



- *Area sensors with crossed beams*
- *100 mm controlled height*
- *Operating distance reaching 2.1 m*
- *0.2 mm minimum detectable thickness*
- *PNP output and Scan mode input*

### AREAsensor™

## AS1 SERIES

The photoelectric light grids of the **AS1** series are crossed-beam area sensors able to detect all objects, with even 0.2 mm thickness, inside a 100 mm height, over operating distances reaching 2.1 m between emitter and receiver.

A standard resolution version is also available for less critical and cost-effective applications.

The **AS1** area sensors represent the ideal solution for the detection of very small objects, even when passing in different positions inside the controlled height and width.

Thanks to the short response time, the ultra-compact **AS1** light grids suit fast conveyor lines, such as feeding and downloading lines, for the detection and counting of objects in random positions.



# AS HIGH-RESOLUTION PHOTOELECTRIC LIGHT GRIDS

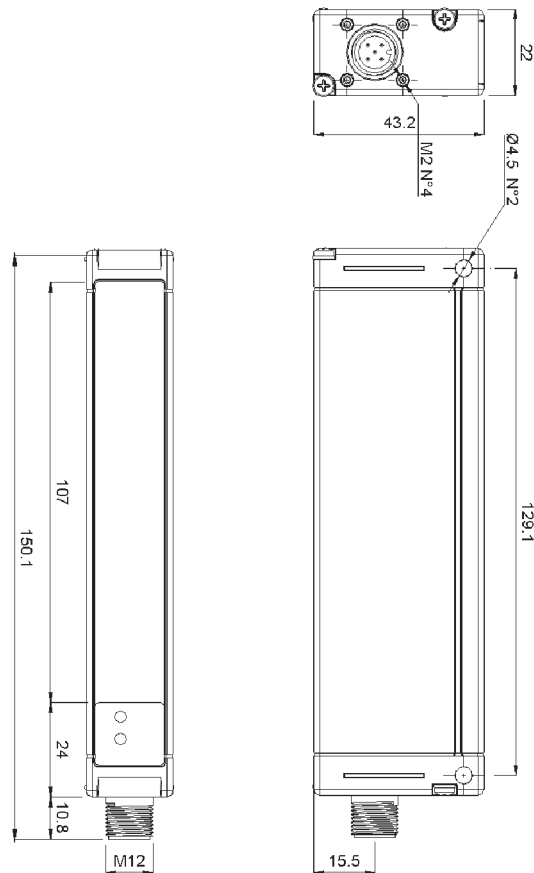
The PNP output is activated every time an object is detected inside the sensitive area between the receiver and emitter.

Two different models are available: high resolution (AS1-HR) or standard resolution (AS1-SR). In the first case the light array has 16 beams, while in the second case the beams are reduced to 6.

In the AS1-HR model, the selection inputs of the SCAN MODE, can configure 4 different crossed-beam scanning modes. These different modes allow to vary the detection performances, in particular the resolution can be increased to 0.2 mm thickness, or the response time up to less than 3 ms.

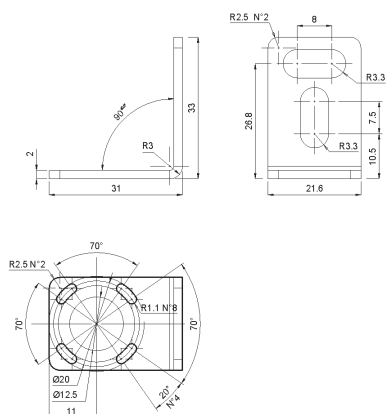


## DIMENSIONS



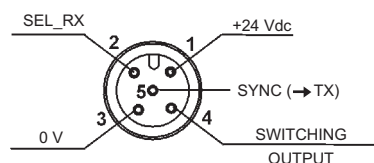
mm

## FIXING BRACKET



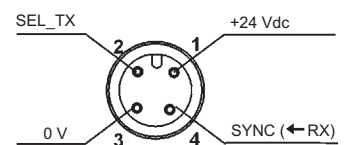
## CONNECTIONS

### RECEIVER (RX)



- 1 = brown = +24 Vdc
- 2 = white = SEL\_RX (only AS1-HR)
- 3 = blue = 0 V
- 4 = black = SWITCHING OUTPUT
- 5 = grey = SYNC

### EMITTER (TX)

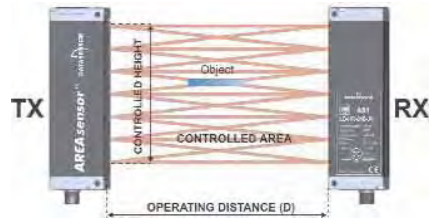


- 1 = brown = +24 Vdc
- 2 = white = SEL\_TX (only AS1-HR)
- 3 = blue = 0 V
- 4 = black = SYNC



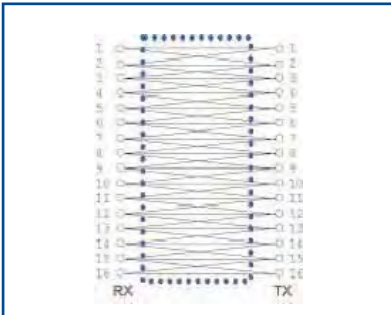
## TECHNICAL DATA

<b>Power supply:</b>	24 Vdc ± 15 %
<b>Consumption on emitting unit:</b>	150 mA max.
<b>Consumption on receiving unit:</b>	40 mA max. load excluded
<b>Outputs:</b>	1 PNP output
<b>Load current on PNP output:</b>	100 mA; short-circuit protection
<b>Saturation voltage on PNP output:</b>	≤ 1.5 V at T=25°C
<b>Emission type:</b>	infrared 880 nm
<b>Response time:</b>	1,75 ms (AS1-SR vers.) 2,75 - 8 ms (AS1-HR vers.)
<b>Optics number:</b>	6 (AS1-SR vers.) 16 (AS1-HR vers.)
<b>Resolution:</b>	refer to tables
<b>Operating distance:</b>	0.3 – 2.1 m
<b>Receiver indicators:</b>	green POWER ON LED yellow OUT LED
<b>Emitter indicators:</b>	green POWER ON LED
<b>Functioning temperature:</b>	0 ... + 50 °C
<b>Storage temperature:</b>	- 25 ... + 70 °C
<b>Humidity:</b>	15...95 % (uncondensed)
<b>Mechanical protection:</b>	IP65
<b>Housing material:</b>	aluminium
<b>Optics material:</b>	PMMA
<b>Connections:</b>	M12 4-pole connector (TX) M12 5-pole connector (RX)
<b>Weight:</b>	300g

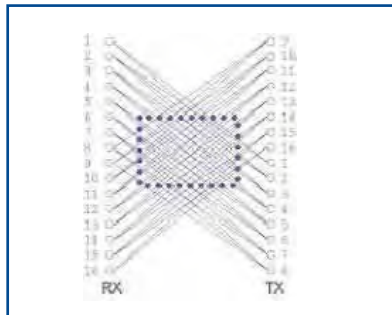


## HIGH RESOLUTION SCANNING MODE

PROG. N°	SEL_RX	SEL_TX	RESOLUTION	RESPONSE TIME (msec )
1	0 Vdc or FLOAT	0 Vdc or FLOAT	LOW	2.75
2	0 Vdc or FLOAT	24 Vdc	M/L	3
3	24 Vdc	0Vdc or FLOAT	M/H	7.75
4	24 Vdc	24 Vdc	HIGH	8



**SCAN MODE 1:**  
high speed / low resolution  
Minimum object detection  
Flat = 0.4 (thickness) x 100 (width) mm  
Cylindrical objects = Ø 6 mm

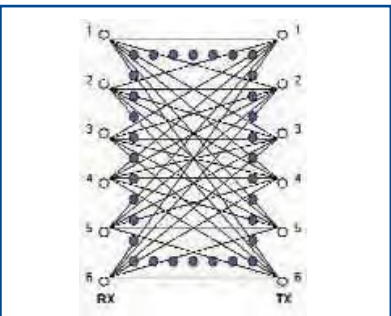


**SCAN MODE 2:**  
high speed / mid resol. central area  
Minimum object detection  
Flat = 0.4 (thickness) x 90 (width) mm  
Cylindrical objects = Ø 6 mm



**SCAN MODE 3-4:**  
low speed / high resolution  
Minimum object detection  
Flat = 0.2 (thickness) x 75 (width) mm  
Cylindrical objects = Ø 6 mm

## STANDARD RESOLUTION



Minimum object detection  
Flat = 0.2 (thickness) x 200 (width) mm  
Cylindrical objects = Ø 18 mm

Note: the scan mode is fixed in the standard resolution version.



## MODEL SELECTION AND ORDER INFORMATION

MODEL	DISTANCE	RESOLUTION	CONTROLLED HEIGHT	ORDER N°
AS1-LD-HR-010-J	0.3 – 2.1 m	high	100 mm	958101000
AS1-LD-SR-010-J	0.3 – 2.1 m	standard	100 mm	958101010

*Fixing brackets and screws are supplied in the package.*

## ACCESSORY SELECTION AND ORDER INFORMATION

MODEL	DESCRIPTION	ORDINE N°
CS-A1-03-G-03	axial M12 5-pole unshielded 3 m connector	95ACC2110
CS-A1-03-G-05	axial M12 5-pole unshielded 5 m connector	95ACC2120
CS-A1-03-G-10	axial M12 5-pole unshielded 10 m connector	95ACC2140
CS-A1-02-G-03	axial M12 4-pole unshielded 3 m connector	95A251380
CS-A1-02-G-05	axial M12 4-pole unshielded 5 m connector	95A251270
CS-A1-02-G-10	axial M12 4-pole unshielded 10 m connector	95A251390

# AREA SENSORS



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