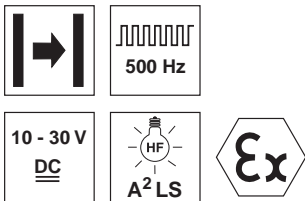


LSR 46B... Ex n Throughbeam photoelectric sensor with alignment indicator

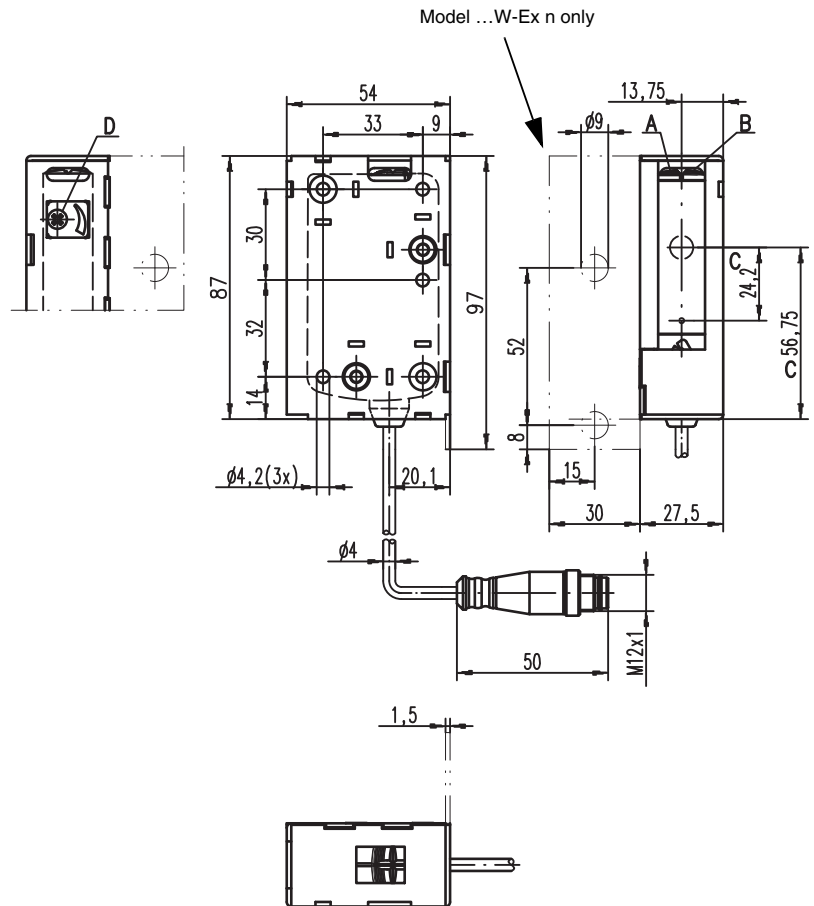
en 01-2010/02 50112942



60m

- Throughbeam photoelectric sensor with visible red light
- Fast alignment through *brightVision*®
- Indicator for fast, precise alignment
- Time-saving connection through Ultra-Lock™ fast locking
- Push-pull switching outputs
- Sensitivity adjustment
- Warning output - for increased availability
- Further options for adapting to the respective application
- Ex II 3G Ex nA II T4
- Ex II 3D tD A22 IP 67 T 90°C

Dimensioned drawing

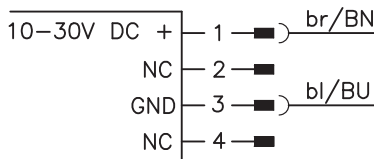


- A** Green indicator diode
- B** Yellow indicator diode
- C** Optical axis
- D** Optional sensitivity adjustment

Electrical connection

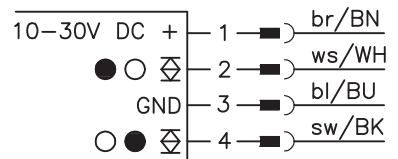
Transmitter:

LSSR 46B, 200-S12 S-Ex n



Receiver:

LSER 46B/66, 200-S12 S-Ex n



Accessories:

(available separately)

- Mounting systems (BT 46, BT 46.1, BT 46.1.5, BT 46.2)
- M12 connectors (KD ...)
- Ready-made cables (K-D ...)
- Alignment aid (SAT 5)
- Interlocking guard K-VM12-Ex (Part No. 501 09217)

We reserve the right to make changes • DS_LSR46B_S-Ex_n_en.fm



Specifications

Optical data

Typ. operating range limit ¹⁾	60m
Operating range ²⁾	50m
Light source ³⁾	LED (modulated light)
Wavelength	620nm (visible red light, polarized)

Timing

Switching frequency	500Hz
Response time	1 ms
Delay before start-up	≤ 300ms

Electrical data

With transistor switching outputs

Operating voltage U_B ⁴⁾	10 ... 30VDC (incl. residual ripple)
Residual ripple	≤ 15% of U_B
Open-circuit current	≤ 20mA
Switching output ⁵⁾	2 push-pull switching outputs pin 2: PNP dark switching, NPN light switching pin 4: PNP light switching, NPN dark switching ($U_B - 2V$) ≤ 2V
Signal voltage high/low	max. 100mA
Output current	

Indicators

Green LED	ready
Yellow LED	light path free
Yellow LED, flashing	light path free, no performance reserve

Mechanical data

Housing	plastic (PC-ABS)
Optics cover	plastic (PMMA)
Weight (with cable and connector)	65g
Connection type	cable with M12 connector, cable length: 200mm

Environmental data

Ambient temp. (operation/storage)	-30°C ... +60°C / -30°C ... +70°C
Protective circuit ⁶⁾	2, 3
VDE safety class ⁷⁾	II, all-insulated
Protection class	IP 67, IP 69K
LED class	1 (acc. to EN 60825-1)
Standards applied	IEC 60947-5-2
Certifications	UL 508 ⁴⁾

Explosion protection

Labeling (CENELEC)	Ⓔ II 3G Ex nA II T4	Ⓔ II 3D Ex tD A22 IP 67 T 90°C
--------------------	---------------------	--------------------------------

- 1) Typ. operating range limit: max. attainable range without performance reserve
- 2) Operating range: recommended range with performance reserve
- 3) Average life expectancy 100,000 h at an ambient temperature of 25°C
- 4) For UL applications: for use in class 2 circuits only
- 5) The push-pull switching outputs must not be connected in parallel
- 6) 2=polarity reversal protection, 3=short-circuit protection for all transistor outputs
- 7) Rating voltage 50VAC

Order guide



Cable with M12 connector, length: 200mm

Complementary push-pull switching output

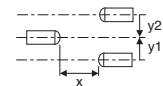
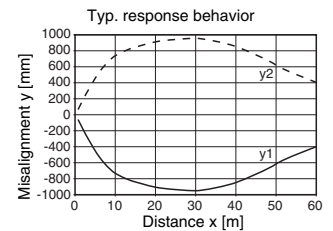
	Designation	Part No.
Transmitter, housing model S (standard)	LSSR 46B, 200-S12 S-Ex n	50111519
Receiver, housing model S (standard)	LSER 46B/66, 200-S12 S-Ex n	50111520

Tables

0	50	60
---	----	----

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

Diagrams



Remarks

A light axis consists of a transmitter and a receiver with the following designations:

LSR = complete light axis
LSSR = transmitter
LSER = receiver

- **Approved purpose:**
The photoelectric sensors are optoelectronic sensors for the optical, contactless detection of objects. This product may only be used by qualified personnel and must only be used for the approved purpose. This sensor is not a safety sensor and is not to be used for the protection of persons.
- **Alignment indicator:**
(‘E’ see dimensioned drawing)
Yellow LED = light path free - with reserve
Yellow LED, flashing = light path free - no performance reserve

LSR 46B... Ex n Throughbeam photoelectric sensor with alignment indicator

Operating instructions for sensors for use in potentially explosive areas of Group II, Category 3, Zones 2 ("Gas Ex") and 22 ("Dust Ex")

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 unfavorable 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.

Installation, Commissioning

In order to comply with the requirements acc. to EN 61 241-1 and EN 60 079-15, the following prerequisites must be met:

- Devices with connector (e.g. Series 46B) must be equipped with an additional safeguard or a mechanical interlocking guard K-VM12-Ex (Part No. 501 09217) to avoid unintended separation of the connectors. The warning sign "Do not disconnect under voltage" that is supplied with the device must be attached to the sensor or its mounting bracket so that it is clearly visible.
- Devices with terminal compartment lid (e.g. Series 96) must only be commissioned if the terminal compartment lid of the device is properly sealed.
- Connection cables and connectors must be protected from excessive or unintended pulling or pushing strain.
- The requirements according to EN 61 241-1 regarding dust deposits and temperatures must be observed.



Attention!

- Due to the physical circumstances, the sensors must not be used for the protection of persons or for purposes of emergency shutdown.
- The sensors must only be installed and maintained by trained electricians.
- The applicable regulations for the installation of electrical equipment in potentially explosive areas must be observed.

Maintenance

No changes may be made to the sensors 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 optical surface of the sensors. This cleaning must only be performed by appropriately trained persons. We recommend using a soft, damp cloth for this purpose. Cleaning agents that contain solvents must not be used!

Chemical resistance

The 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
-Déclaration CE de conformité
-Declaración de conformidad CE

Name des Herstellers:

-Name of the manufacturer:
-Le constructeur:
-Nombre del fabricante:

Leuze electronic GmbH+Co. KG

Anschrift:

-Address:
-domicile:
-Dirección:

In der Braike 1 D-73277 Owen/ Teck

Erklärt unter alleiniger Verantwortung, dass das Produkt mit der Bezeichnung:

-declares under sole responsibility that the products with the designation:
-assumant sa pleine et entière responsabilité déclare que les produits avec la référence:
-declara bajo su propia responsabilidad, que los productos con el número de pedido:

LSSR 46B,200-S12 S-Ex n 50111519
LSER 46B/66,200-S12 S-Ex n 50111520

Kennzeichnung Gas:

-Marking for gas:
-Certification gaz:
-Certificación gas:

Ex II 3G Ex nA II T4

Kennzeichnung Staub:

-Marking for dust:
-Certification poussière:
-Certificación polvo:

Ex II 3D Ex tD A22 IP67 T90°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.
-sont conformes aux directives et normes ci-dessous pour les appareils du groupe II, catégorie 3 et que sous réserve d'utilisation conforme et du respect des consignes du manuel d'utilisation ceux-ci répondent aux exigences fondamentales pour la sécurité et la santé.
-corresponden a las directivas y normas para grupo de aparatos II categoría de aparatos 3 y que cumplen los requerimientos de seguridad y de salud al ser empleados debidamente teniendo en cuenta las instrucciones de uso.

Richtlinie 94/9/EG / Richtlinie 89/336/EWG

-Directive 94/9/EC / Directive 89/336/EEC
-Directive 94/9/CE / Directive 89/336/CEE
-Directiva 94/9/CE / Directiva 89/336/CEE

EN 60947-5-2:1998+A1:1999+A2:2004

EN 60825-1:1994+A1:2002+A2:2001
EN 60079-15:2005
EN 61241-1:2004

Owen, den 10. Juni 2009



Dr. Harald Gröbel (Geschäftsführer/ General Manager/ Directeur / Gerente)

Leuze electronic GmbH + Co. KG
 In der Braike 1
 D-73277 Owen
 Telefon +49 (0) 7021 573-0
 Telefax +49 (0) 7021 573-199
 info@leuze.de
 www.leuze.com

Leuze electronic GmbH + Co. KG, Sitz Owen, Registergericht Stuttgart, HRB 230662
 Persönlich haftende Gesellschafterin Leuze electronic Geschäftsbetriebs-GmbH
 Sitz Owen, Registergericht Stuttgart, HRB 230662
 Geschäftsführer Dr. Harald Gröbel (Vorstandsvorsitz) Karsten Jutz
 USt-IDNr. DE 145612521 Zollnummer 7554232
 Es gelten ausschließlich unsere aktuellen Verkaufs- und Lieferbedingungen.
 Only our current Terms and Conditions of Sale and Delivery shall apply.