

SD360

Installation / User Manual

Long Battery Life Single Station Battery Powered Photoelectric Smoke Detector



Introduction

Paradox's SD360 single station photoelectric smoke detector is designed to sense smoke that comes into the alarm chamber. It does not sense gas, or flame. This smoke detector is designed to give early warning of developing fires by giving off the alarm sounds from its built-in alarm horn. It can provide precious time for you and your family to escape before a fire spreads. However, the smoke detector makes such pre-warning of fire accident possible, only if the smoke detector is located, installed, and maintained properly as described in this User Manual.

WARNING: This smoke detector is designed for use in a single residential unit only, which means that it should be used inside a single family home or apartment. It is not meant to be used in lobbies, hallways, basements, or another apartment in multi-family buildings, unless there are already working alarms in each family unit. Smoke detectors, placed in common areas outside of the individual living unit, such as on porches or in hallways, may not provide early warning to residents. In multi-family buildings, each family living unit should set up its own smoke detectors.

WARNING: This detector is not meant to be used in non-residential buildings. Warehouses, industrial or commercial buildings, and special purpose non-residential buildings require special fire detection and alarm systems. This detector alone is not a suitable substitute for complete fire detection systems for places where many people live or work, such as hotels or motels. The same is true of dormitories, hospitals, nursing homes or group homes of any kind, even if they were once single family homes.

WARNING: This detector will not alert people who are hard of hearing. It is strongly recommended that the special-purpose smoke detectors using lights or vibrating devices, should be installed to alert occupants who are hard of hearing.

Location to Install Your Smoke Detectors

For complete coverage in residential units, smoke detectors should be installed in all rooms, halls, storage areas, basements, and attics in each family living unit. Minimum coverage is one detector on each floor and one in each sleeping area.

Here, we have useful tips for you:

- Install a smoke detector in each separate room and exit way except kitchen, as shown in Figure 1 and Figure 2.
- Install a smoke detector on every floor of a multi-floor home or apartment, as shown in Figure 3
- Install a minimum of two detectors in any household
- Install a smoke detector inside every bedroom
- Install smoke detectors at both ends of a bedroom hallway if the hallway is more than 40 feet (12 meters) long
- Install basement detectors at the bottom of the basement stairwell
- Install second-floor detectors at the top of the first-to-second floor stairwell

Figure 1:

One separate smoke detector in every bedroom and one on the floor for more security

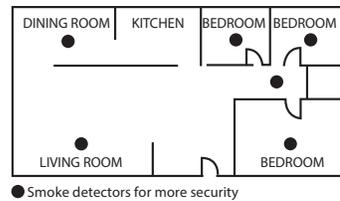


Figure 2:

One separate smoke detector in every room, except kitchen and bathroom as minimum security

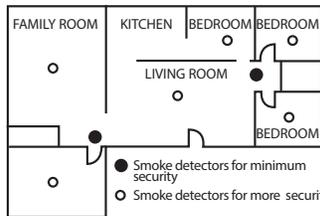
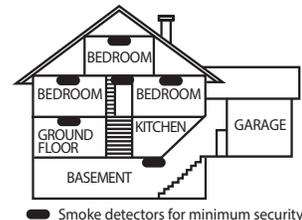


Figure 3:

Location for placing smoke detectors for a multi-floor residence



Be sure no door or other obstruction blocks the path of smoke to the detector.

- Install additional detectors in your living room, dining room, family room, attic, utility and storage rooms
- Install smoke detectors as close to the center of the ceiling as possible. If this is not practical, put the detector on the ceiling, no closer than 20 inches (50 cm) from any wall or corner, as shown in Figure 4
- If ceiling mounting is not possible and wall mounting is permitted by your local and state regulations, put wall-mounted detectors between 4 and 6 inches (10 ~ 15 cm) from the ceiling as shown in Figure 4
- If some of your rooms have sloped, peaked, or gabled ceilings, try to mount detectors 3 feet (0.9 meter) measured horizontally from the highest point of the ceiling as shown in Figure 5

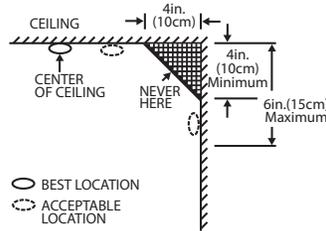
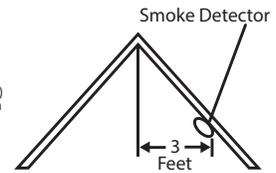


Figure 4:

If it is not practical to mount the detector on the center of the ceiling, put the detector on the ceiling no closer than 50 cm to any wall or corner as shown in Figure 4



Horizontal Distance from Peak

Figure 5:

The distance between the peak and the mounting of the smoke detector on peaked ceilings (>20°) is minimum 0.5M to maximum 1M, measured along the peaked ceiling

Locations NOT to Install Your Smoke Detectors

Nuisance alarms take place when smoke detectors are installed where they will not work properly. To avoid nuisance alarms, do not install smoke detectors in the following situations:

- Combustion particles are the by-products of something that is burning. Thus in or near areas where combustion particles are present you do not install the smoke detector to avoid nuisance alarms, such as kitchens with few windows or poor ventilation, garages where there may be vehicle exhaust, near furnaces, hot water heaters, and space heaters
- Do not install smoke detectors less than 20 feet (6 meters) away from places where combustion particles are normally present, like kitchens. If a 20-foot distance is not possible, e.g. in a mobile home, try to install the detector as far away from the combustion particles as possible, preferably on the wall. To prevent nuisance alarms, provide good ventilation in such places

IMPORTANT: For any reason, do not disable the detector to avoid nuisance alarms.

- When air streams passing by kitchens, the way how a detector can sense combustion particles in normal air-flow paths is graphically shown in Figure 6, which indicates the correct and incorrect smoke detector locations concerning this problem

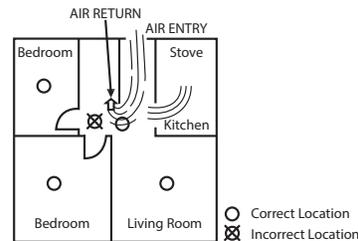


Figure 6:

Recommended smoke detector's locations to avoid air streams with combustion particles

- In damp or very humid areas, or near bathrooms with showers. Moisture in humid air can enter the sensing chamber, then turns into droplets upon cooling, which can cause nuisance alarms. Install smoke detector at least 10 feet (3 meters) away from bathrooms
- In very cold or very hot areas, including unheated buildings or outdoor rooms. If the temperature goes above or below the operating range of smoke detector, it will not work properly. The temperature range for your smoke detector is 0~49°C
- In very dusty or dirty areas, dirt and dust can build up on the detector's sensing chamber, to make it overly sensitive. Additionally, dust or dirt can block openings to the sensing chamber and keep the detector from sensing smoke



- Near fresh air vents or very drafty areas like air conditioners, heaters or fans, fresh air vents and drafts can drive smoke away from smoke detectors
- Dead air spaces are often at the top of a peaked roof, or in the corners between ceilings and walls. Dead air may prevent smoke from reaching a detector. See Figures 4 and 5 for recommended mounting locations
- In insect-infested areas. If insects enter a detector's sensing chamber, they may cause a nuisance alarm. Where bugs are a problem, get rid of them before putting up a detector
- Near fluorescent lights, electrical "noise" from fluorescent lights may cause nuisance alarms. Install smoke detectors at least 5 feet (1.5 meters) from such lights

WARNING: Never remove battery from a DC-power operated detector to stop a nuisance alarm. Open a window or fan the air around the detector to get rid of the smoke. The detector will turn itself off when the smoke is gone. If nuisance alarms persist, attempt to clean the detector as described in this Installation Manual.

WARNING: Do not stand close to the detector when the alarm is sounding. The alarm is loud in order to wake you in an emergency. Too much exposure to the horn at close range may be harmful to your hearing.

Installing Your Smoke Detector

The SD360 smoke detector is made to be mounted on the ceiling or on the wall if necessary. Since this smoke detector is a single-station type, it cannot be linked to other detectors.

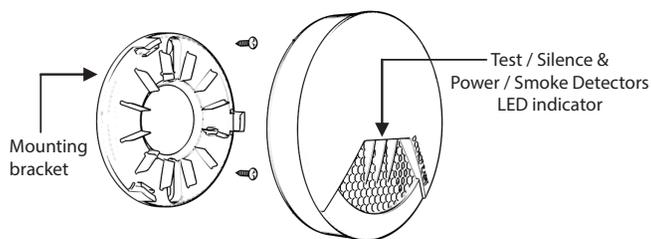
WARNING: Do not connect the SD360 smoke detector to any other detector or auxiliary device. Connecting anything else to this detector will keep it from working properly.

Read "LOCATIONS TO INSTALL YOUR SMOKE DETECTORS" and "LOCATIONS NOT TO INSTALL YOUR SMOKE DETECTORS" section in this Manual first, then decide where to install your smoke detector.

Please follow these steps to install your smoke detector:

- 1) At the place where you are going to install the detector, draw a horizontal line six inches long.
- 2) Remove the mounting bracket from your unit by rotating it counterclockwise.
- 3) Place the bracket so that the two longest hold slots are aligned on the line. In each of keyhole slots, drawing a mark to locate a mounting. plug and screw.
- 4) Remove the bracket.
- 5) Using a 3/16-inch(5mm) drill bit, drills two holes at the marks and insert plastic wall plugs. Put the detector away from plastic dust on it when you drill holds for mounting.
- 6) Using the two screws and plastic wall plugs (all supplied), attach the bracket to the wall.
- 7) Line up the slot of the bracket and the detector. Push the detector onto the mounting bracket on turn it clockwise to fix it into the place. Pull onward on the smoke detector to make sure it is securely attached to the mounting bracket.

Figure 7 :



CAUTION: This smoke detector comes with cover latches that will prevent the smoke detector cover from closing if battery is not installed. This tells you that the detector will not work until a new battery is properly installed.

NOTE: The detector horn will beep once after the detector is installed with battery and mounted with bracket 2~4 seconds. This means the smoke detector is working normally and also indicates that the battery is positioned properly. Close cover, and then press the test button, holding it down for about 3 seconds until the horn sounds. The horn should sound a loud, pulsating alarm. This means the unit is working properly.

Standby Mode

The red LED, as the ALARM indicator, is featured with the smoke detector. It can be seen through the clear test button on the cover of the unit. When a red LED flashes once every 334 seconds, it indicates the smoke detector is under normal operation. When the smoke detector senses smoke and simultaneously sounds an audible alarm with 3 beeps, pause and 3 beeps. The red LED will flash continuously and rapidly.

Silence Feature

The silence feature can temporarily quiet an alarm for up to 10 minutes. To use this feature, press test/silence button on the cover when it alarms. However, if the smoke concentration around the smoke detector unit is still at alarming level after 10 minutes of silence, the unit will re-alarm immediately.

LOW BATTERY WARNING SIGNAL

If the detector horn begins to chirp once in 43 seconds with yellow LED flashing, it indicates that the smoke detector's battery is weak. Replace with new battery immediately. Keep fresh batteries on hand for this purpose.

The Low Battery warning signal should last for up to 30 days, but you should replace the battery immediately to secure your protection.

Also upon initial low battery condition, the detector will send a low battery indicator to the receiver after 5 minutes. The smoke detector will continue to transmit a low battery signal every 12 hours until the battery is replaced.

Warning: Use only the types of battery stated in this manual's Specifications. Do not use any other kind of battery. This smoke detector may not operate properly with other types of battery. For battery installation see below.

TAMPER SWITCH FEATURE:

If the smoke detector's tamper remains open (not mounted into the bracket) within two and a half minutes after the battery is installed, three sequential chirps will sound at regular continuous intervals and the Yellow LED will turn on (steady) until smoke detector is mounted into the bracket properly.

MALFUNCTION (ERROR) SIGNAL:

If you hear 3 "beep" with yellow LED flashing 3 times in 43 seconds, it indicates that the smoke detector does not work properly, please have it repaired or serviced.

TESTING YOUR SMOKE DETECTOR

If you suspect that your smoke detector does not go into alarm, test it as described below. When the Test button is pressed, the smoke detector sends an alarm signal to the wireless receiver.

Notes

- If the smoke detector zone is defined as an **Instant 24hr Fire Zone**, the alarm signal is immediately sent to the Central Monitoring Station; contact the Central Monitoring Station to advise them of the test and to avoid a false alarm.
- If the smoke detector zone is defined as a **Delayed 24hr Fire Zone**, the alarm signal is not sent to the Central Monitoring Station.

To test the detector:

Test the detector weekly by pushing firmly on the test button for around 4 seconds until the horn sounds, the sound pattern is 3 beeps, pause, and then 3 beeps with red LED flashing continuously and rapidly. If the smoke detector beeps three beeps with yellow LED flashing three times in 43 seconds, it indicates the smoke detector is not working properly, it requires to be repaired or serviced.

WARNING: This is the only way to test the smoke detector! If the test fails, repair or replace the detector immediately. If you suspect that your smoke detector does not go into alarm, test it by pressing the test button with your finger to ensure if it works properly.

To cease the alarm:

- If the zone is defined as **Delayed Fire Zone**, the alarm will stop automatically.
- If the zone is defined as an **Instant Fire Zone**, enter a valid code # (PIN).

WARNING: Never use an open flame of any kind to test your detector. You may set fire to damage the detector, as well as your home. The built-in test switch accurately tests all functions. This is the only correct way to test the unit.

WARNING: When you are not testing the unit and the detector's alarm horn sounds this means the smoke detector has sensed smoke or combustion particles in the air. Be sure that the detector alarm horn is a warning of a possible serious situation, which requires your immediate attention.

- The alarm could be caused by a nuisance situation. Cooking smoke or a dusty furnace, sometimes called "friendly fires" can cause the alarm to sound. If this happens, open a window or fan the air to remove the smoke or dust. The alarm will turn off as soon as the air is completely clear.

NOTE: Do not disconnect the power or remove the battery from the smoke detector. This will remove your protection from fires.

Battery Installation

- 1) Open battery compartment (see Figure 8).
- 2) Install battery into compartment and make sure the "+" and "-" ends of each battery are aligned properly.
- 3) After battery is installed in compartment and mounted with the bracket, you will hear a chirp which indicates the unit is receiving battery power.
- 4) After battery is replaced, please press test button immediately to check if it alarms properly.

TAKING CARE OF YOUR SMOKE DETECTOR

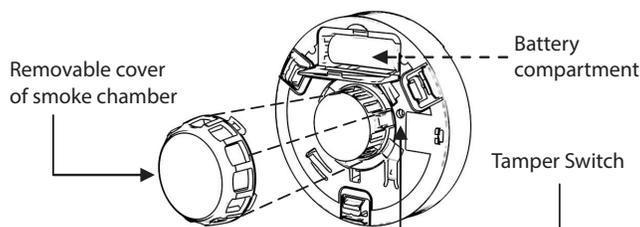
Your smoke detector is designed to be maintenance-free as possible. To keep your smoke detector in good working condition, you must test the unit weekly, as referring to section "TESTING YOUR SMOKE DETECTOR".

Regular Maintenance:

- Open the cover and vacuum the dust off the detector's sensing chamber at least once a month.

Remove battery before cleaning. To clean the smoke detector, use soft brush attachment to your vacuum. Carefully remove any dust on the smoke detector components, especially on the openings of the sensing chamber. Replace battery after cleaning. Test the smoke detector to make sure battery is working correctly. Never use water, cleaners as they may damage the unit.

Figure 8:



NOTE: If nuisance alarms keep coming from the unit, you should check whether the smoke detector unit's location is adequate. Refer to section "WHERE TO INSTALL SMOKE DETECTORS". Move your smoke detector if it is not located properly. Clean the unit as described above.

TIPS TO ENHANCE YOUR PROTECTION FROM FIRES

Putting up smoke detectors is only one step in protecting your family from fires. You must also reduce the chances that fires will start in your home. And you must increase your chances of escaping safely if one does start.

To have a good fire safety program you must apply the following tips to enhance your family's protection from fires:

- 1) Install smoke detectors properly. Carefully follow all the instructions in this manual. Keep your smoke detectors clean, and test them every week.
- 2) Remember that smoke detector that do not work will not alert you. Replace your smoke detectors immediately if they are not working properly.
- 3) Follow fire safety rules, and prevents hazardous situations:
 - Use smoking materials properly. Never smoke in bed
 - Keep matches and cigarette lighters away from children
 - Store flammable materials in proper containers. Never use them near open flame or sparks
 - Keep electrical appliances in good condition. Do not overload electrical circuits
 - Keep stoves, fireplaces, chimneys, and barbecue grills grease free. Make sure they are properly installed and away from any combustible materials
 - Keep portable heaters and open flames such as candles away from combustible materials
 - Do not allow rubbish to accumulate
 - Keep a supply of extra batteries on hand for your battery powered smoke detectors
- 4) Develop a family escape plan and practice it with your entire family. Be sure to include small children in your practice.
 - Draw a floor plan of your home, and find two ways to exit from each room. There should be one way to get out of each bedroom without opening the door
 - Explain to children what the smoke detector signal means. Teach them that they must be prepared to leave the home by themselves if necessary. Show them how to check to see if doors are hot before opening them. Show them how to stay close to the floor and crawl if necessary. Show them how to use the alternate exit if the door is hot and should not be opened

- Decide on a meeting place which has a safe distance from your house. Make sure that all your children understand that they should go and wait for you there if there is a fire
- Hold fire drills at least every 6 months to make sure that everyone, even small children, knows what to do to escape safely
- Know where to go to call the Fire Department from outside your home
- Provide emergency equipment, such as fire extinguishers, and teach your family to use this equipment properly

MORE TIPS TO FACE A FIRE IN YOUR HOME

If you have made a family escape plan and practiced it with your family, you have increased their chances of escaping safely. Go over the following rules with your children each time you have fire drills. This will help everyone remember them in case of a real fire emergency.

- Don't panic and stay calm. Your safe escape may depend on thinking clearly and remembering what you have practiced
- Get out of the house as quickly as possible. Follow a planned escape route. Do not stop to collect anything or to get dressed
- Feel the doors to see if they are hot. If they are not, open them carefully. Do not open a door if it is hot. Use an alternate escape route
- Stay close to the floor. Smoke and hot gases rise
- Cover your nose and mouth with a wet or damp cloth. Take short, shallow breaths
- Keep doors and windows closed. Open them only if you have to in order to escape
- Meet at your planned meeting place after leaving the house
- Call the Fire Department as soon as possible from outside your house. Give the address and your name
- Never go back inside a burning building. Contact your local Fire Department. They will give you more ideas about how to make your home safer from fires and how to plan your family's escape

Wireless Transmitter Information

Wireless Installation Location

The location of the wireless smoke detector affects the overall performance of the wireless system. In order to ensure the best possible signal reception, the following criteria should be respected whenever possible:

- Select an installation site that is free of obstacles that reflect and absorb radio frequency (RF) signals, as well as interference that may distort signals. Avoid installation near or in the path of strong RF fields (i.e. neon lights, computers), and on or near metal objects, circuit breaker boxes, air conditioners, and heater ducts since they may cause interference and reduce the module's sensitivity
- Select a site that is not susceptible to drastic temperature changes
- Respect the maximum allowable distance between the smoke detector and the wireless receiver

NOTE: To configure the detector to communicate with control panels refer to: EVOHD, EVO192 and MGSP programming manuals.

Smoke Detector Zone Assignment

To assign the smoke detector to a wireless receiver, press the smoke detector's Test button.

Check-In Supervision

The SD360 transmits a check-in supervision signal to the receiver at regular intervals. This value is pre-determined and cannot be programmed.

Alarm Transmission

Upon detection of an alarm condition (smoke) the detector will transmit an alarm signal every 30 seconds to the wireless receiver until the condition stops. Once the alarm condition has stopped, the detector will wait 5 seconds then transmit a restore signal to the wireless receiver. The restore signal is transmitted only once to the receiver after an alarm condition has stopped.

Replacing the Battery

After replacing the battery, test the detector to ensure proper functioning (refer to Testing the Smoke Detector above).

Product Compatibility:

Smoke detectors are not to be used with detector guards unless the combination has been evaluated and found suitable for that purpose.

WARNING: This device is not intended as life-saving device and should not be connected with any life-saving device or fire system. This device is only intended to be used in residences.

WARNING: LIMITATIONS OF SMOKE DETECTORS/TRANSMITTERS

Although smoke detectors play a key role in reducing damage resulting from home fires, they can only work if they are properly installed, located and maintained.

Smoke alarm may not be heard if residents are hearing impaired. Special designed units such as those with visual and audible alarms should be installed for hearing impaired residents.

Smoke alarm may not waken all individuals if they are sound sleepers. If children or other family members do not waken readily to the sound of the smoke alarm, or if there are infants or members with mobility limitations, make sure someone is assigned to assist them in fire drill and in the event of emergency.

Smoke detectors will not work without power. AC or DC powered smoke detectors will not work if, for any reason, the power supply is cut off. An alarm signal sent by the wireless transmitter in this detector may be blocked or reflected by metal before reaching the detector's receiver. Even if the signal path has been recently checked, blockage may occur if a metal object is moved into the path.

Smoke detectors will not sense fires when smoke does not reach the detectors. Smoldering fires typically do not generate a large amount of heat, which is needed to drive smoke up to the ceiling where the smoke detector is usually located. For this reason, there may be large delays in detecting a smoldering fire with either an ionization-type detector or a photoelectric-type detector. Either one of them may only generate an alarm after flaming has initiated, which will generate the heat needed to drive the smoke to the ceiling.

Smoke from fires in chimneys, in walks, on roofs, or on the other side of a closed door may not reach the smoke detector and generate an alarm. A detector may not quickly detect or sense at all, a fire developing on another level of a building. Alarm warning devices, such as bells or horns, may not alert people or wake up sleepers if they are located on the other side of closed or partly open doors, or on another level. Persons may not hear a warning device over the noise levels of a radio, air conditioner or appliances or traffic. For this reason, **detectors are strongly recommended to be located on every level and in every bedroom within a building.** Alarm warning devices, however loud, may not warn hearing-impaired people or waken deep sleepers.

Smoke detectors shall be located in any room where an alarm control is located, or in any room where alarm control connections to an AC source or phone lines are made. If detectors are not so located, a fire within any of these rooms could prevent the QED control from reporting a fire.

Sensing limitations of smoke detectors. Ionization detectors and photoelectric detectors are required to pass fire tests of the flaming and smoldering types. This is to ensure that both can detect a wide range of fires. Ionization detectors offer a broad range of fire-sensing capability, but not always provide early warning of a specific type of fire.

In general, detectors cannot be expected to provide warning for fires resulting from inadequate fire protection practices, violent explosions, escaping gases that ignite, improper storage of flammable liquids like cleaning solvents that ignite, other similar safety hazards, arson, smoking in bed, children playing with matches or lighters, etc. Smoke detectors used in high air velocity conditions may have a delay in alarm due to dilution of smoke densities created by frequent and rapid air exchanges. Additionally, high air velocity environments may create increased dust contamination, demanding more frequent detector maintenance.

Maintenance of smoke detectors must be done. To keep your equipment in excellent working order, ongoing monthly maintenance is required as outlined above and as per EU standards. A preventative maintenance agreement should be arranged through the local manufacturer's representative. Though smoke detectors are designed for long life, they may fail at any time. Any smoke detector, fire alarm equipment, or any component of that system which fails must be repaired or replaced as soon as possible.

Information to the User

This equipment generates and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help

Changes and modifications on equipment not expressly approved by Paradox Security Systems Ltd could void the user's authority to operate the equipment.

The users manual or instruction manual for an intentional or unintentional radiator shall caution the user that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Product Specifications

Model: SD360

Sensitivity: 0.091 – 0.149dB/m, 1.31-2.28%/ft

Battery Power: 3V lithium battery, Duracell DL 123A or Panasonic CR123A

Warning Sound Pattern: Three Pulse temporal pattern

Detector Audibility: 85dBA@3m

Operation Temperature Range: 0~49°C (32°F~120°F)

Battery Life: One year

Radio Frequency: 433 MHz/868 MHz

Wireless Range: 35m (115ft) with MG6250

70m (230ft) with MG5000, MG5050, and RTX3

Relative Humidity: 10~85%

Size: 120mm diameter x 5.3mm depth

Warranty

For complete warranty information on this product, please refer to the Limited Warranty Statement found on the website www.paradox.com/terms or contact your local distributor. Your use of the Paradox product signifies your acceptance of all warranty terms and conditions.

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