EXHIBIT 1

INSTALLATION AND OPERATING INSTRUCTIONS

2.1033(b)(3)

DS9360 TriTech Ceiling Mount
PIR/ Microwave Intrusion Detector

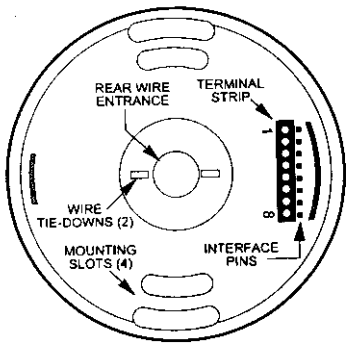
1.0 General Description

The DS9360 is a microprocessor based Tri-Technoloigy Passive Infrared/Microwave intrusion detector. The coverage pattern consists of sensor zones arranged to form a circular coverage pattern.

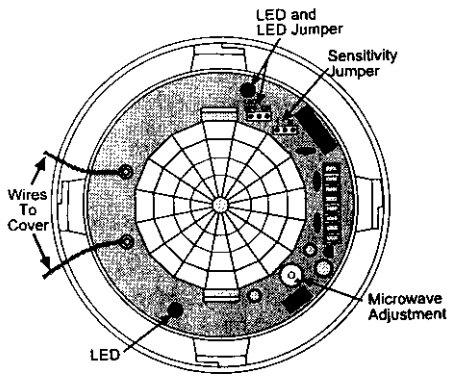
Self-test and supervision circuits provide reliable operation in a variety of installation environments. The result is a highly advanced detector offering superior performance with freedom from false alarms.

2.0 Specifications

- **Coverage:** 360° by 60 ft. (18.3 m) diameter coverage when mounted on 8 to 18 ft. (2.4 to 5.5 m) high ceilings. Pattern consists of 64 zones grouped into 16 barriers, with one additional zone looking straight down from the unit (sabotage). Each barrier is 30 ft. (9.2 m) long and 4.4 ft. (1.3 m) wide at 30 ft. (9.2 m). Choice of two optical modules depending on ceiling height.
- **Input Power:** 6.0 to 15.0 VDC; 18 mA standby, 50 mA with LEDs enabled.
- **Standby Power:** There is no internal standby battery. Connect to DC power sources capable of supplying standby power if primary power fails. Eighteen mA-H required for each hour of standby time needed.
- **Sensitivity:** Field selectable for Intermediate and High.
- **Alarm Relay:** Silent operating Form "C" relay. Contacts rated 125 mA, 28 VDC maximum for DC resistive loads. *Do not use with capacitive or inductive loads.*
- **Tamper:** Normally Closed (with cover in place) tamper switch. Contacts rated at 28 VDC, 125 mA maximum.
- **Temperature:** The storage and operating range is -40° to +120°F (-40° to +49°C). *For U. L. Listed Requirements, the range is +32° to +120°F (0° to +49°C).*



Mounting Base



Top View of Enclosure

3.0 Installation Considerations

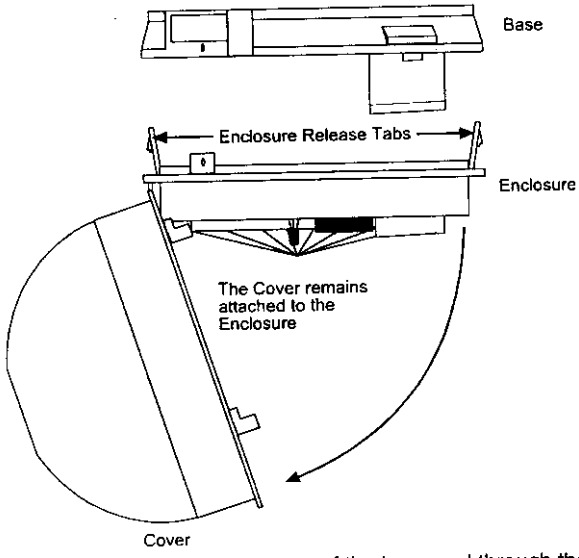
- Never install the detector in an environment that causes an alarm condition in one technology. Good installations start with the LED **OFF** when there is no target motion. It should never be left to operate with the tri-color LED in a constant or intermittent green, yellow, or red condition.
- Keep the unit away from outside traffic (roads/alleys). **Remember:** Microwave energy will pass through glass and most common non-metallic construction walls. Avoid installations where rotating machines (e.g. ceiling fans) are normally in operation within the coverage pattern.

4.0 Mounting

Select a location likely to intercept an intruder moving *beneath and across* the coverage pattern. **The recommended mounting height is 8 to 18 ft. (2.4 to 5.5 m).**

- The mounting surface should be solid and vibration free (i.e. Drop tiles should be secured if the area above the tiles is used as an air return for HVAC systems).
- Open the cover by turning counter-clockwise. One side of the cover will remain attached to the base of the detector. Do not attempt to entirely remove the cover.
- Remove the base from the enclosure by pressing the two enclosure release tabs inward while lifting the enclosure away from the base.

Hint: Slightly rock the enclosure side-to-side during removal to overcome the friction caused by the base-to-enclosure terminal pins.



- Route wiring as necessary to the rear of the base and through the center hole.

Note: Be sure all wiring is de-energized before routing.

- Firmly mount the base. Depending on local regulations, the base may be directly surface mounted using anchors, mollies, or wing-nuts, or may be mounted to standard 4" octagonal or square electrical boxes.

Note: The DS9360 base will not completely cover a 4" square box. Where aesthetics are important, a 4" octagonal box is recommended.

Hint: Mounting to removable ceiling tiles is not recommended unless a sandwich is made of the base, ceiling tile, and a back plate behind the tile. Covers used for 4" octagonal and square boxes make a suitable back plate (when used with bolts and wing nuts, as an example).

5.0 Selecting the Optical Module

- Replace the enclosure onto the base.
- For ceilings between 8 and 13 ft. (2.4 and 4.0 m) from the floor, use the optical module marked AR8-13. This marking can be found next to the two optical module tabs.

  For ceilings between 13 and 18 ft. (4.0 and 5.5 m) high, use the optical module marked AR13-18.

To replace an optical module, push the optical module tabs towards the center until the module snaps free of the circuit board. Holding the new module by the tabs, snap the new module into place.

Avoid fingerprints on the mirrored surfaces. Should the mirrored surfaces become soiled or otherwise marked, they can be cleaned using a soft, clean cloth and any commonly available, mild window cleaner.

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10/20/97

EXHIBIT 2

CIRCUIT DESCRIPTION

2.1033(b)(4)

DS9360 TECHNICAL DESCRIPTION
BILL DIPOALA
10-7-97

ORIGINAL
IF IN RED

The DS9360 is a ceiling mt. Dual PIR/Microwave motion detector. The detection coverage consists of a 360 deg 60' dia pattern. The enclosure design is similar to the DS938 and uses the existing DS938 optics.

+5V Regulator

The 5V regulator (U1) consists of an LM2931 voltage regulator. RV1 protects the voltage regulator from harmful voltage spikes. The UNREG line is used to drive all high current loads through emitter followers to prevent noise spikes from entering the amplifiers.

PIR Amplifier

The PIR amplifier utilizes one half of the LM324 (U3). The DET is AC coupled to the first amp stage via a non-polar capacitor (C9). The gain of the first amp is determined by the ratio of R10 to R11. The bandwidth of the first stage is limited by the values of C11 and C12. The gain of the second stage is determined by the ratio of R13 to R15. The bandwidth is limited by C13 and C14. The amplified signal is coupled to one of the analog inputs of the microprocessor (U4) where signal processing is performed.

Microwave Subsystem

The MW subsystem utilizes a micro-strip Microwave Transceiver. The transmitter consists of a FET oscillator (Q99) biased through R99. The frequency of oscillation is determined by the electrical/physical properties of the ceramic resonator Y99. Fine tuning of the transmitter is accomplished by adjusting the position of the tuning screw located in the back of the plastic black shield. The transmitt and receive antenna consist of a coaxial fed monopole antenna. The antennas are mounted to a circular ground plain and are located on top of the PIR focusing mirror. The transmitter drive pulse is generated by microprocessor U4. The drive pulses are applied to Q99 via Q1, and are 20 microseconds on-time, and 1 millisecond off-time. The receiver incorporates a balanced mixer design consisting of two diodes present in D99. Equal amounts of RF energy are applied to each diode, one from the transmitter and one from the receiver section. This balancing of the RF energy should produce a nominal pulse voltage on the IF output (MW2) of 0Vp, and should always be less than +/- 0.2Vp. The IF output is fed to a sample-and-hold circuit Q7 via AC coupling cap C6. The sample pulse is generated by the microprocessor and should be 10 microseconds long and centered in the middle of the drive pulse. The signal is fed to two stages of amplification U3-3 and U3-4. The MW range is adjusted by potentiometer R28. This amplified signal is fed into one of the four analog inputs of the microprocessor where the rest of the signal processing is done (see software spec.).

Microprocessor Functions

See DS9360 Microprocessor Specification.