

# DIABETES SENTRY INSTRUCTION MANUAL



## THIS IS YOUR DIABTETES SENTRY

**Diabetes Sentry** is the patented invention of an insulin dependent diabetic and is intended for use by a diabetic who may encounter hypoglycemia reactions while asleep. It is specifically designed to monitor changes in the temperature and the moisture levels of the skin. It does **not** detect hypoglycemia.

**Diabetes Sentry** may be described as a **symptom** detector in that it detects two of the symptoms which are normally associated with insulin reactions. It naturally follows that if a person does not demonstrate these symptoms, **Diabetes Sentry** can be of no use.

TOLL FREE NUMBER 1-855-325-4537

Diabetes Sentry will not be effective for those insulin dependent individuals who do not exhibit the symptoms of a drop in skin temperature or perspiration at the location of the skin contact sensors.

IM1001-0032REVA-3-1020

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## SUGGESTIONS

1. Take ample time to read this manual thoroughly.
2. Take **Diabetes Sentry** and this manual to your doctor or diabetic educator and discuss how it can help.
3. Allow an adjustment period to become acquainted with **Diabetes Sentry**.



# DIABETES SENTRY PARTS

## Wrist Strap



## Electronics Module (Back)



Skin Temp Sensor

GSR "Moisture" Sensor

Insulator Tab (to be removed)

## Electronics Module (Front)



Speaker

Serial Number

Battery Compartment

## FIRST TIME USE INSTRUCTIONS

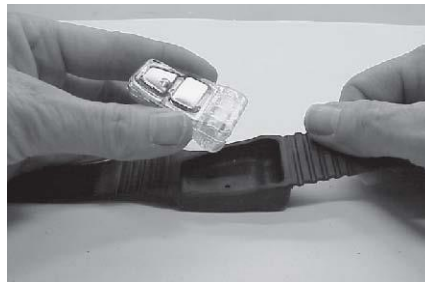
There are two parts to the **Diabetes Sentry** monitor; the **Wrist Strap** and the **Electronics Module** (see page 5). The batteries come pre-installed in the electronics module. To activate the monitor, undo the tie wraps and remove the clear plastic electronics module and the black wrist strap from the package insert. Remove the insulator tab from between the batteries (fig. 1) in the module. Gently reseal the batteries if they become loosened, and install the electronics module into the wrist strap, with the two metal sensors facing outward (fig. 2).

**Fig 1**



Remove Insulator

**Fig 2**



These metal sensors must make contact with the skin when attached to the wrist.

Your **Diabetes Sentry** is now ready for use. Refer to “wearing the **Diabetes Sentry** (page 7).

## WEARING THE DIABETES SENTRY

Place **Diabetes Sentry** on wrist as shown in diagram.



Always wear **Diabetes Sentry** tight enough to prevent slipping around the wrist. Excess watch strap may be trimmed if desired.

## TURN ON DIABETES SENTRY

Now that **Diabetes Sentry** is securely strapped to your wrist and you are ready for bed, press the **“ON”** button once (same button for **“ON”** and **“OFF”**). You will immediately hear 4 (four) quick beeps signifying that your **Diabetes Sentry** is **“ON”** and monitoring. At this time you may go to sleep. If at any time you forget whether you have already turned on the monitor, there is a simple way to check. If you press the **“ON”** button once, and hear 2 (two) quick beeps the monitor is already turned on. Repeatedly pressing the button in no way interferes with the normal function of the **Diabetes Sentry**.

## **WHEN THE ALARM SOUNDS**

When the alarm sounds a continuous series of 4 beeps this signifies that the **Diabetes Sentry** has detected perspiration or a drop in body temperature. This alarm will continue until the **Diabetes Sentry** is turned off.

## **TO TURN OFF ALARM**

Press On/Off button twice quickly, (twice within 1 second). You will hear one long beep. Your monitor is now off. Take appropriate action to determine if hypoglycemia is present e.g. blood test.

## **UPON AWAKENING / WITHOUT ALARM**

If the alarm does not sound during your sleep period, you must create an alarm in order to turn the **Diabetes Sentry** off.

## **TO CREATE AN ALARM**

A) Hold on/off button down for up to 5 seconds until alarm sounds, or

B) Do a "Wet Finger Test" (Page 10), an alarm will sound.

## **TO TURN DIABETES SENTRY OFF**

(After 'Creating' Alarm)

Press on/off button twice quickly, (twice within one second). You will hear one long tone. Your monitor is now off.

## TO DETERMINE THE CAUSE OF ALARM

When awakened by alarm, turn the **Diabetes Sentry** off. Do not remove it from your wrist. Wait 10 seconds and turn **Diabetes Sentry** on again. If the **Diabetes Sentry** alarms within the next 60 seconds, this means **perspiration** was the cause, as it is still present on the surface of the skin. If it does **not** alarm within 60 seconds, chances are it was due to a **drop in temperature**.

Remember: The alarm is intended to awaken the user and indicates there has been a temperature drop or is reading perspiration. It does NOT always indicate Hypoglycemia. See FALSE POSITIVE, page 19.

When the user wakes up as the alarm sounds, he/she should consider the situation: How does he/she feel? Is there reason for perspiring other than a possible insulin reaction? Is the monitor picking up cold air in the room? Or is the **Diabetes Sentry** too loose on the wrist?

It is strongly recommended that written notes of alarm events be recorded for at least 30 days, so that the Doctor and or Nurse educator has a clear understanding of the Diabetes Sentry trial period, i.e.

- A. Date.
- B. Bedtime blood sugar.
- C. Time of Alarm.
- D. Blood sugar at time of Alarm.
- E. How you feel after the alarm sounds. If blood test was in the normal range, do you have any ideas as to why the alarm may have gone off, i.e. nightmare, etc.

\*See attached record log between pages 12 & 13.



## TO TEST DIABETES SENTRY ALARM

Do “**Wet Finger Test**”:

1. Turn Monitor on.
2. Wet finger.
3. Place wet finger over both metal sensors on back of monitor (fig. 3) and hold for 5-10 seconds.
4. The alarm should sound. This means your monitor is working.
5. To turn the alarm off, press On/Off button twice quickly, (twice within one second).
6. If the alarm did not sound replace with new batteries and redo “Wet Finger Test”.
7. If this fails, call customer service at **1-855-325-4537**.

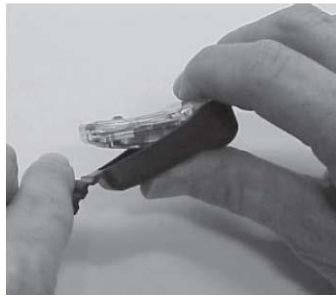
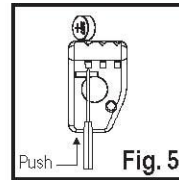
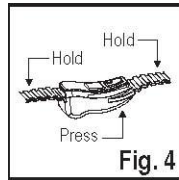
**Fig. 3**



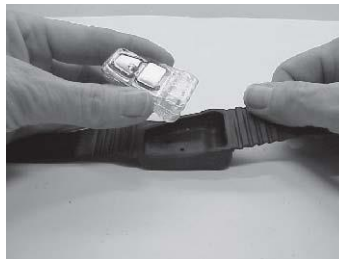
Fingers must touch both sensors at the same time.

## BATTERY REPLACEMENT

**Diabetes Sentry** uses three (3) type 357 button cell, watch batteries (included). To replace the batteries, remove the electronics module by holding one arm of the wrist strap in each hand while applying a moderate pressure with the thumb to the face of the **Diabetes Sentry**. The electronics module will “pop” out of the wrist strap (see Figures 4-4.2). To remove old batteries, gently insert a hairpin, jeweler’s screwdriver, or other small tool through each battery window to eject the battery from the module (see Fig. 5).

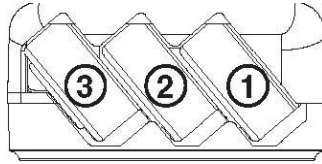


**Fig. 4.1**

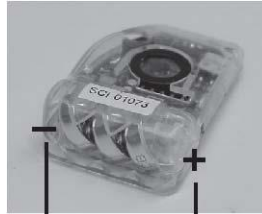


**Fig 4.2**

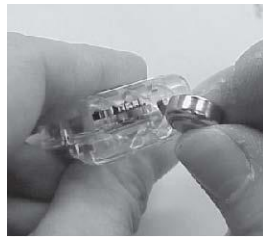
# BATTERY INSTALLATION



Fit this last battery next battery first



Negative facing left Positive facing right



Install Right Battery First  
(positive side facing right)



Install Middle  
Battery Second



Install Left  
Battery Last

**\*Note—flat side of battery is positive,  
nubby side is negative.**

Immediately after installing batteries, press the on/off button. If no beep is heard, remove the batteries and check battery polarity as pictured above. Chances are one or more of the batteries have been installed backwards.

## SAFETY FEATURES

1. If the **Diabetes Sentry** becomes loose or detached from your wrist the alarm will sound, due to the temperature drop from skin temperature to room temperature.
2. A low battery or an electrical malfunction will automatically be sensed by **Diabetes Sentry** and will trigger a continuous alarm tone. If this continuous tone is heard when the unit is first turned "on", press the button twice (twice within 1 second) to turn the unit "off" and replace the batteries with 3 **new** type 357 watch batteries. If this does not resolve the problem, call our toll-free number: 1-855-325-4537.
3. If the On/Off button is accidentally pressed while asleep this will in no way affect or turn off the monitor. You can turn the unit "On" as many times as you like.
4. The only way to turn the monitor off is to first activate the alarm by A.) Holding the On/Off button down continuously for 2-3 seconds, until the alarm sounds or B.) Performing "wet finger" test (page 10), which will also activate the alarm. Then press the same button down twice quickly, (twice within one second) this will result in a long tone, indicating the unit is off.

## WARNING

**Diabetes Sentry** does not detect or determine hypoglycemia. It only detects two **symptoms** of hypoglycemia. The presence of an alarm may not indicate the presence of hypoglycemia.

When **Diabetes Sentry** is attached and the monitor is switched “ON” the sensors must be in contact with body (skin) at all times.

If contacts become loose or detached, the alarm will sound! (False Positive)

It is the responsibility of the diabetic, or someone close by, to determine by other means if hypoglycemia is occurring and needs to be treated. Do not substitute **Diabetes Sentry** for any other means your doctor has provided you to determine the onset of hypoglycemia.

**Diabetes Sentry** will not be effective for those diabetics who do not exhibit the symptoms of a drop in skin temperature or perspiration at the location of the device.

The **Diabetes Sentry** is not water proof or even water resistant. **Never** immerse in water or leave in a steam filled bathroom. Do not allow water to splash on to it. This may cause the unit to malfunction. Water damage is **not** covered by the warranty.

## CLEANING INSTRUCTIONS

### (Strap Only)

**Before attempting cleaning the strap, remove electronics module (procedure on page 11) from strap and place electronics module in a safe, dry place away from any moisture.**

To clean strap, wipe with a damp cloth. Wipe dry with a soft dry cloth or air dry.

**Be sure the strap is completely dry before reinserting the electronics module.**

# DIABETES SENTRY

## Additional Information

### And Helpful Hints

#### What is Diabetes Sentry?

**Diabetes Sentry** is a device which emits an audible alarm when there is a drop in skin temperature and/or a galvanic skin resistance drop (usually an indication of perspiration) in the area where the device is placed - the wrist. A drop in skin temperature and perspiration are two common symptoms of hypoglycemia.

#### How does Diabetes Sentry Work?

**Diabetes Sentry** contains sensors that detect skin temperature and galvanic skin resistance (usually an indication of perspiration). When there is presence of moisture on the surface of the skin of the wrist underneath the device or the skin temperature drops at that location, **Diabetes Sentry** sensors trigger an alarm.

#### Who May Diabetes Sentry Help?

The device is intended for nightly use by insulin-dependent diabetics during sleep to warn them that one or both of these symptoms commonly associated with hypoglycemia are present. The device does not detect hypoglycemia but only these particular symptoms of hypoglycemia.

The diabetic who uses insulin knows the need to recognize the beginning of insulin reaction. During the day, the diabetic is alert for these symptoms. But when sleeping, the presence of symptoms might not awaken him so that he can take preventive measures. It is in recognition of these symptoms that **Diabetes Sentry** can help, but **Diabetes Sentry** is only to be used as an additional method of warning of insulin reaction while sleeping. **Diabetes Sentry** may awaken the user if one of these symptoms is present.

## HOW IS DIABETES SENTRY USED?

**Diabetes Sentry** is placed firmly on the wrist in the manner of a watch. There is one button, for both “ON” and “OFF” settings (see diagram in manual page 4). By pressing the button once, the unit is turned on and the sensors are set to your individual skin temperature; moisture sensors have been set permanently at the factory.

**Diabetes Sentry** may be turned off, after it has alarmed by pressing the button twice quickly, (twice within 1 second). You will hear one long beep, this means the monitor is off.

**Diabetes Sentry** may be turned off without an alarm, upon rising by pressing and holding the button down until an alarm sounds. Then press the button twice quickly, (twice within 1 second). You will hear one long beep, this means the monitor is off. (Please follow instructions in the beginning of this manual).

## WARNING

**Diabetes Sentry** does not detect or determine hypoglycemia, but only two symptoms of hypoglycemia. The presence of an alarm may not indicate the presence of hypoglycemia. It is the responsibility of the diabetic, or someone close by to determine by other means if hypoglycemia is occurring and needs to be treated. Do not substitute **Diabetes Sentry** for any other means your doctor has provided you to determine the onset of hypoglycemia. **Diabetes Sentry** will not be effective for those diabetics who do not exhibit the symptoms of a drop in skin temperature or perspiration at the location of the device.

## CAUTION

**Diabetes Sentry** may not be useful for those diabetics who perspire excessively or exhibit drops in skin temperature for reasons other than hypoglycemia; as examples, fever, menopause or side effects of medications: There will be an alarm when one of these symptoms is present, regardless of the reason. The **Diabetes Sentry** is to be used on the wrist only, as to date no clinical trials/studies have been done using **Diabetes Sentry** on sites other than the wrist.

## CLINICAL STUDIES

Clinical studies performed on the original **Diabetes Sentry** in 1982 have shown the device to be safe and effective for its intended use; however, the studies indicated that the alarm may not sound all the time when either a drop in skin temperature or sweating is observed in the patient. The clinical studies have only included diabetics between ages of 7 and 55 and were performed on the original 1982 device, and not the newer model **Diabetes Sentry**.



## ADDITIONAL INFORMATION ON DIABETES SENTRY OPERATION

We feel it is important for our **Diabetes Sentry** customers to be aware of more details regarding its function than are described in the operating instructions and approved labeling. We are sure this additional information will make it easier for you to adapt to using **Diabetes Sentry**.

The overall functioning of **Diabetes Sentry** is controlled by an electronic microcircuit in a “chip”. The capabilities of such a chip make possible the unique characteristics of **Diabetes Sentry**.

When **Diabetes Sentry** is turned ON, by pushing the button, a series of four beeps is heard. This announces to the user the following:

1. It is turned ON.
2. Batteries are OK.
3. The temperature reference is established at the existing skin temperature.
4. The automatic temperature reference update cycle has been initiated.

It is important to note that if the button is again repeatedly pushed prior to turning **Diabetes Sentry** OFF, the automatic update cycle is in no way affected. The only way in which the automatic update cycle can be stopped is by turning **Diabetes Sentry** OFF.

Starting with turning **Diabetes Sentry** ON, the temperature reference update is performed by **Diabetes Sentry** silently and automatically at 20, 40, 60 and 120 minutes and each subsequent 120 minutes thereafter until it is stopped by turning **Diabetes Sentry** OFF. The automatic update cycle is provided in order to reestablish the temperature reference as the skin temperature may change due to the influence of room air temperature changes.

Remember that the temperature reference point is determined at the time the ON button is pushed and then subsequently reestablished automatically.

There are only two conditions which will trigger the **Diabetes Sentry** alarm

1. A decrease in skin temperature, normally of 2°C from the established reference point.
2. Presence of moisture on the skin sufficient to produce a change in the skin resistance equal to the alarm level. This alarm level is set at the factory and corresponds to the amount of moisture which can be felt by your fingers when rubbing over the skin.

It is important to realize that **Diabetes Sentry** does not know why you are sweating or why you are experiencing a temperature drop on your wrist. Whenever either of these conditions occur, **Diabetes Sentry** alarm will sound. When the alarm is triggered for reasons not associated with hypoglycemia reaction, this is called a **FALSE POSITIVE**. As is pointed out in the labeling, there are many reasons why you may perspire or experience a temperature drop. One of the more common reasons for false positives is the influence which your bedroom air temperature has upon creating these symptoms. Also whether your arm is above or below the bed covers, has an influence on creating FALSE POSITIVES.

### **TO DETERMINE WHAT CAUSED THE ALARM**

In order to minimize the false positives, it is important to be able to determine and know which of the symptoms caused the alarm. It is possible to make this determination as follows - when Diabetes Sentry alarm sounds - turn it OFF, leaving monitor attached to wrist. After several seconds, turn it ON. If after it is turned ON, and no subsequent alarm is heard within (60 seconds), a temperature drop triggered the alarm because by virtue of turning OFF and turning it back ON again, you wiped out the old temperature reference and reestablished it to the present temperature.

If on the other hand an alarm is heard within 60 seconds, it was triggered by the presence of perspiration as the perspiration is still there causing the alarm state.

Knowing the source of the false positive will enable you to more closely control the bedroom environment to decrease the occurrence of false positives. We would be pleased to discuss the subject further with you on our toll free number (1-855-325-4537) if you desire.

The electronic chip provides a pulsating current that occurs once every 5 seconds for approximately 8/100 of a second. This is why we mention the 5 second interval and why the wet finger test described in the manual indicates up to a 5 second response time. It is this pulsing which allows us to obtain 6 months to one year battery life.

**Diabetes Sentry** may be described as a symptom detector in that it detects two of the symptoms which are normally associated with hypoglycemic reactions. It naturally follows that if a person does not demonstrate these symptoms, **Diabetes Sentry** can be of no use.

After you have spent a quiet night where **Diabetes Sentry** has not sounded any alarm - either a FALSE POSITIVE or in connection with a REACTION - perhaps you think, "I wonder if it was turned on." So before you push the button to turn it OFF - remove it from your wrist and do the "wet finger test" (described in the manual) - if it beeps you'll know it was ON.

If during the night you should awaken and wonder if it is really ON, just push the button, you won't hurt a thing and you'll get two beeps which assures you it is ON.

If at any time you have questions regarding Diabetes Sentry's use or interpretation of its functioning, do not hesitate to call us at the toll free number. We sincerely wish to work with you so that your complete satisfaction can be achieved.

## Frequently Asked Questions

### Why does my monitor alarm when I do not have a low blood sugar?

This is called a FALSE POSITIVE. The **Diabetes Sentry** will alarm whenever perspiration and or a drop in temperature occur, no matter the reason.

### How do I know which of these two symptoms caused the alarm?

When the alarm sounds, turn it off. Within 10 seconds turn the **Diabetes Sentry** on again. If it alarms again within 30 seconds, then it was due to perspiration (as the perspiration is still present on the skin). If it does not alarm again, it was due to temperature drop.

### Is there any way to alleviate some of these FALSE POSITIVES?

Yes. Once you determine which of the two symptoms is causing the alarm, you can make some adjustments;

Perspiration: Perhaps you are too hot while sleeping, turn the heat down or remove some blankets.

Temperature Drop: Make sure that the **Diabetes Sentry** is fastened snugly to your wrist in order to prevent sensors from reading cooler room temperature.

\*If false positives are many and cannot be minimized with the above suggestions, please call customer service and we will assist you.

### How low does my blood sugar have to drop in order for the alarm to sound?

The **Diabetes Sentry** is not reading blood sugar levels. It is reading only 2 symptoms of hypoglycemia, perspiration and drop in temperature.

Everyone reacts differently to hypoglycemia. For some people 70-80 mgs. % blood sugar will cause them to exhibit symptoms. While others do not become symptomatic until their blood sugar level has reached 20-30 mgs. %.

If you have "hypoglycemia unawareness" and you do not exhibit symptoms, or your symptoms are coming too late for you to take action, you should speak to your Diabetes Educator about how to get your symptoms to return.

**When I turn my DIABETES SENTRY on I hear a long continuous tone. What does this mean?**

This is most likely due to dying batteries. If the problem persists after changing the batteries it could signify an electrical malfunction and customer service should be notified.

**How do I know my DIABETES SENTRY is on?**

If you go to bed and forget if you turned the **Diabetes Sentry** on, press the on/off button once. If you hear 2 quick beeps then your unit was and is still on and functioning. You can do this as many times as you like throughout the night without affecting **Diabetes Sentry** normal function.

**I woke up and removed the Diabetes SENTRY from my wrist. Within minutes the alarm began to sound. Why does this happen?**

This indicates that you forgot to turn the **Diabetes Sentry** off upon rising. It is picking up the lower room temperature which activates the alarm.

**Can I do dishes or wash my hands while wearing the DIABETES SENTRY?**

Absolutely not! The **Diabetes Sentry** is extremely sensitive to moisture. It should never even be left in a bathroom as steam may affect its function.

## **CUSTOMER SERVICE**

**FOR CUSTOMER SERVICE CALL  
TOLL FREE**

**1-855-325-4537**

**OR E-MAIL US AT  
INFO@DIABETESSENTRY.COM**

**FOR MORE INFORMATION GO TO OUR  
WEBSITE: WWW.DIABETESSENTRY.COM**

## **WARRANTY AND REPAIRS**

Diabetes Sentry Products, Inc. warrants **Diabetes Sentry** to be free of defects in workmanship or material for a period of one year from date of purchase. Diabetes Sentry Products, Inc. will, at its sole discretion repair or replace any defective **Diabetes Sentry** which is returned, prepaid, by the purchaser.

**(You must call and speak with a customer service rep before returning your monitor for any reason.)**

All returns will be given a report number which must be included with monitor at time of return, along with proof of purchase.

The number to call is **1-855-325-4537**. Once you have been given a report number, please send your monitor to:

**Diabetes Sentry Products,  
3175 Northshore Dr.  
Wayzata MN 55391**

**Serial #** \_\_\_\_\_

**Date of Purchase** \_\_\_\_\_

(Record serial # and date of purchase to keep for your records.)