A new generation in home fire protection

Smoke Alarm Smart Switch

STOP HOUSE FIRES BEFORE THEY GET STARTED!

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1. Product Profile

About 2linkinnovations

The company was started in 2014 with a vision of producing products that meet the needs of the general consumer and currently holds standard patents in Australia, U.S. and Canada. Our products range from software to hardware, developed with the experience and insight of hands on installers, design teams and management executives. With over 25 years of technical, management, business and project management experience, all our products and projects are delivered to the highest levels of excellence.

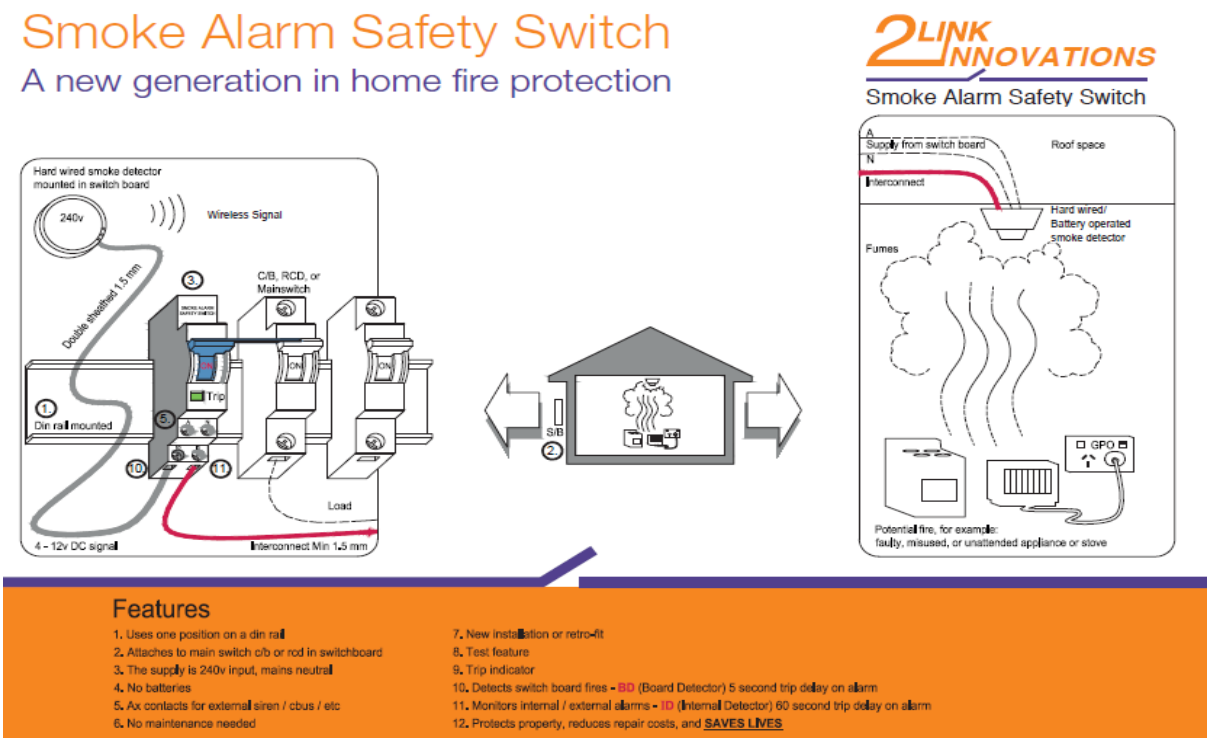
About the Smoke Alarm Smart Switch

The Smoke Alarm Smart Switch is a world first patented Australian invention that can change the way people protect their families and property. Electricity is one of the major causes of house fires and via this ground breaking invention fires can be stopped before they become self fuelling. With over 11,000 house fires and 50 deaths in Australia per year this invention is a must.

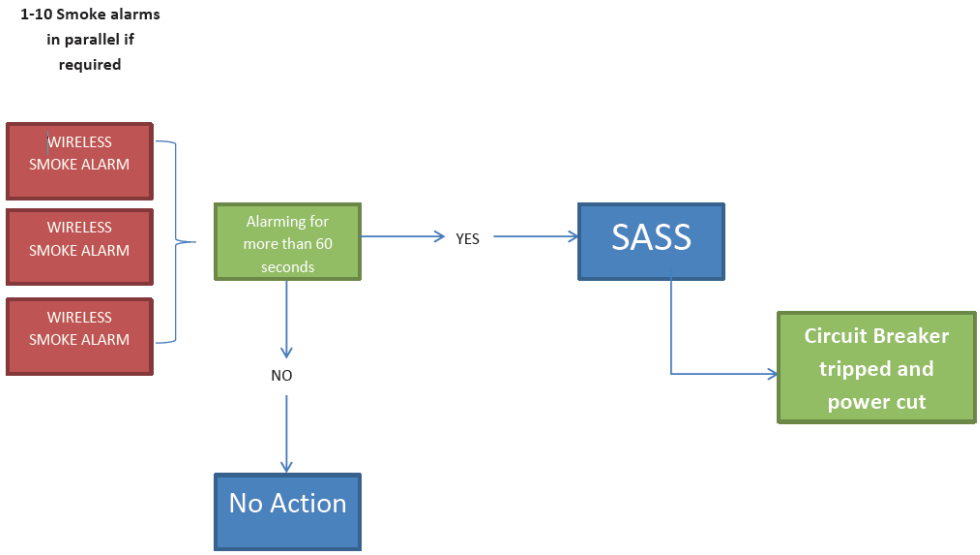
Even if you have a working Smoke Alarm at home, what can the Smoke Alarm do if the occupants

- Do not hear the alarm
- Are hearing impaired
- Are sleeping children under 10yrs of age
- Are not at home?

Smoke Alarms are limited to just emitting a sound. **The Smoke Alarm Smart Switch** is a switch which fits into your Electrical Switch Board (residential or commercial) and communicates with your Smoke Alarm via either a hard wired connection or a wireless signal, once the Smoke Alarm has been alarming for a set period (60 seconds) the Smoke Alarm Safety Switch turns the desired electrical circuits off in turn cutting one of the key potential sources of fuel for a fire, electricity. **"Up to 40% of house fires are fuelled by electricity (www.fire.nsw.gov.au)".**



Smoke Alarm Smart Switch Flow Chart



1. Market Features and Benefits

Feature 1

Stop Kitchen Fires

Cooking fire is the main cause of house fires in Australia as a result of

- cooking left unattended
- misuse of cooking equipment
- over loaded appliances

The **Smoke Alarm Smart Switch** can turn off electricity to the common kitchen stove, hot plates and appliances which are responsible for up to 35% of house fires (http://www.fire.nsw.gov.au/home-fire-safety/common.html)

By switching off the stove or hot plates at the circuit breaker you are cutting the power not only to the cooking unit (stove or hot plates) but cutting the power to the cabling, junction box and electrical system.

Please see the ABC radio interview and explainer video @2linkinnovations.com.au

see www.tcforensic (fire investigators)

Feature 2

Protecting the Hearing Impaired

The deaf community has additional products to notify them off a house fire, but what if they do not see, feel or have these devices, what if they are outside the property?

The **Smoke Alarm Smart Switch** will protect the deaf community by preventing up to 40% of house fires by turning the electricity off at the source and is not dependant of sound.

Once the selected power circuits are off it will give the occupant a visual alert that there has been a potential fire that has been prevented and then they can inspect the situation.

The SASS also has an indicator window on the front face cover to visually inform the user as to which circuit has been tripped and the condition of the unit (red ON, green OFF).

Feature 3

Protecting the Most Venerable Children under 10yrs of age

It has been documented that sleeping children under 10 years of age do not hear a standard smoke alarm beeping. This means if no one is in a position to awaken the children (which can occur) the consequences can be devastating. The Smoke Alarm Safety Switch will turn off the electricity cutting the source of up to 40% of house fires, electricity! The **Smoke Alarm Smart Switch** will enable children to either evacuate the building, bring to the attention a non minor that a potential fire has been stopped.

See www.youtube.com/watch?v=7XKedodF2pk

Feature 4

Protects the Environment and Helps the Economy

Preventing up to 40% # of house fires would have a large impact on the environment as house fires contribute to the burning of toxic substances (cloths, furniture , paints ect) in which contribute to air pollution and global warming.

Also the waste from house fires has added more stress to the limited resources of land fill not to mention the production of new products to repair or rebuild homes, schools, offices ect.

The economy also benefits by not having to repair or rebuild property which in turn costs the insurance companies millions of dollars and raises insurance cost for end users.

Feature 5

Stop Secondary Supply of Electricity from Solar Panels

The **Smoke Alarm Smart Switch** will protect fire fighters by turning off the roof top solar panel 240vac electricity feed. One of the newest challenges that fire fighters are facing is the installation of solar panels in Australia (over 1 million homes have solar panels installed) if a fire is occurring in the day time (or the residence has a storage battery) the panels are feeding electricity to the switch board and into the electrical system of the house this presents a danger to the occupants and fire fighters as this is a secondary source of electricity that cannot be turned off from the street (turning the street mains off from the power pole is a standard practice by fire fighters).The Smoke Alarm Safety Switch turns off both electricity feeds.

Feature 6

Protect Homes from Switch Board Fires

A large cause of house fires is when the fire starts in the switch board (where all the major load switching takes place and most electrical connections are) which is generally positioned of the side of the residence.

The potential fire can then travel up the wiring loom and into the roof space and is unnoticed by the occupants.

The **Smoke Alarm Smart Switch** has the feature of installing a smoke alarm in the switch board and then connecting **the Smoke Alarm Smart Switch** to it via a 5 second delay trip feature, in turn the faulty or overloaded circuits will be switched off and this will prevent a switch board fire and notify the occupants.

See www.mfb.vic.gov.au/News/MFB-investigates-switchboard-fires

see www.tcforensic

Published: 19th March 2008

NSW Fire Brigades (NSWFB) Commissioner Greg Mullins said today that dishwashers were responsible for at least 102 fires in NSW in the past three years, highlighting the need for fire safety precautions, especially in the home."It is also vital that every home has working smoke alarms and residents have prepared and practiced a home escape plan so that if there is a fire they get an early warning and know how to get out quickly and safely."If a fire starts, turn off power immediately at the power point or switchboard if safe to do so and call Triple Zero (000)." www.fire.nsw.gov.au

Feature 7

Home Automation (Smart Homes) Compatibility

The **Smoke Alarm Smart Switch** has the capability to work seamlessly with home automation systems by communicating via its low voltage inputs and hard ware application.

The **Smoke Alarm Smart Switch** can carry out the function of switching off desired electrical, gas, and communication circuits by communicating with alarm or software interfaces automatically or manually, this also enables the end user the provision to monitor the real time activity of their home.

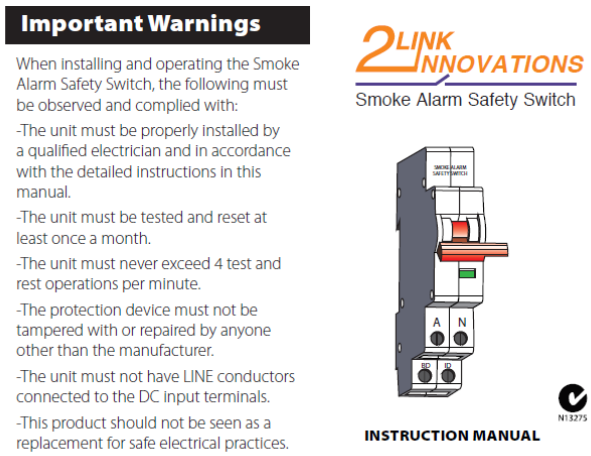
APPLICATION EXAMPLE: you leave home on a long trip or short trip and realise you have left an electrical appliance on (clothes dryer, iron ect), stead of turning home or worrying all day) you can remotely turn off the desired circuits and have not only peace of mind but protect your home.

3. Performances

Quality and reliability

- The **Smoke Alarm Smart Switch** has been designed to fit onto a one pole din rail position; this is to ensure that it can be retro fitting into an existing switch board without the needed installation time and expense.
- The front panel has been fitting with a visual indicating panel that tells the observer what condition the unit is in (red ON, green OFF).
- The outer casing is made of a robust plastic material designed for the environment it will be functioning in.
- The unique side locking system enables the Smoke Alarm Smart Switch to be further secured to the selected circuit breaker reducing the possibility of disconnection.
- The unit has been fitted with an internal/external anti tamper linking mechanism which will prevent the switching arm from being forced into an on position (e.g. tape put over the switching arm to keep it in the on position).
- The internal microprocessor enables the unit to be activated a number of times without any chance of failure.
- The application of the Smoke Alarm Safety Switch is worldwide as all the aforementioned applications apply to most smoke alarms.

Instruction Manual and Certification



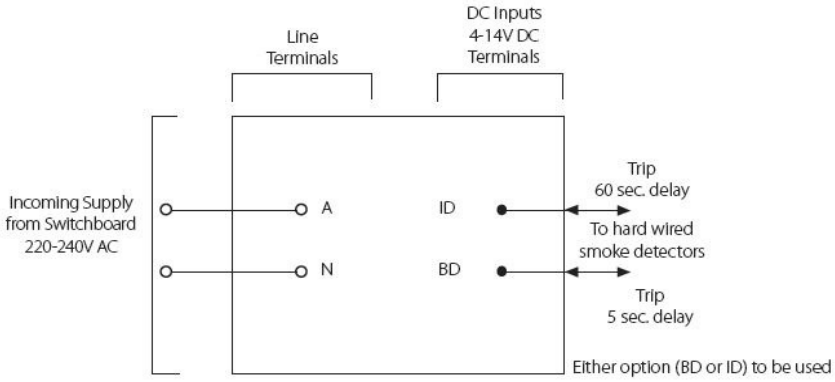
Description

The Smoke Alarm Safety Switch is specifically designed to protect both people and property from damage or injury in case of a particle fire by monitoring the hard wired smoke alarm activity via the interconnect terminal on the smoke detector.
-SSP-1 must be linked up to approved MCB via physically linking the drive arm, as per Fig.2 (page 3).
-Active (A) and neutral (N) must be wired with the correct polarity.
-In 2-3 phase installations the same phase must be used on the SSP-1 as the hard wired smoke alarms.
-A minimum cable size of 1mm must be used for the interconnect
-A maximum of 10 hard wired smoke detectors may be connected to the SSP-1.

Note: Electricians please refer to page 3

Installation Instructions

Figure 1: Wiring Diagram



WARNING: DO NOT connect incoming supply cables to the DC input terminals as this will result in damage to the SSP-1.

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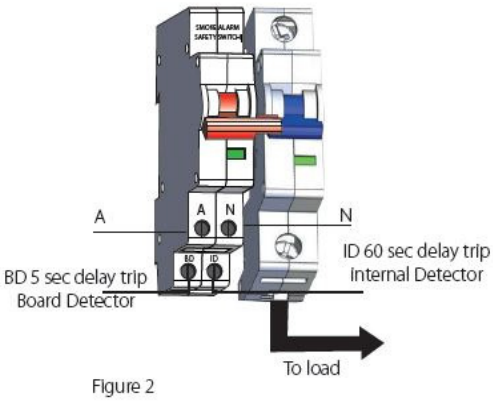

Figure 2

To the Electrician:

One of the recommended Miniature Circuit Breakers to suit the Smoke Alarm Safety Switch is a Moeller single pole 63A 6KA MCB, part number PLS6-C63/1-AU. Alternatively a triple pole 63A 6KA MCB, Part Number PLS6-C63/3-AU, maybe fitted for 3 phase supplies.

Or any MCB which fits the Smoke Detector Safety Switch arm mechanism.

Either of these Circuit Breakers can be obtained from your local Electrician Wholesaler or by contacting Ezlec Trade Supplies on 02 43248899

Technical Specifications

Nominal Operating Voltage	220-240VAC
Nominal Operating Frequency	50Hz
Max. No. Smoke Detectors	10
Circuit Projection Required	Inc 3kA circuit protection by MCB or HRD fuse, 20A max.
General Specifications	
Operating Temperature Range	-10 to 40°C
Operating Humidity Range	10 to 90% RH
Mounting Centres	DIN Rail
Complaint Standard	IEC 60335-1:2010
EMC Emission Compliance	EN 61000-6-3:2007+A1:2011 EN61000-3-2:2006+A1:2009+A2:2009 EN 61000-3-3:2008 EN 61000-6-1:2007
Specifications typical @ 25°C ± 5°C	
No user serviceable parts inside.	

Market Need and Testimonial

1.

Fire and Rescue NSW reports that one of the main cause of house fires is "appliance and electrical faults" they attend over 4500 house fires which almost half are caused by kitchen fires.#

2. The University of Victoria conducted in-depth research into the causes of residential fires which was submitted as evidence to the 2015 Senate Inquiry.

All the highlighted findings in red are were the SASS could have prevented injury or property damage.

Below are the findings.

182 persons who were involved in house fires were interviewed and the finding are as below.

	Unsafe behaviour	Inactions	No human involved	Total of
Ignition factors (n=182)	0	0	76.5(56)	30.8 (56)
Failure/Faults in electrical or ignition				
system				
Unattended cooking	34.5 (29)	0	0	10.15 (29)
Combustibles too close to heat	26.2 (22)	0	4.1 (3)	12.5 (25)
Lack of maintenance/worn out	0	64.0 (16)	0	6.4 (16)
Child playing with ignition sources	14.3 (12)	0	0	6.6 (12)
Cooking other	10.7 (9)	0	0	3 (9)
Overloaded equipment	0	36.0 (9)	0	3.6 (9)
Discarded cigarettes	6.0 (5)	0	0	2.7 (5)
Improper start-up/shutdown	3.6 (3)	0	0	1 (3)
Others*	3.6 (3)	0	5.5 (4)	3.8 (11)
Undetermined	1.1 (1)	0	13.6 (10)	6.3 (11)
Total	100.0 (84)	100.0 (25)	100.0 (73)	100.0 (182)
Appliance involved				
Stove	48.8 (40)	0	1.5 (1)	14.35 (41)
Heating unit(ie central, fixed, portable	7.3 (6)	21.7 (5)	7.2 (5)	4 (16
and indoor fireplace)				
Electrical distribution equipment,	1.2 (1)	21.7 (5)	16.0 (11)	5.1 (17)
Fixed wiring, cord, plug, and charger				
Extraction fan	0	30.4 (7)	5.8 (4)	1 (4)
Lamp light globe	3.7 (3)	0	10.1 (7)	2 (10)
Portable cooker	4.9 (4)	0	4.3 (3)	2.45 (7)
Oven	1.2 (1)	13.1 (3)	1.5(1)	1.75 (5)
Air conditioning unit	0	0	8.7 (6)	2 (6)
TV	0	0	5.8 (4)	1 (4)
Dryer	0	13.1 (3)	0	1 (3)
Dishwasher	0	0	5.8 (4)	1 (4)
Others	1.2 (1)	0	16.0 (11)	6.9 (12)
Total % column	68.3 (32.2, 56)	100.0 (13.2, 23)	82.7(32.8, 57)	78.2 (136)
No appliance involved	31.7 (26)	0	17.3 (12)	21.8 (38)
Total	100.0 (82)	100.0 (23)	100.0 (69)	100.0 (174)

 # preventing accidental residential fires: the role of human involvement in non-injury house fires.

Centre for Environmental Safety and Risk Engineering, Victorian University, Melbourne, Australia

Please note: up to 40% of these common fires could have been prevented by the SASS being installed!

3. www.tcforensic : chief activity is the determination of the causes of fires, and the laboratory analysis
4. JG Consulting : Electrical Fires - **2.0 ELECTRICAL CAUSE OF FIRES**
5. www.youtube.com/watch?v=7XKedodF2pk (Children do not hear Smoke Alarms)
6. www.fire.nsw.gov.au/news.php?incidents=617 (Switch board fires)
7. Watch the 2linkinnovations explainer video @ https://youtu.be/MM3MuLYEcuM
8. ABC radio interview with 2linkinnovations direct (Shaun Garrard)
   https://soundcloud.com/user-902979654/abc-radio-interview-shaun-garrard-smoke-alarm-safetyswitch
9. www.**fire**.**nsw**.gov.au

The Smoke Alarm Smart Switch has been recognized by winning the below awards.

2017 Selection Winner (International Good Design Awards)

2017 Top 8 (Australia By Design Innovation, channel 10 broad cast)

2018 Finalist (Fire Protection Australia) Innovative Product and Technology Award 2018

2018 Finalist (Fire Protection Australia) Fire Protection Project Of The Year 2018 Under $1 Million Dollars

Testimonials

"Thank you for installing the Smoke Alarm Smart switch.
The beauty about installing the Smoke Alarm Smart Switch is that it just gives that added peace of mind. It's

like having added insurance.
It is a very simple but brilliant idea that once any of our smoke detectors go into alarm, having the power turned off automatically just seems so logical. Being away from the house or even going on holidays I can have the peace of mind knowing that the Smoke Alarm Safety Switch goes a long way in protecting our most valuable asset.
I have no doubt in my mind that the time will come when all new homes will have a smoke alarm safety switch installed as part of the requirements of building a home. It really should be made compulsory for all homes".
"Great invention." Regards Ruben Quero

"After installing the Smoke alarm smart switch in our new house I am confident that I can leave home without worrying about potential fires from occurring and what's $250 to protect my investment. I say money well spent!"
Nathan Chivers

To whom it may concern,

"I never thought it was possible to protect your home from electrical fires in such a quick and inexpensive way.

Without the Smoke Alarm Smart Switch what do your Smoke Alarms do if no one is home!

Why don't all home have them, like we do with Safety Switches?"

Norma