FCS-LWM-1 Linear Heat Detector

The FCS-LWM-1 is a Linear Heat Detector for detecting fire. Its functionality is based on the change in resistance of an electrical conductor caused by a rise in temperature.

**Functions**

The four copper wires on the sensor cable are each surrounded by a color-coded (orange, white, red, blue) material with a negative temperature coefficient and encased in a thermally resistant external coating. Two copper wires are connected to the bare end of the sensor cable to form two loops. The end of the sensor cable is then hermetically sealed. Both loops are continually monitored. In the event of an interruption or short circuit, the control unit outputs a trouble message.

If the temperature rises, the electrical resistance between the two loops changes. The control unit detects this change and triggers the alarm if the defined response temperature is exceeded. Both short sensor lengths and longer sections with small temperature increases are detected.

**Certifications and Approvals**

<table>
<thead>
<tr>
<th>Region</th>
<th>Certification</th>
<th>Certificate</th>
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</thead>
<tbody>
<tr>
<td>Germany</td>
<td>VdS</td>
<td>G 205066 FCS-LWM-1</td>
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<tr>
<td>Switzerland</td>
<td>VKF</td>
<td>AEAI 19204 LWM1</td>
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<tr>
<td>Europe</td>
<td>CE</td>
<td>FCS-LWM-1</td>
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**Installation/Configuration Notes**

- Ceiling joists with a height of more than 20 cm are calculated as walls. In this case, the distance from sensor cable to joist must be between 1.5 m und 3 m. With ceiling panels measuring less than 3 m in width, it may not be possible to keep these distances. In such a case, the sensor cable must be installed in the centre of the ceiling panel.
- If ceiling joists are between 20 cm and 80 cm high and the overall ceiling area is under 18 m², at least 1 sensor cable of at least 10 m length must be installed overall. (Where possible it is recommended to install 1 sensor cable of at least 10 m length for each of the ceiling segments.)
- If ceiling joists are between 20 cm and 80 cm high and the overall ceiling area is between 18 m² and 36 m², the sensor cable must be distributed over the two ceiling segments so that each ceiling segment is outfitted with a sensor cable of at least 10 m length.
**Parts Included**

<table>
<thead>
<tr>
<th>Quant.</th>
<th>Component</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Detector box with control unit</td>
</tr>
</tbody>
</table>

**Technical Specifications**

**Electrical**
- **Voltage**: 10 to 30 V DC
- **Current consumption**
  - Standby: 25 mA (at 24 V DC)
  - On alarm (ALARM DIFF/ALARM MAX): 25 mA (at 24 V DC)
  - Malfunction: 15 mA (at 24 V DC)
- **Switch-on current**: < 100 mA (at 24 V DC)

**Mechanical**
- **Display**
  - In operation: LED green, continuously lit
  - ALARM DIFF: LED red, continuously lit
  - ALARM MAX: LED red, continuously lit
  - Malfunction: LED yellow, flashing light
- **Test keys**: 2 x for simulating alarm, malfunction and LED test
- **Dimensions (H x W x D)**: 200 mm x 120 mm x 80 mm
- **Material**: ABS
- **Color**: Grey, similar to RAL 7035
- **Weight**: Appr. 550 g

**Environmental conditions**
- **Protection class as per EN 60529**: IP 65
- **Temperature range**: -20 °C to +50 °C
- **Norm applied**: DIN EN 54-5:2000

**Sensor Cables**
- **Features**
  - Blue Sensor Cable: Suitable for use in non-aggressive atmosphere with high humidity
  - Black Sensor Cable with Nylon Coating: Suitable for use in aggressive atmosphere (nylon coating protects against acids and bases)
  - Black Sensor Cable with Steel Netting: suitable for use in aggressive atmosphere (nylon coating protects against acids and bases), the surrounding stainless steel netting reduces the mechanical load of the cable under extreme conditions.

**Ordering Information**

**FCS-LWM-1 Linear Heat Detector**
Usable in constricted spaces and under extreme environmental conditions

**Accessories**

- **Blue Sensor Cable, per Meter**
  suitable for use in non-aggressive atmosphere with high humidity
  LHD4-SC-BLUE

- **Black Sensor Cable with Nylon Coating, per Meter**
  suitable for use in aggressive atmosphere (nylon coating protects against acids and bases)
  LHD4-SC-BLACK

- **Black Sensor Cable with Woven Steel Cover, per Meter**
  suitable for use in aggressive atmosphere (nylon coating protects against acids and bases)
  LHD4-SC-STEEL

- **Terminal Connector for Sensor Cable**
  LHD4-terminal

- **Intermediate Connector for Sensor Cable**
  LHD4-connector