

FD50x Fiber-optic Intrusion Detection System Specification Sheet

Designed to detect potential intruders attempting to breach a perimeter, the **FD504™/FD508™** Alarm Processing Unit (APU) is a 1-U rack-mounted module designed for standard 19-inch equipment racks. The **FD504/FD508** 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. The sensing fiber can be deployed on a variety of barriers including chain link, decorative metal fences, and cement walls. The fiber-optic processor launches a coherent laser light down a specially designed fiber-optic sensor cable. The return light is then analyzed for disturbances caused by potential intruders who create vibrations on the protected perimeter. When the **FD504/FD508** detects intruders, it annunciates the alarm through relay contacts or an IP interface.

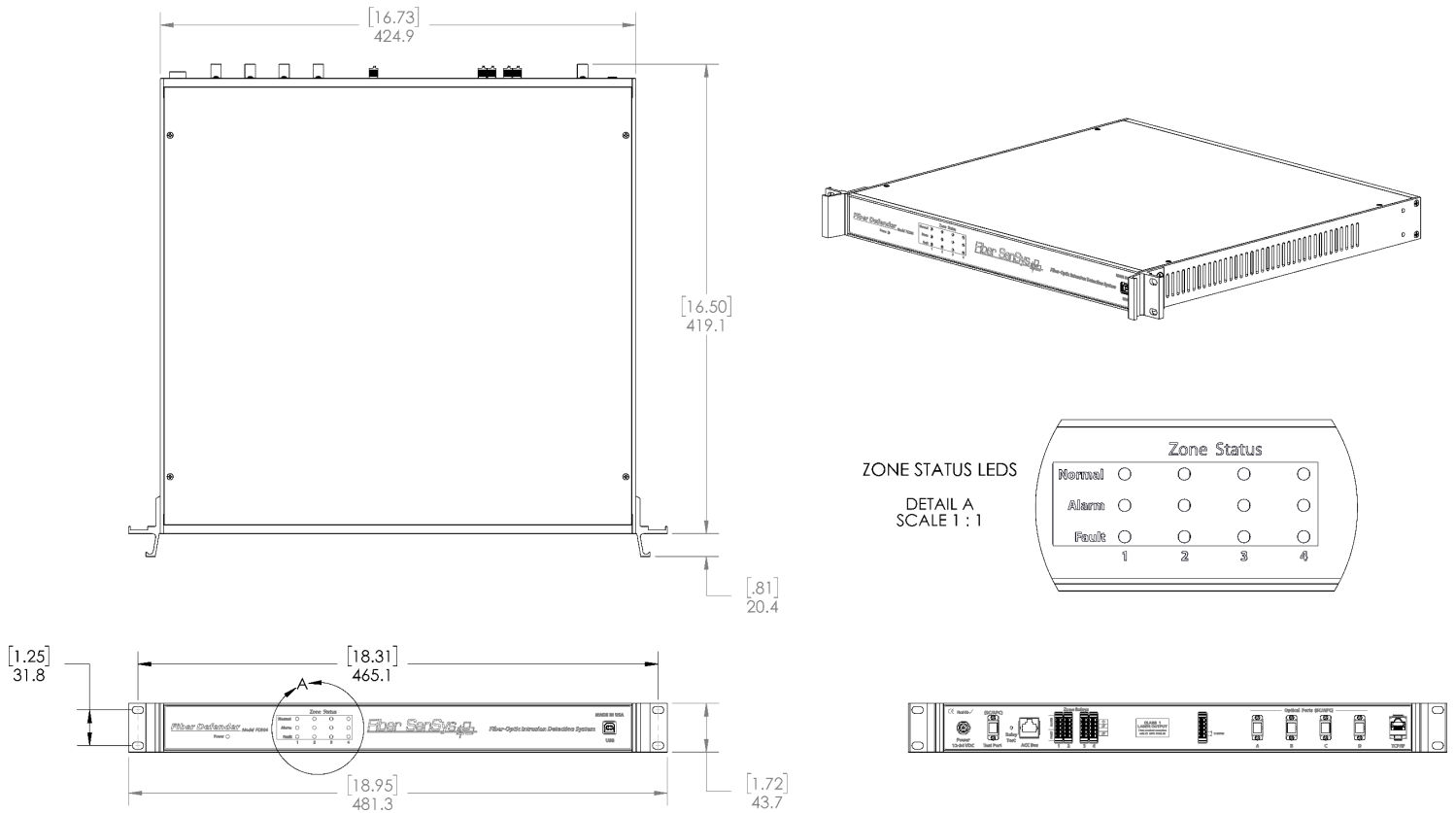


The **FD508** monitors up to eight different sensing fiber zones, and the **FD504** is a four-zone model. Each sensing fiber can be up to 800 meters (2,624 feet) in length for maximum perimeter protection.

FEATURES	APPLICATIONS
Remote APU deployment with insensitive lead-in cable capability	Electrical Substations
Nuisance alarm discrimination with built-in tuning software	Oil and Gas Facilities
Integration capability with head end / annunciator panels	Nuclear Power Plants
Immune to EMI, RFI, and lightning	Solar Power Generation Facilities
Environmental noise compensation	Military and Government Facilities
Linear, uniform sensitivity	Commercial Installations

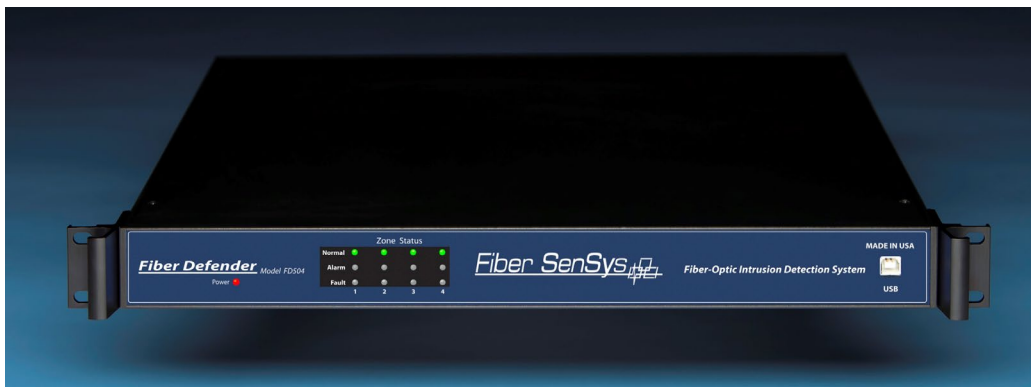
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ALARM PROCESSOR UNIT DIAGRAM



Notes:

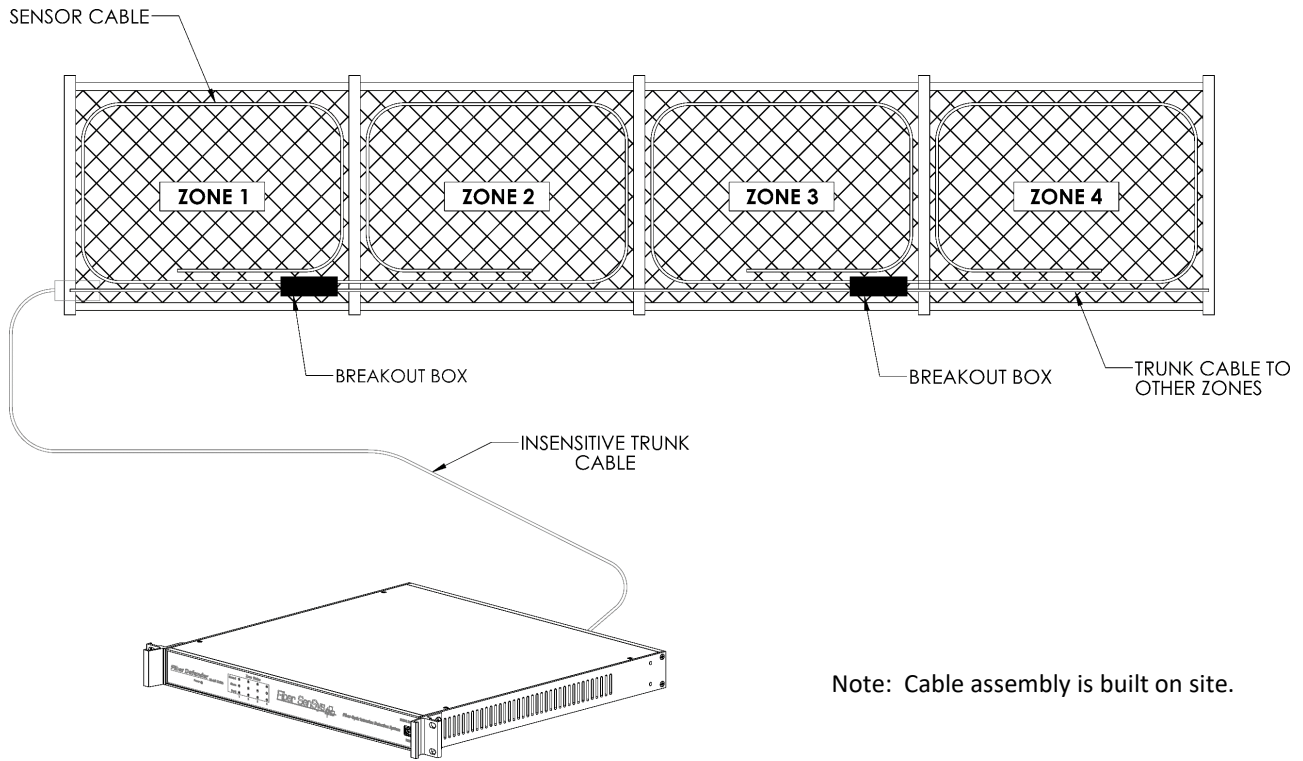
1. Allow 4 inches / 102mm minimum free space behind unit for cabling and removal of relay module plugs
2. Dimensions shown as [inches]/mm.



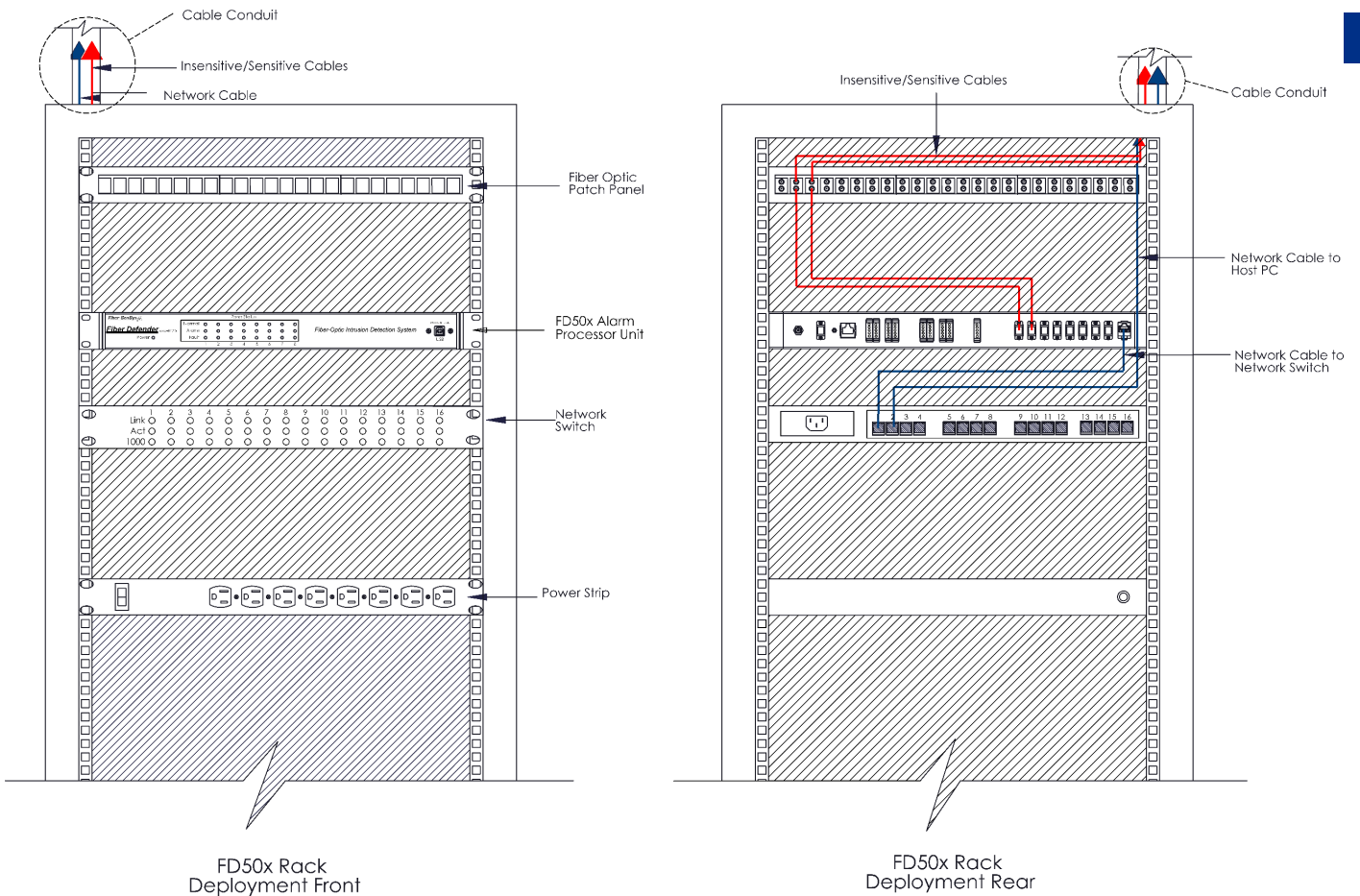
The **FD504/FD508** Alarm Processing Unit (APU) is compatible with all industry-leading head end systems.

For specific design and applications of the **FD504** and **FD508**, please refer to application notes, available on the Fiber SenSys website or contact your territory representative.

APPLICATION DIAGRAM



Note: Cable assembly is built on site.



PRODUCT 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	FD504: Up to four (4) fully independent zones FD508: Up to eight (8) fully independent zones
Sensing Fiber	Multimode fiber, custom manufactured to FSI specifications
Insensitive Lead-in Fiber	Single-mode fiber
Sensing Cable / Zone Lengths ¹	<ul style="list-style-type: none"> • For each zone, sensing fiber + insensitive lead-in cable ≤ 5.8 km • 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
APU Power Requirements	12 -24 VDC input 19 watts power consumption (maximum)
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	<ul style="list-style-type: none"> • 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 Dry Contact Resistance	100 mA @ 24 V Normally open, or normally closed Normally closed Normally closed 7 Ω typical, 17 Ω max (Form A) 5 Ω typical, 17 Ω max (Form B)
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
Operating Temperature Range Operating Humidity Range	0°C to 55°C 0 to 95% non-condensing
Regulatory Compliance	CE, FCC Part 15, RoHS

¹ Sensing fiber is available pre-installed into conduit (FSI product SC3-C) for directly attaching to the fence using stainless steel wire ties. The maximum length of pre-installed sensing fiber in conduit available is 800 meters.

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