smart command™
Tevolve

Energy Monitor + Load Shedding

Installation and operating manual

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Overview

The system is designed to allow the safe use of Ducasa electric radiators when the power supply within the property is limited.

The Tevolve Energy Monitor consists of a clamp that fits around the main power cable of a property and a transmitter that sends real-time energy use to the Tevolve App.

By comparing the current energy use, to the maximum power available in the property, it is possible to calculate how much power can be used for your Ducasa heating system.

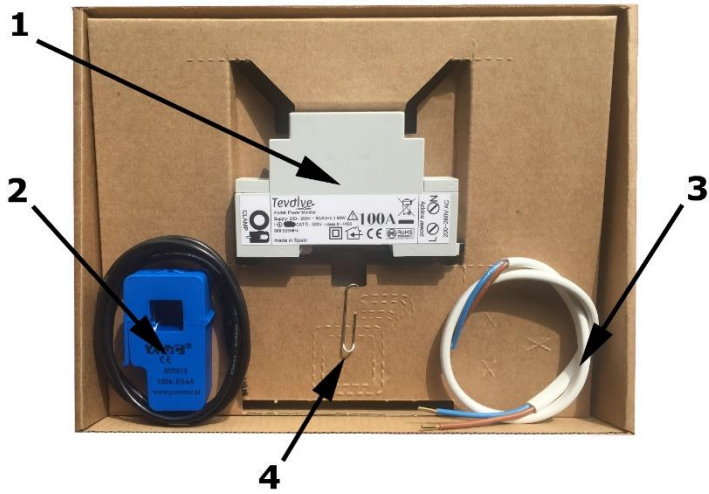
The Ducasa radiators within the home can be prioritised, so if there is insufficient power to run them all at once, the lowest priority radiator will be temporarily switched off. When more power becomes available, for example when the shower is switched off, or a room reaches the set temperature and a radiator switches off, another heater will switch on.

The prioritisation of radiators is based on their importance, which is set in the app, and how close the room temperature is to the set temperature. By design the system will allow the most important rooms to heat up first, whilst continuing to heat other areas of the property.

If required the App also allows the maximum power for the heating to be restricted, particularly useful if all radiators are connected to one circuit with insufficient capacity. The total power usage for the property can be recorded within the App.

Contents of Energy Monitor Kit

Before installing your energy monitor ensure you have everything listed below.



1) Energy monitor transmitter

2) Energy monitor clamp

3) Power cable

4) Paperclip (to activate pairing)

If any contents are missing, please contact your supplier.

Important Information

Keep these instructions safe so you can refer to them in the future.

A competent person or a qualified electrician must carry out the installation of the energy monitor, in accordance with the current UK regulations.

These installation instructions have been written as a guide for basic home installations. If you have a non-standard electrical installation or are unsure about the installation of the energy monitor, you **must** consult a qualified electrician.
Any warranty claim could be invalid if these requirements have not been met.

Children should not play with the energy monitor and it should be installed so that it is out of reach of children.

Ensure that the maximum amperage of the cable being measured by the energy clamp is no more than 100A.

Ensure that the power source for the energy monitor is rated at 200V – 260V AC.

You must be able to isolate the circuit powering the energy monitor by a 2 pole circuit breaker where the distance between the contacts is a minimum of 3mm.

All cables should be installed in such a way that they are secure and do not interfere with any other cables and cannot be pulled or caught.

The equipment must only be used in accordance with these instructions.

Installation

YOU MUST READ THESE INSTRUCTIONS BEFORE INSTALLING

The energy monitor can be mounted directly to the DIN rail within the consumer unit, or it can be wall mounted. DIN rail mounting must be carried out by a qualified electrician, whereas a competent person can install using the wall mounting method.

Method 1 Consumer Unit Installation

(This must be carried out by a qualified electrician)

IMPORTANT: Ensure that the power to the consumer unit is off before beginning the installation of the energy monitor.

a) Install the energy monitor transmitter on the DIN rail within the consumer unit (Fig ①a).

First open the tabs on the transmitter using a flat headed screwdriver to gently lift the retention pins (Fig ②a). Then slide the tabs until they are in the open position (Fig ②b). Once installed push the tabs until closed (Fig ②a).

b) Connect the power cable to the terminals of the energy monitor transmitter, Live (Brown) and Neutral (Blue). Then connect the other end of the power cable to the output of a circuit breaker (Fig ①b).

Please note: The circuit breaker that the energy monitor is connected to must be installed so that it is easy to access and should be marked clearly as the energy monitor's power source.

c) Insert the jack plug of the energy monitor clamp to the socket at the top of the energy monitor transmitter (Fig ①c).

d) Attach the clamp around the main power supply cable to the property (Fig ①d).

Please note: Clamp must be fully closed to function correctly.

e) Restore power to the consumer unit.

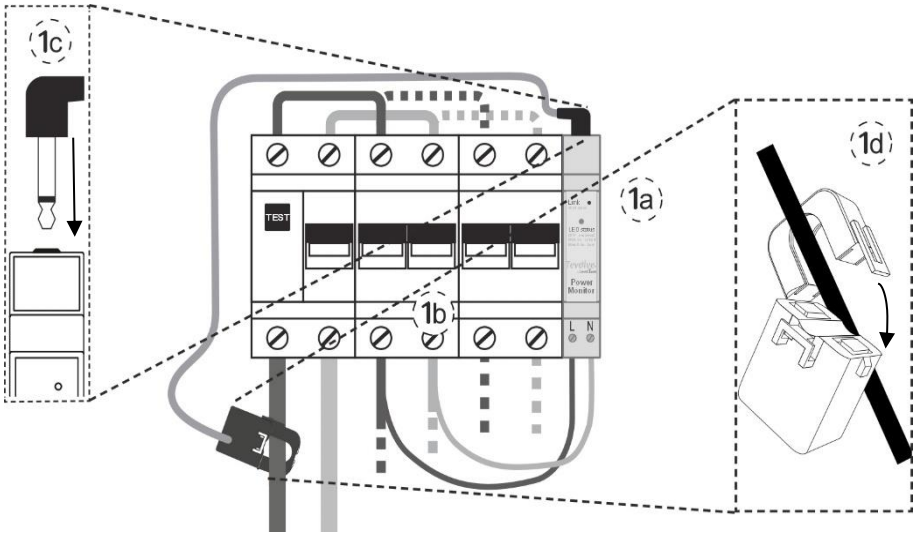


Fig ① Consumer Unit Installation

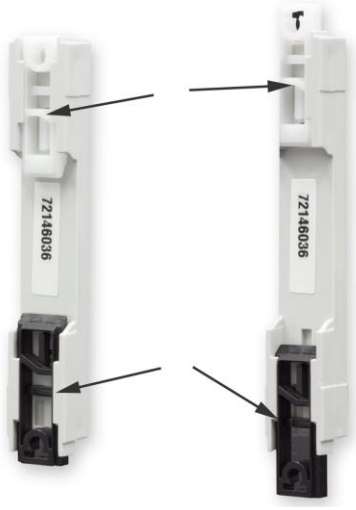


Fig ②a Fig ②b

Method 2 Wall Mounting Installation

(This can be installed by a competent person)

a) Choose a location near the main power cable of the property and close to a power socket.

Wall Mounted Installation

b) Remove the energy monitor mounting plate by gently pushing the white tab away from the body of the energy monitor.

c) Open the tabs on the mounting plate by using a flat headed screwdriver to gently lift the retention pins (Fig ③a). Then gently slide the retention pins until they are in the open position (Fig ③b).

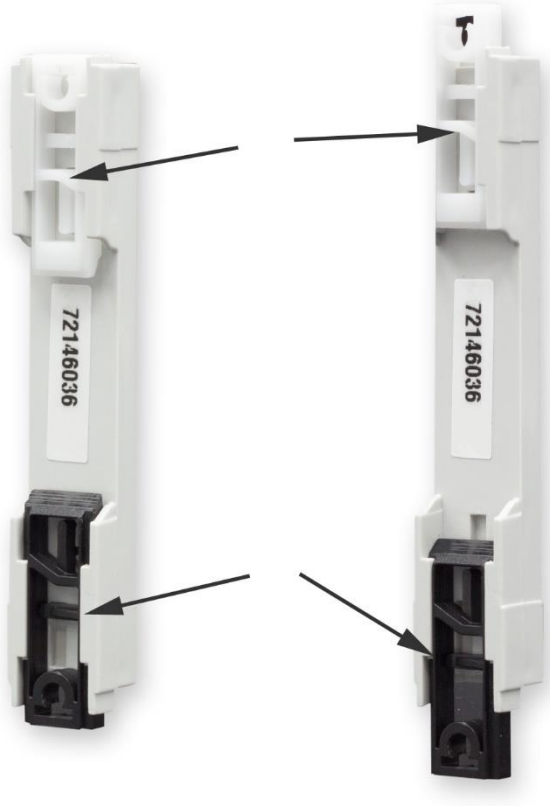


Fig ③a

Fig ③b

d) Mark and drill the position of the mounting holes on the wall, then attach the mounting plate to the wall using suitable screws and wall plugs if required (Fig ④a).

Please note: Don't overtighten as this could damage the bracket.

Next attach the energy monitor transmitter to the mounting plate by inserting the bottom of the transmitter first and then gently pushing the top until it clicks (Fig ④b).

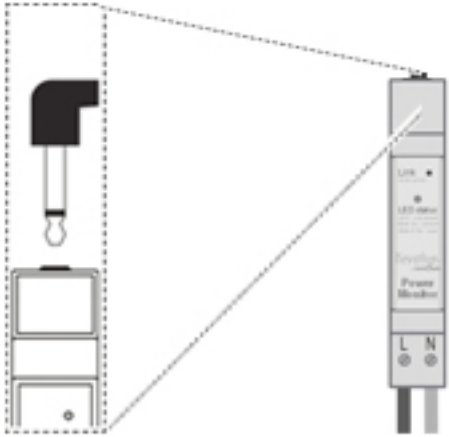
Fig ④a

Fig ④b

e) Connect the power cable to the terminals of the energy monitor transmitter, Live (Brown) and Neutral (Blue). Then fit a 3 pin plug with a 5A fuse to the other end of the power cable.

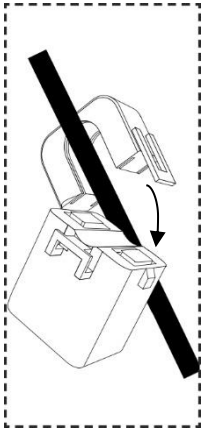
Please note: If a longer power cable is required, it must be of the same specification as the power cable supplied with the energy monitor. If you are unsure about what cable to use for the energy monitor, you must consult a qualified electrician.

f) Insert the jack plug of the energy monitor clamp to the socket at the top of the energy monitor transmitter.



g) Attach the clamp around the main power supply cable to the property.

Please note: Clamp must be fully closed to function correctly.



h) Put the 3 pin plug in the socket and switch on.

3-Phase Properties

If you wish to use the energy monitor and load shedding in a property with a 3-phase electrical supply, you will need an energy monitor and gateway for each phase.

Each energy monitor should be installed as per the installation section, ensuring that there is 1 clamp per phase.
The 3 gateways should be added to the App as if they were installed in 3 different properties (see App instructions), the gateways can then be named Phase-1, Phase-2 and Phase-3.
Next pair one energy monitor to each gateway, making sure the maximum wattage for the phase is set.

The radiators from each phase then need to be paired to the correct gateway and the priorities set in the same way as the standard single-phase installation.

Contact technical support for more information

Set Up

Pairing with the Smart Command Tevolve App

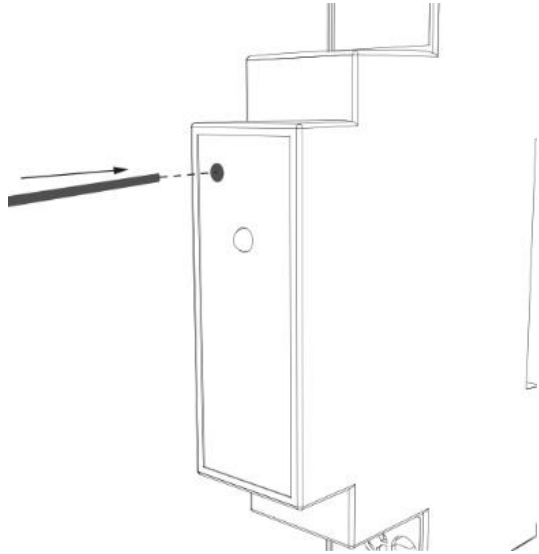
To pair the energy monitor to your App follow the steps below:

a) Open the App.

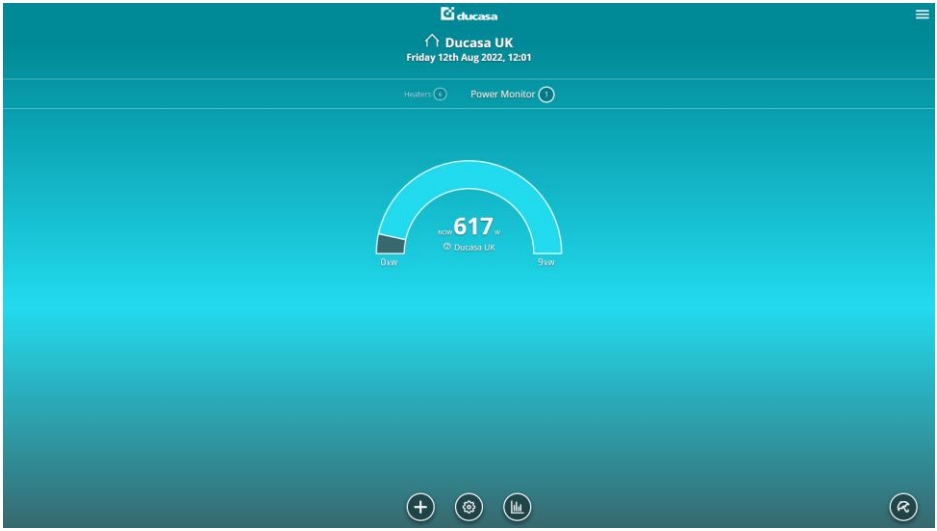
b) Press the “+” icon on the home screen.

c) Select the option for the “power monitor” and follow the on-screen instructions.

d) When prompted use the supplied paperclip to push the small button above the green LED on the energy monitor transmitter once.



e) Your energy monitor is now connected and will be visible on the App.



Setting up the Smart Command Tevolve App

Load Shedding

Setting the Total Power Available in the Property

To set the energy monitor power limit in watts follow the steps below:

a) Select the “power monitor” tab from the home screen.

b) Select the settings icon. 

c) Select the text box titled “MAXIMUM INSTALLED POWER IN WATTS” and input your wattage limit.

AMPS	WATTS
100	24000
80	19200
60	14400

d) Select Save.

Setting Heater Priorities

Heaters can be prioritised as high, medium or low.

The priority, together with the actual room temperature compared to the set temperature is used to determine which heaters are switched off should there be insufficient power available in the property i.e. shower, ev charger or AGA are switched on.

To do this:

a) Select the heater home screen, so all heaters are visible.

b) Select a heater by pressing the heater icon. 

c) Select the settings icon. 

d) Select the priority text box and set as high, medium, or low.

e) Select save.

f) Repeat steps a to e for every heater in your home.

If no priority is set, the factory default is medium.

The system will now monitor the total power available after taking into consideration power being used by showers, lights etc in your home and switch on the maximum number of heaters possible.

If other appliances are switched on or off within your home, this will be recognised by the App and the number of heaters switched on will be adjusted accordingly.

Viewing the Whole House Power Consumption

Select the “power monitor” tab on the home screen of the App to view the current power consumption shown in watts.

You can view historic records by selecting the graph icon. 
Within the historic data you can see a breakdown of usage for the current day, month or year.

If viewing in a web browser you can download the data as a .csv file.

Please note: The data shown will be for all power being used within the property, not just the heating system.

Technical

Amps to Watts conversion table

The chart below shows you the conversion from amps to watts based on 240v supply. The amp rating for your home can be identified by looking at the Amp rating on your electricity meter, or the main fuse of the property.
If you are unsure of the amp rating for your home consult with a qualified electrician.

AMPS	WATTS
100	24000
80	19200
60	14400

Specifications

Energy Monitor Transmitter

Energy monitor Dimensions: 17mm(w) x 90mm(h) x 58mm (d)
Power supply 200-260 V ~ 50 Hz
Consumption 0.90W
Communication frequency: 868Mhz
Measurement: CAT II
Operating temperature: 0 ºC to 60 ºC
Storage temperature -20 ºC to 85 ºC
Impact strength: IK06
Class 2

Energy Monitor Clamp

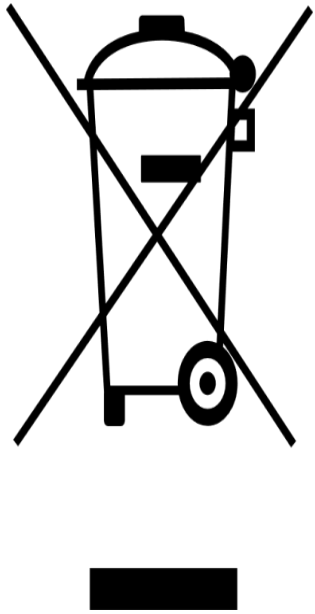
Clamp head dimensions: 35mm(w) x 57mm(h) x 21mm(d)
External current transformer with measurement range between 0 and 100A AC.
Connection by 3.5 mm jack with 1m of cable
Clamp fits cable with up to 13mm diameter
Margin of Error: <3%

NOTE: As a result of continual improvements, the design and specification of the monitor may differ slightly to the unit illustrated on the packaging.

Installation Notes

Processing electrical and electronic equipment at the end of their service life (applicable in the EU and in countries with selective waste collection systems).

This symbol on your equipment or its packaging indicates that this product cannot be treated as normal domestic waste, and instead it must be delivered to the corresponding group that collects electric and electronic equipment. By making sure that this product is disposed ofcorrectly, you are helping to prevent the negative consequences for the environment and human health thatcould be derived from handling this product incorrectly. Recycling materials helps to preserve natural resources. To receive detailed information about recycling this product, please, contact your Town Hall, nearest collection point or the distributor where you acquired the product.



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