S62…B

Polarised retroreflex

INSTRUCTION MANUAL

CONTROLS

OUTPUT LED (yellow)
The yellow LED ON indicates the following output status: N.O. closed and N.C. open.

STABILITY LED (green)
The green LED permantely ON indicates a stable operating condition, where the signal received has a safety margin higher than 30% respect to the output switching value. The sensor is ready to function correctly.

SENSITIVITY TRIMMER (ADJ.)
A mono-turn trimmer adjusts the sensitivity and the sensor operating distance.
See the “SETTING” paragraph for the functioning mode.

***NOTE**: the maximum trimmer mechanical rotating range is equal to 240°. Do not force over the maximum e minimum positions.*

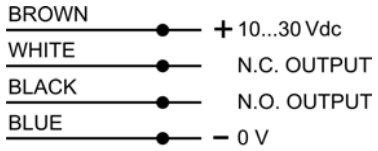
INSTALLATION

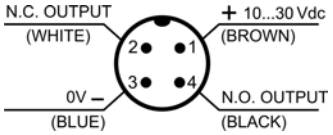
The sensor can be positioned by means of the three housing’s holes using two screws (M4x25 or longer, 1.5 Nm maximum tightening torque) with washers.
Various orientable fixing brackets to ease the sensor positioning are available (please refer to the accessories listed in the catalogue).
The operating 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°.

TECHNICAL DATA

Power supply:	10 … 30 Vdc (limit values)
Ripple:	2 Vpp max.
Current consumption (output current excluded):	< 30 mA
Outputs:	PNP or NPN N.O. / N.C.; 30 Vdc max. (short-circuit protection)
Output current:	100 mA max (overload and overvoltage protection)
Output saturation voltage:	≤ 2 V
Response time:	500 µs max.
Switching frequency:	1 kHz
Indicators:	OUTPUT LED (YELLOW) / STABILITY LED (GREEN)
Setting:	mono-turn sensitivity adjustment trimmer
Operating temperature:	-10 … 55 °C
Storage temperature:	-20 … 70 °C
Dielectric strength:	500 Vac / 1 min. between electronic parts and housing
Insulation resistance:	>20 MΩ / 500 Vdc, between electronic parts and housing
Operating distance (typical values):	0.1…8 m su R2 (EG = 2)
Emission type:	RED (640 nm)
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 PMMA, lenses in polycarbonate
Mechanical protection:	IP67
Connections:	2 m ∅ 4 mm cable / M12 4-pole connector
Weight:	90 g. max. (cable version) / 40 g. max. (connector version)

CONNECTIONS



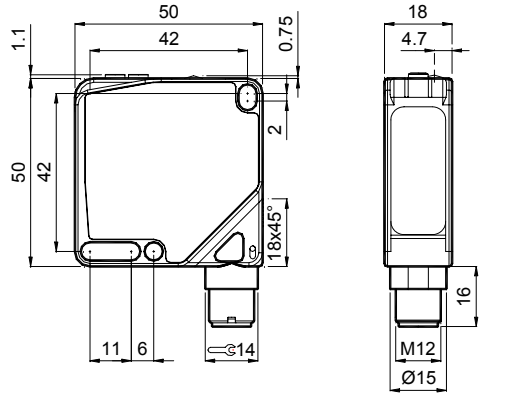


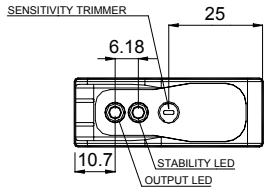
SETTING

Alignement:
- Align sensor and reflector on opposite sides at the necessary distance.
- Rotate in the clockwise direction the sensitivity adjustment trimmer (ADJ.) to maximum level.
- Moving the sensor vertically and horizontally, establish the powering and turning off of the yellow LED (OUT) and fix the sensor at in the middle. The best alignment is obtained in the following condition: yellow LED permanently OFF and green LED permanently ON.

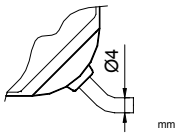
Control:
- Place the target between the sensor and the reflector. Control that the yellow LED turns ON.
- Remove the target and control that the yellow LED turns OFF again.

DIMENSIONS





CABLE VERSION



EX-II-3D T6

Temperature class:	T6 (<85°C)
Max. Power consumpti	540 mW at 30 Vdc
Max. Internal capacitar	100 nF
Internal inductance:	negligible

DECLARATION OF CONFORMITY
We DATASENSOR S.p.A. declare under our sole responsibility that these products are conform to the 2004/108 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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826003020 Rev.00

S62…M

Background suppression

INSTRUCTION MANUAL

CONTROLS

OUTPUT LED (yellow)
The yellow LED ON indicates that the N.O. output is closed and the N.C. output is open.

STABILITY LED (green)
When permanently ON, the green LED indicates a normal operating condition where the received signal has a safety margin superior to 30% respect to the output switching value. The sensor is ready to function correctly (stability condition).

DISTANCE ADJUSTMENT TRIMMER (ADJ.)
A 6-turn trimmer allows the background suppression distance adjustment through a mechanical variation of the optic triangulation angle.
The operating distance increases, rotating the screws in a clockwise direction.
Please refer to the “SETTING” paragraph for acquisition or setup procedure indications.

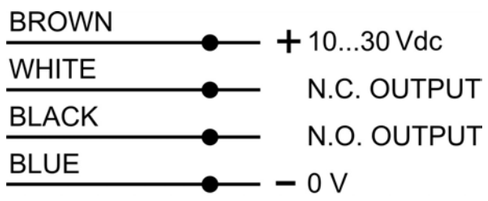
POSITION INDICATOR
This indicator presents a scale numbered from 1 to 6 that allows a precise adjustment of the suppression distance in the entire operating range.
Please refer to the “SETTING” paragraph for use indications.

TIMER ADJUSTMENT TRIMMER (only. M05/M15/M25/M35 vers.)
This control allows to vary the output delay deactivation from 0 to 1 sec.
Please refer to “TIMER FUNCTIONS” paragraph for use indications.

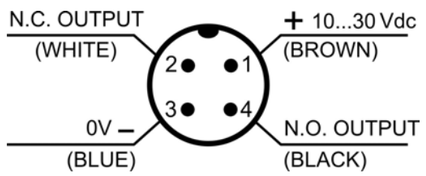
INSTALLATION

The sensor can be positioned by means of the three housing’s holes using two screws (M4x25 or longer, 1.5Nm max. tightening torque) with washers.
Various orientable fixing brackets to ease the sensor positioning are available (please refer to 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



M12 connector



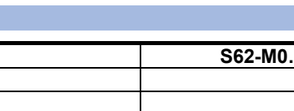
TECHNICAL DATA

	S62-M0…	S62-M1…	S62-M2…	S62-M3…
Power supply:	10 … 30 VDC			
Ripple:	2 Vpp max.			
Consumption (output current excluded):	40 mA max.			
Outputs:	PNP or NPN N.O./N.C.; 30 Vdc max. (short-circuit protection)			
Output current:	100 mA (overload and overvoltage protection)			
Output saturation voltage:	≤ 2 V			
Response time:	500 µs		1 ms	1,5 ms
Switching frequency:	1 kHz		500 Hz	330 Hz
Emission type:	RED (660 nm)	INFRARED (880 nm)		
Spot dimension:	6x6 mm (at 200 mm)	15x15 mm (at 400 mm)		200x200 mm (at 2000 mm)
Operating distance (typical values):	30…300 mm	60…600 mm	60…1200 mm	200…2000 mm *(recommended target 400x400mm)*
Adjustment:	Multiturn distance adjustment trimmer / Timer adjustment trimmer (only M05/M15/M25/M35 vers.)			
Difference (90% white / 4% black):	< 8 %	< 12 %	< 25 %	< 30 %
Hysteresis (90% white):	< 5 %			< 20 %
Indicators:	OUTPUT LED (YELLOW) / STABILITY LED (GREEN)			
Operating temperature:	-10 … 55 °C			
Storage temperature:	-20 … 70 °C			
Insulating strength:	500 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 shock for each axis (EN60068-2-27)			
Housing material:	ABS			
Lens material:	PMMA window; PC lens			
Mechanical protection:	IP67			
Connections:	2 m cable ∅ 4 mm / M12-4 pole connector			
Weight:	90 g. max. cable vers. / 40 g. max. connector vers.			

SETTING

Suppression distance setting

1. *Object detection*
Position object to detect in front of the sensor at the distance required.
Turn distance adjustment trimmer (ADJ) to minimum: yellow LED OFF and green LED ON.



Rotate trimmer in a clockwise direction until the yellow LED and green LED turn ON. *Object detection condition* (A status of position indicator)

A

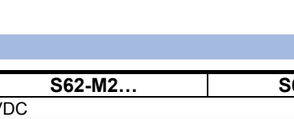
2. *Background suppression*
Remove object and ensure that the background is in front of the sensor: yellow LED OFF and green LED ON.

Rotate trimmer in a clockwise direction until the yellow LED and green LED turn ON: *background detection condition* (B status of position indicator).

B

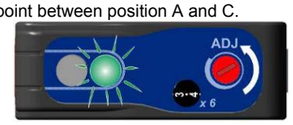
The trimmer reaches maximum level with yellow LED OFF if the background is outside the operating range.

Rotate trimmer in an anticlockwise direction until yellow LED turns OFF and green LED ON: *condition where background is outside operating range* (C status of position indicator).



C

3. *Setting and control*
Rotate trimmer in an anticlockwise direction until the indicator reaches an intermediate point between position A and C.



If position A and C are close to each other, leave trimmer on position C.
The sensor is now ready to function correctly and in stable conditions:

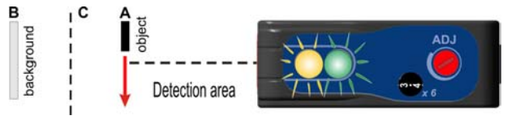
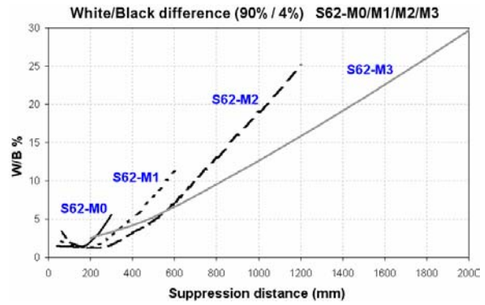
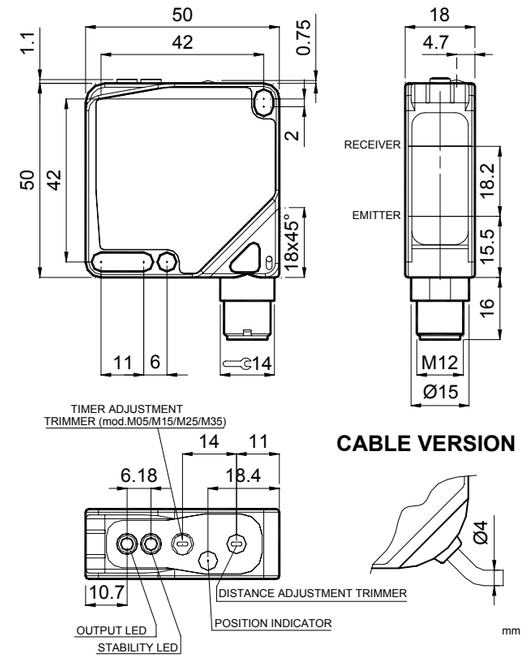


DIAGRAMMA DI RILEVAZIONE

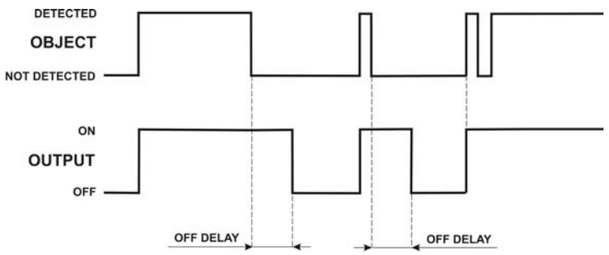


DIMENSIONS

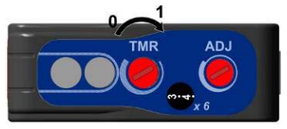


TIMER FUNCTION (S62…M05/M15/M25)

The timer function allows to adjust the output deactivation delay when the object is outside the detection area. The delay extends the output activation allowing the slower interface systems to detect shorter pulses.



The delay adjustment is carried-out manually using the Timer adjustment trimmer. Clockwise rotation increase the delay from 0 to a max. 1 sec. value.



EX-II-3-D T6

Temperature class:	T6 (<85°C)
Max. Power consumption:	1260 mW at 30 Vdc
Max. Internal capacitance:	130 nF
Internal inductance:	negligible

DECLARATION OF CONFORMITY
We DATASENSOR S.p.A. declare under our sole responsibility that these products are conform to the 2004/108/CE, 2006/95/CE Directives and successive amendments.

WARRANTY
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826002872 Rev.C

DATASENSOR

S62-PL…B Laser

Polarised retroreflex

INSTRUCTION MANUAL

CLASS 2 EN 60825-1 (1994)
LASER PRODUCT

CONTROLS

OUTPUT LED (yellow)
The yellow LED ON indicates the following output status: N.O. closed and N.C. open.

POWER ON LED (green)
The green LED ON indicates the sensor powering status and laser emission presence.

SENSITIVITY TRIMMER (ADJ.)
Monoturn trimmer that adjusts the sensitivity and thus the sensor operating distance.
Please refer to "SETTING" paragraph for the correct use procedure.

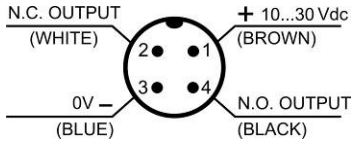
WARNING: *the maximum mechanical trimmer rotation is equal to 240°. Do not apply excessive torque over the maximum and minimum positions.*

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 to 180°.

CONNESSIONS

M12 connector

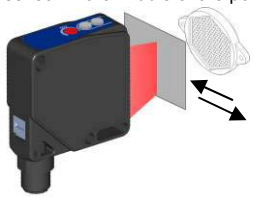


TECHNICAL DATA

Power supply:	10 … 30 Vcc
Ripple:	2 Vpp max.
Consumption (output current excluded):	30 mA max
Outputs:	PNP or NPN N.O. / N.C.; 30 Vdc max. (short-circuit protection)
Output current:	100 mA max (overload and overvoltage protection)
Output saturation voltage:	≤ 2 V
Response time:	200 µs
Switching frequency:	2.5 kHz
Emission type:	RED LASER (λ = 645…665 nm): Class 2 EN 60825-1 (1994), Class II CDRH 21 CFR PART 1040.10 Pulsed emission: pot. max ≤ 5 mW; pulse duration = 5 µs; frequency max = 32 KHz
Operating distance (typical values):	refer to TAB.1
Min. detectable object dimension:	0.5 mm at 0.5m (minimum spot)
Indicators:	OUTPUT LED (YELLOW) / POWER ON LED (GREEN)
Setting:	Monoturn sensitivity adjustment trimmer
Functioning temperature:	-10 … 55 °C
Storage temperature:	-20 … 70 °C
Dielectric strength:	500 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 every axis (EN60068-2-6)
Shock resistance:	11 ms (30 G) 6 shock for every axis (EN60068-2-27)
Housing material:	ABS
Lens material:	PMMA window, polycarbonate lenses
Mechanical protection:	IP67
Connections:	M12 4-pole connector
Weight:	40 g. max.

SETTING

Alignment:
- Position the sensor and reflector aligned on opposite sides at the desired distance.
- Turn to maximum the sensitivity adjustment trimmer (ADJ.) (clockwise).
- Determine the powering on and powering off points of the yellow LED (OUT) by moving vertically and horizontally the sensor and mount the sensor in the middle of the points found.



Control:
- Enter laterally the object inside the operating field and control that the yellow LED turns on.
- Remove the object and check that the yellow LED turns off immediately

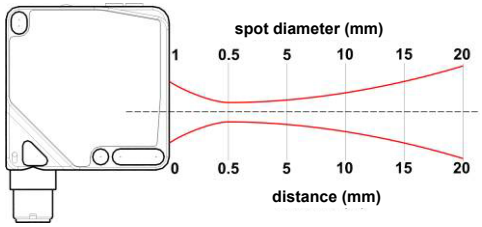
PERFORMANCES

TAB.1: Operating distances (m)

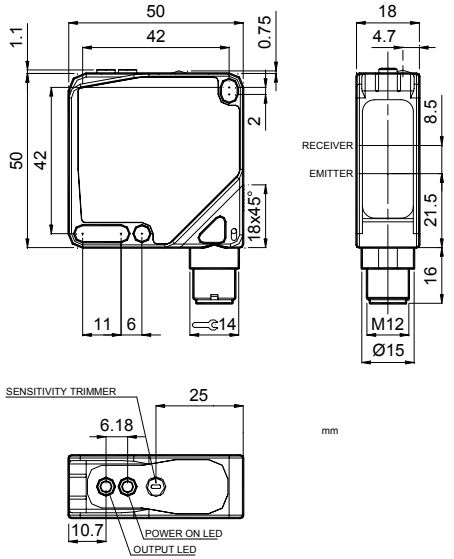
REFLECTOR

R1	R2	R6	R7 /R20	R8
0.3 … 16	0.3 … 20	0.4 … 22	0.3 … 22	0.2 … 2

Note: The use of the RT 3970 reflecting tape is not suggested.



DIMENSIONS



SAFETY PRECAUTIONS

All the electric and mechanical safety regulations have to be respected during sensor functioning.
The sensor has to be protected against mechanical damage.
Apply the labels supplied in a visible position near the laser emission beam.
Do not stare directly into the laser beam!
Do not point the laser beam towards people!
Eye irradiation superior to 0.25 seconds is dangerous.
Please refer to the Class 2 Standard (EN60825-1).
These sensors can not be used for safety applications!

EX-II-3D T6

Temperature class:	T6 (<85°C)
Max. Power consumption:	800 mW at 30 Vdc
Max. Internal capacitance:	100 nF
Internal inductance:	negligible

DECLARATION OF CONFORMITY
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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.
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826003251 Rev.B

S62-PL…M Laser

Background suppression

INSTRUCTION MANUAL

CLASS 2 EN 60825-1 (1994)
LASER PRODUCT

CONTROLS

OUTPUT LED (yellow)
The yellow LED ON indicates the output status: N.O. closed and N.C. open.

POWER ON LED (green)
The green LED ON indicates the sensor powering status and laser emission presence.

DISTANCE ADJUSTMENT TRIMMER (ADJ.)
The multiturn trimmer with clutch (6 turn) adjusts the suppression distance through the mechanical variation of the optic triangulation angle.
The operating distance increases rotation the trimmer shaft in a clockwise direction.
Please refer to “SETTING” paragraph for the correct use procedure.

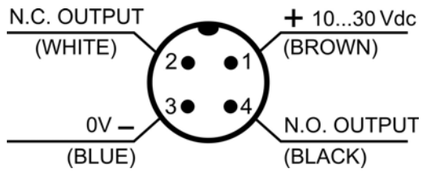
POSITION INDICATOR
This indicator has a scale numbered from 1 to 6 that allows the precise adjustment of the suppression distance on the entire operating range.
Please refer to “SETTING” paragraph for the correct use procedure.

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 to 180°.

CONNECTIONS

M12 connector



TECHNICAL DATA

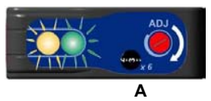
	S62-PL-M01…	S62-PL-M11…
Power supply:	10 … 30 VDC	
Ripple:	2 Vpp max.	
Consumption (output current excluded):	30 mA max	
Outputs:	PNP or NPN N.O. / N.C.; 30 VDC max. (short-circuit protection)	
Output current:	100 mA (overload and overvoltage protection)	
Output saturation voltage:	≤ 2 V	
Response time:	140 µs	200 µs
Switching frequency:	3.5 kHz	2.5 kHz
Emission type:	RED LASER (λ = 645…665nm): Class 2 EN 60825-1 (1994), Class II CDRH 21 CFR PART 1040.10 Pulsed emission: pot. max ≤ 5mW; pulse duration = 5µs; frequency = 14KHz (mod. M01) / 10KHz (mod. M11)	
Focalisation point :	60 mm	150 mm
Spot dimension:	< 0.2 mm (at 60 mm)	< 0.4 mm (at 150 mm)
Operating distance (typical values):	30…150 mm	50…350 mm
Adjustment:	4 turns distance adjustment trimmer	6 turns distance adjustment trimmer
Difference (90% white/ 4% black):	< 4 % (see DETECTION DIAGRAM)	
Hysteresis (90% white):	< 1 %	
Indicators:	OUTPUT LED (YELLOW) / POWER ON LED (GREEN)	
Functioning temperature:	-10 … 55 °C	
Storage temperature:	-20 … 70 °C	
Insulating strength:	500 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 shock for each axis (EN60068-2-27)	
Housing material:	ABS	
Lens material:	PMMA window; PC lens	
Mechanical protection:	IP67	
Connections:	M12-4 pole connector	
Weight:	40 g. max.	

SETTING

Suppression distance setting

1. *Object detection*
Position object to detect in front of the sensor at the distance required.
Turn distance adjustment trimmer (ADJ) to minimum: yellow LED OFF and green LED ON.

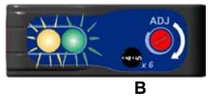
Rotate trimmer in a clockwise direction until the yellow LED and green LED turn ON. *Object detection condition* (A status of position indicator).



A

2. *Background suppression*
Remove object and ensure that the background is in front of the sensor: yellow LED OFF and green LED ON.

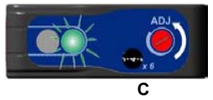
Rotate trimmer in a clockwise direction until the yellow LED and green LED turn ON: *background detection condition* (B status of position indicator).



B

The trimmer reaches maximum level with yellow LED OFF if the background is outside the operating range.

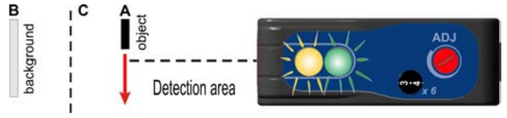
Rotate trimmer in an anticlockwise direction until yellow LED turns OFF and green LED ON: *condition where background is outside operating range* (C status of position indicator).



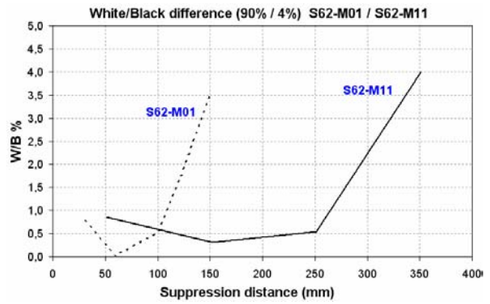
C

3. *Setting and control*
Rotate trimmer in an anticlockwise direction until the indicator reaches an intermediate point between position A and C.

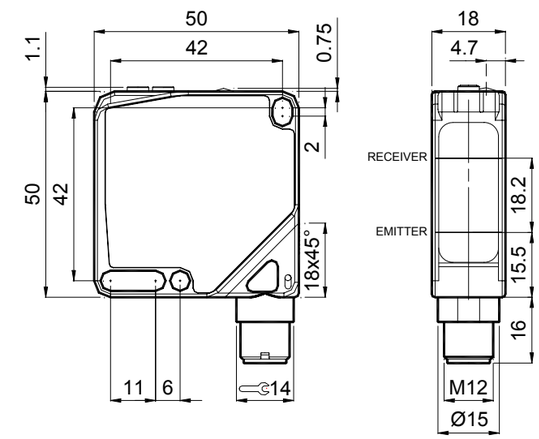
If position A and C are close to each other, leave trimmer on position C.
The sensor is now ready to function correctly and in stable conditions.

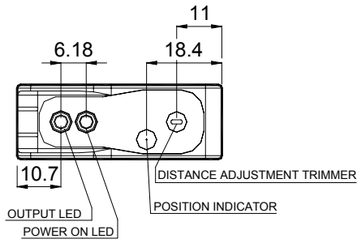


DETECTION DIAGRAM



DIMENSIONS





mm

SAFETY PRECAUTIONS

All the electric and mechanical safety regulations have to be respected during sensor functioning.
The sensor has to be protected against mechanical damage.
Apply the labels supplied in a visible position near the laser emission beam.

Do not stare directly into the laser beam!
Do not point the laser beam towards people!
Eye irradiation superior to 0.25 seconds is dangerous. Please refer to the Class 2 Standard (EN60825-1).
These sensors can not be used for safety applications!

	EX-II-3-D T6	
	Temperature class:	T6 (<85°C)
	Max. Power consumption:	800 mW at 30 Vdc
	Max. Internal capacitance:	100 pF
	Internal inductance:	negligible

DECLARATION OF CONFORMITY
We DATASENSOR S.p.A. declare under our sole responsibility that these products are conform to the 2004/108/CE, 2006/95/CE 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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