



## FEATURES AND BENEFITS

- Detect and locate perimeter intrusions over a distance of up to 24 km (14.9 mi)
- Pinpoint intrusions with a  $\pm 8$  m (25 ft) accuracy
- Accurate ranging of multiple simultaneous intrusions
- Sensor cable continues to operate up to the point of a cut
- 100% operational after a cable cut in cut-immune configuration
- High Probability of detection (Pd) and low Nuisance Alarm Rate (NAR)
- Software-configurable detection zones
- No outdoor power or communication infrastructure required
- EMI and lightning immune
- No electronics or grounding points required in the field
- Accurate locating for directing CCTV and/or response forces
- Field components intrinsically safe
- Alarms reported by zone number, cable distance and/or GPS coordinates
- Multiple options for integration with SMS, VMS and PSIM platforms
- Easy to install and maintain
- Economy-of-scale value

## Fiber Optic Fence-Mounted Sensor

**FiberPatrol-PR's** advanced fiber optic technology provides up to 24 km (14.9 mi) of protection in perimeter applications. No powered or conductive items are required in the field, making the sensor completely immune to EMI and lightning and intrinsically safe in the presence of explosive atmospheres.

FiberPatrol-PR accurately locates intrusions even when there are multiple simultaneous intrusions or in the presence of non-localized environmental noise that would overwhelm the location capability of other long-range fiber optic sensors.

FiberPatrol-PR's resilient design allows detection to continue right up to the point of a cut in the sensor cable. When installed in a redundant configuration, FiberPatrol-PR protects the full perimeter even after a cable cut.

## Detection and Ranging of Simultaneous Intrusions

FiberPatrol-PR is designed specifically to detect multiple simultaneous events. The full length of the cable is continuously analyzed and disturbances at different



FiberPatrol-PR Sensor Unit

locations are reported independently.

## Cut Immunity

When the sensor cable is cut, either accidentally or in an attempt to defeat the sensor, FiberPatrol-PR immediately reports the incident, including its exact location. Moreover, the sensor retains the ability to detect and localize intrusions up to the point of the cut. When installed in a redundant-loop configuration, the sensor continues to provide detection on the full perimeter even after a cable cut.

## Detection Settings

The advanced detection algorithm incorporates thresholds, spatial parameters and timing parameters. Detection settings include alarm threshold, disturbance threshold, event life persistence and duration threshold.



### Sensor Cables

FiberPatrol-PR uses single-mode fiber within telecommunications-grade cable. The sensing function requires two fibers – additional fibers within the cable can be used for other communications purposes like Ethernet and/or Senstar’s proprietary Silver Network protocol (for communication with other Senstar sensors like OmniTrax® buried RF, UltraWave™ microwave, or XField® electrostatic sensors).

### Supported Fence Types

FiberPatrol-PR can be used on most fence types including chain-link, welded mesh and expanded metal. A single pass of sensor cable provides effective protection for fences up to 3 m (10 ft) in height. The sensor may also be used on palisade-style fences depending on the specific characteristics of the fence.

The sensor provides protection on up to 24 km (14.9 mi) of cable in either linear or redundant-loop configurations. For planning purposes, 12.5% extra sensor cable must be budgeted over the fence length for use in service loops, extra coverage at brace and corner posts and zone isolation loops.

The sensor cable can be mounted on swinging gates to provide gate protection.

### Alarm Display Options

Several options are available for alarm display and integration with third-party devices. Customers requiring a single display dedicated to FiberPatrol-PR perimeter monitoring can use the processor’s built-in alarm display. Senstar’s StarNet 2 Security Management System (SMS) provides enhanced capabilities for those requiring multiple workstations and maps as well as the management of additional security equipment.

FiberPatrol-PR can be configured to report alarm locations by zone number, cable distance and/or GPS coordinates.

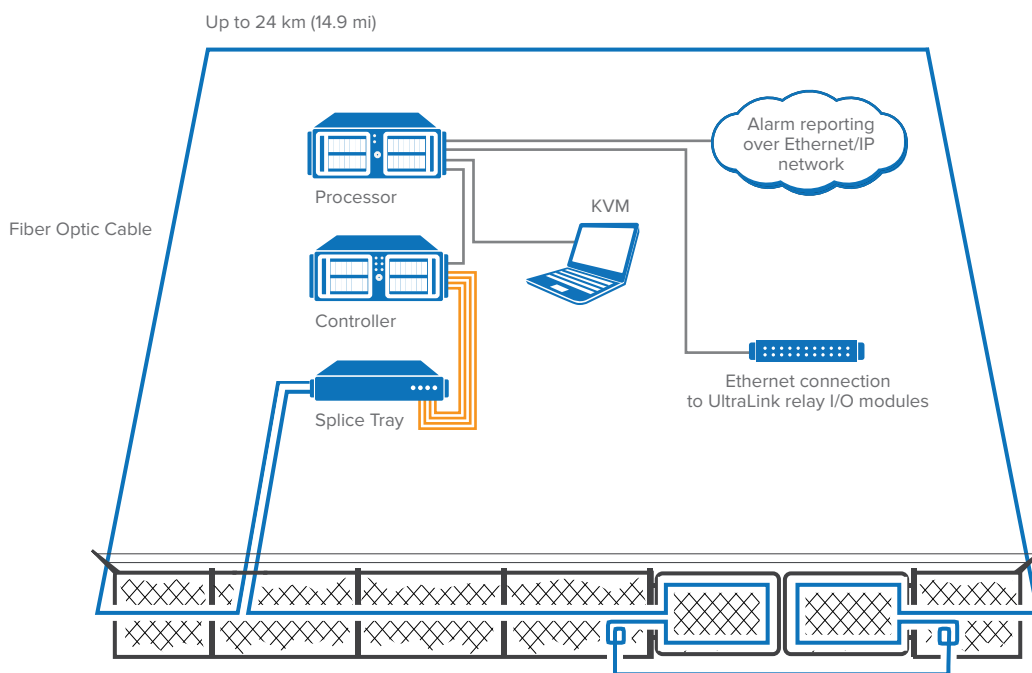
### Third-Party Integration

Senstar’s UltraLink sensor integration components are used to integrate FiberPatrol-PR with third-party sensors. The ultraLink Network Manager Service provides an IP-based interface common to Senstar’s other industry-leading sensors, including OmniTrax® buried RF cable sensors, XField® electrostatic sensors, UltraWave™ microwave units and the FlexZone™ cable-based fence sensor.

Alarms and status can also be presented on relays or open-collector outputs using ultraLink I/O modules.

### Dataline Protection

FiberPatrol-PR is an effective way to provide physical security for fiber optic data links and other cable infrastructure. The sensor’s ability to detect minute vibrations, movement, or other physical disturbances of the cable bundle or conduit enables it to detect TPI before communications are compromised.



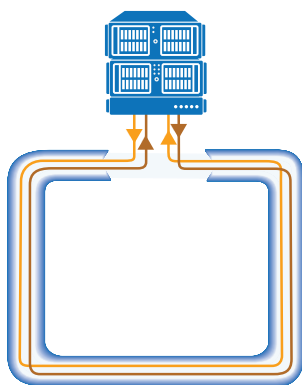
FiberPatrol-PR Fence Protection Site Configuration

## Technical Specifications

### SENSOR UNIT

#### Main Features

- Provides intrusion detection for long perimeters from a central location
- Localization of intrusions and software assignable detection zones
- Redundant bi-directional dual receiver operation provides industry-leading resilience to cut or damaged cable
- Central adjustment of all sensor parameters over long distances
- Simple integration with Security Management Systems and CCTV systems



Cut-Immune Configuration

### SPECIFICATIONS

#### Sensor Length

- Up to 24 km (14.9 mi)

#### Detection Zones

- Software-assignable
- Recommended maximum of 30 zones/km

#### Detection Performance

- Detection accuracy:  $\pm 8$  m (25 ft) typical
- Detection resolution: 45 m (150 ft); minimum separation for two disturbances to be reported separately
- Pd: 95%
- FAR: less than 1/km/year typical
- NAR: site dependent
- Cut cable detection:
  - Operation: as specified up to the cable cut
  - Accuracy of cut location: 30 m (100 ft)

#### Optical

- Laser classification: Class 1, 1550 nm wavelength
- Connector type: FC/APC

#### Interfaces and Software

- Networking: Dual Gigabit Ethernet
- Operating system: Windows 7 Pro 64-bit
- HDD: minimum 2x500 RAID array
- Standard alarm interface – Senstar standard API over TCP/IP from Network Manager
- Optional alarm interface – relay closures via UltraLink I/O modules

#### Environmental (Sensor Unit)

- Operating temperature: +10 to 35°C (50 to 95°F)
- Humidity: 20% to 80% non-condensing

#### Energy Consumption

- Voltage: 100 – 240 VAC, 50/60 Hz
- Power: 400 watts maximum

#### Mechanical

- Style: standard 19-inch rack-mount, 51 cm (20 in) deep
- Rack space: processor 4U, controller 3U, splice enclosure 1U, KVM 1U, total 9U
- Rack clearance required: 5 cm (2 in) front, 15 cm (6 in) back
- Weight: 48 kg (105 lbs) total with processor, controller and 1U splice enclosure

### REGULATORY COMPLIANCE

- FCC Part 15 Class A
- CE: EC Low Voltage Directive 2006/95/EC

### FIBER OPTIC SENSOR CABLE

#### Cable Installation

- Attach cable to fence fabric with cable ties

#### Cable Construction

- Loose tube, 11.1 mm (0.44 in) diameter typical
- Black UV-stabilized medium density PE jacket
- 12–60 fiber count
- Armored cable options available

#### Optical Fiber

- Single mode, 0.25 dB/km typical @ 1550 nm, optical loss or better

#### Weight

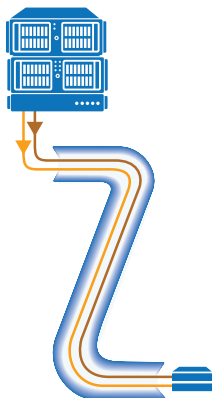
- 75 kg/km (50 lb/kft) typical

#### Cable Mounting Ties

- UV-resistant
- Stainless steel optional

#### Environmental

- Temperature: –40 to 70°C (–40 to 158°F)
- Humidity: no restrictions



Linear Configuration

Part	Description
FP1100X-xx	FiberPatrol-PR sensor unit for fence. Provides up to xx km of detection processing, where xx can be 01 (for 1.5 km), 03, 06, 09, 12, 16, 20 or 24 (1 km = 3280 ft).
GB0296-15	15 in 1U rackmount KVM (KB/LCD/Mouse) (MONIT1)
FPKT0400	8 port KVM switch w/ 2 sets of cables (KVM8)
FPEM0400	1U rack-mount splice enclosure kit (SPLENC)
FPMA0223	Dual Start/End module for FiberPatrol-PR fence protection systems (START/ENDMOD01)
GM0749-24	Field splice enclosure (24 splice capacity, 3 cable ports) (SPLHW)
FPKT0200	Splice consumables kit (SPLCON)
GH1080-08	3/16" x 08" (4.8 x 20.3 cm) stainless steel cable ties (100 ea) (SSTIES)
GH1080-08C	3/16" x 08" (4.8 x 20.3 cm) black-coated stainless steel cable ties (100 ea) (SSTIESC)
GX0310	Tool – manual tension and cut-off tool for stainless steel cable ties (SSTOOL)
GX0311	Tool – upgraded manual tension and cut-off tool for stainless steel cable ties (SSTOOL2)
FPKT0500	One (1) section of 5 cm (2 in) diameter split conduit 1 m (3 ft) long and two (2) hose clamps (SPCON)
FPSP0424	Fiber optic sensor/lead cable for fence applications, 24 fibers. Priced in 100 meter (328 ft) increments (FIB002)
00FG0220	Network Manager service version on CD

Contact Senstar for required training and installation support services.  
 Ask about Senstar's wide range of perimeter protection and security management solutions for fence, wall, buried and free-standing applications.



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