



C40E-S146

C4000 Fusion ATEX II 3G/3D

SAFETY LIGHT CURTAINS

SICK
Sensor Intelligence.



Ordering information

Resolution	Scanning range	Protective field height	System part	Type	Part no.
20 mm	21 m	900 mm	Receiver	C40E-S146	1081932

Other models and accessories → www.sick.com/C4000_Fusion_ATEX_II_3G_3D

Illustration may differ



Detailed technical data

Features

Application	Explosive areas
Ex-approvals	ATEX for gas: II 3G Ex nA op is IIC T4 Gc X
System part	Receiver
Resolution	20 mm
Protective field height	900 mm
Scanning range	21 m
Synchronization	Optical synchronisation

Safety-related parameters

Type	Type 4 (IEC 61496-1)
Safety integrity level	SIL 3 (IEC 61508)
Category	Category 4 (EN ISO 13849)
Performance level	PL e (EN ISO 13849)
PFH_D (mean probability of a dangerous failure per hour)	15 x 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.

Functions

	Functions	Delivery status
Protective operation	✓	
Restart interlock	✓	Internal
External device monitoring (EDM)	✓	Deactivated
Beam coding	✓	Code 1
Configurable scanning range	✓	

	Functions	Delivery status
Reduced resolution	✓	Deactivated
Fixed blanking	✓	Deactivated
Floating blanking	✓	Deactivated
Dynamic blanking for object pattern recognition	✓	
Self-teaching dynamic blanking for goods detection	✓	
Self-teaching dynamic blanking for pallet detection	✓	
Multiple sampling	✓	2x evaluation
Direction monitoring	✓	
Virtual photoelectric switches	✓	
Sensor gap monitoring	✓	
Sequence monitoring	✓	
Object entry monitoring	✓	
Detection of geometrically even objects	✓	
Safe SICK device communication via EFI	✓	

Functions in combination with UE402

Bypass	✓
Operating mode switching	✓

Interfaces

System connection	Hirschmann male connector M26, 12-pin
Direction of cable connection	Straight
Conductor cross section	0.75 mm ²
Permitted cable length	50 m ¹⁾
Configuration connection	Female connector M8, 4-pin
Configuration method	PC with CDS (Configuration and Diagnostic Software)
Display elements	7-segment display

¹⁾ Depending on load, power supply and wire cross-section. The technical specifications must be observed.

Electrical data

Protection class	III (IEC 61140)
Supply voltage V_S	24 V DC (19.2 V ... 28.8 V) ¹⁾
Residual ripple	≤ 10 % ²⁾
Output signal switching devices (OSSDs)	
Type of output	2 PNP semiconductors, short-circuit protected, cross-circuit monitored ³⁾
ON state, switching voltage HIGH	24 V DC ($V_S - 2.25$ V DC ... V_S)
OFF state, switching voltage LOW	≤ 2 V DC

¹⁾ The external voltage supply must be capable of buffering brief mains voltage failures of 20 ms as specified in EN 60204-1. Suitable power supplies are available as accessories from SICK.

²⁾ Within the limits of V_S .

³⁾ Applies to the voltage range between -30 V and +30 V.

Current-carrying capacity per OSSD	≤ 500 mA
Application diagnostic output (ADO)	
Type of output	PNP semiconductor, short-circuit protected ³⁾
Output voltage HIGH (active)	24 V DC (15 V DC ... 28.8 V DC)
Output voltage LOW (deactivated)	High resistance
Output current HIGH (active)	≤ 100 mA

¹⁾ The external voltage supply must be capable of buffering brief mains voltage failures of 20 ms as specified in EN 60204-1. Suitable power supplies are available as accessories from SICK.

²⁾ Within the limits of V_S .

³⁾ Applies to the voltage range between -30 V and +30 V.

Mechanical data

Dimensions	See dimensional drawing
Housing cross-section	48 mm x 40 mm
Housing material	Aluminum extruded profile

Ambient data

Enclosure rating	IP65 (EN 60529)
Ambient operating temperature	0 °C ... +55 °C
Storage temperature	-25 °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 60068-2-27)

Other information

Wave length	850 nm
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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))



Illustration sender (receiver mirror image)

	L1	L2	A
300	381	427	224
450	532	578	374
600	682	728	524
750	833	879	674
900	984	1.030	824
1.050	1.134	1.180	974
1.200	1.283	1.329	1.124
1.350	1.435	1.481	1.274
1.500	1.586	1.632	1.424
1.650	1.736	1.782	1.574
1.800	1.887	1.933	1.724



Recommended accessories

Other models and accessories → www.sick.com/C4000_Fusion_ATEX_II_3G_3D

	Brief description	Type	Part no.
EFI gateways			
	PROFINET PROFIsafe	UE4740-22H0000	1046978
Alignment aids			
	Laser alignment aid for various sensors, laser class 2 (IEC 60825). Do not look into the beam!, 19 mm x 67.3 mm x 66.9 mm	AR60	1015741
	Adapter AR60 for housing cross-section 48 mm x 40 mm	AR60 adapter, 48x40	4032461
	Adapter AR60 for housing cross-section 48 mm x 40 mm in PU3H device column	AR60 adapter, 48x40, PU3H	4056731
Optics cloths			
	Cloth for cleaning optical surfaces	Lens cloth	4003353
Test and monitoring tools			
	20 mm diameter, 250 mm length	Test rod 20 mm	2022600
Mounting brackets and plates			
	4 pieces, Mounting kit 1, mounting bracket, rigid, L-shaped, including fixing screws and washers	BEF-3WNGBAST4	7021352
	4 pieces, Mounting kit 11, exchangeable retainer, suitable for replacement of FGS	BEF-3WNGBCST4	2021646
Other mounting accessories			
	4 pieces, Sliding nut set, M5, 4x, Included in delivery	Sliding nuts	2017550
	6 pieces, suitable for PNS75 and PNS125	Sliding nuts for deflector mirror	2030600
	2 pieces, Floor stands for the horizontal mounting of the safety light curtains C4000 Fusion, Entry/Exit, Palletizer, as well as the multi-beam safety light curtain M4000 Area, for mounting heights of between 70 mm and 780 mm., Includes mounting bracket	BEF-3HHOCAST2	2041661
Plug connectors and cables			
	<ul style="list-style-type: none"> • Connection type head A: Female connector, M26, 12-pin, straight • Description: Unshielded • Connection systems: Crimp contacts • Permitted cross-section: 0.5 mm² ... 1.5 mm² • Note: 12 crimping contacts enclosed 	DOS-0612G000GA3KM0	6020757

	Brief description	Type	Part no.
	<ul style="list-style-type: none"> • Connection type head A: Female connector, M26, 12-pin, angled • Description: Unshielded • Connection systems: Crimp contacts • Permitted cross-section: 0.5 mm² ... 1.5 mm² • Note: 12 crimping contacts enclosed 	DOS-0612W000GA3KM0	6020758
	<ul style="list-style-type: none"> • Connection type head A: Male connector, M26, 12-pin, straight • Description: Unshielded • Connection systems: Crimp contacts • Permitted cross-section: 0.5 mm² ... 1.5 mm² • Note: 12 crimping contacts enclosed 	STE-0612G000GA3KM0	6021191
	<ul style="list-style-type: none"> • Connection type head A: Male connector, M26, 12-pin, angled • Description: Unshielded • Connection systems: Crimp contacts • Permitted cross-section: 0.5 mm² ... 1.5 mm² • Note: 12 crimping contacts enclosed 	STE-0612W000GA3KM0	6021192
Terminal and alignment brackets			
	2 pieces, Mounting kit, rotatable, telescopic, swivel mount, Polyamide PA6	BEF-0SMMEA002	2046172
	4 pieces, Mounting kit 6, side bracket, rotatable, zinc diecast	BEF-1SHABAZN4	2019506
	4 pieces, Mounting kit 3, rotatable, with shock-absorber	BEF-1SHADAAL4	2017752
	4 pieces, Omega bracket, rotatable, fixable with only one screw, for mounting on the swivel mount	BEF-2SMMEAAL4	2044847
	4 pieces, Stainless steel bracket, rotatable, stainless steel 1.4350, stainless steel 1.4301	BEF-2SMMEAES4	2023708
	4 pieces, Mounting kit 2, rotatable, swivel mount, Polyamide PA6	BEF-2SMMEA004	2019659
	4 pieces, Reinforced stainless steel bracket, rotatable, stainless steel 1.4350, stainless steel 1.4301	BEF-2SMMAVES4	2026850
	<ul style="list-style-type: none"> • Connection type head A: Male connector, M8, 4-pin, straight • Connection type head B: Male connector, USB-A, straight • Cable: 2 m, 4-wire, PVC • Description: Unshielded, Configuration cable with integrated RS-232 transducer on USB for connecting a sensor configuration connection (M8, 4-pin) to the USB interface of a PC 	DSL-8U04G02M025KM1	6034574
	<ul style="list-style-type: none"> • Connection type head A: Male connector, M8, 4-pin, straight • Connection type head B: Male connector, USB-A, straight • Cable: 10 m, 4-wire, PVC • Description: Unshielded, Configuration cable with integrated RS-232 transducer on USB for connecting a sensor configuration connection (M8, 4-pin) to the USB interface of a PC 	DSL-8U04G10M025KM1	6034575
	<ul style="list-style-type: none"> • Connection type head A: Female connector, M26, 12-pin, straight • Connection type head B: Flying leads • Signal type: Sensor/actuator cable • Cable: 5 m, 12-wire, PVC • Description: Sensor/actuator cable, unshielded • Connection systems: Flying leads 	DOL-0612G05M075KM0	2022545

	Brief description	Type	Part no.
	<ul style="list-style-type: none"> • Connection type head A: Female connector, M26, 12-pin, straight • Connection type head B: Flying leads • Signal type: Sensor/actuator cable • Cable: 10 m, 12-wire, PVC • Description: Sensor/actuator cable, unshielded • Connection systems: Flying leads 	DOL-0612G10M075KM0	2022547
	<ul style="list-style-type: none"> • Connection type head A: Female connector, M26, 12-pin, straight • Connection type head B: Flying leads • Signal type: Sensor/actuator cable • Cable: 15 m, 12-wire, PVC • Description: Sensor/actuator cable, unshielded • Connection systems: Flying leads 	DOL-0612G15M075KM0	2022548
	<ul style="list-style-type: none"> • Connection type head A: Female connector, M26, 12-pin, straight • Connection type head B: Flying leads • Signal type: Sensor/actuator cable • Cable: 2.5 m, 12-wire, PVC • Description: Sensor/actuator cable, unshielded • Connection systems: Flying leads 	DOL-0612G2M5075KM0	2022544
	<ul style="list-style-type: none"> • Connection type head A: Female connector, M26, 12-pin, straight • Connection type head B: Flying leads • Signal type: Sensor/actuator cable • Cable: 20 m, 12-wire, PVC • Description: Sensor/actuator cable, unshielded • Connection systems: Flying leads 	DOL-0612G20M075KM0	2022549
	<ul style="list-style-type: none"> • Connection type head A: Female connector, M26, 12-pin, straight • Connection type head B: Flying leads • Signal type: Sensor/actuator cable • Cable: 30 m, 12-wire, PVC • Description: Sensor/actuator cable, unshielded • Connection systems: Flying leads 	DOL-0612G30M075KM0	2022550
	<ul style="list-style-type: none"> • Connection type head A: Female connector, M26, 12-pin, straight • Connection type head B: Flying leads • Signal type: Sensor/actuator cable • Cable: 50 m, PVC • Description: Sensor/actuator cable, unshielded • Connection systems: Flying leads 	DOL-0612G50M075KM0	2033548
	<ul style="list-style-type: none"> • Connection type head A: Female connector, M26, 12-pin, straight • Connection type head B: Flying leads • Signal type: Sensor/actuator cable • Cable: 7.5 m, 12-wire, PVC • Description: Sensor/actuator cable, unshielded • Connection systems: Flying leads 	DOL-0612G7M5075KM0	2022546
	<ul style="list-style-type: none"> • Connection type head A: Female connector, M26, 12-pin, straight • Connection type head B: Flying leads • Cable: 20 m, PVC • Description: Unshielded • Connection systems: Flying leads • Note: Without EFI: Pin 9 and 10 not connected 	DOL-0610G20M075KM1	2046890
	<ul style="list-style-type: none"> • Connection type head A: Female connector, M26, 12-pin, straight • Connection type head B: Flying leads • Cable: 5 m, PVC • Description: Unshielded • Connection systems: Flying leads • Note: Without EFI: Pin 9 and 10 not connected 	DOL-0610G05M075KM1	2046888
	<ul style="list-style-type: none"> • Connection type head A: Female connector, M26, 12-pin, straight • Connection type head B: Flying leads • Cable: 10 m, PVC • Description: Unshielded • Connection systems: Flying leads • Note: Without EFI: Pin 9 and 10 not connected 	DOL-0610G10M075KM1	2046889

	Brief description	Type	Part no.
	<ul style="list-style-type: none"> • Connection type head A: Flying leads • Connection type head B: Flying leads • Cable: 12-wire, PVC • Description: Unshielded • Note: max. 100 m, fitting for EFI connections • Items supplied: By the meter 	Connecting cable	6021437
Switching amplifiers			
	<ul style="list-style-type: none"> • Applications: Functionality upgrade • Compatible sensor types: C4000 safety light curtains • Description: Upgrades the C4000 Standard, Advanced, Palletizer, Entry/Exit, and Fusion to include the functions defined in the technical specifications, e.g., bypass, operating mode switching, and PSDI in the case of C4000 Standard, Advanced. 	UE402	1023577

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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