



# SRA3-AAR150BKZI

safeRS/safeRS3

**SAFETY RADAR SENSORS**

**SICK**  
Sensor Intelligence.



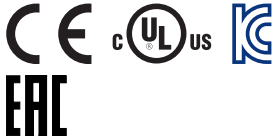
Illustration may differ

### Ordering information

Variant	Protective field range	Field of view	Type	Part no.
safeRS3	0.5 m ... 5 m	10° ... 100°, adjustable in 10° intervals (horizontal plane), 20° (vertical plane)	SRA3-AAR150BKZI	6080599

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

Other models and accessories → [www.sick.com/safeRS\\_safeRS3](http://www.sick.com/safeRS_safeRS3)



### Detailed technical data

#### Features

<b>Application</b>	Indoor / Outdoor
<b>Scope</b>	Stationary, mobile
<b>Protective field range</b>	0.5 m ... 5 m
<b>Number of protective fields</b>	4
<b>Field of view</b>	10° ... 100°, adjustable in 10° intervals (horizontal plane) 20° (vertical plane)
<b>Response time</b>	≤ 100 ms
<b>Vehicle speed</b>	≤ 2 m/s

#### Safety-related parameters

<b>Safety integrity level</b>	SIL 2 (IEC 62061)
<b>Category</b>	Category 3 (EN ISO 13849)
<b>Performance level</b>	PL d (EN ISO 13849)
<b>PFH<sub>D</sub> (mean probability of a dangerous failure per hour)</b>	
Access protection	1.66 x 10 <sup>-8 1)</sup>
<b>MTTF<sub>D</sub> (mean time to dangerous failure)</b>	38 years (IEC 60050)
<b>T<sub>M</sub> (mission time)</b>	20 years (EN ISO 13849)
<b>Safe state in the event of a fault</b>	At least one OSSD pair is in the OFF state.

<sup>1)</sup> For details see operating instructions.

#### Functions

<b>Restart interlock</b>	✓
<b>Muting</b>	✓
<b>Manipulation protection</b>	✓
<b>Safe detection of a person</b>	✓

## Interfaces

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

## Electrical data

<b>Supply voltage <math>V_s</math></b>	12 V DC, $\pm 20\%$ <sup>1)</sup>
<b>Power consumption</b>	$\leq 1$ A
<b>Power consumption</b>	$\leq 4.7$ W

<sup>1)</sup> Via control unit.

## Mechanical data

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

## Ambient data

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

## Other information

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

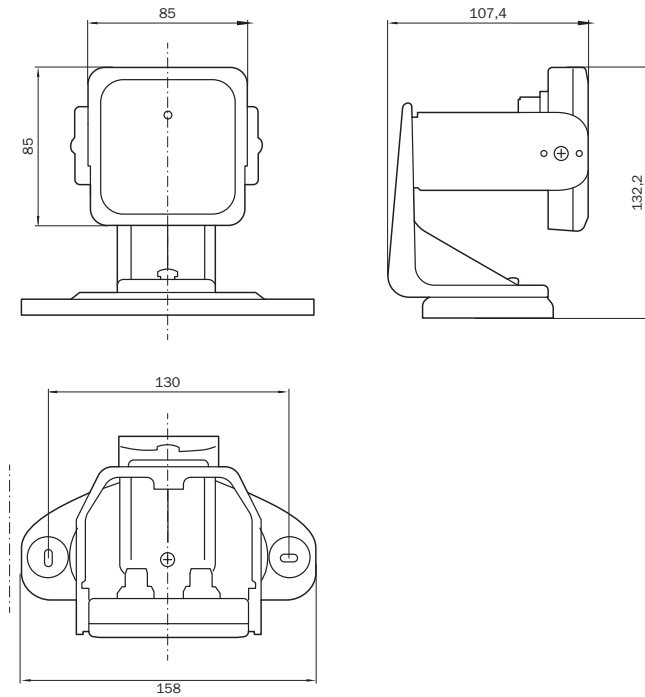
## Classifications

<b>ECLASS 5.0</b>	27270890
<b>ECLASS 5.1.4</b>	27270890
<b>ECLASS 6.0</b>	27280800
<b>ECLASS 6.2</b>	27280800
<b>ECLASS 7.0</b>	27280890
<b>ECLASS 8.0</b>	27280890
<b>ECLASS 8.1</b>	27280890
<b>ECLASS 9.0</b>	27280890
<b>ECLASS 10.0</b>	27280890
<b>ECLASS 11.0</b>	27280890
<b>ECLASS 12.0</b>	27280890
<b>ETIM 5.0</b>	EC001825

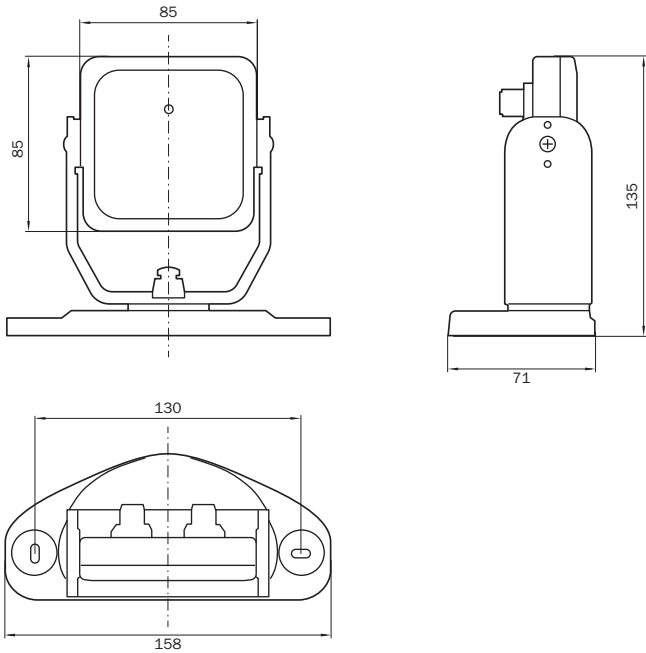
<b>ETIM 6.0</b>	EC001825
<b>ETIM 7.0</b>	EC001825
<b>ETIM 8.0</b>	EC001825
<b>UNSPSC 16.0901</b>	39121528

### Dimensional drawing (Dimensions in mm (inch))

safeRS3 sensor on three-axis bracket

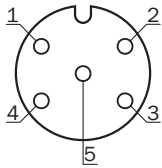


safeRS3 sensor on two-axis bracket



## Pin assignment

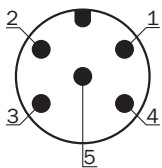
Female connector



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](http://www.sick.com/safeRS_safeRS3)

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

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