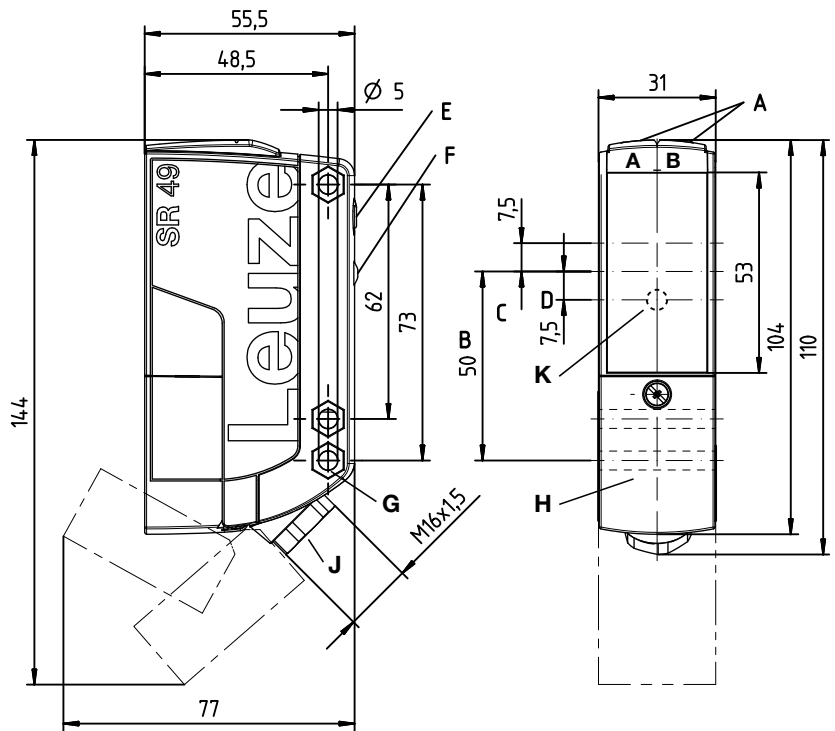


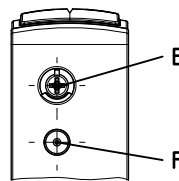
L49C

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 Ø5 ... 10mm
- K Yellow indicator diode  
Transmitter: active/not active  
Receiver: signal/no signal



Electrical connection

Transmitter

10-30V DC	1
GND	2
IN	3
NC	4
NC	5

Selection of terminal 3

IN
Active
NC

Receiver

10-30V DC	1
GND	2
OUT 1	3
OUT	4
NC	5

Selection of terminal 4

OUT
OUT 2
Warn
NC



150m



- Throughbeam photoelectric sensors with large operating range and high function reserve in red light and infrared light versions
- Robust plastic housing, degree of protection IP 67 and IP 69K for universal, industrial application
- 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>)



Accessories:

(available separately)

- Mounting systems (BTU 460, BT 96, BT 96.1, BT 450.1-96)
- Alignment aid (SAT 5)
- Laser alignment aid (ARH 49C)

We reserve the right to make changes • DS\_L49CTB\_en\_50134345.fm

## Technical data

### Optical data

Typ. operating range limit <sup>1)</sup>  
 Operating range <sup>2)</sup>  
 Light source <sup>3)</sup>  
 Wavelength

L49C...	L49CI...
0 ... 150m	860nm (infrared light)
0.5 ... 120m	
LED (modulated light)	
630nm (red light)	

### Timing

Switching frequency 500Hz  
 Response time 1 ms  
 Readiness delay ≤ 300ms

### Electrical data

Operating voltage  $U_B$  <sup>4)</sup> 10 ... 30VDC (incl. residual ripple)  
 Residual ripple ≤ 15% of  $U_B$   
 Open-circuit current ≤ 20mA  
 Switching outputs/functions <sup>5)</sup>

/4P	2 PNP switching outputs, antivalent
/4W	1 PNP switching output, light switching, 1 PNP warning output
/4X	1 PNP switching output, light switching
/PX	1 PNP switching output, dark switching
/2N	2 NPN switching outputs, antivalent

Signal voltage high/low  $\geq (U_B - 2V) / \leq 2V$   
 Output current Max. 100mA  
 Sensitivity/operating range adjustment 225° potentiometer (only LE49C[I].1...)

### Indicators

Green LED Ready  
 Yellow LED Light path free  
 Yellow LED, flashing Light path free, no function reserve  
 Yellow LED (behind lens cover) Transmitter: active/not active  
 Receiver: signal/no signal  
 Receiver: signal, function reserve limited

Yellow LED (behind lens cover), flashing

### Mechanical data

Housing Polycarbonate  
 Optics cover Plastic  
 Weight 150g  
 Connection type Spring terminals, max. wire cross section 1.5mm<sup>2</sup>

### Environmental data

Ambient temp. (operation/storage) -40°C ... +60°C / -40°C ... +70°C  
 Protective circuit <sup>6)</sup> 1, 2, 3  
 VDE safety class <sup>7)</sup> II, all-insulated  
 Degree of protection IP 67, IP 69K <sup>8)</sup>  
 Light source Exempt group (in acc. with EN 62471)  
 Standards applied IEC 60947-5-2  
 Certifications UL 508, CSA C22.2 No.14-13 <sup>4) 9)</sup>

### Additional functions

**Switching function** (teach level 1)  
**Time module** (teach level 2)  
 Light switching (factory setting) or dark switching  
 Active: dropout delay 500ms  
 Not active: no dropout delay (factory setting)  
 PNP transistor, counting principle

**Warning output**  
 Signal voltage high/low  $\geq (U_B - 2V) / \leq 2V$   
 Output current Max. 100mA  
**Activation input**  
 Transmitter active/not active  $\geq 8V / \leq 2V$   
 Activation/disable delay ≤ 1ms  
 Input resistance 10kΩ ± 10%

- 1) Typ. operating range limit: max. attainable range without function reserve
- 2) Operating range: recommended range with function reserve
- 3) Average life expectancy 100,000 h at an ambient temperature of 25°C
- 4) For UL applications: for use in class 2 circuits only
- 5) See part number code
- 6) 1=transient protection, 2=polarity reversal protection, 3=short circuit protection for all outputs
- 7) Rating voltage 50V
- 8) IP 69K test acc. to DIN 40050 part 9 simulated, high pressure cleaning conditions without the use of additives, acids and bases are not part of the test
- 9) These proximity switches shall be used with UL Listed Cable assemblies rated 30V, 0.5A min, in the field installation, or equivalent (categories: CYJV/CYJV7 or PVVA/PVVA7)

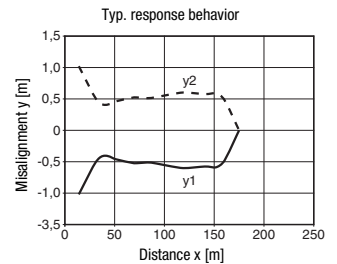
## Tables

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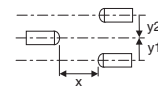
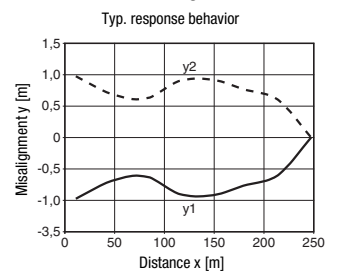
Operating range [m]  
 Typ. operating range limit [m]

## Diagrams

### L49C... with red light



### L49CI... with infrared light



## Notes

### Observe 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 its intended use.

- A light axis consists of a transmitter and a receiver with the following designations:

L49C[I]... = light axis, complete  
 LS49C[I]... = transmitter  
 LE49C[I]... = receiver

- **Alignment indicator:** ('K' see dimensioned drawing)  
**Yellow LED =** light path free - with reserve  
**Yellow LED, flashing =** light path free - no function reserve



## Teach procedure for sensor



**Note**

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

## Light/dark switching

### Adjusting the switching behavior

<b>Teach level 1</b>	<p><b>Press teach button</b> (2 to 7s) 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 <b>OUT1</b> (terminal 3) <b>light switching</b> output <b>OUT2</b> (terminal 4) <b>dark switching</b></p> <p><b>OFF = dark switching =</b> output <b>OUT1</b> (terminal 3) <b>dark switching</b> output <b>OUT2</b> (terminal 4) <b>light switching</b></p>	<p>2 ... 7s</p>
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## Activation/deactivation of the time module

### Setting a slow release

<b>Teach level 2</b>	<p><b>Press teach button</b> (7 to 12s) 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></p> <p><b>OFF = time module active = dropout delay: 500ms<sup>1)</sup></b></p> <p><small>1) Additional models on request</small></p>	<p>7 ... 12s</p>
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Dropout delay: if the object is no longer present, the output switches with a time delay.