Product data sheet

EXE-12D6803B020

deTec

SAFETY LIGHT CURTAINS

SICK
Sensor Intelligence.

Illustration may differ

Ordering information

deTec4 Core Ex

Resolution	Scanning range	Protective field height	System part	Type	Part no.
30 mm	10 m	1,500 mm	Receiver	EXE-12D6803B020	1068415

Completely pre-installed including connecting cable, 30 m, flying lead, 5-wire

Other models and accessories → www.sick.com/deTec

Detailed technical data

Features

Application	Explosive areas
Ex-approvals	ATEX for gas: II 2 G Ex db IIB T6 ATEX for dust: II 2 D Ex tb IIIC T56 °C Db IP6X NFPA 70/NEC 500 Class I, Div. 1, Groups C and D NFPA 70/NEC 500 Class II, Div. 1, Groups E, F and G NFPA 70/NEC 500 Class III, Div. 1
System part	Receiver
Compatible sender	1068416
Resolution	30 mm
Scanning range	10 m
Protective field height	1,500 mm
Response time	13 ms
Synchronization	Optical synchronisation
Items supplied	Receiver in explosion-proof enclosure with connecting cable, 30 m 2 handles including screws Test rod with diameter corresponding to the resolution of the safety light curtain Operating instructions on CD-ROM

Safety-related parameters

Type	Type 4 (IEC 61496-1)
Safety integrity level	SIL3 (IEC 61508) SILCL3 (IEC 62061)
Category	Category 4 (ISO 13849-1)
Performance level	PL e (ISO 13849-1)
PFH_D (mean probability of a dangerous failure per hour)	3.7×10^{-9}

T_M (mission time)	20 years (ISO 13849-1)
Safe state in the event of a fault	At least one OSSD is in the OFF state.

Functions

Protective operation	✓
Automatic calibration of the protective field width	✓

Interfaces

System connection	Connecting cable, 30 m, flying lead, 5-wire
Display elements	LEDs
Fieldbus, industrial network	
Integration via Flexi Soft safety controller	CANopen [1)] DeviceNet™ EtherCAT® EtherNet/IP™ Modbus TCP PROFIBUS DP PROFINET

[1)] For additional information on Flexi Soft -> www.sick.com/Flexi_Soft.

Electrical data

Protection class	III (IEC 61140)
Supply voltage V_S	24 V DC (19.2 V ... 28.8 V)
Ripple	≤ 10 %
Power consumption typical	2.4 W (DC)
Output signal switching devices (OSSDs)	
Type of output	2 PNP semiconductors, short-circuit protected, cross-circuit monitored [1)]
ON state, switching voltage HIGH	24 V DC (V_S – 2.25 V DC ... V_S)
OFF state, switching voltage LOW	≤ 2 V DC
Current-carrying capacity per OSSD	≤ 300 mA

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

Mechanical data

Dimensions	See dimensional drawing
Housing cross-section	161.8 mm x 142.1 mm
Housing material	Aluminum cast/AlSi7Mg0.6

Ambient data

Enclosure rating	IP65 (IEC 60529) IP66 (IEC 60529)
Ambient operating temperature	–20 °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)

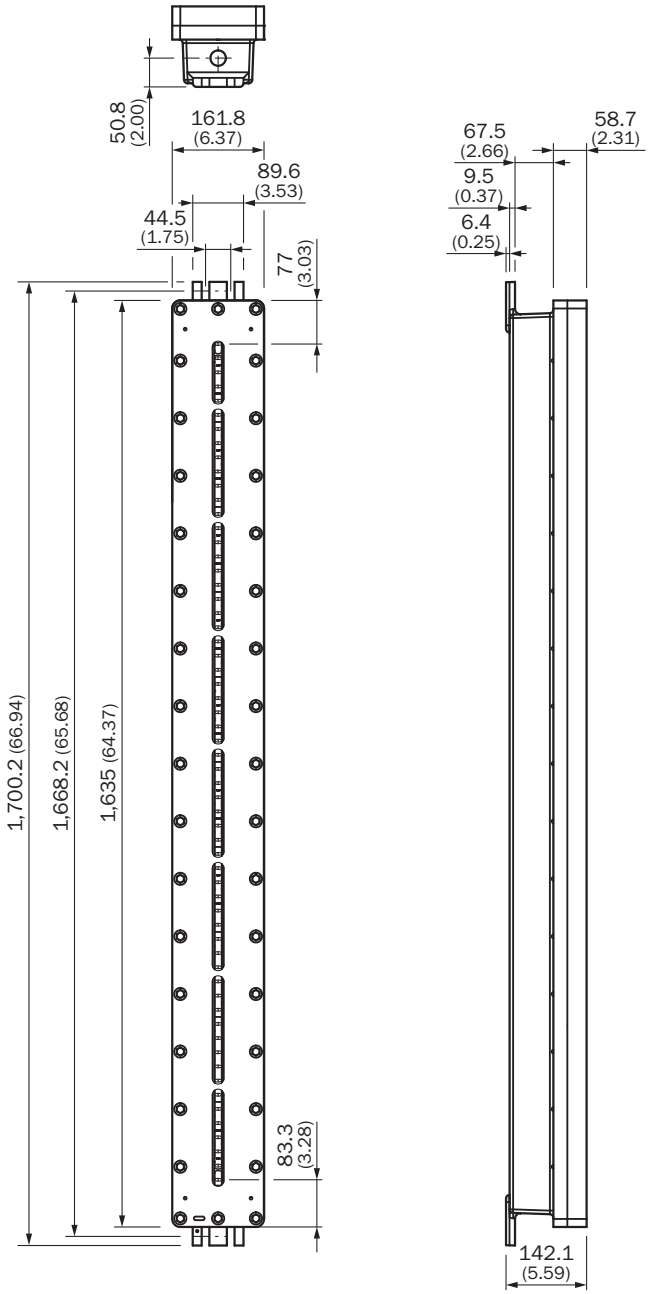
Classifications

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
ECl@ss 10.0	27272704
ECl@ss 11.0	27272704
ETIM 5.0	EC002549
ETIM 6.0	EC002549
ETIM 7.0	EC002549
UNSPSC 16.0901	46171620

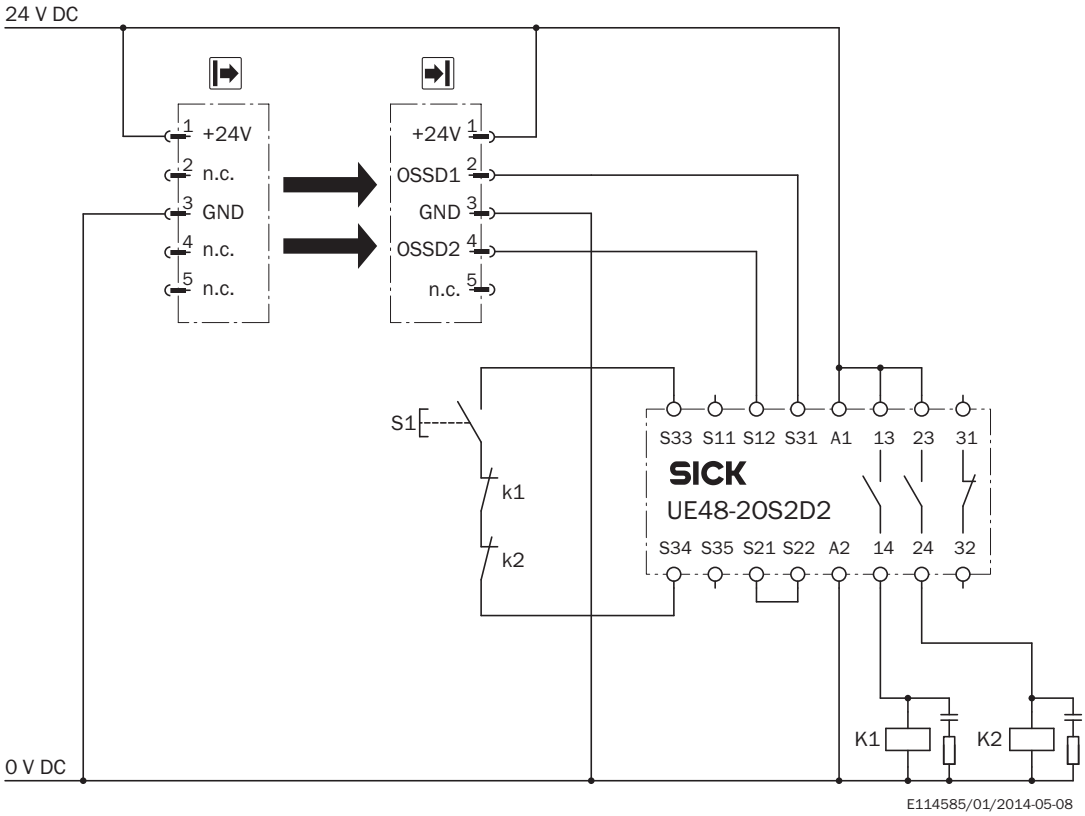
Dimensional drawing (Dimensions in mm (inch))

deTec4 Core Ex, 1,500 mm



Connection diagram

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



Task

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

Mode of operation

When the light path is clear, the OSSD1 and OSSD2 outputs carry voltage. When K1 and K2 are in a fault-free de-energized position, the system can be switched on and waits for an input signal/switch-on signal. The UE48-2OS is switched on by pressing and then releasing the S1 pushbutton. The outputs (contacts 13 - 14 and 23 - 24) switch the K1 and K2 contactors on. When one or more light beams are interrupted, the OSSD1 and OSSD2 outputs switch off the UE48-2OS. Contactors K1 and K2 are switched off.

Fault analysis

Cross-circuits and short-circuits of the OSSDs are recognized and lead to the locking state (lock-out). A malfunction with one of the K1 or K2 contactors is detected. The shut-down function is retained. In the event of manipulation (e.g., jamming) of the S1 pushbutton, the UE48-2OS will not re-enable the output current circuits.

Comments

[1] Output circuits: These contacts must be incorporated into the control such that the dangerous state is brought to an end if the output circuit is open. For categories 4 and 3, they must be incorporated on two channels (x, y paths). Single-channel incorporation into the control (z path) is only possible with a single-channel control and taking the risk analysis into account.

Recommended accessories

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

	Brief description	Type	Part no.
Terminal and alignment brackets			
	2 pieces, alignment bracket for explosion-proof enclosure	BEF-1SHABRST2	2072525
Test and monitoring tools			
	30 mm diameter	Test rod 30 mm	2022602
Plug connectors and cables			
	Cable gland for the European market	Cable gland	5329001

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