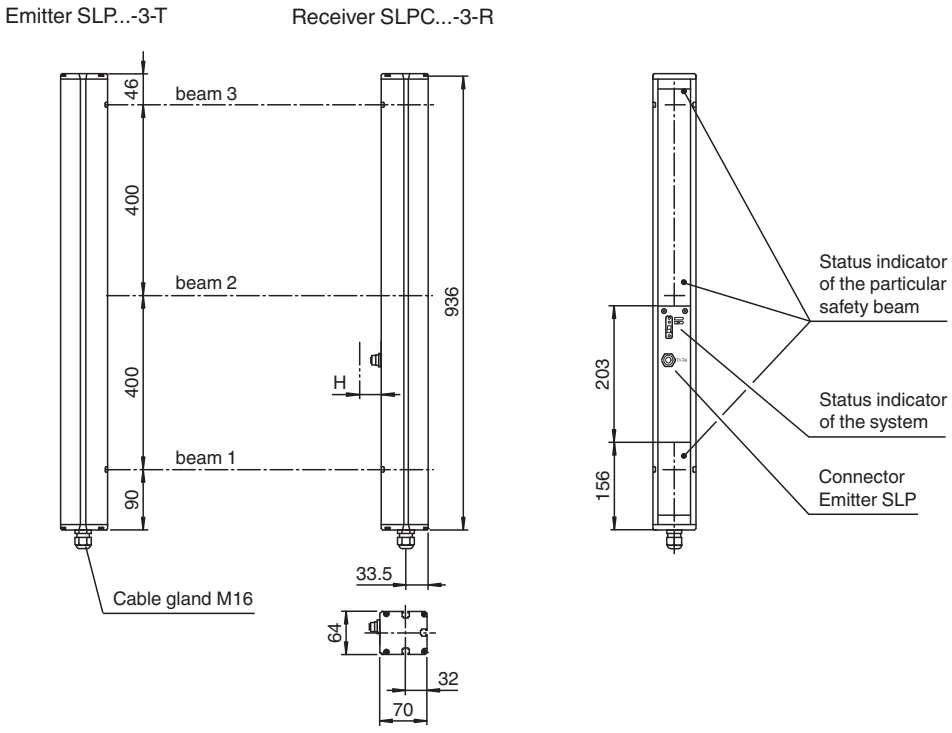
Safety light grid with integrated control unit

SLPC10-3/31

- Sensing range up to 10 m
- 3-radial design
- Beam spacing 400 mm
- Self-monitoring (type 4 according to IEC/EN 61496-1)
- Red transmission light
- Usable with or without start/restart disable
- Integrated relay monitor
- 7-segment diagnostic display
- Integrated function display
- Pre-fault indication
- OSSD outputs as semiconductor or relay outputs

Dimensions



Technical Data

System components	
Emitter	SLP10-3-T
Receiver	SLPC10-3-R/31
General specifications	
Effective detection range	0.2 ... 10 m
Light source	LED

Release date: 2020-08-27 Date of issue: 2020-10-06 Filename: 111857_eng.pdf

Technical Data

Light type		modulated visible red light
Tests		IEC/EN 61496
Safety type according to IEC/EN 61496		4
Marking		CE
Target size		static: 32 mm dynamic: 50 mm (at v = 1.6 m/s of the obstacle)
Beam spacing		400 mm
Number of beams		3
Operating mode		Start/restart disable, relay monitor,
Angle of divergence		< 5 °
Functional safety related parameters		
Performance level (PL)		PL e
Category		Cat. 4
Mission Time (T_M)		20 a
PFH_d		3.54 E-9
B_{10d}		see instruction manuals
Type		4
Indicators/operating means		
Diagnostics indicator		7-segment display
Function indicator		LED red: per receiver channel off: interruption flashes: receiver continuously on: reception with sufficient stability control on the front plate: LED red: OSSD off LED green: OSSD on
Pre-fault indicator		LED red next to receiver flashes
Control elements		10 DIP switch in receiver terminal compartment
Electrical specifications		
Operating voltage	U_B	24 V DC -15% / +25% , galvanically isolated
No-load supply current	I_0	max. 250 mA
Protection class		III , IEC 61140
Input		
Activation current		approx. 10 mA
Activation time		0.03 ... 1 s
Test input		Reset-input for system test
Function input		Relay monitor, start release
Output		
Pre-fault indication output		1 PNP, $+U_B$ -2 V, max. 300 mA
Safety output		2 relay outputs, force-guided NO-contact
Signal output		1 PNP each, max. 300 mA for start readiness, OSSD on, OSSD off
Switching voltage		20 ... 60 V DC, 12 ... 25 V AC $_{rms}$
Switching current		0.01 ... 2 A
Switching power		100 VA
Response time		40 ms
Conformity		
Functional safety		ISO 13849-1
Product standard		EN 61496-1 ; IEC 61496-2
Approvals and certificates		
CE conformity		CE
Approvals		TÜV SÜD
Ambient conditions		
Ambient temperature		0 ... 50 °C (32 ... 122 °F)
Storage temperature		-20 ... 70 °C (-4 ... 158 °F)
Relative humidity		max. 95 %, not condensing
Mechanical specifications		

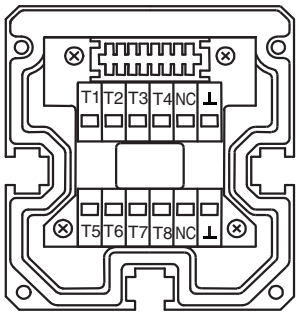
Release date: 2020-08-27 Date of issue: 2020-10-06 Filename: 111857_eng.pdf

Technical Data

Degree of protection	IP65
Connection	M16 cable gland , terminal compartment with cage-terminals, M12-connector for emitter
Connection options	Further electrical connection options on request: Connector DIN 43 651 Hirschmann, emitter: 6-pin+PE, receiver: 11-pin+PE
Material	
Housing	extruded aluminum profile, RAL 1021 (yellow) coated
Optical face	Plastic pane
Mass	Per 3400 g

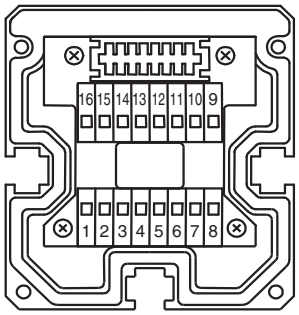
Connection

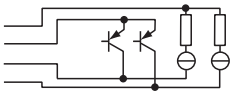
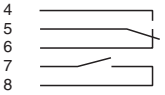
Emitter SLP



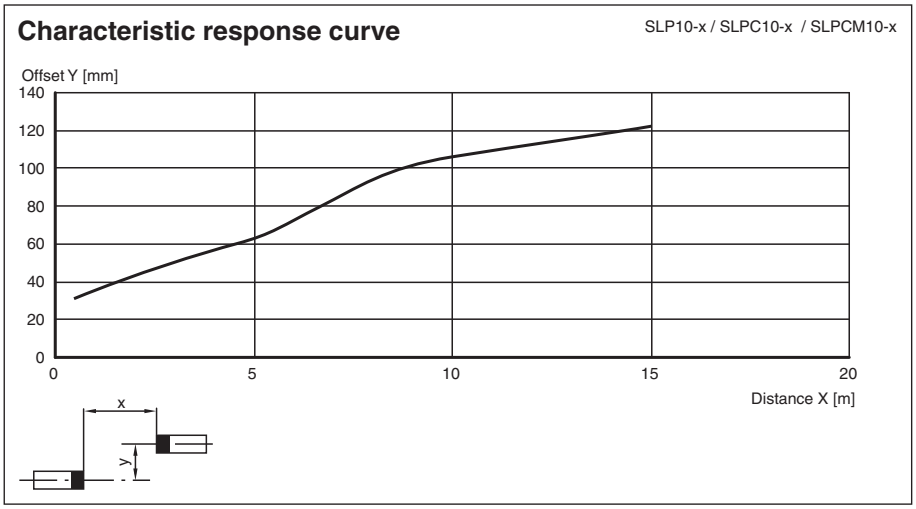
T1 - Emitter channel 1
T2 - Emitter channel 2
T3 - Emitter channel 3
⊥ - 0 V

Receiver SLPC



Receicer SLPC (semiconductor outputs)	Receiver SLPC/31 (Relay outputs)
1 - Functional earth 2 - 0 V 3 - 24 V	
4 - n.c. 5 - —— - 6 - —— + 7 - OSSD 1 8 - OSSD 2 	4 5 6 7 8 
9 - input, Relay monitor 10 - input, Start release 11 - input, Reset 12 - PNP-output, Soiled optics 13 - n.c. 14 - PNP-output, Startup readiness 15 - PNP-output, Indicator OSSD OFF 16 - PNP-output, Indicator OSSD ON	

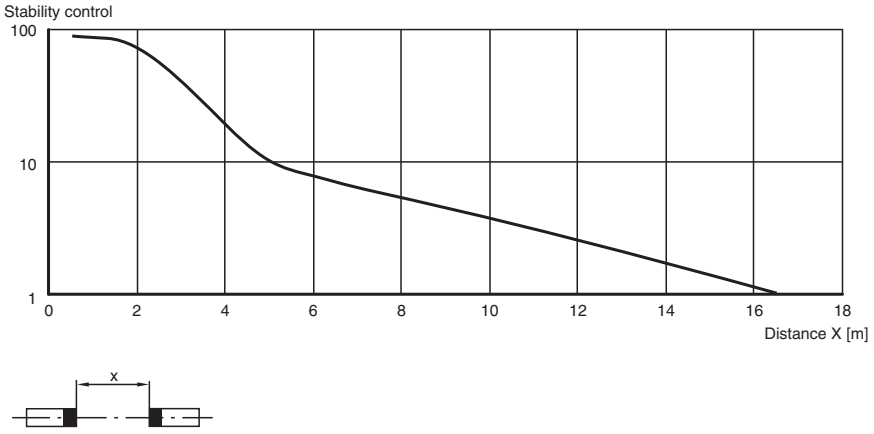
Characteristic Curve



Release date: 2020-08-27 Date of issue: 2020-10-06 Filename: 111857_eng.pdf

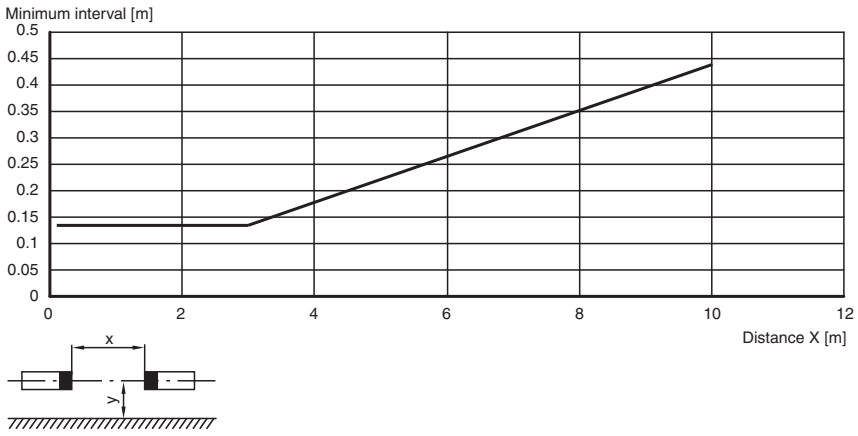
Relative received light strength

SLP10-x / SLPC10-x / SLPCM10-x



Lateral interval to mirroring surfaces

SLP10-x / SLPC10-x / SLPCM10-x



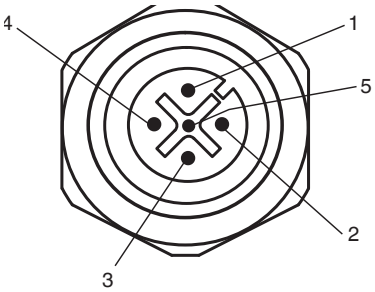
Accessories

	PG SLP-3	Protective glass panes for SLP series

Release date: 2020-08-27 Date of issue: 2020-10-06 Filename: 111857_eng.pdf

Additional information

Socket assignment on the front side of the device



T1 - T4 transmitter control

Socket	Function
1	Transmitter channel 1
2	Transmitter channel 2
3	0 V
4	Transmitter channel 3

System accessories

- Mounting set MS SLP
- Profile alignment aid PA SLP/SLC
- Laser alignment aid BA SLP
- Ground pillar UC SLP/SLC
- Housing for pillar
  Enclosure UC SLP/SLC
- Collision protector
  Damping UC SLP/SLC
- Redirection mirror for multi-side protection of hazardous areas
  SLP-3-M

Release date: 2020-08-27 Date of issue: 2020-10-06 Filename: 111857_eng.pdf