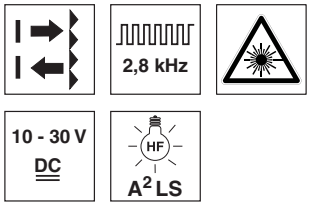
PRKL 8

Laser retro-reflective photoelectric sensor

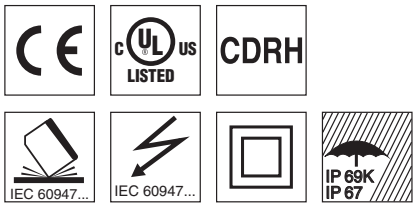
en 10-2014/11 50115718-03





0 … 22m
0 … 14m

- Laser, red light, laser class 1 and 2
- The autocollimation principle used ensures that the device functions reliably over the entire range (0 … max.)
- A²LS - Active Ambient Light Suppression
- Adjustable focus
- M12 turning connector or cable connection

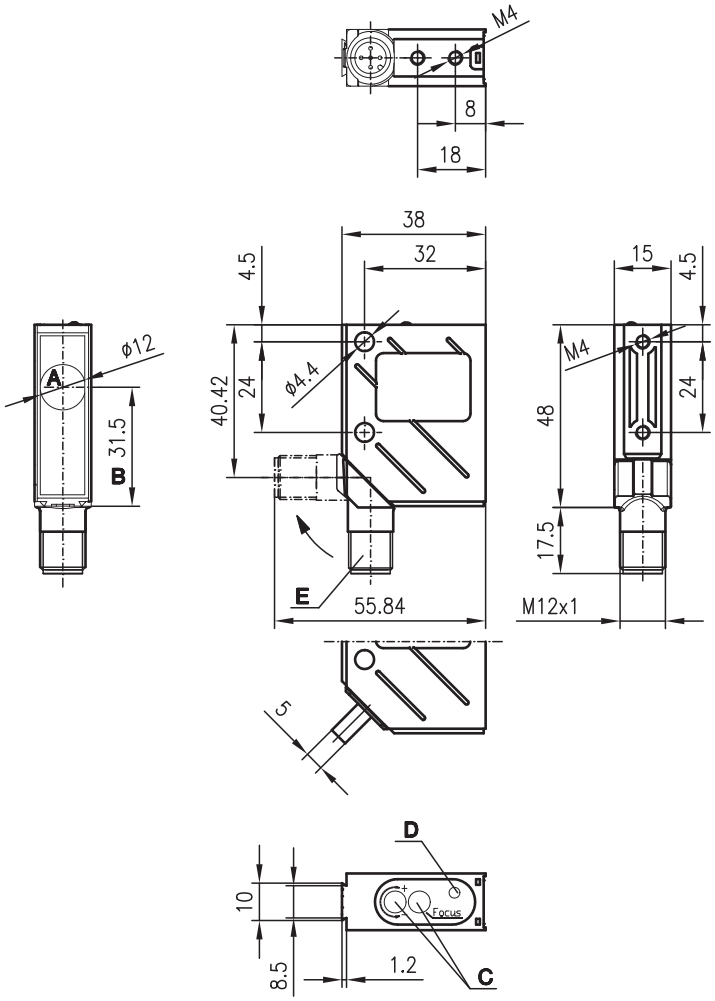


Accessories:

(available separately)

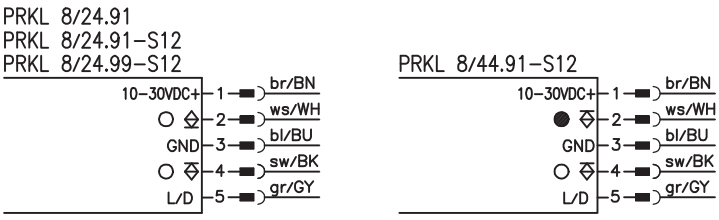
- M12 connectors (KD …)
- Ready-made cables (K-D …)
- Mounting systems
- Reflectors
- Reflective tapes
- Control guard

Dimensioned drawing



A Transmitter and receiver
B Optical axis
C Operational control
D Yellow LED
E Turning connector, 90° rot. angle

Electrical connection



We reserve the right to make changes • DS_PRKL8_en_50115718_03.fm

Specifications

		Laser class 2	Laser class 1
Optical data			
Typ. op. range limit (MTK(S) 50x50)[1]		0 … 21m	0 … 12m
Operating range [2]		see tables	
Light spot diameter		≥ 0.1mm adjustable with 16 rotations (see diagram)	
Focus adjustment range		140mm … ∞ (see diagrams)	
Beam divergence		≥ 0.5mrad	
Light source		laser, pulsed	
Wavelength		655nm (visible red light)	670nm (visible red light)
Timing			
Switching frequency		2800Hz	
Response time		0.18ms	
Delay before start-up		≤ 100ms	
Electrical data			
Operating voltage U_B [3]		10 … 30VDC	
Residual ripple		≤ 15% of U_B	
Open-circuit current		≤ 35mA	
Switching output	…/24…	1 PNP and 1 NPN transistor output, light switching	
	…/44…	2 PNP transistor outputs, pin 4 light switching, pin 2 dark switching	
Function	…/24…	light/dark switching via pin 5	
Signal voltage high/low		≥ (U_B-2V)/≤ 2V	
Output current		max. 100mA	
Sensitivity		adjustable with 12-turn potentiometer	
Indicators			
Yellow LED		light path free	
Yellow LED, flashing		light path free, no performance reserve	
Mechanical data			
Housing		metal	
Optics cover		glass	
Weight (plug/cable)		70g/140g	
Connection type		M12 connector, 5-pin or cable: 2000mm, 5x0.25mm²	
Environmental data			
Ambient temp. (operation/storage)		-10°C … +40°C/-40°C … +70°C	
Protective circuit [4]		2, 3	
VDE safety class [5]		II, all-insulated	
Degree of protection [6]		IP 67, IP 69K [7]	
Laser class		2 (acc. to IEC 60825-1:2007)	1 (acc. to IEC 60825-1:2007)
Standards applied		IEC 60947-5-2	
Certifications		UL 508, C22.2 No.14-13 [3] [8]	
Options			
L/D input			
Dark/light switching		U_B/0V or not connected	
L/D delay		< 0.5ms	

1) Typ. operating range limit: max. attainable range without performance reserve, focus = 16m
2) Operating range: recommended range with performance reserve, focus = 16m
3) For UL applications: for use in class 2 circuits according to NEC only
4) 2=polarity reversal protection, 3=short circuit protection for all outputs
5) Rating voltage 250VAC
6) In end position of the turning connector (turning connector engaged)
7) 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
8) 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)

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.

Order guide

	Designation	Part no.
Laser class 2		
With M12 connector	PRKL 8/24.91-S12	50036364
With M12 connector	PRKL 8/44.91-S12	50127932
With 2m cable	PRKL 8/24.91	50036365
Laser class 1		
With M12 connector	PRKL 8/24.99-S12	50115689

Tables

Laser class 2:

Reflectors			Operating range
1	TK(S)	100x100	0 … 19.0m
2	MTK(S)	50x50	0 … 17.0m
3	TK(S)	30x50	0 … 7.0m
4	TK(S)	20x40	0 … 7.0m
5	REF 6-S-	20x40	0 … 8.0m
6	Tape 6	50x50	0 … 8.0m

1	0																		19		22
2	0																	17		21	
3	0							7		9											
4	0							7		9											
5	0							8		9											
6	0							8		9											

Laser class 1:

Reflectors			Operating range
1	TK(S)	100x100	0 … 12.0m
2	MTK(S)	50x50	0 … 10.0m
3	TK(S)	30x50	0 … 4.0m
4	TK(S)	20x40	0 … 4.0m
5	REF 6-S-	20x40	0 … 5.0m
6	Tape 6	50x50	0 … 5.0m

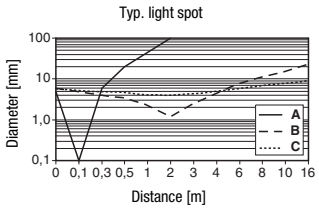
1	0																		12		14
2	0																	10		12	
3	0							4		5											
4	0							4		5											
5	0									5									6		
6	0									5									6		

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

* for focus adjusted to 16m (right limit stop)

TK … = adhesive
TKS … = screw type
Tape 2 = adhesive

Diagrams



A Focus adjusted to 0.144m (left limit stop)
B Focus adjusted to 2m
C Focus adjusted to 16m (right limit stop)

Remarks

- Use reflectors with small tripel structure – MTK(S), REF 6-S… or tape 6

Laser safety notices - PRKL 8/… .99…



ATTENTION, LASER RADIATION – LASER CLASS 1

The device satisfies the requirements of IEC 60825-1:2007 (EN 60825-1:2007) safety regulations for a product in **laser class 1** as well as the U.S. 21 CFR 1040.10 regulations with deviations corresponding to "Laser Notice No. 50" from June 24th, 2007.

- Adhere to the applicable legal and local regulations regarding protection from laser beams.
- The device must not be tampered with and must not be changed in any way.
  There are no user-serviceable parts inside the device.
  Repairs must only be performed by Leuze electronic GmbH + Co. KG.

Laser safety notices - PRKL 8/… .91…

ATTENTION, LASER RADIATION – LASER CLASS 2

Never look directly into the beam!

The device satisfies the requirements of IEC 60825-1:2007 (EN 60825-1:2007) safety regulations for a product in **laser class 2** as well as the U.S. 21 CFR 1040.10 regulations with deviations corresponding to "Laser Notice No. 50" from June 24th, 2007.

- Never look directly into the laser beam or in the direction of reflecting laser beams!
  If you look into the beam path over a longer time period, there is a risk of injury to the retina.
- Do not point the laser beam of the device at persons!
- Interrupt the laser beam using a non-transparent, non-reflective object if the laser beam is accidentally directed towards a person.
- When mounting and aligning the device, avoid reflections of the laser beam off reflective surfaces!
- CAUTION! Use of controls or adjustments or performance of procedures other than specified herein may result in hazardous light exposure.
- Adhere to the applicable legal and local regulations regarding protection from laser beams.
- The device must not be tampered with and must not be changed in any way.
  There are no user-serviceable parts inside the device.
  Repairs must only be performed by Leuze electronic GmbH + Co. KG.

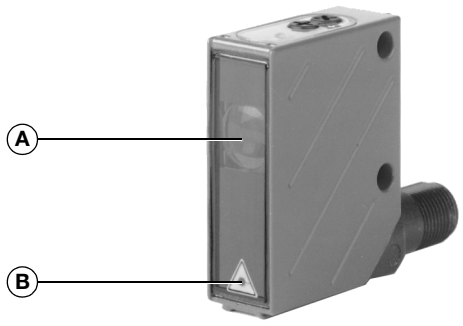
NOTICE

Affix laser information and warning signs!

Laser information and warning signs are affixed to the device(see ①). In addition, self-adhesive laser information and warning signs (stick-on labels) are supplied in several languages (see ②).

- Affix the laser information sheet with the language appropriate for the place of use to the device.
  When using the device in the US, use the stick-on label with the "Complies with 21 CFR 1040.10" notice.
- Affix the laser information and warning signs near the device if no signs are attached to the device (e.g. because the device is too small) or if the attached laser information and warning signs are concealed due to the installation position.
  Affix the laser information and warning signs so that they are legible without exposing the reader to the laser radiation of the device or other optical radiation.

①



A Laser exit opening
B Laser warning sign

②

