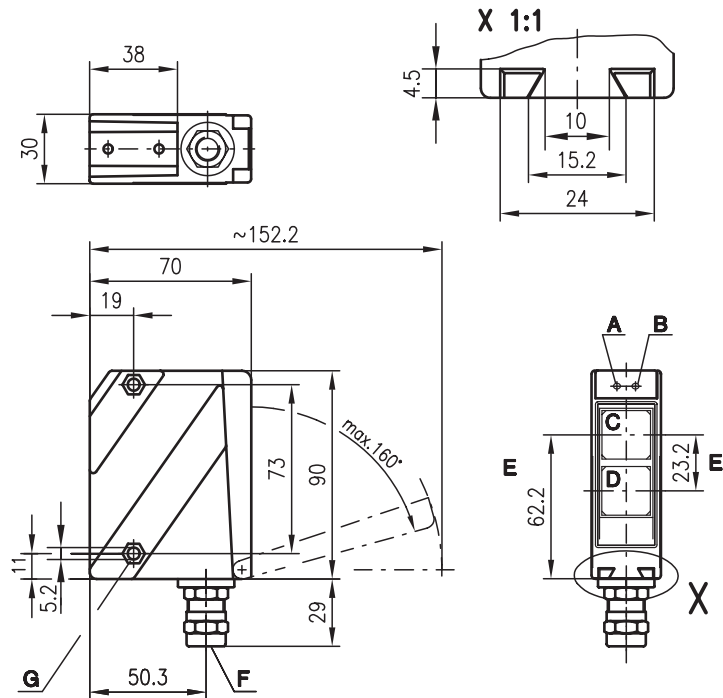




PRK 96 Ex n Retro-reflective photoelectric sensors with polarisation filter



Dimensioned drawing

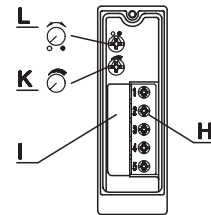


0.1 ... 18m

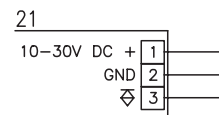


- Polarised retro-reflective photoelectric sensor with large operating range in visible red light
- Robust metal housing with shock-resistant glass cover, protection class IP 67/IP 69K for industrial application
- General light/dark switching, sensitivity adjustment and delay before start-up provide for optimal adaptation to the application
- Connection via comfortable terminal compartment
- Ex II 3G EEx nA II T4
- Ex II 3D IP67 T70°C

- A Indicator diode green
- B Indicator diode yellow
- C Receiver
- D Transmitter
- E Optical axis
- F Screwed cable gland M16x1.5 for \varnothing 5 ... 9mm
- G Countersinking for nut M5, 4.2 deep
- H Connection terminals
- I Cable entry
- K Sensitivity adjustment
- L Light/dark switching



Electrical connection



Accessories:

(available separately)

- Mounting systems (BT 96, BT 96.1, UMS 96, BT 450.1-96)
- Reflectors
- Reflective tapes

We reserve the right to make changes • 96_ex_b18e.fm





Specifications

Optical data

Typ. op. range limit (TK(S) 100x100) ¹⁾	18 m
Operating range ²⁾	see tables
Light spot diameter	approx. 130 mm at 6 m
Light source	LED (modulated light)
Wavelength	660 nm (visible red light, polarised)

Timing

Switching frequency	1000 Hz
Response time	0.5 ms
Delay before start-up	≤ 200 ms

Electrical data

Operating voltage U_B	10 ... 30 VDC (incl. residual ripple)
Residual ripple	≤ 15% of U_B
Bias current	≤ 40 mA
Switching output	PNP transistor
Function characteristics	light/dark switching (reversible)
Signal voltage high/low	≥ ($U_B - 2V$) / ≤ 2V
Output current	max. 100 mA
Sensitivity	adjustable

Indicators

LED green	ready
LED yellow	light path free
LED yellow flashing	light path free, no performance reserve

Mechanical data

Housing	diecast zinc
Optics cover	glass
Weight	380 g
Connection type	terminals, cable diameter 5 ... 9 mm
Screwed cable gland	EEx e II clamping torque 3.5 Nm

Environmental data

Ambient temp. (operation/storage)	-10°C ... +50°C / -40°C ... +55°C
Protective circuit ³⁾	1, 2, 3, 4
VDE safety class ⁴⁾	II, all-insulated
Protection class	IP 67, IP 69K ⁵⁾
LED class	1 (acc. to EN 60825-1)
Standards applied	IEC 60947-5-2

Explosion protection

Labelling (CENELEC)	Ex II 3G EEx nA II T4	Ex II 3D IP67 T70°C
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- 1) Typ. operating range limit: max. attainable range without performance reserve
- 2) Operating range: recommended range with performance reserve
- 3) 1=transient protection, 2=polarity reversal protection, 3=short circuit protection for all outputs, 4=interference blanking
- 4) Rating voltage 250 VAC
- 5) 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

Order guide

Designation	Part No.
PRK 96M/P-3360-21 Ex n	501 01940

Tables

18m models

Reflectors	Operating range
1 TK(S) 100x100	0.3 ... 15m
2 MTK(S) 50x50	0.3 ... 11m
3 TK(S) 30x50	0.3 ... 6m
4 TK(S) 20x40	0.3 ... 5m
5 TK(S) 82	0.3 ... 11m
6 Tape 2 100x100	0.3 ... 6m

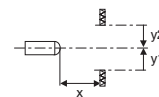
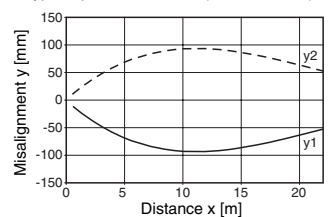
1	0.1	15	18
2	0.1	11	12
3	0.1	6	7.5
4	0.1	5	6
5	0.1	11	11.5
6	0.1	6	7.5

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

Diagrams

18m models

Typ. response behaviour (TKS 100x100)



Remarks

**PRK 96 Ex n Retro-reflective photoelectric sensors with polarisation filter****Operating instructions for sensors of type PRK 96 M/P-3360-21 Ex n for application in potentially explosive areas of zone 2 and 22.**

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.

**Attention!**

Electrical equipment may endanger humans and (where applicable) animal health, and may threaten the safety of goods if used incorrectly and under unfavourable conditions in potentially explosive areas.

A safe operation in potentially explosive areas is only possible if the equipment is used properly and for its intended purpose.

This requires that the installation and operating instructions are adhered to and that appropriate measures are taken to ensure that this is effectively and permanently ensured.

**Notes!**

- In order to achieve a safe operation of sensors of Group II, Category 3 in potentially explosive areas, installation and protective devices appropriate to the application must ensure that operational events do not damage or overload the equipment.
- The lid of the device's terminal compartment must only be opened if no potentially explosive atmosphere is present.

Installation, Commissioning

In order to comply with the requirements acc. to EN 50 021 and EN 50 281-1-1, the following prerequisites must be met:

- Due to the physical circumstances, the photoelectric sensors of Series 96 must not be used for the protection of persons or for purposes of emergency shutdown.
- The photoelectric sensors of series 96 must only be installed and maintained by trained electricians.
- For the photoelectric sensors of the 96 series, screwed cable glands tested and certified according to EEx e are used for openly laid cables and lines. These screwed cable glands may only be replaced by comparable, approved screwed cable glands.
- The photoelectric sensors of the 96 series must only be commissioned if the terminal compartment lid of the device is properly sealed.
- The applicable regulations for the installation of electrical equipment in potentially explosive areas must be observed.
- The requirements according to EN 50281-1-2 regarding dust deposits and temperatures must be observed.

Maintenance

No changes may be made to the devices of type PRK 96 M/P-3360-21 Ex n 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.

A soft, damp cloth should be used for this purpose. Cleaning agents that contain solvents must not be used.

Chemical Resistance

The series 96 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.



EG-Konformitätserklärung

EC Declaration of Conformity

Name des Herstellers:

Name of the manufacturer

Leuze electronic GmbH+Co KG

Anschrift:

Address:

In der Braike 1 D-73277 Owen/ Teck

erklärt unter alleiniger Verantwortung,
dass das Produkt:

declares under sole responsibility that the
products:

Bezeichnung:

Designation:

PRK 96 M/P-3360-21 Ex n

Bestellnummer:

Order Number:

501 01940

Kennzeichnung Gas:

Marking for gas:

II 3G EEx nA II T4

Kennzeichnung Staub:

Marking for dust:

II 3D IP67 T70°C

folgenden Richtlinien und Normen für die
Gerätegruppe II, Gerätekategorie 3 entsprechen
und bei bestimmungsgemäßer Verwendung und
Beachtung der Betriebsanleitung die
grundlegenden Sicherheits- und
Gesundheitsanforderungen erfüllen.

conform to the following directives and standards
for equipment group II, equipment category 3.
They fulfil the basic health and safety
requirements if used as intended and in
accordance with the operating manual.

Richtlinie 94/9/EG

Directive 94/9/EC

Richtlinie 89/336/EWG

Directive 89/336/EEC

EN 60947-5-2 1998+A1: 1999
EN 60825-1: 1994+A1: 2002+A2: 2001
EN 50021: 1999
EN 50281-1-1: 1998+A1: 2002
DMT 02 ATEX ZQS/ E 166

Owen, den *02.02.05*

Michael Heyne
(Geschäftsführer / General Manager)

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Reg.-Nr. 2923192

Die Gesellschaft ist eine Kommanditgesellschaft
mit Sitz in Owen, Registergericht Kirchheim-Teck, HRA 712
Persönlich haftende Gesellschafterin ist die
Leuze-electronic Geschäftsführungs-GmbH mit Sitz in Owen
Registergericht Kirchheim-Teck, HRB 550
Geschäftsführer: Michael Heyne (Sprecher), Dr. Harald Grübel
Vorsitzender des Verwaltungsrats: Meinert Hahnemann

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13 33 624 (BLZ 600 700 70)
310 800 005 (BLZ 612 901 20)
10 399 220 (BLZ 611 500 20)
0 014 890 702 (BLZ 600 100 70)