



### 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

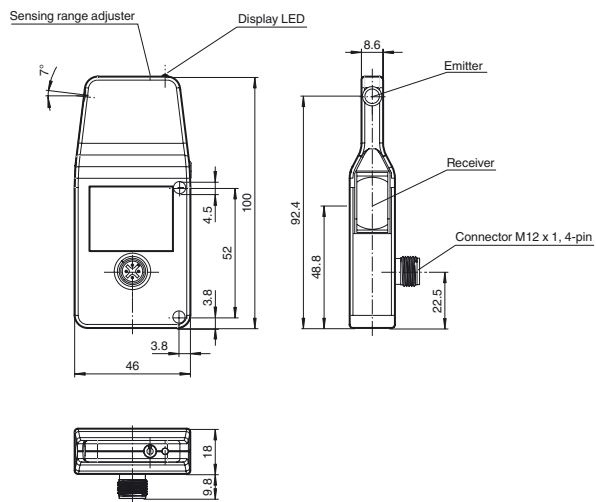
### Product information

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.

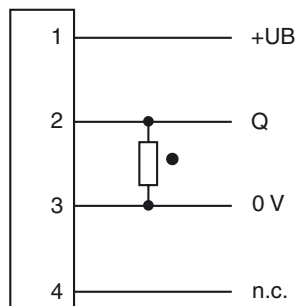
The special design allows the sensor to be mounted between the rollers of a roller conveyor or any other conveying unit. Mounting between the rollers is easy and protects the sensor.

### Dimensions



### Electrical connection

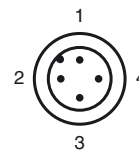
SBL-8-H



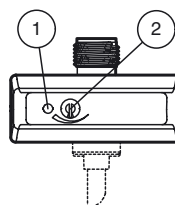
○ = Light on

● = 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	IRE D
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 <sub>d</sub>	1100 a
Mission Time (T <sub>M</sub> )	20 a
Diagnostic Coverage (DC)	0 %

**Indicators/operating means**

Function display	LED yellow: lights when object is detected
Controls	Detection range adjuster

**Electrical specifications**

Operating voltage	U <sub>B</sub>	24 VDC -20% +10%
Ripple		max. 10 %
No-load supply current	I <sub>0</sub>	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**

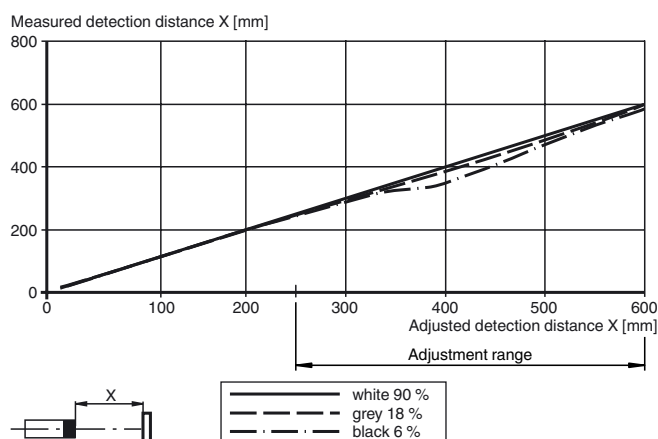
Protection degree	IP65
Connection	connector M12 x 1, 4-pin
Material	
Housing	plastic
Optical face	plastic lens
Mass	approx. 50 g

**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	Products with a maximum operating voltage of ≤36 V do not bear a CCC marking because they do not require approval.

**Curves/Diagrams****Difference in detection distance****Accessories****OMH-SBL-01**

Mounting bracket for sensors of SBL series

**V1-G-2M-PVC**

Cable socket, M12, 4-pin, PVC cable

**V1-G-5M-PVC**

Cable socket, M12, 4-pin, PVC cable

**V1-W-2M-PUR**

Cable socket, M12, 4-pin, PUR cable

**V1-W-5M-PUR**

Cable socket, M12, 4-pin, PUR cable

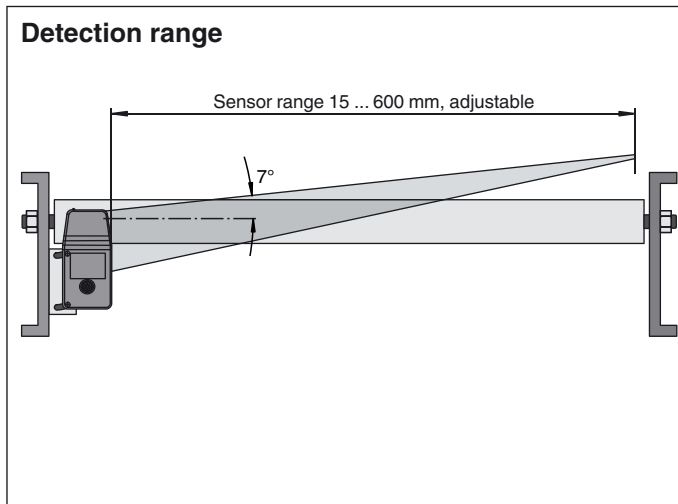
**V1S-TEE-V1/V1S**

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.