

FiberPatrol-PR

Point-reporting intrusion detection system

Features & Benefits ▾

- Long range fiber-optic sensor
 - up to 16 km (10 mi) for perimeter applications
 - up to 48 km (29 mi) for buried pipeline protection
- Accurate location of intrusion attempts
 - ± 8 m (25 ft) typical for perimeter applications
 - ± 10 m (33 ft) typical for buried pipeline applications
- 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 redundant 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
- Invisible and undetectable as a buried sensor in pipeline applications
- 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 SENSORS FOR FENCE, PIPELINE AND DATALINE PROTECTION

FiberPatrol-PR's advanced fiber optic technology provides up to 16 km (10 mi) of protection when used in perimeter applications. For protection of buried pipelines against Third-Party Interference (TPI), FiberPatrol-PR provides up to 48 km (29 mi) of protection. 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.

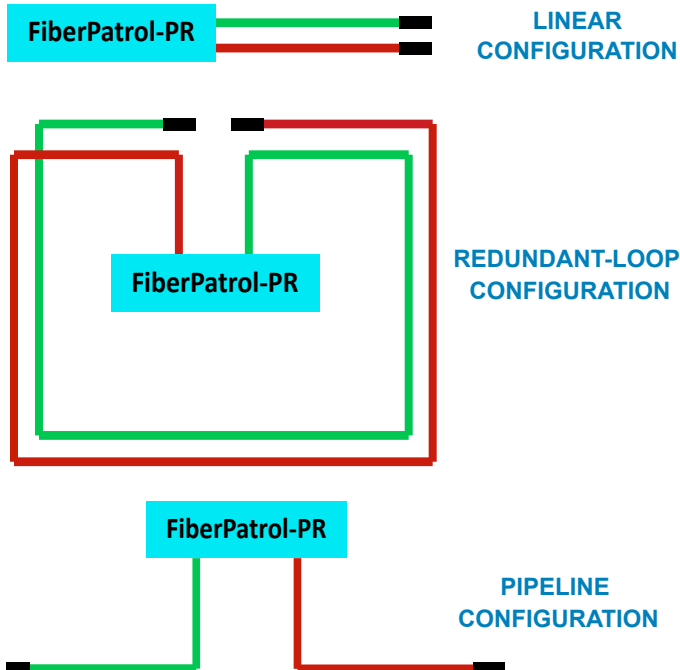
FiberPatrol-PR's resilient design allows detection to continue right up to the point of a cut in the sensor cable. When installed in a redundant configuration, FiberPatrol-PR protects the full perimeter even after a cable cut.

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 locations are reported independently.

CUT IMMUNITY

When the sensor cable is cut, either in an attempt to defeat the sensor or accidentally, 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. Depending on the configuration, the sensing function requires one or two fibers – additional fibers within the cable can be used for other communications purposes like IP / 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).

FIBERPATROL-PR FOR FENCES

FiberPatrol-PR can be used on most types of metallic fences 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. For fence applications, the sensor provides protection on up to 16 km (10 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.

FIBERPATROL-PR FOR PIPELINE PROTECTION

FiberPatrol-PR is ideal for protecting pipelines and other in-ground infrastructure from Third-Party Interference (TPI). A single sensor can provide protection for up to 48 km (29 mi) of sensor cable buried along the pipeline. FiberPatrol-PR detects manual or machine digging, whether from intruders intent on damaging or tapping the pipeline or those accidentally digging near the pipeline's location. By providing an early warning and the precise location of an incident, the sensors helps responders prevent costly damage.

For surface pipelines the sensor cable is directly attached to the pipeline and detects any attempts to drill into or dismantle the pipeline.

The sensor cable is intrinsically safe within explosive atmospheres and completely immune to all forms of electromagnetic energy from radio communications, radar, electrical power transmission equipment and lightning.



Optical fibers within existing fiberoptic communication cables buried along the pipeline can be used for the FiberPatrol-PR sensor if requirements regarding positioning, attenuation and reflective discontinuities are met.

FIBERPATROL-PR FOR 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 intrusions before communications are compromised.

ALARM DISPLAY AND 3RD PARTY INTEGRATION

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 alarm display built-in to the sensor processor. Senstar’s StarNeT™-1000 Security Management System (SMS) provides enhanced capabilities for those requiring multiple workstations and maps as well as the management of additional security equipment.

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.

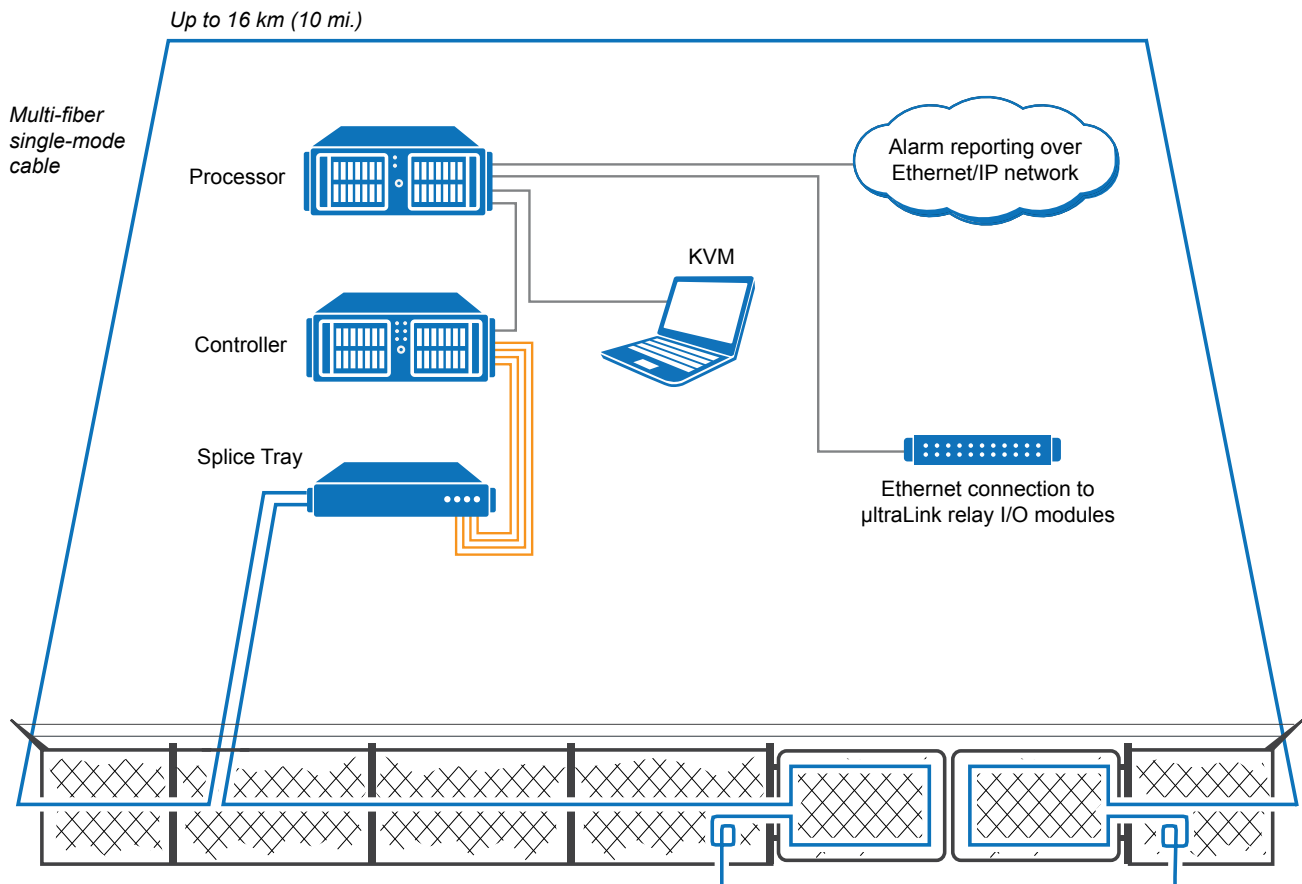
FiberPatrol-PR can be configured to report alarm locations by zone number, cable distance and / or GPS coordinates. Alarms and status can also be presented on relays or open-collector outputs using ultraLink I/O modules.

FIBERPATROL-PR VERSIONS

FiberPatrol-PR for fence, wall and dataline protection provide up to 16 km of fiber optic sensor cable and come in six length-capability versions ranging from 1.5 to 16 km (5,000 ft to 10 mi).

FiberPatrol-PR for pipeline protection provides up to 48 km of detection for pipeline protection applications and come in 4 length-capability versions ranging from 16 to 48 km (10 to 29 mi).

FIBERPATROL-PR FENCE-PROTECTION SITE CONFIGURATION



SENSOR UNIT

Main features:

- Provides intrusion detection for long perimeters from a central location
- Localization of intrusion and software assignment of 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

SPECIFICATIONS

Sensor Length:

- Up to 16 km (10 mi) for fence, wall, or data line protection
- Up to 48 km (29 mi) for pipeline protection

Detection zones:

- Software-assignable
- Recommended maximum of 30 / km for perimeter protection and 10 / km for pipeline protection

Detection performance:

Perimeter application (fence or wall)

- Detection accuracy: ±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 / month typical
- NAR: site dependent

Buried pipeline application

- Detection accuracy: ±10 m (33 ft) typical
- Detection resolution: 45 m (150 ft); minimum separation for two disturbances to be reported separately
- Pd: 95% against Third-Party Interference (digging, tapping)
- FAR: less than 1 / km / month 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° C to +35° C (50°F to 95°F)
- Humidity: 20% to 80% non-condensing

Energy consumption:

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

Mechanical:

- Style: standard 19-inch rack-mount, 41 cm (16 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:

- Fence – attach cable to fence fabric with cable ties
- Wall – attach cable to wall top with cable fasteners
- Pipeline protection – direct-bury cable

Cable construction:

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

Optical fiber:

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

Weight:

- Loose tube construction: 75 kg / km (50 lb / kft) typical

Cable mounting ties:

- UV-resistant
- Stainless steel optional

Environmental:

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

PART	DESCRIPTION
FP1100X-xx	FiberPatrol-PR sensor unit for fence and dataline-protection applications. Provides up to xx km of detection processing, where xx can be 01 (for 1.5 km), 03, 06, 09, 12, or 16. (1 km = 3280 ft)
FP6100X-xx	FiberPatrol-PR sensor unit for pipeline-protection applications. Provides up to xx km of detection processing, where xx can be 16, 24, 40, or 50 (for 48 km). (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)
FPPEM0400	1U rack-mount splice enclosure kit (SPLENC)
FPMA0223	Dual Start/End module for FiberPatrol-PR fence protection systems (START/ENDMOD01)
FPMA0121	Dual Start module for FiberPatrol-PR pipeline protection systems
FPMA0112	Single End module for FiberPatrol-PR pipeline protection systems
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	5 cm (2 in) diameter split conduit per 60 cm. (2 ft), with hose clamps and loom (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	

