

AS1 SERIES

The photoelectric light grids of the **AS1 series** are **crossed-beam area sensors** able to detect all objects, with even 0.2mm thickness, inside a 100mm height, over operating distances reaching 3m between emitter and receiver.

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.

Version with **trimmer adjustment and optic synchronism** between emitter and receiver unit are available.

The distance between emitter and receiver can range from 0.3 up to 2.1 m for the **AS1-LD** models and from 0.8 up to 3 m for the **AS1-HD** models.



SENSORS

HIGHLIGHTS

- Crossed beam area sensors
- 100mm controlled height
- Operating distance reaching 3m
- Adjustment trimmer
- PNP output
- Optic synchronism (trimmer models)
- Scan Mode input (HR models)

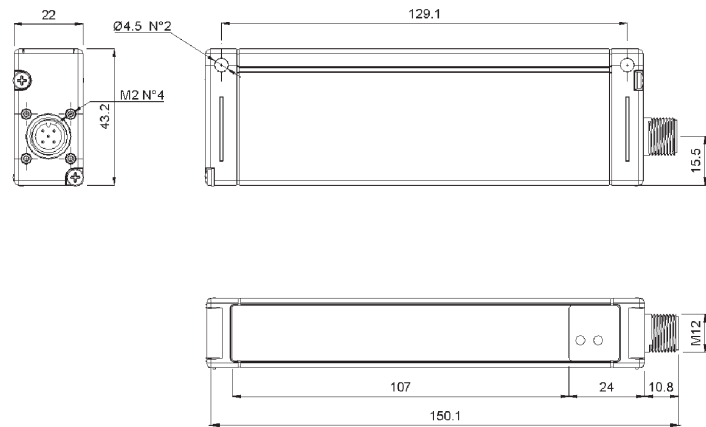
APPLICATIONS

- Object presence/absence control
- Object counting
- Object passage control on conveyor lines



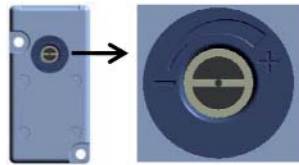
Two different models are available: **high resolution (AS1-HR)** or **standard resolution (AS1-SR)**. In the first case the light array has 16 beams, while in the second case the beams are reduced to 6. In the AS1-HR model, the selection inputs of the SCAN MODE, can configure 4 different crossed-beam scanning modes. These different modes allow to vary the detection performances, in particular the resolution can be increased to 0.2mm thickness, or the response time up to less than 3ms.

DIMENSIONS



mm

INDICATORS AND SETTING (trimmer versions)

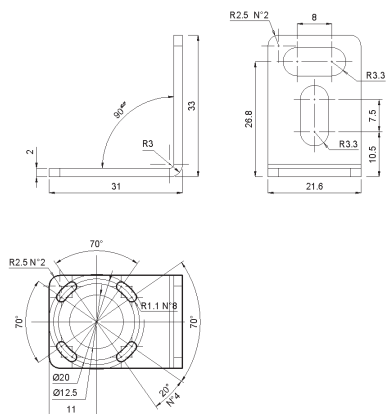


Emitter is equipped with a manual regulation which lets the user change the emission power by means of a screwdriver.

The emission power reduction can be particularly useful to lower passive reflections when maximum operating distance it is not required.

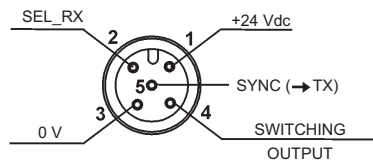


FIXING BRACKET



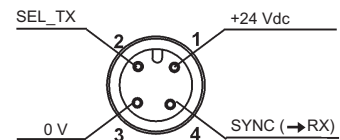
CONNECTIONS

RECEIVER (RX)



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

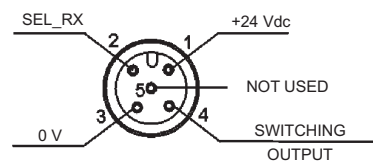
EMITTER (TX)



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

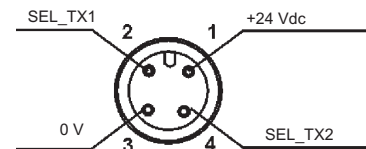
TRIMMER VERSIONS

RECEIVER (RX)



- | | |
|-----------|------------------------|
| 1 = brown | = +24 Vdc |
| 2 = white | = SEL_RX (only AS1-HR) |
| 3 = blue | = 0 V |
| 4 = black | = SWITCHING OUTPUT |
| 5 = grey | = NOT USED |

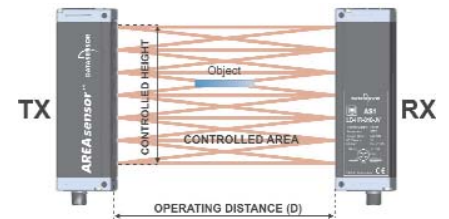
EMITTER (TX)



- | | |
|-----------|-------------------------|
| 1 = brown | = +24 Vdc |
| 2 = white | = SEL_TX1 (only AS1-HR) |
| 3 = blue | = 0 V |
| 4 = black | = SEL_TX2 (only AS1-HR) |

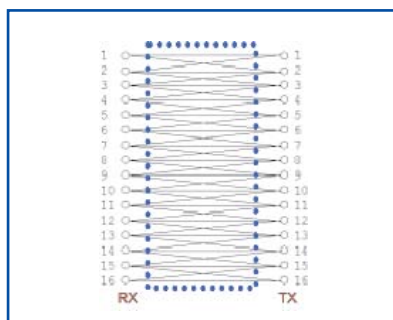
TECHNICAL DATA

| | |
|--|--|
| Power supply: | 24Vdc ± 15 % |
| Consumption on emitting unit: | 150mA max. |
| Consumption on receiving unit: | 40mA max. load excluded |
| Outputs: | 1 PNP output |
| Load current on PNP output: | 100mA; short-circuit protection |
| Saturation voltage on PNP output: | ≤ 1.5V at T=25°C |
| Emission type: | infrared 880nm |
| Response time: | 1.75ms (AS1-SR vers.) 2.75 - 8ms (AS1-HR vers.) |
| Optics number: | 6 (AS1-SR vers.) 16 (AS1-HR vers.) |
| Resolution: | refer to tables |
| Operating distance: | 0.3 – 2.1m (AS1-LD) 0.8 – 3m (AS1-HD) |
| Receiver indicators: | green POWER ON LED yellow OUT LED |
| Emitter indicators: | green POWER ON LED |
| Functioning temperature: | 0 ... + 50°C |
| Storage temperature: | - 25 ... + 70°C |
| Humidity: | 15...95 % (uncondensed) |
| Mechanical protection: | IP65 |
| Housing material: | aluminium |
| Optics material: | PMMA |
| Connections: | M12 4-pole connector (TX) M12 5-pole connector (RX) |
| Weight: | 300g |

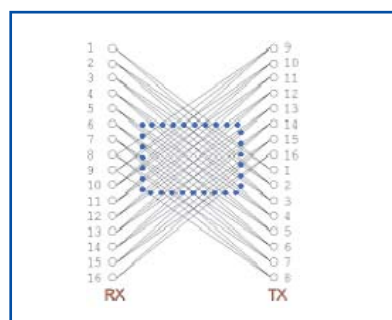


HIGH RESOLUTION SCANNING MODE

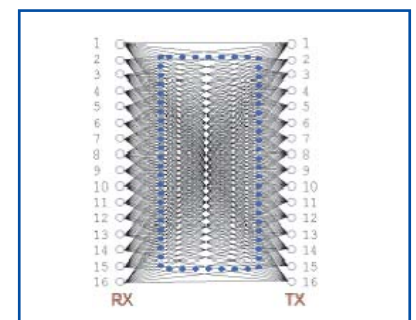
| PROG N° | SEL_RX | SEL_TX | RESOLUTION | RESPONSE TIME (msec) |
|---------|---------------|---------------|------------|----------------------|
| 1 | 0Vdc or FLOAT | 0Vdc or FLOAT | LOW | 2.75 |
| 2 | 0Vdc or FLOAT | 24 Vdc | M/L | 3 |
| 3 | 24Vdc | 0Vdc or FLOAT | M/H | 7.75 |
| 4 | 24Vdc | 24 Vdc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

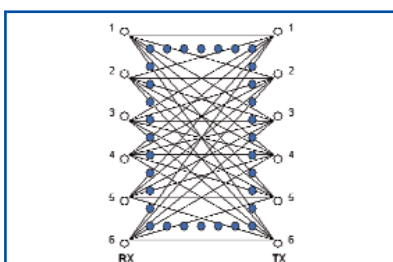


SCAN MODE 2:
high speed / mid resol. central area
Minimum object detection
Flat = 0.4 (thickness) x 90 (width) mm
Cylindrical objects = Ø 6 mm



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 SCANNING MODE



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 | ADJUSTMENT TRIMMER | ORDER N° |
|-----------------|------------|------------|-------------------|--------------------|-----------|
| AS1-LD-HR-010-J | 0.3 – 2.1m | high | 100mm | | 958101000 |
| ASI-LD-HR-P | 0.3 – 2.1m | high | 100mm | • | 958101040 |
| AS1-LD-SR-010-J | 0.3 – 2.1m | standard | 100mm | | 958101010 |
| ASI-LD-SR-P | 0.3 – 2.1m | standard | 100mm | • | 958101050 |
| AS1-HD-HR-010-J | 0.8 – 3m | high | 100mm | | 958101020 |
| AS1-HD-SR-010-J | 0.8 – 3m | standard | 100mm | | 958101030 |

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 |



The company endeavours to continuously improve and renew its products; for this reason the technical data and contents of this catalogue may undergo variations without prior notice. For correct installation and use, the company can guarantee only the data indicated in the instruction manual supplied with the products.