

trio II

User manual









welcome

Welcome to your new **Trio II**. You've taken that all important first step towards complete control of your home energy use.

Your **Trio II** will help you manage and visualise your energy – helping you on the way to optimum efficiency and maximum cost savings.

In this document you'll find everything you need to quickly and simply set up and start using your display. You'll also find out more information about how the display works, how it can help you and how you can identify ways to save energy (and money).

Safety notice

-  Do not fit rechargeable batteries
-  Keep the **Trio II** away from water and other liquids. Clean only with a dry, soft cloth. If any components appear damaged or faulty, please contact your energy provider
-  For use in a dry, indoor environment only
-  It is not necessary for you to connect or disconnect any cabling or access your electricity meter
-  To protect the environment, these products and any batteries must be disposed of safely at the end of their life. Please take to a recycling centre for safe disposal
-  RoHS compliant
-  CE approved
-  Please only use the power supply provided

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your trio II monitor

What's in the Box?

Your **Trio II** package contains the following items:


- **Trio II** energy monitor
- Monitor stand
- Micro-USB power supply

Powering the Monitor

Your **Trio II** monitor can be powered using the supplied power supply or with 3 x AAA (R03, LR03) non-rechargeable batteries.

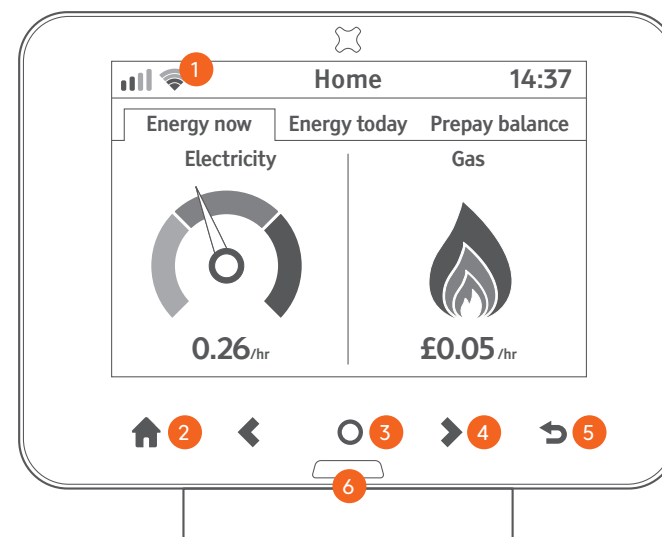
Do not use any other power supply with this monitor. The supplied power supply is not suitable for use with any other USB device.



It is not recommended to use batteries for a prolonged period.




To replace batteries, slide the stand downwards and then pull it away. Insert the batteries, as marked on the inside case. Re-attach the stand and the monitor will show the battery symbol  at the top of the screen.

Do not use rechargeable batteries in this monitor.

Energy display overview



- (1) The banner bar allows you to check the smart meter(s) signal strength, and WiFi signal strength (if fitted).
- (2) Press  to enter Menu whilst on **Home** screen. Press to return to **Home**.
- (3) Press  to select or to switch between options.

- (4) Use the   buttons to navigate around the screen and move between **Energy now**, **Energy today** and **Prepay balance** (if applicable) tabs.
- (5) Press  to return to the previous screen.
- (6) The LED at the bottom of the monitor shows your electricity usage (GREEN for low, AMBER for medium or RED for high).

what does it mean?

See what you're using

Your **Trio II** monitor makes your electricity and gas consumption visible, taking the guesswork out of understanding how much your home uses - both right now and historically.

Similarly, the flame shows you how much gas has been consumed within the past 30 minutes.

The electricity speedometer is updated every few seconds and the gas flame every 30 minutes.

What is a kWh?

Electrical and gas energy consumption is measured in **kWh** (kilowatt hours) - traditionally known as 'units'.

As items within the home consume energy during the day, the kWh total increases.

A **kW** (or kilowatt) is the rate at which energy is being consumed, so using 1.5kW for 1 hour would result in 1.5kWh of energy consumed.

To make it even easier to understand the hourly rates of consumption can show the rate of consumption in cost (£) and energy or power (kW).

For example, if the monitor says £0.15 for the rate of electricity consumption, then this means that if the rate remained the same it would cost 15p for the next hour.

Less is more

The lower the hourly rate of consumption, the less it will cost and the more you can save.

It is typical of a medium sized house to use around 250Wh or 4p per hour of electricity - so see how low you can get the speedometer.

1 Watt of electricity running 24 hours a day costs around £1.30 a year. At bed time, if your energy display is reading 200W, this is costing you appropriately £260 a year. If you could reduce it by 50W, you would save over £65.

The gas flame should be off when your boiler and cooker have not been used for 30 minutes.

How can I use less?

Look for appliances around the home that are not always being used and can be switched off.

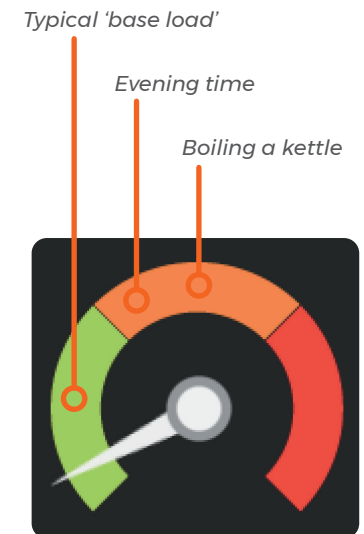
Often it's items such as a games console, sound system or even a clock radio in the spare room. Experiment with switching appliances off and see what affect that has on the speedometer.

Other ways to save include having less water in the kettle (only boil what you intend to use), lowering the temperature on the washing machine or raising the temperature of the freezer (-18C is cold enough).

What is normal?

Don't worry if now and again the usage is high - this can be normal.

The image below shows where the electricity speedometer will typically be when using certain appliances.*



**Depending on your smart meter, the maximum rate of consumption the dial can show can be adjusted. See 'Advanced' on page 24*

getting started



Meter connection

The screen will show **Connecting to smart meter...** for up to 5 minutes while the monitor connects to the smart meter(s) in your home.



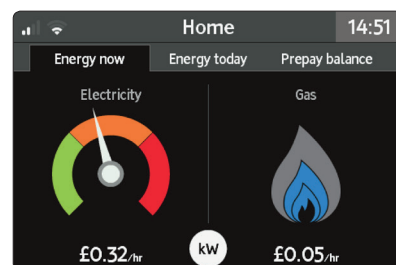
Should the screen show **No Network** then you will need to contact your energy provider to complete the installation.

If the screen shows **Lost Network**, then you may need to move the monitor closer to your smart meter(s) to re-establish the connection.

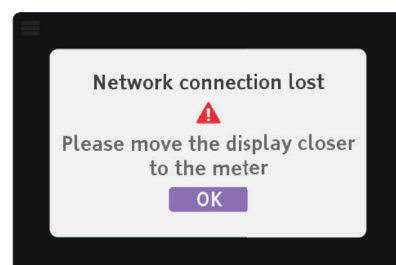
You can check the strength of the signal to the smart meter(s) by looking at the  and  icons in the top left hand corner of the screen.

Connection Established

Once your monitor has successfully established a connection to your smart meter(s), your **Trio II** will show the current consumption for electricity and recent gas usage.



If your monitor loses connection to the smart meter(s), then it will show the alert below. Try moving the **Trio II** closer to the smart meter(s) to re-connect.

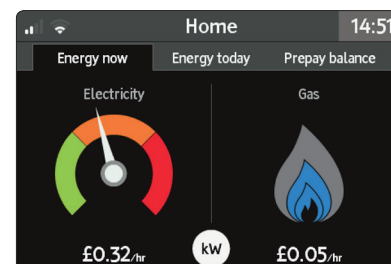



home screen

Overview



The **Home** screen is broken down into two or three tabs, depending on whether you have electricity or gas in credit or pre-payment mode.

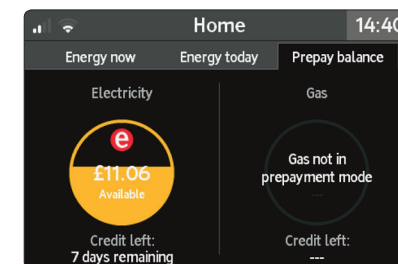
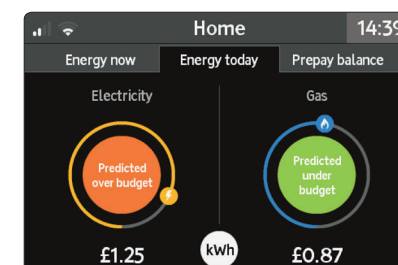
When your **Trio II** is powered on, it will automatically show the **Home** screen once connected to the smart meter(s).



You can also, at any time, press the  button return to the **Home** screen.

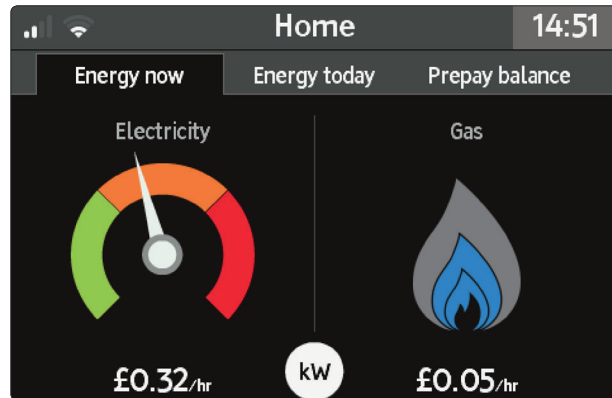
Your meter and WiFi (where applicable) signal status is shown in the top left of the screen.

Use the   buttons to switch between the **Energy now**, **Energy today** or **Prepay balance** (when in prepay mode) tabs.




When you next return to the **Home** screen from other screens, the previously selected tab will automatically be shown.


Energy Now



The **Energy now** screen is divided in half, with the left side being about **Electricity** consumption now and the right about **Gas** consumption.

Depending on your smart meter configuration, only the available energy types will be shown - the gas flame will not be shown if you do not have a gas smart meter, for example.

This is the default screen shown when the monitor has started up, when the  button has been pressed or when the monitor has not been used for a period of time.

Pressing the  button will change the values from being shown in cost as £/hr and power as kW.

Electricity (left)

The dial on the left (only available when you have an electricity smart meter) shows the current rate of energy use for your home.

As your home uses more or less energy, the dial will move up and down.

The dial is divided into three zones - green, amber and red. As the dial moves between the zones, the colour of the button on the top of the display will change to match.

This means you can quickly see if your home is using a little or a lot of electricity from a distance or at times when the screen has dimmed or turned off overnight.

The current rate of consumption can be shown in cost as **£/hr** (default) or energy as **kW**.

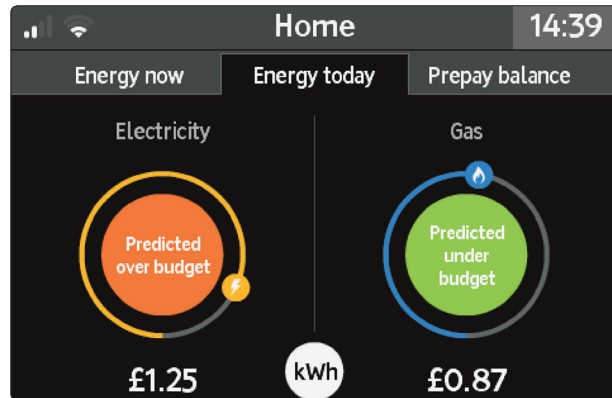
Gas (right)

The gas flame indicates the recent consumption rate of gas for the home (where available). The usage readings are taken every half an hour.

As more gas is consumed, the blue flame will increase in size.

Due to readings being taken every half an hour, the flame shows recent gas consumption and may not show when gas is no longer being consumed.

Energy Today



The **Energy today** screen shows the total consumption so far today for **Electricity** and **Gas**.

If you have set a budget for each fuel type (see **Settings**), then the monitor will predict - based on previous consumption for the same day of the week - if the total consumption today will be within budget. For example if today is Tuesday we look at the four previous Tuesdays and average out the usage and cost.

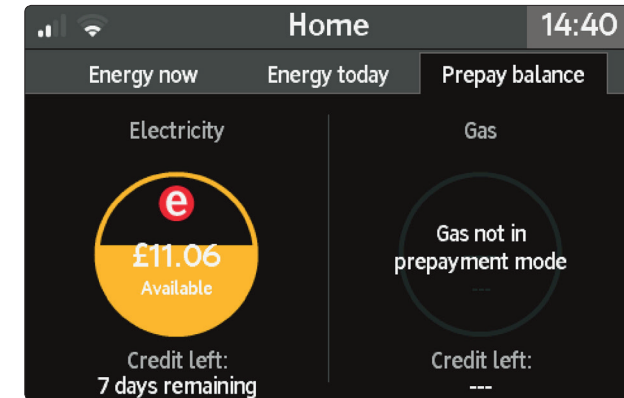
As energy is consumed, the small yellow dot (for electricity) and blue dot (for gas) will orbit around the

budget prediction to show how much of the daily budget has been consumed so far today, starting and ending at the bottom. The total cost shown includes any daily standing charges that form part of your tariff.

The budget prediction is shown in green if predicted to be under budget, amber if over budget is expected or red if the budget has already been consumed.

Press the **○** button to change between total cost and energy. The budget can be set within the **Settings > Budgets** menu.

Prepay Balance



This screen is only shown if one or more prepayment meters are installed.

The **Prepay balance** screen shows the current available credit for prepayment meters.

Electricity is on the left and **Gas** on the right.

The circle will indicate the credit available (from £20 down to £0) and whether **Emergency credit** is available or in use.

You can change the level at which you'll be notified on screen that your credit is running low under **Settings > Advanced > Low credit setting**.

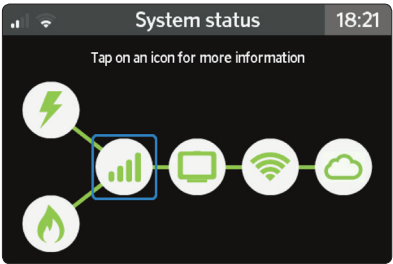
If the grey **e** symbol is shown, you can activate your emergency credit by pressing **⬆ > Prepay > Activate emergency credit**

A green **e** symbol is shown when you have activated emergency credit but it has not yet been used.

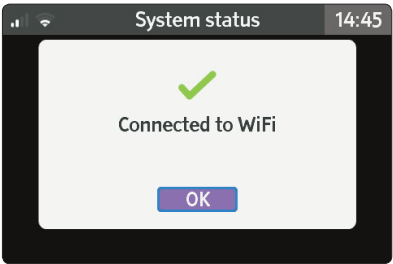
A red **e** symbol is shown when emergency credit is already in use.

System Status

This screen can be accessed via the **Menu**.



Use the ◀ ▶ buttons to select any of the icons and then ○ to view more information on the different parts of the smart metering system.



The icons show the following:

- ⚡ Status of the electricity meter (where fitted)
- 🔥 Status of the gas meter (where fitted)
- 📶 Signal status between the monitor and the smart meters - this is also shown in the top left of the screen

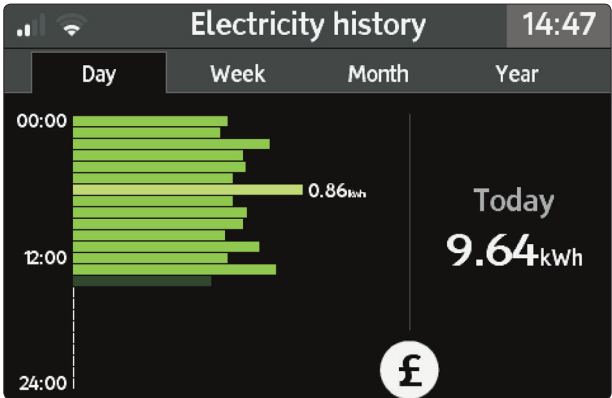
🖥 This monitor (always green)

If the optional WiFi module has been fitted, then the following will also be shown:

- 📶 Signal status to the local WiFi network - this is also shown in the top left of the screen
- ☁ Connection status to the cloud service

history screens

Electricity History



By selecting **Electricity usage** from the **Menu** screen, you can see your recent usage.

Day tab

The screen initially shows the current usage for today in energy (kWh), divided in to the 24 hours of the day.

Each bar represents a one hour period and is shown in green. The lightest green bar shows the highest hourly period for today and the darkest green bar shows the current hour or incomplete period.

The highest hourly period (lighter green) will always display the usage

for that hour, the figure is shown to the right of the bar (0.86kWh in the example shown above).

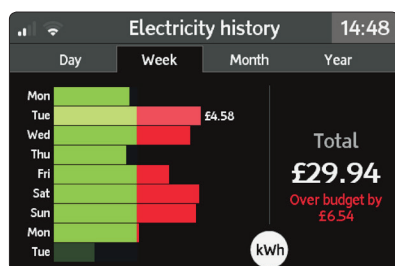
Your monitor learns your normal usage each day of the week, and this is shown by a dot for each hour.

Pressing the ○ button will change the values from being shown in cost as £/hr and energy as kWh.

The total for today is shown inclusive of any daily standing charge. This means at midnight the total may be greater than £0.00, even if no electricity has been used. The bars exclude any daily standing charge.

Week tab

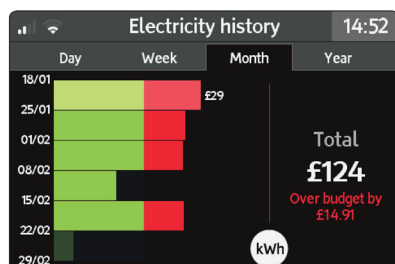
The week tab shows the electricity usage for this week and the previous 8 days. The bars include any daily standing charge.



If a budget has been set (**Settings > Budget**), then when in cost view (£) the days when the budget was exceeded are shown with the extra cost highlighted in red.

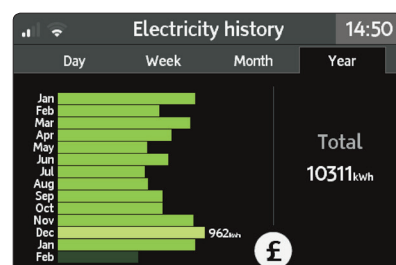
Month tab

This shows the previous weeks in the same way as the week tab. The bars include any daily standing charge.



Year tab

The final view is the Year tab which shows the previous 13 months of usage. As with the week and month tabs, you can see months that were above and below the budget. The bars include any daily standing charge.



Gas History

The same historical views are available for gas consumption.

Seasonal Adjustment

The budgets are seasonally adjusted to take in to account higher energy use during the winter months and less during the summer.

This can be disabled under **Settings > Budget**.

messages

Inbox

Your energy provider(s) may send you messages via your smart meter(s) and these will be shown in the Inbox.

When a new message is received you will also receive a notification on the screen and a sound. (The notifications can be changed under **Settings > Sound & Alerts**.)



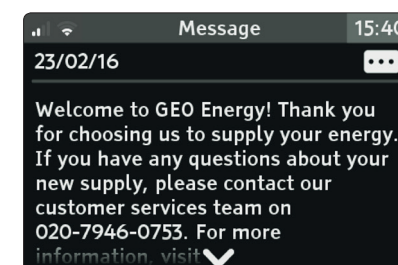
If a message has not yet been read, it will be shown in bold and have a marker to the left.

Use the **<>** buttons to select a message. Press the **O** button to view the message in full.

Reading a Message

Select **Open** from the options menu to read a message.

If the message is longer than the space available, use the **<>** buttons to view the rest of the message.



Some messages require confirmation or acceptance - use the **<>** buttons to switch between options and the **O** button to select.


Deleting Messages

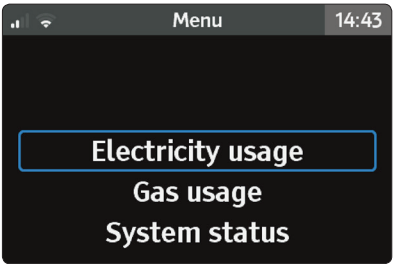
You can delete a message by selecting **Delete** from the options menu.




The delete option will appear greyed out if the message requires confirmation or acceptance.

menu

Overview

The main menu can be accessed by pressing the  button whilst on the home screen.

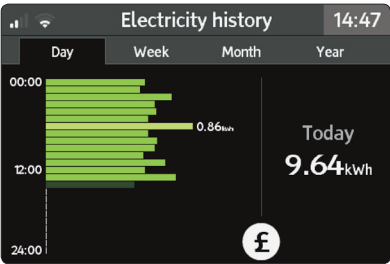





Use the   buttons to move through the menu items and then press  to access the menu item.

Press the  button to go back a level.

Electricity Usage

Explore recent electricity consumption in the **Electricity history** screen (when available).



Use the   buttons to move through the Day, Week, Month and Year tabs. Press  to change the values from being shown in cost as £/hr and energy as kWh.

(See “Settings” on page 21.)

Gas usage

Explore recent gas consumption in the **Gas history** screen (when available).

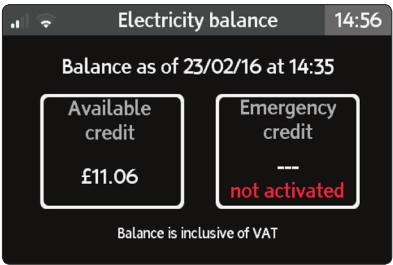
This works in the same way as electricity history.

(See “Settings” on page 21.)

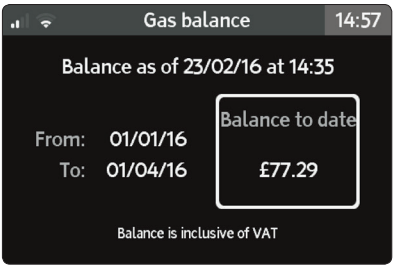
Meter Balance

Look at the current balance of energy used for electricity or gas since the last bill or to view your pre-payment balance.


Use the   buttons for **Electricity** or **Gas** and press  to select.



Meter balance for pre-payment

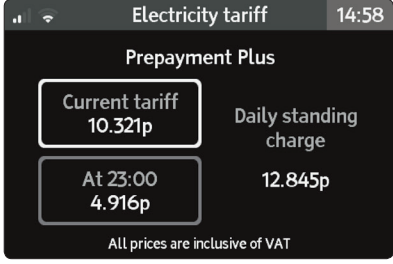


Meter balance for credit billing

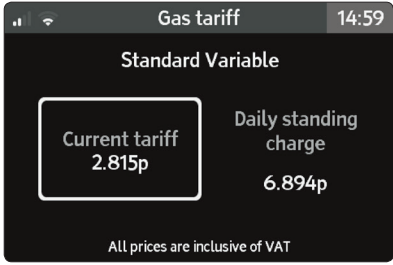
Use the  button to return to the **Menu** screen.

Prepay

Look at the current and next electricity and gas prices and any other daily charges that may apply.



Example tariff with variable charges



Example of standard rate tariff

The screen shows the current chargeable unit of electricity or gas with any daily charges that may apply, excluding any applied discounts. If you're on a variable tariff, then the upcoming rate is shown. If you do not have a standing charge the Trio will not display this part of the text.

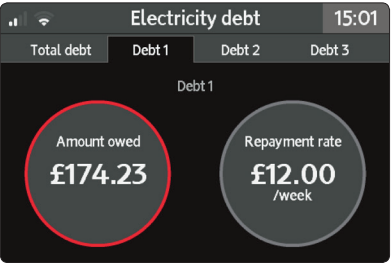
Debt

If you have a pre-payment meter and you have any outstanding debt with your energy provider, this will be shown with a breakdown of the charges and recovery rate. Only the appropriate debt screens are shown, so if you only have debt related to debt 2 tab, then only this tab will be shown along with the Total debt screen.

Total debt refers to the combined total of all debts owed.



Combined debt



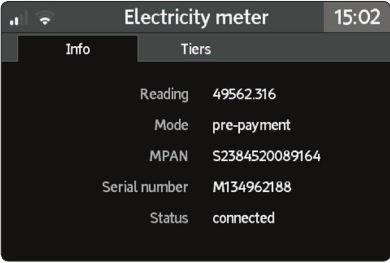
Detailed debt with recovery rate

Inbox

View messages that have been sent by your energy provider(s). See "Messages" on page 20.

Meters

View details of your electricity or gas meter and the current meter reading.



Support

Contact details for your energy provider(s), (which may include a telephone number and email address).

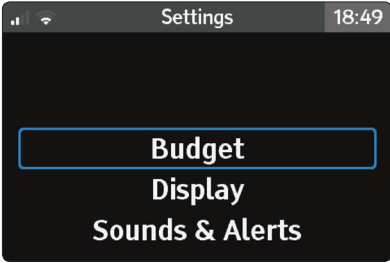
Settings

See "Settings" on page 21.

settings

Overview

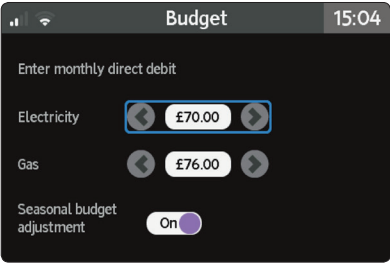
The **Settings** menu can be reached from the main Menu.



Use the ◀ ▶ buttons to change the setting selection and press ○ to view or change the selected setting.

Budget

Your **Trio II** monitor has been designed to help you track your energy usage and meet the budgets you set.



If you're paying by direct debit enter the amount you pay per month for each fuel.

For example, £65 total direct debit per month, electricity being £35 and gas £30, you should Enter £35 into electricity budget and £30 into gas.

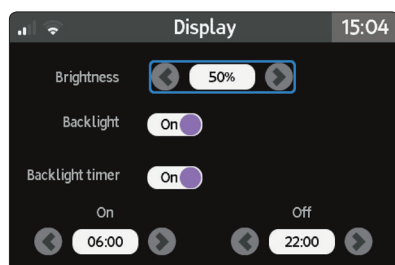
Seasonal adjustment

Your **Trio II** can adjust your budget to reflect seasonal variation in consumption.

It is typical to use less energy in the summer months compared to the winter months.

Display

Use this setting screen to change the display settings for your monitor.



Brightness

Set the brightness of the screen. This affects all screens. Adjust the brightness by pressing the ◀ or ▶ to change.

Backlight

When set to **ON**, the monitor screen will be on at all times (unless backlight timer is on). When **OFF**, press any button to wake after five minutes of inactivity.

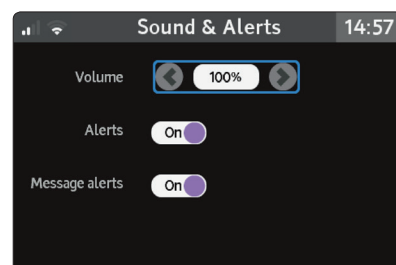
Backlight timer

When set to **ON**, the screen will be on between the times selected.

When off, press any button to wake.

Sound & Alerts

Change the volume of warning tones and when you hear them.



Volume

This sets the volume of all sounds. Adjust the volume by pressing the ◀ or ▶ to change.

Alerts

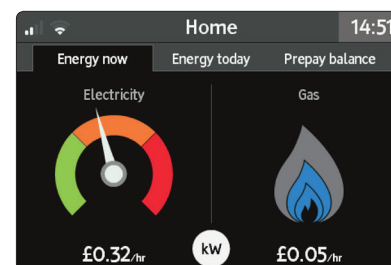
Set to **ON** if you wish to receive audible notifications of new alerts.

Message alerts

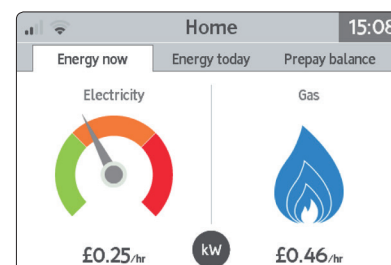
Set to **ON** if you wish to receive audible notification for new messages.

Colour theme

Select between **Dark** and **Light** colour themes



Default **Dark** theme



Light theme

WiFi network

See 'Connect to WiFi Network' section for setting up and managing the WiFi network (if the WiFi module fitted).

Online setup

Please see See "Online setup" on page 25. for setting up online services (if module fitted).

Advanced

The advanced features include:

Device info

Information including the serial number and software version of your **Trio II** monitor. You may need this information when contacting your energy provider.

Usage level

The electricity dial can be scaled to match the typical usage levels of your home.

Select from one of the following options to set the maximum reading the dial can show:

- **Low** = 12kW
- **Medium** (default) = 18kW
- **High** = 24kW

This option is only available when you have an electricity smart meter and the usage level is not provided by the meter.

The dial thresholds between green to orange, and orange to red are changed as below in the table.

Usage level setting	Green/orange threshold	Orange/red threshold
Low	1.2kW	6.0kW
Medium	1.9kW	9.3kW
High	2.5kW	11.5kW

Low credit setting

Use the buttons to set the minimum available credit before you receive an on-screen notification.

This is only shown if you have a pre-payment meter.

Reset device

Use this screen to remove all your user settings including budgets, alerts and credit warning level, WiFi settings and all consumption.

Engineer

This screen is for installation engineer use only.

online setup

Introduction

The **Trio II** may be enabled to connect to remote cloud services using an inbuilt WiFi module.

WiFi module

If your **Trio II** has been supplied with the optional WiFi module, then please refer to the *Online Setup Guide* that accompanies this user manual.

To install the module, make sure the display is disconnected from the power supply and any batteries are removed, then remove the panel from the rear of the display and insert the WiFi module



Connect to WiFi network

Your energy display will need to be connected to a local WiFi network to enable cloud services.

Access WiFi settings screen

- Press the **Home** button whilst on the **Home** screen
- Scroll down to **Settings** and press **Settings**
- Scroll down to **WiFi Network** and press **WiFi Network**
- Press **WiFi** to turn on the WiFi module
- Select **Set up network**

Connection methods

There are three different ways to connect to a local WiFi access point:

- Scan for the network and connect manually (preferred method)
- Use another WiFi device - such as smartphone or laptop - and connect to the monitor
- Use the WPS button on your broadband router

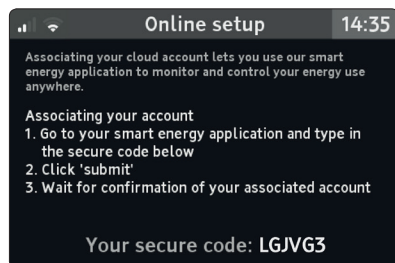
Follow the on-screen instructions on connecting using one of the methods above.

App & Account registration

Your energy provider may provide you with a smart phone app or other online service to view your energy usage remotely.

During the registration of the energy app, you will be required to enter a **Secure code**.

Select **Online setup** from the **Settings** menu and the screen will display a new secure code.



A secure code is received from the cloud service each time you access this screen and shown in the bottom right.


Read the instructions on the screen and within your energy app to complete the process.

troubleshooting

FAQs

My monitor is not showing any readings

This could be because your display is out of range and not communicating with the smart meter.

You can check the signal strength by pressing the  button once whilst on the home screen then selecting **System status** from the menu.

If the display cannot communicate with the smart meter, it will show **Connecting to smart meter ...** when the monitor is turned on.

If the display shows **Lost network** or **Not commissioned**, then contact your energy provider.

Why has my monitor's screen turned off?

Your monitor may be off for a number of reasons:

Under **Settings > Display**, if you have selected the **Backlight** to be off or the **Backlight timer** setting to be on, then the screen will switch off when you are not using it (or it is scheduled to be off). Press any button and the screen should come back on.

See 'Display' on page 22 for more information on the **Display** settings.

If the monitor is being powered by batteries, then it may be that they have run flat. Either connect your monitor using the supplied power adapter or replace the batteries.

The monitor will run for approximately 4 hours whilst on batteries allowing you to carry it around the home to learn how different appliances work. It is not intended for prolonged use.

status codes

You monitor may show an status code when there is a problem.

Code(s)	Status	Resolution
1 ... 3	Monitor problem	Your monitor has developed a fault. Please remove and re-insert the power supply or contact your utility provider.
20, 21, 22, 26	Connection error	Monitor unable to communicate with the meter networks. Try moving the monitor closer to the smart meter(s) or contact your utility provider.
28	Electricity meter problem	Monitor is connected to the electricity meter, but not receiving all data. If the problem persists, contact your utility provider.
29	Gas meter problem	Monitor is connected to the electricity meter, but not receiving all data. If the problem persists, contact your utility provider.
30	WiFi module not found	WiFi module problem (if fitted). Please remove and re-insert the module.
31 ... 34	WiFi problem	WiFi module unable to communicate properly. Please check your local WiFi network and check your monitor's settings. (See Settings > WiFi network)
23, 24, 25	Meter network data problem	Monitor is connected to the meter network, but not receiving all data. If the problem persists, contact your utility provider.
40-44	Cloud problem	Monitor is waiting for cloud data service, please wait.

See **Menu > Support** for contact details.

technical specifications

Trio II Monitor

This product is intended to be used indoors in a domestic or small office environment. It is not suitable for outdoor use.

Model	PCK-TR-004
Rated voltage (display)	5Vdc and / or 3xAAA (R03, LR03) non-recharchable batteries.
Rated voltage (power supply)	230Vac, 50Hz
Input power	0.5W
Operating temperature	0 to 40°C
Operating humidity range	85% non-condensing

Manufacturer

Designed and manufactured by:

Green Energy Options Ltd.
3 St. Mary's Court, Main Street,
Hardwick, Cambridge
CB23 7QS, UK

Hereby, Green Energy Options Ltd. (UK) declares that the radio equipment enclosed (identified by the product type numbers on the product label) are in compliance with Directive 2014/53/EU.

The full text of the EU declaration of conformity is available online at <http://www.geotogether.com/EUDoC>.

www.geotogether.com

For any help or support
please contact your supplier

