AREA SENSORS

AREAscan™ DETECTION AND MEASUREMENT LIGHT GRIDS



- ***Operating distance reaching 1.2 m and up to 300 mm controlled height***
- ***PNP Digital and 0 - 10 V analogue outputs***
- ***20 x 40 mm ultra-thin profile***
- ***4 mm resolution and 1 ms response time***

DS1 SERIES

The ***AREAscan***™ light grids of the **DS1** series are photoelectric multibeam devices suitable for detection, measurement and counting of objects with different shapes and dimensions.
Models with 100, 150 or 300 mm controlled height, 4 or 7 mm minimum resolution and 150 - 850 mm or 800 - 2100 mm operating distance, are available.
The electronics is completely integrated inside the grids and so no external control is necessary. Moreover the receiving and emitting units are synchronised via cable, guaranteeing the best immunity against electromagnetic and optic disturbances.
All models have an analogue output, the digital switching output and LEDs signalling the operating status and autodiagnostics of the device.
The electrical connection is obtained through standard M12 5-pole connectors for the receiver and M12 4-pole connectors for the emitter.
The ultra-thin profile (20 x 40 mm), together with the IP65 mechanical protection, easy use and installation, extremely short response time and excellent performances make the ***AREAscan***™ light grids of the **DS1** series particularly suitable to the many different applications of industrial automation.

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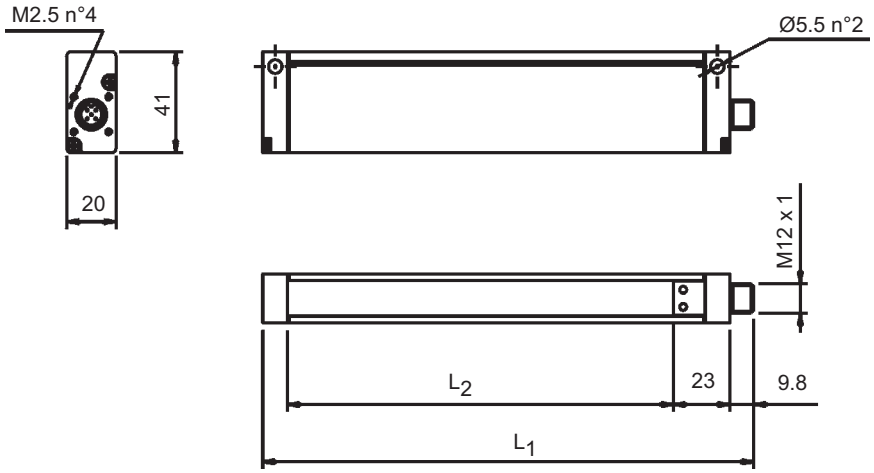
value through detection

The measurement of the object's dimensions, placed inside the sensitive area, is obtained thanks to the 0 - 10 V analogue output, which supplies a signal proportional to the number of interrupted beams that intercept the object.
The PNP digital output is activated each time that a beam intercepts an object. Contemporarily the 'OUT' LED, on the receiving unit panel, turns on. The 'POWER ON' LED, always on this panel, signals the wrong alignment between the emitting and receiving units as well as the functioning outside or near the maximum operating distance.

DIMENSIONS

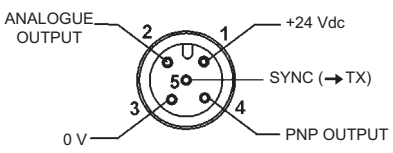




MODEL	L_1 (mm)	L_2 (mm)
DS1-xx-xx-010-xx	149.8	107
DS1-xx-xx-015-xx	199.8	157
DS1-xx-xx-030-xx	349.8	307

CONNECTIONS

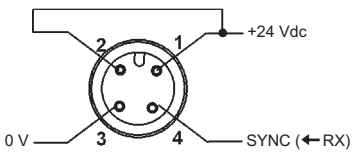
RECEIVER (RX)



1 = brown = +24 Vdc
2 = white = Analogue output
3 = blue = 0 V
4 = black = PNP output
5 = grey = SYNC

M12 5-pole connector

EMITTER (TX)



1 = brown = +24 Vdc
2 = white = SYNC +
3 = blue = 0 V
4 = black = SYNC

M12 4-pole connector

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TECHNICAL DATA

Power supply:	24 Vdc ± 15 %
Consumption on emitter unit:	150 mA max.
Consumption on receiver unit:	50 mA max. without load
Outputs:	1 PNP output
	1 analogue output; 0 - 10 V
Load current on PNP output:	100 mA; short circuit protection
Saturation voltage on PNP output:	≤ 1.5 V at T=25°C
Response time:	*refer to table 2*
Emission type:	infrared 880 nm
Resolution:	from 4 mm
	refer to table 2
Measurement precision:	from ± 3 mm
Operating distance:	0.15 - 0.85 m short distance version (SD)
	0.8 - 2.1 m long distance version (LD)
Receiver indicators:	green POWER ON LED
	orange OUT LED
Emitter indicators:	green POWER ON LED
Operating temperature:	0 ... + 55 °C
Storage temperature:	- 25 ... + 70 °C
Humidity:	15...95 % (uncondensed)
Electrical protection:	class 1
Mechanical protection:	IP65 (EN 60529)
Vibration resistance:	± 0.5 mm amplitude
	10 ... 55 Hz frequency
	5 min. cycle duration
	(EN 60068-2-6)
Shock resistance:	11 ms (about 30 G) 6 shocks per each axis
	(EN 60068-2-29)
Housing material:	black electro-painted aluminium
Optics material:	PMMA
Connections:	M12 4-pole connector for TX
	M12 5-pole connector for RX
Weight:	300g (DS1-xx-xx-010-xx vers.)
	340g (DS1-xx-xx-015-xx vers.)
	510g (DS1-xx-xx-030-xx vers.)

TABLES

Model	Total length (mm)	Cont. area length (mm)	N° beams
DS1-LD-SR-010-JV	149.8	100	16
DS1-LD-HR-010-JV	149.8	100	32
DS1-SD-SR-010-JV	149.8	100	16
DS1-SD-HR-010-JV	149.8	100	32
DS1-LD-SR-015-JV	199.8	150	24
DS1-LD-HR-015-JV	199.8	150	48
DS1-SD-SR-015-JV	199.8	150	24
DS1-SD-HR-015-JV	199.8	150	48
DS1-LD-SR-030-JV	349.8	300	48
DS1-SD-SR-030-JV	349.8	300	48

Table 1

Model	Minimum resol. (mm)	Response time (ms)	Operating distance (m)
DS1-LD-SR-010-JV	7	1	0.8...2.1
DS1-LD-HR-010-JV	5	2	0.8...2.1
DS1-SD-SR-010-JV	7	1	0.15...0.85
DS1-SD-HR-010-JV	4	2	0.15...0.85
DS1-LD-SR-015-JV	7	1.5	0.8...2.1
DS1-LD-HR-015-JV	5	2.75	0.8...2.1
DS1-SD-SR-015-JV	7	1.5	0.15...0.85
DS1-SD-HR-015-JV	4	2.75	0.15...0.85
DS1-LD-SR-030-JV	7	2.75	0.8...2.1
DS1-SD-SR-030-JV	7	2.75	0.15...0.85

Table 2

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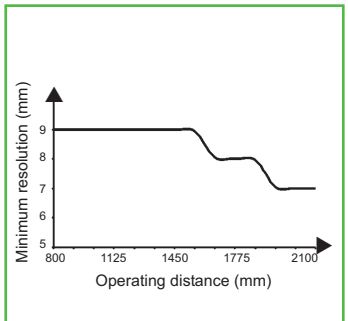
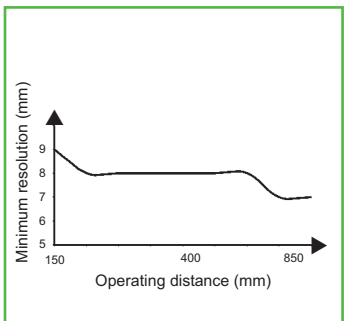
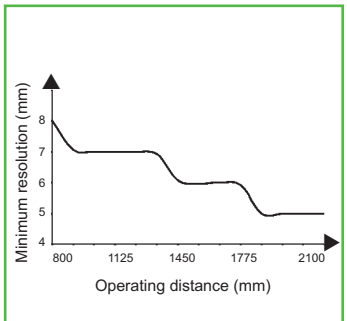
DETECTION DIAGRAMS



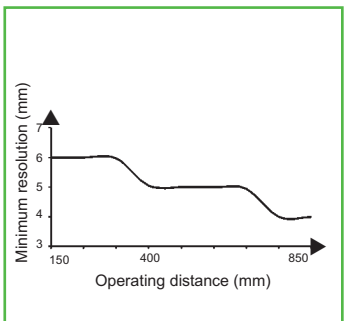
DS1-LD-SR-xx



DS1-SD-SR-xx



DS1-LD-HR-xx



DS1-SD-HR-xx

Variation of the minimum resolution according to the operating distance between the emitting and receiving units.

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SELECTION AND ORDER INFORMATION

MODEL	DISTANCE	RESOLUTION	CONTROLLED HEIGHT	ORDER N°
DS1-SD-SR-010-JV	short	standard	100 mm	957701010
DS1-SD-HR-010-JV	short	high	100 mm	957701000
DS1-LD-SR-010-JV	long	standard	100 mm	957701050
DS1-LD-HR-010-JV	long	high	100 mm	957701060
DS1-SD-SR-015-JV	short	standard	150 mm	957701030
DS1-SD-HR-015-JV	short	high	150 mm	957701020
DS1-LD-SR-015-JV	long	standard	150 mm	957701070
DS1-LD-HR-015-JV	long	high	150 mm	957701080
DS1-SD-SR-030-JV	short	standard	300 mm	957701040
DS1-LD-SR-030-JV	long	standard	300 mm	957701090

Fixing brackets and screws are supplied with the product

ACCESSORIES SELECTION TABLE

MODEL	DESCRIPTION	ORDER 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

Distributed by:

HEADQUARTERS

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