



SE1-ST1A20

safeIDS

NON-CONTACT SAFETY SWITCHES

SICK
Sensor Intelligence.



Ordering information

Type	part no.
SE1-ST1A20	1132196

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



Detailed technical data

Features

System part	sensor
Sensor principle	RFID
Assured switch on distance S_{ao}	10 mm (-10 °C ... +70 °C) ¹⁾
Assured switch off distance S_{ar}	35 mm ¹⁾
Active sensor surfaces	3
Active sensor surface	Top
Actuation frequency	≤ 0.5 Hz

¹⁾ Values apply for the frontal alignment of the sensor to the actuator. A detailed display of the alignment options and values can be found in the operating instructions.

Safety-related parameters

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)	0.301 x 10 ⁻⁹ ¹⁾ 0.418 x 10 ⁻⁹ ²⁾
T_M (mission time)	20 years (EN ISO 13849)
Type	Type 4 (EN ISO 14119)
Actuator coding level	High coding level (EN ISO 14119) ³⁾ Medium coding level (EN ISO 14119) ³⁾ Low coding level (EN ISO 14119) ³⁾
Safe state in the event of a fault	Error display via SPDUin

¹⁾ At 40 °C and sea level.

²⁾ At 40 °C and 3,000 m above sea level.

³⁾ Depends on the evaluation of the process data, see operating instructions.

Functions

Safe series connection	None, only individual wiring (with diagnostics)
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Interfaces

Connection type	Plug, M12, 4-pin, A-coded
Long connecting cable	≤ 20 m
IO-Link Safety	✓, IO-Link Safety V1.1.4
Data transmission rate	38.4 kBaud (COM2)
Process data length	FS-PDin: 8 bytes; FS-PDout: -
Function	Process data, diagnosis
Feature Level	a (no OSSDe support)
WCDT	≤ 100 ms
OFDT	≤ 100 ms
Display elements	LEDs
Diagnostics indicator	✓
Status display	✓

Electronics

Protection class	III (IEC 61140)
Contamination rating	3 (EN 60947-1)
Usage category	DC-12 (IEC 60947-5-1)
Rated insulation voltage U_i	32 V DC
Supply voltage V_s	24 V DC (18 V DC ... 30 V DC)
Power consumption	35 mA ¹⁾
Type of output	IO-Link Safety
Response time	≤ 100 ms
Release time	≤ 100 ms
Risk time	≤ 100 ms
Switch-on time	5 s

¹⁾ Without load.

Mechanics

Dimensions (W x H x D)	84 mm x 18 mm x 26 mm
Weight	44 g
Housing material	VISTAL®

Ambient data

Enclosure rating	IP67, IPX9K (EN 60529, ISO 20653)
Ambient operating temperature	-10 °C ... +70 °C
Storage temperature	-25 °C ... +70 °C
Vibration resistance	10 Hz ... 55 Hz, 1 mm (IEC 60068-2-6)
Shock resistance	30 g, 11 ms (IEC 60068-2-27)
EMC	EN IEC 61000-6-2 EN IEC 61000-6-7 EN IEC 62131-9 EN IEC 61139-2

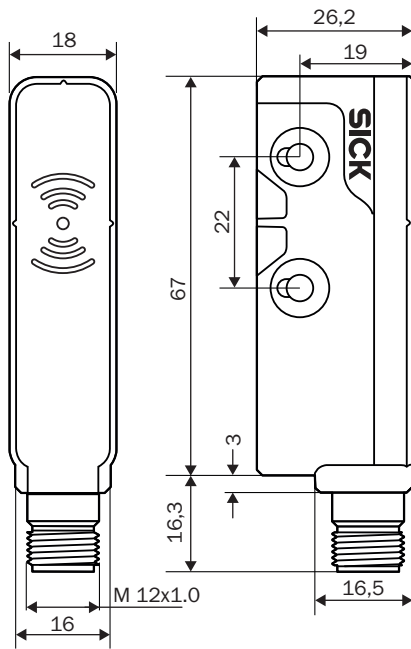
Certificates

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

Classifications

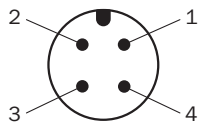
ECLASS 5.0	27272403
ECLASS 5.1.4	27272403
ECLASS 6.0	27272403
ECLASS 6.2	27272403
ECLASS 7.0	27272403
ECLASS 8.0	27272403
ECLASS 8.1	27272403
ECLASS 9.0	27272403
ECLASS 10.0	27272403
ECLASS 11.0	27272403
ECLASS 12.0	27274601
ETIM 5.0	EC001829
ETIM 6.0	EC001829
ETIM 7.0	EC001829
ETIM 8.0	EC001829
UNSPSC 16.0901	39122205

Dimensional drawing



Dimensions in mm (inch)

Pinouts








Pin	Designation	Description
1	+24 V DC	24 V DC voltage supply
2	n.c.	Not connected
3	0 V	0 V DC voltage supply
4	Q/C/IO-L-S	IO-Link network connection

For details see operating instructions

Recommended accessories

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

	Brief description	Type	part no.
actuators and bolts			
	<ul style="list-style-type: none"> • Product: Actuators for RFID safety switches • Description: Actuator with short ID 01 • Design: Mini 	SE1-AM01	1132271
	<ul style="list-style-type: none"> • Product: Actuators for RFID safety switches • Description: Actuator with short ID 02 • Design: Mini 	SE1-AM02	1132272
	<ul style="list-style-type: none"> • Product: Actuators for RFID safety switches • Description: Actuator with short ID 03 • Design: Mini 	SE1-AM03	1132273
	<ul style="list-style-type: none"> • Product: Actuators for RFID safety switches • Description: Actuator with short ID 04 • Design: Mini 	SE1-AM04	1132274
	<ul style="list-style-type: none"> • Product: Actuators for RFID safety switches • Description: Actuator with short ID 05 • Design: Mini 	SE1-AM05	1132275
	<ul style="list-style-type: none"> • Product: Actuators for RFID safety switches • Description: Actuator with short ID 06 • Design: Mini 	SE1-AM06	1132276
	<ul style="list-style-type: none"> • Product: Actuators for RFID safety switches • Description: Actuator with short ID 07 • Design: Mini 	SE1-AM07	1132277
	<ul style="list-style-type: none"> • Product: Actuators for RFID safety switches • Description: Actuator with short ID 08 • Design: Mini 	SE1-AM08	1132278
	<ul style="list-style-type: none"> • Product: Actuators for RFID safety switches • Description: Actuator with short ID 09 • Design: Mini 	SE1-AM09	1132279
	<ul style="list-style-type: none"> • Product: Actuators for RFID safety switches • Description: Actuator with short ID 10 • Design: Mini 	SE1-AM10	1132280
	<ul style="list-style-type: none"> • Product: Actuators for RFID safety switches • Description: Actuator with short ID 11 • Design: Mini 	SE1-AM11	1132281
	<ul style="list-style-type: none"> • Product: Actuators for RFID safety switches • Description: Actuator with short ID 12 • Design: Mini 	SE1-AM12	1132282
	<ul style="list-style-type: none"> • Product: Actuators for RFID safety switches • Description: Actuator with short ID 13 • Design: Mini 	SE1-AM13	1132283
	<ul style="list-style-type: none"> • Product: Actuators for RFID safety switches • Description: Actuator with short ID 14 • Design: Mini 	SE1-AM14	1132284
	<ul style="list-style-type: none"> • Product: Actuators for RFID safety switches • Description: Actuator with short ID 15 • Design: Mini 	SE1-AM15	1132285
	<ul style="list-style-type: none"> • Product: Actuators for RFID safety switches • Description: Actuator with short ID 16 • Design: Mini 	SE1-AM16	1132286

	Brief description	Type	part no.
Mounting systems			
	<ul style="list-style-type: none"> • Packing unit: 10 pieces 	Safety screws M3 x 12	5333569
connectors and cables			
	<ul style="list-style-type: none"> • Description: Sensor/actuator cable, unshielded • Connection type head A: Female connector, M12, 4-pin, straight, A-coded • Connection type head B: Male connector, M12, 4-pin, straight, A-coded • Signal type: Sensor/actuator cable • Cable: 1 m, 4-wire, PUR, halogen-free • Application: Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation 	YF2A14-010UB3M2A14	2095997
	<ul style="list-style-type: none"> • Description: Sensor/actuator cable, unshielded • Connection type head A: Female connector, M12, 4-pin, angled, A-coded • Connection type head B: Male connector, M12, 4-pin, angled, A-coded • Signal type: Sensor/actuator cable • Cable: 1 m, 4-wire, PUR, halogen-free • Application: Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation 	YG2A14-010UB3N2A14	2107519
	<ul style="list-style-type: none"> • Description: Sensor/actuator cable, unshielded • Connection type head A: Female connector, M12, 4-pin, angled, A-coded • Connection type head B: Male connector, M12, 4-pin, angled, A-coded • Signal type: Sensor/actuator cable • Cable: 0.6 m, 4-wire, PUR, halogen-free • Application: Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation 	YG2A14- C60UB3N2A14	2145702
	<ul style="list-style-type: none"> • Description: Sensor/actuator cable, unshielded • Connection type head A: Female connector, M12, 4-pin, angled, A-coded • Connection type head B: Male connector, M12, 4-pin, angled, A-coded • Signal type: Sensor/actuator cable • Cable: 5 m, 4-wire, PUR, halogen-free • Application: Drag chain operation, Zones with oils and lubricants, Robot, Drag chain operation 	YG2A14-050UB3N2A14	2145703

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