

PRK 92/3 L Ex

Retro-reflective photoelectric sensors with polarization filter

en 2022/05/11 50111475-06



0.2 ... 5m

- Compact construction with glass optics, degree of protection IP 67 for industrial application
- Switching output acc. to IEC 60947-5-6 (NAMUR)
- EU type examination certificate DMT 03 ATEX E 029 Supplement 4 onwards
 - Ex II 2G Ex ia IIC T6 Gb
 - Ex II 2D Ex ia IIIC T 80 °C Db
- For explosive gas atmospheres of subgroup IIC and conductive dusts acc. to subgroup IIIC
- IECEx certificate IECEx BVS 21.0011
 - Ex ia IIC T6 Gb
 - Ex ia IIIC T80 °C Db

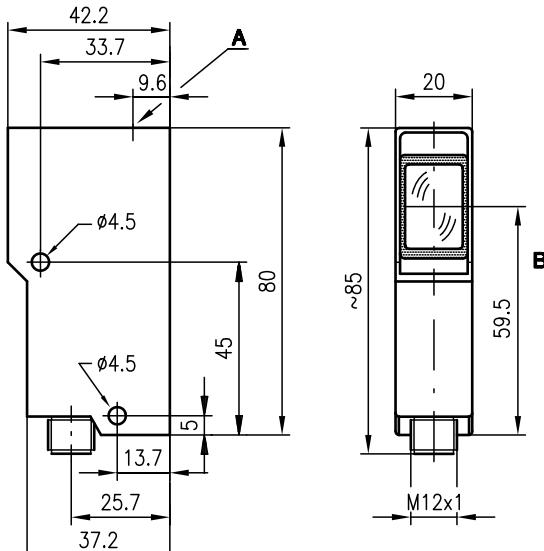
We reserve the right to make changes • PAL_PRK92Ex_en_50111475_06.fm

Accessories:

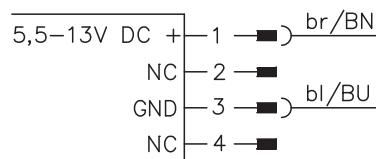
(available separately)

- Mounting systems (BT 92, UMS 1)
- Reflectors
- Reflective tapes
- Blue connection cable for intrinsically safe circuits:

KB-092-5000-4 ... Ex	50113399
KB-092-5000-4A ... Ex	50113400
- Isolated switching amplifier (VS 403...)

Dimensioned drawing

A Indicator diode
B Optical axis

Electrical connection

Technical data

Optical data

Operating range (TK(S) 100x100) ¹⁾

Light source

Wavelength

Intensity

Time behavior

Switching frequency

Response time

Readiness delay

Electrical data

Nominal voltage

Operating voltage U_B

Residual ripple

Bias current (light path interrupted)

Switching output

Function

Indicators

Yellow LED

Mechanical data

Housing

Surface

Optics

Weight

Connection type

Environmental data

Ambient temp. (operation/storage)

VDE protection class ²⁾

Protective circuit ³⁾

Degree of protection

Light source

Standards applied

Explosion protection

Certification ATEX

Certification IECEx

Maximum safe voltage

Maximum safe current

Maximum safe power

Internal capacitance C_i

Internal inductance L_i

0.2 ... 5m

LED (modulated light)

660nm (visible red light, polarized)

$< 1.1 \text{ mW/mm}^2$

60Hz

8.5ms

$\leq 100 \text{ ms}$

8.2VDC

5.5 ... 13VDC (incl. residual ripple)

Max. 0.35V_{SS}

$\leq 1 \text{ mA}$

NAMUR (IEC 60947-5-6)

Light switching

(light/dark setting on switching amplifier)

Light path free

Diecast zinc

Anti-static epoxy coating

Glass

140g

M12 connector

-20°C ... +50°C/-30°C ... +70°C

II

2

IP 67

Exempt group (in acc. with EN 62471)

IEC 60947-5-2

 II 2G Ex ia IIC T6 Gb

 Ex ia IIC T6 Gb

 II 2D Ex ia IIIC T 80 °C Db

 Ex ia IIIC T80 °C Db

U_{max} 13V

I_{max} 40mA

P_{max} 90 mW

$\leq 70 \text{ nF}$

$\leq 200 \mu\text{H}$

1) Operating range: recommended range with function reserve

2) Rating voltage 250VAC

3) 2=polarity reversal protection

Tables

Reflectors	Operating range
	0.2 ... 5.0m
	0.2 ... 4.0m
	0.2 ... 3.5m
	0.2 ... 2.0m
	0.5 ... 3.5m
	0.2 ... 2.0m
	0.3 ... 2.5m
Film 2 100x100	0.4 ... 2.5m

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

Diagrams

Order guide

Designation	Part no.
PRK 92/3 L Ex	50080723

Notes

Observe 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 its intended use.

- For operation in potentially explosive atmospheres, an isolated switching amplifier is required.

Operating instructions for the 92 Ex series for use in potentially explosive areas.

The sensors produced by Leuze electronic GmbH + Co. KG for use in potentially explosive areas are sensors which function on the optical electronic principle. Without making physical contact, these sensors detect objects which are located in or which pass through the light beam.

The devices of the 92 Ex series (LS throughbeam photoelectric sensor, PRK retro-reflective photoelectric sensor and FRK diffuse reflection sensor) were designed for use in explosive gas atmospheres of group II, subgroup IIC (according to Directive 2014/34/EU, corresponds to device group II, device category 2G, zone 1) and for conductive dusts (subgroup IIIC) in compliance with standards EN IEC 60079-0:2018 and EN 60079-11:2012, IEC 60079-0:2017 and IEC 60079-11:2011. The EU Declaration of Conformity can be found under www.leuze.com.

The intrinsic safety of the sensors is ensured only in combination with corresponding electrical equipment according to IEC 60947-5-6 (NAMUR), e.g. isolated switching amplifier VS 403.

NOTE



- An isolated switching amplifier must be used for each sensor. In the case of the throughbeam photoelectric sensor, an isolated switching amplifier is required for both the transmitter and the receiver.
- The sensors must not be connected together at an isolated switching amplifier.
- When using an isolated switching amplifier, it must be ensured that the characteristic data specific to explosion protection of both devices are not exceeded.

Installation, commissioning

ATTENTION!



- Due to the physical circumstances, the photoelectric sensors of the 92 Ex series must not be used for the protection of persons or for E-Stop purposes.
- The photoelectric sensors of the 92 Ex series must only be installed and maintained by trained electricians.
- The respective applicable national regulations for the installation of electrical equipment in potentially explosive areas must be observed.
- The metal housing of the photoelectric sensor has to be mounted at the mounting location electrostatically conductive ($< 1 \text{ M}\Omega$).

During installation and commissioning of the devices, the Supplement 4 onwards of EU type examination certificate DMT 03 ATEX E 029 and IECEx certificate IECEx BVS 21.0011 is to be observed.

To connect the intrinsically safe sensors with corresponding equipment, it is possible to use, for example, the blue interconnection cable KB-092-5000-4 Ex (angular connector, part no. 50113399) or KB-092-5000-4A Ex (axial connector, part no. 50113400) from Leuze electronic GmbH + Co. KG.

Maintenance

No changes may be made to the devices of the 92 Ex series for potentially explosive areas.

Repairs to the sensors may only be performed by persons trained for such work or by the manufacturer.

Defective devices must be replaced immediately.

Cyclical maintenance of the sensors is not necessary.

Depending on the environmental conditions, it may occasionally be necessary to clean the light-emission surfaces of the sensors.

This cleaning must only be performed by persons trained for performing this task.

Chemical resistance

The 92 Ex series sensors demonstrate good resistance against many diluted acids and bases.

Exposure to organic solvents is possible only under certain circumstances and only for short periods of time.

Resistance to chemicals should be examined on a case by case basis.