L46C Red-light throughbeam photoelectric sensor with alignment display

150m

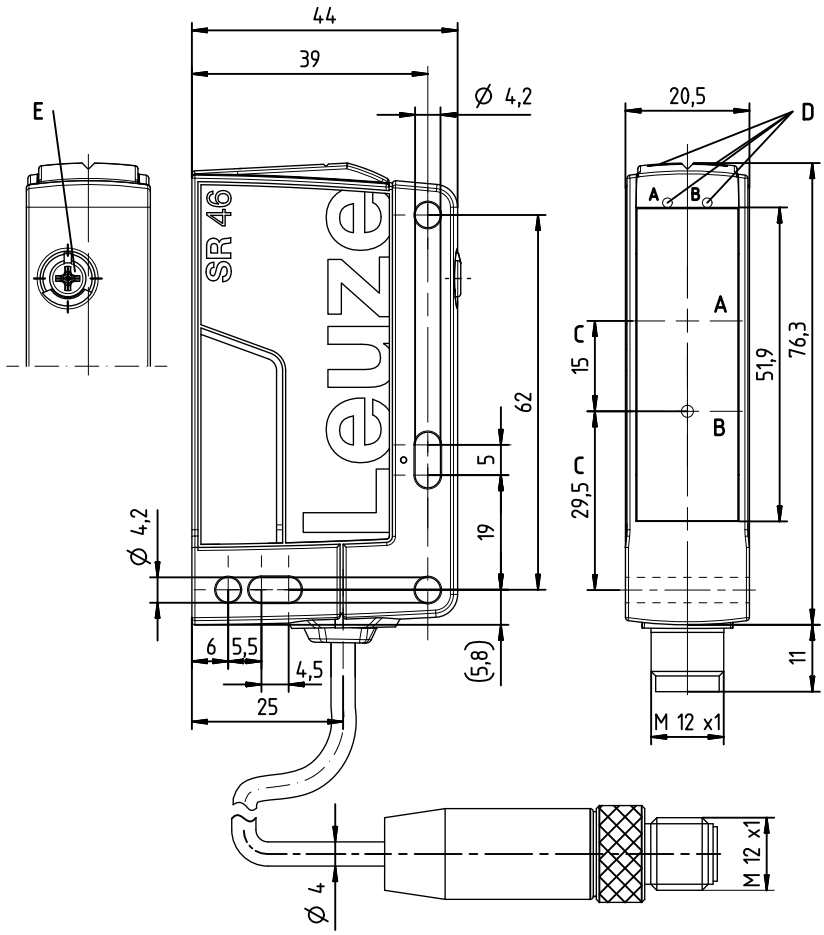
- Throughbeam photoelectric sensor with large operating range and high function reserve in red light version
- Sensitivity adjustment and delay before start-up for optimal adaptation to the application
- Time-saving, exact alignment and function check through additional, highly visible display on front side
- Warning output for sustained availability (prefailure message)
- Activation input for sensor test
- Various switching output functions for universal connection to existing control environment
- Robust plastic housing in degrees of protection IP67 and IP69K

Accessories:

(available separately)

- Mounting systems (BT 46, BTU 300M, BT 300, BTU 346)
- M12 connectors (KD …)
- Ready-made cables (K-D …)
- Alignment aid (SAT 5)
- Laser alignment aid (ARH 46C)

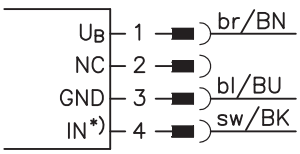
Dimensioned drawing



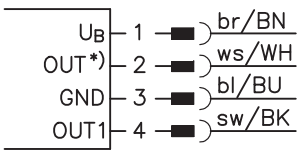
A Transmitter (LS) / Receiver (LE)
B Yellow indicator diode Transmitter: active/not active
Receiver: signal/no signal
C Optical axis
D_A Green indicator diode
D_B Yellow indicator diode
E Sensitivity adjustment (only on receiver)

Electrical connection

Transmitter, 4-pin connector



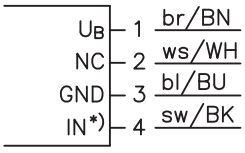
Receiver, 4-pin connector



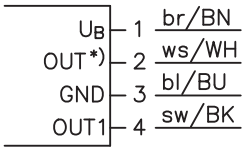
Selection pin 2/4

*)	OUT	IN
	OUT 2	Active
	Warn	NC
	NC	

Transmitter, cable



Receiver, cable



en 01- 2015/0650129626

Specifications

Optical data

Typ. operating range limit [1]		0 … 150m
Operating range [2]		0.5 … 120m
Operating range adjustment		225° potentiometer (LE46C.1… only)
Light source [3]		LED (modulated light)
Wavelength		630nm (visible red light)

Timing

Switching frequency		500Hz
Response time		1ms
Delay before start-up		≤ 300ms

Electrical data

With transistor switching outputs

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
	/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

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
Yellow LED (behind lens cover), flashing	receiver:	signal, function reserve limited

Mechanical data

Housing		plastic
Optics cover		plastic
Weight	with M12 connector:	approx. 60g
	with 200mm cable and M12 connector:	approx. 65g
	with 2000mm cable:	approx.100g
Connection type		M12 connector, 4-pin
		cable 200mm with M12 connector, 4-pin
		cable 2000mm, 4 x 0.21mm²

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]

Options

Warning output	PNP transistor, counting principle
Signal voltage high/low	≥ (U_B-2V)/≤ 2V
Output current	max. 100mA
Activation input	
Transmitter active/not active	≥ 8V/≤ 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 250VAC
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)

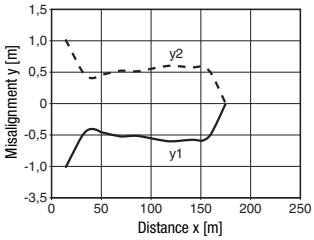
Tables

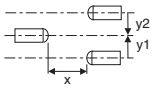
0	0.5	120	150

Operating range [m]
Typ. operating range limit [m]

Diagrams

Typ. response behavior





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.

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

  L46C… = complete light axis
  LS46C… = transmitter
  LE46C… = receiver

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

L46C Red-light throughbeam photoelectric sensor with alignment display

Part number code

L	S	4	6	C		.	8				-	2	0	0	-	M	1	2
L	E	4	6	C		.	1	/	4	P	-	2	0	0	-	M	1	2

Operating principle

LS	Throughbeam photoelectric sensor, transmitter
LE	Throughbeam photoelectric sensor, receiver

Series

46C	46C series

Light type

Free	Red light
I	Infrared light

Equipment

1	Sensitivity adjustment via potentiometer on receiver
8	Activation input on transmitter (active high, connector pin 4/black cable wire)

Pin assignment of OUT1 (connector pin 4 / black cable wire)

2	NPN, light switching
N	NPN, dark switching
4	PNP, light switching
P	PNP, dark switching

Pin assignment of OUT2 (connector pin 2 / white cable wire)

X	Not assigned
2	NPN, light switching
N	NPN, dark switching
4	PNP, light switching
P	PNP, dark switching
W	Warning output, PNP light switching

Connection technology

M12	M12 conector, 4-pin
200-M12	Cable 200 mm with M12 connector, 4-pin
Free	Cable 2000 mm

Order guide

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

	Red-light throughbeam photoelectric sensor with alignment display	Designation	Part no.
TRANSMITTER	**With M12 connector, 4-pin**		
	Standard	LS46C-M12	50127042
	With activation input	LS46C.8-M12	50127045
	Cable 0.2m with M12 connector, 4-pin		
	Standard	LS46C-200-M12	50127044
	Cable 2m		
	Standard	LS46C	50127043
RECEIVER	**With M12 connector, 4-pin**		
	OUT1: PNP light switching; OUT2: PNP dark switching	LE46C/4P-M12	50127033
	OUT1: PNP light switching; OUT2: warning output PNP active high	LE46C/4W-M12	50127038
	OUT1: PNP light switching; OUT2: PNP dark switching; sensitivity adjustment	LE46C.1/4P-M12	50127037
	OUT1: NPN light switching; OUT2: NPN dark switching	LE46C/2N-M12	50127036
	Cable 0.2m with M12 connector, 4-pin		
	OUT1: PNP light switching; OUT2: PNP dark switching	LE46C/4P-200-M12	50127035
	OUT1: PNP dark switching; OUT2: no contact [1)]	LE46C/PX-200-M12	50127039
	Cable 2m		
	OUT1: PNP light switching; OUT2: PNP dark switching	LE46C/4P	50127034

1) Direct connection to AS-i coupling modules possible

For a complete light axis, arbitrary combinations of the transmitters and receivers listed above are possible.