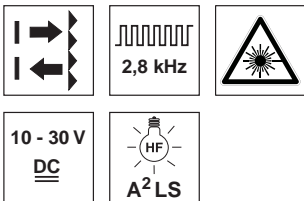


PRKL 8

Laser retro-reflective photoelectric sensor

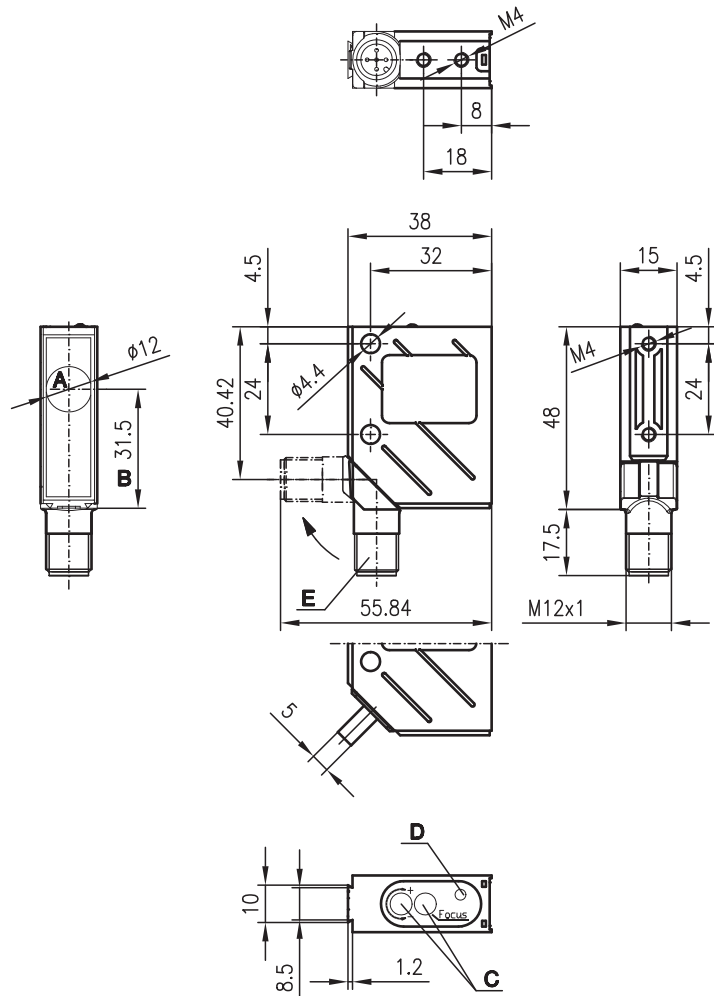
en 11-2017/09 50115718-04



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

- Laser, 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

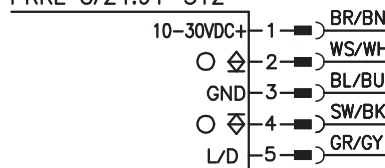
Dimensioned drawing



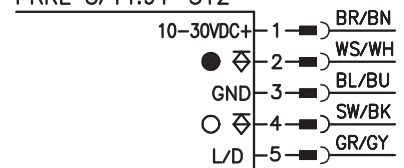
- A** Transmitter and receiver
- B** Optical axis
- C** Operational control
- D** Yellow LED
- E** Turning connector, 90° rot. angle

Electrical connection

PRKL 8/24.91
PRKL 8/24.91-S12



PRKL 8/44.91-S12



We reserve the right to make changes • PAL_PRKL8_L2_en_50115718_04.fm

Accessories:

(available separately)

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

Specifications

Optical data

Typ. op. range limit (MTK(S) 50x50) ¹⁾	0 ... 21 m
Operating range ²⁾	see tables
Light spot diameter	≥ 0.1 mm adjustable with 16 rotations (see diagram)
Focus adjustment range	140 mm ... ∞ (see diagrams)
Beam divergence	≥ 0.5 mrad
Light source	laser, pulsed
Laser class	2 acc. to IEC 60825-1:2007
Wavelength	655 nm (visible red light)
Max. output power (peak)	3 mW
Pulse duration	8 μs

Timing

Switching frequency	2800 Hz
Response time	0.18 ms
Delay before start-up	≤ 100 ms

Electrical data

Operating voltage U_B ³⁾	10 ... 30 VDC
Residual ripple	≤ 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
Function	.../24... light/dark switching via pin 5
Signal voltage high/low	≥ ($U_B - 2V$) / ≤ 2V
Output current	max. 100 mA
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, 5x0.25mm ²

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⁾
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	< 0.5 ms

- 1) Typ. operating range limit: max. attainable range without performance reserve, focus = 16 m
- 2) Operating range: recommended range with performance reserve, focus = 16 m
- 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)

Order guide

Laser class 2

With M12 connector	PRKL 8/24.91-S12	50036364
With M12 connector	PRKL 8/44.91-S12	50127932
With 2 m 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 Tape 6 50x50	0 ... 8.0m

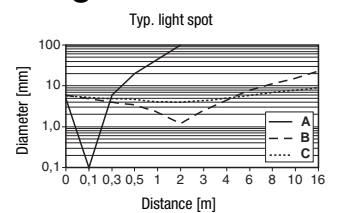
1	0	19	22
2	0	17	21
3	0	7	9
4	0	7	9
5	0	8	9
6	0	8	9

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

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

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

Diagrams



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

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.

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

PRKL 8

Laser retro-reflective photoelectric sensor

Laser safety notices



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.

<p>①</p> <p>A Laser exit opening B Laser warning sign</p>	<p>②</p> <div style="display: flex; justify-content: space-between;"> <div style="width: 48%;"> <p style="text-align: center; border: 1px solid black; padding: 2px;">50107525-04</p> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> <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: 655 nm</p> <p style="text-align: center; font-size: x-small;">LASER KLASSE 2 DIN EN 60825-1:2008-05</p> </div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> <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: 655 nm</p> <p style="text-align: center; font-size: x-small;">CLASS 2 LASER PRODUCT EN 60825-1:2007</p> </div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px; text-align: center; font-size: x-small;"> <p>AVOID EXPOSURE – LASER RADIATION IS EMITTED FROM THIS APERTURE</p> </div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> <p style="text-align: center; font-size: small;">RADIACIÓN LASER NO MIRAR FIJAMENTE AL HAZ</p> <p style="font-size: x-small;">Potencia máx. (peak): 3 mW Duración del impulso: 8 µs Longitud de onda: 655 nm</p> <p style="text-align: center; font-size: x-small;">PRODUCTO LASER DE CLASE 2 EN 60825-1:2007</p> </div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> <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: 655 nm</p> <p style="text-align: center; font-size: x-small;">CLASS 2 LASER PRODUCT IEC 60825-1:2007 Complies with 21 CFR 1040.10</p> </div> <div style="text-align: center;"> </div> </div> <div style="width: 48%;"> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> <p style="text-align: center; font-size: x-small;">RADIATIONE 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: 655 nm</p> <p style="text-align: center; font-size: x-small;">*APPARECCHIO LASER DI CLASSE 2 EN 60825-1:2007</p> </div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> <p style="text-align: center; font-size: small;">RAYONNEMENT LASER NE PAS REGARDER DANS LE FASCEAU</p> <p style="font-size: x-small;">Puissance max. (crête): 3 mW Durée d'impulsion: 8 µs Longueur d'onde: 655 nm</p> <p style="text-align: center; font-size: x-small;">APPAREIL A LASER DE CLASSE 2 EN 60825-1:2007</p> </div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px; text-align: center; font-size: x-small;"> <p>EXPOSITION DANGEREUSE – LASER RAYONNEMENT LASER EST EMIS PAR CETTE OUVERTURE</p> </div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> <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: 655 nm</p> <p style="text-align: center; font-size: x-small;">EQUIPAMENTO LASER CLASSE 2 EN 60825-1:2007</p> </div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> <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: 655 nm</p> <p style="text-align: center; font-size: x-small;">2 类激光产品 GB7247.1-2012</p> </div> </div> </div>
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