



DATA SHEET

STR1-SASU10P8

STR1
Non-contact safety switches

SICK

Sensor Intelligence

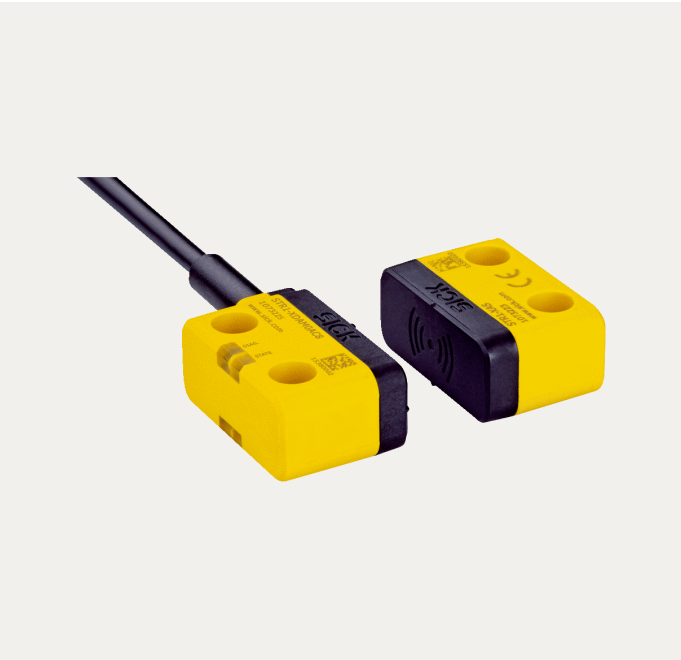


Illustration may differ

NON-CONTACT SAFETY SWITCHES

STR1-SASU10P8

ORDERING INFORMATION

Type	part no.
STR1-SASU10P8	1077193

Further device versions and accessories at www.sick.com/STR1



DETAILED TECHNICAL DATA

FEATURES

System part	Sensor with actuator
Sensor principle	RFID
Number of safe outputs	2
Auxiliary contact (AUX)	1 (Switching behavior complementary to OSSDs)
Assured switch on distance S_{ao}	10 mm (–30 °C ... +70 °C) ¹⁾
Assured switch off distance S_{ar}	25 mm ¹⁾
Active sensor surfaces	3
Active sensor surface	Top, sides (left, right) ²⁾
Actuation directions	5
Coding	Uniquely coded

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.

²⁾ For details see 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 ₀ (mean probability of a dangerous failure per hour)	5,1 x 10 ⁻⁹
T _m (mission time)	20 years (EN ISO 13849)
Type	Type 4 (EN ISO 14119)
Actuator coding level	High coding level (EN ISO 14119)
Safe state in the event of a fault	At least one safety-related semiconductor output (OSSD) is in the OFF state.

FUNCTIONS

Safe series connection	In control cabinet (with diagnostics)
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INTERFACES

Connection type	Cable, 7-wire
Length of cable	10 m
Long connecting cable	≤ 200 m
Cable diameter	5.5 mm
Conductor cross section	0.12 mm ²
Bend radius (with fixed installation)	> 8 x cable diameter
Bend radius (with moving cable)	> 12 x cable diameter
Cable material	PVC
Conductor material	Copper
Display elements	LEDs
Diagnostics indicator	✓
Status display	✓

ELECTRONICS

Protection class	III (IEC 61140)
Classification according to cULus	Class 2
Supply voltage V_s	24 V DC (19.2 V DC ... 28.8 V DC)
Power consumption	50 mA
Type of output	Self-monitoring semiconductor outputs (OSSDs)
Output current	≤ 100 mA
Response time	40 ms ¹⁾
Release time	100 ms ^{1) 2)}
Risk time	80 ms ^{1) 3)}
Switch-on time	2.5 s ⁴⁾

¹⁾ In a safe series connection, each downstream safety switch increases the system response time. More response times can be found in the operating instructions.

²⁾ Response time on approach to the enable zone.

³⁾ Detection time for internal oder external faults (e.g., short-circuit or cross-circuit of output signal switching devices). Follow the detailed information in the operating instructions.

⁴⁾ The time specified applies to one sensor after the supply voltage has been applied to the safety switch. In a safe series connection, 0.1-s must be added for each sensor. An additional 0.5-s per taught-in actuator must be added for uniquely coded and permanently coded sensors.

MECHANICS

Dimensions (W x H x D)	40 mm x 18 mm x 26 mm
Weight	475 g
Housing material	VISTAL®

AMBIENT DATA

Enclosure rating	IP67 (IEC 60529) IP69K (ISO 20653)
Ambient operating temperature	-30 °C ... +70 °C ¹⁾
Storage temperature	-30 °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 61326-3-1

¹⁾ Only applies for safety switches whose serial numbers begin with number series 1825**** or higher. For safety switches whose serial numbers deviate from this, an ambient operating temperature of -10 °C ... +70 °C applies. The serial number is displayed on the safety switch over the data matrix code.

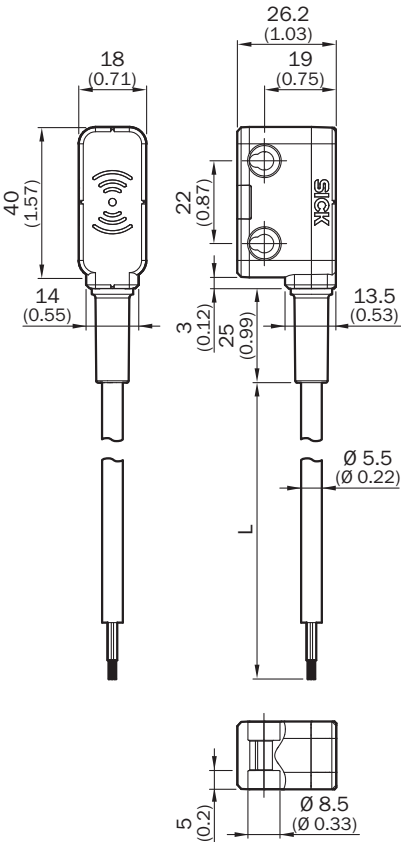
	EN IEC 60947-5-2 EN IEC 60947-5-3 EN 300330 V2.1.1
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¹ Only applies for safety switches whose serial numbers begin with number series 1825**** or higher. For safety switches whose serial numbers deviate from this, an ambient operating temperature of -10 °C ... +70 °C applies. The serial number is displayed on the safety switch over the data matrix code.

CERTIFICATES

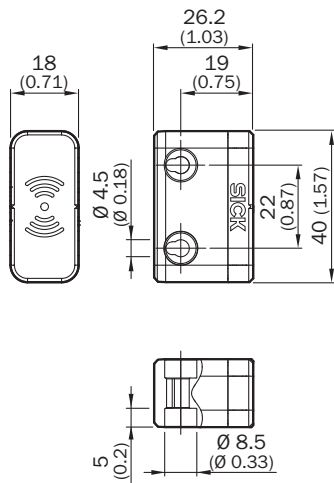
EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
China RoHS	✓
ECOLAB certificate	✓
UK-Type-Examination approval	✓
cULus certificate	✓
TÜV approval	✓
TÜV approval annex	✓
EC-Type-Examination approval	✓

DIMENSIONAL DRAWING SENSOR WITH CABLE



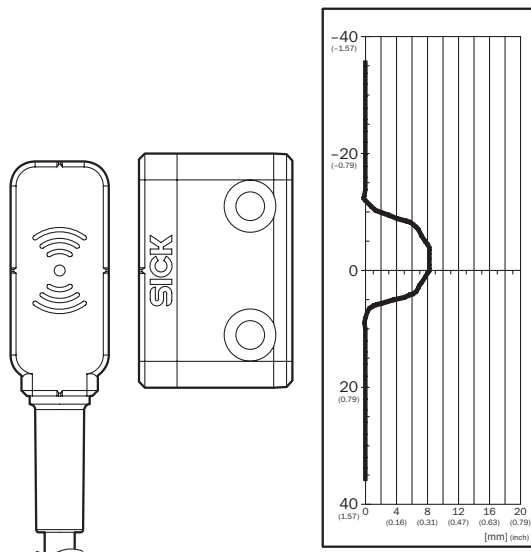
Dimensions in mm (inch)

DIMENSIONAL DRAWING "STANDARD" ACTUATOR



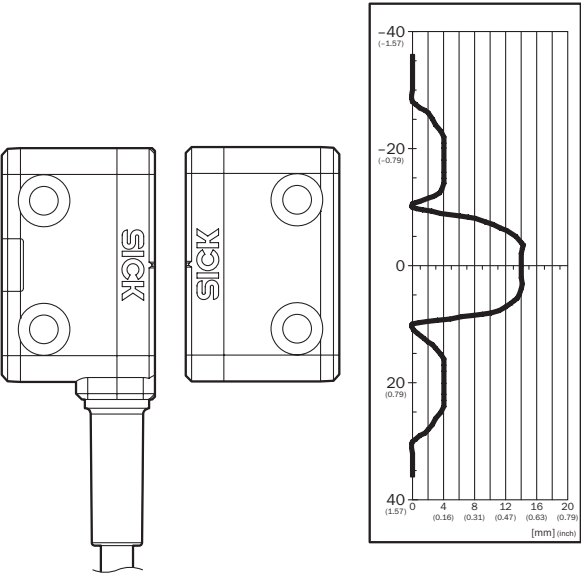
Dimensions in mm (inch)

RESPONSE RANGE "STANDARD" ACTUATOR, ACTIVE SIDE SENSOR SURFACE



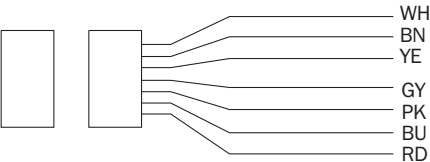
assured switch on distance S_{ao} 6 mm

RESPONSE RANGE "STANDARD" ACTUATOR, ACTIVE FRONT SENSOR SURFACE

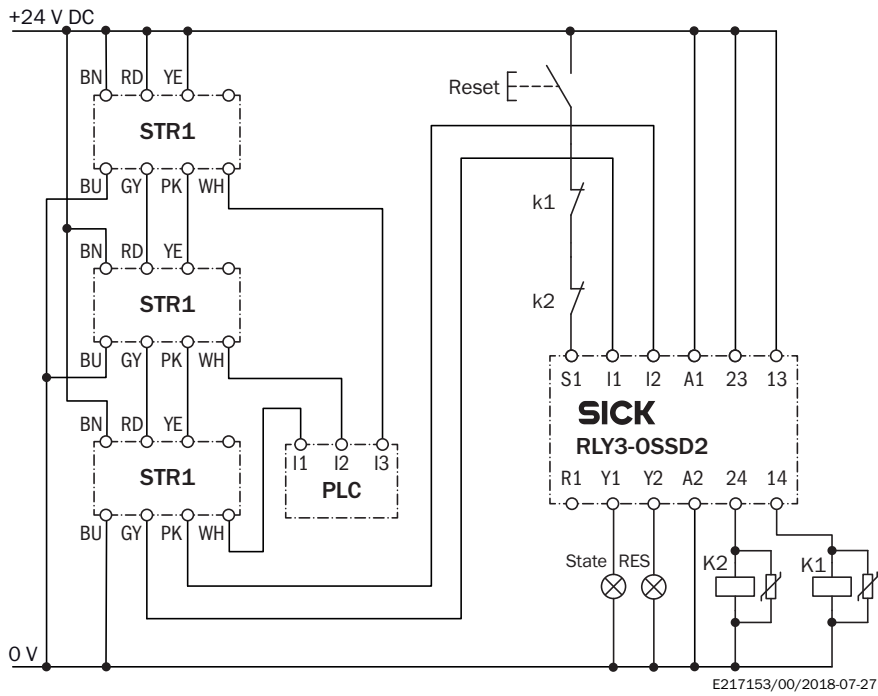


Assured switch on distance Sao 10 mm. Observe border areas for parallel approach: a minimum distance of 6 mm (typical) must be upheld when the actuator moves laterally to the sensor surface. This prevents early triggering due to the side preparation areas.

PINOUTS



White	Aux output (not safe)
Brown	Voltage supply 24 V DC
Yellow	Enable input for OSSD 2
Grey	OSSD 1
Pink	OSSD 2
Blue	Voltage supply 0 V DC
Red	Enable input for OSSD 1

CONNECTION DIAGRAM SERIES CONNECTION OF THREE STR1 RFID SAFETY SWITCHES TO RLY3-OSSD2 SAFETY RELAY

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/1077193



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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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