

POWER BOX EV PORTABLE CHARGING CABLE 3-PHASE 16A-32A



Ratio
ELECTRIC

Manual

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IMPORTANT

The energy meter is not MID certified.
Therefore this meter is not suitable for billing purposes but for reference only.
Do not disconnect power during charging.

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 Portable Charging device 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 Portable Charging devices' 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 Portable Charging device yourself.
- ❖ Do not operate your Portable Charging device if it or the supply cable or housing is visibly damaged. Switch off the MCB in the electrical cabinet 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 groundig plug. This plug must be plugged into a properly gounded outlet in compliance with national and local electrical codes.



Warning: If, at any time, you think the equipment is unsafe, switch off the MCB in your electrical cabinet and immediately contact Customer Support for service. Do not use your Portable Charging device until the problem is identified and corrected.



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



Caution: Do not open the enclosure.

DESCRIPTION

This portable charging station is used for charging of electric vehicles (EV's) from a standard socket-outlet (IEC 61851-1, mode 2).

It can be used portable or mounted on a wall.

The respective national regulations and conditions must be observed with regard to the connection and operation of this charging station (IEC 62752).

INSTALLATION

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 red CEE wall socket 16A/32A 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. The red CEE plug must fit tightly into a red CEE wall socket that is in good condition.



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



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

OPERATION

The Ratio Electric Mode 2 Charge Cable offers maximum security when charging your EV from a standard 3-phase red CEE outlet.

Just plug the wall plug into the red CEE 16A-32A wall socket. Always plug in the wall socket first.

Now the Power LED will light up.

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Factory preset is at FIXED 16/32A. If you want to change the settings enter the setup menu (see page 8 SETUP MENU)

| |
|--------------------|
| READY TO CHARGE |
|--------------------|

Plug the type 2 plug into the car. For charging information you can reach the next screen. You can reach the next screen with the left or right arrow button.

The menu's below can be reached with the arrow button from a READY TO CHARGE screen but also from CHARGING screen.

Here you can find more information about the consumption:

I: current (A)

| | |
|------|---|
| I 1: | A |
| I 2: | A |
| I 3: | A |

U: voltage (V)

| | |
|------|---|
| U 1: | V |
| U 2: | V |
| U 3: | V |

P: power (kWh)

Et: total kWh value
(cumulative,
you can't reset it)

| | |
|------|-----|
| P 1: | kWh |
| P 2: | kWh |
| P 3: | kWh |
| Et: | kWh |

By pressing the middle button, you can see the meter readings of the last 5 sessions.

| | |
|---------|-----|
| Et (1): | kWh |
| Et (2): | kWh |
| Et (3): | kWh |
| Et (4): | kWh |
| Et (5): | kWh |

The values can be deleted by pressing the left and right arrow buttons at the same time.

With the middle button you can go back to the previous screen.

CHARGER ERROR

| |
|----------------------|
| CHARGER NOT READY |
| ERRCODE: |

In case of the charger error, you will see the error screen with the error code. If multiple errors occur the codes will alternate.

By error message please contact Ratio Electric for support.

SETUP MENU

To enter the setup menu press:

- 2 x left arrow button
- 1 x right arrow button
- 1 x left arrow button
- 1 x middle button
- 1 x left arrow button

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In the menu you can choose between SETUP:

1. CHG MODE
2. I-MIN
3. I-MAX
4. READOUT -> ERR MEMORY



You can use the left or right arrow button to switch between the settings.
Confirm your choice always with the middle button.

1. SETUP CHG MODE

SETUP
 <- CHG MODE ->

In the setup CHG MODE you can choose between:

SETUP CHG MODE
 <- FIXED 16 ->

SETUP CHG MODE
 <- FIXED 32 ->*

SETUP CHG MODE
 <- MANUAL ->



* only available for 32A chargers



FIXED 16
with this option you can set the charging current to 16A

FIXED 32
with this option you can set the charging current to 32A



MANUAL
You can adjust the charging current between 6A and 16/32A

You can change the setup by pressing the left or right arrow button. After your choice has been made confirm by pressing the middle button.

2. SETUP I-MIN



Here you can set the minimum charging current, that your car requires. Normally 6A but some EV's require 10A minimum. You can choose between 6A and 16/31A with steps of 2A. To make your choice please use the left or right arrow button. To confirm press the middle button.



3. SETUP I-MAX

SETUP
<- I-MAX ->

Here you can set the maximum charging current. You can choose between 7A and 16/32A with steps of 2A. To make your choice please use the left or right arrow button. To confirm press the middle button.



4. READOUT -> ERR MEMORY

SETUP
<- ERR MEMORY ->

Confirm with the middle button to enter the error memory screen. You can see max. 10 error codes. With the left and right arrow buttons you can scroll to the last code. To return into the setup menu please press the middle button. In case of error message please contact Ratio Electric for support.



SPECIFICATIONS

| | |
|--------------------------|--|
| Charging System | IEC 61851 Mode 2 |
| Safety | IEC 62752 (IC-CPD Devices) |
| Car Connector | IEC 62196 Type 2 |
| Wall Plug | IEC 60309 16A/3-phase (red)& 32A/3phase (red) |
| Voltage & Wiring | 400V AC 3-phase, 50Hz |
| Charge Current | max. 3-phase 16A or 3-phase 32A (IEC 60309) |
| Earth leakage protection | 30mA AC / 6mA DC |
| Protection | under & overvoltage, overcurrent |
| Grounding safety | earth wire detection |
| Dimensions | 310mm x 130mm x 76mm |
| Housing | PC/ABS |
| Weight | 4,5 kg (incl. cable) 16A 5,0 kg (incl. cable) 32A |
| Environment | IP54 rain-tight |

MAINTENANCE

The Portable Charging device requires no maintenance other than occasional cleaning.



Warning: Switch off your Portable Charging device 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 Portable Charging device 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 three years 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 Portable Charging device will void this warranty.

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

CONTACT / CUSTOMER SUPPORT



Ratio Electric B.V.
Ambachtsstraat 12
NL-3861 RH Nijkerk
The Netherlands
Tel. +31-33-2452360
info@ratio.nl
www.ratio.nl

