Data sheet



WS016I-243ZZ1A0ZZZZLLZZZZZZZZ1

L25

SAFETY SINGLE-BEAM SENSORS

SICK
Sensor Intelligence.



Ordering information

Type	part no.
WS016I-243ZZ1A0ZZZZLLZZZZZZZZ1	2113103

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

Detailed technical data

Features

Smart Sensor	Diagnosis Efficient communication Smart Task
Light source	LED
Type of light	Near-infrared (NIR), invisible
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	SIL 1 (IEC 61508) [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 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)	✓
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

Electronics

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).

Mechanics

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 60068-2-27)

Other information

Light source	LED
Type of light	Near-infrared (NIR), invisible
Wave length	850 nm
Light spot diameter (distance)	110 mm (8 m)

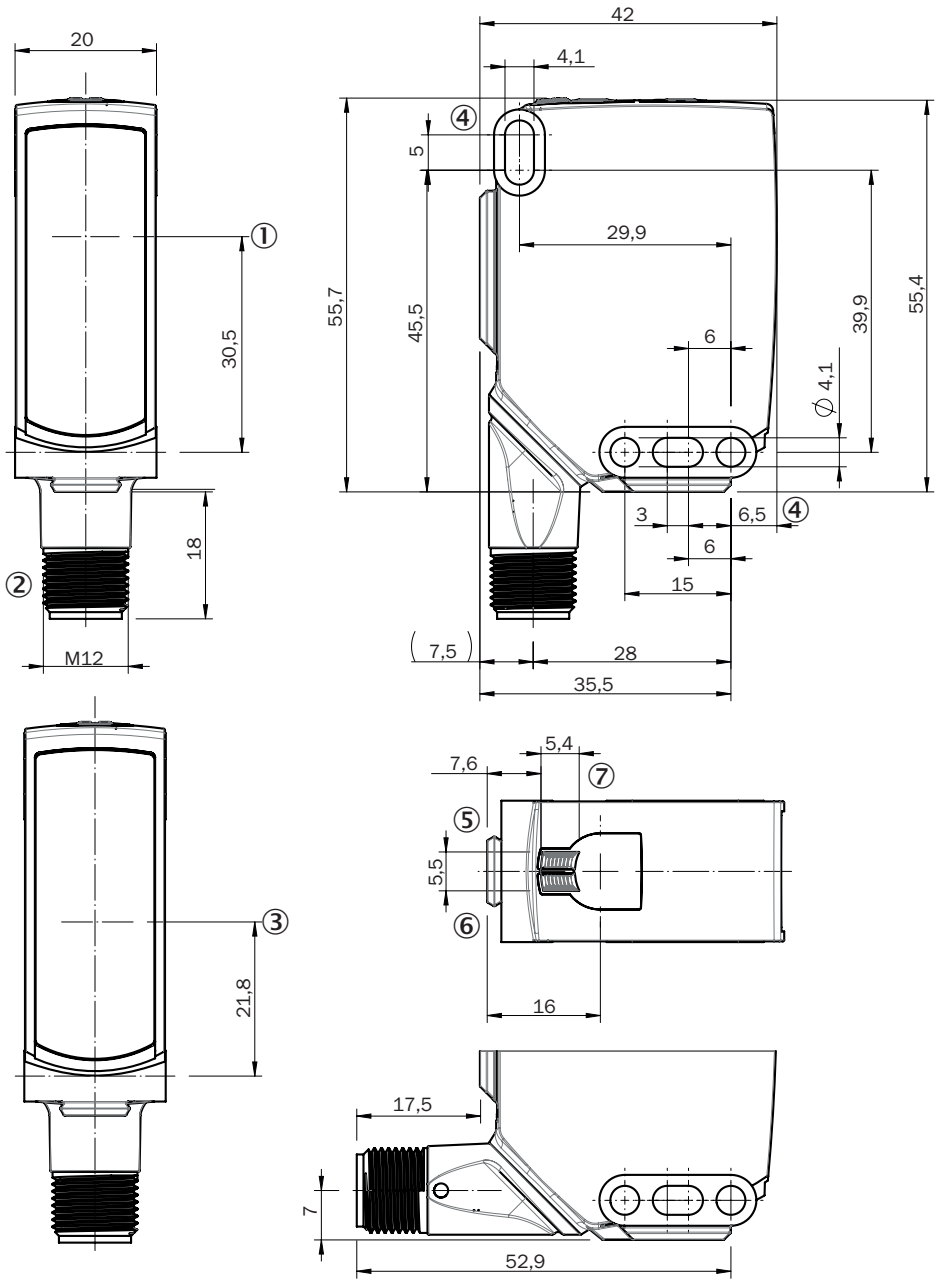
Certificates

EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China-RoHS	✓
ECOLAB certificate	✓
ULus approval	✓
cUL approval	✓
Photobiological safety (DIN EN 62471) certificate	✓
EC-Type-Examination approval	✓

Classifications

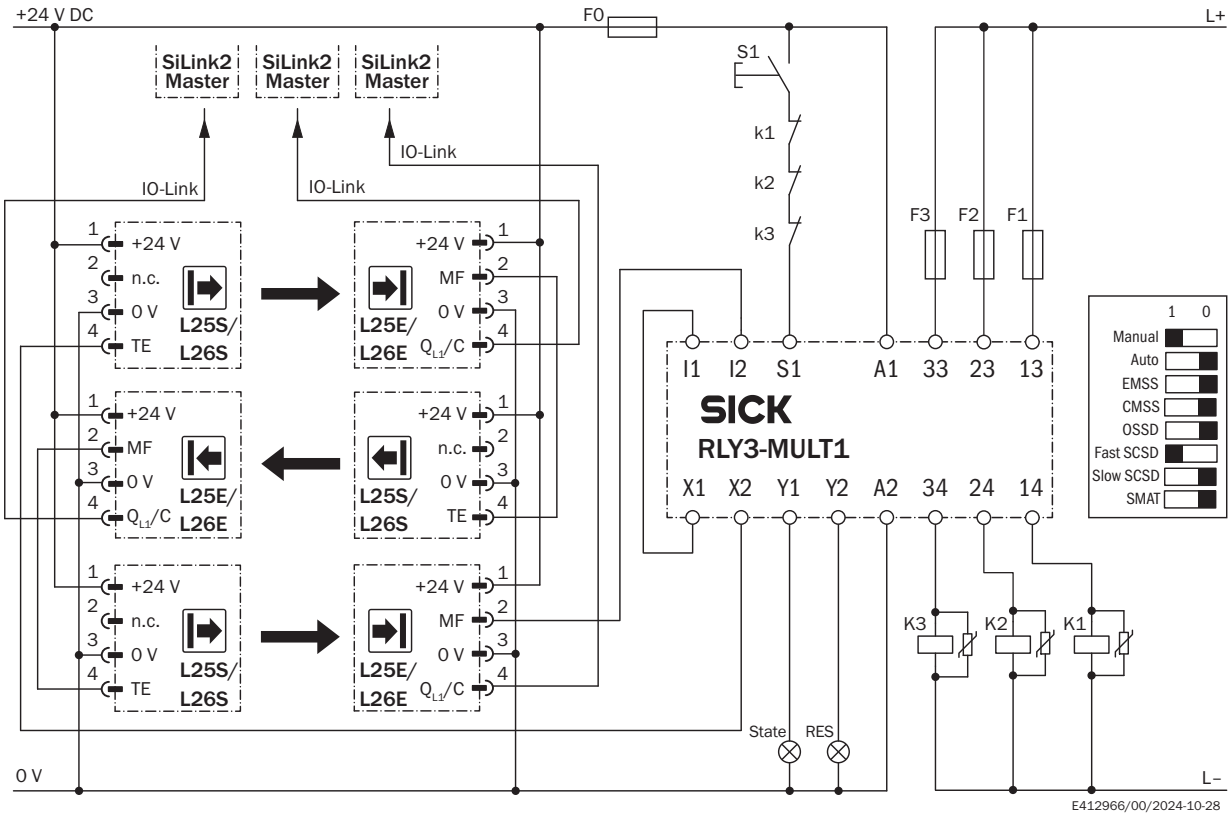
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ECLASS 6.0	27272701
ECLASS 6.2	27272701
ECLASS 7.0	27272701
ECLASS 8.0	27272701
ECLASS 8.1	27272701
ECLASS 9.0	27272701
ECLASS 10.0	27272701
ECLASS 11.0	27272701
ECLASS 12.0	27272701
ETIM 5.0	EC001831
ETIM 6.0	EC001831
ETIM 7.0	EC001831
ETIM 8.0	EC001831
UNSPSC 16.0901	46171620

Dimensional drawing L25



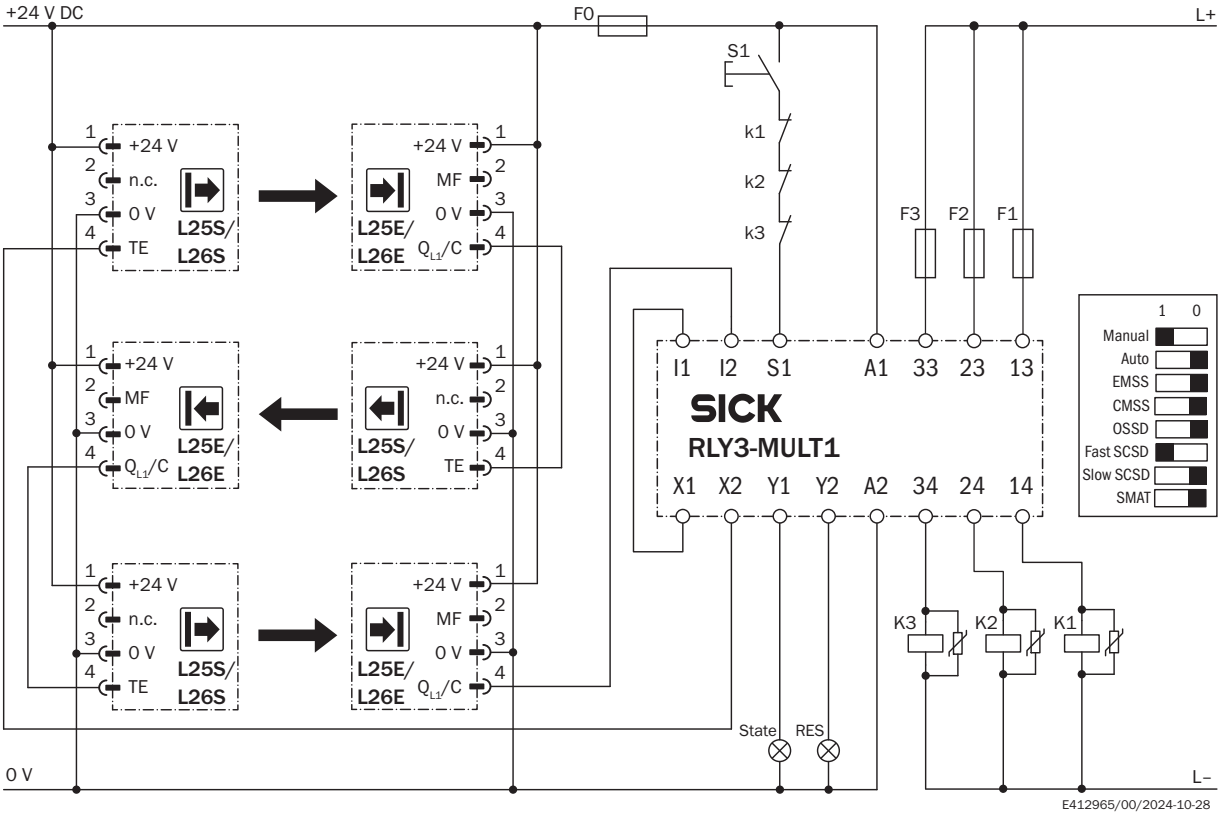
Dimensions in mm (inch)
① Center of optical axis, sender
② Connection
③ Center of optical axis, receiver
④ Mounting holes
⑤ Green operating LED: Supply voltage active
⑥ Yellow status LED: Light receiver indication
⑦ Alignment aid (BluePilot): Blue alignment quality LEDs

Connection diagram 3 x L25/L26 to RLY3-MULT1 and IO-Link, with restart interlock and external device monitoring



The requirements in the operating instructions of the devices used must be adhered to.

Connection diagram 3 x L25/L26 to RLY3-MULT1, with restart interlock and external device monitoring

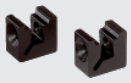


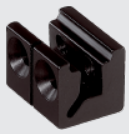
The requirements in the operating instructions of the devices used must be adhered to.

Recommended accessories

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

	Brief description	Type	part no.
connectors and cables			
	• **Connection type head A:** Female connector, M12, 4-pin, straight, A-coded • **Connection type head B:** Flying leads • **Signal type:** Sensor/actuator cable • **Cable:** 5 m, 4-wire, PVC • **Description:** Sensor/actuator cable, unshielded • **Application:** Zones with chemicals, Uncontaminated zones	YF2A14-050VB3XLEAX	2096235

	Brief description	Type	part no.
Mounting systems			
	• **Description:** Plate N02 for universal clamp bracket • **Material:** Steel, zinc diecast • **Details:** Zinc plated steel (sheet), Zinc die cast (clamping bracket) • **Items supplied:** Universal clamp (5322626), mounting hardware • **Usable for:** W4S-3 Glass, W10, W4SLG-3, W4S-3 Inox, W4S-3 Inox Glass, W9, W11-2, W12-3, W12-2 Laser, W12G, W12 Teflon, W16, W250, W250-2, PowerProx, W11G-2, TranspaTect, WTT12, UC12, P250, G6 Inox, W4S, W4SL-3V, W4SLG-3V, W4SL-3H	BEF-KHS-N02	2051608
	• **Description:** Plate N03 for universal clamp bracket, zinc coated • **Material:** Steel, zinc diecast • **Details:** Zinc plated steel (sheet), Zinc die cast (clamping bracket) • **Items supplied:** Universal clamp (5322626), mounting hardware • **Usable for:** UC12, W14-2, W18-2, W18-3, W11-2, W12-3, W12-2 Laser, W12G, W12 Teflon, W16, W24-2 Ex, PowerProx, W11G-2, TranspaTect, W18-3 Ex, W24-2, PL50A, PL80A, PL40A, P250	BEF-KHS-N03	2051609
	• **Description:** Clamping block for dovetail mounting • **Material:** Aluminum • **Details:** Aluminum (anodised) • **Items supplied:** Mounting hardware included	BEF-KH-W12	2013285

	Brief description	Type	part no.
	• **Suitable for:** W11-2, W12-3		
	• **Description:** Plate N04 for universal clamp, steel • **Material:** Steel, zinc diecast • **Details:** Zinc plated steel (sheet), Zinc die cast (clamping bracket) • **Items supplied:** Universal clamp (5322626), mounting hardware • **Usable for:** Dx50, UC12, W12G, W14-2, W18-2, W23, W280, W11-2, W12-3, W12-2 Laser, W12 Teflon, W16, W18-3, W23-2, W24-2, W24-2 Ex, W26, W27-2 Laser, W27-2, W27-3, W34, W260, W280-2, PowerProx, Reflex Array, W11G-2, W18-3 Ex, W27-3 Ex	BEF-KHS-N04	2051610
	• **Description:** Mounting bracket, large • **Material:** Stainless steel • **Details:** Stainless steel • **Items supplied:** Mounting hardware included • **Suitable for:** W11-2, W12-3, W16	BEF-WG-W12	2013942
	• **Description:** Mounting bracket, small • **Material:** Stainless steel • **Details:** Stainless steel • **Items supplied:** Mounting hardware included • **Suitable for:** W11-2, W12-3, W16	BEF-WK-W12	2012938
	• **Description:** Mounting bracket with articulated arm • **Material:** Steel • **Details:** Steel, zinc coated • **Items supplied:** Mounting hardware included • **Suitable for:** W16, W26, W11, W12, W23, W27, Dx50, W280, G10	BEF-WN-MULTI2	2093945
	• **Description:** Double clamp bracket for dovetail mounting • **Material:** Aluminum • **Details:** Aluminum (anodised) • **Items supplied:** Mounting hardware included • **Suitable for:** W11-2, W12-3	BEF-DKH-W12	2013947
device protection and care			
	• **Description:** Protective housing for universal clamp • **Material:** Steel, zinc diecast • **Items supplied:** Universal clamp, mounting hardware • **Suitable for:** W16	BEF-SG-W16	2096146

	Brief description	Type	part no.
network devices			
		IOLA2US-01101 (SiLink2 Master)	1061790
		SIG200-0A0G12200	1102605
		SIG200-0A0412200	1089794

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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