NETTHINGS®

ENERGY MANAGER SPECIFICATIONS & INSTALLATION GUIDE

Energy Manager for the home is a sophisticated but low-cost, mains powered integrated energy, heat and water monitoring package that saves money by helping you reduce your energy consumption.

It is easy to install in new homes or retrofit into existing properties. The heart of the system is the NetThings measurement unit, which is normally installed close to the home consumer unit, with a mains power supply. The Unit can be wired with up to 6 sensors for in-coming mains electricity, gas and water supplies or to monitor the electrical output from solar PV systems, or the heat /cooling output from solar thermal systems or district heating schemes. CT (current transducer) clips are used for the electricity supplies, pulse connectors for the gas, water meters and heat meters, which are all wired in directly to NetThings.

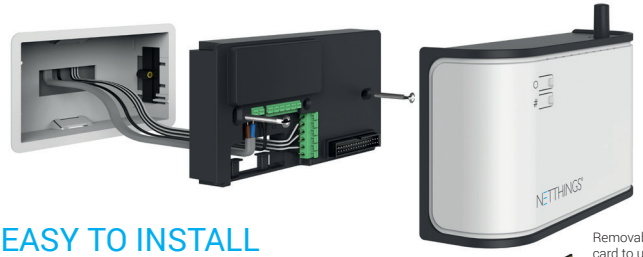
On-going energy consumption and costs are stored continually within the NetThings unit and can also be downloaded to a removable microSD card (not supplied). Built-in WiFi allows Energy Manager to communicate real-time monetary values of your energy use directly with a local display in the home without requiring an existing broadband internet connection. During the summer of 2015 NetThings will be launching their cloud service, where data will be viewable from anywhere in the world via an internet browser.

The NetThings monitor and 5" local display screen qualify for 2 credits under the Code for Sustainable Homes.

EFFORTLESS CONTROL

A UNIQUE real-time energy monitoring system for all utility types including heat and water that is worth two code credits under the Code for Sustainable Homes.

THE CODE FOR SUSTAINABLE HOMES



Removable microSD card to upgrade software and export data (not supplied).

EASY TO INSTALL

Installation is fast and simple

Measurement units and smart displays are fitted over standard double electrical boxes.

Simple push-fit spring connectors internally for ease of cable installation.

HOW TO PAIR THE WIFI SMART DISPLAY TO NETTHINGS MEASUREMENT UNIT AND GET STARTED

1. Power up the Energy Manager and wait till the LEDs start flashing.
2. Power up the display and use a paperclip inserted into the top of the frame to turn on the display.
3. Select the correct Energy Manager WiFi from the list displayed and pair the display to this.
4. The MAC address and password to pair devices is supplied in the packaging.
5. Check signal strength and press 'associate'.
6. Display will now show the energy screens.

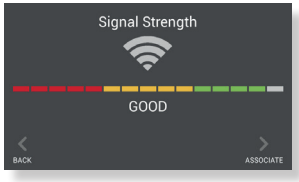
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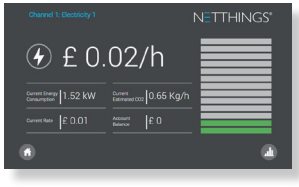
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ELECTRICIAN

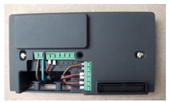
PLEASE READ THESE INSTRUCTIONS IMMEDIATELY ON RECEIPT OF THIS PRODUCT AND CARRY OUT STEPS 1 TO 3 AS SOON AS POSSIBLE.

MOUNTING OPTIONS

The Energy Manager can be fitted in either of the following options:



Direct Mounting
(Cable restraints must be used)



Recessed Box

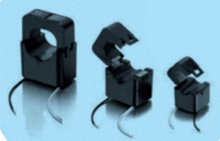


Surface Box

CURRENT TRANSFORMERS

Three sizes are available most commonly supplied is CT16. If monitoring 3 phase connect one CT to each phase and connect to terminals 1-2, 3-4 & 5-6. CTs come with cable attached - **polarity isn't important.**

Can Connect up to 3 x CTs



IMPORTANT ALL WIRING SHOULD BE CARRIED OUT BY A COMPETENT INSTALLER OR ELECTRICIAN.

QUALIFIED TO WORK WITH MAINS ELECTRICITY AND BE IN ACCORDANCE WITH IEE & BUILDING REGULATIONS AND IN SOME CASES, NOTIFIABLE TO BUILDING CONTROL.

DO NOT CARRY OUT THIS INSTALLATION IF UNDER THE INFLUENCE OF ALCOHOL OR DRUGS.

CAN CONNECT UP TO 3 PULSE O/P UTILITY METERS.

PULSE INPUTS ARE AT LOW VOLTAGE.

If you have any questions about installing this product please contact NetThings or **visit www.netthings.co.uk/support**

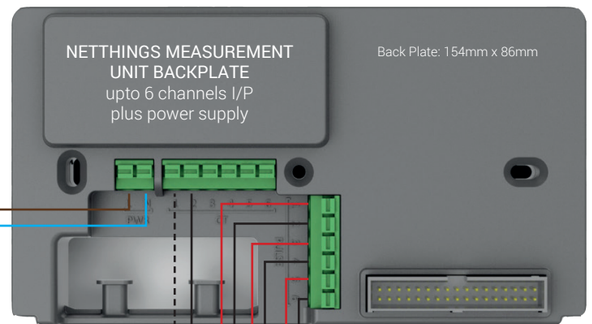
8 STEPS TO A SUCCESSFUL INSTALLATION

1. Please choose a suitable location for the display and Energy Manager.*
2. Ensure that a 13A power supply is available at these chosen locations.
3. If your chosen location for the Energy Manager is not adjacent to the services you require monitored then run cabling between these during your first fix installation.
4. Fix Energy Manager and display in their final position and make connections.

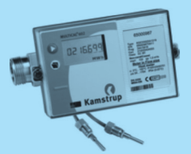
WARNING - Electric Shock Hazard! Make all cable connections to device before powering up the unit. Always power-down before disconnecting cables.

Fused 3A Spur





Heat Meters



Water Meters



Gas Meters



Cable specification: Beldon 9501 or equivalent.

5. Make connections to the service you require to be monitored.**
6. Pair the display to the Energy manager.
7. Use energy on systems that you have connected to and check that this registers on your display.
8. Leave information with the end user for them to gain maximum usage of this product.

*As this product communicates with WiFi frequencies the signal from the Energy Manager should easily reach the display within modern houses but solid walls and obstructions can affect this. If you are in doubt about the effectiveness of the signal strength please check before installation. ** Additional equipment may be needed to connect to other manufacturer's products. Please contact NetThings if in doubt.

Display screen is fitted to a double recessed box.
Tablet in mount: 173mm x 99mm x 14mm





Fused 3A Spur



Outer cover clips over the backplate.

ELECTRIC METERS

If monitoring solar PV systems then fit an import export meter and connect Energy Manager via pulse cables. Polarity of connection is important here as it is an electronically generated pulse. Observe pulse polarity when connecting.

HEAT METERS

Heat meters require to be pulse enabled and with a low pulse setting i.e. 1 pulse per watt hour of energy.



Electric Meters

WATER METERS

Water meters need to be specified as pulse enabled. Polarity of pulse is not critical as pulses are mechanically generated.

GAS METERS

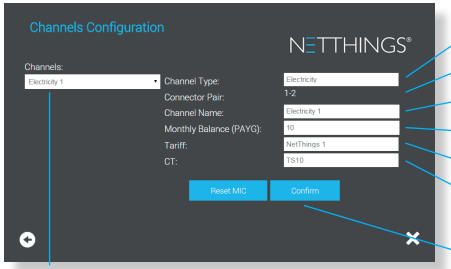
Ensure gas meters are pulse enabled and fitted with the appropriate pulse block. As there are several different types please ensure that the correct pulse block is ordered.

If unsure check our support website for further information. www.netthings.co.uk/support

CHANGING YOUR **CHANNEL** SETTINGS

Any connected utilities need to be connected to a 'Turned On' channel. Here is a quick walk through a channel set up.

Navigate to this screen via NETTHINGS, CONFIGURATION then CHANNELS



Select the channel that is to be configured.

Change the channel type so that the icon is correct.

The channel name can be changed to represent what is being monitored.

Indicate what the channel usage will be.

The Monthly balance can be left at zero.

Select the tariff that suits the utility being monitored.

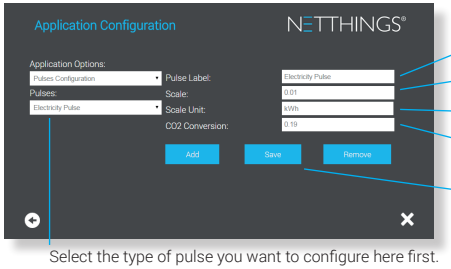
If on channels 1 to 3 select the correct CT (default is CT16) If on pulse channels 4 to 6 select pulse value.

Save your changes.

CHANGING YOUR **PULSE** SETTINGS

When monitoring utilities via pulse you will have to adjust the scale to match the pulse of the connected equipment.

Navigate to this screen via **NETTHINGS**, **CONFIGURATION** then **SETTINGS** and select **PULSE CONFIGURATION** in **APPLICATION OPTIONS**



Select the type of pulse you want to configure here first.

This field doesn't need changed.

Input the correct pulse value here.

Change this to match the correct unit value of energy.

This field doesn't need changed.

Save your changes.

IMPORTANT

Whilst NetThings takes all reasonably practical steps to design and manufacture its products to comply with the requirements of the Health and Safety at Work Act 1974, all products must be properly used and purchasers are reminded that their obligations under the Act are to ensure that the installation and operation of such products at a place of work should be safe and without risk to them. Do not place the product where it may be affected by dust, moisture, adverse temperature, radio interference or be subject to physical damage.

Do not insert any objects into the Energy Manager or Display.

CAUTION Do not connect or disconnect CTs with the device powered up as terminals will be at mains potential!

This information is for reference only. Accuracy may vary depending on the type of connection and wiring system used.

CARE AND MAINTENANCE: The NetThings Energy Manager or Display require no regular maintenance. Do not spray with water or any cleaning products.

WHAT'S IN THE BOX?

1 x NT Measurement Unit, 1 x 5" Table display, 1 x aluminium tamper free wall mount, 1 x display power supply, 1 x CT 16mm and 2 x pulse cable free end 10m plus User and Installation guide.

PRODUCT DATA

Name of Manufacturer	NetThings Limited
Unique reference number (model number)	NT01:00:00
Purpose of product (Energy Manager)	Monitoring building energy consumption
Dimensions	165mm x 95mm x 52mm
Operating temperature range	0°C to 40°C
Enclosure protection	IP 20
Level of protection from electric shock	Double insulation
Case material V0 rating	Rated fire retardant
Supply Voltage	220-240V AC
Max power in watts	7W
Power Supply Frequency Hz	50-60 Hz
WiFi IEE 802.11 Frequency Band	EEE 802.11 BG 2.4 GHz
Type of Memory & Data Storage Capacity	Internal-4Gb storage greater than 2 years External-microSD card slot for downloading data
Power supply for display	12W Switching Power Supply: I/P 90-264VAC unterminated wire for spur connection. O/P USB Connection DC 5V. 82.5mm x 40mm x 29mm
Number of monitored channels	Up to 6: Max of 3 x Electricity via CTs & 3 x any pulse enabled meter
CT Current Transformer related measurements (16mm/24mm)	Kilowatt and kilowatt/hour kW and kW/h
Real-time, instantaneous Measurements	Energy units consumed £/h (gas, water, electricity, heat, cooling, solar power)
Continued Utility Measurements	Historical total energy consumed in currency and kW/h. Carbon CO2
WiFi Security	WiFi Protected Access (WPA) security protocol and certification program

DECLARATION OF CONFORMITY This product conforms to: ETSI EN 301 489-1 V1.4.1 (2002-08) IEC 61643, 61326, 61010, 60529. NetThings Limited, 14 New Mart Road, Edinburgh EH14 1RL
NetThings policy is one of continuous improvement and development. The right to change specification and appearance without prior notice is reserved. Document Number 200SM035 Rev.1.2.

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