative cable to the negative terminal.

⊕ Positive Terminal. This is denoted by the “+” symbol on the top lid of the Battery. ONLY connect the positive cable to this terminal.

Carefully remove the terminal bolt cap cover and the terminal cover protective washer.

Keep these items for future use. It is recommended whenever the Product is being moved or stored, that the washer followed by the terminal bolt and terminal bolt thread cap are correctly refitted as first supplied for safety and protection.

When connecting a positive cable to the Battery use the M8 thread bolt supplied to connect the positive cable to the positive terminal.

Only when the Battery user is satisfied that the connected environment is correctly designed and configured should the Teconnex Power Advanced 100 be switched to “ON” via the Teconnex Power Smart App (see page 6 and 7 for details).

TECONNEX POWER 100 ADVANCED 100 BATTERY MANAGEMENT SYSTEM (“BMS”)

The Teconnex Power Advanced 100 includes an integrated Battery Management System (“BMS”).

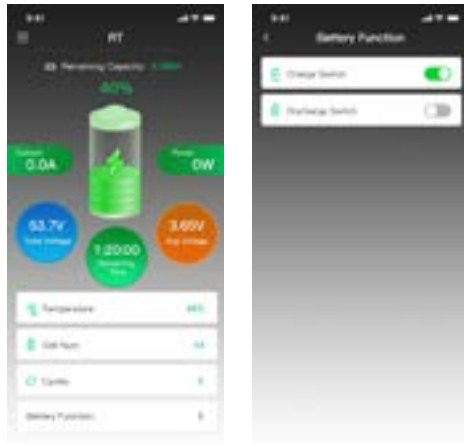
The Teconnex Power Advanced 100 BMS settings can be viewed and managed via the Teconnex Power Smart App.

The Teconnex Power Smart App provides clear visibility of the operational state and current performance of the Battery.

The Teconnex Power Smart App connects directly to the Battery over Bluetooth. The Teconnex Power Smart App is available for suitable Android and IOS devices.

The Teconnex Power Smart App offers a range of easy to access features and user benefits which include:

- View the status of the isolating switch (“ON / OFF”) feature of the Battery in real time.
- View the ambient operating temperature of the Battery in real time.
- View the current charge level of the Battery in real time.
- View the expected time remaining for the Teconnex Power Advanced 100 Battery to reach the full charge capacity level (only possible when the Battery is being charged).
- View the voltage at a per cell level to ensure the Battery is performing optimally (thanks to the in-built intelligence of the BMS to manage and balance the LiFePO4 cells).
- The capability for the Product user to **ISOLATE the Battery** via an “ON / OFF” switch using the “**Battery Function**” Power Smart App settings. Additional user capability through the “**Battery Function**” Power Smart App settings to separately restrict the Battery charge or discharge only operations. This feature may be important if shipping, transporting or storing the Battery.
- Access on-line User Manuals and other Teconnex Battery product information.
- View detailed system and operational information for troubleshooting diagnosis.



BATTERY FUNCTION CHARGING / DISCHARGING ISOLATION FEATURES (“ON/OFF”) USING THE SMART APP


Product Users must first establish a Bluetooth connection between a suitable Android or IOS smart device and the Teconnex Power Advanced 100 BMS.

This enables the Teconnex Power Smart App to display clear visibility and current operational performance access of the Battery.

Once correctly connected Product Users can now use the Power Smart App to manage and change selected settings and operational modes of the Teconnex Power Advanced 100 as required.

The following steps describe how to turn the Teconnex Power Advanced 100 “OFF” or “ON” via the “**BATTERY FUNCTION**” settings accessed from the Teconnex Power Smart App. This is the electrical “**ISOLATE**” feature of the Product.

When handling, moving, connecting, disconnecting, storing, or transporting the Battery, it is recommended to “**ISOLATE**” the Battery via the Teconnex Power Smart App. This can be performed by switching off the “**CHARGE**” and “**DISCHARGE**” capability of the Battery via the “**BATTERY FUNCTION**” setting in Teconnex Power Smart App as follows:

1. Ensure Bluetooth is operating correctly on your Android™ or Apple IOS smart tablet or smart phone device.
2. Ensure the Teconnex Power Smart App is downloaded and supported for your smart tablet or smart phone device.
3. Connect to the Battery via the Android or IOS Bluetooth settings of your device.
4. Open the Teconnex Power Smart App on your Android or IOS
5. Open the menu section within the Power Smart App by selecting 
(click on the three lines at the top left of the Power Smart App home screen.)
6. To fully isolate the Battery, switch the slider for both the “**CHARGE**” and “**DISCHARGE**” settings to the “**OFF**” position (the radio buttons will turn grey in the Power Smart App when performed).
7. To disable the “**ISOLATE**” feature (and turn the Battery “**ON**”) repeat the above steps but after selecting “**BATTERY FUNCTION**” move both slider setting radio buttons to “**ON**” (the radio buttons will turn green in the Power Smart App).

GENERAL INFORMATION

When shipping and transporting the Teconnex Power Advanced 100 please refer to any in-country and local area laws and regulations, including any specific courier or carrier rules relating to battery devices on LiFePO₄ battery devices at that time of transporting.

The Product is originally shipped by the manufacturer with full UN certified packaging. Teconnex recommend the complete packaging is retained for any future shipping need.

GENERAL OPERATING PARAMETERS - BATTERY TEMPERATURES

The ambient operating temperature of the Battery can be viewed in real time via the Teconnex Power Smart App.

The Teconnex Power Advanced 100 will discharge in temperatures as low as -20°C and as high as 45°C.

If the Battery requires charging and the ambient temperature of the Product is below 1°C, simply move the Battery to a warmer temperature location and wait until the Product has naturally increased to the minimum ambient temperature threshold (viewed via the Teconnex Power Smart App) before attempting to charge the Battery.

Note: The operating capacity of the Teconnex Power Advanced 100 will be reduced if the battery operates at sub-zero°C temperatures. This is a standard feature of LiFePO₄ cells.

WARNING: Please be aware that when operating the Battery with a high current charge or a high current discharge or when using the Battery for extended periods of continuous operation the Battery terminals may become very hot to touch.

It is advised to first stop using the Battery and allow the terminals to naturally cool before handling an in-use or recently in-use Battery. Avoid any risk of burn, injury or harm by always wearing suitable protective clothing and gloves when touching or handling the Product.

GENERAL OPERATING PARAMETERS - CHARGING AND DISCHARGING

The Battery will allow a continuous discharge of approximately 100A until the Battery fully discharges (at which point it will require recharging). The real-time state of charge for the Battery can be viewed in the Teconnex Power Smart App.

For the optimal performance and long term life, the Battery should always be charged at 0.5C (50 Amp).

The Battery has been designed to support up to a 1C charge for urgent instances when faster charging of the Battery is required. Note that charging at capacities rates greater than 0.5C (50 Amp) should only be performed on rare occasions. This is to protect the long-term operational life of the LiFePO₄ cells within the Product. Note: Regular or consistent charging of the Product above 0.5C will invalidate any extended warranty agreement.

Should the Battery become fully discharged, it is important to recharge the Battery within 6 months of any such full discharge. This is to maintain the long-term optimal operational performance of the LiFePO₄ cells within the Product.

Note: If the Battery is left fully discharged for more than 6 continuous months this may damage the Product and will invalidate any extended warranty agreement.

Only charge the Teconnex Power Advanced 100 using LiFePO₄ compatible chargers. Failure to use compatible chargers may damage the Product and will invalidate any warranty agreement.

Do not exceed the maximum charge current of the Battery. Failure to do so may damage the Battery and will invalidate any warranty agreement.

BATTERY FIRST USE: PERFORMING A FIRST CHARGE FOLLOWING PURCHASE AND UNBOXING

Providing the Product user has followed and understood all the instructions described in the previous pages, the Teconnex Power Advanced 100 should now be ready to be fully charged for the first time. This first initial charge is an important activity to best optimise the Battery before regular use. It ensures the Product owner will benefit from high Battery performance for many years and across many thousands of battery cycles.

Please follow and perform the following actions in the order below:

1. Fully charge the Battery prior to first use (charge until the Power Smart App displays 100% charge).
2. Fully discharge the Battery (discharge until the Power Smart App displays 0% charge).
3. Fully recharge the Battery back to 100% and read the next section "General Operating Parameters" of these instructions.
4. This completes the first full power cycle and ensures the optimal Battery efficiency for future use.

DISPOSAL AND RECYCLING

When the Product has reached end of service / end of natural use the Battery should be carefully and ethically disposed of.

Under no circumstances should the Battery enter general waste or landfill.

The Teconnex Power Advanced 100 has been designed and manufactured to allow this Product to be recycled and / or repurposed. Such recycling must only be performed through specialist qualified and certified operators.

We suggest that when the Product is no longer required, Battery owners speak to their local authority recycling disposal centres for current guidance and rules regarding the recycling regulations of LiFePO4 specific to the particular area or region at that time, as specific local and national rules and regulations may be subject to change from time to time.

DOWNLOADS AND WARRANTY REGISTRATION

Visit the Teconnex Power website for Teconnex Power Advanced 100 documentation including:

- an online copy of this User Manual
- web links to download the Teconnex Power Smart App
- data sheets and product information for Teconnex Power solutions
- product warranty registration forms
- and other useful information

Please scan the following QR code for quick access to the getting started pages.



Or visit
teconnexpower.com/advanced-100ah-leisure-batteries/getting-started/

www.teconnexpower.com

CONTACT INFORMATION

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Some apps may not be available in all areas.

App availability is subject to change.

