Fiber SenSys®
AN OPTEX GROUP COMPANY

FD322 Fiber-optic Intrusion Detection System
Specification Sheet

The **Fiber Defender® FD322** is a value-priced, easy-to-use, high-performance fiber-optic intrusion sensor designed to detect intruders that are cutting through, climbing over, or crawling under a perimeter fence.

Each alarm processing unit (APU) supports two zones, and each zone can support up to 500 meters of sensing cable. The APU features XML integration via TCP/IP. An optional tamper-proof enclosure is available for easy mounting at the perimeter.

The sensor element is a rugged multimode optical fiber integrated into a specialized cable and installed inside conduit that is attached to the fence using stainless steel wire. This configuration results in an extremely robust fence-mounted sensor that is unaffected by rain, hail, salt spray, or humidity. The fiber optic sensor, cable, and conduit are dielectric and 100% passive so they can be used in areas with high electromagnetic interference and/or areas with flammable/explosive materials.
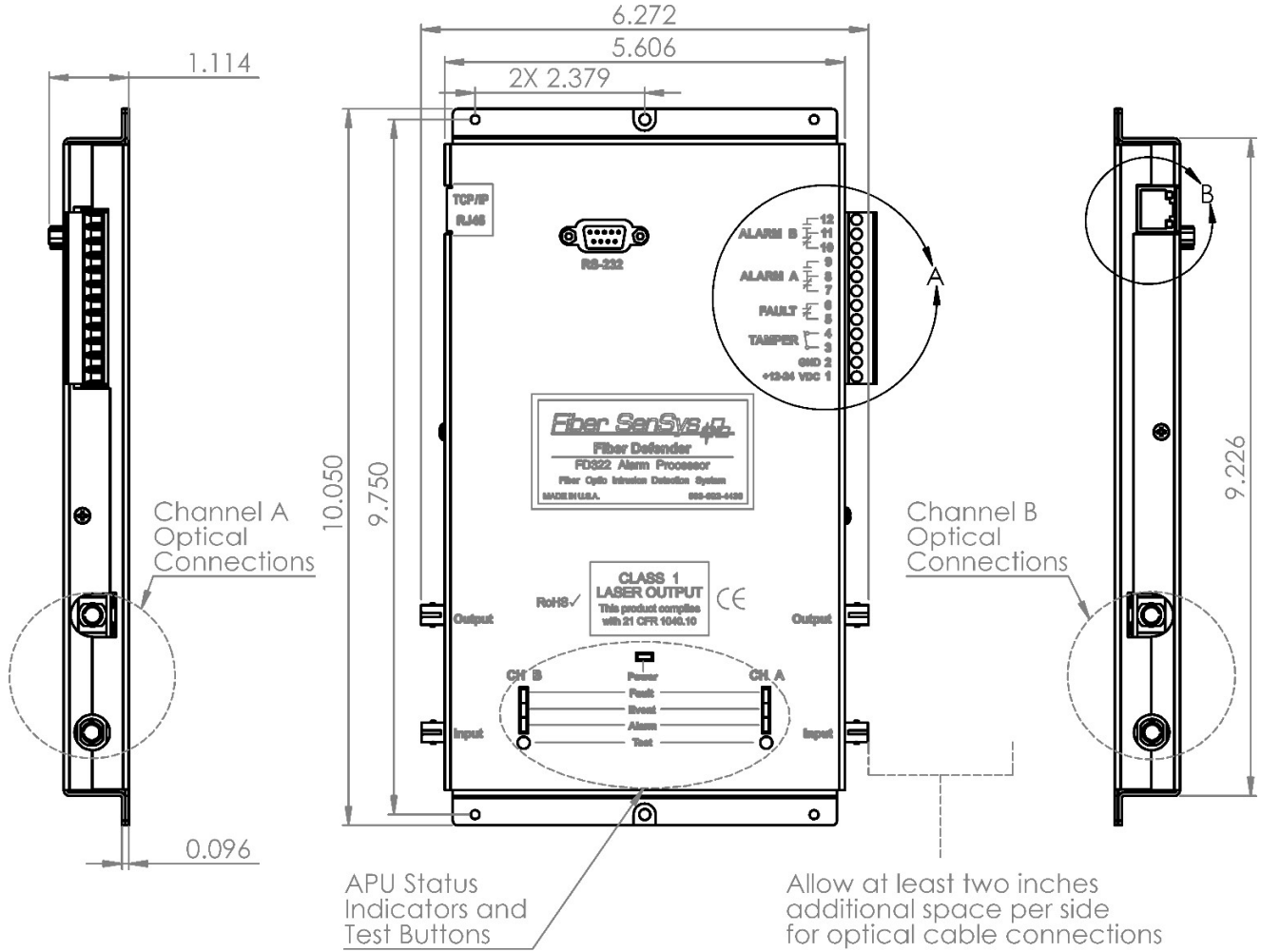
The fiber-optic sensor is especially applicable to areas frequented by severe thunderstorms and lightning because the optical fiber cable/conduit will not conduct electrical discharge back to the APU, and because the sensing fiber is unaffected by EMI resulting from lightning strikes.
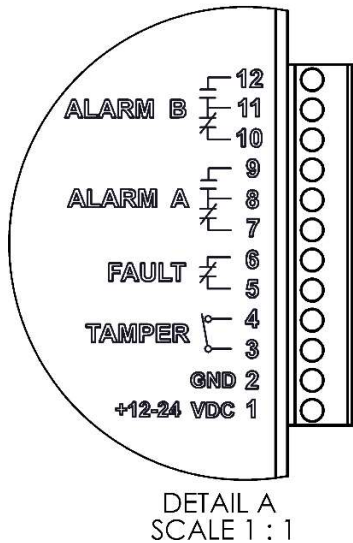
FEATURES	APPLICATIONS
Two zones per APU, each fully independent and tunable	Construction sites
Up to 500 meters of sensing fiber per zone	Garden centers
TCP/IP communications port	High-end residences
Linear sensitivity	Corporate buildings
Simple user interface	Manufacturing plants
Automatic adaptive wind rejection	RV/Marine storage

For more information, contact us at:
info@fibersensys.com
Tel: +1(503) 692-4430
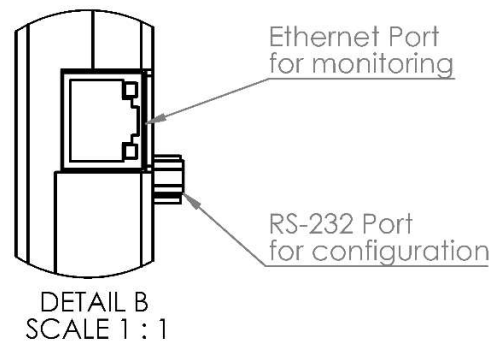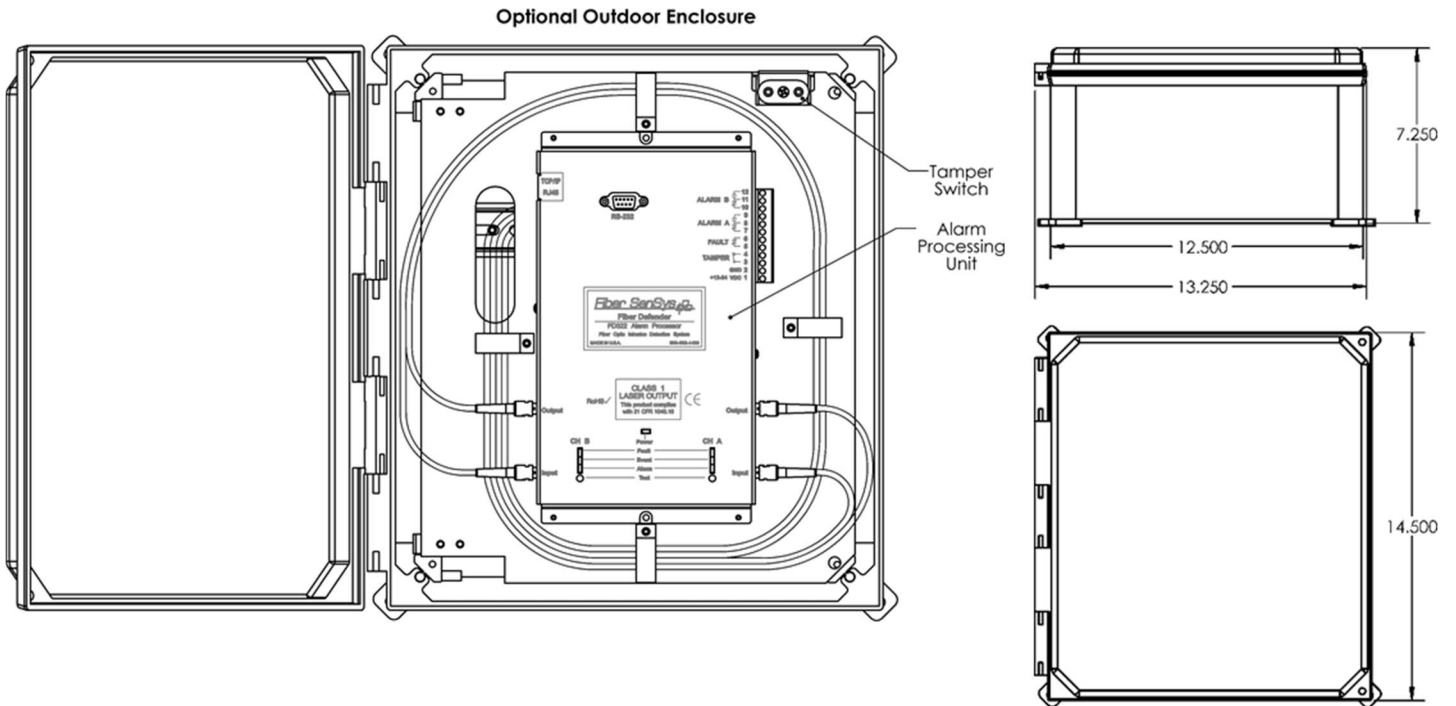**Toll free (US) +1(800) 641-8150**
www.fibersensys.com

FD322 ASSEMBLY DIAGRAM

Channel A Optical Connections

Channel B Optical Connections

APU Status Indicators and Test Buttons

Allow at least two inches additional space per side for optical cable connections

Power, Relay, and Tamper Connection Arrangement

ALARM B — 12, 11, 10
ALARM A — 9, 8, 7
FAULT — 6, 5
TAMPER — 4, 3
GND 2
+12-24 VDC 1

DETAIL A
SCALE 1 : 1

Ethernet and Serial Connections

Ethernet Port for monitoring

RS-232 Port for configuration

DETAIL B
SCALE 1 : 1

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FD322 ENCLOSURE DIAGRAM

Optional Outdoor Enclosure

Tamper Switch

Alarm Processing Unit

7.250

12.500

13.250

14.500

FD322 APPLICATION BLOCK DIAGRAM

Ethernet Connection To Network

To Head-end
Channel B Alarm Status
Channel A Alarm Status
Fault Status
To Tamper Switch
To Ground
12 to 24 VDC

Protected Zone

Sensing Fiber

Sensing Fiber

Protected Zone

Fiber Coupling Options

ST Connector

ST Mating Sleeve

Splice Protector

- OR -

Fiber

ST - ST Connector Mating with Mating Sleeve

Fiber Coupling with Fusion Splice
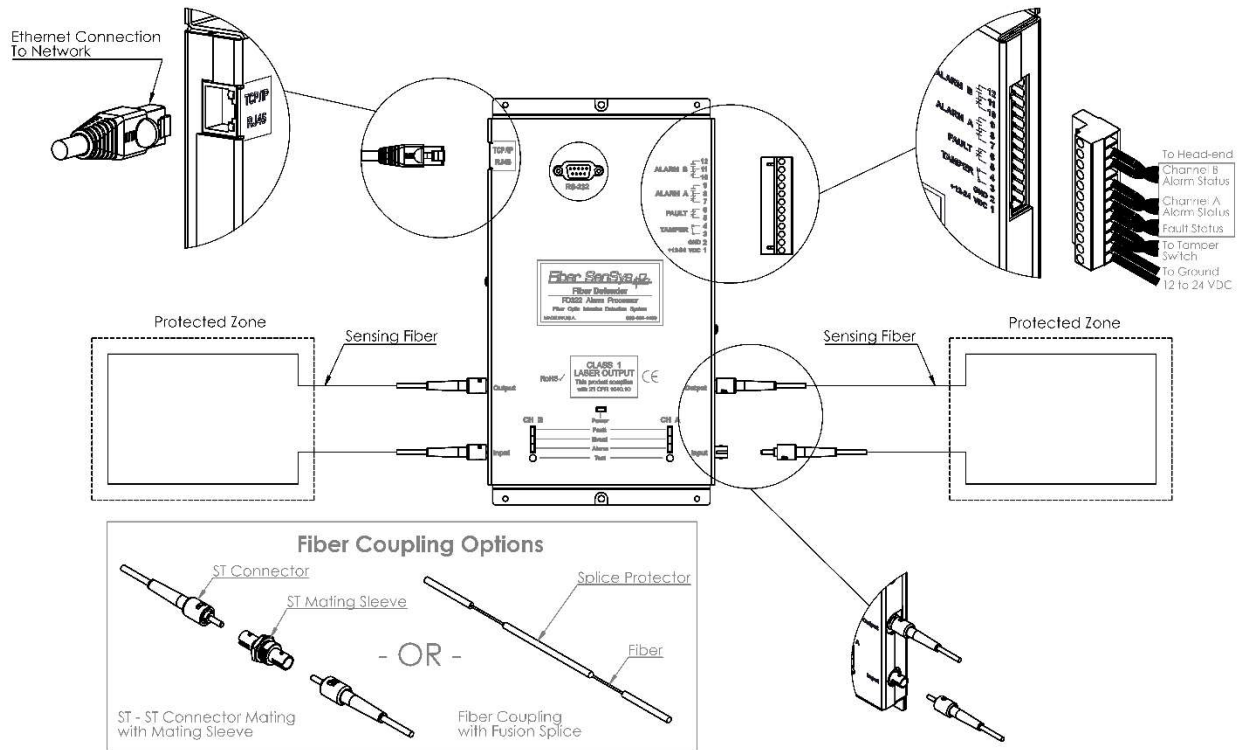
FD322 PRODUCT SPECIFICATIONS

Application	Perimeter Fence
Sensor	• Multimode optical fiber cable • Passive, inert, intrinsically safe • Resistant to EMI and corrosion • -40°C to +70°C operating range
Installation	• Sensing cable in conduit • Conduit attached to fence with wire ties • Loop-back zone configuration
Insensitive Lead-in Fiber	No
Number of Zones / APU	2
Maximum Sensing Cable per Zone	500 meters (loop-back design will affect distance)

Input Power Requirements
    Voltage
    Power
	
	12-24 VDC
	4.0 Watts @ 25°C

Programming Method	RS-232 using laptop PC
Communications	RS-232 serial communications, TCP/IP
Fault and Alarm Relays	Contact ratings: • 28 to 14 AWG • 100 mA, 24 VDC non-inductive Relay defaults when the APU is in secured status: • Fault relay – Normally Closed (NC) • • Alarm relay – Normally Open or Normally Closed (NO/NC)
Light Source	• Type = laser • Average power = 5 mW max • Wavelength = 1310 nm • Class 1 laser
Optical Connectors	ST, PC polish
APU Dimensions	• Width: 5.6 in (14.3 cm) • Length: 10.1 in (25.7 cm) • Height: .94 in (2.4 cm)
Operating Temperature Range (APU)	-40 °C to +70°C
Operating Temperature (Sensor)	-40 °C to +85°C
Operating Humidity Range (APU)	0-90%, non-condensing
Operating Humidity Range (sensor)	0-100%
Regulatory Compliance	CE, FCC Part 15, RoHS
Product Compatibility	Fiber Commander™
Tuning Parameters	• Sensitivity (for cuts and climbing) • Number of events before alarming (for cuts and climbing) • Low-frequency cutoff (cuts/climbing) • Wind rejection • Tamper (enable/disable) • Alarm relay time

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