WSO16P-243ZZ1A0ZZZZLLZZZZZZZZ1
L25

SAFETY SINGLE-BEAM SENSORS

SICK
Sensor Intelligence.

WS016P-243ZZ1A0ZZZZLLZZZZZZZZ1 | L25

SAFETY SINGLE-BEAM SENSORS

Ordering information

Scanning range	Type of light	Light source	System part	Type	Part no.
20 m	Red light, visible	PinPoint LED	Sender	WS016P-243ZZ1A0ZZZ-ZLLZZZZZZZZ1	2113101

Other models and accessories ➜ www.sick.com/L25

Detailed technical data

Features

Smart Sensor	Diagnosis Efficient communication Smart Task
Light source	PinPoint LED
Type of light	Red light, visible
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. You can find response times and connection diagrams for cascading in the operating instructions.

[1] A test rod with a diameter of at least 30 mm is required for thorough check. Suitable test rods are available as accessories from SICK.

Safety-related parameters

Type	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)

[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.

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)	1.0×10^{-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)	✓
IO-Link	✓
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

Electrical data

Protection class	III (IEC 61140)
Supply voltage V$_S$	24 V DC (19.2 V DC … 28.8 V DC)
Residual ripple	≤ 5 V
Power consumption	≤ 30 mA
Test input voltage	≤ 3 V (Sender off) [1] ≥ U$_V$ - 4 V (Sender on) [1]
Test input response time	≤ 1.1 ms

[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).

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	IP65 (IEC 60529) 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

Light source	PinPoint LED
Type of light	Red light, visible
Wave length	635 nm
Light spot diameter (distance)	90 mm (8 m)

Classifications

eCl@ss 5.0	27272701
eCl@ss 5.1.4	27272701
eCl@ss 6.0	27272701
eCl@ss 6.2	27272701
eCl@ss 7.0	27272701
eCl@ss 8.0	27272701
eCl@ss 8.1	27272701
eCl@ss 9.0	27272701
eCl@ss 10.0	27272701
eCl@ss 11.0	27272701
eCl@ss 12.0	27272701
ETIM 5.0	EC001831
ETIM 6.0	EC001831
ETIM 7.0	EC001831
ETIM 8.0	EC001831
UNSPSC 16.0901	46171620

Dimensional drawing (Dimensions in mm (inch))

L25
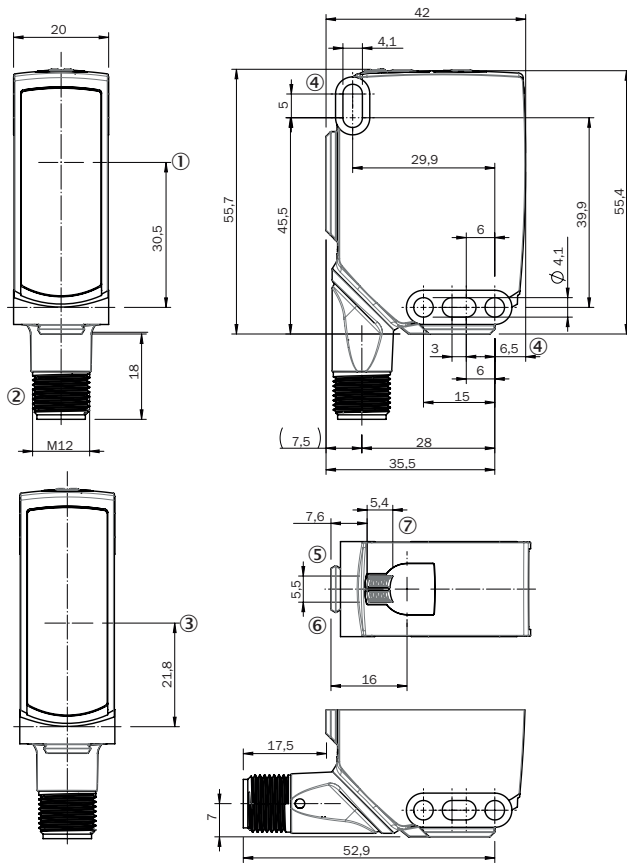
① Center of optical axis, sender
② Connection
③ Center of optical axis, receiver
④ Mounting holes
⑤ Green operating LED: Supply voltage active
⑥ Yellow status LED: Light receiver indication
⑦ Alignment aid (BluePilot): Blue alignment quality LEDs

Recommended accessories

Other models and accessories ➜ www.sick.com/L25

	Brief description	Type	Part no.
Universal bar clamp systems			
	Plate N02 for universal clamp bracket, Zinc plated steel (sheet), Zinc die cast (clamping bracket), Universal clamp (5322626), mounting hardware	BEF-KHS-N02	2051608
	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

	Brief description	Type	Part no.
	Plate N04 for universal clamp, steel, Zinc plated steel (sheet), Zinc die cast (clamping bracket), Universal clamp (5322626), mounting hardware	BEF-KHS-N04	2051610

Device protection (mechanical)

	Brief description	Type	Part no.
	Protective housing for universal clamp, Zinc plated steel (protective housing), Zinc die cast (clamping bracket), Universal clamp, mounting hardware	BEF-SG-W16	2096146

Mounting brackets and plates

	Brief description	Type	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
	Mounting bracket with articulated arm, steel, zinc coated, mounting hardware included	BEF-WN-MULTI2	2093945

Plug connectors and cables

	Brief description	Type	Part no.
	Head A: female connector, M12, 4-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 5 m	YF2A14-050VB3XLEAX	2096235

Terminal and alignment brackets

	Brief description	Type	Part no.
	Double clamp bracket for dovetail mounting, Aluminum (anodised), mounting hardware included	BEF-DKH-W12	2013947
	Clamping block for dovetail mounting, Aluminum (anodised), mounting hardware included	BEF-KH-W12	2013285

Others

	Brief description	Type	Part no.
	IO-Link V1.1 Class A port, USB2.0 port, optional external power supply 24V / 1A		On request

Sensor Integration Gateway

	Brief description	Type	Part no.
	• **Further functions:** Web server integrated, USB connection for easy configuration of the SIG200 Sensor Integration Gateway with SOPAS ET, the engineering tool from SICK, logic editor is available for easy configuration of logic functions • **Connection CONFIG:** 1 x M8, 4-pin female connector, USB 2.0 (USB-A) • **Logic editor:** yes • **Communication interface:** IO-Link, USB, Ethernet, PROFINET, REST API • **Product category:** IO-Link Master	SIG200-0A0412200	1089794
	• **Further functions:** Web server integrated, USB connection for easy configuration of the SIG200 Sensor Integration Gateway with SOPAS ET, the engineering tool from SICK, logic editor is available for easy configuration of logic functions • **Connection CONFIG:** 1 x M8, 4-pin female connector, USB 2.0 (USB-A) • **Logic editor:** yes • **Communication interface:** IO-Link, USB, Ethernet, REST API • **Product category:** IO-Link Master	SIG200-0A0G12200	1102605

SICK AT A GLANCE

SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. 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 a wide range of 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 complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

For us, that is "Sensor Intelligence."

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