FiberPatrol® FP2100-X
In-Ground Intrusion Detection System

Description

The FiberPatrol FP2100-X perimeter intrusion detection system uses in-ground fiber-optic sensors to detect humans and vehicles crossing over the sensor area. Unlike the readily visible fence-mounted sensors, a buried FP2100-X sensor is covert. FiberPatrol sensors are also non-metallic and produce no electro-magnetic emissions or heat, which makes them not merely invisible, but virtually undetectable.

The FP2100-X system features high sensitivity monitoring, capable of detecting and pinpointing the location of intruder's footsteps. Sensing cables are buried in protective conduits using standard utility contractor techniques to minimize the installation cost. Buried sensors can be deployed in a single or dual straight line, or configured to cover areas of any shape and size on flat or rolling terrain. The in-ground sensors are compatible with a wide range of soil types and climate conditions.

FP2100-X systems can be calibrated to report GPS coordinates of an attempted breach, which can be used for activating corresponding PTZ camera presets or for personnel dispatch. The location-sensing ability of the FP2100-X system enables it to resolve multiple simultaneous disturbances, making it immune to defeat by overwhelming.

When a sensor cable is cut, either in an attempt to defeat security or through accidental damage, the system immediately reports the incident, including its exact location. Moreover, the system retains the ability to detect and pinpoint intrusion attempts up to the cut point. A self-healing sensor ring can be implemented by installing an FP2100-X sensor in a closed loop configuration. The same fiber-optic cable can be used for video and data transmission.

FP2100-X systems are commonly deployed to provide intrusion detection around site perimeter or to isolate individual high-value assets within a facility. The FP2100-X in-ground sensors can be discreetly incorporated into landscaped areas, where security fencing may not be desirable on aesthetic basis. Alternatively, the FP2100-X can be used as a second layer of intrusion detection, in conjunction with fence- or wall-mounted sensors.

Features

Covert Detection
> Invisible and undetectable buried sensor
> Essential part of multi-layer security
> Highly sensitive to foot traffic
> Simple installation methods

Long Range Fiber-Optic Sensor
> No electrical power required in the field
> EMI / RFI and lightning immunity
> Available fiber-optic video and data links
> Multiple I/O options for system integration
> Economy-of-scale pricing

Location Sensing
> Accurate location of intrusion attempts
> Detection of multiple simultaneous events
> GPS mapping of site perimeter
> Reconfigurable virtual detection zones
> Intrinsic rejection of non-localized events

Cut Immunity
> Remains operational after a cable cut
> Supports self-healing ring architecture
> Supports redundant sensor configurations
> Option to postpone cable repairs

Specifications

Intrusion Detection

Max Sensor Length:	10 miles (16 km)
Sensor Layout:	Closed loop or dead end
Alarm Location Accuracy:	Better than 75' (23 m) maximum Better than 25' (8 m) typical
Min Virtual Zone Length:	100' (30 m) recommended
Max Virtual Zone Count:	52 per mile (33 per km) recommended

Sensor Cable

Cable Type:	Tight buffer, single jacket, unarmored
Rating:	Indoor/outdoor riser
Fiber Count:	2 sensing, 10 spare
Sensing Fiber Type:	Corning SMF-28e+ or equivalent
Optical Loss:	< 0.48 dB/mi (0.30 dB/km) @ 1550 nm
Outer Diameter:	0.28" (0.7 cm)
Weight:	30 lbs/kft (45 kg/km)
Max Pull Strength:	300 lbf (1335 N)

Installation

Sensor Depth:	12" nominal
Sensor Installation:	HDPE utility conduit
Conduit Diameter:	OD 1.66" / ID 1.39"
Sensor Configuration:	Single or dual line

Electrical Power

Consumption / Field:	None
Consumption / Head End:	400 Watts maximum
Requirements / Head End:	100..240 Volts, 50 / 60 Hz

Sensor Controller / Optical

Laser Output Classification:	Class 1
Laser Wavelength:	1550 nm
Connector Type:	FC/APC

Alarm Processor / Software

CPU*:	1.86 GHz Intel Nehalem
RAM*:	6 GB DDR3
HDD*:	2x500 GB RAID array
Networking*:	Dual Gigabit NIC
Operating System*:	Windows 7 Pro 64bit
Default Alarm Interface:	XML over TCP/IP
Optional Alarm Interfaces:	RS232, relay contacts, analog current loop

* Similar or better configuration may be substituted

Environmental

Op. Temp / Head End:	+50°F..+95°F (+10°C..+35°C)
Op. Temp / Field:	-40°F..+158°F (-40°C..+70°C)
Humidity / Head End:	20%..80%, non-condensing
Humidity / Field:	No restriction

Head End Mechanical

Combined Dimensions:	19" x 19" x 16" (48 x 48 x 41 cm)
Combined Rack Space:	19" (48 cm), 9 RU
Rack Clearance:	2" (5 cm) [front], 6" (15 cm) [back]
Combined Weight:	125 lbs (56.7 kg)

Certifications and Compliance

Electromagnetic Compatibility:	FCC Part 15 Class A EC EMC Directive 2004/108/EC
Safety:	EC Low Voltage Directive 2006/95/EC

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