

FiberPatrol® FP4100-X

Mixed Application Intrusion Detection System

Description

The FiberPatrol FP4100-X is the first and only intrusion detection system with the flexibility to address several dissimilar perimeter security applications in a single sensor deployment. An FP4100-X sensor cable can be attached to a perimeter fence, mounted along a wall top, and buried in ground for covert detection - all within a single installed system with one alarm processor. Mixed-application capability can be utilized in multi-layer security installations or to provide continuous coverage for non-uniform site perimeters.

In a traditional perimeter security system, distinct sensor types are deployed to address different intrusion detection applications. Such specialized sensors are often based on incompatible technologies and sourced from different manufacturers. They require individual power and communication infrastructure, which drives installation cost up and needlessly complicates system integration and monitoring.

The FP4100-X system replaces such disparate sensors with a single solution. It does so by leveraging the innate ability of the FiberPatrol X technology to interrogate each location along a fiber-optic cable independently. With the FP4100-X, fiber-optic sensor cables protecting different perimeter environments are joined together to form a continuous optical path. Combined sensor length may total up to 10 miles per head end, without any field repeaters, processors, or other powered field components.

When virtual detection zones are defined during system commissioning, the zones that belong to distinct perimeter types are accordingly designated. This assignment instructs the FP4100-X system to select and apply one of several application-specific signal processing algorithms. As many as 50 virtual detection zones can be defined for each mile of a site perimeter, with each zone linked to camera presets for quick video verification.

Features

Mixed-Application Deployment

- > Fence, wall top and in-ground sensing
- > Wide detection sensitivity range
- > Flexible software-based configuration
- > Layered security options in one system

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 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: Fence and Wall

Cable Type:	Gel-filled loose tubes, single jacket, unarmored
Rating:	Outdoor aerial and duct
Fiber Count:	2 sensing, up to 70 spare
Sensing Fiber Type:	Corning SMF-28e+ or equivalent
Optical Loss:	<0.4 dB/mi (0.25 dB/km) @ 1550 nm
Outer Diameter:	0.44" (1.1 cm)
Weight:	55 lbs/kft (82 kg/km)

Sensor Cable: In-Ground

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 in. (0.7 cm)
Weight:	30 lbs/kft (45 kg/km)
Max Pull Strength:	300 lbf (1335 N)

Installation

Fence:	Direct attachment
Wall Top:	Edge cable clips
In-Ground:	Utility conduit

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

Electrical Power

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

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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