



ENGINEERING SPECIFICATION - ISC Infinity 2020 SECTION 17000 - PERIMETER SECURITY SYSTEM

PART 1 - GENERAL

1.1 GENERAL

Provide and install a perimeter security system as herein specified for the purpose of detecting entry into a designated security area. The perimeter security system is to be installed complete with appropriate controls, wiring and mounting hardware per the manufacturer's recommendations. All installation work shall be accomplished in a professional manner by manufacturer trained installers.

1.2 SYSTEM DESCRIPTION

The perimeter security system shall be an electronic shock vibration type system as manufactured by Integrated Security Corporation of Walled Lake, Michigan. The system shall incorporate a meteorological device. This fully integrated monitoring sub-system shall detect environmental changes resulting from wind and precipitation and supply the necessary "real-time" data to the system processor. Based on this continuously updated flow of information the system processor shall constantly adjust sensor operating parameters to minimize the generation of environmentally induced false alarms.

This specification is to provide an operating perimeter security system complete with central monitoring computer, processor, controlled weather notification device, sensor cable, accessories and such other peripheral equipment as the site may require. The perimeter security system shall detect perimeter intrusion attempts and indicate alarms on a color graphic display on a central monitoring computer with flashing alarm zones, custom digital audio annunciation of alarms. The system shall provide relay outputs for each zone, power/communication failure and tamper from the system processor to other site monitoring systems (if required).

**Integrated Security Corporation
Perimeter Detection System Specification**

The field sensors shall be installed on the fence material, concertina, razor ribbon, barbed wire or other such media as required. The sensor cable shall be mounted on the fence material, concertina, razor ribbon, barbed wire, or other such media using UV resistant cable ties.

The length of a detection zone is variable and depends to a large degree on the need for a certain section of perimeter to require extra accuracy in locating an attempted intrusion. The ISC S-10 sensor cable shall come pre-assembled with shock vibration sensors installed at regular intervals. Sensitivity shall be software adjustable individually by zone from the central computer keyboard. No field sensitivity adjustments shall be required. The system shall have separate adjustable wind and precipitation compensation settings for each zone from the central computer keyboard. No field adjustments required.

All sensor cable shall be UV resistant to sunlight and rated for direct burial cable. All sensors shall come encased in UV resistant high impact plastic with gold plated internal contact points. All sensor cables shall be fully supervised and an alarm shall be generated if any cable is cut, shorted to ground or each other. A tamper alarm shall be generated if the processor enclosures are opened via enclosure tamper switches.

The processor unit shall include Vision Card, Sensor Interface Card, and Relay Output Module and shall contain all required electronics, standby battery, power supply and other accessories as necessary.

PART 2 - PRODUCTS

2.1 CENTRAL MONITORING COMPUTER SYSTEM

A. The central monitoring computer minimum requirements: Intel Core 2 Duo, E8400, 3 GHz, 2 Gigabytes of RAM, multi Gigabyte hard disk drive, color monitor capable of 1920 x 1080 resolution, CD ROM drive and a printer.

Access to site information shall be accomplished using Microsoft's Internet Explorer web browser. Multiple workstations shall be allowed simultaneous access. The software shall be capable of constantly monitoring the site for intrusions regardless of the operation being performed within the system software. The system software will provide a custom site map with flashing alarm zones, custom digital audio messages for each alarm and on screen video of alarmed zones. The central monitoring computer shall have "data log" retention of alarm activity on the computer's database. The site monitoring system shall provide multi-level password access and have software adjustable sensitivity settings for each zone from the central monitoring computer

**Integrated Security Corporation
Perimeter Detection System Specification**

The site monitoring system shall provide software adjustable wind and precipitation compensation settings for each zone individually from the central computer keyboard, no field adjustments required. The site monitoring system shall include software adjustable event/condition zoning for each zone or software adjustable dual domain zoning for each zone from the central computer keyboard. Event/condition zoning will allow individual gate zones to be shunted when related activities occur (such as a valid card read from an access control system) during software programmable "Time Window". The Dual Domain programming shall allow an alarm to be generated only when multiple related activities occur during software programmable "Time Window".

The site monitoring system shall include manual keyboard access to instantaneous spot weather conditions including current wind speed and precipitation values. Automatic logging of wind speed and precipitation values to the site monitoring system database will take place at software programmable regular intervals. The site monitoring system shall include logged wind and precipitation values taken in real time when an alarm occurs.

All data shall be logged within the PC's database. Web browser GUI updates shall be extracted from the database information via Web Services. Third party integration shall be supported by the methods defined within the Web Service.

2.2 SYSTEM PROCESSOR

A. The system processor shall monitor electronic signals from perimeter sensors and continually analyze and evaluate these signals. The processor shall also analyze inputs from a meteorological device and dynamically calibrate the system for each zone individually during adverse weather conditions to reduce the possibility of weather induced false alarms. The processor shall support at least two relay outputs for each zone and relay outputs for power/communication failure, tamper and one general output relay. The processor shall facilitate a battery backup capable of supplying 12 VDC at .500 ma. The battery will automatically recharge when 120 VAC power is restored. The processor shall require no field calibration and or routine maintenance and adjustment. The processor shall indicate alarms to a central monitoring computer via encrypted Ethernet, fiber-optic, or RS-232 communication. SMS text messaging of alarms shall be supported. It shall be possible to link output relay boards to the system processor via RS-485.

2.3 SENSORS AND SENSOR CABLE

A. The sensor device shall be shock vibration type, weather resistant and UV protected. The sensor device shall detect in the X, Y and Z axis. The sensor device shall be capable of operating at -55 degree to +155 degree C. All internal contact points shall be gold plated to MIL Spec #MIL-G-45204-B Type 2 Grade C. The sensors shall be weather resistant and come pre-assembled on a multi-conductor cable. The sensor cable shall be an overall foil wrapped UV resistant PVC jacketed cable suitable for direct burial and EMI/RFI protected. Fence sensors shall require no field calibration and or routine maintenance and adjustment.

2.4 METEOROLOGICAL ASSEMBLY

A. The meteorological assembly shall be capable of detecting wind speed and precipitation intensity. The meteorological device shall be a fully integrated monitoring sub-system that detects environmental changes resulting from wind or precipitation and supplies the necessary data to the system processor. The output signals from this device shall be transmitted through a communication cable to the processor which in turn automatically calibrates the system's thresholds for each zone individually according to the weather conditions. The processor shall constantly adjust sensor-operating parameters to minimize the generation of environmentally induced false alarms. Through password control the system operator shall be able to adjust wind and precipitation compensation values separately for each zone individually from the central monitoring computer keyboard.

2.5 GENERAL

- a)** Perimeter Media Applications - Have the ability to be installed on fences of chain link or welded mesh construction, concertina, barbed wire, razor ribbon, all types of gates and even concrete walls.
- b).** Electrical Components - Electrical construction shall be with high reliability and an industrial operating temperature of -40 to 85 degrees Celsius.
- c).** Environmental Conditions - The perimeter detection system shall be capable of operating to specification in fog, rain, snow or other adverse weather conditions.
- d).** Power Requirements - 110/220 VAC; 50/60 Hz, backup battery - 12 VDC.
- e).** Battery Charger - Integral to system processor power supply.
- f).** Relay Outputs - Alarm for each zone, tamper, power/communication failure and one general output relay.
- g).** Supervision - Opens, shorts, grounds; change in sensor line voltage.

- h).** Sensitivity Control - Fully software programmable from the central computer keyboard. No field adjustments required.
- i).** Indicators - Power indicator.
- j).** Transient and Surge Suppression - Bidirectional thyristor semiconductor technology incorporated within the Sensor Interface Module.
- k).** IP Addressable Vision Card allowing for 16 zone inputs each, expandable to 256 zones. Multiple Vision Cards allowable for unlimited expandability.
- l).** Single Mode and Multimode fiber transceivers available for long haul communication over duplex, SC fiber infrastructure.