

L49C MOSFET

Throughbeam photoelectric sensors

en 02-2015/08 50128465-01



150m

20 - 250 V
AC / DC

- 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 1.5mm²)
- Optics heating

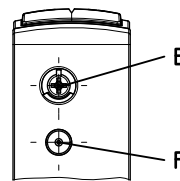
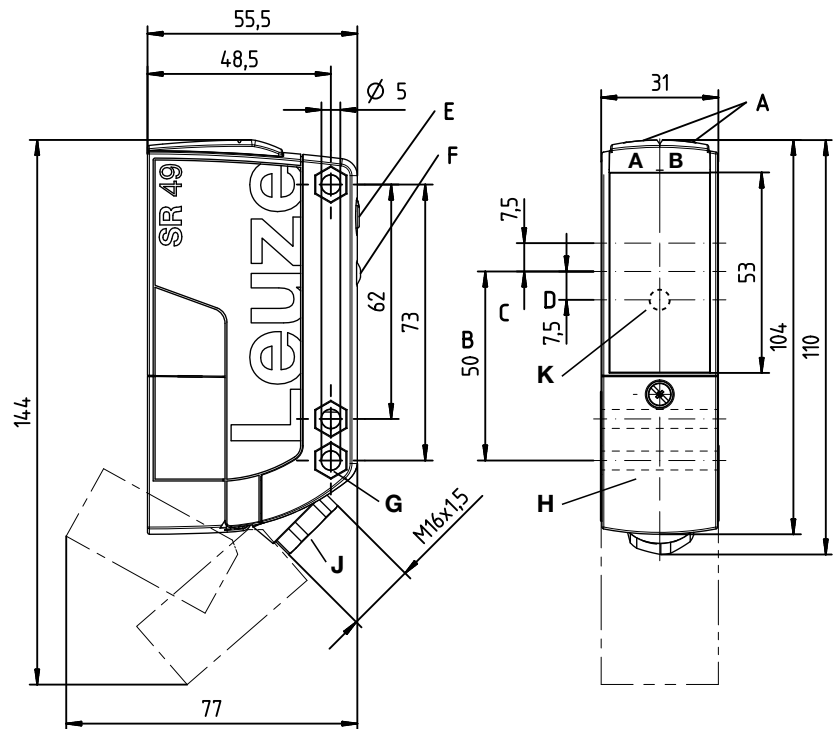


Accessories:

(available separately)

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

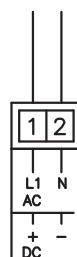
Dimensioned drawing



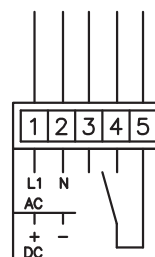
- A_A** Green indicator diode
- A_B** Yellow indicator diode
- B** Optical axis
- C** Receiver
- D** Transmitter
- E** Sensitivity adjustment
- F** Teach button for light/dark switching / time module activation
- G** Countersinking for SK nut M5, 4.2 deep
- H** Connection compartment with spring terminals
- 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
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

Specifications

Optical data

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

L49C...

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

L49CI...

860nm (infrared light)

Timing

Switching frequency
Response time
Delay before start-up

150Hz
3.3ms
≤ 300ms

Electrical data

Operating voltage U_B

20 ... 250VAC, 50/60Hz
20 ... 250VDC

Power consumption
Switching output ³⁾
Function
MOSFET switching voltage
MOSFET switching current
MOSFET switching power
Sensitivity

≤ 1.5VA
MOSFET semiconductor switching output (NO)
NO contact
250VAC/DC
250VAC, 0.4A/30VDC, 0.4A
100VA, $\cos\phi=1$
adjustable

Indicators

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

ready
light path free
light path free, no performance reserve
transmitter: active/not active
receiver: signal/no signal
receiver: signal, performance reserve limited

Yellow LED (behind lens cover), flashing

Mechanical data

Housing
Optics cover
Weight
Connection type

polycarbonate
plastic
150g
spring terminals, max. wire cross section 1.5mm²
cable 2000mm, 3/5 x 0.5mm²

Environmental data

Ambient temp. (operation/storage)
Protective circuit ⁴⁾
VDE safety class ⁵⁾
Degree of protection
Light source
Standards applied

-40°C ... +60°C/-40°C ... +70°C
1, 2, 3
II, all-insulated
IP 67, IP 69K ⁶⁾
exempt group (in acc. with EN 62471)
IEC 60947-5-2

Options

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)

Optics heating

Current consumption

approx. 70mA at 20VDC

- 1) Typ. operating range limit: max. attainable range without performance reserve
- 2) Operating range: recommended range with performance reserve
- 3) Suitable spark extinction (snubber) must be provided with inductive or capacitive loads.
- 4) 1=transient protection, 2=polarity reversal protection, 3=short circuit protection for all outputs
- 5) Rating voltage 250VAC
- 6) 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

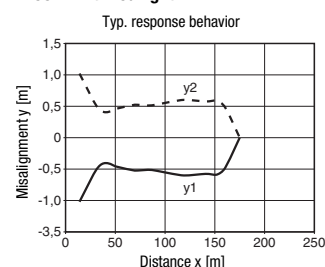
Tables

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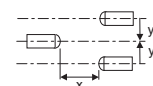
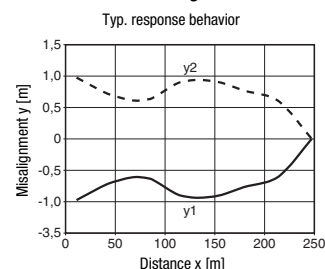
Operating range [m]
Typ. operating range limit [m]

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 1.5mm²)

free Cable 2000mm

Order guide

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

All-mains designs with MOSFET semiconductor output

	Designation	Part no.
TRANSMITTER	Terminal compartment with spring terminals (5 x 1.5mm²)	
	Red light	LS49C.UC-TB
	Infrared light	LS49CI.UC-TB
	Red light, optics heating	LS49C.UCH-TB
	Infrared light, optics heating	LS49CI.UCH-TB
	Cable, cable length 2m	
	Red light	LS49C.UC
	Infrared light	LS49CI.UC
RECEIVER	Terminal compartment with spring terminals (5 x 1.5mm²)	
	Red light	LE49C.UC1/M4-TB
	Infrared light	LE49CI.UC1/M4-TB
	Red light, optics heating	LE49C.UCH1/M4-TB
	Infrared light, optics heating	LE49CI.UCH1/M4-TB
	Cable, cable length 2m	
	Red light	LE49C.UC1/M4
	Infrared light	LE49CI.UC1/M4

Transmitter/receiver combinations ¹⁾

		TRANSMITTER		RECEIVER
Red light	Terminal connection	50127437	+	50127443
	Terminal connection, optics heating	50130462	+	50130465
	Connection cable	50127438	+	50127444
Infrared light	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

Teach level 1	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: ON = light switching = output between pin 4 and pin 5: normally open contact (NO) OFF = dark switching = output between pin 4 and pin 5: normally closed contact (NC)	

Activation/deactivation of the time module

Setting a dropout delay for the MOSFET output

Teach level 2	Press teach button (7 to 12 s) 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: ON = time module not active = no dropout delay for the MOSFET output OFF = time module active = dropout delay for the MOSFET output: 500ms ¹⁾	
	1) Additional models on request	

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