Zerio Plus

EDA-R6000 Radio Combined Optical Smoke Detector and Sounder Installation Instructions



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0359

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EDA-R6000
Radio combined smoke detector and sounder for use in fire detection and fire alarm systems for buildings.
Type A: for indoor use

The EDA-R6000 Radio Combined Optical Smoke Detector and Sounder is used as part of the Zerio Plus Radio Fire Alarm System. It cannot be used with other ranges of Electro-Detectors products.

The device is IP rated to IP21C and should only be used indoors.

To fix the base to the ceiling
The R6000 should be fitted in an appropriate position as detailed in BS5839 Part 1. The base plate should be separated from the device by rotating the detector anti-clockwise and pulling apart. The base should be screwed to a flat surface using 2 x No 8 (4mm) screws of appropriate length for the material that the device is being mounted on. If the surface is not flat, the base plate may warp when screwed too tightly to the surface, which could cause tamper fault conditions. It is recommended that the base plate not be secured too tightly or a rigid mounting plate be fixed to the wall first. The devices should not be fitted covering holes in ceilings where water could possibly drip through. Any hole should be made good prior to installing the device. The device should be fitted away from any metal objects or electrical items to avoid radio interference and a radio survey for the position should have been carried out prior to installation.

Adding the device to the system
Before the R6000 will operate on a system, it must be programmed via the control panel. To program the unit the panel must be set in the appropriate mode to add a device to the system. If a device is being added or replaced on the system then the appropriate menu option should be selected on the control panel. Please refer to the panel manual for further information. Before adding/replacing the device on the system you will need to know what unit number/address the unit is to be programmed to. The zone number, sensitivity, volume, area and text location information should also be to hand but this can be added/changed later.

Zone Number
The zone number is a logical way of grouping devices and is used as a way of indicating where the alarm is in a building. Careful attention to BS5839 should be exercised when allocating devices to zones and would usually be defined when the system is designed. The number of zones available depends on the type of control panel that is being installed. There are 8, 20 and 100 zone models available.

Sensitivity
The sensitivity can be adjusted by the control panel to the following settings.

High:	0.08dB/m (1.8%)	
Medium:	0.12dB/m (2.7%)	This is the default (EN54 approved) setting.
Low:	0.20dB/m (4.4%)	

Alarm Verify
Number of seconds that an R6000 needs to remain in alarm before it sends an alarm signal to the control panel.

Range:	1 to 20 seconds	2 seconds is the default (EN54 approved) setting.

Volume
The volume of the sounder is set when the device is programmed by the control panel. We would recommend that this is left as its default maximum setting which conforms to EN54-3 as tested. When changing volume levels, the appropriate sections of BS5839 should be considered.

4-High	80dB at 1m*	This is the default setting (EN54 approved) setting.
3-Medium	75dB at 1m	
2-Low	65dB at 1m	
1-Quiet	35dB at 1m	
0-Off	0dB	

*This is the minimum recorded volume in all directions. Depending on orientation a maximum of 90dB can be achieved.

Area 1 and Area 2
The cause and effects can be configured to only sound a specific area or group of sounders. Each sounder device can be programmed to two different areas, known as Area1 and Area2, which are both set to 101 by default. The default cause and effects for detectors or inputs on the system are for any fire event to sound in all areas (area 000). Up to 240 different sound areas can be used on a Zerio Plus system.

For example a sounder in flat number 3 could be programmed to area 003, and the detector in the flat could be configured to only sound an alert tone in area 003. A fire event in flat 3 would only sound in that flat, preventing disruption to other residents of the building. A detector in a common stairwell could be configured to sound an evacuate tone in area 000 (all areas) which would alert all residents immediately.

Output Timeout
This controls how long the device will sound before automatically silencing, in order to preserve battery life. Once the sounder has automatically silenced, the panel will remain indicating the alarm and the panel buzzer will continue to sound. Should another alarm condition occur then the sounder will resound. The output timeout can be set in multiples of 30 minutes from 0 to 900 minutes. Setting the value at 0 will allow the unit to sound indefinitely.

Sounder Tone List

Two main tones are available. A swept tone that should be used as a general evacuate tone and a single frequency pulsed tone should be used for an alert signal. When programming the panel, for each device that can set the system into alarm, a set of cause and effects can be programmed to determine how the sounders, beacons and I/O units operate. The options are detailed below. The system defaults to sounder tone number 0 and has been type approved to this. Other options have not been approved. Four user defined tones can be added to the system.

The swept tone sweeps from 1056Hz to 918Hz in 500mS

The pulsed single frequency operates on a 50% duty cycle and is on for 1 second.

Sounder Tone Number	Tone Name	Tone Description	Beacon	I/O unit Operation
0	Swept (+BCN+ACT)	Swept Tone + beacons + actuators	ON	ON
1	Pulsed (+BCN+ACT)	Pulsed 1s on 1s off + beacons + actuators	ON	ON
2	Swept (+BCN)	Swept Tone + beacons	ON	OFF
3	Pulsed (+BCN)	Pulsed 1s on 1s off + beacons	ON	OFF
4	Swept (+ACT)	Swept Tone + actuators	OFF	ON
5	Pulsed (+ACT)	Pulsed 1s on 1s off + actuators	OFF	ON
6	Swept	Swept Tone	OFF	OFF
7	Pulsed	Pulsed 1s on 1s off	OFF	OFF
8	No Tone	No Tone	OFF	OFF
9	No Tone (+BCN)	No Tone + beacons	ON	OFF
10	No Tone (+ACT)	No Tone + actuators	OFF	ON
11	No Tone (+BCN+ACT)	No Tone + beacons + actuators	ON	ON
12	User Tone A	Constant High*	ON*	ON*
13	User Tone B	Constant Low*	ON*	ON*
14	User Tone C	Warble*	ON*	ON*
15	User Tone D	6 second Swept Tone*	ON*	OFF*

*Can be configured by the user.

To put the R6000 into programming mode, follow the procedure below:-

1. Remove the power jumper link.
2. Press and hold the unit removal button and the reset button on the front of the detector simultaneously.
3. With these buttons both pressed down, fit the power jumper.
4. Keep both buttons held down for approximately 5 seconds until 3 rapid beeps are heard, then release the buttons immediately.
5. If the mode is successfully selected the LED on the front of the unit will flash green.
6. On the control panel go to ‘Add Device’ or ‘Replace Device’ in the Device Setup menu. The panel will search for new devices, and will indicate that it has found a smoke sounder detector.
7. Confirm this on the panel and select a zone number for the new device.
8. The panel will now ask whether to use default values or custom settings. Select which option you require. Default values will meet the relevant parts of EN54. Follow the instructions on the screen selecting the appropriate values. The selections can be made by using the cursor keys.
   The available custom settings are as follows.

   Zone Number: Sensitivity: Volume:
   Area 1: Area 2: Output Timeout:
   Alarm Verify:

Fitting the unit to the ceiling.
In normal operation the power link should be fitted on the ON position. When the power link is placed to the ON position the device will beep and the LED will briefly flash green. It will then flash red once a second if the device is off its base. When fitting the device to its base the LED on the front of the device should be aligned with the red dot on the base, then rotated clockwise. Once mounted correctly, press the reset button for about a second until the device beeps. The LED will stop flashing if the unit is mounted correctly.

When enough smoke enters the optical chamber, the device will indicate the alarm with a solid red LED and will beep once a second. The alarm will be indicated on the panel and if programmed accordingly, the sounder will sound a few seconds later.

To change the batteries in the R6000: replacement part: 2 x EDA-Q690
The batteries should last approximately four years in the R6000. Always use batteries supplied by Electro Detectors otherwise this will invalidate the certification. The battery pack is fitted with 2xAA Lithium Thynol Chloride cells. Min voltage 3.0V, Max 3.7V. When the battery is approaching its end of life the unit will transmit a low battery condition, which will be indicated on the control panel. The system will still function for at least a further 60 days in this condition before the unit fails to operate. Once the batteries are too flat to operate, the unit will either indicate a "verify fail" fault, because the panel has lost communication with the device, or a battery fault will be displayed. Should either of these be witnessed, the batteries should be changed immediately. If the unit detects a fault with the battery a 'battery fault' will be indicated on the panel. Therefore:-

1. Remove the power link.
2. Remove the back plate by removing the two screws
3. Remove the old battery packs.
4. Fit the new battery packs making sure the battery pins are lined up and pressed down.
5. Re-fit the back plate.
6. Press and hold the unit removal and reset button simultaneously.
7. With these buttons pressed down, fit the power link.
8. After 5 seconds the 3 rapid (log-on) beeps will be heard. Keep the buttons pressed down.
9. After a further 5 seconds another set of beeps will sound, at this point release the buttons. This will re-set the battery counter after a further 15 minutes. Refit the device onto its base.

Faults displayed on the control panel from R6000:-

Battery Low: The battery stats counter calculates battery life based on workload. Battery low is indicated when the counter expects that the device will need to have batteries replaced in 60 days time. Battery Low is cleared by resetting the battery stats counter (see above).

Battery Fault: The battery voltage has dropped below 3.0V. The batteries should be replaced immediately.

Verify Fail: The panel will generate a verify fault when it doesn't receive any communication from a device from 390 seconds. This could be caused by inadequate signal strength, something blocking the radio signal, batteries being flat, the unit failing to operate, or the device being turned off.

Unit Removal: If the device is removed from its base, the panel will display a unit removal/tamper fault.

Tx/Rx Fault: A failure with the transmit / receive module of the device. It is suggested that the fault should be reset and if the same fault occurs within 60 minutes the unit be replaced.

Int Fault: The unit has detected an internal problem with the way it is operating. There are several faults that can cause this but the usual way of solving the problem is to replace the unit or return it for repair. It is suggested that the fault should be reset and if the same fault occurs within 60 minutes the unit be replaced. The faults can relate to the operation of the sensing head, if fitted, the micro-processor controlling the device, its internal memory and a host more.

Polar Diagram for swept tone at maximum volume.

