legrand®

TROUBLESHOOTING

ELECTROMAGNETIC INTERFERENCE (EMI)

Smoke alarms are designed to filter external EMI signals. But some forms of EMI can still affect the performance.

- Avoid installing a smoke alarm too close to an electrical noise source (< 1m).
- Install the smoke alarm on a separate circuit to all other electrical circuits.
- Common sources of EMI which may cause the smoke alarm to malfunction include: Fluorescent luminaires, LED Downlights, CFL lamps, Security Lights, Solar Inverters, A/C Compressors (Spikes during ON/OFF).
- Heat lamps, air conditioners, ceiling fans (Electrical noise & Spike due to heavy inductive loads at ON/OFF).

Note: Some installations may require an inline EMI filter if the EMI source cannot be identified (Legrand EMI Filter Cat. No: 643093 is available).

PRODUCT NOTES

1. For indoor use only.
2. This product must be installed by a licensed electrician.
3. This product must be installed and used as per these instructions.
4. This product has been designed to operate in ambient temperatures: 0°C to 40°C.
5. This product is not suitable for installation in hazardous and/or corrosive areas.
6. This product is intended for domestic or similar uses. It is not suitable for use in an environment heavily laden with dust.
7. This product has been designed for domestic or similar uses and is not suitable for commercial installation.
8. This product should not be installed in areas exposed to constant vibration, temperature fluctuations, or areas of high humidity.
9. This product is not suitable for marine environments such as areas subject to salt spray and/or mist.
10. Severe electromagnetic interference from other products may cause malfunction of this product.
11. This product has a nominal 10 year design life from the date of installation. If not powered by mains (for mains versions only) the lifetime will be reduced.
12. The date of commissioning must be recorded on the product label when each unit is installed. The alarm should be replaced every 10 years from the commissioning date. If commissioning date is not recorded on the unit, the 10 years will commence from the date of manufacture. The date of manufacture is marked on every unit in the form yyWww (Eg. 22W15 means 15th week of year 2022).
13. Electrical installations periodically receive transient over-voltages. This product has been designed to minimize the effect of such voltages on the connected equipment. It may not give full protection for extreme over voltage transients such as those resulting from a close lightning strike.
14. This product has been designed to operate on a nominal supply voltage of 230-240V ~ 50 Hz.
15. After installation, this product must be tested as required by the appropriate government and/or statutory regulations.
16. This product contains no serviceable parts and no attempt should be made to repair this product. If the product is faulty it should be discarded.
17. The material in this product may vary in colour from batch to batch. Colour matching from one batch to another cannot be guaranteed.
18. This product utilises intellectual property in the form of registered designs, trademarks, and/or patents. Such intellectual property remains the property of Legrand in all cases.
19. Legrand reserves the right to modify the specification of this product at any time.

Warranty

- Legrand ("we or us") has given each purchaser who is a consumer ("you") a warranty against defects in its products.
- As a consumer, you are entitled to the benefit of the Warranty and should read and understand its terms. In addition, for the purposes of the Australian and New Zealand Consumer Laws, we note the following:

- Our contact details for the purpose of any claims made under the Warranty are below. Any claim under the Warranty must be sent in writing to the following address:

AUSTRALIA ONLY
Legrand Australia Pty Ltd
Nexus Industry Park
Bldg 4, 43-47 Lyn Parade
PRESTONS, NSW 2170
1300 369 777
sales.orders@legrand.com.au

NEW ZEALAND ONLY
Legrand New Zealand Ltd
106-124 Target Rd
GLENFIELD, AUCKLAND 0627
0800 476 009
nz.sales@legrand.co.nz

- If we accept your claim under the Warranty we will reimburse all your reasonable expenses in making and pursuing the claim, including the cost of reimbursement of any defective products returned in the ordinary course to us at the address above by post or other agreed means. Any such claim must be made within 14 days of your receiving notice of our acceptance of your claim and include any necessary supporting documentation or invoices.

- As a consumer, you have rights under the Australian and New Zealand Consumer Laws and may have rights under other applicable laws which cannot be excluded, restricted or modified. Those rights are in addition to any rights you have under the Warranty.

- Legrand warrants this product for a period of 5 years from the date of purchase. Our goods (which we refer to in the Warranty as the Products) come with guarantees that cannot be excluded under the Australian and New Zealand Consumer Laws. You are entitled to a replacement or a refund for a major failure and compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

LED5841AF

07/2023

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IMPORTANT: READ ALL INSTRUCTIONS BEFORE INSTALLATION. NO USER SERVICEABLE PARTS INSIDE THIS SMOKE ALARM. THE SMOKE ALARM SHOULD BE REPLACED AFTER 10 YEARS OF INSTALLATION.

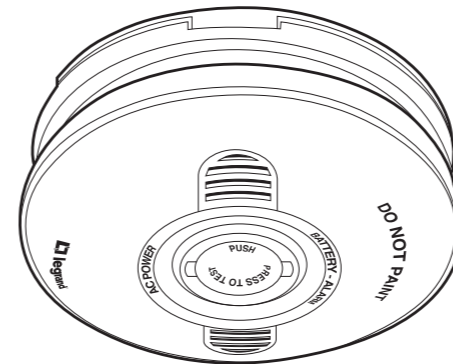NOT TO BE USED WITH NON-PURE SINUSOIDAL POWER SOURCES.

Fig.1

5 YEAR WARRANTY

AS 3786:2014 COMPLIANT

ACTIVFIRE® CERTIFIED

LEARN MORE ABOUT THIS PRODUCT

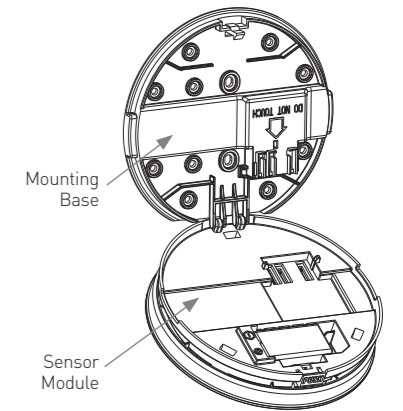| Cat. No.	643085
Description	Photoelectric Smoke Alarm
Nominal Input Voltage	230 - 240 V ~ 50 Hz
Battery Voltage	DC 9 V
Backup Battery	9V battery included (recommended replacement: Energizer 522, Duracell MN 1604 or MX 1604)
Temperature Range	0° C to +40° C
Humidity Range	10-95 % at 20°C
Aural Signal Pattern	ISO 8201 340-350 Hz
Siren Sound Level	> 85 dB at 3 metres*
Unit Size	Ø147 x 49 mm
Recommended Lifespan	10 Years
Quality Systems	ISO 9001

* Tested under laboratory conditions.

Mounting Base

Sensor Module

Fig.2

Ø147mm

DO NOT PAINT

Red LED

Green LED

Fig.3

84mm

50mm

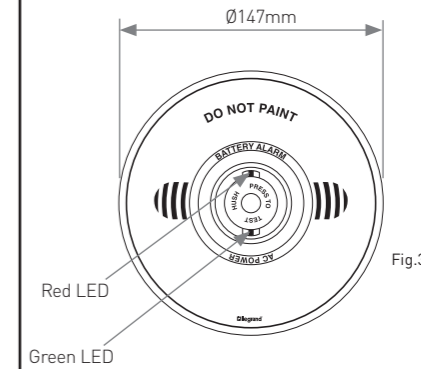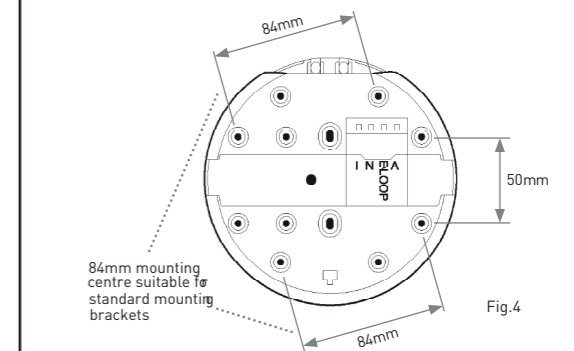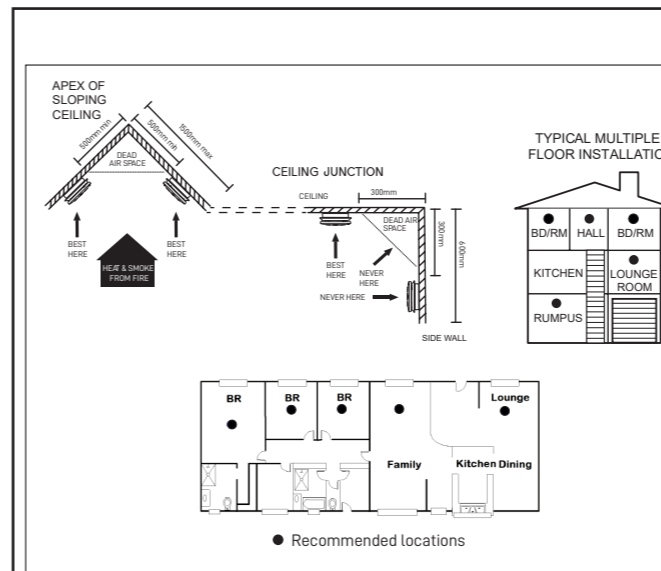84mm mounting centre suitable for standard mounting brackets

84mm

Fig.4

INSTALLATION LOCATIONS

- These recommendations are for information only. Check specific state legislation in your area to ensure smoke alarms are correctly located according to local laws. Each state or territory may differ in building codes and regulations.
- Install at least one alarm for each separate sleeping area. Try to cover the exit path as the bed rooms are usually farthest from an exit. If there is more than one sleeping area, install additional alarms in each sleeping area in the immediate vicinity of bedrooms.
- Locate additional alarms to monitor any stairway because stairways act like chimneys for smoke and heat.
- Locate at least one alarm on every floor level.
- Locate an alarm in every room where electrical appliances are operated (i.e portable heaters or humidifiers)
- Smoke, heat, and other combustion products rise to the ceiling and spread horizontally. Mounting the alarm 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.
- When mounting alarms on the ceiling locate it at least 300 mm away from the sidewall and 300 mm away from any corner.
- When mounting alarms on a wall use the internal walls of the building. The recommended position is between 300 mm and 500 mm off the ceiling.

NOTE: The performance of smoke alarms mounted on walls is unpredictable and this mounting position is not recommended when ceiling mounting can be implemented.

Fig.5

SURFACE MOUNT PHOTOELECTRIC SMOKE ALARM (CAT. NO. 643085)
MAINS POWERED, WIRED INTERCONNECTABLE WITH BATTERY BACKUP

L legrand®

OTHER COMPATIBLE LEGRAND SMOKE ALARMS

Legrand Reference	Mounting Type	Interconnect Type	Interconnect Compatibility with 643085
643088	Surface Mount	Wired & Wireless	Wired only
643089	Flush Mount (Ø 90mm Cut-out)	Wired & Wireless	Wired only
643090	Surface Mount	Wired only	Wired only
643091	Surface Mount	Wireless	Conditional (Requires minimum of 1x type 643088 or 643089)
643092/ 643087	Flush Mount	Wired	Wired only

TABLE 1

INSTALLATION DESIGN

Legrand smoke alarm can be added to the existing wired Interconnect network. You must replace one of the existing wired smoke alarms with an RF unit that is also wired to do this.

1. Understand your requirements and decide how and where do you need the smoke alarm (See location section Fig. 5 for guidance)
2. Determine which alarms are appropriate from our range (See Legrand smoke alarms list Table 1)
3. Run cabling if required.
4. Mount base in the required position (See recommended location. Fig. 5).
   Note: The RF units need to be paired before the base is mounted on wall /ceiling.
5. Commission and install (See operation and wiring sections for guidance).
6. Test the installation.

REFER TO THE TABLE BELOW TO UNDERSTAND COMBINATIONS TO INTERCONNECT

Understand Installation Types		
Upgrade existing installation with wireless units	New installation with a mix of 240 V with battery backup	New installation with only wired installation
■ You can have a mixture of wired and RF units on the one installation (See wiring section). ■ Existing installation with 2 or more wired interconnect units to extend the network with RF units. ■ At least one existing unit must be replaced with a wired RF unit (Either 643088 or 643089). ■ All new smoke alarms must be RF units (643088, 643089, 643091).	Install the RF versions where required (643088, 643089, 643091)	Install the wired interconnect versions where required (643090, 643092, 643085)
Note: A maximum of 20 smoke alarms can be interconnected on one circuit.		

TABLE 2

Installation Type		
Upgrade existing installation with wireless units	New installation with a mix of 240 V with battery backup	New installation with only wired installation
■ Pair all additional RF units to the network. ■ After RF network setup is completed, clip units to mounted base and test. ■ Remove existing smoke alarm and replace with a RF unit either 643088 or 643089) ■ If adding 240V RF versions - hard wire A & N to the new base.	■ Gather all RF alarms to be installed and complete pairing to network. ■ After RF network setup is completed, clip units to mounting base and test. ■ On 240V RF units, hard wire A & N to new base. ■ Connect interconnect wire to "I" on the new bases. Note: RF only units (643091) need unit clipped into base to perform pairing.	■ Hard wire 240V to A & N. ■ Connect interconnect wire to "I" on the new bases. ■ Clip units to mounted base and test.
Note: A maximum of 20 smoke alarms can be interconnected on one circuit.		

TABLE 3

NOTE: AFTER THIS SMOKE ALARM HAS REACHED THE END OF ITS LIFE, IT CAN BE RECYCLED AS E-WASTE.

■ **Terminals at the back of mounting base are marked as follows:**

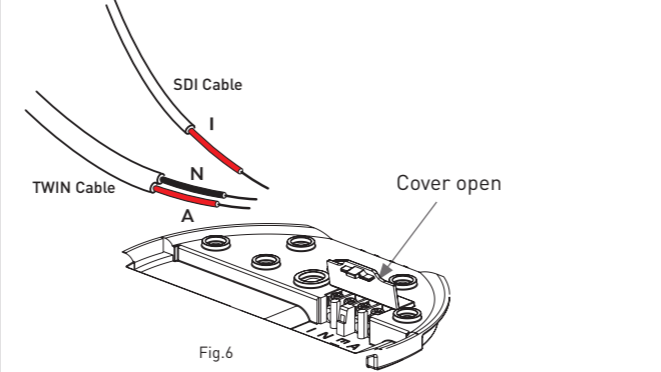A- Active   I- Interconnect   N - Neutral   E / Loop - Earth or Loop

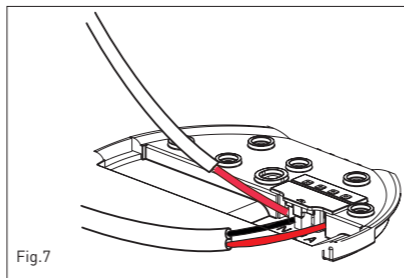SDI Cable

TWIN Cable

Cover open
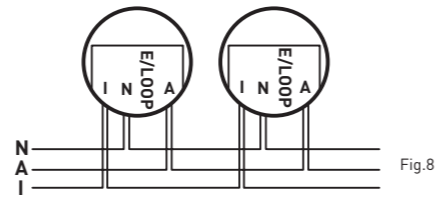
Fig.6

Fig.7

40mm   10mm

Fig.8

■ There are four terminals in the supply terminal block marked **A, I, N,** and **E/Loop**. It is important that the alarm be wired correctly to ensure correct operation. Incorrect wiring to the smoke alarm will damage the unit and invalidate the warranty. See wiring diagrams.
■ If the unit is being installed in a new build, fully cover the unit with the plastic bag supplied to protect the unit from dust during the building construction stage. The plastic bag should only be removed at the end of the building construction phase, when the smoke alarm is to be commissioned. The building construction phase includes sanding, painting preparation, painting, flooring, etc. Once removed keep the plastic bag away from babies and children to avoid the danger of suffocation and must be disposed safely.
■ A maximum length of 300 meters of wire can be used to interconnect smoke alarms. Spacing between interconnected smoke alarms must not exceed 30 meters. Minimum wire cross-section of 1.00mm^2 to be used.
■ Wired interconnected smoke alarm must be connected to the same final sub-circuit. This is not required if connecting via RF.
■ Do not use any wire that could later be confused with the normal house wires for the interconnect wire. For example Green/ Yellow wire.
■ Do not connect AC power wired to the terminal marked "I" (Interconnect). This will damage the smoke alarm.
■ Interconnect feature is only compatible with other Legrand smoke alarms. Refer to Table 3. This unit will be damaged if interconnected with another brand of smoke alarm.
■ Smoke alarm should be interconnected only within the confines of a single-family living unit. If smoke alarms are Interconnected between different units, there may be excessive nuisance alarms and residents may not be aware that smoke alarms are being tested or that it is a nuisance alarm caused by cooking, etc.

Note:
The smoke alarm should be installed on a separate circuit to minimize false triggering.

WARNING
■ Connecting the interconnect terminal to any supply conductor will result in danger to the alarm and fail to operate and /or introduce a shock hazard and will void the warranty of the alarm.
■ Under no circumstances must an insulation resistance test be carried out on a circuit to which a smoke alarm is connected. The test could cause irreparable damage to the internal circuitry of the smoke alarm and make it inoperative. The warranty would be void under such circumstances.
■ If no alarm sounds, check wiring, fuses, or circuit breaker and make sure that the alarm is connected to a continuous final sub-circuit.

OPERATION

The smoke alarm is operational once:
■ All wires are properly connected.
■ The smoke alarm is correctly installed on the mounting base.
■ The alarm has been tested.

Legrand smoke alarms are capable of linking together to make a unique network. When one or hard-wired interconnected unit senses smoke, it sounds an alarm and triggers all other units on the same network to sound an alarm. Only the originating smoke alarm will have a flashing RED LED.

VISUAL AND AUDIBLE INDICATIONS

VISUAL INDICATION		SOUND PATTERN	MEANING
LED COLOUR	LED SEQUENCE		
GREEN	Solid ON	N/A	Unit is connected to 240V a.c.
GREEN	OFF	N/A	Unit is not connected to 240V a.c
RED	Single flash, followed by 3 flashes	N/A	Smoke alarm battery activated
RED	Flashes once every 300 seconds	N/A	Normal operation (Standby mode)
RED	Flashes once every minute	1 beep every minute	Low battery indication (End of life)
RED	3 flashes every 4 sec (1 cycle) and repeats	3 beeps every 4 seconds (1 cycle) and repeats	Smoke detected (Wired Unit)
RED	3 flashes every 4 sec (1 cycle)	3 beeps in 4 seconds (1 cycle)	Testing mode-Wired unit being tested
	N/A	3 beeps in 4 seconds (1 cycle)	Testing mode-Wired interconnected unit being tested

TABLE 4

COMPLETE SMOKE ALARM TEST

■ All smoke alarms should be tested on a monthly basis.
■ To accurately test the integrity of the smoke sensing chamber use a suitable aerosol tester.
■ Before testing make sure that the smoke alarm is connected to the AC power supply and the Green LED is ON and there is a 9V battery properly installed.

ALARM TESTING

Unit	Test Method	Sound Pattern	LED Colour	LED Sequence
Single Alarm Unit Test (RF & Wired Units)	Push the Press button for 2-3 seconds	3 beeps in 4 seconds (1 Cycle) and repeats until unit button is released	RED LED	3 flashes every 4 sec (1 Cycle) and repeats until button is released

ALARM

Unit	Test Method	Sound Pattern	LED Colour	LED Sequence
RF or Wired Unit	Push the Press button for 10 seconds	3 beeps in 4 seconds (1 cycle) and repeats until unit button is released	RED LED	3 flashes every 4 sec (1 Cycle) and repeats until button is released
Other Wired Interconnected RF Units	N/A	3 beeps in 2 seconds (1 cycle) and repeats until unit button is released	N/A	N/A

TABLE 5

NOTE

■ After the above test with the "HUSH/TEST" button is completed the alarm will be desensitized for about 20 minutes.
■ Wait for 20 minutes before doing the SMOKE AEROSOL TEST.

WARNING
■ Do not apply excessive force on the "HUSH/TEST" button this may damage the smoke alarm and may void the warranty.
■ Never use an open flame of any kind to test your alarm. You may damage the alarm or set fire to your home. The built-in test switch enables the testing of all electronic components and the horn.

GOOD SAFETY HABITS

■ Develop and practice a plan of escape.
■ Install and maintain fire extinguishers on every level of the home and in the kitchen, basement, and garage. Know how to use a fire extinguisher prior to an emergency.
■ 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 you all can meet if a fire occurs.
■ Familiarize everyone with the sound of the smoke alarm and train them to leave your home when they hear it.
■ Practice a fire drill at least every six months, including fire drills at night. Ensure that small children hear the alarm and wake when it sounds. They must wake up in order to execute the escape plan. Practice allows all occupants to test your plan before an emergency. You may not be able to reach your children. It is important that they know what to do.

LIMITATIONS OF SMOKE ALARMS

■ Smoke alarms cannot provide an alarm if smoke does not reach the alarm. Therefore, smoke alarms may not sense fires starting in chimneys, walls, on roofs, on the other side of a closed door or on a different floor.
■ If the alarm is located outside the bedrooms or on a different floor, it may not wake up sound sleepers. A smoke alarm in the bedroom is therefore recommended as additional protection.
■ Smoke alarms have been significant in saving lives in many parts of the world. However, U.S. Government research indicates that they may not give early enough warning in up to 35% of fires. Hence, the use of this product does not act as a substitute for basic prevention.
■ Although smoke alarms can help save lives by providing early warnings of a fire, they are not a substitute for an insurance policy.
■ This smoke alarm alone will not alert the hearing impaired. Use special purpose smoke alarm with lights or vibrating devices, for those hard of hearing.

MAINTENANCE

The smoke alarm is virtually maintenance free. However, if there is any dust or lint buildup around the smoke alarm a vacuum cleaner may be used to clean the exterior of the unit (including slots on the cover). We recommend using a vacuum cleaner to clean the exterior of the unit every six months. DO NOT IMMERSE IN OR SPRAY WITH HOUSEHOLD CLEANERS. If the unit gives a chirping sound once every minute, it indicates that the battery is flat and the unit needs to be replaced.

FALSE ALARMING

This smoke alarm is designed to minimise false alarms.
■ If the alarm does sound, check for a fire before silencing the alarm. If a fire is discovered, escape quickly and call the Fire Brigade.
■ Dust generated on building construction sites can cause false alarms. The plastic bag is intended to protect the sensor module during the building construction phase.
■ Cigarette smoking will not normally set off the alarm unless smoke is blown directly into the alarm.
■ This smoke alarm has a HUSH button that can be used if combustion particles from cooking sets off the alarm.
■ False alarm can be prevented by pressing the HUSH button on triggered alarm to desensitize it for 20 minutes.

NOTE: AFTER THIS SMOKE ALARM HAS REACHED THE END OF ITS LIFE, IT CAN BE RECYCLED AS E-WASTE.

BATTERY

BATTERY INSTALLATION

■ The smoke alarm uses one 9V battery to automatically provide back-up power to the alarm if AC power fails. The battery will operate the alarm for approximately one to three months with AC power off.
■ USE ONLY BATTERIES AS SPECIFIED IN THE PRODUCT LABEL. USE OF A DIFFERENT BATTERY MAY HAVE A DETRIMENTAL EFFECT ON OPERATION OR MAY CAUSE THE BATTERY TO EXPLODE.
■ USE ONLY THE FOLLOWING 9-VOLT ALKALINE BATTERIES FOR REPLACEMENT: EVEREADY/ ENERGIZER 522 DURACELL MN 1604, MX 1604.
■ Battery can only be inserted in one direction. Ensure polarity is correct.
■ Push battery firmly into contacts.
■ Incase of intermittent beeping, please re-install battery ensuring the gap from battery edge (terminal end) to plastic terminal lip, is not more than 2mm.
Note: Incorrect battery insertion is not covered by warranty.

BATTERY REPLACEMENT

■ To replace battery, unlatch unit from mounting base and remove the battery from compartment. Replace the old battery with a fresh one and close unit. Verify that the green LED is on. Test the smoke alarm.
■ To ensure proper operation, the battery should be replaced once a year.
■ Smoke alarm cannot be closed properly without battery in place.