



SRA2-AAC140AANI

safeRS/safeRS3

SAFETY RADAR SENSORS

SICK
Sensor Intelligence.



Illustration may differ

Ordering information

Variant	Integration in the control system	Safety outputs	Universal inputs	Type	Part no.
safeRS	Local inputs and outputs (I/O)	1 relay output, dual-channel	3 dual-channel	SRA2-AAC140AANI	6073486

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

Number of monitoring cases	≤ 1
Response time	≤ 100 ms

Safety-related parameters

Safety integrity level	SIL 2 (IEC 62061)
Category	Category 2 (outputs category 3) (EN ISO 13849)
Performance level	PL d (EN ISO 13849)
PFH _D (mean probability of a dangerous failure per hour)	4.34 x 10 ⁻⁸
MTTF _D (mean time to dangerous failure)	40 years (IEC 60050)
T _M (mission time)	20 years (EN ISO 13849)
Safe state in the event of a fault	At least one safety relay is in the OFF state

Functions

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

Interfaces

Outputs	Safety outputs	1 relay output, dual-channel
	Universal outputs	2 relay outputs
Inputs	Universal inputs	3 dual-channel
	Test input	1
Configuration method		PC with safeRS Designer (Configuration and Diagnostic software)
Configuration and diagnostics interface		USB 2.0, micro USB

Display elements	LEDs
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Electrical data

Supply voltage V_s	24 V DC (20 V DC ... 28 V DC)
Power consumption	≤ 0.6 A
Power consumption	≤ 11 W, control unit and six sensors

Mechanical data

Dimensions (W x H x D)	166.25 mm x 92.6 mm x 46.5 mm
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Ambient data

Enclosure rating	IP20 (IEC 60529)
Ambient operating temperature	-40 °C ... +60 °C
Storage temperature	-40 °C ... +80 °C

Other information

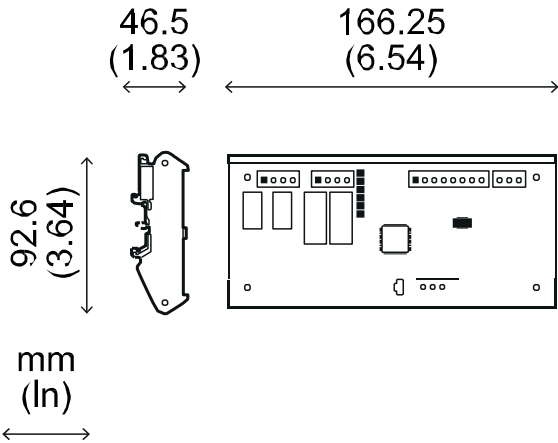
Bandwidth	24 GHz ... 24.25 GHz
Transmissin power	≤ 13 dBm
Radio class	Class 2 (2014/53/EU, RED - radio equipment)
Detection method	FMCW radar for motion detection
Items supplied	safeRS control unit Safety instruction Mounting instructions Operating instructions for download safeRS Designer (configuration 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

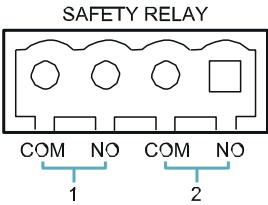
Dimensional drawing (Dimensions in mm (inch))

safeRS control unit



Pin assignment

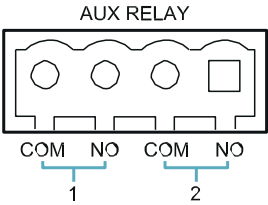
Safety outputs



Terminal	Description
COM	Common safety output 1
NO	Relay output, normally open
COM	Common safety output 2
NO	Relay output, normally open

For details see operating instructions

Universal outputs

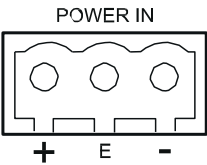


Functions: status warning field intrusion, diagnosis signal, muting status

Terminal	Description
COM	Mutual universal output 1
NO	Relay output, normally open
COM	Mutual universal output 2
NO	Relay output, normally open

For details see operating instructions

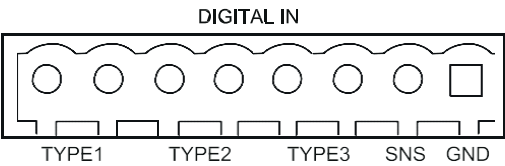
Voltage supply



Terminal	Description
+	+24 V DC
E	Earthing
-	GND

For details see operating instructions

Universal inputs

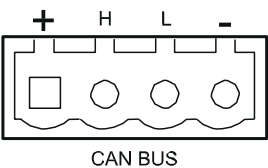


Functions: emergency stop button, manual restart interlock, muting function

Terminal	Description
Type 1	Input, 24 V DC
Type 1	Input, 24 V DC
Type 2	Input, 24 V DC
Type 2	Input, 24 V DC
Type 3	Input, 24 V DC
Type 3	Input, 24 V DC
SNS	Input, 24 V DC, diagnostics
GND	Common reference for all digital inputs
The cables used must be maximum 30 m long	

For details see operating instructions

Sensor connection




Terminal	Description
+	+12 V DC
H	CAN H
L	CAN L
-	GND

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
	<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

	Brief description	Type	Part no.
	<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