Online data sheet



deTec4 Core Set 30/1650

deTec4 Core

SAFETY LIGHT CURTAINS

SICK
Sensor Intelligence.



Ordering information

Type	Part no.
deTec4 Core Set 30/1650	1062918

Included in delivery: C4C-SEA16530A10000 (1), DOL-1205-G05MC (1), BEF-1SHABPKU4 (1), UE48-2OS2D2 (1)

Other models and accessories ➜ www.sick.com/deTec4_Core

Detailed technical data

Features

System part	Sender/receive pair with FlexFix bracket, connecting cable, and UE48-2OS safety relay
Resolution	30 mm
Protective field height	1,650 mm
Scanning range	
Minimum	0 m ... 10 m
Typical	0 m ... 12 m
Response time	13 ms
Synchronization	Optical synchronisation

Safety-related parameters

Type	Type 4 (IEC 61496)
Safety integrity level	SIL3 (IEC 61508) SILCL3 (EN 62061)
Category	Category 4 (EN ISO 13849)
Performance level	PL e (EN ISO 13849)
PFH_D (mean probability of a dangerous failure per hour)	$3,7 \times 10^{-9}$ (EN ISO 13849)
T_M (mission time)	20 years (EN ISO 13849)
Safe state in the event of a fault	At least one OSSD is in the OFF state.

Interfaces

System connection	
Connection type	Male connector M12, 5-pin
Permitted cable length	≤ 50 m
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 (EN 50178)
Supply voltage V_S	24 V DC (19.2 V DC ... 28.8 V DC)
Ripple	≤ 2.4 V_{pp} [1]
Power consumption typical	2.5 W / 1.25 W (depending on type)
Safety outputs (OSSD)	
Type of output	2 PNP semiconductors, short-circuit protected, cross-circuit monitored [2]
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] Within the limits of V_S.

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

Mechanical data

Housing cross-section (incl. system connection)	34 mm x 30.7 mm
Housing material	Aluminum extruded profile
Weight	1,520 g / 1,510 g (depending on type)

Ambient data

Enclosure rating	IP65 (EN 60529) IP67 (EN 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 (EN 60068-2-6)
Shock resistance	10 g, 16 ms (EN 60068-2-29)

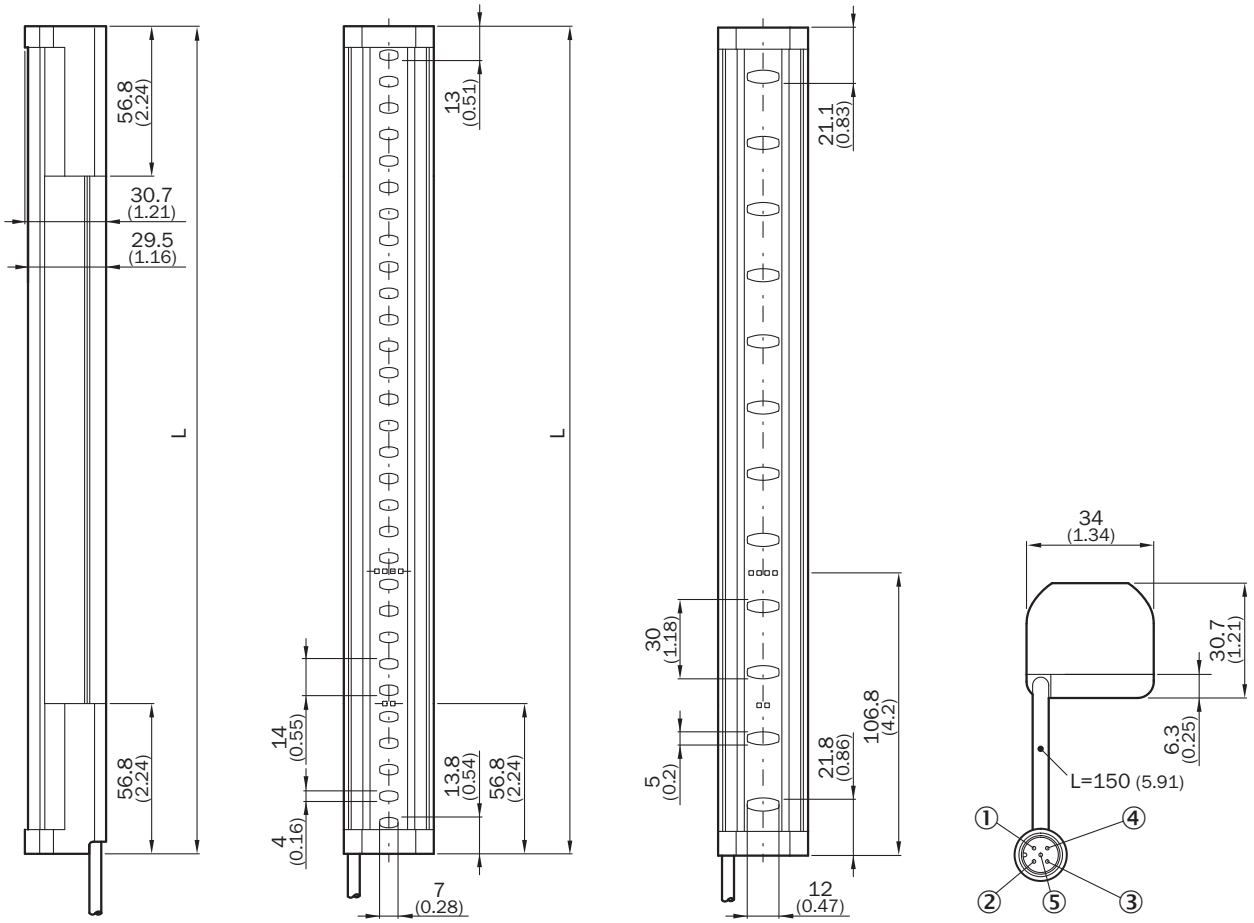
Other information

Wave length	850 nm

Classifications

ECl@ss 5.0	27272704
ECl@ss 5.1.4	27272704
ECl@ss 6.0	27272704
ECl@ss 6.2	27272704
ECl@ss 7.0	27272704
ECl@ss 8.0	27272704
ECl@ss 8.1	27272704
ECl@ss 9.0	27272704
ETIM 5.0	EC002549
ETIM 6.0	EC002549
UNSPSC 16.0901	46171620

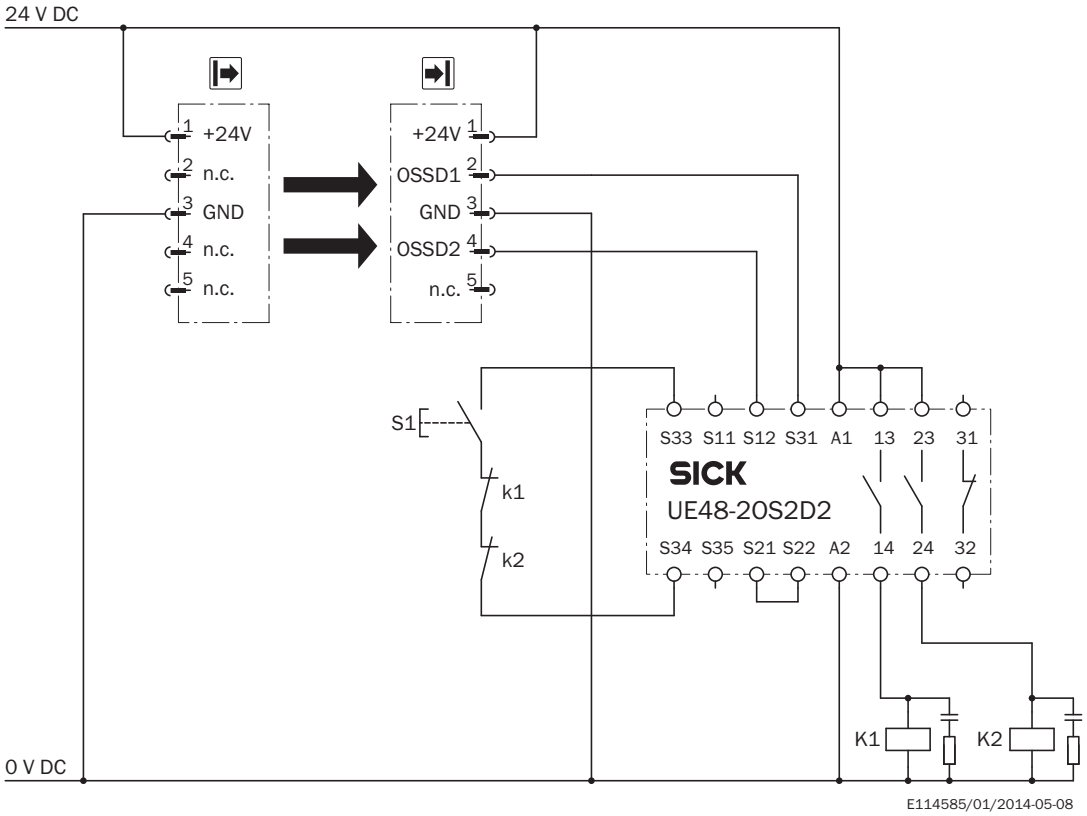
Dimensional drawing (Dimensions in mm (inch))



Protective field height	L
300 (11.81)	313 (12.32)
450 (17.72)	463 (18.23)
600 (23.62)	613 (24.13)
750 (29.53)	763 (30.04)
900 (35.43)	913 (35.94)
1,050 (41.34)	1,063 (41.85)
1,200 (47.24)	1,213 (47.76)
1,350 (53.15)	1,362 (53.62)
1,500 (59.06)	1,512 (59.53)
1,650 (64.96)	1,662 (65.43)
1,800 (70.87)	1,812 (71.34)
1,950 (76.77)	1,962 (77.24)
2,100 (82.68)	2,112 (83.15)

Connection diagram

deTec4 Core safety light curtain connected to UE48-2OS safety relay



Task

Connection of a deTec4 Core safety light curtain to UE48-2OS.
Operating mode: with restart interlock and external device monitoring.

Function

When the light path is clear, the OSSD1 and OSSD2 outputs are live. The system is ready to switch on if K1 and K2 are de-energized. By pressing S1 (button is pressed and released), the UE48-2OS is energized and its 13 - 14 and 23 - 24 contacts activate K1 and K2. On interruption of one of the light beams, the UE48-2OS is de-energized by the OSSD1 and OSSD2 outputs and K1 and K2 are deactivated.

Fault analysis

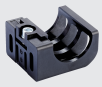
OSSD cross-circuits and short-circuits are detected and lead to the inhibited state (lock-out). The incorrect functioning of one of the K1 or K2 contactors will be detected and does not result in the loss of the shutdown function. Jamming of the S1 button will prevent the UE48-2OS from enabling.

Comments

[1] Output circuits: These contacts are to be connected to the controller such that, with the output circuit open, the dangerous state is disabled. For categories 4 and 3, the integration must be dual-channel (x/y paths). Single-channel integration in the control (z path) is only possible with a single-channel control and by taking the risk analysis into account.

Recommended accessories

Other models and accessories ➜ www.sick.com/deTec4_Core

	Brief description	Type	Part no.
Device protection (mechanical)			
	1 piece, self-adhesive protective film for the front screen (protects sensors from damage by flying sparks and welding beads)	Self-adhesive protective film	2069268
Terminal and alignment brackets			
	4 pieces, FlexFix bracket, plastic, can be aligned ± 15°, including screw M5, Plastic	BEF-1SHABPKU4	2066614
	2 pieces, QuickFix bracket, Plastic	BEF-3SHABPKU2	2066048
Adapters and distributors			
	CANopen, T-piece	DSC-1205T000025KM0	6030664
Plug connectors and cables			
	Head A: female connector, M12, 5-pin, straight Head B: cable Cable: Power, I/O, drag chain use, PUR, halogen-free, unshielded, 2 m	DOL-1205-G02MC	6025906
	Head A: female connector, M12, 5-pin, straight Head B: cable Cable: drag chain use, PUR, halogen-free, unshielded, 5 m	DOL-1205-G05MC	6025907
	Head A: female connector, M12, 5-pin, straight Head B: cable Cable: drag chain use, PUR, halogen-free, unshielded, 10 m	DOL-1205-G10MC	6025908
	Head A: female connector, M12, 5-pin, straight Head B: cable Cable: drag chain use, PUR, halogen-free, unshielded, 20 m	DOL-1205-G20MC	6050247
	Head A: female connector, M12, 5-pin, straight Head B: cable Cable: drag chain use, PUR, halogen-free, unshielded, 30 m	DOL-1205-G30MC	6050248
	Head A: female connector, M12, 5-pin, angled Head B: cable Cable: Power, I/O, drag chain use, PUR, halogen-free, unshielded, 2 m	DOL-1205-W02MC	6025909
	Head A: female connector, M12, 5-pin, angled Head B: cable Cable: drag chain use, PUR, halogen-free, unshielded, 5 m	DOL-1205-W05MC	6025910
	Head A: female connector, M12, 5-pin, angled Head B: cable Cable: drag chain use, PUR, halogen-free, unshielded, 10 m	DOL-1205-W10MC	6025911
	Head A: female connector, M12, 5-pin, straight, A-coding Head B: male connector, M12, 5-pin, straight, A-coding Cable: digital I/Os, drag chain use, PUR, halogen-free, unshielded, 5 m	DSL-1205-G05MC	6029282
	Head A: female connector, M12, 5-pin, straight, A-coding Head B: male connector, M12, 5-pin, straight, A-coding Cable: digital I/Os, drag chain use, PUR, halogen-free, unshielded, 10 m	DSL-1205-G10MC	6038954
	Head A: female connector, M12, 5-pin, straight, A-coding Head B: male connector, M12, 5-pin, straight, A-coding Cable: digital I/Os, drag chain use, PUR, halogen-free, unshielded, 15 m	DSL-1205-G15MC	6038956

	Brief description	Type	Part no.
Alignment aids			
	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

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.”

WORLDWIDE PRESENCE:

Contacts and other locations –www.sick.com