Lector®620

Image-Based Code Reader

SICK
Sensor Intelligence.

Correct Use

The Lector®620 image-based code reader is an intelligent SICK IDpro sensor for automatic, stationary decoding of codes on mobile or stationary objects. It reads all commonly used 1D codes (bar codes/stacked codes) and 2D codes (matrix codes). The Lector®620 sends the read data to a higher-level computer via its host interface for further processing.

Correct use also includes compliance with all information in these operating instructions and the supplementary 📖 *Lector®620 Image-Based Code Reader Technical Information*.

The Lector®620 product family offers several variants: Professional, High Speed, DPM Plus, OCR and ECO. These include further sub-variants depending on the model (for information about product identification, see ➜ *"Type Code", page 3*).

In this document, the Lector®620 image-based code reader is simply referred to as the "Lector®620", unless a clear distinction needs to be made between variants.

About This Document

These operating instructions apply to all variants of the Lector®620. They allow you to put the Lector®620 into operation and obtain initial read results quickly and easily. They describe the use of **one** Lector®620 with device parameters set to their defaults.
SICK connection module CDB620-001 is used, for example, for industry-standard signal distribution with the Lector®620.

Supplementary and other Applicable Documents

More detailed information about mounting and electrical installation in these operating instructions is available in 📖 the *Lector®620 Image-Based Code Reader Technical Information*. This describes and presents:

- Optional mounting accessories (brackets)
- The prevention of ground potential equalization currents in applications with widely distributed systems
- Pin assignments and wire color assignments of cables
- Electrical wiring diagrams for the SICK CDB620-001 and CDM420-0001 connection modules, relating to the Lector®620

The Technical Information is divided into two documents: for the Professional, High Speed, DPM Plus and OCR variants: no. 8014009, for the ECO variant: no. 8014569.

Operating the Lector®620 in a Fieldbus with Line Topology

The optional incorporation of the Lector®620 into the PROFIBUS DP or PROFINET IO fieldbus is described in the relevant 📖 operating instructions for the CDF600-21xx or -2200 fieldbus module. ➜ See *""Safety Information", page 1*.

Information about configuration can be found in the online help function of the SOPAS ET configuration software.

The listed documents are available in PDF format on the SICK product pages at: *www.mysick.com/en/lector62x, .../CDF600-2* or *.../CDF600*

To view PDF documents on a PC, PDF visualization software is required, e.g. Adobe Reader (http://get.adobe.com/reader).

Safety Information

- This chapter is about the safety of commissioning personnel, as well as operators of the system in which the Lector®620 is integrated.
- Read these instructions carefully before commissioning the Lector®620 in order to familiarize yourself with the device and its functions. The operating instructions are considered a part of the device and must be kept in an accessible location in the immediate vicinity of the Lector®620 at all times!
- Do not look into the reading window of the Lector®620 in order to dazzling from the bright, integrated lighting (➜ see *"LED and Laser Radiation", page 4*).
- The following requirements must be met if the variant-dependent IP 67/IP 65 enclosure rating is to be maintained during operation (otherwise, the device will no longer meet the conditions for any specified IP enclosure rating):
  - The black cover for the microSD card slot and USB port must be screwed tight to the device.
  - Devices with swivel connector: the cables plugged into the M12 connectors are locked in place.
- Any electrical connections that are not being used must be fitted with protective caps or plugs that are screwed tight (as in the delivery condition)
- Opening the Lector®620 housing, which is screwed closed, will invalidate any warranty claims against SICK AG. For further warranty provisions, see the General Terms and Conditions of SICK AG, e.g., on the delivery note of the Lector®620.
- Data integrity:
  SICK AG uses standardized data interfaces, such as standard IP technology, in its products. The emphasis here is on the availability of products and their features. SICK AG always assumes that the integrity and the confidentiality of the data and rights which are affected by the use of these products will be ensured by the customer. In all cases, appropriate security measures, such as network separation, firewalls, virus protection, and patch management, must be taken by the customer on the basis of the situation in question.

Commissioning and Configuration

Scope of Delivery

- The ordered version (variant) of the Lector®620, including two M5 sliding nuts. Electrical connections fitted with protective caps or plugs. Only the ECO variant has a connecting cable fitted.
- Printed operating instructions in German (no. 8014639) and English (no. 8014640). Other languages (if available) can be found in PDF format on the product page for the Lector®620 at: *www.mysick.com/en/lector62x.*
- Optional accessories, such as brackets and connecting cables, are only supplied if ordered separately

Step 1: Mounting and Alignment

Equipment Required

- Two or four M5 screws for mounting the Lector®620 on a mounting device (bracket) supplied by the customer. Screw length is dependent on the mounting base (wall thickness of the bracket).
  When using an optional SICK bracket, the screws for mounting the Lector®620 on the bracket are included with the bracket in the scope of delivery.

Mounting Requirements

- The permissible ambient conditions for operating the Lector®620 must be observed (e.g., ambient temperature, ground potential ➜ see *"Technical Data (Excerpt)", page 5* and *"Step 2: Electrical Installation", page 2*)
- Sturdy bracket with sufficient load-bearing capacity and suitable dimensions for the Lector®620. Weight depends on model, max. 170 g (not including cables).
  Dimension drawing (➜ see *"Device Layout", page 3*)
- Shock- and vibration-free mounting
- Clear view of the codes to be detected on the objects

Mounting and Aligning the Lector®620

1. Connect the provided cables to the Lector®620 (already present on the ECO variant).
2. Optional: Attach the SICK bracket that has been ordered separately (e.g., mounting bracket no. 2042902) to the Lector®620. Refer to the "Mounting" chapter of the Lector®620 📖 *Image-Based Code Reader Technical Information*.

- Otherwise, mount the Lector®620 on a bracket using M5 screws. To do this, use the blind tapped holes in the housing (pair at the front or bottom) or in the two sliding nuts on the sides. Mounting bracket no. 2042902 can be attached at the bottom or on the sliding nuts.
  Screw the screws no more than 5 mm into the blind tapped holes (➜ see *"Device Layout", page 3*).

Aligning the reading window of the Lector®620 with the Code

➢ Remember to consider the shape, alignment and extent of the field of view in front of the Lector®620.

ICR620x-xYxxxx (Y = 1, 3, 5, 7)

① working distance   ② field of view   ③ reading field
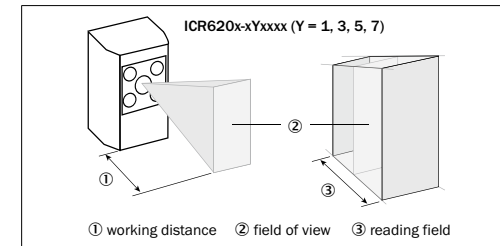
Example of field of view in front of the device, area range depends on working distance. Here, the linear range is in the longitudinal axis of the device

Allowing for Working Distance, Dependent on Resolution

Using the Auto-Setup function, the Lector®620 automatically adjusts its focal position to the working distance from the code. ECO variant: the focal position is set by entering the working distance in SOPAS.
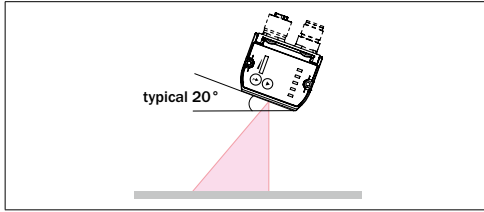
Maximum Working Distance with Minimum Resolution

Max. working distance	Minimum resolution
50 mm	0.10 mm
105 mm	0.20 mm
160 mm	0.30 mm
220 mm	0.40 mm
270 mm	0.50 mm
330 mm	0.60 mm
380 mm	0.70 mm

Example: working distances of Professional variant

For variant-dependent visual and reading field charts, see *www.mysick.com/en/lector62x.*

Allowing for Reading Angle

typical 20°

Selection of skew angle, depending on the application

➢ Tilt the Lector®620 away from the plane that is perpendicular to the surface of the code to avoid as many interfering reflections as possible. Typically, this angle will be 20°.

For codes created on metal, e.g., by dot peening, an angle of between 0° (bright field light) and 45° (dark field light) may be advisable.

➢ Perform final adjustment using the Auto-Setup function, with the device powered and working.

CDB620-001 Connection Module

➢ Mount the CDB620-001 connection module in the vicinity of the Lector®620. If you are using the serial AUX interface (RS-232), we recommend a maximum distance of 5 m. Mount the Lector®620 in such a way that the device remains accessible at all times. See 📖 *CDB620-001 Connection Module Operating Instructions* (No. 8012119), which are supplied in printed form with the connection module.

Step 2: Electrical Installation

- **Electrical installation must only be performed by electrically qualified persons**.
- **Standard safety requirements must be met when working in electrical systems!**
- The Lector®620 may only be connected to or disconnected from other devices when there is no power to the system. Otherwise, the devices may be damaged.
- When using connecting or extension cables with an open end, make sure that bare wire ends are not touching (risk of short-circuit when the supply voltage is switched on). Wires must be properly insulated from each other.
- Wire cross-sections in the supply cable from the customer's power system should be designed in accordance with the applicable standards.
- If the supply voltage for the Lector®620 is not supplied via a SICK connection module, the Lector®620 must be protected by a separate 2.0 A slow-blow fuse at the start of the supply circuit.
- All circuits connected to the Lector®620 must be designed as SELV circuits. The power supply or power supply unit must satisfy SELV requirements in accordance with the currently applicable EN 60950-1. (SELV = **S**afety **E**xtra **L**ow **V**oltage).


⚠ DANGER

Electrical current poses a serious risk of injury or damage!

The Lector®620 is designed to be operated in a system with professional grounding of all connected devices and mounting surfaces to the same ground potential. Incorrect grounding of the Lector®620 can result in equipotential bonding currents between the Lector®620 and other grounded devices in the system. This can lead to hazardous voltages being applied to the metal housing, cause devices to malfunction or sustain irreparable damage, and damage the cable shield as a result of heat rise, thereby causing cables to catch fire.
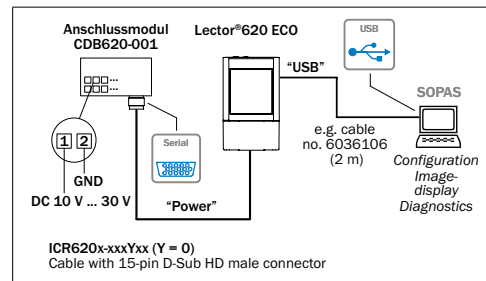
- Ensure that the ground potential is the same at all grounding points.
- If the cable insulation is damaged, disconnect the power supply immediately and have the damage repaired.

➢ See the "*Electrical Installation*" chapter in the 📖 Lector®620 *Image-Based Code Reader Technical Information* on the product page at: *www.mysick.com/en/lector62x*

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1. Connect the communications interface of the Lector®620 (Ethernet or USB, ECO variant: USB) to the PC.
2. Connect the Lector®620 to the power supply.

ICR620x-xxxYxx (Y = 5)
Swivel connector unit with 2 M12 cylindrical connectors
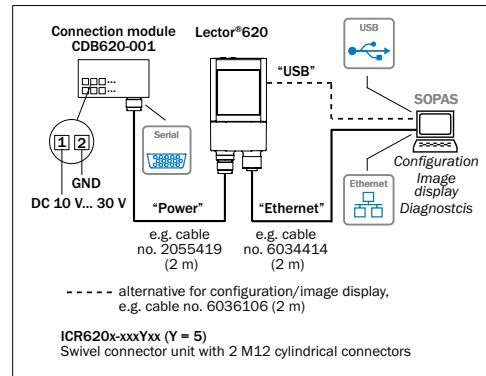
Lector®620 Professional, High Speed, DPM Plus and OCR with swivel connector

ICR620x-xxxYxx (Y = 0)
Cable with 15-pin D-Sub HD male connector

Lector®620 ECO with cable outlet

Step 3: Configuration

a. Configuration without PC

The two function buttons and the LEDs with their second display level are used for adjusting the reading performance of the Lector®620 without a PC.

The **Lector®620** uses the Auto-Setup function to adjust itself automatically to the lighting conditions and quality of a presented code (not applicable to Pharmacode and OCR). The Professional, High Speed, DPM Plus and OCR variants also adjust to the working distance. The values calculated for the three parameter modules, or two parameter modules in the case of the ECO variant, are permanently stored (default), thereby overwriting the existing configuration.
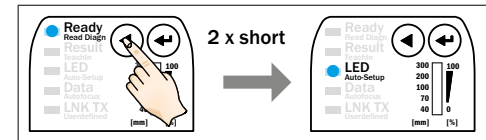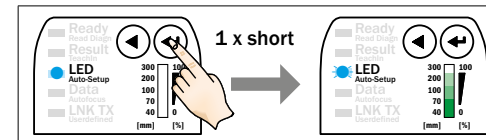
1. Start "Edit" mode.
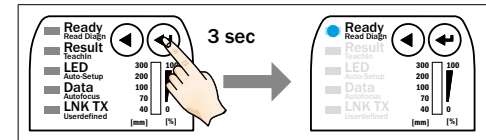
2. Align the Lector®620 with the code.
   The ECO variant has no aiming laser.

(Code sample)

3. Select Auto-Setup.

4. Start Auto-Setup.

Feedback from Lector®620 during Auto-Setup

The bar display shows the progress of the Auto-Setup function in percent. 100 % means the Auto-Setup has finished.
The color of the LED now signals the success status.

| LED Auto-Setup	Color	Status
🔵	Blue	Auto-Setup selected
🔆	Blue	Auto-Setup started
🟢	Green	Auto-Setup successfully finished

LED Auto-Setup	Color	Status
🟡	Yellow	Auto-Setup partially successful (in at least one of the 3 modules or 2 modules in the case of the ECO variant)
🔴	Red	Auto-Setup was unsuccessful

● = illuminated; ◔ = flashing

Important

➢ If the read result is inadequate ("Auto-Setup" LED lights up yellow or red), check the alignment and distance of the Lector®620 in relation to the code (➜ *"Step 1: Mounting and Alignment"*) and perform Auto-Setup again.

5. Exit "Edit" mode. Save parameters.
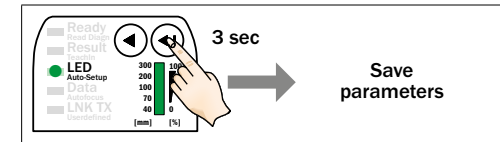
Save parameters

Alternatively, the Lector®620 saves the parameters automatically if 5 minutes elapse without a pushbutton being pressed, and it returns to read mode.

b. Configuration with PC

The SOPAS configuration software is used by default to adapt the Lector®620 parameters to the application and to perform diagnostics in the event of an error. The Lector®620 supports this process by displaying the images it has recorded in the SOPAS software (SOPAS requirement: V. 2.34 or higher). If the reading performance of the Lector®620 has been adapted without a PC, SOPAS is generally used to continue the configuration process (reading clock, read result formats, data interface, etc.).

Installing and Starting the Configuration Software

1. Download and install the latest version of the SOPAS ET configuration software, as well as the current device description files (*.sdd), from the online product page for the software:
   www.mysick.com/en/SOPAS_ET
   by following the instructions provided there. In this case, select the "Complete" option as suggested by the installer. Administrator rights may be required on the PC to install the software.
2. Start the "Single Device" program option after completing the installation. Path: Start > Programs > SICK > SOPAS ET Engineering Tool > SOPAS (Single Device).
3. Establish a connection between the software and the Lector®620 via Ethernet or USB (ECO variant: USB). The connection wizard starts automatically. The following IP address is configured by default on the Lector®620:

4. Select the appropriate Lector®620 from the list of available devices. SOPAS establishes communication with the Lector®620 and loads the associated device description file for the Lector®620. The program window, which is divided into three sections, opens.

SOPAS Single Device Program Window

Wizard and help	Image	Configuration bars
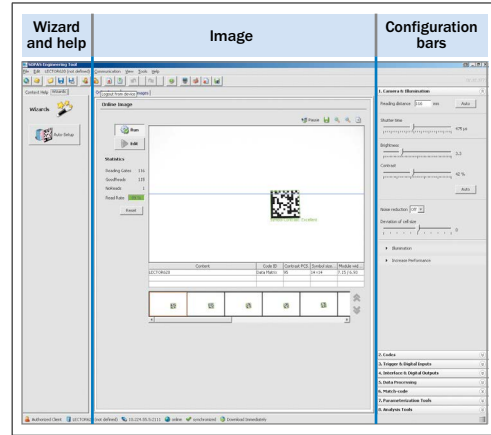
Configuring Reading Performance with the Wizard

➢ Start the AUTO-SETUP wizard on the left in the program window and follow the instructions in the dialog box. The Lector®620 uses the Auto-Setup function to adjust itself automatically to the lighting conditions and quality **of a** presented code (not applicable to Pharmacode and OCR). The Professional, High Speed, DPM Plus and OCR variants also adjust to the working distance. The values calculated for the three modules, or two modules in the case of the ECO variant, are stored temporarily at first. SOPAS applies the parameters to the two configuration bars CAMERA & ILLUMINATION and CODES.

Continuing the Configuration Process

1. For custom optimization of the image and code settings of the Lector®620, click the CAMERA & ILLUMINATION and CODES configuration bars on the right and adjust the parameter values accordingly.
2. To make the changes directly visible, go to the image display window (Online Images) and click the EDIT button. The Lector®620 now starts recording images and uses the current settings to decode them. The switching inputs and outputs as well as data output via the host interface are deactivated in EDIT mode.
3. Enter settings for additional functions such as reading clock, read result formats, data interface, etc.
4. Go to the image display window (Online Images), click the OPERATION button and test the settings in read mode (real operation).

OCR Variant Only:

➢ For optical character recognition (OCR), start the OCR SETUP wizard on the left of the program window and follow the instructions in the dialog box.

Completing the Configuration Process

➢ Permanently save the entire configuration: Parameter set in Lector®620: Click the 🖫 button Configuration file on the PC: Click the 🖫 button.

Important

To put the Lector®620 into operation on a network (e.g., CAN bus) together with other SICK products, select the SOPAS program option. Path: Start > Programs > SICK > SOPAS Engineering Tool > SOPAS.

Device Description

Device Layout – Lector®620 with Swivel Connector
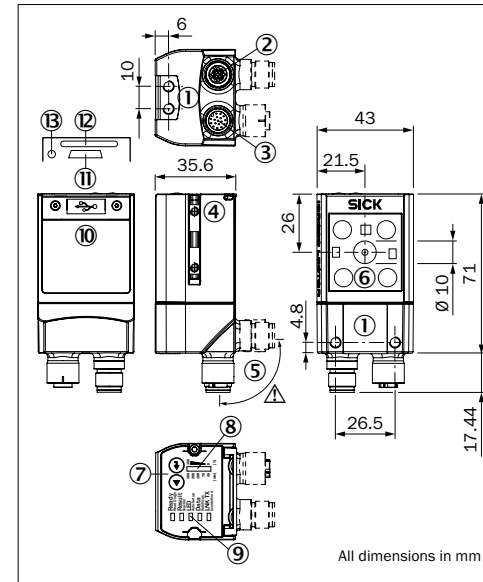
All dimensions in mm

Lector®620 Professional, High Speed, DPM Plus and OCR

① M5 blind tapped holes, 5 mm deep (4 x), for mounting the Lector®620
② "Ethernet" connection (4-pin M12 female connector, D-coded)
③ "Power/Serial Data/CAN/I/O" connection (17-pin M12 male connector, A-coded)
④ M5 sliding nuts, 5 mm deep (2 x), for mounting the Lector®620 (alternative)
⑤ Swivel connector
⑥ Reading window
⑦ Function buttons (2 x)
⑧ Bar graph display
⑨ RGB LEDs for status indication (2 levels), 5 x
⑩ Cover (flap)
⑪ USB port, 5-pin female connector, Micro B type
⑫ Slot for microSD memory card
⑫ LED for microSD memory card

Important

The dimensions in the above drawing are not applicable to type ICR620D-T51503 (part no. 1064256). The corresponding, differing drawing can be downloaded from the product page for the Lector®620: *www.mysick.com/en/lector62x*

NOTE

Risk of damaging the swivel connector

The connector may be moved up to 180° from end point to end point of the stop.
The ECO variant has no swivel connector.

Device Layout – Lector®620 with Cable Outlet
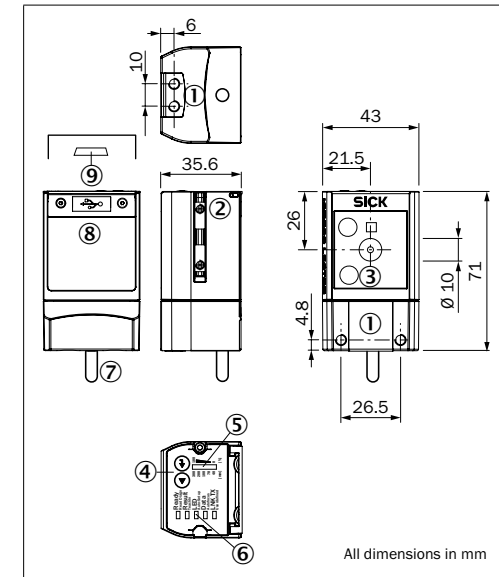
All dimensions in mm

Lector®620 ECO

① M5 blind tapped holes, 5 mm deep (4 x), for mounting the Lector®620
② M5 sliding nuts, 5 mm deep (2 x), for mounting the Lector®620 (alternative)
③ Reading window
④ Function buttons (2 x)
⑤ Bar graph display
⑥ RGB LEDs for status indication (2 levels), 5 x
⑦ Cable (0.9 m) with 15-pin D-Sub HD male connector ("Power/Serial Data/CAN/I/O")
⑧ Cover (flap)
⑨ USB port, 5-pin female connector, Micro B type

Type Code

The device list on the product page of the Lector®620 (*www.mysick.com/en/lector62x*) allows product identification (variant allocation) based on the type label of the device.

Lighting Unit
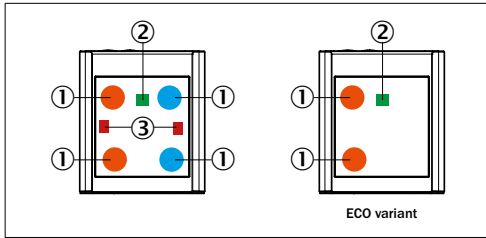
ECO variant

① Integrated lighting = 4 x LED (2 x left/2 x right);
   2 x LED (2 x left) on ECO variant
② Feed-back spot (e.g. for Good Read) = 1 x green LED
③ Aiming laser for alignment (aiming), can be deactivated = 2 x red
   laser LEDs

The ECO variant has no aiming laser.

⚠ **CAUTION**

LED and Laser Radiation

The accessible radiation from the laser and the LEDs does not represent a risk due to the normal restrictions imposed by human behavior. It is not possible to entirely rule out temporary, disorientating optical effects on the human eye (e.g. dazzle, flash blindness, afterimages, impairment of color vision), in particular in conditions of dim lighting. No safety precautions are required. Caution – if any operating or adjusting devices other than those specified here are used or other methods are employed, this can lead to dangerous exposure to radiation.

• Do not intentionally look directly into light sources.
• Do not view the laser directly with optical instruments
  (e.g. magnifying glass, microscope)
• Comply with the latest version of the applicable regulations
  on photobiological safety of lamps and lamp systems as
  well as on laser protection.

Additional information ➔ see "Technical Data (Excerpt)", page 5.

Status Indicators and Functions

Optical Status Indicators:
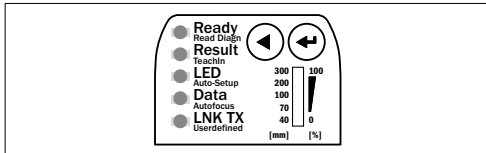
Status Indicators on the First Display Level

Indicator	LED	Color	Status
Ready	●	Green	Device ready to read
	●	Red	Hardware error
Result	●	Green	Successful reading
LED	●	Green	Lighting on (in read mode)

Indicator	LED	Color	Status
Data	●	Yellow	Data output via host interface
LNK TX	●(flashing)	Green	Data traffic via Ethernet

● = illuminated; ☀ = flashing

Status indicators on the Second Display Level

Indicator	LED	Color	Status
Read Diagn	●	Blue	Read diagnosis selected
	☀	Blue	Read diagnosis started
TeachIn	●	Blue	Teach-in matchcode selected
	☀	Blue	Teach-in matchcode started
	●	Green	Teach-in matchcode successfully completed
	●	Red	No code learned
Auto-Setup	●	Blue	Auto-Setup selected
	☀	Blue	Auto-Setup started
	●	Green	Auto-Setup successfully finished
	●	Yellow	Auto-Setup partially successful (in at least one of the 3 modules or 2 modules in the case of the ECO variant)
	●	Red	Auto-Setup was unsuccessful
Autofocus (not in the case of ECO variant)	●	Blue	Autofocus selected
	☀	Blue	Autofocus started
	●	Green	Auto focus successfully completed
	●	Red	Autofocus was unsuccessful

● = illuminated; ☀ = flashing

Audible Status Indicator (Beeper):

Signals a selectable event (default: Good Read).
User operations are accompanied by a series of sounds.
Can be disabled.

Functions:

Read Diagn

Percentage analysis: The Lector®620 records a series of images and uses the current reading performance settings to decode them. The read rate of the last 10 attempts is displayed in % above the bar display.

TeachIn

When you teach in a matchcode, the Lector®620 reads the code that is presented (not applicable to Pharmacode and OCR) and saves it permanently (in accordance with the default setting) as a target code for future code comparisons during read mode.

Auto-Setup

The Lector®620 adjusts itself automatically to the lighting conditions and quality **of a** presented code (not applicable to Pharmacode and OCR). The Professional, High Speed, DPM Plus and OCR variants also adjust to the working distance. The device permanently stores the calculated values (default).

Autofocus (not in the case of ECO variant)

The Lector®620 only adjusts itself to the working distance and stores this permanently (default).

Overview of all Interfaces and Connection Options
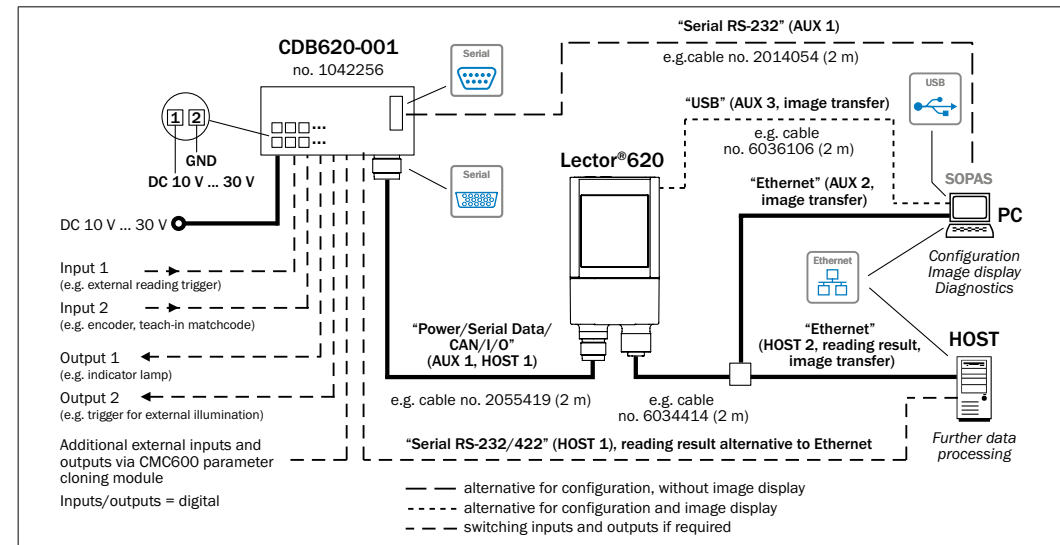
Lector®620 Lector®620 Professional, High Speed, DPM Plus, OCR with swivel connector

Lector®620 ECO with cable outlet

Overview of Pin Assignment

"Power/Serial Data/CAN/I/O" connection

Male connector on Lector®620
(not valid for ECO variant)

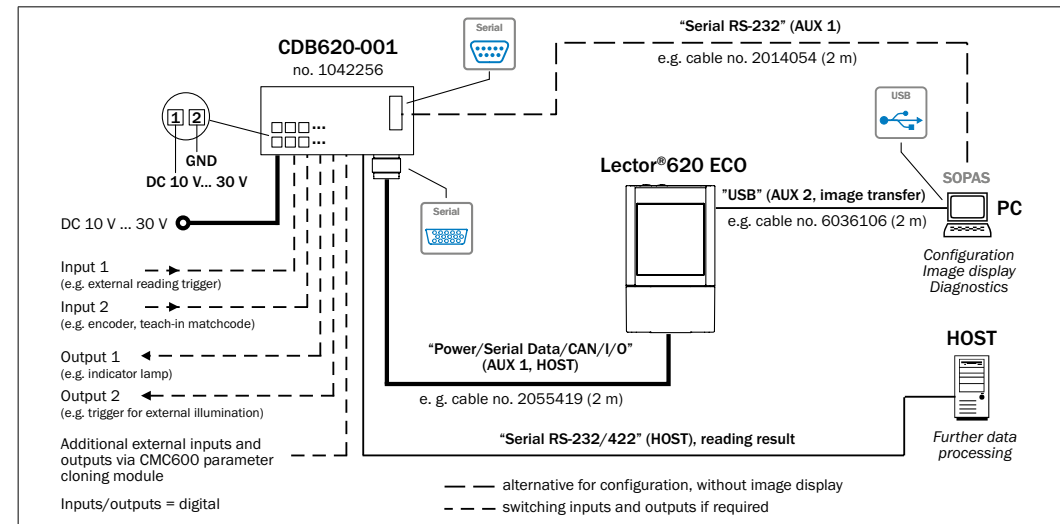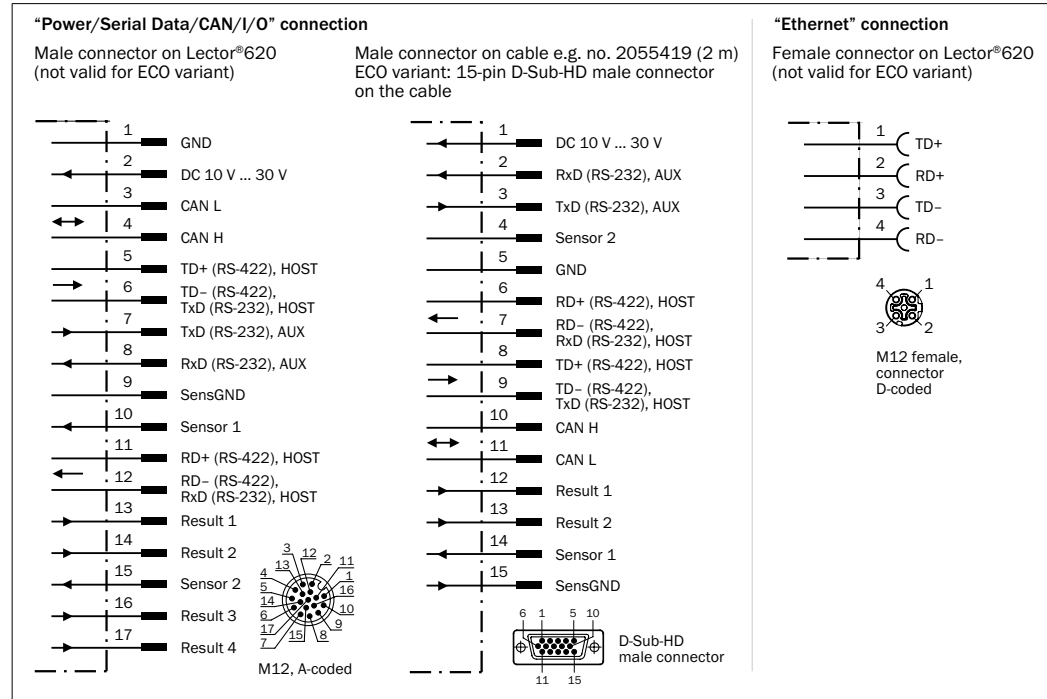| Pin	Signal
1	GND
2	DC 10 V … 30 V
3	CAN L
4	CAN H
5	TD+ (RS-422), HOST
6	TD– (RS-422), TxD (RS-232), HOST
7	TxD (RS-232), AUX
8	RxD (RS-232), AUX
9	SensGND
10	Sensor 1
11	RD+ (RS-422), HOST
12	RD– (RS-422), RxD (RS-232), HOST
13	Result 1
14	Result 2
15	Sensor 2
16	Result 3
17	Result 4

M12, A-coded

Male connector on cable e.g. no. 2055419 (2 m)
ECO variant: 15-pin D-Sub-HD male connector on the cable

Pin	Signal
1	DC 10 V … 30 V
2	RxD (RS-232), AUX
3	TxD (RS-232), AUX
4	Sensor 2
5	GND
6	RD+ (RS-422), HOST
7	RD– (RS-422), RxD (RS-422), HOST
8	TD+ (RS-422), HOST
9	TD– (RS-422), TxD (RS-232), HOST
10	CAN H
11	CAN L
12	Result 1
13	Result 2
14	Sensor 1
15	SensGND

D-Sub-HD male connector

"Ethernet" connection

Female connector on Lector®620
(not valid for ECO variant)

Pin	Signal
1	TD+
2	RD+
3	TD–
4	RD–

M12 female, connector D-coded

MicroSD Memory Card (Optional Accessory)

The ECO variant has no memory card slot.

Function

With the optional plug-in memory card, the Lector®620 backs up the last saved parameter set externally as well (cloning). Furthermore, the Lector®620 can record optional images, e.g., when codes cannot be read ("No Read") (refer to the online help for details of the parameter backup concept and other memory card functions). The OCR variant can also store learned fonts.

The memory card is not included with delivery.

Inserting the Memory Card

➢ To avoid damaging the memory card, make sure there is no power to the Lector®620 when you insert or remove it.

Only use types approved by SICK to ensure reliable function of the memory card. The Lector®620 supports memory cards up to 32 GB.

The card slot (➔ see ⑫ in *"Device Layout", page 3*) can be accessed on the Lector®620 behind the black cover (flap).
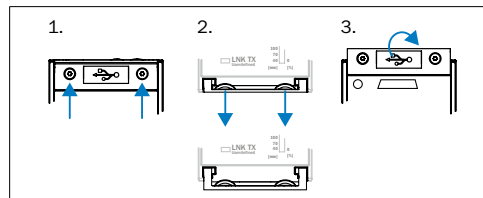
1. To open the cover, undo both screws of the flap (TX6, captive).
2. Carefully pull the upper edge of the flap away from the housing a little at the level of the hinges on the side. Use both of the recesses on the inside of the flap to do this.
3. Fold the flap upwards starting from the bottom edge.

NOTE

Risk of data loss or irreparable damage to the memory card

On the Lector®620, the green LED (Ⓑ) next to the card slot lights up when data is being written to the memory card.

➢ Do not remove the memory card or turn off the supply voltage while data is being written to the memory card!

➢ To remove the memory card safely, select the REMOVE CARD function under ANALYSIS TOOLS/MICROSD CARD in the SOPAS configuration software.

Technical Data (Excerpt)

Model name	Lector®620
Focus	Auto focus (during teach-in of working distance) Focus adjustment by manual entry of distance on the ECO variant
Illumination of field of view	LEDs, number depending on variant Red ($\lambda = 617 \pm 15$ nm), blue ($\lambda = 470 \pm 15$ nm), infrared ($\lambda = 850 \pm 25$ nm)
Feedback LED (spot in field of view)	Green ($\lambda = 525 \pm 15$ nm), risk group 0 according to IEC 62471-1: 2006-07/EN 62471-1: 2008-09
LED risk group (illumination)	Red or blue: Risk group 1 according to IEC 62471-1: 2006-07/EN 62471-1: 2008-09. Radiance: $L_B < 10$ kW/(m²sr) within 100 s $L_R < 3.7 \times 10^5$ W/(m²sr) within 10 s with a distance of ≥ 200 mm Infrared: Risk group 0 according to IEC 62471-1: 2006-07/EN 62471-1: 2008-09. Irradiance: $E_{IR} < 100$ W/m² within 1,000 s with a distance ≥ 200 mm
MTBF of LEDs	75,000 h, at ambient operating temperature 25 °C
Aiming laser (in field of view)	Visible light, red ($\lambda = 630$ to 680 nm), can be deactivated (ECO variant: no aiming laser)
Laser class	Class 1 according to IEC 60825-1: 2007-03. Complies with 21 CFR 1040.10 except for tolerances according to Laser Notice No. 50 of June 24, 2007. P < 0.39 mW per laser module
Image sensor	752 x 480 pixels (WVGA resolution), monochrome (gray values)
Image recording rate	60 Hz (with WVGA resolution) 25 Hz (with WVGA resolution) on ECO variant
Insensitivity to ambient light	2,000 lx on code
Bar code types (1D)	2/5 Interleaved, Codabar, Code 128, Code 32, Code 39, Code 93, GS1 DataBar GS1-128/EAN 128, Pharmacode, UPC/GTIN/EAN
2D code types	Data Matrix ECC200, GS1 Data Matrix, PDF417, PDF417 Truncated, QR Code
Serial RS-232/422	HOST (300 Bd to 115.2 kBd), for data output
Serial RS-232	AUX (57.6 kBd), for configuration/ diagnostics
USB	AUX (USB 2.0), for configuration/ diagnostics and image transmission
Ethernet	AUX, HOST, image transmission (FTP). 10/100 MBit/s, TCP/IP, Ethernet/IP, PROFINET IO. MAC address, see type label. (ECO variant: no Ethernet interface)
CAN	20 kBit/s to 1 MBit/s Protocol: SICK CAN sensor network, CANopen®
PROFIBUS	Optional via external fieldbus module CDF600-21xx

Model name	Lector®620
PROFINET IO	Optional line topology via external fieldbus module CDF600-220x
Digital switching inputs	Applicable to all variants: 2 x physical, 2 x additional external via optional CMC600 and CDB620/CDM420, opto-decoupled, reverse polarity protected.
Digital switching outputs	Lector®620 Professional, High Speed, DPM Plus, OCR: 4 x physical, when using adapter cable with open end – or – 2 x physical, 2 x additional external via optional CMC600 and CDB620/CDM420 when using adapter cable with 15-pin D-Sub HD male connector. Lector®620 ECO: 2 x physical, 2 x additional external via optional CMC600 and CDB620/CDM420.
Optical indicators	5 x RGB LEDs (status indicators) 1 x LED (feedback LED, green) 10 x RGB LEDs (bar display, green)
Acoustic indicator	1 x beeper for signaling events, can be deactivated
Supply voltage	DC 10 V to 30 V SELV (EN 60950-1:2006-04) and LPS (EN 60950-1: 2006-04) or Class 2 (UL 1310)
Power consumption	Typically 3 W (with switching outputs without load)
Housing/weight	Die-cast aluminum/approx. 170 g
Safety	Acc. to EN 60950-1: 2006-04/A11: 2009-03
Protection class	III, EN 60950-1 (2006-04)/ EN 60950-1/A11 (2009-03)
Enclosure rating, depending on variant	IP 67/IP 65 (EN 60529: 1991-10/A2: 2002-02/ EN 60950-1: 2006-04/EN 60950-1/ A11: 2009-03)
EMC	Radiated emission: EN 61000-6-3: 2007-09 Electromagnetic immunity: EN 61000-6-2: 2006-03
Vibration resistance Shock resistance	According to EN 60068-2-6: 2008-02 According to EN 60068-2-27: 2009-05
Ambient temperature	Operation: 0 °C to +50 °C, Storage: –20 °C to +70 °C

For further technical data, see the *Online data sheet* on the product page (www.mysick.com/en/lector62x).

Information Relating to UL60950 Certification

The certification is only valid with corresponding device identification on the type label of the code reader.

Type label example

Type: ICR62xx-xxxxxx
Supply voltage: DC 10 V to 30 V

Power consumption: 3 W
Current consumption: max. 1.7 A with load at the switching outputs
Ambient operating temperature: 0 °C to 50 °C
Enclosure rating IP 65/67

The device must be powered by a UL-listed LPS or Class 2 power supply unit (➜ see *"Technical Data (Excerpt)"*.

Maintenance and Care

The Lector®620 is maintenance-free.
No maintenance is required to ensure compliance with risk group RGO (infrared/green) or RG1 (red/blue) and laser class 1.

Reading Window

In order to obtain maximum reading performance from the Lector®620, the lens of the reading window (plastic) must be checked for contamination at regular intervals (e.g. weekly). This applies especially when using the Lector®620 in harsh environments (dust, abrasion, moisture, etc.). The lens must be kept clean and dry for reading.

➢ Clean the lens of the reading window with a clean, soft, damp cloth (mild, anti-static cleaning agent).

Important

If the lens of the reading window is scratched or damaged (cracked, broken), the lens must be replaced. Contact SICK Service to arrange this.

Static charge may cause dust particles to adhere to the reading window. This effect can be reduced by using SICK anti-static plastic cleaner (no. 5600006) in combination with the SICK lens cloth (no. 4003353).

Transport and Storage

Transport and store the Lector®620 in its original packaging with all protective plugs and caps (device with swivel connector) fully screwed on. Do not store outdoors. To ensure that any residual moisture present can escape, do not store the device in airtight containers. Do not expose to any aggressive substances. Storage conditions: Dry, dust-free, no direct sunlight, as little vibration as possible, storage temperature –20 °C to +70 °C, relative humidity max. 90 % (non-condensing).

Repair

Repairs to the Lector®620 may only be carried out by qualified and authorized service personnel from SICK AG.

Disassembly and Disposal

Any Lector®620 which can no longer be used at the end of the product life cycle must be disposed of in an environment-friendly manner in accordance with the country-specific waste disposal regulations that are applicable at the time. As it is categorized as electronic waste, the Lector®620 must never be disposed of with household waste! SICK AG is not currently able to take back devices that can no longer be used.

Sources for Additional Information

Additional information about the Lector®620, its optional accessories, and fieldbus modules can be found in electronic format on the following product pages on the Internet:

Lector®620 Image-Based Code Reader (www.mysick.com/en/lector62x)

- Detailed technical specifications (online data sheet)
- EC declaration of conformity
- Dimensional drawing and 3D CAD dimension models in various electronic formats
- Visual and reading field charts
- Compatible accessories (including cables, brackets, trigger sensors)
- Lector®620 Image-Based Code Reader Operating Instructions in English (No. 8014640), German (No. 8014639) and other languages (if available)
- Lector®620 Image-Based Code Reader Technical Information. Professional, High Speed, DPM Plus and OCR variants: in English (No. 8014010) and German (No. 8014009). ECO variant: in English (No. 8014570) and German (No. 8014569).
- Ordering information in the Lector®620 Image-Based Code Reader Product Information in English (No. 8014632) and German (No. 8014555)
- Publications dealing with accessories

Function Modules for Lector®620 Code Reader (www.sick.com/software)

- Function modules for communication between a SIMATIC controller (S7-300/S7-400) and the Lector®620. Function modules for other controllers on request.

CDF600-21xx PROFIBUS DP Fieldbus Module (www.mysick.com/en/cdf600-2)

- CDF600-21xx PROFIBUS DP Fieldbus Module Operating Instructions in English (No. 8015335) and German (No. 8015334), in other languages if required

CDF600-2200 PROFINET IO Fieldbus Module (www.mysick.com/en/cdf600-2)

- CDF600-2200 PROFINET IO Fieldbus Module Operating Instructions in English (No. 8015922) and German (No. 8015921), in other languages if required

Documents on Request

- Overview of command strings for Lector®620

Support is also available from your sales partner: *www.sick.com/worldwide.*

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SICK uses open-source software in its Lector®620. This software is licensed by the rights holders under the following free licenses, among others: GNU General Public License (GLP version 2, GPL version 3) and GNU Lesser General Public License (LGPL), MIT License, zlib License, and licenses derived from the BSD license.

Exclusion of Liability

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List of Software Licenses and License Texts

In the Lector®620 product, SICK uses unmodified open-source software and, insofar as required and where permitted under the relevant license conditions, modified open-source software.

The firmware of the Lector®620 is, therefore, subject to the copyrights listed below.

The associated license texts that relate to the license overview provided below can be found in the 📖 *Lector®620 Image-Based Code Reader Technical Information*.
Professional, High Speed, DPM Plus and OCR variants: in English (No. 8014010) and German (No. 8014009) ECO variant: in English (No. 8014570) and German (No. 8014569). The information can be downloaded free of charge from the product page of the Lector®620: *www.mysick.com/en/lector62x*

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