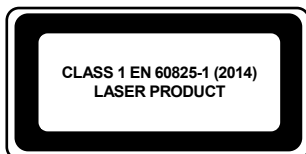




## S8-PH...B Laser

Polarised retroreflex

### INSTRUCTION MANUAL



#### CONTROLS

##### OUTPUT LED (yellow)

The yellow LED ON indicates the output status.  
The yellow LED blinking indicates the alarm status.

##### POWER ON LED (green)

The green LED ON indicates that the sensor is operating and laser emission is present.

##### SENSITIVITY TRIMMER (ADJ.)

The sensitivity and operating distance can be adjusted using this trimmer. See the "SETTING" paragraph for procedure indications.

##### LIGHT/DARK TRIMMER

The light/dark mode can be selected using this mono-turn trimmer. See the "SETTING" paragraph for procedure indications.

**WARNING:** the maximum trimmer rotation is 240°. Do not apply excessive torque when adjusting.

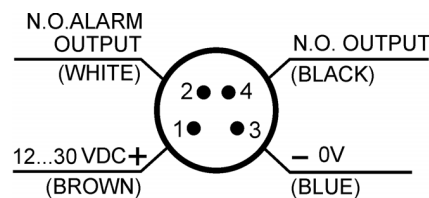
#### INSTALLATION

The sensor can be positioned by means of the housing's holes using two screws (M3x18 or longer, 0.8Nm maximum tightening torque) with washers. Various orientable fixing brackets to ease the sensor positioning are available (please refer to the accessories listed in the general catalogue). The operating distance is measured from the front surface of the sensor optics.

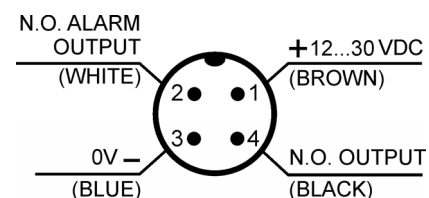


#### CONNECTIONS

##### M8 connector



##### Pig-tail with M12 connector



#### TECHNICAL DATA

|  |   |
|--|---|
| Power supply:                          | 12 ... 30 Vdc   |
| Ripple:                                | 2 Vpp max.  |
| Consumption (output current excluded): | 30 mA max   |
| Outputs / Alarm output:                | PNP or NPN N.O.; 30 VDC max. (short-circuit protection)   |
| Output current:                        | 100 mA (overload protection)  |
| Output saturation voltage:             | ≤ 2 V   |
| Response time:                         | 50 μs   |
| Switching frequency:                   | 10 kHz  |
| Emission type:                         | RED LASER (λ = 645...665nm): Class 1 EN 60825-1 (2014), Class II CDRH 21 CFR PART 1040.10<br>Pulsed emission: pot. max ≤ 1,5mW; pulse duration = 3μs; frequency = 40KHz |
| Focus point:                           | 500 mm  |
| Spot dimension:                        | < 0.5 mm (a 500 mm)   |
| Operating distance (typical values):   | refer to TAB.1  |
| Minimum object detectable:             | 0.5 mm at 500 mm (minimum spot)   |
| Setting:                               | Mono-turn sensitivity adjustment trimmer  |
| LIGHT/DARK selection:                  | Mono-turn trimmer   |
| Indicators:                            | OUTPUT/ALARM LED (YELLOW) and POWER ON LED (GREEN)  |
| Operating temperature:                 | -10 ... 55 °C   |
| Storage temperature:                   | -20 ... 70 °C   |
| Dielectric strength:                   | □: 1500 VAC 1 min between electronic parts and housing  |
| Insulating resistance:                 | >20 MΩ 500 VDC between electronic parts and housing   |
| Ambient light rejection:               | according to EN 60947-5-2   |
| Vibrations:                            | 0.5 mm amplitude, 10 ... 55 Hz frequency, for every axis (EN60068-2-6)  |
| Shock resistance:                      | 11 ms (30 G) 6 shocks per every axis (EN60068-2-27)   |
| Environment:                           | E2/M3 for Directive MID 2014/32/UE  |
| Housing material:                      | ABS   |
| Lens material:                         | window in PMMA; lens in PC  |
| Mechanical protection:                 | IP67  |
| Connections:                           | M8 4-pole connector / cable with M12 4-pole connector with 150 mm length and Ø 4 mm (pig-tail)  |
| Weight:                                | 12 g. max. connector version / 50 g. pig-tail version   |

#### SETTING

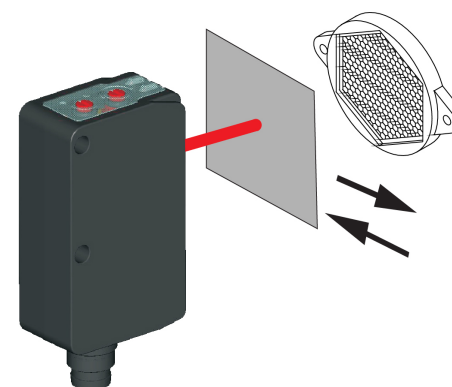
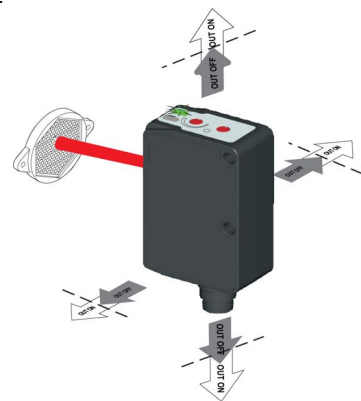
##### SENSITIVITY SETTING

###### Alignment:

- Position and align the sensor and reflector on opposite side at the desired distance.
- Rotate sensitivity adjustment trimmer (ADJ.) to maximum point (clockwise direction).
- Move the sensor vertically and horizontally to determine the powering on and powering off points of the yellow LED (OUT) and fix the sensor in the middle of these two points.
- To detect very small objects, reduce the sensitivity using the specific trimmer (if necessary). Repeat procedure reducing progressively the sensitivity to improve alignment.

###### Control:

- Enter object laterally in the detection area and check that the yellow LED turns ON (in dark mode).
- remove object and check that the yellow LED turns OFF immediately (in dark mode).



#### ALARM FUNCTION

The alarm output is active (ON) when the received signal remains without safety margin for more than 1 second (30% respect to output switching value)

#### DARK/LIGHT SETTING

##### LIGHT MODE SETTING

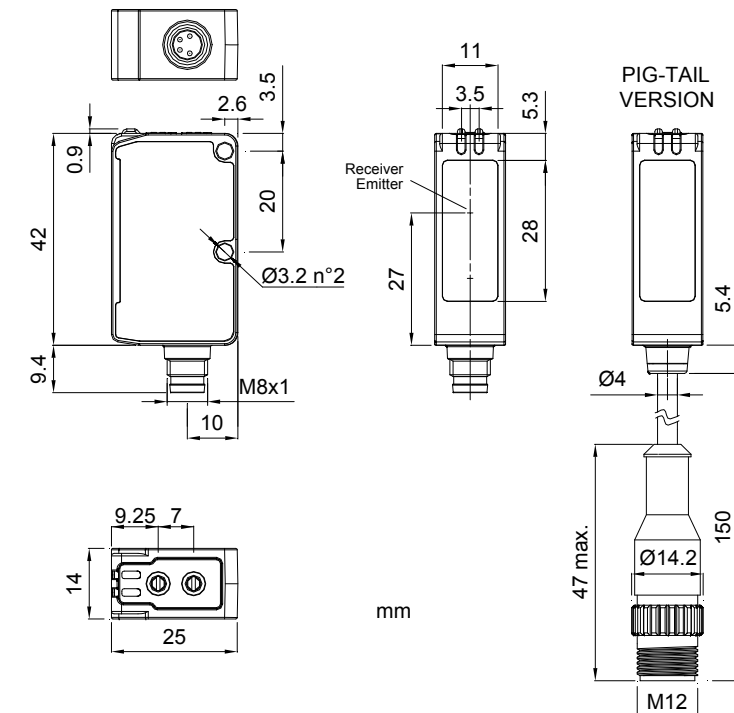
Rotate trimmer in an anti-clockwise direction to set the LIGHT mode (output ON with the reflector).

##### DARK MODE SETTING

Rotate trimmer in a clockwise direction to set the DARK mode (output ON in presence of the object).



#### DIMENSIONS



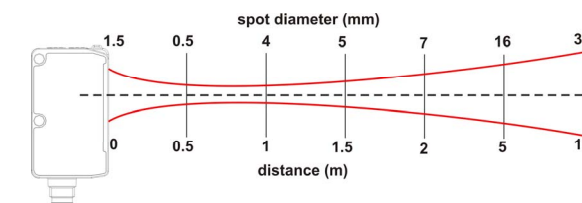
#### PERFORMANCES

TAB.1: Operating distance

##### REFLECTOR

| R2   | R6   | R7   | R8  |
|------|------|------|-----|
| 10 m | 10 m | 12 m | 1 m |

NOTE: the use of the RT3970 tape is not recommended.



#### SAFETY WARNINGS

All the safety electrical and mechanical regulations and laws have to be respected during sensor functioning. The sensor has to be protected against mechanical damages. Place the given labels in a visible position close to the laser emission.

The sensors are NOT safety devices, and so MUST NOT be used in the safety control of the machines where installed.

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Helpful links at www.datalogic.com: [Contact Us](#), [Terms and Conditions](#), [Support](#).

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