

PRKL 8

Laser retro-reflective photoelectric sensor

2024/06/25 50115718-05



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



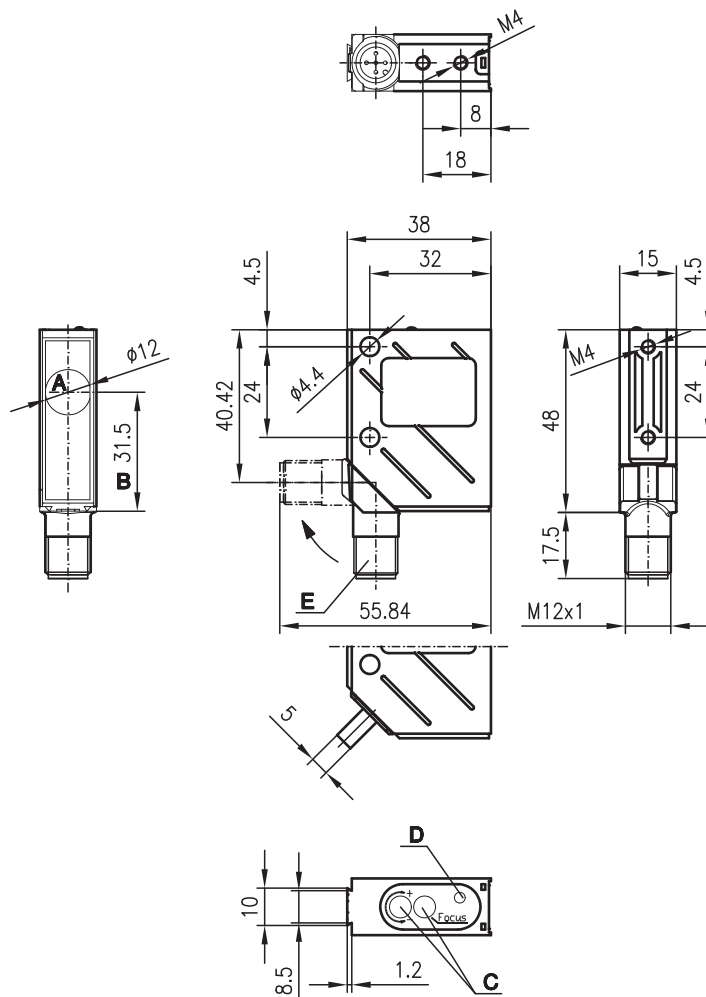
- Laser-generated red light, laser class 2
- The autocollimation principle used ensures that the device functions reliably over the entire range (0 ... max.)
- A²LS - Active Ambient Light Suppression
- Adjustable focus
- M12 turning connector or cable connection

Accessories:

(available separately)

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

Dimensioned drawing

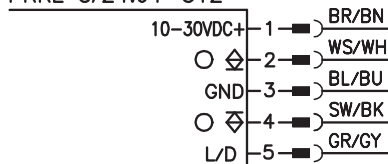


- A Transmitter and receiver
- B Optical axis
- C Operational control
- D Yellow LED
- E Turning connector, turnable 90°

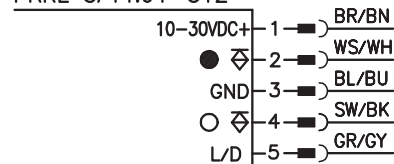
Electrical connection

PRKL 8/24.91

PRKL 8/24.91-S12



PRKL 8/44.91-S12



We reserve the right to make changes

Technical data

Optical data

Typ. operating range limit (MTK(S) 50x50)¹⁾ 0 ... 21m
 Operating range ²⁾ See tables
 Light spot diameter ≥ 0.1 mm adjustable with 16 rotations (see diagrams)
 Focus adjustment range 140 mm ... ∞ (see diagrams)
 Beam divergence ≥ 0.5 mrad
 Light source Laser, pulsed
 Laser class 2 in acc. with IEC 60825-1:2014 / EN 60825-1:2014+A11:2021

Wavelength 655 nm (visible red light)
 Max. output power (peak) 3mW
 Impulse duration $\leq 8\mu$ s

Time behavior

Switching frequency 2800Hz
 Response time 0.18ms
 Readiness delay ≤ 100 ms

Electrical data

Operating voltage U_B ³⁾ 10 ... 30VDC
 Residual ripple $\leq 15\%$ of U_B
 Open-circuit current ≤ 35 mA
 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
 .../24... LPght/dark switching via pin 5
 $\geq (U_B - 2V) / \leq 2V$
 Max. 100mA
 Adjustable with 12-turn potentiometer

Function

Signal voltage high/low
 Output current
 Sensitivity

Indicators

Yellow LED
 Yellow LED, flashing

Light path free
 Light path free, no function reserve

Mechanical data

Housing
 Optics cover
 Weight (connector/cable)
 Connection type

Metal
 Glass
 70g/140g
 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 protection class ⁵⁾ II, all-insulated
 Degree of protection ⁶⁾ IP 67, IP 69K ⁷⁾
 Standards applied IEC 60947-5-2
 Certifications UL 508, C22.2 No. 14-13 ³⁾ ⁸⁾

Additional functions

L/D input

Dark/light switching $U_B/0V$ or not connected
 L/D delay < 0.5 ms

- 1) Typ. operating range limit: max. attainable range without function reserve with focus = 16 m
- 2) Operating range: recommended range with function reserve with focus = 16 m
- 3) For UL applications: use is permitted exclusively in Class 2 circuits according to NEC
- 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)

Order guide

Laser class 2

	Designation	Part no.
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

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 Film 6 50x50	0 ... 8.0m

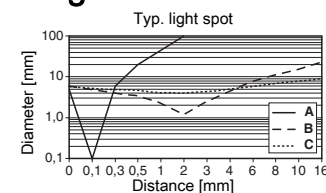
1	0	19	22
2	0	17	21
3	0	7	9
4	0	7	9
5	0	8	9
6	0	8	9

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

* with focus adjustment = 16m (right limit stop)

TK ... = adhesive
 TKS ... = screw type
 Film 2 = adhesive

Diagrams



- A Focus adjustment at 0.144m (left limit stop)
- B Focus adjustment at 2m
- C Focus adjustment at 16m (right limit stop)

Notes

NOTES	
i	<p>Observe intended use!</p> <ul style="list-style-type: none"> ⚠ 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.

- Use reflectors with small triple structures – MTK(S), REF 6-S... or film 6

Laser safety notices

⚠ ATTENTION, LASER RADIATION – CLASS 2 LASER PRODUCT



Do not stare into beam!

The device satisfies the requirements of IEC 60825-1:2014 / EN 60825-1:2014+A11:2021 safety regulations for a product of **laser class 2** and complies with 21 CFR 1040.10 except for conformance with IEC 60825-1 Ed. 3., as described in Laser Notice No. 56, dated May 8, 2019.

- ⚠ Never look directly into the laser beam or in the direction of reflected 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.
- ⚠ Observe the applicable statutory and local laser protection regulations.
- ⚠ The device must not be tampered with and must not be changed in any way.
There are no user-serviceable parts inside the device.
- ⚠ **CAUTION!** Opening the device may result in hazardous radiation exposure!
Repairs must only be performed by Leuze electronic GmbH + Co. KG.

NOTE

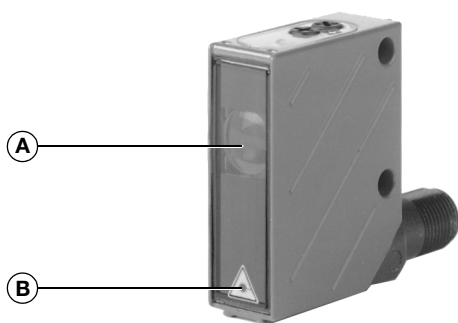


Affix laser information and warning signs!

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

- ⚠ Affix the laser information sheet to the device in the language appropriate for the place of use.
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 aperture
- B Laser warning sign

②

50107525-05

<p>LASERSTRAHLUNG NICHT IN DEN STRAHL BLICKEN</p> <p>Max. Leistung (peak): 3 mW Impulsdauer: ≤8 µs Wellenlänge: 655 nm</p> <p>LASERKLASSE 2 EN 60825-1:2014+A11:2021</p>	<p>RADIAZIONE LASER NON FISSARE IL FASCIO</p> <p>Potenza max. (peak): 3 mW Durata dell'impulso: ≤8 µs Lunghezza d'onda: 655 nm</p> <p>APPARECCHIO LASER DI CLASSE 2 EN 60825-1:2014+A11:2021</p>
<p>LASER RADIATION DO NOT STARE INTO BEAM</p> <p>Maximum Output (peak): 3 mW Pulse duration: ≤8 µs Wavelength: 655 nm</p> <p>CLASS 2 LASER PRODUCT EN 60825-1:2014+A11:2021</p>	<p>RAYONNEMENT LASER NE PAS REGARDER DANS LE FASCEAU</p> <p>Puissance max. (crête): 3 mW Durée d'impulsion: ≤8 µs Longueur d'onde: 655 nm</p> <p>APPAREIL À LASER DE CLASSE 2 EN 60825-1:2014+A11:2021</p>
<p>↑</p> <p>AVOID EXPOSURE - LASER RADIATION IS EMITTED FROM THIS APERTURE</p>	
<p>↑</p> <p>EXPOSITION DANGEREUSE - UN RAYONNEMENT LASER EST ÉMIS PAR CETTE OUVERTURE</p>	
<p>RADIACIÓN LASER NO MIRAR FIJAMENTE AL HAZ</p> <p>Potencia máx. (pico): 3 mW Duración del impulso: ≤8 µs Longitud de onda: 655 nm</p> <p>PRODUCTO LASER DE CLASE 2 EN 60825-1:2014+A11:2021</p>	<p>RADIAÇÃO LASER NÃO OLHAR FIXAMENTE O FEIXE</p> <p>Potência máx. (pico): 3 mW Período de pulso: ≤8 µs Comprimento de onda: 655 nm</p> <p>EQUIPAMENTO LASER CLASSE 2 EN 60825-1:2014+A11:2021</p>
<p>LASER RADIATION DO NOT STARE INTO BEAM</p> <p>Maximum Output (peak): 3 mW Pulse duration: ≤8 µs Wavelength: 655 nm</p> <p>CLASS 2 LASER PRODUCT IEC 60825-1:2014 Complies with 21 CFR 1040.10</p>	<p>激光辐射 勿直视光束</p> <p>最大输出 (峰值): 3 mW 脉冲持续时间: ≤8 µs 波长: 655 nm</p> <p>2 类激光产品 IEC 60825-1:2014</p>