



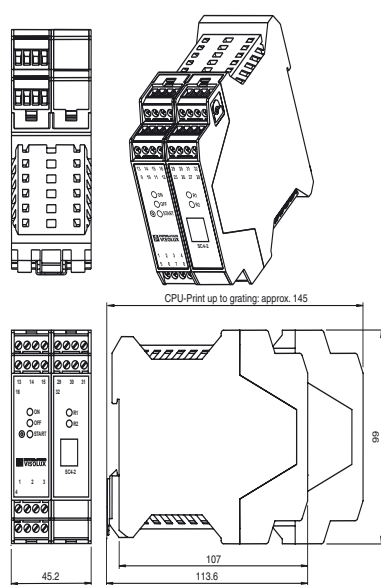
**Model Number**

**SC4-2 24VDC**  
 Safety control unit  
 Safety control unit

**Features**

- Evaluation device for safety thru-beam sensors SLA12 and SLA29
- Self-monitoring (type 4 according to IEC/EN 61496-1)
- Operating mode can be selected by means of DIP switches
- Start/Restart disable
- Relay monitor
- Pre-fault indication
- Clearly visible LED functional display
- 7-segment diagnostic display
- Safety outputs OSSD, external status displays OSSD

**Dimensions**

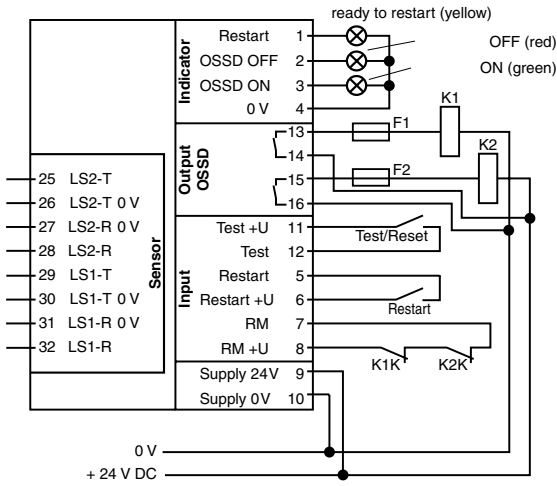


**Technical data**

<b>General specifications</b>	
Approvals	TÜV
Tests	IEC/EN 61496
Safety type according to IEC/EN 61496	4
Marking	CE
Operating mode	Start/restart disable, relay monitor,
<b>Functional safety related parameters</b>	
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>	1.98 E-9
<b>Indicators/operating means</b>	
Diagnostics display	7-segment display
Function display	LED red: OSSD OFF LED green: OSSD ON LED yellow : Start readiness LED yellow (2x): indicator lamp channel 1 ... 2
Pre-fault indication	LED yellow flashing: Indicator lamp channel 1 ... 2
Controls	DIP-switch
<b>Electrical specifications</b>	
Operating voltage	U <sub>B</sub> 24 V DC, -15 %/+20 %
No-load supply current	I <sub>0</sub> 160 mA
<b>Input</b>	
Activation current	approx. 10 mA
Activation time	0.05 ... 1 s
Test input	Reset-input for system test
<b>Output</b>	
Safety output	2 relay outputs, force-guided NO-contact
Signal output	Output for displaying the switching state of the OSSDs
Switching voltage	20 ... 230 V AC/DC
Switching current	AC: 0.01 ... 2 A DC see diagram of limit load curve
Response time	30 ms
<b>Ambient conditions</b>	
Ambient temperature	0 ... 50 °C (32 ... 122 °F)
Storage temperature	-20 ... 70 °C (-4 ... 158 °F)
<b>Mechanical specifications</b>	
Protection degree	IP20
Connection	screw terminals , lead cross section 0.2 ... 2 mm <sup>2</sup>
Material	
Housing	Polyamide (PA)
Mass	230 g

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**Electrical connection**



Connections of the OSSD module

Terminal/Assignment	Function
1 PNP output readiness for startup message	Option for connecting external indicator lamps to indicate restart (start) or error message
2 PNP output OSSD reporting OFF	Option for connecting external indicator lamps to indicate the OSSD state Off
3 PNP output OSSD reporting ON	Option for connecting external indicator lamps to indicate the OSSD state On
4 0 V internal	Reference point for pnp outputs
5 Startup enable for input (RI)	Normally open contact for start/restart interlock. It should be wired in if no function is activated
6 24 V internal	
7 Relay monitor input (RM)	Relay monitor input.
8 24 V internal	It should be wired in if no function is activated (see section 3.2)
9 24 V DC	Supply voltage connection, protected from reverse polarity
10 0 V	
11 24 V internal	Normally open contact for testing or error enable
12 Test input	
13 OSSD1.1	OSSD relay output 1 NO (normally open)
14 OSSD1.2	
15 OSSD2.1	OSSD relay output 2 NO
16 OSSD2.2	

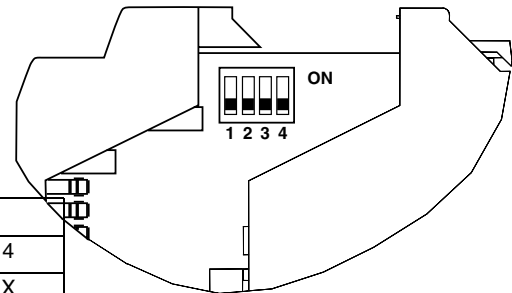
Connections for light barrier module

Terminal/Assignment	Function
25 LS2-T2	Transmitter 2 connection
26 LS2-T 0 V	
27 LS2-R 0 V	Receiver 2 connection
28 LS2-R	
29 LS1-T	Transmitter 1 connection
30 LS1-T 0 V	
31 LS1-R 0 V	Receiver 1 connection
32 LS1-R	

**Operating modes**

The operating modes of the SC2 can be adjusted using DIP switches. Two switches must be activated to set an operating mode. The DIP switches are located inside the housing of the light barrier module.

When the control unit is delivered, the relay monitor (RM) is turned off and start / restart interlock (RI) is turned on.



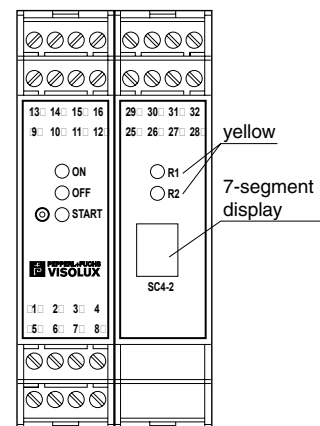
	DIP-switch			
	1	2	3	4
Start/restart interlock (RI)			X	X
Relay monitor (RM)	X	X		

**Indicator lamps**

Displays for the switching state of the OSSD and status displays for indicating the operating status are located on the front plate of the two modules of the SC4-2.

**Status displays**













Display	LED	Meaning
OFF	Red	OSSD output turned off
ON	Green	OSSD output turned on
Start	Yellow	Continuous light: Protective field free, OSSD off, readiness for startup, activate restart button Flashing: System error (see 7-segment display)
R1	Yellow	Status of light barrier 1 Off: Interrupted On: Light beam free Flashing: Light beam free, level below function reserve.
R2	Yellow	Status of light barrier 2 Off: Interrupted On: Light beam free Flashing: Light beam free, level below function reserve.



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### System error displays

If an error is present, the yellow LED flashes, indicating readiness for startup. The 7-segment display shows the error that has been detected.

Display	Meaning	Display	Meaning
	Protective beams free, OSSD ON (running light)		Error on one of the transmitters
	One or both protective beams interrupted		Extraneous light detected
	Protective beams free, OSSD off, readiness for startup		Sensor error in Channel 1
	System start		Sensor error in Channel 2
	DIP switch position incorrect		System errors
	Both light barrier channels jumpered		Error in an external relay