



by Schneider Electric

# Residential Energy Efficiency Guide

**Contractors' Edition**

[clipsal.com](http://clipsal.com)



Clipsal is pioneering  
**real solutions**  
to real problems



# The Electrical Contractors' **Solution Guide**

This publication was developed in conjunction with Clipsal's Residential Energy Efficiency Guide, Consumers' Edition. Specifically designed for electrical contractors, it provides information and technical know-how on Clipsal's range of residential energy efficiency solutions. In this guide we present practical solutions for saving energy in the areas of lighting, air-conditioning, pool pumps and solar. Clipsal's Residential Energy Efficiency Guide, Contractors' Edition can assist your business by:

- identifying energy efficiency opportunities within the residential building
- providing you with the tools and technical know-how to up sell energy efficiency solutions to your customers
- identifying energy and cost savings associated with each solution
- identifying your customer's motivations and needs to help you tailor your solution.

## Your guide to using electricity more efficiently

Australian homes have transformed over the years and have become a sanctuary where we can enjoy a lifestyle with comfort and convenience through the use of technology. Today's homes feature powerful air-conditioning systems, entertainment centres, networked computers and modern appliances in the kitchen. And while we enjoy the benefits of technology, our energy costs have increased. With energy costs set to double in the near future, households are demanding solutions to reduce their energy consumption.

Clipsal is Australia's leading electrical company with over 90 years experience. We have a long history of pioneering energy efficient products for the home, from the famous Infrascan that automatically turns lights on and off, through to our C-Bus home automation systems, designed to provide comfort, convenience, safety and security as well as real energy savings.

It is of no surprise that Clipsal is once again at the forefront of the electrical industry with the introduction of our Home Energy & Safety Audit. This innovative program is designed to make the home safer, more energy efficient, save home owners money on electrical bills, while allowing them to maintain their lifestyle.

## Clipsal's Home Energy & Safety Audit

Clipsal is pioneering real solutions to real problems with the introduction of our Home Energy & Safety Audit. And in partnership with a network of factory certified electricians, Clipsal will deliver this program to the public. Not only do Clipsal certified electricians test the home's electrical systems for safety, but also provide advice to save energy and reduce cost. Our innovative solutions are delivered through our national network of licensed electrical contractors who exclusively use Clipsal products.

# Residential Energy Efficiency Guide

## Contents

<b>1. Home Energy &amp; Safety Audit</b>	<b>7</b>
<b>2. Renewable Energy</b>	<b>8</b>
Know Your Solar	11
Clipsal Solar	12
<b>3. Energy Management</b>	<b>14</b>
Measuring Energy Use	16
<b>4. Lighting Strategies</b>	<b>18</b>
Know Your Lighting	21
Indoor Lighting	22
Dimmers	24
Infrascans	26
Sunset Switches	28
Timers	30
<b>5. Tactics for Cooling &amp; Heating</b>	<b>33</b>
Ceiling Sweep Fans	34
Exhaust Fans	36
Bathroom Fan/Light/Heater	38
<b>6. Water Strategies</b>	<b>40</b>
Pool & Spa Strategies	42
<b>7. Eliminating Standby Power</b>	<b>44</b>
Standby Power	46
<b>8. Home Safety Solutions</b>	<b>49</b>
RCD Protection	50
Surge Arrestors	52
Smoke Alarms	54
Additional Home Safety	56
<b>9. Colour &amp; Finish</b>	<b>58</b>



A man in a dark blue t-shirt is shown from the chest up, looking upwards and pointing his right index finger at a white, circular smoke alarm mounted on a white ceiling. He is wearing a silver watch on his left wrist. The background shows a white wall with decorative crown molding and a doorway. The text is overlaid on the left side of the image.

Smoke alarms  
must be replaced  
**every 10 years**  
to keep your  
**family and  
property safe**

# Home Energy & Safety Audit

## Provide customers with expert advice

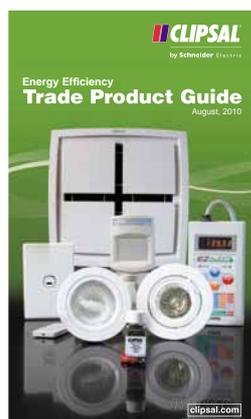
Just like servicing a car, a home needs to be monitored and serviced too. A home's electrical system needs to be checked by a qualified electrician to ensure it's operating safely to protect the home owners' investment, and more importantly protect their family from fire and electrical hazards.

That's where a Clipsal certified energy electrician can help with a comprehensive Home Energy & Safety Audit. The Clipsal certified energy electrician can advise on opportunities for energy savings as well as supply and install energy saving solutions if requested by the home owner.

Clipsal certified energy electricians can:

- advise and design the best solar energy solution for the home
- advise on energy saving opportunities in the home, such as the installation of low energy lighting, motion sensors, timer switches and ceiling sweep fans to reduce energy use
- provide an estimation of energy savings from the onset
- inspect and test residual current devices (Safety Switches), surge arrestors and circuit protection for correct operation
- inspect and test electrical and fire safety of insulation material fitted in the ceiling
- inspect and test smoke alarms
- inspect and test switches and power outlets inside and outside the home.

Not only will residents gain control of their energy use and save money, but they will also improve the safety of their home's electrical system, which may one day save a life.



Contact your Clipsal Representative  
for an exclusive Energy Efficiency  
Trade Product Guide.

# Renewable Energy

## It pays to be green

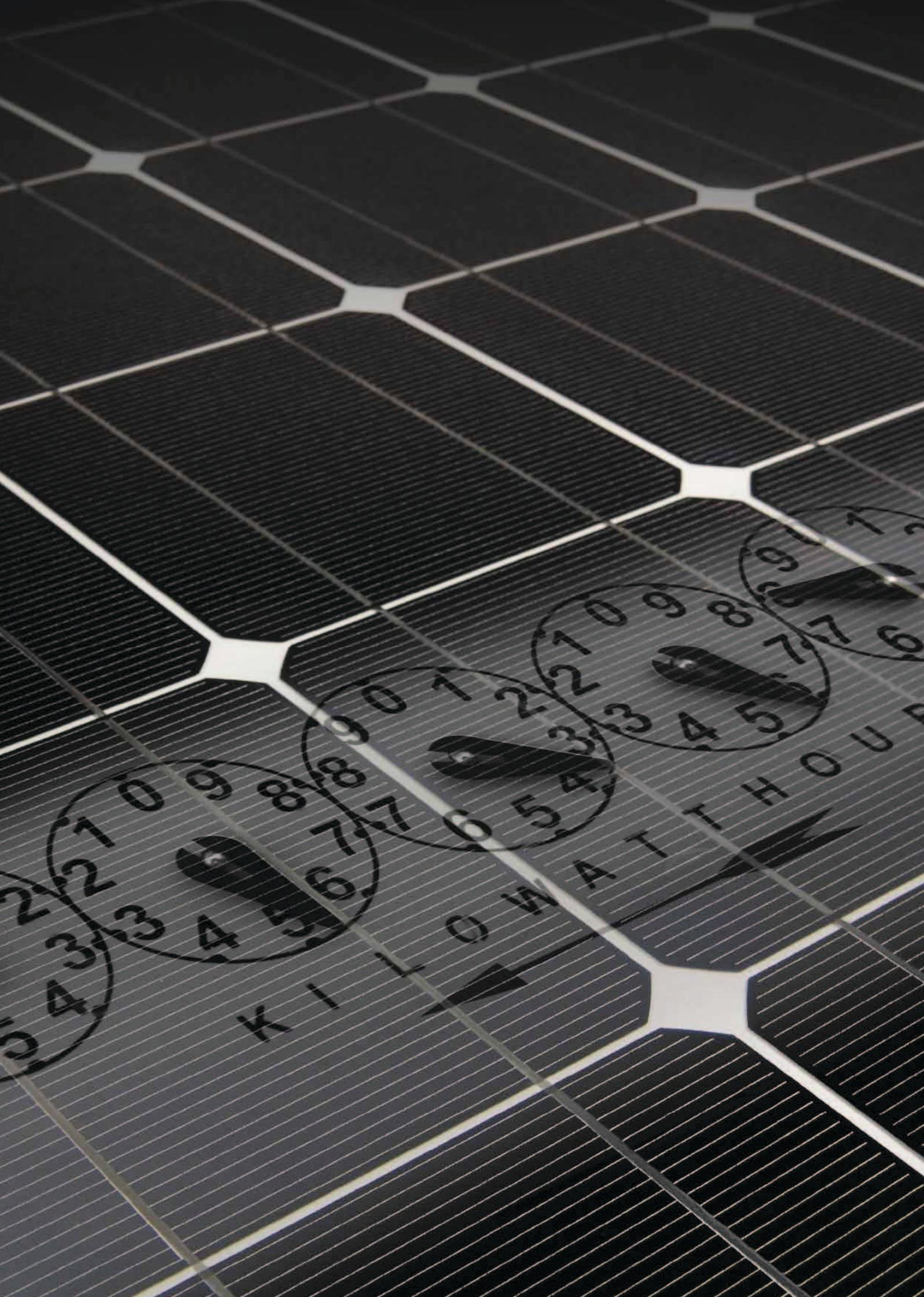
An ever-increasing demand for power will put more and more pressure on our electricity supply. Worse still, our aging grid is incredibly inefficient, with only a third of power generated actually reaching its destination. These factors will force the price of power up exponentially, with high tariffs being imposed at peak times to encourage home owners to manage their consumption. So how can we use renewable energy to reduce our reliance on the grid and cope with these increased costs?

Renewable energy is an excellent way to make homes environmentally friendly. It not only saves our limited natural resources, but also saves the home owner money. Australia's sunny climate makes it perfect for solar power, while the fact that over 80% of our population lives within 50km of the coast makes wind turbine generation a very efficient solution as well.

Home owners can enjoy the benefit of:

- reduced energy costs
- knowing they are helping to reduce their carbon footprint
- feed-in tariffs from the utility companies
- minimising the impact of future energy cost increases.





# Know Your Solar

## Solar panels

Solar panel technology has evolved at a rapid rate, while at the same time the cost of manufacture has come down. Today there are three main types of solar panel technology:

1. Monocrystalline
2. Polycrystalline
3. Thin Film or Amorphous.

Each type of panel has its particular application. For residential applications, monocrystalline panels are the most common due to their high efficiency, robustness, reliability and longevity.

## High efficiency monocrystalline photovoltaic module

- High module efficiency and stable power output.
- Outstanding electrical performance under high-temperature conditions or low irradiance conditions.
- Ease of installation.
- Cell technology comprises 72 pieces of 125mm x 125mm monocrystalline silicon per panel.
- Australian Clean Energy Council approved.
- 25-year performance warranty.



**LF180WP**  
180W Solar Panel

## Applications

- Residential and commercial grid-tie systems.
- Water pumping stations.
- Ground monitoring solar arrays.

## Inverters

Clipsal supplies 2.8kW and 5kW inverter models. Our Xantrex inverter has been selected to achieve peak efficiency across a large range output.

## Grid-tie solar inverter

- Superior photovoltaic energy harvest.
- Peak inverter efficiency.
- Excellent thermal performance.
- Liquid crystal display.
- Vibration sensor allows the tap of a finger to turn backlight on and display screen cycling.
- IP54 rated.
- Australian Clean Energy Council approved.
- 5-year warranty (parts and labour).



**GT2.8AU**  
2.8kW Grid-tie  
Solar Inverter

## Applications

- Residential and commercial grid-tie systems.



# Clipsal **Solar**

## Reduce your energy costs and save money

With generous government rebates on solar systems, rising energy costs and the falling cost of solar technology, solar energy solutions in the home are within reach of many households. And they make economic sense.

Solar energy systems are a solid investment that pay for themselves in a very short period of time. Not only will a Clipsal Solar Solution provide the home owner with free electricity for decades to come, but also add value to property, slash energy bills and reduce greenhouse gas emissions.

## Our solar solutions

Clipsal's solar solutions range from 1.5kW to 5kW systems, and are suitable for all residential applications. A 1.5kW solar system from Clipsal is capable of reducing electricity costs by up to 30%\* and reduce greenhouse gas emissions\*\* by 2,050kgs per annum. While in most cases, a 5kW system makes the household self sufficient of their electrical needs.

## Customer needs

The home owner wants to reduce their energy costs, save money, add value to their property and reduce greenhouse gas emissions.

\* Based on the estimation of the average household consuming 6,840kWh p.a. (Energy use in the Australian Residential Sector report, Department of Climate Change, 2008.)

\*\* Tonnes of greenhouse gases saved; calculated at approximate rate of 1kg CO<sub>2</sub>-e/kWh as per Department of Climate Change, National Greenhouse Accounts (NGA) factors, June 2009 - full fuel cycle emission factors for grid purchased electricity for Australia.



# Clipsal Australia **Solution**

- Solar energy solutions ranging from 1.5kW to 5kW.
- 25-year performance warranty on solar panels.
- Five-year warranty on solar inverters.
- Solar panels designed in the USA.
- Solar inverters designed in Canada.
- Mechanical brackets suitable for tiled and sheet metal roofs.
- Professional grade circuit protection equipment.
- Installed by accredited electrical contractors.
- Adds capital value to customers' home.

## Energy efficiency benefits

- A 1.5kW solar system can reduce household electricity energy costs by 30%, whilst a 5kW solar system can deliver an energy solution that requires no costs of external electricity.
- A 1.5kW solar system can reduce greenhouse gas emissions by approximately 2,050kgs per annum.
- Substantially reduces household energy costs.
- Feed excess energy back into the grid to reduce home owners' energy costs even further.
- Helps protect household against future energy price increases.



**LF180WP**  
180W Solar Panel

**4CB240/6DC**  
PV Array  
Main Switch



**4CB240/6DC**  
d.c. Solar Isolator



**GT2.8AU**  
2.8kW Grid-tie Solar Inverter



**4CB120/6**  
a.c. Solar Isolator

To meter and grid

**Free energy**  
and **cost savings**  
for **a lifetime**

## Solar core products

Clipsal Solar Solutions range in capacity from 1.5kW to 5kW systems, designed to deliver free energy and cost savings for 25 years and beyond.

Options available: 1.44kW, 2.16kW, 2.52kW, 2.88kW, 3.24kW, 3.60kW, 3.96kW, 4.32kW, 4.68kW, 5.04kW.

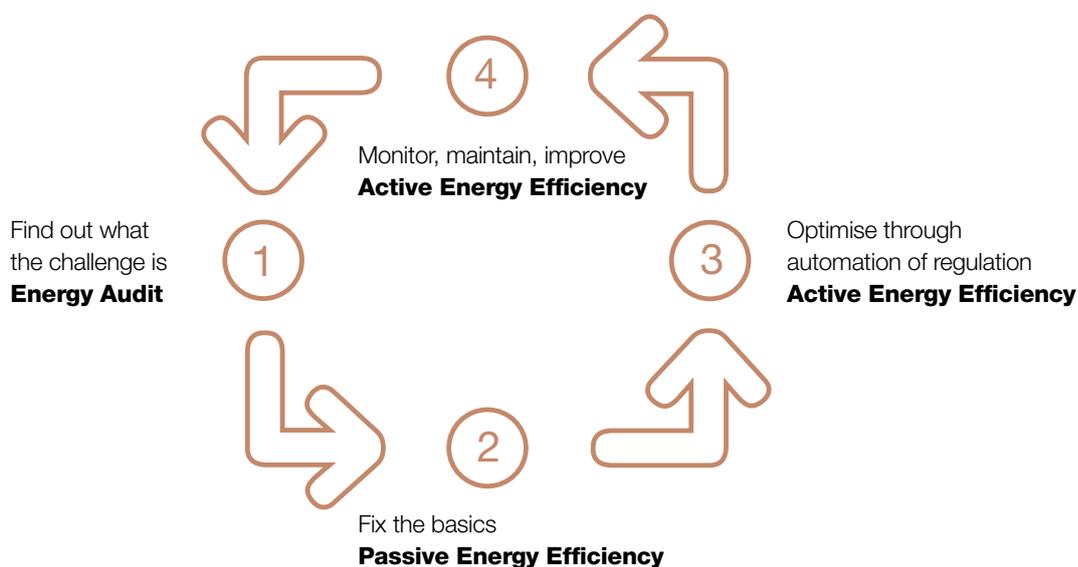
# Energy Management

## Measure, control, monitor and save

Understanding the cost of household electricity is the first step towards reducing an electricity bill. By monitoring energy use, households can better control how energy is used in the home.

The concept is simple:

1. Understand how much energy is being used and where.
2. Identify opportunities where customers can take immediate action to reduce energy.
3. Implement solutions.
4. Customers can sit back and enjoy the savings on their energy bills.





Rr13%



KILOWATTHOURS

CL200 • 240V 3W • FM2S TA30

80 202 494



# Measuring **Energy Use**

## Measure home energy use and stay in control

Clipsal's Energy Consumption Monitor has a large LCD display that makes it easy to keep an eye on running costs and energy consumption. It also displays greenhouse gas emissions, temperature, time and date, which assists home owners to stay in control and decide how energy is used.

In addition, it features a programmable alarm that beeps when a peak power limit is reached. And for even greater insight into energy consumption, home owners can compare their usage daily, weekly, monthly and yearly.

## Customer needs

The home owner wants to reduce energy consumption without compromising lifestyle and comfort. By understanding how energy is used it empowers the home owner to modify their electricity consumption, which can result in energy and cost savings of up to 10%.

# Clipsal Australia Solution

- Wireless electricity monitor that displays energy use and cost on a portable, easy to read LCD monitor inside the home.
- Simple to install and commission.
- Displays temperature and humidity to show comfort levels inside the home.
- Alarm notification of excessive peak load.
- User set tariff rates.
- Able to monitor single or three-phase power supplies.
- Able to measure and display energy from solar PV systems.

## Energy efficiency benefits

Residents can save up to 10% of their electricity consumption by understanding how energy is used in the home. This enables them to modify their behaviour and achieve energy and cost savings.

The Clipsal Energy Consumption Monitor allows the home owner to understand the true cost of energy in real time and empowers them to change the way they use electricity.



## Energy efficiency core products



Display Unit



Transmitter Unit



Current Sensor

# Lighting Strategies

## Shedding light on energy savings

Lighting plays a very important part in house design, comfort and ongoing energy costs. Correct lighting needs to be chosen to suit the application within the home. Clipsal offers a comprehensive lighting range and advice on the correct use of different lamp types to create genuine energy savings.





# Know Your Lighting

## Linear and fluorescent lighting

Compact fluorescent lamps or CFLs are low energy, long life lamps. They are ideal for areas that require lighting for long periods and are infrequently switched; such as outside lighting, kitchens, studies and living areas. Fluorescent lamps provide an excellent light output and are a great choice for general lighting within the home.

CF22



WDB114



WP114



741/11WH



204WH



## Halogen lighting

Modern halogen IRC lamps are 30% more energy efficient than their predecessor with the same light output and long lamp life. Halogen lamps are dimmable and a great option to create mood lighting. They're ideal for living areas, bedrooms, home theatres and dining rooms. Halogen lighting produces a warm comfortable light with a sparkle effect not found with other lighting types.

DLKLRG/FP



DLKLRF/FP



## LED lighting

LED lighting is the most energy efficient and longest lasting lighting product on the market today. LED lighting is ideal for accent lighting in cabinets, under kitchen benches, pathways, wall lights and staircases. They're also a great energy saving option for bedrooms, living rooms, home theatres and dining rooms, and in most cases replace halogen lighting in these applications.

L681WH



L881WH



L506WH



L960W/12WH





# Indoor Lighting

## Energy and cost savings

Downlights are the most popular lighting choice by consumers and can be found in the latest modern homes, or in extensions and refurbishments of older style homes.

Clipsal downlights are available in a wide range of colours, styles and configurations, including gimble versions to suit any and every indoor application. Today's downlights are available with halogen, compact fluorescent and LED technology lamps incorporated.

IRC halogen lamps are the latest halogen technology lamps. A 35W IRC halogen lamp creates the same light output as a standard 50W halogen lamp, while using 30% less energy in the process. IRC halogen lamps are dimmable and last twice as long as standard halogen lamps.

CFL downlights are long life lamps, and have a lifetime of between two and five times longer than halogen lamps. CFLs also use much less energy than incandescent lamps; up to 80% less energy in most cases. Some CFL lamps are dimmable, but special CFL dimmers are required.

LED lamps are the most modern type of lighting and use a similar amount of energy as the downlight style CFL for the same light output. An advantage of LED lamps is their lifetime. They can outlast halogen lamps by up to ten times and CFLs by four times. LED lamps are dimmable and have similar light output as a standard 50W halogen or 35W IRC halogen.

## Customer needs

The customer requires downlight solutions in different areas of the home. Some lighting needs to be controlled by dimmers, but all lighting needs to be energy efficient.

Dimming is recommended as it allows for further energy savings. See pages 24 and 25 for more information.

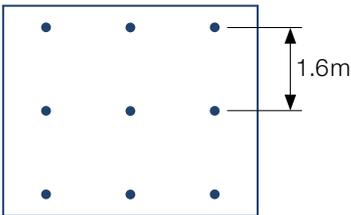
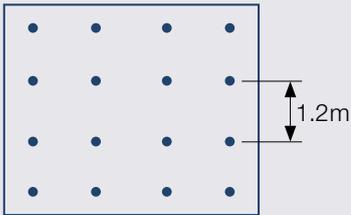


# Clipsal Australia **Solution**

- Wide range of downlight styles with halogen, CFL and LED lamp technologies.
- Compatible with Clipsal C-Thru range of dimmer products.
- Lifetime of downlights can be extended when used in conjunction with Clipsal C-Thru dimmers.
- Saving of between 30% and 80% of energy when compared with incandescent lamps for similar applications.
- 35W IRC and LED downlights are a direct replacement for 50W halogen lamps, in most situations.
- Use of dimmers saves energy.

**Savings** of between 30% and **80%** of **lighting energy costs**

## Typical configuration

Lamp Type	Recommended Spatial Separation
<b>35W IRC Halogen</b> MR16, 750 lumens, 60 degrees	<b>1.6m x 1.6m</b> @ 2.4m ceiling height 
<b>11W LED (warm white)</b> MR16, 650 lumens, 60 degrees	
<b>11W CFL</b> SGU10, 440 lumens, 60 degrees	<b>1.2m x 1.2m</b> @ 2.4m ceiling height 

## Energy efficiency core products



**DLKLRP/FP**  
Downlight,  
35W IRC



**741/11WH**  
Downlight,  
11W CFL



**743/11WH**  
Downlight, 11W CFL  
IP65 rated



**L960W/12WH**  
Downlight,  
11W LED



# Dimmers

## A simple solution to save you energy

Dimmers don't just set the mood, but they can save money too. Most of the time we don't need to set our lights to full brightness to light a room, and if home owners dim their lights they're using less energy to run them. Clipsal leads the way in dimming technology and manufactures dimmers for all lamp types. So if you want to control a single lamp or string of lamps we have a dimmer to suit.

Clipsal dimmers are available in a wide range of styles and finishes with push button, rotary or remote control dimmer functions. There's sure to be a dimmer to suit everyone's requirements.

## Customer needs

The home owner desires simple to use dimmer products compatible with all lamp types. By dimming the light levels the home owner wishes to create ambience, while saving energy and running costs.

# Clipsal Australia Solution

- A wide range of dimmer technology products, including leading edge, trailing edge, universal and fluorescent dimmers, which are compatible with the majority of lamps.
- Colour coded for ease of identification and use.
- Remote control versions available.
- Small and compact size.
- Power range of dimmers from 300W to 2000W.
- Short circuit protection and thermal overload protection on most models.

## Energy efficiency benefits

- Energy and cost savings are achieved when lighting is dimmed.
- Dimmer units extend the lifetime of the lamps so they need to be replaced less frequently.
- Dimmer units are used to set the desired light level, which reduces energy consumption.
- Energy savings between 10% and 50% can be achieved.

Save  
up to  
**50%**  
energy

## Typical configuration



## Energy efficiency core products

Clipsal C-Thru® dimmers utilise leading edge, trailing edge, universal and compact fluorescent dimming technologies.



**32E450UDM**  
Universal dimmer.  
Suitable for use with  
all load types.



**32E2CFLDM**  
Compact fluorescent  
dimmer. Suitable for  
use with dimmable  
CFL/PL/LED lamp types.



**32E450LM**  
Leading edge  
dimmer. Suitable for use  
with incandescent and  
iron core transformers.



**32E450T**  
Trailing edge  
dimmer. Suitable for  
use with electronic  
transformers.





# Infrascans

## Safety, convenience and energy savings in one

The original Infrascan was developed by Clipsal, and remains the electrical contractor's choice due to its reliability, ruggedness, and simplicity of operation — with an industry first five-year warranty. The Infrascan is designed to turn lights on automatically, when movement is detected, and turn off after a pre-set period of time.

The outdoor Infrascan is designed to operate under all weather conditions and features long-range detection with immunity to false triggering. Infrascans can be used for garages, driveways, porches and outdoor living areas. They also provide peace of mind for consumers. However you look at it, Infrascans provide enhanced security, convenience and energy savings.

## Customer needs

The home owner desires the convenience and energy savings that automatic switching provides. They also require the enhanced security that Infrascans provide by automatically lighting up the area to deter intruders and trespassers.

# Clipsal Australia **Solution**

- A wide range of Infrascan products for indoor and outdoor applications.
- IP66 rating and suitable for all weather applications (outdoor models only).
- Available in 90, 110 and 360 degree detection.
- Long-range detection capability and immune to false triggering.
- Surface and flush mount models available.
- Available with integrated lights in outdoor models.
- Two and three-wire models available.
- Override control.
- Five-year warranty.

## Energy efficiency benefits

- Energy and cost savings are achieved when lighting is only switched on when required.
- Remembers to turn load off, even when people don't.
- Enhanced convenience, safety and security.
- Energy savings between 30% and 50% can be achieved.

## Typical configuration



Switch off unused lighting **and save up to 50%** energy

## Energy efficiency core products

An extensive range of indoor and outdoor models to suit any application.



**750 Series**  
Infrascan  
110° outdoor  
motion sensors



**751 Series**  
Infrascan 90°  
indoor motion  
sensors



**753 Series**  
Infrascan 360°  
indoor motion  
sensors



**754 Series**  
Infrascan 140° and 180°  
outdoor motion sensors  
with integrated lamps



**100CF360 Series**  
Kinesis 360° indoor  
motion sensors



# Sunset Switches

## See the light in saving energy

Sunset Switches use a light sensor to switch lights on once daylight levels drop below the desired level, and switch lights off once again at sunrise. The best thing is Sunset Switches automatically adjust to seasonal changes. They're even available with inbuilt timers so the electrical contractor can program the lights to turn off after a set time. Clipsal Sunset Switches are perfect for entrance areas, pathways, garden and car park applications — lighting the way for a safe welcome home and to deter would-be intruders.

## Customer needs

The home owner desires the convenience and energy savings that dusk to dawn switching provides. With an in-built light sensor they don't need to manually change switching times due to seasons. Home owners will also enjoy the convenience, security and enhanced safety that automatic switching provides. Timers are useful to cover routine lighting.

# Clipsal Australia **Solution**

- IP66 rating and suitable for all weather applications.
- Available as dusk to dawn models or with programmable time delay.
- Simple to install and commission.
- 10A switch capacity.
- Two and three wire models available.

## Energy efficiency benefits

- No wasteful energy or additional costs due to seasonal changes.
- Programmable time delay means lights are only on for the period required.
- Enhanced convenience, safety and security.
- Achieve up to 20% energy savings.

## Typical configuration



**Save  
up to 20%**  
energy

## Energy efficiency core products

Simple to install and easy to use.



**56SSR**  
Sunset Switch  
complete with  
programmable timer.



**56PEDD3**  
Dusk to dawn  
Sunset Switch.



**31VSSR**  
Sunset Switch  
complete with  
programmable timer.



**WDL10**  
Sunset Switch  
complete with  
programmable timer.



# Timers

## It's time to save energy

Another great way to save energy is to have a timer do the work for you. Timers are particularly useful in areas where you need lights, fans or heaters to operate for a short period time and turn off automatically.

Timers are ideal for exhaust fans in toilets and bathrooms, lights in pantries and walk-in wardrobes, or towel heaters in bathrooms. Simply set the timer, and it will automatically turn itself off.

## Customer needs

The home owner desires a simple to use, "set and forget" switch timer. They want the convenience of a timer switch for use in pantries, bathrooms, external lights, garages and other areas. The home owner wants a solution that turns lights or fans on for the pre-defined period and then automatically turns them off.

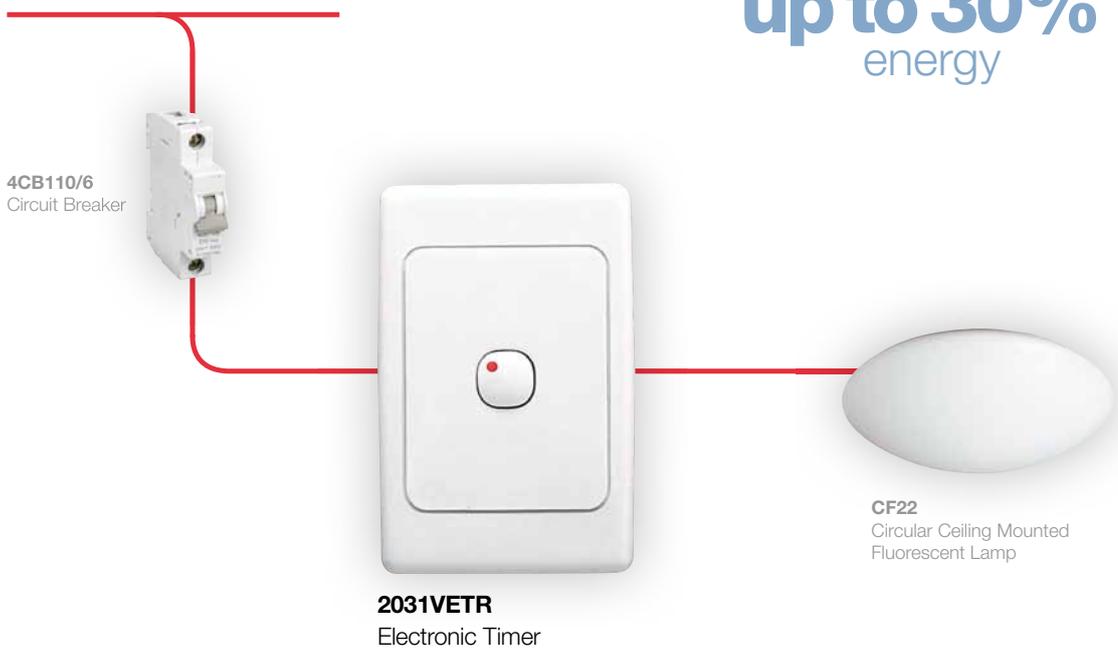
# Clipsal Australia **Solution**

- Available as electronic or pneumatic switches.
- Simple to install and commission.
- 10A switch capacity.
- Programmable time delay, from one minute to 15 hours.
- Status countdown LED indicator on some models.
- Two and three wire models available.

## Energy efficiency benefits

- Precise control of loads saves energy and costs.
- Programmable time delay results in wide applications for timer switches.
- Enhanced convenience, safety and security.
- Achieve energy savings between 20% and 30%.

## Typical configuration



Switching devices  
off automatically  
can **save**  
**up to 30%**  
energy

## Energy efficiency core products

Set and forget switches that provide exact time control of lights, fans, heaters or other devices.



**31VETR**  
Electronic timer



**319**  
Pneumatic timer



**TC32V24**  
24-hour  
analogue timer



**646E7**  
Seven day  
programmable  
digital timer



**648T**  
10 second to  
120 minute time  
delay module



# Tactics for **Cooling & Heating**

## Save energy and stay comfortable

There is nothing like a cool fresh breeze throughout the home. Not only is it comforting, but it also helps to freshen the home.

Ceiling sweep fans are fashionable, super quiet and an effective way to circulate fresh air, while saving energy and costs.

The convenience and comfort of warming up efficiently in winter comes at a price; energy consumption and cost. Choosing the right type of heating and air circulation, and implementing effective insulation measures can all assist in minimising excess energy costs.



# Ceiling Sweep Fans

## A natural way to cool the home

Ceiling sweep fans are an effective natural way to cool the home or circulate heat. In most cases, when the outdoor temperature is less than 30 degrees, a ceiling sweep fan is all occupants need to stay cool and comfortable. Stylish in design with remote control options and inbuilt lighting, ceiling sweep fans are super quiet and use less energy than a standard light bulb.

Ceiling sweep fans are just as practical in winter, whereby reversing the air flow will circulate warm air that accumulates near the ceiling. This increases the efficiency of the heating and reduces energy costs at the same time.

## Customer needs

The home owner is aware that air-conditioning accounts for the greatest energy use and cost in the home, but they are not willing to compromise comfort on very hot days. They desire a less costly comfort solution on days when air-conditioning is not required.

Clipsal ceiling sweep fans are a cost effective method to cool rooms during the day and night in summer, and maximise the efficiency of heating in the winter.

Ceiling sweep fans are just as effective outdoors and are ideal under verandahs to provide comfort on a hot summer evening.

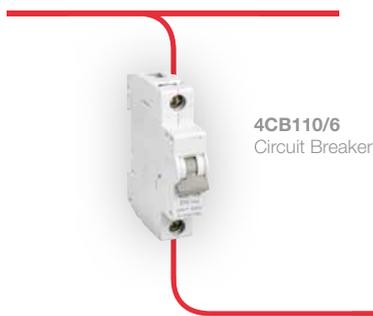
# Clipsal Australia **Solution**

- A wide range of three, four and five blade ceiling sweep fans.
- Available in remote control or wall control versions.
- Stainless steel and powder coat finishes.
- Forward and reverse air flow capability.
- Three stage or variable fan speed controllers.
- Suitable for indoor and outdoor use.
- Simple to install.
- Reliable and quiet motors.

## Energy efficiency benefits

- Typical savings of \$126 in energy costs per annum.
- Cost effective way to cool a home day and night.
- Uses substantially less energy than air-conditioning units and systems.
- Improves effectiveness of heating, pushing down warm air from the ceiling.

## Typical configuration



Save up to  
**\$126** in energy  
costs per annum



**5HS1300SBR**  
Ceiling sweep fan with five  
timber blades and infrared  
remote control

## Energy efficiency core products



**ACES48JAL,WE**  
Three blade reversible  
aluminium ceiling  
sweep fan



**ACES48R,SS**  
Infrared remote  
control, three blade  
reversible, stainless  
steel ceiling sweep fan



**4HS1200R,SS**  
Infrared remote  
control, four blade  
reversible, stainless  
steel ceiling sweep fan



# Exhaust Fans

## Keep the draught out

Studies have shown that poor seals around doors and windows, and leaks elsewhere account for up to 15% of heating and cooling loss in the home. Exhaust fans commonly found in kitchens, bathrooms, laundries and toilets are used to exhaust stale air outside or into the roof space. Most exhaust fans are open at the back and allow warm air to escape in winter and hot air to enter in summer. Clipsal exhaust fans are fitted with new backdraft shutters that close automatically when the exhaust fan is not in use, thus preventing air entering or escaping into the home.

## Customer needs

The home owner wants to minimise heating and cooling costs in the home by ensuring that windows, doors and other escape areas are properly sealed from the outside. The home owner wants the exhaust fan to automatically close to the outside environment when not in use.

# Clipsal Australia Solution

- Clipsal exhaust fans feature a backdraft shutter that closes automatically when not in use.
- Unique design reduces dust collection by 80% and requires cleaning less frequently.
- Designed to move a large volume of air - equivalent to 290m<sup>3</sup> per hour.
- High performance centrifugal fan.
- Side entry duct connection.

## Energy efficiency benefits

- Save up to \$72 in energy costs per annum by sealing openings for the average home.
- Minimises heating and cooling costs.
- Prevents hot air from entering the home in summer and warm air escaping in winter.

## Typical configuration



Save up to  
**\$72** in energy  
 costs per annum  
 by **sealing openings**  
 throughout the home

## Energy efficiency core products



**CEF40**  
Ceiling Mounted  
Centrifugal Fan



**2031VETF**  
Run-on Timer



# Bathroom **Fan/Light/Heater**

## Warm up efficiently

The Clipsal Sunshine range of fan, light and heater combination units are an ideal solution for bathrooms, where instant warmth and maximum comfort are a must.

To optimise energy use and tailor the temperature to the individual, the Sunshine range allows the user to select the heat output, only using the energy that is needed.

For added convenience, a powerful exhaust fan is incorporated into the unit. And for those applications where only lighting is required, Clipsal have provided a low energy, long life fluorescent lamp.

## Customer needs

The home owner wants to minimise heating and cooling costs in the home by using energy wisely, whilst still maintaining a practical lifestyle. Often called 3-in-1's, bathroom fan/light/heater units are the one item home owners can't do without in their bathrooms. They include everything a home owner could possibly want; a light to illuminate, a heater to warm and an exhaust fan to remove excess moisture from the air. Instantaneous and concentrated heat provided by fan-light-heater units, if used prudently, is a more economical alternative to space heating.

# Clipsal Australia **Solution**

- Efficient and economical operation.
- Multiple choice – two heat lamp model for use in ensuites and four heat lamp model for main bathrooms.
- Some models feature flexible ducting option.
- Efficient ball bearing motor and centrifugal fan for optimum ducting performance.
- Built-in thermal protection - temperature sensor automatically turns off heat lamps if overheating is detected. Exhaust fan and centre light continue to operate, on selected models.

## Energy efficiency benefits

- Supplied with energy efficient compact fluorescent globe.
- User selectable heat settings.
- Some models feature backdraft shutters to reduce draughts.

## Typical configuration



User selectable  
**heat settings**  
can lead to  
**energy savings**  
of up to **50%**  
or more



**7500ATP**  
Ducted 3-in-1 Fan/Light/Heater,  
four heat and one CFL lamp

## Energy efficiency core products



**7600ATP**  
Ducted 3-in-1 Fan/Light/Heater,  
two heat and one centre lamp



**7500ATP**  
Ducted 3-in-1 Fan/Light/Heater,  
four heat and one centre lamp



**6500A**  
3-in-1 Fan/Light/Heater,  
four heat and one CFL lamp



**6600ATP**  
3-in-1 Fan/Light/Heater,  
two heat and one CFL lamp

# Water Strategies

## Save electricity, use a timer

Water saving is front of mind for every Australian. Water saving strategies and devices such as flow-regulators, taps, dual-flush toilets, sensors and timers are becoming more common. There are also some simple things customers can do around the home to reduce the consumption of energy in relation to water features, ponds, pools and spas. Typically exposed to the outdoors, the Clipsal weatherproof timer and industrial range can assist in managing electrical consumption by enabling the user to set up a more efficient operating regime.





# Pool & Spa Strategies

## Timer switches

If your customer owns a swimming pool or spa, a Clipsal timer switch is the ideal solution to reduce their energy costs. It can be programmed for the seasons, which means their pool pump operates for longer periods during the summer months when the pool is in use, while in winter the pump will operate less frequently when the pool isn't being used.

The recommended ranges for summer and winter pool filter operation are eight and four hours respectively. In most cases, a reduction in running time per day will provide instant savings, however drastic reductions may result in under-filtering and associated chemical requirements would defeat the purpose of the energy saving. The home owner should make changes in consultation with their local pool service technician.

## Customer needs

The home owner wants to maintain the pool's cleanliness all year round to help protect the water quality and to ensure that it is free of micro organisms that can lead to infections and disease. To ensure the pool pump remains in optimum condition, there is a requirement to run the pump frequently. The home owner also wishes to minimise the energy use and cost of operating the pool pumps, especially in the off-season when the pool is seldom used.

# Clipsal Australia Solution

- Manufacture a range of time clocks for pool pump applications.
- IP66 rated for outdoor applications.
- Simple to program and use.
- Support multiple schedule programs.

## Energy efficiency benefits

- Seasonal schedule control of pool pumps can save over \$525 per annum in energy costs.
- Operating pool pumps less frequently may increase service life.

Seasonal schedule control of pool pumps can **save over \$525** per annum in energy costs

## Typical configuration



## Energy efficiency core products



**4TC**  
24-hour DIN Rail  
Mounted Timer



**56TC**  
IP66 24-hour Timer  
with Battery Reserve



**56TC7**  
IP66 Seven-day Timer  
with Battery Reserve



**56CTC**  
IP66 Combination  
24-Hour Timer

# Eliminating **Standby** Power

A study by the United Nations Economic and Social Commission for Asia and the Pacific, estimated that the average Australian household uses 86.8W of standby power at any time. This is equivalent to 760kWh per annum or 11.6% of the total energy consumption in the home.

Standby power creates over four million tonnes of greenhouse gases in Australia every year and is set to double every nine years as we incorporate more electronics into our homes in the future.





# Standby Power

## Money for nothing

Standby power is the small amount of power that appliances, such as televisions, DVD players, phone chargers and microwave ovens, consume when sitting idle. Standby power otherwise serves no useful purpose, which means home owners are paying money for nothing. It is of no surprise to learn that over 10% of a home's electricity costs can be the result of standby power.

Home owners can minimise or totally eliminate standby power costs by simply switching off power at the outlet. Clipsal offers a range of innovative products to help them do this, such as remote kill switches and intelligent plug packs that automatically senses when a device is in standby power and switch it off.

## Customer needs

The home owner wants to reduce excess energy consumption caused by standby power on electronic devices. By using kill switches they can reduce 10% of their total home energy consumption.

# Clipsal Australia **Solution**

- Remote control kill switches turn off devices when not in use.
- Simple to use.
- Cost effective.

## Energy efficiency benefits

- Remote control kill switches can reduce total power energy consumption by up to 10%.

## Typical configuration



**Kill switches**  
can help you **save**  
**up to 10%**  
energy **consumption**  
by reducing standby power

## Energy efficiency core products



**5888TXBA**  
C-Bus Wireless Hand  
Held Remote Control



**LHC8TXRF**  
C-Bus Lexcom Hand  
Held Remote Control



**5812R10F1AA**  
C-Bus Wireless 10A  
Plug Adaptor



**LHC2R10F1**  
C-Bus Lexcom 10A Home  
Wireless Control Plug Adaptor

A white, circular Clipsal smoke alarm is mounted on a ceiling. The brand name 'CLIPSALE' is visible on the top surface. Below the alarm is a smaller, dark circular vent. The room is dimly lit, with a person sleeping in a bed in the background.

The Clipsal range of **smoke alarms** and **Safety Switches** are proven **lifesavers**

# Home **Safety** Solutions

## Protect your home and family

Clipsal's comprehensive range of safety products are designed to make the home safer and help protect the family from electrical hazards. The Clipsal range of smoke alarms and Safety Switches, or RCD protected devices, are proven lifesavers and a must in all homes.

Our fast acting circuit protection equipment guards against electrical faults and reduces the possibility of electrical fires, while our high capacity surge arrestors are designed to protect expensive electronic equipment from lightning strikes and electrical network faults.



# RCD Protection

## Lifesaver<sup>®</sup> Safety Switches

Clipsal is recognised as a leader in the field of electrical accessories and has over 90 years experience. Clipsal manufacture a wide range of RCD switches and Lifesaver Safety Switches that meet and exceed Australian standards.

Give your customers peace of mind with the simple installation of a Clipsal Lifesaver Safety Switch in their home's electrical switchboard. Their family will have the best protection money can buy.

## Customer needs

The home owner desires total protection from electrical hazards for their family. They also demand utmost reliability and quality products from a reputable company. The home owner has an expectation that the Safety Switches will operate instantaneously and without fault when required. They'll also trust that Safety Switches can prevent severe injury and even death.

The **best**  
**protection**  
money can buy

# Clipsal Australia Solution

- Clipsal manufacture a wide range of RCDs for electrical switchboards, power outlets and portable devices.
- Proven reliability and renowned quality.
- Trusted brand in hospitals and medical facilities.
- Select earth leakage protection or overcurrent protected devices.
- Combinations also available.

## How to avoid the tragedy of electrocution

The Clipsal Lifesaver Safety Switch works by continually monitoring the current flow in the Active and Neutral conductors. In the case of a faulty appliance, or live wiring, the current balance is disturbed and the RCD automatically reacts and disconnects power, protecting against electrical shock and preventing loss of life.

## Protection for the entire home

Clipsal offers switchboard, power outlet and portable RCD protected outlets. Mounted in the electrical switchboard, Clipsal Safety Switches protect the power and lighting circuits in the home. They should also be fitted in workshops and garages to provide additional protection. Clipsal's Safety Switch offers comprehensive protection and is your customer's first line of defence.



**4RC240/30**  
30mA Two-pole RCD

## Single circuit protection

The Clipsal Lifesaver Power Outlets feature an inbuilt RCD. They're designed to provide protection to the home's occupants and are ideal for nurseries, workshops, kitchens, bathrooms, laundries and any other wet areas.



**2025RC**  
2000 Series RCD  
Protected Outlet

## Portable protection

For a tradesperson or the home handyman who works away from fixed RCD protection, portable protection is a must. The cords of power tools and electrical garden equipment are easily damaged, and using any appliance in damp conditions can also be dangerous.

The Clipsal Lifesaver range of portable protection includes plugs, plug adaptors, heavy-duty cord sets and cable reels, all of which offer safety when working with electricity.



**955**  
2m Extension  
Lead with RCD  
Protection



**951WH**  
Plug Adaptor with  
RCD Protection



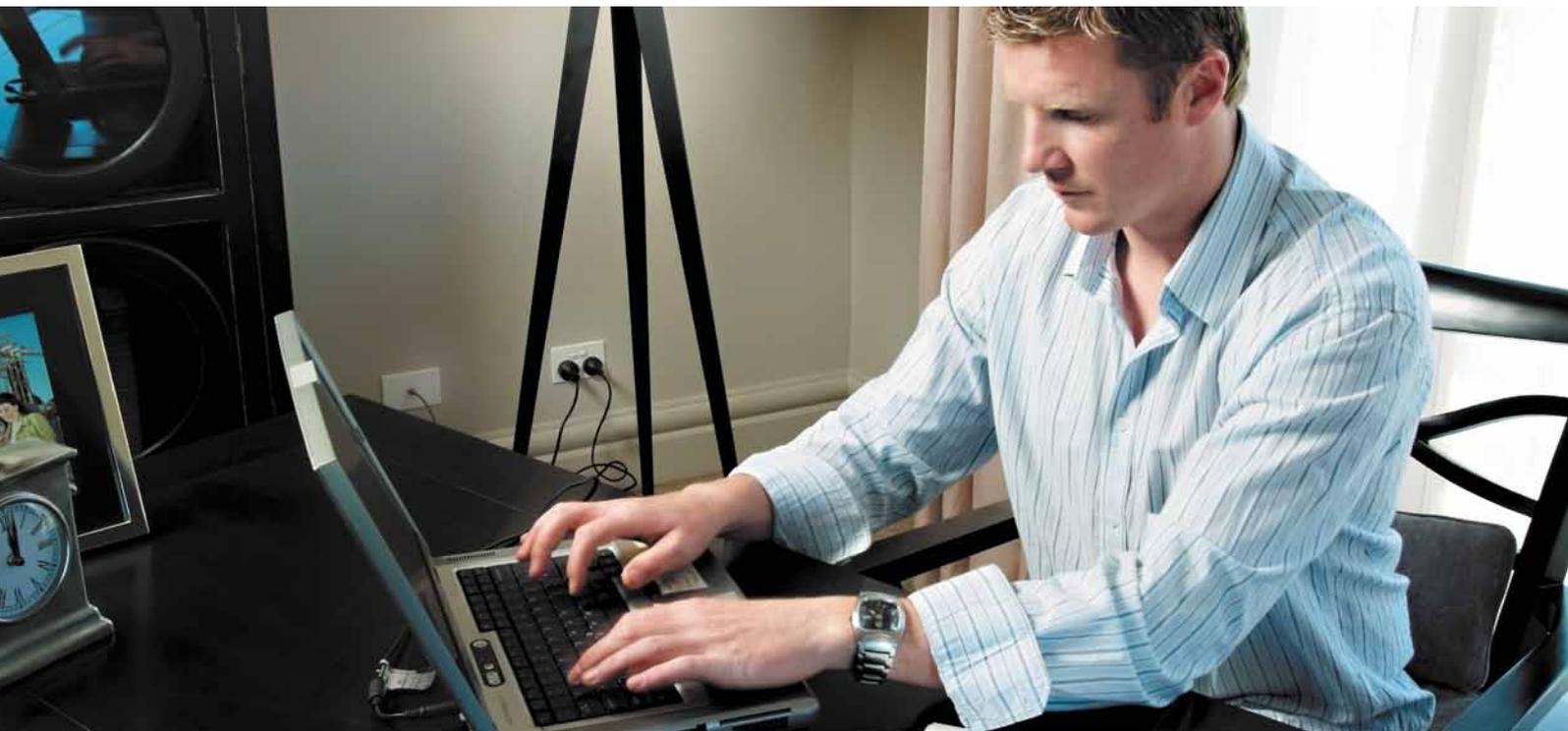
**485P4CB30**  
Portable Power  
Outlet with RCD  
Protection

## Thermal protection power outlets

The thermal trip power outlet is an innovative design that comes loaded with benefits. Designed to shutdown power to a device if overheating is detected, it protects wiring, prevents fires from starting and avoids any further damage to the device if there is a fault or problem. Easy to reset from the power outlet, rather than having to go to the mains switchboard.



**695T**  
Thermal Protected  
Socket Outlet



# Surge Arrestors

## Protection from surges

Lightning strikes, mains electrical faults and even branches falling onto power lines during a storm can cause surges. Surges are voltage spikes measuring several thousands of volts that travel down the power lines, through the electrical switchboard and into customers' electronic equipment. This can affect electronic devices such as large screen televisions, computers, alarm systems, washers and dryers. The result can cause catastrophic failure or permanent damage to equipment.

A switchboard surge arrestor is designed to stop surges into the switchboard and prevent them entering the home. The surge arrestor is a small investment and the best way to protect assets and property.

## Customer needs

In today's modern homes we find large screen televisions, home theatres, computers, audio distribution systems and home automation systems, which represent considerable expense and investment for the home owners. All electronic equipment is susceptible to lightning strikes and overvoltage conditions that can lead to catastrophic failure and may not be covered by insurance. The home owner wants a solution that will protect their investment from likely damage.

# Clipsal Australia **Solution**

- Clipsal has a wide range of lightning and overvoltage protection equipment for electrical switchboards, power outlets and portable devices.
- Switchboard mounted overcurrent devices are designed to protect equipment from lightning strikes.
- Switchboard mounted surge arrestors are designed to protect equipment from overvoltage conditions.
- Surge arrestor modules may be removed and replaced when they fail.
- Switchboard mounted surge arrestors feature remote status terminals that can be connected to an external buzzer or light.

## Surge protection benefits

- Protects electronic equipment from permanent damage, that may not be covered by insurance.
- Helps to prevent electronic stress on equipment, which may reduce performance over time.
- Low cost to implement and simple to install.
- Switchboard mounted equipment protects all electronic equipment downstream.
- Surge protected power outlets offer local protection of equipment.

## Typical configuration



Clipsal's surge arrestors  
are a **small investment**  
and a **first line**  
**of defence**  
from electrical damage

## Surge protection core products



**970RM/120**  
DIN Rail One-pole  
Overvoltage Arrestor



**970RM**  
DIN Rail Overvoltage  
Arrestor



**2025SF**  
2000 Series Surge  
Protected Outlet



**463SF**  
Plug Adaptor  
Surge Filter



**600S**  
600 Series Surge  
Protected Outlet



# Smoke Alarms

## Smoke alarms save lives

Smoke alarms save lives and protect property from the powerful destruction of fire. Many home owners are not aware that smoke alarms have a limited working life and need to be replaced every 10 years to provide adequate protection.

Clipsal offers a complete range of ionisation and photoelectric smoke alarms to suit all applications. The range includes surface mount units and a low profile flush mount design, which is ideal for home owners seeking a smoke alarm to be as unobtrusive as possible.

Specifically designed for early smoke detection and superior protection, our range of smoke alarms fully meet Australian standards for performance and features. In addition, Clipsal smoke alarms are compatible with all makes on the market, so replacement is easy, with no new wiring or holes in the ceiling required.

## Customer needs

The home owner expects that a smoke alarm operates reliably on every occasion when it is called for. They have an expectation that the smoke alarm is immune from false triggering, has a long service life and is easy to test. In the case of a power failure to the home, the smoke alarm will continue to operate on battery back-up for an extended period.



# Clipsal Australia **Solution**

- Clipsal manufacture a wide range of ionisation and photoelectric smoke alarms.
- 240V a.c. operation with 9V d.c. battery back-up.
- Surface and flush mount units available.
- Test and hush button.
- Loud audible alarm output.
- Meets Australian Standard AS3786.

## Smoke alarm benefits

- Smoke alarms are designed to protect a home's occupants and property from fire and smoke.

Smoke alarms  
**save lives**  
 and protect property

## Typical configuration



## Smoke alarm core products



**755FM**  
Flush Mount  
Ionisation  
Smoke Alarm



**755PFM**  
Flush Mount  
Photoelectric  
Smoke Alarm



**755SMA**  
Surface Mount  
Ionisation  
Smoke Alarm



**755PSMA**  
Surface Mount  
Photoelectric  
Smoke Alarm



# Additional Home **Safety**

## Clipsal **Awesome Foursome**

The use of portable power boards and plug adapters have seen widespread adoption as we embrace technology and find more and more equipment to plug in. The tangle of wires represents potential fire or electrical safety hazards because plug adapters may come loose, expose live pins and represent a risk to small children.

The solution is to update the old single and double power outlets with Clipsal's Awesome Foursome power outlet. The Clipsal Awesome Foursome eliminates the tangle of cables and removes any potential electrical hazard.



**C2015D4**  
Clipsal Awesome Foursome  
Four Gang Power Outlet

## Weatherproof - Indoors

Electricity and water don't mix. How many of us have switched on a light with wet hands in the kitchen, laundry or bathroom? For added safety, Clipsal has developed a range of waterproof switches for indoor applications. These switches feature a special rubber membrane barrier to prevent water entering the switch, but they look like any other switch from the front.



**2031V66**  
IP66 Rated Switch

## Weatherproof - Outdoor

Our love for outdoor living and gardening has increased the need for outdoor switches and power outlets. Clipsal have responded with a wide range of weatherproof switches designed to operate outdoors in direct weather, while offering unparalleled protection and safety. Constructed from heavy-duty plastics, Clipsal's weatherproof switches are designed to resist corrosion, colour fading and impact.

To help complement home design, the Clipsal range of switches are available in various colour finishes such as Sandstone, Brown and Black to match brickwork or rendering.



**WSC227/2**  
Weathershield®  
Surface Mounting  
Weather Protected  
Double Power Outlet



**WS229**  
IP66 Surface  
Mounting Weather  
Protected Switch

## Front-loading modules and safety shutters

If the home owner is after additional safety options there are other switch and outlet solutions that will assist.

Perfect for anyone with an adventurous child, the Modena 800 Series™ includes front-loading switch modules, which are designed to combat frontal impact. Put simply, the modules cannot be pushed back into the wall cavity.

Reduce any further risk by installing this range. The power outlets are internally switched and combined with safety shutters on each socket, which means that only an appliance plug will create a connection.



**883**  
Modena 800 Series™  
Three Gang Switch



**895A**  
Modena 800 Series™  
Twin GPO

# Colour & Finish

Choose the colour and finish to suit any room of the home.

## Clipsal Saturn™ 250V



Pure White (PW) Ocean Mist (OM) Espresso Black (EB)

## Metal Plate™ Range



Stainless Steel (BSL) Brass (BBSL) Anodised Aluminium (AA)

## Slimline SC2000 Series®



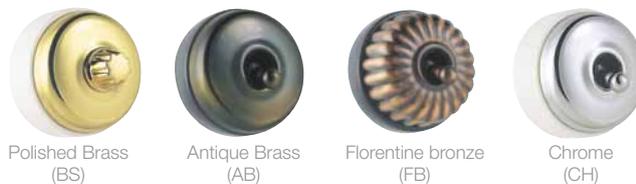
White (WE) Cream (CM) Black (BK) Gold (GD) Soft Grey (SG) Desert Sand (DS)  
 Chrome (CH) Brushed Aluminium (BA) Brushed Brass (BB) Chrome Shadow (3S) Brown (BR)

## Modena 800 Series™



Blue (BL) Red (RD) White (WH) Black (BK) Charcoal (CC)  
 Chrome (CH) Gunmetal Grey (GM) Platinum (PT) Champagne (CE)

## Heritage™ Range



Polished Brass (BS) Antique Brass (AB) Florentine bronze (FB) Chrome (CH)

Clipsal Australia would like to acknowledge and thank the following providers:

- » Uniq Homes, [www.uniqhomes.com.au](http://www.uniqhomes.com.au)
- » Scott Salisbury Homes, [www.scottsalisburyhomes.com.au](http://www.scottsalisburyhomes.com.au)
- » Serenity Homes, [www.serenityhomes.com.au](http://www.serenityhomes.com.au)





## GIVE YOUR HOME A CLEAN BILL OF ENERGY

With spiralling energy prices, growing concern over greenhouse gas emissions and the ever present need for electrical safety in the home, it's more important than ever to monitor your energy usage.

**For just \$279** you can have a Clipsal certified energy electrician conduct a complete Home & Energy Safety Audit and provide a comprehensive report and quote for ways to optimise your energy usage. For a limited time you'll also receive a complimentary Clipsal Energy Monitor (RRP \$150) installed FREE. To enjoy the benefits of a safe, cost effective and environmentally responsible energy lifestyle, visit [www.clipsal.com/myhome](http://www.clipsal.com/myhome) or call **1300 878 878**.



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Energy Solutions for Life

**CLIPSAL**<sup>®</sup>

by Schneider Electric