RPI-BC 107,6 DEV-KIT KMGY

RPI-BC housing system

Data sheet
107161_en_00

1   Description

The RPI-BC housing system is designed to accommodate a Raspberry Pi computer. The housing can be used with Raspberry Pi models A+, B+, B2, and B3. Further PCBs can also be inserted in the housing in addition to the Raspberry Pi board.

Integration in distributor housing is possible since the RPI-BC housing system complies with DIN 43880. The housing can be mounted on a TS 35 DIN rail or on a wall.

The RPI-BC housing system consists of a special BC housing (overall width 107.6) and a PCB holder for mounting the Raspberry Pi board.

The HBUS DIN rail connector can be used to connect together several RPI-BC housings or other BC housings.

This housing can be combined with the BC DEV-KIT to create an I/O system (BC 107,6 DEV-KIT KMGY, 2202525). The BC DEV-KIT is a set comprising BC housing and PCB terminal blocks. An appropriate perfboard is also available for the BC DEV-KIT.

Table of contents

i	Make sure you always use the latest documentation. It can be downloaded at phoenixcontact.net/products.
i	This document is valid for all products listed in "Ordering data" on page 2.

INSPIRING INNOVATIONS

2 Ordering data

RPI-BC housing system

Description	Type	Order No.	Pcs./Pkt.
RPI-BC housing system, lower housing part including base latch, upper housing part, housing cover (permanently snapped onto the upper housing part), and PCB holder for mounting the Raspberry Pi board, color: light gray	RPI-BC 107,6 DEV-KIT KMGY	2202874	1

RPI-BC housing system, individual parts

Description	Type	Order No.	Pcs./Pkt.
Lower housing part, including base latch, color: jet black	BC 107,6 UT HBUS BK	2896270	10
Lower housing part, including base latch, color: light gray	BC 107,6 UT HBUS KMGY	2202951	10
Upper housing part, including PCB holder for mounting the Raspberry Pi board, color: light gray	RPI-BC 107,6 DEV-KIT KMGY P10	2202875	10
Housing cover, permanently snapped onto the upper housing part, color: light gray	BC 107,6 DKL R KMGY	2896173	10
Housing cover, hinged, can be sealed, transparent, including fitted cover	BC 107,6 DKL S TRANS	2896131	10

Accessories

Description	Type	Order No.	Pcs./Pkt.
Adapter, for mounting the Raspberry Pi A+ model	RPI-BC A+-ADAPTER ATGY	2202906	1
DIN rail connector, 16-pos., 1 slot, without pin strip, color: jet black	HBUS 107,6-16P-1S BK P1	2202876	1
Perfboard, including pin strip for connection to the DIN rail connector	RPI-BC EXT-PCB HBUS SET	2202995	1
Perfboard, including socket strips for the GPIO connection, solder rings for PTSM header, and PTSM header	RPI-BC INT-PCB SET	2202994	1
Socket strip, for connecting the RPI-BC INT-PCB SET perfboard (or another additional PCB) to the GPIOs of the Raspberry Pi computer	PSTD 0,65X0,65/40-2,54	2202992	1
Pin strip, for connecting the RPI-BC EXT-PCB HBUS SET perfboard (or another additional PCB) to the DIN rail connector	PSTD 0,65X0,65/18-3IS-2,54	2202993	1

Additional products

Description	Type	Order No.	Pcs./Pkt.
Housing kit for the BC 107,6 product range, including PCB terminal blocks (MKDS 1,5), supplied in individual parts	BC 107,6 DEV-KIT KMGY	2202525	1
Perfboard, for the BC 107,6 DEV-KIT	BC 107,6/40 U11 HBUS DEV-PCB	2202544	1
DIN rail connector, 16-pos., 1 slot, with pin strip, color: jet black	HBUS 107,6-16P-1S DEV-KIT BK	2202545	1

3 Technical data

RPI-BC housing system	
Mounting	NS 35 DIN rail or wall mounting
Temperature range	-40°C ... +105°C
Degree of protection according to DIN EN 60529	IP20
Dimensions, W x H x D	107.6 mm x 89.7 mm x 62.2 mm
PCB, maximum usable area	Raspberry Pi board, plus 8200 mm²
Power dissipation P_V at 20°C in the horizontal mounting position, aligned without spacing	13.08 W
PCB connection of additional PCB, maximum number of positions	16 positions
Insulation material	PC (polycarbonate), PA (polyamide)
Flammability rating UL 94	V0

DIN rail connector	
Number of positions	16
Current carrying capacity, depending on derating	Maximum of 3 A per contact, total current 25 A, maximum, 60 V DC

Perfboard	
Current carrying capacity	50 V DC, maximum
Maximum nominal current for the GPIO connection	0.7 A per position
Maximum nominal current for the DIN rail connector	0.7 A per position
Maximum nominal current for the PTSM terminal blocks	1.8 A per position

4   Overview of the housing system
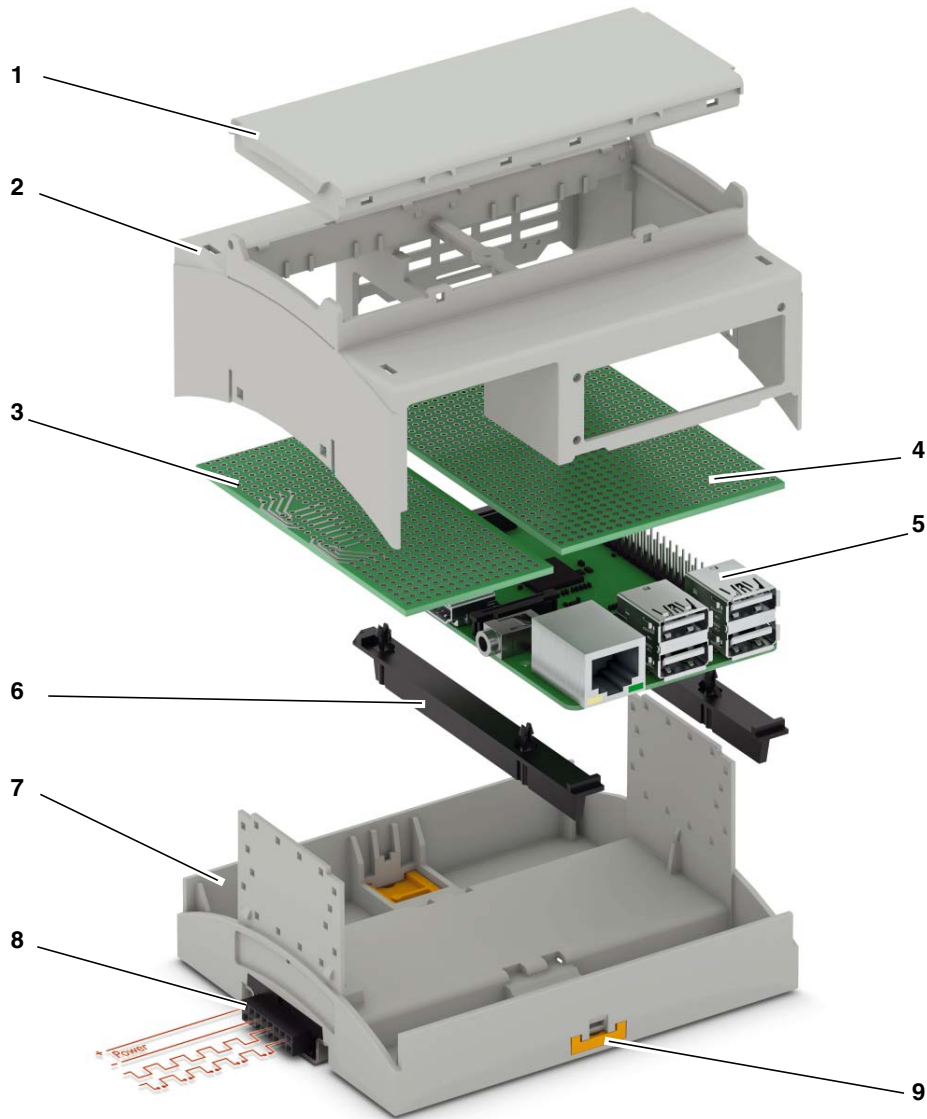
Figure 1   RPI-BC housing system

1 Housing cover
2 Upper housing part
3 Perfboard (optional), RPI-BC EXT-PCB HBUS SET
4 Perfboard (optional), RPI-BC INT-PCB SET
5 Raspberry Pi board (not supplied as standard)
6 PCB holder
7 Lower housing part including base latch
8 DIN rail connector (optional)
9 Base latch

5   Dimensions
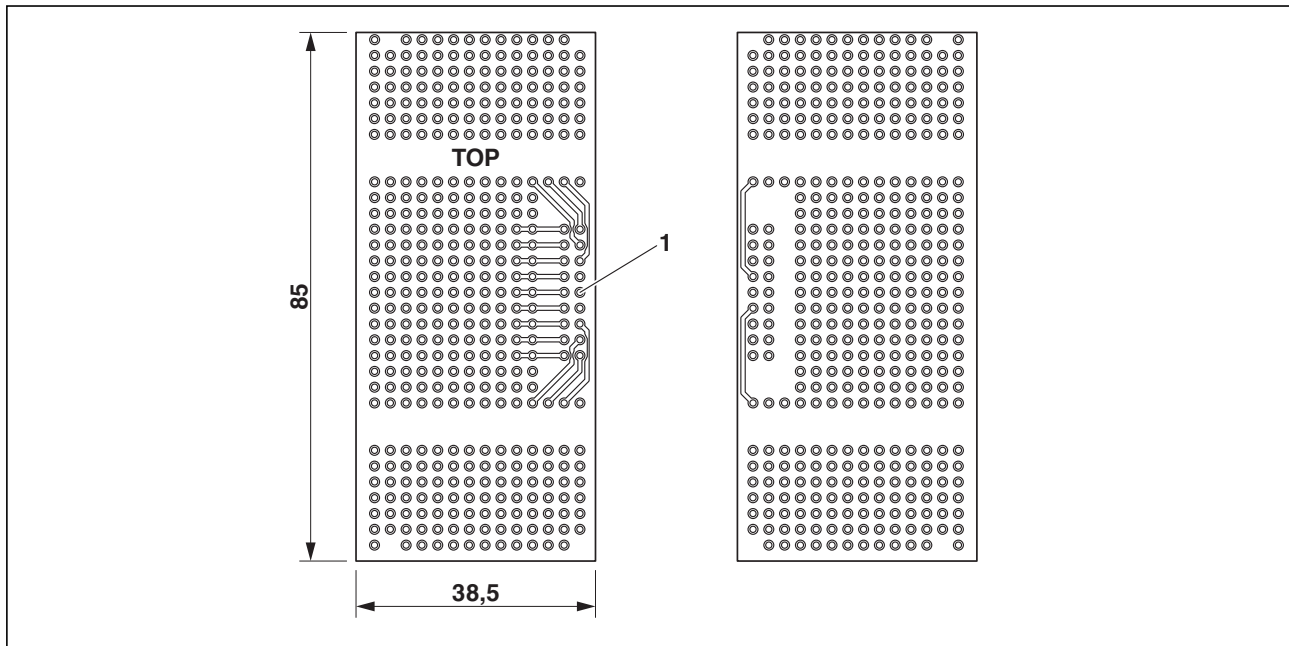
5.1   PCB dimensions of additional PCBs

PCB for DIN rail connector

Figure 2   Dimensions of PCB RPI-BC EXT-PCB HBUS SET, 2202995

1	Connection area for the pin strip for connecting the DIN rail connector (PSTD 0,65X0,65/18-3IS-2,54, 2202993)
PCB thickness	1.6 mm ±0.2 mm
Perforated grid	2.54 mm
Drill hole	ø 1 mm

PCB for the GPIO connection
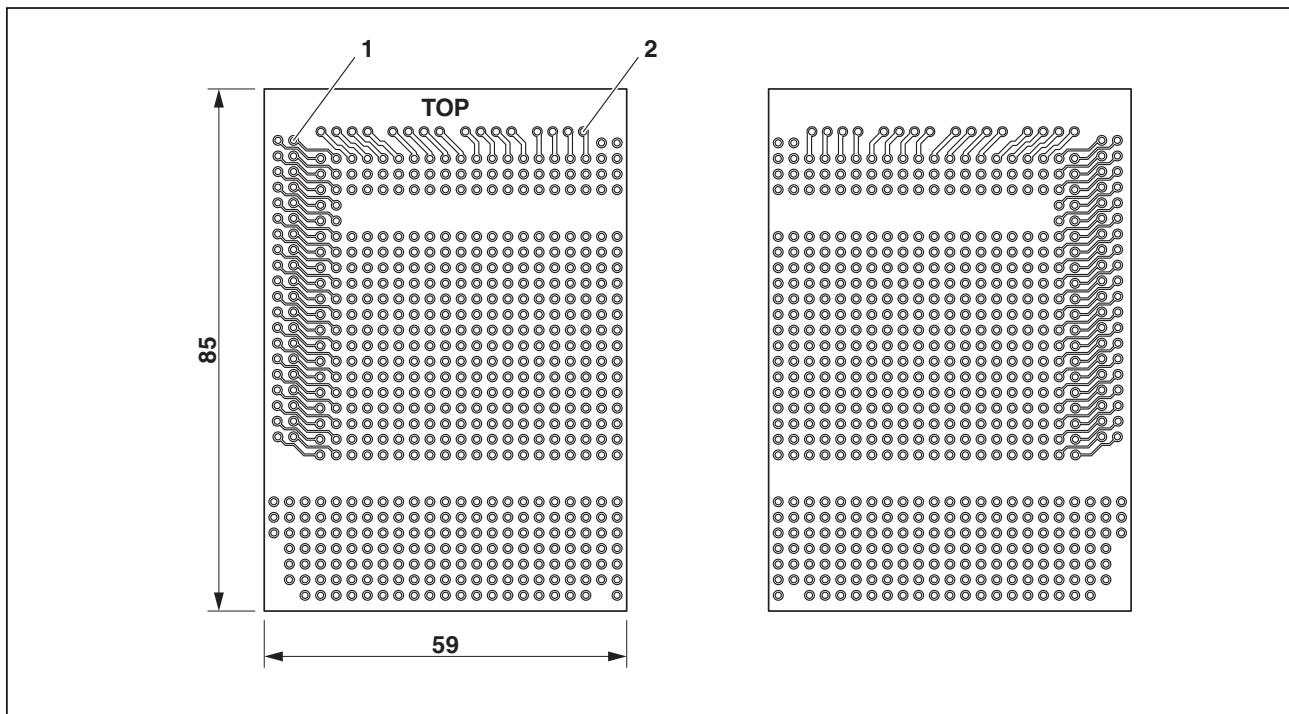
Figure 3   Dimensions of PCB RPI-BC INT-PCB SET, 2202994

1	Connection area for the pin strip for the GPIO connection (PSTD 0,65X0,65/40-2,54, 2202992)
2	Connection area for the header for (PTSM 0,5/ 4-HH-2,5-THR WH R32, 1814867)
PCB thickness	1.6 mm ±0.2 mm
Perforated grid	2.54 mm
Drill hole	ø 1 mm
▨	Keep-out zone, no components at these positions

5.2 Dimensions of upper housing part
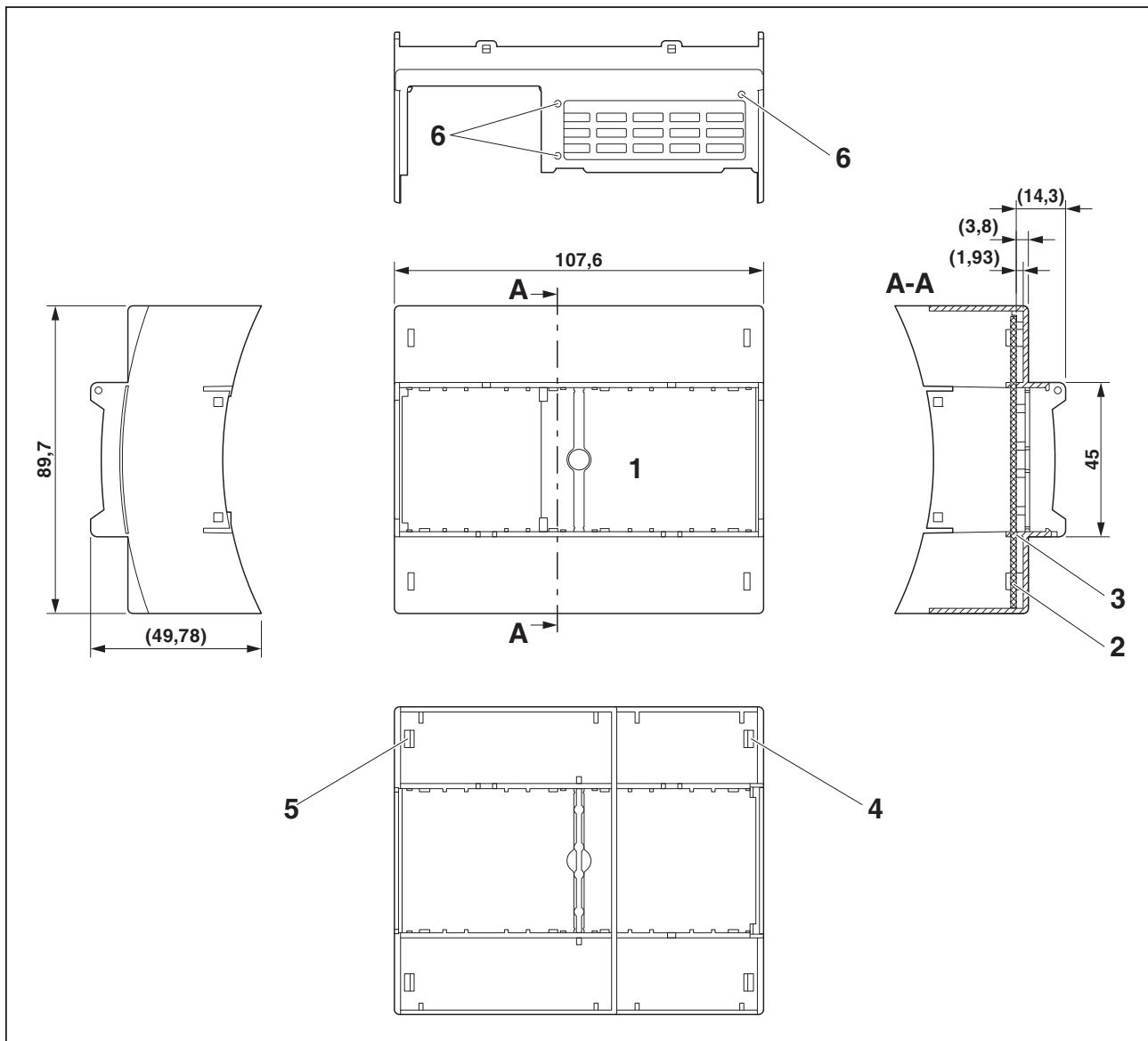
Figure 4   Dimensions of housing

1   Removable fin
2   PCB
3   Position of PCB
4   Latching for PCB RPI-BC EXT-PCB HBUS SET
5   Latching for PCB RPI-BC INT-PCB SET
6   Mounting holes for adapter

5.3   Installation example
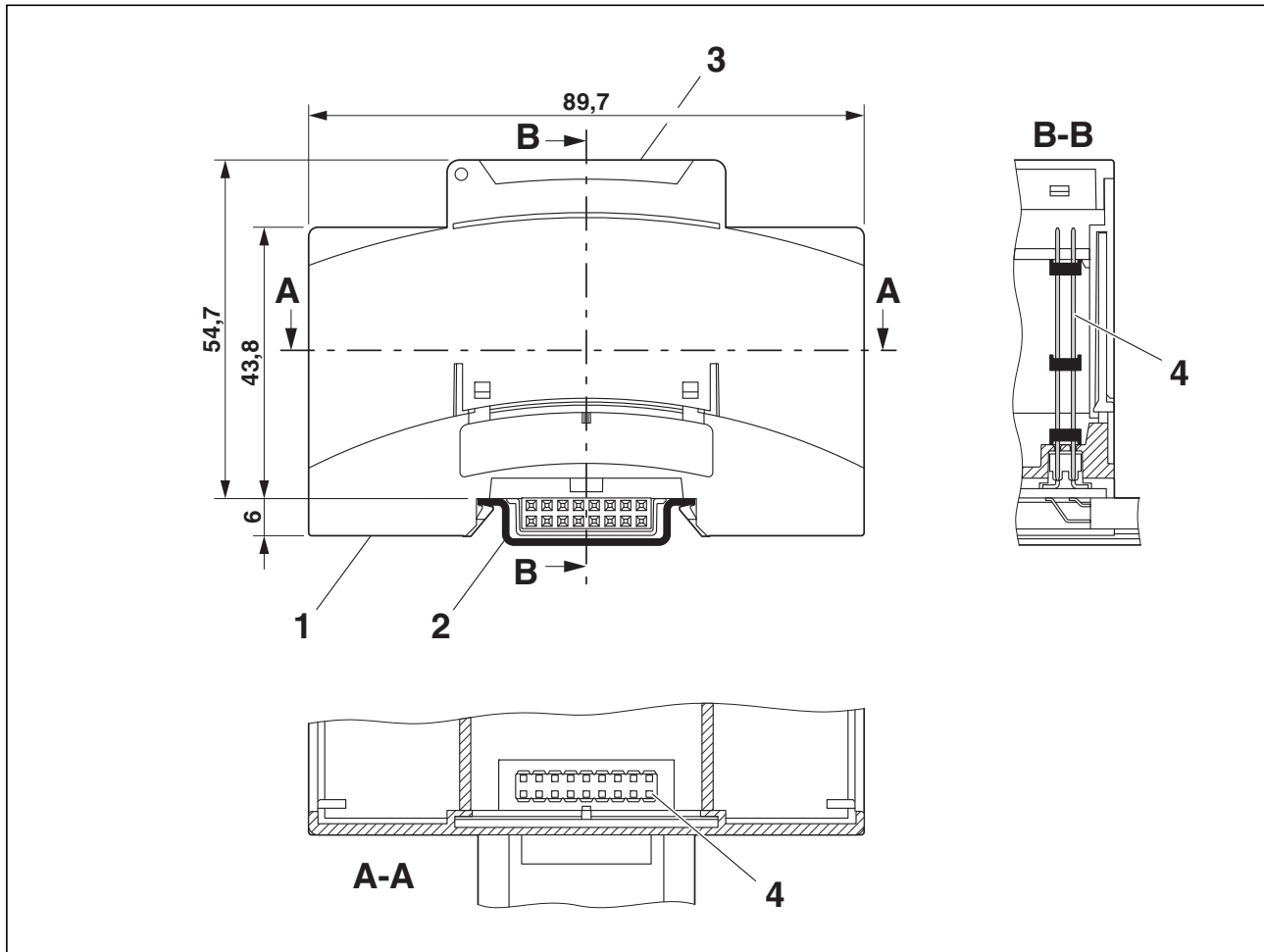
Figure 5   Installation example

1   Lower housing part
2   TS 35-7,5 or TS 35-15 x 1,5 DIN rail
3   Housing cover
4   DIN rail connector

5.4   Dimensions of PCB holder
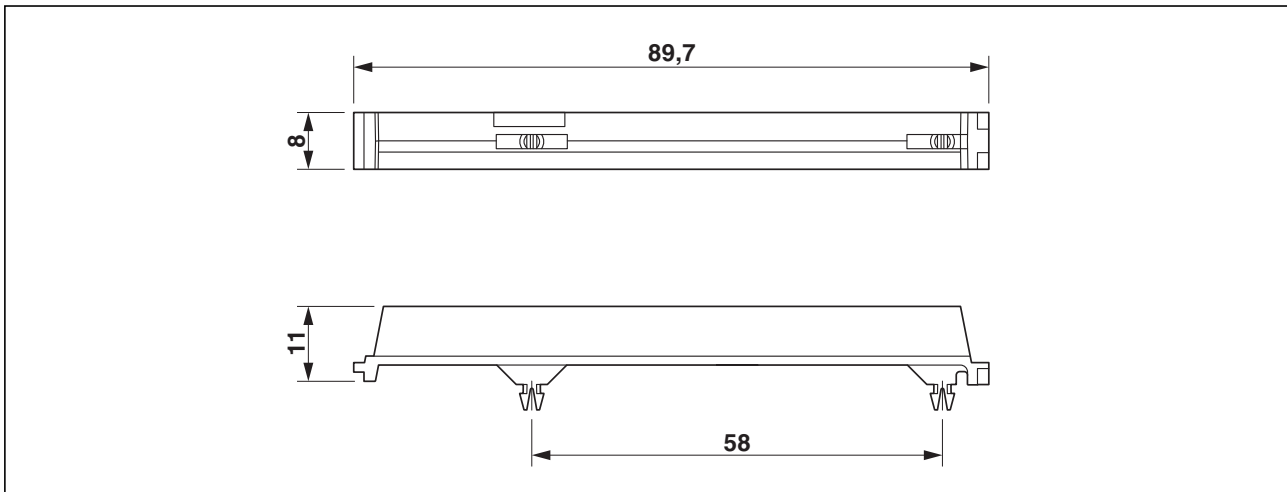
Figure 6   Dimensions of PCB holder

5.5   Dimensions of adapter
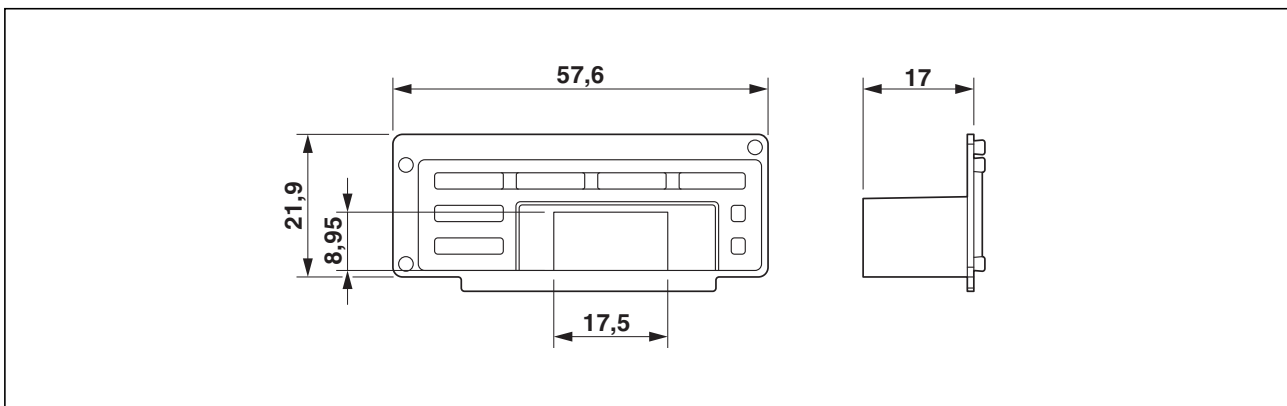
Figure 7   Dimensions of the adapter for mounting the Raspberry Pi A+ model (RPI-BC A+-ADAPTER ATGY, 2202906)

5.6 Dimensions of DIN rail connector
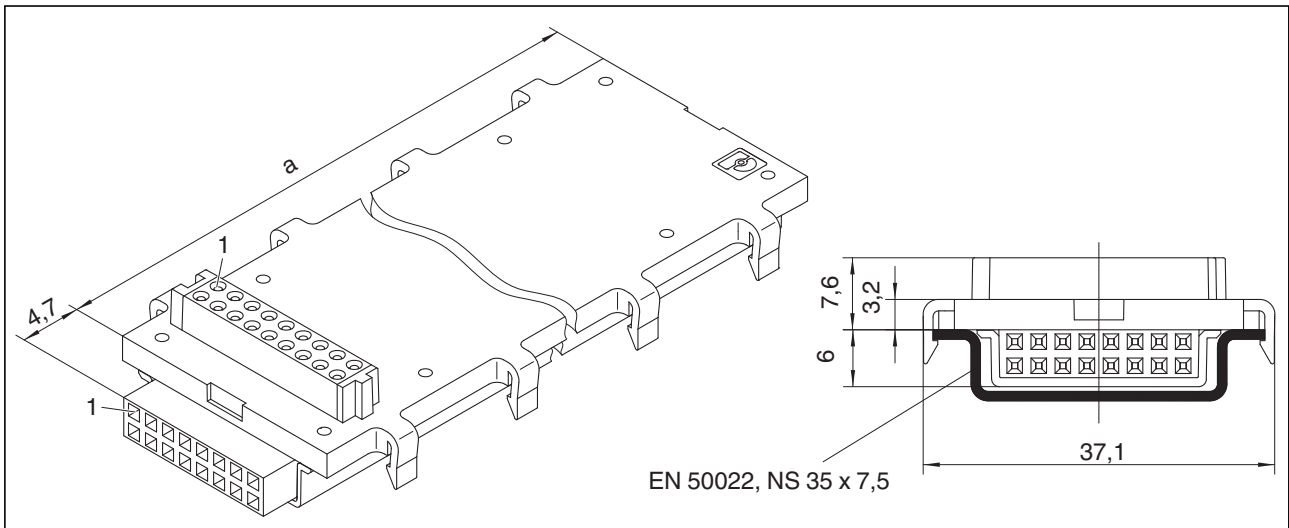
Figure 8 Dimensions of HBUS DIN rail connector and NS 35 DIN rail

Dimensions for a	
BC 107,6 UT HBUS BK	107.6 mm
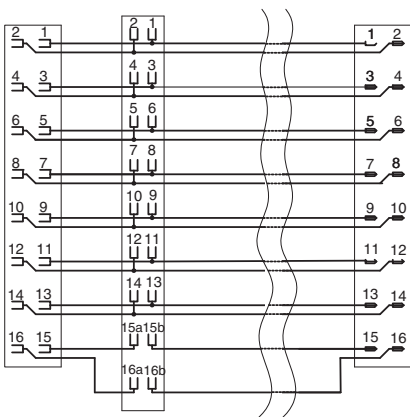
Figure 9 Circuit diagram for HBUS DIN rail connector

# 6   Mounting the RPI-BC housing with Raspberry Pi

All parts latch together by hand. No tools are required.

- Place the upper housing part with the cover side on the work surface.
- The removable fin is labeled in the upper housing part. The fin can be removed if necessary.
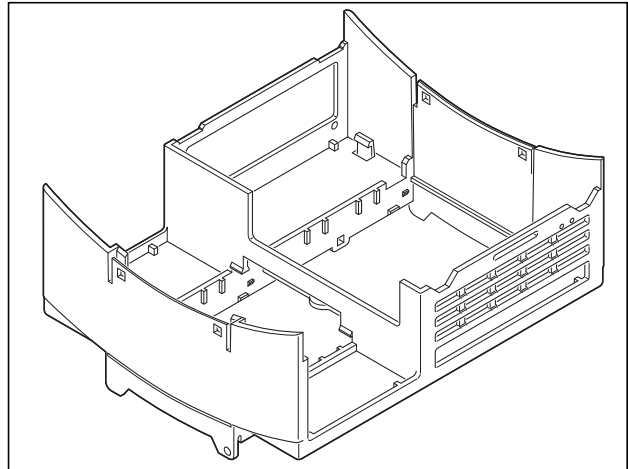
- If you are using additional PCBs, insert them into the upper housing part with the long side first.
- Insert the PCBs on the housing panel side first and then pull them down.

When using a DIN rail connector, use a PCB that has an appropriate pin strip on the left-hand side.
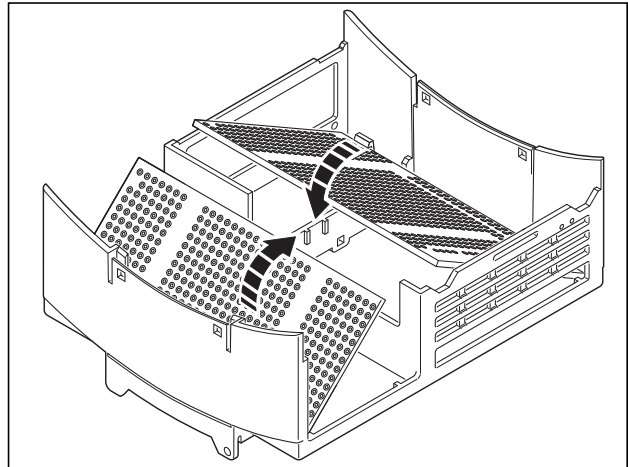
The Raspberry Pi A+ model is shorter than the other models. If you are using the Raspberry Pi A+ model, you can use an adapter. You can also use the housing without an adapter with the A+ model.

- Insert the adapter. The adapter latches into the upper housing part in three places.
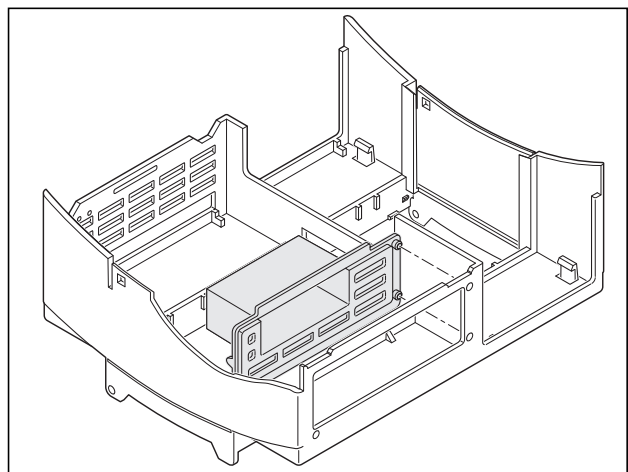
- Fit the PCB holders provided onto the Raspberry Pi.
  Make sure that the arrow on the PCB holder is pointing in the direction of the SD card slot.
- Insert the plastic catches in the holes provided on the Raspberry Pi.
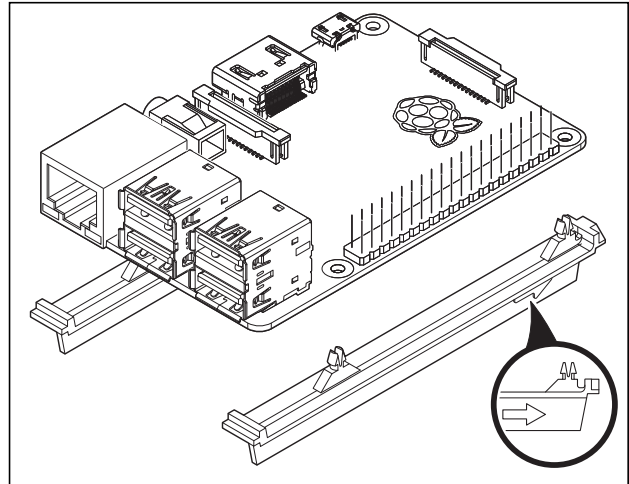
- Push the Raspberry Pi into the housing with a slight rotary motion.
  Insert the Raspberry Pi so that its interfaces fit in the corresponding openings in the housing. Push down the Raspberry Pi until the PCB holders snap into the housing.
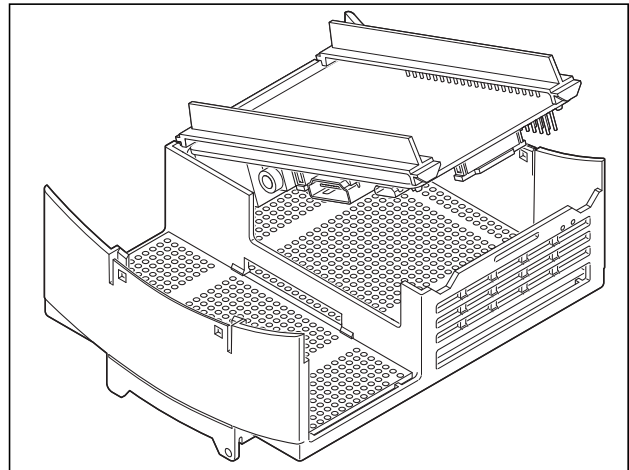
- Connect the required interfaces on the Raspberry Pi. The interfaces on the long side will be difficult to access later (e.g., micro USB for power supply, HDMI port, CSI interface for a camera or composite video output).
- Lead the adapter out of the housing.
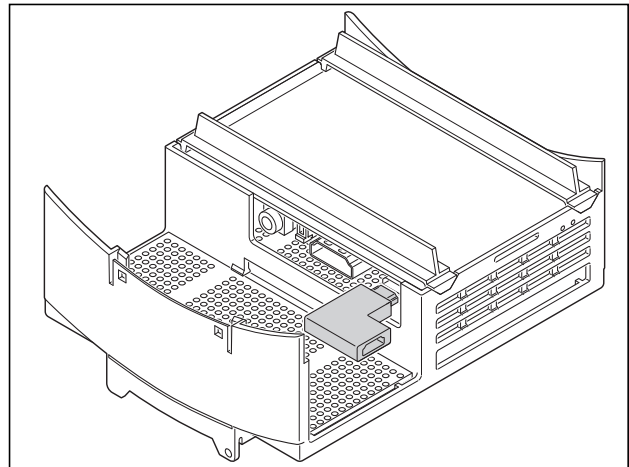
- Note the orientation of the housing parts. The lower housing part has an opening for the DIN rail connector, which should be on the side of the upper housing part that does not hold the Raspberry Pi.
- During insertion, ensure that the pin strip is not damaged by the DIN rail connector.
- Place the lower housing part on the upper housing part. The upper part slides on guides.
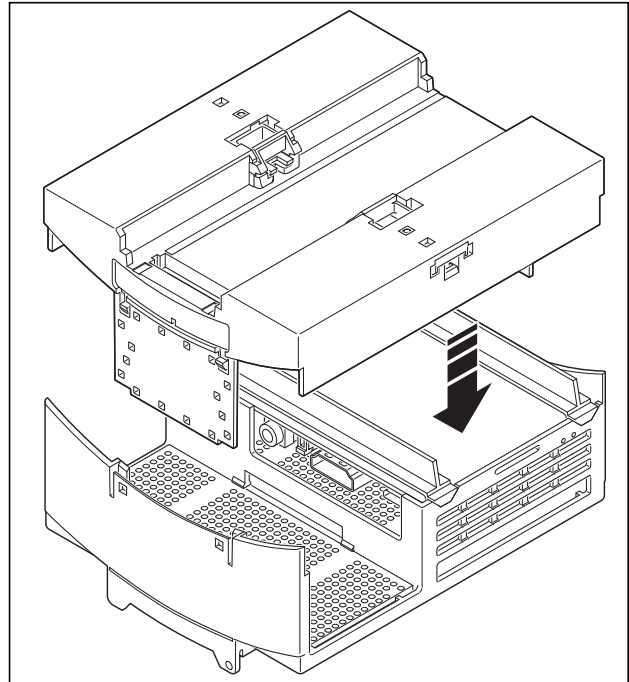
⊘ **NOTE:** You can no longer remove the cover after installation.

Alternatively, you can use a transparent housing cover which can be reopened (BC 107,6 DKL S TRANS, 2896131).

- Turn the housing over.
- Put the cover on.
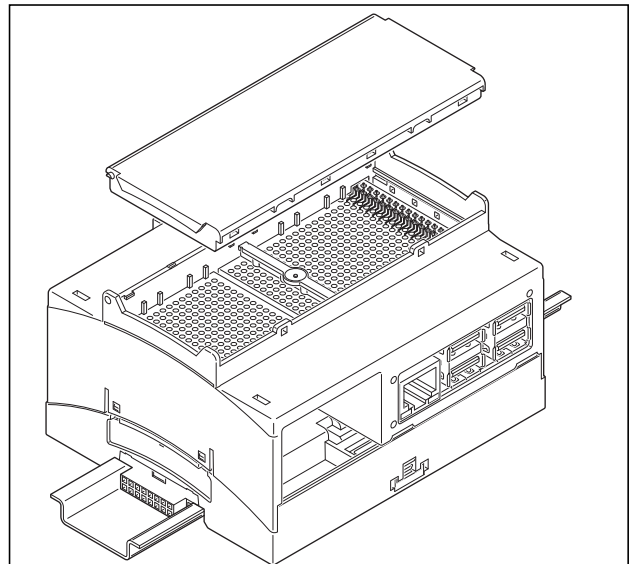
- Mount the base latch.
- The housing can be mounted directly on a wall or on a mounting plate. Pull out the base latch as far as it will go for mounting.