

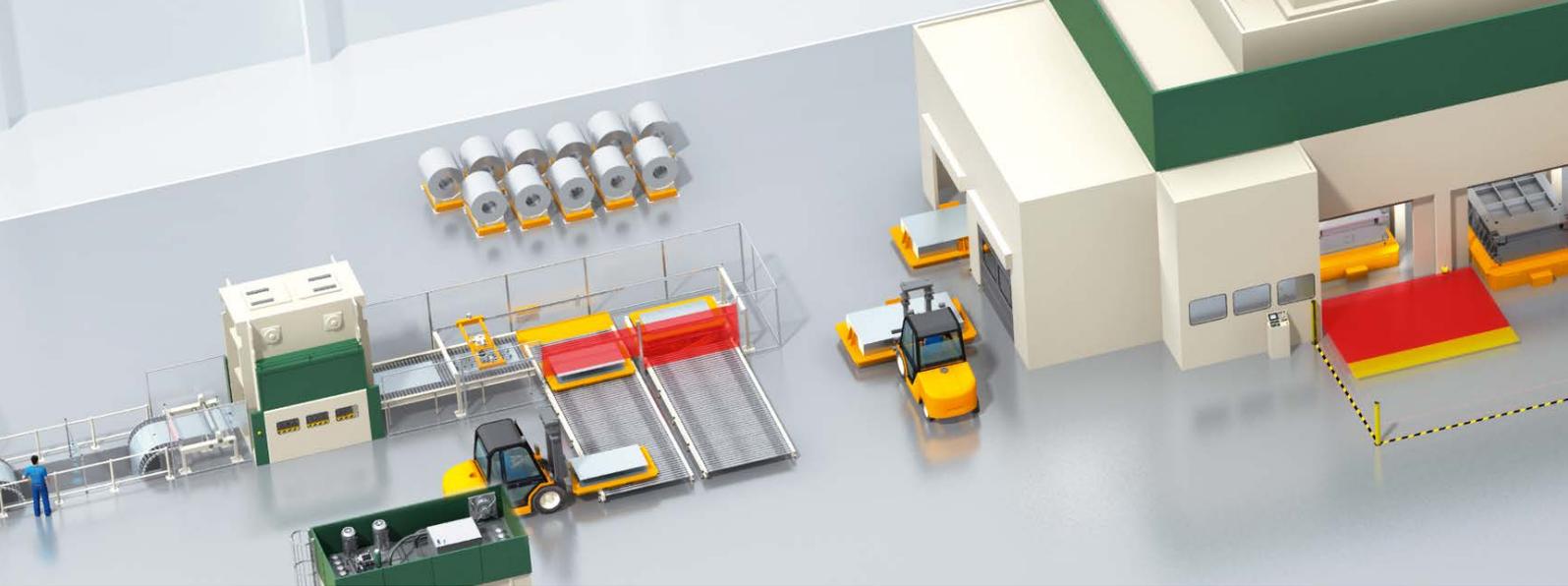


deTem4 Core / deTem2 Core

SIMPLY GOING FURTHER

Multiple light beam safety devices

SICK
Sensor Intelligence.



A NEW STANDARD IN EVERY SENSE

Just how do we maintain our leading position in the industrial safety sector after 65 years? Through continuous innovation.

deTem Core has laid the foundations for a new generation of multiple light beam safety devices. Combining cost-effectiveness with reliability, deTem Core is the ideal solution for securing access to hazardous areas of machines.

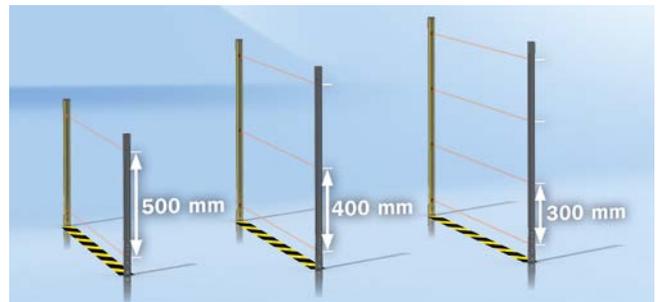
Access protection made easy and efficient

Focusing on the essential functions, deTem Core scores highly in particular for its wide scanning range. Commissioning has never been easier.



Radiating range – even around corners

With its wide scanning range, the deTem Core is able to protect access across very large areas. Mirror columns can deflect the beams from the photoelectric sensor multiple times if necessary.



Radiating safely

deTem Core delivers access protection in compliance with standards with 2, 3, and 4 beams and beam separation of 500, 400, and 300 mm.



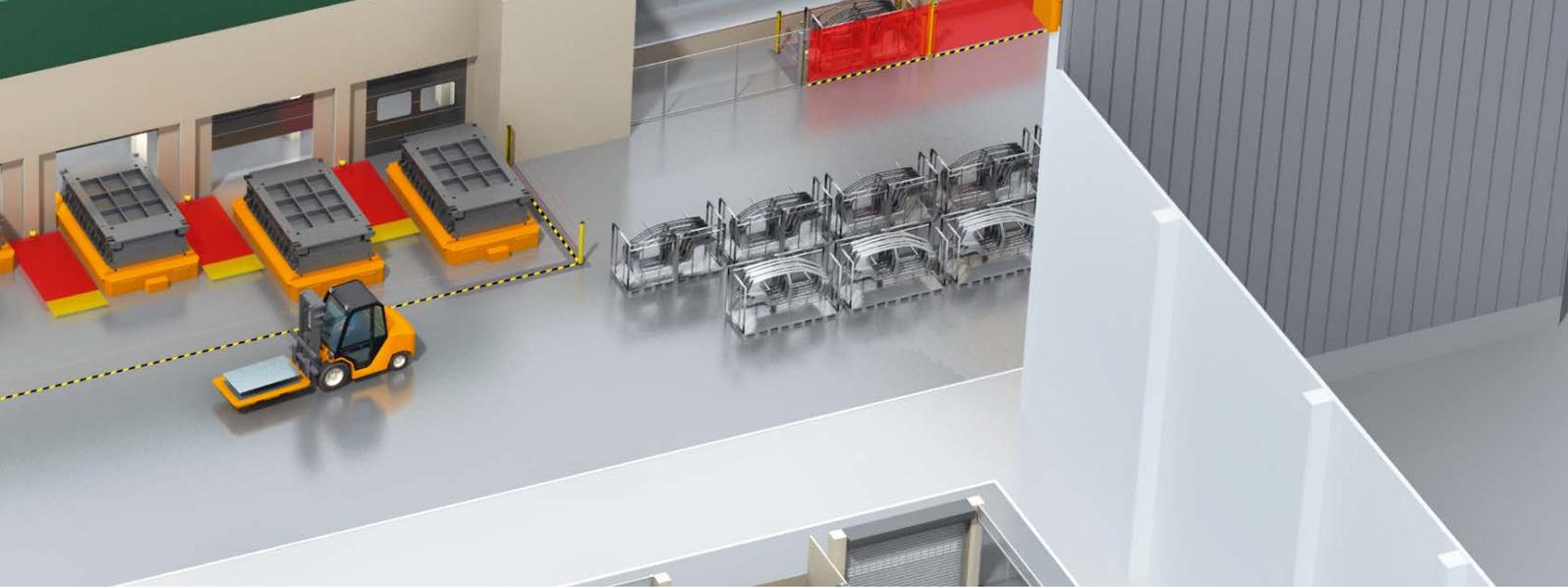
Perfectly aligned

The 4 integrated LEDs indicate how well the photoelectric sensor has been aligned overall and facilitate easy and ideal alignment of sender and receiver.

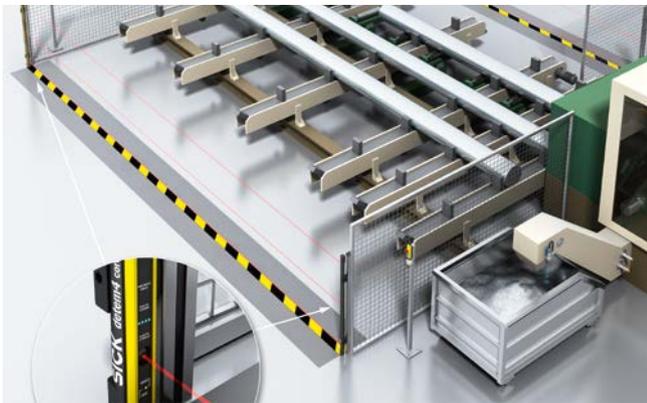


Quick mounting

FlexFix brackets ensure that mounting the housing takes just a matter of minutes. The innovative mounting system and the slim-line housing have already proven their worth in deTec light curtains.



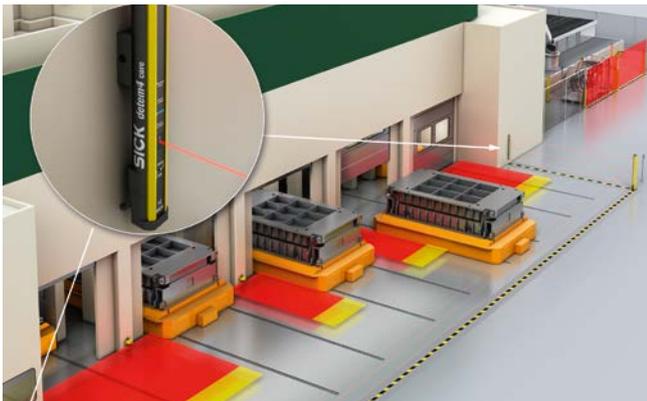
deTem Core IN ACTION



Single-sided access protection

deTem4 Core monitors material transportation at both ends of an automated sawing line. At the same time, the photoelectric sensor facilitates rapid access to the protected area on demand.

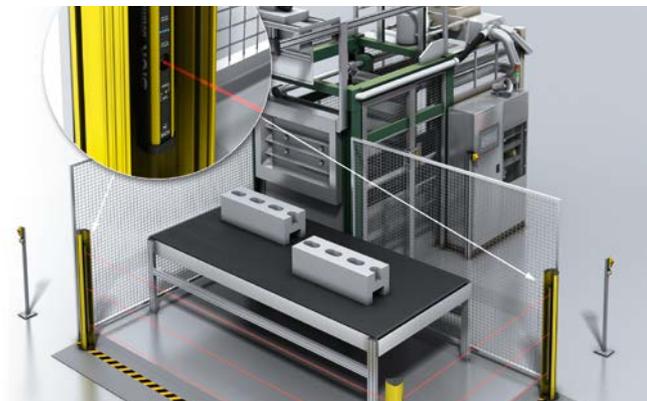
Their rugged housing makes these multiple light beam safety devices ideal for use in harsh environments.



Multi-sided access protection

In conjunction with deflector mirrors, a deTem4 Core protects three sides of the change area for press tools. The system needs just one sender and one receiver to do this.

Installation and cabling overheads for this cost-efficient multi-sided access protection solution are low.

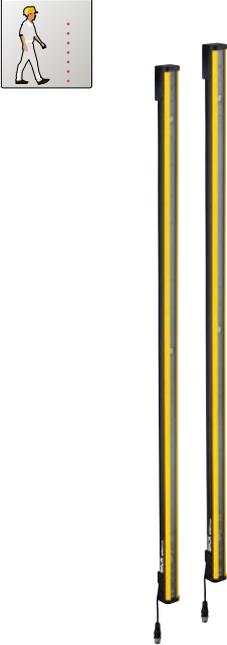


Multi-sided access protection

deTem4 Core protects access to a shape molding machine. A mirror column deflects the beams from the photoelectric sensor horizontally through 90°.

When the machine is at a standstill, the equipment is freely accessible for the removal of material. However, if anyone enters the hazardous area during active operation, the multiple light beam safety device safely shuts down the dangerous part of the machine.

ACCESS PROTECTION: EASY AND EFFICIENT



CE cULus

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for commissioning 12

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for accessories 16

Product description

The deTem4 Core multiple light beam safety devices, with 2, 3, or 4 beams as per the sender/receiver principle, provide simple and reliable protection when accessing hazardous machine areas. The small housing already typical of deTec devices saves space and can be

easily integrated using tried-and-tested brackets and standardized connectivity products. Despite the small dimensions, the sensor can achieve a scanning range of up to 90 m and therefore enables multi-sided access protection with deflector mirrors.

At a glance

- Typical scanning range of up to 90 m
- 2 versions: small and wide scanning range
- Compact design
- The same housing as deTec
- Versions with 2, 3, and 4 light beams
- Ambient operating temperature of -30 °C to +55 °C
- Enclosure ratings IP65 and IP67

Your benefits

- Protection of large access areas with multiple beam deflections as well
- Little space required
- The same quick and easy mounting and commissioning as the deTec: the same accessories and connectivity
- Reduced variant diversity
- Reliable in challenging environments

→ www.sick.com/deTem4_Core

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

	Low scanning range	Great scanning range
Scanning range	17 m	90 m
Dimension of the light path	Minimum	10 m ... 70 m
	Typical	10 m ... 90 m
Number of beams	2 / 3 / 4 (depending on type)	
Beam separation	500 mm / 400 mm / 300 mm (depending on type)	
Response time	20 ms	
Synchronization	Optical synchronisation	

Safety-related parameters

Type	Type 4 (IEC 61496)
Safety integrity level	SIL3 (IEC 61508) SILCL3 (IEC 62061)
Category	Category 4 (ISO 13849)
Performance level	PL e (ISO 13849)
PFH_D (mean probability of a dangerous failure per hour)	$3 * 10^{-9}$
T_M (mission time)	20 years (ISO 13849)
Safe state in the event of a fault	At least one OSSD is in the OFF state.

Interfaces

Connection type	Male connector M12, 5-pin
Permitted cable length	≤ 50 m
Flexi Loop compatible M12 male connector	✓
Status display	LEDs
Fieldbus, industrial network	
Integration via Flexi Soft safety controller	CANopen, DeviceNet™, EtherCAT®, EtherNet/IP™, Modbus TCP, PROFIBUS DP, PROFINET ¹⁾

¹⁾ For additional information on Flexi Soft → www.sick.com/Flexi_Soft

Electrical data

	Sender	Receiver
Protection class	III (IEC 61140) ¹⁾	
Supply voltage V_S	24 V DC (19.2 V DC ... 28.8 V DC) ²⁾	
Residual ripple	≤ 10 % ³⁾	
Power consumption	≤ 50 mA ≤ 1.44 W (DC)	≤ 150 mA ≤ 4.32 W (DC)
Safety outputs (OSSD)		
Type of output	–	2 PNP semiconductors, short-circuit protected, cross-circuit monitored ⁴⁾
Switching voltage HIGH	–	24 V DC (V _S – 2.25 V DC ... V _S)
Switching voltage LOW	–	≤ 2 V DC
Switching current	–	≤ 300 mA

¹⁾ SELV/PELV safety/protective extra-low voltage.

²⁾ The external voltage supply must be capable of buffering brief mains voltage failures of 20 ms as specified in EN 60204-1. Suitable power supplies are available as accessories from SICK.

³⁾ Within the limits of V_S.

⁴⁾ Applies to the voltage range between –30 V and +30 V.

Mechanical data

Housing cross-section	31 mm x 34 mm
Housing material	Aluminum extruded profile
Front screen material	Polycarbonate, scratch-resistant coating
Weight	560 g ... 880 g (± 50 g)

Ambient data

Enclosure rating	IP65 (IEC 60529) IP67 (IEC 60529)
Ambient operating temperature	-30 °C ... +55 °C
Storage temperature	-30 °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 (IEC 60068-2-27)

Other information

Wave length	Near-infrared (NIR), invisible
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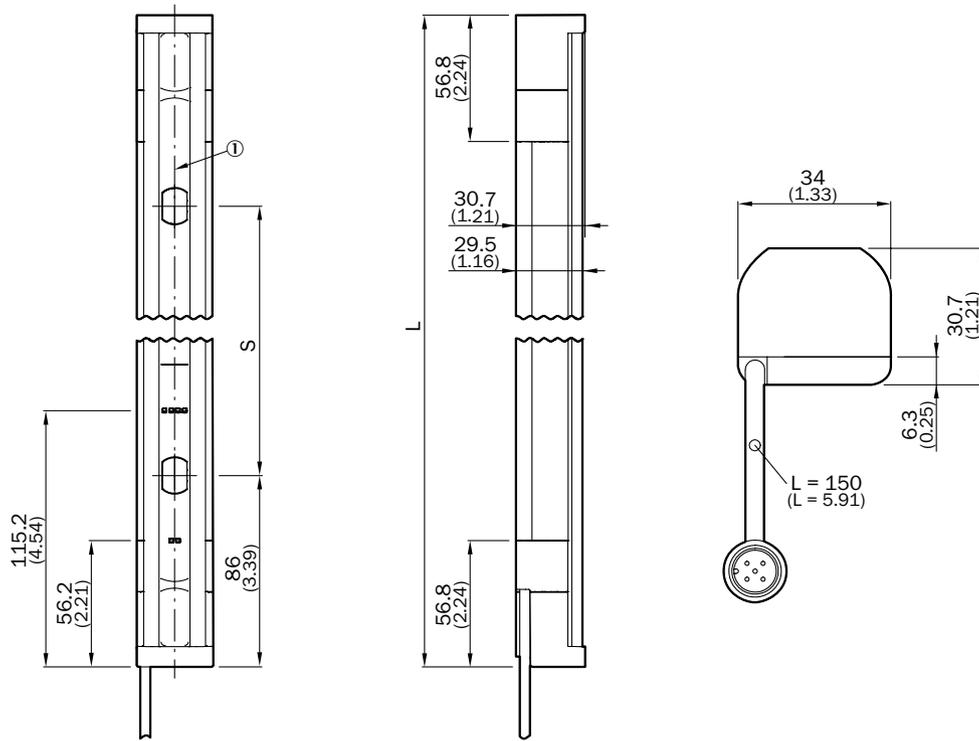
Ordering information

Items supplied deTem4 Core:

- Multiple light beam safety device consisting of a sender and a receiver
- Mounting instructions
- Safety instruction
- Operating instructions for download → www.sick.com/deTem4_Core

Scanning range	Number of beams	Beam separation	Sender		Receiver	
			Type	Part no.	Type	Part no.
17 m	2	500 mm	M4C-SA0250LA10	1082684	M4C-EA02500A10	1082686
	3	400 mm	M4C-SA0340LA10	1082687	M4C-EA03400A10	1082689
	4	300 mm	M4C-SA0430LA10	1082690	M4C-EA04300A10	1082692
90 m	2	500 mm	M4C-SA0250HA10	1082685	M4C-EA02500A10	1082686
	3	400 mm	M4C-SA0340HA10	1082688	M4C-EA03400A10	1082689
	4	300 mm	M4C-SA0430HA10	1082691	M4C-EA04300A10	1082692

Dimensional drawing (Dimensions in mm (inch))



Number of beams	S (Beam separation)	L (Length)
2	500 (19.69)	672 (26.46)
3	400 (15.75)	972 (38.27)
4	300 (11.81)	1,072 (42.2)

Accessories required for commissioning → [page 12](#)

Accessories → [page 12](#)

ACCESS PROTECTION: EASY AND EFFICIENT



Product description

The deTem2 Core multiple light beam safety devices, with 2, 3, or 4 beams as per the sender/receiver principle, provide simple and reliable protection when accessing hazardous machine areas. The small housing already typical of deTec devices saves space and can be

easily integrated using tried-and-tested brackets and standardized connectivity products. Despite the small dimensions, the sensor can achieve a scanning range of up to 90 m and therefore enables multi-sided access protection with deflector mirrors.

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- 2 versions: small and wide scanning range
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- Versions with 2, 3, and 4 light beams
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Beam separation	500 mm / 400 mm / 300 mm (depending on type)	
Response time	20 ms	
Synchronization	Optical synchronisation	

Safety-related parameters

Type	Type 2 (IEC 61496)
Safety integrity level	SIL1 (IEC 61508) SILCL1 (IEC 62061)
Category	Category 2 (ISO 13849)
Performance level	PL c (ISO 13849)
PFH_D (mean probability of a dangerous failure per hour)	$3 * 10^{-9}$
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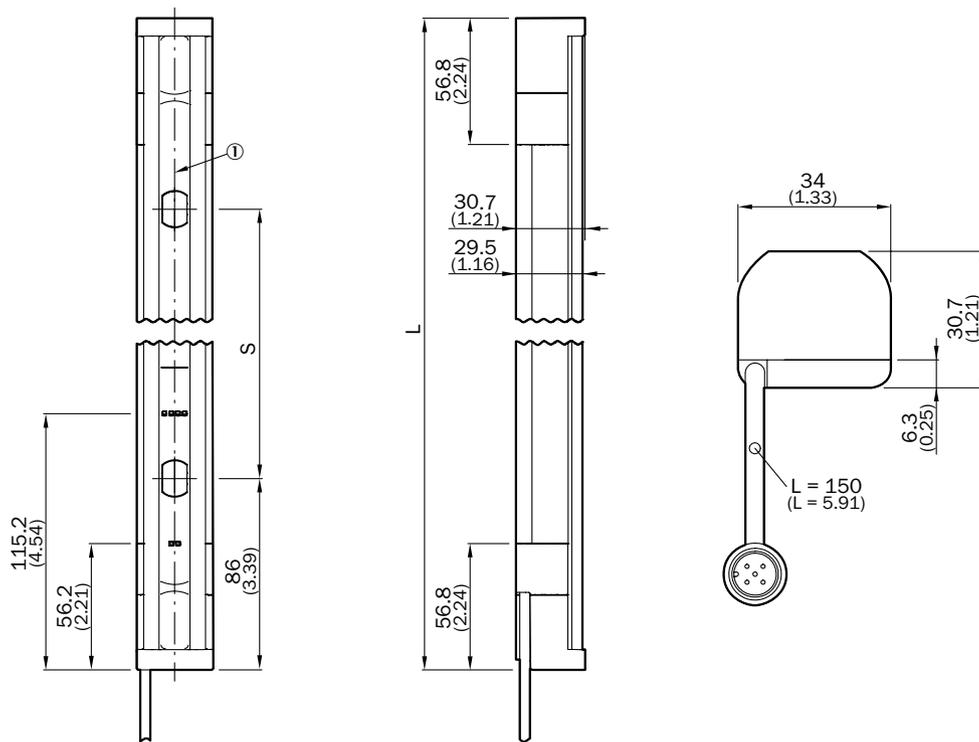
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	3	400 mm	M2C-SA0340LA10	1085565	M2C-EA03400A10	1085567
	4	300 mm	M2C-SA0430LA10	1085568	M2C-EA04300A10	1085570
90 m	2	500 mm	M2C-SA0250HA10	1085563	M2C-EA02500A10	1085564
	3	400 mm	M2C-SA0340HA10	1085566	M2C-EA03400A10	1085567
	4	300 mm	M2C-SA0430HA10	1085569	M2C-EA04300A10	1085570

Dimensional drawing (Dimensions in mm (inch))



Number of beams	S (Beam separation)	L (Length)
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Accessories required for commissioning → [page 12](#)

Accessories → [page 12](#)

Accessories required for commissioning

Description	Number	Items supplied	Further information
Mounting bracket	2	-	→ Mounting brackets and plates
Connecting cable	2	-	→ Plug connectors and cables

Accessories

Mounting systems

Terminal and alignment brackets

Alignment brackets

Figure	Description	Packing unit	Type	Part no.
	QuickFix bracket, Plastic	2 pieces	BEF-3SHABPKU2	2066048
	FlexFix bracket, plastic, can be aligned ± 15°, including screw M5, Plastic	4 pieces	BEF-1SHABPKU4	2066614
	FlexFix brackets including alignment tool and mounting material suitable for fastening to device columns, plastic	2 pieces	BEF-1SHABBKU2	2073543
	Replacement bracket kit replaces swivel mount brackets 2019649 and 2019659 or side brackets 2019506 with FlexFix brackets by using the existing fixing holes, Aluminum (anodised), plastic	4 pieces	BEF-1SHABP004	2071021

Dimensional drawings → [page X-0](#)

Other mounting accessories

Mounting tools

Figure	Description	Packing unit	Type	Part no.
	Alignment tool for deTec4 and deTec2 in areas with limited accessibility	1 piece	Alignment tool	4084133

Connection systems

Plug connectors and cables

Connecting cables with female connector

- **Model:** PUR, halogen-free, unshielded

Figure	Connection type		Conductor cross-section	Cable length	Type	Part no.
	Female connector, M12, 5-pin, straight	Cable	0.34 mm ²	2 m	DOL-1205-G02MC	6025906
				5 m	DOL-1205-G05MC	6025907
				10 m	DOL-1205-G10MC	6025908
				15 m	DOL-1205-G15MC	6051946
				30 m	DOL-1205-G30MC	6050248
	Female connector, M12, 5-pin, angled	Cable	0.34 mm ²	2 m	DOL-1205-W02MC	6025909
				5 m	DOL-1205-W05MC	6025910
				10 m	DOL-1205-W10MC	6025911

Connection cables with female connector and male connector

- **Model:** PVC, unshielded
- **Cable length:** 0.25 m

Figure	Connection type		Conductor cross-section	Items supplied	Type	Part no.
	Female connector, M12, 5-pin, straight	Male connector, M12, 8-pin, straight	0.34 mm ²	Packaging unit: 2 pcs.	DSL-1285GM25034KM1	2070987
		Male connector, M26, 12-pin, straight	0.34 mm ²	Packaging unit: 2 pcs.	DSL-6182GM25034KM1	2070989
		Male connector, M26, 7-pin, straight	0.34 mm ²	Packaging unit: 2 pcs.	DSL-6187GM25034KM1	2070988

Adapters and distributors

T-junctions

Figure	Description	Type	Part no.
	CANopen, T-piece, 5-pin	DSC-1205T000025KM0	6030664

Power supply units and power cord connectors

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

Alignment aids

Figure	Description	Type	Part no.
	Laser alignment aid for various sensors, laser class 2 (IEC 60825). Do not look into the beam!	AR60	1015741
	Adapter AR60 for deTec4, deTec2 and MLG-2	AR60 adapter, deTec, MLG-2	4070854

Deflector mirrors

Figure	Mirror material	Description	Items supplied	Type	Part no.
	Glass	Horizontal deflection, 75 mm x 80 mm reflector surface	Incl. mounting kit (2 x swivel mount)	PNS75-008	1026647

Optics cloths

Figure	Description	Type	Part no.
	Cloth for cleaning the front screen	Lens cloth	4003353

Further accessories

Test and monitoring tools

Figure	Description	Type	Part no.
	30 mm diameter	Test rod 30 mm	2022602
	Test rod holder	BEF-3WNAAAAL1	2052249

Cleaning agent

Figure	Description	Type	Part no.
	Plastic cleaner and care product, anti-static, 0.5 liter	Plastic cleaner	5600006

Mirror columns and device columns

Mirror columns with separate mirrors

Figure	Suitable for number of beams	Suitable for beam separation	Column height	Type	Part no.
 <p>Illustration may differ</p>	2	500 mm	985 mm	PM3S96-00240020	1040619
	3	400 mm	1,185 mm	PM3S11-00330030	1040625
	4	300 mm	1,285 mm	PM3S13-00430040	1040626

Device columns with two external mounting grooves

Figure	Suitable for number of beams	Height of first beam above ground	Max. installation length	Column height	Type	Part no.
	2	400	965 mm	985 mm	PU3H96-00000000	2045490
	3	300	1.165 mm	1.185 mm	PU3H11-00000000	2045641
	4	300	1.265 mm	1.285 mm	PU3H13-00000000	2045642
	-	-	1.550 mm	1.570 mm	PU3H15-00000000	2068813
	-	-	1.720 mm	1.740 mm	PU3H17-00000000	2045643
	-	-	2.020 mm	2.040 mm	PU3H21-00000000	2045644
	-	-	2.250 mm	2.270 mm	PU3H22-00000000	2045645
	-	-	2.400 mm	2.420 mm	PU3H24-00000000	2045646

Accessories for mirror columns and device columns

Mounting plates

Figure	Description	Type	Part no.
	Adjusting plate for floor mounting of device columns, height 3 mm, steel	Adjusting plate	4031053

Dimensional drawings → [page 16](#)

Others

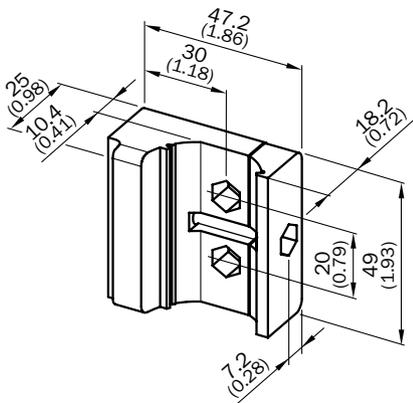
Figure	Description	Packing unit	Type	Part no.
	M10 steel wall plug, for floor mounting the compensation plate for device columns, steel, zinc coated	1 piece	Steel plugs	5308961

Dimensional drawings → [page 16](#)

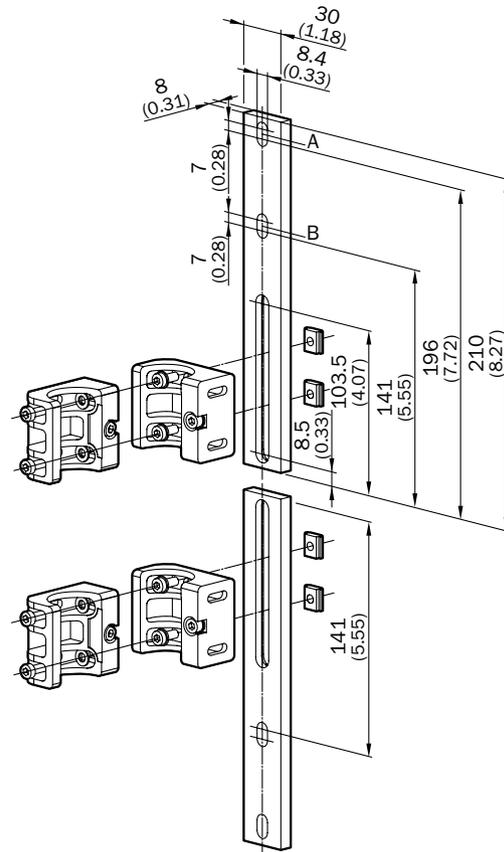
Dimensional drawings for accessories (Dimensions in mm (inch))

Terminal and alignment brackets

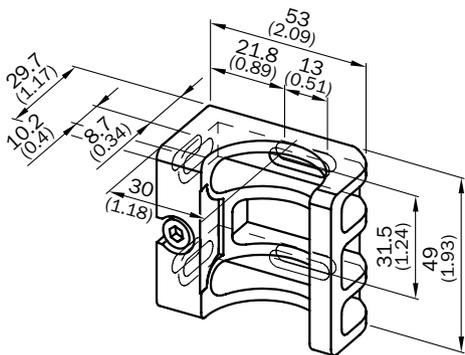
BEF-3SHABPKU2



BEF-1SHABP004

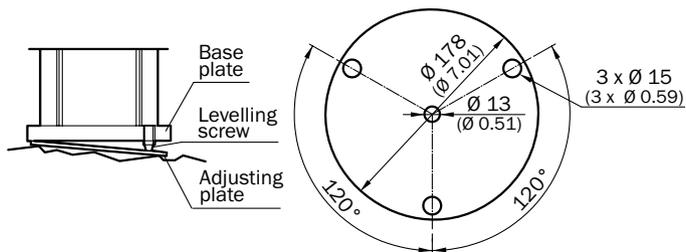


BEF-1SHABPKU4
BEF-1SHABBKU2



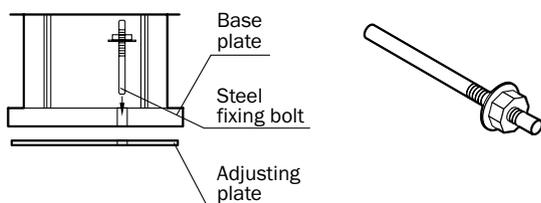
Mounting brackets and plates

Adjusting plate



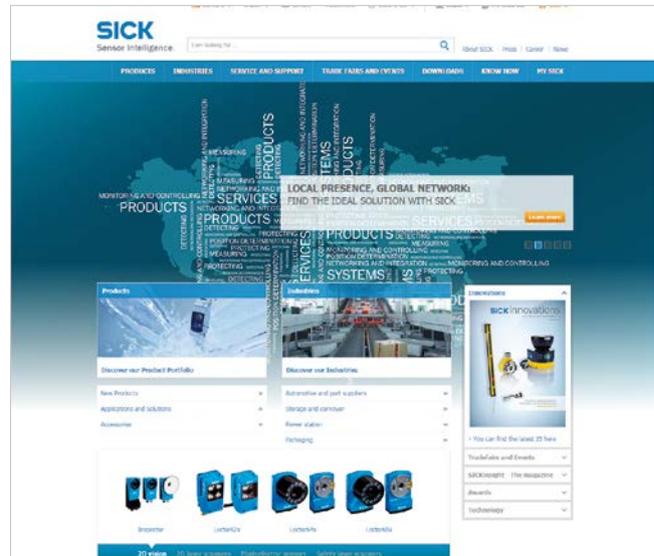
Other mounting accessories

Steel plugs



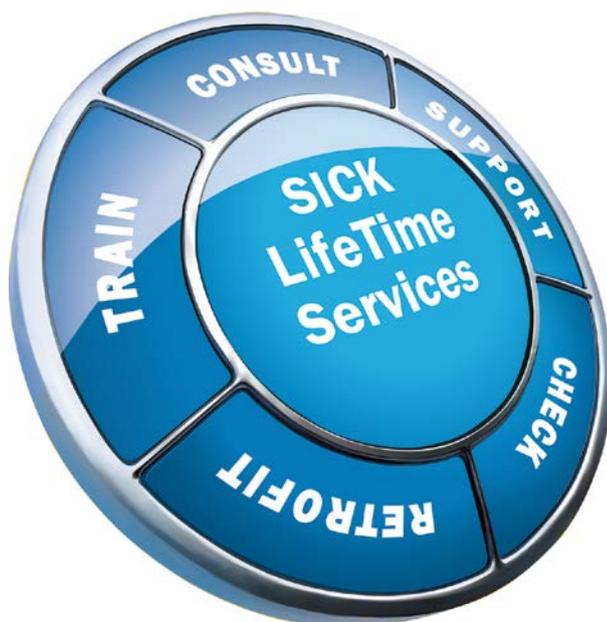
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SERVICES FOR MACHINES AND SYSTEMS: SICK LifeTime Services

Our comprehensive and versatile LifeTime Services are the perfect addition to the comprehensive range of products from SICK. The services range from product-independent consulting to traditional product services.



Consulting and design
Safe and professional



Product and system support
Reliable, fast and on-site



Verification and optimization
Safe and regularly inspected



Upgrade and retrofits
Easy, safe and economical



Training and education
Practical, focused and professional

SICK AT A GLANCE

SICK is a leading manufacturer of intelligent sensors and sensor solutions for industrial applications. With more than 7,400 employees and over 50 subsidiaries and equity investments as well as numerous agencies worldwide, we are always close to our 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.

We have extensive experience in various industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our 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 us a reliable supplier and development partner.

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

For us, that is “Sensor Intelligence.”

Worldwide presence:

Australia, Austria, Belgium, Brazil, Canada, Chile, China, Czech Republic, Denmark, Finland, France, Germany, Great Britain, Hungary, 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