Fiber SenSys ®

AN OPTEX GROUP COMPANY

FD508 Intrusion Detection System
Versatile perimeter intrusion detection with a rack-mounted APU

The ultimate in perimeter fence protection just got better with a single-strand system designed for standard 19-inch equipment racks. Potential intruders attempting to breach a perimeter are identified and their attempts are deterred with a high-security system.

Designed as a 1-U rack-mounted instrument for standard data center racks, Fiber SenSys® has developed the **FD508™ Fiber−optic Intrusion Detection System** as an all-new fiber-optic perimeter sensor. The system detects intruders using a fiber-optic sensor that is deployed on the perimeter. For fence-protected perimeters, the sensing fiber is installed on the fence inside specially designed UV resistant polyethylene conduit.

Applications:
- **Electrical substations**
- **Solar power generation facilities**
- **Oil and gas facilities**
- **Government and military perimeters**

The **FD508** incorporates Fiber SenSys' proprietary and patent-pending technology that has been successfully deployed in thousands of sensors throughout the world, in a versatile fiber-optic sensor. The **FD508** detects intruders attempting to climb or cut through fences using a proven high-security technology. Sophisticated algorithms distinguish between actual intruders and "nuisance alarms" that might be caused by wind, wildlife or other environmental conditions. The fiber-optic sensor works by measuring laser signals resulting from potential intruders who vibrate the structure to which the fiber is attached.

- **Up to 8 zones per APU; each zone up to 800 meters of sensing cable**
- **Passive fiber−optic sensor**
- **Remote control and monitoring over TCP/IP network**

When the **FD508** detects intruders, it sends alarm messages to a head end, and also switches relay contacts that can be used to manage lights, cameras, sound alarms, etc. The **FD508** monitors up to eight different sensing fibers (zones). Each sensing fiber can be installed up to 800 meters (2,624 feet) in length for maximum perimeter protection.

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Features and Benefits of the FD508 Fiber-optic Intrusion Detection System

- Up to eight fully independent zones, each of which can support up to 800 meters of sensing fiber
- Durable fiber-optic sensing unaffected by chemical or electrical environmental elements that include corrosion, EMI and lightning strikes
- The **FD508** can be fully integrated with any industry standard head end system for a total system solution when combined with other security elements (cameras, lights, etc.)
- Includes custom tuning software

TECHNICAL SPECIFICATIONS	
Application	Perimeter Fence
Sensor Configuration	Fully independent zones, installed with a multi-fiber trunk cable and breakout boxes (assembled in the field)
Number of Zones per APU	Up to eight fully independent zones
Sensing Fiber	Multimode fiber, custom manufactured to FSI specifications
Insensitive Lead-in Fiber	Single-mode fiber, custom manufactured to FSI specifications
Sensing Cable / Zone Lengths [1]	• For each zone, sensing fiber + insensitive lead-in cable ≤ 5.8km • Sensing fiber length ≤ 800 meters • Zone length ≤ 500 meters
Trunk Cable	Outdoor-rated cable containing (minimum) one single-mode insensitive lead-in fiber for each zone
Standard, External Power Supply	• 12-volt external power supply • Maximum power output: 24 watts
Front-panel Display	LED indicators for normal, fault, and alarm conditions for each zone
Communications	• USB serial port for tuning and for assigning zones to optical ports • TCP/IP port for alarm output and XML communication • Individual dry contact alarm and fault relays for each zone
Relay Contact Ratings **Alarm Relay Default** **ACC Bus Fault Relay Default** **Individual Zone Fault Relays**	100 mA @ 24 V Normally closed Normally open, or normally closed Normally closed Normally closed
Dimensions	• Height: 4.5 cm (1.77 inch) - 1U • Width: 42.5 cm (16.75 inch) • Depth: 40.6 cm (16 inch); compatible with standard 19" rack

[1] Sensing cable is available pre-installed in conduit (FSI product: SC3-C), for directly attaching to the fence using stainless steel wire ties. The maximum continuous length of pre-installed sensing fiber in conduit is 800 meters. If longer lengths are required, please contact your territory representative.

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