Fiber SenSys

Specification Sheet

Fiber Defender Model FD-341/FD-342
Alarm Processing Unit

FD-341/FD-342

The Fiber Defender Model FD-341/FD-342 Alarm Processing Unit (APU) is a next-generation alarm processor compatible with insensitive lead-in fiber optic cable. The use of insensitive lead-in cable allows the APU to be mounted up to 20 kilometers away from the protected zone, leaving only the inert fiber optic sensor cable deployed in the zone. This feature makes the FD-341/FD-342 an ideal platform for protecting areas in or near EMI/RFI fields, areas of extreme temperatures, or for protecting environments with corrosive and flammable materials harmful to electronic components. The FD-341 is a single-channel model while the FD-342 is a dual-channel alarm processor, capable of supporting two separate runs of fiber optic sensor cable.

The FD-332 APU can connect to and support sensor cable from two detection zones, regardless of their applications. Each channel in the APU can be programmed separately for fence line or buried deployments. Both channels support up to 5 km (16,400 feet/3.1 miles) of sensor cable.

The FD-341/FD-342's digital signal processing enables detection and analysis of sensor cable stimulation. The Digital Signal Processor (DSP) also provides discrimination between natural phenomena and intrusion attempts. Using a pre-programmed algorithm, the FD-341/FD-342 senses wind effects and continuously adjusts the system sensitivity to compensate.

Two alarm relay outputs are provided in each FD-341/FD-342 channel: a normally-open and a normally-closed set of relay contacts. The corresponding relay changes state

The FD-342 dual-channel APU supports dual-channel operation and incorporates the use of insensitive leads

when the APU detects an alarm condition from the sensor cable.

The FD-341/FD-342 is fully compatible with the Fiber Security Network (FSN). Using FSN, up to 127 zones can be interconnected in a single system that provides full integration with a central station or remote control software. Optionally, the FD-341/FD-342 can be fitted with an RJ-45 connector for IP/XML communication.

Each FD-341/FD-342 APU comes as either a stand-alone unit or mounted in an optional fiberglass NEMA 4X enclosure.

The FD-341/FD-342 Alarm Processing Unit is designed and manufactured in the U.S.A., and is backed by a full two-year warranty.
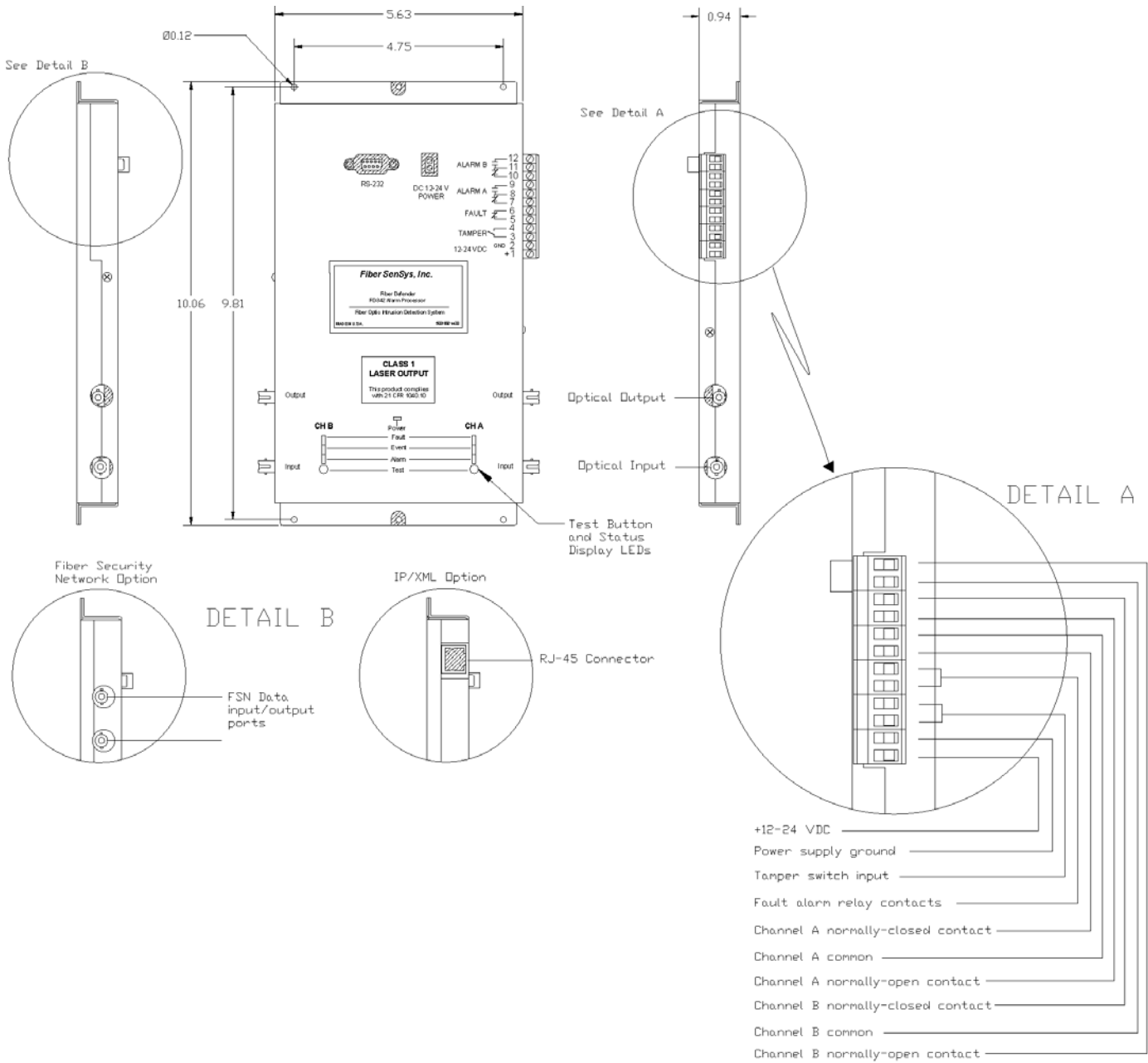
Features	Applications	Deployments
Sensor immune to lightning and EMI	Commercial	Fences
Supports dual-zone operation	Oil pipelines	Buried
Zones up to 5 km long	Chemical depots	Walls
20 km remote operation	Military facilities	Gratings
IP/XML communication option	Campuses	Rooftops
Linear, uniform sensitivity	Electrical substations	Lawns
Adaptive wind processing	Corrections	Beaches

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5.63

4.75

Ø0.12

See Detail B

0.94

See Detail A

RS-232

DC 12-24 V POWER

ALARM B — 12, 11, 10

ALARM A — 9, 8, 7

FAULT — 6, 5

TAMPER — 4, 3

12-24 VDC GND — 2, +1

10.06   9.81

Fiber SenSys, Inc.

Fiber Defender
FD-342 Alarm Processor

Fiber Optic Intrusion Detection System

CLASS 1
LASER OUTPUT
This product complies
with 21 CFR 1040.10

Output   Output   Optical Output

CH B   Power   CH A
              Fault
              Event
              Alarm
Input   Test   Input   Optical Input

Test Button
and Status
Display LEDs

Fiber Security
Network Option

DETAIL B

FSN Data
input/output
ports

IP/XML Option

RJ-45 Connector

DETAIL A

+12-24 VDC
Power supply ground
Tamper switch input
Fault alarm relay contacts
Channel A normally-closed contact
Channel A common
Channel A normally-open contact
Channel B normally-closed contact
Channel B common
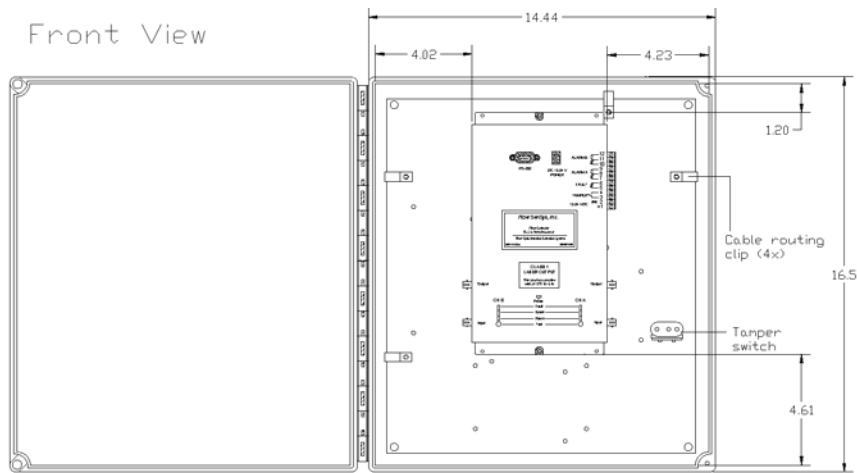Channel B normally-open contact

NOTES:

1. All units in inches unless otherwise noted

2. Channel A only for FD-341 models

FD-341/FD-342 Enclosure Drawing

Front View

NOTES:
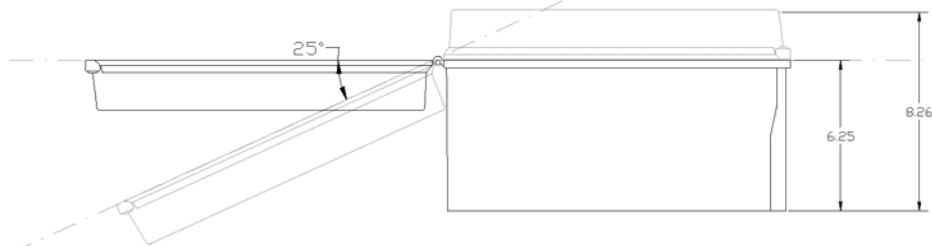
1. All units in inches unless otherwise noted
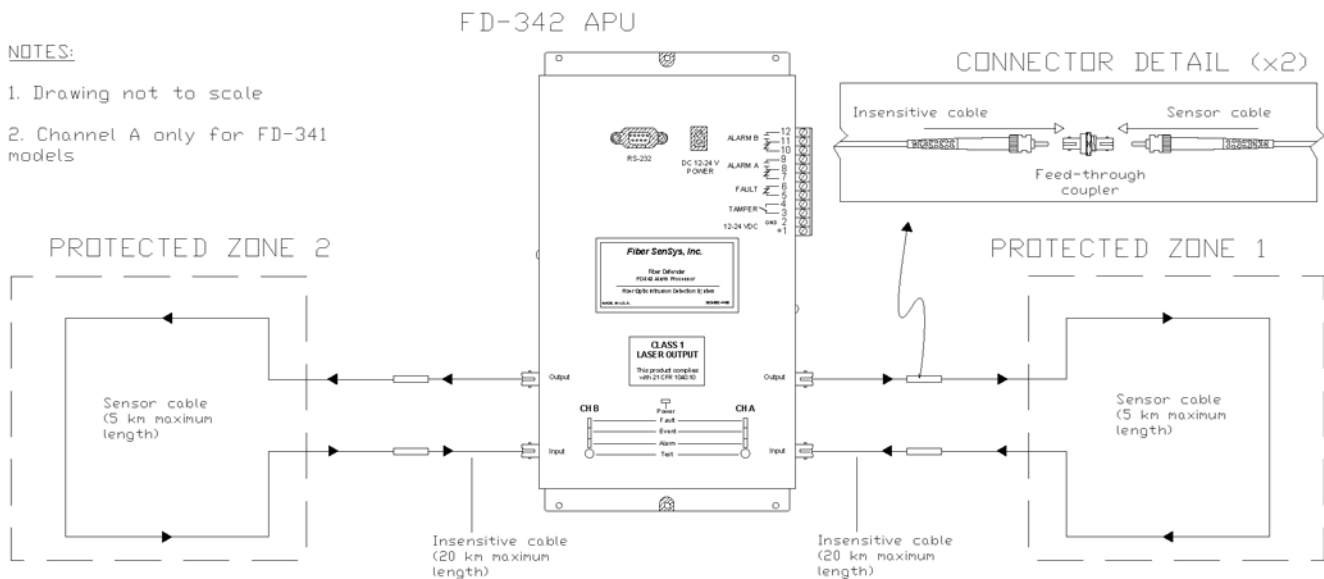
2. Channel A only for FD-341 models

Cable routing clip (4x)

Tamper switch

Bottom View

FD-341/FD-342 Application Block Diagram

FD-342 APU

NOTES:

1. Drawing not to scale

2. Channel A only for FD-341 models

CONNECTOR DETAIL (x2)

Insensitive cable   Sensor cable

Feed-through coupler

PROTECTED ZONE 2

PROTECTED ZONE 1

Sensor cable (5 km maximum length)

Sensor cable (5 km maximum length)

Insensitive cable (20 km maximum length)

Insensitive cable (20 km maximum length)

CLASS 1 LASER OUTPUT
This product complies with 21 CFR 1040.10

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Product Specifications   FD-341/FD-342

Number of Channels	1 (FD-341) or 2 (FD-342)

Input Power Requirements
    Voltage
    Power
	
	12-24 VDC
	3.0 Watts @12 VDC

Communications	RS-232 serial communications (standard), Fiber Security Network (FSN) compatible (FSN option) or IP/XML (IP option)
Programming Method	RS-232 using laptop PC or Hand Held Calibrator
Alarm Output	100 mA normally-closed/normally-open relay contacts on each channel
Alarm Relay Ratings	28 to 14 AWG 100 mA, 24 VDC non-inductive
Operating Temperature Range Humidity	-30°C to 55°C 90% non-condensing

Maximum Cable Length
    Sensor Cable
    Insensitive Leads
	
	5 km (16,400 feet/3.1 miles) per channel
	20 km to protected zone

Sensor Cable Sensitivity Alarm Relay Activation Duration	Uniform over entire length Programmable
APU Dimensions	10.06 in x 5.63 in x 0.94 in (25.55 cm x 14.30 cm x 2.39 cm) H x W x D
NEMA Enclosure Dimensions	16.50 in x 14.44 in x 8.26 in (41.91 cm x 36.68 cm x 20.98 cm) H x W x D
NEMA Enclosure Material	Fiberglass polyester NEMA-EEMAC type 4x UL 508. Type 4 and 5 standards with an enclosure flammability rating of UL94-5V

Ordering Information

Fiber optic sensor cable types Fiber optic insensitive lead in cable	Fiber SenSys part #SC-3 (fence), SC-4 (buried) Fiber SenSys part #IC-3 (3mm), IC-3D (duplex), IC-4 (buried)

Conduit Kits (required for fence line applications)
    EZ-300NSS
    EZ-300SS
	
	100m non-split conduit kit
	100m split conduit kit

Alarm Processing Units

FD-34X-X-X

Specify "1" for single channel or "2" for dual channel

Specify "IP" for IP/XML capability, "FSN" for FSN compatibility, or leave blank for relay contacts only

Add an "E" to include the NEMA enclosure option