



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 permanently 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).

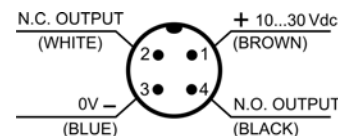
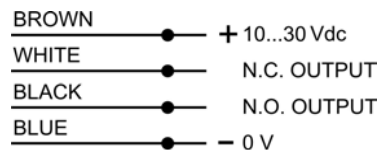
The operating distance is measured from the front surface of the sensor optics.

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 Ø 4 mm cable / M12 4-pole connector
Weight:	90 g. max. (cable version) / 40 g. max. (connector version)

CONNECTIONS



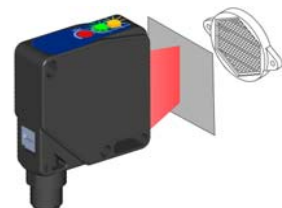
SETTING

Alignment:

- 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.



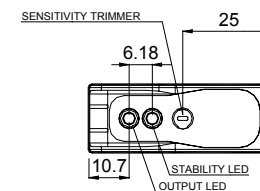
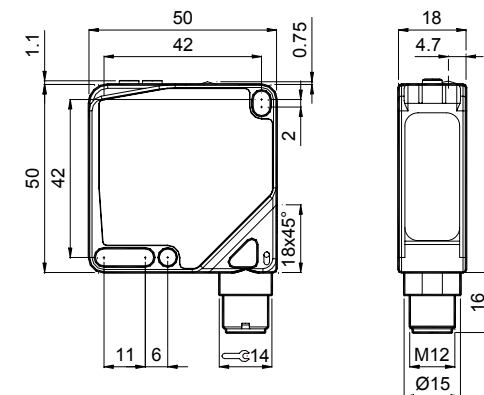
Control:

- Place the target between the sensor and the reflector. Control that the yellow LED turns ON.

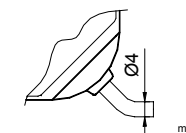
- Remove the target and control that the yellow LED turns OFF again.



DIMENSIONS



CABLE VERSION



	EX-II-3D T6
	Temperature class: T6 (<85°C)
	Max. Power consumpti 540 mW at 30 Vdc
	Max. Internal capacitor 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.

DATASENSOR S.p.A. Via Lavino 265
40050 Monte S. Pietro - Bologna - Italy
Tel: +39 051 6765611 Fax: +39 051 6759324
http://www.datasensor.com e-mail: info@datasensor.com



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S62...M

Soppressione di sfondo

MANUALE ISTRUZIONI

CONTROLLI

LED DI USCITA (giallo)

Il LED giallo acceso indica lo stato delle uscite: N.A. chiusa e N.C. aperta.

LED DI STABILITY (verde)

Il LED verde acceso permanente indica una condizione operativa normale in cui il segnale ricevuto ha un margine di sicurezza maggiore del 30% circa rispetto al valore di commutazione dell'uscita: il sensore è pronto ad operare correttamente (condizione di stabilità).

TRIMMER DI REGOLAZIONE DISTANZA (ADJ.)

Trimmer multigiro con frizione che regola la distanza di soppressione mediante variazione meccanica dell'angolo di triangolazione ottica.

La distanza operativa aumenta ruotando il trimmer in senso orario.

Si veda il paragrafo "REGOLAZIONI" per la sua modalità di utilizzo.

INDICATORE DI POSIZIONE

Questo indicatore ha una scala numerata da 1 a 6 che permette una regolazione precisa della distanza di soppressione su tutto il range di lavoro.

Si veda il paragrafo "REGOLAZIONI" per la modalità di utilizzo.

TRIMMER DI REGOLAZIONE TIMER (solo mod. M05/M15/M25/M35)

Questo controllo permette di variare il ritardo di disattivazione dell'uscita da 0 a 1 sec. Si veda il paragrafo "FUNZIONE TIMER" per le modalità di utilizzo.

INSTALLAZIONE

L'installazione del sensore può essere effettuata grazie ai tre fori passanti del corpo, tramite due viti (M4x25 o di maggiore lunghezza, coppia max. di serraggio 1.5Nm) con rondelle.

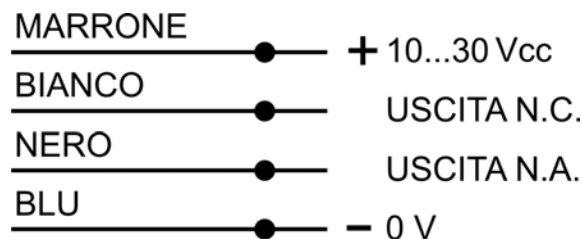
Sono disponibili numerose staffe orientabili per facilitare il posizionamento del sensore (vedi accessori a catalogo).

La distanza operativa è misurata partendo dalla superficie frontale dell'ottica del sensore.

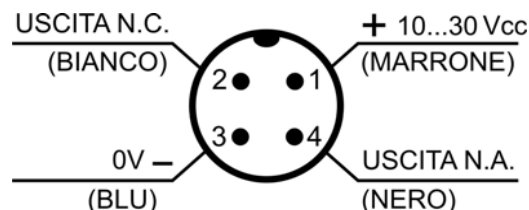
Il connettore M12 può essere orientato in due diverse posizioni agendo sull'apposita molla di ritenuta e ruotando il blocchetto di 180° fino a fine corsa.



CONNESSIONI



connettore M12



DATI TECNICI

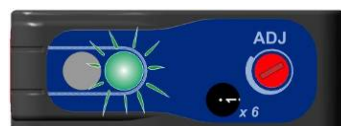
	S62-M0...	S62-M1...	S62-M2...	S62-M3...
Tensione di alimentazione:	10 ... 30 Vcc			
Tensione di ripple:	2 Vpp max.			
Assorbimento (esclusa corrente di uscita):	40 mA max.			
Uscite:	PNP o NPN N.A. / N.C.; 30 Vcc max. (protezione contro il cortocircuito)			
Corrente di uscita:	100 mA (protezione al sovraccarico ed alle sovratensioni)			
Tensione di saturazione dell'uscita:	≤ 2 V			
Tempo di risposta:	500 μs		1 ms	1,5 ms
Frequenza di commutazione:	1 kHz		500 Hz	330 Hz
Tipo di emissione:	ROSSO (660 nm)	INFRAROSSO (880 nm)		
Dimensione dello spot:	6x6 mm (a 200 mm)	15x15 mm (a 400 mm)		200x200 mm (a 2000 mm)
Distanza operativa (valori tipici):	30...300 mm	60...600 mm	60...1200 mm	200...2000 mm <i>(target raccomandato 400x400mm)</i>
Impostazione:	Trimmer di regolazione distanza a 6 giri / Trimmer di regolazione timer (solo mod. M05/M15/M25/M35)			
Differenza bianco-nero (90% / 4%):	< 8 %	< 12 %	< 25 %	< 30 %
Isteresi su bianco 90%:	< 5 %			< 20 %
Indicatori:	LED DI USCITA (GIALLO) / LED STABILITY (VERDE)			
Temperatura di funzionamento:	-10 ... 55 °C			
Temperatura di immagazzinamento:	-20 ... 70 °C			
Rigidità dielettrica:	500 Vca 1 min tra parti elettroniche e contenitore			
Resistenza d'isolamento	>20 MΩ 500 Vcc tra parti elettroniche e contenitore			
Reiezione alla luce ambiente:	come prescritto da EN 60947-5-2			
Vibrazioni:	ampiezza 0.5 mm, frequenza 10 ... 55 Hz, per ogni asse (EN60068-2-6)			
Resistenza agli urti:	11 ms (30 G) 6 shock per ogni asse (EN60068-2-27)			
Materiale contenitore:	ABS			
Materiale lenti:	finestra in PMMA; lente in PC			
Protezione meccanica:	IP67			
Collegamenti:	cavo di lunghezza 2 m Ø 4 mm / connettore M12 a 4 poli			
Peso:	90 g. max. vers. a cavo / 40 g. max. vers. a connettore			

REGOLAZIONI

Impostazione della distanza di soppressione

1. Rilevazione dell'oggetto

Posizionare di fronte al sensore l'oggetto da rilevare alla distanza desiderata. Mettere al minimo il trimmer di regolazione distanza (ADJ): LED giallo OFF e LED verde ON.



Ruotare il trimmer in senso orario fino alla condizione LED giallo ON e LED verde ON: *condizione di oggetto rilevato* (stato A dell'indicatore di posizione).

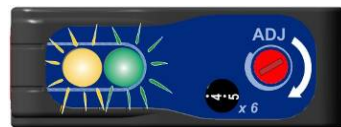


2. Esclusione dello sfondo

Rimuovere l'oggetto ed assicurarsi che lo sfondo sia posizionato di fronte al sensore: LED giallo OFF e LED verde ON.

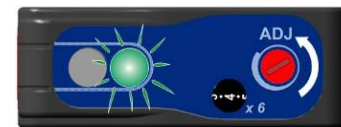


Ruotare il trimmer in senso orario fino alla condizione LED giallo ON e LED verde ON: *condizione di sfondo rilevato* (stato B dell'indicatore di posizione).



Il trimmer raggiunge il massimo con LED giallo ancora spento se lo sfondo è fuori dal range operativo.

Ruotare il trimmer in senso antiorario fino alla condizione LED giallo OFF e LED verde ON: *condizione di sfondo fuori dal campo di rilevazione* (stato C dell'indicatore di posizione).



3. Impostazione e verifica

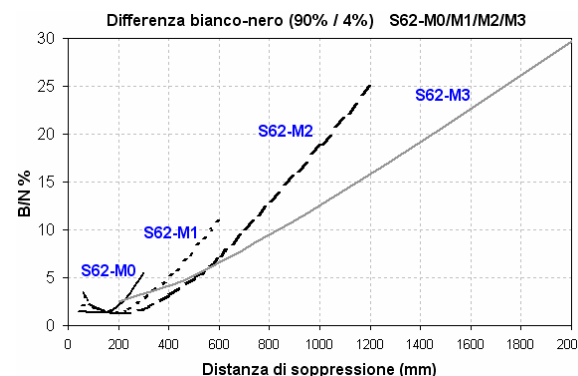
Ruotare il trimmer in senso antiorario fino a portare la tacca dell'indicatore in un punto intermedio fra la posizione A e la posizione C.



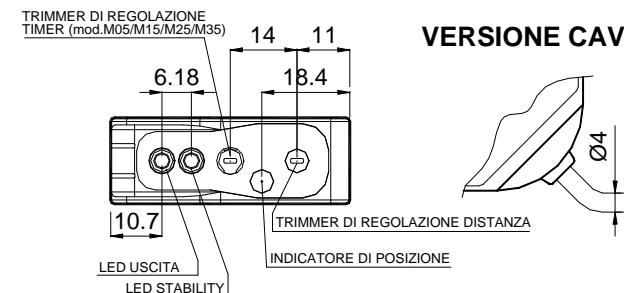
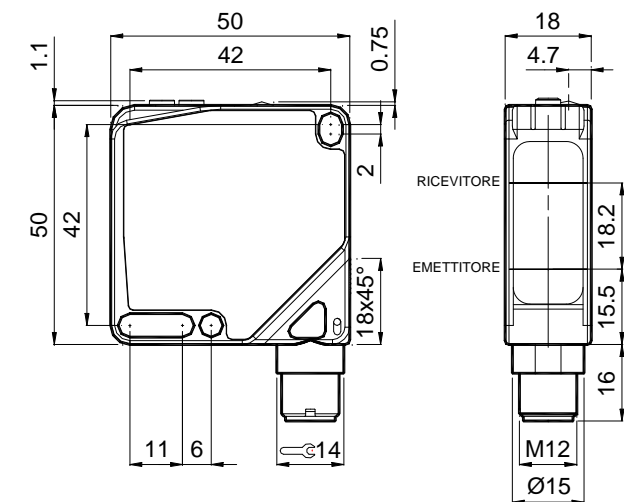
Nel caso in cui la posizione A e la posizione C siano molto vicine fra loro, lasciare il trimmer nella posizione C. Ora il sensore è pronto ad operare correttamente e in condizioni stabili.



DIAGRAMMA DI RILEVAZIONE



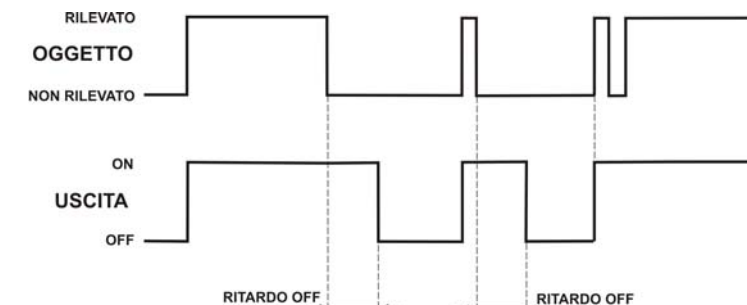
DIMENSIONI D'INGOMBRO



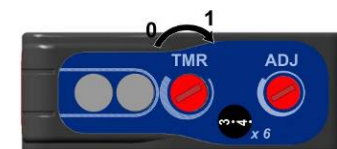
FUNZIONE TIMER (S62...M05/M15/M25/M35)

La funzione timer permette di regolare il ritardo di disattivazione dell'uscita dopo che l'oggetto è uscito dall'area di rilevazione.

Il ritardo estende l'attivazione dell'uscita permettendo ai sistemi d'interfacciamento più lenti, di rilevare gli impulsi più brevi.



La regolazione del ritardo si esegue manualmente mediante il trimmer di regolazione timer. La sua rotazione in senso orario produce un aumento lineare del ritardo da 0 al valore massimo di 1 sec.



	EX-II-3-D T6	
	Classe di temperatura:	T6 (<85°C)
	Potenza max. dissipata:	1260 mW a 30 Vcc
	Capacità max. interna:	130 nF
	Induttanza interna:	trascurabile

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DATASENSOR S.p.A. Via Lavino 265
40050 Monte S. Pietro - Bologna - Italy
Tel: +39 051 6765611 Fax: +39 051 6759324
http://www.datasensor.com e-mail: info@datasensor.com

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S62-PL...B Laser

Polarised retroreflex

INSTRUCTION MANUAL



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

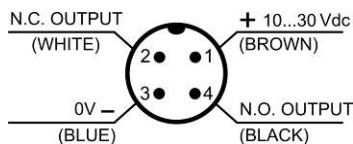
The sensor can be positioned by means of the three housing's holes using two screws (M4x25 or longer, 1.5 Nm maximum tightening torque) with washers. Various orientable fixing brackets to ease the sensor positioning are available (please refer to the accessories listed in the general catalogue). The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

CONNECTIONS

M12 connector



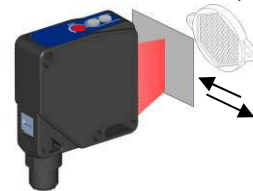
TECHNICAL DATA

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

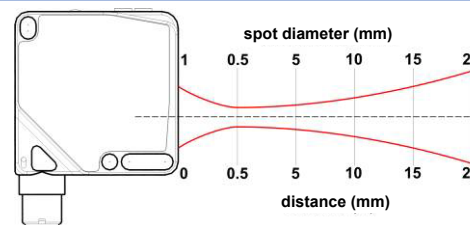


PERFORMANCES

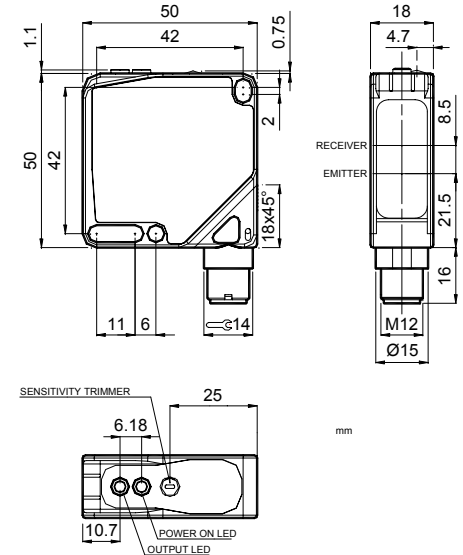
TAB.1: Operating distances (m)

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	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. This warranty does not cover damage or liability deriving from the improper application of DATASENSOR products.

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S62-PL...M Laser

Background suppression

INSTRUCTION MANUAL



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).

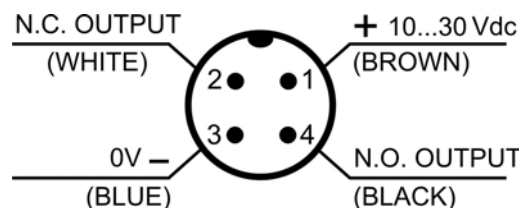
The operating distance is measured from the front surface of the sensor optics.

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-turn distance adjustment trimmer	6-turn 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	
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 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).



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).



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).

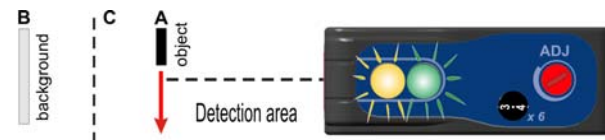


3. Setting and control

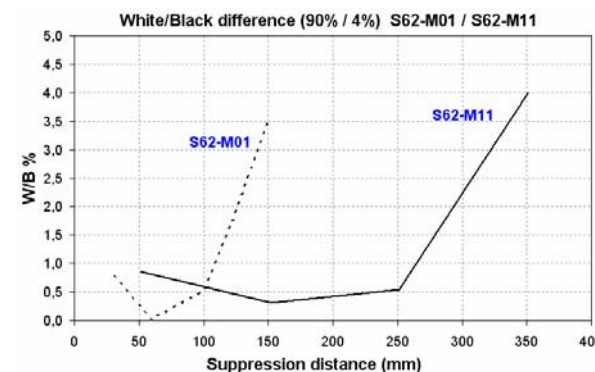
Rotate trimmer in an anticlockwise direction until the indicator reaches an intermediate point between position A and C.



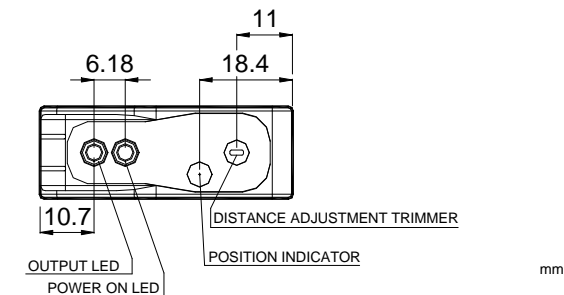
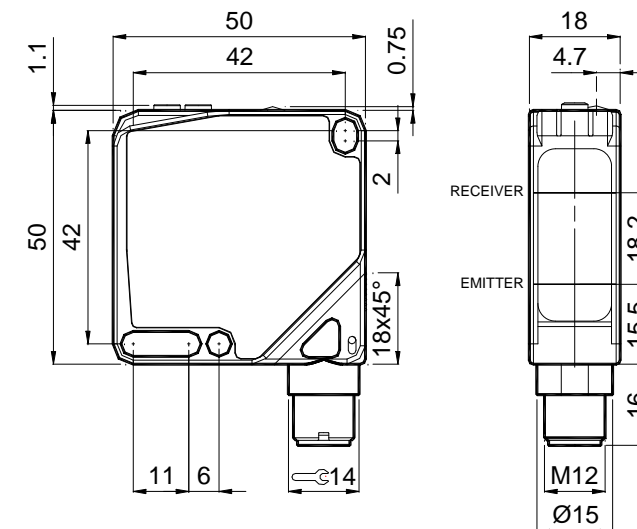
If position A and C are close to each other, leave trimmer on position C. The sensor is now ready to function correctly and in stable conditions.



DETECTION DIAGRAM



DIMENSIONS



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.

DATASENSOR S.p.A. Via Lavino 265
40050 Monte S. Pietro - Bologna - Italy
Tel: +39 051 6765611 Fax: +39 051 6759324
http://www.datasensor.com e-mail: info@datasensor.com

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