



Model Number

SBL-8-H-600-IR-4022

Background suppression sensor
with 4-pin, M12 x 1 connector

Features

- Background suppression sensor for roller conveyors
- For installation between the rollers on a roller conveyor
- Very small black-white difference
- Adjustable detection range
- Direction of plug coding offset by 90° compared to IEC 60947-5-2

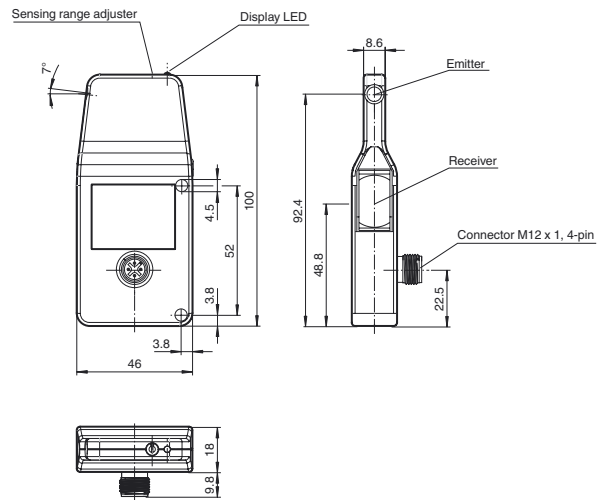
Product information

Sensors of the SBL series are used to easily control material flow on roller conveyors in material handling and other branches.

The SBL series is a precise background suppression sensor according to the 3 element method. The sensor features superior background suppression and a very good ambient light immunity. Material and transport container of all colors and opacities are reliably detected.

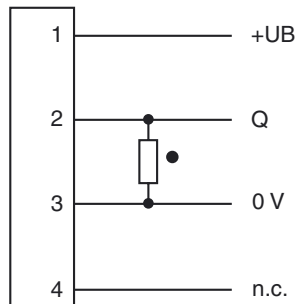
The special design allows the sensor to be mounted between the rollers of a roller conveyor or any other conveying unit. Mounting between the rollers is easy and protects the sensor.

Dimensions



Electrical connection

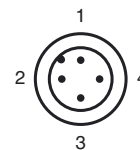
SBL-8-H



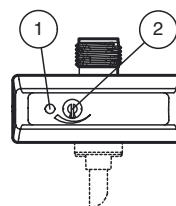
○ = Light on

● = Dark on

Pinout



Indicators/operating means



| | | |
|---|------------------------|--------|
| 1 | Signal display | yellow |
| 2 | Sensing range adjuster | |

Technical data

General specifications

| | |
|-----------------------------------|--|
| Detection range | 15 ... 600 mm |
| Detection range min. | 15 ... 250 mm |
| Detection range max. | 15 ... 600 mm |
| Adjustment range | 250 ... 600 mm |
| Reference target | standard white 200 mm x 200 mm |
| Light source | IREL |
| Light type | modulated infrared light , 880 nm |
| Black/White difference (6 %/90 %) | < 15 % |
| Diameter of the light spot | approx. 40 mm at detection range 600 mm |
| Ambient light limit | continuous light 30000 Lux , Fluorescent lamp 5000 Lux |

Functional safety related parameters

| | |
|--------------------------------|--------|
| MTTF _d | 1100 a |
| Mission Time (T _M) | 20 a |
| Diagnostic Coverage (DC) | 0 % |

Indicators/operating means

| | |
|--------------------|--|
| Function indicator | LED yellow: lights when object is detected |
| Control elements | Detection range adjuster |

Electrical specifications

| | | |
|------------------------|----------------|------------------|
| Operating voltage | U _B | 24 VDC -20% +10% |
| Ripple | | max. 10 % |
| No-load supply current | I ₀ | max. 20 mA |

Output

| | |
|---------------------|--|
| Switching type | dark on |
| Signal output | 1 PNP, short-circuit protected, reverse polarity protected |
| Switching voltage | max. 30 V DC |
| Switching current | max. 200 mA |
| Switching frequency | f 100 Hz |
| Response time | 5 ms |

Ambient conditions

| | |
|---------------------|--------------------------------|
| Ambient temperature | -20 ... 50 °C (-4 ... 122 °F) |
| Storage temperature | -30 ... 60 °C (-22 ... 140 °F) |

Mechanical specifications

| | |
|-------------------|--------------------------|
| Protection degree | IP65 |
| Connection | 4-pin, M12 x 1 connector |
| Material | |
| Housing | plastic |
| Optical face | plastic lens |
| Mass | approx. 50 g |

Compliance with standards and directives

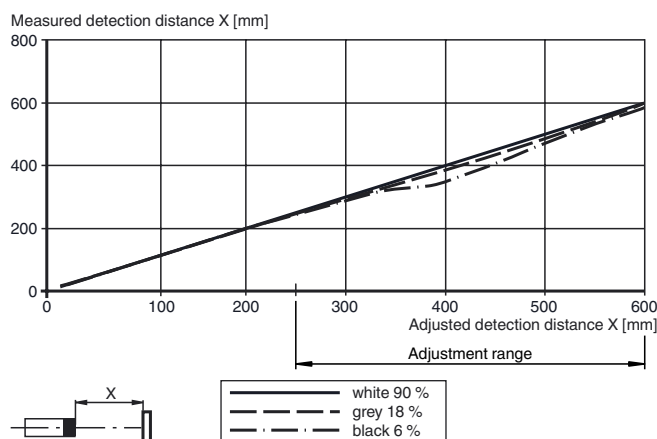
| | |
|-----------------------------|--|
| Directive conformity | EMC Directive 2004/108/EC |
| Standard conformity | |
| Product standard | EN 60947-5-2:2007 IEC 60947-5-2:2007 |
| Shock and impact resistance | IEC / EN 60068. half-sine, 40 g in each X, Y and Z directions |
| Vibration resistance | IEC / EN 60068-2-6. Sinus. 10 -1000 Hz, 10 g in each X, Y and Z directions |

Approvals and certificates

| | |
|--------------|--|
| UL approval | cULus Listed, Class 2 Power Source, Type 1 enclosure |
| CCC approval | CCC approval / marking not required for products rated ≤36 V |

Curves/Diagrams

Difference in detection distance



Accessories

OMH-SBL-01

Mounting bracket for sensors of SBL series

V1-G-2M-PVC

Female cordset, M12, 4-pin, PVC cable

V1-G-5M-PVC

Female cordset, M12, 4-pin, PVC cable

V1-W-2M-PUR

Female cordset, M12, 4-pin, PUR cable

V1-W-5M-PUR

Female cordset, M12, 4-pin, PUR cable

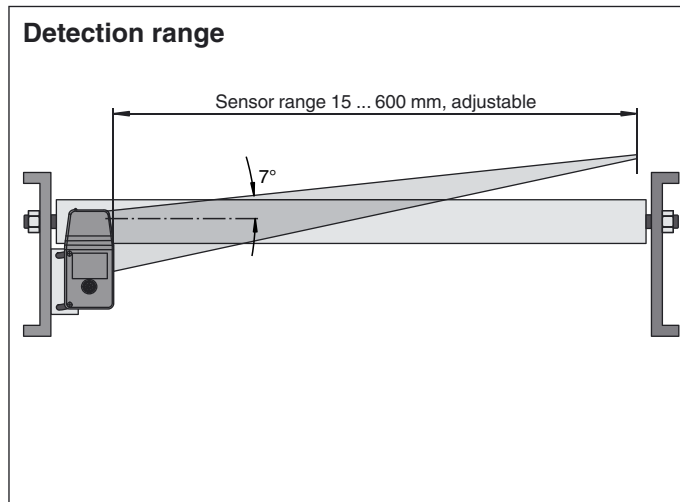
V1S-TEE-V1/V1S

T-Distributor, M12 connector to M12 socket/connector

Schraubendreher 0,5 x 3,0 mm

Screwdriver

Additional accessories can be found in the Internet.

**Note:**

Use a screwdriver to adjust the sensing range. We strongly recommend to use the screwdriver given in the accessories section.