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## Trident BP1240-3A

# Trident BP1240-3A Smart Battery Charger User Manual

Model: BP1240-3A | 12V 40A | 3 Outputs

## 1. INTRODUCTION

This manual provides essential information for the safe and efficient operation of your Trident BP1240-3A Smart Battery Charger. Designed for mobile and maritime applications, this charger ensures continuous and optimized battery charging, extending battery life. Please read this manual thoroughly before installation and use.

## 2. SAFETY INSTRUCTIONS

- Always disconnect AC power before making or breaking battery connections.
- Ensure adequate ventilation around the charger to prevent overheating.
- Do not expose the charger to rain, moisture, or excessive dust.
- This charger is designed for 12V lead-acid batteries. Do not attempt to charge other battery types unless explicitly supported by the manufacturer.
- Avoid short-circuiting the battery terminals.
- Only use the charger for its intended purpose.
- Keep out of reach of children.

## 3. PACKAGE CONTENTS

Verify that all items are present in your package:

- Trident BP1240-3A Smart Battery Charger
- Temperature Sensor with 1.5m Cable
- User Manual (this document)

## 4. PRODUCT FEATURES

- **Output:** 12V/40A with 3 independent DC outputs.

- **Charging Algorithm:** Advanced 6-stage charging process (Soft start, Main charge, Compensation, Absorption, Floating, Recycling) for optimal battery health.
- **Temperature Compensation:** Automatic temperature regulation function when the external temperature sensor is connected.
- **Cooling:** Fan with automatic start/stop functionality for efficient cooling.
- **Protection:** Fully protected with PCB coating, short-circuit protection, reverse polarity protection, over-temperature protection for charger and battery, and over-voltage protection.
- **Design:** IP20 rated, marine design suitable for various applications.

## 5. PRODUCT OVERVIEW

Familiarize yourself with the charger's components and indicators.



Figure 1: Front panel and connection diagram of the Trident BP1240-3A charger.

**LED Indicators:** Power, Charging, Charged, Reverse Polarity/Error.

**DIP Switches:** Used for configuring work mode and

battery type. Refer to the full technical manual for specific settings.

**Main Switch:** Power ON/OFF switch.

**AC Power Cord Input:** Connects to mains power (185-265VAC 50Hz).

**BAT - (Negative):** Common negative terminal for all batteries.

**BAT + (Nr.1), BAT + (Nr.2), BAT + (Nr.3):** Positive output terminals for connecting up to three separate battery banks.



**Figure 2:** Front view of the Trident BP1240-3A charger, showing LED indicators and general design.



Figure 3: Included temperature sensor for automatic battery temperature compensation.

## 6. SETUP AND INSTALLATION

### 6.1 Mounting

Mount the charger in a dry, well-ventilated area, away from direct sunlight and heat sources. Ensure sufficient space around the unit for airflow, especially around the cooling fins and fan grille. The charger can be mounted horizontally or vertically.

### 6.2 Connecting Batteries

1. Ensure the charger's main switch is OFF and the AC power cord is disconnected.
2. Connect the negative terminal of your battery bank(s) to the common BAT - terminal on the charger.
3. Connect the positive terminal of your first battery bank to BAT + (Nr.1).
4. If charging additional battery banks, connect their positive terminals to BAT + (Nr.2) and BAT + (Nr.3) respectively.
5. Ensure all connections are secure and free from corrosion.

### 6.3 Connecting Temperature Sensor

Connect the provided temperature sensor to the designated port on the charger. Place the sensor on or near one of the batteries being charged to allow for accurate temperature compensation, which optimizes charging voltage based on battery temperature.

### 6.4 Connecting AC Power

Connect the AC power cord to the charger's AC input. Then, plug the other end into a suitable mains power outlet (185-265VAC 50Hz).

### 6.5 DIP Switch Configuration

The DIP switches on the charger's front panel are used to select the charging profile and battery type. Refer to the detailed instructions in the complete technical manual for the correct DIP switch settings for your specific battery type (e.g., Gel, AGM, Flooded).

## 7. OPERATING INSTRUCTIONS

### 7.1 Powering On

After all connections are made and verified, switch the main power switch on the charger to the 'ON' position.

The 'Power' LED should illuminate.

## 7.2 Charging Process

The Trident BP1240-3A utilizes a 6-stage charging algorithm:

1. **Soft Start:** Gently introduces current to deeply discharged batteries.
2. **Main Charge (Bulk):** Delivers maximum current to rapidly bring the battery to approximately 80% charge. The 'Battery Charging' LED will be active.
3. **Compensation:** Further charges the battery to a higher voltage to ensure full capacity.
4. **Absorption:** Charges the battery to 100% by gradually reducing current while maintaining a constant voltage. The 'Battery Charging' LED will remain active.
5. **Floating:** Maintains the battery at a safe voltage to prevent self-discharge, keeping it fully charged. The 'Battery Charged' LED will illuminate.
6. **Recycling:** Periodically re-applies a higher charge if the battery voltage drops, ensuring optimal long-term maintenance.

## 7.3 LED Indicators

- **Power LED:** Indicates the charger is receiving AC power.
- **Battery Charging LED:** Illuminates during the bulk and absorption stages.
- **Battery Charged LED:** Illuminates when the battery is fully charged and in float mode.
- **Error/Reverse Polarity LED:** Illuminates to indicate a fault condition, such as reverse polarity connection or other system errors.

## 8. MAINTENANCE

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- Regularly inspect all cables and connections for wear, damage, or corrosion.
- Keep the charger's exterior clean and free from dust. Use a soft, dry cloth.
- Ensure the cooling fan and vents are unobstructed.
- Do not open the charger casing; there are no user-serviceable parts inside.

## 9. TROUBLESHOOTING

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- **Charger not powering on:** Check AC power connection and mains supply. Ensure the main switch is ON.
- **Error LED illuminated:**
  - **Reverse Polarity:** Disconnect AC power, correct battery connections (positive to positive, negative to negative), then reconnect.
  - **Battery Over-Voltage:** Charging will not start if battery voltage is above 15.0 VDC. Check battery condition.
  - **Charger Over-Temperature:** Ensure adequate ventilation. The charger will reduce output power or shut down if it overheats.
  - **Battery Over-Temperature:** If the connected temperature sensor detects battery temperature above 50°C, the charger will shut down. Allow the battery to cool.
  - **Short Circuit at Output:** Disconnect AC power, check battery connections for short circuits, then reconnect.

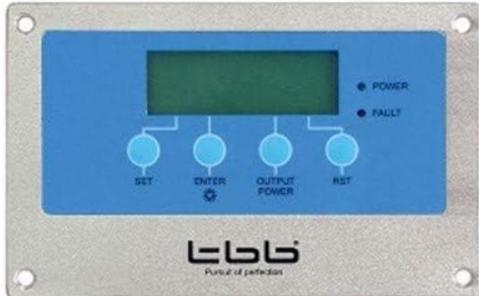
- **Battery not charging:** Verify all connections, check DIP switch settings for correct battery type, and ensure the battery is not severely damaged.

## 10. SPECIFICATIONS

Feature	Specification
Model Number	BP1240-3A
Nominal Output Voltage	12V
Nominal Output Current (Total)	40A
Number of Battery Outputs	3
Input Voltage Range	185-265VAC 50Hz
Charging Algorithm	Automatic 6-stage (Soft, Start, Bulk, Compensation, Absorption, Floating, Recycle)
Battery Temperature Compensation	Automatic with connected temperature sensor
Nominal Voltage (Energy Saving Mode)	13.5 ± 0.6 VDC
Efficiency	85%
Power Factor	60%
Cooling	Passive (Fan with auto start/stop)
Protection Class	IP20
Dimensions (L x W x H)	35 x 18.8 x 6.8 cm
Weight	2.8 kg
Material	Aluminum
Color	Blue & Silver
Special Features	Heat resistant, PCB coating

## 11. OPTIONAL ACCESSORIES

The following accessories are available separately to enhance the functionality of your Trident BP1240-3A charger:



## RC: LCD-Fernbedienung

- LCD Bildschirm
- Status der Ladung
- Systemstatus
- Kabel 1.5m



## RD: LED-Fernanzeige

- LED-Alarm
- Status der Ladung
- Systemstatus
- Kabel 1.5m



- **RC and RD are optional accessory and should be purchased separately;**
- RC und RD sind optionales Zubehör und wird separat verkauft.



Figure 4: Optional remote control units (LCD and LED displays) for monitoring charger status.

**RC: LCD Remote Control:** Features an LCD screen, displays charging status and system status, includes a 1.5m cable.

**RD: LED Remote Display:** Features LED alarms, displays charging status and system status, includes a 1.5m cable.

*Note: RC and RD units are optional accessories and must be purchased separately.*

## 12. WARRANTY INFORMATION

For detailed warranty terms and conditions, please refer to the warranty card included with your product or contact Trident customer support directly. Keep your proof of purchase for warranty claims.

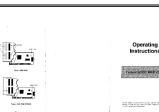
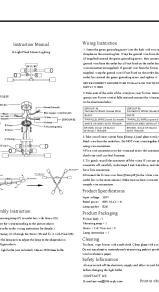
## 13. CUSTOMER SUPPORT

If you encounter any issues or have questions not covered in this manual, please contact Trident customer

support. Contact information can typically be found on the manufacturer's website or on the product packaging.

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## Related Documents - BP1240-3A

	<p><a href="#">Trident TVGA 9000I Graphics Adapter User Manual - Installation and Configuration Guide</a></p> <p>Comprehensive user manual for the Trident TVGA 9000I Graphics Adapter, covering installation, configuration, troubleshooting, and software driver setup for various applications.</p>
	<p><a href="#">Trident 60HP A/C Cabin Tractor Quick-Start Guide   Nicola's Machinery</a></p> <p>Concise quick-start guide for the Trident 60HP A/C Cabin Tractor, covering safety, operation, and control panel overview. Provided by Nicola's Machinery.</p>
	<p><a href="#">Trident TVGA 9440AGI Graphics Card User Manual   Configuration &amp; Features</a></p> <p>Comprehensive user manual for the Trident TVGA 9440AGI VGA Local-Bus graphics card, detailing its features, compatibility, configuration options, technical specifications, display modes, driver installation, and FCC compliance. Includes information on VL-Bus and PCI interfaces.</p>
	<p><a href="#">Trident 9000C MKII VGA Operating Instructions</a></p> <p>Operating instructions and jumper settings for the Trident 9000C MKII VGA graphics adapter, including DRAM upgrade information and configuration details.</p>
	<p><a href="#">Trident TD60003FL 6-Light Sputnik Semi Flush Mount Ceiling Light - Instruction Manual</a></p> <p>Official instruction and assembly manual for the Trident TD60003FL 6-Light Sputnik Semi Flush Mount Ceiling Light. Includes wiring instructions, assembly steps, product specifications, cleaning, and safety information.</p>
	<p><a href="#">Trident 60HP Canopy Tractor Quick-Start Guide   Nicola's Machinery</a></p> <p>Comprehensive quick-start and safety guide for the Trident 60HP Canopy Tractor, detailing operation, controls, and maintenance tips from Nicola's Machinery.</p>

