

SPD-2000 NS

Supervised RFID Spatial Position Detector

SpiderAlert®

Installation Instructions

INTRODUCTION

The SPD-2000 NS is a fully supervised RFID spatial position detector from Visonic Technologies (VT). The SPD-2000 NS is ideal for protecting fine art in public institutions, museums, galleries or private residences.

The SPD-2000 NS detector is designed to discreetly and covertly protect, location monitor and identify all types of fine art assets including paintings, statues, antiques and ceramics in environments where conventional security systems are not quite adequate.

The SPD-2000 NS is also suitable for high-risk, stationary general asset protection; including but not limited to computers, general office and medical equipment. When deployed as part of a 'SpiderAlert' system, the SPD-2000 NS can provide on-going around-the-clock asset location monitoring in near-real time (30 second intervals).

Each SPD-2000 NS detector is deployed with its own 24-bit identification code (factory set) so that each asset is protected by a uniquely numbered tag.

The SPD-2000 NS contains an ultra-sensitive acceleration sensor (silicone chip mounted) that measures on two axes static (vibration) as well as dynamic (gravity) accelerations. Thus when a protected asset is moved without authorization, the SPD-2000 NS transmits a real-time identifiable coded alarm message every 30 seconds while in motion to the 'SpiderAlert' system. Each alarm transmission consists of three messages (each message @ 300ms in duration), at 700ms intervals. Thus the total duration of an alarm transmission is approximately 2300ms.

The SPD-2000 NS automatically transmits an alarm restore message when the asset is again at rest or after 10 minutes has elapsed without detecting further acceleration changes so that the system can handle new alarm conditions. The SPD-2000 NS returns to generating a single supervision transmission at @ 15min. intervals for a maximum of 5 messages/hr. Each supervision transmission consists of a single message (@ 300ms in duration). Accordingly, total duration of supervision transmissions /hr is @ 1500ms.

To ensure high operational reliability in security sensitive environments, the SPD-2000 NS automatically transmits supervisory status messages at 15 minute intervals or 60 minute intervals depending on the enabled mode selection position of Function Switch 2 (as detailed table 1) to the 'SpiderAlert' system throughout the day.

SPECIFICATIONS

Movement Sensitivity: 0.075g (Gravitation accel. Constant)

Transmission Frequency (MHz): 315, 433.92, 447.375, 868.95, 869.025 or other frequencies according to local requirements

Transmission range: Up to 60m (200 ft.) from the receiver in open indoor spaces and 30m (100 ft.) in sub-divided rooms (In environments that includes metals, the effective transmission range may drop significantly.)

Overall Message Length: 36 bit pulse width modulation, including 24-bit identification code

Supervision : Supervisory status messages transmitted continuously at 15 minute intervals or 60 minute intervals depending on the enabled mode selection of Function Switch 2 as detailed in Table 1.

Power Source: 3 V Lithium Thionyl Chloride (LiSOCl₂) battery, size 1/2 AA, Tadiran TL-2150, or equivalent

Nominal Battery Capacity: 1 Ah

The SPD-2000 NS is also tamper protected. Upon removing the unit's cover, the detector automatically transmits a Tamper alarm in near-real time (30 second intervals) as an alarm tracking transmission. Should the SPD-2000 NS not detect further acceleration changes after 10 minutes has elapsed, the detector returns to generating a single transmission @ every 15 minutes, comprised of three alarm messages the same as described above.

The SPD-2000 NS employs a "Smart" anti-collision transmission methodology to overcome message collisions from other RFID detectors in the protected area.



Operating power is provided by single onboard commercially available 3.0 V 1/2 AA Lithium battery. When battery voltage is low, a "Low Battery" marker is added to the transmitted message.

A LED illuminates upon all event transmissions (except for a low battery condition).

SPD-2000 NS Advantages:

- Quick and easy installation. The sensor attaches to an asset using double-sided adhesive tape or via an optional mounting bracket.
- Supports four user selectable sensitivity levels for detecting unauthorized asset movement.
- Powered by a single, compact 3V Lithium battery,
- Small size, enables discrete, covert asset mounting.
- Optional Alarm Tracking delivers near-real time (30 second intervals) location monitoring of the protected asset.

Current Drain: 500 μ A (STBY), 20 mA (transmission, including LED)

Alarm Tracking: Automatic signaling at 30 second intervals when the protected asset is in unauthorized motion

Battery Life: At least 2 years (typical operation)

Battery Supervision: Automatic Low battery condition marker is automatically added to transmitted messages

Operating Temperature: 0°C to 50°C (32°F to 122°F)

Dimensions (Height x Width x Depth): 72 x 49 x 18.5 mm (2-13/16 x 1-15/16 x 11/16 inches)

Weight (excluding battery): 50 g (1.75 oz)

Color: Black

Compliance Standards: Meets FCC Part 15, ETS 300-220 and MPT1349

The 433.92 MHz models of this device comply with the European Council Directive EMC 89/336/EEC & 92/31/EEC

INSTALLATION

General Information

Fig. 3 (shown directly below) details how to prepare the SPD-2000 NS detector prior to mounting.

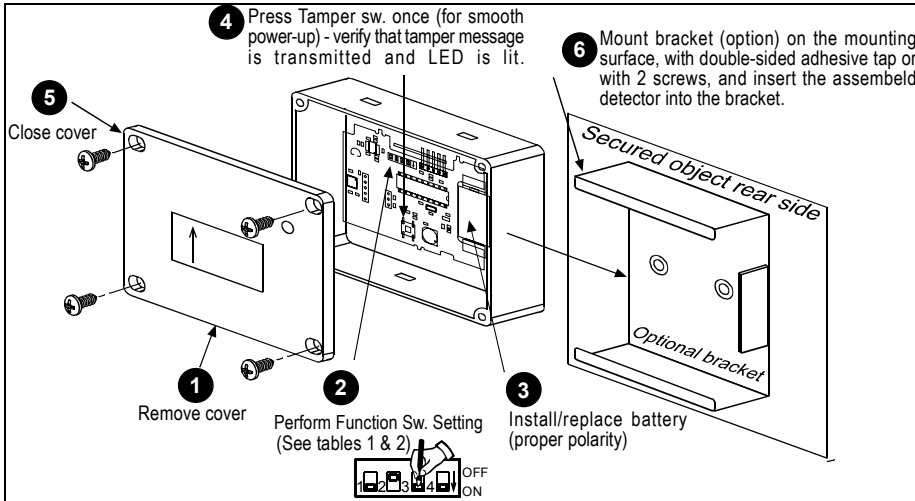


Figure 3 :Detector Preparation Process

Table 1: Functions – Switches 1 & 2 (Mode Selection)

Sw	Pos	Description
1	OFF	*Alarm restore Disabled: After the unauthorized movement of the protected asset has ceased; no alarm restore messages are transmitted and the detector 'Learns' the new location of the asset. Should the detector sense subsequent asset movement a new alarm message is transmitted.
	ON	Alarm restore Enabled: After any unauthorized movement of the protected asset has ceased an alarm restore message is transmitted.
2	OFF	Location Monitoring Disabled: When the protected asset commences unauthorized motion, a single alarm message is transmitted. Supervisory messages transmit hourly.
	ON	Location Monitoring Enabled: When the protected asset commences unauthorized motion. Location monitoring messages transmit in 30 second intervals for up to 10 minutes after movement has ceased. Supervisory messages transmit in 15 minute intervals.

* The detector requires approximately 10 minutes to 'Learn' the location of the protected asset.

Table 2: Sensitivity Selection Functions - Switch 3 & 4 ()

Switch 3	Switch 4	Sensitivity Level
OFF	OFF	1. "Strong movement" (lowest sensitivity)
ON	OFF	2. "Move"
OFF	ON	3. "Slide"
ON	ON	4. "Touch" (highest sensitivity)

Mounting Details

Attach the SPD-2000 NS to a corner of the asset you wish to protect using double-side adhesive tape or by means of an optional mounting bracket. If required, you the detector can be affixed to either the far left or far right side of the asset as well.

Caution: Verify that the "UP" arrow is pointing upwards (allowed deviation: up to ± 25° in the vertical and horizontal axes).

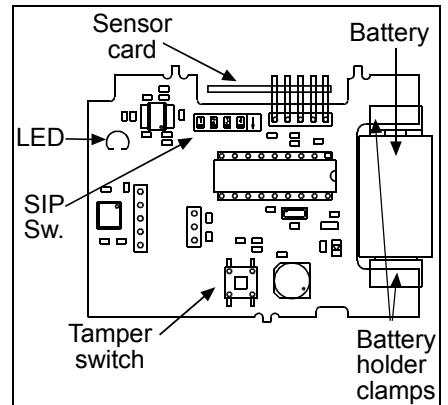


Figure 4: PCB Layout.

Field Testing

Wait 10 minutes after attaching the detector to an asset so that the detector may 'Learn' the location of the asset. Then move the asset to verify that alarm messages are being transmitted by the detector and that the function LED illuminates.

Miscellaneous Operating Information

Due to the low transmitting power and the limited range of this RFID device (as required by the FCC and other international regulating authorities), there are a number of operational limitations that need to be considered considered and handled:

- Receivers may be blocked by radio signals that occur on or near their operating frequencies.
- A receiver can only respond to one transmitted signal at a time.
- Wireless equipment should be regularly tested to determine current sources of interference and to protect against faults.

Battery Safety and Disposal

Promptly remove the worn-out battery from the detector and dispose of according to manufacturer's instructions. For more information, contact your local government for the disposal or recycling practices in your area.

CAUTION: To eliminate the risk of possible explosion, do not attempt to replace the battery with a non-specified type.

STANDARDS COMPLIANCE

This device complies with Part 15 of the FCC Rules and RSS-210 of Industry and Science Canada.

Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) This device must accept any interference received, including interference that may cause undesired operation.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses 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.

However, 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.

Warning!

Changes or modifications to this equipment not expressly approved by the party responsible for compliance (Visonic Technologies Ltd.) could void the user's authority to operate the equipment.

PRODUCT WARRANTY

Visonic Technologies Ltd., and its affiliates, (hereinafter collectively referred to as "the Manufacturer") warrants its products (hereinafter referred to as "the Product") to be free of defects in materials and workmanship under normal operating conditions and use for a period of one year from the date of shipment by the Manufacturer. The Manufacturer's obligations shall be limited within the warranty period, at its option, to repair or to replace the defective Product or any defective component or part thereof. To exercise this warranty, the product must be returned to the manufacturer freight prepaid and insured.

This warranty does not apply to repairs or replacement caused by improper installation, Product misuse, failure to follow installation or operating instructions, alteration, abuse, accident, tampering, repair by anyone other than the Manufacturer, external causes, and failure to perform required preventive maintenance. This warranty also does not apply to any products, accessories, or attachments used in conjunction with the Product, including batteries, which shall be covered solely by their own warranties, if any. The Manufacturer shall not be liable for any damage or loss whatsoever, whether directly, indirectly, incidentally, consequentially or otherwise, resulting from a malfunction of the Product due to products, accessories, or attachments of others, including batteries, used in conjunction with the Product.

THE MANUFACTURER MAKES NO EXPRESS WARRANTIES EXCEPT THOSE STATED IN THIS STATEMENT. THE MANUFACTURER DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE MANUFACTURER'S SOLE RESPONSIBILITY FOR WARRANTY CLAIMS IS LIMITED TO REPAIR OR TO REPLACE AS SET FORTH IN THIS STATEMENT.

The Manufacturer shall have no liability for any death, personal injury, property damage, or other loss whether direct, indirect, incidental, consequential, or otherwise, based on a claim that the Product failed to function. However, if the Manufacturer is held liable, whether directly or indirectly, for any loss or damage arising under this limited warranty or otherwise, regardless of cause or origin, the Manufacturer's maximum liability shall be limited to the purchase price of the Product, which shall be fixed as liquidated damages and not as a penalty, and shall be the complete and exclusive liability of the Manufacturer.

The Manufacturer shall not, under any circumstances whatsoever, be liable for any inaccuracy, error of judgment, default, or negligence of the Manufacturer, its employees, officers, agents, or any other party, or of the purchaser or user, arising from any assistance or communication of any kind regarding the configuration, design, installation, or creation of security system involving the Product, that being the responsibility of the purchaser or user.

If the Manufacturer is unable to make such repair or replacement, the Manufacturer's entire liability shall be limited to the cost of a reasonable substitute product.

The Manufacturer shall not be responsible for any dismantling, installation, reinstallation, purchasing, shipping, insurance, or any similar charges.

The Manufacturer shall have no liability for any damages, including without limitation, any direct, indirect, incidental, special, or consequential damages, expenses, costs, profits, lost savings or earnings, or other damages arising out of the use of the Product or the removal, installation, reinstallation, repair or replacement of the Product or any related events. In the event that there is any liability against the Manufacturer, such liability shall be limited to the purchase price of the Product which amount shall be fixed as liquidated damages.

The purchaser and user understand that this Product may be compromised or circumvented by intentional acts; that the Product will not in all cases prevent death, personal injury, property damage, or other loss resulting from burglary, robbery, fire or other causes; and that the Product will not in all cases provide adequate warning or protection. The purchaser and user also understand that a properly installed and maintained alarm may reduce the risk of events such as burglary, robbery, and fire without warning, but it is not insurance or a guarantee that such events will not occur or that there will be no death, personal injury, property damage, or other loss as a result of such events.

By purchasing the Product, the purchaser and user shall defend, indemnify and hold the Manufacturer, its officers, directors, affiliates, subsidiaries, agents, servants, employees, and authorized representatives harmless from and against any and all claims, suits, costs, damages, and judgments incurred, claimed, or sustained whether for death, personal injury, property damage, or otherwise, because of or in any way related to the configuration, design, installation, or creation of a security system involving the Product, and the use, sale, distribution, and installation of the Product, including payment of any and all attorney's fees, costs, and expenses incurred as a result of any such events.

The purchaser or user should follow the Product installation and operation instructions and test the Product and the entire system at least once each week. For various reasons, including but not limited to changes in environmental conditions, electric, electronic, or electromagnetic disruptions, and tampering, the Product may not perform as expected. The purchaser and user are advised to take all necessary precautions for the protection and safety of persons and property.

This statement provides certain legal rights. Other rights may vary by state or country. Under certain circumstances, some states or countries may not allow exclusion or limitation of incidental or consequential damages or implied warranties, so the above exclusions may not apply under those circumstances and in those states or countries.

The Manufacturer reserves the right to modify this statement at any time, in its sole discretion without notice to any purchaser or user. However, this statement shall not be modified or varied except by the Manufacturer in writing, and the Manufacturer does not authorize any single individual to act on its behalf to modify or vary this statement.

Any questions about this statement should be directed to the Manufacturer.

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Manufactured In Israel



Visonic Technologies
Enterprise Protection Solutions



W.E.E.E. Product Recycling Declaration

For information regarding the recycling of this product you must contact the company from which you originally purchased it. If you are discarding this product and not returning it for repair then you must ensure that it is returned as identified by your supplier. This product is not to be thrown away with everyday waste.

Directive 2002/96/EC Waste Electrical and Electronic Equipment.

