



### Model Number

#### SLC14-1650/31/130

with 2 relay outputs with two force-guided normally open contacts

### Features

- Sensing range up to 5 m
- Resolution 14 mm (finger 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
- Very short response time
- 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)

### Accessories

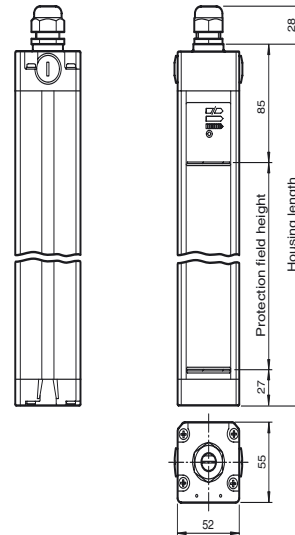
#### PG SLC-1650

Protective glass panes for SLC series

#### BA SLC

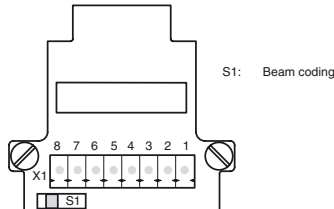
laser alignment aid for safety light curtains series SLC

### Dimensions

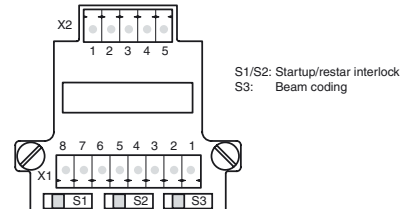


### Electrical connection

Emitter:



Receiver:



| terminal | emitter             | receiver SLC...-R/31 (relay output) | receiver SLC...-R/31 (Relay monitor) |
|----------|---------------------|-------------------------------------|--------------------------------------|
| X1:1     | Functional earth    | Functional earth                    | Functional earth                     |
| X1:2     |                     | test (input)                        | Relay monitor                        |
| X1:3     |                     | OSSD2.2 (output)                    | OSSD2.2 (output)                     |
| X1:4     |                     | OSSD1.2 (output)                    | OSSD1.2 (output)                     |
| X1:5     |                     | OSSD2.1 (output)                    | OSSD2.1 (output)                     |
| X1:6     |                     | OSSD1.1 (output)                    | OSSD1.1 (output)                     |
| X1:7     | 0 V AC/DC           | 0 V AC/DC                           | 0 V AC/DC                            |
| X1:8     | 24 V AC/DC          | 24 V AC/DC                          | 24 V AC/DC                           |
| X2:1     |                     | Start release (output)              | Start release (output)               |
| X2:2     |                     | Status OSSD (output)                | Status OSSD (output)                 |
| X2:3     | Not placed on board | 24 V reference potential for I/O    | 24 V reference potential for I/O     |
| X2:4     |                     | 0 V reference potential for I/O     | 0 V reference potential for I/O      |
| X2:5     |                     | Startup readiness (input)           | Startup readiness (input)            |

## Technical data

### System components

|          |                     |
|----------|---------------------|
| Emitter  | SLC14-1650-T/130    |
| Receiver | SLC14-1650-R/31/130 |

### General specifications

|                                       |   |
|---------------------------------------|---|
| Effective detection range             | 0.2 ... 5 m   |
| Light source                          | IRED  |
| 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 ... 5 m   |
| Protection field height               | 1650 mm   |
| Number of beams                       | 176   |
| Operating mode                        | can be selected with or without start/restart disable |
| Optical resolution                    | 14 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>               | 2.42 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 %) / 24 V AC (-20 %/+10 %) |
| 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 relay outputs, force-guided NO-contact                    |
| Signal output     | 1 PNP each, max. 100 mA for start readiness and OSSD status |
| Switching voltage | 50 V  |
| Switching current | max. 2 A  |
| Switching power   | 100 VA  |
| Response time     | 54 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     | 1760 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 5250 g   |

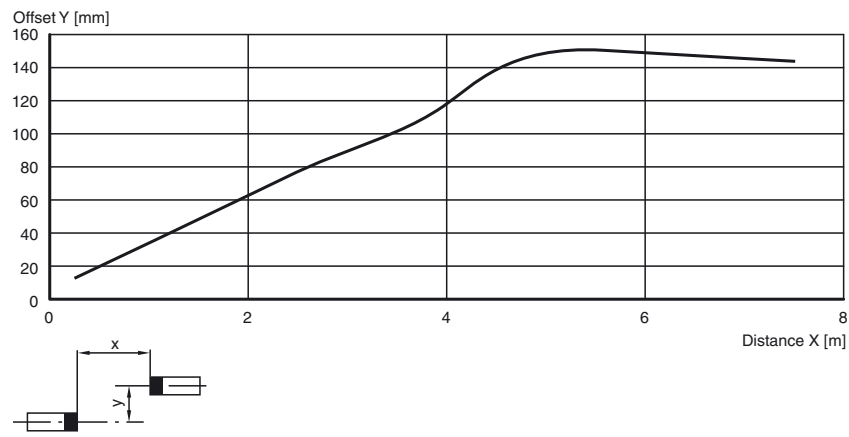
### Approvals and certificates

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

## Curves/Diagrams

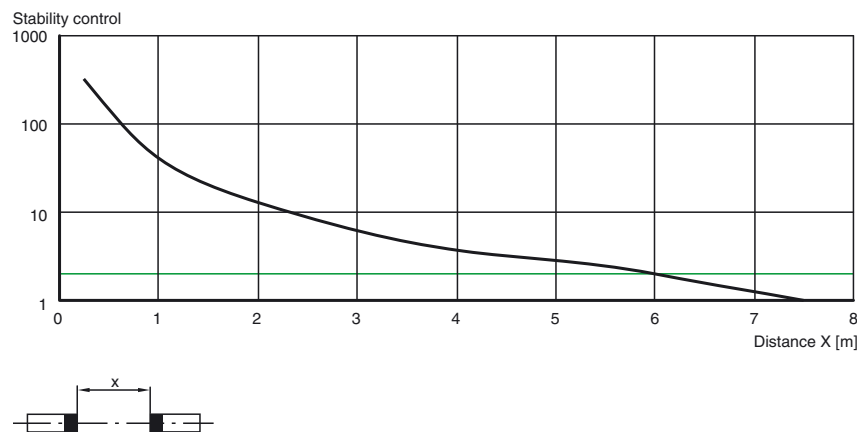
## Characteristic response curve

SLC14



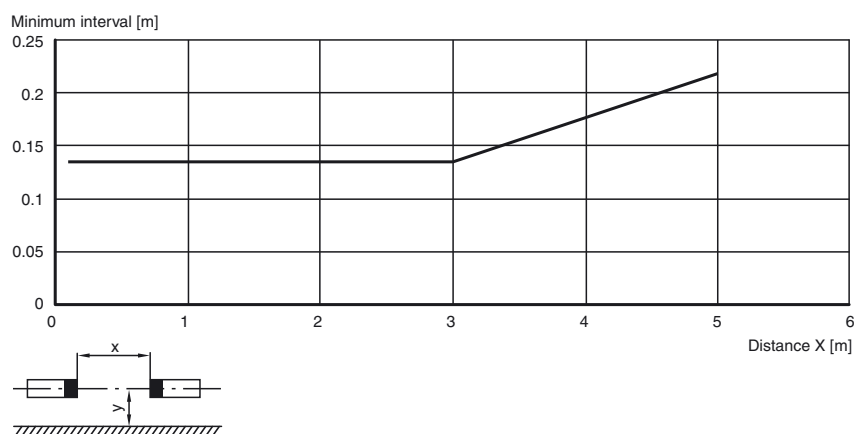
## Relative received light strength

SLC14



## Lateral interval to mirroring surfaces

SLC14



## Note

## Master-Slave operation

Master: SLC... (semiconductor)  
or SLC.../31 (relay)

Slave: SLC...-S

Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

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The use of slaves allows both the protection fields to be extended and protection fields to be created that do not all exist at a single level. When deciding which slaves to connect, remember that the total maximum of 96 beams must not be exceeded. Up to 192 beams are possible if the /130 option is selected.

Slaves exist for the transmitter and the receiver. These simply need to be connected to the master light curtain. Up to two slaves can be connected to both the transmitter and receiving units. Only one slave can be connected if the /130 option is selected.

Installation:

- 1 The end cap (no cable gland) on the light curtain is unscrewed and removed.
- 2 The plug-in jumper on the connectors of the now visible PCB is removed.
- 3 The slave is designed in such a way that the cap and PCB on the connecting cable plug directly onto the open end of the light curtain.
- 4 Once the end cap has been screwed on, the system is complete.

## System accessories

- Mounting set SLC
- Test rods SLC14/SLC30/SLC60
- Protection glass for SLC (to protect the optical surface)
- Side cable gland SLC
- Profile alignment tool
- Beam alignment tool SLC
- Mirror for SLC (to protect danger areas on more than one side)
- Stands UC SLP/SLC
- Enclosure for stands  
Enclosure UC SLP/SLC
- Start protection  
Damping UC SLP/SLC