DATALOGIC

# S8-PR…T

***Polarised retroreflex for transparents***

# S8-PR…W

***Contrast sensor***

# INSTRUCTION MANUAL

## CONTROLS

**OUTPUT LED (yellow)**
The yellow LED indicates the output status.

**READY LED (green) (S8W)**
The green LED ON indicates normal functioning.

**POWER ON LED (green) (S8T)**
The green LED ON indicates the powering status.

**SET PUSH-BUTTON (S8W)**
The acquisition procedure is activated by pressing the SET push-button.
The control obtained with the SET push-button can be made externally with the REMOTE input.

**DELAY TRIMMER (S8W)**
The digital output's delay is selected/deselected by a monoturn trimmer.

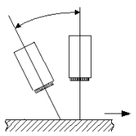
**SENSITIVITY TRIMMER (ADJ.) (S8T)**
The sensitivity and thus the operating distance are adjusted by a monoturn trimmer.

**LIGHT/DARK TRIMMER (S8T)**
The light/dark mode is selected by a monoturn trimmer.

Please refer to "SETTING" paragraph for the correct use procedures.
***WARNING:*** *the maximum mechanical rotation range of the trimmer is 240°. Do not force over of the maximum and minimum positions.*

## INSTALLATION

The sensor can be positioned by means of the two housing 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).

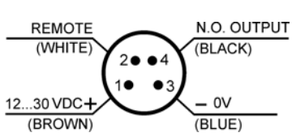


The operating distance is measured from the front surface of the sensor optics.
S8W - Mark detection on a reflective surface is improved adjusting the beam direction to 5° … 20° from surface axis.

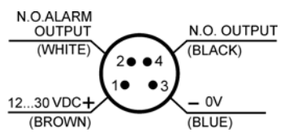
## CONNECTIONS

***M8 connector***

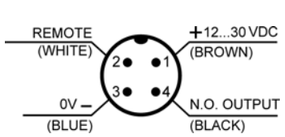
***S8W***

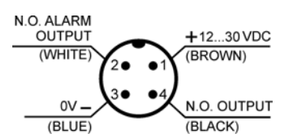



***S8T***




***Pig-tail with M12 connector***



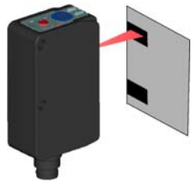

## TECHNICAL DATA

| | S8W | S8T |
|---|---|---|
| Power supply: | 12 … 30 VDC (Class 2 UL508) (reverse polarity protected) | |
| Ripple: | 2 Vpp max. | |
| Consumption (output current excluded): | 30 mA max | 15 mA max |
| Outputs / Alarm output only for S8T: | PNP or NPN N.O.; 30 VDC max. (short-circuit protection) Pull-down/up resistance = 47 KΩ | 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 | 250 us |
| Switching frequency: | 10 kHz | 2 KHz |
| Emission type: | blue ( 465 nm) / green (520 nm) / red (630 nm) with automatic selection | red (660 nm) |
| Spot dimension: | 3x1 $mm^2$ | - |
| Operating distance (typical values): | 9 mm | 0.8 m (EG2); 1 m (EG1) on R2 reflector |
| Depth of field: | ± 2 mm | - |
| LIGHT/DARK selection: | Automatic | Mono-turn trimmer |
| Delay OFF 20msec selection: | Mono-turn DELAY trimmer | - |
| Indicators: | OUTPUT LED (yellow) / READY LED (green) | OUTPUT LED (yellow) / READY LED (green) |
| Operating temperature: | -10 … 55 °C | |
| Storage temperature: | -20 … 70 °C | |
| Dielectric strength: | ⧈: 1500 VAC 1 min. between electronics and housing | |
| Insulating resistance: | >20 MΩ 500 Vdc between electronics and housing | |
| Ambient light rejection: | according to EN 60947-5-2 | |
| Vibrations: | 0.5 mm amplitude, 10 … 55 Hz frequency, for each axis (EN60068-2-6) | |
| Shock resistance: | 11 ms (30 G) 6 shocks for each axis (EN60068-2-27) | |
| Housing material: | ABS | |
| Lens material: | Window in glass; lens in PC | |
| Mechanical protection: | IP67 | |
| Connections: | M8 4-pole connector / 150 mm ∅ 4 mm cable with M12 4-pole connector (pig-tail) | |
| Weight: | 12 g. max. connector version / 50 g. pig-tail version | |

## S8W SETTING

### ACQUISITION

*Mark detection*
The DARK/LIGHT mode is automatically selected by the sensor.
Place mark in front of the sensor spot and press SET until the green READY LED turns off.
The sensor functions alternating red, green and blue emissions.
Do not move the mark during this phase.



*Background detection*
Place background in front of the sensor spot and press SET again.
The sensor functions alternating red, green and blue emissions.
Do not move the background during this phase.

If the READY LED turns permanently ON the acquisition was successful. If the LED blinks slowly the acquisition failed due to insufficient contrast. Press SET and the sensor returns to the previous setting. Repeat procedure from the beginning.

### DELAY SETTING

The delay extends the minimum output activation to 20 ms allowing the slower interface systems to detect also shorter pulses.

***Delay activation***
- *Rotate trimmer in an anti-clockwise direction.*

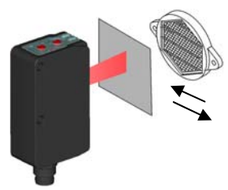
***Delay deactivation***
- *Rotate trimmer in a clockwise direction.*


## S8T SETTING

### SENSITIVITY ADJUSTMENT

*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).

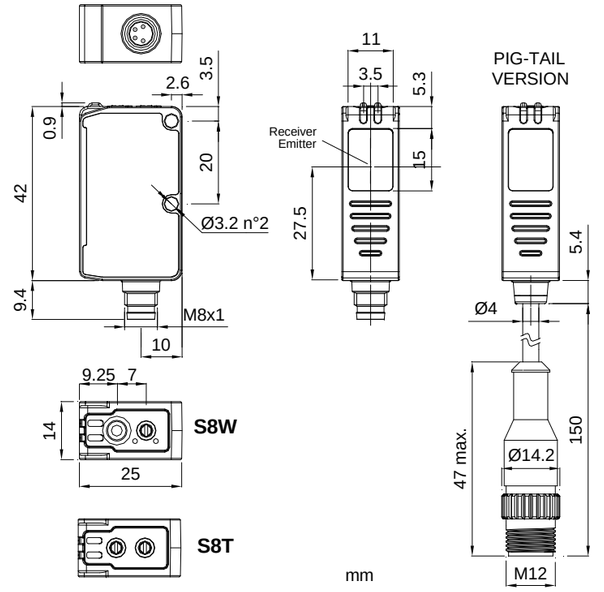


### LIGHT/DARK MODE SETTING

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

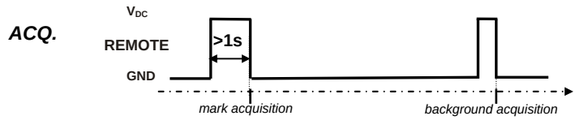
***Dark mode setting***
Rotate trimmer in a clockwise direction to set the DARK mode (output ON in presence of the object).


## DIMENSIONS




## OTHER FUNCTIONS

**S8W – REMOTE input**
The REMOTE signal carries-out acquisition functions without using the SET push-button.
The REMOTE wire connected to +Vdc is equal to pressing the SET pus-button, connected to GND or not connected is equal to not pressing the SET push-button.




**S8T – ALARM output**
The alarm output is active (ON) when the received signal remains without safety margin for 0.5 second (30% respect to output switching value).

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

**DECLARATION OF CONFORMITY**
We Datalogic Automation declare under our sole responsibility that these products are conform to the 2004/108/CE and successive amendments.

**WARRANTY**
Datalogic Automation warrants its products to be free from defects.
Datalogic Automation will repair or replace, free of charge, any product found to be defective during the warranty period of 36 months from the manufacturing date.
This warranty does not cover damage or liability deriving from the improper application of Datalogic Automation products.

**DATALOGIC AUTOMATION srl**
Via Lavino 265 - 40050 Monte S.Pietro - Bologna – Italy
Tel: +39 051 6765611 - Fax: +39 051 6759324 www.datalogic.com

DATALOGIC AUTOMATION cares for the environment: 100% recycled paper.
DATALOGIC AUTOMATION reserves the right to make modifications and improvements without prior notification.



**826003723 Rev.F**