

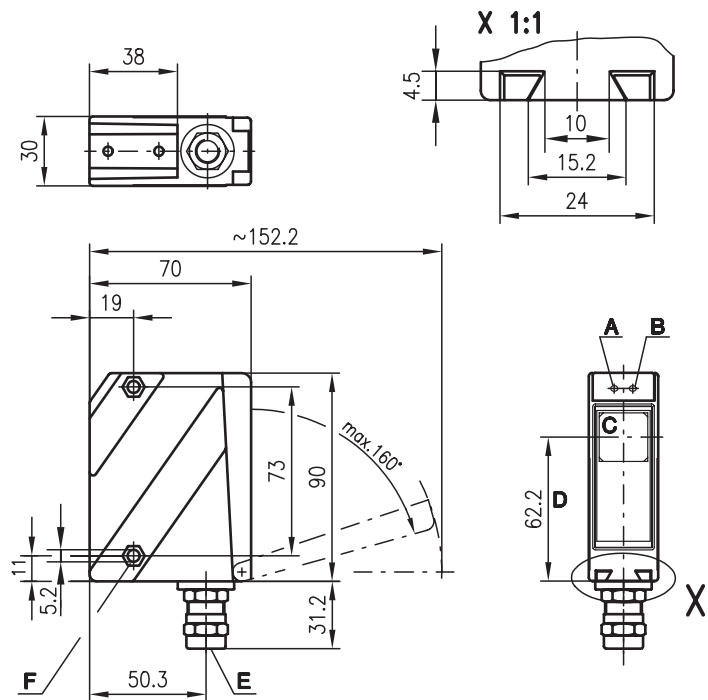


SLS 96 Ex n

Protective throughbeam photoelectric sensors



Dimensioned drawing



- A Indicator diode green
- B Indicator diode yellow
- C Transmitter/receiver
- D Optical axis
- E Screwed cable gland M16x1.5 for Ø 5 ... 9mm
- F Countersinking for SK nut M5, 4.2 deep
- G Connection terminals
- H Cable entry



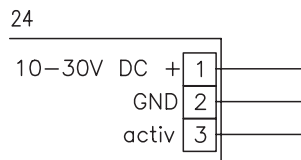
0 ... 65m



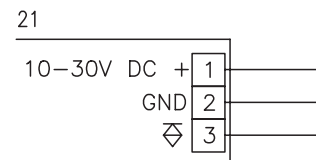
- Protective throughbeam photoelectric sensor cat. 2 (testing) with high performance reserve in infrared light
- Robust metal housing with shock-resistant optical window, protection class IP 67/ IP 69K for industrial application
- 2 indicators each at the transmitter and receiver for displaying their status when commissioning and in operation
- Connection via comfortable terminal compartment
- Ex II 3G EEx nA II T4
- Ex II 3D IP67 T60°C

Electrical connection

Transmitter



Receiver



Accessories:

(available separately)

- Mounting systems (BT 96, BT 96.1, UMS 96, BT 450.1-96)
- Alignment aid ARH 96
- Test-monitoring units:
 - TNT 32 (Part No. 500 20476)
 - TNT 33 (Part No. 500 28158)
 - TNT 34 (Part No. 500 81023)
 - TNT 35 (Part No. 500 33058)
 - TMC 66 (Part No. 500 82121)

We reserve the right to make changes • 96_ex_a16e.fm



Specifications

Optical data

Typ. operating range limit ¹⁾
 Operating range ²⁾
 Light source
 Wavelength

Infrared light

0 ... 65 m
 0 ... 50 m
 LED (modulated light)
 880 nm

Timing

Sensor switching frequency
 Sensor response time
 Delay before start-up

500 Hz
 1 ms
 ≤ 200 ms

Electrical data

Operating voltage U_B
 Residual ripple
 Bias current
 Switching output
 Function characteristics
 Signal voltage high/low
 Output current

10 ... 30 VDC (incl. residual ripple)
 ≤ 15% of U_B
 ≤ 50 mA
 PNP transistor
 light switching
 ≥ ($U_B - 2V$) / ≤ 2 V
 max. 100 mA

Indicators

LED green

ready

Receiver

LED yellow
 LED yellow flashing

light path free
 light path free, no performance reserve

Transmitter

LED yellow

transmitter active

Mechanical data

Housing
 Optics cover
 Weight
 Connection type
 Screwed cable gland

Metal housing

diecast zinc
 polycarbonate
 380 g
 terminals, cable diameter 5 ... 9 mm
 EEx e II clamping torque 3.5 Nm

Environmental data

Ambient temp. (operation/storage)
 Protective circuit ³⁾
 VDE safety class ⁴⁾
 Protection class
 LED class
 Standards applied

-10 °C ... +50 °C / -40 °C ... +70 °C
 1, 2, 3
 II, all-insulated
 IP 67, IP 69K ⁵⁾
 1 (acc. to EN 60825-1)
 IEC 60947-5-2

Explosion protection

Labelling (CENELEC)

II 3G EEx nA II T4 II 3D IP67 T60 °C

Options

Activation input active
 Transmitter active/not active
 Activation/disable delay
 Input resistance

≥ 8 V / ≤ 2 V
 ≤ 1 ms
 10 kΩ ± 10%

- 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) 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.
Transmitter and receiver	SLS 96M/P-1070-T2-2 Ex n	
Transmitter	SLSS 96 M-1080-T2-24 Ex n	500 41443
Receiver	SLSE 96 M/P-1070-T2-21 Ex n	500 41444

Tables

Diagrams

Remarks

- The protective through-beam photoelectric sensor is a contactless active protective device only in connection with a safety-relevant control system, in which the cyclical testing of transmitter and receiver is carried out according to EN 61496-1, category 2 (testing).
- The power supply unit used to operate the photoelectric sensor has to be able to compensate for changes and interruptions of the supply voltage acc. to EN 61496-1. Minimum blackening object dia: Ø 28 mm.



Operating instructions for sensors of type SLS 96 M/P-1070-T2-2 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:

- The protective throughbeam photoelectric sensor is a contactless active protective device only in connection with a safety-relevant control system, in which the cyclical testing of transmitter and receiver is carried out according to EN 61496-1, category 2 (testing).
- 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 SLS 96 M/P-1070-T2-2 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:

SLSS 96 M-1080-T2-24 Ex n

Bestellnummer:

Order Number:

500 41443

Kennzeichnung Gas:

Marking for gas:

II 3G EEx nA II T4

Kennzeichnung Staub:

Marking for dust:

II 3D IP67 T60°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 fulfill 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 **27.10.04**

Michael Heyne
(Geschäftsführer/ General Manager)



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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

Deutsche Bank AG Stuttgart
Volksbank Kirchheim-Nürtingen
Kreissparkasse Esslingen-Nürtingen
Post giro Stuttgart

13 33 624
310 800 005
10 399 220
0 014 890 702

(BLZ 600 700 70)
(BLZ 612 901 20)
(BLZ 611 500 20)
(BLZ 600 100 70)

Steuer-Nr. 69026 / 10630
USt-IdNr. DE 145912521

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dass das Produkt:*declares under sole responsibility that the
products:*

Bezeichnung:

*Designation:***SLSE 96 M/P-1070-T2-21 Ex n**

Bestellnummer:

*Order Number:***500 41444**

Kennzeichnung Gas:

Marking for gas: **II 3G EEx nA II T4**

Kennzeichnung Staub:

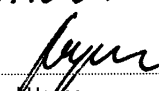
Marking for dust: **II 3D IP67 T60°C**folgenden Richtlinien und Normen für die
Gerätegruppe II, Gerätekategorie 3 entsprechen
und bei bestimmungsgemäßer Verwendung und
Beachtung der Betriebsanleitung die
grundlegenden Sicherheits- und
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DMT 02 ATEX ZQS/ E 166Owen, den **27.10.04**

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