

Datasheet

RS PRO Background Suppression Photoelectric Sensor with Block Sensor

Stock No: 729-5185





Detailed technical data

Features

Functional principle	Photoelectric proximity sensor
Functional principle detail	Background suppression
Sensing range max.	5 mm ... 250 mm ¹⁾
Sensing range	35 mm ... 140 mm
Polarisation filters	No
Key LED figures	
Wave length	650 nm
Adjustment	Mechanical spindle, 5 turns

¹⁾ Object with 90 % reflectance (referred to standard white, DIN 5033).

Safety-related parameters

MTTF_D	1,886 years
DC_{avg}	0 %

Electrical data

Supply voltage U_B	10 V DC ... 30 V DC ¹⁾
Ripple	± 10 % ²⁾
Power consumption	30 mA ³⁾

¹⁾ Limit values when operated in short-circuit protected network: max. 8 A.

²⁾ May not exceed or fall below U_v tolerances.

³⁾ Without load.

⁴⁾ At U_v > 24 V, I_A max. = 50 mA.

⁵⁾ Signal transit time with resistive load.

⁶⁾ With light/dark ratio 1:1.

⁷⁾ A = V_S connections reverse-polarity protected.

⁸⁾ B = inputs and output reverse-polarity protected.

⁹⁾ D = outputs overcurrent and short-circuit protected.

Protection class	III
Digital output	
Type	PNP
Signal voltage PNP HIGH/LOW	$V_S - (\leq 3 \text{ V}) / \text{ approx. } 0 \text{ V}$
Output current I_{max}	$\leq 100 \text{ mA}^4)$
Response time	$< 625 \mu\text{s}^5)$
Switching frequency	$1,000 \text{ Hz}^6)$
Switching mode	Light/dark switching
Switching mode selector	Selectable via light/dark selector
Circuit protection	A ⁷⁾ B ⁸⁾ D ⁹⁾

1) Limit values when operated in short-circuit protected network: max. 8 A.

2) May not exceed or fall below U_V tolerances.

3) Without load.

4) At $U_V > 24 \text{ V}$, $I_A \text{ max.} = 50 \text{ mA}$.

5) Signal transit time with resistive load.

6) With light/dark ratio 1:1.

7) A = V_S connections reverse-polarity protected.

8) B = inputs and output reverse-polarity protected.

9) D = outputs overcurrent and short-circuit protected.

Mechanical data

Housing	Rectangular
Dimensions (W x H x D)	12 mm x 31.5 mm x 21 mm
Connection	Male connector M8, 4-pin
Material	
Housing	Plastic, ABS/PC
Front screen	Plastic, PMMA
Weight	20 g
Items supplied	Stainless steel mounting bracket (1.4301/304) BEF-W100-A

Ambient data

Enclosure rating	IP67
Ambient operating temperature	$-25 \text{ }^\circ\text{C} \dots +55 \text{ }^\circ\text{C}^1)$
Ambient temperature, storage	$-40 \text{ }^\circ\text{C} \dots +70 \text{ }^\circ\text{C}$
UL File No.	NRKH.E348498 & NRKH7.E348498

1) Temperature stability following adjustment +/-10 °C.

Classifications

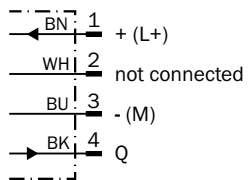
ECl@ss 5.0	27270904
ECl@ss 5.1.4	27270904
ECl@ss 6.0	27270904
ECl@ss 6.2	27270904
ECl@ss 7.0	27270904
ECl@ss 8.0	27270904



ECI@ss 8.1	27270904
ECI@ss 9.0	27270904
ECI@ss 10.0	27270904
ECI@ss 11.0	27270904
ETIM 5.0	EC002719
ETIM 6.0	EC002719
ETIM 7.0	EC002719
UNSPSC 16.0901	39121528

Connection diagram

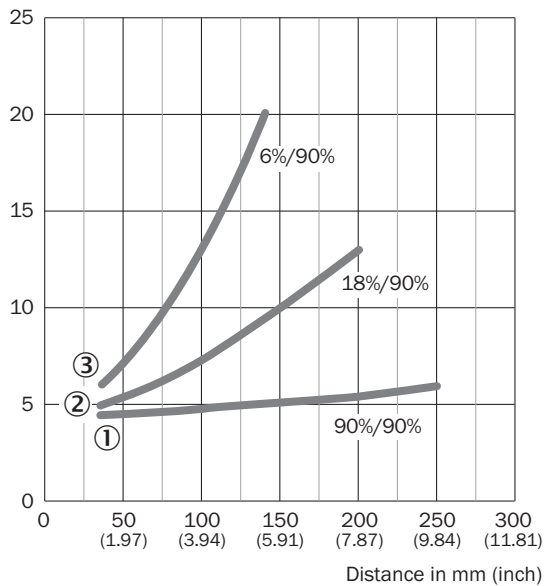
Cd-066



Characteristic curve

GTB6

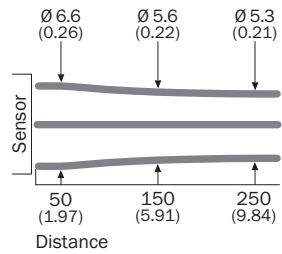
% of sensing distance



- ① Object with 90% remission (based on standard white DIN 5033)
- ② Sensing range on gray, 18 % remission
- ③ Sensing range on black, 6% remission

Light spot size

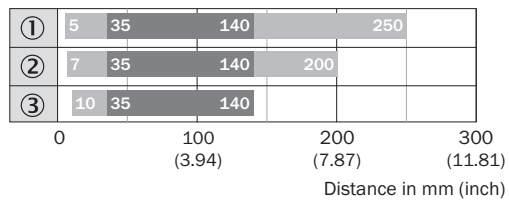
GTB6



All dimensions in mm (inch)

Sensing range diagram

GTB6

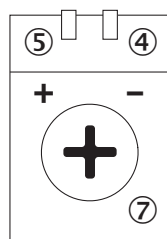


■ Sensing range max. ■ Sensing range

- ① Object with 90% remission (based on standard white DIN 5033)
- ② Sensing range on gray, 18% remission
- ③ Sensing range on black, 6% remission

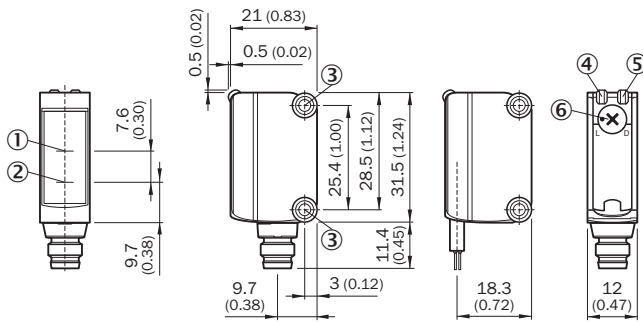
Adjustments

Adjustment possibility



- ④ LED indicator green: Supply voltage active
- ⑤ LED indicator yellow: Status of received light beam
- ⑦ Sensitivity control: potentiometer

Dimensional drawing (Dimensions in mm (inch))



- ① Optical axis, receiver
- ② Optical axis, sender
- ③ Mounting holes M3
- ④ LED indicator green: Supply voltage active
- ⑤ LED indicator yellow: Status of received light beam
- ⑥ Light/ dark rotary switch: L = light switching, D = dark switching

Brief description

Mounting brackets and plates



Stainless steel (1.4301)

Plug connectors and cables



Head A: female connector, M8, 4-pin, straight, A-coded
 Head B: Flying leads
 Cable: Sensor/actuator cable, PVC, unshielded, 5 m



Head A: male connector, M8, 4-pin, straight
 Head B: -
 Cable: unshielded