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DATA SHEET

# C40S-0602CA010, C40E-0602DB010

C4000 Advanced
Safety light curtains

SICK Sensor Intelligence




Illustration may differ

# SAFETY LIGHT CURTAINS

# C40S-0602CA010, C40E-0602DB010

## ORDERING INFORMATION

| System part | Type | part no. |
|---|---|---|
| sender | C40S-0602CA010 | 1018617 |
| receiver | C40E-0602DB010 | 1018840 |

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

## DETAILED TECHNICAL DATA

### FEATURES

| | |
|---|---|
| Application | Normal industrial environment |
| System part | Pair |
| Resolution | 20 mm |
| Scanning range | 21 m |
| Protective field height | 600 mm |
| Response time | 13 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)<br>$43 * 10^{-9}$ (EN ISO 13849)<br>$63 * 10^{-9}$ (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<br>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)<br>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 |

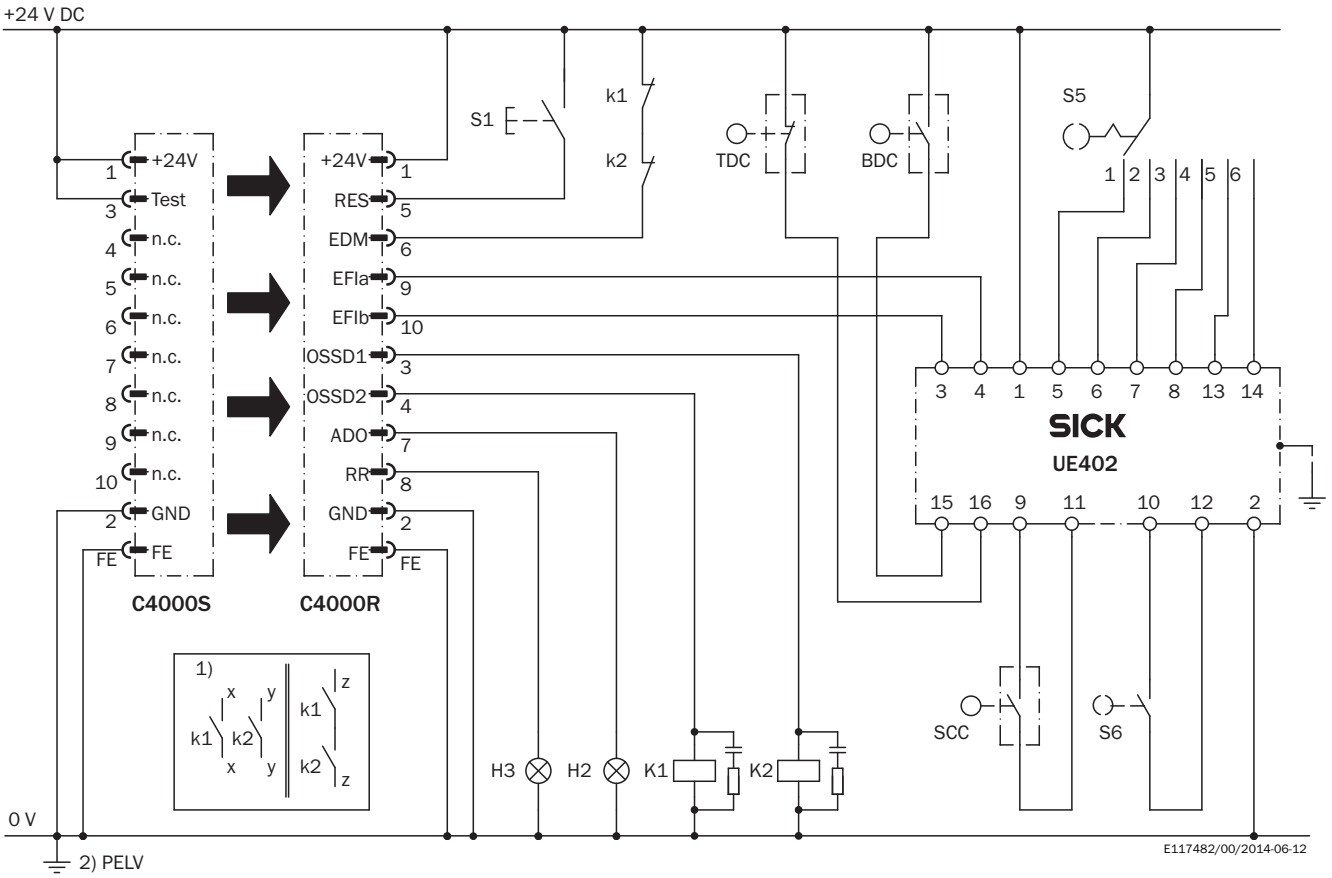
## AMBIENT DATA

| | |
|---|---|
| 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 |

## 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 Wirkungsweise 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/1018617

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