

easee

Quick guide

Easee Equalizer Kit Commercial UK

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Product overview

This kit consists of main components required to install an Easee Equalizer on a charging site with one or multiple circuits. All of the components are tested and guaranteed to work with the Easee Equalizer (E02-EQP). Not for use with the Easee Equalizer HAN version.

Power meter:

Eastron SDM630MCT-RC 3-phase meter reader

Power supply:

Tufvassons electricity transformer (part no. PSLR 30 230/24VDC)

Cable:

RJ12

Current transformer:

CT Clamp (part no. ESCT-TUI6)

Rogowki Coil (part no. ESCT-RC60)

Technical specifications

Eastron SDM630MCT-RC 3-phase meter reader

Measurements (mm): H: 94,5 x W: 72 x D: 65
Voltage: 3 x 400V ac / 230V ac
Network frequency: 50/60Hz ($\pm 2\%$)
Type: 3-phase 400 imp/kWh
IP-classification: IP51
Running temperature: $-25^{\circ}\text{C} - 55^{\circ}\text{C}$
Primary connection: 2,5mm²
Secondary connection: 2,5mm²
Montage: DIN-rail or alternative wall mount with screw
Material: Self-extinguishing UI94 V-0

Tufvassons electricity transformer

Measurements (mm): H: 110 x W: 53 x D: 66
Input voltage: 180-264V, 47-63 Hz N - L
Output voltage: 24V dc ($\pm 5\%$)
Effect: 30VA (1,25A) (electricity limit 2,5A)
MTBP: 50000 h at 70% load at 25°C
IP-classification: IP40
Running temperature: $-10^{\circ}\text{C} - 45^{\circ}\text{C}$
Double isolation (not to be earthed)
Protected against circuit cut and overload
Primary connection: 2-polig 2,5mm²
Secondary connection: 2-polig 2,5mm²
Mounting: DIN-rail or wall mount with screw

RJ12 cable

Length: 1.5m
Colour: Black
Pre-cut
Connector plug: RJ12
Lead cable: 6 pin

100A KIT CT Clamps

Input: Max 100A
Output: 333 mV
Measurements (mm): H: 46 W: 29
Diameter: 15.7 mm
Running temperature: $-15^{\circ}\text{C} - +60^{\circ}\text{C}$

500A KIT Rogowski Coils

Input: 500A
Output: 85-100 mV | 1KA
Measurements (mm): L: 200
Diameter: 45-60 mm
Running temperature: $-30^{\circ}\text{C} - +80^{\circ}\text{C}$

Before you start

WARNING! This product shall only be installed, repaired or serviced by an authorised electrician. All applicable local, regional and national regulations for electrical installations must be respected.

- **Please check the safety instructions on the manufacturer’s user guides for all the components of the kit.**
- Make sure you have enough space on the DIN rail for all the components. Minimum required space is 10 modules.
- If you need to move the Equalizer away from the main fuse cabinet, the cable to the modbus can be extended up to 200 meters. Please use appropriate cable and cross section.
- Get the WiFi password. Make sure the Equalizer and the master charger(s) will be connected to the same WiFi network. The Equalizer needs to be connected to a WiFi network to work properly.
- Main distribution unit or secondary distribution unit / facade metre reader unit.
- Rogowski Coils must be fitted in the correct order to read incoming power line.
- Fuse triple pole 10A (**not included**).
- Install the Easee Installer App on your phone by using the QR code below.

TIPS! Prepare installation in a new encapsulation (**not included**):

- 4 Modules for Eastron 3-phase meter reader.
- 3 Modules for Tufvasson’s electricity transformer .
- 3 Modules for fuse 10A 3 pole (not included).



1 Equalizer Kit Installing

WARNING! Turn off the power before you begin the installation. Use extreme caution and follow instructions carefully.

- Install the components in the distribution box according to the wiring diagram on the next page.

2 Power meter Configuring

Configure Eastron Meter:

1. Press and hold E-button for 3 seconds.
2. Type in 1000 as password, press and hold E-button for 3 seconds to confirm.
3. Scroll down to Set-CT1-0.1KA if using the 100A CT kit variant or 0.5KA for 500A Rogowski coil kit variant. Press and hold for 3 seconds to select.
4. Press U/It-button to return to main menu. You should now be able to see phase readings on the display.

3 Equalizer Setting up

Download the Easee Installer App via App store or Google play. To use the Easee Installer App, you must have an Easee Cloud account. If you already have an account, you can log in immediately. Commission the site by following the steps below in the Easee Installer App.

1. Pairing. Create new facility:
 - Site information.
 - Select Easee as the operator.
 - Main fuse.
 - Circuit fuse.
 - Wi-Fi information.
 - Scan the backplate and complete the site.
2. Equalizer. At Site Overview:
 - Add Equalizer.
 - WiFi information.
 - Scan Equalizer with your phone's NFC reader.
 - Connect Equalizer to the metre reader.
 - Update Equalizer to at least v.99 (takes up to 10 min).
 - Set metre type -> Eastron SDM.
 - Set main fuse limit -> 100%.
 - Set circuits for load balancing -> Circuit (on).
 - Restart the device.
3. Transfer ownership. At Site Overview:
 - Upload to cloud.
 - Invite new owner by phone number (you remain the administrator).
 - Ask the customer to download the Easee app and create an Easee cloud account. If an account already exists, the customer needs to accept the ownership request which is sent via email.

Troubleshooting

Is the charging robot already installed? If the charger is already installed you will need to be invited as an administrator to access it in the Easee Installer App.

- Do this by asking the site owner to invite you as an administrator via the Easee Cloud, or
- Add the charger (master) to the users Easee app with the serial number and pin code.

Then you will automatically become an administrator and will find the site under "update existing site" in the Easee Installer App. Note that you must be logged in with the same account in the Easee app as for your Easee Installer App for this step to work.

I can't connect the Equalizer to the Wi-Fi via the Easee Installer App. If you are unable to connect the device to the Wi-Fi, check the following:

- The name and the password of the Wi-Fi. Be sure to check lowercase and uppercase letters as well as special characters. If you have the option to rename the Wi-Fi, only use letters and numbers, avoid special characters and spaces.
- The Wi-Fi must have a password, it can't be an open Wi-Fi.
- Connected on 2.4 GHz Wi-Fi (5 GHz does not work).
- Firewalls or login portals blocking internet access.
- Make sure that the Equalizer has good coverage for Wi-Fi. Change location of the Wi-Fi router and Equalizer. Open any garage doors and the facade metre cabinet to get as good coverage during the connection process as possible. Alternatively, install a Wi-Fi extender (Mesh).

How to connect the Equalizer via the charging robot. If you do not succeed in connecting the Equalizer to Wi-Fi via the Easee Installer App, you can try moving the Equalizer towards the charging robot until the box displays a green light.

- Ensure that the charging robot is connected to the same Wi-Fi that you want the Equalizer to be connected to. This is due to the name and password being copied over when you scan the devices.
- If the Wi-Fi is not already available, connect the charging robot via the Easee Cloud, the Easee app or via the charging robot's Wi-Fi interface.

To set the Wi-Fi up via the charging robot's Wi-Fi interface:

- Turn the fuses on and off to activate the installer's interface.
- Press the button on the charger for 5 seconds until it lights up green.
- Log into the charging robot's Wi-Fi interface (192.168.4.1) and set the Wi-Fi.
- Scan the Equalizer again when these steps are completed.

I am receiving negative values on my metre reader. Check the following:

- The arrows on the Rogowski coils are connected in the right direction.
- The phase sequence control by measuring on the charging robot with a voltage meter.
- The connection of the respective colour in the meter (Red&Blue / Black).
- That the connection is correct from the fuse to the metre reader. Note on the wiring diagram that the connection on the meter has the sequence L3, L2, L1 from below.
- If the site has solar cells, it can show negative values during production.

The metre reader shows abnormal values or no values. Check the following:

- RJ12 cable is connected in sequence according to the wiring diagram. If the cable was incorrectly turned (see picture of RJ12 cable in the wiring diagram), the Equalizer will receive power but no data.
- The metre is set to 0.5KA or 1KA by following the instructions in the section Installation - Configure the Easton 3-phase meter.
- The charging robot and the metre reader are installed in the same phase sequence. If switching has taken place in the house e.g.

L2, L1, L3 the phase sequences need to be adjusted for the phase angle to be correct. Please contact Easee Customer Excellence to adjust the phase sequence in the Equalizer. Switching on the metre reader may need to be done, therefore an installer needs to be in place during this troubleshooting.

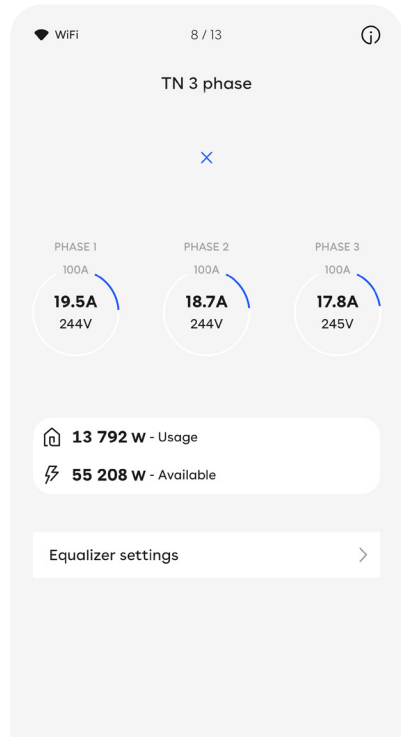
Equalizer is offline. Do the following steps:

- Check that the charging robot is connected to Wi-Fi.
- Disconnect the Equalizer from the metre reader until it stops flashing.
- Hold the Equalizer against the charging robot until it lights up green.
- Reconnect the Equalizer to the metre reader.
- If the Equalizer does not appear in the Easee Installer App, the signal is too weak. Reposition Wi-Fi or Equalizer to get a stronger signal. If necessary, install a Wi-Fi extender (Mesh) for portable connection.

How to make sure the Equalizer is displaying the correct values? Do the following steps:

Via the Easee Installer App, go to Site Overview → Site Structure → Equalizer, you can click on the product card and get the same visual image of the Equalizer that the customer gets via their Easee app.

Here you can confirm that the same ampere values are displayed as on the Eastron meter. Ampere values can be found on the Eastron metre by clicking on [U / I] and scrolling to ampere values (A).



Ampere values screen

Assistance

Make sure to have the serial number available for the Easee Home and Equalizer to receive more rapid assistance.

Easee Customer Excellence
Telephone: 02039946725
Email: support@easee.com

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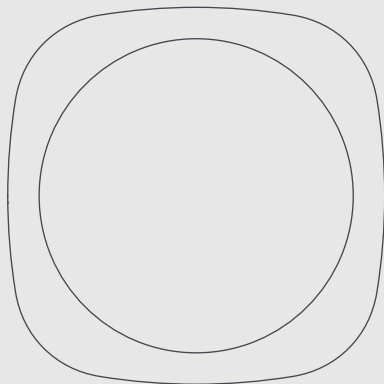
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Illustrations of the product and user interface are exemplary
and may differ from the actual appearance.

September 2022 - Version 1.00

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User guide / Installation guide

Easee Equalizer

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IMPORTANT:

Read carefully before use. Keep for future reference. When passing on the product, ensure this guide is also passed on.

Introduction

This manual concerns the two versions of the product: Easee Equalizer (E02-EQP) and Easee Equalizer HAN (E02-EQ). All instructions apply to both versions, unless specified otherwise.

Intended use

This product is intended for optimizing the power consumption by performing an automatic load balancing between the Easee Charging Robot(s) and the building. It is used to avoid overload and power interruptions while the electric vehicle (EV) is being charged.

The product may only be operated with the approved operating parameters and under the specified environmental conditions (see page 5). Uses other than those specified here are not permitted.

Operating conditions

The product needs to be paired with a Charging Robot and connected to a supported meter with the cable provided. In order for the Equalizer to work, the smart meter's communication port in most

cases needs to be activated. The Equalizer supports several smart meters. Find a full list of compatible meters at [easee.support](https://www.easee.com/support).

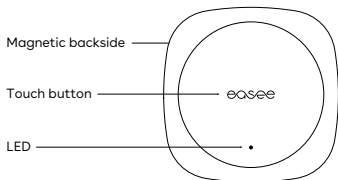
For installation and operation purposes, a smartphone with internet connection is needed.

Optimal performance

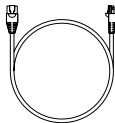
The Equalizer makes it possible to charge smarter, safer and faster if the installation is scaled accordingly. To enable its true potential, the rated value of the chargers circuit fuse should be as high as possible compared to the main fuse. Even in 1-phase setups, we recommend using a 3-phase cable to future proof the installation.

Product overview

Equalizer



Cable



Wall mounting kit

For non-metallic surfaces



Safety instructions

Read the entire manual carefully before installing and operating the product. Observe the following instructions:

- Do not use the product if it is damaged or does not function properly.
- Always have any repair work carried out by an authorised electrician and in accordance with local requirements.
- This product is intended for indoor use in dry locations only. If placed outside the house, it must be installed inside a cabinet protected from the weather.
- Do not immerse the product in water or other liquids.
- Avoid direct sunlight or heat exposure.
- Keep product away from open flames and extreme heat.
- Make sure that children do not play with the product.

Technical specifications

General

Product (mm): H: 110 x W: 110 x D: 27.5
Packaging (mm): H: 130 x W: 130 x D: 39
Permitted temperature: -20 °C to +50 °C
Weight: 95 g (Equalizer) and 110 g (Equalizer HAN)
IP degree: IP40
Supply: 5-32 V DC 100 mA (Equalizer) and 20-32 V DC 30 mA (Equalizer HAN)
RJ11 connector

Cabling

Cable length: 1.5 m
RJ11 to RJ11 custom made cable (Equalizer) and RJ11 to RJ45 custom made cable (Equalizer HAN)
It can be extended using an extension cable: up to 15 m (Equalizer) and up to 200 m (Equalizer HAN)



RJ11 (6 pins)



RJ45 (8 pins)

Max transmitted power

Radio: 25 mW at 863-870 MHz.

WiFi: 50 mW at 2.4-2.472 GHz.

Connectivity

Easee Link RF™ and WiFi¹
HAN (NVE/AMS) (Equalizer HAN) or P1 (Equalizer) smart meter communication
Modbus connection to energy meter²
Monitor power consumption with the Easee App
RFID / NFC reader

¹WiFi is required for normal operation and for future software updates. When offline or unstable, it will use Easee Link RF™ as backup in small installations with one primary charger. Easee Link RF™ via radio may be limited by walls, concrete or other obstacles.

²Only for supported meters.

Customer setup

Follow these steps if you are a private customer installing the Equalizer in your own household.

1 HAN port Activation

In Scandinavia, the communication port on the smart meter is most likely not activated. Contact your utility company to open the HAN port for use with the Equalizer.

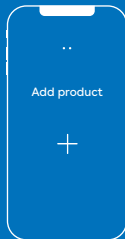
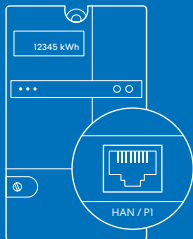
If you are not in Scandinavia, skip to step 2.

2 Easee App Download

Scan the QR code to download the Easee App and create a free account.

3 Equalizer Setup

Add the Equalizer in the app, follow the on-screen installation guide and get ready to balance your energy smarter than ever before!



Installer setup

Follow these steps if you are an installer and use the Installer App to configure the Equalizer in large commercial installations or private households.

1 Installer App Download

Scan the QR code to download the Installer App and create a free account.



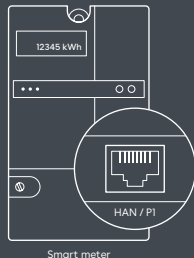
2 Equalizer Setup

Add the Equalizer to a new or existing charging site using the Installer App and follow the on-screen installation guide to set it up.









3 Smart meter Connect


Connect the Equalizer to the smart meter using the provided cable. The Equalizer will appear in the Easee Portal after a while.





LED colours meaning

-  White, fast flashing - Booting
-  White, breathing every 10s - Normal operation
-  Red / white, switching - No WiFi added³
-  Red, flashing - No data from power meter⁴
-  Red, breathing every 10s - Error⁵
-  Purple, breathing every 10s - Offline operation⁶

Touch the Easee logo in the middle to check power consumption:

-  Blue, fast flashing - High power consumption
- Blue, slow flashing - Low power consumption
- Count the flashes for percentage - 1 flash (10%), 2 flashes (20%), up to 10 flashes (100%)

Hold the Easee logo for 3 seconds to check connectivity. You will see 2 flashes:

- 1st flash - Easee Link RF status⁷
- 2nd flash - WiFi status
-  Green - Connected
-  Red - Not connected

³ Use the Easee App to set up the WiFi.

⁴ Contact your utility company to activate the HAN port.

⁵ Go to <http://easee.support>.

⁶ Check your internet connection.

⁷ After booting, it can take a few minutes before Easee Link RF™ status flashes green.

Practical details

Warranty

The device is free from material defects and is in accordance with laws and regulations for consumer protection in the country where the product is purchased. All correctly installed Easee hardware is covered by our 3 years* limited warranty.

*Some countries may have extended warranty.

Standards

Hereby, Easee AS declares that the radio equipment types Easee Equalizer (E02-EQP) and Easee Equalizer HAN (E02-EQ) are in compliance with Directive 2014/53/EU.

The full text of the EU Declaration of Conformity is available at the following internet address: **[easee.support](https://www.easee.com/support)**.

Maintenance

This product requires no maintenance. If it needs to be repaired, please contact your Easee supplier.

Storage

The product should be stored in a tempered, dry and well-ventilated area in order to preserve the packaging and its contents. Relative humidity should not exceed 80 % and no corrosive gas should be present. Storage or transportation environment should never exceed the limits provided in the technical specifications.

Disposal



A crossed-out dustbin symbol indicates that a product and its accessories must not be disposed of in household waste at the end of their lifecycle. For the return of old devices, free collection and acceptance points may be available in your vicinity. Observe local regulations for correct and environmentally friendly disposal. If the electronic equipment contains personal data, you are responsible for deleting it yourself before returning it. This can be done via Easee App or Installer App.

Returns and complaints

Contact your distributor or Easee Customer Support at **[easee.support](https://www.easee.com/support)** regarding the return and complaint of your product.

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June 2022 - Version 4.05
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