FRAY-ONE-EN Linear beam detector, standalone

The FRAY-ONE-EN is an easy to mount and cost-effective linear beam detector. It covers distances between 5 m and 120 m. A reflective prism allows for the accurate detection of smoke particles within the given distance range.

For ranges between 5 m and 50 m, one prism is sufficient. For ranges between 50 m and 120 m, four prisms are required. The additional prisms are included in the FRAY5000-LR-KIT.

Key application areas are large halls such as historical buildings, churches, museums, shopping centers, factory halls, warehouses, etc. The FRAY-ONE-EN is suitable for use in areas where point-type detectors are not effective.

**Functions**

**Detection performance**
- Building Movement Tracking: Compensates for natural shifts in alignment from building movement
- Contamination Compensation: Compensates for gradual build-up of contamination on the optical surfaces
- Light Cancellation Technology: Compensates for high levels of sunlight and artificial lighting
- Optical wavelength - smoke detection: 850 nm near infrared (invisible)
- Integrated laser - laser alignment: 650 nm visible. Class IIa <5 mW
- Dynamic Beam Phasing: Allows beam detectors to be mounted facing each other with the reflectors in the middle. Eliminates false alarms caused by crosstalk between beams

**Programmable user settings**
- Alarm response threshold levels:
  - 25% (1.25 dB) - Fastest response to smoke (EN 54-12 approved)
  - 35% (1.87 dB) - Default value (EN 54-12 approved)
  - 55% (3.46 dB) - High immunity to false alarms, slow response to smoke
  - 85% (8.23 dB) - Highest immunity to false alarms, slowest response to smoke
- Configured via the integrated user interface

**Delay to alarm:** 10 seconds, for momentary partial obstruction of the beam path
**Delay to fault:** 10 seconds, for momentary obstruction of the beam path

**User features**
- Integrated user interface: Alignment mode switch, alignment directional buttons and configuration switches for alarm response threshold
- Alignment status indication: 2 Green LEDs and 1 Yellow LED
- System status indication:
  - Normal operation - Green LED flashing every 10 seconds
  - Alarm condition - Red LED flashing every 10 seconds
  - Fault condition - Yellow LED flashing every 10 seconds for obscuration or every 5 seconds for contamination
• Cleaning: Flat front face with enclosed optics. Cleaning the optics does not affect alignment.

**Design parameters**
• Beam path clearance: 1 m in diameter from center line between detector and reflector
• Detector location: Within the ceiling jet flow (top 10% of the floor to ceiling height) unless otherwise stipulated

**Field wiring**
• Cable gauge and type:
  - 2 core, dedicated, 0.5 to 1.6 mm
  - System compatible with fireproof and non-fireproof cable meeting local installation standards
• Cable entry:
  - 3 knock-out locations capable of accepting M20, 12.7 mm or 19 mm glands
  - 4 drill-out locations capable of accepting glands up to 21 mm diameter

**Technical specifications**

<table>
<thead>
<tr>
<th>Component</th>
<th>Quantity</th>
<th>Material</th>
<th>LED color</th>
<th>Color in RAL</th>
<th>Weight (kg)</th>
<th>Weight reflector (kg)</th>
<th>Operating relative humidity, non-condensing (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FRAY-ONE-EN base</td>
<td>1</td>
<td>Plastic</td>
<td>Red</td>
<td>RAL 9016 Traffic white</td>
<td>0.70 kg</td>
<td>0.1 kg</td>
<td>0% – 93%</td>
</tr>
<tr>
<td>FRAY-ONE-EN detector head</td>
<td>1</td>
<td>Plastic</td>
<td>Yellow</td>
<td>RAL 9016 Traffic white</td>
<td>0.70 kg</td>
<td>0.1 kg</td>
<td>0% – 93%</td>
</tr>
<tr>
<td>Reflector</td>
<td>1</td>
<td>Plastic</td>
<td>Green</td>
<td>RAL 9016 Traffic white</td>
<td>0.70 kg</td>
<td>0.1 kg</td>
<td>0% – 93%</td>
</tr>
<tr>
<td>Short range mask</td>
<td>1</td>
<td>Plastic</td>
<td></td>
<td>RAL 9016 Traffic white</td>
<td>0.70 kg</td>
<td>0.1 kg</td>
<td>0% – 93%</td>
</tr>
</tbody>
</table>

**Accessories**
- **FRAY5000-BR Universal bracket**
  Universal bracket
  Order number FRAY5000-BR | F.01U.098.240
- **FRAY5000-1PRISM Prism plate, 1 prism**
  prism plate for 1 prism, for use with universal bracket FRAY5000-BR
  Order number FRAY5000-1PRISM | F.01U.098.242
- **FRAY5000-4PRISM Prism plate, 4 prisms**
  prism plate for 4 prisms, for use with universal bracket FRAY5000-BR
  Order number FRAY5000-4PRISM | F.01U.098.241
FRAY5000-LR-KIT Extension kit, long-range
3 additional prisms
Order number FRAY5000-LR-KIT | F.01U.083.264