



FiberSensor

MULTI-PURPOSE FIBER-OPTIC PERIMETER INTRUSION DETECTION SYSTEM

The **FiberSensor** is BEI Security's high performing, cost-effective security system designed for low to medium security risk installations.

- * The FiberSensor technology has been upgraded, modified and perfected over years of practical application and extensive field testing under extreme conditions.
- * The FiberSensor is highly reliable, easy and economical to install and maintain, and boasts a **very low false alarm rate (FAR)**, **high probability of detection (PD)**, and **exceptionally low cost**.



The **FiberSensor XL** buried sensor system is comprised of fiber-optic cables buried across a wide horizontal plane. The system detects pressure applied on the ground above the cable. The buried sensor cable is invisible, completely passive, and can be installed in almost any ground.

- * The FiberSensor is very flexible in its application, and is highly adaptive to a great variety of existing or new perimeter barriers.

FiberSensor

The FiberSensor detects intrusion attempts at the perimeter or palisade barrier by means of motion and vibration disturbance. The FiberSensor cable is installed in a split plastic conduit to provide uniform detection and to enhance sensitivity. The cable is attached to an existing fence by standard cable ties.

FiberSensor XL

The FiberSensor XL upgrades the standard FiberSensor system by adding:

- * more sophisticated compensatory processing for reducing false alarms due to environmental conditions
 - * an anemometer
 - * enabling a buried sensor application.
- * The FiberSensor is immune to EMI and RFI. It carries no electrical charge, and will not interfere with avionics or communications. It is not combustible, and *is safe for use in all sensitive environments.*

FIBERSENSOR PERIMETER INTRUSION DETECTION

PRINCIPLES OF OPERATION

The *FiberSensor* is a versatile system based on the use of fiber-optic sensor cable. Intrusion attempts are detected by motion and vibration disturbance in the light transmission. It is installed on an existing perimeter fence or barrier or buried underground.

Coded Infrared (IR) light is sent through the cable sensors from IR transmitters and is received by IR receivers. Any attempted intrusion such as cutting, climbing or walking above the FOBS will be detected by an interruption in light transmission and will trigger an alarm in the Command Center that will locate the intruded zone.

A Laser Diode (transmitter) launches continuous wave light into a fiber-optic cable. It appears at the end of the fiber-optic as a speckle pattern of light and dark patches. Under steady conditions this speckle pattern is stationary. When pressure or vibration is applied close to the sensor it causes the fiber-optic to deflect and redistribute the light speckle pattern. This movement or 'twinkling' of the speckle pattern is detected by a Photo-Diode (receiver). The output is electronically processed and fed to a relay that causes an alarm to be activated.

SYSTEM SPECIFICATIONS

Optical Components

Cable - Multimode fiber-optic, heavy-duty military spec tactical cable; KEVLAR reinforced polyethylene jacket withstands UV radiation.

Light Source - Class 1 Laser Diode

Detector - PIN Diode

Optical Connectors - ST-SC

Detection Zones up to 2000 m/6500 ft.

Version A. Connected to the computerized alarm, monitoring and control system via fiber-optic or wireless transmission.

Version B. Stand-alone, provides dry contact outputs.

Zone Processing Units- Electro-optic zone processing units installed in climate-proof enclosures monitoring up to 2 zones; redundantly routed fiber-optic communication cables connect ZPUs to System Command Center controlled by micro-computer with Graphical User Interface that allows wide range of calibration and sensitivity settings:

- Adjustable alarm threshold for various fencing structures and environments.
- Advanced signal processing to significantly decrease false and nuisance alarms.

Enclosure

Fiberglass polyester NEMA-EEMAC Type 4 or 4X

Current - 28mA

Input Voltage - 9-50 VDC, 1/2 A or 24-36 VAC, 1/2A

Output

A. 8 Control open collectors, 300mA

B. 8 Relay dry contacts

Operating Temperatures - -30C to +70C (-22F to +158F)

VERSATILE, MULTI-PURPOSE SECURITY SOLUTIONS



Petrochemical Plants

Airports

Natural Gas Facilities

Military Bases

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Whatever the need BEI is the SOLUTION

Border Protection

Prisons

Water Districts

All Sensitive Perimeters

Law Enforcement



BEI SECURITY
DETECTIONS AT THE SPEED OF LIGHT

BEI SECURITY

For over 20 years, BEI Security has been developing innovative solutions for perimeter protection and electronic surveillance. BEI offers a full line of fiber-optic based intrusion detection systems designed to meet all budget and risk requirements. BEI systems are cost effective, and easy to install and maintain.

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