

FiberPatrol® FP1100-X

Self-Healing Fence Intrusion Detection System

Description

The FiberPatrol FP1100-X system features the most advanced fiber-optic sensor technology available for fence-line perimeter monitoring. The FP1100-X can pinpoint the location of an intrusion attempt to within one or two fence panels. Multiple simultaneous events, such as coordinated intrusions, can be effectively detected and located. The system reports the coordinates of an attempted breach, which can be used for activating corresponding PTZ camera presets and for personnel dispatch. The location-sensing ability also enables the system to ignore non-localized disturbances, such as those produced by wind and rain.

Based on the FiberPatrol X technology, the FP1100-X is the first and only fence perimeter security system to offer cut immunity. When a fence sensor is cut, either in an attempt to defeat security or through accidental damage, the FP1100-X 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 FP1100-X sensor in a closed loop configuration. Having a self-healing FP1100-X system gives site owner an option to delay cable repairs without compromising site security.

FiberPatrol's passive, all-optical fiber sensor can monitor up to 10 miles of perimeter fence without using repeaters, processors, or any other powered field components. The sensing cable is mounted directly on existing fence, requires no electrical grounding, and is unaffected by lightning storms. The per-foot cost of an installed system drops significantly with perimeter length. Using the same sensor cable for fiber-optic video and data transmission further reduces the cost of site infrastructure development.

As many as 50 virtual detection zones can be defined for each mile of a perimeter fence with the FP1100-X. Each zone can be linked to camera presets and can have its own sensitivity settings. Configured in this way, a typical installed system replaces an equivalent of 100s of legacy fence sensors, while providing higher performance at a fraction of the cost.

Features

Advanced Fence Sensor

- > Superior PD and NAR performance
- > Advanced environmental filtering
- > Suitable for most types of flexible fencing
- > Integrated sensing on gates
- > Rugged, outdoor grade sensor cable
- > Easy to install and maintenance-free

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

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:	Gel-filled loose tubes, single jacket, unarmored
Rating:	Outdoor aerial and duct
Fiber Count:	2 sensing, up to 70 spare
Optical Loss:	< 0.40 dB/mi (0.25 dB/km) @ 1550nm
Sensing Fiber Type:	Corning SMF-28e+ or equivalent
Outer Diameter:	0.44" (1.1 cm)
Weight:	55 lbs/kft (82 kg/km)

Installation

Fence Type & Construction:	Most types of flexible fencing
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Electrical Power

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

Sensor Controller / Optical

Laser 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

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)

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

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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