



# Smoke Alarm SD200



240V a.c Mains Power Photoelectric Smoke Alarm with 9V d.c Battery Backup and Hush Feature.

PLEASE LEAVE THESE INSTRUCTIONS WITH THE OWNER. OWNER TO RETAIN THESE INSTRUCTIONS FOR THE LIFE OF THE ALARM.

THIS SMOKE ALARM REQUIRES INSTALLATION BY A LICENSED ELECTRICAL CONTRACTOR.

## Read all Instructions Before Installation and Operation

This Smoke Alarm has a recommended service life of at least 10 years under normal conditions. We recommend the Smoke Alarm be replaced after 10 years. DO NOT try to open or repair the Smoke Alarm yourself. No user serviceable parts are inside.

## Specifications

Main Power Source:	230-240V a.c. 50Hz	Horn Level:	85dB at 3 meters minimum
Secondary Power Source:	9V d.c. Carbon Zinc or Alkaline Battery	Visual Indicators:	Green LED for Mains Power ON Red LED for Warning and Low Battery indication
Operating Current:	35mA	Approvals:	Listed by SSL Scientific Services Laboratory
Battery Life:	1 year approximately	Complies with:	AS3786:1993 AS/NZS 3100:1997
Sensing Type:	Photoelectric. This alarm contains NO radioactive material.	Certificate of suitability:	CS02038V
Operating Temperature:	5°C to 45°C		
Ambient Humidity:	10% to 90%		
Inter-connecting:	40 Alarms over 150 metres maximum. Can be inter-connected with any PDL SD series Smoke Alarm		

## Information on Smoke Alarms

### WHAT SMOKE ALARMS CAN DO

Smoke Alarms can only HELP protect your family and home against loss from a fire. For maximum protection install Smoke Alarms in every bedroom, and every other area of the home, making sure the people in the home will be able to hear and respond to the alarm sound.

**WARNING** – Smoke Alarms may give you a warning of fire and smoke but only if you install, use and maintain them as recommended in this instruction leaflet.

### WHAT SMOKE ALARMS WILL NOT DO

A Smoke Alarm will not work without power – Your Smoke Alarm needs Mains Power (230-240V) and a good battery (9V) that is installed correctly to operate.

**A Smoke Alarm will not sense a fire when smoke cannot reach the unit** – If a fire starts in a chimney, wall, roof, the other side of a closed door or any other isolated area, the Smoke Alarm may not sense the smoke and may not give a warning. If you do not have a Smoke Alarm in the bedroom and sleep with the door closed, a fire inside the bedroom may not sound an alarm located in another room. Therefore it is recommended that a Smoke Alarm be installed inside and outside all bedrooms. A Smoke Alarm will not promptly sense a fire except in the area in which the Smoke Alarm is installed.

**All types of Smoke Alarms have limitations** – No type of Smoke Alarm can sense every kind of fire or smoke every time.

### CHOOSING YOUR SMOKE ALARM

**Fire types** – A photoelectric alarm like the SD200 (this unit) responds faster to large smoke particles, while an ionisation alarm like the PDL SD100 responds faster to small smoke particles. Smouldering fires produce more large particles, so this type of fire will be more quickly detected by the SD200 photoelectric alarm. Flaming fires produce more small smoke particles and this type of fire will be more quickly detected by an ionisation alarm like the SD100. The type of fire likely in a location is therefore an important consideration when choosing which type of smoke alarm to install.

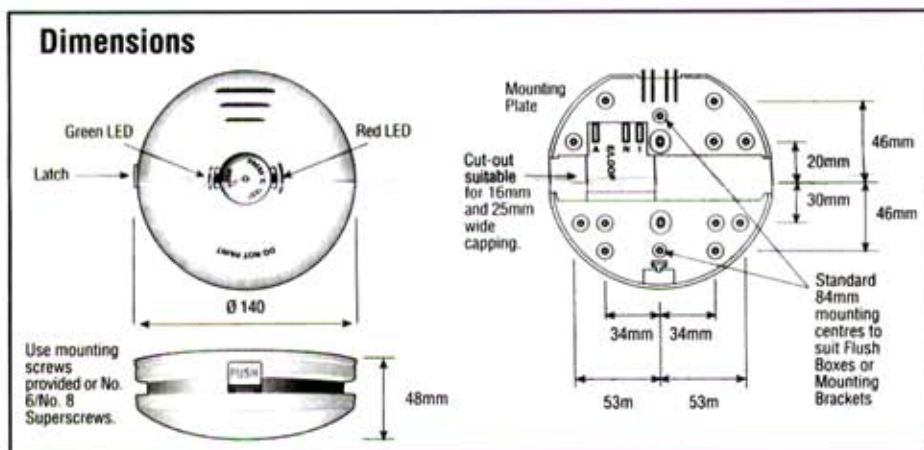
**Nuisance alarming** – Because an ionisation type alarm is sensitive to small smoke particles, it will respond more quickly to particles typically given off during cooking, even where there may be no danger. On the basis of this "nuisance" alarming, consideration should be given to installing photoelectric alarms like the SD200 in kitchen areas. While the homeowner will lose some warning time in a fire that generates smaller smoke particles, they will also reduce the occurrence of the one nuisance that results in a lot of smoke alarms being disabled.

**How a photoelectric alarm works** – A photoelectric sensor uses a light source and a light sensor to measure smoke density. The light source is constantly on but the light beam is angled away from the light sensor. When smoke enters the chamber, the smoke particles scatter some of the light toward the sensor. As the smoke density increases, more light is scattered toward the sensor. When the amount of light scattered into the sensor reaches a predetermined threshold, the unit goes into alarm mode and the horn will sound to alert occupants.

Using a Smoke Alarm in a smokey area like a kitchen or in a high humidity area such as a bathroom can cause false alarms. Do not remove the battery to quieten the alarm, or take the alarm down. A Smoke Alarm will not protect you if it is not powered or if the unit is not present.

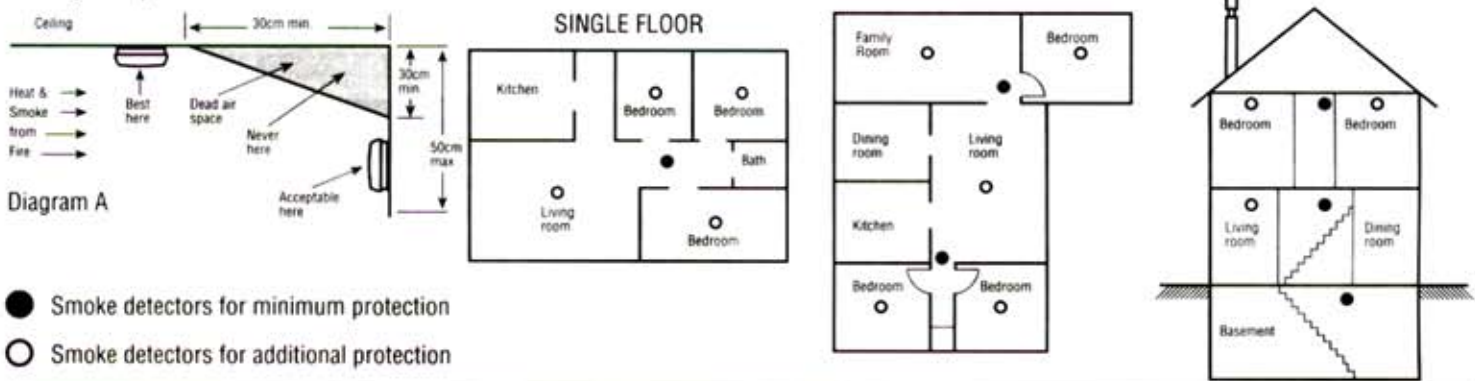
- A Smoke Alarm may not always warn you about fires caused by the following:
- Smoking in bed
  - Children playing with matches or lighters
  - Incorrect storage of flammable materials
  - Over-loaded electrical circuits

**So please remain vigilant against fire risks at all times. Fire prevention is your best safeguard.**



## Recommended Location of Alarm

- Locate the first alarm in the immediate areas of the bedrooms. Try to protect the exit path as the bedrooms are usually furthest from an exit. If more than one sleeping area exists, locate additional alarms in each sleeping area.
- Locate additional alarms to protect any stairway as stairways act like chimneys for smoke and heat.
- Locate at least one alarm on every floor level.
- Locate an alarm in any area where a smoker sleeps or where electrical appliances are operated in sleeping areas.
- Smoke, heat and other combustion products rise to the ceiling and spread horizontally. Mounting the detector on the ceiling in the centre of the room places it closest to all points in the room. Ceiling mounting is preferred in ordinary residential construction. However, in mobile homes, wall mounting on an inside partition is required to avoid the terminal barrier that may form at the ceiling.
- When mounting alarm in the ceiling, locate it a minimum of 30cm from a sidewall and 30cm from any corner (see Diagram A).
- When mounting alarm on a wall, use an inside wall with the alarm a maximum of 50cm below the ceiling and at least 30cm from any corner (see Diagram A).



## Avoid these Locations

- Do not install a Smoke Alarm within 1 metre of heating and cooling supply vents or within 1 metre of return air or fresh air vents. Smoke may be blown away from the Smoke Alarm by the supply vents, or could be diffused or reduced by being diverted into the return air vent.
- Do not install your Smoke Alarm in an area where the temperature may fall below 5°C or rise above 45°C. Smoke Alarms are designed to work safely only within these temperature ranges and failure to alarm, improper alarms or nuisance alarms may result from operation outside these temperature limits.
- Do not install a Smoke Alarm in a damp or very humid area such as bathrooms with showers, where the normal humidity may rise above 90%. Above this level, moisture may condense inside the smoke chamber and cause wrong or false alarms. The Smoke Alarm may also become unstable below 10% Relative Humidity.
- Do not install a Smoke Alarm in an area where particles of combustion are normally present, such as garages or kitchens etc as this can cause false alarms.
- Do not install a Smoke Alarm in dusty or dirty areas – such an installation cannot be relied on. An accumulation of dust and dirt in the sensing chamber may block the openings and prevent an alarm, or may get inside the alarm and cause false alarms. If a Smoke Alarm is required in such an area, vacuum it frequently and test it according to the 'Operation and Testing' section.
- Do not install a Smoke Alarm in the dead air space in the corner where the wall meets the ceiling. If in doubt as to the exact location of mounting, for your safety, contact your local Fire Department for help choosing a location.
- Do not install a Smoke Alarm where bugs or insects are present before eliminating or minimising the problem. Although all smoke Alarms built since 1985 are made to prevent bugs from entering the detection chamber, bugs may build up on chamber openings and prevent smoke from entering. If bugs are present, vacuum the unit frequently as described in the maintenance section.
- Do not install a Smoke Alarm within 1 metre of a fluorescent light. Electrical 'noise' may cause nuisance alarms.

## Installation

**CAUTION:** The Smoke Alarm will function correctly either as a stand-alone alarm or inter-connected.

For further information on interconnecting see "Interconnecting Smoke Alarms"

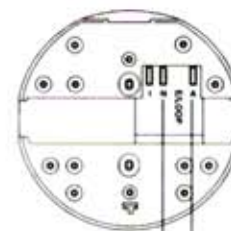
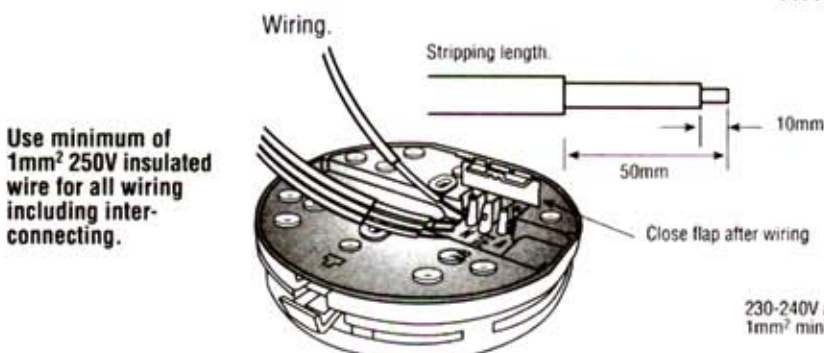
**WIRING: All 230-240V wiring must comply with AS/NZS3000 wiring rules.**

1. Strip the Active/Neutral and Inter-connect (if used) wires back to the strip length shown below.
2. Connect the wires to the correct terminals on the base as indicated and ensure the screws are fully tightened.
3. Clip the flap closed preventing accidental contact with the live terminals.
4. Screw the mounting base on the ceiling or wall using the screws provided or No.6/No.8 superscrews.

5. Clip the Smoke Alarm on to the base and install the 9V battery. The Smoke Alarm base will only close with a battery installed.
- Note: Do not close unless a battery is installed.**
6. Turn on the Mains Power and check the Green and Red LED's function. Green LED should glow to show Mains Power present. Red LED will pulse every 40-60 seconds to indicate correct operation and the 9V battery is OK.
7. Press the Test Button to check the alarm works

**DO NOT LEAVE THE INSTALLATION UNTIL THE RED AND GREEN LEDS AND THE ALARM HAVE BEEN CHECKED FOR CORRECT OPERATION.**

**WARNING - DO NOT PERFORM AN INSULATION RESISTANCE TEST BETWEEN PHASE AND NEUTRAL OF ANY CIRCUIT WITH SMOKE ALARM FITTED.**



Terminal marking	
I	Interconnect
N	Neutral
E/Loop	Earth or Loop
A	Active or Phase

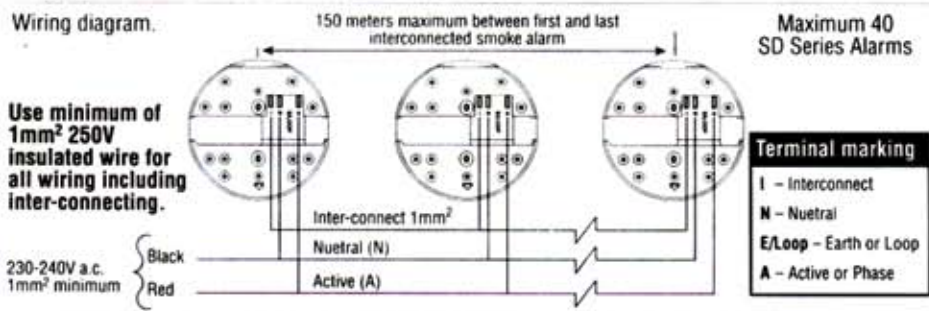
# Interconnecting Smoke Alarms

## How Interconnected Smoke Alarms function?

- Interconnecting Smoke Alarms is a method of joining a series of alarms so that if any one alarm senses smoke all the alarms in the series will operate (alarm).
- A 9V signal on the I and N wires is used to alarm all the other interconnected alarms.
- The hush feature (available on Ionisation alarms only) will only operate on the alarm that has detected smoke.
- Any combination of PDL SD Series Photoelectric or Ionisation Smoke Alarms can be used on one circuit.

## Warning.

- All interconnected Smoke Alarms must be supplied from a single power circuit.
- A common neutral must be used for the interconnect to function.
- DO-NOT connect the interconnect wire to active or neutral.
- A maximum of 40 PDL SD Smoke Alarms can be installed on one circuit.
- Check all interconnected alarms operate during set up and testing.



# Develop and Practice a Plan of Escape

## Basics of Escape Plan

- Make a floor plan indicating all doors and windows and at least two escape routes from each room. Second story windows may need a rope or chain ladder.
- Have a family meeting and discuss your escape plan, showing everyone what to do in case of fire.
- Determine a place outside your home where all of you can meet if a fire occurs i.e. Letterbox.
- Familiarise everyone with the sound of the Smoke Alarm and train them to leave your home when they hear that sound.
- Identify children's bedrooms with red stickers placed in the upper left corner of the windows.
- Practice a fire drill at least every six months. Practice allows you to test your plan before an emergency. You may not be able to reach your children. It is important they know what to do!



# Operation and Testing

## Operation

Once the Mains Power (230-240V) is connected and the 9V Battery is present the Smoke Alarm is operating.

## Operation once Smoke Is Detected.

The Smoke Alarm will sound a loud alarm (85dB) and the Red LED will flash rapidly. This will continue until the air is cleared.

## Standby Condition

The Red LED flashes once every 40-60 seconds to indicate the Smoke Alarm and Battery are functioning correctly.

## Green LED

The green LED glows when the Mains Power (230-240V) is on.

**CAUTION: Never use an open flame of any type to test your alarm.**

## Testing

**TEST THE SMOKE ALARM WEEKLY AND AFTER REPLACING THE BATTERIES TO ASSURE PROPER OPERATION**

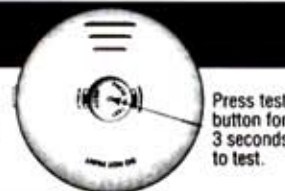
Test by pushing the centre test button on the Smoke Alarm for 3 seconds until the alarm sounds.

The alarm sounds if all electronic circuitry, horn and battery are working. If no alarm sounds check the battery is installed the correct way around or replace the battery.

If the battery is new and installed correctly and the alarm still doesn't sound replace the Smoke Alarm.

**If the Smoke Alarm is installed in a Mobile Home test weekly and after every journey.**

Check all interconnected Smoke Alarms operate during test.

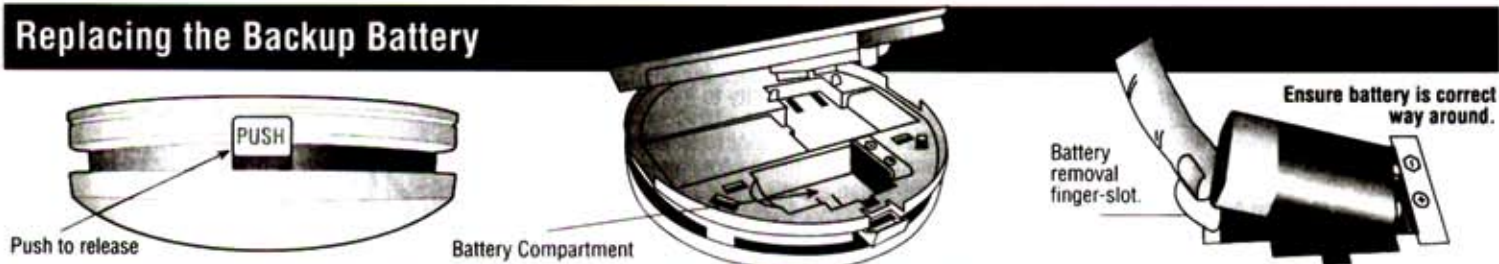


# Hush or Silence Feature

- This smoke Alarm has a built in Hush or Silence feature incorporated into the test button.
- If cooking or other non-hazardous sources cause the alarm to sound it can be temporarily silenced by pressing the test/hush button for 3 seconds.
- The alarm then enters a dormant period for 10 minutes.
- If the smoke density increases during this period (i.e. from a fire) the unit will go into alarm mode.
- After the 10-minute dormant period the smoke alarm resumes normal operation and two beeps sound to indicate this.



# Replacing the Backup Battery



The secondary backup power for the Smoke Alarm is supplied by a 9V Carbon Zinc or Alkaline Battery. The battery should last at least one year under normal operating conditions.

IT IS RECOMMENDED YOU REPLACE THE BATTERY ON A DAY YOU CAN REMEMBER EVERY YEAR i.e. birthday, daylight saving.

The Smoke Alarm has a low Battery Audible Beep. If the Smoke Detector sounds a 'beep' once a minute replace the Battery with a new one.

Recommended batteries can be obtained at most hardware (DIY) stores or electrical suppliers.

**Recommended Batteries:** Gold Peak GP1604S    Duracell MN1604    Eveready A522 or 1222

**CAUTION: Always test the Smoke Alarm after replacing the battery.**

## What to Do if Alarm Sounds

- Leave immediately by following your escape plan. Every second counts so don't waste time getting dressed or picking up valuables.
- In leaving, don't open any inside door without first feeling it's surface. If hot, or if you see smoke seeping through cracks, don't open that door! Instead, use your alternate exit. If inside door is cool, place your shoulder against it, open it slightly and be ready to slam it shut if heat and smoke rushes in.
- Stay close to the floor if air is smokey. Breathe shallowly through a cloth, wet if possible.
- Once outside, go to your selected meeting place and make sure everyone is there.
- Call the fire brigade from your neighbour's home – not from yours!
- Don't return to your home until fire officials say that it is all right to do so.

## Operations and Troubleshooting

Problem	Cause	Remedy
Alarm sounds and the Red LED is blinking rapidly.	Smoke has activated the smoke alarm.	Vacate the building and call the fire brigade (see what to do if alarm sounds).
Green LED ON.	240V Mains Power ON.	Normal Operating Condition.
Green LED OFF	240V Mains Power OFF. Mains power may be disconnected.	Check mains power ON. MCB may have tripped. Wiring could be reversed.
Red LED Flashes every 40 to 60 seconds.	Red LED indicates the smoke alarm is functioning correctly.	Normal Operating Condition.
Red LED not flashing.	Battery may be reversed. No Battery present. Battery completely flat.	Reinstall battery around the correct way or replace Battery.
Audible 'Beep' is heard every minute.	Low battery indicator is warning the battery needs replacing.	Replace 9V battery with a specified new battery.
When Test button is pressed for 3 seconds Alarm sounds briefly.	The Smoke Alarm horn is indicating all electronic circuitry, horn and battery are working.	Normal Test condition. Test weekly to ensure proper operation.
Smoke Alarm is sounding you press the Test/Hush Button and it stops.	Hush feature has been activated for 10 minutes providing the smoke density does not increase.	Normal condition. Clear the smoke as soon as you can.
Smoke Alarm is sounding and you press the Test/Hush Button and nothing happens.	Smoke Density is too high for the 'Hush' feature to activate.	Vacate the building and call the Fire Brigade (see what to do if alarm sounds).
Smoke Alarm body will not close on the Base.	9V battery not present.	Install a 9V Battery.

## Maintenance, Repairs and Service

**Maintenance:** It is recommended that the Smoke Alarm is inspected monthly to ensure it is free from dirt or dust. The alarm can be vacuumed or brushed with a soft brush to remove dust, dirt or kitchen grease that has accumulated.

**ALWAYS TEST THE SMOKE ALARM AFTER CLEANING.**

**Repairs/Service:** Alarm is defective in any way, do not tamper with the unit.

The Smoke Alarm does not contain any user serviceable parts except the battery.

As the alarm does not contain any radioactive material disposal with normal rubbish is permitted in Australia and New Zealand.

## Limited 5 Year Warranty

PDL Industries Aust Pty Ltd., (PDL) warrants your PDL product to be free from defects in material and workmanship for a period of 5 years from the date of purchase. The Warranty applies only to the original consumer purchaser and only to products used in normal use and service. If this product is found to be defective, PDL's only obligation, and your exclusive remedy, is the repair or replacement of the product, at PDL's discretion, provided that the product has not been damaged through misuse, abuse, accident, modifications, alteration, neglect or mishandling (excluding any labor cost relating to removal or re-installation of product and transport cost). This Warranty shall not apply to any product, which is found to be improperly installed, set-up or used in any way not in accordance with the instructions supplied with the product. This Warranty shall not apply to any batteries used in the product or to any damage caused by such batteries.

If your PDL product fails to operate satisfactorily, please return it to the point of purchase or PDL Industries Aust Pty Ltd.

PDL DOES NOT WARRANT AND SPECIFICALLY DISCLAIMS ANY WARRANTY, WHETHER EXPRESS OR IMPLIED, OF FITNESS FOR A PARTICULAR PURPOSE OTHER THAN THE WARRANTY CONTAINED HEREIN. NOT IMPLIED WARRANTY ON THIS PRODUCT, CREATED BY STATE LAW, SHALL EXTEND BEYOND THE TERM OF THIS WARRANTY UNLESS SUCH LAW OTHERWISE PROVIDES. PDL SPECIFICALLY DISCLAIMS ANY LIABILITY AND SHALL NOT BE LIABLE FOR ANY CONSEQUENTIAL OR INCIDENTAL LOSS OR DAMAGE, INCLUDING, BUT NOT LIMITED TO, DAMAGES TO ANY EQUIPMENT WITH WHICH THIS PRODUCT IS USED.

No agent, representative, dealer, or employee of the company has the authority to increase or alter the obligations or terms of this Warranty.

This Smoke Alarm Complies  
With: AS3786:1993  
AS3100:1997  
Australian Electrical Authority  
Certificate of Suitability CS02038V



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