



Photoelectric sensors  
G2S, Photoelectric proximity sensor, Background  
suppression

GTB2S-F5451



**Model Name** > **GTB2S-F5451**  
**Part No.** > **1064341**



Illustration may differ

**At a glance**

- Accurate adjustment of the operating distance due to easy operation of the 3-turn potentiometer
- Reliable detection of objects of all types regardless of their reflective properties
- Minimum black/white shift, less than 10% under 80 mm

**Your benefits**

- Precise, repeatably accurate switching points with a small, brilliant and sharply defined light spot
- Universal use, since a minimum black/white shift allows the sensor to be used irrespective of object contours and backgrounds
- High throughput and less downtime due to the sensor's ability to suppress active and passive interference in industrial environments.
- The 45-degree tilted cable entry offers maximum installation flexibility with additional soft rubber bearings to absorb vibrations and tensile loads
- The powerful PinPoint LED permits reliable detection of jet-black and poorly reflective objects



**Features**

Sensor/detection principle:	Photoelectric proximity sensor, Background suppression
Dimensions (W x H x D):	7.7 mm x 27.5 mm x 13.5 mm
Housing design (light emission):	Rectangular
Sensing range max.:	2 mm ... 120 mm <sup>1)</sup>
Sensing range:	25 mm ... 90 mm <sup>2)</sup>
Type of light:	Visible red light
Light source:	PinPoint LED <sup>3)</sup>
Wave length:	640 nm
Adjustment:	Potentiometer, 3 turns
Light spot size (distance):	Ø 3.5 mm (50 mm)

<sup>1)</sup> Object with 90 % reflectance (referred to standard white, DIN 5033) <sup>2)</sup> Object with 6 % remission <sup>3)</sup> Average service life of 100,000 h at T<sub>A</sub> = +25 °C

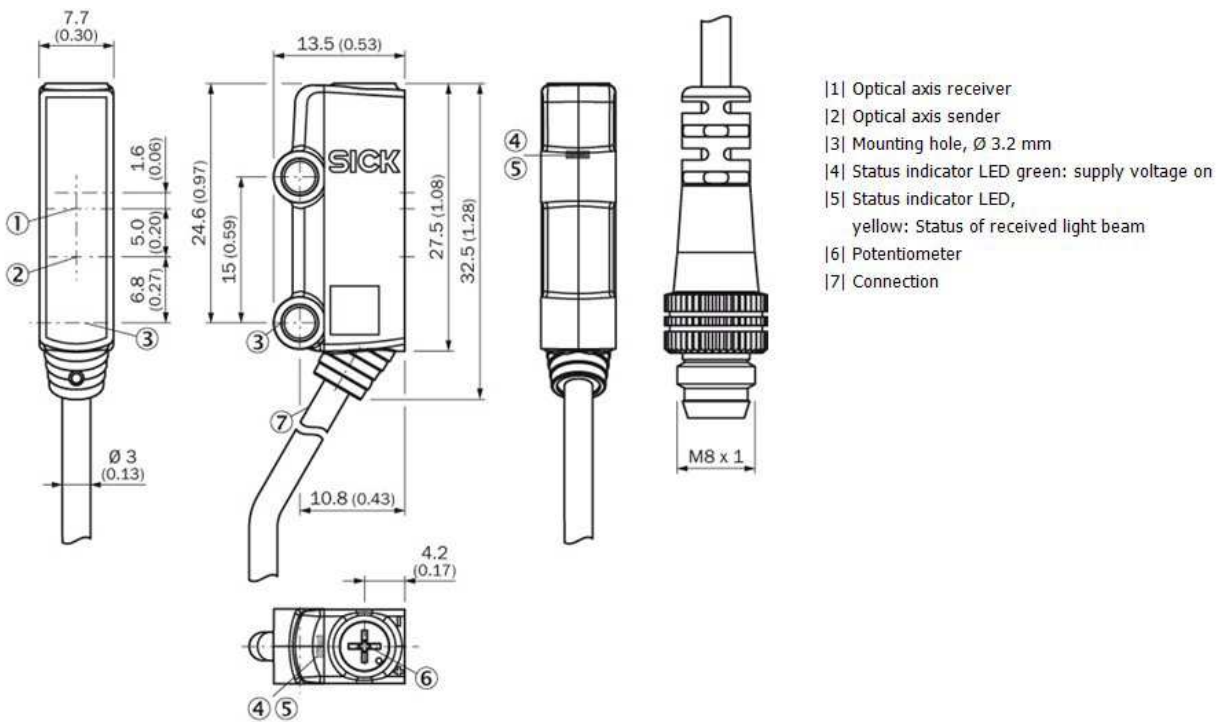
**Mechanics/electronics**

Supply voltage:	10 V DC ... 30 V DC <sup>1)</sup>
Ripple:	≤ 5 V <sub>pp</sub> <sup>2)</sup>
Power consumption:	≤ 20 mA <sup>3)</sup>
Output type:	PNP
Switching mode:	Dark switching

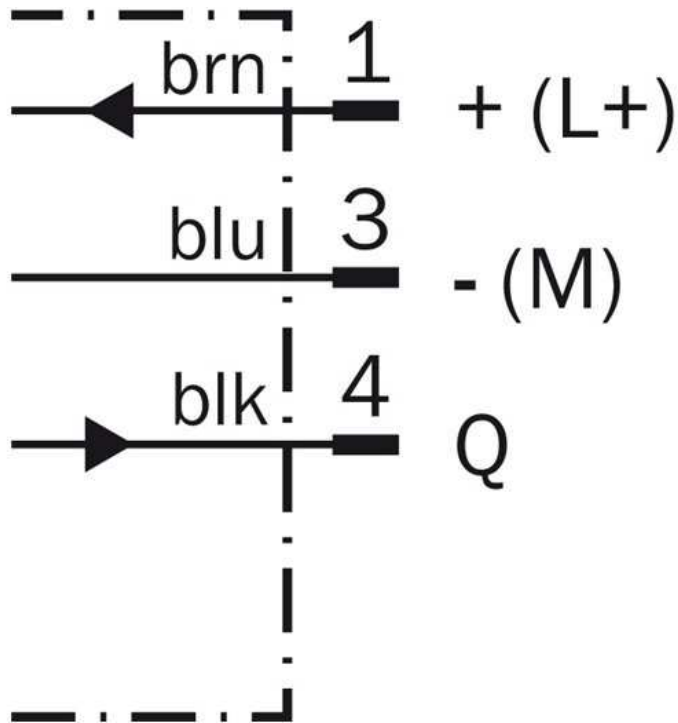
Output current I <sub>max</sub> ..:	< 50 mA
Response time:	< 0.6 ms <sup>4)</sup>
Switching frequency:	800 Hz <sup>5)</sup>
Connection type:	Cable with connector M8, 3-pin, 200 mm <sup>6)</sup>
Cable diameter:	Ø 3 mm
Circuit protection:::	A, C, D <sup>7)</sup> 8) 9)
Optics material:	PMMA
Enclosure rating:	IP 67
Ambient temperature operation:	-25 °C ... +50 °C
Ambient storage temperature:	-40 °C ... +75 °C
UL File No.:	NRKH.E181493
Housing material:	ABS, Plastic

1) Limit values, operation in short-circuit protected network max. 8 A 2) May not exceed or fall short of V<sub>S</sub> tolerances 3) Without load 4) Signal transit time with resistive load 5) With light/dark ratio 1:1 6) Do not bend below 0 °C 7) A = V<sub>S</sub> connections reverse-polarity protected 8) C = interference suppression 9) D = outputs overcurrent and short-circuit protected

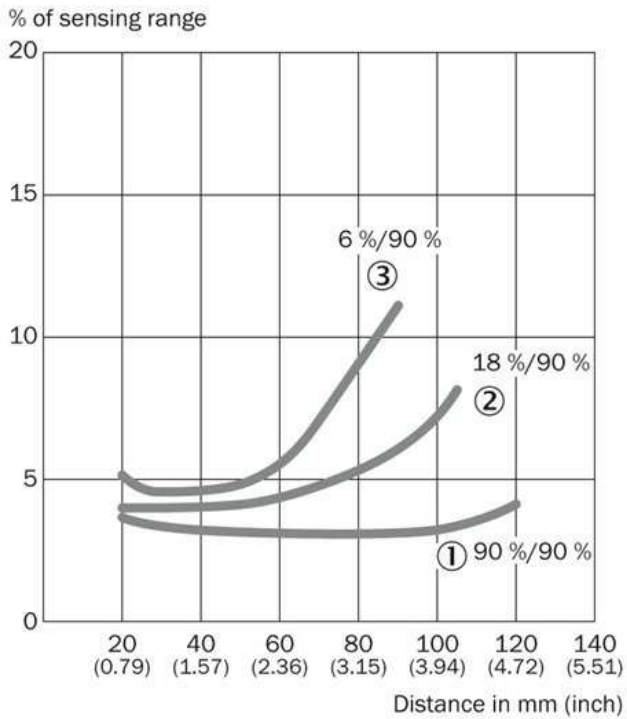
## Dimensional drawing



Connection diagram

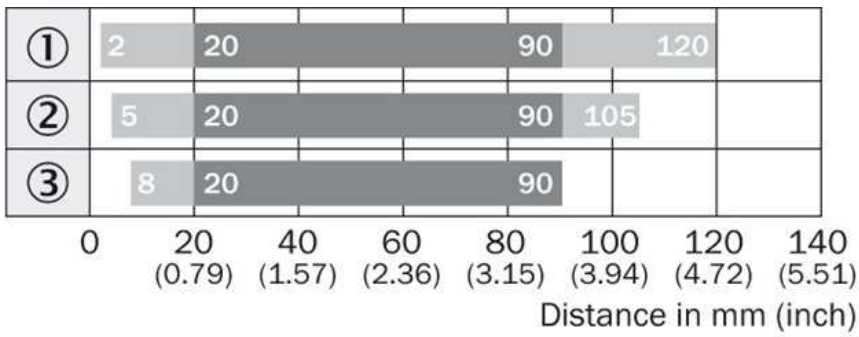


Characteristic curve



- |1| Sensing range on white, 90 % remission
- |2| Sensing range on gray, 18 % remission
- |3| Sensing range on black, 6 % remission

### Sensing range diagram



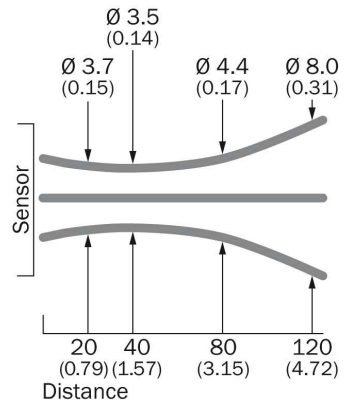
- |1| Sensing range on white, 90 % remission
- |2| Sensing range on gray, 18 % remission
- |3| Sensing range on black, 6 % remission

■ Sensing range      ■ Sensing range max.

### Connection type



### Light spot size



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