FCS-LHD-2EN Linear heat detector, VdS

The linear heat detector is suitable for protecting a wide range of commercial and industrial applications.

**System overview**

A rise in temperature causes the change in resistance of an electrical conductor.

The control unit provides monitoring of the sensor cable, configuration of alarm and pre-alarm temperatures. Fitted with its own internal temperature monitor, the device raises an alarm if the temperature within the enclosure reaches 100°C. Each control unit can have up to 500m of sensor cable connected to it acting as a single detection zone. Where the sensor cable and the control unit are installed in different areas a suitable interposing cable can be used to make the electrical connection between them.

The sensor cable is a 4 core cable which senses temperature variations by continuously monitoring the resistance of the specially doped Negative Temperature Coefficient (NTC) polymeric insulation. A change in the ambient temperature produces a relative change in resistance which is monitored by the control unit.

Initial set-up is done by measuring and entering the calibration resistance of the sensor cable.

**Functions**

Pre-alarm and alarm thresholds are set by menu options. Volt free changeover contacts for pre-alarm and alarm signaling and a failsafe opto-isolated phototransistor fault output are provided. An isolated input enables resetting the device.

**Regulatory information**

<table>
<thead>
<tr>
<th>Region</th>
<th>Regulatory compliance/quality marks</th>
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</thead>
<tbody>
<tr>
<td>Germany</td>
<td>VdS G220035 FCS-LHD-2EN</td>
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<tr>
<td>Europe</td>
<td>CE FCS-LHD-2EN</td>
</tr>
<tr>
<td>USA</td>
<td>UL FCS-LHD-2EN</td>
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</tbody>
</table>

**Installation/configuration notes**

- The following equipment is required: multimeter for the resistance measurement of the sensor cable
- The commissioning of the control unit can be completely done by using the LCD display. If required the commissioning can also be done by using the laptop and the appropriate software. Contact your support partner to obtain the latest version of the software. For commissioning with laptop a USB cable (5-pin mini-USB plug) is needed to connect to the control unit.
- For connecting two sensor cables use a 4-wire-junction box of suitable class of equipment. Use minimum 30m and maximum 500m of sensor cable per control unit. For installations in accordance with VdS the minimum cable length is 50m.
- 54°C alarm setting is intended for areas with controlled environmental conditions. For the VdS approved alarm setting class A1I/A2I the alarm temperature is 66°C. For class BI the alarm temperature is 80°C.
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### Notice
For connecting the device follow the instructions in the Wiring Guide (document number F.01U.378.911, F.01U.009.201).

### Parts included

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Component</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Analogue control unit</td>
</tr>
<tr>
<td>1</td>
<td>End of line element</td>
</tr>
</tbody>
</table>

### Technical specifications

#### Electrical
- **Operating voltage (VDC):** 20 VDC – 30 VDC

#### Maximum current consumptions
- **Quiescent state, without LCD backlight:** 31mA @ 20Vdc to 20mA @ 30Vdc
- **Alarm and no LCD backlight (mA):** 61mA @ 20Vdc to 39mA @ 30Vdc
- **Alarm and LCD backlight (mA):** 85mA @ 20Vdc to 59mA @ 30Vdc

#### Outputs
- **Pre-alarm relay output:** Form C changeover contact
- **Maximum load, resistive:** 2 A 30 VDC / 0.25 A @ 250 VAC
- **Alarm relay output:** Form C changeover contact
- **Maximum load, resistive:** 2 A 30 VDC / 0.25 A @ 250 VAC
- **Fault:** Opto-isolated phototransistor output
- **Maximum load:** Max. voltage 35 Vdc, Max. current 80mA, Max. power 150mW

#### Inputs
- **Reset:** Isolated input for resetting module 5 to 28 VDC pulse for 3s
- **Maximum zone length (m):** 500
- **Minimum zone length (m):** 50 (installation according VdS) / 30 (installation not according VdS)

#### Mechanical
- **Material:** Plastic
- **Color:** Gray

### Environmental
- **Operating temperature (°C):** -20 °C – 50 °C
- **Operating relative humidity, non-condensing (%) (ambient temperature -20°C to +30°C):** 0% – 95%
- **Operating relative humidity, non-condensing (%) (ambient temperature > 30°C):** 0 – 75%
- **Environmental class (EN 50130-5):** II

#### Sensor cable PVC
- **Color:** Red
- **Weight per 100 m (kg):** 2.56 kg
- **Wire diameter (mm):** 4.83 mm
- **Operating temperature (°C):** -40 °C – 125 °C
- **Operating relative humidity, non-condensing (%):** 0% – 99%

#### Sensor cable nylon
- **Color:** Black
- **Weight per 100 m (kg):** 3.63 kg
- **Wire diameter (mm):** 6 mm
- **Operating temperature (°C):** -40 °C – 125 °C
- **Operating relative humidity, non-condensing (%):** 0% – 99%
- **Environmental class (EN 50130-5):** II

#### Sensor cable steel
- **Color:** Silver
- **Weight per 100 m (kg):** 3.93 kg
- **Wire diameter (mm):** 5.33 mm
- **Operating temperature (°C):** -40 °C – 125 °C
Fire Alarm Systems - FCS-LHD-2EN Linear heat detector, VdS

Operating relative humidity, non-condensing (%) 0% – 99%

Environmental class (EN 50130-5) II

Ordering information

FCS-LHD-2EN Linear heat detector, VdS
Conventional linear heat detector with LCD display.
Order number FCS-LHD-2EN | F.01U.393.476

Accessories

FCS-LHD2EN-CONN Connection module, VdS
Junction box to connect two sensor cables.
Order number FCS-LHD2EN-CONN | F.01U.395.478

FCS-LHD2EN-EOL End-of-line module, VdS
Spare part, required for terminating sensor cable line.
Order number FCS-LHD2EN-EOL | F.01U.395.477

FCS-LHD2EN-FIX Fixing base, 20mm
Fixing base for sensor cable, the package includes 200 pieces.
Order number FCS-LHD2EN-FIX | F.01U.398.503

FCS-LHD2EN-DOW Dowel collar
Dowel collar for Fixing base, the package includes 200 pieces.
Order number FCS-LHD2EN-DOW | F.01U.398.504

FCS-LHD2EN-CLIP L-Clip, 50mm
L-Clip Zintec to mount sensor cable. Delivery unit: 100 pcs.
Order number FCS-LHD2EN-CLIP | F.01U.395.480

FCS-LHD2EN-SLE Silicone sleeves
Spare part, required for mounting sensor cable to L-Clip.
Delivery unit: 100 pcs.
Order number FCS-LHD2EN-SLE | F.01U.395.479

FCS-LHDSC-EN100 Sensor cable PVC, VdS, 100m
Sensor cable red, PVC outer sheath, resistant to dust and water. Delivery unit 100 m, on reel.
Order number FCS-LHDSC-EN100 | F.01U.395.474

FCS-LHDSC-EN250 Sensor cable PVC, VdS, 250m
Sensor cable red, PVC outer sheath, resistant to dust and water. Delivery unit 250 m, on reel.
Order number FCS-LHDSC-EN250 | F.01U.395.475

FCS-LHDSC-EN500 Sensor cable PVC, VdS, 500m
Sensor cable red, PVC outer sheath, resistant to dust and water. Delivery unit 500 m, on reel.
Order number FCS-LHDSC-EN500 | F.01U.395.476

FCS-LHDSC-NYL100 Sensor cable nylon, VdS, 100m
Sensor cable black, nylon outer sheath, UV stable for indoor and outdoor use in direct sunlight. Delivery unit 100 m, on reel.
Order number FCS-LHDSC-NYL100 | F.01U.403.515

FCS-LHDSC-NYL250 Sensor cable nylon, VdS, 250m
Sensor cable black, nylon outer sheath, UV stable for indoor and outdoor use in direct sunlight. Delivery unit 250 m, on reel.
Order number FCS-LHDSC-NYL250 | F.01U.403.516

FCS-LHDSC-NYL500 Sensor cable nylon, VdS, 500m
Sensor cable black, nylon outer sheath, UV stable for indoor and outdoor use in direct sunlight. Delivery unit 500 m, on reel.
Order number FCS-LHDSC-NYL500 | F.01U.403.517

FCS-LHDSC-SSL100 Sensor cable steel, VdS, 100m
Sensor cable silver, PVC and stainless steel braided outer sheath, increased mechanical toughness and abrasion resistant. Delivery unit 100 m, on reel.
Order number FCS-LHDSC-SSL100 | F.01U.403.518

FCS-LHDSC-SSL250 Sensor cable steel, VdS, 250m
Sensor cable silver, PVC and stainless steel braided outer sheath, increased mechanical toughness and abrasion resistant. Delivery unit 250 m, on reel.
Order number FCS-LHDSC-SSL250 | F.01U.403.519

FCS-LHDSC-SSL500 Sensor cable steel, VdS, 500m
Sensor cable silver, PVC and stainless steel braided outer sheath, increased mechanical toughness and abrasion resistant. Delivery unit 500 m, on reel.
Order number FCS-LHDSC-SSL500 | F.01U.403.520

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