

# PhoneSentry™

## Curbing the threat of the mobile phone

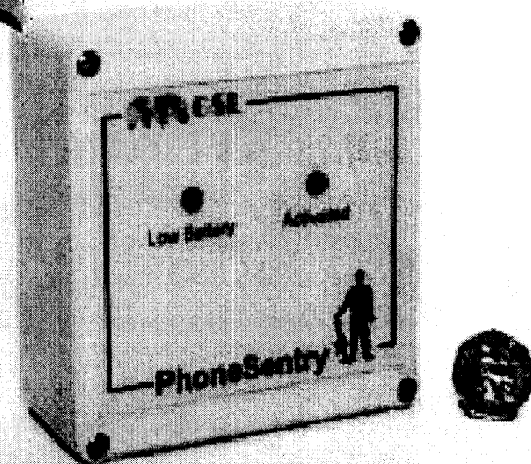
Hospitals, clinics and medical laboratories are packed with sensitive electronic equipment used for patient monitoring, diagnosis and care. Equipment of this kind can be susceptible to the local interference generated by mobile phones. Such interference may cause an annoying malfunction of hospital equipment or, in the most severe cases, its temporary failure. Clearly, this is unacceptable in an environment where patient health and welfare is paramount.

This is why you need PhoneSentry™. PhoneSentry™ is a self-contained, battery powered, electronic monitoring device that looks for the tell-tale signals produced by mobile phones whenever they are switched on. PhoneSentry™ maintains a silent vigil not just for signals from mobile phones being used to make outgoing calls, but also for signals from mobile phones switched on but concealed in pockets and bags waiting to receive incoming calls. On detecting these signals, and hence an active (or potentially active) mobile phone within range, PhoneSentry™ provides clear, concise, visual and verbal warnings to politely encourage mobile phone carriers in the vicinity to "Please switch off your mobile phone in this area... thank you !" This also alerts nearby nursing and supervisory staff to the potential threat of a mobile phone in the immediate area.

PhoneSentry™ is as easy to install as a smoke detector. It requires no specialist skills to set up and, with the exception of an occasional change of batteries, is maintenance free. The user has the freedom to select one of three pre-set sensitivities which govern the range over which PhoneSentry™ will detect a mobile phone and also one of three pre-set volume levels for the verbal message provided. This should cater for most practical applications and environments. Properly located outside operating theatres, intensive care units, laboratories, wards, private nursing rooms, waiting rooms, recovery areas and in corridors and reception points PhoneSentry™ can provide effective screening for areas where mobile phones need to be excluded, and therefore minimise the chance of them interfering with sensitive equipment in the immediate vicinity.

No mobile phone detection system is infallible. However, using the electronic technology that brought you the mobile phone itself, PhoneSentry™ comes as near as possible to providing you with the necessary peace of mind.

Year 2000  
Compliant



### PhoneSentry™ key features :-

- Small size, lightweight, quick and easy to install
- Wall mounting (screws, wall plugs, etc supplied)
- Battery powered (first set of batteries supplied free)
- Three user selectable sensitivity ranges (High/Medium/Low) for long, medium and short range detection of mobile phones (see over page)
- Three user selectable volume settings (High/Medium/Low) for the verbal warning message
- Self monitoring electronics to prompt users to replace batteries well in advance of their expiry to maintain continuity of operation
- Sealed, maintenance free, fit and forget, hygienic wipe clean finish
- Supplied with full installation, set-up and operating instructions
- Guaranteed for 12 months from date of purchase
- Applications and outline technical data overleaf

### How to order :-

To order your PhoneSentry™ simply complete the enclosed fax reply form and return it to us today. We will send you a proforma invoice by return and goods will be despatched within 30 days (subject to demand) following receipt of your payment.

## Specification and Application Information

Detection frequency bands:	Covers the main UK networks (i.e. Cellnet, Vodafone, One-2-One, Orange, etc)
Average detection (sensitivity) ranges:	See diagram and table below
Typical battery life:	4,300 hours approximately in quiescent (standby) state 4,000 hours approximately with an average of 20 phone detections per day
Batteries:	2 x 1.5 volt "C" size alkaline cells type MN1400 or LR14 (Note: Other types of battery may give a <u>substantially</u> shorter service life)
External dimensions:	122 mm (height) x 120 mm (width) x 59 mm (depth)
Weight:	Approximately 450g (including batteries)
Operating temperature:	-20°C to +50°C
Storage temperature:	-55°C to +100°C
Maximum humidity:	93% RH
Conformity to Standards:	PhoneSentry™ conforms with the requirements of the European Directive on Electromagnetic Compatibility 89/336/EEC



## Typical Application

PhoneSentry™ detects mobile phones presented to it within a certain detection "zone" as illustrated in the diagram below. Achieving the best performance from PhoneSentry™ depends on locating it strategically so that the phone-holder passes through or dwells within the detection zone. Instructions on locating PhoneSentry™ to obtain the best operational performance are included with the product. One or more PhoneSentry™ units can be used together to provide adequate coverage for larger zones.

In addition to a clear and positive verbal message to encourage a phone-holder within range to "Please switch off your mobile phone in this area ... thank you !" there are also two visual indicators provided on the product. Firstly, a red high brightness light emitting diode flashes simultaneously with the verbal message whenever PhoneSentry™ has been activated by a nearby phone. Secondly, a yellow high brightness light emitting diode periodically flashes, independently of phone detection, to indicate when the batteries need changing. This "low battery" warning occurs approximately one month before operation of PhoneSentry™ ceases to allow ample time for maintenance staff to change the batteries and therefore maintain continuity of operation of the product.

It is important to note that PhoneSentry™ does not prevent mobile phones within range from being used to make or receive emergency calls, but is a visual and verbal interactive prohibition warning device only. PhoneSentry™ is a passive receiving device and therefore does not require a licence to install or operate. Nor is it illegal under UK legislation as are some currently available "jamming" devices.

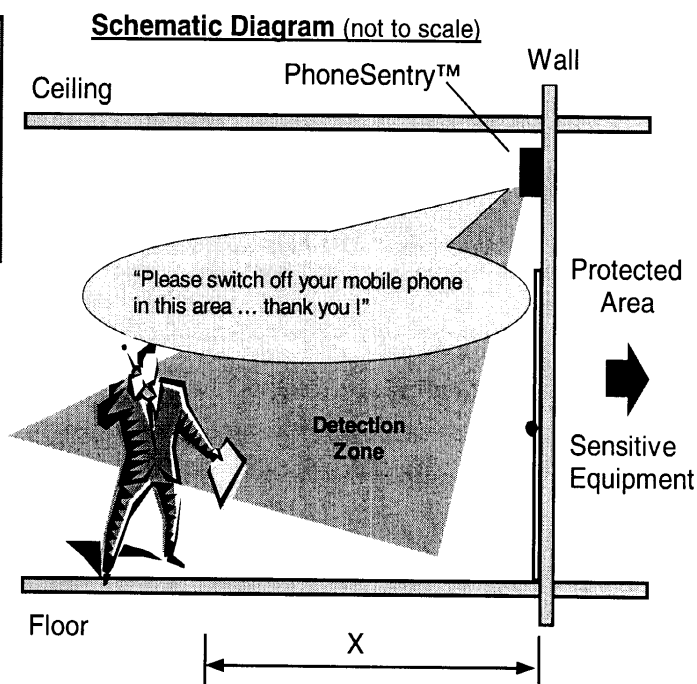
Sensitivity	Typical
High (Long)	7.5
Medium (Medium)	5.5
Low (Short)	1.4

\* Note: Typical detection distances are based on tests using a standard handset transmitting in the 890 to 915MHz band in an average reception area. Actual distances may vary slightly according to application. See instructions supplied with the product.



PhoneSentry™ is a product of Global Sciences Limited and is made in Great Britain.

Subject to patent applications.  
Specifications subject to change without notice  
Trade marks and trade names acknowledged  
Errors and omissions excepted



**Example : Using PhoneSentry™ to protect a door access**

## Battery Replacement

1.5 Volt C Cell alkaline batteries, type MN1400, LR14 or equivalent are required. The use of rechargeable or lower capacity batteries will result in a significantly shorter life between battery charges.

PhoneSentry™ indicates when the batteries are due for replacement in two ways:

**LOW BATTERY Indication:** the Orange (left hand) light will periodically flash three times in quick succession followed by a second gap. PhoneSentry™ will continue to operate normally for approximately one month during this time, depending on use.

**BATTERIES EXHAUSTED Indication:** the Orange and Red lights flash alternately as follows; Orange-Red-Orange followed by a second gap, this sequence then repeats. The unit will not operate in this condition, and has approximately one week of power left. When the power is completely exhausted PhoneSentry™ gives no response at all.

Remove the batteries as follows:

Screw the four screws holding the front lid in place, and carefully remove the lid assembly to reveal the circuit board with batteries. The PhoneSentry™ lid, electronics and batteries weigh approximately 400g, and care must be taken not to drop the unit or personal injury and/or damage to the electronics may occur. Switch the unit OFF by moving the OFF/ON switch to the left (see diagram overleaf for position of the OFF/ON switch). Remove the batteries carefully, and replace with two new batteries. Do not mix old and new batteries, different brands or types. The polarity and position of the batteries are shown in the diagram overleaf. The unit has an automatic built in cut-out if the batteries are inserted wrongly. When the batteries have been inserted switch the PhoneSentry™ ON using the OFF/ON switch. The unit will indicate that it is working correctly by flashing the two lights alternately for 10 seconds and also playing the message. If it does not occur please check the batteries are inserted correctly, the right way round and that the OFF/ON switch is in the correct position.

Place the PhoneSentry™ lid assembly into the base and re-attach the four screws (removed in 1 above) which hold the lid assembly in place.

Batteries should be disposed of as directed by their

## Conformity to Standards

PhoneSentry™ conforms to the requirements of the European Council Directive on Electromagnetic Compatibility, 89/336/EEC. The requirements are met through compliance with the relevant tests in the following standards:

EN 55022-1: 1992 Class B  
EN 55022-1: 1992

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made in Great Britain.



## Fault Diagnosis

If PhoneSentry™ does not appear to work correctly please use the following information to help diagnose the problem.

1. There is no message or led's flashing when PhoneSentry™ is switched on.
  - Check that the batteries are inserted correctly.
  - Check that the batteries are fresh by inserting a set of new batteries.
  - Check that the OFF/ON switch is switched to the ON position.
2. PhoneSentry™ is not detecting and no led's are flashing.
  - Check that the OFF/ON switch is in the ON position.
  - Replace the batteries, as when they are completely exhausted the PhoneSentry™ gives no indications.
  - Increase the sensitivity of the PhoneSentry™ by using the SENSITIVITY switch.
3. PhoneSentry™ does not always detect in the range required.
  - Increase the sensitivity of the PhoneSentry™ by using the SENSITIVITY switch.
  - The location of the PhoneSentry™ may be affecting the PhoneSentry™ sensitivity. Move any metal objects near the unit and if necessary re-locate PhoneSentry™.
4. PhoneSentry™ is too sensitive.
  - Decrease the sensitivity of the PhoneSentry™ using the SENSITIVITY switch.

If the fault persists, please contact Global Sciences Limited.

## Specification

Detection frequencies: Covers the main UK cellular networks (ie. Cellnet, Vodafone, One-2-One, Orange, etc.)

Average Detection Distances\*: for a call in progress or handset ringing:

Sensitivity Level	Distance
High	7.5m
Medium	5.5m
Low	1.4m

\* Based on a standard mobile handset transmitting in the 890-915MHz or 1710-1785MHz bands in an average reception area in-line and in front of the PhoneSentry™. (Note: Intermittent transmissions due to handset switch on/off, and base station polling have a reduced detection distance)

Typical Battery Life: 4300 hours approx in quiescent state

Batteries: 2 x 1.5 Volt 'C' Cell Type MN1400, LR14

Output loudspeaker maximum rating: 0.3W

External dimensions: 122mm (height) x 120mm (width) x 59mm

(depth)

Operating temperature range: -20°C to +50°C

Storage temperature range: -55°C to +100°C

Maximum humidity: 93% RH. (Note: prolonged exposure to this humidity may cause deterioration in the equipment)

Weight: 500g

# PhoneSentry™ User Guide

Please read all instructions  
carefully before installation

## Function

PhoneSentry™ provides an audible and visual indication that an active mobile phone is within a certain range of it. PhoneSentry™ is used to discourage the use of mobile phones, where it is considered a danger or nuisance to other people using the particular area, or where the use of mobile phones may interfere with sensitive equipment.

PhoneSentry™ works by detecting the carrier waves used by most mobile phones. PhoneSentry™ does not intercept any of the call data in either digital or analogue format.

PhoneSentry™ has the provision for altering the detection sensitivity (range), and volume of the audible message.

**Note:** PhoneSentry™ discourages but does not prevent the use of mobile phones for the making and receiving of phone calls.

## Maintenance

PhoneSentry™ requires no maintenance, except for the occasional replacement of batteries. The external surface can be wiped with a damp clean cloth to remove dust and dirt.

## Guarantee

Global Sciences Limited undertakes to guarantee all parts of PhoneSentry™ for one year from the date of purchase. If any part, or parts, are found to be defective within the first year after purchase then Global Sciences Limited will effect the repair at no charge to the customer providing the fault is reported directly to Global Sciences Limited. All repairs must be carried out by Global Sciences Limited. The guarantee does not apply to routine replacement of parts which deteriorate during normal use (ie. batteries). Similarly, the guarantee does not cover faults caused by neglect, misuse or unauthorised attempts at repair.

This guarantee is in addition to, and does not detract from, the contractual rights you have under statute or common law.

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Issue D



Global Sciences Limited operates a policy of continuous development and therefore reserves the right to make changes and improvements to the product described in this guide without prior notice.

Trade marks and trade names acknowledged

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Installation and Set-Up

1. Locating PhoneSentry™

PhoneSentry™ detects mobile phones in a certain 'Zone of Operation' (see diagram opposite). Locating PhoneSentry™ correctly is important as this affects its sensitivity. Objects, particularly metallic ones, can cause changes in sensitivity. PhoneSentry™ should be positioned so that no major obstacles, for example pillars, are in front of it in the zone of operation. It should also be mounted at least 1.8m above floor level to reduce the effect of screening by groups of people in the detection zone. The extent to which PhoneSentry™ is sensitive to signals through the wall, ceiling and floor is dependent on their construction and the 'Zone of Operation' diagrams provide a guide only to this sensitivity.

We recommended that PhoneSentry™ is not located within 1m of the following:

- fluorescent light tubes
  - microwave ovens
  - spark igniters
  - electric motors, eg. fans, air conditioning
- These sources, when activated, can on occasion give rise to false triggering of the unit.

2. Preparation

Remove PhoneSentry™ from its protective plastic transport bag and remove the lid of PhoneSentry™ by undoing the screws in each corner of the lid using a flat-head or cross-head screw driver. Take care when removing the lid as it holds the sensitive electronics and batteries and much of the weight of the unit.

3. Fixing to the wall

The back of the PhoneSentry™ box can now be fixed to the wall using the pack of four screws and four masonry plugs provided. For other mounting arrangements please use appropriate techniques.

**Note 3.1** The PhoneSentry™ box is not square and it is important to mount the box back onto the wall in such a way that when the PhoneSentry™ lid is put in place the front label is the correct way up. The shorter distance between the wall fixing screws (90mm) is the horizontal distance. See drilling template supplied for more details.

**Note 3.2** Do not drill extra mounting holes through the back of the box. The inside surface of the box is coated with a special paint required as part of its function. Any holes made in this paint will degrade the performance of the unit and void the warranty.

Once the holes are drilled in the wall the back of the box can be secured using appropriate screws.  
**Safety Note: Always wear suitable eye protection to BS 2092 when drilling and cleaning holes.**

4. Sensitivity and Volume Settings

Two switches are mounted on the electronic circuit board in the lid. These allow the detection sensitivity and message volume to be changed (see diagram opposite). The right hand switch, marked VOLUME, alters the volume of the audible message. The left hand switch, marked SENSITIVITY, alters the detection sensitivity (range). Alter these switches as required.

The detection sensitivity of PhoneSentry™ is affected by its location within a room (see 'Location' above) and by the signal strength produced by mobile phones when contacting their nearest transmitter. Some adjustment of the sensitivity switch may be required after installation. In most situations, medium or high sensitivity is appropriate. To cover large areas a number of PhoneSentry™ units can be placed strategically so that their Zones of Operation are adjacent or just overlap.

5. Activating the PhoneSentry™

PhoneSentry™ is activated by moving the OFF/ON switch, in the bottom left hand corner of the circuit board, to the right (see diagram). This will cause the two led's to flash together, one red and one orange, indicating that they are working correctly, and the audible message will play "Please, switch off your mobile phone in this area...thank you!". If this does not happen check that the batteries are installed correctly and that the OFF/ON switch is in the ON position. Consult the section on Fault Diagnosis if a problem exists.

**Note:** If PhoneSentry™ is switched off again please allow 10 seconds, before switching the unit on again to allow the circuit to reset.

6. Replace the lid assembly into the box base, which is now mounted on the wall. Re-insert the four screws into the lid assembly, one in each corner of the lid, and tighten appropriately.

**Safety Note:** Take care when removing and replacing the lid assembly as it weighs approximately 400g and dropping it could cause personal injury and/or damage to the sensitive internal electronics

7. Operation

Once installed PhoneSentry™ will provide a method of detecting the presence and use of mobile phones within a certain range.

When PhoneSentry™ detects a mobile phone it plays an audio warning message and simultaneously the red "Activated" light flashes. PhoneSentry™ will repeat the message twice more, with a 5 second gap between each repetition, if the mobile phone is still in range. PhoneSentry™ then waits up to 30 seconds before re-detecting.

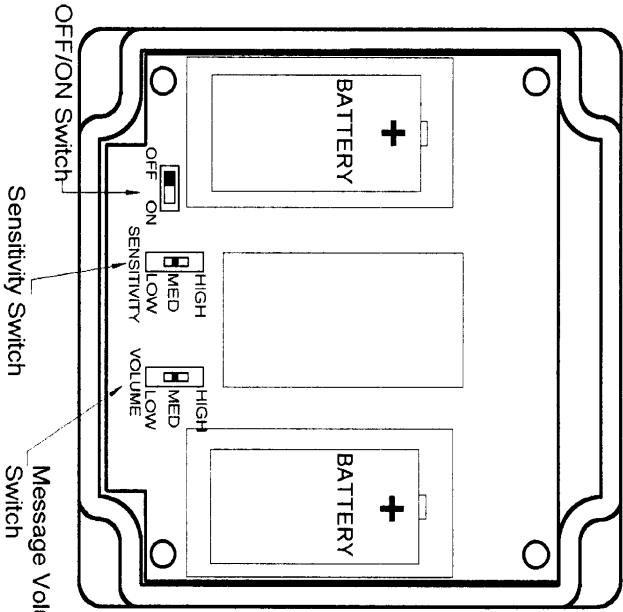
Zone of Operation  
Average Detection Distances

Sensitivity (Range) Setting	Detection Distances * (m)				
	A	B	C	D	E
High	7.5	3.0	7.7	4.0	3.5
Medium	5.5	2.2	5.6	2.9	2.6
Low	1.4	0.6	1.4	0.8	0.7

\* Note:

The detection distances are based on a standard mobile handset transmitting in the 890-915 MHz or 1710-1785 MHz bands in an average reception area.

PhoneSentry™ Lid Assembly



Zone of Operation

