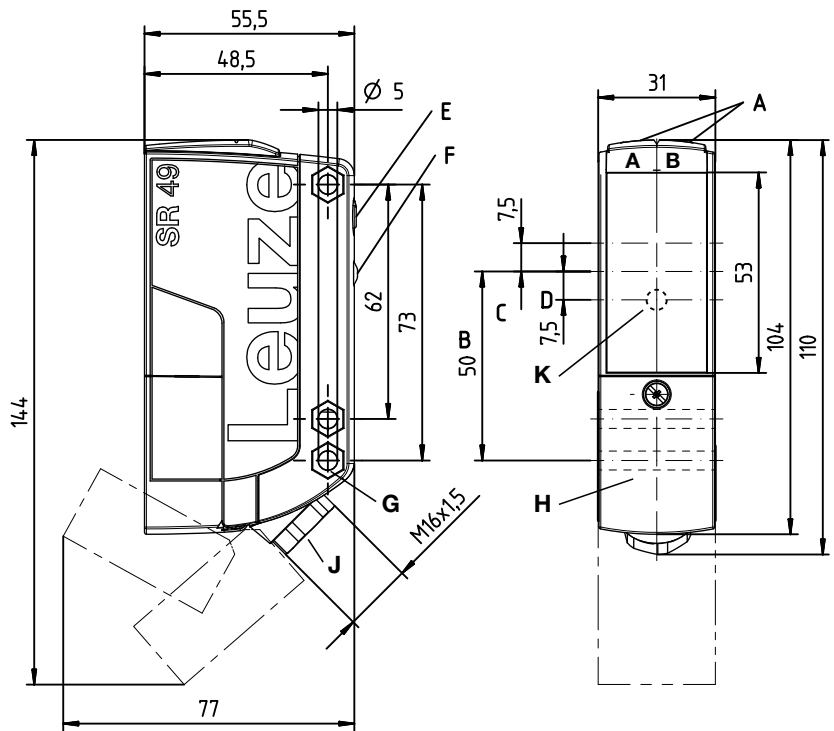


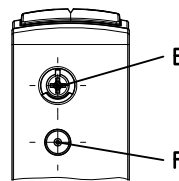
**L49C MOSFET**

**Throughbeam photoelectric sensors**

**Dimensioned drawing**



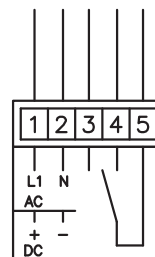
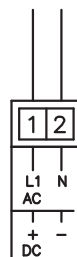
- A<sub>A</sub>** Green indicator diode
- A<sub>B</sub>** Yellow indicator diode
- B** Optical axis
- C** Receiver
- D** Transmitter
- E** Sensitivity adjustment
- F** Teach button for light/dark switching / time module activation
- G** Countersinking for SK nut M5, 4.2 deep
- H** Connection compartment with spring terminals
- J** Cable entry with M16x1.5 screw fitting for  $\varnothing 5 \dots 10$ mm
- K** Yellow indicator diode  
 Transmitter: active/not active  
 Receiver: signal/no signal



**Electrical connection**

**Transmitter**  
DC/AC

**Receiver**  
DC/AC



**Pin 3 = nc** (not connected)

**Wire color of connecting cable**

Pin	Color
1	BR / BN
2	BL / BU
3	WS / WH
4	GR / GY
5	SW / BK



**150m**



- Throughbeam photoelectric sensors with large operating range and high performance reserve in red light and infrared light versions
- Robust plastic housing, degree of protection IP 67 and IP 69K for universal, industrial application
- All-mains design 20 ... 250VAC/DC with MOSFET semiconductor switching output (potential-free)
- Sensitivity adjustment and delay before start-up for optimal adaptation to the application
- Light/dark switching and time module activation via teach button for time-saving integration in existing evaluation environment:
- Time-saving, exact alignment through additional, highly visible display
- Space-saving installation thanks to front access to the connection compartment
- Extremely time-saving connection by means of spring terminals (up to 1.5mm<sup>2</sup>)
- Optics heating



**Accessories:**

(available separately)

- Mounting systems (BTU 460, BT 96, BT 96.1, BT 450.1-96)
- Alignment aid SAT 5

en 02-2015/08 50128465-01

We reserve the right to make changes • DS\_L49CUCM4\_en\_50128465\_01.fm

**Specifications**

<b>Optical data</b>	<b>L49C...</b>	<b>L49CI...</b>
Typ. operating range limit <sup>1)</sup>	0 ... 150m	
Operating range <sup>2)</sup>	0.5 ... 120m	
Light source	LED (modulated light)	
Wavelength	630nm (red light)	860nm (infrared light)
<b>Timing</b>		
Switching frequency	150Hz	
Response time	3.3ms	
Delay before start-up	≤ 300ms	
<b>Electrical data</b>		
Operating voltage U <sub>B</sub>	20 ... 250VAC, 50/60Hz	
	20 ... 250VDC	
Power consumption	≤ 1.5VA	
Switching output <sup>3)</sup>	MOSFET semiconductor switching output (NO)	
Function	NO contact	
MOSFET switching voltage	250VAC/DC	
MOSFET switching current	250VAC, 0.4A/30VDC, 0.4A	
MOSFET switching power	100VA, cosφ=1	
Sensitivity	adjustable	
<b>Indicators</b>		
Green LED	ready	
Yellow LED	light path free	
Yellow LED, flashing	light path free, no performance reserve	
Yellow LED (behind lens cover)	transmitter: active/not active	
	receiver: signal/no signal	
Yellow LED (behind lens cover), flashing	receiver: signal, performance reserve limited	
<b>Mechanical data</b>		
Housing	polycarbonate	
Optics cover	plastic	
Weight	150g	
Connection type	spring terminals, max. wire cross section 1.5mm <sup>2</sup> cable 2000mm, 3/5 x 0.5mm <sup>2</sup>	
<b>Environmental data</b>		
Ambient temp. (operation/storage)	-40°C ... +60°C/-40°C ... +70°C	
Protective circuit <sup>4)</sup>	1, 2, 3	
VDE safety class <sup>5)</sup>	II, all-insulated	
Degree of protection	IP 67, IP 69K <sup>6)</sup>	
Light source	exempt group (in acc. with EN 62471)	
Standards applied	IEC 60947-5-2	
<b>Options</b>		
<b>Switching function</b> (teach level 1)	light switching (factory setting) or dark switching	
<b>Time module</b> (teach level 2)	active: dropout delay 500ms not active:no dropout delay (factory setting)	
<b>Optics heating</b>		
Current consumption	approx. 70mA at 20VDC	

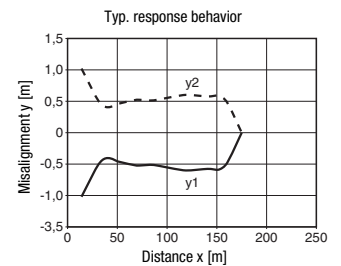
**Tables**

0/0,5	120	150
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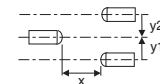
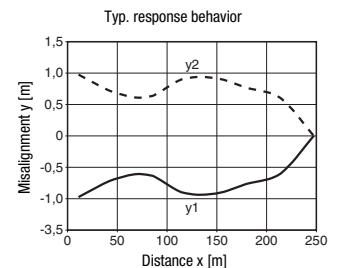
Operating range [m]  
 Typ. operating range limit [m]

**Diagrams**

**L49C... with red light**



**L49CI... with infrared light**



**Remarks**

**Operate in accordance with intended use!**

- ⚠ This product is not a safety sensor and is not intended as personnel protection.
- ⚠ The product may only be put into operation by competent persons.
- ⚠ Only use the product in accordance with the intended use.

## L49C MOSFET

## Throughbeam photoelectric sensors

### Part number code

Transmitter	L	S	4	9	C	I	.	U	C	H					-	T	B
Receiver	L	E	4	9	C	I	.	U	C	H	1	/	M	4	-	T	B

#### Operating principle

**LS** Throughbeam photoelectric sensor, transmitter

**LE** Throughbeam photoelectric sensor, receiver

#### Series

**49C** 49C series

#### Light type

**I** Infrared light

**free** Red light

#### Operating voltage

**UC** 20 ... 250VAC/DC (all-mains design)

#### Equipment

**H** Optics heating

#### Setting (receiver)

**1** Potentiometer, teach button (light/dark switching, time module activation)

#### Switching output (receiver)

**TS** Relay, normally closed contact/normally open contact (NC/NO)

**M4** Low-impedance MOSFET semiconductor switching output, normally open contact (NO)

#### Connection technology

**TB** Terminal block - terminal compartment with spring terminals (5 x 1.5mm<sup>2</sup>)

**free** Cable 2000mm

## Order guide

The sensors listed here are preferred types; current information at [www.leuze.com](http://www.leuze.com).

### All-mains designs with MOSFET semiconductor output

### Designation

### Part no.

		Designation	Part no.	
<b>TRANSMITTER</b>	<b>Terminal compartment with spring terminals (5 x 1.5mm<sup>2</sup>)</b>			
	Red light	LS49C.UC-TB	50127437	
	Infrared light	LS49CI.UC-TB	50127439	
	Red light, optics heating	LS49C.UCH-TB	50130462	
	Infrared light, optics heating	LS49CI.UCH-TB	50130463	
	<b>Cable, cable length 2m</b>			
	Red light	LS49C.UC	50127438	
	Infrared light	LS49CI.UC	50127440	
	<b>RECEIVER</b>	<b>Terminal compartment with spring terminals (5 x 1.5mm<sup>2</sup>)</b>		
		Red light	LE49C.UC1/M4-TB	50127443
Infrared light		LE49CI.UC1/M4-TB	50127447	
Red light, optics heating		LE49C.UCH1/M4-TB	50130465	
Infrared light, optics heating		LE49CI.UCH1/M4-TB	50130466	
<b>Cable, cable length 2m</b>				
Red light		LE49C.UC1/M4	50127444	
Infrared light		LE49CI.UC1/M4	50127448	

Transmitter/receiver combinations <sup>1)</sup>		TRANSMITTER		RECEIVER
<b>Red light</b>	Terminal connection	50127437	+	50127443
	Terminal connection, optics heating	50130462	+	50130465
	Connection cable	50127438	+	50127444
<b>Infrared light</b>	Terminal connection	50127439	+	50127447
	Terminal connection, optics heating	50130463	+	50130466
	Connection cable	50127440	+	50127448

1) Combinations of red-light devices and infrared-light devices are not possible; combinations of devices with terminal connection and devices with connection cable are possible if both devices are of the same light type

## Teach procedure for sensor




**Note**

Factory setting: **light switching, time module not active**


## Light/dark switching

### Setting the switching behavior of the MOSFET output

<b>Teach level 1</b>	<p><b>Press teach button (2 to 7s)</b> until both LEDs (green/yellow) <b>flash synchronously</b>. Release teach button – switchover is complete.</p> <p>The <b>yellow LED</b> then indicates the <b>current setting of the switching output</b> for 3s:</p> <p><b>ON = light switching =</b> output between <b>pin 4</b> and <b>pin 5: normally open contact (NO)</b>  <b>OFF = dark switching =</b> output between <b>pin 4</b> and <b>pin 5: normally closed contact (NC)</b></p>	
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## Activation/deactivation of the time module

### Setting a dropout delay for the MOSFET output

<b>Teach level 2</b>	<p><b>Press teach button (7 to 12s)</b> until both LEDs (green/yellow) <b>flash alternately</b>. Release teach button – activation/deactivation is complete.</p> <p>The <b>yellow LED</b> then indicates the <b>current setting of the dropout delay</b> for 3s:</p> <p><b>ON = time module not active = no dropout delay</b> for the MOSFET output  <b>OFF = time module active = dropout delay</b> for the MOSFET output: <b>500ms</b> <sup>1)</sup></p>	
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1) Additional models on request

Dropout delay: if the object is no longer present, the output switches with a time delay.