Safety light barriers

SLB 200-C

• Up to two pairs of light barrier devices can be connected
• Co-ordinated for use with SLB 200 R/E safety light barriers
• 1 safety contact, STOP 0
• 1 signaling output
• Operating voltage 24 VDC
• Test input
• LED display of switching conditions
• Response time ≤ 30 ms
• Start/Restart interlock can be switched active or inactive
• Contactor monitoring can be switched active or inactive
• Additional cyclic testing

Technical data

Standards: IEC/EN 61496-1/-2, IEC 60947-5-3, IEC 61508
Start conditions: Test button, start-reset button, ON/OFF coding
Feedback circuit (Y/N): yes
Max. switching frequency: 10 Hz
Rated operating voltage $U_{e}$: 24 VDC ± 20%
Rated operating current $I_{e}$: 180 mA

Outputs:
Stop category 0: 1
Stop category 1: 0
Number of safety contacts: 1
Number of auxiliary contacts: 0
Number of signaling outputs: 1
Max. switching capacity of the safety contacts: 8 A
Switching capacity of the signaling outputs: 500 mA
Max. fuse rating of the safety contacts: 4 A gG D-fuse
Utilization category to EN 60947-5-1:
AC-15: 250 V / 2 A
DC-13: 24 V / 2 A

Ambient conditions:
Environmental temperature: 0 °C … +50 °C
Storage and transport temperature: –20 °C … +80 °C
Protection class:
Enclosure: IP40,
Terminals: IP20,
Clearance: IP54
Mounting: Snaps onto standard DIN rail to EN 60715
Connection type: Screw connection
Max. cable section: 4.0 mm² (incl. conductor ferrules)
Dimensions (Height/Width/Depth): 84 x 45 x 118 mm

Approvals

TUV

Ordering details

SLB 200-C04-1R
Note

- Monitoring two pairs of light barrier devices and the power contactor using the SLB 200-C safety monitoring module
- Test push button
  The test push button is connected to X13 and X14 in order to carry out a check of the light barrier monitoring function. The terminals X15 and X16 must be bridged.
- The wiring diagram is shown for the de-energized condition.
- Contactor check
  To monitor an external contactor, the feedback circuit is connected to X17 and X18. The terminals X19 and X20 must be bridged.
- Start push button
  The start push button can be used to start the monitoring of the light barriers for a new start or after an interruption. The terminals X3 and X4 must be bridged.
- It is also possible to connect only one pair of light barrier devices.

Wiring diagram

Note

In order to set for the desired mode of operation and number of light barriers connected, remove the front cover of the safety monitoring module. As supplied all switches are in Position 1.

The required functions can be selected by means of the internal DIP switches.

<table>
<thead>
<tr>
<th>DIPswitch 1</th>
<th>DIPswitch 2</th>
<th>DIPswitch 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Position 1</td>
<td>With contactor check</td>
<td>With start/restart interlock</td>
</tr>
<tr>
<td>Position 2</td>
<td>Without contactor check</td>
<td>Without start/restart interlock</td>
</tr>
</tbody>
</table>

Inductive loads (e.g. contactors, relays, etc.) are to be suppressed by means of a suitable circuit.
Safety light barriers

**SLB 400-C**

- Up to 4 light barrier pairs SLB 400 can be connected
- Co-ordinated for use with SLB 400 R/E safety light barriers
- 2 safety contacts, STOP 0
- 2 signaling outputs
- Cross-wire monitoring
- ISD Integral System Diagnostics
- Operating voltage 24 VDC
- Feedback circuit to monitor external contactors
- Two short-circuit proof additional transistor outputs
- Response time ≤ 30 ms
- Start/Restart interlock can be switched active or inactive
- Contactor monitoring can be switched active or inactive
- Can be coded

**Technical data**

| Standards: | IEC/EN 61496-1/-2, IEC 60947-5-3, IEC 61508 |
| Start conditions: | Start-reset button, ON/OFF coding |
| Feedback circuit (Y/N): | yes |
| Max. switching frequency: | 10 Hz |
| Rated operating voltage $U_e$: | 24 VDC ± 15% |
| Rated operating current $I_e$: | 0.3 A without additional transistor outputs and safety light barriers |
| Max. fuse rating of the operating voltage: | 1 A |

| Outputs: |
| Stop category 0: | 2 |
| Stop category 1: | 0 |
| Number of safety contacts: | 2 |
| Number of auxiliary contacts: | 2 |
| Number of signaling outputs: | 2 |
| Max. switching capacity of the safety contacts: | 2 A |
| Switching capacity of the auxiliary contacts: | 2 A |
| Switching capacity of the signaling outputs: | 100 mA |
| Max. fuse rating of the safety contacts: | 2 A gG D-fuse |
| Utilization category to EN 60947-5-1: |
| AC-15: 250 V / 2 A |
| DC-13: 24 V / 2 A |
| LED display: | ISD |

| Ambient conditions: |
| Environmental temperature: | 0 °C … +55 °C |
| Storage and transport temperature: | −25 °C … +70 °C |
| Protection class: |
| Enclosure: IP40, |
| Terminals: IP20, |
| Clearance: IP54 |
| Mounting: | Snaps onto standard DIN rail to EN 60715 |
| Connection type: | Screw connection |
| max. cable section: | 4.0 mm² (incl. conductor ferrules) |
| Dimensions (Height/Width/Depth): | 75 x 99.7 x 110 mm |

**Approvals**

![Approvals Icon]

**Ordering details**

SLB 400-C10-1R
Safety light barriers

Note

- Monitoring up to four pairs of light barrier devices and the power contactors using the SLB 400-C safety monitoring module
- The wiring diagram is shown for the de-energized condition.
- Connection of two pairs of safety light barrier devices
  When two pairs of safety light barriers are connected, the terminals X9-X10 and X11-X12 must be bridged.
- Restart push button
  The restart function can be selected by means of the DIP switches. When a start push button is connected to X5 and X6, it must be operated for min. 250 ms and max. 5 s after an interruption of the safety light barriers.

Wiring diagram

The following faults are registered by the safety monitoring modules and indicated by ISD
- Short-circuit on the connecting leads
- Interruption of the connecting leads
- Failure of the safety relay to pull-in or drop-out
- Fault on the input circuits or the relay control circuits of the safety monitoring module
- Mutual influence between the connected pairs of light barrier device and others on neighbouring systems

ISD

The ISD tables (Integral System Diagnostics) for analysis of the fault indications and their causes are shown in the manual.

Note

Inductive loads (e.g. contactors, relays, etc.) are to be suppressed by means of a suitable circuit.