



S31A-7011CA

S3000 Cold Store

SAFETY LASER SCANNERS

SICK
Sensor Intelligence.



Ordering information

| Type | Part no. |
|-------------|----------|
| S31A-7011CA | 1041648 |

Other models and accessories → www.sick.com/S3000_Cold_Store



Detailed technical data

Features

| | |
|---|--|
| Protective field range | 7 m |
| Warning field range | 49 m (20 m at 20 % reflectivity) |
| Distance measuring range | 49 m |
| Number of simultaneously monitored protective fields | ≤ 4 ¹⁾ |
| Type of field set | Triple field sets, dual field sets |
| Number of field sets | 4 |
| Number of fields | 12 |
| Number of monitoring cases | 4 |
| Scanning angle | 180° |
| Resolution (can be configured) | 30 mm, 40 mm, 50 mm, 70 mm, 150 mm |
| Angular resolution | 0.5°, 0.25°, depending on range and resolution |
| Response time | 120 ms ²⁾ |
| Protective field supplement | 100 mm |
| Number of multiple samplings | 2 ... 16, configurable |
| Delay of automatic reset | 2 s ... 60 s, configurable |

¹⁾ If several protective fields are monitored simultaneously, the shut-off signals must be connected to safe outputs on a Flexi Soft safety controller or routed via a safe EFI gateway.

²⁾ Depending on basic response time and multiple sampling.

Safety-related parameters

| | |
|---|---------------------------------------|
| Type | Type 3 (IEC 61496) |
| Safety integrity level | SIL2 (IEC 61508) SILCL2 (EN 62061) |
| Category | Category 3 (EN ISO 13849) |
| Performance level | PL d (EN ISO 13849) |
| PFH_D (mean probability of a dangerous failure per hour) | 8.0 x 10 ⁻⁸ (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

| | |
|---|---|
| Multiple sampling | ✓ |
| Monitoring case switching | ✓ |
| Simultaneous monitoring | ✓ |
| Static protective field switching | ✓ |
| Contour as a reference | ✓ |
| Safe SICK device communication via EFI | ✓ |

Interfaces

| | |
|--|--|
| Connection type | System plug |
| Inputs | |
| Static control inputs | 2 |
| Static control inputs with EFI | 5 ¹⁾ |
| Outputs | |
| OSSD pairs | 1 |
| Diagnostic outputs | 2 ²⁾ |
| Configuration method | PC with CDS (Configuration and Diagnostic Software) |
| Configuration and diagnostics interface | RS-232 |
| Transmission rate | 9.6 kBaud, 19.2 kBaud, 38.4 kBaud |
| Safe SICK device communication via EFI | |
| Transmission rate | ≤ 500 kBaud |
| Length of cable | ≤ 50 m |
| Conductor cross-section | 0.34 mm ² |
| Fieldbus, industrial network | |
| Integration via EFI gateways | CANopen, Ethernet, PROFIBUS DP, PROFIBUS PROFI-safe, PROFINET PROFI-safe ³⁾ |

¹⁾ In combination with an EFI device (Flexi Soft or EFI gateway) five static control inputs are available. Otherwise two.

²⁾ Freely programmable, e.g. warning field, contamination, reset required.

³⁾ For a suitable EFI-gateway see modules and gateways in the accessory section of connection systems.

Electrical data

| | |
|---|--|
| Protection class | II (EN 50178) |
| Supply voltage V_s | |
| Scanner | 24 V DC (17.5 V DC ... 28.8 V DC) |
| Heating | 24 V DC (16.8 V DC ... 28.8 V DC) |
| Power consumption | |
| Scanner | ≤ 0.8 A ¹⁾ ≤ 2.3 A ²⁾ |
| Heating | ≤ 6 A, cyclical |
| Outputs | |
| Output signal switching devices (OSSDs) | 2 x 500 mA |

¹⁾ At 24 V DC without output load.

²⁾ At 24 V DC including maximum output load.

³⁾ Freely programmable, e.g. warning field, contamination, reset required.

| | |
|--------------------|--------------------------|
| Diagnostic outputs | 2 x 100 mA ³⁾ |
|--------------------|--------------------------|

¹⁾ At 24 V DC without output load.

²⁾ At 24 V DC including maximum output load.

³⁾ Freely programmable, e.g. warning field, contamination, reset required.

Mechanical data

| | |
|------------------------------------|--|
| Dimensions (W x H x D) | 351 mm x 265 mm x 221 mm |
| Weight | 9 kg |
| Material | |
| Back panel, plug | Aluminum die cast |
| Cover | Polyurethane |
| Housing color | RAL 1021 (yellow) |
| Front screen material | Polycarbonate |
| Front screen surface finish | Outside with scratch-resistant coating |

Ambient data

| | |
|--------------------------------------|--|
| Enclosure rating | IP65 (EN 60529) IP67 (EN 60529) |
| Ambient operating temperature | -30 °C ... +50 °C |
| Storage temperature | -30 °C ... +50 °C |
| Vibration resistance | 5 g, 10 Hz ... 150 Hz (IEC 61496, IEC 61496-3) |
| Shock resistance | |
| Continuous shock | 10 g, 16 ms (IEC 61496, IEC 61496-3) |

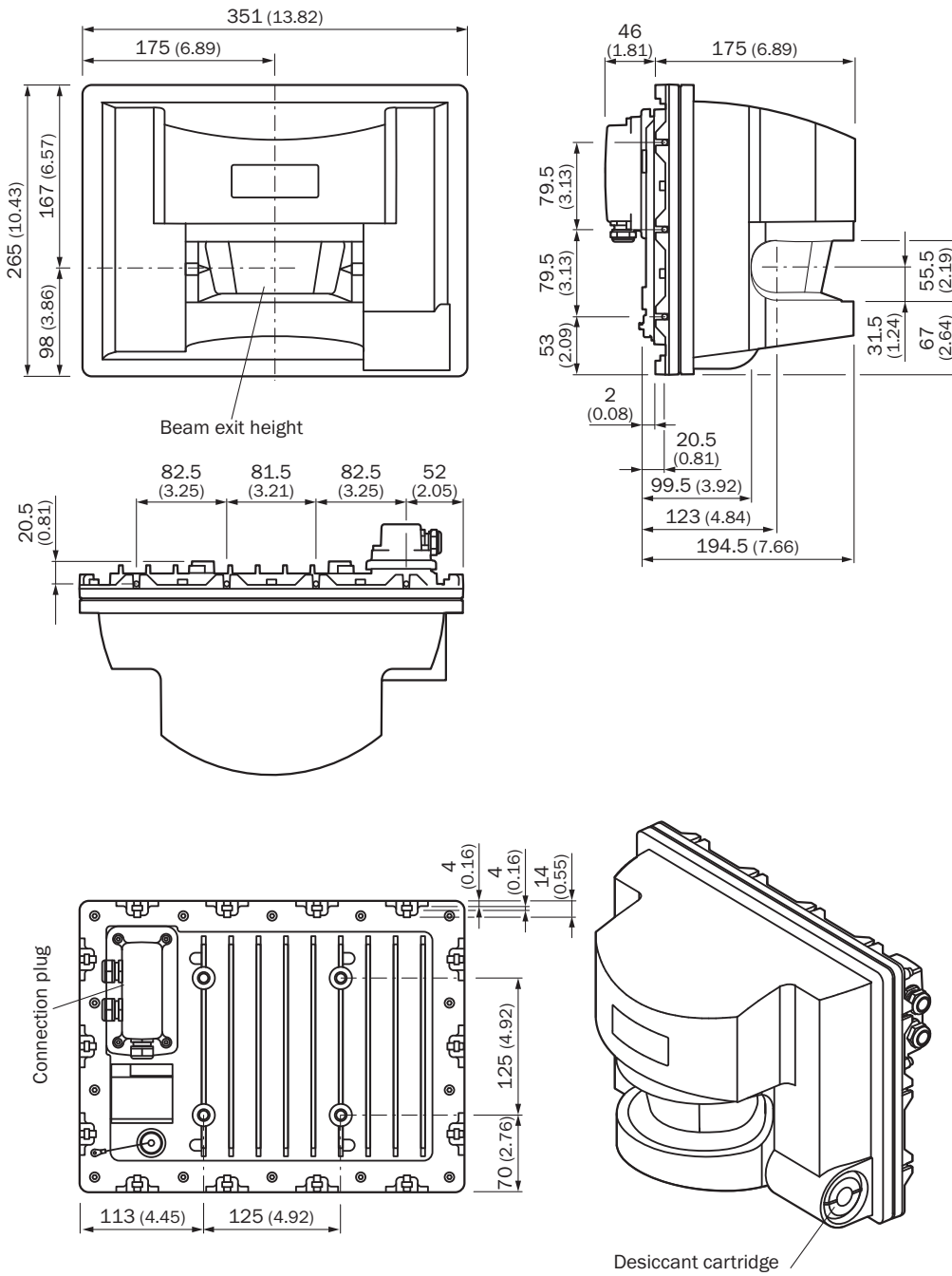
Other information

| | |
|-----------------------------|---|
| Type of light | Pulsed laser diode |
| Wave length | 905 nm |
| Detectable remission | 1.8 % ... > 1,000 %, reflectors |
| Laser class | 1 (21 CFR 1040.10 and 1040.11, IEC 60825-1) |

Classifications

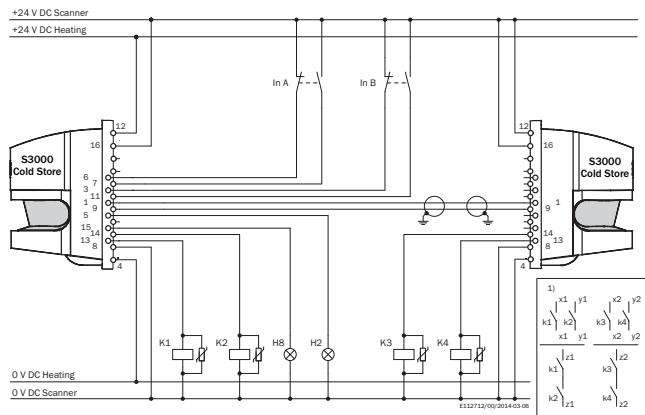
| | |
|-----------------------|----------|
| ECl@ss 5.0 | 27272705 |
| ECl@ss 5.1.4 | 27272705 |
| ECl@ss 6.0 | 27272705 |
| ECl@ss 6.2 | 27272705 |
| ECl@ss 7.0 | 27272705 |
| ECl@ss 8.0 | 27272705 |
| ECl@ss 8.1 | 27272705 |
| ECl@ss 9.0 | 27272705 |
| ETIM 5.0 | EC002550 |
| ETIM 6.0 | EC002550 |
| UNSPSC 16.0901 | 39121528 |

Dimensional drawing (Dimensions in mm (inch))



Connection diagram

Protective field switching between two S3000 with static inputs



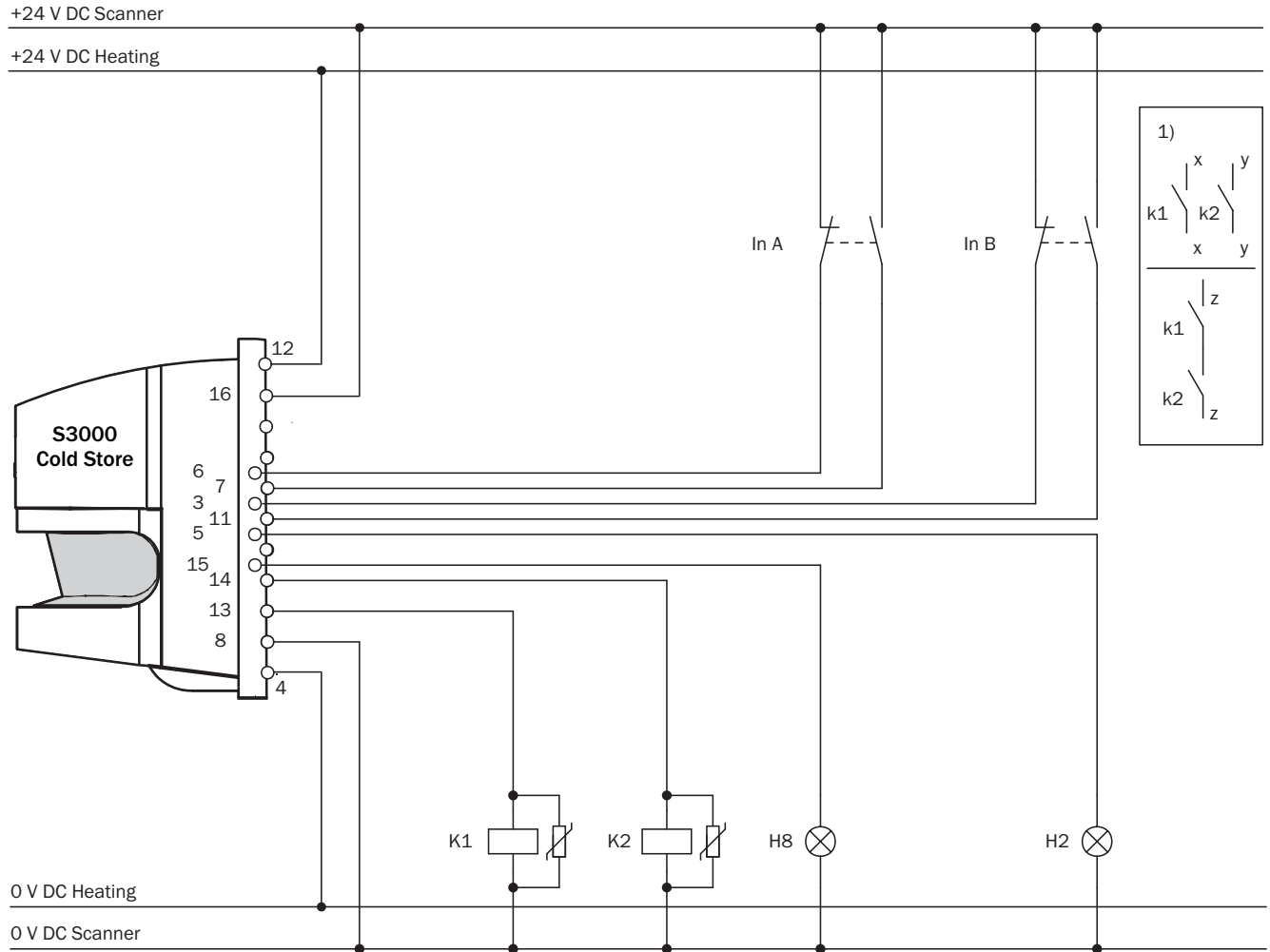
S3000 Cold Store with S3000 Cold Store in conjunction with relays/contactors

Protective field switching by means of control input A and control input B on separate OSSD pairs (simultaneous monitoring)

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 insertion in the control (z path) is only possible with a single-channel control and by taking the risk analysis into account.

Protective field switching with two static inputs



E112711/00/2014-03-06


S3000 Cold Store in conjunction with relays/contactors
Protective field switching by means of control inputs A and B



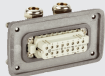


Comments

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 insertion in the control (z path) is only possible with a single-channel control and by taking the risk analysis into account.

Recommended accessories

Other models and accessories → www.sick.com/S3000_Cold_Store

| | Brief description | Type | Part no. |
|---|---|--------------|----------|
| Mounting brackets and plates | | | |
|  | Mounting kit for wall-mounting (adjustment bracket), steel, zinc coated | Mounting kit | 2018303 |

| Brief description | | Type | Part no. |
|---|--|--|----------|
| Plug connectors and cables | | | |
|  | Head A: Flying leads Head B: Flying leads Cable: PVC, unshielded | Connecting cable | 6025729 |
|  | Head A: Flying leads Head B: Flying leads Cable: PVC, shielded Fitting for EFI connections | EFI connecting cable | 6029448 |
|  | Head A: female connector, 16-pin Head B: - Cable: unshielded | 16-pin female connector | 2018301 |
|  | Cable: RS-232, RS-422, unshielded, 5 m, configuration cable pre-assembled for RS-232, for the connection of PCs/power supply | Service cable | 2019561 |
| Drying agent cartridges | | | |
|  | Dry cartridge | Drying agent cartridge with screw thread M36 x 1.5 | 5306179 |

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