

... small, compact, versatile



Features

- Intelligent, infrared-based diffuse-reflective sensor
- Excellent detection capability
- PNP or NPN output, light on or dark on available
- For indoor and outdoor applications
- Small and sleek design
- Plug-and-play
- Operating range up to 6 m
- Easy mounting
- Insensitive to direct sunlight up to 100,000 Lux
- Test input for N and P type

Technical data

Optical

Operating range	6 m
Adjustable operating range	0.2 ... 6 m (VR-Type)
Active light spot @ 2 m	Ø 0.24 m
Aperture angle	±3.5°
Min. distance to background	0.2 m
Recalibration time	10 s (N-Type)
Recalibration adjust time	3 ... 180 s (P-Type)
Max. ambient light	100,000 Lux

Electrical

Supply voltage U_{SP}	10 ... 30 VDC
Current consumption	12 mA @ 24 VDC
Output	PNP or NPN
Max. output current	40 mA
Output logic	Light on (LO) or dark on (DO)
Power-up time	< 150 ms
Response time	< 150 ms
Test response time	< 150 ms

Mechanical

Dimensions (l x w x h)	32 x 22 x 27.5 mm
Housing material	Polycarbonate (UL 94-V0)
Housing colour	Black (other colours on request)
Enclosure rating	IP65
Temperature range	
- Operation	-40° ... +65°C
- Storage	-40° ... +85°C
Cable type	4-wires, 0.14 mm ² (AWG26)
Cable length	2 m
Relative humidity	0 ... 95% (non-condensing)

Electrical connection

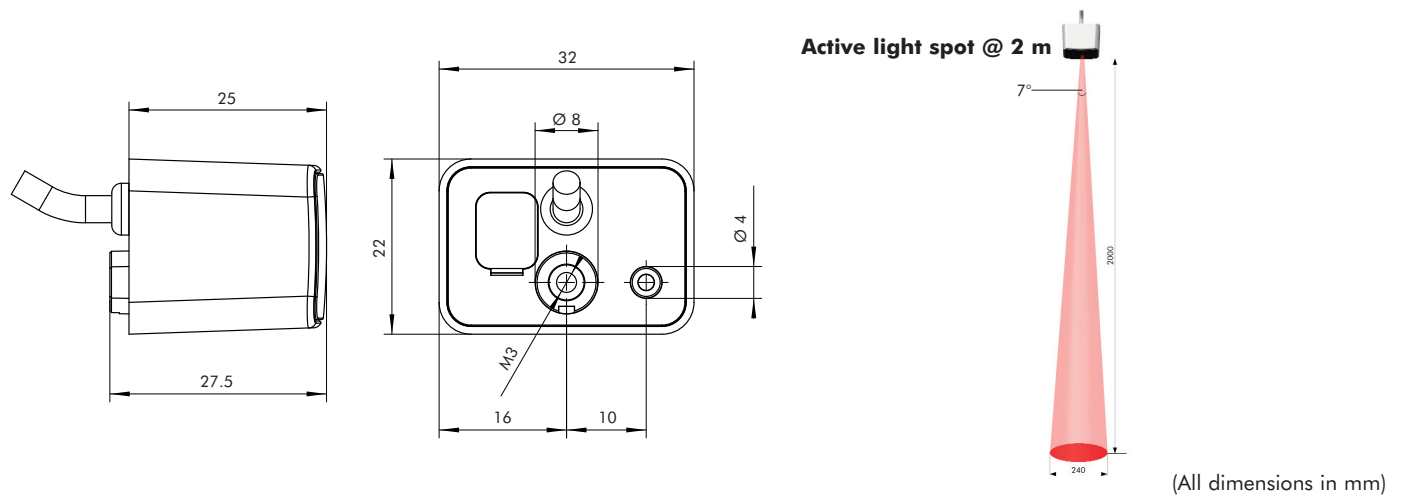
Brown	U_{SP}
Blue	GND
Black	Output
White	Test input
	If no test signal is available → White to U_{SP}

General

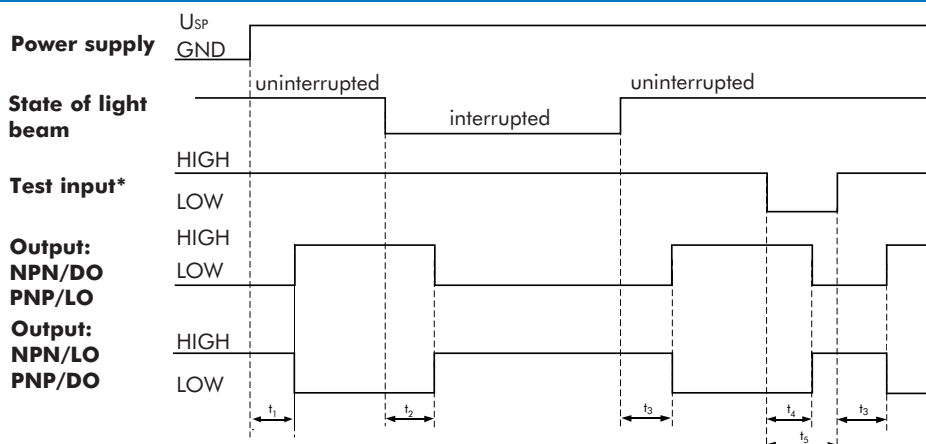
EMC emission	EN 61000-6-3
EMC immunity	EN 61000-6-2
Standards Automatic Doors	Acc. to DIN 18650, EN 12978, EN 12453

Vibration/ shock	EN 60068-2-6, EN 60068-2-27
RoHS	Fulfilled 2002/95/EC
Certificate	CE

Dimensions



Timing diagram



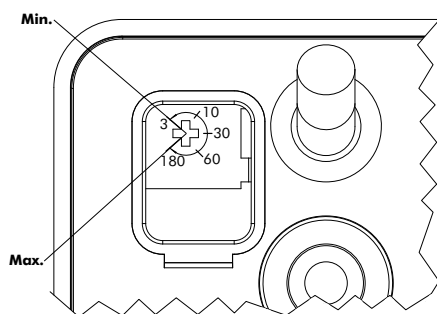
	Time	Value
Power-up time	t_1	< 150 ms
Response time	t_2	< 150 ms
Release time	t_3	< 150 ms
Test response time	t_4	< 150 ms
Test time	t_5	> t_4

	Value
Output HIGH	$\geq U_{sp} - 4 V$
Output LOW	< 4 V

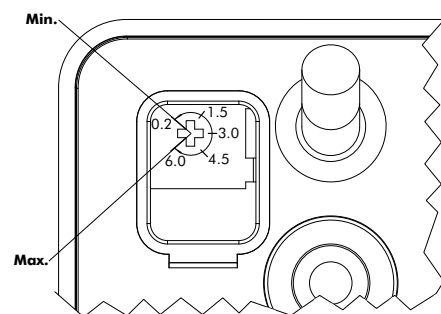
* If no test signal is available connect the test input with U_{sp}

Configuration with potentiometer

P-Type - Adjustable recalibration time (in s)



VR-Type - Adjustable operating range (in m)



Ordering information

Part No.	Type	Description
110 601	TLS 500-VR-NPN-LO	TLS 500 with adjustable operating range 0.2 ... 6 m
110 600	TLS 500-VR-PNP-LO	TLS 500 with adjustable operating range 0.2 ... 6 m
110 602	TLS 500-VR-PNP-DO	TLS 500 with adjustable operating range 0.2 ... 6 m
110 828	TLS 500-P-PNP-LO	TLS 500 with adjustable recalibration time 3 ... 180 s
110 810	TLS 500-N-PNP-LO	TLS 500, 6 m operating range, 10 s recalibration time

Accessories

106 666	Power line converter	85 ... 265, for 24 V sensors with up to 250 mA current consumption
103 602	Relay module	Interface module for sensors with semi-conductor output

Other configurations on request

CEDES AG / Switzerland • Tel. +41 81 307 2323 • Fax +41 81 307 2325 • info@cedes.com • www.cedes.com

CEDES AG is certified according to ISO 9001: 2008. CEDES AG reserves the right to modify or change technical data without prior notice.