

L25, L26 FLEXIBLE MACHINE SAFEGUARDING FOR TYPE 2 APPLICATIONS

SICK Sensor Intelligence.

Single-beam photoelectric safety switches

FLEXIBLE MACHINE SAFEGUARDING FOR TYPE 2 APPLICATIONS



Additional information

Product description

The L25 and L26 product families from SICK represent a new generation of single-beam photoelectric safety switch for type 2 applications, which, in combination with an external test device, facilitate operations and make processes safer and more efficient. Thanks to the innovative BluePilot operating concept with feedback LED, the alignment of sender and receiver is easier than ever.

At a glance

- BluePilot: optical alignment aid
- Smart Sensor: efficient communication with IO-Link
- Ultra robust VISTAL® housing
- Enclosure rating: IP66, IP67 and IP69K

Your benefits

- Quick and precise alignment of the sender and the receiver thanks to the PinPoint LED in combination with BluePilot
- Increased productivity: Smart Sensor diagnostic functions always available via IO-Link
- Cost efficiency: IP66, IP67 and IP69K guarantee a long service life. The ultra robust VISTAL[®] housing withstands extreme environmental influences with ease

Smart Sensor diagnostic functions provide insight into the status each individual sensor at all times, thus creating the basis for successful and efficient communication. Thanks to the ultra robust VISTAL[®] housing and predictive maintenance, L25 and L26 are extremely reliable and prevent unscheduled machine downtime.

- Typical scanning range of up to 20 m
- Type of light: IR light and visible red light
- Standardized connection and mounting systems
- Type 2, PL c, SIL1
- Flexibility: The large scanning range of up to 20 m enables more application possibilities
- High availability: IR light and red light variants prevent interference and a superimposition of sensor signals
- Easy order processing thanks to the standardized connection and mounting systems

www.sick.com/L25

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

More detailed data can be found in the operating instructions. Download → www.sick.com/L25

Features

	Near-infrared (NIR), invisible	Red light, visible	
Smart Sensor	Efficient communication		
	Diagnosis		
Light source	LED PinPoint LED		
Scanning range	20 m		
Number of beams	1		
Detection capability	30 mm ¹⁾		
Response time	0.5 ms		
Response time	0.5 ms + Test device response time		
Cascading	Cascading allows up to 4 single-beam photoelectric safety switches to be connected in series. Response times and connection diagrams for cascading can be found in the operating instructions.		

¹⁾ For regular thorough check, a test rod with minimum diameter of 30 mm is needed. Suitable test rods are available as accessories from SICK.

Safety-related parameters

Туре	Type 2 (IEC 61496-1) ¹⁾
Safety integrity level	SIL1 (IEC 61508) ¹) SILCL1 (EN 62061) ¹)
Category	Category 2 (EN ISO 13849) 1)
Test rate (external test)	100 /s (EN ISO 13849)
Maximum demand rate	≤ 60 min ⁻¹ (EN ISO 13849) ²⁾
Performance level	PL c (EN ISO 13849) 1)
PFH _D (mean probability of a dangerous failure per hour)	1.0 x 10 ⁻⁶ (EN ISO 13849) ¹⁾
T _M (mission time)	20 years (EN ISO 13849)

¹⁾ Only in combination with an appropriate test device, e.g., Flexi Classic or Flexi Soft.

²⁾ Between two requirements on a safety-related response of the device, at least 100 external tests must be carried out.

Interfaces

Connection type	Male connector M12, 4-pin, connector 270° rotatable
Configuration method	Via IO-Link
Display elements	LEDs
Alignment aid	Alignment quality via diagnostic LEDs Easy and quick sensor alignment using BluePilot
Application diagnostic output (ADO)	V
IO-Link	\checkmark
Data exchange via IO-Link	Device information
	Quality of reception
Configuration via IO-Link	Switching output
	Application diagnostic output (ADO)
IO-Link master	SiLink2 Master IOLA2US-01101
Configuration software	SOPAS ET
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

III (IEC 61140)
24 V DC (19.2 V DC 28.8 V DC)
≤ 5 V
≤ 30 mA
\leq 3 V (Sender off) ¹⁾ \geq U _V - 4 V (Sender on) ¹⁾
≤ 1.1 ms
Push-pull 2)
≤ 100 mA

¹⁾ The test input may not not be operated when not connected. The test input has a pull-up resistor to activate the sender (sender on) even when not connected. Therefore, an active-switched LOW signal is required to activate the cyclic test with test gap (sender off).

²⁾ Digital output for controlling the downstream test device, not an OSSD according to IEC 61496-1. Short-circuit protected output.

Mechanical data

Design	Rectangular
Dimensions (W x H x D)	20 mm x 42 mm x 55.4 mm
Housing material	VISTAL®

Ambient data

Enclosure rating	IP66 (IEC 60529) IP67 (IEC 60529) IP69K (ISO 20653)
Ambient operating temperature	-40 °C +60 °C
Storage temperature	-40 °C +75 °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 60068-2-29)

Other information

	Near-infrared (NIR), invisible	Red light, visible
Light source	LED	PinPoint LED
Wave length	850 nm	635 nm
Light spot diameter (distance)	110 mm (8 m)	90 mm (8 m)

Ordering information

Scan- Type of ning light range		Light	Sender		Receiver	
		source	Туре	Part no.	Туре	Part no.
20 m	Near-infra- red (NIR), invisible	LED	WS016I-243ZZ1A0ZZZZLLZZZZZZZ1	2113103	WE016I-2416R500A00ZLLZZZZZZZ1	2113105
20 m	Red light, visible	Pin- Point LED	WS016P-243ZZ1A0ZZZZLLZZZZZZZ1	2113101	WE016P-2416R500A00ZLLZZZZZZZ1	2113102

Dimensional drawing (Dimensions in mm)

L25



① Center of optical axis, sender

- 2 Connection
- 3 Center of optical axis, receiver

④ Mounting holes

 $\ensuremath{\mathfrak{S}}$ Green operating LED: Supply voltage active

 $\textcircled{\sc 6}$ Yellow status LED: Light receiver indication

⑦ Alignment aid (BluePilot): Blue alignment quality LEDs

Accessories

Mounting systems

Mounting brackets

Figure	Description	Туре	Part no.
	Mounting bracket, large, stainless steel, mounting hardware included	BEF-WG-W12	2013942
	Mounting bracket, small, stainless steel, mounting hardware included	BEF-WK-W12	2012938
Ĥ	Mounting bracket with articulated arm, steel, zinc coated, mounting hardware included	BEF-WN-MULTI2	2093945

Dimensional drawings -> page 8

Mounting plates

Figure	Description	Туре	Part no.
434343	Spring mounting for PSK1 deflector mirror	BEF-4AAAAHST3	2012473

Alignment brackets

Figure	Description	Туре	Part no.
	Bracket for PSK1 deflector mirror	BEF-4GHAAHAL1	2009292

Dimensional drawings → page 10

Terminal brackets

Figure	Description	Туре	Part no.
	Double clamp bracket for dovetail mounting, Aluminum (anodised), mounting hard- ware included	BEF-DKH-W12	2013947
M 🕅	Clamping block for dovetail mounting, Aluminum (anodised), mounting hardware included	BEF-KH-W12	2013285

Dimensional drawings → page 10

Device protection (mechanical)

Protective housings and protective pipes

Figure	Description	Suitable for	Туре	Part no.
1	Protective housing for universal clamp, Zinc plated steel (protective housing), Zinc die cast (clamping bracket), Univer- sal clamp, mounting hardware	W11-2, W12-3	BEF-SG-W16	2096146

Dimensional drawings -> page 10

Universal bar clamp systems

Figure	Description	Туре	Part no.
Contraction of the second seco	Plate N02 for universal clamp bracket, Zinc plated steel (sheet), Zinc die cast (clamp- ing bracket), Universal clamp (5322626), mounting hardware	BEF-KHS-N02	2051608
6	Plate N03 for universal clamp bracket, zinc coated, Zinc plated steel (sheet), Zinc die cast (clamping bracket), Universal clamp (5322626), mounting hardware	BEF-KHS-N03	2051609
	Plate N04 for universal clamp, steel, Zinc plated steel (sheet), Zinc die cast (clamping bracket), Universal clamp (5322626), mounting hardware	BEF-KHS-N04	2051610

Connection systems

Plug connectors and cables

Connecting cables

• Model: PVC, unshielded

Figure	Connec	tion type	Conductor cross-section	Length of cable	Туре	Part no.
	Female connector,	Elving loads	$0.24 mm^{2}$	2 m	YF2A14-020VB3XLEAX	2096234
N o	M12, 4-pin, straight	Figing leads	0.34 mm-	5 m	YF2A14-050VB3XLEAX	2096235

Reflectors and optics

Deflector mirrors

• Mirror material: Glass

Figure	Description	Items supplied	Туре	Part no.
	Horizontal deflection, 75 mm x 80 mm reflector surface	Incl. mounting kit (2 x swivel mount)	PNS75-008	1026647
	Horizontal deflection, 96 mm x 124 mm reflector surface	-	PSK1	1005229

Figure	Description	Items supplied	Туре	Part no.
	Deflector mirror for 90° deflection, mirror surface 97 mm x 80 mm, not suitable for column mounting	Mounting hardware included	PSK45	5306053

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Optics cloths

Figure	Description	Туре	Part no.
SICK	Cloth for cleaning optical surfaces	Lens cloth	4003353

Further accessories

Test and monitoring tools

Figure	Description	Туре	Part no.
	30 mm diameter	Test rod 30 mm	2022602

Cleaning agent

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

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

Mounting brackets and plates BEF-WG-W12



BEF-WK-W12



BEF-WN-MULTI2









W16/L25













1 0° position

Terminal and alignment brackets

BEF-4GHAAHAL1



BEF-DKH-W12



BEF-KH-W12



Device protection (mechanical) BEF-SG-W16



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Deflector mirrors

PSK1







FLEXIBLE MACHINE SAFEGUARDING FOR TYPE 2 APPLICATIONS



Additional information

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Product description

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At a glance

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- Smart Sensor: efficient communication with IO-Link
- Ultra robust VISTAL® housing
- Enclosure rating: IP66, IP67 and IP69K

Your benefits

- Quick and precise alignment of the sender and the receiver thanks to the PinPoint LED in combination with BluePilot
- Increased productivity: Smart Sensor diagnostic functions always available via IO-Link
- Cost efficiency: IP66, IP67 and IP69K guarantee a long service life. The ultra robust VISTAL[®] housing withstands extreme environmental influences with ease

Smart Sensor diagnostic functions provide insight into the status each individual sensor at all times, thus creating the basis for successful and efficient communication. Thanks to the ultra robust VISTAL[®] housing and predictive maintenance, L25 and L26 are extremely reliable and prevent unscheduled machine downtime.

- Typical scanning range of up to 50 m
- Type of light: IR light and visible red light
- Standardized connection and mounting systems
- Type 2, PL c, SIL1
- Flexibility: The large scanning range of up to 50 m enables more application possibilities
- High availability: IR light and red light variants prevent interference and a superimposition of sensor signals
- Easy order processing thanks to the standardized connection and mounting systems

www.sick.com/L26

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

More detailed data can be found in the operating instructions. Download → www.sick.com/L26

Features

	Near-infrared (NIR), invisible	Red light, visible
Smart Sensor	Efficient communication	
	Diagnosis	
Light source	LED	PinPoint LED
Scanning range	50 m	
Number of beams	1	
Detection capability	30 mm ¹⁾	
Response time 0.5 ms		
Response time	0.5 ms + Test device response time	
Cascading	Cascading allows up to 4 single-beam photoelectric safety switches to be connected in series. Response times and connection diagrams for cascading can be found in the operating instructions.	

¹⁾ For regular thorough check, a test rod with minimum diameter of 30 mm is needed. Suitable test rods are available as accessories from SICK.

Safety-related parameters

Туре	Type 2 (IEC 61496-1) ¹⁾
Safety integrity level	SIL1 (IEC 61508) ¹) SILCL1 (EN 62061) ¹)
Category	Category 2 (EN ISO 13849) 1)
Test rate (external test)	100 /s (EN ISO 13849)
Maximum demand rate	≤ 60 min ⁻¹ (EN ISO 13849) ²⁾
Performance level	PL c (EN ISO 13849) 1)
PFH _D (mean probability of a dangerous failure per hour)	1.0 x 10 ⁻⁶ (EN ISO 13849) ¹⁾
T _M (mission time)	20 years (EN ISO 13849)

¹⁾ Only in combination with an appropriate test device, e.g., Flexi Classic or Flexi Soft.

²⁾ Between two requirements on a safety-related response of the device, at least 100 external tests must be carried out.

Interfaces

Connection type	Male connector M12, 4-pin, connector 270° rotatable
Configuration method	Via IO-Link
Display elements	LEDs
Alignment aid	Alignment quality via diagnostic LEDs Easy and quick sensor alignment using BluePilot
Application diagnostic output (ADO)	V
IO-Link	\checkmark
Data exchange via IO-Link	Device information
	Quality of reception
Configuration via IO-Link	Switching output
	Application diagnostic output (ADO)
IO-Link master	SiLink2 Master IOLA2US-01101
Configuration software	SOPAS ET
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

Protection class	III (IEC 61140)
Supply voltage Vs	24 V DC (19.2 V DC 28.8 V DC)
Residual ripple	≤ 5 V
Power consumption	≤ 30 mA
Test input voltage	\leq 3 V (Sender off) ¹⁾ \geq U _V - 4 V (Sender on) ¹⁾
Test input response time	≤ 1.1 ms
Switching outputs	Push-pull ²⁾
Current loading	≤ 100 mA

¹⁾ The test input may not not be operated when not connected. The test input has a pull-up resistor to activate the sender (sender on) even when not connected. Therefore, an active-switched LOW signal is required to activate the cyclic test with test gap (sender off).

²⁾ Digital output for controlling the downstream test device, not an OSSD according to IEC 61496-1. Short-circuit protected output.

Mechanical data

Design	Rectangular
Dimensions (W x H x D)	26.4 mm x 48.1 mm x 82.2 mm
Housing material	VISTAL®

Ambient data

Enclosure rating	IP66 (IEC 60529) IP67 (IEC 60529) IP69K (ISO 20653)
Ambient operating temperature	-40 °C +60 °C
Storage temperature	-40 °C +75 °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 60068-2-29)

Other information

	Near-infrared (NIR), invisible	Red light, visible
Light source	LED	PinPoint LED
Wave length	850 nm	635 nm
Light spot diameter (distance)	110 mm (8 m)	90 mm (8 m)

Ordering information

Scan-	Type of Light		Sender		Receiver	
ning range	light	source	Туре	Part no.	Туре	Part no.
50 m	Near-infra- red (NIR), invisible	LED	WS026I-243ZZ1A0ZZZZLLZZZZZZZ1	2113107	WE026I-2416R500A00ZLLZZZZZZ1	2113110
50 m	Red light, visible	Pin- Point LED	WS026P-243ZZ1A0ZZZZLLZZZZZZZ1	2113106	WE026P-2416R500A00ZLLZZZZZZZ1	2113109

Dimensional drawing (Dimensions in mm)

L26







1 Center of optical axis, sender

O Connection

③ Center of optical axis, receiver

④ Mounting holes

 $\ensuremath{\textcircled{\text{S}}}$ Green operating LED: Supply voltage active

⁽⁶⁾ Yellow status LED: Light receiver indication

O Alignment aid (BluePilot): Blue alignment quality LEDs

Accessories

Mounting systems

Mounting brackets and plates

Figure	Description	Туре	Part no.
A	Mounting bracket with articulated arm for W11-2, W27, Dx50, steel, zinc coated, mounting hardware included	BEF-WN-MULTI	2064469
à	Mounting bracket with articulated arm, steel, zinc coated, mounting hardware included	BEF-WN-MULTI2	2093945
	Mounting bracket, steel, zinc coated, mounting hardware included	BEF-WN-W23	2019085
	Mounting bracket with hinged arm, steel, zinc coated, mounting hardware included	BEF-WN-W27	2009122

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Mounting plates

Figure	Description	Туре	Part no.
444	Spring mounting for PSK1 deflector mirror	BEF-4AAAAHST3	2012473

Terminal and alignment brackets

Alignment brackets

Figure	Description	Туре	Part no.
	Bracket for PSK1 deflector mirror	BEF-4GHAAHAL1	2009292

Dimensional drawings -> page 20

Device protection (mechanical)

Protective housings and protective pipes

Figure	Description	Suitable for	Туре	Part no.
	Protective housing for W26, W27-3 and mounting rods with diameter 12 mm 20 mm, Zinc plated steel (protective housing), Zinc die cast (clamping bracket), Universal clamp BEF-KHS-KH1 (2022726), mounting hardware	W27-3, W26, RAY26	BEF-SG-W27	2039601

Dimensional drawings → page 20

Universal bar clamp systems

Figure	Description	Туре	Part no.
0	Plate A for universal clamp bracket, steel, zinc coated, Universal clamp (2022726), mounting hardware	BEF-KHS-A01	2022458
	Plate NO4 for universal clamp, steel, Zinc plated steel (sheet), Zinc die cast (clamping bracket), Universal clamp (5322626), mounting hardware	BEF-KHS-N04	2051610

Connection systems

Plug connectors and cables

Connecting cables

• Model: PVC, unshielded

Figure	Connection type		Conductor cross-section	Length of cable	Туре	Part no.
	Female connector,	Elving loods	0.24 mm ²	2 m	YF2A14-020VB3XLEAX	2096234
N	M12, 4-pin, straight	0.34 mm²	5 m	YF2A14-050VB3XLEAX	2096235	

Reflectors and optics

Deflector mirrors

• Mirror material: Glass

Figure	Description	Items supplied	Туре	Part no.
	Horizontal deflection, 75 mm x 80 mm reflector surface	Incl. mounting kit (2 x swivel mount)	PNS75-008	1026647
	Horizontal deflection, 96 mm x 124 mm reflector surface	-	PSK1	1005229
1	Deflector mirror for 90° deflection, mirror surface 97 mm x 80 mm, not suitable for column mounting	Mounting hardware included	PSK45	5306053

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Optics cloths

Figure	Description	Туре	Part no.
SICK	Cloth for cleaning optical surfaces	Lens cloth	4003353

Further accessories

Test and monitoring tools

Figure	Description	Туре	Part no.
	30 mm diameter	Test rod 30 mm	2022602

Cleaning agent

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

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

Mounting brackets and plates

BEF-WN-MULTI









Setting for sensors W27, W23, W26
Setting for sensors W12, W11, W16
Adjustment for sensors D50

BEF-WN-MULTI2









W16/L25



G10









1 0° position







Terminal and alignment brackets BEF-4GHAAHAL1

20



BEF-WN-W27





Device protection (mechanical) BEF-SG-W27







Deflector mirrors

PSK1







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SERVICES FOR MACHINES AND PLANTS: 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.



SICK AT A GLANCE

SICK is a leading manufacturer of intelligent sensors and sensor solutions for industrial applications. With more than 9,700 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

