

## S50-PA/MA...M

Background suppression proximity

## S50-PA/MA...N

Foreground-background suppression proximity

## INSTRUCTION MANUAL

### CONTROLS

#### OUTPUT LED

The yellow LED ON indicates that the N.O. output status is closed.

#### READY/ERROR LED (bicolour)

When the bicoloured LED is continuously green, the sensor is operating in a normal condition and it is ready to function correctly (stability condition).

The red and green blinking of the LED indicates a wrong sensor setting. Please refer to the "SETTING" paragraph to get the correct setting procedure.

#### SET PUSHBUTTON

A long pressure on the pushbutton activates the self-setting procedure.

### INSTALLATION

**S50-PA...M/N:** The sensor can be fixed by means of the M18x1 threaded body through a  $\varnothing$  18 mm hole, using the specific washer and the two CH.24 nuts enclosed (1.5 Nm maximum tightening torque). Alternatively, the sensor can be mounted through the two housing's holes using two screws (M3x22 or longer) and washer. Amongst the various possible solutions, we suggest to choose the combination that offers the best visibility of the signalling LEDs and the easiest access to the SET pushbutton. 22 mm nuts, h=8 mm, (2 Nm maximum tightening torque) are available to guarantee an improved torque.

**S50-MA...M/N:** The sensor can be fixed by means of the M18x1 threaded body through a  $\varnothing$  18 mm hole, using the specific washer and the two CH.24 nuts enclosed (2.2 Nm maximum tightening torque).

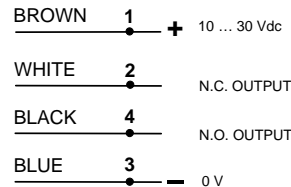
For both plastic version and metallic version are available various orientable fixing brackets to ease the sensor positioning (please refer to the accessories listed in the general catalogue).

The operating distance is measured from the front surface of the sensor lens. To improve the detection, the object has to be moved closer or further away from the front surface of the sensor lens. In case of lateral translation, the object must move as indicated in the figure.

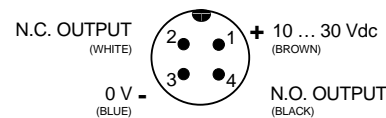


### CONNECTIONS

The connections are compliant to the EN 60947-5-2 standard.

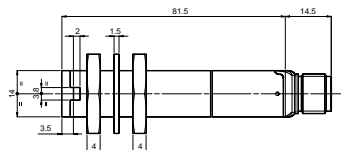


### M12 CONNECTOR

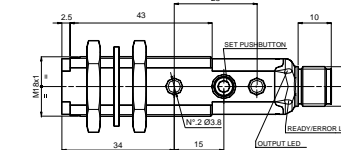


### DIMENSIONS

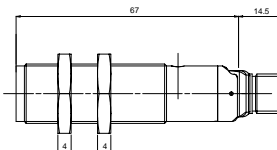
#### S50-PA VERSIONS



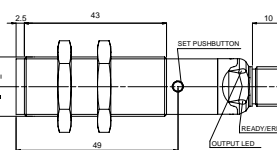
#### CABLE VERSION



#### S50-MA VERSIONS



#### CABLE VERSION



### TECHNICAL DATA

	S50-PA PLASTIC VERSIONS	S50-MA METALLIC VERSIONS
Power supply:	10 ... 30 Vdc (limit values)	
Ripple:	2 Vpp max.	
Current consumption (output current excluded):	30 mA max.	
Outputs:	N.A. and N.C.; PNP or NPN (short-circuit protection)	
Output current:	100 mA max.	
Output saturation voltage:	2 V max.	
Response time:	1 ms mod.M / 2 ms mod.N	
Switching frequency:	500 Hz mod.M / 250 Hz mod.N	
Indicators:	OUTPUT LED (YELLOW) / READY/ERROR LED (GREEN/RED)	
Setting:	SET pushbutton	
Operating mode:	LIGHT mode on N.O. output / DARK mode on N.C. output	
Data retention:	non volatile EEPROM memory	
Operating temperature:	-25 ... 55 °C	
Storage temperature:	-25 ... 70 °C	
Insulating strength:	500 Vac 1 min., between electronics and housing	
Insulating resistance:	>20 M $\Omega$ 500 Vdc, between electronics and housing	
Operating distance (typical values):	background suppression 50...100 mm (mod.M) foreground suppression 40...100 mm and background suppression 45...110mm mod.N)	
Emission type:	RED (630 nm)	
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 shock for every axis (EN60068-2-27)	
Housing material:	PBT	Nickel plated brass
Lens material:	PMMA	
Mechanical protection:	IP67 Metal versions type 1 enclosure	
Connections:	2 m cable $\varnothing$ 4 mm / M12 - 4 pole connector	
Weight:	75 g. max. cable vers./25 g. max. connector vers.	110 g. max. cable vers./60 g. max. connector vers.

### SETTING

#### EASY TOUCH™

The sensor uses the patent-covered EASY TOUCH™ technology that allows a rapid and safe self-setting of the product.

Two different setting possibilities are available:

- **EASY TOUCH™**; a long pressure of the SET pushbutton allows self-setting.
- **FINE DETECTION**; to be used only in particularly critical conditions; this setting procedure is used only when the EASY TOUCH™ is not sufficient.

#### Setting of S50-PAMA...M

To achieve a correct sensor setting, the background or the object to be suppressed has to be present during self-setting.

#### - EASY TOUCH™ (standard detection)

Place the background or the object to be suppressed inside the operating range.

Press the SET pushbutton until the READY/ERROR LED turns OFF. Release the SET pushbutton and wait for the READY/ERROR LED to turn green.

The sensor is now ready to detect all objects in the set range distinguishing them from the suppressed background (output LED turns ON).

#### - Fine detection

Place the background or the object to be suppressed inside the operating range.

Press the SET pushbutton. The READY/ERROR LED turns OFF. Keep the SET pushbutton pressed until the READY/ERROR LED blinks green.

The sensor performs a fine adjustment and is ready to detect objects also very near the suppressed background (output LED turns ON).

#### Setting of S50-PAMA...N

To achieve a correct sensor setting, the object to be detected has to be used during self-setting.

#### - EASY TOUCH™ (standard detection)

Place the object to be detected in front of the sensor inside the operating range.

Press the SET pushbutton until the READY/ERROR LED turns OFF. Release the SET pushbutton and wait for the READY/ERROR LED to turn green.

The sensor is ready to detect the object (output LED turns ON) excluding the background and foreground range (and thus any object closer to the sensor respect to the reading field).

#### - Fine detection

Place the object to be detected inside the operating range. Press the SET pushbutton. The READY/ERROR LED turns OFF.

Keep the SET pushbutton pressed until the READY/ERROR LED blinks green.

The sensor performs a fine adjustment and is ready to detect with better precision objects (output LED turns ON) at the pre-set operating distance, suppressing the background and foreground, even if the latter is very close to the sensing range.

#### 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

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826001015 Rev.H

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