Ohme

The Intelligent EV Charger

Product Manual

Welcome to Ohme, the smartest, cheapest and greenest way to charge your electric vehicle. This handy guide will get you set up in no time.

Contents

Safety precautions

This document contains important safety information relating to your Ohme charger. Please retain this document for future reference.

Please read the document fully before using the Ohme charger. Not following the safety instructions can result in electric shock, fire, serious injury or death.

⚠	The charger should be inspected periodically to check for damage to the cabling and the enclosure. Do not use if the product is defective or appears damaged. Contact Ohme Customer Care for support.
⚠	Do not attempt to open, repair, tamper or modify the Ohme charger in any way. There are no user-serviceable parts.
⚠	We strongly recommend that a competent person (e.g. qualified electrician) installs and/or inspects the installation to check for safety and supply adequacy before use.
⚠	The overall installation should be in accordance with the IET Wiring Regulations and the IET Code of Practice for Electric Vehicle Charging Equipment.
⚠	Handle the Ohme charger with care. Do not expose any part of the cable to severe forces, impact or sharp objects.
⚠	The Ohme charger is only intended for vehicles that do not require ventilation during charging (NB all mainstream electric vehicles do not require ventilation).
⚠	You may clean the Ohme charger with a soft damp cloth. Do not use any solvents or abrasives.

Introduction

Welcome to Ohme

This guide contains everything you need to know to set up your new charger. It covers important safety information, as well as our top tips. If you need a bit more information there are plenty of useful resources available on our website and if you can't find what you're looking for, our Customer Care Team will be happy to help. Now, let's get started...

Download the app

The first step in setting up your Ohme charger is downloading the Ohme App. Simply head over to the App Store or Play Store on your smart phone or tablet, and search for 'Ohme'. Learn more about the benefits of using the Ohme app on page 12.

Your charger information

Use the section below to make a note of your charger's serial number as this is important if you ever need to contact our Customer Care Team. If you've had an Ohme Home charger installed take a moment to write down the installer's name, contact number and installation date. Turn to page 13 to find out where to locate the serial number.

Serial Number

o	h	m	e								
o	h	m	e								

Installation Information

Installer name:						
Installer contact number:						
Installation date:						

Product overview

Ohme Home

Ohme Home is an Electric Vehicle (EV) charging device to be used with single phase electricity supplies (which is standard in most UK houses). It's a tethered unit, which means the cable cannot be removed. It has a maximum charge rate of 32 A.

Tip: The battery capacity of your EV will determine how long it takes to charge. To get an estimation of how long your EV will take to charge from 0 - 100% (When charging at your charger's maximum rate) divide the battery capacity by the charging power.

For example: 60 kWh / 7.4 kW = 8.1 hours

Ohme Go

We have a range of Ohme Go chargers with different plug types: Commando, Type 2, 3-Pin, Schuko / European Charger.

Please do not use multi-plug adaptors or extension leads with any Ohme Go charger. Many of these are not suitable for the continuous, high loads drawn by electrical vehicle charging, nor are they suitable for use outside.

Commando

Our Commando charger is designed to be used with a 32 A CEE "commando" socket. Your electrician will be familiar with these sockets and the additional requirements for using them to charge an electric vehicle. You will find all of the relevant information for installing a Commando socket to use with a Commando charger in the 'Commando socket installation' section on page 27.

The Commando charger will charge at a maximum rate of 32 A. If you're unable to charge at 32 A due to supply limitations, just call us and let us know the serial number of your charger and we can remotely reduce the charge rate for you.

Type 2

Our Type 2 charger is designed to be plugged into your existing un-tethered charge point. No additional installation is required, simply plug in your new Type 2 charger and download the Ohme app to start benefitting from Ohme's smart features.

The Type 2 charger will talk to your charge point and make sure that it does not charge above the rating of your unit. If you have an existing 16 A charge point, Ohme will charge at a maximum rate of 16 A (there's no need to contact us to reduce the rate).

Your Type 2 charger can charge up to a maximum rate of 32 A, if not limited by the rate of your existing untethered charge point.

IMPORTANT NOTE: the Type 2 charger won't power up unless it's plugged into both a power supply and an electric vehicle.

3-Pin

Our 3-pin charger can be plugged into a standard UK socket. We recommend that you ask a qualified electrician to give your electrical supply a once over, just to make sure that the socket and circuit are safe for the continuous demands of EV charging.

Although UK 3-pin plugs are rated 13 A, most domestic sockets can't safely deliver this current for long periods of time, so to avoid the potential for overheating we've de-rated our cables to 10 A.

For daily charging, and to reduce the risk of overload to existing electrical systems, you can ask a qualified electrician to install a dedicated external socket.

Schuko / European Charger

Our Schuko charger can be plugged into a standard European socket. These are rated at 13 A, so it's important to ask a qualified electrician to check that the supplying circuit and socket are safe to deliver 13 A for the duration of your charge. Charging at 13 A can provide about 10 miles of added range an hour.

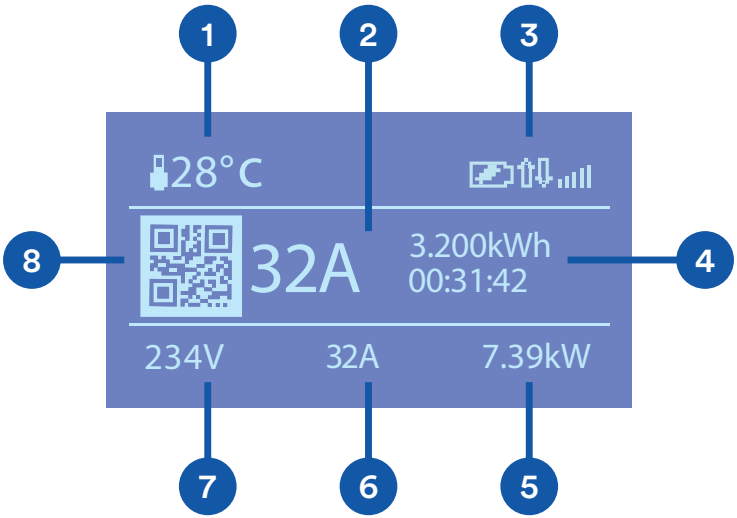
For daily charging, and to reduce the risk of overload to existing electrical systems, you can ask a qualified electrician to install a dedicated external socket.

Ohme box overview

The control box is identical across all variants. The LCD display has various icons that tell you important information about the charger, as well as useful real-time measurements of active charge sessions. The circle of indicator lights provides a visual reference to the current state of the charger. More information about the indicator lights can be found on page 11.

Don't worry about your charger being left outside, it's IP55 rated which means it's resistant to all weather types.

Understanding the display screen



1. Internal temperature of the Ohme unit
2. Number of amps the charger has been set to deliver*
3. Connectivity status bar
4. Total kWh charged and time elapsed in a session
5. Real time kW being delivered to the car
6. Real time amps being delivered to the car
7. Mains voltage
8. QR code to link charger with Ohme app

* If on a timed scheduled session the charger will display 0A.

Understanding the display icons

Charging

Checking server for firmware

Attempting to download new firmaware

Connected to network, but unable to send or receive data

Charging suspended due to vehicle communications error

Connection to network denied

Connected to server

Downloading new firmware

EV Supply Equipment (EVSE) connected, but not ready to charge

Fault

GPS has secured a location fix

Level 1 signal strength

Level 2 signal strength

Level 3 signal strength

Level 4 signal strength

Level 5 signal strength

New firmware will be installed on device, awaiting reboot

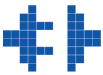
No network

No SIM

Not charging due to schedule

PIN number needed

PUK code needed



Ready to charge

Searching for network

Understanding the indicator lights

The indicator lights on the front of the Ohme Charger can be used to tell you about the charger's status at a quick glance. The ring of lights comprises three segments: red, green, and yellow. The different combinations of lights that you will see are shown below.

If the indicator lights display an Electrical or EV fault, contact Ohme Customer Care Team via help@ohme-ev.com.

Waiting, ready to plug into the vehicle.
(Steady green light)

Plugged into vehicle, waiting to connect to vehicle.
(Flashing green light)

Connected to vehicle, waiting for vehicle to accept charge.
(Steady red light)

Waiting for schedule to start charging.
(Lights flash in sequence)

Charging.
(Steady red light, flashing green light)

Electrical fault.
(Flashing yellow light)

EV fault.
(Lights flash simultaneously)

The Ohme app

Benefits of the using the Ohme app

To make the most of charging with Ohme, it's important to download our mobile app. Doing so means you can benefit from the following:

Smart features

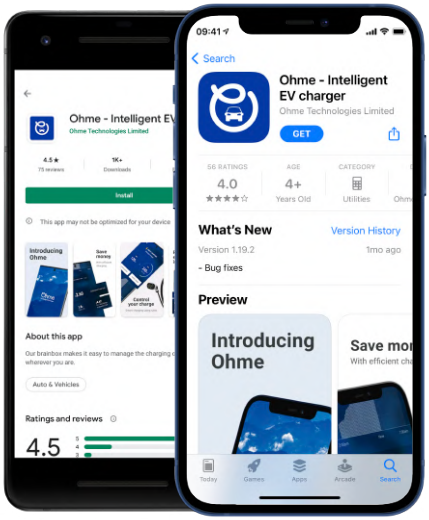
You'll have full access to all of our smart features. You can create charge schedules, limit your charging to a certain price per kWh and keep track of your energy costs and consumption.

Help and support

Creating an account on the Ohme app helps us to help you. We'll be able to easily access your charging information to provide support when you need it.

Peace of mind

You can create a lock schedule in the Ohme app, so you won't have to worry about passers-by using your charger when you're not home. Find out more in 'Create your schedule' on page 16.



Want to watch the app set up?

Scan the QR code below to check out our app tutorial videos online.

GET IT ON Google Play

Download on the App Store

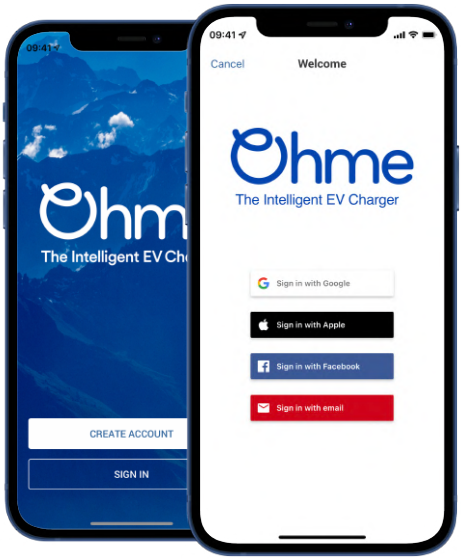
Create an account

Once you've downloaded the app, creating an account is easy.

Tap 'Create Account' and fill in the relevant information or for quick sign-in choose to sign in with Google, Facebook, or your Apple ID.

If you want to download the Ohme app on multiple devices, choose the option to sign in with your email.

Next, you will need to 'pair' your new Ohme account with your charger by scanning the QR code on your charger. See below on where to find the QR code.



Ohme Charging Cable

On the back of the charger box

Ohme Home Charger

On the side of the charger box

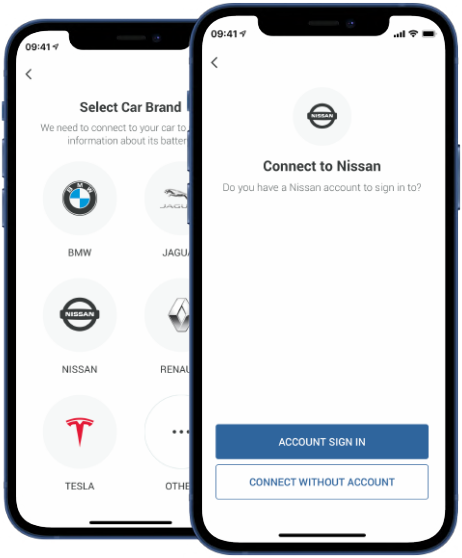
‘Pair’ your charger

When prompted, use your camera to scan the QR code on the side or back of the charger control box (you'll need to allow access to your camera for this). This will link the charger to your Ohme account.

If you're having trouble scanning your QR code, you can enter the serial number manually by tapping 'enter manually' in the top right of your screen.

Select your car

Next, you need to tell Ohme which car you drive so we can accurately calculate your charge sessions.



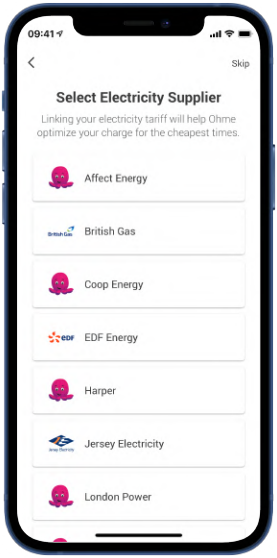
For more precise charging, choose the 'Account Sign In' option where you'll be prompted to log in with your car manufacturer app's login details. This gives Ohme access to your car's state of charge. This option is currently only available for select manufacturers. To check the current list of available manufacturers, please visit our website.

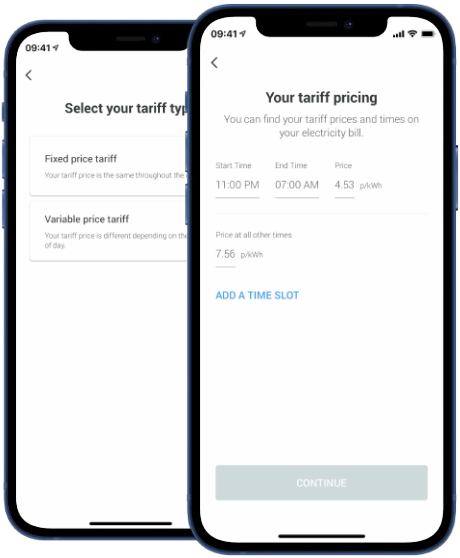
You can change your car at any time by heading to ‘Settings’ > ‘Change Car’ and selecting the manufacturer and car model.

Tip: If you can't see your car listed, please contact our Customer Care Team so we can add this to the database for you.

Select your tariff

Choose your energy supplier and tariff from the list provided. If you have a variable or time-of-use tariff, we can use this information to save you money by charging at the cheaper rates. If no tariffs are listed once you've entered your postcode, get in touch with our Customer Care Team who will be able to help.



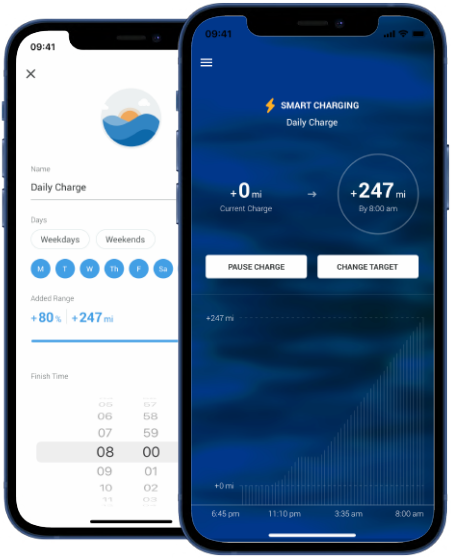


Can't see your electricity supplier or tariff listed? You can create a custom tariff by selecting the 'Create New Tariff' option located at the bottom of the ‘Select Electricity Supplier’ list.

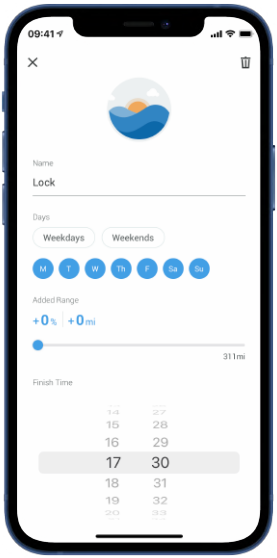
If your tariff is a single price throughout the day and night, choose ‘Fixed price tariff’. If your tariff has an off-peak period, choose ‘Variable price tariff’.

Create your schedule

Create a charge schedule to ensure your car has exactly how much charge you need, when you need it. You can create as many charge schedules as you like, and Ohme will pick up whichever schedule is applicable at the time of plug-in. For example, you could create a charge schedule for 70% by 7am every weekday, and another for 100% by 10am every weekend.



If you want to check which schedule has been applied while charging, take a look at the main dashboard where you'll notice the name of the schedule is displayed underneath 'Smart Charging'.



Lock your charger

If you want to securely disable use of your charger you can create a 'Lock' schedule. Tap the '+' button located in the bottom right of the 'Charge Schedule' section of the app. Tap the days you wish the schedule to be active and set the 'Target/Added Range' to 0%. Set the 'Finish Time' for just before you are due to arrive home at the end of the day.

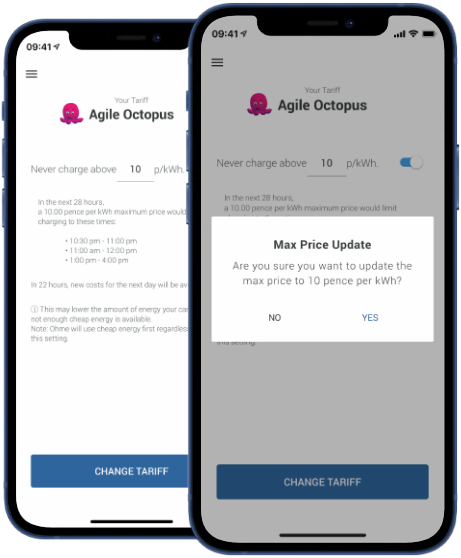
For example: If you are regularly away from home until 6pm each night you could create a 'Lock' schedule with a 'Finish Time' of 5:30pm. If anyone plugs in before 5:30pm the 'Lock' schedule will be applied and zero charge will be added to the car. Plugging in after 5:30pm will set the next active schedule.

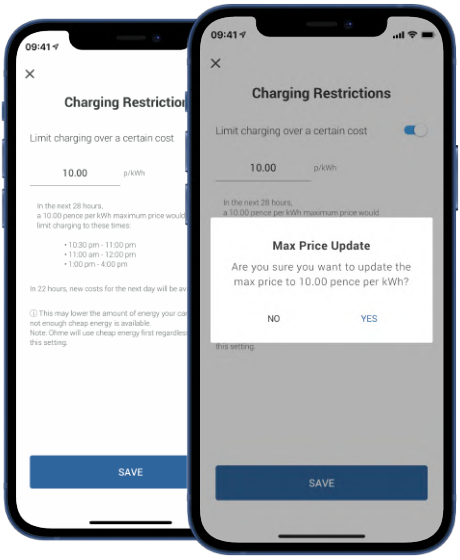
Set a price cap

If you have a variable price tariff with a period of cheaper electricity, or a dynamic tariff that changes more frequently, you may wish to set a price cap to limit your charging to the cheapest rates.

Setting a price cap will ensure your car only starts charging once the price drops below a certain rate.

To set a price cap for any chosen ‘pre-set’ tariff, ensure the ‘Never charge above’ toggle is switched on.





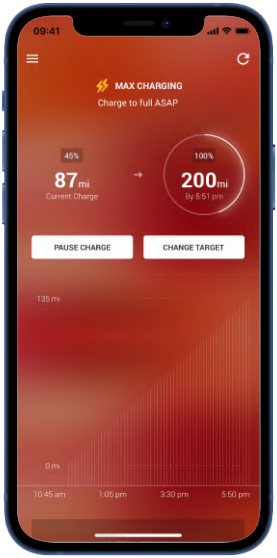
To set a price cap for manually added tariffs, go to ‘Charge Schedule’ and tap on the cogwheel in the top right of your screen. Next, enter the price you want to pay for your electricity and you'll see the available charging times at that rate listed below.

It's important to note, if no available times are listed, your car won't charge.

Make sure you slide the toggle to the right and tap ‘Save’ to confirm the ‘Max Price’ update.

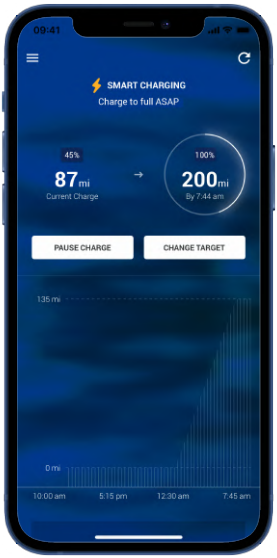
Max charging

Plans change, so when you need to charge your car as soon as possible, simply switch to ‘Max Charge’.



Once the car has been plugged in, tap 'Change Target’ on the ‘Dashboard’ where you'll see 'Switch to Max Charging'. Slide the toggle to the right to enable the setting, and don't forget to tap 'Confirm'. Ohme will now set a ‘Charge to full ASAP’ schedule.

The Max Charge will end once you've unplugged. Next time you plug in, Ohme will follow your Charge Schedules as normal.



Alternatively, you can turn off your Charge Schedule and Price Cap before you plug in, and Ohme will simply charge immediately until your car is full.

Connecting to your car

If you've signed in with your manufacturer's account when selecting your car, Ohme will communicate with the car to get the battery's current state of charge. This will allow for more precise charging, with the option to set a target you wish to achieve. Ohme will calculate how long the charge will take based on the current level of charge and the desired target charge.

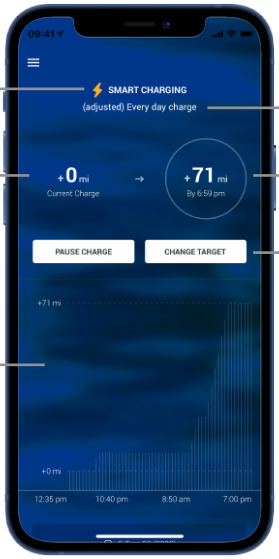
If your manufacturer is not currently supported, Ohme will assume the battery is at 0% when you plug in. This may mean your car finishes charging sooner than expected.

Exploring the ‘Dashboard’

Type of charge

Charge status

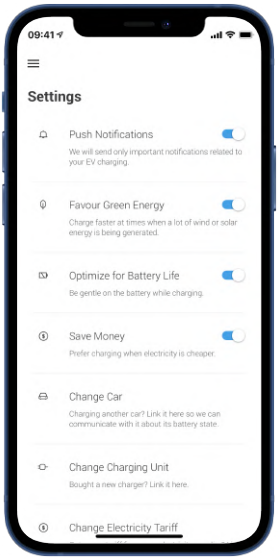
The main graph will display a prediction of the charge session. The start of the graph indicates time of plug in.
As time passes, each vertical line will turn white. Bars increasing in height indicate charge being added. Bars of identical height indicate no charge being added.



Name of schedule set

Estimated state of charge by the end of the charge session. Estimated time of target/full charge.

‘Change Target’ allows modification to the current charge session only or to activate ‘Max Charge’. Once unplugged Ohme will revert to scheduled settings. ‘Pause Charge’ pauses the current charge session.



Exploring the app settings

Electric cars are good for the planet, but we want to make them even better. Our Favour Green Energy setting will charge your car when electricity is at its greenest (i.e. generated from renewables rather than fossil fuels).

You can also select Optimise for Battery Life which helps increase the lifetime of your battery. It does this by reducing the amount of time that the battery is at full charge. Setting charge schedules to keep the battery at 80% charge or lower also helps preserve battery life.

Troubleshooting

Issue	Possible Cause	Who to contact
Ohme Charger does not power up.	Check electrical supply to the Ohme Charger. Supply MCB or RCD may have tripped. If you have a PEN device installed for earthing, power may have been cut due to voltage outside of UK tolerances	Your installer
Tripping	The circuit breaker or RCD trips when it suspects an electrical fault. This means that the flow of electricity is cut off to keep your circuits from overheating or causing more damage.	Your installer
Ohme is powered up but vehicle does not charge.	Check cable is fully inserted. Check that schedules are not delaying	Ohme Customer Care Team
No communications to the Ohme Charger.	Possible poor mobile phone signal	Ohme Customer Care Team
Cannot link the Ohme Charger to the app.	The charger may already be paired with another	Ohme Customer Care Team
Ohme charger display is blank, but indicator light is on.	Possible firmware update issue. Remove power from the charger and reconnect after 5 seconds.	Ohme Customer Care Team

If you have any issues, or you're worried something isn't quite right, please contact Ohme Customer Care via help@ohme-ev.com.

Additional Information

Standards Compliance

Ohme chargers comply with the relevant elements of:

- IEC 62752:2016 In-cable control and protection device for mode 2 charging of electric road vehicles (IC-CPD).
- EN 61000-6-3 Electromagnetic compatibility (EMC). Generic standards. Emission standard for residential, commercial and light-industrial environments.
- EN 61000-6-1 Electromagnetic compatibility (EMC). Generic standards. Immunity standard for residential, commercial and light-industrial environments.
- BS EN 61851-1:2011 Electric vehicle conductive charging system.
- BS EN 61851-22 Electric vehicle conductive charging system - AC electric vehicle charging station.
- EN 61543:1995 Residual current-operated protective devices (RCDs) for household and similar use - Electromagnetic compatibility (EMC).
- IEC 62196-1 Plugs, socket-outlets, vehicle connectors and vehicle inlets.
- IEC 60309-2 Plugs, sockets and couplers for industrial purposes.
- BS 1363-1 13 A plugs, socket-outlets, adaptors and connection units. Specification for rewireable and non-rewireable 13 A fused plugs.

Cleaning

The Ohme Charger can be cleaned with a soft damp cloth. Avoid the use of cleaning agents and solvents.

Maintenance

The Ohme Charger is maintenance free. If the charger is defective or damaged, please discontinue use and contact the Ohme Customer Care Team via help@ohme-ev.com.

Disposal

Information on Disposal for Users of Waste Electrical & Electronic Equipment (private households).

This symbol on the product and accompanying documents means that used electrical and electronic products should not be mixed with general household waste. For proper treatment, recovery and recycling, please take this product to designated collection points where it will be accepted free of charge.

Alternatively, in some countries you may be able to return your products to your local retailer upon purchase of an equivalent new product.

Disposing of this product correctly will help save valuable resources and prevent any potential negative effects on human health and the environment, which could otherwise arise from inappropriate waste handling.

Please contact your local authority for further details of your nearest designated collection point.

Penalties may be applicable for incorrect disposal of this waste, in accordance with your national legislation.

For business users in the European Union and Great Britain:

If you wish to discard electrical and electronic equipment, please contact your dealer or supplier for further information.

Information on Disposal in other countries outside the European Union and Great Britain:

This symbol is only valid in the European Union. If you wish to discard this product please contact your local authorities or dealer and ask for the correct method of disposal.

Further information on disposal and general recycling can be found at: www.complydirect.com/the-recycling-room.

Contact Details

The Ohme Customer Care Team can be contacted at:

	United Kingdom	European Union
Address:	Ohme Operations UK Limited Wellington House 125-130 The Strand London WC2R 0AP	Ohme Operations Ireland Limited Unit 74, Penrose Wharf, Penrose Quay Cork Ireland T23 HF51
Email:	help@ohme-ev.com	help@ohme-ev.com
Telephone:	+44 (0) 20 3375 1586	+353 21 601 7623

Manufacturer's Warranty

The Ohme Home Charger is protected by a manufacturer's warranty for 36 months from the date of purchase or delivery, whichever is later.

The Ohme Go charger is protected by a manufacturer's warranty for 12 months from the date of purchase or delivery, whichever is later.

The warranty covers any defects in materials or workmanship under normal use. During the warranty period, Ohme will refund, repair or replace, at its discretion, at no charge, products or parts of the product which prove defective because of improper materials or workmanship under normal use and maintenance.

Ohme will either repair the product using new or refurbished replacement parts or replace the product with new.

A replacement product assumes the remaining warranty period of the original product or for 180 days from the date of the replacement or repair, whichever is longer.

The warranty does not cover any issues that are caused by conditions, malfunctions, or damage not resulting from defects in materials or workmanship. The warranty does not cover damage or malfunction directly or indirectly caused by normal wear and tear, abuse, misuse, negligence, accident, lack of or improper use, including but not limited to:

- Failure to follow the instructions and warnings provided in the product literature
- The environment or "Acts of God" such as fire, earthquake, flood
- General appearance of the product such as damage to paint, labels, scratches, dents and cracks
- Any repair, alteration or modification to the product other than those authorised by Ohme

You may have other legal rights under local laws in addition to the rights under this manufacturer's warranty. Contact Ohme in the first instance to discuss your options.

To initiate a service from Ohme under the manufacturer's warranty, it is necessary to contact Ohme first to assist in determining the most appropriate solution.

Regarding issue with the overall installation, please contact your installer who will be able to assess the problem and contact Ohme on your behalf.

Limitation of Liability

No liability will be accepted for any loss, costs or damage as a consequence of using or misusing the product except, and only to the extent, where this is caused by our negligence.

Terms and Conditions

For Terms and Conditions of the product please visit our website at www.ohme-ev.com/terms-and-conditions.

Installer Information

Vehicle compatibility

The Ohme charger is compatible with all Mode 3 equipped vehicles that use Type 1 (J 1772) or Type 2 (IEC 62196-2) connectors.

The Ohme app connects into vehicle manufacturer API/telematics services. For the list of supported manufacturers please refer to our website. Additional manufacturers will be supported in the app as they become available.

Ohme Home Installation

The Ohme charger is supplied with a 1 metre fixed input cable/flying lead, requiring termination on site to a suitable junction box, isolation switch or mini-CU (Consumer Unit). The charger comes complete with wall fixings and a charging gun holster to retain the holster when not connected.

The overall installation must be compliant with the IET Wiring Regulations and the IET Code of Practice for Electric Vehicle Charging Equipment. Installation should be carried out by a competent electrician with appropriate knowledge of EV charge point installations.

Please note: to be compliant with regulation 722.411.1 of BS 7671:2018 Wiring Regulations, for TN-C-S properties, it is necessary to either:

- Install a separate earth to make the charger supply TT
- Install a device which disconnects the supply in line with regulation 722.411.4.1

The Ohme Charger is rated at 32 A and contains an integral RCD with Type A and DC 6 mA operating characteristic. To avoid blinding of RCDs, we recommend that any upstream RCD is at least Type A. Type AC RCDs may saturate with smooth DC currents below 6 mA.

The RCD is reset by power cycling the unit or by unplugging and plugging the charger from the vehicle.

No overcurrent protection is provided in the Ohme Charger, separate provision must be provided as part of the installation. A mounting screw kit is provided to securely attach the charger to a wall or post.

The Ohme Home charger is a single-phase device with three input connections:

The input lead is one metre long and the conductors are 6mm² copper. They need to be terminated to a suitable junction box or similar (not supplied).

Ohme Go Installation

The Ohme Go charger comes in four power input connector types:

- 32A Commando plug (IEC 60309)
- Type 2 (IEC 62196)
- Schuko / European Plug
- UK 3-Pin plug (BS 1363)

As with all EV charging equipment, we recommend that the RCD in your property is checked. Type AC RCDs should not be used with an EV charger.

We recommend that the electrical installation is checked by a qualified/competent electrician for safety. EV charging is more demanding on your system than normal appliances.

Commando socket installation

This section is intended to be a quick reference guide for electricians to help ensure a commando socket, intended to be used for EV charging, is installed compliant with the 18th Edition Wiring Regulations (Amendment 1). Please note this guide is only applicable for single phase dwellings with PME supply (TN-C-S).

Ohme's commando product uses a 32 A IEC 60309 (Blue) CEE "Commando" single phase socket.

RCD Selection

Both Ohme Home and Ohme Go chargers have Type A and 6 mA DC residual current functionality (RCD) built in. Where you are asked to install a socket for EV charging, we recommend that Type AC RCDs are not used upstream.

Earthing

For installation of a socket intended to be used for EV charging, the relevant section of the Wiring Regulations applies (currently section 722). For a TN-C-S supply, it is not permitted to install a socket to charge an EV outdoors if connected to the PME without an additional device as described in 722.411.4.1. You can either:

- Install a separate earth to make the charger supply TT
- Install a PEN fault device which disconnects the supply in line with regulation 722.411.4.1

For help in selecting a PEN fault device, please contact help@ohme-ev.com.

Socket selection

For domestic properties, the Commando socket used should be interlocked, which prevents the socket contact becoming live when a plug is not connected. There are several types which are readily commercially available. It should also have adequate IP rating for the installation location.

Socket placement

The socket installation location should be decided with the customer based on a number of factors:

Safety, convenience of use, and proximity to the vehicle parking space

Practicality of connecting to a TT earth electrode.

Mobile phone signal strength of the location (e.g. try to avoid installing in garages with metal doors).

DNO Notification

Although a Commando socket is not an EV charging point in itself, it is recommended the DNO is notified of the installation as if it were a dedicated wall-mounted charging point. This is done through the Energy Networks Association.

www.energynetworks.org/operating-the-networks/connecting-to-the-networks

OZEV Grant Eligibility

Ohme Home is eligible for the OZEV Electric Vehicle Homecharge Scheme grant. Ohme Go variants are not eligible.

Product Specification

Voltage	220 - 250 V AC		
Frequency	50 / 60 Hz		
Power output, max current	Ohme Home	32 A	7.4 kW
	Commando	32 A	7.4 kW
	Type 2	32 A	7.4 kW
	Schuko	13 A	3.0 kW
	3-Pin	10 A	2.4 kW
Operating temperature	-25°C to 45°C		
Storage temperature	-40°C to 85°C		
Output cable length to vehicle	5 metres		
Input cable length	Ohme Home	1 metre	
	Commando	30 cm	
	Type 2	30 cm	
	Schuko	30 cm	
	3-Pin	30 cm	
Residual current function	Type A 30 mA DC 6 mA		
Overcurrent protection	Not fitted, overcurrent protection to be fitted separately as part of installation.		
Ingress protection	IP55 (suitable for use outdoors in all weather).		
Data communication	2G / 3G / 4G		
Shipping weight	4 kg		
Colour	Black		

Part Numbers

Connector Type	Product part number
Ohme Home Type 1	OHME0001GB001
Ohme Home Type 2	OHME0002GB001
Type 2 to Type 1	OHME0201GB001
Type 2 to Type 2	OHME0202GB001
3-Pin to Type 1	OHME0301GB001
3-Pin to Type 2	OHME0302GB001
Commando to Type 1	OHME0401GB001
Commando to Type 2	OHME0402GB001
Schuko to Type 2	OHME0702EU001