DATALOGIC

S8-MR…T

Polarised retroreflex for transparents with threshold auto-adjustment

S8-MR…W

Contrast sensor

INSTRUCTION MANUAL

CONTROLS

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

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

SET PUSH-BUTTON (S8…W03/T53)
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 (S8-W03)
The digital output's delay is selected/deselected by a monoturn trimmer.

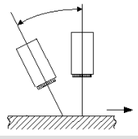
LIGHT/DARK TRIMMER (S8-T53)
The sensitivity and thus the operating distance are adjusted by a monoturn trimmer.

Please refer to the "SETTING" paragraph for the correct use procedures.

<u>WARNING</u>: the maximum mechanical rotation range of the trimmer is 240°. Do not force over of the maximum and minimum positions.

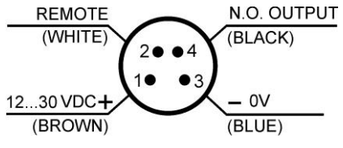
INSTALLATION

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).

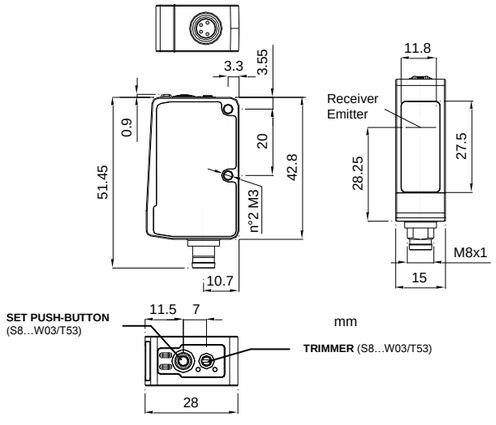


The operating distance is measured from the front surface of the sensor optics.
S8W - Mark detection on a reflective surface is improved adjusting the beam direction to 5° … 20° from surface axis.

CONNECTIONS



DIMENSIONS



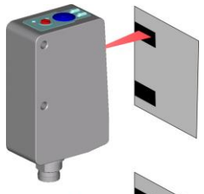
TECHNICAL DATA

	S8-W03	S8-W00	S8-T53	S8-T50
Power supply:	12 … 30 VDC			
Ripple:	2 Vpp max.			
Consumption (output current excluded):	30 mA max			
Outputs:	PNP or NPN N.O.; 30 VDC max (short-circuit protection) Pull-down/up resistance = 47 KΩ			
Output current:	100 mA (overload protection)			
Output saturation voltage:	≤ 2 V			
Response time:	50 µs		250 us	
Switching frequency:	10 kHz		2KHz	
Emission type:	BLUE (465 nm) / GREEN (520 nm) / RED (630 nm) with automatic selection		RED (660 nm)	
Minimum spot dimension:	3x1 mm^2		-	
Operating distance (typical values):	9 mm		2 m (EG2) on R2 reflector	
Depth of field:	± 2 mm		-	
Settings:	SET push-button	-	SET push-button	-
DARK/LIGHT selection:	automatic		Mono-turn trimmer	Automatic
Delay OFF 20msec selection:	Mono-turn trimmer	Automatic	-	
Indicators:	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)			
AtEx environment:	Ⓔx II 3G E Ex nA II T6 / II 3D E Ex tD A22 IP67 T85°C			
Shock resistance:	11 ms (30 G) 6 shocks for each axis (EN60068-2-27)			
Housing material:	INOX AISI 316L			
Lens material:	Window in glass or PMMA; lens in PC			
Mechanical protection:	IP67; IP69K (TYPE 1 ENCLOSURE)			
Connections:	M8 4-pole connector			
Weight:	70 g. max.			

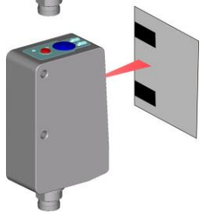
S8-W03 SETTINGS

ACQUISITION

<u>Mark Detection</u>
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.



<u>Background Detection</u>
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 OFF SETTING
The DELAY OFF extends the minimum output activation to 20 ms allowing the slower interface systems to detect also shorter pulses.

<u>Delay Off Activation</u>
Rotate trimmer fully counter-clockwise.

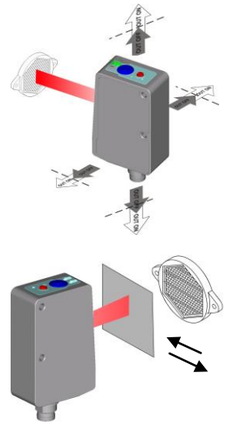
<u>Delay Off Deactivation</u>
Rotate trimmer fully clockwise.

S8-T53 SETTINGS

SENSITIVITY ADJUSTMENT

<u>Alignment and Sensitivity Adjustment</u>
- Positioning and align the sensor and the reflector on opposite side at the desired distance.
- 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.
- Press SET push-button until the green READY LED turns off. The sensor adjusts the sensitivity. If the READY LED turns permanently ON the acquisition was successful. If the LED blinks the acquisition failed due to insufficient contrast. Press SET and the sensor returns to the previous setting. Verify alignment between sensor and reflector and the operative distance before repeat procedure from the beginning.
  If the signal that returns from the reflector is too high (saturated), the sensor sets the sensitivity to minimum and functions normally, however signalling this condition by the READY LED blinking slowly. In this case the sensor may not detect some transparent objects. You can press SET for 1s to make the READY LED stop blinking.

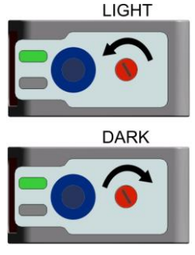
<u>Control:</u>
- Enter object laterally in the detection area and check that the yellow LED turns ON (in dark mode).
- Remove object and check that the yellow LED turns OFF immediately (in dark mode).



LIGHT/DARK MODE SETTING

<u>Light Mode Setting</u>
Rotate trimmer fully counter-clockwise to set the LIGHT mode (output ON with the reflector).

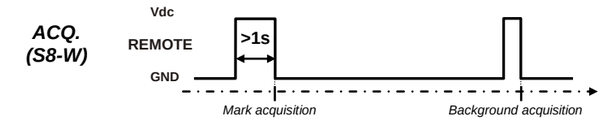
<u>Dark Mode Setting</u>
Rotate trimmer fully clockwise to set the DARK mode (output ON in presence of the object).



ADDITIONAL FUNCTIONS

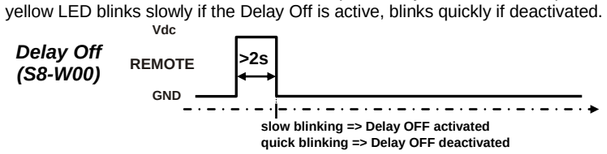
REMOTE INPUT
The REMOTE signal carries-out acquisition functions without using the SET push-button.
The REMOTE wire connected to +Vdc is equal to pressing the SET push-button; connected to GND or not connected is equal to not pressing the SET push-button.

<u>S8-W:</u>

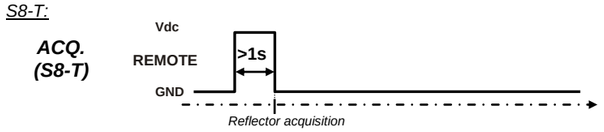


In the W00 version, the REMOTE input is also used for:
- Activation/deactivation of Delay Off (S8-W00)

The current setting of the Delay Off can be changed by connecting the REMOTE wire to +Vdc for at least 2sec (until the yellow LED blinks). The yellow LED blinks slowly if the Delay Off is active, blinks quickly if deactivated.

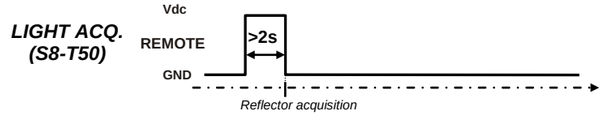


<u>S8-T:</u>



In the T50 version, the REMOTE input is also used for:
- Acquisition in LIGHT mode (S8-T50)

To activate this function, the REMOTE wire must be connected to +Vdc for at least 2sec (until the yellow LED blinks).



ADDITIONAL FUNCTIONS (S8-T53)

KEYLOCK FUNCTION (keyboard lock)
The KEYLOCK function (keyboard lock) allows to deactivate the keyboard avoiding accidental changes in the sensor setting.
If at sensor powering the REMOTE wire is connected to +Vdc for at least 1 s., the keyboard lock function is activated and the push-buttons are no longer active.
To deactivate the keyboard lock, the sensor must be turned off and repowered with the REMOTE wire not connected or connected to GND.

THRESHOLD AUTO-ADJUSTMENT FUNCTION
The sensor provides threshold auto-adjustment function. If the received signal decreases/increases due to dirty optical lens or reflector, or for cleaning, the sensor adjusts automatically the commutation threshold to avoid continuous cleaning of optical parts (after 1 minute of low/high signal). If the received signal is too low to be adjusted by the sensor, the output turns on and it is necessary to clean the optical parts.
At sensor powering, if the received signal is a lot higher than the switching threshold (e.g. after reflector cleaning), the sensor after 1s automatically adjusts the switching threshold.

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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