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
- Signal output: Individual Alarm and Fault relays (VFCO) 0.5 A @ 30 VDC

**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**

### Electrical
- Auxiliary current (mA) 4.5 mA – 5.5 mA
- Auxiliary current - Alignment modes (mA) 31 mA - 35 mA
- Operating voltage (VDC) 14 VDC – 36 VDC

### Environmental
- Operating relative humidity, non-condensing (%) 0% – 93%

### Mechanical
- Weight (kg) 0.70 kg
- Weight reflector (kg) 0.1 kg
- Color in RAL RAL 9016 Traffic white
- Dimension (H x W x D) (mm) 181 mm x 130 mm x 134 mm
- Dimension reflector (H x W x D) (mm) Up to 50 m separation distance - 1 prism: 100 mm x 100 mm x 9 mm Up to 120 m separation distance - 4 prisms: Four reflectors 200 mm x 200 mm x 9 mm
- LED color Red; Yellow; Green
- Material Plastic

**Regulatory information**

<table>
<thead>
<tr>
<th>Region</th>
<th>Regulatory compliance/quality marks</th>
<th>Details</th>
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<tbody>
<tr>
<td>Europe</td>
<td>CPR</td>
<td>EU-CPR 2831-CPR-F2237</td>
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<tr>
<td>Germany</td>
<td>VdS</td>
<td>G 218070 FRAY-ONE-EN</td>
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<td>Belgium</td>
<td>BOSEC</td>
<td>B-9223-FD-K1066</td>
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**Parts included**

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<tr>
<th>Quantity</th>
<th>Component</th>
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<tbody>
<tr>
<td>1</td>
<td>FRAY-ONE-EN base</td>
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<tr>
<td>1</td>
<td>FRAY-ONE-EN detector head</td>
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<tr>
<td>1</td>
<td>Reflector</td>
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<tr>
<td>1</td>
<td>Short range mask</td>
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**Ordering information**

**FRAY-ONE-EN Linear beam detector, standalone**
Reflective linear beam detector with one prism, range 5 m - 120 m
Order number FRAY-ONE-EN | F.01U.400.533

**Accessories**

<table>
<thead>
<tr>
<th>FRAY5000-BR Universal bracket</th>
<th>Universal bracket</th>
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<tr>
<td>Order number FRAY5000-BR</td>
<td>F.01U.098.240</td>
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<table>
<thead>
<tr>
<th>FRAY5000-1PRISM Prism plate, 1 prism</th>
<th>Prism plate for 1 prism, for use with universal bracket</th>
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<tbody>
<tr>
<td>Order number FRAY5000-1PRISM</td>
<td>F.01U.098.242</td>
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<table>
<thead>
<tr>
<th>FRAY5000-4PRISM Prism plate, 4 prisms</th>
<th>Prism plate for 4 prisms, for use with universal bracket</th>
</tr>
</thead>
<tbody>
<tr>
<td>Order number FRAY5000-4PRISM</td>
<td>F.01U.098.241</td>
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</tbody>
</table>
FRAY5000-LR-KIT Extension kit, long-range
3 additional prisms
Order number FRAY5000-LR-KIT | F.01U.083.264