efergy®

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4000228

Industry Canada / Industrie Canada

Canada

FC

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THIS DEVICE COMPLIES WITH PART 15 OF THE FCC RULES AND INDUSTRY CANADA LICENSE-EXEMPT RSS STANDARD(S). 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.

*All values shown in this manual are only examples. Actual figures will vary depending on your consumption.

NOTE: THE GRANTEE IS NOT RESPONSIBLE FOR ANY CHANGES OR MODIFICATIONS NOT EXPRESSLY APPROVED BY THE PARTY RESPONSIBLE FOR COMPLIANCE. SUCH MODIFICATIONS COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.

INSTRUCTION MANUAL

CONTENTS

INTRODUCTION

Energy metering and monitoring are at the heart of energy management, understanding when and where your energy is consumed is key to saving money.

The **elite** wireless electricity monitor shows the amount of energy that a household is consuming at the time the display is read. The display can also give the user a reading showing usage in financial terms. You can walk around the home with your monitor device, switching appliances on and off, to see the difference that each one makes. With a few small changes in your consumption behaviour the **elite** can help you reduce your energy costs.

Ask Us
If you have any questions about using your **efergy** monitor or if you'd like further advice on monitoring electricity at home, please feel free to contact us, or visit the website for up to date information, downloads and frequently asked questions.

Email your questions to;
support@energymonitoring.ca

We aim to answer all your emails within 48 hours

Call us on:
613 395-3000

www.efergycanada.ca for Canada

IMPORTANT SAFETY INFORMATION

IT IS IMPORTANT THAT YOU OBSERVE SOME SIMPLE PRECAUTIONS BEFORE USING THIS PRODUCT. INCORRECT USE OR POOR SAFETY PRACTISES CAN RESULT IN INJURY OR FATALITY. WHENEVER POSSIBLE, TURN OFF THE MAIN BREAKER OUTSIDE YOUR HOME FEEDING POWER TO YOUR ELECTRICITY PANEL.

When installing the **efergy** monitor you should find that everything is relatively straight forward. However, there are a number of health and safety issues which you need to be aware of:

- Some electricity meters in Canada have an integrated flashing LED on the front which indicates the rate of kWh. The infrared sensor counts the number of impulses and this information is sent to the display.

- Please read and act upon the important information on the following pages. Remember the device is not intrusive and does not require re-wiring; **no wires or cables need to be cut, removed or modified to perform this installation.**

- **efergy** energy monitoring systems are considered 'plug and play' devices that meet all regulatory requirements for installation in Canada and the United States.

- The user does not need to remove the sensor throughout the working life of the unit. Battery changes are performed on the transmitter and the display. There are no batteries to change in the sensor.

- Millions of these systems have been installed worldwide without incident but please follow the safe working practises as outlined during installation.

EFERGY ASSUMES NO RESPONSIBILITY FOR CLAIMS BROUGHT ABOUT BY IMPROPER OR CARELESS INSTALLATION OR HANDLING OF THIS PRODUCT.

IN THE BOX

Your **efergy elite IR** pack contains the following elements:

1 x **elite IR** Wireless Energy Monitor
1 x Energy Monitoring Transmitter
6 x lithium AA - 1.5V batteries
1 x IR Sensor
1 x Sensor alignment template
1 x peel and stick velcro NEMA3R enclosure*
2 x peel and stick cable supports*

*Packaged separately

Elite IR Monitor

You will need to fit the sensor to the IR output on your electricity meter. You can use the alignment template to help you do this. Any power you use in your home will be recorded through the infra-red port the sensor is mounted over.
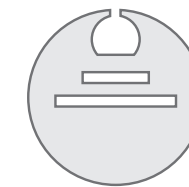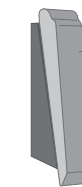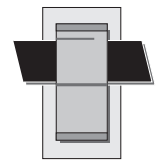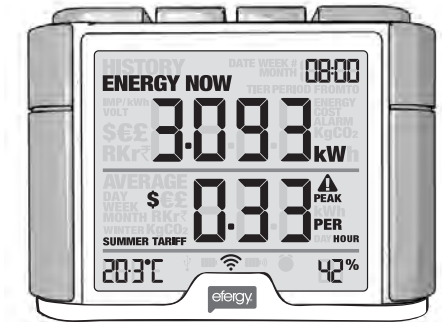

| Transmitter | Batteries | IR Sensor | Alignment template | NEMA3R enclosure | Cable supports |

HARDWARE INSTALLATION

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PRIOR TO INSTALLATION

The **efergy elite IR** is installed by attaching the IR sensor to the infra-red port on your electricity meter. Make sure that the safety information on pages 3 & 4 is read before installation.

Locate Your Utility Meter
You can normally find your utility meter complete with IR port outside on the other side of the wall from your electrical panel. You may also follow the conduit from your electrical panel. As utility meters tend to be found outside, thus exposed to a range of weather conditions, a waterproof NEMA3R enclosure is supplied to efergy elite IR customers to protect the energy monitoring transmitter from potential damage. The IR sensor meets waterproofing standards without the need for an enclosure or any other protective measure.

Locating Your IR meter output
Meters generally have the IR output located on the front panel. The output will have digits and imp/kWh mentioned below it. e.g. 1000 imp/kWh. Write this number down in-case this area gets hidden from view after installing the IR sensor. You may need to enter it into the monitor settings later on (the default setting for imp/kWh is set at 1000 in the monitor. If your output reading on the meter is different to this figure you will have to manually adjust the setting by following our guide within 'Monitor Settings').

Modern office blocks and apartments may have safety panels to protect the meter from being tampered with. It is recommended that professional electricians be contacted where this is the case. You can use the sensor alignment template to help you fix the sensor in place (see the next page for more infomation).

INSTALLING THE IR SENSOR & TRANSMITTER

Please note that this installation procedure was based on installing the IR sensor and transmitter on a Sensus Smart Meter (model iSA2). You may have to adapt this procedure to install the sensor on a different meter model.

Step 1
Locate your utility meter and wipe down the face of it so it is clean and dry. Place the sensor aligment template on the face of the meter and align the bottom edge of the digital display and the bottom slot of the template with the bottom edge of the Flex Net label. If you wish, use some masking tape to hold the template in place.

Step 2
Peel the backing off the IR sensor and press the sensor firmly in place making certain that the flat edge of the sensor is aligned with the flat edge of the template. Simply remove the template from the meter leaving the IR sensor perfectly aligned with the IR optical output on the meter.

Step 3
Peel and stick the anchor clips onto the meter body as shown and then tuck the IR data cable in behind the meter ring to the desired location.

HARDWARE INSTALLATION

Step 4
Peel the backing from the side of the waterproof velcro pad fixed to the NEM3R enclosure and press it against the meter base as shown. In the event that there is an old compact round meter base in place the enclosure may be stuck to the building. As outlined, our new enclosure may also be secured to any conduit using tie wraps through the slots on the enclosure mounting tabs.

Step 5
Insert the jack on the end of the sensor wire into input socket on the transmitter. The transmitter will send the information wirelessly to the display. Place the transmitter into the enclosure and carefully stow any excess cable beside the transmitter.

INSERTING, REPLACING AND DISPOSING BATTERIES

Install 3 AA batteries into the back of the **elite** display as shown in Fig. 1. Also insert 3 AA batteries into the back of the transmitter as shown in Fig. 2.

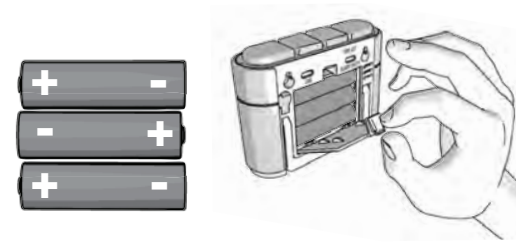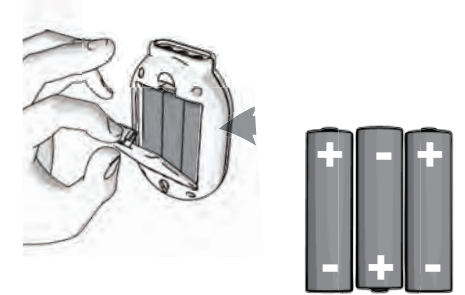Fig. 1   Fig 2.

Tips for Proper Battery Care and Use

- Use the correct size and type of battery specified by the manufacturer of your device.

- Make sure that you insert batteries into your device properly, with the + (plus) and – (minus) terminals aligned correctly.

- Extreme temperatures reduce battery performance. Avoid putting battery-powered devices in very warm places.

- Do not attempt to recharge a battery unless the battery specifically is marked "rechargeable."

HARDWARE INSTALLATION

LINKING AND TESTING THE TRANSMITTER AND MONITOR

Step 1
Press the **link** button on the back of the elite monitor and hold for 2 seconds. The transmission symbol will flash for one minute or until the transmitter and monitor are linked.

Step 2
While the transmission symbol in the display flashes, push the **link** button on the transmitter and wait until the transmission symbol becomes solid.

Transmission
Signal Symbol

Transmitter link
button

Dashes indicate
signals not linked

Monitor link
button

Step 3
The energy monitoring transmitter has an in-built test mode that can be used to check whether or not the system is accurately picking up data. If you want to quit test mode, just press the link button once. The test mode will exit automatically after 3 minutes:

1. Turn on an appliance in your home (preferably around 500W - 1kW).
2. Make sure you have followed the steps on the previous pages to setup you efergy device.
3. Press & hold the button of energy transmitter for at least 6 seconds to enter test mode.
4. The LED on the front of the transmitter will blink at a slow, even pace to signify that the transmitter is in test mode.
5. The LED will blink at a rapid, even speed for 3 seconds everytime a pulse is detected by the sensor, signifying that data is being read. If the load is above 500W a pulse should be detected within the first 5 seconds after entering test mode. If it is over 1kW the LED may continually blink at a rapid pace as the higher the load the closer together the signals are sent.
6. You will be able to see new energy reading on the monitor every 30 seconds.
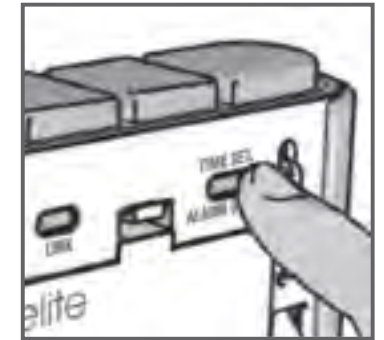
MONITOR SETUP

SETTING THE TIME AND DATE

The **elite** monitor needs to know the time and date in order to provide you with the correct information. Set the time and date as follows:

Step 1
On the reverse of the monitor you will find the **time set** button. Press and hold for two seconds. The time setup will flash on the monitor.

Step 2
Set the hour to the correct time by using the **backward** and **forward** buttons. Press the **mode/set** button once to save the hours. Repeat for minutes, using the **mode/set** button to confirm. Once the correct time has been set, push the **mode/set** button to save and move onto the date setup.

Step 3
Set the month by using the **backward** and **forward** buttons. Press the **mode/set** button to confirm and move onto the day and year. Repeat the same process and then press the **mode/set** button to save and exit.

Hold for 2 seconds

history
backward
forward
mode/set
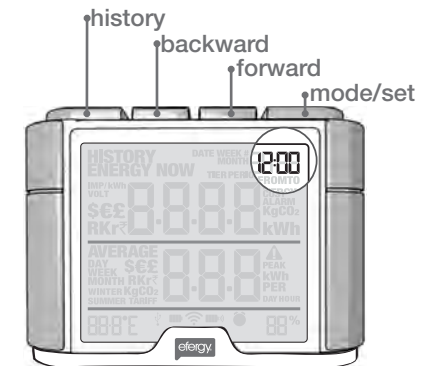
MONITOR SETUP

PROGRAMMING THE ELITE IR

Your **elite** monitor has been pre-programmed from the factory in accordance with the standardized Ontario time of use tariffs, including weekends as off-peak. The display will also automatically change from the 'Summer Tariff Structure' to the 'Winter Tariff Structure' in accordance with your Ontario utility. In the future, should any changes be required due to new tariff rates or structures, your display may be easily re-programmed using the following steps:

Program Design
The program has been divided into summer and winter tariffs. Both summer and winter seasons are divided into 5 tariffs. Tariffs 1 through to 4 in both groups represent the 4 tariff settings for Weekdays (Monday-Friday) and tariff 5 is for Weekends (Saturday-Sunday). Keep in mind that tariff 5 is preset for weekends, therefore you only need to set the tariff cost using the off peak rate.

Note: The elite monitor uses a 24h clock

Start Programming
To start your manual programming press and hold the **mode/set** button for 2 seconds. Enter the impulse rate written down when you plugged in the IR sensor at your meter by using the forward and backwards keys. Press **mode/set** to confirm. The currency symbol will appear, this has by default been set to '$', press the **mode/set** button to go to the tariff and cost settings.

**Tariff Examples
Summer (May 1-Oct 31) - Weekdays**

**Winter (Nov 1-Apr 30) - Weekdays**

SUMMER TARIFF

Summer Hours
Press the **mode/set** button to enter tariff hours setting - you will note that the words SUMMER TARIFF 1 will appear. The 1 represents the tariff times for weekdays (represented by 1, 2, 3, 4) and weekends (represented by 5). The time setting FROM will be flashing at the top right - use the **backwards** and **forwards** buttons to change the hour, then press the **mode/set** button to set. Repeat process for minutes. On pressing the **mode/set** button you will confirm the FROM time and will move to set the TO time. Follow the same routine to adjust and set the TO time.

Pressing the **mode/set** button will complete the tariff time setting for SUMMER TARIFF 1. Next you will see the words SUMMER TARIFF 2. Again proceed using the **backward** and **forward** and **mode/set** buttons to adjust and set the time for tariff 2. Proceed as above through all 3 tariffs. The fourth tariff will not appear as the balance of the 24 hour clock is accounted for. You will only need to program cost in tariff 4 and tariff 5 (weekends). Press **mode/set** button again to progress onto the tariff costs.

Summer Tarrif Pricing
On completing the above, pricing will appear next. Use the **backward** and **forward** buttons to increase or decrease the cost and press the **mode/set** button to confirm. As you work your way through the modes each tariff will appear on the bottom right of the screen i.e: 1, 2, 3, 4, 5. The fifth period is set for weekends as 'off peak', you only need to set pricing. No time setting is required as it is preset.

# MONITOR SETUP

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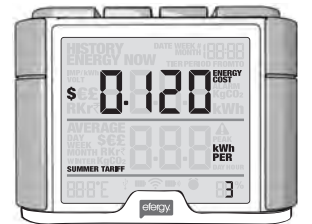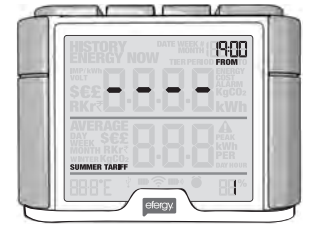
WINTER TARIFF

Winter Hours

The programming procedure for winter tariffs is identical to the summer tariffs, you will see WINTER TARIFF 1 on the monitor. Use the **mode/set** button to access and the backwards and forwards buttons to adjust time values. Press the **mode/set** button to set and proceed as above through all 3 tariffs. The fourth tariff will not appear as the balance of the 24 hour clock is accounted for. You will only need to program cost in tariff 4 and tariff 5 (weekends). Press **mode/set** button again to progress onto the tariff costs.

Winter Tariff Pricing

Pricing will again follow the same process as the summer tariff settings - use the **mode/set** and **backwards** and **forwards** buttons to manoeuvre through the time, tariffs and set pricing for WINTER TARIFF 1, 2, 3 and 4. The fifth period is set for weekends as off peak, so you only need to set pricing. No time setting is required as it is preset.
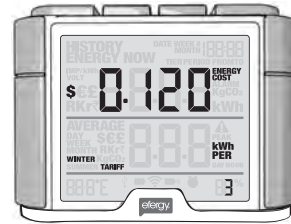
You have now completed your manual tariff programming. Press **mode/set** button to move onto the set-up for Carbon Emissions Ratio, Alarms, and Temperature.
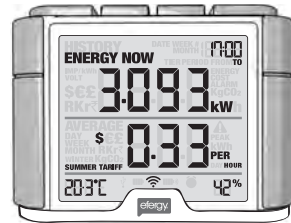
NOTE: To exit the tariff programming at any time press the history button.

Carbon Emissions Ratio

You can also alter the carbon emissions ratio displayed on your monitor. This can be increased and decreased using the **backward** and **forward** arrow buttons. Press the **mode/set** button to store the value. The North American average is 0.50kg.CO_2/ kWh. This is the default value.
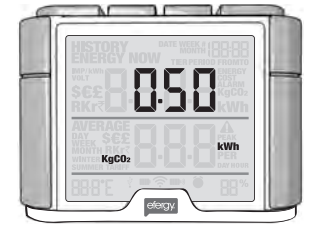
Setting an Alarm

The default alarm is set at 5kW. If the alarm function is switched on and you are using more than 5kW, the alarm will sound and a red light will glow from the bottom of the unit. The value can be increased or decreased using the **backward** and **forward** arrow buttons. Press **mode/set** to store the value. To activate or deactivate the alarm push the **Alarm On/Off** button on the reverse of the unit.
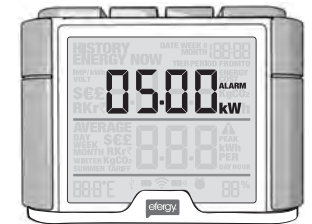
Temperature mode

The temperature mode can be changed between fahrenheit and centigrade by pressing the **backward** and **forward** arrow buttons.
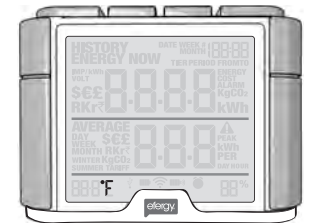
⚠️ **PEAK** NOTE: The PEAK symbol shown is displayed when the most expensive tariff is in use
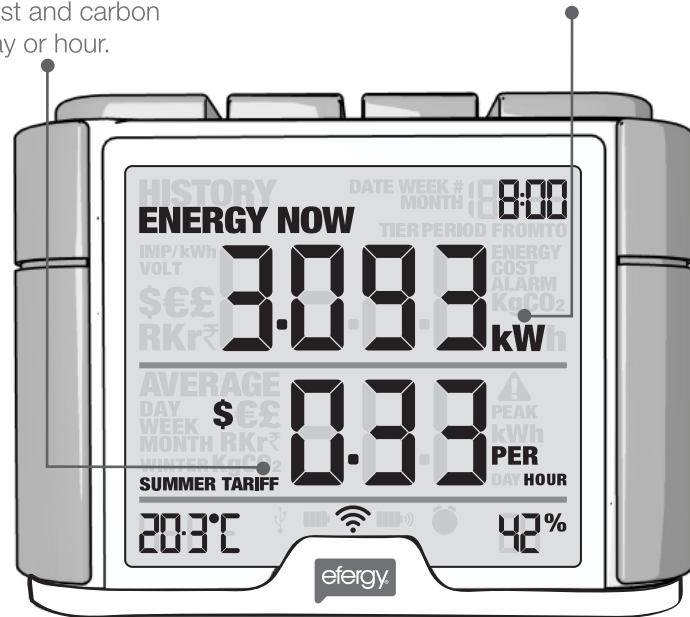
MONITOR SETUP

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INSTANT MODE

Push the **mode/set** button to change information being displayed from cost (displayed in $) to carbon emissions (kgCO_2).

Cost and Emission Per Day or Hour
The lower part of the screen shows the estimated cost and carbon emissions per day or hour.

Energy Now
Shows the instant power in kW.

HISTORY MODE

Push the **history** button to access daily, weekly and monthly stored data. Use the **backward** and **forward** arrow buttons to scroll between dates and compare consumption data. Press the **mode/set** button to change the information display from kWh to costs and CO_2 emissions.

Historical consumption information for days, weeks and months in kWh, $ and KgCO_2

Average information for days, weeks and months in kWh, $ and KgCO_2
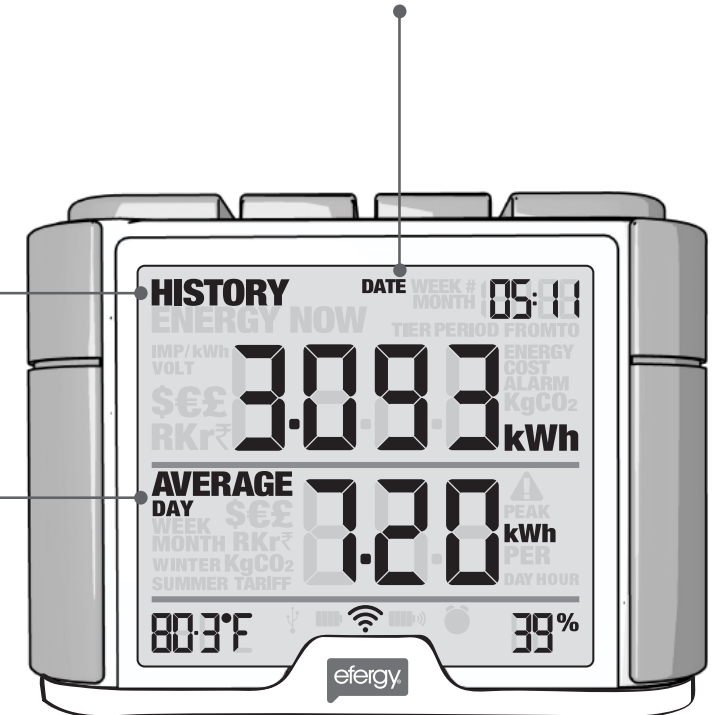
FAQS

If I remove the batteries will I lose the information on the display?
The display has an internal memory, so if you need to change or remove the batteries the information stored on it will not be lost.

How do I reset the display (clear the stored data and start again)?
Press and hold the **mode/set** and **History** buttons simultaneously for 2 seconds.

How far does the device transmit?
The transmitter work up to around 230ft/ 40m within the home. The 433MHz range is well suited for in-home use. This can cover 3 floors and is also ideal for buildings where electricity meters are situated outside.

I have dashes (- - - -) showing on the display. What does this mean?
Move the display closer to the transmitter and press the **link** button. If the dashes remain on the display this would indicate that the transmitter and receiver are not communicating. Please contact **efergy** customer services to help solve the problem, at askjohnny@efergy.ca

The backlight appears to work sometimes and then not others. Is it broken?
No. The backlight is on a timer to save battery life. The display should work at darker periods during the day when any buttons are pressed. The LED backlight will be activated from 18:00 hours - 6:00 hours.

TECHNICAL INFORMATION

Model Name	**efergy elite IR 1.0**
Model Number	ELITE-IR-CA
Frequency	433.5MHz
Transmission Time	30 seconds
Transmission Range	230ft - 328ft/ 40m - 70m
Impulse Range	100 - 10,000imp/kWh
Carbon Ratio	$0.50kg.CO_2$/ kWh

INSTALLATION NOTES

Date: _____

                                         mm/ dd/ yyyy

Location installed: _____

                    _____

                                         Address/ City

Installed By: _____