



**Dimensions**



**Model Number**

**SLC90-1800/133**  
 Safety light curtain  
 with 2 separate fail-safe semiconductor  
 outputs

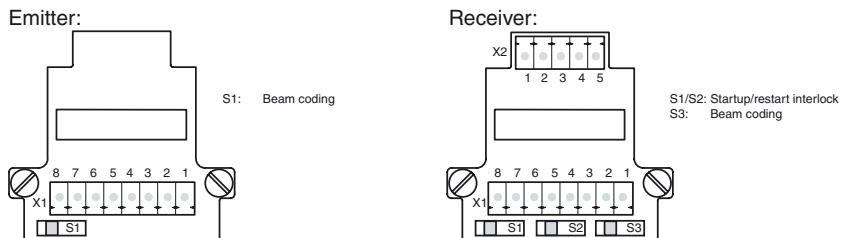
**Features**

- ATEX-approval for zone 2 and zone 22
- Sensing range up to 15 m
- Resolution 90 mm
- Self-monitoring (type 4 according to IEC/EN 61496-1)
- Safety outputs OSSD, external status displays OSSD
- Start/Restart disable
- Integrated function display
- Pre-fault indication
- Protection degree IP66
- Further protection field height available (150 mm ... 1800 mm)

**Accessories**

- PG SLC-1800**  
Protective glass panes for SLC series
- BA SLC**  
laser alignment aid for safety light curtains series SLC

**Electrical connection**



Terminal	Emitter	Receiver SLC...-R (semiconductor output)	Receiver SLC...-R/129 (Relay monitor)
X1:1	Functional earth	Functional earth	Functional earth
X1:2		Test (input)	Relay monitor
X1:3		0 V OSSD	0 V OSSD
X1:4		24 V OSSD	24 V OSSD
X1:5		OSSD2 (output)	OSSD2 (output)
X1:6		OSSD1 (output)	OSSD1 (output)
X1:7	0 V AC/DC	0 V DC	0 V DC
X1:8	24 V AC/DC	24 V DC	24 V DC
X2:1		Start release (output)	Start release (output)
X2:2		Status OSSD (output)	Status OSSD (output)
X2:3	Not placed on board	n.c.	n.c.
X2:4		n.c.	n.c.
x2:5		Startup readiness (input)	Startup readiness (input)

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**Technical data****System components**

Emitter	SLC90-1800-T/133
Receiver	SLC90-1800-R/133

**General specifications**

Effective detection range	0.2 ... 15 m
Light source	IRED
Light type	modulated infrared light
Safety type according to IEC/EN 61496	4
Width of protected area	0.2 ... 15 m
Protection field height	1800 mm
Number of beams	24
Operating mode	can be selected with or without start/restart disable
Optical resolution	90 mm
Angle of divergence	< 5 °

**Functional safety related parameters**

Safety Integrity Level (SIL)	SIL 3
Performance level (PL)	PL e
Category	Cat. 4
Mission Time (T <sub>M</sub> )	20 a
PFH <sub>d</sub>	1.35 E-8
Type	4

**Indicators/operating means**

Operating display	7-segment display in emitter
Diagnostics display	7-segment display in receiver
Function display	in receiver: LED red: OSSD off LED green: OSSD on LED yellow: Protected area free, system start-ready
Pre-fault indication	LED orange
Controls	switch for start/restart disable, transmission coding

**Electrical specifications**

Operating voltage	U <sub>B</sub>	24 V DC (-30 %/+25 %)
No-load supply current	I <sub>0</sub>	Emitter: ≤ 100 mA receiver: ≤ 150 mA
Protection class		III

**Input**

Activation current	approx. 10 mA
Activation time	0.03 ... 1 s
Test input	Reset-input for system test
Function input	Start release

**Output**

Safety output	2 separated fail safe semiconductor outputs
Signal output	1 PNP each, max. 100 mA for start readiness and OSSD status
Switching voltage	Operating voltage -2 V
Switching current	max. 0.5 A
Response time	12 ms

**Ambient conditions**

Ambient temperature	0 ... 55 °C (32 ... 131 °F)
Storage temperature	-25 ... 70 °C (-13 ... 158 °F)
Relative humidity	max. 95 %, not condensing

**Mechanical specifications**

Housing length L	1910 mm
Protection degree	IP66
Connection	M20 cable gland , terminal compartment with screw terminals, lead cross-section max. 1.5 mm <sup>2</sup>
Material	
Housing	extruded aluminum profile, RAL 1021 (yellow) coated
Optical face	Plastic pane
Mass	Per 5700 g

**General information**

System components	
Emitter	SLC90-1800-T/133
Receiver	SLC90-1800-R/133
Use in the hazardous area	see more details for the use in hazardous areas
Category	3G; 3D

**Compliance with standards and directives**

Directive conformity	
Machinery Directive 2006/42/EC	EN ISO 13849-1:2008 EN 61496-1:2004/A1:2008
EMC Directive 2004/108/EC	EN 61000-6-4:2007 + A1:2011
Standard conformity	
Standards	IEC 61496-2:2006 EN 50178:1997

**Approvals and certificates**

CE conformity	CE
CCC approval	Products with a maximum operating voltage of ≤36 V do not bear a CCC marking because they do not require approval.

TÜV approval

TÜV

**ATEX 3G (nA)**

Instruction

**Device category 3G (nA)**

Directive conformity

Standard conformity

Ex-identification

Installation, Commissioning

Maintenance

**Special conditions**

Application environment

Maximum permissible ambient temperature  $T_{Umax}$

Protection from mechanical danger

Protection from UV light

Electrostatic charging

Protection of overvoltage

Other conditions

**Manual electrical apparatus for hazardous areas**

for use in hazardous areas with gas, vapour and mist

94/9/EG

EN 60079-0:2009 , EN 60079-15:2010 , EN 60079-28:2007

. II 3 G Ex nAc op is IIC T4

Laws and/or regulations and standards governing the use or intended usage goal must be observed. By fitting a suitable external fixture, the connecting cable is secured against the transmission of rotational movements and tensile loading on the connections. After opening the enclosure (connection cap) and connecting the wires, but before mounting the connection cap, ensure the seal is correctly fitted and intact. Damaged seals are to be replaced.

No modifications must be undertaken on apparatus, which is operated in hazardous areas. Repairs to such apparatus are not permissible.

55 °C (131 °F)

The cable and wire gland and end caps are to be protected from mechanical shock.

The sensor must be protected against harmful UV radiation. This can be achieved by using the sensor indoors.

The enclosure is to be grounded with help of the accompanying grounding terminal EC SLC EX via a wire with a cross section of 4 mm<sup>2</sup>.

Precautions must be taken to prevent the rated voltage being exceeded by more than 40 % due to transient disturbances.

Do not open or disconnect when energized! By fitting a suitable external fixture, the connecting cable is secured against the transmission of rotational movements and tensile loading on the connections. After opening the enclosure (connection cap) and connecting the wires, but before mounting the connection cap, ensure the seal is correctly fitted and intact. Damaged seals are to be replaced.

**ATEX 3D**

Instruction

Details for use in hazardous areas

Directive conformity

Standard conformity

Ex-identification

Installation, Commissioning

Maintenance

**Special conditions**

Protection from mechanical danger

Protection from UV light

Electrostatic charging

Protection of overvoltage

**Manual electrical apparatus for hazardous areas**

Electrical apparatus for potentially explosive atmospheres

94/9/EG

EN 60079-31:2009

. II 3 D Ex tc IIIC T90 °C

Laws and/or regulations and standards governing the use or intended usage goal must be observed. By fitting a suitable external fixture, the connecting cable is secured against the transmission of rotational movements and tensile loading on the connections. After opening the enclosure (connection cap) and connecting the wires, but before mounting the connection cap, ensure the seal is correctly fitted and intact. Damaged seals are to be replaced.

No modifications must be undertaken on apparatus, which is operated in hazardous areas. Repairs to such apparatus are not permissible.

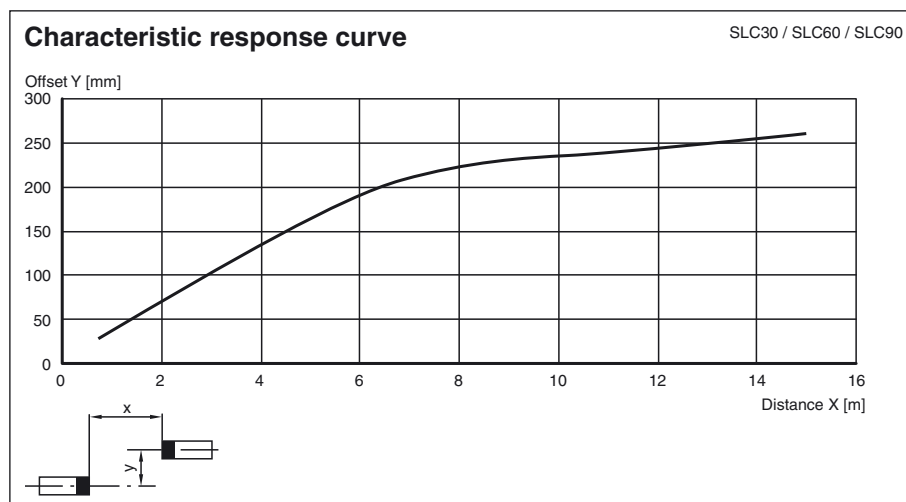
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The sensor must be protected against harmful UV radiation. This can be achieved by using the sensor indoors.

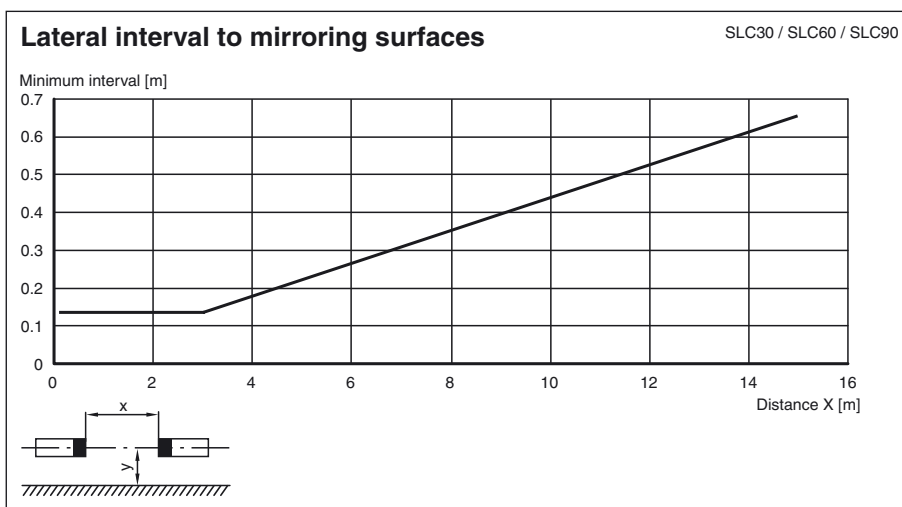
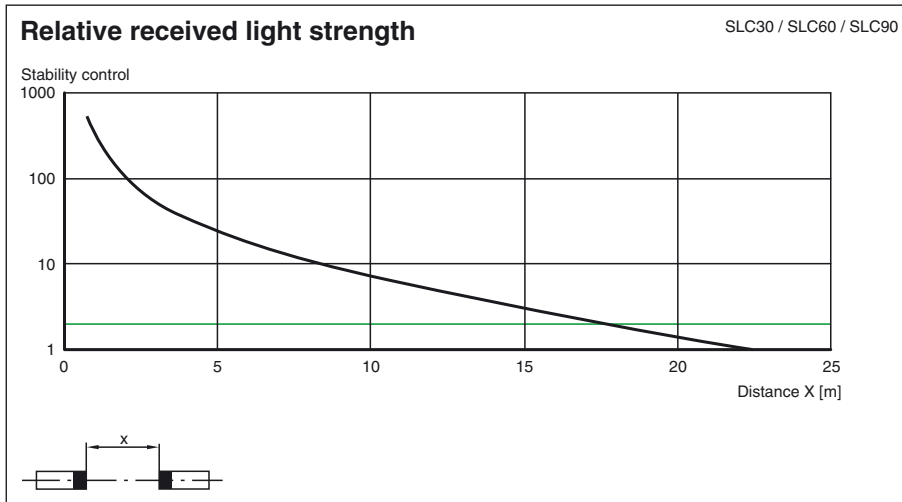
The enclosure is to be grounded with help of the accompanying grounding terminal EC SLC EX via a wire with a cross section of 4 mm<sup>2</sup>.

Precautions must be taken to prevent the rated voltage being exceeded by more than 40 % due to transient disturbances.

**Curves/Diagrams**



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**Notes**

**Master slave mode**

Master: SLC... (semiconductor)  
 or  
 SLC.../31 (relay)  
 Slave: SLC...-S

Using slaves makes it possible to lengthen protective fields or to form protective fields that lie in more than just one level. When you select slaves that can be connected, you should take into consideration that the maximum number of 96 light rays must not be exceeded.

There are slaves for transmitters and receivers. These may simply be connected to the master light curtain. As many as 2 slaves may be connected respectively to the transmitter and receiver unit.

**Installation:**

- 1 The end cap should be screwed off for the light curtain (without cable gland).
- 2 The plug-in jumper on the connectors of the printed circuit board, which is now visible, should be removed.
- 3 The slave is designed so that the cap located on the cable connector can be plugged directly onto the open end of the light curtain with the printed circuit board.
- 4 After you have screwed on the connection cap, the system is complete.

**System accessories**

- Mounting set SLC
- Test rods SLC14/SLC30/SLC60
- Protective glass pieces for SLC (to protect the optically functional surface)
- Lateral screwed connection SLC

- Profile alignment aid
- Laser alignment aid SLC
- Mirror for SLC (for securing hazardous areas on multiple sides)
- Ground pillar UC SLP/SLC
- Housing for pillar  
Enclosure UC SLP/SLC
- Collision protector  
Damping UC SLP/SLC