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DATA SHEET

C40S-1603CA010, C40E-1603CB010

C4000 Advanced
Safety light curtains

SICK Sensor Intelligence

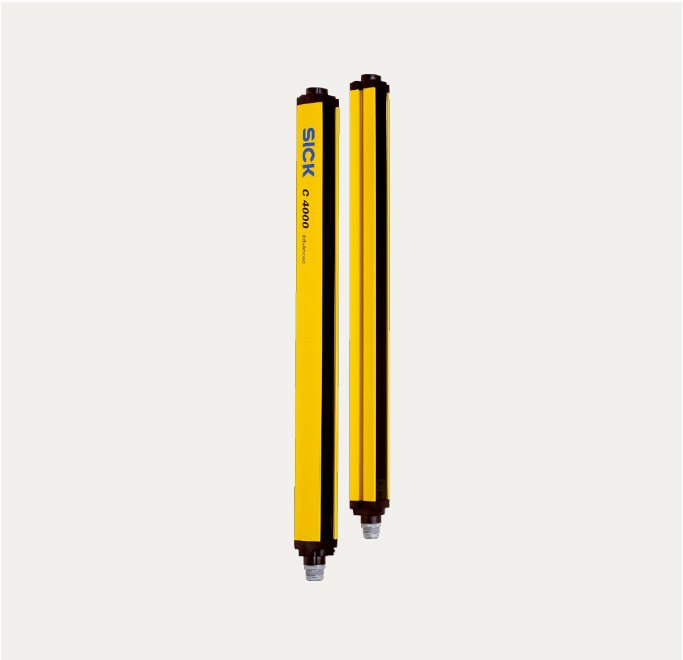


Illustration may differ

SAFETY LIGHT CURTAINS

C40S-1603CA010, C40E-1603CB010

ORDERING INFORMATION

System part	Type	part no.
sender	C40S-1603CA010	1018653
receiver	C40E-1603CB010	1018813

Further device versions and accessories at www.sick.com/C4000_Advanced

DETAILED TECHNICAL DATA

FEATURES

Description	C4000 Advanced without extension connection
Application	Normal industrial environment
System part	Pair
Resolution	30 mm
Scanning range	21 m
Protective field height	1,650 mm
Response time	14 ms [1]
Synchronization	Optical synchronization

[1] Without beam coding, without blanking, no cascaded systems. Other response times see operating instructions.

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) $43 * 10^{-9}$ (EN ISO 13849) $63 * 10^{-9}$ (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	✓	
External device monitoring (EDM)	✓	Deactivated
Beam coding	✓	Uncoded
Configurable scanning range	✓	0 m ... 6 m
Fixed blanking	✓	Deactivated
Floating blanking	✓	Deactivated
Safe SICK device communication via EFI	✓	

FUNCTIONS IN COMBINATION WITH UE402

Bypass	✓
Operating mode switching	✓
PSDI mode	✓

INTERFACES

System connection 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.

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 [3]

[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.

MECHANICS

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

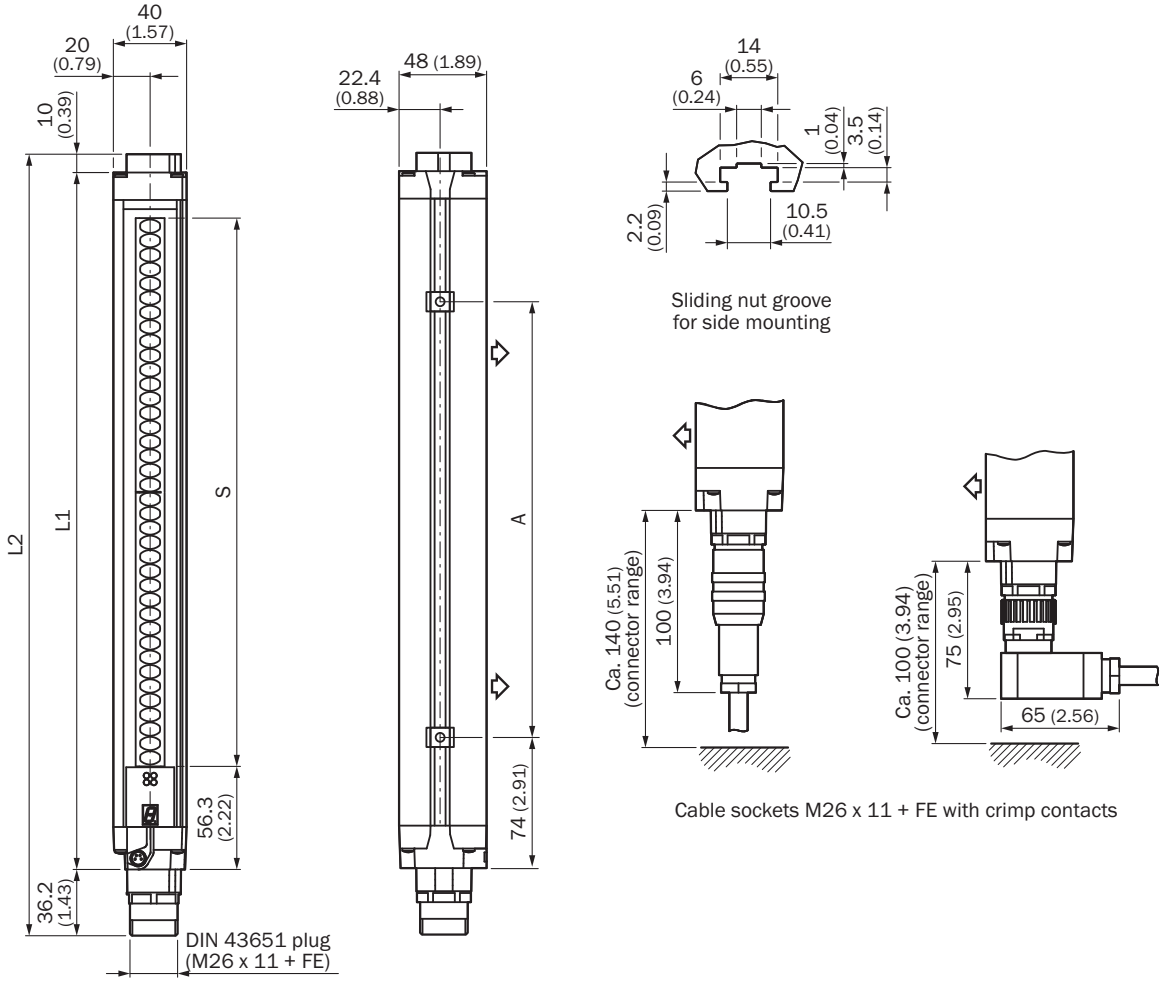
AMBIENT DATA

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

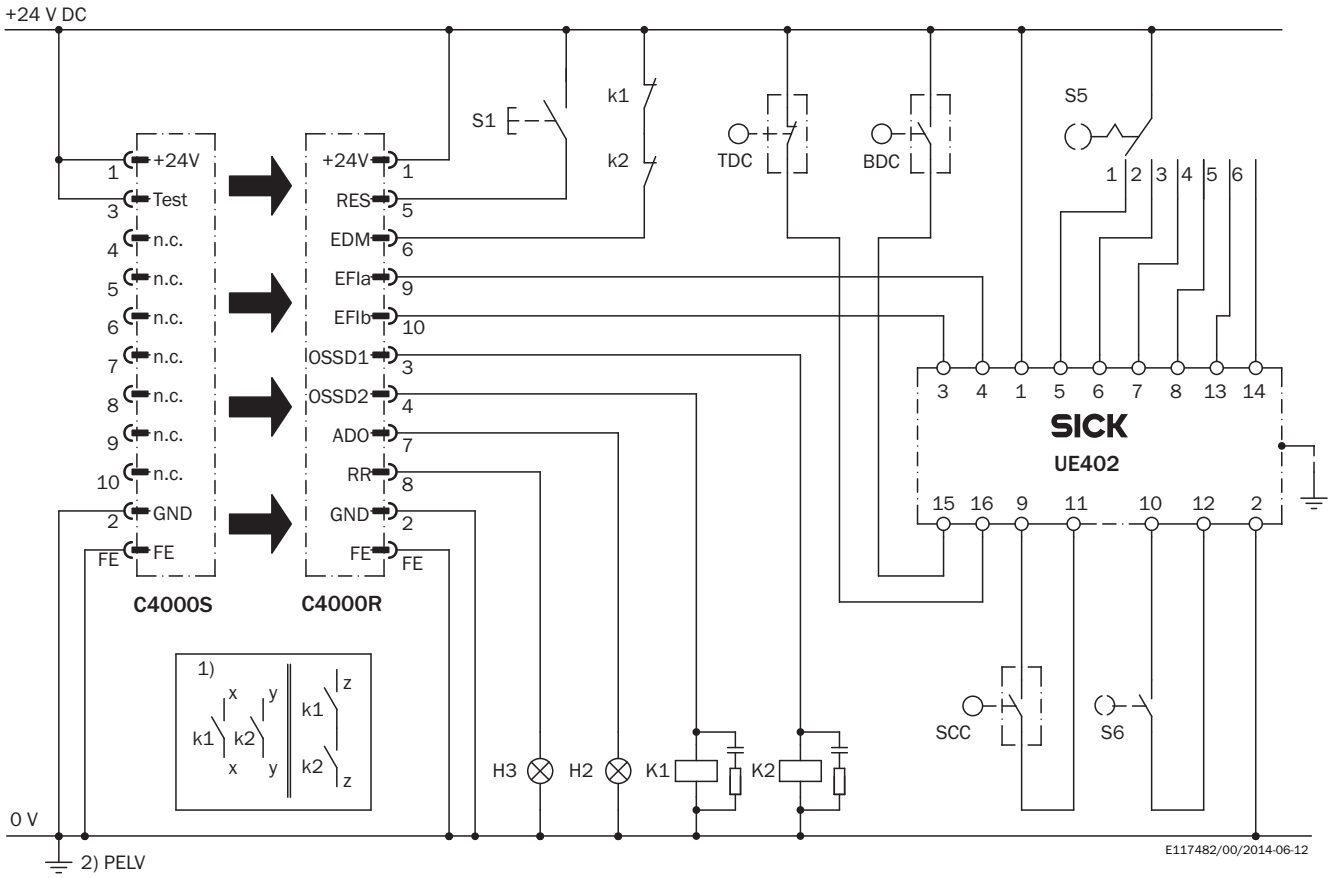
DIMENSIONAL DRAWING



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 ADVANCED SAFETY LIGHT CURTAIN ON UE402 SAFETY SWITCHING AMPLIFIER



Aufgabe
Anbindung eines Sicherheits-Lichtvorhanges C4000 Advanced mit UE402 in eine Steuerung. 6 parametrierbare Betriebsarten mit Wiederanlaufsperre und Schützkontrolle. Taktbetrieb mit TDC, BDC, SCC. Ausblendbereiche einlernbar.
Wirkungsweise
Wenn kein Gegenstand im aktiven Schutzfeld detektiert wird und die Schütze K1 und K2 sich in Ruhelage befinden blinkt die Lampe H3 als Aufforderung, das Befehlsgerät S1 zu betätigen. Wenn S1 betätigt (Taster wird betätigt und losgelassen) werden die OSSDs eingeschaltet. Diese schalten die Schütze K1 und K2 ein. Bei Detektion eines Gegenstandes im aktiven Schutzfeld schalten die OSSDs die Schütze K1 und K2 ab.
Fehlerbetrachtung
Das Fehlverhalten eines der Schütze K1 oder K2 führt nicht zum Verlust der Abschaltfunktion. Querschlüsse und Kurzschlüsse der OSSDs werden erkannt und führen zum Sperrzustand (Lock-Out). Die Manipulation (Festklemmen) des Tasters S1 verhindert die Freigabe der Ausgangskreise.
Anmerkungen:
Die Wirkungsgweise der parametrierbaren Funktionen ist den jeweiligen Betriebsanleitungen der eingebundenen Geräte zu entnehmen. Die dabei enthaltenen Angaben sind zu beachten.

Further information as well as suitable accessories, example applications and downloads such as CAD dimensional models, operating instructions and software can be found at www.sick.com/1018653

SICK AG
WALDKIRCH
GERMANY
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SICK AT A GLANCE

SICK is a leading global technology company for intelligent sensors and integrated solutions in industrial automation. Our technologies set benchmarks, making your industrial processes more efficient, safer and more sustainable – both in logistics and manufacturing operations.

SICK combines sensor intelligence with industry expertise and certified consulting services. We provide the ideal foundation for scalable as well as tailor-made automation solutions and create added value along the entire value chain. Our close partnerships with our customers are more than just a promise: Together, we optimize productivity, improve quality, protect health and safety, and help build a sustainable future. All with empathy and trust.

Since 1946, we have been developing innovative technologies with passion and a pioneering spirit. With a global network in around 40 countries, SICK has a global presence and is always close by. The company's headquarters are located in Waldkirch near Freiburg, Germany. Our customers benefit from our understanding of both local and global requirements, which enables us to deliver tailor-made solutions

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