

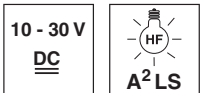
PRKL 8

Laser retro-reflective photoelectric sensor

en 08-2014/06 50115718-01

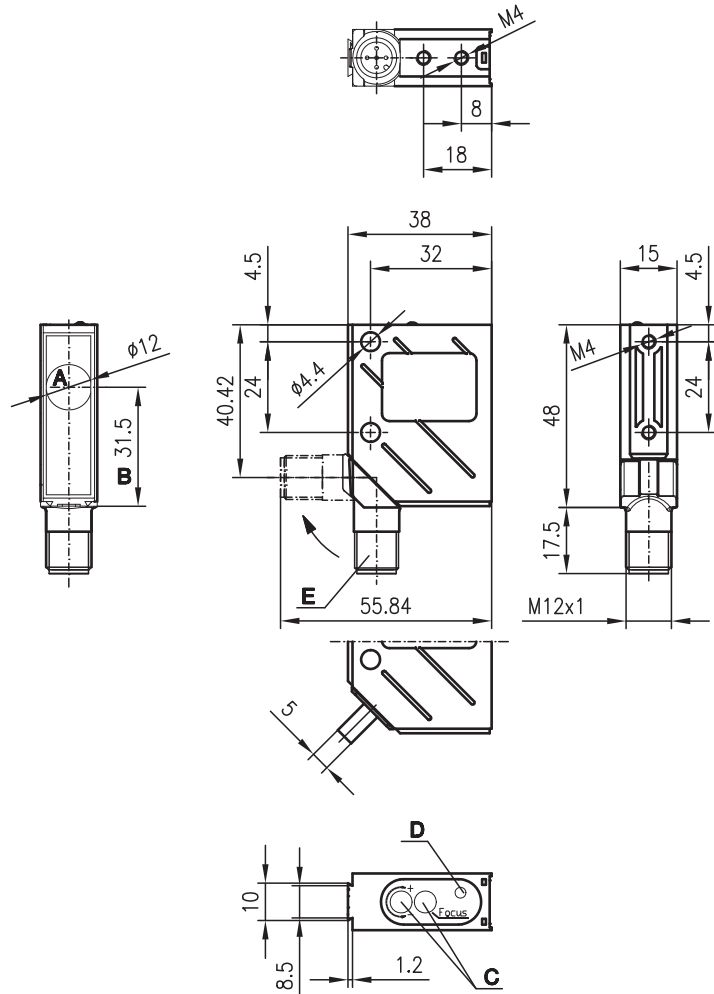


0 ... 22m
0 ... 14m



- 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

Dimensioned drawing



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

Electrical connection

PRKL 8/24.91
PRKL 8/24.91-S12
PRKL 8/24.99-S12

10-30VDC+	1	br/BN
○ ⊕	2	ws/WH
GND	3	bl/BU
○ ⊖	4	sw/BK
L/D	5	gr/GR

We reserve the right to make changes • DS_PRKL8_en_50115718_01.fm



Accessories:

(available separately)

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

Specifications

Optical data

Typ. operating range limit (MTK(S) 50x50) ¹⁾
 Operating range ²⁾
 Light spot diameter
 Focus adjustment range
 Beam spread
 Light source
 Wavelength

Laser class 2

0 ... 21m
 see tables
 ≥ 0.1mm adjustable with 16 rotations (see diagram)
 140mm ... ∞ (see diagrams)
 ≥ 0.5mrad
 laser, pulsed
 670nm (visible red light, polarised)

Laser class 1

0 ... 12m

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 PNP and NPN transistor output
 Function characteristics light switching (dark switching for + U_B connected to 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
 Protection class ⁶⁾ IP 67, IP 69K ⁷⁾
 Laser class 2 (acc. to EN 60825-1) 1 (acc. to EN 60825-1)
 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 stop position of the turning connector (turning connector locked)
- 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 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

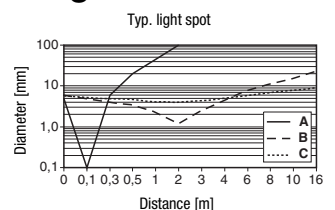
1	0	12	14
2	0	10	12
3	0	4	5
4	0	4	5
5	0	5	6
6	0	5	6

- 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 8/24.99...



ATTENTION, LASER RADIATION – LASER CLASS 1

The device fulfills the EN 60825-1:2008-05 (IEC 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 acc. to EN 60825 (IEC 60825) in its latest version.
- ↳ 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 8/24.91...

 **ATTENTION, LASER RADIATION – LASER CLASS 2**

Never look directly into the beam!

The device fulfills the EN 60825-1:2008-05 (IEC 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!
- ↳ Intercept the laser beam with an opaque, 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.
The use of optical instruments or devices (e.g., magnifying glasses, binoculars) with the product will increase eye hazard.
- ↳ Adhere to the applicable legal and local regulations regarding protection from laser beams acc. to EN 60825 (IEC 60825) in its latest version.
- ↳ 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.

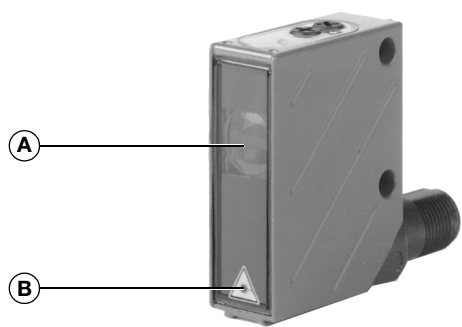
NOTICE

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

50107525-02

<p style="text-align: center; font-size: small;">LASERSTRAHLUNG NICHT IN DEN STRAHL BLICKEN</p> <p style="font-size: x-small;">Max. Leistung (peak): 3 mW Impulsdauer: 8 µs Wellenlänge: 670 nm</p> <p style="text-align: center; font-size: x-small;">LASER KLASSE 2 DIN EN 60825-1:2008-05</p>	<p style="text-align: center; font-size: small;">RADIACIONE LASER NON FISSARE IL FASCIO</p> <p style="font-size: x-small;">Potenza max. (peak): 3 mW Durata dell'impulso: 8 µs Lunghezza d'onda: 670 nm</p> <p style="text-align: center; font-size: x-small;">APPARECCHIO LASER DI CLASSE 2 EN 60825-1:2007</p>
<p style="text-align: center; font-size: small;">LASER RADIATION DO NOT STARE INTO BEAM</p> <p style="font-size: x-small;">Maximum Output (peak): 3 mW Pulse duration: 8 µs Wavelength: 670 nm</p> <p style="text-align: center; font-size: x-small;">CLASS 2 LASER PRODUCT EN 60825-1:2007</p>	<p style="text-align: center; font-size: small;">RAYONNEMENT LASER NE PAS REGARDER DANS LE FASCIEAU</p> <p style="font-size: x-small;">Puissance max. (crête): 3 mW Durée d'impulsion: 8 µs Longueur d'onde: 670 nm</p> <p style="text-align: center; font-size: x-small;">APPAREIL À LASER DE CLASSE 2 EN 60825-1:2007</p>
<p style="font-size: x-small;">AVOID EXPOSURE – LASER RADIATION IS EMITTED FROM THIS APERTURE</p>	<p style="font-size: x-small;">EXPOSITION DANGEREUSE – UN RAYONNEMENT LASER EST EMIS PAR CETTE OUVERTURE</p>
<p style="text-align: center; font-size: small;">RADIACIÓN LASER NO MIRAR FIJAMENTE AL HAZ</p> <p style="font-size: x-small;">Potencia max. (peak): 3 mW Duración del impulso: 8 µs Longitud de onda: 670 nm</p> <p style="text-align: center; font-size: x-small;">PRODUCTO LASER DE CLASE 2 EN 60825-1:2007</p>	<p style="text-align: center; font-size: small;">RADIACÃO LASER NÃO OLHAR FIXAMENTE O FEIXE</p> <p style="font-size: x-small;">Potência máx. (peak): 3 mW Período de pulso: 8 µs Comprimento de onda: 670 nm</p> <p style="text-align: center; font-size: x-small;">EQUIPAMENTO LASER CLASSE 2 EN 60825-1:2007</p>
<p style="text-align: center; font-size: small;">LASER RADIATION DO NOT STARE INTO BEAM</p> <p style="font-size: x-small;">Maximum Output (peak): 3 mW Pulse duration: 8 µs Wavelength: 670 nm</p> <p style="text-align: center; font-size: x-small;">CLASS 2 LASER PRODUCT EN 60825-1:2007 Complies with 21 CFR 1040.10</p>	<p style="text-align: center; font-size: small;">激光辐射 勿直视光束</p> <p style="font-size: x-small;">最大输出 (峰值): 3 mW 脉冲持续时间: 8 µs 波长: 670 nm</p> <p style="text-align: center; font-size: x-small;">2 类激光产品 GB7247.1-2012</p>

