



# MRS1104A-111011S01

PeopleCounter

3D LIDAR SENSORS

**SICK**  
Sensor Intelligence.



### Ordering information

Type	Part no.
MRS1104A-111011S01	1112242

Other models and accessories → [www.sick.com/PeopleCounter](http://www.sick.com/PeopleCounter)



### Detailed technical data

#### Features

<b>SensorApp</b>	PeCo
<b>Measurement principle</b>	HDDM <sup>+</sup>
<b>Light source</b>	Infrared (850 nm)
<b>Laser class</b>	1 (IEC 60825-1:2014, EN 60825-1:2014)
<b>Aperture angle</b>	Horizontal 275° Vertical 7.5° (Over 4 measurement levels)
<b>Scanning frequency</b>	50 Hz, 4 x 12.5 Hz
<b>Angular resolution</b>	0.25°
<b>Heating</b>	Self-heating
<b>Working range</b>	10 m (Width of the counting range)
<b>Scanning range</b>	At 10% remission 16 m At 90% remission 30 m
<b>Spot size</b>	10.4 mrad x 8.7 mrad
<b>Amount of evaluated echoes</b>	3

#### Mechanics/electronics

<b>Connection type</b>	M12 round connectors (D-coded, aligned) with swivel connector
<b>Supply voltage</b>	10 V DC ... 30 V DC
<b>Power consumption</b>	≤ 13 W, Start-up phase max. 30 W for 1 s
<b>Housing</b>	AlSi12, optics cover: PC
<b>Protection class</b>	III (IEC 61140:2016-11)
<b>Electrical safety</b>	IEC 61010-1:2010-06
<b>Weight</b>	1.2 kg
<b>Dimensions (L x W x H)</b>	151.9 mm x 150 mm x 92.5 mm
<b>Mounting method</b>	Mounting height 2 m ... 5 m (typ. 2.5 m ... 3.5 m)

## Performance

<b>Scan/frame rate</b>	55,000 measurement point/s ... 165,000 measurement point/s
<b>Response time</b>	4 layers, typ. 20 ms 1 layer, typ. 80 ms
<b>Systematic error</b>	± 60 mm
<b>Statistical error</b>	≤ 30 mm
<b>Accuracy</b>	> 98 %
<b>Integrated application</b>	People counting

## Interfaces

<b>Ethernet</b>	✓, TCP/IP, UDP/IP
Data transmission rate	10/100 MBit/s
<b>Digital inputs/outputs</b>	I/O (8 (Multiport))
<b>Output data</b>	IMU (secondary sensor data)
<b>Optical indicators</b>	LEDs
<b>Operator interfaces</b>	Web server, SOPAS ET (diagnostics)
<b>Configuration software</b>	SICK AppStudio

## Ambient data

<b>Object remission</b>	2 % ... > 1,000 % (Reflector)
<b>Electromagnetic compatibility (EMC)</b>	EN 61000-6-2:2005 EN 61000-6-3:2007+A1:2011
<b>Vibration resistance</b>	IEC 60068-2-6:2007
<b>Storage temperature</b>	-40 °C ... +75 °C
<b>Ambient light immunity</b>	80 klx

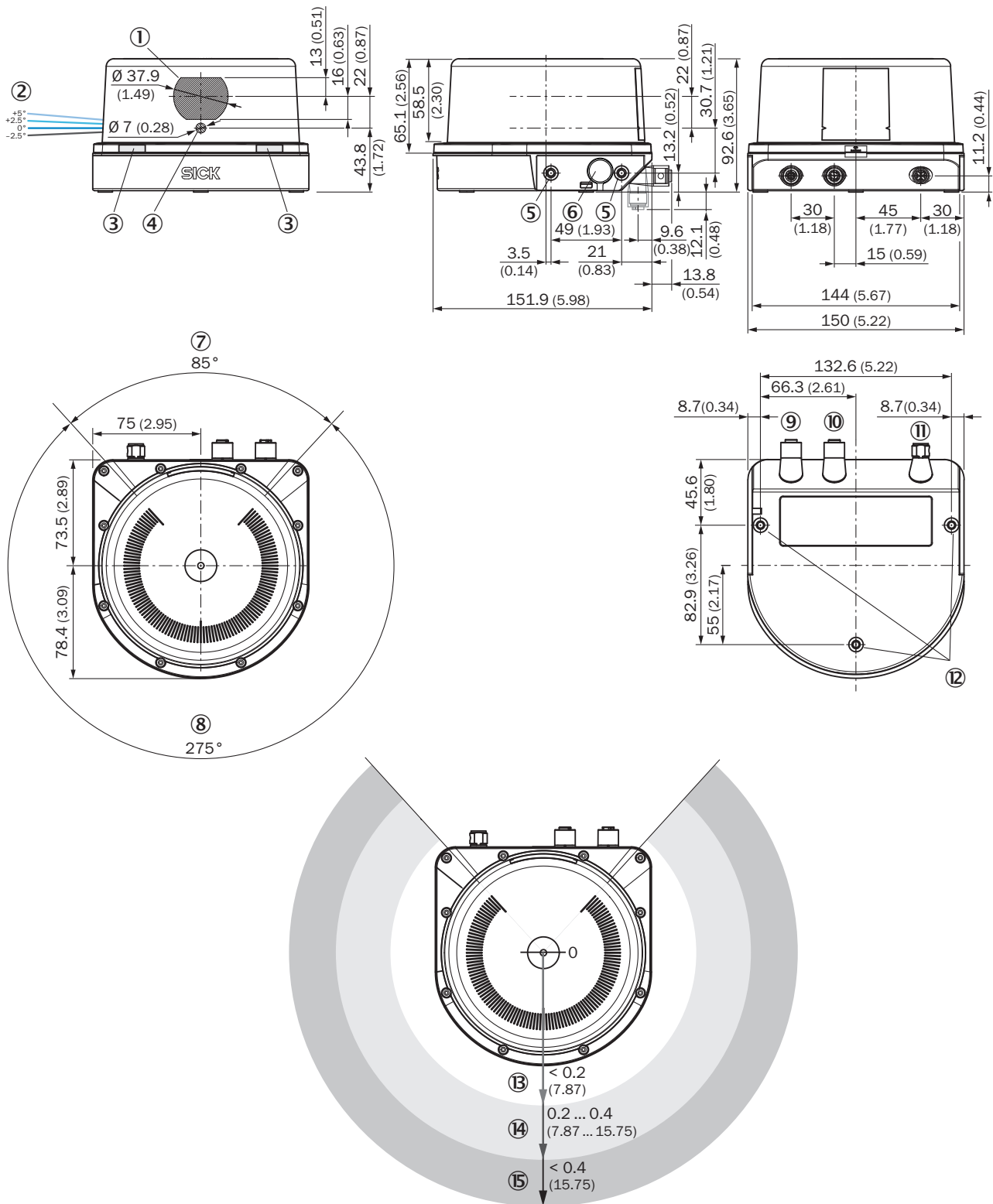
## General notes

<b>Note on use</b>	The sensor does not constitute a safety component as defined by relevant legislation on machine safety.
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## Classifications

<b>ECl@ss 5.0</b>	27270990
<b>ECl@ss 5.1.4</b>	27270990
<b>ECl@ss 6.0</b>	27270913
<b>ECl@ss 6.2</b>	27270913
<b>ECl@ss 7.0</b>	27270913
<b>ECl@ss 8.0</b>	27270913
<b>ECl@ss 8.1</b>	27270913
<b>ECl@ss 9.0</b>	27270913
<b>ECl@ss 10.0</b>	27270913
<b>ECl@ss 11.0</b>	27270913
<b>ETIM 5.0</b>	EC002550
<b>ETIM 6.0</b>	EC002550
<b>ETIM 7.0</b>	EC002550
<b>UNSPSC 16.0901</b>	46171620

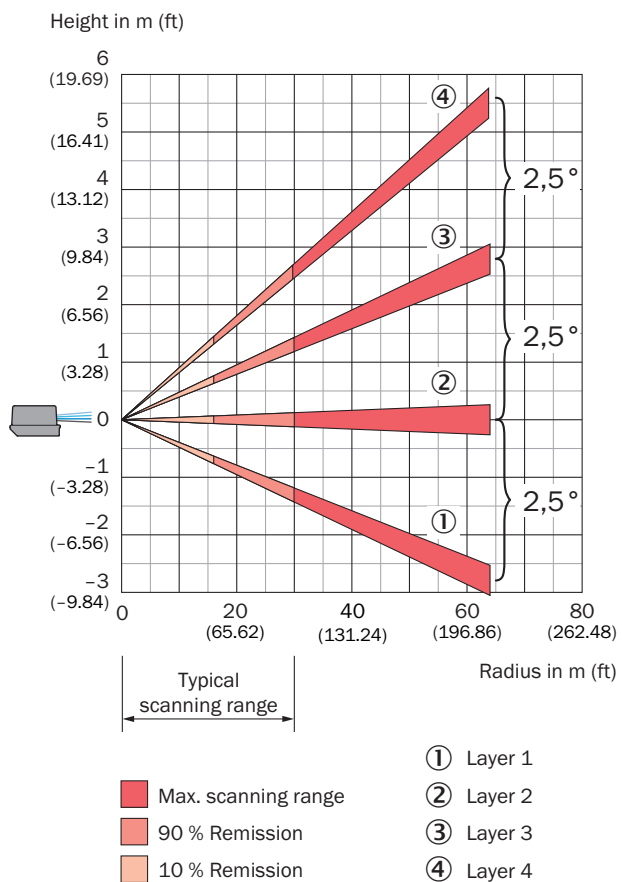
### Dimensional drawing (Dimensions in mm (inch))



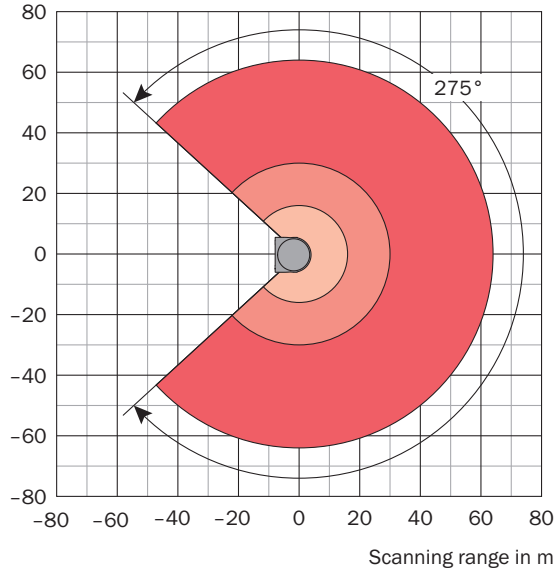
- ① Receiver
- ② Laser aperture angle, layers 1 to 4
- ③ Status LEDs
- ④ Sender
- ⑤ Mounting hole M5 x 7.5
- ⑥ Pressure compensation element

- ⑦ Blind zone
- ⑧ Field of view
- ⑨ Ethernet connection
- ⑩ I/O connection
- ⑪ POWER connection
- ⑫ Mounting hole M5 x 7.5
- ⑬ Close range (no detection or measurement possible)
- ⑭ Detection zone
- ⑮ Measuring range

### Working range diagram

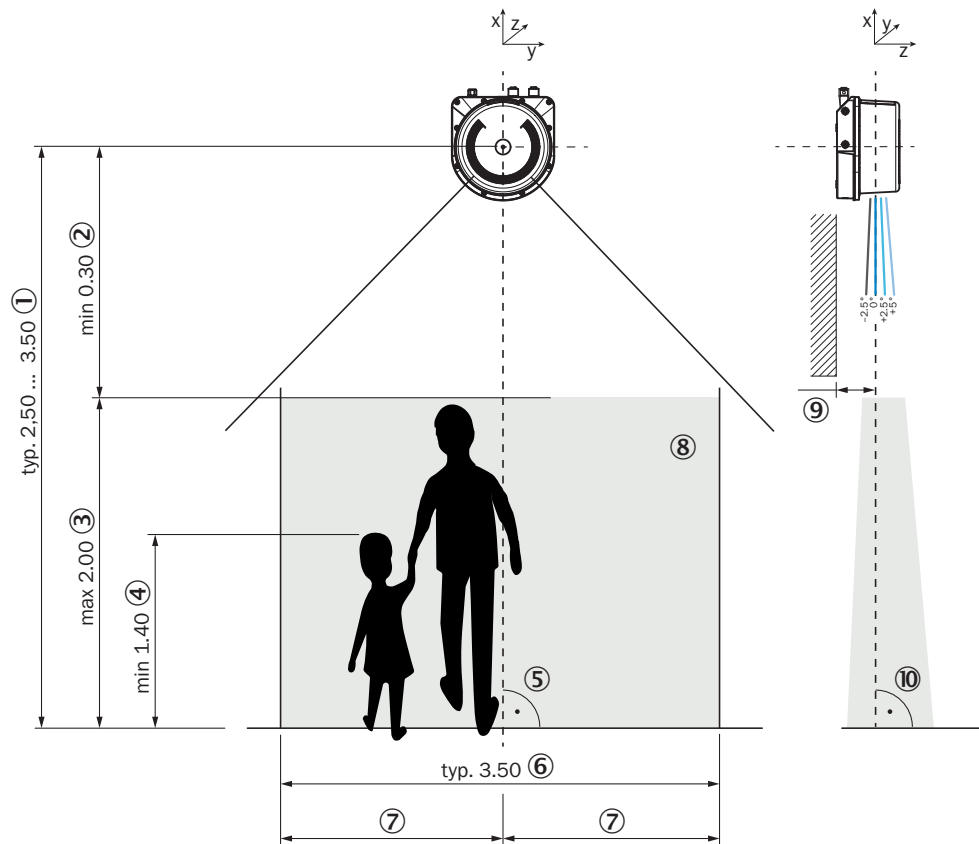


Scanning range in m



- Scanning range max. 64 m
- Scanning range for objects up to 90 % remission 30 m
- Scanning range for objects up to 10 % Remission 16 m

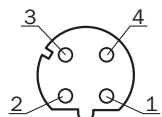
## Assembly note



- ① Mounting height 2 m ... 5 m (typ. 2.5 m ... 3.5 m)
- ② Minimum distance from origin of measurement to people
- ③ Size of person: max. 2 m
- ④ Size of person: min. 1.4 m
- ⑤ Tilt of device around y-axis: typically 0°; max. ± 10°
- ⑥ Horizontal detection area: typically 3.5 m; max. 10 m
- ⑦ Position of the device over the detection area: typically central to prevent shading by people walking by
- ⑧ Detection area: typically 3.5 m x 2 m (W x H); max. 10 m x 2 m (W x H)
- ⑨ Distance of the device to objects (e.g. walls): observe scan plane angle (-2.5°/0°/+2.5°/+5°), if needed increase distance or tilt device around y-axis
- ⑩ Tilt of device around y-axis: typically 0°; max. ± 10°

## Connection type

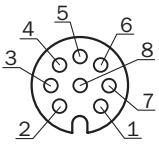
Ethernet



M12 female connector, 4-pin, D-coded

- ① TX+
- ② RX+
- ③ TX-
- ④ RX-

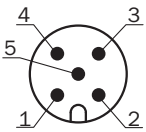
I/O



Connector M12, 8-pin, A-coded

- ① IN1/OUT1
- ② IN2/OUT2
- ③ IN3/OUT3
- ④ IN4/OUT4
- ⑤ IN5/OUT5
- ⑥ IN6/OUT6
- ⑦ GND IN<sub>x</sub>/OUT<sub>x</sub>
- ⑧ IN7/OUT7

Power



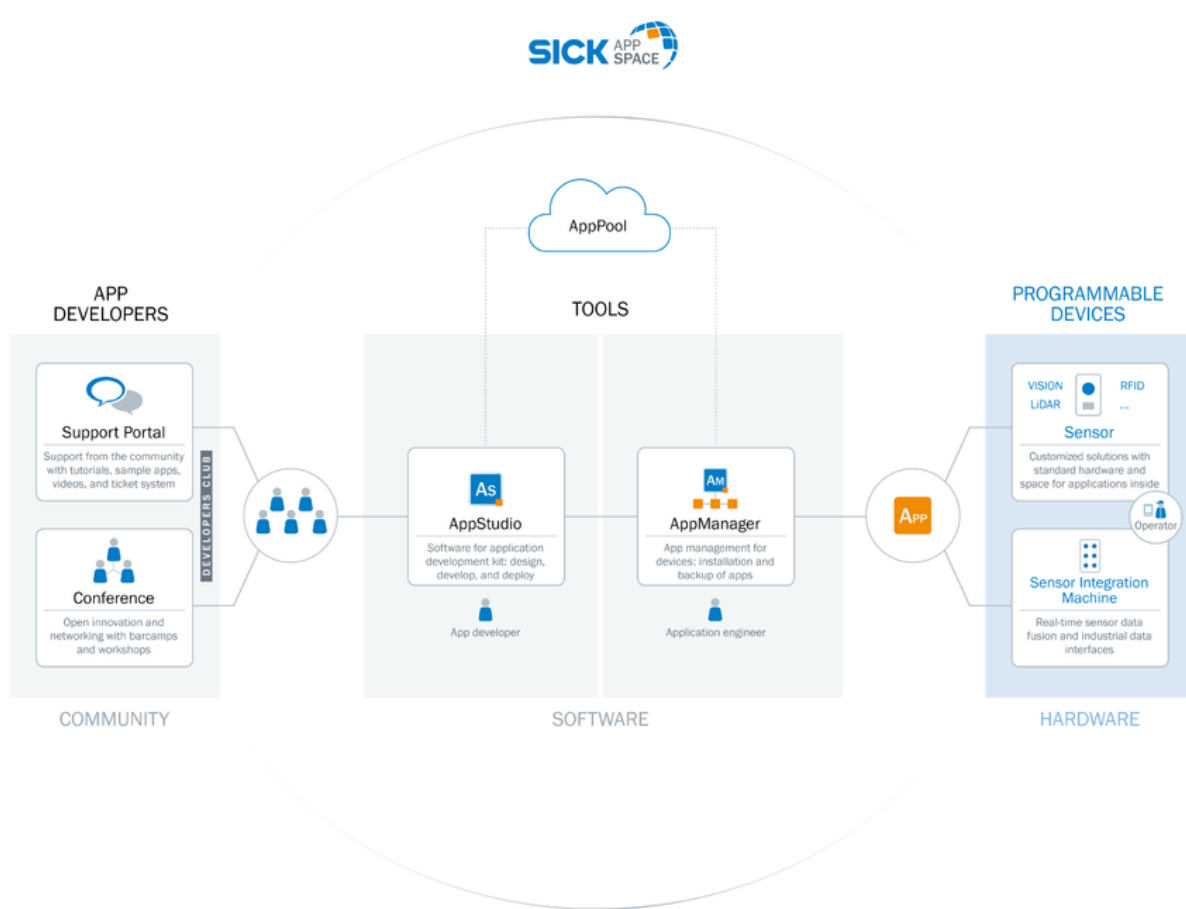
Connector M12, 5-pin, A-coded

- ① VS 10...30 V
- ② Reserved
- ③ GND
- ④ IN8/OUT8
- ⑤ Reserved



Overview

SICK AppSpace



Recommended services

Additional services → [www.sick.com/PeopleCounter](http://www.sick.com/PeopleCounter)

	Type	Part no.
Warranty extensions		
<ul style="list-style-type: none"> <li><b>Product area:</b> Identification solutions, machine vision, Distance sensors, Detection and ranging solutions</li> <li><b>Range of services:</b> The services correspond to the scope of the statutory manufacturer warranty (SICK general terms and conditions of purchase)</li> <li><b>Duration:</b> Five-year warranty from delivery date.</li> </ul>	Extended warranty for a total of five years from delivery date	1680671
Product, system, and software training		
<ul style="list-style-type: none"> <li><b>Range of services:</b> The training contents relate to the following 2D and 3D LiDAR sensors: LMS series, MRS1000, MRS6000, NAV series or TiM series, Training format and location can be worked out in collaboration with SICK</li> </ul>	Training LMS/MRS/NAV/TiM	1612234

## 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)