

Technical Service Note

Detection Systems, Inc.
Fairport, New York 14450
Technical Service (800) DSI-7454
Sales: (800) 289-0096 and (585) 223-4060
Fax: (585) 223-9180

Concerns: Architect/Engineer Specifications

Affects: DS936 Passive Infrared Detectors

Dated: January 6, 1998

NOTE: Words/statements within square brackets [] may be included when appropriate, or when selection is required.

Each detector shall provide the detection, signal processing, alarm relay and operating power circuitry in the same enclosure, and shall provide an alarm relay actuation upon the detection of an intruder moving into and/or through its field of view. Each detector shall be ready for surface and/or semi-flush ceiling mounting at 7 to 12 feet, and be capable of mounting to standard single gang or octagonal boxes.

Each detector shall be capable of operating from a non-polarized DC power source rated within the range of 10 volts to 15 volts, and shall draw a nominal 15 milli-amperes (ma) across the voltage range.

Each detector shall contain a sealed Pyroelectric sensor peaked for the detection of far-infrared energy in the 7 to 14 micron region. To prevent drafts on the sensor, the detector shall be designed with a Draft-seal around the sensor. To guard against unwanted alarms caused by changes of infrared energy not associated with motion, the sensor shall utilize a balanced Dual-Opposed element.

Each detector shall have a front mounted, internal pointable fresnel lens which shall focus received infrared energy onto the sensor. The sensor and fresnel lens combined shall then construct a protection coverage field of view. The pattern shall consist of 30 zones with one (1) sabotage zone looking straight down from the unit. The field of view shall be a 360° coverage pattern with three (3) multi-zone planes of protection. The unit shall be capable of mounting on ceiling heights of 7 to 12 feet. When mounted at 10 feet, the top plane shall consist of twelve (12) sensor zones angled 18° downward from the horizontal, and spaced at 30° between each zone. The rated range of the top plane shall be thirty feet (30 ft.). The second plane shall be angled 36° downward from the horizontal, and shall consist of

twelve (12) sensor zones spaced at 30° between each zone. The third plane shall consist of six (6) sensor zones angled 54° downward from the horizontal, and spaced at 60° between each zone. The sabotage zone shall look straight down from the detector. A condition of alarm shall occur when a net amount of rapid thermal change detected on one (1) element finger exceeds two degrees Centigrade (2°C). Alternate Polarity Pulse Count must be employed to identify an interruption of a positive then negative or negative then positive finger. To reduce the occurrence of unwanted alarms, simultaneous disturbances that occur in two adjacent sensor zones shall not be cause for an alarm.

Each detector shall provide a condition of alarm using a form "A" Normally Closed (NC) Reed Relay with terminal strip terminations. In addition, an independent visual condition of alarm shall be provided by the output of a red colored Light Emitting Diode (LED) indicator and there shall be switch provisions for LED Disable when necessary.

Each detector shall provide for a cover and enclosure tamper using a Form "A" Normally Closed (NC) switch with separate terminals for connection to a Normally Closed Supervision/Monitor circuit. For accuracy in pattern placement, and to determine the amount of background thermal noise within the protected area, each detector shall provide a 3-pin connector for the connection of any standard volt-ohmmeter (VOM) of 20,000 ohms/volt or greater.



detection systems

**A member of the
Bosch Group**

Each detector shall permit field switch selection of three (3) response modes depending on type of coverage desired, and thermal harshness of the installation environment. Selections shall be available of "High" for installations that require fast detector response; "Intermediate" for intermediate response in normal environments; and "Standard" where higher immunity to thermally noisy environments is desired.

Electronic circuitry shall be mounted on an enclosure produced from the UL Component Recognized material "ABS", Grade T, Rated 94HB, and shall be connected to a separate mounting base of the same material, with four snap-in place positive-latch tabs. The cover, also produced from UL Component Recognized materials, shall be mounted to the enclosure with four positive-latch tabs. When combined, the total package shall not exceed 4.6 inches in Diameter by 1.2 inches High and 4.5 ounces in Weight.

Each detector shall be rated to operate within the Temperature Range of - 20° Fahrenheit to + 120° Fahrenheit [-29°C to +29°C].

The Passive Infrared Intrusion Detector shall be model DS936.