



Model Number

SLC30-450

with 2 separate fail-safe semiconductor outputs

Features

- Sensing range up to 15 m
- Resolution 30 mm (hand protection)
- Protective field height up to 1800 mm
- Self-monitoring (type 4 according to IEC/EN 61496-1)
- Master/Slave detection, Plug and Play
- Start/Restart disable
- Degree of protection IP67
- Integrated function display
- Pre-fault indication
- Safety outputs OSSD in potential-separated semiconductor design or with monitored, compelled connection NC-contacts
- Optional with relay monitor (Option 129)
- Optional with ATEX certificates for zone 2 and 22 and degree of protection IP66 (Option 133)

Accessories

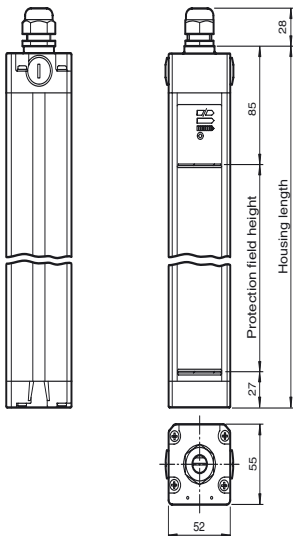
PG SLC-450

Protective glass panes for SLC series

BA SLC

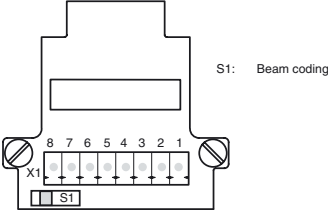
laser alignment aid for safety light curtains series SLC

Dimensions

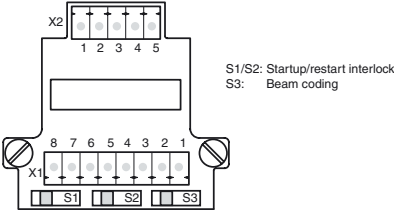


Electrical connection

Emitter:



Receiver:



| 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  | SLC30-450-T |
| Receiver | SLC30-450-R |

### General specifications

|                                       |                                                       |
|---------------------------------------|-------------------------------------------------------|
| Effective detection range             | 0.2 ... 15 m                                          |
| Light source                          | IREDD                                                 |
| Light type                            | modulated infrared light                              |
| LED risk group labelling              | exempt group                                          |
| Tests                                 | IEC/EN 61496                                          |
| Safety type according to IEC/EN 61496 | 4                                                     |
| Width of protected area               | 0.2 ... 15 m                                          |
| Protection field height               | 450 mm                                                |
| Number of beams                       | 24                                                    |
| Operating mode                        | can be selected with or without start/restart disable |
| Optical resolution                    | 30 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>               | 1.5 E-8 |
| Type                           | 4       |

### Indicators/operating means

|                       |                                                                                                                |
|-----------------------|----------------------------------------------------------------------------------------------------------------|
| Operation indicator   | 7-segment display in emitter                                                                                   |
| Diagnostics indicator | 7-segment display in receiver                                                                                  |
| Function indicator    | in receiver:<br>LED red: OSSD off<br>LED green: OSSD on<br>LED yellow: Protected area free, system start-ready |
| Pre-fault indicator   | LED orange                                                                                                     |
| Control elements      | 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                                                       |

### Conformity

|                   |                          |
|-------------------|--------------------------|
| Functional safety | ISO 13849-1              |
| Product standard  | EN 61496-1 ; IEC 61496-2 |

### 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     | 560 mm                                                                                                                                                           |
| Degree of protection | IP67                                                                                                                                                             |
| Connection           | M20 cable gland ,<br>terminal compartment with screw terminals, lead cross-section max. 1.5 mm <sup>2</sup>                                                      |
| Connection options   | Further electrical connection options on request:<br>Connector M12, 8-pin<br>Connector DIN 43 651 Hirschmann, 6-pin+PE<br>Connector M26x11 Hirschmann, 11-pin+PE |
| Material             |                                                                                                                                                                  |
| Housing              | extruded aluminum profile, RAL 1021 (yellow) coated                                                                                                              |
| Optical face         | Plastic pane                                                                                                                                                     |
| Mass                 | Per 1650 g                                                                                                                                                       |

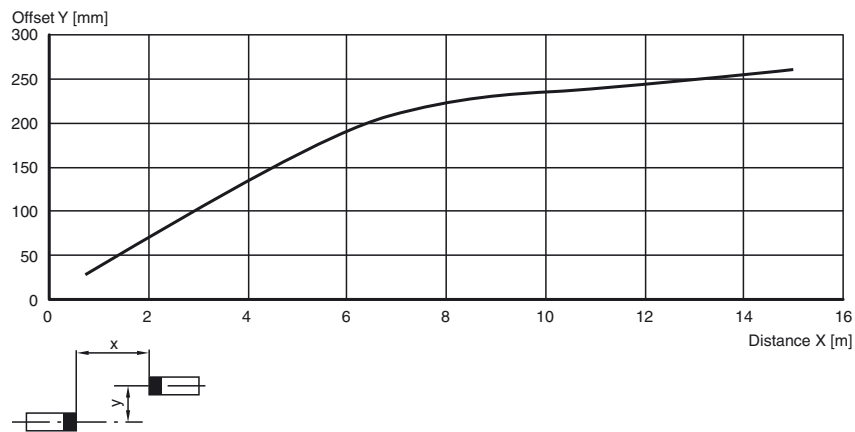
### Approvals and certificates

|               |                                                              |
|---------------|--------------------------------------------------------------|
| CE conformity | CE                                                           |
| UL approval   | cULus Listed                                                 |
| CCC approval  | CCC approval / marking not required for products rated ≤36 V |
| TÜV approval  | TÜV                                                          |

## Curves/Diagrams

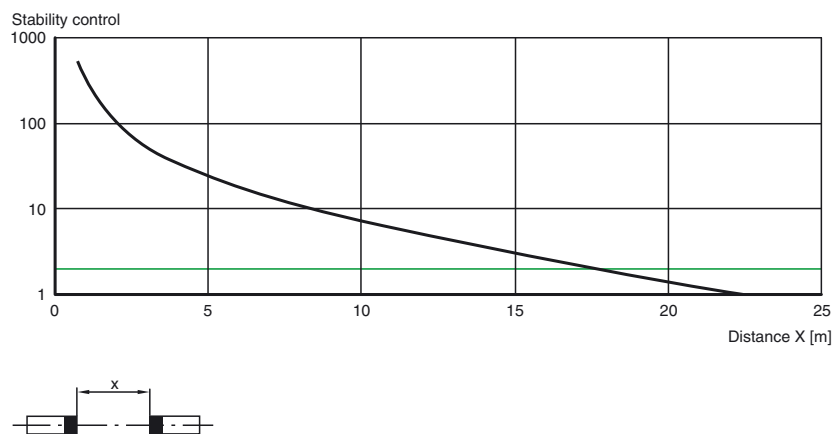
## Characteristic response curve

SLC30 / SLC60 / SLC90



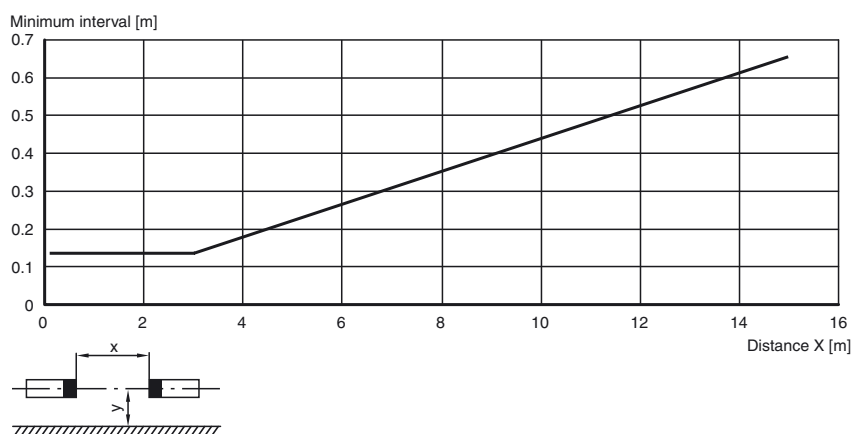
## Relative received light strength

SLC30 / SLC60 / SLC90



## Lateral interval to mirroring surfaces

SLC30 / SLC60 / SLC90



## 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