

Ohme
The intelligent EV charger

Ohme Home Pro

Product Manual



Product code: OHME0002GB002

Ohme Wall Pro – Type 2








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Safety Precautions

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

Please read the document fully before using the Ohme Home Pro. 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 the Ohme Helpdesk for advice
	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 Home Pro with care. Do not expose any part of the cable to severe forces, impact or sharp objects
	The Ohme Home Pro 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 Home Pro with a soft damp cloth. Do not use solvents or abrasives

Welcome to Ohme

This handy guide contains everything you need to know to set up your new charger and get started on the Ohme app. It also covers some important safety information. 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.

There is a dedicated section for installers to find the information needed to quickly and safely install the Ohme Home Pro.

Download the app

Downloading the Ohme app is an important part of setting up your charger. Go to the App Store/Playstore on your smart phone or tablet, and search for 'Ohme'.



Your charger information

Use the section below to make a note of your charger's serial number, this is important if you ever need to contact the Ohme Helpdesk. If you've had a Wall Charger installed take a moment to write down the installer's name, contact number and installation date.

Serial number

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Installer

Name:

Contact number:

Installation date:

Product Specification

Voltage	230 V AC
Frequency	50 Hz
Max Current, Power Output	32 A, 7.4 kW
Operating Temperature	-25 °C to 45 °C
Storage Temperature	-40 °C to 85 °C
Cable length (output to vehicle)	8 metres
Cable length (input, supply)	1 metre
Residual current function	Type A 30 mA DC 6 mA
PEN fault detection	Conforms to 722.411.4.1 (iv) of BS7671 18 th edition
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	6 kg
Colour	Black

Product Description

The Ohme Home Pro is an Electric Vehicle (EV) charging device, with:

- Input cable for connection to a power supply
- Charge controller, including integral residual current protection device and PEN fault detector
- Tethered charging cable, with both Type 1 and Type 2 variants
- Wall mounting accessories and cable holder

The charger is to be used with a single-phase electricity supply (most UK houses are single phase).

The product conforms to the latest safety standards including:

- RCD functions to disconnect the power supply if AC or DC current leakage occurs
- Neutral fault detection, avoiding the need for an earth rod to be installed

All Ohme Home Pro units are tethered, which means the cable cannot be removed.

Vehicle Compatibility

The Ohme Home Pro will charge all mainstream electric vehicles that use Type 2 connectors.

The Ohme app connects into vehicle manufacturer API/telematics services to obtain information from the vehicle where these are available. API integrations include Tesla, Nissan, BMW, Jaguar and Renault. Contact the helpdesk before purchase to check if we currently support or are developing the interface to your specific vehicle.

Installation

At a glance...

- Ohme units have PEN fault detection
- The RCD inside the unit is Type A and 6mA DC
- The units use the 4G mobile phone network, it is preconfigured to connect to the Ohme backend server automatically
- Load balancing can be setup with the current sensor (CT) clamp
- Ohme units are sealed, in most cases you will need to provide a junction box to connect to the supply

Mounting the unit

The Ohme Home Pro is designed to be wall mounted to a flat surface. Fixings are included which are suitable for most wall surfaces (e.g. brick/render) but the installer should select their own fixings if these are not appropriate.

Attach the back plate to the wall using four fixings, then mount the unit, carefully guiding the three lugs into the rear of the unit. Use the supplied three M4 short machine screws to fix the unit to the back plate.

The charger comes complete with a cable holder and charging gun holster to retain the cable and vehicle connector when not connected to the vehicle. Use a further four fixings to mount these to the wall.

The Ohme Home Pro has a colour display, dependent upon customer preference, it may be preferable to mount the unit closer to eye level for comfort.

Electrical connection

The Ohme Home Pro is supplied with a one metre fixed input cable/flying lead requiring termination on site to a suitable junction box, isolation switch or mini-CU (not supplied). The flying lead is 15.2mm diameter, suitable for a No. 6 cable cleat.

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 chargepoint installations.

Installer Mode

On first powering the unit, the Ohme Home Pro will be in installer mode. In this mode:

- The RCD is automatically reset after 2 seconds to speed up the RCD tests
- The rating of the unit can be adjusted
- Load balancing can be activated and the threshold value selected

Installer mode must be disabled before leaving site!

RCD

The Ohme Home Pro has a Type A 30mA and DC 6mA RCD built in. In some circumstances (e.g. armoured cable clipped to wall) the supply to the charger can be fed direct from a double pole MCB (to permit isolation) without an additional RCD upstream.

To avoid blinding of RCDs, we recommend that any upstream RCD is at least Type A. Type AC RCDs may saturate and fail to operate in the presence of smooth DC currents below 6mA.

In the event of an RCD activation in the Ohme charger, the unit is reset by power cycling (switching the supply off, wait 5 seconds, and switch on) or by unplugging and re-plugging the vehicle.

Earthing Arrangement

The Ohme Home Pro has an in-built PEN fault detection function, as described in 722.411.4.1 (iv), to disconnect the vehicle from the live, neutral and earth conductors if the voltage is above or below the prescribed levels (greater than 253 V and less than 207 V). The units can therefore be connected to the PME on single phase supplies.

Where the voltage is hovering above and below the threshold, this could cause the supply to the vehicle to rapidly power cycle. For this reason, the Ohme Home Pro has a timer built in; where the PEN fault detection has activated, after the voltage has recovered, it will not reconnect the vehicle for 5 minutes.

Ohme units periodically send voltage readings to our servers. Where it is suspected that the supply voltage is persistently high, contact Ohme with the serial number of the unit. Ohme can make small adjustments to the voltage threshold which may allow the customer to charge their vehicle whilst the DNO are contacted to address the issue.

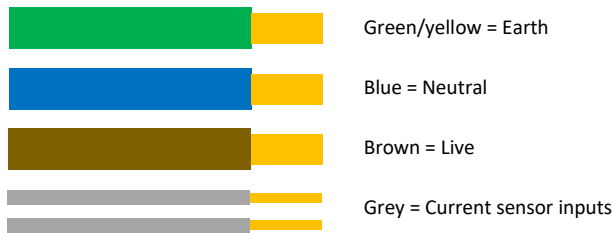
Note that the PEN fault detection function, according to 722.411.4.1 (iv) is suitable for single phase supplies only.

Overcurrent Protection

No overcurrent protection is provided in the Ohme Home Pro, separate provision is to be provided as part of the installation. We recommend a 40A Type C MCB.

Wiring

The Ohme Home Pro is a single-phase device with five input connections:



The input lead is one metre long and the supply conductors are 6mm² copper. They need to be terminated to a junction box, isolator or direct into a consumer unit.

To connect, typically an installer will either:

- Install a junction box at ankle height
- Feed the input cable through a wall and terminate on the other side

The junction box needs to be rated for 32A, have sufficient IP rating for the location and have space for a three-way terminal block (no load balancing) or five way terminal block (with load balancing).

Load Balancing

The Ohme Home Pro has a dynamic load balancing feature. A current sensor (CT) clamp is provided to measure the electrical demand of the property, or sub-board. The unit will limit the maximum current available to the vehicle to keep the household demand below the set threshold/fuse value.

The unit is designed to comply with the relevant parts of Engineering Recommendation (ER) G100, which is a requirement of some DNOs for them to accept the charger installation without prior agreement.

Where load balancing is activated, if the CT clamp is removed, or is faulty, the unit will revert to 16A. It is therefore sensible to ensure the spare capacity, after taking account of other loads and diversity, is at least 16A.

Note: where the dynamic available capacity for the charger drops to below 6A, the Ohme Home Pro will pause the charging for at least five minutes to prevent rapid switching of the vehicle where the current is hovering above and below the threshold.

Activating Load Balancing

In Installation Mode, select “Enable” to activate load balancing and use the “+” and “-” buttons to set the unit maximum current value.

Connect up the current sensor inputs to the CT clamp, you will likely need to extend the cable. The CT clamp and wiring is not polarity sensitive – you can install the CT clamp in either direction. The wiring can be extended using additional cable if necessary.

Ohme recommends EV Ultra Cable 3 Core + Data as a convenient single cable solution. This cable contains two data cores and can be used to extend the clamp cable up to 60 metres.

Cat5e Ethernet cables can be used to extend the CT clamp. A single pair can be used to extend the CT clamp wire to 60 metres. Pairs can be twisted together for ease of wiring if necessary.

Network/Internet Connection

Ohme Chargers use a 4G data connection. They are pre-configured in the factory to talk directly to the Ohme backend server.

Signal coverage in the UK is generally very good but it is important to ensure the customer is aware that the unit relies on a mobile phone connection for the smart features. Where it is known to be unreliable the customer should be made aware that the smart features of the Ohme unit will also be unreliable.

Ohme cannot be held responsible for the installation location and issues with the public mobile phone network.

Where the unit cannot establish data transfer at the time of plug in, the unit will behave like a dumb charger and will not schedule the charging session.

Grid-sympathetic Charging

The Ohme platform is designed to help reduce power demand in times of stress to the local and regional electricity networks. As the adoption of EVs progresses, these features will become more important to avoid expensive and disruptive upgrades to electricity networks.

To facilitate this, charging demand may be limited in times of extreme stress to the electricity network to prevent power outages. This will always be done in an open and transparent way whilst limiting the effect on users of the Ohme platform. We understand that EV drivers are reliant on their vehicles. If you have any queries or concerns, please contact us for more information.

Troubleshooting

There is a troubleshooting and FAQ section of the website at www.ohme-ev.com

If there are any queries or issues regarding using the Ohme Charger, please contact the Ohme Helpdesk via email: help@ohme-ev.com, telephone 0203 375 1586, or send a direct message on Twitter to [@OhmeEV](https://twitter.com/OhmeEV).

Cleaning

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

Maintenance

The Ohme Home Pro is maintenance free. If the charger is defective or damaged, please discontinue use and contact the Ohme Helpdesk for advice.

Standards Compliance

The product complies with the relevant elements of:

- BS EN BS EN 61851-1:2019 Electric vehicle conductive charging system. General requirements
- BS IEC 62955:2018 Residual direct current detecting device (RDC-DD) to be used for mode 3 charging of electric vehicles
- BS EN IEC 61000-6-3:2021 Electromagnetic compatibility (EMC). Generic standards. Emission standard for equipment in residential environments

- BS EN IEC 61000-6-1:2019 Electromagnetic compatibility (EMC). Generic standards. Immunity standard for residential, commercial and light-industrial environments
- IEC62196-1 Plugs, socket-outlets, vehicle connectors and vehicle inlets

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:

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:

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

Ohme Helpdesk can be contacted at:

Address: Ohme Technologies Ltd.
Unit 74, Penrose Wharf, Penrose Quay
Cork
Ireland
T23 HF51

Email: help@ohme-ev.com

Telephone: +44 (0) 20 3375 1586

Manufacturer's Warranty

The key terms of the warranty for the Ohme Home Pro are as follows

- The device is protected by a manufacturer's warranty for 36 months from the date of installation. This covers parts and labour
- The minimum operational life of the Ohme Home Pro exceeds 36 months
- The warranty covers on-site assistance, repairs and replacements, at no cost

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. This will include labour costs to repair or replace the unit at the installation site.

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 the charging unit. The warranty does not cover damage or malfunction directly caused by abuse, misuse, negligence, accident, 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 discolouration or 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, please contact help@ohme-ev.com. Please have the serial number of the charging unit to hand and it will help if you have the details of your installer.

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.