

# CLV63x, CLV64x and CLV65x Bar Code Scanners with Heating



This technical information presents the variants of the bar code scanners CLV63x, CLV64x and CLV65x with heating and describes the installation combined with the optional connection modules CDM420-0001/CDB620-001.

This information extends the following current documents:

- Product Information CLV600 Product Family (part no. 8011945, English edition), issue TD32, 2009-07
- CLV63x Operating Instructions (part no. 8011970, English edition), issue S345, 2008-04-16
- CLV64x Operating Instructions (part no. 8011975, English edition), issue 2008-04-14
- CLV65x Operating Instructions (part no. 8011980, English edition), issue 2008-09-14
- CDM420-0001 Operating Instructions (part no. 8010004, German/English edition), issue TF10, 2009-08
- CDB620 Operating Instructions (part no. 8012119, German/English edition), issue U842, 2010-03

## 1. Available Variants of Bar Code Scanners with Heating

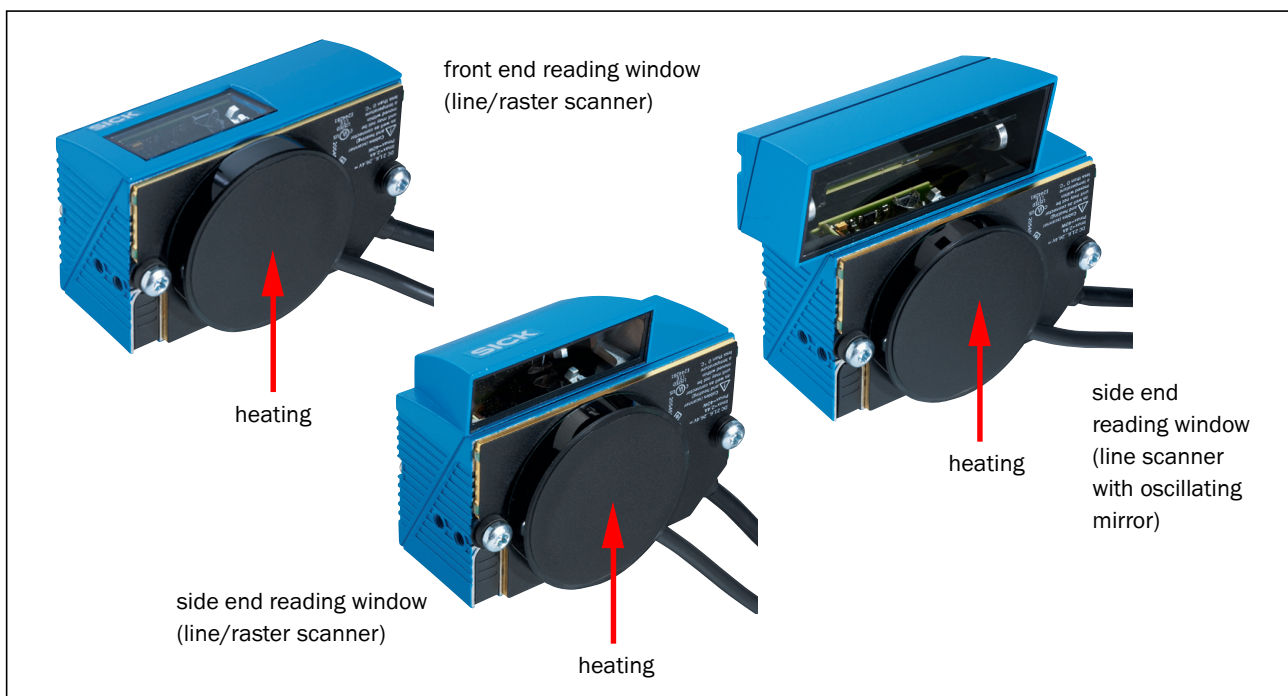


Fig. 1: CLV63x to 65x bar code scanners with heating in several housing designs

**a) Bar Code Scanners with fixed Cable Inlet on the Housing (data interfaces RS 232/422/485)**

Electrical connections (design):

Scanner: cable with 15-pin D Sub HD plug, 2 m (6.56 ft)

Heating: cable, 3-pole, open wire ends (ferrules), 2 m (6.56 ft)

Part no.	Type	Scanning procedure	Reading window
1051733	CLV630-0000F0	line scanner	front end
1051734	CLV630-1000F0	raster scanner	front end
1050778	CLV631-0000F0	line scanner	front end
1052180	CLV650-0000F0	line scanner	front end
1052181	CLV650-6000F0	line scanner with oscillating mirror	side end

Table 1: CLV63x to 65x bar code scanners with heating and fixed cable inlet

Further types on request.

**b) Bar Code Scanners with pivotable Connector Unit on the Housing (data interfaces Ethernet, RS 232/422/485)**

Electrical connections (design):

Scanner: 12-pin M12 round plug + 4-pin M12 round socket (Ethernet)

Heating: cable, 3-pole, open wire ends (ferrules), 2 m (6.56 ft)

Part no.	Type	Scanning procedure	Reading window
1051864	CLV630-6120F0	line scanner with oscillating mirror	side end
1051861	CLV631-0120F0	line scanner	front end

Table 2: CLV63x to 65x bar code scanners with heating and pivotable connector unit

Further types on request.

**IMPORTANT:**

The optional heating is mounted and checked at the factory as stipulated by contract. It is not possible for the customer to install it himself in situ.

**2. Conditions for Installation and Startup**

- A CLV63x to 65x bar code scanner with heating
- An optional connection module for connecting a CLV63x to 65x bar code scanner:
  - CDM420-0001 for operating ambient temperature -35 to +40 °C (-31 to +104 °F), part no. 1025362
  - additionally the board part no. 2055071 incl. fuse 3 A and 2 wires

or

  - CDB620-001 for operating ambient temperature -35 to +40 °C (-31 to +104 °F), part no. 1042256
  - additionally the 1-pin terminal part no. 6041383
  - a fuse 3 A in the control cabinet (provided by customer)
- If required the optional CMC600-101S02 parameter cloning module for bar code scanners (operating ambient temperature -35 to + 40 °C (-31 to +104 °F)), part no. 1051166, for installation in the CDM420-0001 / CDB620-001
- A thermally isolating bracket for CLV63x to 65x bar code scanners with heating, e.g. mounting bracket, U-shaped (part no. 2050705)
- Power supply voltage 24 V DC ±10 %

**IMPORTANT:**

The CLV63x to 65x bar code scanners with heating are not released for fork lift applications in deep temperature areas.

## 2. Function of the Heating

The external heating is attached on the side of the bar code scanner which provides the maximum heat conductive surface area. To the supply voltage, the heating is connected by a separate cable. The supply voltage for the bar code scanner is led via a temperature-dependent switch of the heating. The heating must be wired in the connection module in corresponding manner.

By applying the supply voltage to the bar code scanner, at first, by means of the temperature-dependent switch, only the heating is fed with electricity. After the time of the warm-up phase (approx. 40 min at  $-35\text{ }^{\circ}\text{C}$  ( $-31\text{ }^{\circ}\text{F}$ ) and 24 V DC power supply), the switch releases the supply voltage for the bar code scanner. The self-test follows and then the device starts the reading mode. The illumination of the green "Device Ready" LED indicates general readiness for operation.

## 3. Mounting the Bar Code Scanner

- The CLV63x to 65x bar code scanner with heating must not be exposed to strong air movement (e.g. due to ventilation), otherwise the required heating performance can not be generated. It is recommended to shield the bar code scanner against an existing air movement using suitable measures.
- At temperatures below  $0\text{ }^{\circ}\text{C}$  ( $+32\text{ }^{\circ}\text{F}$ ): do not move the connection cables or the type-dependent pivotable connector unit at the bar code scanner. Do also not set the configuration switches in the CDM420-0001/ CDB620-001 connection modules! See also the warning label on the heating.

For mounting the CLV63x to 65x bar code scanner with heating, the following optional mounting bracket are available:

- Part no. 2050705: mounting bracket (U-shaped) for installing the bar code scanner to a plane holder. The bar code scanner can be adjusted in two axes
- Part no. 2058082: mounting bracket (U-shaped) with clamp for rods and tubes with 12 to 20 mm external diameter. The bar code scanner mounted on the rod/tube can be adjusted in three axes

To isolate the bar code scanner thermally to the mounting bracket, 3 included plastic washers are used.

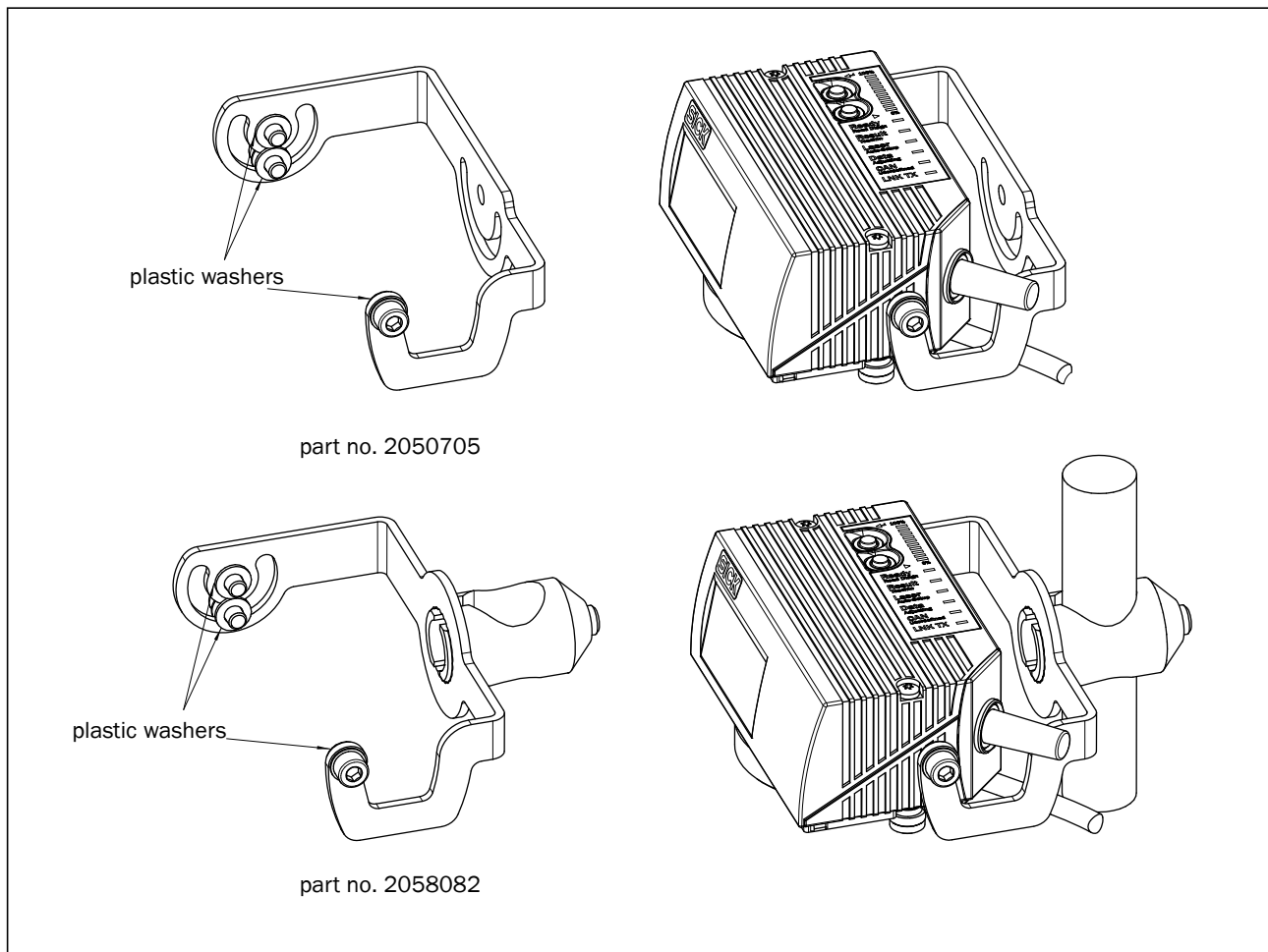


Fig. 2: Fitting the CLV63x to 65x bar code scanner on the mounting bracket

## Using in Outdoor Areas

When CLV63x to 65x bar code scanners with heating are used outdoors, it is recommended to fit them additionally in a protective housing. This way the reading window cannot be soiled by rain, snow or dust. At the same time, the housing serves as protection against the wind.

## 4. Electrical Installation

- Connect or release current linkages only under de-energized conditions.  
At temperatures below 0 °C (+32 °F) do not carry out any electrical workings!
- The wire cross-sections of the incoming power supply cable at the connection module shall be  $\geq 0.75 \text{ mm}^2$  (20 AWG). The power supply voltage required at the connection module is 24 V DC  $\pm 10 \%$ . Due to the resulted voltage drop, the wires of long cables require a major cross-section according to valid engineering standards.
- **IMPORTANT:**  
If the connection cables of the bar code scanner are extended beyond 2 m (6.56 ft), the bar code scanner will lose the UL certification.

### Electrical Installation of the CDM420-0001 Connection Module

- In the CDM420-0001, the incoming/outgoing power supply cables are connected to the terminal block  $U_{IN}$  on the additional board.

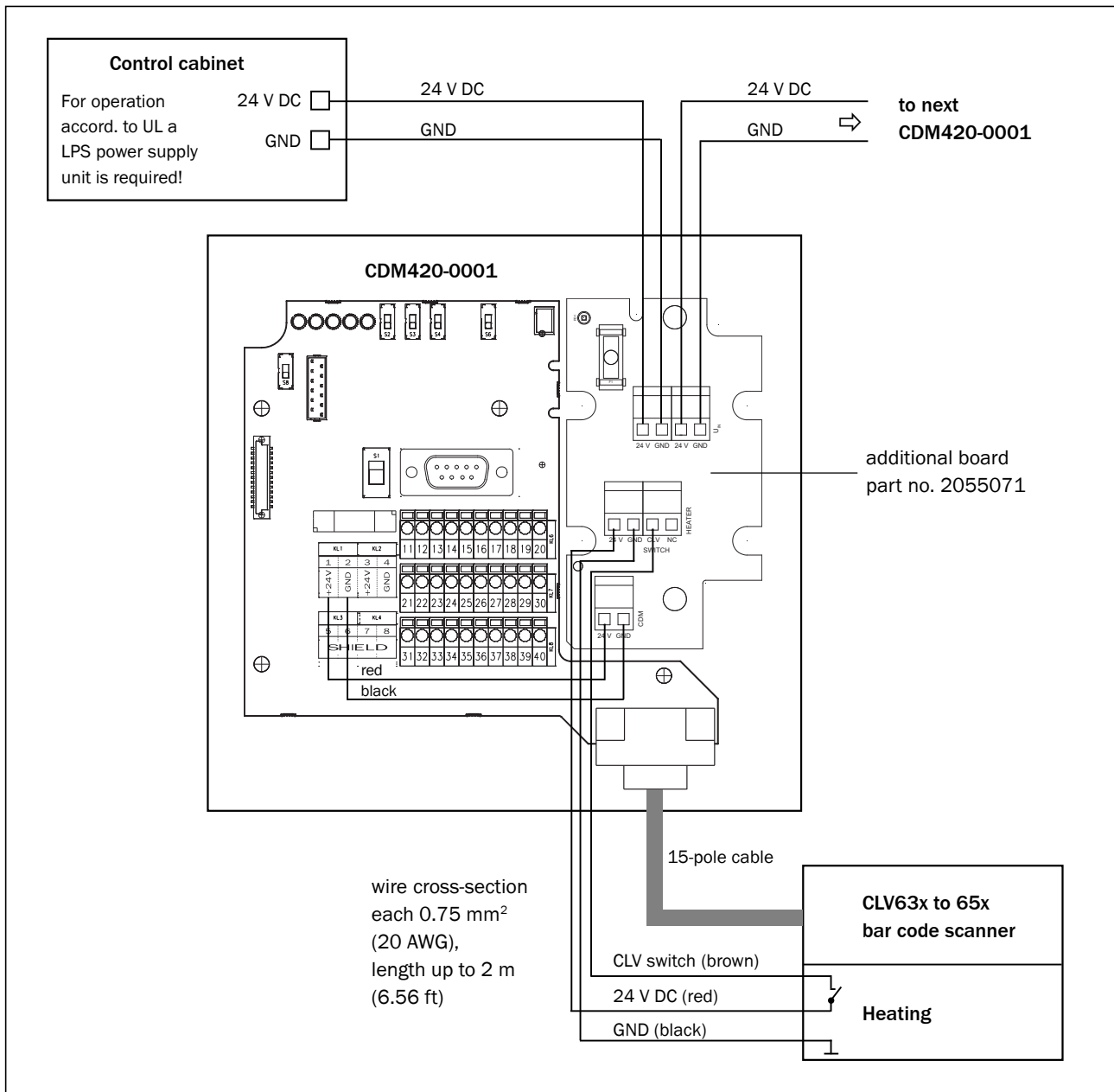


Fig. 3: Wiring the power supply voltage for the bar code scanner and the heating in the CDM420-0001 connection module

- When a CLV63x to 65x bar code scanner with heating is connected to the CDM420-0001 connection module, the incoming power supply cable for the heating is protected by the fuse of 3 A on the additional board.
- The maximum permissible wire cross-section at the screw terminals in the CDM420-0001 is 2.5 mm<sup>2</sup>. If the bar code scanner with heating does not operate according to UL, the maximum permissible current at the screw terminals is 20 A according to the terminal specifications. This allows the parallel wiring of several CDM420-0001 connected with bar code scanners with heating.

### Electrical Installation of the CDB620-001 Connection Module

- When a CLV63x to 65x bar code scanner with heating is connected to the CDB620-001 connection module, the incoming power supply cable for the heating must be protected by a fuse of 3 to 4 A in the control cabinet provided by the customer. For each connection module combined with a bar code scanner a separate fuse is required.
- To connect the incoming supply voltage in the CDB620-001, use the additionally required terminal (24 V DC) and the terminal 2 (GND). Via the switch of the heating the supply voltage is led to the terminal 3 (U<sub>IN</sub>).

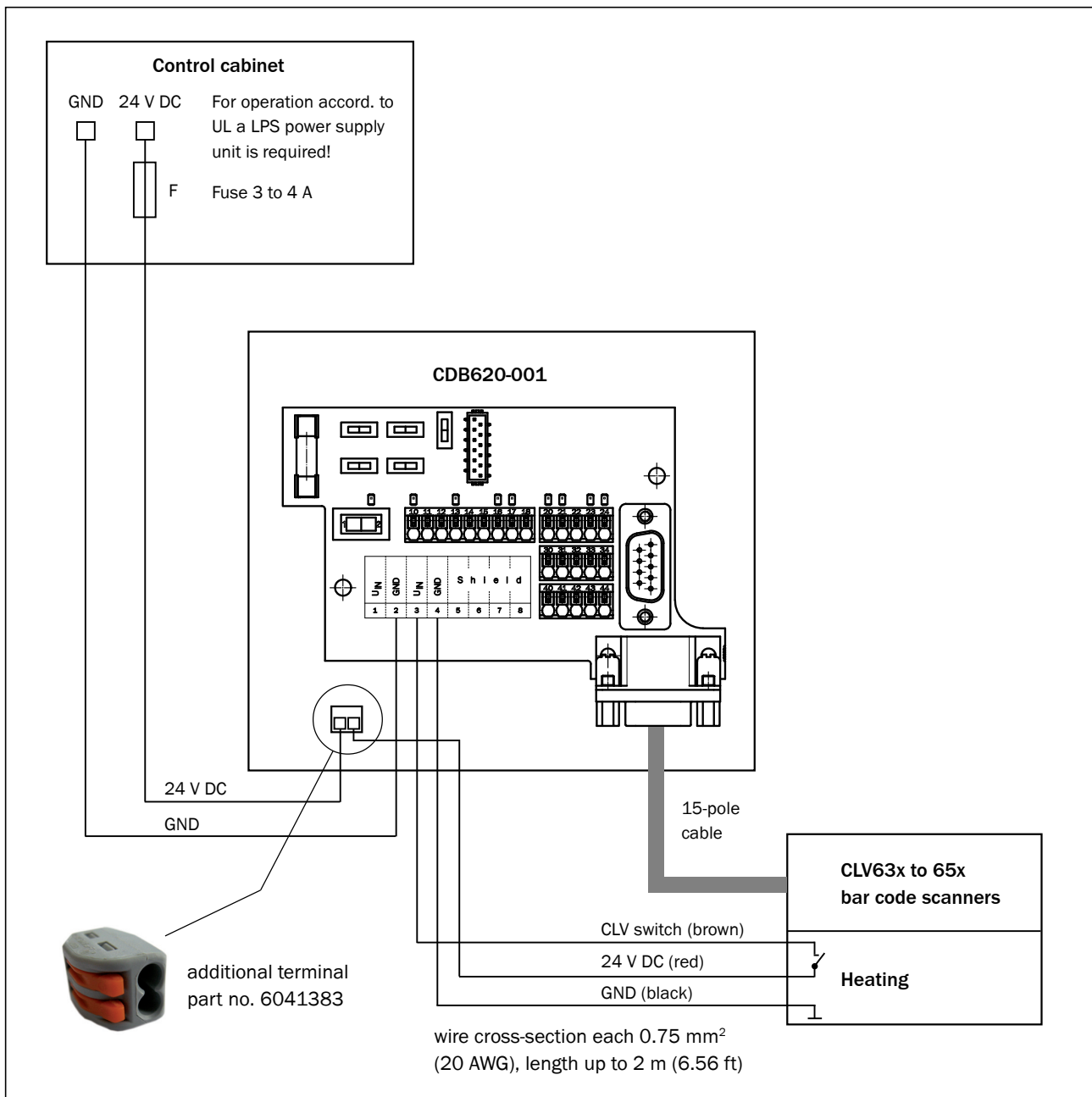


Fig. 4: Wiring the power supply voltage for the bar code scanner and the heating in the CDB620-001 connection module

## 5. Technical Data CLV63x to 65x Bar Code Scanners with Heating

Type	CLV63x/64x/65x
Power supply voltage	24 V DC $\pm 10\%$ SELV respectively PELV according to IEC 60364-4-41 (2005)
Power consumption	Max. 40 W (max. 2.4 A)
Ambient temperature	Operation: $-35$ to $+35$ °C ( $-31$ to $+95$ °F), no air movement/storage: $-20$ to $+70$ °C ( $-4$ to $+158$ °F)
Delay in switching on	Scanner: approx. 40 min at $-35$ °C ( $-31$ °F) and 24 V DC
Electrical safety	III, according to EN 61140 (2002-03)
Enclosure rating	IP 65 <sup>1)</sup> according to EN 60529 (1991-10); A1 (2002-02)
Required fuse	3 A
Wire cross-section	Power supply cable to connection module <sup>2)</sup> : at least 0.75 mm <sup>2</sup> (20 AWG)
Dimensions	See Fig. 5, Page 7 to Fig. 7, Page 9
1) with SICK standard cables	
2) when a bar code scanner with heating is connected and the supply voltage is not forwarded to further connection modules	

Table 3: Supplement of technical data

### Certification according to UL60950-1

The bar code scanners of the CLV63x, CL64x and CLV65x series with heating and cable length of up to 2 m (6.56 ft) are certified according to UL60950-1, when LPS power units or Class 2 power units are used. The certification is only valid with corresponding product marking on the type plate of the respective bar code scanners.

For detailed information please refer to the Technical Information "UL-Certification of the CLV62x to 65x Bar Code Scanners" (part no. 801306 from issue U954, 2010-05).

## 6. Ordering Information

Part No.	Description
<b>Bar code scanners with heating</b>	
1051733	CLV630-0000F0, line scanner, front end reading window, 2 cables fixed connected, length each 2 m (6.56 ft)
1051734	CLV630-1000F0, raster scanner, front end reading window, 2 cables fixed connected, length each 2 m (6.56 ft)
1051864	CLV630-6120F0, line scanner with oscillating mirror, side end reading window, 1 pivotable connector unit, 1 heating cable fixed connected with length 2 m (6.56 ft)
1050778	CLV631-0000F0, line scanner, front end reading window, 2 cables fixed connected, length each 2 m (6.56 ft)
1051861	CLV631-0120F0, line scanner, front end reading window, 1 pivotable connector unit, 1 heating cable fixed connected with length 2 m (6.56 ft)
1052180	CLV650-0000F0, line scanner, front end reading window, 2 cables fixed connected, length each 2 m (6.56 ft)
1052181	CLV650-6000F0, line scanner with oscillating mirror, side end reading window, 2 cables fixed connected, length each 2 m (6.56 ft)
<b>Accessories (optional)</b>	
1025362	CDM420-0001 connection module, used for one bar code scanner
2055071	Additional board with fuse 3 A for CDM420-0001 connection module, for connecting the incoming power supply cable and the heating of the CLV63x to 65x bar code scanners. Incl. 2 wires (red, black), length each 135 mm (5.32 in) as well as 2 spacer bushings and 2 screws
1042256	CDB620-001 connection module, used for one bar code scanner
6041383	Additional terminal for CDB620-001 connection module, 1-pole, for connecting the positive pole of the heating of the CLV63x to 65x bar code scanners to the incoming power supply voltage
1051166	CMC600-101S02 parameter cloning module for installation in the connection module CDM420-0001/CDB620-001
2050705	Mounting bracket for CLV63x to 65x bar code scanners, U-shaped, incl. mounting material <sup>1)</sup> . For installing the bar code scanner on a plane holder (bar code scanner adjustable in two axis)
2058082 <sup>2)</sup>	Mounting bracket for CLV63x to 65x bar code scanners, U-shaped, with clamp for rods/tubes with diameter 12 to 20 mm (0.47 to 0.79 in), incl. mounting material <sup>1)</sup> . Scanner adjustable in three axis when mounted on rod
1) for fixing the bar code scanner to the mounting bracket 2) available on request	

Table 4: Ordering information for CLV63x to 65x bar code scanners with heating and for accessories

## 7. Dimensional Drawings

### 7.1 Dimensional Drawings Bar Code Scanners with Heating

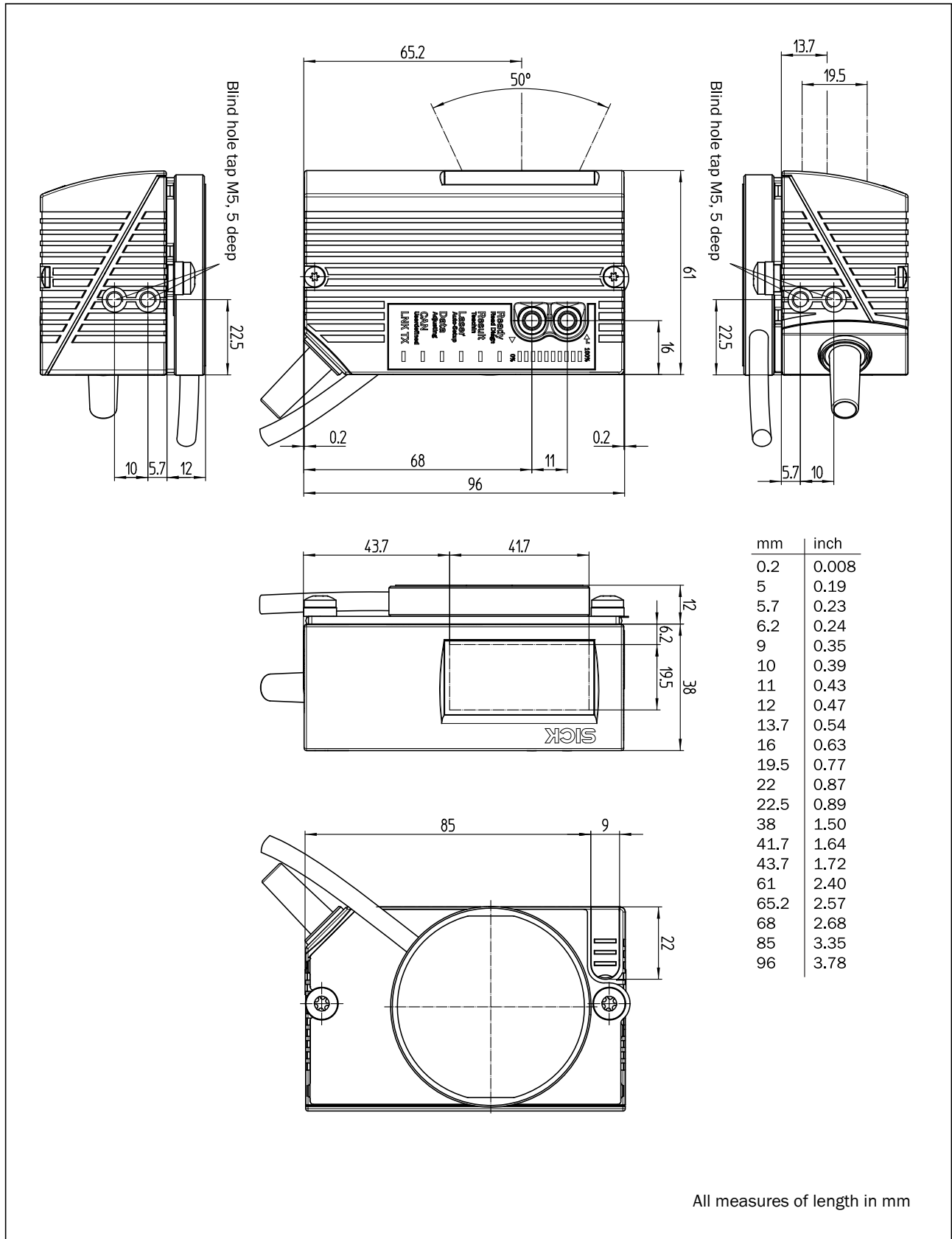


Fig. 5: Dimensions of the line/raster scanner with heating and front end reading window

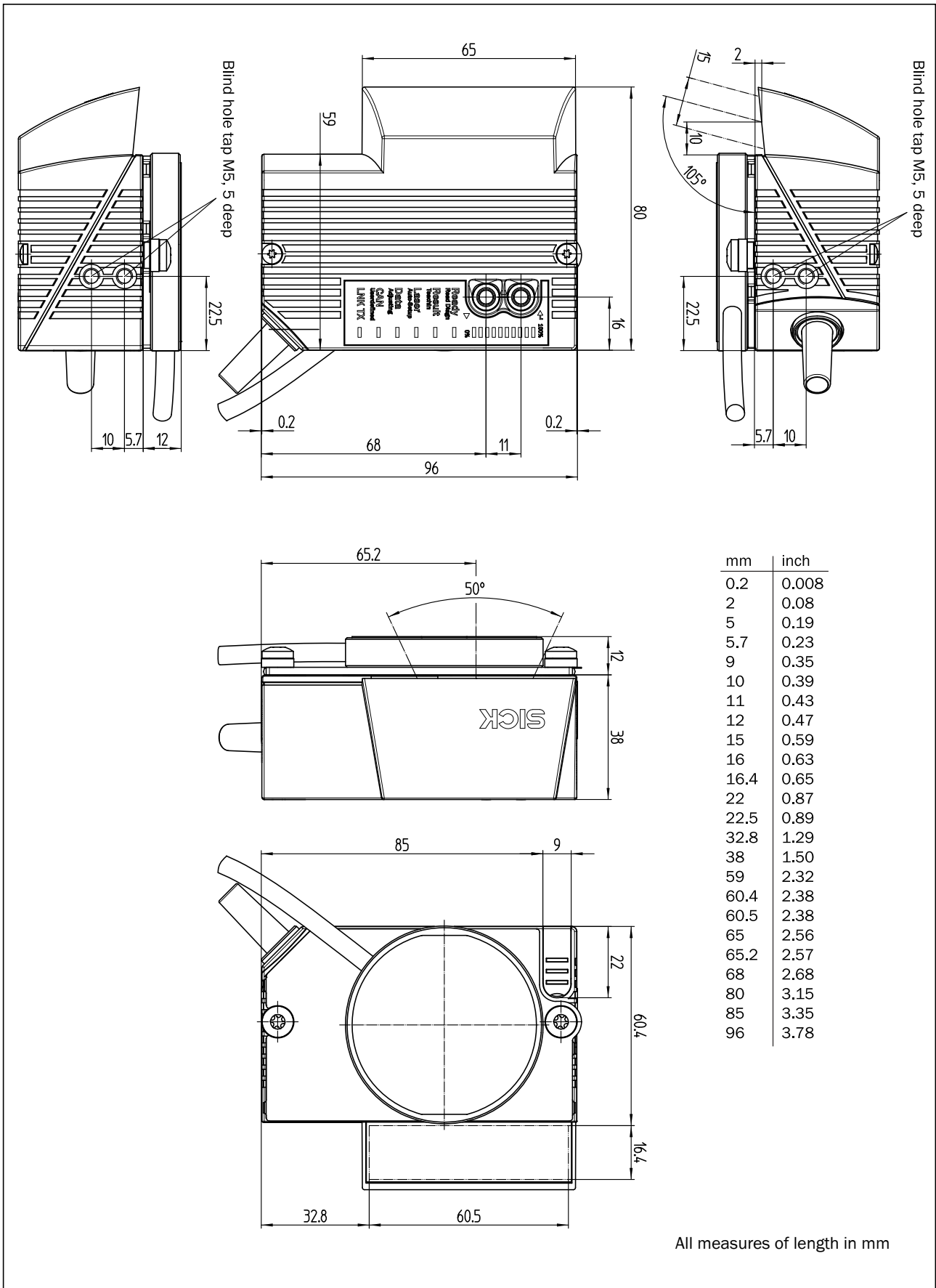


Fig. 6: Dimensions of the line/raster scanner with heating and side end reading window



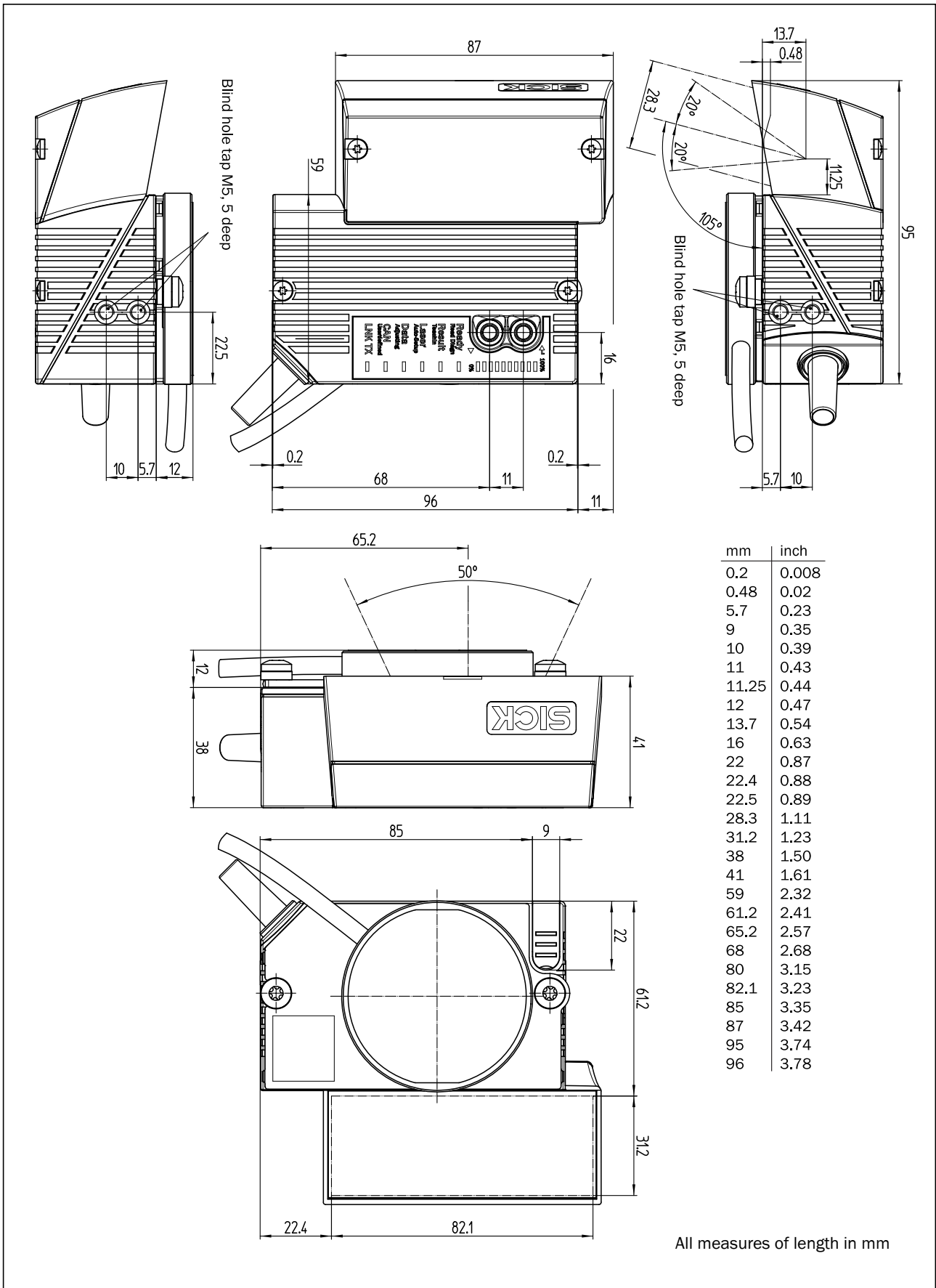


Fig. 7: Dimensions of the line scanner with oscillating mirror (side end reading window) and heating

### Dimensional Drawing Mounting Brackets

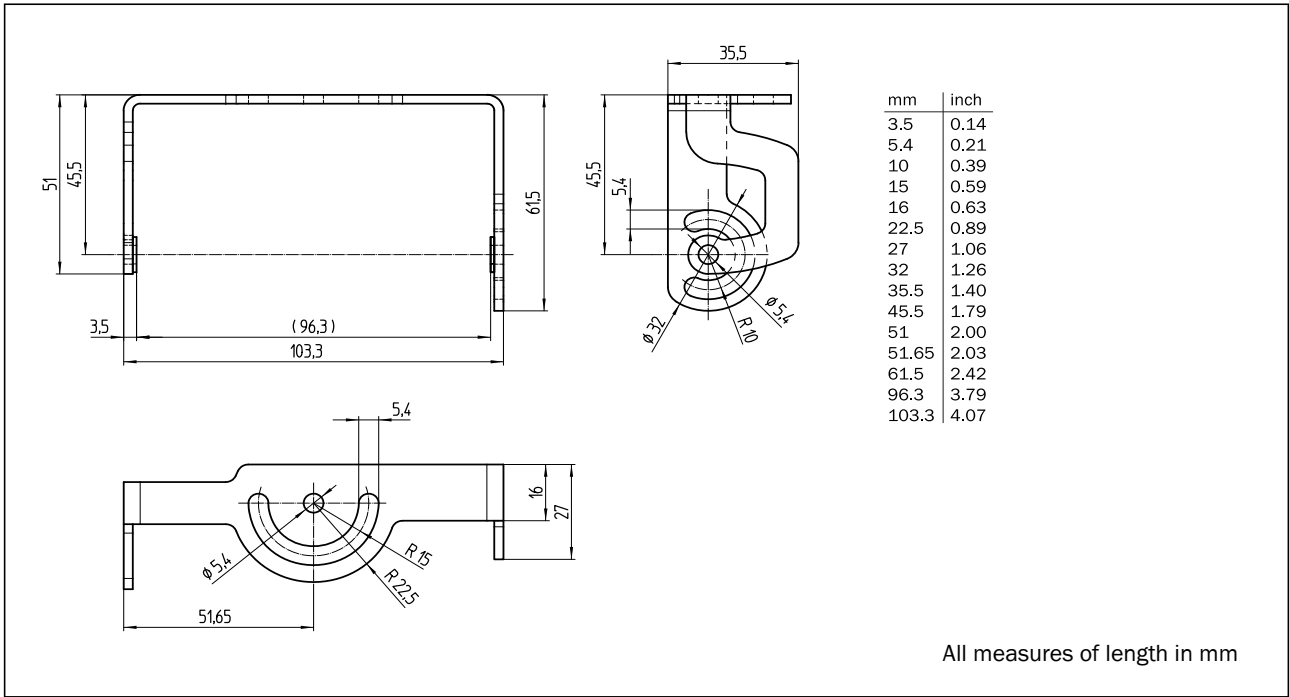


Fig. 8: Dimensions of the mounting bracket part no. 2050705

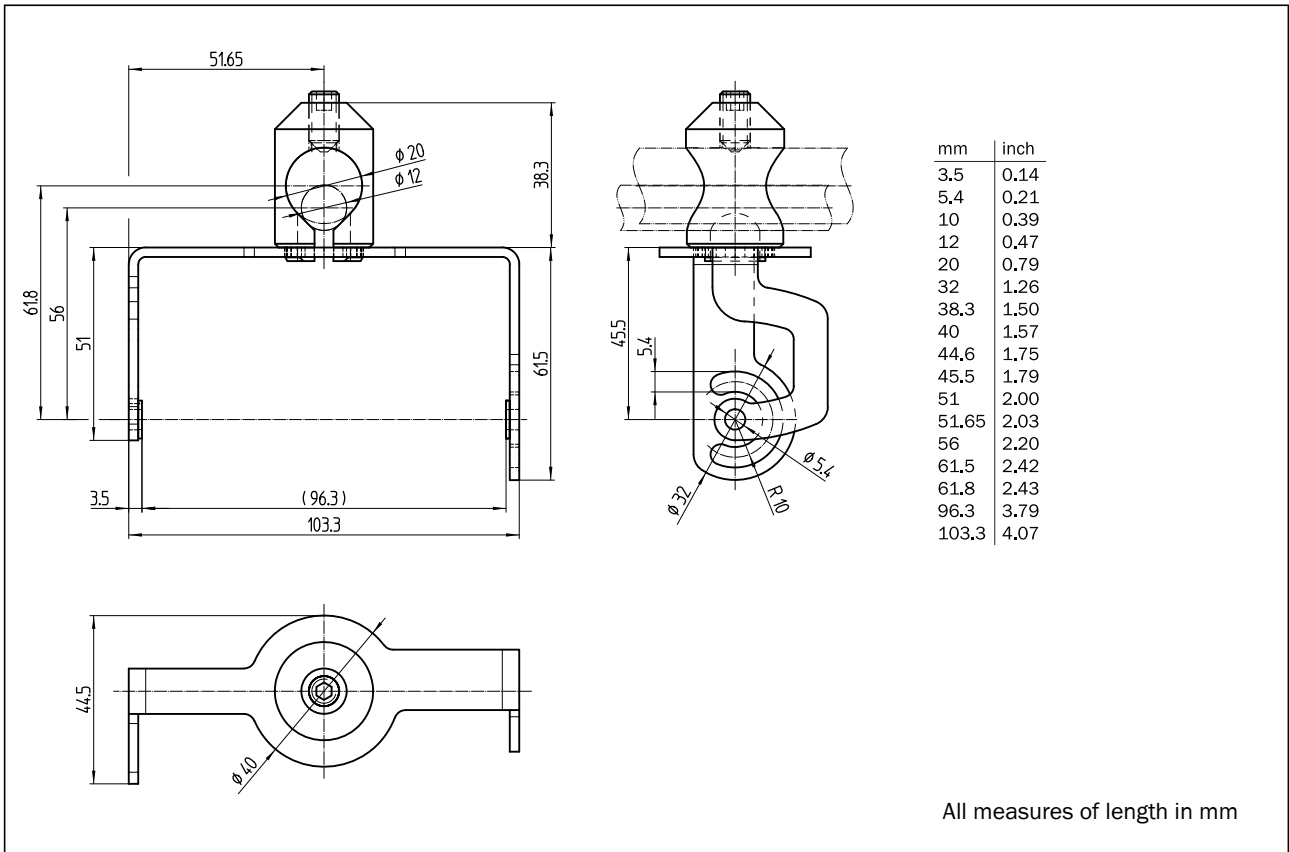


Fig. 9: Dimensions of the mounting bracket part no. 2058082