TWINOX4

COMPACT DESIGN FOR MAXIMUM RELIABILITY

Safety light curtains

SICK
Sensor Intelligence.

A SAFE AND REWARDING INVESTMENT

Safety is a crucial factor in the pharmaceutical industry, both from a patient perspective and from the perspective of pharmaceutical companies. Automation and safety technologies can be used to prevent product contamination during the manufacturing process, e.g., barrier technologies for sterile filling systems as well as isolators. The TWINOX4 safety light curtain with a stainless-steel housing has been designed specifically for use in the pharmaceutical industry. It protects operating personnel when interventions are required in the hazardous areas around machines that are subject to stringent hygiene requirements.

Measurement, detection, identification, protection: SICK offers a wide range of solutions which are tested and certified for use in the pharmaceutical industry.

Source: Robert Bosch Packaging Technology GmbH

Ensure safety on all levels

Design your machine to be safe and reliable – even in hygienic areas. Thanks to its stainless-steel housing, the TWINOX4 is suitable for all common decontamination processes, e.g., those that use hydrogen peroxide.

Saving you time and money

Minimize effort when cleaning your machine or system. Thanks to its easy-to-clean stainless-steel housing, all residue can be removed from the TWINOX4 light curtain quickly and efficiently.

New opportunities for more productivity

Achieve short downtimes and high machine availability with the reliable product components of the safety light curtain.

See for yourself all the advantages of the TWINOX4 at a glance ➜

SUITABLE FOR CLEAN ROOMS FOR HIGH PRODUCTIVITY AND FLEXIBILITY

The TWINOX4 safety light curtain makes it easier and more flexible than ever before to protect hazardous zones and access points in clean room zones. All of SICK's application knowledge has been packed into its stainless-steel housing (which was developed specifically for the pharmaceutical industry) for maximum productivity.

Innovative bracket concept for rapid mounting

⊕ Specially developed brackets for rapid mounting and easy alignment of the light curtain – maximizing machine and system availability

SICK offers a bracket for the TWINOX4 safety light curtain as an optional accessory. What's more, the TWINOX4 is easy to align and the LED status indicators on the device itself make it a very user-friendly solution. Commissioning of the TWINOX4 can be completed quickly, thus saving time and money.

Resistance to media for very high reliability

⊕ High productivity thanks to long service life and high media resistance thanks to stainless-steel housing

Aggressive cleaning agents and disinfectants such as hydrogen peroxide require media-resistant materials. The stainless-steel housing of the TWINOX4 meets this criterion as it was developed specifically for use in areas with high hygiene requirements. For safe production and more productivity in the pharmaceutical industry.

Efficient cleaning increases productivity

⊕ High production quality combined with low process risk

⊕ Easy and efficient cleaning increases availability and lowers costs

Thanks to its stainless-steel design with rounded edges and without undercuts, the TWINOX4 meets stringent hygiene requirements for surfaces and materials. The materials used in the TWINOX4 are resistant to media and thus suitable for all common decontamination processes.

Compact and elegant housing for optimum machine integration

⊕ The TWINOX4 housing can be optimally integrated into machine designs, saves space, and provides your plant with great flexibility right from the planning stage.

The TWINOX4 delivers high levels of quality and safety. Its elegant design makes it ideal for seamless integration into your machine or system. The safety light curtain is characterized by a full high-resolution protective field, thus ensuring maximum safety and high availability of your machine or system.

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Product description

In the pharmaceutical industry, extremely aggressive cleaning and decontamination agents require products that are highly resistant and rugged. The TWINOX4 stainless-steel safety light curtain has been designed specifically for use in the pharmaceutical industry. Since it has no edges or gaps, its design is particularly suitable for the protection of machines with stringent hygiene requirements. Due to its compact size, the TWINOX4 is ideal for flexible installation when space is limited. It boasts impressive features – it is rugged, easy to clean, and made of stainless steel.

At a glance

- Media resistance due to stainless-steel housing
- Easy-to-clean design with rounded edges and without undercuts
- Twin concept: Sender and receiver in a single housing
- Restart interlock, external device monitoring (EDM), beam coding
- Enclosure ratings IP65 and IP67

Your benefits

- The small, elegant housing saves space, enables optimum integration into the machine design, and offers great flexibility
- Highest level of media resistance for maximum reliability
- Efficient cleaning ensures high process and production quality and a low risk of contamination
- Efficient ordering process and cost savings due to reduced storage needs and spare parts maintenance
- Adjustable brackets ensure the highest availability
- Quick on-site diagnostics with LED status indicators over the entire protective field height

Additional information

→ **www.sick.com/TWINOX4**

For more information, simply enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.

Detailed technical data

Features

Resolution	14 mm
Protective field height	300 mm / 420 mm / 600 mm (depending on type)
Scanning range	4.5 m
Response time	14 ms

Safety-related parameters

Type	Type 4 (IEC 61496-1)
Safety integrity level	SIL3 (IEC 61508) SILCL3 (IEC 62061)
Category	Category 4 (ISO 13849-1)
Performance level	PL e (ISO 13849-1)
PFH_D (mean probability of a dangerous failure per hour)	4.3×10^{-9}
T_M (mission time)	20 years (ISO 13849-1)
Safe state in the event of a fault	At least one OSSD is in the OFF state.

Functions

	Functions	Delivery status	Configuration method
Protective operation	✔		
Restart interlock	✔	Deactivated	Reset pushbutton
External device monitoring (EDM)	✔	Deactivated	Cabling
Beam coding	✔	Code 1	Automatic

Interfaces

System connection	
Connection type	Connecting cable (10 m) with flying leads, 5-wire
Permitted cable length	≤ 20 m [1]
Permitted cross-section	≥ 0.34 mm²
Display elements	LEDs
Fieldbus, industrial network	
Integration via Flexi Soft safety controller	CANopen, DeviceNet™, EtherCAT®, EtherNet/IP™, Modbus TCP, PROFIBUS DP, PROFINET [2]

[1] The 10 m connecting cable attached to the twin stick can either be shortened as required or extended to a maximum of 20 m. the permissible wire cross-section must be observed.

[2] For additional information on Flexi Soft ➜ www.sick.com/Flexi_Soft.

Electrical data

	Protective field height 300 mm	Protective field height 420 mm	Protective field height 600 mm
Protection class	III (IEC 61140)		
Supply voltage V_s	24 V DC (19.2 V … 28.8 V)		
Residual ripple	≤ 10 % [1]		
Power consumption	~ 161 mA	~ 193 mA	~ 224 mA
Power consumption typical	3.1 W (DC)	3.7 W (DC)	4.3 W (DC)
Output signal switching devices (OSSDs)			
Type of output	PNP semiconductors, short-circuit protected, cross-circuit monitored [2]		
ON state, switching voltage HIGH	24 V DC (V_s – 2.25 V DC … V_s)		
OFF state, switching voltage LOW	≤ 2 V DC		
Current-carrying capacity per OSSD	≤ 300 mA		

[1] Within the limits of V_s.

[2] Applies to the voltage range between –30 V and +30 V.

Mechanical data

Housing cross-section	40.5 mm x 20 mm
Housing material	Stainless steel V4A (1.4404, 316L)
Average roughness R_a	≤ 0.8 µm
Front screen material	Chemically prestressed float glass
Material of the end caps	Stainless steel V4A (1.4404, 316L)
Seal material	EPDM
PCB material	Glass fiber reinforced epoxy resin with flame retardant TBBPA
External material of the connecting cable	TPU (PUR)

Ambient data

Enclosure rating	IP65 (IEC 60529) IP67 (IEC 60529)
Ambient operating temperature	–20 °C … +55 °C
Storage temperature	–25 °C … +70 °C
Air humidity	15 % … 95 %, Non-condensing
Vibration resistance	5 g, 10 Hz … 55 Hz (IEC 60068-2-6)
Shock resistance	10 g, 16 ms (EN 60068-2-27)

Other information

Wave length	850 nm
Type of light	Near-infrared (NIR), invisible

Ordering information

Resolution	Protective field height	Type	Part no.
14 mm	300 mm	C4IT-03014ABA01KA0	1094833
	420 mm	C4IT-04214ABA01KA0	1094834
	600 mm	C4IT-06014ABA01KA0	1094835

Dimensional drawing (Dimensions in mm (inch))
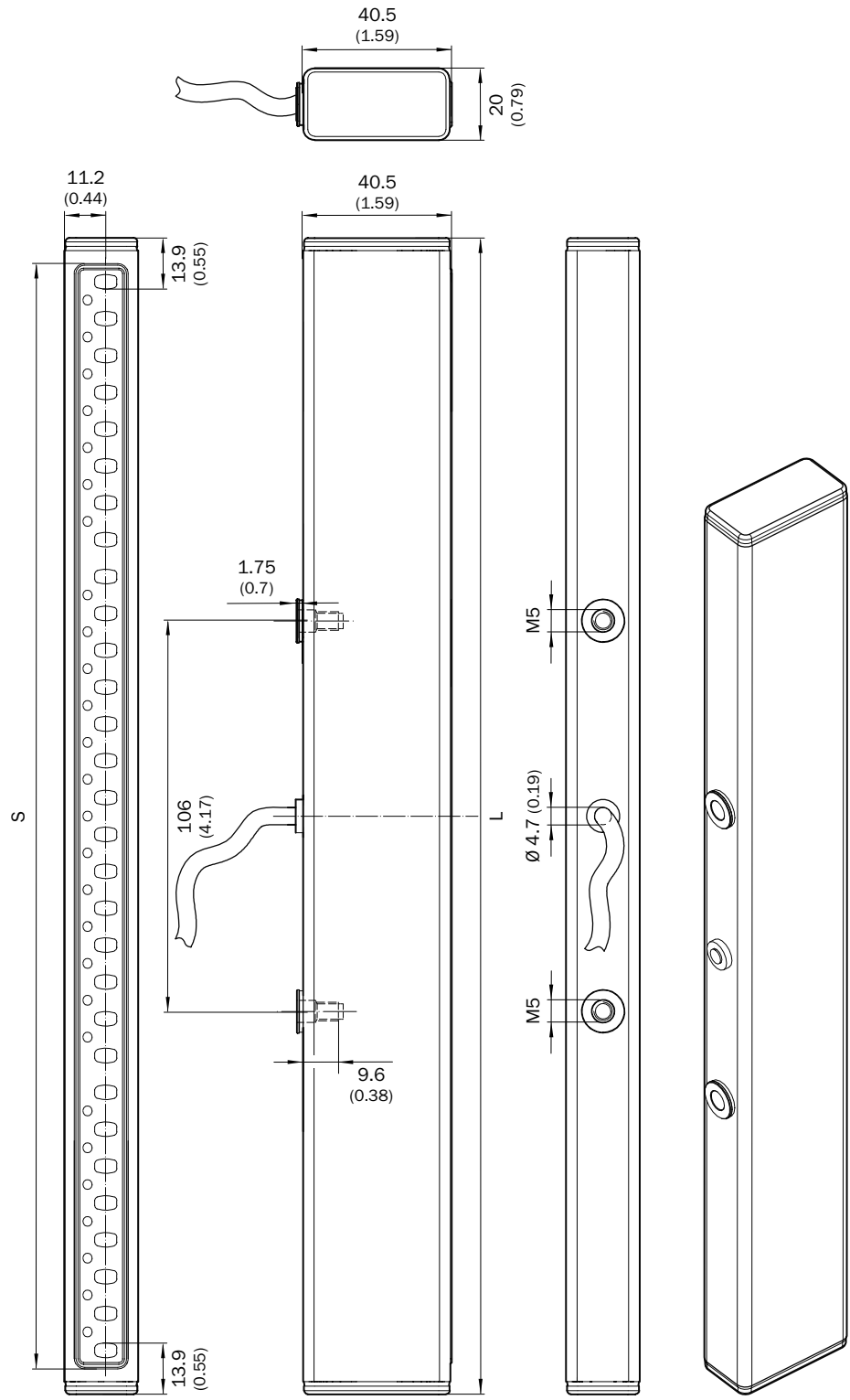
Protective field height	Housing length
300	314
420	434
600	614

Accessories

Mounting systems

Alignment brackets

Figure	Description	Packing unit	Type	Part no.
	TWINOX4 bracket, for 1 twin stick ± 2° adjustment Bracket material: stainless steel V4A (1.4404, 316L) Seal material: EPDM	1 piece	BEF-4SHAHMES1	2101024

Connection systems

Power supply units and power supply cables

Figure	Input voltage	Output voltage	Output current	Type	Part no.
Illustration may differ	100 V AC ... 240 V AC	24 V DC	≤ 2.1 A	PS50WE24V	7028789
			≤ 3.9 A	PS95WE24V	7028790

Reflectors and optics

Deflector mirrors

• **Mirror material:** Glass

Figure	Description	Items supplied	Suitable for protective field height	Type	Part no.
	Horizontal deflection	Incl. mounting kit swivel mount	150 mm ... 300 mm	PNS125-034	1019425
			150 mm ... 450 mm	PNS125-049	1019426
			150 mm ... 600 mm	PNS125-064	1019427
			150 mm ... 300 mm	PNS75-034	1019414
			150 mm ... 450 mm	PNS75-049	1019415
			150 mm ... 600 mm	PNS75-064	1019416

Further accessories

Test and monitoring tools

Figure	Description	Type	Part no.
	14 mm diameter	Test rod 14 mm	2022599
	Test rod holder	BEF-3WNAAAAL1	2052249

SICK AT A GLANCE

SICK is a leading manufacturer of intelligent sensors and sensor solutions for industrial applications. With more than 8,800 employees and over 50 subsidiaries and equity investments as well as numerous agencies worldwide, SICK is always close to its customers. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents, and preventing damage to the environment.

SICK has extensive experience in various industries and understands their processes and requirements. With intelligent sensors, SICK delivers exactly what the customers need. In application centers in Europe, Asia, and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes SICK a reliable supplier and development partner.

Comprehensive services round out the offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

That is "Sensor Intelligence."

Worldwide presence:

Australia, Austria, Belgium, Brazil, Canada, Chile, China, Czech Republic, Denmark, Finland, France, Germany, Great Britain, Hungary, Hong Kong, India, Israel, Italy, Japan, Malaysia, Mexico, Netherlands, New Zealand, Norway, Poland, Romania, Russia, Singapore, Slovakia, Slovenia, South Africa, South Korea, Spain, Sweden, Switzerland, Taiwan, Thailand, Turkey, United Arab Emirates, USA, Vietnam.

Detailed addresses and further locations ➔ **www.sick.com**

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