S60-PL SERIES

INSTRUCTION MANUAL

CLASS 1 EN 60825-1 (2014)
LASER PRODUCT

CONTROLS

OUTPUT LED (S60-PL…B01/C01/F01)
The yellow LED on indicates that the N.O. (normally open) output status is closed.

POWER ON LED (S60-PL…B01/C01/F01/G00)
The green LED indicates that the sensor is operating and the laser is active.

TRIMMER (S60-PL …B01/C01/F01)
The trimmer can be used to adjust sensitivity; the operating distance increases turning the trimmer clockwise.

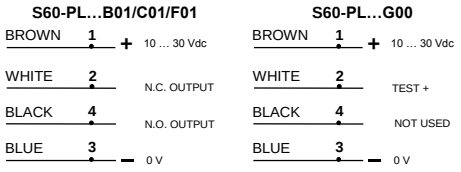
WARNING: *The trimmer rotation is limited to 270° by a mechanical stop. Do not apply excessive torque when adjusting (max 40 Nmm).*

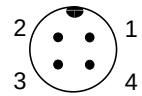
INSTALLATION

The sensor can be positioned by means of the three housing's holes using two screws (M4x25 or longer, 1.5 Nm 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.
The M12 connector can be oriented at two different positions using the specific fastening spring and rotating the block of 180°.

CONNECTIONS

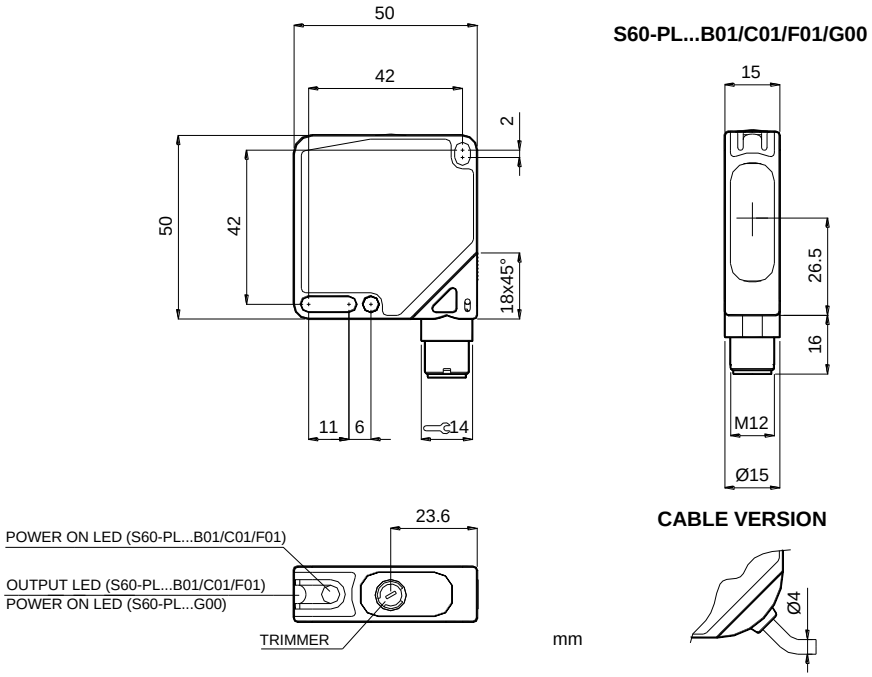
The connections are compliant to the EN 60947-5-2 standard.





M12 CONNECTOR

DIMENSIONS



TECHNICAL DATA

Power supply:	10 … 30 Vdc limit values
Ripple:	2 Vpp max.
Consumption (output current excluded):	35 mA max.
Outputs:	N.O. and N.C.; PNP or NPN; 30 Vdc max. (short-circuit protection) (mod. B01/C01/F01)
Ouput current:	100 mA max.
Output saturation voltage:	≤ 2 V
Response time:	250 µs (mod. B01/C01); 333 µs (F01)
Switching frequency:	2 kHz (mod. B01/C01); 1,5 kHz (F01)
Indicators:	OUTPUT LED (YELLOW) (mod. B01/C01/F01) POWER ON LED (GREEN) (mod. B01/C01/F01/G00)
Setting:	senstivity trimmer (mod. B01/C01/F01)
Operating mode:	LIGHT mode on N.O. output / DARK mode on N.C. output (mod.C01) DARK mode on N.O. output / LIGHT mode on N.C. output (mod.B01/F01)
Operating temperature:	-10 … 50 °C
Storage temperature:	-25 … 70 °C
Electrical protection:	Class 2
Operating distance (typical values):	B01: 0.1…20 m on R2 C01: 0…50 cm F01/G00: 0…60 m
Emission type:	RED LASER: Class 1 EN 60825-1 (2014) (mod.B01/C01/G00) Class II CDRH 21 CFR PART 1040.10 (mod.B01/C01/G00) Max. power ≤ 1 mW; Pulse = 4.2 µS (mod.B01/C01); 5 µS (mod.G00); λ = 630…680 nm; Frequency =33.5 kHz (mod.B01/C01); 10 kHz (mod.G00)
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:	ABS
Lens material:	window in PMMA, lenses in glass and polycarbonate
Mechanical protection:	IP67
Connections:	2 m ∅ 4 mm cable / M12 4-pole connector
Weight:	90 g. max. cable vers. / 40 g. max. connector vers.

SETTING

Setting of S60-PL…B01
Position the sensor and reflector aligned on opposite sides.
Turn the sensitivity trimmer to the maximum position.
Moving the sensor both vertically and horizontally, determine the power on and off points of the yellow LED (OUT) and then mount the sensor in the middle of the points defined.
Reduce sensitivity if very small objects have to be detected. Repeat procedure reducing progressively the sensitivity in orde to improve alignment.

Setting of S60-PL…F01/G00
Position the sensors aligned on opposite sides.
Turn the sensitivity trimmer to maximum: moving the sensor both vertically and horizontally, determine the power on and off points of the yellow LED (OUT) and then mount the sensor in the middle of the points defined so that the yellow LED remains off.
If necessary, reduce sensitivity using the trimmer, in order to detect very small targets. In order to improve alignment, repeat the procedure detailed above whilst progressively reducing the sensitivity.

Setting of S60-PL…C01

Adjust the sentivity trimmer to minimum: the yellow LED is off.
Position the target to detect in front of 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 sensitivity 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.

TEST FUNCTION (S60-PL…G00)

The TEST+ input can be used to inhibit the emitter and verify that the system is correctly operating.
The receiver output should switch when the test is activated while the beam is uninterrupted.
The inputs activating voltage range is 10 … 30 Vdc, with respect to 0V input (blue wire pin3).
Connect the TEST+ input to 0V if not used.

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**.

The warranty period for this product is 36 months. See General Terms and Conditions of Sales for further details.

Under current Italian and European laws, Datalogic is not obliged to take care of product disposal at the end of its life. Datalogic recommends disposing of the product in compliance with local laws or contacting authorised waste collection centres.

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