



Model Number

PSE4-SC-01

Safety control unit

Safety control unit from the PSE4 series

Features

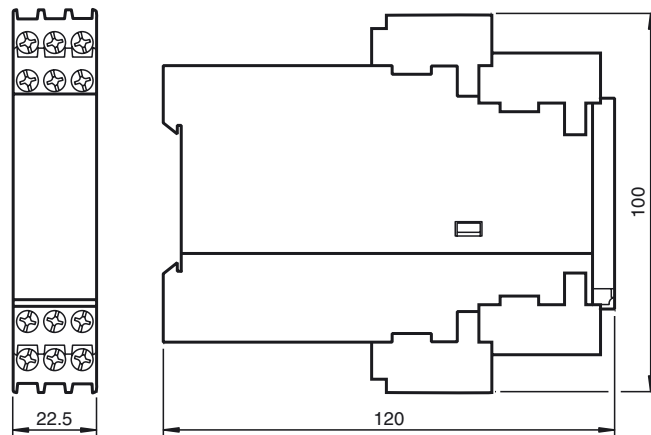
- Safety control unit
- For evaluating safety thru-beam sensors PSE4-SL
- Safety category 4 according to EN61496-1
- 24 V DC supply voltage
- 2 safe output contacts
- Performance level PLe (EN13849-1) is attainable
- Component of PSE4 modular system

Product information

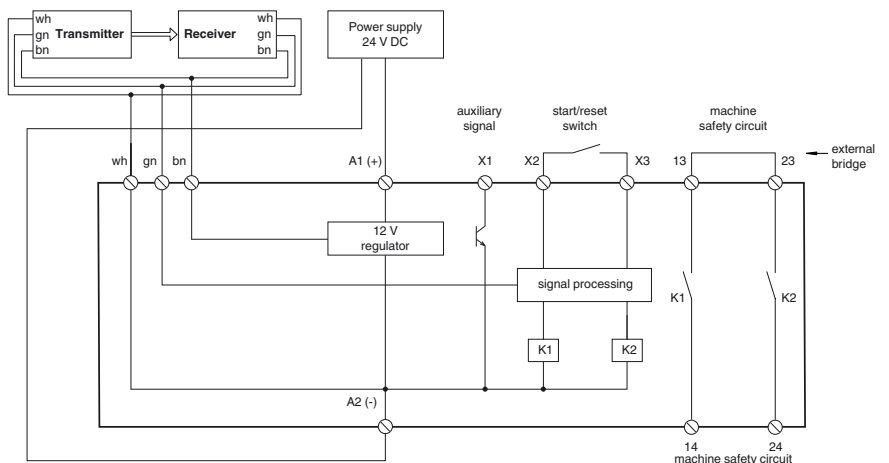
The complete PSE4 safety edge system consists of a control unit, sensors, a rubber sensor strip and an optional aluminum mounting strip. The system has been tested within a temperature range of 5 °C to 55 °C according to EN 1760-2 and is suitable for finger protection.

The control unit evaluates the signal from the sensors and was designed for installation in a control cabinet. The safety contact on the control unit opens when the sensor strip is deformed. The complete system fulfills performance level e, cat. 4 according to EN ISO 13849-1.

Dimensions



Electrical connection



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Subject to modifications without notice

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Technical data

Limit data

Permissible cable length 200 m

Functional safety related parameters

Performance level (PL) PL e
 Category Cat. 4
 Mission Time (T_M) 20 a
 Diagnostic Coverage (DC) 99 %
 Type 4

Indicators/operating means

Operating display LED green: Power on
 Function display LED green

Electrical specifications

Operating voltage U_B 24 V DC +20/-10 %
 Power consumption P₀ < 4 W

Output

Signal output relay, 2 NO
 Switching voltage max. 250 V AC/DC
 Switching current max. 4 A
 Switching power 1000 VA
 Response time 32 ms

Ambient conditions

Ambient temperature 5 ... 55 °C (41 ... 131 °F)
 Pollution Degree 2

Mechanical specifications

Protection degree IP20
 Connection screw terminals , Cable cross-section 0.2 ... 2.5 mm²
 Material Polyethylene (PE)
 Mass approx. 200 g

Compliance with standards and directives

Directive conformity
 Machinery Directive 2006/42/EC EN 12978:2003+A1:2009
 Standard conformity
 Functional safety EN ISO 13849-1:2008 + AC:2009

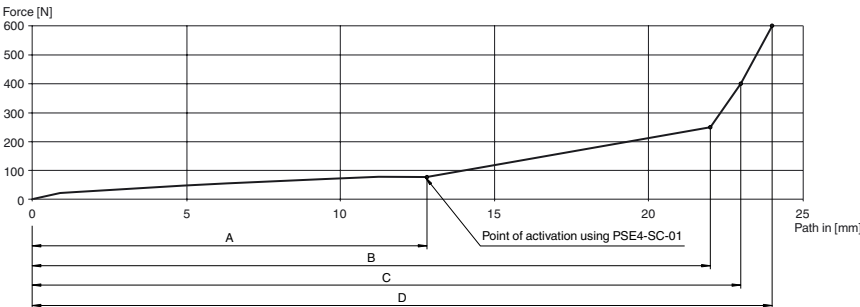
Approvals and certificates

UL approval cULus Listed File no: NRNT.E344450
 TÜV approval TÜV Rheinland 968/M 301.00/11

Curves/Diagrams

Force path diagram

Measurement parameters: T = 23 °C, mounting position B as per EN 1760-2, measuring location C (EN 1760-2), v = 100 mm/s up to A, v = 10 mm/s from A.



Force path diagram representing the deformation of the sensor strip under force

Deformation under force with control unit PSE4-SC-01			
	Resistance	Deformation [mm]	Force [N]
A		12.8	80
B		22.0	250
C		23.0	400
D		24.0	600

Notes

The PSE 4 module is comprised of the following components:

Safety thru-beam sensors PSE4-SL:

The emitter and receiver housings are fully encapsulated to provide maximum protection against environmental influences such as water, dust and moisture and achieve degree of protection IP 68.

Sensor strips PSE4-RUB and PSE4-ROI:

The sensor strip has a two chamber design. The emitter and receiver are housed in the round top chamber. When the sensor strip is actuated, the optical channel is interrupted and the safety contacts on the control unit open. When actuation occurs in the end area, the emitter and receiver are pushed into the lower chamber to ensure that the light beam is broken. However, the force required is extremely high and the end areas become inactive as specified

Accessories

PSE4-ROI-01

Rubber profile, oil resistant for safety terminal strips from the PSE4 series

PSE4-ROI-02

Rubber profile, oil resistant for safety terminal strips from the PSE4 series

PSE4-ROI-03

Rubber profile, oil resistant for safety terminal strips from the PSE4 series

PSE4-ROI-04

Rubber profile, oil resistant for safety terminal strips from the PSE4 series

PSE4-RUB-01

Sensor strip for safety edges from the PSE4 series

PSE4-RUB-02

Sensor strip for safety edges from the PSE4 series

PSE4-RUB-03

Sensor strip for safety edges from the PSE4 series

PSE4-RUB-04

Sensor strip for safety edges from the PSE4 series

PSE4-ALU-01

Extruded aluminum mounting strip for safety edges from the PSE4 series

PSE4-ALU-02

Extruded aluminum mounting strip for safety edges from the PSE4 series

PSE4-SL-01

Safety photoelectric sensor for the PSE4 series

Other suitable accessories can be found at www.pepperl-fuchs.com

in EN 1760-2.

Safety control unit PSE4-SC:

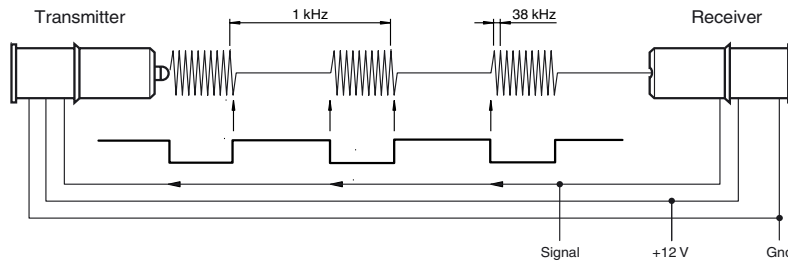
The signal from the emitter/receiver system is evaluated as specified in EN ISO /IEC 61496-1 according to control category 4.

Aluminum rails PSE4-ALU:

Aluminum mounting rails are available in different lengths.

Operating principle

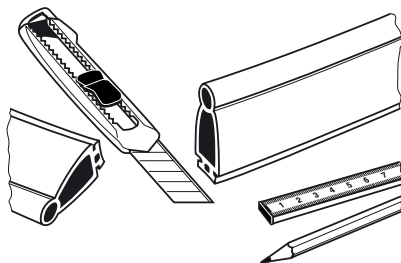
The emitter transmits pulses of infrared light, which are detected by the receiver. When the emitter light is detected, the receiver turns off the emitter via a control input. The "optical emission" stops. The receiver also detects this status and the emitter is then switched on again after a specified time. This coupling generates a dynamic signal sent to a buffer. The evaluation analyzes the charge state of the buffer. Any errors in the emitter/receiver system affect the optical or electrical signal, which results in the absence of a dynamic signal.



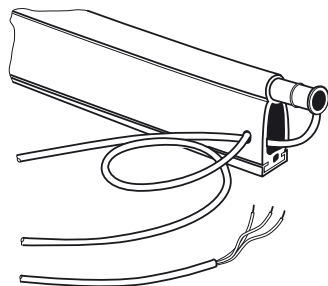
Note:

Only fully fitted safety edges comply with the examination certificate for the PSE4 series.

Mounting or replacing the sensors



Sensor strip PSE4-RUB-XX or PSE4-ROI-XX and accompanying aluminum mounting strip
Cut PSE4-ALU-XX to the required length.



Slide the emitter and receiver into the upper chamber.
Guide the emitter cable through the lower chamber to the receiver side.