BRK ELECTRONICS®

DICON™ SAFETY PRODUCTS

OWNERS MANUAL

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2502-A0108-Rev B

MAINS POWERED

SMOKE ALARMS & HEAT ALARMS

COVERS • **Simple Fitting Instructions** • **Location Guide**
• **User Information** • **Basic Fire Safety Tips**
• **Simple Maintenance Instructions**

MODELS:

PHOTOELECTRIC SMOKE ALARMS
650M, 650MC, 650MRL, 650MBX

IONIZATION SMOKE ALARMS
670M, 670MC, 670MRL,670MBX,

HEAT ALARMS
680M, 680MC, 680MRL, 680MBX

220-240VAC (∿)
MAINS POWERED ALARMS
CLASS II APPARATUS

IMPORTANT: PLEASE READ AND RETAIN THIS OWNERS MANUAL

When installing this alarm for use by others, please leave this manual or a copy with the end user.

CHECKS BEFORE USE

650MBX, 670MBX, and 680MBX:
• Check battery has been fitted correctly.
• Check alarm is not beeping.
• Test alarm before switching on the electricity supply.

All Alarms:
• Check the green light is on (behind the front grille).
• Check the red light flashes every 45 seconds or so.
• When testing linked alarms check that they all interconnect within 10 seconds.

IMPORTANT NOTES
• Alarms with rechargeable batteries or capacitor back up may beep for up to 2 hours while the batteries / capacitors charge.
• Leave a copy of this handbook with the user and ensure they know how to use and maintain the alarm.

All models of smoke alarms shown in the manual supplied are fitted with a pause function; this allows you to silence your alarm by momentarily pressing the test button. Ideal when non-emergency smoke (cooking fumes, steam) causes nuisance alarms. A red light flashes every 10 seconds to remind you that the alarm has been silenced. The alarm automatically resets after approximately 10 minutes.

NOTE: Please be advised that when testing with smoke (not advised) or canned smoke the alarm will be insensitive during this period.

A: GUIDANCE ON INSTALLATION

WARNING: Wiring should be installed by a qualified electrician in accordance with BS7671. Permanent connection to the fixed wiring of the building should be made in a suitable junction box. This alarm must not be exposed to dripping or splashing. Connect the alarm as late as possible in an installation, particularly in new build, to avoid contamination. Remove the dust cover before applying power.

NOTE: For detailed guidance on the siting of this alarm refer to section C of this handbook.

IMPORTANT: The circuit used to power the alarm must be a 24 hour voltage circuit that cannot be turned off by a switch. BS5839 Part 6 states that: -
For mains powered alarms, each with an integral standby supply (Grade D), the mains electricity supply should take the form of either:
a) an independent circuit at the dwelling's main circuit board, in which case no other electrical equipment should be connected to this circuit (other than a dedicated monitoring device installed to indicate failure of the mains electricity supply to the alarms); or
b) a separately electrically protected, regularly used local lighting circuit.

For mains powered alarms, with no standby supply (Grade E), the mains electricity supply may only take the form of an independent circuit as per a) above. If it is necessary to use an RCD for protection, it should operate independently of any RCD protection for circuits supplying sockets or portable equipment.
All interconnected alarms should be installed on a single final circuit.

NOTE: The maximum interconnect wiring length is 250 metres. The maximum number of alarms interconnected together is 12. BRK Dicon smoke alarms should not be connected to any model produced by another manufacturer.
The location of the alarms must comply with the applicable building codes and the advice in section C: WHERE TO LOCATE below.

B: INSTALLATION (See Diagrams 1 & 2)

1. Use either of the methods of installation shown in diagrams1 and 2.

   When selecting cable for connecting interlinked smoke alarms the interlink wire should be treated as live.

   The installation method shown in diagram 1 is suitable for a plasterboard or similar ceiling where access to the void behind it is available and suitable to mount the junction box.

   The installation method shown in diagram 2 is suitable for concrete or similar ceilings where access is insufficient or where surface wiring is necessary.

2. Connect the brown wire to the brown (live) in the house wiring and the blue wire to the blue (neutral). NO CONNECTION SHOULD BE MADE TO THE MAINS ELECTRICITY SUPPLY EARTH TERMINAL. TERMINATE HOUSE WIRING EARTH IN SPARE CONNECTOR.

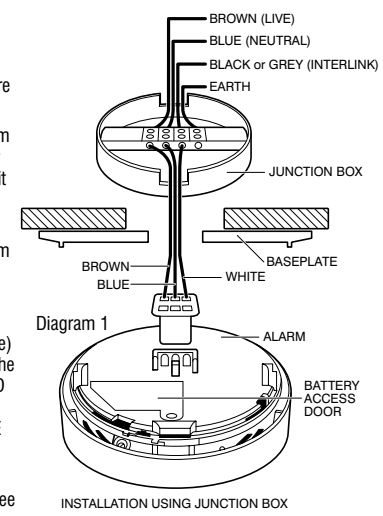


Diagram 1
INSTALLATION USING JUNCTION BOX

3. For multiple alarm installations use a "three core and earth" style cable between all the alarms to be interconnected and connect the third core of that cable to the white wire from the smoke alarm. DO NOT use the earth wire for the interconnect line. This must be treated as live, i.e. insulated and sheathed. If the alarm is not going to be interconnected, cap the unused wires.
4. Remove the baseplate from the back of the alarm by twisting anti-clockwise as far as it will go. (about 12 mm). Detach the locking pin.

   650MBX, 670MBX and 680MBX
   Detach battery door screw from the base plate. Open the battery door on the back of the alarm, connect the battery, close the door and secure with the screw provided before fitting the alarm to the baseplate.
   Test the alarm using the test button.
5. Attach the flat side of the mounting plate and tighten screws to fit snugly against the pattress or junction box and ceiling or wall.
6. Bring the power connector through the centre opening of the plate.

IMPORTANT: THE PAPER GASKET SUPPLIED MUST BE FITTED BETWEEN THE REAR OF THE ALARM AND THE MOUNTING PLATE TO PREVENT THE ALARM FROM BECOMING CONTAMINATED BY DUST AND TO ENSURE THE CORRECT OPERATION OF THE ALARM. Gasket not required on alarms fitted with protective film on the back.

7. Plug the lead into the rear of the alarm.
8. Place the alarm on the baseplate by lining up arrows on the baseplate and the alarm rim and twist clockwise to fasten.

   To secure the alarm to the baseplate, insert the locking pin (removed from the base in 5 above) into the 'T' shaped slot located above the arrow on the rim of the alarm.

   Fit either locking key into the 'Key Slot' above the battery drawer handle. Key number 1 locks the alarm to the base, key number 2 locks the alarm to the baseplate AND the battery drawer closed. These keys remain in place and should only be removed when opening the battery drawer or removing the alarm from the baseplate.

   LOCKING PINS / KEYS MUST BE FITTED. DO NOT ATTEMPT TO REMOVE THE ALARM FROM THE BASEPLATE WITHOUT FIRST REMOVING THEM.

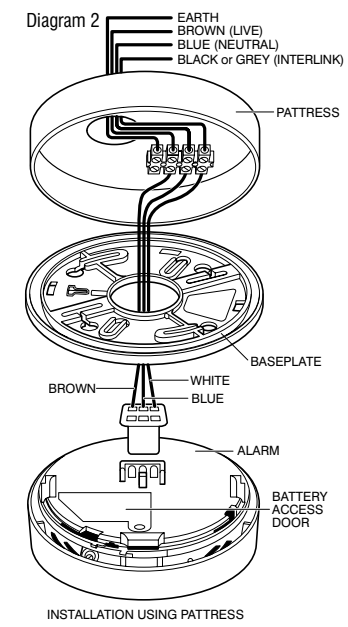


Diagram 2
INSTALLATION USING PATTRESS

9. Switch on the mains electricity supply.
10. Check that the green light is on and that the red light is flashing every 45 seconds or so. The lights are located behind the grille on the front of the alarm.
11. Press and hold the test button until the alarm sounds. NOTE: On the 670 series, pressing this button places the alarm in pause mode.

SYSTEMS OF MORE THAN ONE ALARM
Test each alarm in the system checking that all other alarms in the system are triggered within 10 seconds.

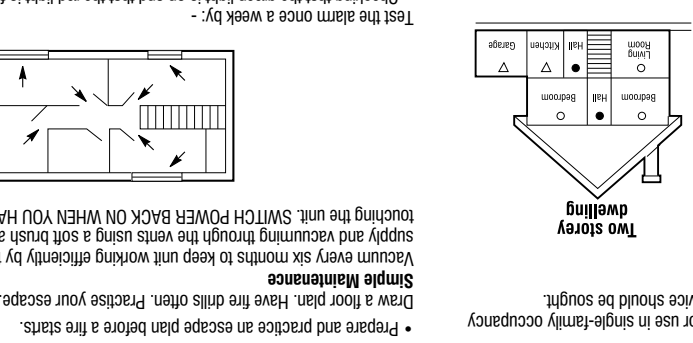
WARNING
Do not attempt to test the alarm with flame heat or smoke, the results may be misleading and may damage the alarm.

The dust cover must be removed as late as possible before commissioning. This will reduce the chances of the alarm being contaminated by building dust etc.
Remove the alarm from the system before testing the wiring with high voltage insulation testing equipment otherwise this will damage the alarm and will invalidate the warranty.

C: WHERE TO LOCATE

1. As a minimum smoke alarms should be located between sleeping areas and potential sources of fire such as living rooms and kitchens. In single storey homes with one sleeping area a smoke alarm should be installed in the hallway as close as possible to the living accommodation. To ensure audibility in the bedrooms it may be necessary to install more than one smoke alarm, particularly if the hallway is more than 15m long. In single storey homes with two separate sleeping areas, a minimum of two smoke alarms is required, one outside each sleeping area. In multilevel or split level homes as a minimum a smoke alarm should be installed on the ground floor between the staircase and any rooms in which a fire might start and on each storey in circulation areas which form part of the escape route (normally hallways and landings).

   NOTE: Heat alarms should not be used in escape routes instead of smoke alarms. They should only be used in the applications listed below in addition to smoke alarms and should always be interconnected to smoke alarms.
2. Additional alarms should be installed in bedrooms in anticipation of fires originating there, caused by faulty wiring, lights, appliances, smokers or other hazards.
3. For best protection, smoke alarms should be installed in every room in your home, apart from those listed in the 'LOCATIONS TO AVOID' section. Heat alarms should be used in kitchens, boiler rooms, laundry rooms, garages and such like where smoke alarms would be unsuitable. All alarms must be interconnected.



LOCATIONS TO AVOID

Single storey, one sleeping area | **Single storey, two sleeping areas** | **Two storey dwelling**

4. Install smoke alarms in circulation areas at a distance no greater than 7.5m from the farthest wall, no greater than 7.5m from a door to any room in which a fire might start and no greater than 7.5m from the next smoke alarm.
5. When heat alarms are installed in a room, they should be at a distance no greater than 5.3m from the farthest wall no greater that 5.3m from a door to any room in which a fire might start and no greater than 5.3m from the next heat or smoke alarm.
6. As it is impossible to predict the source of a fire the best location for an alarm is the centre of the room or hallway. If it is necessary to locate the smoke alarm on a wall always locate the detection element of the alarm 150mm to 300mm (6 to 12 inches) below the ceiling and the bottom of the alarm above the level of doors and other openings.
   NOTE: Heat alarms should not be wall mounted.
7. In rooms with simple sloped, peaked or gabled ceilings install smoke alarms 900mm (3 feet) from the highest point of the ceiling. 'Dead air' at the peak of the ceiling may prevent smoke from reaching the alarm in time to provide an early warning.
8. Closed doors and other obstructions will interfere with the path of smoke and heat to an alarm and may prevent occupants from hearing an alarm on the other side of a closed door. Install sufficient alarms to compensate for closed doors and other obstacles.
9. Your local fire brigade or insurance company may be able to give you further advice. Call them and ask. Further help and information may also be found in BS5839 Part 6 and the Fire Safety guidance given by the Department of Transport, Local Government and the Regions (DTLR).
   CAUTION: Research indicates that substantial increases in warning time can be obtained with each properly installed additional alarm, It is strongly recommended that the advice above be followed to ensure maximum protection.
   IMPORTANT: These smoke and heat alarms are intended primarily for use in single-family occupancy private dwellings. For use in other applications the manufacturers advice should be sought.
11. Near objects such as ceiling decorations that might impede the path of smoke or heat to the alarm.
12. Within 1500mm (5 feet) of a fluorescent light fitting and keep wiring at least 1000mm (39 inches) from these fittings. Do not install alarms on circuits containing fluorescent light fittings or dimmer switches.

Further help and information may be found in BS5839 Part 6

D: USER INFORMATION

Features
• Operating Lights – A continuous green light indicates the alarm is receiving mains power. The red light doubles as an alarm source indicator and flashes approximately every 45 seconds to confirm

DO NOT locate alarms: -
1. In turbulent air from fans, heaters, doors, windows, etc.
2. In high humidity areas such as bathrooms and shower rooms or where the temperature exceeds 39ºC (100ºF) or falls below 5ºC (40ºF)
3. At the peak of an 'A' frame ceiling – dead air at the top may prevent smoke and heat from reaching the alarm to provide an early warning.
4. Less than 300mm (12 inches) from a wall when mounted on the ceiling.
5. In insect infested areas. Tiny insects may affect performance.
6. (Smoke alarms) in poorly ventilated kitchen or garage. Combustion particles from cooking or car exhaust could trigger a nuisance alarm
7. In very dusty or dirty areas – dirt and excessive dust can impair the performance of the alarm.
8. Within 300mm (12 inches) of a light fitting or room corners.
9. In locations that would make routine testing or maintenance hazardous. (e.g. over a stairwell).
10. On poorly insulated walls or ceilings.

- Test the alarm once a week by: -
- Checking that the green light is on and that the red light is flashing every 45 seconds or so. The lights are located behind the grille on the front of the alarm.
- Press and hold the test button until the alarm sounds. NOTE: Pressing this button on alarms in the 670 series also places the alarm in pause mode.

MBX MODELS.
Change the battery with a new one when the alarm beeps every 45 seconds.

All MBX Models
Turn off the mains electricity supply, remove locking key, rotate the alarm approximately 10mm anti-clockwise and remove the alarm from the ceiling. Unplug the alarm from the mains supply. Remove the screw and prise open the battery compartment door on the back of the alarm to replace the battery with one of the following: Duracell MN1604, MX1604, Eveready PP3B PP3S, 6LF22 Gold Peak 1604A, 1604S. Close the battery door refit the screw and re-assemble the alarm to the ceiling ensuring that the mains plug is securely fitted. Test the alarm using the test button then turn on the mains electricity supply. PLEASE NOTE: The alarm cannot be fitted to the baseplate without a battery installed.

650MRL, 670MRL, 680MRL
Rechargeable Lithium batteries provide approximately 6 months back up power supply in the event of a mains supply failure. The alarm may beep every 45 seconds for a few hours after a mains supply failure while the batteries re-charge.

650MC, 670MC, 680MC.
High performance capacitors provide a back up power supply in the event of a mains supply failure. The alarm may beep every 45 seconds for a few hours after a mains supply failure while the capacitors re-charge.

Troubleshooting
Problems are indicated by four events: -
1. Alarm does not sound upon pressing the test button
2. Green light does not illuminate when mains power is on.
3. Red operating light remains steadily on, or off (i.e. does not flash every 45 seconds when alarm is in standby).
4. Alarm emits a beep every 45 seconds when back up power supply should be fully charged.

Try the following: -
1. Inspect the fuse in the power circuit to the alarm
2. Gently vacuum as detailed in 'Simple Maintenance'.
3. For MBX models only, replace the battery.
4. Call a qualified electrician to inspect the house wiring and connections to the alarm.

If these procedures do not eliminate the problem. DO NOT ATTEMPT REPAIRS. In the first instance contact the manufacturer for further advice.
If the alarm is still within warranty period and terms, return the unit with proof of purchase to the distributor, indicating the nature of the problem. Units beyond warranty cannot be economically repaired. For address see the bottom of this page.

False Alarms
Abnormal air conditions may cause the highly sensitive alarm to give a 'false' alarm. DO NOT DISCONNECT THE ALARM. If no fire is apparent, ventilate the room and/or operate the alarm pause (if fitted).
WARNING: IF THERE IS ANY QUESTION AS TO THE CAUSE OF AN ALARM, ALWAYS ASSUME THAT IT IS DUE TO AN ACTUAL FIRE AND FOLLOW YOU FIRE EMERGENCY PLANS. Do not assume the alarm is a nuisance alarm and activate alarm pause (if fitted).
Dust can have an adverse effect. Vacuum as recommended above.
Do not paint the unit.
Other factors such as nicotine contamination may also adversely affect the alarm.

Radioactive Contents
Ionization type smoke alarms utilise a tiny amount of radioactive material, 0.9 microcuries (30 kilobequerels) of Americium 241, to detect smoke. This material is in the form of a sealed source and represents no hazard whatsoever to anyone installing or using the smoke alarm. Any stray particles would be unable to "penetrate the dead layer of skin and thus do not constitute an external hazard". (Radiation Protection Guidance for Scientists and Physicians). All BRK® Dicon™ ionization smoke alarms have been rigorously tested by the National Radiological Protection Board to ensure absolute safety.

Disposal
This product, the batteries and other accessories must not be disposed of as unsorted municipal waste and must be collected separately at the end of the products life. Contact your local authority for information about collection points in your area.

Limited guarantee
BRK brands Europe Ltd., ("the Company"), guarantees its enclosed alarm to be free from defects in materials and workmanship under normal use and service for a period of five years from the date of purchase. BRK Brands Europe Ltd. Makes no other express guarantee for this alarm. No agent, representative, dealer or employee from the Company has the authority to increase or alter the obligations or limitations of the Guarantee. The Company's obligation of this guarantee shall be limited to the repair or replacement of any part of the alarm which is found to be defective in materials or workmanship under normal use and service during the five year period commencing with date of purchase. The Company shall not be obligated to repair or replace alarms which are found to be in need of repair because of damage, unreasonable use, modifications or alterations occurring after the date of purchase.

How to obtain guarantee service
If service is required, return the product to your retailer.
Battery: BRK Brands Europe Ltd. make no guarantee, express or implied, written or oral, including that of merchantability or fitness for any particular purpose with respect to battery.
YOUR ALARM IS NOT A SUBSTITUTE FOR PROPERTY, DISABILITY OR OTHER INSURANCE OF ANY KIND. APPROPRIATE COVERAGE IS YOUR RESPONSIBILITY. CONSULT YOUR AGENT.
This warranty does not affect your statutory rights in any way.
In the event of a problem with your alarm or you have any questions concerning its use; care and service please consult this manual.

If you require any further help or clarification please write to:
BRK® Dicon™, BRK Brands Europe Ltd
Unit 6, Carter Court - Davy Way - Waterwells Business Park - Quedgeley - Gloucester - GL2 2DE
United Kingdom
or phone our Helpline on: 01452 887570
www.brkdicon.eu

PLEASE KEEP THIS MANUAL IN A SAFE PLACE

Please note that specifications may be subject to change.

650 & 670 Range

CE 0086-CPD-S171190 EN 14604: 2005

680 Range

BS5446-2:2003 Licence No: KM858555

650 & 670 Range

BS EN 14604: 2005 Licence No: KM990528

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