elecbrakes™

vm1

Download the Elecbrakes App

VM1 User Manual

V1.0 -29-07-2024

1. WELCOME

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Our aim is to empower you with the knowledge to confidently install and operate the VM1 Electric Brake Controller in any application. This guide is designed for professional installers and technically inclined vehicle owners, assuming a basic understanding of vehicle electrical systems.

Following the provided instructions and safety precautions ensures the reliable performance and longevity of the VM1 brake controller. Let's get started!

2. ABOUT THE VM1

The VM1 is a vehicle mounted electric brake controller designed for 12V and 24V systems, featuring an onboard accelerometer to detect deceleration and adjust braking force proportionally.

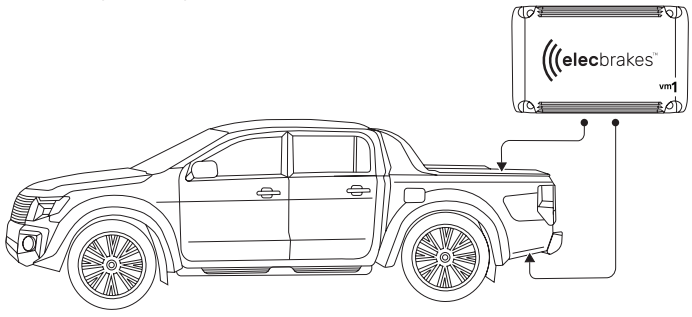
The VM1 allows for precise tuning of the braking response through three independent parameters, enabling customisation for different trailers, varying loads and road conditions. Five user defined programs facilitate quick adjustments to meet changing conditions. Overide allows manual activation of trailer brakes independent of the tow vehicle, providing control during instances of sway or instability. Sleep mode conserves vehicle battery life, reducing its current draw to less than 10mA when not in use.

The device integrates seamlessly with CarPlay and Android Auto, enabling in-vehicle adjustments of brake settings, preset switching, and override function activation via the vehicle's head unit. The user can alternatively control the VM1 using the Elecbrakes app on their smartphone (iOS and Android supported) or with the EB remote.

It can be mounted to the tow vehicle externally, fastened on a rigid body point directly or installed internally, inside vehicle paneling according to user preference. The complementary wiring harness is then routed to the vehicle's trailer plug for easy connection with the vehicle's existing circuits making for a quick and easy install.

VEHICLE REQUIREMENTS

- +12V (25A) DC voltage source OR
- +24V (12A) DC voltage source
- DC negative (earth) point
- Brake light voltage (12-24V DC)



Suggested mounting locations

3. SPECIFICATIONS AND RATINGS

Electrical Characteristics

Input

Input voltage (nominal)	12V & 24V systems
Power input	Auxiliary circuit
Signal input	Brake circuit
Max input voltage	28Vdc
Startup Voltage	6Vdc
Operating voltage	>10Vdc
Operating current	≈40mA
Standby current	<10mA

Output

Max output voltage	12Vdc
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 (W x L)	90mm x 138mm
Housing material	Glass reinforced nylon
Fasteners	S500 self tapping ph3 head
Encapsulant	Polyurethane elastomer

Thermal properties

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

Other

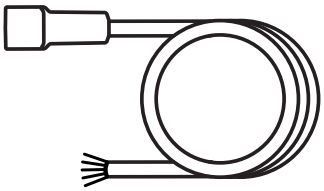
Bluetooth Version	4.2

4. WHAT'S INCLUDED:

1. VM1 brake controller

2. 4x self tapping screws

3. 1.5m leader



4. Quick install guide

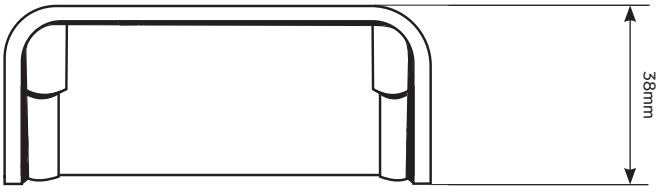
5. QUICK START OPTIONS

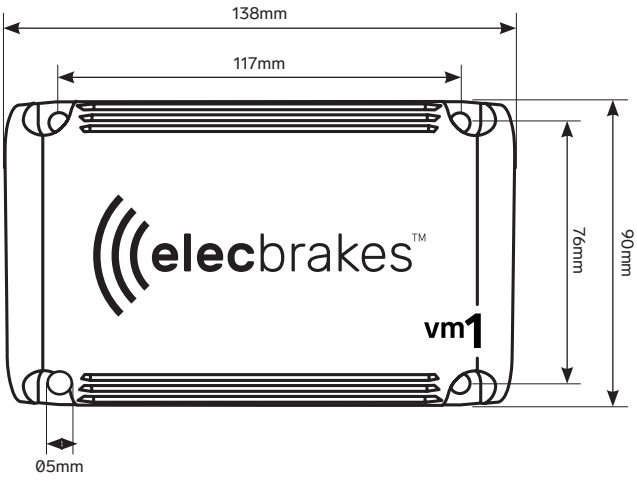
In-App Onboarding

In Box Print Out

The Quick-Install Video

6. DIMENSIONS





7. INSTALLATION

Choose a suitable location for mounting VM1 such as the luggage compartment, rear quarter panel, ute tray or vehicle underbody. Ensure the brake controller is mounted securely, within reach of the wiring harness and is out of harms way. Fasten using the 4x self tapping screws (supplied)

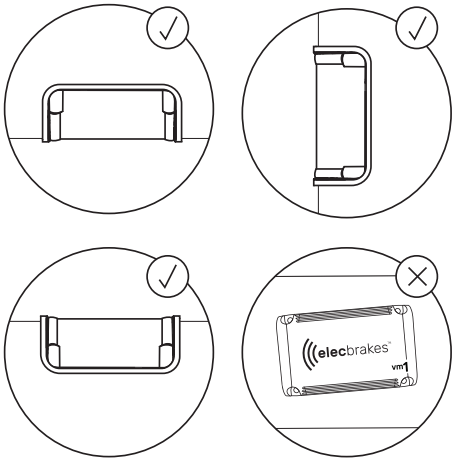
For correct forward direction detection and accurate proportional control you MUST ensure one of the unit's sides or faces is approximately parallel to the ground. This can be done by eye and does not require a spirit level or specialist tools.

You may require pilot holes prior to fastening, we recommend a 4mm drill bit or alternatively lubrication to aid in fastening.

Ensure the unit is secure in place before proceeding

MOUNTING ORIENTATIONS

VM1 Unit must be mounted with one face parallel to the ground.



Wire in the exposed end of the leader into the vehicle's existing trailer socket using the CONNECTIONS / WIRING guide to the right. You can also view a full wiring diagram for both 7P and 12P socket types at the end of this document.

1. Unscrew the top / bottom covers of your vehicle's trailer socket to expose the wiring.
2. Match the colours of the Leader (supplied) to the requisite positions on the trailer plug.
3. Use the pinouts below to aid in the wiring process. You can also find full wiring diagrams for 7-pin and 12Pin installations at the end of this document.
4. Fasten the covers back onto the vehicles socket

CONNECTIONS / WIRING

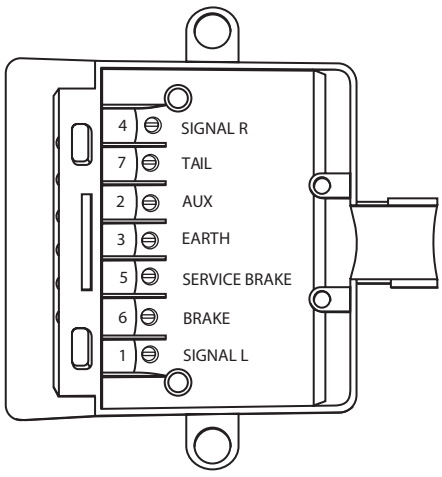
Black	DC Voltage Supply (see section 1)
Red	Brake Light Voltage Supply
Brown	Not Used
White	DC Negative Earth
Blue	Service Brake Output

We recommend a 25A rated circuit be installed for p2 on a 7P socket. For 12P sockets, p9 is suitable.

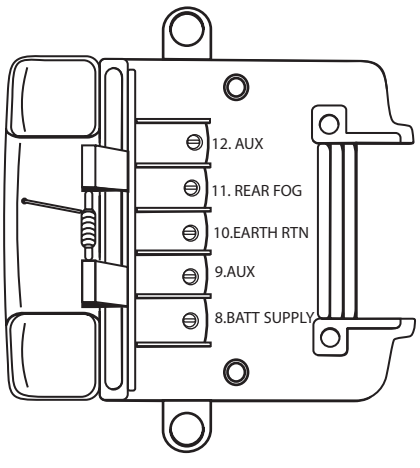
It's good practice to check each of the relevant circuits for an output of at least 10Vrms.

Some vehicles use pin 5 as an ignition power feed. In these cases disconnect pin 5 from the output for correct operation.

7-PIN



12-PIN



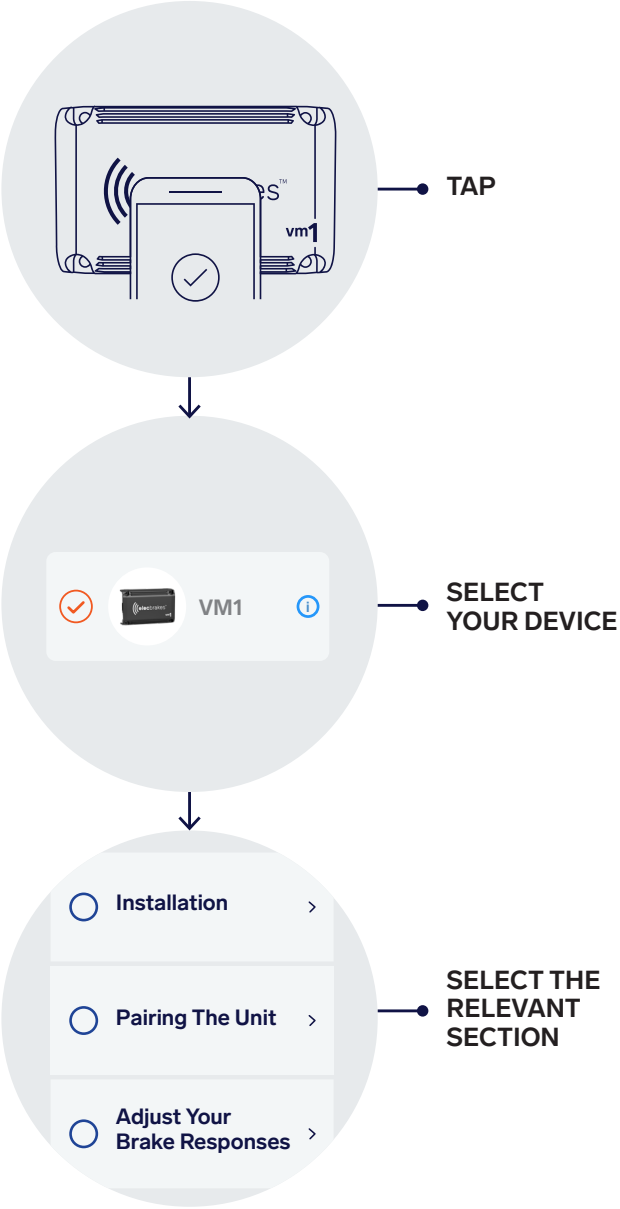
8. PAIRING THE UNIT

You must use the Elecbrakes app on your smartphone for the initial connection and setup. Download the app through the appropriate app store

Minimum requirements:
iOS 15 or later
Android 10 or later

Download on the App Store

GET IT ON Google Play



On opening, the app will ask you to select your device type and guide you through a short onboarding process, this includes;

- Installation
- Pairing the unit
- Adjusting the brake responses

You can choose to view the entire process, or jump in to the relevant section

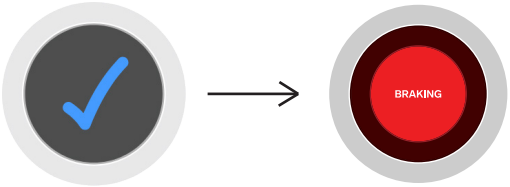
Pairing the unit via onboarding consists of the following steps:

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

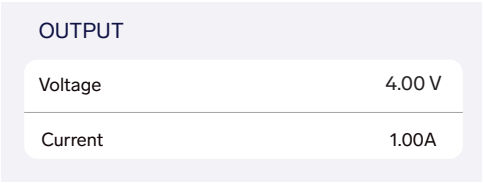
Alternatively, should you choose to skip onboarding, a device can be paired through the usual process on the 'Devices' page

9. CONFIRM OPERATION

Confirm a correct installation by oberving the tick 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.



10. 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

11. COMPLIANCE INFORMATION

Elecbrakes VM1 holds the following product compliances:

Electrical Equipment Safety Scheme RMA

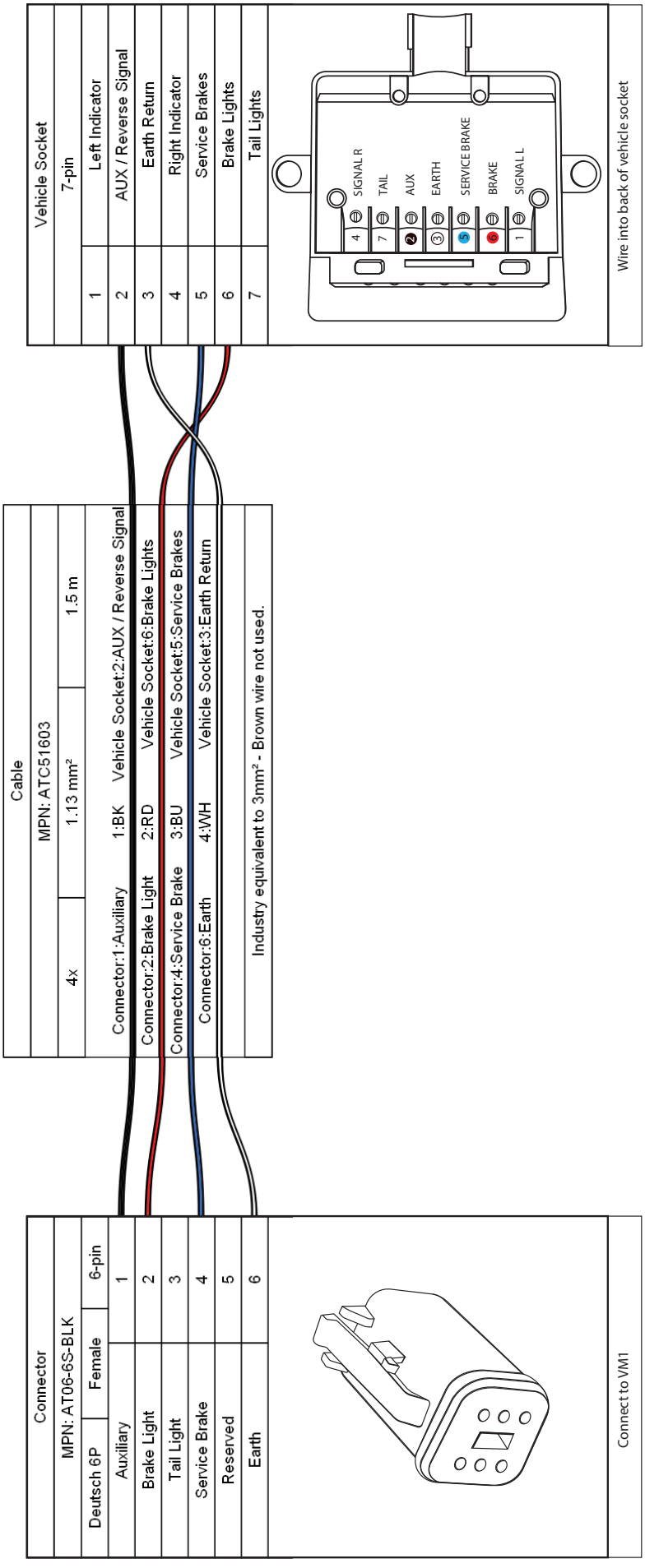
IP67

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.

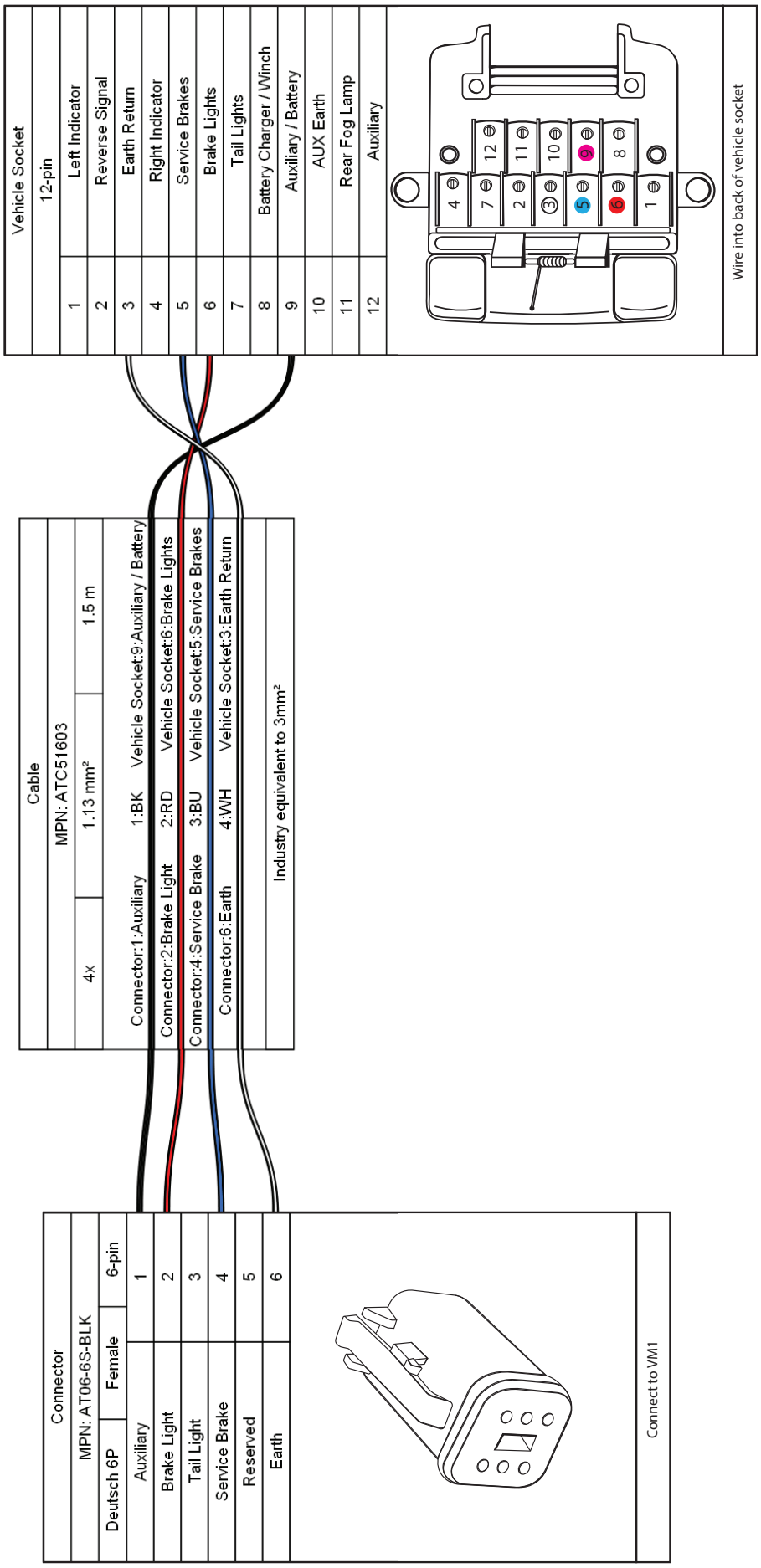
FCC - Contains Transmitter Module FCC ID: QOQ-BGM220S

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

11. 7-pin Wiring diagram



12. 12-pin wiring diagram



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NEED HELP?

or call our customer service team on
1300 516 248