USER GUIDE

iTECHBC25

INTELLIGENT BATTERY CHARGER

iTECHWORLD
THE POWER EXPERT

QUICK START GUIDE

Step 1.
Connect the positive and negative copper terminal wires to the corresponding terminal on the iTECHBC25.

Step 2
Connect the positive and negative copper terminal wires to the corresponding terminal on the battery.

Step 3.
Connect the iTECHBC25 to a 240V outlet.

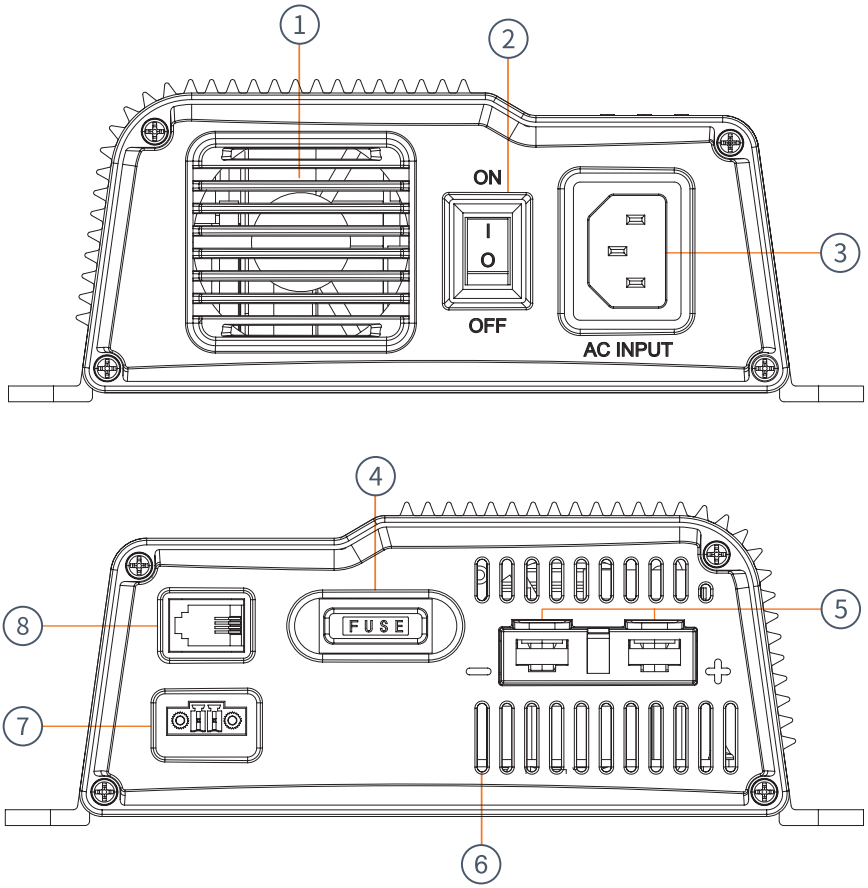
Step 4.
Flip the power switch, the LED lights should now be on.

Step 5.
Verify that the iTECHBC25 is functioning properly.

You will know the iTECHBC25 is outputting power when the power,charging, and battery type LEDs are solid.

CONTENTS

PRODUCT OVERVIEW



1. AIR INTAKE
2. POWER SWITCH
3. AC 240V INPUT PORT
4. OUTPUT FUSE
5. DC OUTPUT TERMINALS
6. AIR OUTLET
7. TEMPERATURE SENSOR PORT
8. REMOTE (COMING SOON)

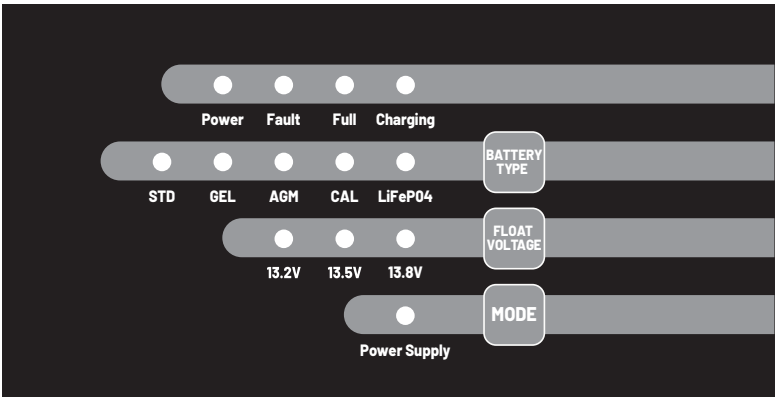
Introducing the iTECHBC25 Battery Charger, a smart and multi-stage lithium battery charger that incorporates the latest switch-mode battery charging technology. Engineered for 12-Volt batteries, this charger ensures rapid and efficient charging through a multi-stage algorithm, delivering fast, consistent charging without voltage drop.

The iTECHBC25 not only enhances the longevity of battery cells but also acts as a safeguard against premature battery failure. Additionally, it features an innovative power supply function designed to awaken and recharge a battery with low voltage, effectively revitalising weak or flat batteries. Welcome to the cutting-edge technology of the iTECHBC25, your reliable partner for effective and intelligent battery charging.

KEY FEATURES:

- Suitable for charging all common types of automotive or recreational 12-Volt lead acid and LiFePO4 Lithium batteries.
- Silent mode.
- Excellent performance in harsh environments.
- In-built Low-Voltage, Over-Voltage, Over-Temperature and Reverse Polarity Protection.
- Power supply mode.
- Capable of bringing an iTechworld battery out of safe mode.
- Advanced custom iTechworld charging algorhythms.
- Adjustable float voltage.
- Easy to use “set and select” menu.
- Multistage charging process.

DISPLAY PANEL:



BATTERY CHARGING PROFILE:

To modify the battery charging profile, float voltage, or charger mode briefly press the corresponding button. As a result, the indicator will move one LED to the right.

LED CHARGE INDICATOR

LED Light					Status
Power LED	**Fault LED**	**Full LED**	**Charging LED**	**Battery Type LED**	
ON	OFF	OFF	OFF	OFF	Standby
ON	OFF	OFF	ON	ON	Charging
ON	OFF	ON	OFF	ON	Float
ON	ON	OFF	ON	ON	Fault

Power Supply Mode	This mode allows the iTECHBC25 to output a stable voltage and current without being connected to a battery.
Silent Mode	This mode disables the cooling fan for total silent operation whilst lowering the amp output.

UNIT OPERATION:

1. Ensure the switch on the front panel is set to the OFF position, and the 240V AC supply is disconnected.

2. Connect the DC output to the battery that requires charging. Connect the **RED** cable to the battery + terminal and the **BLACK** cable to the battery - terminal.

3. Plug the AC power cable into the AC input socket and switch on the 240V AC supply.

4. Turn the switch on the front panel to the **ON** position.

5. Press the "Battery Type' button to select your battery type, the iTECHBC25 will now initiate the charging process for the connected battery.

6. Once the battery has completed its charging cycle, switch the iTECHBC25 off, and unplug the AC power cable.

7. Disconnect the charging cables from the battery.

8. The iTECHBC25 features a memory function. The next time the unit is connected to the 240V AC supply, it will continue to charge in the mode you previously selected.

MULTISTAGE CHARGING PROCESS:

Stage 1 - Bulk, the battery is charged at 25 amps until the battery reaches its final charging voltage, known as its absorption voltage. In this step, around 80% of the battery is charged as fast as possible.

Stage 2 - Absorption, for the remaining 20% of the battery, the iTECHBC25 output will taper off as the battery approaches full charge.

Stage 3 - Float, the iTECHBC25 voltage is lowered and held at a constant and safe predetermined level. This prevents the battery from being overcharged, yet allows the charger to supply enough current to make up for the self-discharge losses of the battery, while supporting any additional loads connected to the battery.

Stage 4 - Maintenance, Once the iTECHBC25 has hit float, the unit will stop outputting power. Once your battery drops below a predetermined level (depending on your battery type), the iTECHBC25 will kick back in, maintaining your battery's state of charge.

FAULT LED INDICATORS:

Fault LED	Fault	Reason	Solution
On	Charger is not outputting power	Reverse polarity	Disconnect the terminal wires and correctly reconnect them
		Short circuit	
		Poor connection	
		No AC input	Check the AC power source
		Over temperature	Disconnect the terminal wires and allow the charger to cool down
	Charger is not reaching the float stage	Battery fault	Check the charger on another battery
		Constant load	Lower, or disconnect the load connected to the battery
		Cable size	Use the supplied cables

INSTALLATION

INSTALL LOCATION:

Choose a suitable location that meets the following criteria:

- **Dry:** Ensure that no liquids can drip or splash onto the charger. This is crucial to prevent electrical hazards and damage to the unit.
- **Cool:** Avoid installing the charger in direct sunlight or near heat sources.

- **Ventilated:** Maintain a space of 10cm away from the side suction and exhaust ports to ensure proper heat dissipation.

- **Clean:** Avoid installing the charger in a dusty environment. Dust can be drawn into the charger's cooling fan, potentially damaging or reducing its lifespan.

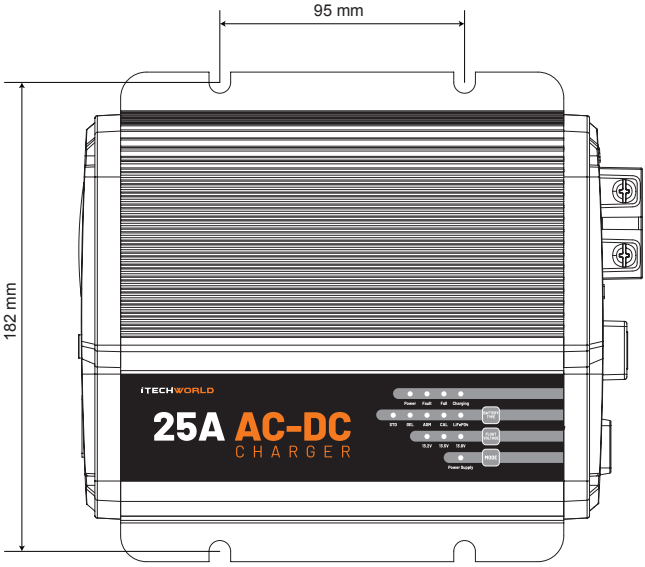
- **Close to Batteries:** Minimise cable lengths between the charger and the batteries to prevent voltage drop and ensure efficient charging.

MOUNTING SURFACE:

If you are mounting the iTECHBC25 on a hard surface like metal or a wood board, consider using anti-vibration mounts between the unit and the mounting surface. This helps reduce vibrations and extends the life of the charger.

SECURE MOUNTING:

Ensure that the charger is securely mounted to prevent any movement or vibrations during operation.



ELECTRICAL CONNECTIONS:

Ensure correct connection of the iTECHBC25 to the power source and the batteries it will be charging. Utilise the appropriate wire gauge and connectors to minimise voltage drop and guarantee safe operation.

MAINTENANCE:

Ensure that the iTECHBC25 is turned off and disconnected from both the battery and the 240V AC input while conducting any maintenance.

Periodically inspect the charger and the surrounding area to ensure it remains dry, clean, and free from obstructions. Check for any signs of damage or wear and address them promptly.

Also, clean the exterior with a dry cloth to prevent the accumulation of dust and dirt. Additionally, inspect and tighten the DC output terminal screws as needed.

SELECTION OF CABLE SIZE:

The iTECHBC25 charger cables may not be long enough for your application. If they need extending, please refer to the table below with the recommended wire sizes. You can select wires that are equal to or larger than the recommended sizes.

Input	Length		
Solar Positive Alternator Positive Output Positive Ground	0-3M	3-6M	6-9M
	10mm² (8AWG)	16mm² (6AWG)	25mm² (4AWG)
Ignition	0.5mm² (20AWG)	0.5mm² (20AWG)	0.5mm² (20AWG)

iTechworld strongly advises that a properly trained / qualified individual conducts this task. Failure to establish a secure connection could result in a short circuit, potentially leading to fire and property damage.

For wire extensions, it is advisable to utilise soldered butt splice connectors. This ensures minimal resistance in the connections. The optimal approach is to crimp both ends of the connector, followed by soldering both sides of the connector. Once the connection is secured, it is crucial to employ heat shrink tubing to protect the connections and prevent any potential short circuits.

Butt Splice Connector	BN8 for 10-8 AWG	

FUSE SPECIFICATIONS:

The iTECHBC25 is equipped with an inbuilt 240V AC input fuse, along with an external 40A blade fuse.

The external fuse is replaceable if blown, it is essential to install all recommended fuses specific to the below ratings.

Source	Fuse Size
Output	1 x 40A

TEMPERATURE SENSOR:

The battery charger is equipped with a temperature sensor that we recommend installing on the positive terminal of the battery. This sensor automatically adjusts the charging voltage based on the battery's temperature, ensuring optimal charging performance. In colder temperatures, it increases the voltage for efficient charging, while in hotter conditions, it reduces the voltage to prevent overheating. This feature helps maintain the battery and extend its lifespan.

SPECIFICATIONS

Operating Parameters					
AC Input Voltage	220V - 240V				
AC Input Frequency	50Hz - 60Hz				
Max Input Current	3A				
Max Input Power	440W				
Continuous Output Current	Up to 25A				
Output Fuse Rating	1 x 40A				
Minimum Auxiliary Battery Voltage	0V				
Standby Current	<2mA				
Battery Types	Standard lead acid, GEL, AGM, Calcium & LiFePO4				
Operating Temperature	-20°C - 60°C				
IP Rating	IP20				
Weight	2kg				
Dimensions	275 x 190 x 72mm				
Charge Efficiency	Up to 95%				
Charge Control					
Charge Type	4-Stage				
Selectable Battery Type	STD	GEL	AGM	Calcium	LiFePO4
Bulk	25A				
Absorbtion	14.4V	14.1V	14.7V	15.5V	14.4V
Float	13.4V	13.5V	13.4V	13.6V	

The iTECHBC25 complies with AS/NZS 60335.2.29 including Australian deviations.

SAFETY PRECAUTIONS

For safe operation and optimal performance, the iTECHBC25 Intelligent Battery Charger must be installed and operated correctly. Please carefully read, understand, and follow all instructions and guidelines in this user guide. iTechworld recommends that a certified technician install the iTECHBC25 charger. Failure to follow these instructions may result in damage to the unit, property, death, or serious injury.

Disclaimer: While iTechworld has taken every precaution to ensure the accuracy of the contents of this user guide, iTechworld assumes no responsibility for any errors or omissions.

Furthermore, all specifications and functionality may change at any time without notice.

It is best to view our website for the most up-to date information

WARNING:
People with physical disabilities, visual, sensory, or mental impairments (including children) should not use this device. Children should be supervised to ensure they do not play with battery chargers.

WARNING:
Please select the correct battery charging profile applicable to the auxiliary battery. Selecting the incorrect battery charging profile may cause damage to your auxiliary battery or result in a fire. If you are unsure of the correct battery charging profile to use, please consult your battery's manufacturer.

WARNING:
Please use the fuses and wires recommended in this user guide; otherwise, it may result in damage to the charger, a risk of electrical shock, fire, death, or serious injury.

WARNING:
Ensure that the selected battery charging profile's charge voltage does not exceed the battery's recommended maximum charging voltage. If you are unsure of the maximum charging voltage of your battery, please consult your battery's manufacturer.

WARNING:
Ensure that the continuous output current of the charger does not exceed the battery's recommended maximum charging current. If you are unsure of the maximum charging current of your battery, please consult your battery's manufacturer.

WARNING:
When using the charger to charge a lithium battery, ensure that it contains an inbuilt battery management system (BMS) that features under and over-voltage protection with cell balancing. Failure to do so may result in fire, death, or serious injury.

DANGER:
Do not disassemble or modify the charger; doing so may result in a risk of electrical shock, fire, death, or serious injury.

DANGER:
This charger is only suitable for battery types listed in the manual. Do not use it for other purposes.

DANGER:
Do not connect the charger with reverse polarity, as doing so may result in a risk of electrical shock, fire, death, or serious injury.

DANGER:
Do not touch the DC output cables together when the charger is switched on or in power supply mode, as doing so may result in a risk of electrical shock, fire, death, or serious injury.

EXPLOSION HAZARD:
Do not use the charger in an environment where flammable fumes or gases are present (such as gas bottles, petrol engines, or lead-acid battery compartments).

LIMITATIONS OF USE:
Do not use in connection with life support systems or other medical equipment or devices.

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When it comes to energy storage and creation at iTechworld, we take pride in being one of the biggest names in the industry. Based in Australia, we are a family-owned and operated business. With many more innovative products on the horizon we are committed to constantly raising the bar to provide bigger and better benefits to all our customers Australia-wide.

Whether you're an avid camper, 4WD enthusiast , freedom seeker or camper, we've got your power needs covered. Escape the grid without compromise, minimise your downtime and travel with comfort with our large range of leading products at great prices.

iTechworld. The Power Expert.

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