

## S41 SERIES INSTRUCTION MANUAL

### CONTROLS

#### OUTPUT LED

The yellow LED indicates the output status.

#### STABILITY LED (S41-x-B/C/D/F/P)

The green LED ON indicates that the received signal has a safety margin greater than 30% compared to the output switching value.

#### POWER ON LED (S41-x-G/H)

The green LED indicates that the sensor is operating.

#### TRIMMER (S41-x-B/C/T)

The trimmer can be used to adjust sensitivity; the operating distance increases turning the trimmer clockwise.

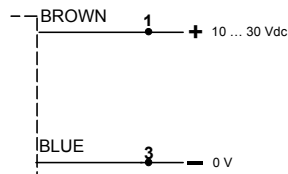
**WARNING:** The trimmer rotation is limited to 270° by a mechanical stop. Do not apply excessive torque when adjusting (max 40 Nmm).

### CONNECTIONS

#### S41-x-B/C/D/F/P/T



#### S41-x-G/H

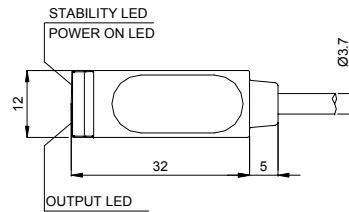
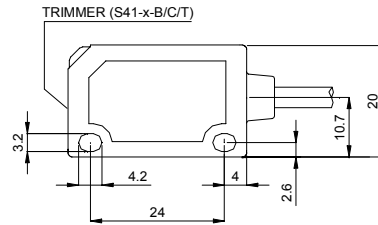


#### M8 CONNECTOR

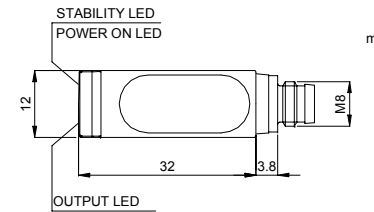
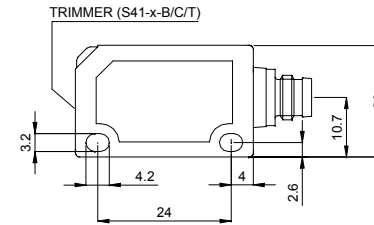


### DIMENSIONS

#### CABLE VERSION



#### M8 CONNECTOR VERSION



### TECHNICAL DATA

	S41-x-B	S41-x-P	S41-x-T	S41-x-C	S41-x-D	S41-x-F/G S41-x-F/H
Power supply:	10 ... 30 Vdc; reverse polarity protected					
Ripple:	10% max					
Current consumption (output current excluded):	35 mA max.					
Output:	NC and NO; PNP or NPN; 30 Vdc max. (short-circuit protection)					
Output current:	100 mA max. (derating -1mA/°C Tamb)					
Output saturation voltage:	2 V max.					
Response time:	1 ms max.					
Switching frequency:	500 Hz max.					
Indicators:	OUT LED (YELLOW) STABILITY LED (GREEN) mod. S41-x-B/C/D/F/P POWER ON LED (GREEN) mod. S41-x-G/H					
Setting:	TRIMMER mod. S41-x-B/C/T					
Operating temperature:	-25 ... +55 °C					
Storage temperature:	-25 ... +70 °C					
Electrical shock protection:	Class 2					
Operating distance (minimum):	see TAB.1		0.2...80 cm on R2	0.2 ... 45 cm	11 cm	0.1 ... 6 m 0.1 ... 1.5 m
Emission type:	RED (660nm) mod. S41-x-B/D/P/T INFRARED (880nm) mod. S41-x-C/G/H					
Ambient light rejection:	according to EN 60947-5-2					
Vibration:	10 ... 55Hz, 1.5 mm amplitude in each X, Y, Z axes for 2 hours					
Shock resistance:	500 ms (approx. 50G) 3 shock in each 3 axes					
LIGHT/DARK selection:	LIGHT mode mod. S41-x-C/D; DARK mode mod. S41-x-B/F/P/T					
Housing:	ABS UL 94V-O (TYPE 1 ENCLOSURE)					
Lenses:	PMMA plastic					
Protection class:	IP66 mod. S41-x-B/C/T IP67 mod. S41-x-D/F/G/P/H					
Connections:	2 m cable Ø 3.5 mm / M8-4 pole connector					
Weight:	40 g. max. cable versions / 10 g. connector versions					

### SETTING

#### Alignment S41-x-B/P/T

Position the sensor and reflector on opposite sides. Turn the sensitivity trimmer to maximum. Find the points where the yellow LED (OUT) is switched ON and OFF in both vertical and horizontal positions, and fix the sensor in the centre between these points.

Optimum operation is obtained when the green LED is ON (B/P models). **B/T models:** If necessary, reduce sensitivity using the trimmer, in order to detect very small or transparent targets. In order to improve alignment, repeat the procedure detailed above whilst progressively reducing the sensitivity.

#### Alignment S41-x-F/G and S41-x-F/H

Position the sensors on opposite sides. Find the points where the yellow LED (OUT) is switched ON and OFF in both vertical and horizontal positions, and fix the sensor in the centre between these points.

Optimum operation is obtained when the green LED is ON.

#### Alignment S41-x-C

Position the sensor and turn the sensitivity trimmer at minimum; the green LED is ON and the yellow LED is OFF. Place the target opposite the sensor. Turn the sensitivity trimmer clockwise until the yellow LED turns ON (*Target detected state, pos.A*). Remove the target, the yellow LED turns OFF. Turn the trimmer clockwise until the yellow LED turns ON (*Background detected state, pos.B*). The trimmer reaches maximum if the background is not detected. Turn the trimmer to the intermediate position C, between the two positions A and B. The green LED must be ON.



#### Alignment S41-x-D

The operating distance range of these sensors is factory preset at 11cm ±10%; please consider this feature during installation.

To improve the detection, the object has to be moved closer or further away from the sensor, or orthogonally respect to the short side of the lens, as indicated in the figure.



TAB.1: S41-x-B/P max. operating distance table (meters)

-B/P	REFLECTOR					
	R1	R2	R3	R4	R5	R6
	1.5	3	2.0	3.2	2.7	3.5

#### DECLARATION OF CONFORMITY

We DATASENSOR S.p.A. declare under our sole responsibility that these products are conform to the 89/336 CEE, 73/23 CEE Directives and successive amendments.

#### WARRANTY

DATASENSOR S.p.A. warrants its products to be free from defects. DATASENSOR S.p.A. 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 DATASENSOR products.

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