ECOFRONT

INSTALLATION GUIDE

Ecofront Energy Monitor

P/N: EFEB32-WM-005

Contents

1. BEFORE YOU BEGIN

1.1. What You Should Know

The Ecofront Energy Monitor is an energy management system designed to monitor 240VAC voltages, and as such should be installed by a qualified electrical trades person.

This manual only describes the physical installation of the product. For configuration and user options please refer to the respective manuals: Configuration Manual and User Guide. Both these manuals are accessible from the Energy Monitor's web pages.

The Energy Monitor is a web-enabled device. The primary configuration and user interface is the monitor's web pages.

The unit must be installed in a location with an Ethernet connection and access to a DHCP router.

1.2. Check Your Package Contents

Your system should include:

- Ecofront Energy Monitor (P/N EFEB-WM-005)
- 5VDC power supply (P/N. CF1205-D)
- 1 or more CT sensors
- 1 or more voltage sensors
- Installation guide

Notes:

- Only use the power supply supplied with the package. Using a different power supply may damage and void the warranty for this product.
- Only use the CT Sensors supplied with the package. Using different CT sensors or sensors not correctly rated for your system may affect accuracy, damage the unit and void the warranty for this product.

1.3. Warnings

Current sensors, voltage sensors and pulse counters must be installed by a competent electrical trades person.

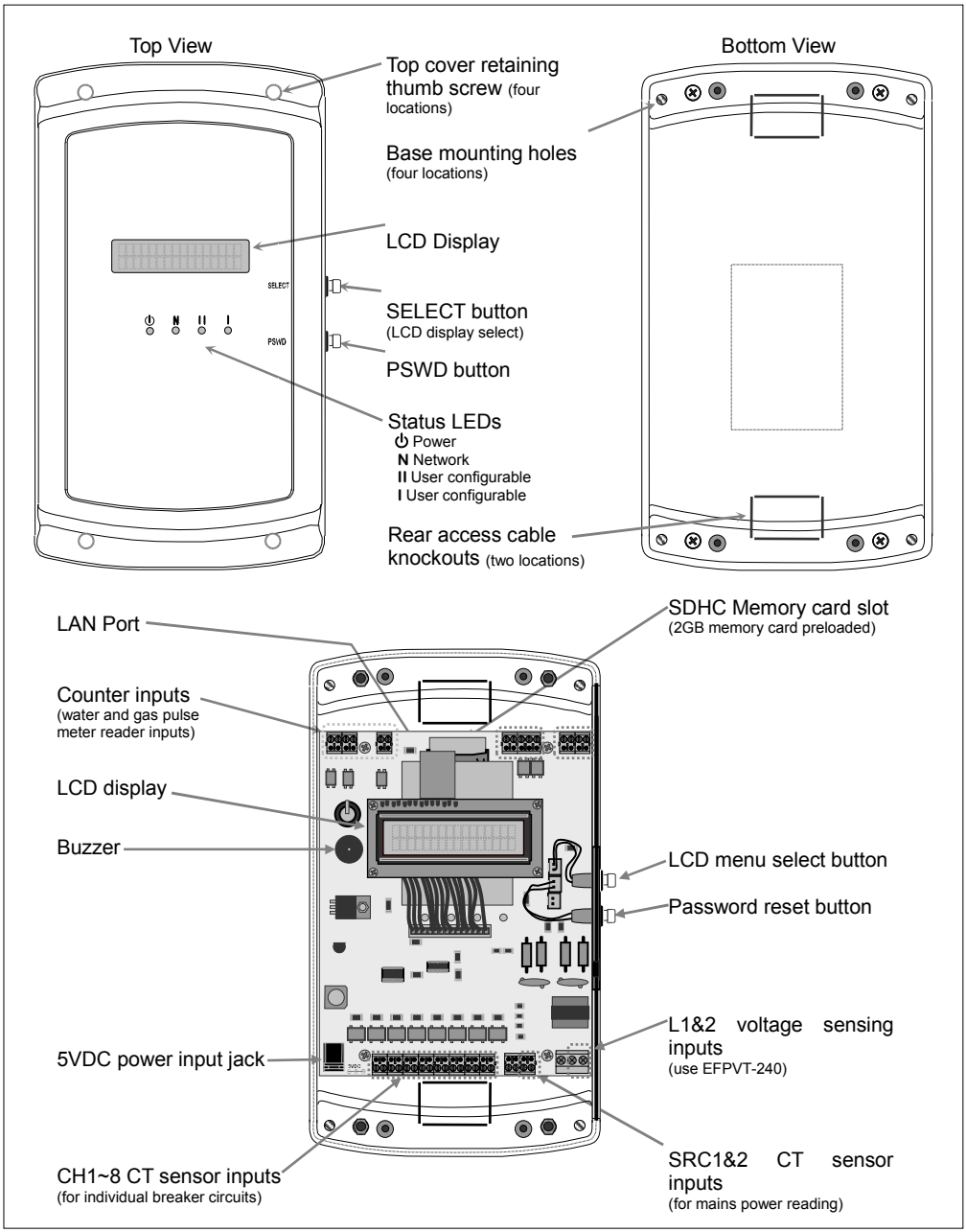
Do not use or store the device in locations that may experience adverse conditions such as high humidity, condensation, excessive temperature fluctuations or exposure to the elements (wind, sun or rain).

Do not use in life support or health critical applications.

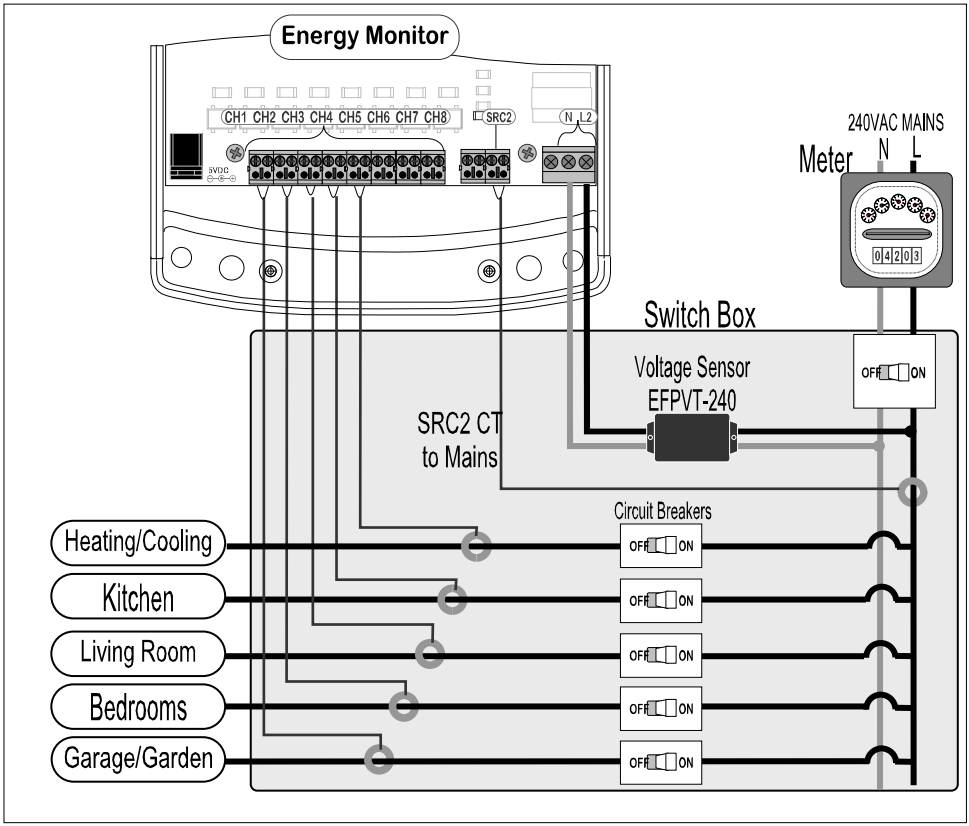
Do not subject the product to impact, shock or excessive vibration.

When disposing of this product, be careful to observe local waste disposal regulations.

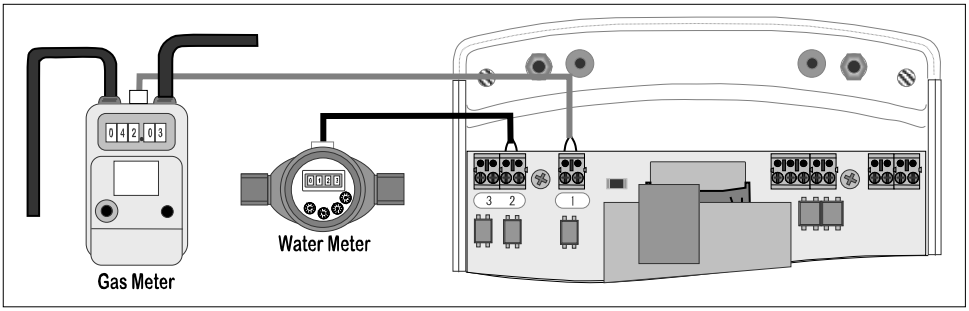
2. ENERGY MONITOR HARDWARE



Installation Example 1: Single Phase Electricity

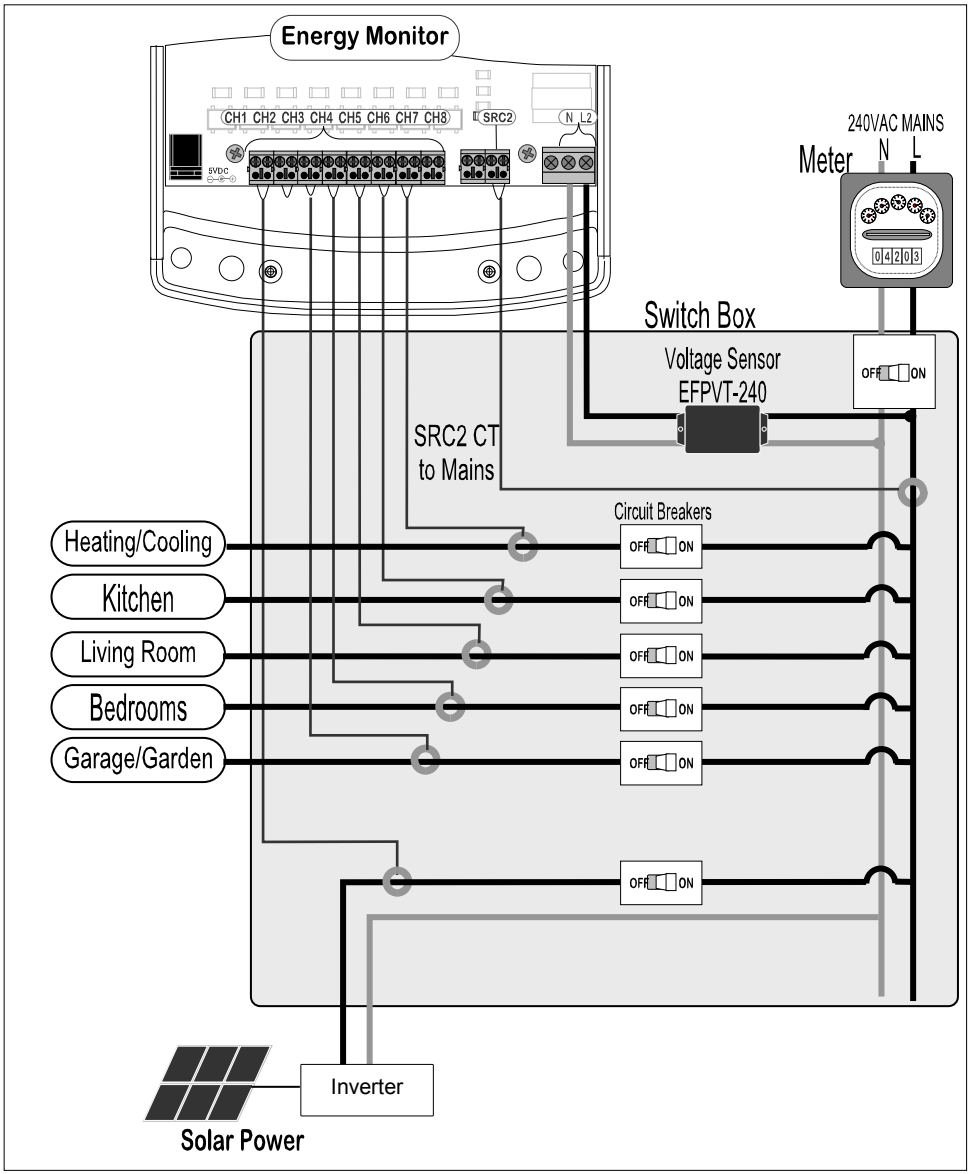


Installation Example 2: Water and Gas



Note: Gas and water meters must have a pulsed output signal.

Installation Example 3: Single Phase Electricity With Solar

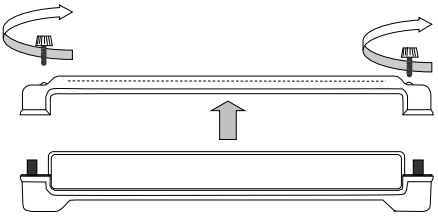


Note: For solar systems only CH1 can be used to measure the AC solar input circuits. This must be configured in software.

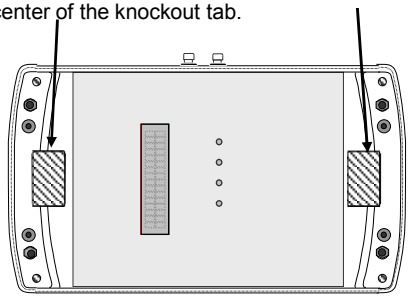
3. INSTALLATION

STEP 1 - Mount The Energy Monitor

1. Remove Top Cover:
Remove the top cover by unscrewing the four retaining thumb screws.



2. Remove Knockouts:
Remove cable access knockouts located on plastic base by pushing firmly down on the center of the knockout tab.

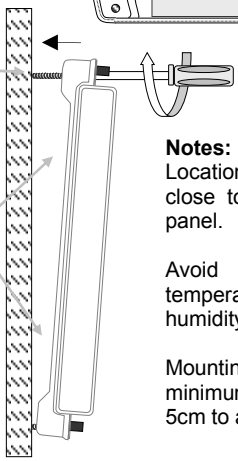


3. Mount The Energy Monitor:
Use 3mm diameter screws to secure the plastic base to the wall.

For concrete or gyp board, use anchors to secure the screws.

Do NOT screw down tightly; leave enough play to allow wires to be passed underneath the case.

Once sensors have been terminated then the case can be tightly screwed on to the wall.



Notes:
Location should be indoors and close to the electrical distribution panel.

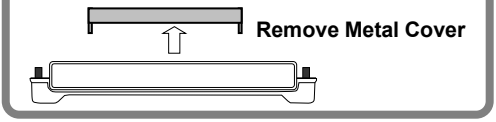
Avoid areas with extreme temperature fluctuations, high humidity or excessive moisture.

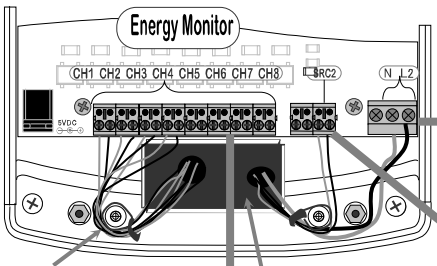
Mounting position should have a minimum all round clearance of 5cm to allow for ease of cabling.

Warnings:

- To avoid electrostatic discharge (ESD) be careful not to touch the internal PCB components during installation.
- If possible use an antistatic grounding strap if handling the PCB directly. If not possible then before handling, ground yourself by touching a bare metal chassis to discharge any build up of static electricity. Do this periodically throughout the installation.
- Do NOT apply power to the device or connect live wires before the system is correctly setup and the top cover is secured.

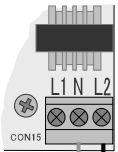
STEP 2 - Connect Voltage and Current Sensors





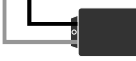
Cables should be tied off and secured to the mounting posts

All wiring feeds in from the cable access knockouts



Connect L1 or L2 to EFPVT-240 Voltage Sensor

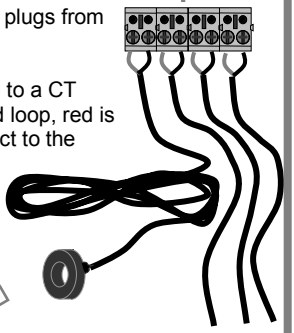
Warning: DO NOT CONNECT DIRECTLY TO 240VAC
L1 is paired to SRC1
L2 is paired to SRC2

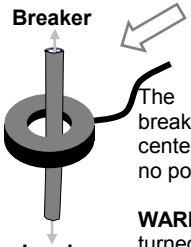


Connect CH1~8 CT Sensors
Remove the green plugs from CH1~8.

Connect each plug to a CT sensor (20A closed loop, red is positive). Reconnect to the terminal.

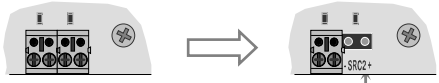
Connect one CT Sensor to each breaker circuit.





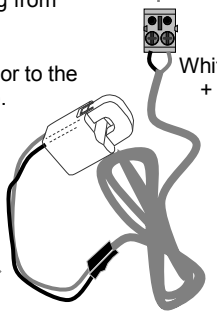
The active circuit from the breaker must pass through the center of the CT sensor (there is no polarity).

WARNING: Ensure breaker is turned off before connecting the sensor.

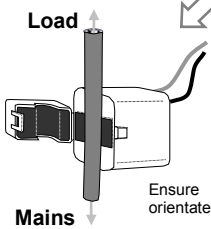


Connect SRC CT Sensor
Remove the green plug from the terminal.

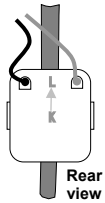
Connect SRC CT sensor to the plug (White is positive). Reconnect to the terminal.



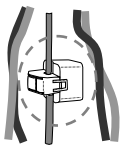
Clamp CT on to Mains cable



Ensure the "L" mark is orientated toward the Load.



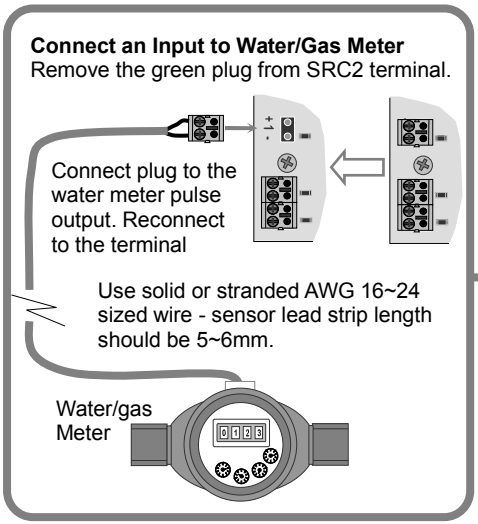
Ensure the CT sensor has adequate clearance from surrounding cables.

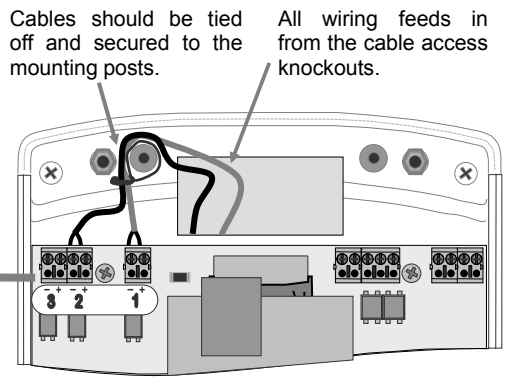


Warnings:

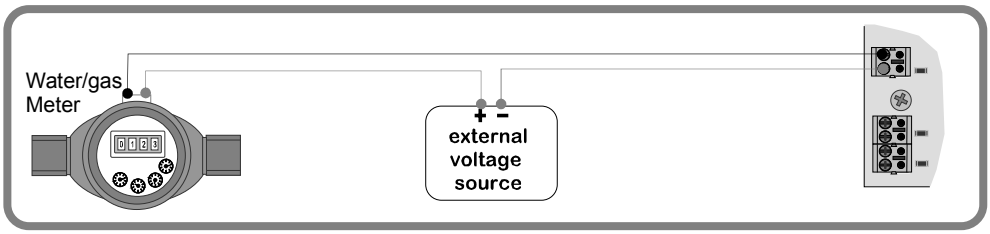
- Un-terminated CT sensors on live AC circuits can generate transient voltages that may cause damage or harm if not correctly terminated. If CT sensors are to be preinstalled without an energy monitor, ensure the sensor leads are shorted together and insulated.
- CT sensor cables need to be tied down securely to prevent movement after installation.

STEP 3 - Connect Gas/Water Meters



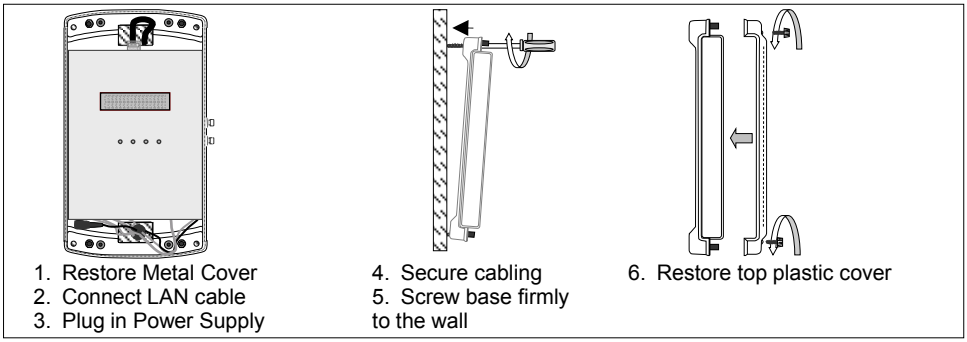


Inputs are voltage free, rated to 24VDC. If the gas/water meter output is a voltage free dry contact then a secondary voltage source will be required to drive the circuit. If a secondary voltage source is used, any DC voltage between 5V and 24V will drive the circuit.



Note: In hardware there are three counter inputs but only two are supported in firmware. Inputs can be configured as either a gas or water meter counter.

STEP 4 - Final Assembly

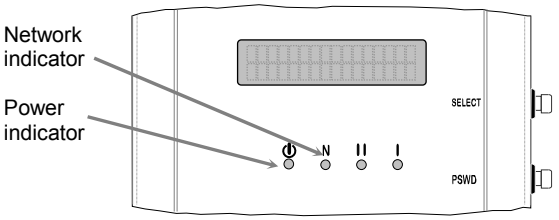


1. Restore Metal Cover
2. Connect LAN cable
3. Plug in Power Supply
4. Secure cabling
5. Screw base firmly to the wall
6. Restore top plastic cover

Check all sensor cables are securely tied down. Restore the metal cover to ensure safe installation. Plug in the DC jack and the LAN cable. Firmly screw down the Energy Monitor base to the wall and screw down the top plastic cover. The system is now ready to power up.

STEP 5 - Power Up the System

Plug in the 5VDC power adapter into the GPO; the Energy Monitor's Power indicator should turn on. After power up the "N" network lamp will turn on then off, after several seconds the "N" Network LED should turn on again. This indicates that the Energy Monitor has booted up and has received a local DHCP IP address from the host router.



Now the system is ready to be configured.

Note: if the "N" network lamp does not turn on, this indicates that it has not received an IP address from the DHCP router. Recheck the network connections before progressing.

4. CONFIGURE THE ENERGY MONITOR

Boot up your PC and ensure it is on the same LAN as the controller.

Open your browser (Internet Explorer, FireFox, etc.) and enter the following URL into the address bar: http://energymonitor/

Note: If "http://energymonitor" cannot be found on the LAN then the controller can be accessed directly via its local IP address. To find the controller's LAN IP press the SELECT button located on the side of the controller case, the controller's IP Address will be displayed in the LCD after the first press. Then enter the monitor's IP address in the address bar, e.g. http//:10.1.1.3/

The following login page should appear:

Enter the default configuration password: xxx1234. The following page will appear:

This is the Network configuration page. This completes the hardware installation; the system is now ready to be configured.

For a detailed description of configuration and user options, please refer to the Configuration Manual and to the User Manual. They are available through the User Interface (Web Pages) after Login. They can also be downloaded from the Ecofront website: http://www.ecofront.biz/

5. WARRANTY STATEMENT

1. This Ecofront product is guaranteed against faulty workmanship and materials for a period of one (1) year from the date of installation.

2. This warranty is expressly subject to the Ecofront product being installed, wired, tested, operated and used in accordance with the manufacturer's instructions.

3. The warrantor is Ecofront Pty Ltd of 18 Tabulam Dr. Ferny Hills QLD 4055 Australia

4. Ecofront Pty Ltd reserves the right, at its discretion, to either repair free of parts and labour charges, replace or offer refund in respect to any article found to be faulty due to materials, parts or workmanship.

5. When making a claim the consumer shall forward the product to Ecofront with adequate particulars of the defect within 14 days of the fault occurring. The product should be returned securely packed, complete with details of the date and place of purchase, description of load, and circumstances of malfunction.

6. The benefits conferred herein are in addition to, and in no way shall be deemed to derogate; either expressly or by implication, any or all other rights and remedies in respect to the Ecofront product, which the consumer has under the Commonwealth Competition and Consumer Act or any other similar State or Territory Laws.