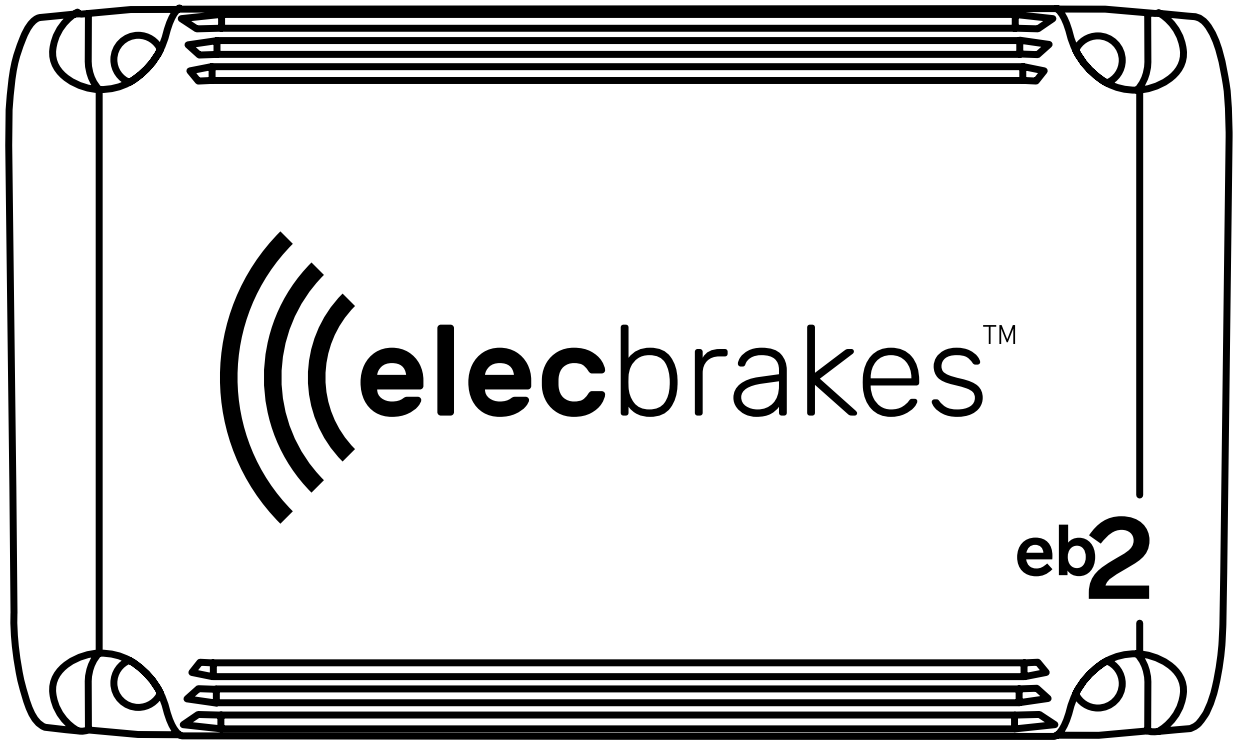
elecbrakes™

eb2



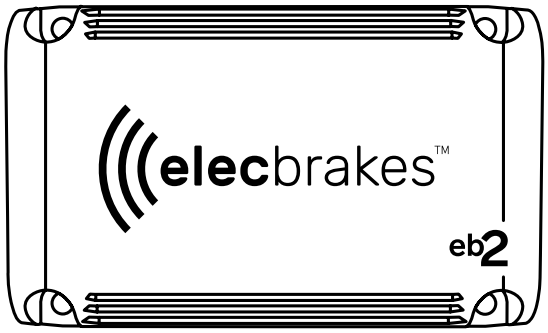
Download the Elecbrakes App

EB2 Technical Manual

V1.12 October 1, 2025

OVERVIEW

Welcome to the EB2 Electric Brake Controller technical manual. Our goal is to equip you with the necessary knowledge to confidently install and operate the EB2 across various applications. This guide is tailored for users of all experience levels, including those with limited familiarity with vehicle electrical systems, due to the EB2's straightforward plug + play design. By adhering to the provided instructions and safety precautions, you can ensure the EB2's reliable performance and longevity. Let's get started!



1. ABOUT THE EB2

The EB2 is a trailer-mounted electric brake controller designed for compatibility with both 12V and 24V systems. Equipped with an onboard accelerometer, it detects deceleration in real time and adjusts the braking force applied to the trailer proportionally, ensuring a smooth and responsive towing experience. The EB2 allows for fine-tuning of the braking response through multiple adjustable parameters, enabling users to customise performance to suit different trailer loads, and road conditions. With support for up to five user-defined braking programs, the EB2 offers quick adaptability to varying towing scenarios.

As a safety-critical device, the EB2 is engineered to provide reliable and consistent braking performance under all conditions. It requires no modifications to the tow vehicle's wiring, drawing power and input signals from the vehicle's brake light, tail light, and auxiliary circuits. The EB2 connects directly to the trailer's electrical system using either a plug + play adaptor or a more permanent Trailer Wiring Leader (TWL). Control and configuration are managed wirelessly through the Elecbrakes app, available for iOS and Android devices, or via an optional remote.

Full compatibility with Apple CarPlay and Android Auto allows users to monitor and adjust brake settings conveniently from their vehicle's infotainment system, ensuring continuous oversight of this essential safety component.

Mounting the EB2 is straightforward, with a design that securely attaches to the trailer's draw bar without the need for complex tools or modifications. Combining advanced technology with ease of use, the EB2 provides precise control and peace of mind, making it a trusted and adaptable solution for a wide range of towing applications.

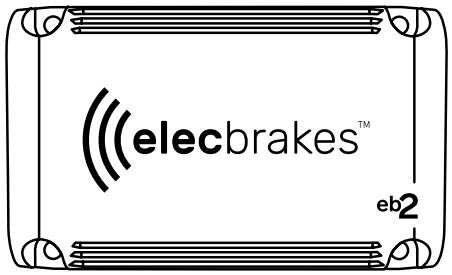
SYSTEM REQUIREMENTS

- Auxilliary circuit (12-24V DC) or
- Tail light circuit (12-24V DC)
- DC negative (earth) point
- Brake light voltage (12-24V DC)

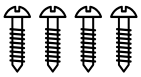
2. EB2 PRODUCTS NEEDED

1

EB2 Brake Controller



4 x Self Tapping Screws (included)



2

Plug + Play Adaptor (Sold Separately)

Check your vehicle and trailer to get the correct adaptor configuration.

VEHICLE SIDE	TRAILER SIDE	PART #
Flat 7 Pin	Flat 7 Pin	**PP7-7**
	Flat 12 Pin	**A7-12**
	Large Round 7 Pin	**A7-7LR**
Flat 12 Pin	Flat 12 Pin	**A12-12**
Large Round 7 Pin	Flat 7 Pin	**A7LR-7**
	Flat 12 Pin	**A7LR-12**
	Large Round 7 Pin	**A7LR-7LR**
Small Round 7 Pin	Flat 7 Pin	**A7SR-7**
	Flat 12 Pin	**A7SR-12**
	Large Round 7 Pin	**A7SR-7LR**
1.5m Trailer Wired Leader		**TWL**

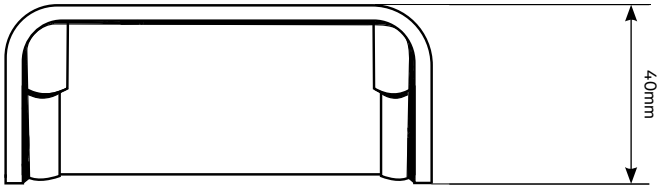
3. QUICK START OPTIONS

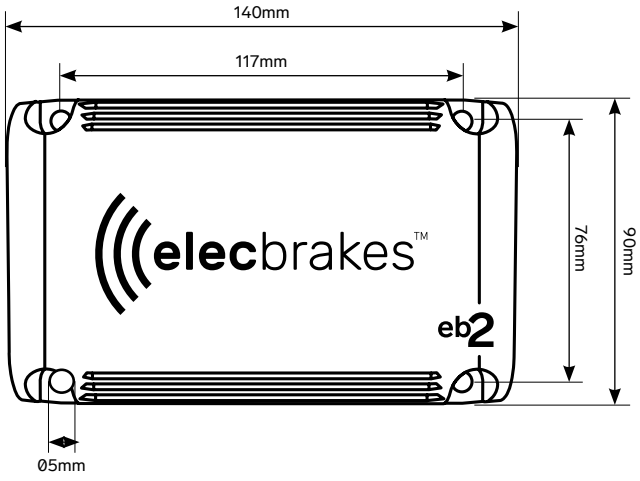
There are two options for getting started:

In-App Onboarding
Download the Elecbrakes app and follow the prompts to get started.

The Quick-Install Video
Watch our EB2 Quick Install Guide video.

4. DIMENSIONS





5. INSTALLATION

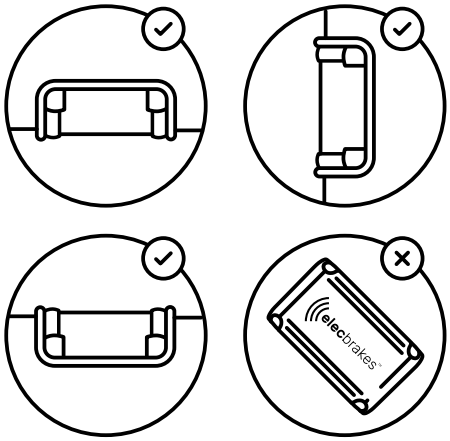
Choose a suitable location for mounting the EB2, eg. along the outside of the trailer draw bar and within 1m of the tow ball for optimal performance. Ensure the brake controller is mounted securely and within reach of the trailer plug to allow sufficient cable slack from trailer to vehicle. Fasten the EB2 to the trailer using the four self-tapping screws supplied.

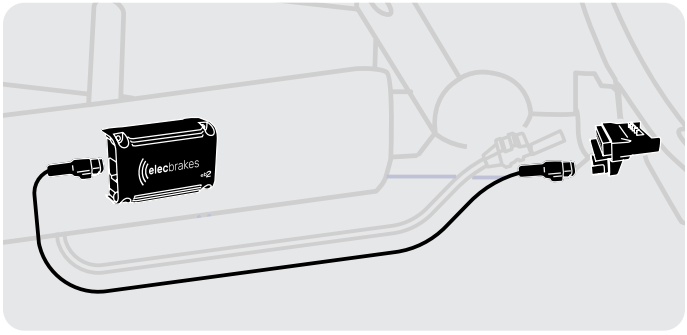
For correct forward direction detection and accurate proportional control you MUST ensure one of the unit's sides or faces is approximately parallel to the ground. This can be done by eye and does not require a spirit level or specialist tools.

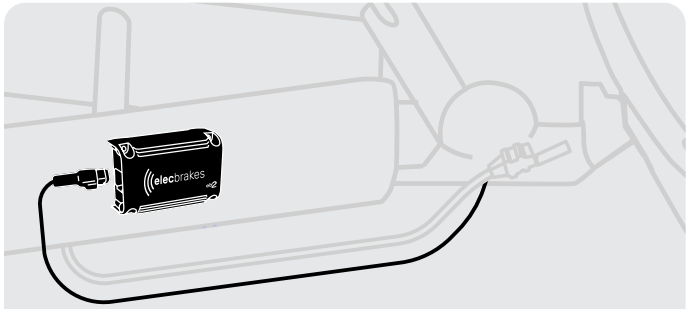
You may require pilot holes prior to fastening, we recommend a 4mm drill bit or alternatively lubrication to aid in fastening. Ensure the EB2 is securely fastened before proceeding.

Mounting Orientations

EB2 Unit must be mounted with one face parallel to the ground.







OPTION A: **The Elecbrakes Plug + Play system.**

1. Select the appropriate plug + play adaptor (sold separately) that matches your vehicle's trailer socket.
2. Plug the adaptor into your trailers existing trailer plug.
3. Connect the EB2 to the adaptor via the deutsch plug.
4. Connect the existing trailer plug into the adaptor socket.
5. Connect the deutsch plug from adaptor to EB2.
   Tip: Cable tie the lead and trailer cable together to significantly increase the pull out resistance.
6. Connect the adaptor to the socket at the rear of the tow vehicle.
   Tip: Ensure sufficient cable slack between trailer and vehicle is maintained completing left / right turns.

Done!

Refer to Appendix 1A for eleConnect 7-7 Wiring Diagram

OPTION B: **Trailer Wired Leader (TWL).**

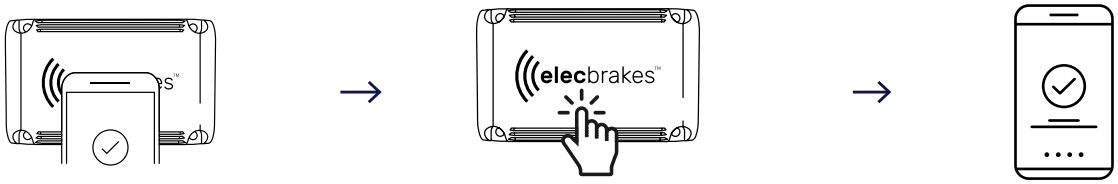
A Trailer Wired Leader (TWL) can be used for a more permanent, hardwired connection to the trailer's wiring. You can use the connections and wiring guide below.

CONNECTIONS / WIRING GUIDE

BLACK	AUX DC voltage supply
RED	Brake Light Circuit
BROWN	Tail Light Circuit
WHITE	DC Negative Earth
BLUE	Service Brake Output

Refer to Appendix 1B for TWL Wiring Diagram

6. PAIRING THE UNIT



Tap → **Select Your Device** → **Follow the Prompts**

Download The App

Download on the App Store

GET IT ON Google Play

You must use the Elecbrakes app on your smartphone for the initial connection and setup of your brake controller.

Minimum Requirements

· iOS 15 or later
· Android 10 or later

Open The App

Upon opening, the app will ask you to select your device type and guide you through a short onboarding process, which includes:

- **Installation**
- **Pairing**
- **Brake Responses**

From here you can choose to view the entire process, or jump in to the section of your choosing.

Pairing The Unit

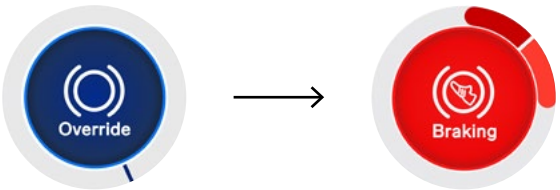
Pairing the unit consists of the following steps:

- **Turn the vehicle and headlights on (in case of a switched auxiliary feed)**
- **Search and connect via the app**
- **Brake signal check to confirm wiring**

Alternatively, should you choose to skip onboarding, a device can be paired through the *'ADD DEVICE'* button on the *'Devices'* page.

7. CONFIRM OPERATION

Confirm a correct installation by observing the override icon change to a braking icon when placing your foot on the brakes.



Observe power delivery to the brakes by looking at the Output section on the data page of the app. Place your foot on the brake and confirm voltage and current are non-zero.

OUTPUT

Voltage	4.00 V
Current	1.00A

8. FORWARD DIRECTION DETECT

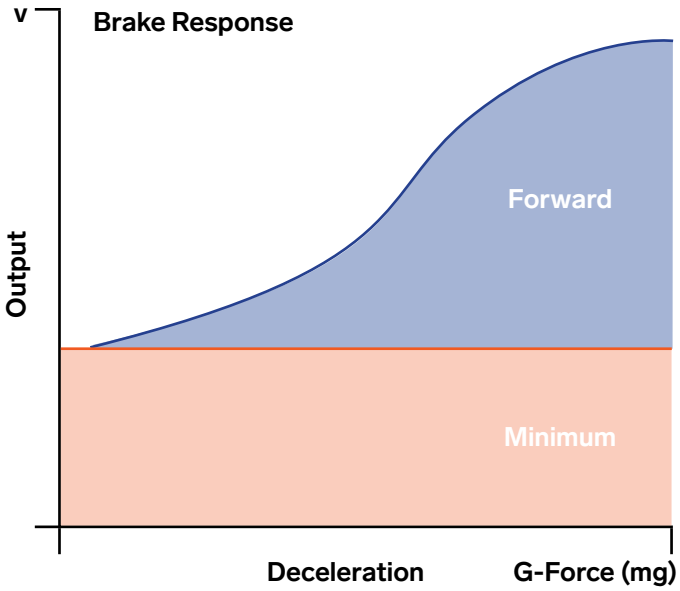
Elecbrakes brake controllers use a proprietary algorithm to determine the forward longitudinal direction of your vehicle. This allows precise proportional control with unparalleled accuracy and confidence. The EB2 will automatically calibrate, refining this measurement on an ongoing basis and is not something you need to set or worry about! This system may, however require a couple of brake applications to set this angle initially.

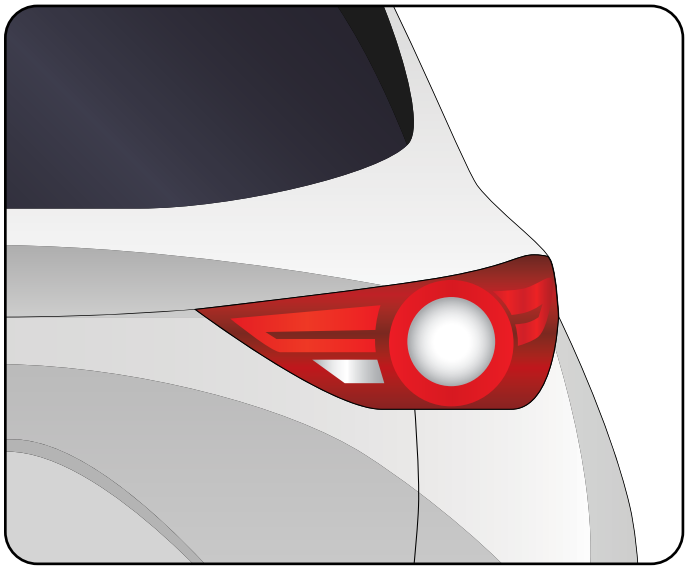
NOTE: Prior to setting a forward direction, the EB2 will use a default 4V output for all brake applications. Whilst this will likely feel aggressive, it will ensure a rapid detection of the forward direction within only a few applications.

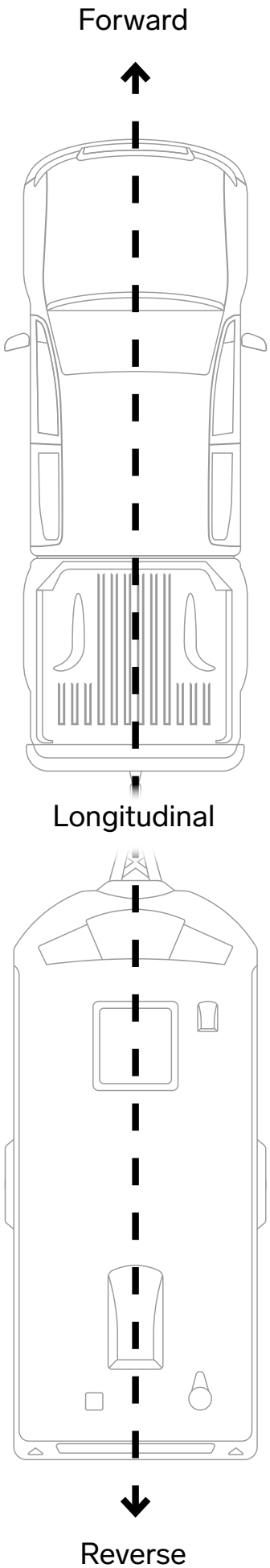
If you happen to move the install location or orientation of the EB2, you may need to reset the unit Orientation & Angle, as viewed in the app Data tab under Accelerometer information. Disconnect and sit the EB2 in a different orientation and plug it back in, the app data should now show *'Angle: Auto'* to confirm reset. Power the EB2 down and re-secure, it is now ready to auto calibrate its angle during your next few brake applications.

9. ADJUSTING YOUR SETTINGS

The EB2 is a proportional brake controller. This means it applies a varying brake force on the trailer in direct proportion to how hard you, the driver, are braking. So how do Elecbrakes brake controllers deliver such a smooth braking experience allowing you to 'set and forget' your preference for seamless operation? In addition to our own proprietary braking algorithms, we achieve this by giving you full customisation of your setup, allowing for independent control of the brake controllers' minimum, forward & reverse settings in addition to the override value - not to mention multiple preset programs for varying setups and conditions. But what do all these settings do? Let's dive in...







Minimum Response

You may have noticed while driving that when placing your foot on the brake you can activate your brake lights without applying pressure to the brakes. In this condition, the brake controller detects the brake lights turn on, but there is no deceleration from braking. Elecbrakes brake controllers have the ability to apply a user defined brake output in this case, referred to as a *'Minimum'*. Think of it like an offset or bias. Having independent control of the minimum allows you to tune in your brake response according to your preference, taking into account your setup, loading conditions, road conditions and more. A well setup minimum is crucial in achieving a smooth and comfortable brake response so be sure to experiment. **A good place to start is 10%, adjusting up or down according to preference.**

Forward Response

The Forward response represents the proportional component of your brake controller's output in the forward longitudinal direction. You can think of this as being system gain or sensitivity to deceleration. This Forward response will be added on top of your Minimum response giving you the overall braking response of the system. **A good place to start is 40%, adjusting up or down according to preference.**

Reverse Response

The Reverse response represents the proportional component of your brake controller's output in the reverse longitudinal direction. We find because you reverse at much slower speeds than normal driving it is beneficial to have an independent reverse response setting. **A good place to start is 10%, adjusting up or down according to preference.**

Manual Override Response

To set the manual override response: **A good starting point is to set the override preset value equal to the forward response value and adjust from there, according to preference.**

10. ELECBRAKES SWAYCONTROL

SwayControl is a stabilisation feature integrated into Elecbrakes EB2 and VM1 controllers. It continuously monitors the trailer's lateral movement and applies progressive, symmetric braking across all brake magnets when instability is detected.

- Integrates with existing proportional braking to automatically mitigate sway.
- Compatible with most electric-braked trailers without additional sensors or wiring.
- Activates only when instability is detected.

Full system visibility and adjustments are available through the Elecbrakes App, with Apple CarPlay and Android Auto integration.

11. SWAYCONTROL SYSTEM OPERATIONS & CONTROL

1. ON/OFF Control

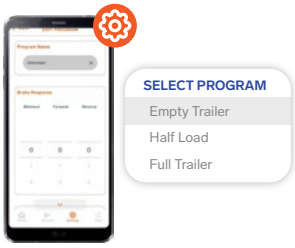
SwayControl is ON by default. For some trailers (e.g. unladen plant trailers, car carriers, empty boat trailers) or extreme off-road use, SwayControl may be turned OFF.

Control Options:

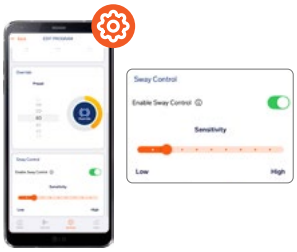
Press and hold the orange SwayControl icon to turn ON/OFF.

Single tap to adjust sensitivity (Low–High).

Program Settings:



Select the program in App "Settings".

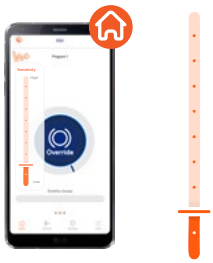


Scroll to the SwayControl section and toggle ON/OFF and adjust sensitivity (Low–High).

SwayControl follows the active program's Minimum/ Forward Response to ensure behaviour remains consistent with the configured setup.

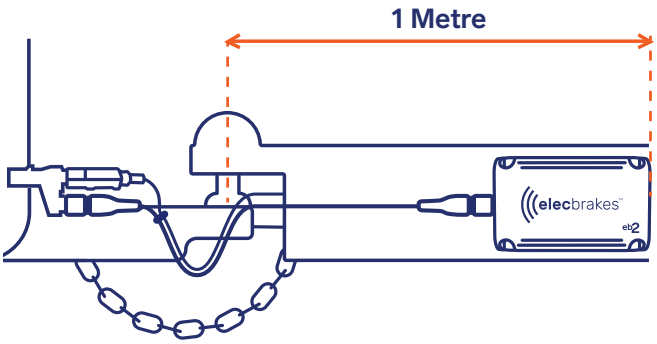
2. Sensitivity Level

The sensitivity level allows you to adjust how responsive the system is to detecting sway.



Access via a tap of the orange SwayControl icon in the App. Adjust the slider between Low and High.

Note: If SwayControl appears overactive, confirm the controller is installed within 1m of the towball, as per installation guidelines.



3. Trailer Stability Gauge

The App includes a trailer stability gauge that visually represents trailer behaviour. Gauge width increases with instability.

Frequent instability indicates the need to reduce speed or review trailer loading/setup.

4. Enabling GPS

When enabled, GPS data from the actively connected smartphone allows speed-based arming/disarming of SwayControl:

Armed automatically above **60 km/h**.

Disarmed automatically below **50 km/h**.

This means SwayControl is there when you need it and stays out of the way when you don't. GPS can be enabled during onboarding or in the App "Settings" tab.

IMPORTANT:
If the GPS signal is lost, the SwayControl system will automatically default to "armed". This ensures the feature remains ready to activate if instability is detected.

SwayControl Performance

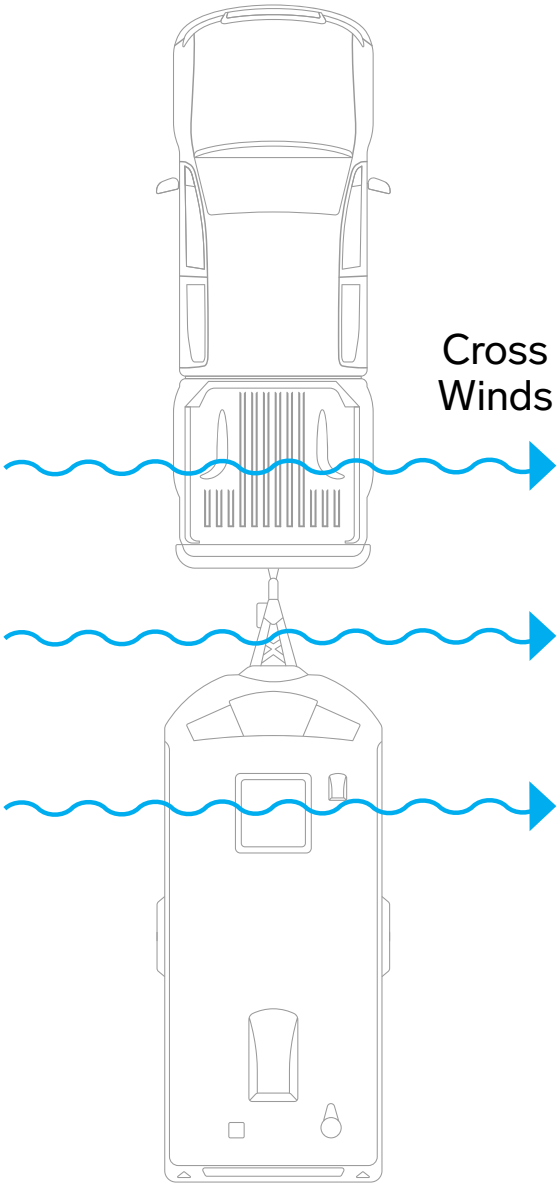
Elecbrakes SwayControl has been developed through countless hours of rigorous testing on real Australian roads, supported by extensive simulation experiments, to ensure it delivers industry-leading stability and safety.

For SwayControl performance data, see Appendix 2.

12. USING THE OVERRIDE

The manual override function allows you to manually engage the trailer brakes without applying the vehicle's brakes. Manual Override should only be used for stationary testing or to manually assist in controlling trailer sway.

In conditions such as strong crosswinds or poor load distribution, your trailer may begin to sway from side to side. SwayControl will detect this instability or oscillation and automatically apply progressive, symmetric braking across all brake magnets, integrating with your existing proportional settings to reduce sway.



IMPORTANT:
Never use Manual Override to slow the vehicle and trailer during normal driving - excessive use may cause brake overheating and brake failure.

Activating Override

- Tap the circle on the app's home screen to apply the preset override value.
- To increase the override force, hold down the circle to progressively raise the braking force. Release to stop at the desired value.
- Tap again to disable the override.

If you are using an Elecbrakes remote, the override is triggered by a force sensitive button. Apply more force to apply a larger override value.

NOTE: The remotes override button does not latch.

13. NOTIFICATIONS & WARNINGS

Elecbrakes brake controllers offer advanced features designed to keep you informed and safe at all times. The EB2 can instantly notify you through the app if there's a problem with your setup or something isn't looking quite right. This includes short circuit detection, low system voltage warnings and more.

Additionally, you'll receive key updates and new feature developments directly to your phone, keeping you safe, informed, and in control, providing peace of mind while towing. Remember, for access to the latest notifications & warnings, you must use the App, Apple CarPlay, or Android Auto.

Warnings

The EB2 brake controller will actively protect against a range of system faults, notifying you of exactly what is happening and directing you towards potential issues and fixes for your setup. This is in addition to the real-time information available to you via the data page of the app.

WARNING
EB2 - Low System Voltage
System Voltage Low - Check Connections

WARNING
EB2 - Excessive Current Detected
Check Braking System

WARNING
EB2 - Short Circuit Detected
Output Disabled - Check Wiring Before Proceeding

WARNING
EB2 - Temperature Warning
Regulated Output

Updates

Elecbrakes brake controllers are continually getting better, whether it's new features, performance improvements or requests from our user base, one thing's for certain - your brake controller will get even better over time. Every EB2 has the ability to download the latest software via the app, ensuring you're brake controller will never get left behind.

Elecbrakes will even notify you if there's a product specific upgrade available for your EB2. **No spam, no ads - just upgrades.**

EB2 Update Available
We've been working hard to make your EB2 even better! Connect to your EB2 and check for updates on the settings page.

Product Upgrade Available
Upgrade your brake controller to actively mitigate and control for trailer instability. Tap here to learn more.

14. SPECIFICATIONS AND RATINGS

Electrical Characteristics

Input

Input voltage (nominal)	12V & 24V systems
Power input	Auxiliary circuit Tail light circuit Brake light circuit
Signal input	Brake light circuit
Max input voltage	28Vdc
Startup voltage	6Vdc
Operating voltage	>10Vdc
Operating current	≈60mA

Output

Max output voltage	12Vrms
Continuous output current	24A
Peak output current	32A
Short circuit protection timing	32µS
Output signal characteristics	457 Hz PWM

Mechanical Characteristics

IP rating	IP67
Dimensions	140mm x 90mm x 40mm
Housing material	Glass reinforced nylon
Fasteners	S500 self tapping ph3 head
Encapsulant	Polyurethane elastomer

Thermal Properties

Operating range	-30°C to 75°C ambient
Over temperature output throttling	145°C internal

Other

Bluetooth version	5.2

15. WARRANTY INFORMATION

The following applies to Elecbrakes products purchased in Australia: Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and compensation for any other reasonably foreseeable loss or damage. You are also 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 following applies to Elecbrakes products purchased in New Zealand: If the Consumer Guarantees Act 1993 ('CGA') applies, our goods come with guarantees that cannot be excluded except in accordance with the CGA. Where goods fail to comply with a guarantee, you are entitled to a repair, replacement or refund and compensation for reasonably foreseeable loss or damage. You are also entitled to compensation for a reduction in the value of goods where a failure is substantial or cannot be remedied.

In addition to your rights and remedies at law, all Elecbrakes products purchased in Australia and New Zealand are covered by the Elecbrakes Product Warranty. This Product Warranty is provided by:

Elecbrakes Pty Ltd
878 Pacific Highway
Lisarow NSW 2259
Tel: 1300 516 248
Email: warranty@elecbrakes.com

For Elecbrakes **Warranty Terms** and Conditions, please visit our website or scan the QR code.

16. COMPLIANCE INFORMATION

Elecbrakes EB2 holds the following product compliances:

RCM - Electrical Equipment Safety Scheme.

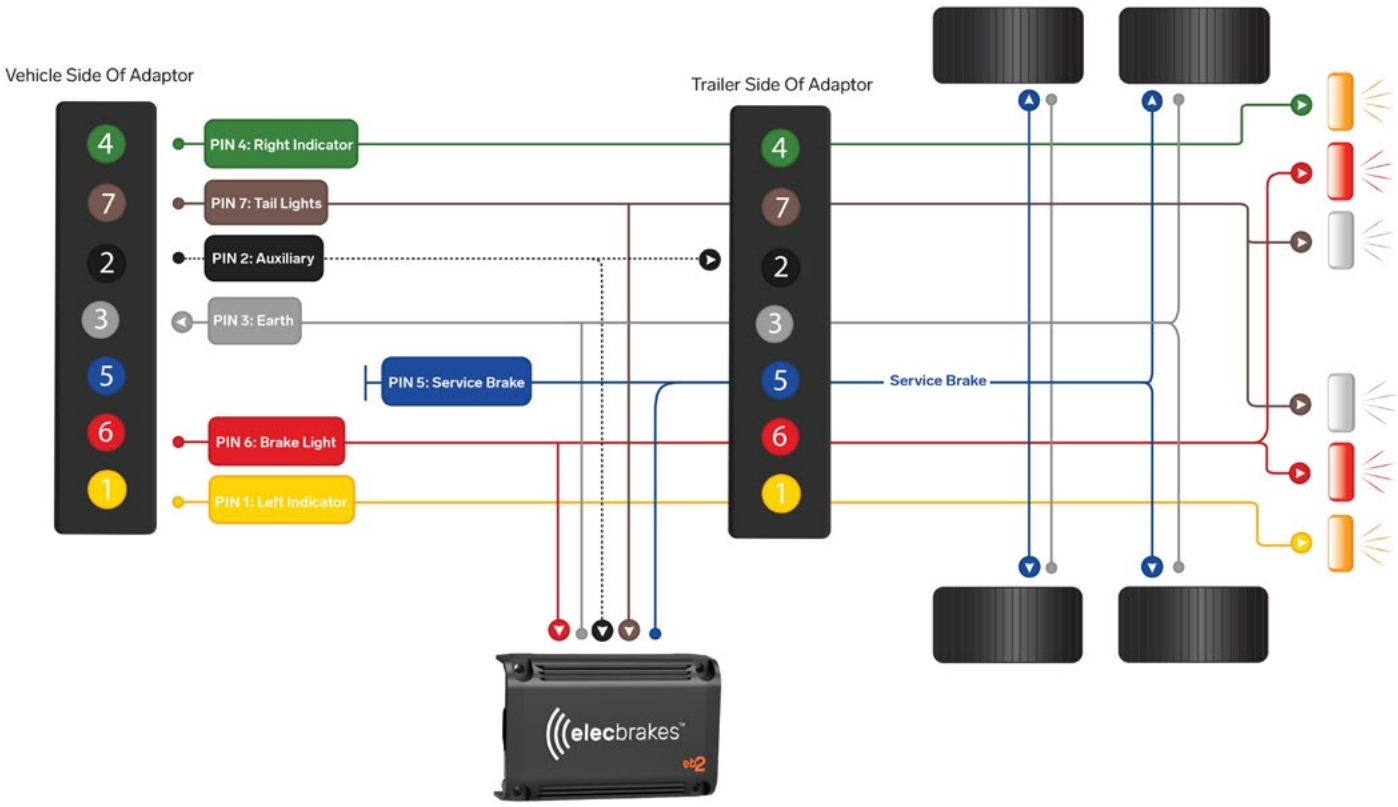
IP67 - Ingress Protection to IEC 60529:1981+A1:1999+A2:2013+COR1:2019
- Submersible in water up to 1m deep for at least 30 minutes.

FCC - Contains Transmitter Module FCC ID: QOQ-BGM220S.

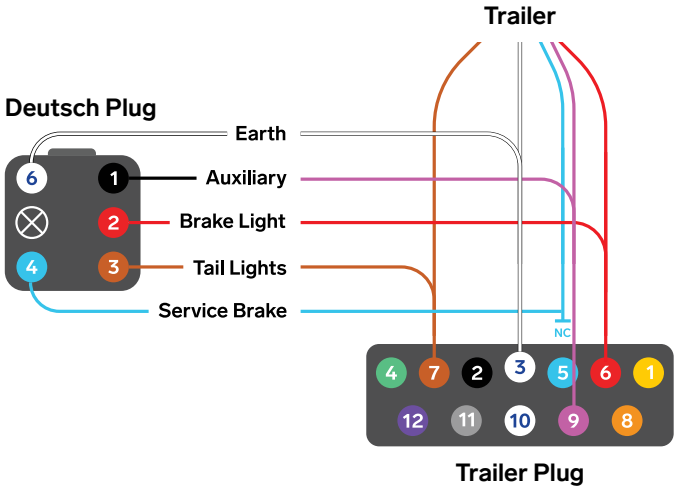
CE - Compliant with EU health, safety, and environmental requirements.

APPENDIX 1

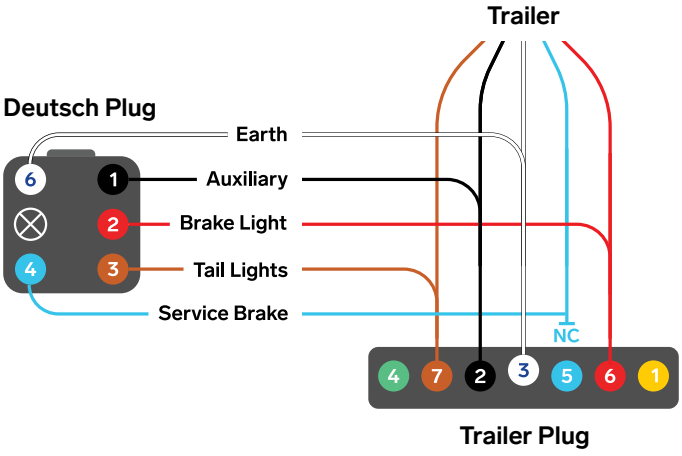
1A 7 PIN PLUG WIRING DIAGRAM



1B 12 PIN TWL WIRING DIAGRAM

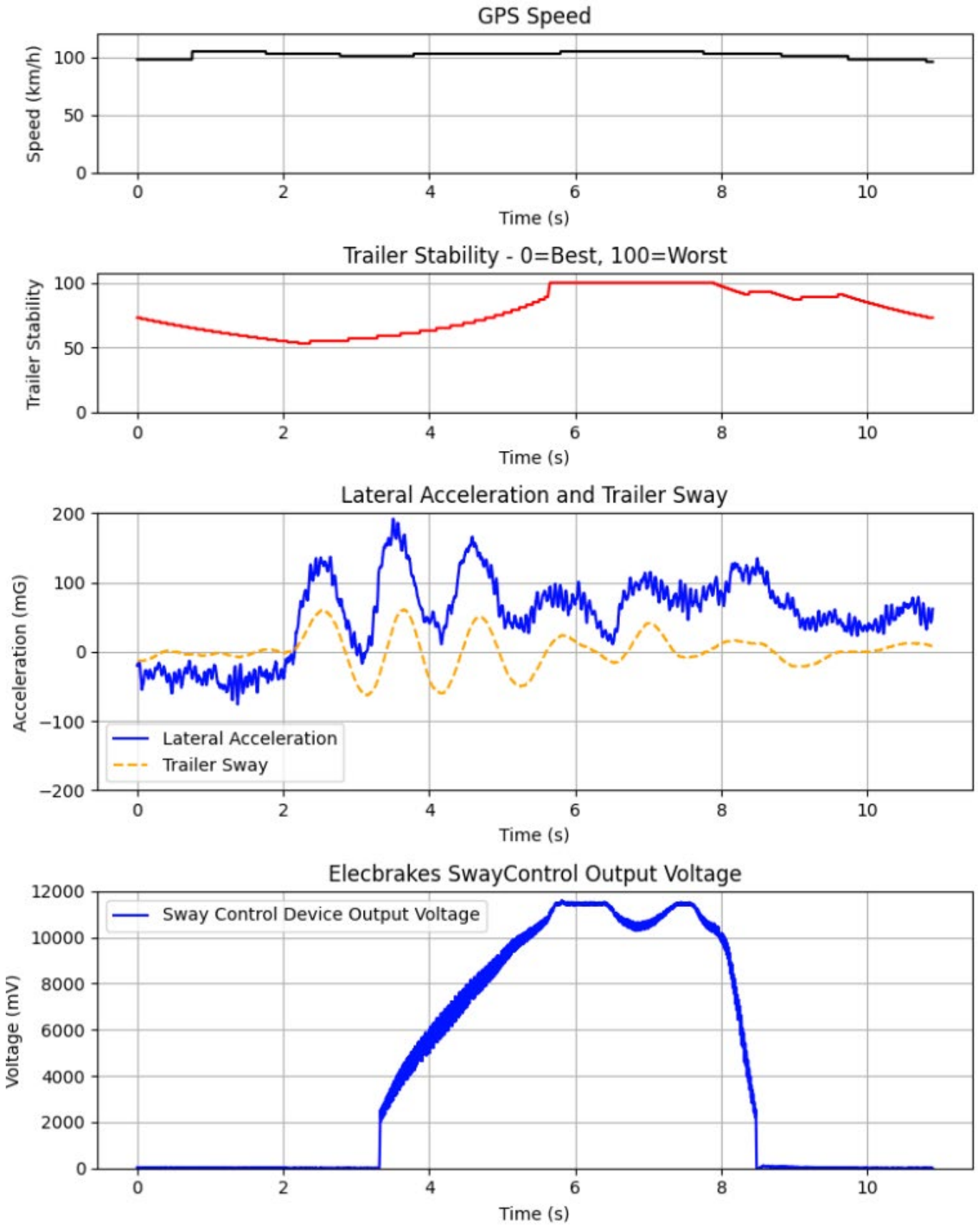


7 PIN TWL WIRING DIAGRAM



APPENDIX 2

Figure 1 - Elecbrakes SwayControl performance during sway event



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NEED HELP?

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elecbrakes.com/FAQ

or call our customer service team on
1300 516 248