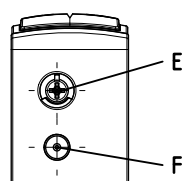
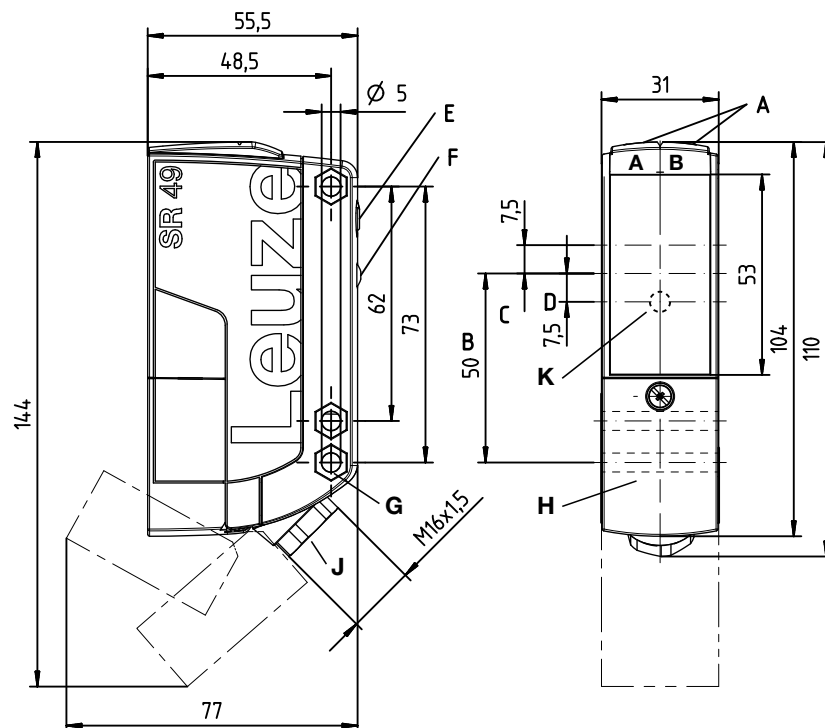


L49C

Throughbeam photoelectric sensors

Dimensioned drawing



- A_A Green indicator diode
 - A_B 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 1.5mm²)



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)

Technical data

Optical data

Typ. operating range limit ¹⁾
Operating range ²⁾
Light source ³⁾
Wavelength

L49C...

0 ... 150m
0.5 ... 120m
LED (modulated light)
630nm (red light)

L49CI...

860nm (infrared light)

Timing

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

Electrical data

Operating voltage U_B ⁴⁾ 10 ... 30VDC (incl. residual ripple)
Residual ripple ≤ 15% of U_B
Open-circuit current ≤ 20mA
Switching outputs/functions ⁵⁾ /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 ≥ ($U_B - 2V$) / ≤ 2V
Output current Max. 100mA
Sensitivity/operating range adjustment 225° potentiometer (only LE49C[I].1...)

Indicators

Green LED
Yellow LED
Yellow LED, flashing
Yellow LED (behind lens cover)

Yellow LED (behind lens cover), flashing

Ready
Light path free
Light path free, no function reserve
Transmitter: active/not active
Receiver: signal/no signal
Receiver: signal, function reserve limited

Mechanical data

Housing Polycarbonate
Optics cover Plastic
Weight 150g
Connection type Spring terminals, max. wire cross section 1.5mm²

Environmental data

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

Additional functions

Switching function (teach level 1)
Time module (teach level 2)

Warning output
Signal voltage high/low
Output current
Activation input
Transmitter active/not active ≥ 8V / ≤ 2V
Activation/disable delay ≤ 1ms
Input resistance 10kΩ ± 10%

Light switching (factory setting) or dark switching
Active: dropout delay 500ms
Not active: no dropout delay (factory setting)
PNP transistor, counting principle

- 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)

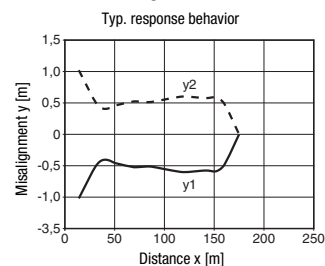
Tables

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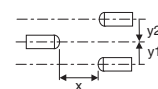
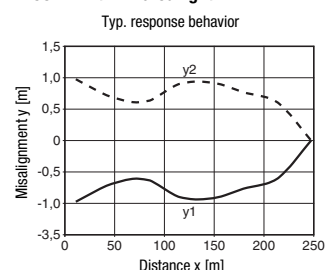
Operating range [m]
Typ. operating range limit [m]

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

L49C

Throughbeam photoelectric sensors

Part number code

		Transmitter	L	S	4	9	C	I	.	8				-	T	B
		Receiver	L	E	4	9	C	I	.	1	/	4	P	-	T	B
Operating principle																
LS	Throughbeam photoelectric sensor transmitter															
LE	Throughbeam photoelectric sensor receiver															
Series																
49C	49C series															
Light type																
free	Red light															
I	Infrared light															
Equipment																
1	Sensitivity adjustment via potentiometer on receiver															
8	Activation input at transmitter (IN (terminal 3), active high)															
Pin assignment OUT1 (terminal 3) at receiver																
2	NPN, light switching															
N	NPN, dark switching															
4	PNP, light switching															
P	PNP, dark switching															
Pin assignment OUT (terminal 4) at receiver																
X	Not used															
2	NPN, light switching															
N	NPN, dark switching															
4	PNP, light switching															
P	PNP, dark switching															
W	Warning output, PNP light switching															
Connection technology																
TB	Terminal block - terminal compartment with spring terminals (5 x 1.5mm ²)															

Order guide

The sensors listed here are preferred types; current information at www.leuze.com.

Red-light throughbeam photoelectric sensor ¹⁾ with alignment display		Designation	Part no.
TRANSMITTER	Terminal compartment with spring terminals (5 x 1.5mm ²)		
	Standard	LS49C-TB	50134450
	With activation input	LS49C.8-TB	50134451
RECEIVER	Terminal compartment with spring terminals (5 x 1.5mm ²)		
	OUT1: PNP light switching; OUT2: PNP dark switching	LE49C/4P-TB	50134454
	OUT1: PNP light switching; OUT: warning output PNP active high	LE49C/4W-TB	50134457
	OUT1: PNP light switching; OUT2: PNP dark switching; sensitivity adjustment	LE49C.1/4P-TB	50134456
	OUT1: NPN light switching; OUT2: NPN dark switching	LE49C/2N-TB	50134455
Infrared light throughbeam photoelectric sensor ¹⁾ with alignment display		Designation	Part no.
TRANSMITTER	Terminal compartment with spring terminals (5 x 1.5mm ²)		
	Standard	LS49CI-TB	50134452
	With activation input	LS49CI.8-TB	50134453
RECEIVER	Terminal compartment with spring terminals (5 x 1.5mm ²)		
	OUT1: PNP light switching; OUT: warning output PNP active high	LE49CI/4W-TB	50134460
	OUT1: PNP light switching; OUT2: PNP dark switching; sensitivity adjustment	LE49CI.1/4P-TB	50134458
	OUT1: NPN light switching; OUT2: NPN dark switching; sensitivity adjustment	LE49CI.1/2N-TB	50134459

1) For a complete light axis, arbitrary combinations of the transmitters and receivers listed below are possible. Transmitter/receiver combinations of red light devices with infrared light devices are, however, not possible.

Teach procedure for sensor




Note

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


Light/dark switching

Adjusting the switching behavior

<p>Teach level 1</p>	<p>Press teach button (2 to 7 s) until both LEDs (green/yellow) flash synchronously. Release teach button – switchover is complete. The yellow LED then indicates the current setting of the switching output for 3s:</p> <p>ON = light switching = output OUT1 (terminal 3) light switching output OUT2 (terminal 4) dark switching</p> <p>OFF = dark switching = output OUT1 (terminal 3) dark switching output OUT2 (terminal 4) light switching</p>	<p>2 ... 7s</p> 
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Activation/deactivation of the time module

Setting a slow release

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