

SICK.COM



DATA SHEET

NANS3-AAAZ30AN1

nanoScan3
Safety laser scanners

SICK

Sensor Intelligence



Illustration may differ

SAFETY LASER SCANNERS

NANS3-AAAZ30AN1

ORDERING INFORMATION

Type	part no.
NANS3-AAAZ30AN1	1100333

Further device versions and accessories at www.sick.com/nanoScan3



DETAILED TECHNICAL DATA

FEATURES

Product version	nanoScan3 Core I/O
Model	Sensor without system plug
Application	Indoor
Protective field range	3 m
Warning field range	10 m
Distance measuring range	40 m
Number of simultaneously monitored fields	≤ 4 ^{1) 2)}
Number of fields	8 ³⁾
Number of monitoring cases	2
Scanning angle	275°
Resolution (can be configured)	20 mm 30 mm 40 mm 50 mm 60 mm 70 mm 150 mm 200 mm
Angular resolution	0.17°
Response time	70 ms
Protective field supplement	65 mm

¹⁾ Protection, warning or contour detection fields.

²⁾ Please note the number of available OSSD pairs.

³⁾ Please note the number of available inputs and OSSD pairs.

SAFETY-RELATED PARAMETERS

Type	Type 3 (IEC 61496)
Safety integrity level	SIL 2 (IEC 61508)

Category	Category 3 (EN ISO 13849)
Performance level	PL d (EN ISO 13849)
PFH _d (mean probability of a dangerous failure per hour)	8.0×10^{-8}
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

Restart interlock	✓
External device monitoring (EDM)	✓
Multiple sampling	✓
Monitoring case switching	✓
Simultaneous monitoring	✓
Static protective field switching	✓
Safe contour detection	✓
Contour as a reference	✓
Integrated configuration memory	✓
Measured data output	Via Ethernet

INTERFACES

Connection type	Depending on system plug
Universal I/Os	3 ¹⁾
Outputs	
OSSD pairs	1
Inputs	
Universal inputs	1 ²⁾
Static control inputs	1 ³⁾
Configuration method	PC with Safety Designer (Configuration and Diagnostic Software)
Configuration and diagnostics interface	USB 2.0, micro USB
Data interface	
Services	CoLa 2 (configuration and diagnostics using Safety Designer) Data output DHCP SNTP
Display elements	Graphic color display, LEDs

¹⁾ Freely programmable as input or output, e.g. external device monitoring input, reset input, static control input, contamination warning, warning field, reset required.

²⁾ Freely programmable input, e.g. external device monitoring input, reset input, static control input.

³⁾ Availability depends on the configuration of the universal I/Os and universal inputs.

ELECTRONICS

Protection class	III (EN 61140)
Supply voltage V _s	24 V DC (16.8 V DC ... 30 V DC)
Power consumption typical	3.9 W (without output load)

MECHANICS

Dimensions (W x H x D)	106.6 mm x 80 mm x 117.5 mm (including system plug)
Weight	0.67 kg

Housing material	Aluminum
Housing color	RAL 1021 (yellow), RAL 9005 (black)
Optics cover material	Polycarbonate

AMBIENT DATA

Enclosure rating	IP65 (IEC 60529)
Ambient light immunity	≤ 40 klx (IEC 61496-3) ¹⁾
Ambient operating temperature	-10 °C ... +50 °C
Storage temperature	-25 °C ... +70 °C
Vibration resistance	IEC 60068-2-6, IEC 60068-2-64, IEC 60721-3-5, IEC TR 60721-4-5, IEC 61496-3
	Class 5M1 (IEC 60721-3-5)
Shock resistance	IEC 60068-2-27, IEC 60721-3-5, IEC TR 60721-4-5, IEC 61496-3
	Class 5M1 (IEC 60721-3-5)
	Continuous shock 50 m/s², 11 ms
	100 m/s², 16 ms
EMC	IEC 61496-1, IEC 61000-6-2, IEC 61000-6-3

¹⁾ Typical ambient light immunity, for ambient light sources directly in the scan plane in accordance with IEC 61496-3: ≤ 3 klx.

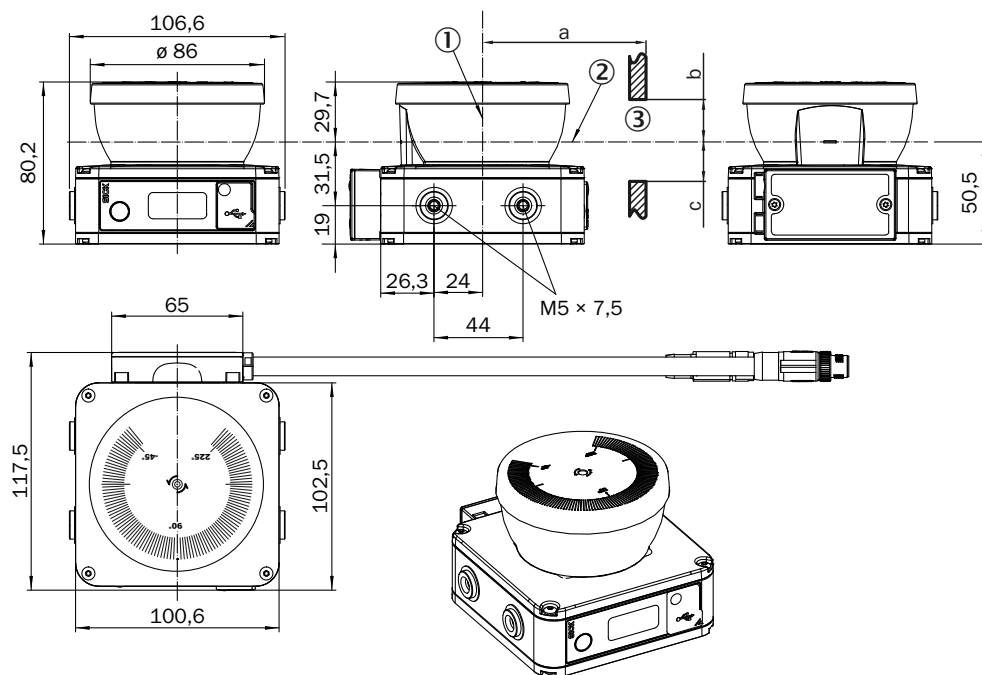
OTHER INFORMATION

Type of light	Pulsed laser diode
Wave length	905 nm
Detectable remission factor	1.8% to several 1000%
Laser class	1 (21 CFR 1040.10 and 1040.11, IEC 60825-1)

CERTIFICATES

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

DIMENSIONAL DRAWING



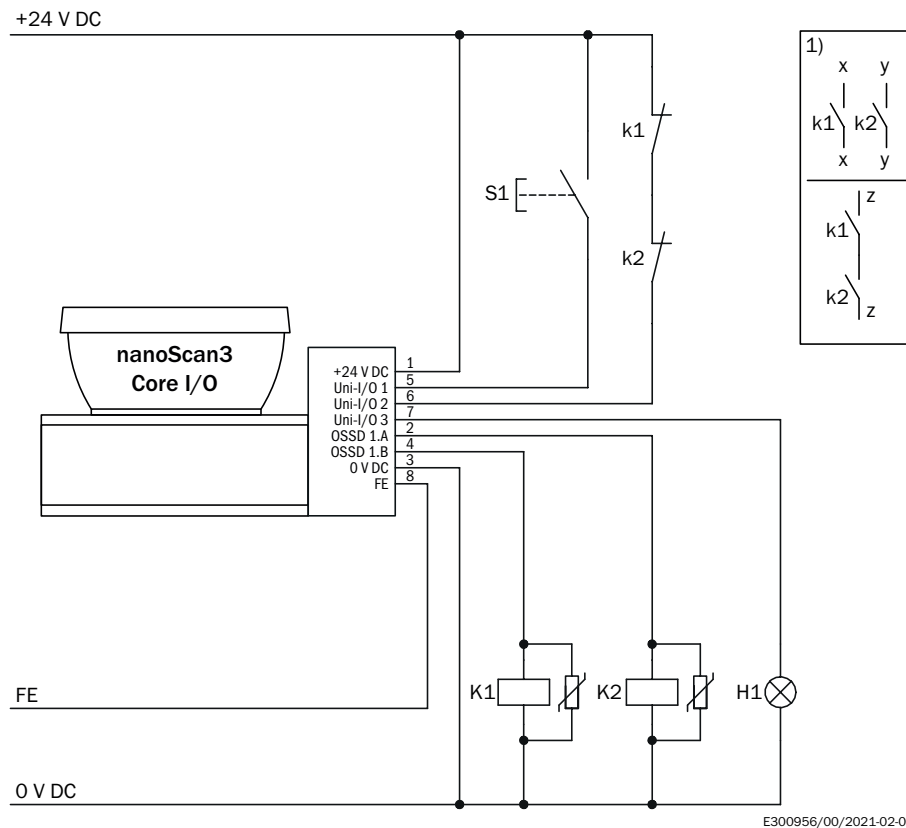
Dimensions in mm (inch)

① mirror axis of rotation

② scan plane

③ required viewing slit (a: length of the viewing slit, b: minimum height above the scan plane, c: minimum height below the scan plane. See the operating instructions for details.)

CONNECTION DIAGRAM NANOSCAN3 CORE I/O WITH RESTART INTERLOCK AND EXTERNAL DEVICE MONITORING

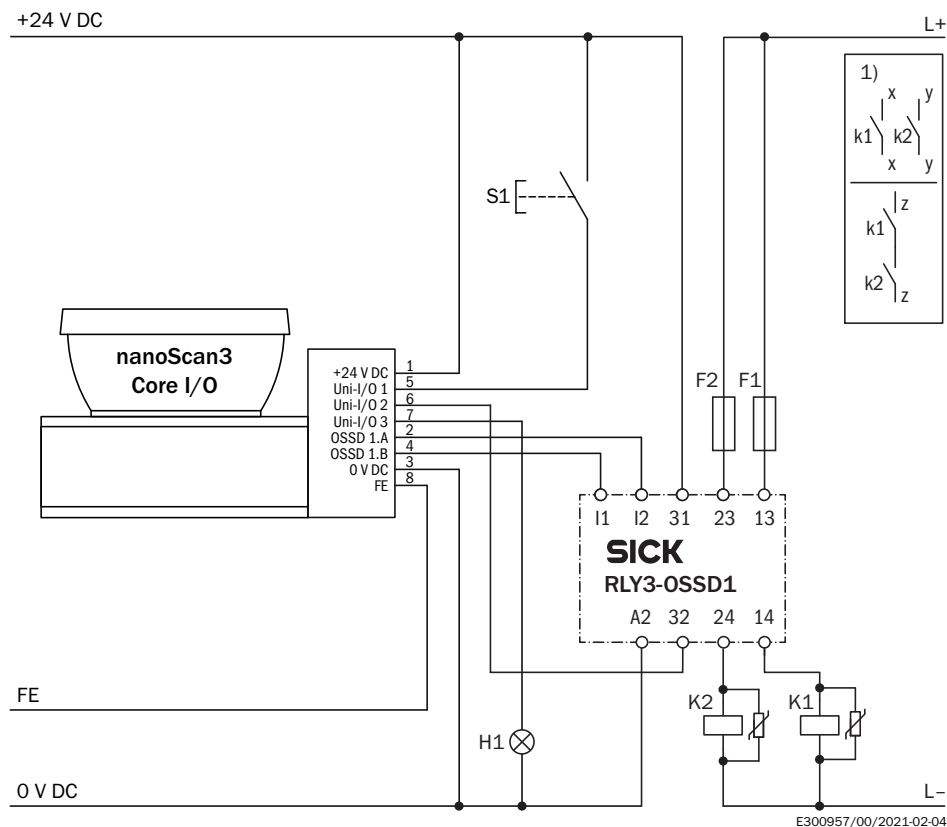


E300956/00/2021-02-05

① Output circuits: These contacts must be incorporated into the control such that the dangerous state is brought to an end if the output circuit is open. For categories 4 and 3, they must be incorporated on dual-channels (x, y paths). Single-channel incorporation into the control (z path) is only possible with a single-channel control and taking the risk analysis into account.

- Uni-I/O 1: configured as input reset
- Uni-I/O 2: configured as input external device monitoring (EDM)
- Uni-I/O 3: configured as output reset required

CONNECTION DIAGRAM NANOSCAN3 CORE I/O WITH RESTART INTERLOCK AND EXTERNAL DEVICE MONITORING AT RLY3-OSSD1 SAFETY RELAY



E300957/00/2021-02-04

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/1100333



SICK AG
WALDKIRCH
GERMANY
SICK.COM

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

SICK
Sensor Intelligence