Passive Infrared Motion Detector Standard - Features for Enhancing False Alarm Immunity

ANSI/SIA PIR-01-2000

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ACKNOWLEDGMENTS

This standard was developed by the SIA PIR Standards Subcommittee. The voting members of the Subcommittee at the date the standard was approved are listed below.

SIA gratefully acknowledges the efforts of the many volunteers from the security industry that helped the Subcommittee to develop this standard.

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SIA PIR Standards Subcommittee, April 1999 (Revision of the standard):

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Revision History

1994.12 BASELINE

- Original Release

1996.08 REVISION

- Added Recommended Validation Test Procedures

1999.04 REVISION

- Removed Class 1 (former Class 2 requirements retained)
- Made compliance to UL 639 mandatory (for integrity of detection)
- Removed requirements for default settings and simultaneous compliance to compound requirements
- Revised methods used in Validation Test Procedures (pervasive changes)

2000.04 REVISION

Section 2.1

Changed normative reference for testing techniques from ANSI C63.4-1992 to IEC 61000-4-3

Section 4.4

Corrected typo in frequency range from 100 MHz to 1000 MHz

Appendix A – Validation Test Procedures

Added NOTE about test equipment calibration

Appendix A - Section 4.2 External Light Immunity

Note 3:

- Changed “operating voltage set at 13.8 +/- 0.3 volts” to- “13.8 +/- 0.1 volts”

Note 4:

- Changed “glass plate” to “clear float glass (per ASTM Specification C1036, Standard Specification for Flat Glass, Type I, Class 1)”
- Changed “distance between the UUT and the nearer pane of glass is 0.3 +/- 0.1” to “0.3 +/- 0.01”
- Added specifications for use and position of photometer
- Added (in quotes): Modulate the light “electrically” with a 50% “+/- 2%” on-off duty cycle for 10 cycles each at frequencies of 2 Hz “+/- 2%”, 1 Hz “+/- 2%”, ½Hz “+/- 2%”, and ¼ Hz “+/- 2%”.

Appendix A - Section 4.4 Radio Frequency Immunity

- Added NOTE 3 referencing IEC 61000-4-3
- Added (in quotes): Modulate the field with a 50% on-off “(pulse)”…
- Added (in quotes): UUT orientation: “(antenna only shown in one polarization)”

Passive Infrared Motion Detector Standard - Features for Enhancing False Alarm Immunity

1. SCOPE

This standard details recommended design features for passive infrared detectors to reduce the incidence of false alarms when the detectors are used in security systems. For the purposes of this standard, passive infrared detectors include detectors that incorporate passive infrared elements with other technologies. The features contained herein are applicable to both residential and commercial properties protected by an electronic security system.

This standard addresses detector features in terms of their technical feasibility and economic viability at the date of publication. These features are considered to provide a good level of false alarm protection for general use in commercial and residential applications.

This standard is intended for use by manufacturers in the design of passive infrared detectors. It is also intended for reference by all affected parties, including security system installers, specifiers, and users; central station owners and operators; manufacturers of central station products, such as receivers and automation software; and local authorities.

This standard is voluntary and self enforcing.

2. REFERENCE DOCUMENTS

2.1 Related Areas

This standard assumes compliance with the following standard from Underwriters Laboratories Inc.:

ANSI/UL 639, Intrusion-Detection Units

This standard is intended to provide compatibility wherever possible with the following standards. This standard relies on the following standards to provide additional good design criteria in areas beyond the scope of this standard.

ULC S306, Standard for Intrusion Detection Units (Underwriters' Laboratories of Canada)

prEN50131-2-2, Alarm System - Intrusion System (CENELEC)

IEC 61000-4-3 Electromagnetic Compatibility (EMC) – Part 4-1: Testing and Measurement Techniques – Radiated, Radio-Frequency, Electromagnetic Field