



V2D631P-2MXSXB0

InspectorP63x

2D MACHINE VISION

**SICK**  
Sensor Intelligence.



### Ordering information

Type	Part no.
V2D631P-2MXSB0	1082299

Other models and accessories → [www.sick.com/InspectorP63x](http://www.sick.com/InspectorP63x)



### Detailed technical data

#### Features

<b>Technology</b>	2D snapshot
<b>Product category</b>	Programmable
<b>SensorApp</b>	Nova Inspector
<b>License included</b>	Quality Inspection License Optional upgrade with the Intelligent Inspection Upgrade License, which enables productive use of the complete toolset.
<b>Toolkit</b>	HALCON
<b>Sensor</b>	CMOS matrix sensor, grayscale values
<b>Shutter technology</b>	Global-Shutter
<b>Optical focus</b>	Adjustable focus
<b>Illumination</b>	To be ordered separately as accessories
<b>Alignment aid</b>	Laser, Red, 630 nm ... 680 nm
<b>Laser class</b>	1, complies with 21 CFR 1040.10 except for the conformance according to "Laser Notice No. 50" from June 24, 2007 (IEC 60825-1:2014, EN 60825-1:2014)
<b>Spectral range</b>	Approx. 400 nm ... 900 nm
<b>Lens</b>	S-mount
	Optical format 1/1.8"
	Note To be ordered separately as accessories
<b>Task</b>	Detecting - Standard objects Measuring - Dimension, contour and volume Measuring - Number Identifying - 2D code Identifying - OCR Identifying - Pattern Identifying - Classifying Identifying - Sorting Determining position - 2D position determination

## Mechanics/electronics

<b>Connection type</b>	1 x M12, 17-pin male connector (serial, I/Os, voltage supply) 1 x M8, 4-pin female connector (USB, not used) 1 x M12, 8-pin female connector (gigabit Ethernet) 1 x M8, 4-pin female connector (external illumination)
<b>Supply voltage</b>	12 V DC ... 24 V DC, ± 20 %
<b>Power consumption</b>	Typ. 10 W, ± 20 %
<b>Enclosure rating</b>	IP67 (EN 60529 (1991-10), EN 60529/A2 (2002-02))
<b>Protection class</b>	III (EN 60950-1 (2014-08))
<b>Housing material</b>	Aluminum die cast
<b>Window material</b>	PMMA
<b>Weight</b>	430 g
<b>Dimensions (L x W x H)</b>	108 mm x 63 mm x 46 mm <sup>1)</sup>

<sup>1)</sup> Housing only, without lens and optics protection hood.

## Performance

<b>Sensor resolution</b>	1,280 px x 1,024 px (1.3 Mpixel)
<b>Scan/frame rate</b>	50 Hz

## Interfaces

<b>Serial</b>	✓, RS-232, RS-422
Data transmission rate	300 Baud ... 115.2 kBaud
<b>Ethernet</b>	✓, TCP/IP
Function	FTP, HTTP
Data transmission rate	10/100/1,000 Mbit/s
<b>CAN</b>	✓
Function	SICK CAN sensor network (CAN controller/CAN device)
<b>EtherNet/IP™</b>	✓
Data transmission rate	10/100/1,000 Mbit/s
<b>PROFINET</b>	✓
Function	PROFINET Single Port, PROFINET Dual Port (optional via external connection module CDF600-2)
Data transmission rate	10/100 MBit/s
<b>Operator interfaces</b>	Web server
<b>Configuration software</b>	SICK AppStudio
<b>Data storage and retrieval</b>	Image and data logging via microSD memory card and external FTP
<b>Inputs/outputs</b>	2 opto-decoupled inputs, 4 inputs/outputs, configurable
<b>Output current</b>	≤ 100 mA
<b>Maximum encoder frequency</b>	1 kHz
<b>External illumination</b>	Via digital output (max. 24 V trigger) or external illumination connection
<b>Control elements</b>	2 buttons
<b>Optical indicators</b>	11 LEDs (5 x status display, 5 x LED bar graph, 1 green/red feedback spot)
<b>Acoustic indicators</b>	Beeper

### Ambient data

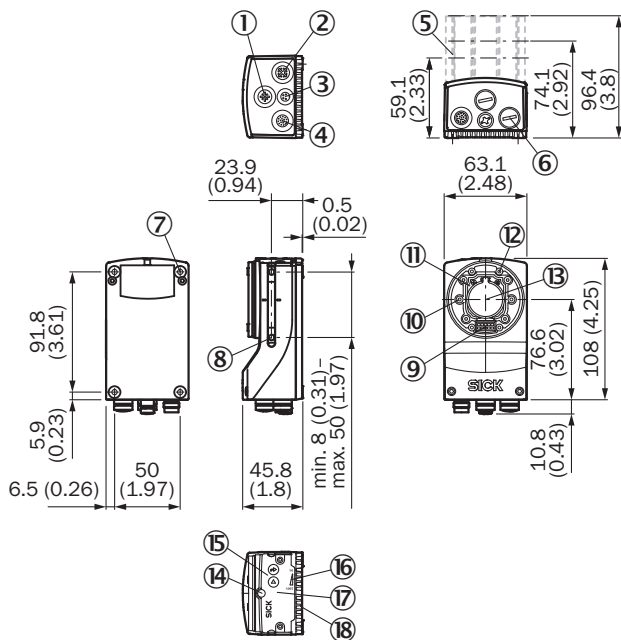
<b>Shock load</b>	EN 60068-2-27:2009-05
<b>Vibration load</b>	EN 60068-2-6:2008-02
<b>Ambient operating temperature</b>	0 °C ... +50 °C <sup>1)</sup>
<b>Storage temperature</b>	-20 °C ... +70 °C <sup>1)</sup>

<sup>1)</sup> Permissible relative humidity: 0% ... 90% (non-condensing).

### Classifications

<b>ECLASS 5.0</b>	27310205
<b>ECLASS 5.1.4</b>	27310205
<b>ECLASS 6.0</b>	27310205
<b>ECLASS 6.2</b>	27310205
<b>ECLASS 7.0</b>	27310205
<b>ECLASS 8.0</b>	27310205
<b>ECLASS 8.1</b>	27310205
<b>ECLASS 9.0</b>	27310205
<b>ECLASS 10.0</b>	27310205
<b>ECLASS 11.0</b>	27310205
<b>ECLASS 12.0</b>	27310205
<b>ETIM 5.0</b>	EC001820
<b>ETIM 6.0</b>	EC001820
<b>ETIM 7.0</b>	EC001820
<b>ETIM 8.0</b>	EC001820
<b>UNSPSC 16.0901</b>	43211731

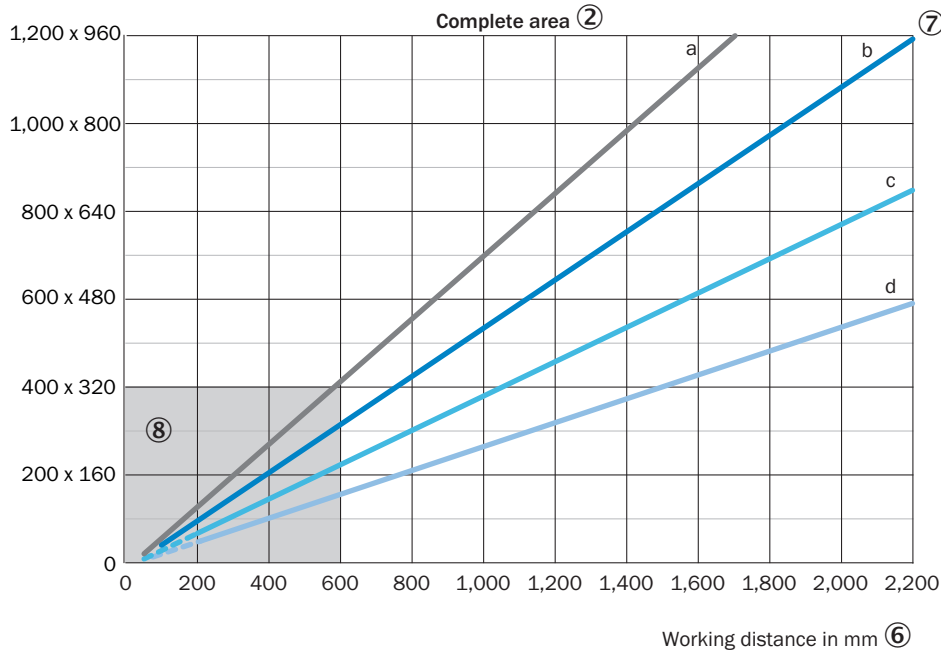
## Dimensional drawing (Dimensions in mm (inch))



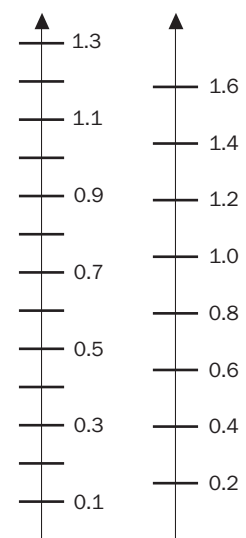
- ① "External light" connection (external illumination unit, female connector, M12, 4-pin, A-coded)
- ② "Ethernet" connection (Gigabit Ethernet, female connector, M12, 8-pin, X-coded)
- ③ "USB" connection (female connector, type M8, 4-pin), for temporary use as a service interface only
- ④ "Power/Serial Data/CAN/I/O" connection (male connector, M12, 17-pin, A-coded)
- ⑤ Optics protection hood (length: 22.7 mm, 37.7 mm or 60 mm)
- ⑥ 4 protective caps for sealing off the electrical connections as required for enclosure rating IP67 (delivery condition)
- ⑦ 4 tapped blind holes, M5, 5.5 mm deep for mounting the device
- ⑧ 2 sliding nuts, M5, 5.5 mm deep, as an alternative method of mounting the device
- ⑨ Connection for an integrable illumination unit (VI55I ring illumination unit)
- ⑩ 2 laser alignment aids
- ⑪ S-mount or C-mount optics module
- ⑫ 4 blind tapped holes, 2.5 mm for mounting the spacers for the integrable illumination (VI55I ring illumination unit)
- ⑬ Optical axis and center of the image sensor
- ⑭ Basic device: Manual focus screw for an S-mount lens, accessible via the round opening in the housing cover. To secure the focus setting, cover the round opening with a self-adhesive label. Complete device: The opening is already covered by a label.
- ⑮ 2 function keys
- ⑯ 5 bar graph LEDs
- ⑰ Hinged cover on the top side of the device, access to the microSD memory card and the manual focus screw (S-mount)
- ⑱ 5 status LEDs (2 levels)

### Field of view

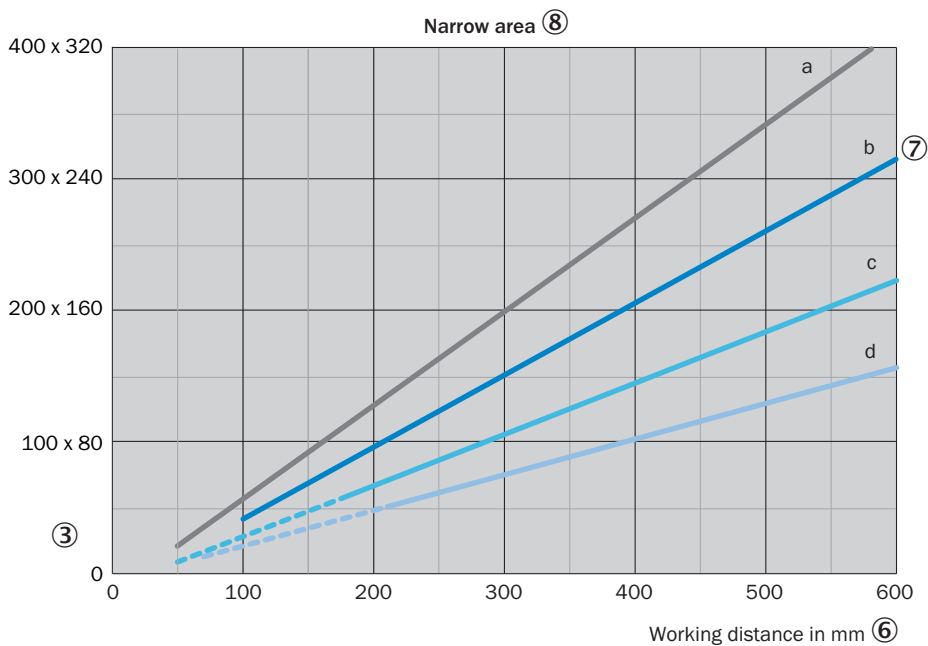
Perceived area of field of view: H x V (mm) ①



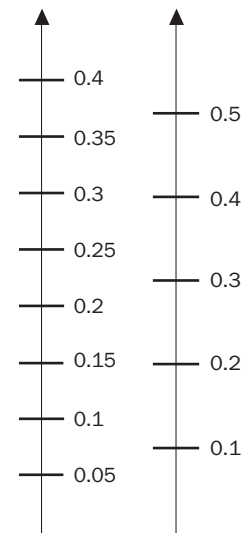
Min. resolution in mm ③  
1D code ④ 2D code ⑤



Perceived area of field of view: H x V (mm) ①



Min. resolution in mm ③  
1D code ④ 2D code ⑤

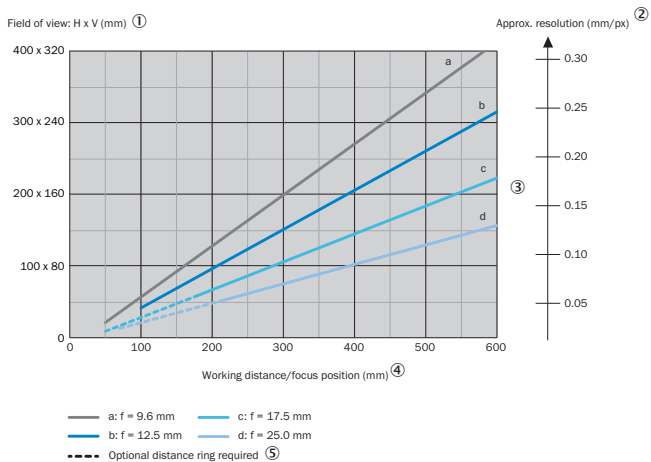
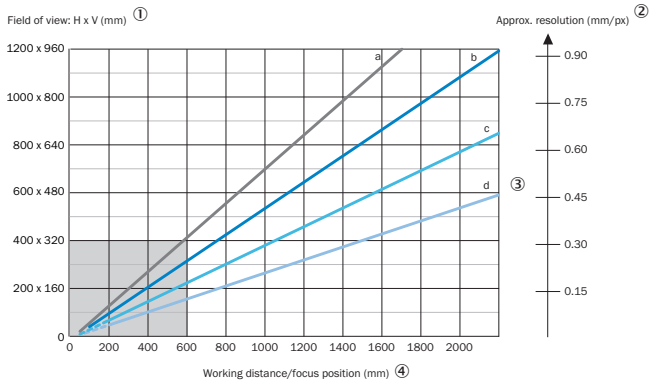


- a: f = 9.6 mm      — c: f = 17.5 mm
- b: f = 12.5 mm    — d: f = 25.0 mm
- - - Optional spacer rings required ⑨

For S-mount and standard C-mount lenses, spacer rings are needed for working distances shorter than approximately 10 times the focal length. For compact C-mount lenses, spacer rings are not needed, but the built-in illumination cannot be used for distances shorter than 300 mm.

① Perceived field of view area: horizontal x vertical (mm)

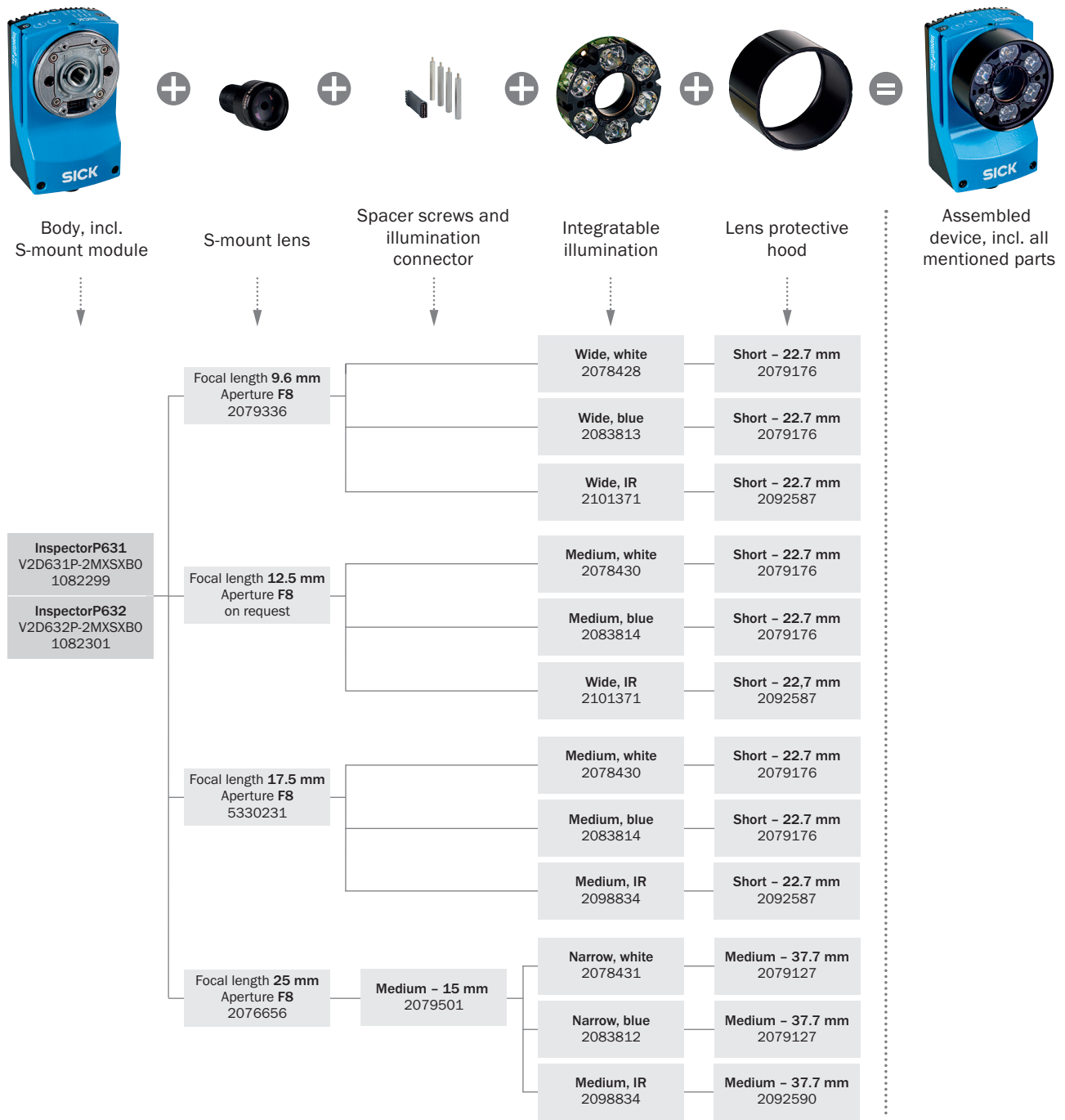
- ② Complete area
- ③ Minimum resolution in mm
- ④ 1D code
- ⑤ 2D code
- ⑥ Working distance in mm
- ⑦ Focal length of lens, here example for  $f = 12.5$  mm
- ⑧ Close range
- ⑨ Optional spacer ring required



For S-mount and standard C-mount lenses, spacer rings are needed for working distances shorter than approximately 10 times the focal length. For compact C-mount lenses, spacer rings are not needed, but the built-in illumination cannot be used for distances shorter than 300 mm.

- ① Field of view: Horizontal x vertical in mm
- ② Approximate resolution in mm/px
- ③ Lens focal length
- ④ Working distance/Focus position in mm
- ⑤ Optional spacer rings required

### Selection Guide







Overview








SICK AppSpace



Recommended accessories

Other models and accessories → [www.sick.com/InspectorP63x](http://www.sick.com/InspectorP63x)

	Brief description	Type	Part no.
Lenses and accessories			
	Optics protection hood, short, enclosure rating IP 67, length: 22.7 mm, PMMA, for use with S-mount lens with focal length 9.6 mm or 17.5 mm	Optics protection hood (PMMA)	2079176
	S-mount 1/1.8", focal length 9.6 mm, aperture 8	S-mount lens	2079336

	Brief description	Type	Part no.
Illuminations			
	Integratable lighting, white lighting color, wide, suitable for S-mount and compact C-mount lenses with a focal length of 9.6 mm	VI55I-WH0766M0	2078428
Mounting brackets and plates			
	Mounting bracket set consisting of mounting bracket, cooling plate, includes angle display for setting the tilt angle	Mounting bracket	2076735
Other mounting accessories			
	Sliding nut, M5, short	Sliding nut	5324896
Others			
	<ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Female connector, M12, 17-pin, straight, A-coded</li> <li>• <b>Connection type head B:</b> Male connector, M12, 17-pin, straight, A-coded</li> <li>• <b>Signal type:</b> Power, serial, CAN, digital I/Os</li> <li>• <b>Cable:</b> 3 m, 17-wire</li> <li>• <b>Description:</b> Power, serial, CAN, digital I/Os, suitable for 2 A, shielded, to connection module CDB650</li> <li>• <b>Application:</b> Drag chain operation</li> </ul>	YM2A8D-030XXF2A8D	6051194
	<ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Male connector, M12, 8-pin, straight, X-coded</li> <li>• <b>Connection type head B:</b> Male connector, RJ45, 8-pin, straight</li> <li>• <b>Signal type:</b> Ethernet, Gigabit Ethernet</li> <li>• <b>Cable:</b> 2 m, 8-wire, PUR, halogen-free</li> <li>• <b>Description:</b> Ethernet, Gigabit Ethernet, shielded</li> <li>• <b>Application:</b> Zones with oils and lubricants</li> </ul>	YM2X18-020EG1MRJA8	2106258
	<ul style="list-style-type: none"> <li>• <b>Connection type head A:</b> Male connector, M12, 8-pin, straight, X-coded</li> <li>• <b>Connection type head B:</b> Male connector, RJ45, 8-pin, straight</li> <li>• <b>Signal type:</b> Ethernet, Gigabit Ethernet</li> <li>• <b>Cable:</b> 3 m, 8-wire, PUR, halogen-free</li> <li>• <b>Description:</b> Ethernet, Gigabit Ethernet, shielded</li> <li>• <b>Application:</b> Zones with oils and lubricants</li> </ul>	YM2X18-030EG1MRJA8	2145693
Modules			
	<ul style="list-style-type: none"> <li>• <b>Accessory group:</b> 4DproConnectivity</li> <li>• <b>Product family:</b> Connection Device Basic</li> <li>• <b>Sub product family:</b> CDB650</li> <li>• <b>Supported products:</b> Lector series, CLV62x - CLV64x (depending on type), CLV69x, RFID read/write device, InspectorP series</li> <li>• <b>Brief description:</b> Connection device basic for connecting one sensor with 2 A fuse, 5 cable glands and RS-232 interface to sensor via M12, 17-pin female connector, all outputs available on screw/spring-loaded terminals.</li> </ul>	CDB650-204	1064114

## Recommended services

Additional services → [www.sick.com/InspectorP63x](http://www.sick.com/InspectorP63x)

	Type	Part no.
Extended warranty		
<ul style="list-style-type: none"><li>• <b>Product area:</b> Machine vision, LiDAR sensors, safety camera sensors, Safety laser scanners, Safety radar sensors, Radar sensors, Fixed mount barcode scanners, Image-based code readers, RFID, Mobile handheld scanners</li><li>• <b>Range of services:</b> The services correspond to the scope of the statutory manufacturer warranty (SICK general terms of delivery).</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

## 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)