

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.

V d S

- ▶ Applicable in constricted spaces and under extreme environmental conditions.
- ▶ IP 65 rated enclosure
- ▶ Minimal maintenance costs through continual self-monitoring of the sensor cable
- ▶ Commissioning via built in LCD display
- ▶ Rate-of-rise and configurable fixed heat alarm detection

Regulatory information

Region	Regulatory compliance/quality marks	
Germany	VdS	G220035 FCS-LHD-2EN
Europe	CE	FCS-LHD-2EN
USA	UL	FCS-LHD-2EN

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 A11/A21 the alarm temperature is 66°C. For class B1 the alarm temperature is 80°C.

i Notice

For connecting the device follow the instructions in the Wiring Guide (document number F.01U.378.911, F.01U.009.201).

Parts included

Quantity	Component
1	Analogue control unit
1	End of line element

Technical specifications**Electrical**

Operating voltage (VDC)	20 VDC – 30 VDC
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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

Weight (g)	860 g
Dimension (H x W x D) (mm)	180 mm x 182 mm x 90 mm

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%
IP rating	IP65
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

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-STL100 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-STL100 | F.01U.403.518**

FCS-LHDSC-STL250 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-STL250 | F.01U.403.519**

FCS-LHDSC-STL500 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-STL500 | F.01U.403.520**

Represented by:

Europe, Middle East, Africa:
Bosch Security Systems B.V.
P.O. Box 80002
5600 JB Eindhoven, The Netherlands
Phone: +31 40 2577 284
www.boschsecurity.com/xc/en/contact/
www.boschsecurity.com

Germany:
Bosch Sicherheitssysteme GmbH
Robert-Bosch-Ring 5
85630 Grasbrunn
Tel.: +49 (0)89 6290 0
Fax: +49 (0)89 6290 1020
de.securitysystems@bosch.com
www.boschsecurity.com

North America:
Bosch Security Systems, LLC
130 Perinton Parkway
Fairport, New York, 14450, USA
Phone: +1 800 289 0096
Fax: +1 585 223 9180
onlinehelp@us.bosch.com
www.boschsecurity.com

Asia-Pacific:
Robert Bosch (SEA) Pte Ltd, Security Systems
11 Bishan Street 21
Singapore 573943
Phone: +65 6571 2808
Fax: +65 6571 2699
www.boschsecurity.com/xc/en/contact/
www.boschsecurity.com