Common Mistakes Fitting Electric Brake Controllers

Some Information kindly supplied by Redarc

The starting point for any Electric Brake Controller installation is quite often finding a suitable Brake signal connection point. This used to be an easy decision to make but with many brake switches now negative switching a signal to the vehicle BCM, a suitable connection point can take some finding.

JAS Tech Tip 62 covers some Ford Rangers

There is a dual perspective to the selection of a suitable point, firstly it needs to have 0volts when the brake switch is off and true constant battery voltage when foot brakes are applied, it also has to be able to be supplied 12volts **from the brake controller** if it is in manual override mode to light at least the trailer brake lights.

This is imperative so that any following vehicle is aware the trailer and towing vehicle are braking. In many cases this can be found at the brake light supply to the trailer plug but always check suitability for the vehicle you are fitting.

It should not be too hard to find a suitable positive battery +ve pick up point and likewise a suitable good Earth point close to the controller should be easy enough to find. One major hurdle to Brake Controller fitting that has been made far simpler is the positioning of the controller itself. As controllers such as the Tow-Pro™ now have a remote switch that is the only part visible in the dash this frees up many areas where you can physically mount the controller that are more accessible such as behind the glove box area. This also can make cable access easier through the passenger side firewall depending on the vehicle.

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Whilst REDARC's Brake controllers can be mounted in any orientation, it's important that inertia sensing (proportional) models such as the Tow-Pro™ Elite are securely mounted to the vehicle. The internal accelerometer relies on a solid mounting to know how hard the vehicle's brakes are applied so it can vary its output accordingly.

Brake Controllers should be connected directly to Battery Positive not through a relay as this negates the possibility of relay, relay connection failure or loss of relay switch supply from ignition etc.

Interrupting constant supply to Redarc's Inertia controlled units will clear the calibration leading to rough braking until the unit has recalibrated.

Check the thickness of the panel chosen to mount the Remote Head will be installed in, The Redarc Tow-Pro™ requires 2-3mm to allow the override button to be depressed correctly.

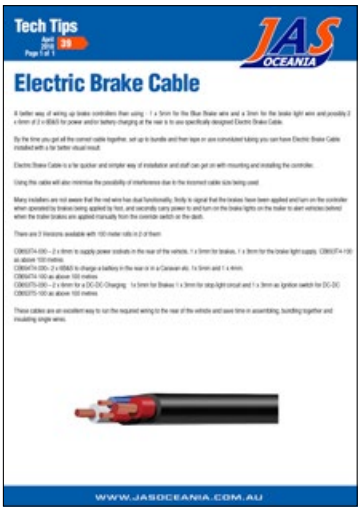
Ensure that there are no obstructions either fixed or moving (brake or clutch mechanisms), Airbags or ECU's behind the panel that you will mount the remote head into.

Allow for future trailer upgrades to more axles in selecting the wiring. The Customers current trailer may be a single axle but they may change or hire a trailer with more. Allow for a possible 25amp current draw in this scenario. Make all connections with this current draw in mind. Soldering is always preferable and use quality fuses and connectors where possible. It is far better spending time to do this correctly before the vehicle has done any off-road work as dirt in the face when reworking is not pleasant!

JAS Tech Tip 38 covers resistance issues.

Consider using either the Premade Redarc Wiring kits such as TPWKIT-011 or JAS Electric Brake Cable e.g. CB653T4-030.

JAS Tech Tip 38



JAS Tech Tip 39

TPWKIT-011

CB653T4-030

Testing Your Brake Controller

Once Fitted Your Brake Controller can be tested without a trailer connected.
Testing a modern electronically controlled Brake Controller such as REDARC's Tow Pro Elite cannot be done with a multimeter as the controller needs to see a correct resistive load to wake up and not set a fault code.

Using a 5-21watt filament globe on Pin 5 in the towing vehicle trailer plug will simulate a trailer brake connection and the Tow Pro remote head will flash "Green and Blue" indicating that it has sensed the trailer connection. Either applying the foot brake or using the manual override function while varying the amount of braking using the control knob on the remote head should show a smooth transition on the test light from zero to full brightness. The remote head's LED should be flashing Green at the minimum setting and with increasing Red flashes as the dial is turned to increase brake output.

After Installation and testing you can continue on with calibration by watching a video from this link https://youtu.be/b06BxqyBFWc

NB: Testing with other than a 5-21Watt Filament globe may cause fault codes or the Tow Pro not to operate correctly and possibly show fault codes.

Lower than 5 watts may not "wake" the Tow Pro up and over 21watts may cause the Tow Pro Elite to report a short circuit fault as the inrush of current into the cold filament of a higher wattage globe may be interpreted as a short circuit causing the LED to display Yellow with one Red Pulse.

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