



C40E-1602FY010

C4000 Fusion

SAFETY LIGHT CURTAINS

SICK
Sensor Intelligence.



Illustration may differ

Ordering information

Type	part no.
C40E-1602FY010	1043197

Other models and accessories → www.sick.com/C4000_Fusion



Detailed technical data

Features

Application	Normal industrial environment
System part	Receiver
Resolution	20 mm
Scanning range	21 m
Protective field height	1,650 mm
Synchronization	Optical synchronization

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)	15×10^{-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	✓	
Reduced resolution	✓	Deactivated
Fixed blanking	✓ ¹⁾	

¹⁾ Only in combination with a Flexi Soft safety controller via EFI.

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	✓	
Sensor gap monitoring	✓	
Sequence monitoring	✓	
Object entry monitoring	✓	
Detection of geometrically even objects	✓	
Safe SICK device communication via EFI	✓	

¹⁾ Only in combination with a Flexi Soft safety controller via EFI.

Interfaces

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

Electronics

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
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	≤ 500 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.

Mechanics

Dimensions	See dimensional drawing
Housing cross-section	48 mm x 40 mm
Housing material	Aluminum extruded profile
Weight	3,420 g

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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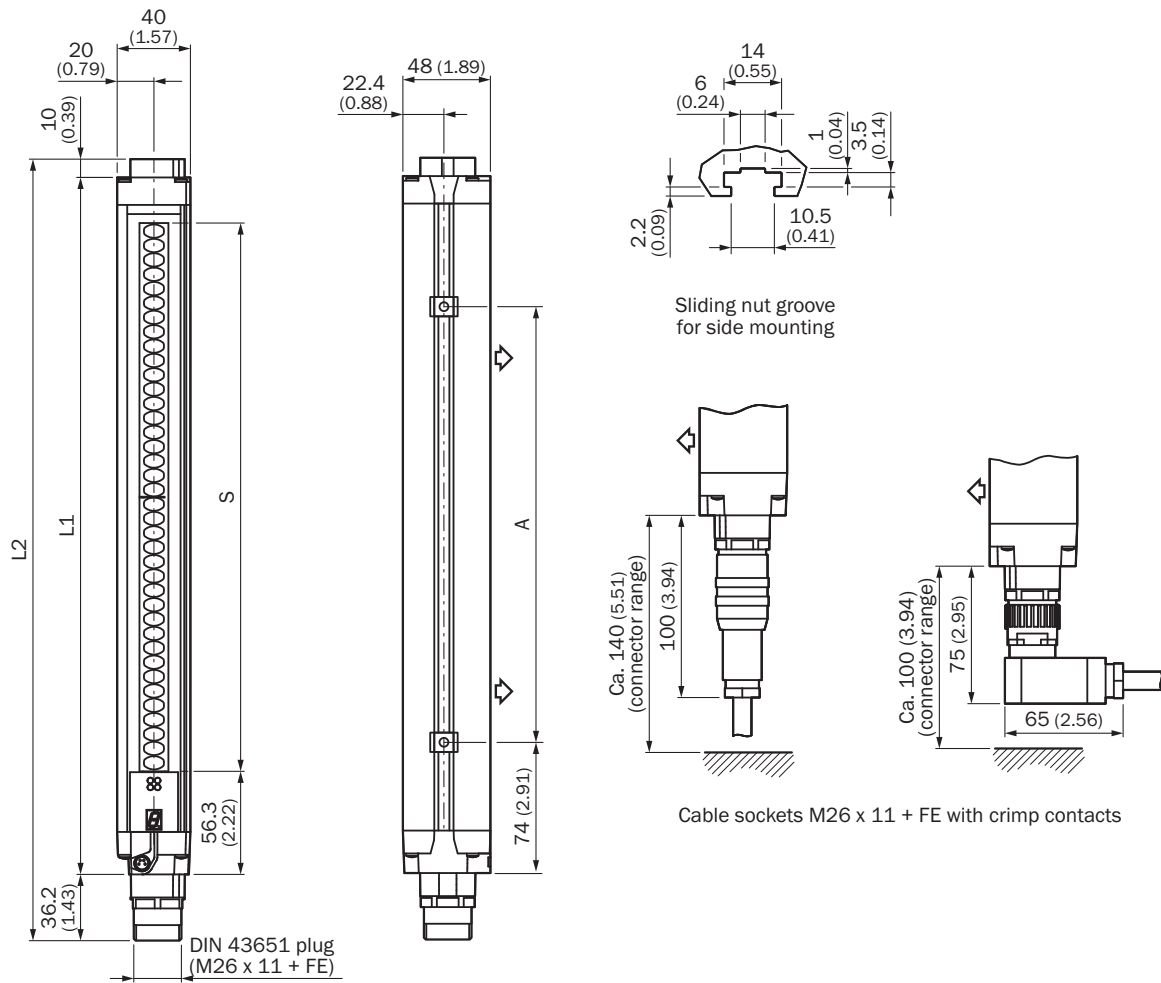
Certificates

EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China RoHS	✓
ULus approval	✓
cUL approval	✓
EC-Type-Examination approval	✓
China GB certificate	✓
Information according to Art. 3 of Data Act (Regulation EU 2023/2854)	✓

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

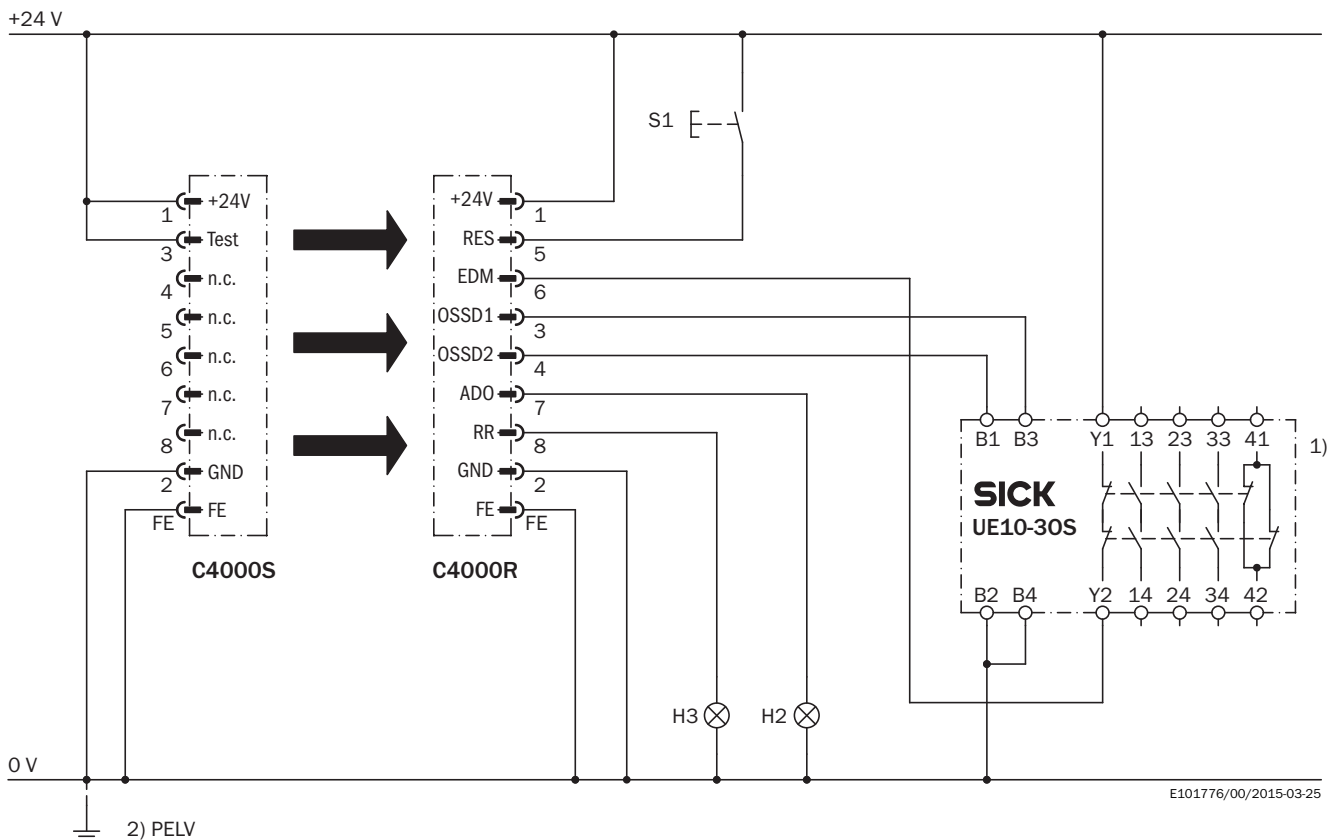


Dimensions in mm (inch)

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

Connection diagram C4000 safety light curtain to UE10-30S safety relay



Task

Connection of a C4000 Standard/Advanced/Palletizer/Fusion safety light curtain to UE10-30S. Operating mode with restart interlock and external device monitoring.

Function

When the light path is clear and the UE10-30S is de-energized and functioning correctly, the yellow LED on the receiver and the H3 lamp flash. The system is ready to be switched on. The system is enabled by pressing S1 (button is pressed and released). The OSSD1 and OSSD2 outputs are live, and the UE10-30S is switched on. Upon the interruption of one of the light beams, the UE10-30S is deactivated by the OSSD1 and OSSD2 outputs.

Possible faults

Cross-circuits and short-circuits of the OSSDs are detected and lead to the inhibited state (lock-out). The incorrect functioning of the UE10-30S will be detected, but will not result in the loss of the shutdown function. Jamming of the S1 button prevents the output circuit from enabling. H2 lamp is illuminated if there is contamination (adjustable parameter).

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, this 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 taking the risk analysis into account.





²⁾ PELV as required in EN 60204-1 / 6.4

The related operating instructions for the integrated devices must be observed.



Recommended accessories

Other models and accessories → www.sick.com/C4000_Fusion

	Brief description	Type	part no.
device protection and care			
	<ul style="list-style-type: none"> Product family: Cleaning agents Description: Cloth for cleaning optical surfaces 	Lens cloth	4003353
Mounting systems			
	<ul style="list-style-type: none"> Description: 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. Packing unit: 2 pieces Items supplied: Includes mounting bracket 	BEF-3HHOCAST2	2041661
	<ul style="list-style-type: none"> Description: Reinforced stainless steel bracket, rotatable Material: Stainless steel Details: Stainless steel 1.4350, stainless steel 1.4301 Packing unit: 4 pieces 	BEF-2SMMVAES4	2026850
	<ul style="list-style-type: none"> Description: Omega bracket, rotatable, fixable with only one screw, for mounting on the swivel mount Packing unit: 4 pieces Suitable for: All protective field heights in large housing 	BEF-2SMMEAAL4	2044847
	<ul style="list-style-type: none"> Description: Mounting kit 6, side bracket, rotatable Material: Zinc diecast Details: Zinc diecast Packing unit: 4 pieces Suitable for: All protective field heights 	BEF-1SHABAZN4	2019506
	<ul style="list-style-type: none"> Description: Mounting kit 2, rotatable, swivel mount Material: Plastic Details: Polyamide PA6 Packing unit: 4 pieces Suitable for: All protective field heights 	BEF-2SMMEAKU4	2019659
	<ul style="list-style-type: none"> Description: Mounting kit 1, mounting bracket, rigid, L-shaped, including fixing screws and washers Packing unit: 4 pieces Suitable for: All protective field heights 	BEF-3WNGBAST4	7021352
	<ul style="list-style-type: none"> Description: Reinforced stainless steel bracket, rotatable Material: Stainless steel Details: Stainless steel 1.4350, stainless steel 1.4301 Packing unit: 2 pieces 	BEF-2SMMVAES2	2048373

	Brief description	Type	part no.
Commissioning aids and test equipment			
	<ul style="list-style-type: none"> Product: Alignment aids Dimensions (W x H x L): 19 mm 67.3 mm 66.9 mm Description: Laser alignment aid for various sensors, laser class 2 (IEC 60825). Do not look into the beam! 	AR60	1015741
	<ul style="list-style-type: none"> Product: Alignment aids Description: Adapter AR60 for housing cross-section 48 mm x 40 mm 	AR60 adapter, 48x40	4032461
	<ul style="list-style-type: none"> Product: Alignment aids Description: Adapter AR60 for housing cross-section 48 mm x 40 mm in PU3H device column 	AR60 adapter, 48x40, PU3H	4056731
	<ul style="list-style-type: none"> Product: Test equipment Description: 20 mm diameter, 250 mm length 	Test rod 20 mm	2022600

	Brief description	Type	part no.
connectors and cables			
	<ul style="list-style-type: none"> • Connection type head A: Male connector, M26, 12-pin, angled, A-coded • Description: Unshielded • Connection systems: Crimp contacts • Permitted cross-section: 0.5 mm² ... 1.5 mm² • Note: 12 crimping contacts enclosed 	STE-0612W000GA3KMC	6021192
	<ul style="list-style-type: none"> • Connection type head A: Male connector, M26, 12-pin, straight, A-coded • Description: Unshielded • Connection systems: Crimp contacts • Permitted cross-section: 0.5 mm² ... 1.5 mm² • Note: 12 crimping contacts enclosed 	STE-0612G000GA3KMC	6021191
	<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-0612G05M075KMC	2022545
	<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-0612G10M075KMC	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-0612G15M075KMC	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: 20 m, 12-wire, PVC • Description: Sensor/actuator cable, unshielded • Connection systems: Flying leads 	DOL-0612G20M075KMC	2022549
	<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 	DSL-8U04G10M025KMC	6034575
	<ul style="list-style-type: none"> • Connection type head A: Female connector, M26, 12-pin, straight, A-coded • Description: Unshielded • Connection systems: Crimp contacts • Permitted cross-section: 0.5 mm² ... 1.5 mm² • Note: 12 crimping contacts enclosed 	DOS-0612G000GA3KMC	6020757
	<ul style="list-style-type: none"> • Connection type head A: Female connector, M26, 12-pin, angled, A-coded • Description: Unshielded • Connection systems: Crimp contacts • Permitted cross-section: 0.5 mm² ... 1.5 mm² • Note: 12 crimping contacts enclosed 	DOS-0612W000GA3KMC	6020758
	<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-0612G50M075KMC	2033548
	<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 	DSL-8U04G02M025KMC	6034574
	<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 	DOL-0610G05M075KMC	2046888

	Brief description	Type	part no.
	<ul style="list-style-type: none"> • Note: Without EFI: Pin 9 and 10 not connected • 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-0610G10M075KM:	2046889
system plugs and extension modules			
	<ul style="list-style-type: none"> • Applications: Functionality upgrade • 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. • Compatible sensor types: C4000 safety light curtains 	UE402	1023577

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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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