FD525–HALO™ Intrusion Detection System

*Streamlined Installation for up to 25 Zones*

The FD525-HALO™ is an easy-to-install fiber-optic intrusion detection system with up to 25 independent zones, impressive probability of detection (PD) and unmatched nuisance alarm discrimination.

The FD525–HALO™ from Fiber SenSys, Inc. (FSI) is a perimeter security intrusion detection system designed for quick and easy installation at a competitive price. This solution solves many perimeter security problems inherent at commercial, industrial and critical infrastructure facilities using a security system based on fiber optics. The FD525–HALO™ reduces the installation cost of a typical perimeter security system and makes the FSI intrusion detection system more affordable than ever.

- Streamlined installation with hybrid cable sensor
- Fusion splice capable
- Cut-tolerant design
- Nuisance alarm discrimination

The FD525–HALO™ uses proven technology that has been successfully deployed in thousands of high-security facilities throughout the world, in a low-priced and easy to use sensor. Built with maximum design flexibility, the FD525–HALO™ uses the power of fiber optics to identify intrusion attempts along a perimeter. When one or more zones are breached, the system instantly identifies the zone of each intrusion attempt, while continuing to monitor the rest of the perimeter.

The FD525–HALO™ detects multiple simultaneous intrusion attempts where and when they happen, making the Fiber SenSys system extremely difficult to defeat. This information is graphically displayed and immediately communicated for prompt incident response.

Applications:
- Commercial and Industrial
- Power, Energy and Water Utility sites
- Transportation and Aviation facilities
- Fence or wall mount installations

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FD525-HALO™ Features and Benefits

- Up to 25 fully independent zones with a maximum cable length of 5.8 km (3.6 miles)
- A unified cable design multiplexed through a multi-fiber hybrid cable and breakout boxes
- Durable fiber-optic sensing unaffected by chemical, electrical or environmental elements such as corrosion, RFI, EMI, and lightning
- XML via Ethernet and relay modules ensures a high level of integration and communication options
- The system can be fully integrated with head end systems for a total system solution when combined with other security elements such as video cameras and other third-party devices.
- Insensitive lead-in cable allows for remote APU deployment – up to 5 km maximum length
- Tuning and calibration discrimination software in the FD500 Series Software Suite eliminates nuisance alarms

FD525-HALO™ INSTALLATION DIAGRAM

- Fence Line Scale 1:25
- Fence Fabric Omitted for Clarity
- Zone 1
- Two Meter Service Loop (view line of at least 1 fence (zone from breakout box))
- UV-Resistant Nylon Ties Attach Breakout Box to fence
- (should only pass through the rear half of the splice enclosure for serviceability)
- Hybrid Cable
- (the sensor and trunk cable are both integrated into one cable)

Detail A - Breakout Box Installation Scale 2:3

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DISTRIBUTION ASSEMBLY SPECIFICATIONS

**Exterior Dimensions**
- Width: 6.55 in (16.64 cm)
- Length: 14.00 in (35.54 cm)
- Height: 2.44 in (6.19 cm)

**Industry Standards**
- ISO 9001 / 2000 manufacturing Compliance
- Modified Telcordia TR-NWT-000251

**Operating Temperature**
- -40 degrees to +70 degrees centigrade (-40° to 158° F.)

**Splicing Capacity**
- Supports up to 48 single-fusion splices.

**Weight**
- 3.5 lbs.
### FD525-HALO™ Assembly

<table>
<thead>
<tr>
<th>Sensor configuration</th>
<th>Fully independent zones, time-domain multiplexed through a multi-fiber hybrid cable and breakout boxes.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unified cable</td>
<td>One multimode fiber with five single mode fibers integrated into a rugged unified cable, custom manufactured to FSI specifications</td>
</tr>
<tr>
<td>Insensitive lead-in fiber</td>
<td>• Single-mode fiber, custom manufactured to FSI specifications  &lt;br&gt; • Maximum length: 5 km</td>
</tr>
<tr>
<td>Zone/cable lengths</td>
<td>• Minimum distance between nodes: 20 m (65.6 ft.)  &lt;br&gt; • Maximum distance between nodes: 800 m (2625 ft.)  &lt;br&gt; • Maximum cable length (not including insensitive lead-in): 5.8 km (3.6 mi)</td>
</tr>
</tbody>
</table>

### Alarm Processing Unit

<table>
<thead>
<tr>
<th>System type</th>
<th>Vibration-sensing intrusion detection system</th>
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</thead>
<tbody>
<tr>
<td>Number of zones per APU</td>
<td>Up to twenty-five fully independent zones.</td>
</tr>
<tr>
<td>APU power requirements</td>
<td>• 90 to 250 VAC input  &lt;br&gt; • 17 watts power consumption (maximum)  &lt;br&gt; • Fuse rating: 1.25 A</td>
</tr>
<tr>
<td>Communications</td>
<td>• USB serial port for assigning zones to optical ports, and for tuning  &lt;br&gt; • TCP/IP port for alarm output and XML communication  &lt;br&gt; • Individual dry contact alarm and fault relays for each zone  &lt;br&gt; • Dry contact alarm relay for tamper.</td>
</tr>
<tr>
<td>Contact ratings</td>
<td>100 mA @ 24 VDC non-inductive</td>
</tr>
<tr>
<td>Fault relay default</td>
<td>Normally closed</td>
</tr>
<tr>
<td>Alarm relay default</td>
<td>Normally open, and normally closed</td>
</tr>
<tr>
<td>ACC bus fault relay default</td>
<td>Normally closed</td>
</tr>
<tr>
<td>Network Port</td>
<td>Ethernet 10 Base-T/100 Base-TX (RJ-45)</td>
</tr>
<tr>
<td>Dimensions</td>
<td>Height = 8.81 cm (3.47 inch)  &lt;br&gt; Width = 48.16 cm (18.96 inch)  &lt;br&gt; Length = 42.52 cm (16.74 inch)</td>
</tr>
<tr>
<td>Operating temperature range</td>
<td>0°C to 55°C (32°F to 131°F)</td>
</tr>
<tr>
<td>Operating humidity range</td>
<td>0 to 95% non-condensing</td>
</tr>
<tr>
<td>Compliance</td>
<td>CE, FCC Part 15, RoHS</td>
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</tbody>
</table>

The FD525-HALO™ employs an insensitive lead-in cable, up to 25 individual zones, the distribution box and zone kit enclosures. The hybrid cable is attached to a fence, wall, or other perimeter barrier. If the barrier is disturbed, the FD525-HALO™ immediately detects a change and instantly sends operators a message identifying the location of the intrusion attempt.

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