THE POWER OF REDARC®

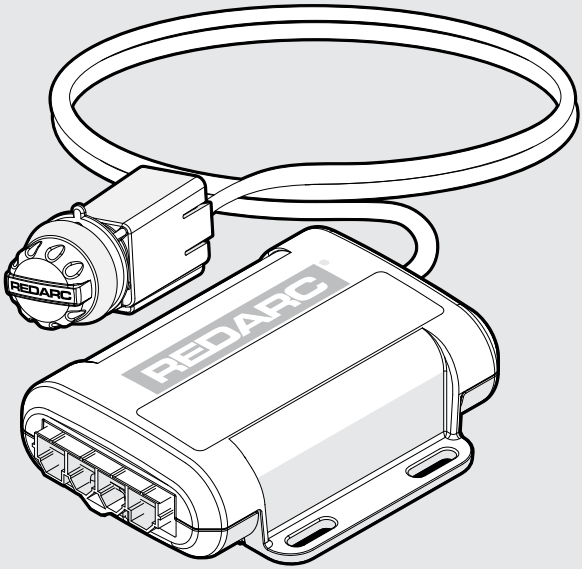
Tow-Pro® Trail

Electric Trailer Brake Controller

12 V or 24 V, 1–3 Axles

MODEL:

- **EBRH-ACCV3-NA-T**



AUSTRALIAN MADE®

Tow-Pro® Trail

Electric Trailer Brake Controller (EBRH-ACCV3-NA-T)

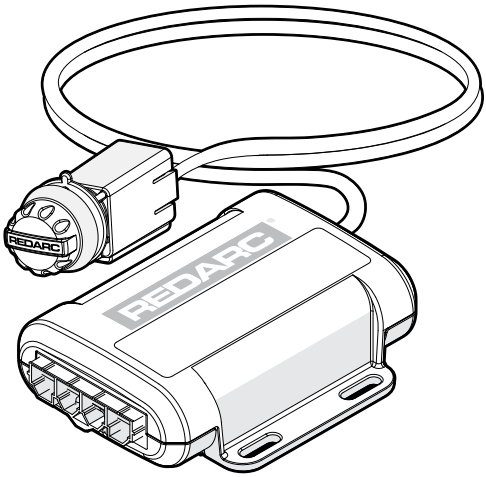
The Tow-Pro Trail is an electric trailer brake controller designed to suit most common trailer braking applications. It requires minimal dash space and is simple to install and operate.

The Tow-Pro Trail has selectable Everyday or Manual Off-road trailer braking modes that allow you to choose the braking style depending on the road or terrain conditions, vehicle type, or driver preference.

The Tow-Pro Trail features Active Calibration which constantly monitors the direction of travel and will even calibrate with no trailer attached, and can be mounted in any orientation.

The unit is able to operate electric trailer brakes from either 12 V or 24 V vehicle systems without the need for manual selection or extra components or wiring.

The unit is able to operate Electric/Hydraulic trailer brakes from 12 V vehicle systems.



CONTENTS

1 WARNINGS AND SAFETY INSTRUCTIONS

SAVE THESE INSTRUCTIONS — This manual contains important safety instructions for the Tow-Pro Trail Electric Trailer Brake Controller.

Do not operate the controller unless you have read and understood this manual and the controller is installed as per these installation instructions. REDARC recommends that the controller be installed by a suitably qualified person.

SAFETY MESSAGE CONVENTIONS

Safety messages in this manual include a signal word to indicate the level of the hazard as follows:

⚠ **WARNING:** Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury to the operator or to bystanders.

⚠ **CAUTION:** Indicates a potentially hazardous situation which, if not avoided, may result in moderate or minor injury to the operator or to bystanders.

NOTICE: Indicates a situation that may cause equipment damage.

⚠ WARNING

1. This product may contain chemicals known to the state of California to cause cancer and birth defects or other reproductive harm.
2. Ensure that your trailer brakes are installed and are operating correctly; Improperly installed and/or faulty trailer brakes can cause erratic vehicle or trailer behavior with the potential to cause a road accident. For this reason, it is of utmost importance that your trailer braking system be installed/maintained by a qualified installer.
3. Always check brakes at low speed each time a trailer is attached to your vehicle.

⚠ CAUTION

4. Ensure that the Tow-Pro is mounted securely in a fixed location. Failure to mount securely will result in inaccurate braking force measurements and incorrect braking of the trailer.
5. Ensure that the Tow-Pro is installed inside the vehicle cabin and away from any environmental conditions that may cause damage, including engine heat, submersion in water, salt spray and humidity. Exposure to these conditions may cause damage to the unit's circuitry and may cause erratic trailer braking.
6. A Fuse of appropriate rating must be installed to protect the vehicle system. Refer to the installation instructions starting on page 7 for specific instructions on where to install the fuse and for appropriate fuse rating. The fuse must be installed as close as possible to the battery.
7. Ensure the remote head push-button activates correctly when installed into surfaces with a thickness greater than ⅛" (3.2 mm). Failure to activate correctly would result in not being able to activate the SwayStop function or change modes.
8. Ensure that the wire(s) and all connections used to install the Tow-Pro are suitably rated to supply the required current to simultaneously operate the trailer electric brakes and stop lamps. Incorrect wiring can result in reduced (or total loss of) trailer braking and/or damage to property or persons.
9. The Tow-Pro is suitable for trailers with electric brakes up to three axles. Note that Federal and State laws apply to trailer weights and brake controller requirements. Please consult your local authority to ensure you comply with the legal requirements.
10. Do not tow with the Tow-Pro Trail while a fault code is active. Fault codes of the Tow-Pro Trail may indicate conditions that make it unsafe or illegal to tow, including unreliable trailer brakes or failure of brake lights.

11. During the calibration step of the Tow-Pro, braking of the trailer may be inconsistent. REDARC recommends calibrating the Tow-Pro without a trailer attached. A normal drive of a few miles will do for this purpose. If calibrating with a trailer attached, then the recommended setting for the Tow-Pro is 4 or less.

12. DO NOT install the remote control head in a location that could interfere with the activation of the vehicle's airbags.

NOTICE

13. Ensure that a correct grounding point is used. Vehicles often have ungrounded metal reinforcements under the dash and these points are not suitable grounds. Bad grounding of the unit will result in poor or no operation.

14. The Tow-Pro does not act as a trailer lights voltage converter. If the trailer brake lights operate on a different voltage, damage to the vehicle; trailer and/or Tow-Pro and associated wiring may result. This may also result in reduced (or total loss of) trailer braking.

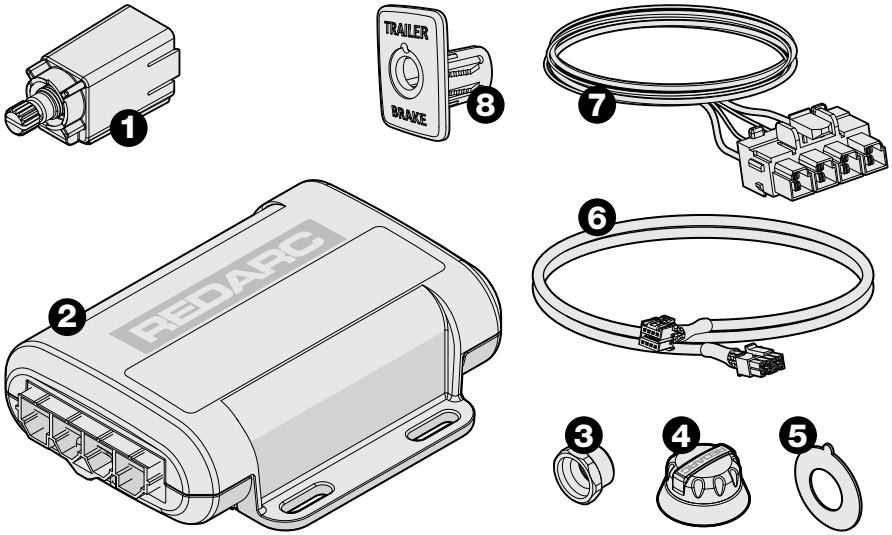
15. When installing the Tow-Pro Remote Control to a thin panel, washers are recommended to reinforce the structure of the panel.

16. Do NOT exceed Tow Vehicle and Trailer weights and specifications. Failure to abide by the towing regulations, including maximum loads, may result in a fine, or in case of an accident, refusal of the insurance claim, and the possibility of further legal action. If the tow vehicle or trailer's maximum load is exceeded, police and transport authorities have the power to order the combination off the road until the issue is corrected. This may necessitate leaving the trailer on the side of the road while a vehicle with suitable towing capacity is sourced or the trailer load is reduced. Please contact your local authorities for further information.

17. If no trailer is connected, Active Calibration may occur as normal without any indication from the LED. The LED will already be Blue when the trailer is connected. Essentially, whether a trailer is connected or not, just drive normally and Active Calibration will ensure the Tow-Pro learns the correct direction of travel.

18. The State of California regulations require that the manual override (SwayStop) function illuminates the trailer brake lights. Once the Tow-Pro is installed it should be tested with your vehicle to confirm the wiring configuration to make sure the brake lights are illuminated when the Control Knob button is pressed.

2 KIT CONTENTS



Reference	Description
1	Remote Head Assembly
2	Main Unit
3	Remote Head Nut
4	Remote Head Control Knob
5	Remote Head Bezel
6	Remote Head Cable 3'3" (1 m)
7	Main Unit Wires and Connector 1'7" (0.5 m)
8	Tow-Pro Universal Switch Insert Panel

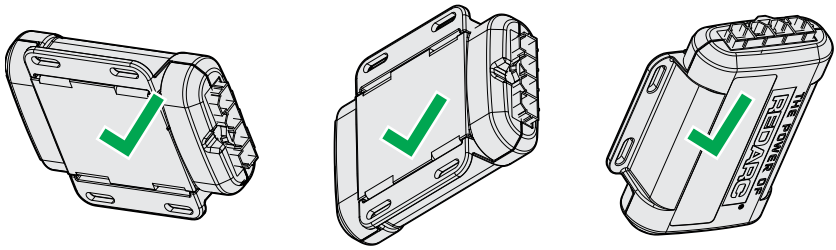
3 INSTALLATION

3.1 MOUNTING THE MAIN UNIT

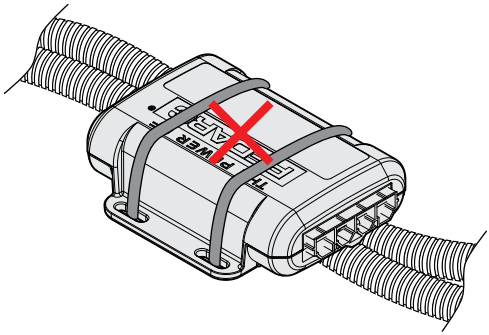
The Tow-Pro Trail should be mounted inside the vehicle cabin using either 5/32" (M4) diameter screws or other secure fitting methods at the mounting points provided. It is essential to mount the unit in a location which allows access to the intended remote head location.

The Tow-Pro Trail can be mounted in any orientation as long as the installation is secure and the main unit cannot move or change orientation once installed. A change of orientation will affect the system calibration.

> **⚠ CAUTION**
> - Ensure that the Tow-Pro Trail is mounted securely in a fixed location. Failure to mount securely will result in inaccurate braking force measurements and incorrect braking of the trailer.
> - Ensure that the Tow-Pro Trail is installed inside the vehicle cabin and away from any environmental conditions that may cause damage, including engine heat, submersion in water, salt spray and humidity. Exposure to these conditions may cause damage to the unit's circuitry and may cause erratic trailer braking.



Any secure location ok



Do Not Mount to Cables/Wiring Looms (Must be mounted to a rigid or solid object or surface)

3.2 WIRING THE BRAKE CONTROLLER

REDARC Electronics manufactures a number of vehicle-specific wiring harnesses for quick and easy installation (refer to REDARC's website for details). The universal wiring harness included with the EBRH-ACCV3-NA-T kit is the TPH-025 'Universal Harness' which is typically used for older vehicles not covered by our range of wiring harnesses. Please follow the subsequent instructions for all custom installations.

⚠ CAUTION

- A Fuse of appropriate rating must be installed to protect the vehicle system. Refer to the installation instructions starting on page 7 for specific instructions on where to install the fuse and for appropriate fuse rating. The fuse must be installed as close as possible to the battery.
- Ensure that the wire(s) and all connections used to install the Tow-Pro Trail are suitably rated to supply the required current to simultaneously operate the trailer electric brakes and stop lamps. Incorrect wiring can result in reduced (or total loss of) trailer braking and/or damage to property or persons.

NOTICE

The Tow-Pro Trail does not act as a trailer lights voltage converter. If the trailer brake lights operate on a different voltage, damage to the vehicle; trailer and/or Tow-Pro Trail and associated wiring may result. This may also result in reduced (or total loss of) trailer braking.

RED WIRE (VEHICLE BRAKE LIGHT) CONNECTION

The requirements for a suitable connection of a brake controller trigger wire are quite specific. This connection point must:

- Supply the 'same voltage level*1 as the Start Battery while the vehicle brakes are applied.
- Have 0 V output while the vehicle brakes are not applied
- Accept battery voltage input when the brake controller manual over-ride is operated and illuminate at least the trailer brake lights.
- Accept the battery voltage input as above without causing any damage, spurious vehicle operation or erroneous fault indication.

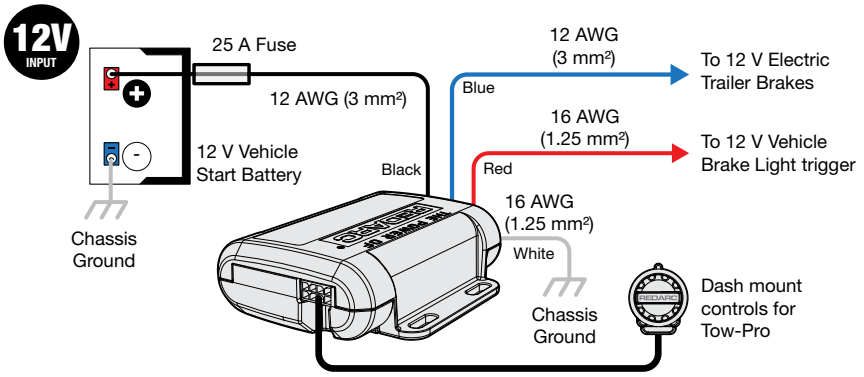
A relay should not be installed to drive the red wire as this would prevent the SwayStop feature from working and may introduce dangerous voltage spikes.

***1** 'Same voltage level' means that there must be no more than 0.4 V difference between the voltages measured at the Start Battery terminals.

WIRING — ELECTRIC BRAKES

For 12 V and 24 V vehicle electrical systems, the Tow-Pro Trail is designed to operate electric brakes without the need for any additional converters.

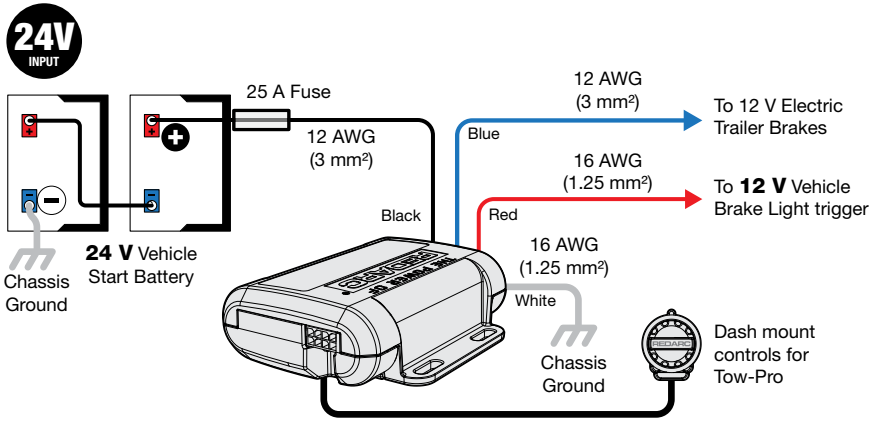
For wire selection refer to "Wiring Gauge Guide" on page 11.



For red wire connection, see "Red Wire (Vehicle Brake light) Connection" on page 8.

NOTICE

The Input Power (Black) wire must be connected directly to the positive terminal of the start battery via a 25 A Fuse and not through an Ignition source.



For red wire connection, see "Red Wire (Vehicle Brake light) Connection" on page 8.

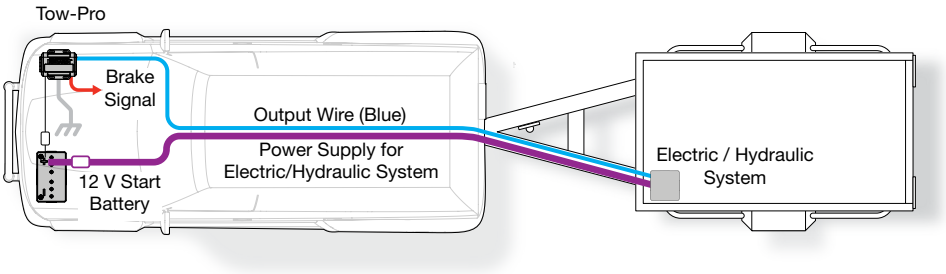
WIRING — ELECTRIC/HYDRAULIC BRAKES

NOTICE

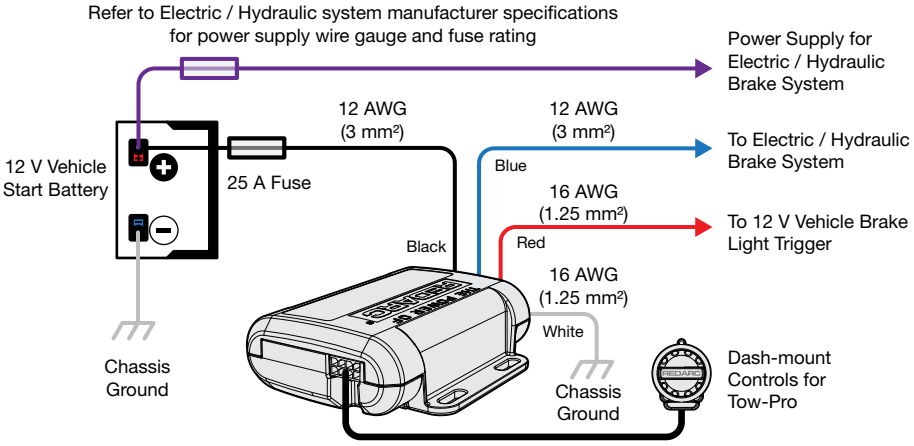
Always refer to the manufacturer's specifications for your Electric/Hydraulic Braking system prior to installation and usage of the Tow-Pro Trail.

12 V VEHICLE SYSTEMS

The Tow-Pro Trail is designed to operate both Electric trailer brake systems and 12 V Electric/Hydraulic trailer brake systems. However, most Electric/Hydraulic systems require a separate 12 V power feed for the hydraulic pump. For example:



For wire selection refer to the wiring gauge guide in "Wiring Gauge Guide" on page 11.



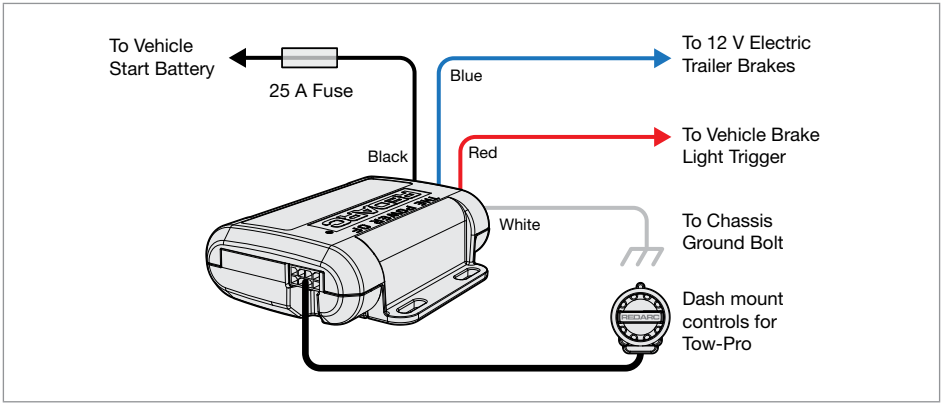
For red wire connection, see "Red Wire (Vehicle Brake light) Connection" on page 8.

24 V VEHICLE SYSTEMS

Since Electric/Hydraulic braking systems can be sensitive to 24 V inputs depending on the electronics within the hydraulic pump system the The EBRH-ACCV3-NA-T should only be used with electric/hydraulic braking systems in 12 V vehicles.

WIRING — VEHICLES WITH CAN BUS SYSTEM

Many modern vehicles use a CAN Bus system for signalling when to apply the vehicles brakes as required by safety systems including adaptive cruise control, stability control, Autonomous Emergency Braking (AEB) and hill descent control. For these vehicles, REDARC recommend the following wiring configuration.

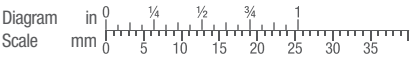


WIRING GAUGE GUIDE

This diagram outlines the required wire cross sectional areas for the Tow-Pro Trail installations detailed in "Wiring the Brake Controller" on page 8.

All wire ratings refer to the **minimum** required cross sectional area of copper only (not including insulation). Always use a wire gauge equal to or greater than what is specified in this guide.

Black (12 V)	Blue	White	Red
3 mm^2 12 AWG	3 mm^2 12 AWG	1.25 mm^2 16 AWG	1.25 mm^2 16 AWG



3.3 MOUNTING THE REMOTE HEAD

⚠ CAUTION

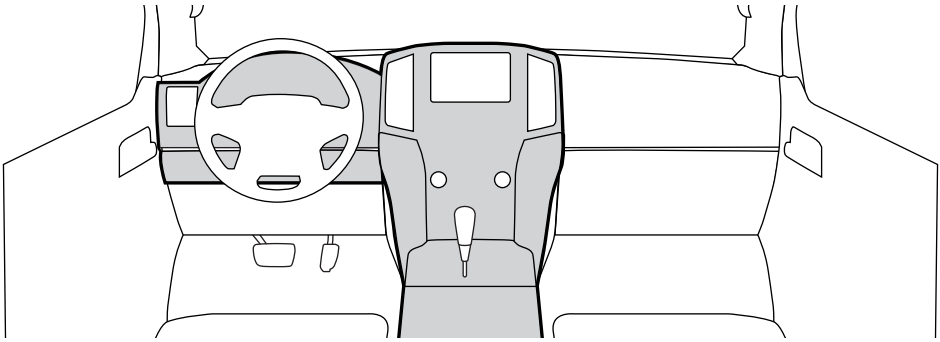
Do NOT install the Remote Head in any location that may influence the activation of vehicle air-bags.

NOTICE

It is the installers responsibility to ensure that the Remote Head installation complies with local safety standards for dashboard mounted devices.

The Tow-Pro Trail remote head is designed to be mounted at a distance from the main unit, allowing for a neat, convenient installation and not impeding on lower leg airbags or driver leg room.

The Tow-Pro Trail remote head can be mounted directly to the dashboard, to the center console or through a spare knock-out switch panel and requires only one hole to be drilled as per the Mounting Guide in "Mounting the Remote Head on a Dash or Console Panel" on page 13. For easy access in an emergency situation, REDARC recommend installing the remote head within reach of the driver such as the regions shaded in the diagram.



INSTALLATION ACCESSORIES

REDARC offer a range of vehicle specific switch inserts and vehicle specific wiring kits designed to make the installation of the Tow-Pro Trail easier.

The range includes most popular SUV and LCV's and is frequently being updated and added to. A full listing of Switch Inserts and Wiring Kits is available for purchase on the REDARC website.

UNIVERSAL SWITCH PANEL INSERT

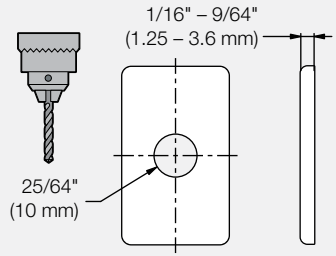
Refer to the TPSI-001 installation instructions included with the kit.

MOUNTING THE REMOTE HEAD ON A DASH OR CONSOLE PANEL

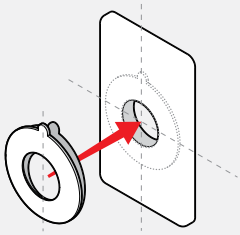
Ensure that there is enough space behind the mounting location to fit the Tow-Pro Main Unit and remote head cable before drilling any holes.

⚠ CAUTION

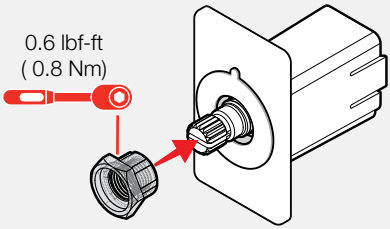
- Ensure the remote head push-button activates correctly when installed into panels thicker than 1/8" (3.2 mm). Failure to activate correctly would result in not being able to activate the SwayStop function or change modes.
- DO NOT install the remote control head in a location that could interfere with the activation of the vehicle's airbags.



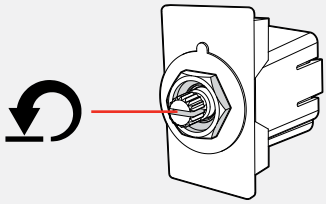
1 Drill a small pilot hole, then Drill a 25/64" (10 mm) mounting hole.



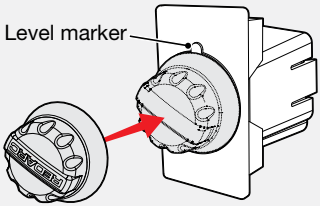
2 Gently bend bezel to aid removal of white backing tape. Apply adhesive bezel (optional) to cleaned surface.



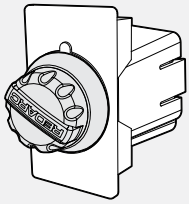
3 Insert Remote Head shaft through the hole and fasten with nut.



4 Turn shaft fully anti-clockwise.



5 Apply knob with '0' aligned to level marker on the bezel.

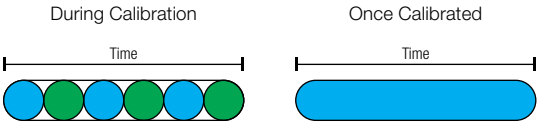


6 Test installed remote head for correct function.

4 OPERATION

4.1 ACTIVE CALIBRATION

When the unit is first powered, Active Calibration must first become confident in the vehicle direction of travel. Until this time the LED will flash Blue/Green.



Active Calibration constantly monitors the vehicle's direction of travel and allows the Tow-Pro Trail to 'learn' and continuously confirm its mounting orientation. This process occurs whilst the vehicle is moving and the brake is applied and will occur with or without a trailer connected.

When the Tow-Pro Trail is first installed it will begin learning its mounting orientation through Active Calibration as soon as you start driving, at this point Everyday Mode is selected but not yet fully operational.

Until the Tow-Pro Trail has determined its mounting orientation the unit will function as if in Manual Off-road mode, this is indicated by the LED glowing green with blue flashes. As the Tow-Pro Trail becomes more confident of its direction of travel the length of the Blue flash will increase, to the point that the LED is solid Blue which indicates it is now operating completely in Everyday mode.

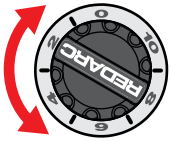
Under normal driving conditions the Tow-Pro Trail will learn its mounting orientation within 20 brake applications. Note that the braking must be perceptible (applying the brake while stopped will not assist calibration).

If power is disconnected (for example, if the vehicle battery is changed) calibration memory will be lost and the unit will recalibrate itself using active calibration. This is similar to a radio losing its clock or preset station memory.

NOTICE
If no trailer is connected, Active Calibration may occur as normal without any indication from the LED. The LED will already be Blue when the trailer is connected. Essentially, whether a trailer is connected or not, just drive normally and Active Calibration will ensure the Tow-Pro Trail learns the correct direction of travel.

4.2 ADJUSTING THE BRAKING FORCE

In both modes the braking level can be adjusted to suit varying trailer loads, braking requirements or user comfort by adjusting the Control Knob on the remote head.



The lower end of the scale (below level 5) should be used as a starting point and adjusted accordingly once braking requirements are established.

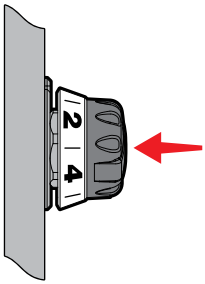
If a lighter braking level is required, turn the Control Knob to a lower number (anti-clockwise) to reduce the trailer braking force. Similarly, turn the Control Knob to a higher number (clockwise) to increase the trailer braking force.

The braking level will be indicated by the LED changing to a shade of RED when the brakes are applied. The higher the braking level, the more RED the LED will glow.

A setting of '0' will result in no trailer braking output.

4.3 SWAYSTOP

Pressing the Control Knob whilst driving activates SwayStop, applying the manual override brake. SwayStop will apply the trailer brakes only, and will also apply the trailer brake lights and will turn the LED indicator RED. Depending on the vehicle wiring it may also apply the vehicle brake lights.



SwayStop is designed to be used when the trailer brakes need to be applied without the vehicle brakes, such as correcting trailer 'sway' whilst traveling.

In **Everyday** mode, SwayStop will apply the trailer brake to a level equivalent to 'light' vehicle braking.

In **Manual Off-road** mode, SwayStop will apply the trailer brakes to the level set on the Control Knob.

In both modes, while pressing the Control Knob, the braking force can be also adjusted by turning the knob at the same time.

SwayStop should not be used in place of the regular vehicle brakes.

4.4 OPERATING MODES

The Tow-Pro Trail offers two modes of operation — **Everyday** and **Manual Off-road**. On first use, the Tow-Pro Trail will start-up in Everyday mode. Every time a trailer is connected, the Tow-Pro Trail will return to the mode that was last selected (provided the black wire has remained connected to power/battery positive).

EVERYDAY MODE (BLUE LED)

When **Everyday** mode is enabled, the LED is blue.

Everyday mode is ideal for highway travel and general use on all road surfaces, including dirt and gravel. Once the Braking Force is set at the beginning of each trip, this mode requires minimal input from the user whilst travelling.

In this mode, the trailer will brake at a level proportional to the vehicle deceleration. Simply put, the harder the vehicle brakes are applied, the harder the trailer will brake. The Braking Force setting (0 to 10), will set the trailer brakes from a lighter to a heavier brake application.

MANUAL OFF-ROAD MODE (GREEN LED)

When **Manual Off-road** mode is enabled, the LED is green.

Manual Off-road mode is best for experienced drivers that need precision control on surfaces like mud and sand, and in rocky terrain. It may require frequent adjustment throughout the trip as ground surfaces change.

In this mode, the trailer will brake at the level set on the Remote Head regardless of how hard the vehicle brakes. The Braking Force setting (0 to 10), will set the trailer brakes from a lighter to a heavier brake application.

NOTICE

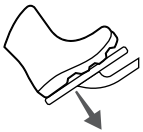
It is important to consider the road surface and conditions when selecting a mode and level setting. When changing conditions we advise to review your controller settings and adjust according to your preference.

CHANGING MODES

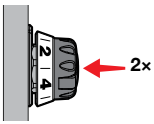
Changing modes can only be completed with a trailer connected. Ensure the vehicle has come to a complete stop before beginning the mode change process.

Changing between modes requires the user to complete the following process:

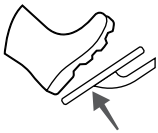
1. Rotate the knob fully counter-clockwise.



2. Apply Vehicle Brakes.



3. Double-click the knob (two pushes within 1 second).



4. Release Vehicle Brakes.

NOTICE

If you are unable to change modes, check that the remote head is not installed into a panel which is too thick and that the button is able to be depressed fully. Refer to "Mounting the Remote Head on a Dash or Console Panel" on page 13 for details.

Ensure you reset the Control Knob to a suitable braking level after changing modes.

4.5 PARK BRAKE FEATURE

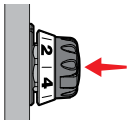
If the Tow-Pro Trail detects that the vehicle brakes are applied for longer than 3 seconds whilst the vehicle is stationary, it will apply the trailer brakes in an intelligent manner to reduce the required braking effort whilst decreasing the risk of rolling forward or backward whilst stopped. If the controller determines the trailer brakes are not required to keep the vehicle stationary, the output will be decreased to Zero.

4.6 VISUAL USER GUIDE

EVERYDAY MODE (BLUE)

1. Rotate knob to adjust brake level.

2. Brake applied (Red LED).

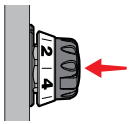


3. Light application of Trailer Brakes only.

MANUAL OFF-ROAD MODE (GREEN)

1. Rotate knob to adjust brake level.

2. Brake applied (Red LED).



3. Applies Trailer Brakes only, to the level set on the Control Knob.

4.7 LED INDICATION

The Tow-Pro Trail will indicate both Mode and Fault Condition through color and flash sequences of the LED indicator. The table shows how the Tow-Pro Trail will indicate Operation of the unit.

NOTE: LEDs will glow full brightness when the Control Knob is adjusted or pressed. After release of the Control Knob the LED brightness will reduce. This is designed to be less intrusive on driver's vision at night.

LED Indications		
	Everyday Mode	**Manual Off-road Mode**
Calibration	Blue/Green flashing	Not Applicable
Sleep Mode*2	Blue 'Breathing' on button push*3	
Trailer Connected	Solid Blue	Solid Green
Braking	Blue to Red*4	Green to Red*4
Fault Code (Trailer braking performance potentially compromised)	Flashing in any sequence (other than Blue/Green) Refer to "Fault Codes – Flash Patterns" on page 19 or contact an experienced auto-electrician.	

***2** Sleep Mode occurs when there is no trailer connected to the vehicle.
***3** 'Breathing', as opposed to flashing, is the LED gradually getting brighter until its brightest point and then gradually dimming until off. In the event of trailer disconnection, breathing will occur after 1 minute.
***4** The LED will vary between the Mode Colour (Blue or Green) and Red depending on the braking force.

4.8 BREAK-AWAY SYSTEMS

WHAT IS A BREAK-AWAY SYSTEM?

A break-away system is designed to apply the brakes on trailers using on-board power if a trailer physically separates from the towing vehicle during travel.

TESTING YOUR BREAK-AWAY SYSTEM

Your break-away system should be manually tested periodically to ensure it is functioning correctly. You may also be directed by a roadside authority to perform an on-the-spot break-away system test to demonstrate that your system is operational.

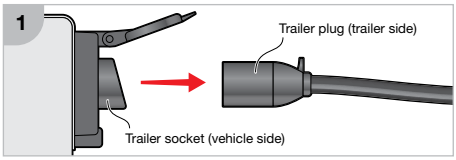
> ⚠ **WARNING: Before manually testing the break-away system, you must disconnect the electrical connection to the towing vehicle (i.e. unplug the trailer plug).**
>
> Some unregulated break-away systems can cause irreparable damage to vehicle wiring, devices, and/or the Tow-Pro Main Unit if tested when the trailer is electrically connected to the vehicle. Loss of braking may result.

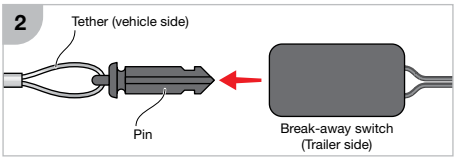
TEST PROCEDURE

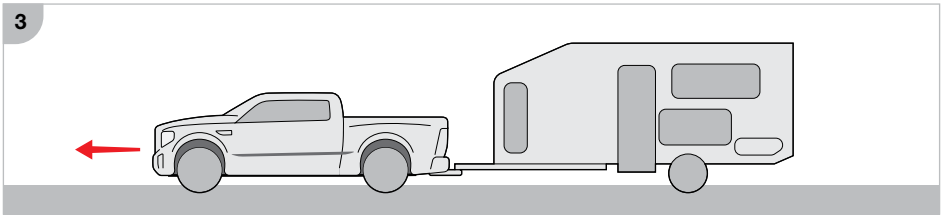
IMPORTANT: All steps must be performed in the listed order.

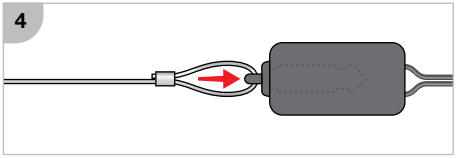
1. Unplug the trailer plug.
2. Pull the pin out of the break-away switch.
3. Move the vehicle forward a little. The trailer brakes will automatically engage if the system is working correctly.

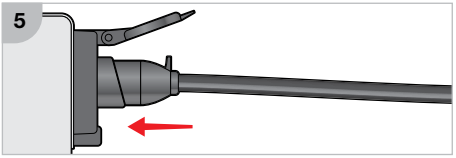
   If there is no trailer braking or a fault code is displayed, DO NOT tow until the problem is resolved. Contact the manufacturer of your break-away system for troubleshooting advice.
4. Return the pin to the break-away switch.
5. Reconnect the trailer plug, then confirm that the Tow-Pro is functioning correctly. Check that the Control Knob LED is on, and you are able to change modes. Test the SwayStop function shortly into your initial trip. If there is no trailer braking, stop towing and contact the REDARC technical support team for assistance.











5 TROUBLESHOOTING

The Tow-Pro Trail features sophisticated diagnostics to warn the operator of faults in the vehicle and trailer brake wiring. Wiring faults are indicated by a series of color coded flash patterns on the Tow-Pro Trail LED.

Most faults turn out to be something simple such as a poor connection from a dirty trailer socket, however a fault indication should not be ignored. It is a warning; if left unattended such wiring faults can become worse and may lead to deterioration or loss of trailer braking.

Refer to "5.2 Fault Codes – Flash Patterns" for the list of flash patterns, showing the cause and recommended course of action for each of the conditions which may be detected.

⚠ **CAUTION:** Do not tow with the Tow-Pro Trail while a fault code is active. Fault codes of the Tow-Pro Trail may indicate conditions that make it unsafe or illegal to tow, including unreliable trailer brakes or failure of brake lights.

NOTICE: Even intermittent faults are detected and may be indicated until the Tow-Pro is reset.

5.1 RESETTING THE TOW-PRO

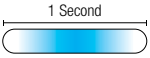
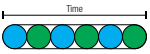
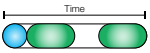
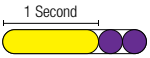
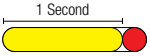
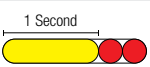
SOFT RESET

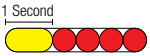
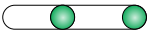
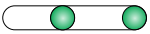
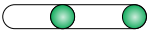
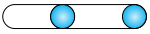
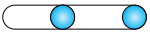
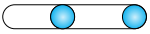
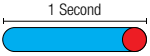
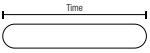
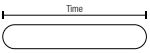
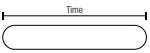
Most fault codes can be cleared by unplugging the trailer then pressing the Control Knob twice. Wait for 1 minute before reconnecting the trailer.

HARD RESET

Disconnect the black wire or remove the Tow-Pro fuse. Wait for 1 minute before reconnecting the black wire/ re-inserting the fuse.

5.2 FAULT CODES – FLASH PATTERNS

LED Sequence	Symptom/Description	Possible Cause	Suggested Action
	BLUE Breathing when the Control Knob is pushed	The trailer brakes have not been detected OR the trailer is not plugged in	Check the trailer plug and all connections between the controller and brakes
	Flashing a BLUE/GREEN sequence (LED will change color when brake applied)	The unit is in the process of calibrating, this is NOT a fault	Keep driving carefully and the unit will calibrate, usually in the first 10 minutes of driving when regularly braking
	1 short BLUE flash quickly followed by 2 GREEN flashes (no change of LED color when brake applied)	Start up fault (usually after connecting the trailer)	Perform a Soft Reset*5. If the fault persists, do a Hard Reset*6 and contact REDARC for further assistance
	The LED is YELLOW and flashes PURPLE twice	Intermittent open circuit or short circuit on the output circuit (Blue wire)	Check trailer plug pin tension and condition, if old or poor, replace and recheck operation. If fault condition remains, contact REDARC.
	The LED is YELLOW and flashes RED once per second	There is a short circuit somewhere on the brake output line (BLUE wire)	Check all wiring from the unit to the trailer brakes for any wiring faults, including at trailer plug
	The LED is YELLOW and flashes RED twice per second	There is a short circuit somewhere on the brake light circuit (RED wire)	Check all wiring from the unit to the brake light trigger for any wiring faults

LED Sequence	Symptom/Description	Possible Cause	Suggested Action
	The LED is YELLOW and flashes RED four times per second	There is a break/open circuit somewhere along the Tow-Pro Trail's Ground circuit (WHITE wire)	Check all ground connections and associated wiring for any wiring faults
	The LED is flashing GREEN only whilst braking	Loss of supply power	Do a Hard Reset*6 or contact REDARC for further assistance
	The LED is flashing GREEN at any time	Hesitation during connection of BLACK wire possibly causing incomplete startup sequence	Disconnect BLACK wire, wait 1 minute and reconnect BLACK wire to the battery
	The LED is flashing GREEN at any time or only when not braking	Low continuous voltage on brake light (RED) wire	Check that RED wire is connected to a point that is 0 V when the brakes are off and 12 V (or 24 V for Electric Brake installation) with the brakes applied
	The LED is flashing BLUE	The Remote Head cable may be damaged	Replace the cable between the Remote Head and the Main Unit
	The LED is flashing BLUE	The power supply to the unit is not stable	Check the BLACK and WHITE wires for loose connections
	The LED is flashing BLUE	The RED wire is (constantly) at a low voltage	Check the voltage at the RED wire and reassess the connection point if necessary
	The LED is BLUE and flashes RED once per second when vehicles brake not applied	The unit has detected that the Remote Cable is faulty or it is in calibration mode with a permanent input on the brake light trigger	Check the Remote cable is fully plugged in, otherwise replace; check red wire has 0 V when vehicle brake is not applied
	The LED is flashing RED	The unit has detected an internal fault of your AL-KO iQ7 hydraulic/pneumatic system	Check for faults according to the manual for the AL-KO iQ7 actuator
		There is a voltage drop between the trailer ground and the Tow-Pro ground	If you don't have an AL-KO iQ7, check for suitable wiring on the trailer ground circuit
	The LED flashes an unusual color sequence randomly whilst braking	There is a short circuit on the output (BLUE) wire or the Fuse is overloaded	Check for short circuit on brake light (RED) circuit
			Check for short circuit on trailer brake (BLUE) circuit, including moving brake swing arms
			Check that no other devices are running from the same Fuse as the Tow-Pro Trail
	LED only lights up when braking	The power wire is most likely not connected brake light fuse may have blown	Check supply (BLACK) wire for connection problems and check fuse is not blown
	The LED is not working at all	There is a bad connection to the trailer	Check the trailer wiring as the unit is not recognizing that a trailer is connected
	The LED is not working at all	There is a bad connection between the Main Unit and Remote Head	Check that the Remote Head cable is correctly plugged in to both the Main Unit and Remote Head

***5** Soft Reset (see "Soft Reset" on page 19)
***6** Hard Reset (see "Hard Reset" on page 19)

6 MAINTENANCE AND CHECKS

⚠ WARNING

Ensure that your trailer brakes are installed and are operating correctly:

- **Improperly installed and/or faulty trailer brakes can cause erratic vehicle or trailer behavior with the potential to cause a road accident.** For this reason, it is of utmost importance that your trailer braking system be installed/maintained by a qualified installer.
- **Always check brakes at low speed each time a trailer is attached to your vehicle.**
- **Immediately after installation (to be done by a qualified Auto-Electrician),** test the installation/vehicle wiring. Testing your vehicle wiring is best done by connecting a test light (max. 21 W filament globe) to the brake output, pressing the Control Knob (SwayStop), and having someone check that the test lamp lights up.

BEFORE EACH TRIP

It is important to ensure that your system is operating correctly before you set out. The following should be checked, along with standard mechanical maintenance:

Before connecting the trailer plug:

- Check that your break-away system is operating correctly and that the break-away battery is healthy (if applicable). For more information see "4.8 Break-Away Systems" on page 18.

Each time you attach your trailer, check:

- Correct brake light operation on both your vehicle and trailer.
- Correct operation and setting of the electric brake controller.
- Correct operation of your trailer brakes.
- Ensure that the tow hitch, and safety chains and weight distribution systems are setup correctly.

PERIODICALLY

It is important to have a qualified technician check the function of your trailer system on a periodic basis to ensure that everything is operating correctly. REDARC recommends that you visit a qualified technician before the beginning of each holiday season to ensure that any towing aids or systems are working correctly.

OTHER CONSIDERATIONS

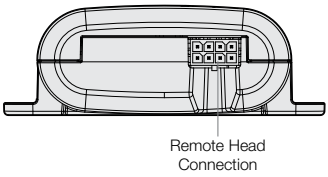
Please consider these points whilst towing a trailer:

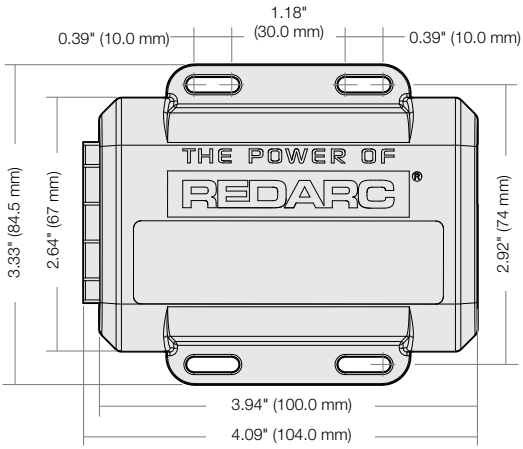
- Ensure that your vehicle is capable of towing the trailer.
- Ensure that you adjust your driving style to allow more time to change lanes and brake.
- Always remember that your electric brake controller is designed to supplement your vehicle brakes; do NOT use the Tow-Pro SwayStop function in place of your vehicle foot brake.
- REDARC recommend professional towing training before attempting to tow a trailer.

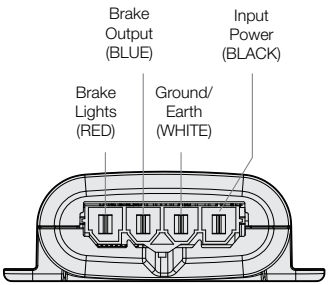
7 SPECIFICATIONS

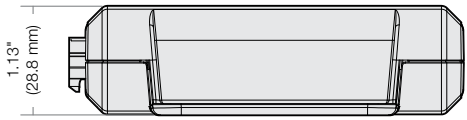
Part Number	EBRH-ACCV3-NA-T	
Operating Voltage	9 V to 32 V	
Nominal Input System Voltage	12 V	24 V
Brake Input Signal Voltage	OFF: 0 V ON: +12 V nominal	OFF: 0 V ON: +24 V nominal
Brake Coil Voltage	12 V	
Max. Trailer Axles	3 Axles	
Nominal Current Draw	18 A	
Max. Rated Current	25 A	30 A
Standby Current	< 5 mA	
Operating Temp	–4°F to 140°F (–20°C to +60°C)	
Weight	7.05 oz (200 g)	
Warranty	2 years	
EMC Compliance	FCC, ICES	

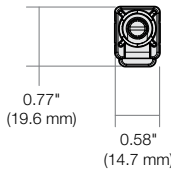
DIMENSIONS AND CONNECTION

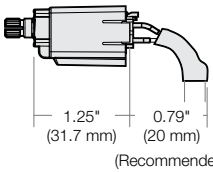


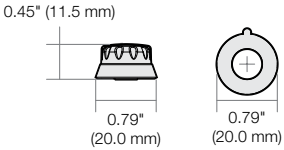












8 COMPLIANCE

8.1 FCC DECLARATION

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

9 FREQUENTLY ASKED QUESTIONS

My trailer is 3.5 tonnes fully loaded; Is the Tow-Pro Trail strong enough to stop that much weight safely?

The controller is capable of supplying 3-axle setups at 12 V or 24 V inputs up to the maximum rated braking ability of the brakes. You must also ensure that your trailer brakes are adequate for the trailer load.

Will my trailer brakes work while I am reversing?

The Tow-Pro Trail is designed to apply the trailer brakes whether the vehicle is traveling forward or in reverse. The effectiveness of the brake application in reverse will depend on the mechanical design of your particular electric brake system.

Can I connect the Tow-Pro through my cigarette lighter socket?

No, as most 'power sockets' are rated around 10 A which is insufficient to power trailer brakes and stop lamps circuits. In addition, these outlets may not be powered continuously.

10 WARRANTY

LIMITED WARRANTY

For full warranty terms and conditions, visit the Warranty page of the REDARC website at www.redarcelectronics.com/warranty.

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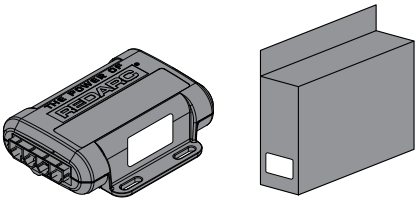
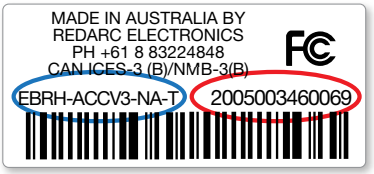
CHECKING THE PRODUCT SERIAL NUMBER

The Product Serial Number is located on the side of the Main Unit and on the side of the Product Packaging.



The Serial Number Label contains the Part Number (circled in BLUE) and the Serial Number (circled in RED).

The first 4 digits of the serial number indicate the YEAR and MONTH of manufacture, in the format YYMM.



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US Patent Number US 9,446,747 | US Trademark 5,353,114 | Canadian Trademark TMA991,361

NOTES

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