



SRA3-AAR190BKZI

safeRS/safeRS3

SAFETY RADAR SENSORS

SICK
Sensor Intelligence.



Illustration may differ

Ordering information

Variant	Protective field range	Field of view	Type	Part no.
safeRS3	0.5 m ... 9 m	10° ... 100° (0.5 m ... 5 m) or 10° ... 40° (5 m ... 9 m), can be adjusted in 10° intervals (horizontal plane), 20° (vertical plane)	SRA3-AAR190BKZI	6082806

The system consists of a control unit and up to 6 sensors.

Other models and accessories → www.sick.com/safeRS_safeRS3



Detailed technical data

Features

Application	Indoor / Outdoor	
Scope	Stationary (only one monitoring case possible), mobile	
Protective field range	0.5 m ... 9 m	
Number of protective fields	4	
Field of view	0.5 m ... 5 m	10° ... 100°, adjustable in 10° intervals (horizontal plane) 20° (vertical plane)
	5 m ... 9 m	10° ... 40°, adjustable in 10° intervals (horizontal plane) 20° (vertical plane)
Response time	≤ 100 ms	
Vehicle speed	≤ 4 m/s	

Safety-related parameters

Safety integrity level	SIL 2 (IEC 62061)
Category	Category 3 (EN ISO 13849)
Performance level	PL d (EN ISO 13849)
PFH_D (mean probability of a dangerous failure per hour)	1.66 x 10 ^{-8 1)}
Access protection	
MTTF_D (mean time to dangerous failure)	38 years (IEC 60050)
T_M (mission time)	20 years (EN ISO 13849)
Safe state in the event of a fault	At least one OSSD pair is in the OFF state.

¹⁾ For details see operating instructions.

Functions

Restart interlock	✓ ¹⁾
Muting	✓
Manipulation protection	✓
Safe detection of a person	✓

¹⁾ Only available at a protective field range of 0.5 m ... 5 m.

Interfaces

Connection type	
Voltage supply and signal transmission	Male connector, M12, 5-pin, A-coded Female connector, M12, 5-pin, A-coded

Electrical data

Supply voltage V_s	12 V DC, $\pm 20\%$ ¹⁾
Power consumption	≤ 1 A
Power consumption	≤ 4.7 W

¹⁾ Via control unit.

Mechanical data

Dimensions (W x H x D)	85 mm x 85 mm x 71 mm
Housing material	
Sensor	PA 66
Rear view	Aluminum
Bracket	PA 66, Glass fiber

Ambient data

Enclosure rating	IP67 (IEC 60529)
Ambient operating temperature	-30 °C ... +60 °C
Storage temperature	-40 °C ... +80 °C

Other information

Bandwidth	60.6 GHz ... 62.8 GHz
Transmissin power	≤ 16 dBm
Radio class	Class 2 (2014/53/EU, RED - radio equipment)
Detection method	FMCW radar for motion detection
Items supplied	safeRS3 sensor Two-axis/three-axis bracket Safety instruction Mounting instructions Operating instructions for download safeRS3 Designer (configuration and diagnostic software) for download

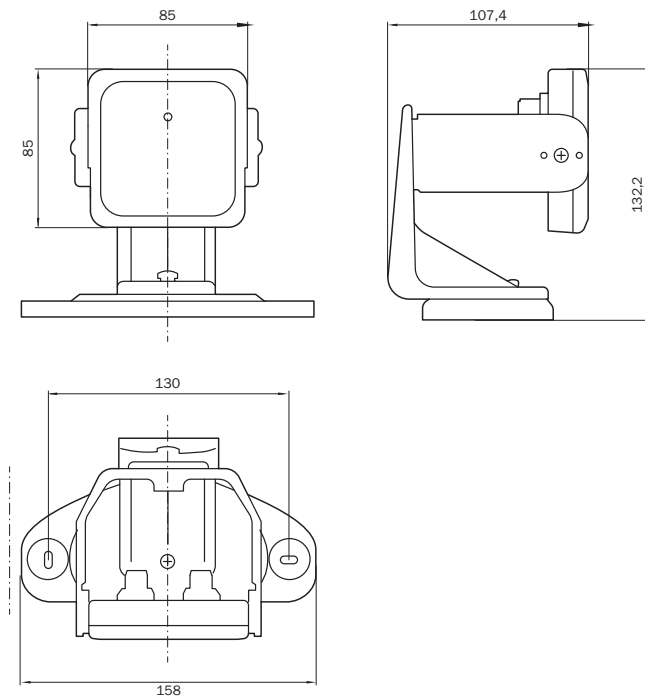
Classifications

ECLASS 5.0	27270890
ECLASS 5.1.4	27270890
ECLASS 6.0	27280800
ECLASS 6.2	27280800
ECLASS 7.0	27280890

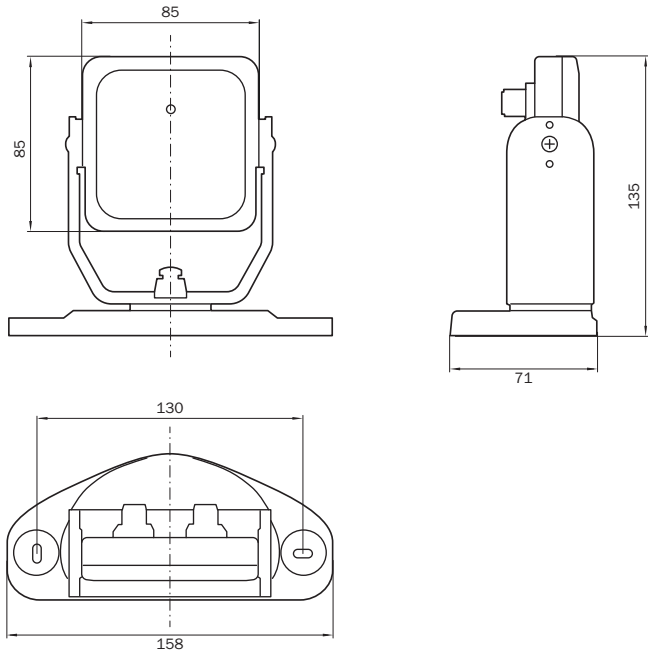
ECLASS 8.0	27280890
ECLASS 8.1	27280890
ECLASS 9.0	27280890
ECLASS 10.0	27280890
ECLASS 11.0	27280890
ECLASS 12.0	27280890
ETIM 5.0	EC001825
ETIM 6.0	EC001825
ETIM 7.0	EC001825
ETIM 8.0	EC001825
UNSPSC 16.0901	39121528

Dimensional drawing (Dimensions in mm (inch))

safeRS3 sensor on three-axis bracket

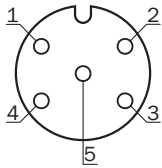


safeRS3 sensor on two-axis bracket



Pin assignment

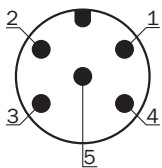
Female connector



Pin	Description
1	Shield, for connecting to the ground connection of the control unit
2	+ 12 V DC
3	GND
4	CAN H
5	CAN L

For details see operating instructions

Male connector



Pin	Description
1	Shield, for connecting to the ground connection of the control unit



Pin	Description
2	+ 12 V DC
3	GND
4	CAN H
5	CAN L

For details see operating instructions

Recommended accessories

Other models and accessories → www.sick.com/safeRS_safeRS3

	Brief description	Type	Part no.
Plug connectors and cables			
	<ul style="list-style-type: none"> Connection type head A: Female connector, M12, 5-pin, angled Connection type head B: Flying leads Signal type: Fieldbus, DeviceNet™ Cable: 5 m, 5-wire, PUR, halogen-free Description: Fieldbus, DeviceNet™, shielded Note: A-coded 	YG2A15-050C1BXLEAX	2112753
	<ul style="list-style-type: none"> Connection type head A: Female connector, M12, 5-pin, angled Connection type head B: Flying leads Signal type: Fieldbus, DeviceNet™ Cable: 10 m, 5-wire, PUR, halogen-free Description: Fieldbus, DeviceNet™, shielded Note: A-coded 	YG2A15-100C1BXLEAX	2112754
	<ul style="list-style-type: none"> Connection type head A: Female connector, M12, 5-pin, angled Connection type head B: Flying leads Signal type: Fieldbus, DeviceNet™ Cable: 15 m, 5-wire, PUR, halogen-free Description: Fieldbus, DeviceNet™, shielded Note: A-coded 	YG2A15-150C1BXLEAX	2112755
	<ul style="list-style-type: none"> Connection type head A: Male connector, USB-A Connection type head B: Male connector, Micro-B Signal type: USB 2.0 Cable: 2 m Description: USB 2.0, unshielded 	USB cable	6036106
	<ul style="list-style-type: none"> Connection type head A: Male connector, USB-A, straight Connection type head B: Female connector, USB-A, straight Signal type: USB Cable: 10 m, 4-wire Description: USB, unshielded Note: Used to extend the USB interface by 10 m. The cable can be extended up to 20 m by plugging in another 10 m extension. 	USB extension cable, repeater	6069292
	<ul style="list-style-type: none"> Connection type head A: Female connector, M12, 5-pin, angled Connection type head B: Male connector, M12, 5-pin, angled Signal type: Fieldbus, DeviceNet™ Cable: 3 m, 5-wire Description: Fieldbus, DeviceNet™, shielded Note: A-coded 	YG2A15-030C1BN2A15	2112756
	<ul style="list-style-type: none"> Connection type head A: Female connector, M12, 5-pin, angled Connection type head B: Male connector, M12, 5-pin, angled Signal type: Fieldbus Cable: 5 m, 5-wire Description: Fieldbus, shielded Note: A-coded 	YG2A15-050C1BN2A15	2115283

	Brief description	Type	Part no.
	<ul style="list-style-type: none"> • Connection type head A: Female connector, M12, 5-pin, angled • Connection type head B: Male connector, M12, 5-pin, angled • Signal type: CANopen, DeviceNet™ • Cable: 10 m, 5-wire • Description: CANopen, DeviceNet™, shielded • Note: A-coded 	YG2A15-100C1BN2A15	2115284
	<ul style="list-style-type: none"> • Connection type head A: Female connector, M12, 5-pin, angled • Connection type head B: Male connector, M12, 5-pin, angled • Signal type: CANopen, DeviceNet™ • Cable: 15 m, 5-wire • Description: CANopen, DeviceNet™, shielded • Note: A-coded 	YG2A15-150C1BN2A15	2115285
	<ul style="list-style-type: none"> • Connection type head A: Male connector, Micro-B, 4-pin, straight • Connection type head B: Male connector, USB-A, 4-pin, straight • Signal type: USB 2.0 • Cable: 5 m, 4-wire, PVC • Description: USB 2.0, shielded 	YMUSA4-050VG4MUIA4	2118400
	<ul style="list-style-type: none"> • Connection type head A: Male connector, M12, 5-pin, straight, A-coded • Signal type: CANopen, DeviceNet™ • Description: CANopen, DeviceNet™, Terminating plug with a 120 Ω resistor for the last sensor in the system 	YM2W15-000000XXXXX	2123627

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