Panther® II

Buried cable intrusion detection sensor

DESCRIPTION – Panther® II is a covert perimeter intrusion detection sensor that generates an invisible electromagnetic field around buried sensor cables. If an intruder disturbs the field, an alarm is declared. The sensor's covert nature makes it perfect for sites that require high security or where keeping the site's appearance intact is paramount. It is ideal for applications with up to 400 m (1,312 ft.) of perimeter to protect.

APPLICATION – For burial in soil, a trench 23 cm (9 in.) deep by 10 cm (4 in.) wide is prepared. The cable is cut to suit the desired zone length. The end of the cable requires the installation of a terminator. Native soil is used to fill the trench and the original soil covering (e.g. lawn) is restored. For burial in existing asphalt or concrete, a slot 1 cm (3/8 in.) wide and 6 cm (2 1/3 in.) deep is prepared using a concrete saw. The cable is inserted at the bottom of the slot and covered with a foam backer rod. Joint sealant is used to seal the slot. For sites where the asphalt or concrete has not yet been installed, the cable(s) can be installed at the standard depth of 23 cm (9 in.). If the concrete is reinforced, contact Senstar for details.

Features

- Terrain-following
- Adaptive algorithms
- 2 zones to a maximum length of 400 m (1312 ft.) per processor
- 12 VDC input power
- Separate relay outputs for alarm A, alarm B, tamper, fail
- Set-up using the Universal Configuration Module (UCM)
- Analog outputs for detection signal in each zone
- Lightning protection on all inputs and outputs

Markets

- VIP residences
- Critical commercial / industrial assets
- Utility yards
- Substations
- Airport fuel farms / aircraft
- Important historic / cultural sites
- Communications sites
- Petrochemical sites / well pads

Benefits

- Covert
- Continuous field of detection with over 99% Probability of detection (Pd)
- Low Vulnerability to defeat (Vd)
- All-weather performance
- Intruders unaware of Panther II's presence - cannot locate, avoid or tamper with it
- Site aesthetics maintained
- Reduced installation time and expense as a result of single cable burial

VOLUMETRIC SENSORS - BELOW GROUND

Technical Specifications

How it works

Panther II uses a uniform volumetric field to detect moving targets based on their electrical conductivity, size and movement. Unless a target possesses the minimum alarm characteristics, it will not be detected. A person or vehicle crossing through the field is detected while small animals and birds are ignored. Common environmental false alarms from foliage, rain, snow and blowing sand are filtered out by Panther II's advanced adaptive algorithms. This intelligent signal processing provides a high Probability of detection (Pd) and low False / Nuisance Alarm Rate (FAR / NAR).

Configuration

Panther II is easily configured and calibrated using the Universal Configuration Module (UCM) software on a laptop PC. A converter is required from either RS-232 or USB to the RS-485 interface of Panther.

Technology

Panther II uses ported ("leaky") coaxial sensor cables to create an invisible electromagnetic detection field. A gap in the sensor cable's outer conductor allows electromagnetic energy to escape and be received by a corresponding parallel sensor cable. The cables are conveniently packaged in a single common jacket, called an SC1 cable. The SC1 cable can be buried in any medium including soil, sand, clay, concrete or asphalt to form a covert, volumetric detection field that is terrain-following.

Set-up / installation

The cable is located at the center of a 6 m (19.7 ft.) strip that is free of metallic objects. It should be at least 3 m (9.8 ft.) from large metallic objects such as chain-link fences. The length of each zone can be from 10 m (33 ft.) to 200 m (656 ft.) and is customized to suit site requirements. The resulting detection field is typically 1 m (3.3 ft.) high and 2 m (6.6 ft.) wide. The actual field size depends on the burial depth, the burial medium and the thresholds chosen. Non-sensitive lead-in cable, which is an integral part of the sensor cable, is used to make necessary connections to the Panther II Processor Module (PM).

Detection performance

The Pd for intruders with a mass greater than 34 kg (75 lbs.) is greater than 99% with a statistical confidence level of 95%, while intruders less than 10 kg (22 lbs.) are rejected. Detection is made for intruder speeds ranging from 2.5 cm / sec. (1 in. / sec.) to 15 m / sec. (49 ft. / sec.).

SENSOR CABLE

REQUIRED CABLE: One or two rolls of SC1 cable

LENGTH: 50, 100, 150 or 200 m (162.5, 328, 492 or 656 ft.) detection length. All cables come with 50 m (162.5 ft.) of integral non-sensitive lead-in except for 200 m cable length which has 20 m (66 ft.) of lead-in.

SIZE: SC1: 8.5 x 15 mm (0.335 x 0.590 in.)

OPERATIONAL TEMPERATURE: -40°C to +70°C (-40°F to 158°F)

STORAGE TEMPERATURE: -50°C to +85°C (-58°F to 185°F)

REEL DIAMETER: SC1: 508 mm (20 in.) dia. x 330 mm (13 in.) wide

WEIGHT: SC1: 38.6 kg (85 lbs.) for 200 m (656 ft.)

PROCESSOR MODULE

2 zones per PM - zone length - min.10 m (33 ft.) / max. 200 m (656 ft.)

TAMPER ALARM: By enclosure tamper switch

SELF TEST FUNCTION: Internal, activated by contact closure or from the UCM

CALIBRATION: Calibration through UCM

DETECTION THRESHOLD: Adjustable for each zone through UCM

VELOCITY RESPONSE: 2.5 cm / sec. (1 in. / sec.) to 15 m / sec. (49 ft. / sec.) adjustable

PROBABILITY OF DETECTION: >99% for walking intruder with mass >34 kg (75 lbs.)

FREQUENCY: 40.675 MHz zone A / 40.685 MHz zone B

OPERATING TEMPERATURE: 0°C to +70°C (32°F to +158°F)

OPERATING HUMIDITY: 0% to 95% RHNC
SIZE: 360 L x 230 W x 100 mm H (14 L x 9 W x 4 in. H)
WEIGHT: 4.5 kg (10 lbs.)
POWER CONSUMPTION: 12 VDC @ 500 mA

RELAY OUTPUTS: Relay outputs - 4 form C relay outputs 24 VDC max. 350 mA max.

OPTIONS

OPTIONAL POWER SUPPLY:
Power input: 115 / 230 VAC, 60 / 50 Hz, 75W
Power output: 12 VDC, 4 A max.

Specifications are subject to change without prior notice.

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