

The reliable way ...



... to monitor machines!



cegard/Process Eco

Light curtain to monitor machines and automation processes



ISO 9001: 2000



EN 954-1

Description

cegard/Process Eco is an intelligent light curtain system to be used in industrial automation to monitor machines and to control automation processes. It offers an ideal solution where very large areas have to be closely and cost effectively surveyed. The light curtain profile is extremely slim (12 x 16 mm) and still offers a maximum range of up to 8 meters. In addition, the robust construction of the light curtain with protection class of IP65 is the basis of excellent reliability. Besides several standard lengths each system can also be designed according to individual OEM requirements.

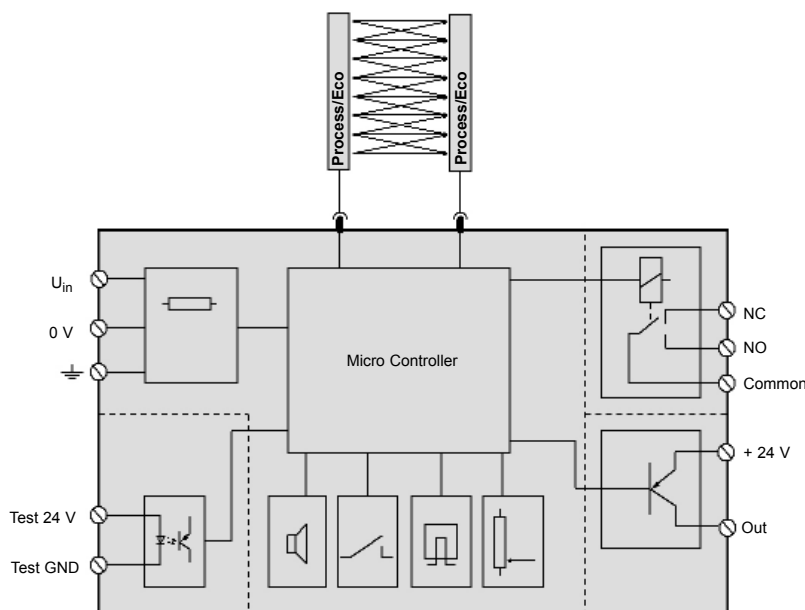
Three different types of control units are available which guarantee flexible operation. The operating range is automatically adjusted. On the basis of customer specific needs new or altered functions can be implemented.

Features

- Safety category B (EN 954-1)
- Relay or PNP output
- Straight and criss-cross beams for improved resolution
- Intelligent range adjustment (self calibration)
- Simple installation due to wide aperture angle
- Excellent ambient light resistance
- Integrated diagnosis
- Slim and robust aluminum profile: 12 x 16 mm
- Wide temperature range
- Very low price due to economy of scale
- Test input available
- Output off delay, adjustable

Principle

Supply voltage, type of output and test input depends on model



Technical Data

Control unit	
Supply voltage	24 VDC \pm 20 % or 17 ... 240 VAC / DC
Current consumption	max. 90 mA / 24 VDC or max. 280 mA / 230 VAC (without load)
Output	PNP or Relay (250 VAC / 8 A)
Enclosure rating	IP54
Output off delay	0 ... 10 s
Light curtain	
No. of sensor per system	8 / 16 / 24 / 32
Operating range	0 ... 5 m or 0 ... 8 m
Max. ambient light	100'000 Lux
Aperture angle	\pm 10 %
Cable length standard	each 5 m (detachable)
Enclosure rating	IP65 (IP67 on request)
Color profiles	Aluminum or black anodized
General	
Temperature range	
- Operation	-20 ... +65°C
Humidity	5 ... 95 %
Operation	
- Vibration / shock	IEC 68-2-6
EMC	EMC 89 / 336 / EC Low voltage 73 / 23 / EC

Specification

- Control Unit

Type Part Number	EcoC-230-Rel 102 075	EcoC-24-Rel-T 104 458	EcoC-24-PNP-T 103 189
Power supply	17 ... 240 VAC / DC	24 VDC ± 20 %	24 VDC ± 20 %
Current consumption (without load)	max. 280 mA	max. 90 mA	max. 90 mA
Relay Output	250 VAC / 8 A 125 VDC / 0.5 A 30 VDC / 8 A min. 5 VDC / 10 mA	250 VAC / 8 A 125 VDC / 0.5 A 30 VDC / 8 A min. 5 VDC / 10 mA	---
PNP Output			6 mA (24 V)
Off time delay	0 ... 10 s		
Test input	no	yes	yes
Connector	6 pin terminal block	6&2 pin terminal block	6&2 pin terminal block
Indicators (LED)	Power, beam status, failure (see manual)		
Enclosure rating (control unit)	IP54		
Temperature range			
- Operation	-20 ... +65°C		
- Storage	-20 ... +70°C		
Operation humidity	5 ... 95 %		
Operation vibration / shock	IEC 68-2-6		
EMC	EMC 89 / 336 / EC, amended 92 / 31 / EC and Low voltage 73 / 23 / EC		
Material housing	ABS, color blue (similar to RAL 5005)		
Weight	350 g		

- Light curtain

Operation wave length	Infrared approx. 900 nm
No. of sensors per light curtain	8 / 16 / 24 / 32
No. of beams per sensor	1 - 3
Operating range	0 to 5 m or 3 to 8 m (for criss-cross beams see minimum working distance restriction)
Max. ambient light	100'000 Lux
Minimum object size	22 mm (depends on sensor spacing)
Minimum operating range in criss-cross operation mode	1'800 mm
Response time (max., without relay delay)	(8, 16, 24, 32 beams)
- with criss-cross beams (Jumper on)	32 ms, 58 ms, 82 ms, 110 ms
- without criss-cross beams (Jumper off)	23 ms, 40 ms, 57 ms, 78 ms
Light curtain length	According to customer specification (max 2.4 m) Standard: 195, 315, 435, 555, 675, 795, 1'000, 1'270, 1'455, 1'700, 1'900 mm Customer specification or Standard: See Process/Eco standard systems
Position mounting holes [mm]	Standard: Pigtail with Mini-Din, 5 meter connector cable each Customer specification: Fixed cable (no connector) emitter up to 10 m / receiver up to 30 m
Cable length	
Temperature range	
- Operation	-20 ... +65°C
- Storage	-20 ... +70°C
Operation humidity	5 ... 95 %
Vibration / shock	IEC 68-2-6
Enclosure rating	IP65 (IP67 upon request)
Materials	
- Lenses	Polycarbonate
- Profiles	Aluminium
Color of profiles	Aluminium anodized (standard) or black anodized
Weight / profile	150 g (light curtain length 500 mm)



IMPORTANT WARNING:

This product is not a safety sensor to protect human life or human injury from dangerous parts of machinery. Finger, hand or body detection sensors conforming to safety standards (IEC 61496-1, -2) are available. For details contact your next CEDES partner.

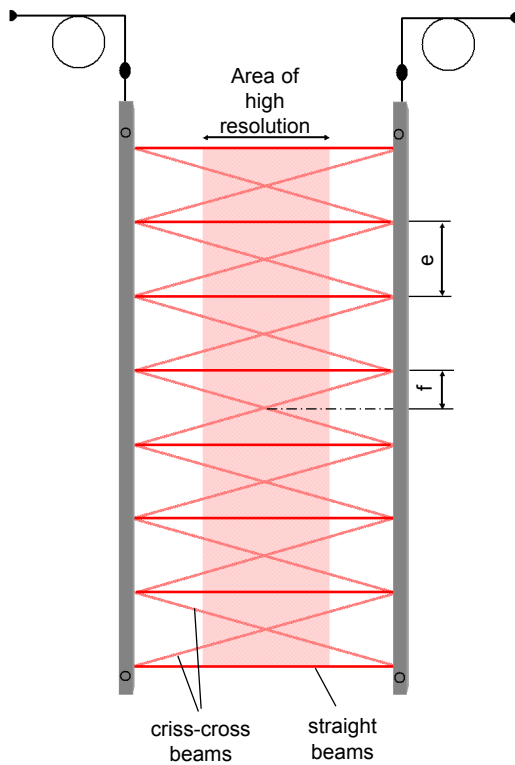
Process/Eco standard system



Process/Eco pigtail cable with Mini-Din connectors and connecting cables (Mini-Din-RJ4)



Slim and robust aluminum profile: 12 x 16 mm



Minimum object detection size with criss-cross beams operation (f, operating range > 1.8 m) and direct beams only (e)

Process/Eco standard systems

Part Number		103 608 M0379	103 608 M0380	103 608 M0381	103 608 M0382	103 608 M0383	103 608 M0384	103 608 M0435	103 608 M0436	103 608 M0437	103 608 M0438	103 608 M0439
Sensors per light curtain		8	16	16	24	32	32	32	32	16	32	32
Sensing height	q	113	233	352	473	593	713	899	1'178	1'400	1'630	1'780
Sensor spacing (center to center)	x	16	16	24	21	19	23	29	38	94	53	58
Operating range		< 5'000	< 5'000	< 5'000	< 5'000	< 5'000	< 5'000	< 5'000	< 5'000	< 5'000	< 5'000	< 5'000
Min. operating range with criss-cross beams		1'800	1'800	1'800	1'800	1'800	1'800	1'800	1'800	1'800	1'800	1'800
Beam diameter (approx.)		7	7	7	7	7	7	7	7	7	7	7
Minimum detection size	e	24	24	32	29	28	31	36	45	101	60	65
Minimum detection size in the area of high resolution (criss-cross mode)	f	16	16	20	19	18	20	22	26	54	34	36
Light curtain length	n	195	315	435	555	675	795	1'000	1'270	1'455	1'700	1'900
Position - First element	a	22	22	22	22	22	22	22	20	20	20	20
Position - Last element		135	255	375	495	615	735	921	1'198	1'420	1'650	1'800
Distance	b	55	55	55	55	55	55	74	67	30	45	95
Cable cover length	c	5	5	5	5	5	5	5	5	5	5	5
Mounting hole 1	m1	7	7	7	7	7	7	7	7	7	7	7
Mounting hole 2	m2	160	280	400	520	640	760	970	1'235	697	837	847
Mounting hole 3	m3	-	-	-	-	-	-	-	-	1'387	1'667	1'717
Light curtain color		black	black	black	black	black	black	alu	black	alu	alu	black
Pigtail cable with Mini-Din connector, 110 mm		yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Waterproof (IP67)		no	no	no	no	no	no	no	no	no	no	no
Controller (EcoC...)		230-Rel	230-Rel	230-Rel	230-Rel	230-Rel	230-Rel	230-Rel	230-Rel	230-Rel	230-Rel	230-Rel

Please check the CEDES homepage for our configuration sheet to design your own cegard/Process Eco light curtain.

Order information

Part No.	Type	Description
103 608 Mxxxx	cegard/Process Eco	Complete light curtain system including control unit Mxxxx = Special configuration

0500421 Part No. 001 030 E

CEDES reserves the right to modify or change the technical specifications without prior notice.