

**NEW**

**L 4000  
System**



Product Overview

**Safety Photoelectric Switches**  
Complete overview



**SICK**

## Non-contact access protection to hazardous areas with safety photoelectric switches type 2 and type 4



The SICK safety photoelectric switches consist of self-testing senders and receivers or verifiable senders and receivers in conjunction with an evaluation device. They convince users by both large ranges and different forms and sizes. They are also unsurpassed in terms of safety, complying with the Safety Categories Type 2 and Type 4, according to EN 61496.

There are many areas of application: whether on robots, processing machinery, machining centres, palletising systems, high-bay warehouses or transfer lines – SICK products are synonymous with top-quality customer-friendly solutions.

### Twin benefits for low inventory costs

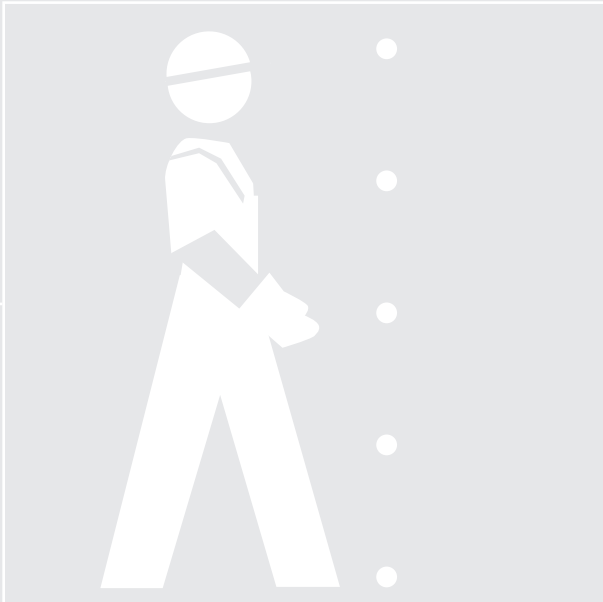
The SICK devices benefit you in two ways, as the safety photoelectric switches can also be applied to automation technology. Therefore, only one type of through-beam photoelectric switches has to be stocked, reducing your costs.





## Safe, even in extreme cases

All SICK safety photoelectric switches comply with IP 67 Protection and are ideally suited to extreme applications like heat (up to +60 °C), cold (down to -40 °C) or humidity. However, SICK also offers solutions for varying ambient conditions and outdoor areas.



## Flexible, adaptable technology

SICK safety photoelectric switches enable you to be as flexible as never before, offering different forms, sizes and types and a large selection of housing materials. Whether rectangular or cylindrical photoelectric switches – we provide you with the right solution for your application.

## Convincing performance, optimum price

In addition, you benefit from optimum value for money. SICK products are specifically matched to one another, without the need for laborious connection of components that do not fit. In a word: benefit upon benefit.

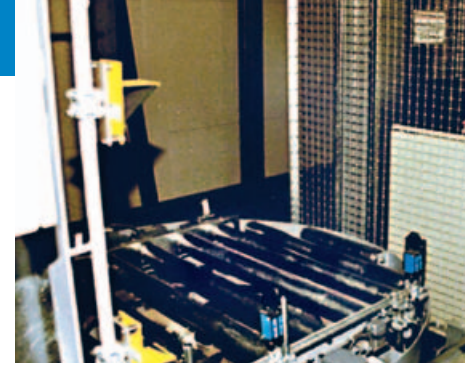


Sensor

Evaluation unit

Machine

The combination of verifiable safety photoelectric switches and the LE 20 evaluation device complies with Safety Category Type 2 to EN 61496, with the LE 20 evaluation device being the link to the machine control.



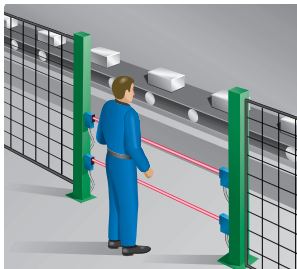
## Photoelectric switches

### Features:

- Verifiable safety photoelectric switches, opening angle  $\leq \pm 5^\circ$
- In conjunction with the LE 20 evaluation device Type 2 to EN 61496
- Large ranges
- Red light/infrared light
- Integrated heating
- Temperature ranges  $-40 \dots +60^\circ\text{C}$

## Accessories for Light Barriers

- Deflector mirrors
- Alignment accessories
- SMS components (mounting columns)



Specifications <sup>1)</sup>	WS/WE 12-2	WS/WE 18-2	WS/WE 24-2	WS/WE 27-2	VS/VE 18-2
Range typ./max. [m]	0...10/0...12	0...10/0...12	0...40/0...50	0...25/0...35	0...16/0...22
Size	49 x 15 x 41.5 <sup>2)</sup>	75 x 17 x 32.5 <sup>2)</sup>	87.5 x 27 x 65 <sup>2)</sup>	80 x 24 x 53.5 <sup>2)</sup>	M 18 x 80 <sup>3)</sup>
Type of light/optical Sender	LED, Infrared light	LED, visible red light	LED, visible red light	LED, visible red light	LED, visible red light
Supply voltage	24 V DC	24 V DC	24 V DC	24 V DC	24 V DC
Connection technology	Cable 2 m or M 12 plug, 4-pin	Cable 2 m or M 12 plug, 4-pin or plug, 6-pin	Terminal connection or M 12 plug, 4-pin	Cable 2 m or M 12 plug, 7-pin	M 12 plug
Switching outputs	PNP, Q + $\bar{Q}$	PNP, Q + $\bar{Q}$	PNP, Q + $\bar{Q}$	PNP, Q + $\bar{Q}$	PNP, Q + $\bar{Q}$
Ambient operating temperature [°C]	-40 ... +60	-25 ... +60	-40 ... +60	-40 ... +60	-20 ... +60
Protection class	IP 67	IP 67	IP 67	IP 67	IP 67
Safety Category to EN 61496-1 + -2	Type 2 (NCPS-T) only in conjunction with LE 20	Type 2 (NCPS-T) only in conjunction with LE 20	Type 2 (NCPS-T) only in conjunction with LE 20	Type 2 (NCPS-T) only in conjunction with LE 20	Type 2 (NCPS-T) only in conjunction with LE 20
Housing material	Die-cast zinc	ABS	Die-cast zinc	ABS	Brass, nickel-plated
Special features	–	–	Heating optional	Heating optional	–
Order No. preferred types <sup>4)</sup>	1 018 047 <sup>5)</sup>	1 016 885 <sup>5)</sup>	1 018 051 <sup>5)</sup>	1 019 561 <sup>5)</sup>	6 011 846 <sup>5)</sup>

<sup>1)</sup> Further Technical Details can be found in the relevant Operating Manuals.  
<sup>2)</sup> H x W x D [mm]

<sup>3)</sup> Thread diameter x L [mm]

<sup>4)</sup> Preferred types with M 12 Plug

<sup>5)</sup> Sender – Receiver set



## LE 20 evaluation device

### Features:

- Evaluation device Type 2 for up to 6 verifiable pairs of photoelectric switches
- Self-testing
- 7-segment diagnostic display
- Restart interlock selectable
- External device monitoring selectable
- Muting version optional
- Plug-in block terminals



	LE 20		UE 10-3 OS	UE 10-2 OS
Number of sensors	up to 6 pairs	Switching outputs	3 NO, 1 NC	2 NO
Size H x W x D [mm]	121.2 x 100.2 x 109.5	Size H x W x D [mm]	123 x 22.5 x 93.5	82 x 45.8 x 55
Response time	14 ms	Response time	Typ. 16 ms	≤ 5 ms
Power consump.	150 mA	Switching voltage	230 V AC/30 V DC	230 V AC/60 V DC
Supply voltage	24 V DC	Switching current max.	6 A	3 A
Connection techn.	Plug-in block terminals	Life, mechanical	1 x 10 <sup>7</sup>	1 x 10 <sup>7</sup>
Switching outputs	2 OSSDs, PNP, monitored and short-circuit protected, 500 mA	Connection technology	Plug-in block terminals	Plug-in block terminals
Ambient operating temp. [°C]	-20 ... +60	Ambient operating temp. [°C]	-25 ... +55	-20 ... +60
Protection class	IP 20, IP 65 optional	Protection class	IP 20	IP 20
Safety Category to EN 61496-1 + -2	Typ 2	Housing material	Plastic	Plastic
Housing material	PC	Special features	Additional contacts for external device monitoring	Additional contacts for external device monitoring
Special features	Muting version optional	Order No. preferred types	6 024 917	2 019 772
Order No. preferred types	1 016 503 1 016 502 (Muting version)			

## Accessories for LE 20

If the switching performance is insufficient or if voltage-free contacts are required, we offer the following safety relays:

### UE 10-3 OS safety relays:

- Outputs: 3 normally opened, 1 normally closed
- Plug-in block terminals
- 2 LEDs for relays K1 and K2
- Multiplication of the outputs with expansion unit UE 10-4 XT and UE 11-4 DX (with time-delay)

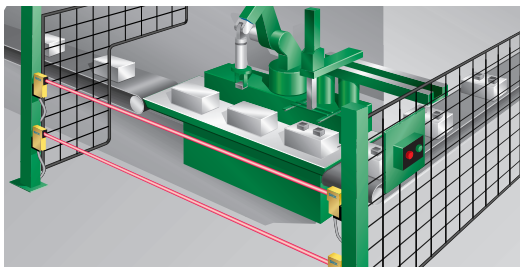
### UE 10-2 OS safety relays:

- Outputs: 2 normally opened
- Plug-in block terminals
- Multiplication of the outputs with expansion unit UE 10-4 XT and UE 11-4 DX (with time-delay)





The self-testing safety photoelectric switch WSU/WEU 26/2 acts as access protection to hazardous areas on machines or systems. If the light beam is interrupted, the receiver passes an emergency stop signal to the machine or system.



## WSU/WEU 26-2

### Features WSU/WEU 26-2:

- Range up to 70 m
- Relay outputs
- 24, 115 and 230 V versions
- Robust construction
- Integrated heating

### Accessories

- Safety relays  
Series EU 10 to UE 48
- Deflector mirror(s)
- Alignment adapter(s)



Specifications <sup>1)</sup>	WSU/WEU 26-2
Range max. [m]	0.5...18/15...70
Size	156 x 50 x 116 <sup>2)</sup>
Type of light/optical Sender	Infrared light
Supply voltage	24 V DC, 230 V AC, 115 V AC
Connection technology	Connecting cable PG 13.5, connecting plug 6-pin/15-pin + PE
Switching outputs	2 positively-guided contacts
Ambient operating temperature [°C]	-25 ... +55
Protection class	IP 65/IP 67
Safety category	Type 4 to EN 50100
Housing material	Die-cast zinc
Special features	Integrated heating
Order No. preferred types	1 015 724 (sender) 1 015 725 (receiver)

<sup>1)</sup> Further Technical Details can be found in the relevant Operating Manuals.

<sup>2)</sup> H x W x D [mm]



### L 4000 System



The L 4000 system consists of the UE 401 safety evaluation device and the L 4000/L 400 safety photoelectric switches. Together, they comply with safety Category 4 to EN 61496. The UE 401 safety evaluation device is the link to the machine control.

## L 4000 System

(= L 4000 or L 400 + UE 401 evaluation device)

### Features of the system:

- Restart interlock selectable
- External device monitoring selectable
- Connection of up to 8 sensor pairs (cascade circuit)
- Diagnostic option through 7-segment display and LEDs
- Intelligent testing prevents mutual optical interference (up to 4 sensor pairs)
- Ranges of 0 ... 60 m
- Temperature range of -20 ... +55°C

## Accessories

If the switching performance is insufficient or if voltage-free contacts are required, we offer the following safety relays:

### Safety relay

**UE 10-3 OS and UE 10-2 OS**

For detailed description see page 5.



Specifications <sup>1)</sup>	L 4000	L 400	UE 401
Range [m]	0 ... 60	0 ... 5/10	–
Size	M 30 x 100 <sup>3)</sup>	M 18 x 98 (axial optics) <sup>3)</sup> M 18 x 108 (radial optics) <sup>3)</sup>	66 x 22.6 x 113.5 <sup>2)</sup>
Type of light/optical Sender	LED, visible red light	LED, visible red light	–
Supply voltage	24 V DC	24 V DC	24 V DC
Connection technology	M 12 plug, 4-pin	M 12 plug, 4-pin	Plug-in block terminals
Switching outputs	PNP, Q	PNP, Q	2 OSSDs, PNP, monitored and short-circuit protected, 500 mA
Ambient operating temperature [°C]	-20 ... +55	-20 ... +55	-20 ... +55
Protection class	IP 67	IP 67	IP 20
Safety category	Type 4 to EN 61 496, only in conjunction with UE 401 Safety evaluation device	Type 4 to EN 61 496, only in conjunction with UE 401 Safety evaluation device	Type 4 to EN 61 496
Housing material	Nickel-plated brass	Plastic or Nickel-plated brass	Plastic
Special features	UL approval <sup>4)</sup>	90° angled optics version UL approval <sup>4)</sup>	UL approval <sup>4)</sup>
Order No. preferred types	6 027 335 (sender) 6 027 336 (receiver)	6 027 337 (sender) 6 027 338 (receiver)	6 027 343

<sup>1)</sup> Further Technical Details can be found in the relevant Operating Manuals.

<sup>2)</sup> H x W x D [mm]

<sup>3)</sup> Thread diameter x L [mm]

<sup>4)</sup> Awaiting approval

# The dialogue continues.

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