

SICK Sensor Intelligence.

SAFETY LIGHT CURTAINS

SAFETY LIGHT CURTAINS



Ordering information

deTec4 Core IP69K

Note	Resolution	Scanning range	Protective field height	System part	Туре	Part no.
Completely pre-installed including connecting cable, 15 m, flying lead, 5-wire, com- pletely pre- installed including connect- ing cable, 15 m, flying lead, 5-wire	14 mm	8.5 m	1,500 mm	Receiver E	C4C- B15010A1000	1219547

Completely pre-installed including connecting cable, 15 m, flying lead, 5-wire

Other models and accessories \rightarrow www.sick.com/deTec



Detailed technical data

Features

Sub product family	deTec4 Core IP69K
Application	Areas with special hygiene requirements
System part	Receiver
Compatible sender	1219546
Resolution	14 mm
Scanning range	8.5 m
Protective field height	1,500 mm
Response time	18 ms
No blind zones	Yes
Synchronization	Optical synchronisation
Items supplied	Receiver in IP69K protective housing with connecting cable, 15 m Test rod with diameter corresponding to the resolution of the safety light curtain Safety instruction Mounting instructions Operating instructions for download

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Safety-related parameters

Protective operation✓Automatic calibration of the protective field width✓Interfaces✓System connectionConnecting cable, 15 m, flying leads, 5-wireLength of cable Cable diamete15 mCable diametei Cable materiaPUR, halogen-freeLongutor cross settion0.34 mm²Display elementsLEDs	Safety-related parameters		
Category 4 (S0 13849-1)Performance levelPe (SO 13849-1)Phymean probability of a dangerous fait3,7 x 10 ³ Two per hour)20 years (SO 13849-1)Attame of a faut20 years (SO 13849-1)Safe state in the event of a faut20 years (SO 13849-1)FunctionsX least on oSSD is in the OFF state.Functions-Protective operation-Automatic calibration of the protective field-Muthatic calibration of the protective field-System connectionConnecting cable, 15 m, flying leads, 5-wireCable diameter5 mCable diameter-Onductor cross settic-Outputs field cameter-Protection class-Diplay elements-Electrical data-Supply voltage Vs-Automo-Automo-Conductor cross settic-Order consumption typical-Automo-Conductor cons settic-Supply voltage Vs-Automo-Automo-Conductor cons settic-Conductor cons settic-Automo-Conductor cons settic-Automo-Conductor cons settic-Automo-Conductor cons settic-Automo-Conductor cons settic-Automo-Conductor cons settic-Automo- </th <th>Туре</th> <th>Type 4 (IEC 61496-1)</th>	Туре	Type 4 (IEC 61496-1)	
Performance level P.e. (SO 13849.1) Preformance level P.e. (SO 13849.1) Streper hour) 20 years (SO 13849.1) Streper hour) 20 years (SO 13849.1) Streper hour) 4 least one OSSD is in the OFF state. Functions - Functions - Protective operation - Automatic calibration of the protective field - Virth - System connection Connecting cable, 15 m, flying leads, 5-wire Length of cable 5 m Cable diameter PRI, halogen-free Conductor cross section 0.34 mm ² Display elements Leggth of 24 V DC (19.2 V 28.8 V) Ripple 10 % Supply voltage Vs 8.44 V DC) Prover consumption typical 8.48 W (DC) Output signal switching devices (OSSD) Pype endorus Type of corus 2 PyP semiconductors, short-circuit protected, cross-circuit monitored ¹¹	Safety integrity level	SIL 3 (IEC 61508)	
PFHp (mean probability of a dangeous fail rependeum)37 x 10°Tw (mission time)20 years (ISO 13849-1)Sale state in the event of a faultA least one OSSD is in the OFF state.Functions-Protective operation4Automatic calibration of the protective fueld with-System connection-Length of cale Cable diametaSmmCable diameta Cable diameta5 mSupply elements-Display elements-Fortection class0.34 mm²Electrical data-Furfection class10 (EC 61140)Supply votage Vs210 %Ripple10 %Automatic calibration of trape Cable diameta-Protection class10 %Supply votage Vs340 (DC)Cable diameta Cable diameta-Supply votage Vs-Protection class-Supply votage Vs-Automatic calibration of trape of comply Cable diametaAutomatic calibration of trape of comply Cable diameta-Supply votage Vs-Supply votage Vs-Ripple-Automatic calibration of trape of comply Calibration of trape of comply Calibration of calibration of	Category	Category 4 (ISO 13849-1)	
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Functions Functions Functions Forective operation function functi	T _M (mission time)	20 years (ISO 13849-1)	
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Length of cable15 mCable diametei5 mmCable materialPUR, halogen-freeConductor cross section0.34 mm²Display elementsLEDsElectrical data11 (EC 61140)Supply voltage Vs10 (EC 61140)Ripple24 VDC (19.2 V 28.8 V)Power consumption typical3.84 W(DC)Output signal switching devices (OSSB)21 NPS emiconductors, short-circuit protected, cross-circuit monitored ¹)Yope on typical21 NPS emiconductors, short-circuit protected, cross-circuit monitored ¹)Otypical switching devices (OSSB)21 NPS emiconductors, short-circuit protected, cross-circuit monitored ¹)Yope on typical21 NPS emiconductors, short-circuit protected, cross-circuit monitored ¹)Yope on typical21 NPS emiconductors, short-circuit protected, cross-circuit monitored ¹)Yope on typical21 NPS emiconductors, Short-circuit protected, cross-circuit monitored ¹)Yope on typical21 NPS emiconductors, Short-circuit protected, cross-circuit monitored ¹)Yope on typical21 NPS emiconductors, Short-circuit protected, cross-circuit monitored ¹)Yope on typical21 NPS emiconductors, Short-circuit protected, cross-circuit monitored ¹)Yope on typical21 NPS emiconductors, Short-circuit protected, cross-circuit monitored ¹)Yope on typical21 NPS emiconductors, Short-circuit protected, cross-circuit monitored ¹)Yope on typical21 NPS emiconductors, Short-circuit protected, cross-circuit monitored ¹)	Interfaces		
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Cable mathemPUR, halogen-freeConductor corsos section0.34 mm²Display elementsEDsElectrical dataIII (EC 61140)Supply voltage Vs0.40 C(9.2 M.2 M.3 M.2	Length of cable	15 m	
Conductor cross section 0.34 mm ² Display elements EDs Electrical data II (EC 61140) Supply voltage Vs 44 VD C (19.2 V 28.8 V) Ripple 510 % Power consumption typical 510 % Voltage Vs 510 % Output signal switching devices (OSSDs) 510 % Type of of ution 2 NPN semiconductor sponsor. s	Cable diameter	5 mm	
Display elementsEDSBisElectrical dataProtection classIII (E 0 1140)supply oltage Vs4 V D C 19.2 V 28.8 V)Ripple5 10 %Power consumption typical6 10 %Output signal switching devices (OSDS)- NPS ensiconductors consumption typicatImage Not Supply Consumption typicat- NPS ensiconductors consumption typicatOn State, switching words- NPS ensiconductors (SOSDS)Image Not Supply Consumption typicat- NPS ensiconductors (SOSDS)Image Not Supply Consumption typication ty	Cable material	PUR, halogen-free	
Financial data Financial data Protection class III (IEC 61140) Supply voltage Vs 24 V DC (19.2 V 28.8 V) Ripple ≤ 10 % Power consumption typical 384 W (DC) Output signal switching devices (OSSDs) 2 PNP semiconductors, short-circuit protected, cross-circuit monitored ¹) ON state, switching voltage High 24 V DC (Vs - 2.25 V DC Vs)	Conductor cross section	0.34 mm ²	
Protection classIII (IEC 61140)Supply voltage Vs24 V DC (19.2 V 28.8 V)Ripple<10 %	Display elements	LEDs	
Supply voltage Vs 44 VDC (19.2 V 28.8 V) Ripple ≤ 10 % Power consumption typical 3.84 W (DC) Output signal switching devices (OSSDs)	Electrical data		
Ripple ≤ 10 % Power consumption typical 3.84 W (DC) Output signal switching devices (OSSDs)	Protection class	III (IEC 61140)	
Power consumption typical 3.84 W (DC) Output signal switching devices (OSSDs)	Supply voltage V _S	24 V DC (19.2 V 28.8 V)	
Output signal switching devices (OSSDs) Type of output ON state, switching voltage HIGH 24 V DC (V _S - 2.25 V DC V _S)	Ripple	≤ 10 %	
Type of output2 PNP semiconductors, short-circuit protected, cross-circuit monitored 1)ON state, switching voltage HIGH24 V DC (V _S - 2.25 V DC V _S)	Power consumption typical	3.84 W (DC)	
ON state, switching voltage HIGH 24 V DC ($V_S - 2.25$ V DC V_S)	Output signal switching devices (OSSDs)		
	Type of output	2 PNP semiconductors, short-circuit protected, cross-circuit monitored $^{1)}$	
OFF state, switching voltage LOW $\leq 2 \text{ V DC}$	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 \leq 300 mA	Current-carrying capacity per OSSD	≤ 300 mA	

 $^{\rm (1)}$ Applies to the voltage range between –30 V and +30 V.

Mechanical data

Dimensions	See dimensional drawing
Material	
Protective housing	РММА
End caps	Stainless steel 1.4404
Cable glands	Stainless steel 1.4404 including silicone seal
Compensating element (membrane)	PA 6
Ambient data	

Enclosure rating	IP65 (IEC 60529)
	IP66 (IEC 60529)
	IP67 (IEC 60529)

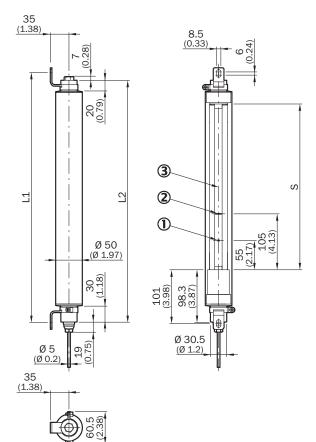
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	IP69K (ISO 20653)
Ambient operating temperature	-30 °C +55 °C
Storage temperature	-30 °C +70 °C
Air humidity	15 % 95 %, Non-condensing
Vibration resistance	5 g, 10 Hz 55 Hz (IEC 60068-2-6)
Shock resistance	10 g, 16 ms (IEC 60068-2-27)

Classifications

ECLASS 5.0	27272704
ECLASS 5.1.4	27272704
ECLASS 6.0	27272704
ECLASS 6.2	27272704
ECLASS 7.0	27272704
ECLASS 8.0	27272704
ECLASS 8.1	27272704
ECLASS 9.0	27272704
ECLASS 10.0	27272704
ECLASS 11.0	27272704
ECLASS 12.0	27272704
ETIM 5.0	EC002549
ETIM 6.0	EC002549
ETIM 7.0	EC002549
ETIM 8.0	EC002549
UNSPSC 16.0901	46171620

Dimensional drawing (Dimensions in mm (inch))



① Operating indicator

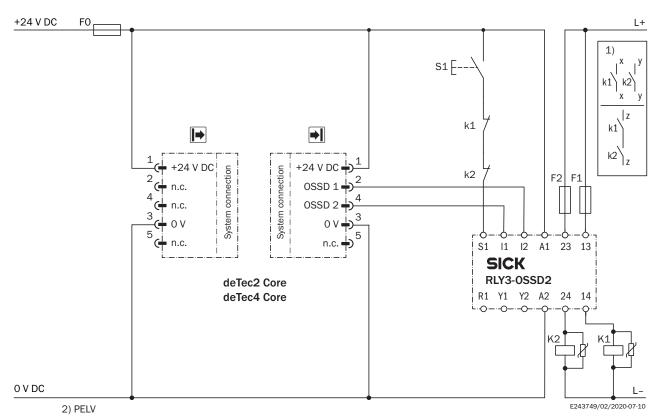
2 Alignment indicator3 Optical axis

	S	L1	L2
300	311	469	454
450	461	619	604
600	611	769	754
750	761	919	904
900	911	1,069	1,054
1,050	1,061	1,219	1,204
1,200	1,211	1,369	1,354
1,350	1,361	1,519	1,504
1,500	1,511	1,669	1,654
1,650	1,661	1,819	1,804
1,800	1,811	1,969	1,954

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Connection diagram

DeTec4 Core IP69K safety light curtain to RLY3-OSSD2 safety relay



Task

Connection of a deTec4 Core IP69K or deTec2 Core IP69K safety light curtain to RLY3-OSSD2.

Operating mode: with restart interlock and external device monitoring.

Function

When the protective field is clear, the OSSD1 and OSSD2 outputs carry voltage. The system can be switched on when K1 and K2 are in a fault-free de-energized position. The RLY3-OSSD2 is switched on by pressing S1 (pushbutton is pressed and released). The outputs (contacts 13-14 and 23-24) switch the K1 and K2 contactors on. When the protective field is interrupted, the OSSD1 and OSSD2 outputs switch the RLY3-OSSD2 off. Contactors K1 and K2 are switched off.

Fault analysis

Cross-circuits and short-circuits of the OSSDs are recognized and lead to the locking status (lock-out). A malfunction with one of the K1 or K2 contactors is detected. The switch-off function is retained. In the event of manipulation (e.g., jamming) of the S1 pushbutton, the RLY3-OSSD2 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 dual-channels (x, y paths). Type 2 devices are suitable for use up to PL c. Single-channel incorporation into the control (z path) is only possible with a singlechannel control and taking the risk analysis into account.

²⁾ SELV/PELV safety extra-low voltage.

	Col- or-cod- ed con- nect- ing cable	Sender	Receiver
1	Brown	+24 V DC	+24 V DC
2	White	Reserved	OSSD 1
3	Blue	0 V DC	0 V DC

	Col- or-cod- ed con- nect- ing cable	Sender	Receiver
4	Black	Reserved	OSSD 2
5	Gray	-	-

Recommended accessories

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

	Brief description	Туре	Part no.			
Terminal and	Terminal and alignment brackets					
	2 pieces, Stainless steel support bracket, stainless steel 1.4350	BEF-2AAAADES2	2026849			
	4 pieces, Stainless steel bracket, rotatable, stainless steel 1.4350, stainless steel 1.4301	BEF-2SMMEAES4	2023708			
e de la companya de la	2 pieces, Reinforced stainless steel bracket, rotatable, stainless steel 1.4350, stainless steel 1.4301 $$	BEF-2SMMVAES2	2048373			
Ø	$4\ \text{pieces},$ Reinforced stainless steel bracket, rotatable, stainless steel 1.4350, stainless steel 1.4301	BEF-2SMMVAES4	2026850			
Safety switch	ing amplifier					
	 Applications: Evaluation unit Compatible sensor types: Safety sensors with OSSDs Connection type: Front connector with spring terminals Restart interlock: yes External device monitoring (EDM): Integrated Outputs: 2 enabling current paths (safe), 2 application diagnostic outputs (not safe), 1 test pulse output (not safe) Housing width: 18 mm 	RLY3-OSSD200	1085344			
	 Applications: Evaluation unit Compatible sensor types: Safety sensors with OSSDs Connection type: Front connector with spring terminals Restart interlock: yes External device monitoring (EDM): Integrated Outputs: 3 enabling current paths (safe), 2 application diagnostic outputs (not safe), 1 test pulse output (not safe) Housing width: 18 mm 	RLY3-OSSD300	1099969			

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



Online data sheet

