



HOME CHARGER MODE 2

Series 31328 to 31340

16/32A single phase

Ratio
ELECTRIC

Manual

CONTENTS

IMPORTANT SAFETY INSTRUCTIONS	3
SAFETY INFORMATION	4
INSTALLATION	5
OPERATION	8
SPECIFICATIONS	8
MAINTENANCE	9
FCC INFORMATION	9
WARRANTY INFORMATION	10
CONTACT / CUSTOMER SUPPORT	11

IMPORTANT SAFETY INSTRUCTIONS

Carefully read these instructions and the charging instructions in your vehicle owner's handbook before charging your electrical vehicle.

Take special note of all information marked with the following symbols:

Note: *This means pay particular attention.* Notes contain helpful suggestions.



Caution: *This symbol means be careful.* You are capable of doing something that might result in damage to equipment.



Warning: *This symbol means danger.* You are in a situation that could cause bodily injury. Before you work on any electrical equipment, be aware of the hazards involved with electrical circuitry and standard practices for preventing accidents.

Safety Guidelines

- Use this Home Charger to charge electric vehicles equipped with a conductive charge port only. See the vehicle's owner's handbook to determine if the vehicle is equipped with a conductive charge port.
- Make certain the Home Charger's supply cable is positioned so it will not be stepped on, tripped over, or otherwise subjected to damage or stress.
- There are no user serviceable parts inside. Refer to the Customer Support section in this manual for service information. Do not attempt to repair or service the Home Charger yourself.
- Do not operate your Home Charger if it or the supply cable or housing is visibly damaged. Unplug the CEE wall plug and contact your Service Representative for service immediately. Refer to the Customer Support section in the manual for information on the Service Representative in your area.

SAFETY INFORMATION



Warning: When using electric products, basic precautions should always be followed, including the following:

- Read all the safety warnings and instructions before using the product. Failure to follow the warnings and the instructions may result in electric shock, fire and / or serious injury.
- This device should be supervised when used around children.
- Do not put fingers into the electric vehicle connector.
- Do not use this product if the flexible power cord or EV cable are frayed, have broken insulation, or any other signs of damage.
- Do not use this product if the enclosure or the EV connector are broken, cracked, open, or show any other indication of damage.
- If the plug provided does not fit the outlet, do not modify the plug, arrange for a grounded outlet to be installed by an electrician.
- The charge cord is provided with a grounding conductor and a grounding plug. This plug must be plugged into a properly grounded outlet in compliance with national and local electrical codes.



Warning: If, at any time, you think the equipment is unsafe, unplug the CEE wall plug and immediately contact Customer Support for service. Do not use your Home Charger until the problem is identified and corrected.



Caution: Children should not be allowed to use this Home Charger. Do not allow children to play in or around the Home Charger. Close supervision of children is necessary when the Home Charger is used.



Caution: Do not open the enclosure.

INSTALLATION

Note: This Home Charger was designed according the IEC61851 Mode 2 standard.
It means the power input is supplied by means of the attached power cord with CEE plug. The installation without this CEE plug is not allowed.

Note: This product must be grounded/protective earthed. If it should malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This product is equipped with a cord having an equipment grounding conductor and a grounding plug. The plug must be plugged into a CEE outlet that is properly installed and grounded in accordance with all local codes and ordinances.



Warning: Improper connection of the equipment-grounding conductor is able to result in a risk of electric shock. Check with a qualified electrician or serviceman if you are in doubt as to whether the product is properly grounded. Do not modify the plug provided with the product – if it will not fit the outlet, have a proper outlet installed by a qualified electrician.

Note: The charge cord used to charge the vehicle is a high-powered electrical device. During normal operation, the AC wall plug of the charge cord may feel warm. The AC wall plug must fit tightly into an AC outlet that is in good condition.



Warning: Using the charge cord with a worn or damaged AC outlet may cause burns or start a fire. Periodically, check the AC wall plug and charge cord while the vehicle is charging. If the AC wall plug feels hot, unplug the charge cord and have the AC outlet replaced by a qualified electrician. Replace the charge cord if the AC wall plug or cord are damaged. Do not use an AC outlet that is worn or damaged.



Warning: Extension Cords, Multi Outlet Power Strips, Surge Protectors or similar devices should not be used with the charge cord. Use of an Extension Cords, Multi Outlet Power Strips, Surge Protectors or similar devices may increase the risk of electric shock or other hazards.

1. CHOOSE LOCATION

The Home Chargers are waterproof but should not be positioned in a location where they are exposed to running water.
The Home Charger should be installed between 1,50m and 1,70m from the ground. Make certain that the Home Charger's supply cable is not positioned on the ground.

The power supplying 16A/32A single phase CEE wall socket can only be installed by a licensed, qualified electrician. We recommend to install this home charger inside (Garage) or use weather cover.

The distance from your Home Charger to the CEE wall socket should be max. 40cm.

2. INSTALL THE HOME CHARGER TO THE WALL



Use 4 M4,5x20 screws. Use the mounting plate as template to mark screws locations. Drill holes and mount the Home Charger to the wall.

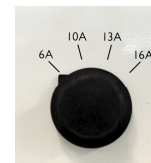
3. MAKE THE HOME CHARGER READY TO CHARGE



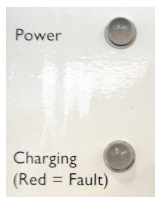
Plug the Home Charger into the CEE wall socket.



Turn the earth leakage circuit breaker on.
Test the earth leakage function at least each half year.
With this switch it is also possible to switch off the charger.



You can now adjust the charge current: selectable 6, 10, 13 and 16A. (for 32A versions : 12,18,24 and 30A).The charge current can be changed at any time during the charging. A lower charge current gives less heat loss and less risk of overload.



Power Light turns on green when power from your local utility is at the Home Charger.

4. CONNECT TO VEHICLE



Plug the connector into your vehicle. The vehicle automatically starts charging.

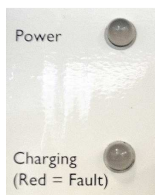


Charging Light turns on green when power is being provided to your vehicle. If the charging LED turns red there is a power fault or charging fault.

Power fault : indicates that the wall socket is not wired correctly. The problem can be that the wall socket has no earth/ground or incorrect phase connection.

Charging fault: indicates that there is a communication problem.

5. CHARGE COMPLETE



When the vehicle has completed charging, the green charging light will automatically switch off after a few minutes.



Remove the connector from your vehicle and return the connector to the holder at your Home Charger.

OPERATION

The Home Charger has 2 indicator lights:

POWER	<i>green</i> - indicates that power is available.
CHARGING	<i>green</i> - indicates power has been applied to the vehicle <i>red</i> - indicates a fault

SPECIFICATIONS

	16A	32A
Charging System	IEC 61851 Mode 2	IEC 61851 Mode 2
Car Connector	IEC 62196 Type 1 or 2	IEC 62196 Type 1 or 2
Wall Plug	IEC 60309 16A / single phase	IEC 60309 32A / single phase
Voltage & Wiring	230V AC single-phase	230V AC single-phase
Charge Current	max. 16A	max. 30A
Earth leakage protection	30mA (A-type)	30mA (A-type)
Grounding safety	Earth wire detection	Earth wire detection
Over current protection	16A (B-type)	32A (C-type)
Dimensions	200mm x 200mm x 120mm	250mm x 200mm x 120mm
Housing	Polycarbonate (PC)	Polycarbonate (PC)
Weight	4 kg (incl. cable)	4 kg (incl. cable)
Environment	IP65, rain-tight	IP65, rain-tight
Operating Temperature	-25°C to +40°C	-25°C to +40°C

MAINTENANCE

The Home Charger requires no maintenance other than occasional cleaning.



Warning: Unplug your Home Charger before cleaning the unit.



Warning To reduce the risk of electrical shock or equipment damage, be cautious while cleaning the connectors and case.

Clean the Home Charger using a soft cloth lightly moistened with mild detergent solution. Never use any type of abrasive pad, scouring powder, or flammable solvents such as alcohol or benzene.

FCC INFORMATION

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

This product has been designed to protect against Radio Frequency Interference (RFI). However there are some instances where high powered radio signals or nearby RF-producing equipment (such as digital phones, RF communications equipment, etc.) could affect operation.

If interference to your charge station is suspected, we suggest the following steps be taken before consulting your Service Representative for assistance:

1. Reorient or relocate nearby electrical appliances or equipment during charging.
2. Turn off nearby electrical appliances or equipment during charging.



Caution: Changes or modifications to this product by other than an authorized service facility may void FCC compliance.

WARRANTY INFORMATION

Ratio Electric B.V. warrants this product to be free from defects in material, manufacture and design for a period of one year after the date of purchase. If this product is defective in materials, manufacture or design during this warranty period, Ratio Electric B.V. will, at its option, repair or replace the product.

Repair parts and/or replacement products may be either new or reconditioned at Ratio Electric B.V. discretion.

This limited warranty does not include service to repair damage from improper installation, improper connections with peripherals, external electrical fault, accident, disaster, misuse, vandalism, unauthorized alteration or repair, abuse or modifications to the product not approved in writing by Ratio Electric B.V. Any evidence of an attempt to disassemble the Home Charger will void this warranty.

Any service repair outside the scope of this limited warranty shall be at applicable rates and terms then in effect.

Note: The enclosure of the Home Charger is sealed. Opening this enclosure will damage the seal and end the warranty. Removing and / or replacing the attached power cords will end the warranty.

CONTACT / CUSTOMER SUPPORT



Ratio Electric BV
Ambachtsstraat 12
3861 RH Nijkerk
The Netherlands

Tel.: +31-33-2452360
Fax: +31-33-2453154

info@ratio.nl
www.ratio.nl