

# OWNER'S MANUAL

# TRAILS**AFE**BT

## + OPTIONAL TRAILS**CHECK**



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Manual Part #030448

The BMPRO **TrailSafeBT** is a proudly Australian-made product manufactured in Melbourne, Australia. Designed by Setec, one of Australia's leading power solutions experts. The **TrailSafeBT** represents a high quality product that will provide years of service.

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#### **Disclaimer**

SETEC accepts no liability for any loss or damage, which may occur as a result of improper or unsafe use of its products. Warranty is only valid if the unit has not been modified or misused by the customer.

# SAFETY PRECAUTIONS

Please read the Safety Precautions carefully before installing the power supply. Be sure to observe all precautions without fail.

After completing the installation, conduct a trial operation to check for faults.

Note: NSW legislation requires the use of an additional remote trailer battery monitor system in the tow vehicle. **TrailCheck** is a wireless solution for this purpose. Wired options are also supported. For more information visit: [www.rms.nsw.gov.au](http://www.rms.nsw.gov.au)



## CAUTION

Failure to observe these instructions properly may result in property damage or personal injury, which may be serious depending on the circumstances.

Correct installation is the most critical factor in ensuring the safe use of the **TrailSafeBT** system.

Take care as dropping or touching of metal objects onto the battery terminals may cause short circuits. Remove any personal metal adornment such as a chain, watch or ring, which could cause short circuits and personal injury.

Batteries are electrically live at all times and must be treated with extreme caution. They can supply high short circuit currents, even if they appear damaged or undamaged.

Before servicing a battery, disconnect the power supply from all power sources.

Please note that the battery can only reach top performance level after it has been fully charged.

The pull pin should be tested before use to confirm the effectiveness of contacts particularly if exposed to salt water.

This device is a high precision electronic product. It contains no user-serviceable parts inside. Do not try to dismantle, modify or repair it yourself. Disassembly by unauthorised persons will void the warranty.

## WHAT'S INCLUDED

Accessories provided with this product are:

- **TrailSafeBT** Unit
- **TrailSafeBT** Owner's Manual & Installation Instructions

Optional **TrailCheck** wireless remote monitor

## KEY FEATURES

- **TrailSafeBT** is a break-away system that activates emergency braking on the trailer if/when it becomes disconnected from the tow vehicle. This is a requirement of the Australian Design Rules (ADRs).
- **TrailSafeBT** utilises the caravan or trailer's reliable house battery so that no separate (extra) battery is required to maintain or power the unit.
- **TrailSafeBT** provides an indicator light so that you can test the battery and the pull switch whilst at the tow vehicle's hitching point. No requirement to access the cupboard or storage area.
- **TrailSafeBT** provides a remote monitor function either by a wired connection to a third party monitor or by a wireless connection when used with the **TrailCheck**.

## PRODUCT INFORMATION

Australian Design Rule (ADR) 38/02 mandates that for all trailers having a Gross Trailer Mass (GTM) over 2,000 kg, an 'emergency braking system' is required on all wheels and must be capable of automatically activating should the trailer become detached from the tow vehicle. In such a situation the brakes must remain active for a minimum of 15 minutes.

NSW RTA VSI-22 mandates that for trailers over 2,000kg, the towing vehicle is to be equipped so that it is capable of warning the driver if the condition of the trailer battery is such that it may not be capable of meeting the 15 minute requirement.

TrailSafeBT is a system designed to activate the electric brakes of a trailer, caravan (or similar) in the event of a disconnection from the towing vehicle. It utilises the house battery located on the trailer to activate the electric brake system and brake lights on the trailer in the event of an emergency breakaway situation.







TrailSafeBT also provides an indication of the charge status of the house battery and checks the condition of the Pull Pin and effective activation of the brakes. This is transmitted through a wire to a remote monitor, as well as by Bluetooth wireless to the optional **TrailCheck**.

Disconnection detection is performed by means of a mechanical Pull Pin that is removed should the towing vehicle become separated from the trailer. Upon disconnection, the brakes and brake lights are activated as long as charge remains in the trailer battery or until the pin is replaced.

# USING TRAILSAFEBT



Correct operation of **TrailSafeBT** should be checked prior to each use of the trailer. This check should be done prior to the trailer being hitched to the towing vehicle. **TrailSafeBT** can be checked by removing the Pull Pin. This will activate the system and illuminate the Status Indicator on the side of the unit according to the table below:







STATUS		
	<b>RED</b> Flashing 1 Pulse	Fault - Pull pin contacts not in good condition → System may not be able to provide emergency braking
	<b>RED</b> Flashing 2 Pulses	Fault - Battery not detected → System will not be able to provide emergency braking
	<b>ORANGE</b>	Battery may not be suitable for 15 minutes of operation → Turn off all loads on the house battery → Check battery condition and charging manually if possible
	<b>ORANGE</b> Flashing	STATUS being determined → Wait or check battery manually
	<b>GREEN</b>	Battery suitable for >15 minutes of operation
	<b>BLUE</b> Flashing	System Initialisation → Wait or check battery manually → Do not remove Pull Pin

# OPTIONAL WIRELESS MONITORS



## TrailCheck (Wireless)

The **TrailCheck** will indicate system status as follows:

STATUS	
 <b>RED</b> Flashing	Fault Pull Pin is out and Trailer brakes applied or → Replace Pull Pin Pull pin is not in good condition, or → Check and clean Pull-Pin contacts Battery not detected → Check Battery and charging system
 <b>ORANGE</b>	Battery may not be suitable for 15 minutes of operation → Turn off all loads on the house battery → Check battery condition and charging manually if possible
 <b>ORANGE</b> Flashing	Waiting for Communications or not yet paired → Wait or Pair <b>TrailCheck</b> to <b>TrailSafeBT</b>
 <b>GREEN</b>	Battery suitable for >15 minutes of operation (only displayed on Brake Application)
 <b>BLUE</b> Flashing	Pairing in progress
 <b>BLUE</b>	Pairing successful

# OPTIONAL THIRD PARTY WIRED MONITOR

The wired monitor will confirm the status of the trailer battery when the **TrailSafeBT** has determined that it has sufficient charge for braking and that the pull pin contacts are in good condition.

If the indication is other than **green** or no indication is shown when the brake is pressed or pull pin removed, the **TrailSafeBT** and Trailer Battery status should be checked for a possible fault or low state of charge.

# SPECIFICATIONS

System Voltage	12V Nominal (not suitable for 24V systems)
Electric Brake Load	4 to 18A
Brake Light Load	0 to 8A
Communications	Bluetooth Low Energy (BLE 4.1)
Wired Monitor Current	0 to 30mA

# INSTALLATION INSTRUCTIONS

## Mounting location

Secure **TrailSafeBT** to the right hand side draw bar of the trailer (the driver's side) approximately 300mm from the tow ball hitch. Mount horizontally on top of the draw bar.

## Mounting method

Mount on the arm of the trailer using an M6 bolt or screw. Only one mounting point is required so that the unit can swivel in an emergency. Ensure that it is secured tightly so that it does not vibrate loose.

## Mounting orientation

The wires and mounting bolt should be pointing towards the rear i.e. away from the tow vehicle so that the pull pin is facing towards the tow vehicle. The pull pin will then be pulled out freely should the vehicle and trailer separate. The other end of the pull pin cord is attached to the towing vehicle by a D shackle or similar.

## Wiring Instructions

The **TrailSafeBT** has multiple coloured wires coming from the rear side which require connection to ensure correct functionality. As this is a safety critical system all wiring should be done by a suitably qualified Auto Electrician.

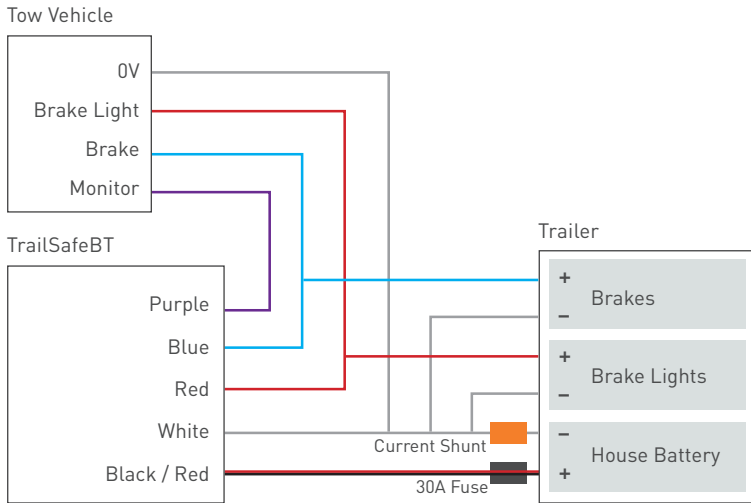
- |  |  |
|--|--|
| <b>Red</b> (14AWG / 2.5mm <sup>2</sup> )     | to the positive of the brake lights                  |
| <b>Blue</b> (12 AWG/ 4 mm <sup>2</sup> )     | to the positive of the brakes                        |
| <b>Purple</b> (20 AWG/ 0.5 mm <sup>2</sup> ) | to the wired monitor                                 |
| <b>White</b> (14 AWG/ 2.5 mm <sup>2</sup> )  | to the negative of the house battery                 |
| <b>Black/Red</b> (12AWG / 4mm <sup>2</sup> ) | to positive of the house battery (30A Fuse Required) |

**Note:** Larger wire sizes maybe used. Minimum shown.

Black/Red: 30A Mini Blade located as close to the trailer battery as possible, but not before the battery charging source feed.



Wire **TrailSafeBT** to the house battery, trailer brakes & brake lights according to following diagram:



### Notes:

The return (negative) wires of brakes & brake lights from trailer must be wired directly to

- One of the negative output connections on **BatteryPlus35** or **J35** if fitted
- To the non-battery side of a negative side shunt if fitted

Ensure the house battery has a suitable charging source such as a **BatteryPlus35**, **J35** or other charging means and that this is functioning correctly. Refer to manufacturer's instructions for these products as required. A basic charging means such as diode from the Auxiliary to the house battery may be employed in simple systems.

### Initial Self Test

Ensure the pull-pin is inserted when power is first applied to the system. The status indicator will flash **Blue** for approximately 15 minutes while the system undertakes the initial determination of the battery status. Preferably avoid switching loads on or off or applying charging sources during this time. **DO NOT REMOVE PULL PIN DURING THIS TIME**. If removed early the **Red** Fault Status Indication will be shown. Replace the Pin to restart the 15 minute setup.

After the **Blue** Status Indication stops flashing the pin should be pulled and left out until the Status Indication stops flashing and changes colour. This is to test the complete system including pull pin contacts, battery, wiring and brakes. The Status Indication should turn **Green**. If the Status Indication turns **Orange** the battery needs to be charged. Next, replace the pull pin to complete the system initialisation. This will complete the system initialisation.

If the Status Indication is **Red** or does not light when the Pull Pin is out or with the brake lights activated there is a fault.

### **TrailCheck Monitor Installation**

If a monitor is required for NSW or otherwise desired, it should be located so that it is visible to the driver. Confirm operation by pressing the brake pedal and viewing the battery status is indicated.

With the wireless **TrailCheck**, some location options may provide a more reliable connection. If a suitable location can't be found, a wired remote is required.

**TrailCheck** can be mounted with the provided Velcro strips and plugs into a 15A (or lower) fused vehicle 12VDC Outlet/Cigarette lighter. Ensure the **TrailCheck** will not dislodge during severe braking.

Recommended location is on the side of the transmission tunnel or under dash. Make sure the surface is free from dust and grease to ensure good adhesion.

Apply the hook Velcro to the **TrailSafe** on the side to be attached to the vehicle by peeling off the clear tape.

Similarly attach the loop side Velcro to the vehicle where it will be mounted so that the tapes will align.

Ideally clean the surface with isopropyl alcohol and leave for 24 hours to achieve maximum adhesion before mounting the **TrailSafe**.

Avoid contacting the tape with fingers.

Test with the engine running. If there is too much metal between the **TrailSafeBT** and **TrailCheck** or a high level of electrical noise in the vehicle, **TrailSafeBT** may not provide an adequate connection. In such cases a wired 12VDC battery voltage level indicator, such as 08160 from Vanline Electronics, can be used with reduced functionality.

## Pairing to TrailCheck

To enable monitoring of the battery, either wired remote or the optional **TrailCheck** needs to be installed. The following steps are initially required:

1. Complete wiring of the **TrailSafeBT** System and confirm that the battery indication is working when the Pull Pin is pulled.
2. Replace the Pull Pin
3. Power the **TrailCheck** by inserting the power connection into the vehicles DC jack/ Cigarette lighter output and turn on the ignition.
4. Press the button on the rear of the **TrailCheck** for 1 second confirming the Status Indication is flashing **Blue**
5. Operate the brake pedal and watch the **TrailCheck** Status indicator for up to 2 minutes.
  - a. If the **TrailCheck** Status indicator turns solid **Blue** for 2 seconds then pairing to the **TrailSafeBT** was successfully. The **TrailCheck** Status indicator will then show either solid **Green**, solid **Orange** or flashing **Red**. See the **TrailCheck** Status indicator output descriptions in section "OPTIONAL VEHICLE MONITOR".
  - b. If the **TrailCheck** STATUS indicator changes to flashing **Orange** then pairing failed. Return to step 4 to try again.

If pairing does not work try an alternate location for the **TrailCheck**.

Pairing can be cleared by pressing and holding the button on the rear of the **TrailCheck** until the Status Indication starts flashing **Orange** (approximately 5 seconds)

**TrailCheck** can be unplugged when not in use and will not require repeating the pairing sequence.

## FAQS

### **When I pull the pin, TrailSafeBT indicator does not illuminate:**

1. Check the supplied fuse on the Black/Red wire
2. Check the wiring matches the diagram
3. Ensure **TrailSafeBT** pin contacts are clean and free of corrosion
4. Ensure House Battery is charged

### **Why should I test TrailSafeBT before hitching to the tow vehicle?**

Testing **TrailSafeBT** ensures that the house battery has sufficient capacity to operate the brakes for at least 15 minutes should the need arise.

### **What is the difference between a solid green, orange and red Status Indications on TrailSafeBTs?**

**Green** confirms that the battery has been detected, has been determined to have sufficient charge and no fault in the wiring to the brakes has been detected. Good to go!

**Orange** indicates there is a need for a secondary check as the battery maybe too low. It is possible that with dual axles brakes, heavy brake light loads, warm batteries, a large load on the trailer etc, that the battery is sufficient but failing to give a clear pass.

It is necessary that there is at least 10Ah of useful battery capacity remaining, which may require 20% of aged 100Ah-rated battery for this load. If any loads (e.g. lights, 12V fridges) are on in the trailer, turn these off if possible. If your trailer or caravan has a display showing remaining battery capacity this should be able to provide a useful indication that there is enough battery capacity remaining for the emergency braking function.

**Red** indicates that a fault has been detected such the Pull Pin contacts being in poor condition or battery not detected.

### **When I pull the pin, the red LED is flashing 1 pulse:**

The pull pin internal contacts may have become corroded particularly by exposure to salt water or dirt leading to the resistance building up which may cause the brakes to not operate correctly or for as long as desired. If possible try cleaning the contacts with a nail file or other means until the warning light resumes **Orange** or **Green** with the pin out, then replace the pin.

### **When I pull the pin, the red LED is flashing 2 pulses:**

The system has been unable to detect a battery. Check the condition of the battery manually and confirm wiring is appropriately arranged and fuse is intact.

**I have charged my house battery, but TrailSafeBT shows an orange LED.**

If a large load is applied to the house battery, such as a fridge, the house battery terminal voltage may drop below the minimum **TrailSafeBT** threshold (due to the internal resistance of the house battery). While the house battery may still be capable of operating the brakes for the minimum required time, **TrailSafeBT** cannot accurately determine if there is sufficient charge remaining to support 15 minutes of braking. Switch off any loads and re-test.

**I thought it was not a good idea to remove the pin?**

This is a key feature of the device and by removing the pin to test the unit it checks to ensure that the contacts inside the case are not corroded and capable of making a suitable electrical connection including wiring to the brakes. It also checks the battery is ready to function should an emergency happen.

# WARRANTY TERMS AND CONDITIONS

Registering your BMPRO by Setec product is an important step to ensure that you receive all of the benefits you are entitled to. Please visit [www.teambmprom.com](http://www.teambmprom.com) to complete the online registration form for your new product today.

1. BMPRO by Setec goods come with guarantees that cannot be excluded under Australian Consumer Law. You are entitled to a replacement or refund for major failure and compensation for any reasonably foreseeable loss or damage. You are entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure. The benefits under this Warranty are in addition to your other rights and remedies under a law in relation to the goods to which this Warranty relates (the Australian Consumer Law).
2. Setec, as the manufacturer of BMPRO by Setec goods, warrants products against defects for a period of two years, commencing from the original date of purchase. Proof of purchase is required before you can make a claim under this warranty.
3. HOW TO PROTECT YOUR RIGHTS UNDER THIS WARRANTY: The **TrailSafeBT** is designed to be installed by a suitably qualified installer. You or your installer should carefully inspect the product before installation for any visible manufacturing defects. We accept no responsibility in addition to our consumer guarantee obligations where a product has been installed incorrectly.
4. This warranty does not extend to product failures or defects caused by, or associated with, but not limited to; failure to install or maintain correctly, unsuitable physical or operating environment, accident, acts of God, hazard, misuse, unauthorised repair, modification or alteration, natural disaster, corrosive environment, insect or vermin infestation and failure to comply with any additional instructions supplied with the product.
5. Setec may seek reimbursement of any costs incurred by them when a product is found to be in proper working order or damaged as a result of one or more of the warranty exclusions mentioned in point 4 of this statement.
6. To enquire or make a claim under this warranty, please follow these steps:
  - a. Prior to returning a BMPRO by Setec product, please email [customerservice@setec.com.au](mailto:customerservice@setec.com.au) to obtain a Return Material Authorisation (RMA) number
  - b. Package and send the product to: BMPRO by Setec Warranty Department, 19 Henderson Road, Knoxfield, VIC 3180. Please mark RMA details on the outside of the packaging
  - c. Please ensure the package also includes: a copy of the proof of purchase, a detailed description of the fault and your contact details including phone number and return address
7. Setec will not be liable for any costs, charges or expenses incurred in the process of returning a product in order to initiate a warranty claim.



**SWITCH OFF. POWER UP.**