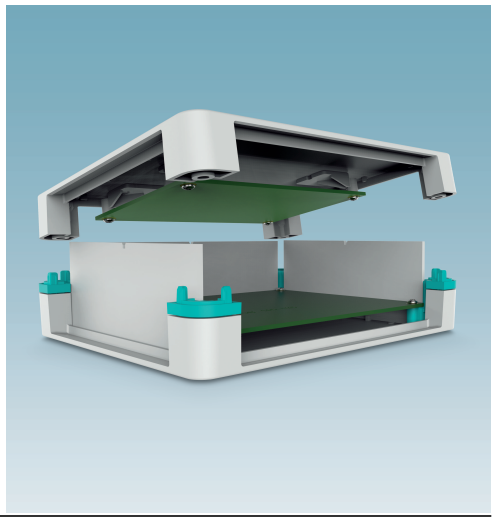
UCS

Universal electronics housings



Data sheet
107750_en_01

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1 Description

The UCS... universal electronics housings consist of two housing half-shells, which can be combined with side walls in two different heights. The housing half-shells are available in four sizes and several colors.

- Four housing sizes:
  125 x 87 mm
  145 x 125 mm
  195 x 145 mm
  237 x 195 mm
- **Two housing heights**: 47 mm or 67 mm
- **Colors**: light gray (similar to RAL 7035) or deep black (similar to RAL 9005). The fastening elements are RAL 5018 (turquoise blue)

The housings have special corner inlays, to which a PCB can be attached. It is also possible to attach the PCBs with adhesive domes. The adhesive domes are attached to the housing half-shells. The PCB is screwed onto the adhesive domes. This allows several PCBs to be added to the housings. We can also provide you with templates for positioning the adhesive domes. The housing half-shells are also available with customer-specific adhesive domes.

Complete housings are available for certain PCBs with a form factor (e.g., ETX, ITX, DTX, EBX, EPIC). Corner inlays with domes or adhesive domes are available for attaching the PCB. In addition to the above PCB format, further PCBs can be installed in the complete housings depending on the size. The template layouts for the adhesive domes are available for download with the products.

Connection systems and display and operating elements can be installed in the housings. We would be glad to install the required openings for you.

A configurator is available for selecting the products at phoenixcontact.com, web code: #0512. You can use it to create your housing. You will then receive 3D data, order lists, and PCB layouts.

Make sure you always use the latest documentation.
It can be downloaded at phoenixcontact.net/products.

This document is valid for the products listed in Section “Ordering data” from Page 4.

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2 Overview of UCS products

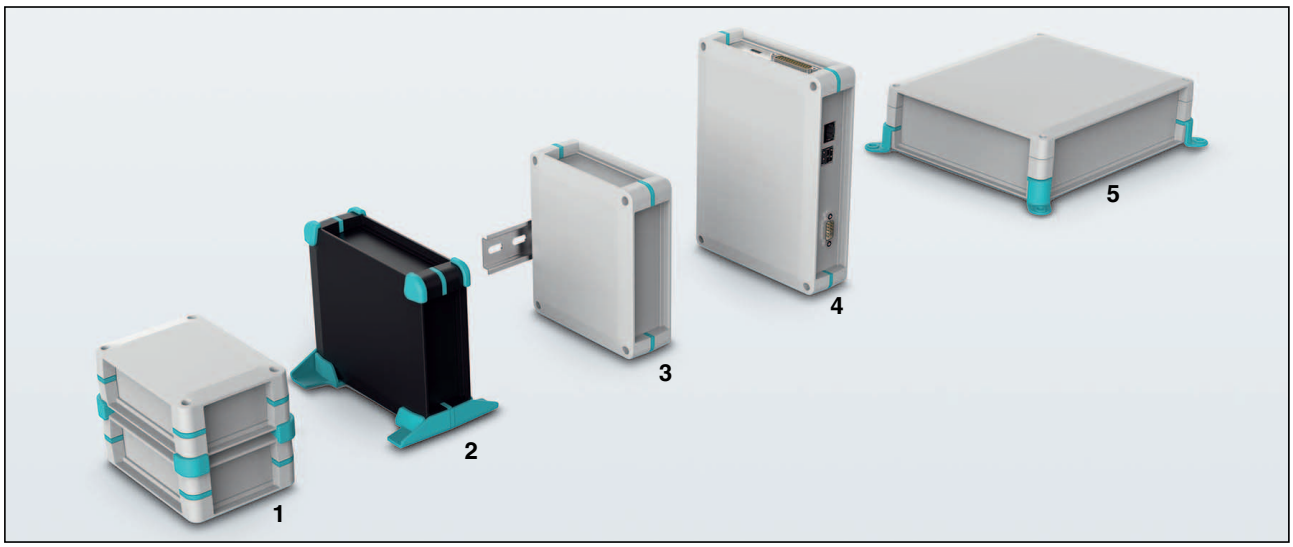


Figure 1 Overview

Accessories are available for setting up the housing.

1 **Stacking adapters** for connecting housings of the same size

2 **Corner guards**, anti-slip

Stand for upright housings, for the 47 mm version only

3 **DIN rail adapter** for the following housing sizes (instead of a side panel): 125 mm x 87 mm / 145 mm x 125 mm / 195 mm x 145 mm

4 Application example with prepared side panels for various connections

5 **Wall bracket**, special corner inlays with longitudinal hole for mounting on a wall

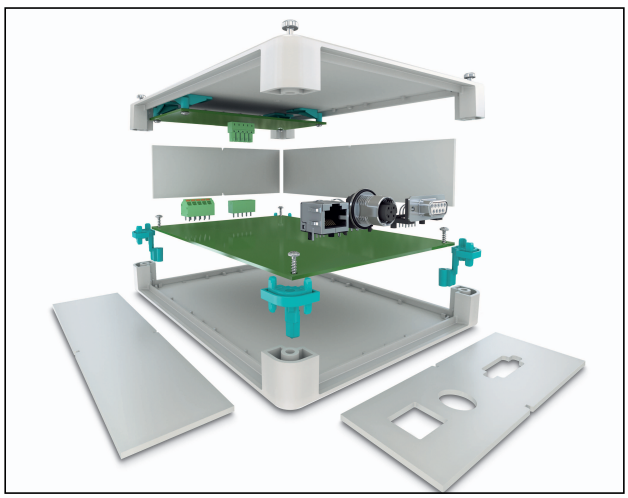


Figure 2 Housing example

3 Ordering data

A configurator is available for selecting the products at phoenixcontact.com, web code: #0512. You can use it to create your housing. You will then receive 3D data, order lists, and PCB layouts.

			UCS 125 x 87…		UCS 145 x 125…		UCS 195 x 145		UCS 237 x 195…	
			47 mm	67 mm	47 mm	67 mm	47 mm	67 mm	47 mm	67 mm
Complete housing										
With PCB mounting, flexible, suitable for the following form factors*	Raspberry Pi	RAL 7035[1]	2203328	2203331						
	ETX				2203332	2203334				
	PC/104				2203332	2203334				
	Pico ITX				2203332	2203334				
	EPIC						2203336	2203338		
	Nano ITX						2203336	2203338		
	Mini DTX								2203341	2203344
	Mini ITX								2203341	2203344
	EBX								2203341	2203344
	Raspberry Pi	**RAL 9005[1]**	2203329	2203330						
	ETX				2203333	2203335				
	PC/104				2203333	2203335				
	Pico ITX				2203333	2203335				
	EPIC						2203337	2203340		
	Nano ITX						2203337	2203340		
	Mini DTX								2203342	2203345
	Mini ITX								2203342	2203345
	EBX								2203342	2203345
With PCB mounting, fixed for maximum PCB dimensions	211.8 x 169.8 mm	RAL 7035[1]							2203455	2203457
	169.8 x 120 mm						2203453	2203454		
	120 x 100 mm				2203447	2203450				
	100 x 62 mm		2203443	2203445						
	211.8 x 169.8 mm	**RAL 9005[1]**							2203456	2203458
	169.8 x 120 mm						2203441	2203442		
	120 x 100 mm				2203448	2203451				
	100 x 62 mm		2203444	2203446						
Wall bracket	UCS WM-B 7035	RAL 7035[1]	2203718	2203718	2203718	2203718	2203718	2203718	2203718	2203718
	UCS WM-B 9005	**RAL 9005[1]**	2203719	2203719	2203719	2203719	2203719	2203719	2203719	2203719
	UCS WM-B 5018	RAL 5018[1]	2203391	2203391	2203391	2203391	2203391	2203391	2203391	2203391
Stand	UCS PED 7035	RAL 7035[1]	2203392		2203392		2203392		2203392	
	UCS PED 9005	**RAL 9005[1]**	2203393		2203393		2203393		2203393	
	UCS PED 5018	RAL 5018[1]	2203394		2203394		2203394		2203394	
Corner guards	UCS CP 7035	RAL 7035[1]	2203346	2203346	2203346	2203346	2203346	2203346	2203346	2203346
	UCS CP 9005	**RAL 9005[1]**	2203347	2203347	2203347	2203347	2203347	2203347	2203347	2203347
	UCS CP 5018	RAL 5018[1]	2203348	2203348	2203348	2203348	2203348	2203348	2203348	2203348
Stacking adapters	UCS CS 7035	RAL 7035[1]	2203720	2203720	2203720	2203720	2203720	2203720	2203720	2203720
	UCS CS 9005	**RAL 9005[1]**	2203721	2203721	2203721	2203721	2203721	2203721	2203721	2203721

[1] Color similar to the specified RAL color

					UCS HH... housing half-shells			
				Housing size	...125-87...	...145-125...	...195-145...	...237-195...
				RAL 7035[1]	2203349	2203351	2203353	2203356
				RAL 9005[1]	2203350	2203352	2203354	2203357
Side panel	Length	Material	Product					
Flat (47 mm)	87	RAL 7035[1] PC	UCS SW 87-F 7035	2203358	X			
	87	**RAL 9005[1]** PC	UCS SW 87-F 9005	2203359	X			
	87	Aluminum	UCS SW 87-F AL	2203360	X			
	125	RAL 7035[1] PC	UCS SW 125-F 7035	2203364	X	X		
	125	**RAL 9005[1]** PC	UCS SW 125-F 9005	2203365	X	X		
	125	Aluminum	UCS SW 125-F AL	2203366	X	X		
	145	RAL 7035[1] PC	UCS SW 145-F 7035	2203372		X	X	
	145	**RAL 9005[1]** PC	UCS SW 145-F 9005	2203373		X	X	
	145	Aluminum	UCS SW 145-F AL	2203374		X	X	
	195	RAL 7035[1] PC	UCS SW 195-F 7035	2203378			X	X
	195	**RAL 9005[1]** PC	UCS SW 195-F 9005	2203379			X	X
	195	Aluminum	UCS SW 195-F AL	2203380			X	X
	237	RAL 7035[1] PC	UCS SW 237-F 7035	2203385				X
	237	**RAL 9005[1]** PC	UCS SW 237-F 9005	2203386				X
	237	Aluminum	UCS SW 237-F AL	2203387				X
Tall (67 mm)	87	RAL 7035[1] PC	UCS SW 87-H 7035	2203361	X			
	87	**RAL 9005[1]** PC	UCS SW 87-H 9005	2203362	X			
	87	Aluminum	UCS SW 87-H AL	2203363	X			
	125	RAL 7035[1] PC	UCS SW 125-H 7035	2203367	X	X		
	125	**RAL 9005[1]** PC	UCS SW 125-H 9005	2203369	X	X		
	125	Aluminum	UCS SW 125-H AL	2203370	X	X		
	145	RAL 7035[1] PC	UCS SW 145-H 7035	2203375		X	X	
	145	**RAL 9005[1]** PC	UCS SW 145-H 9005	2203376		X	X	
	145	Aluminum	UCS SW 145-H AL	2203377		X	X	
	195	RAL 7035[1] PC	UCS SW 195-H 7035	2203381			X	X
	195	**RAL 9005[1]** PC	UCS SW 195-H 9005	2203382			X	X
	195	Aluminum	UCS SW 195-H AL	2203383			X	X
	237	RAL 7035[1] PC	UCS SW 237-H 7035	2203388				X
	237	**RAL 9005[1]** PC	UCS SW 237-H 9005	2203389				X
	237	Aluminum	UCS SW 237-H AL	2203390				X
Height adapter, required in conjunction with tall side panels, four pieces incl. four longer screws								
		RAL 7035[1]	UCS HAC 7035	2203399	X	X	X	X
		RAL 9005[1]	UCS HAC 9005	2203400	X	X	X	X
Corner inlay, 4 pieces in PE bag								
		RAL 7035[1]	UCS CC 7035	2203395	X	X	X	X
		RAL 9005[1]	UCS CC 9005	2203396	X	X	X	X
		RAL 5018[1]	UCS CC 5018	2203398	X	X	X	X
Corner inlay, with domes incl. four screws for PCB mounting, 4 pieces								
		RAL 7035[1]	UCS CCD 7035	2203479	X	X	X	X
		RAL 9005[1]	UCS CCD 9005	2203477	X	X	X	X
		RAL 5018[1]	UCS CCD 5018	2203404	X	X	X	X
Screw set, for housing half-shells, 4 pieces								
Flat (47 mm)			UCS SF 3,5X20	2203402	X	X	X	X
Tall (67 mm)			UCS SH 3,5X40	2203403	X	X	X	X
Adhesive dome, incl. screws for PCB mounting, 4 pieces								
			UCS GD	2203401	X	X	X	X

[1] Color similar to the specified RAL color

4 Technical data

Housing design	
Insulation material	PC (polycarbonate)
Flammability rating UL 94	V0
Colors	Similar to RAL 7035, light gray Similar to RAL 9005, deep black Similar to RAL 5018, turquoise blue Customer-specific colors possible
Temperature range	-40°C … +85°C
Temperature range when attaching the adhesive domes	+18°C ... +25°C
Tool for screwing the PCBs into the housing	Torque screwdriver with T7 bit
Power dissipation	
UCS 125-87-F...	9 W
UCS 145-125-F...	11 W
UCS 195-145-F...	20 W
UCS 237-195-F...	30 W
PCB surface, maximum	See “PCB dimensions” on page 10
Degree of protection according to DIN EN 60259	IP40
Recommended screws for wall fastening	S5 dowel, ø 4.0

5 Housing dimensions

5.1 Outer and inner dimensions

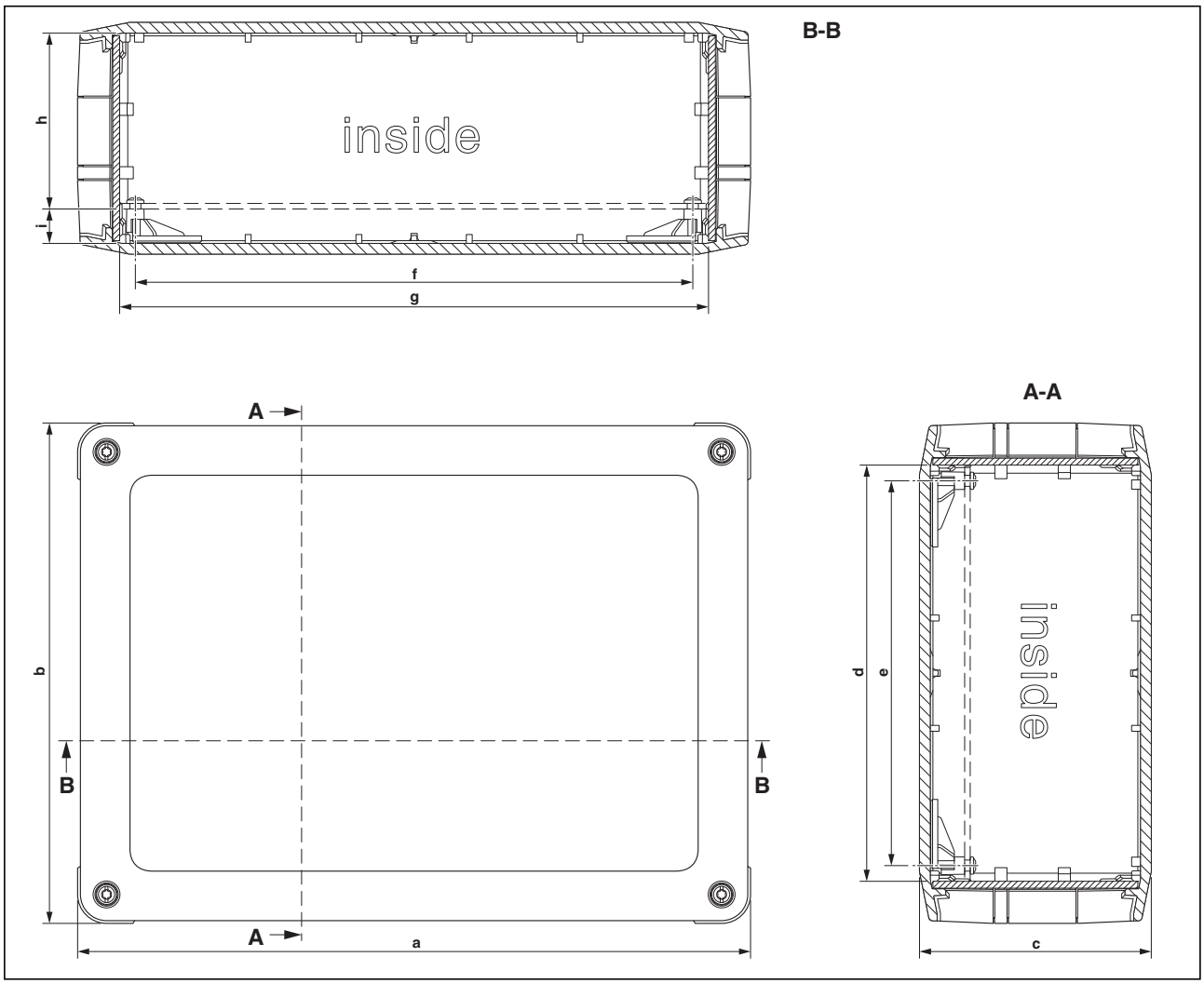


Figure 3 Housing dimensions

Outer dimensions			Inner dimensions, narrow side		Inner dimensions, wide side		Inner dimensions, height	
a	b	c	d	e	f	g	h	i
125 mm	87 mm	47 mm	62.7 mm	≤ 57 mm	≤ 95 mm	100.7 mm	31 mm	10 mm
125 mm	87 mm	67 mm	62.7 mm	≤ 57 mm	≤ 95 mm	100.7 mm	51 mm	10 mm
145 mm	125 mm	47 mm	100.7 mm	≤ 95 mm	≤ 115 mm	120.7 mm	31 mm	10 mm
145 mm	125 mm	67 mm	100.7 mm	≤ 95 mm	≤ 115 mm	120.7 mm	51 mm	10 mm
195 mm	145 mm	47 mm	120.7 mm	≤ 115 mm	≤ 165 mm	81.65 mm	31 mm	10 mm
195 mm	145 mm	67 mm	120.7 mm	≤ 115 mm	≤ 165 mm	81.65 mm	51 mm	10 mm
237 mm	195 mm	47 mm	170.7 mm	≤ 163.2 mm	≤ 205 mm	212.7 mm	31 mm	10 mm
237 mm	195 mm	67 mm	170.7 mm	≤ 163.2 mm	≤ 205 mm	212.7 mm	51 mm	10 mm

5.2 Space for printing

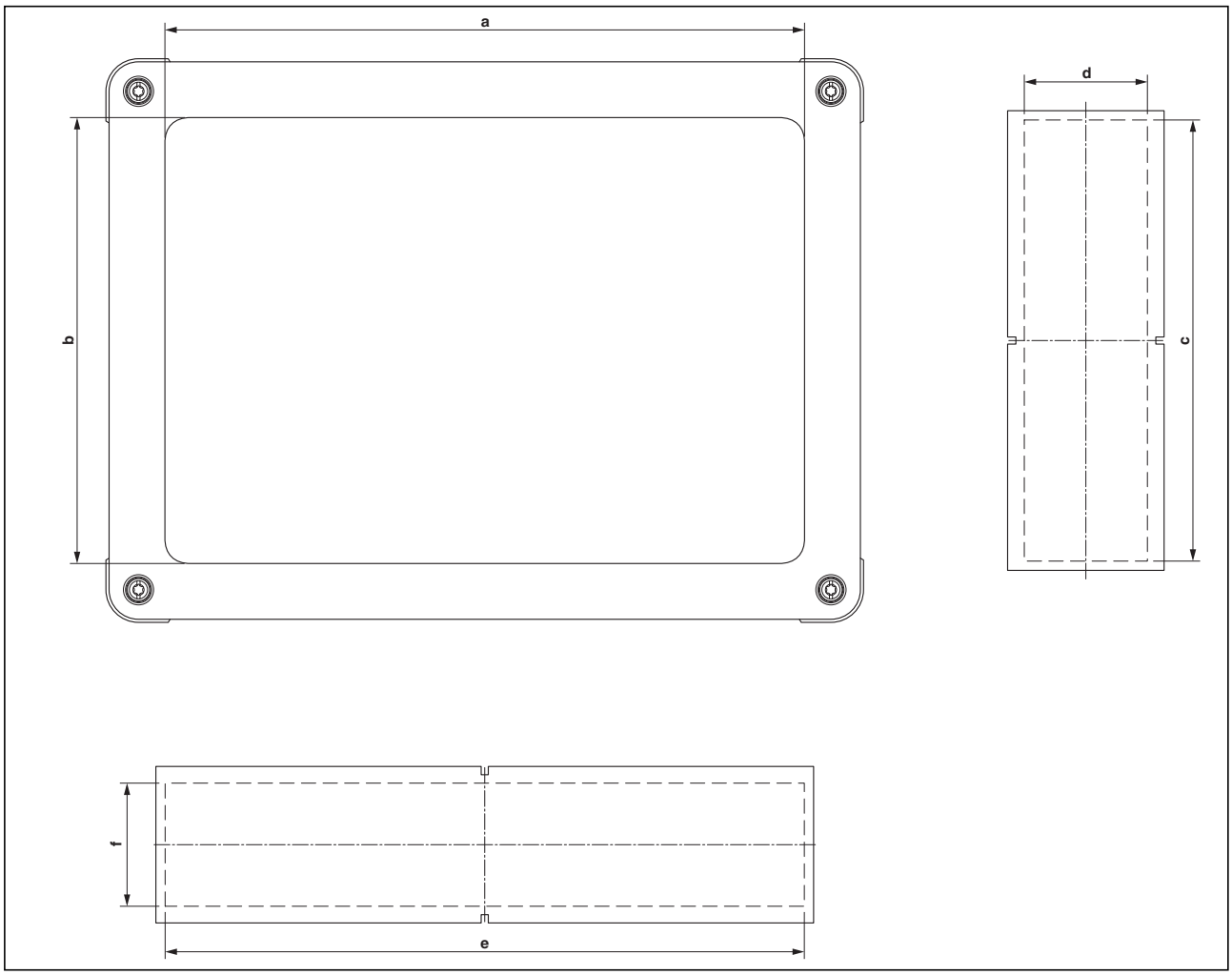


Figure 4 Maximum space for printing

The specified space is available for printing.

Outer dimensions			Space for printing					
			Top		Narrow side		Wide side	
			a	b	c	d	e	f
125 mm	87 mm	47 mm	94.8 mm	56.8 mm	53.3 mm	31.1 mm	91.3 mm	31.1 mm
125 mm	87 mm	67 mm	94.8 mm	56.8 mm	53.3 mm	50.6 mm	91.3 mm	50.6 mm
145 mm	125 mm	47 mm	114.8 mm	94.8 mm	91.3 mm	31.1 mm	111.3 mm	31.1 mm
145 mm	125 mm	67 mm	114.8 mm	94.8 mm	91.3 mm	50.6 mm	111.3 mm	50.6 mm
195 mm	145 mm	47 mm	164.8 mm	114.8 mm	111.3 mm	31.1 mm	161.3 mm	31.1 mm
195 mm	145 mm	67 mm	164.8 mm	114.8 mm	111.3 mm	50.6 mm	161.3 mm	50.6 mm
237 mm	195 mm	47 mm	206.8 mm	164.8 mm	161.3 mm	31.1 mm	202.4 mm	31.1 mm
237 mm	195 mm	67 mm	206.8 mm	164.8 mm	161.3 mm	50.6 mm	202.4 mm	50.6 mm

5.3 Space for cutouts

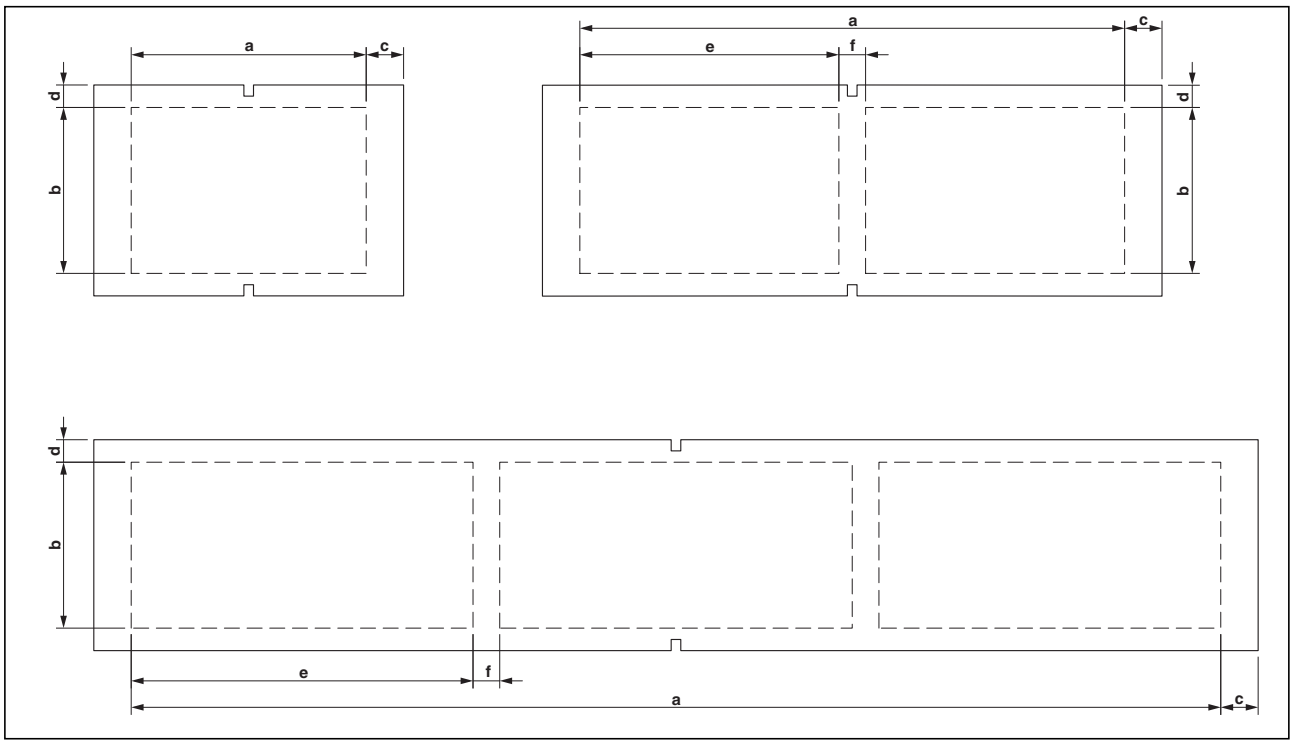


Figure 5 Maximum space for cutouts

In order to absorb the forces produced during milling, segments must be provided for cutouts. By significantly reducing the cutout length, the outer and middle segments can be made thinner.

Housing side dimensions		Space for recesses		Minimum width of outer segment		Maximum length of cutout	Minimum width of middle segment	Number of middle segments
		a	b	c	d	e	f	
87 mm	47 mm	44 mm	31.1 mm	7 mm	4.2 mm	–	–	–
125 mm	47 mm	82 mm	31.1 mm	7 mm	4.2 mm	–	–	–
145 mm	47 mm	102 mm	31.1 mm	7 mm	4.2 mm	70 mm	5 mm	1
195 mm	47 mm	152 mm	31.1 mm	7 mm	4.2 mm	73.5 mm	5 mm	1
237 mm	47 mm	194 mm	31.1 mm	7 mm	4.2 mm	70 mm	5 mm	2
87 mm	67 mm	38 mm	39.4 mm	10 mm	10 mm	–	–	–
125 mm	67 mm	76 mm	39.4 mm	10 mm	10 mm	–	–	–
145 mm	67 mm	96 mm	39.4 mm	10 mm	10 mm	70 mm	10 mm	1
195 mm	67 mm	146 mm	39.4 mm	10 mm	10 mm	70 mm	10 mm	1
237 mm	67 mm	188 mm	39.4 mm	10 mm	10 mm	70 mm	10 mm	2

5.4 PCB dimensions

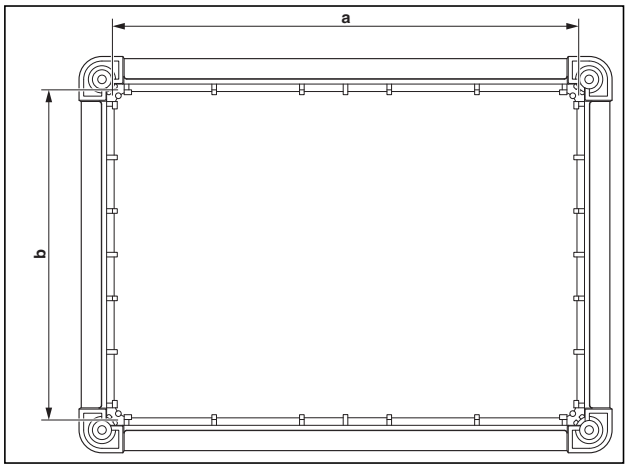


Figure 6 Maximum assembly area

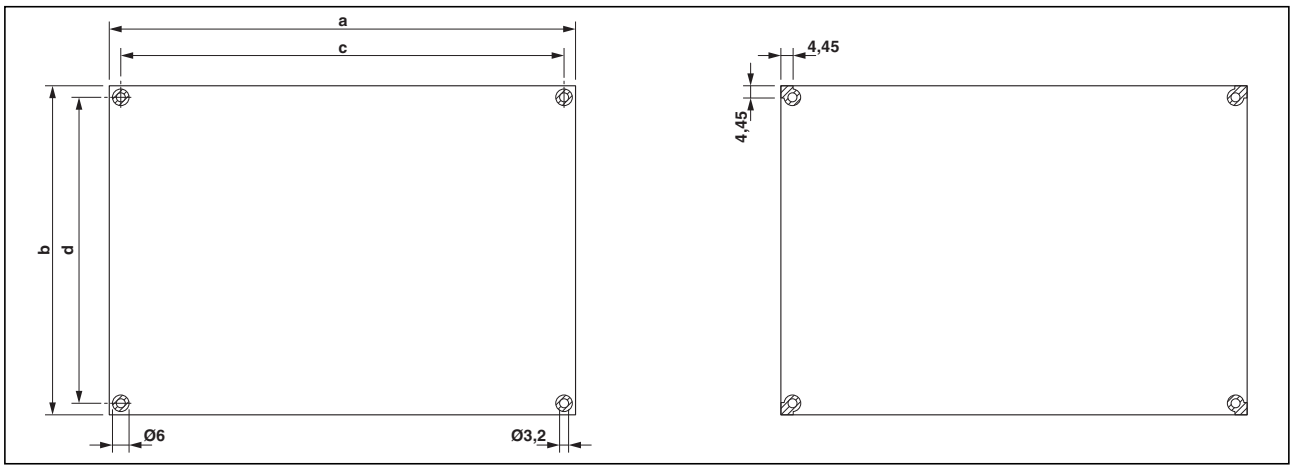


Figure 7 Maximum PCB dimensions

For housing		Maximum assembly area		Distance between fixing holes		PCB thickness
		a	b	c	d	
125	87	100	62	91.6	53.6	0.8 mm ... 3 mm
145	125	120	100	111.6	91.6	0.8 mm ... 3 mm
195	145	170	120	161.6	111.6	0.8 mm ... 3 mm
237	195	212	170	203.6	161.6	0.8 mm ... 3 mm

Keep-out zone, no components at these positions

6 Mounting the housing

6.1 Mounting PCBs

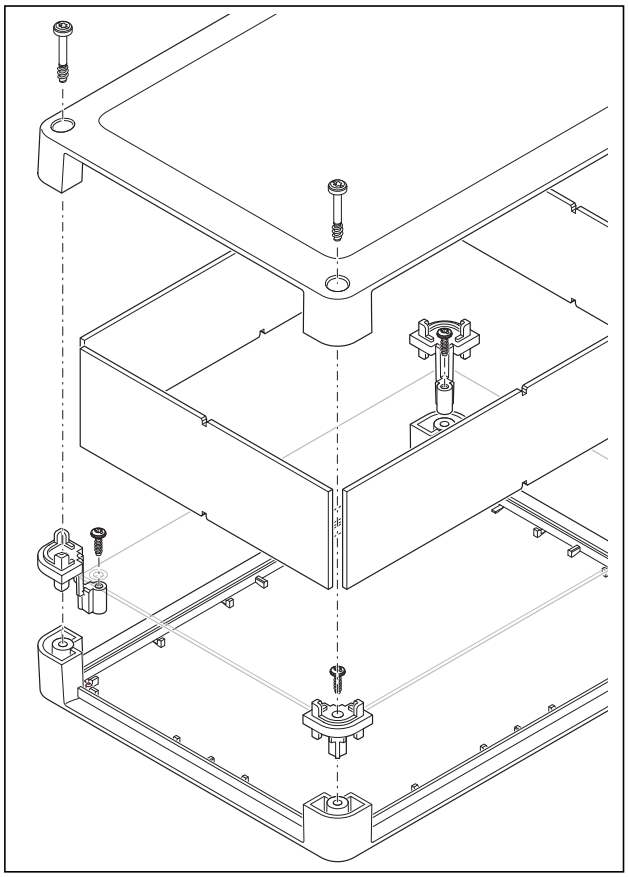


Figure 8 Mounting the housing (with UCS CCD...)

- Insert the four corner inlays into the lower part of the housing half-shells.
  - Corner inlay with domes for PCB mounting (UCS CCD...)
  - Corner inlay without domes for PCB mounting (UCS CC...)
- Insert the side panels and the PCBs. The sequence depends on how the connections are routed outwards.
  The inside of the side panels is marked with “Inside”.
- Screw the PCBs into the UCS CCD... corner inlays or the UCS GD adhesive domes with 0.4 Nm ... 0.5 Nm. Only use the T7 Torx screws provided for this. We recommend a torque screwdriver with a T7 bit (500 rpm).

6.2 Screw on the housing

Use the self-tapping T10 Torx screws provided to attach the housing. We recommend a torque screwdriver with a T10 bit (500 rpm).

The screws are designed in such a way that they cannot be lost when the cover is released.

NOTE: The housing can be opened a maximum of 10 times.

- Screw down the upper housing half-shell with 1.2 Nm ... 1.4 Nm.

6.3 Inserting a height adapter

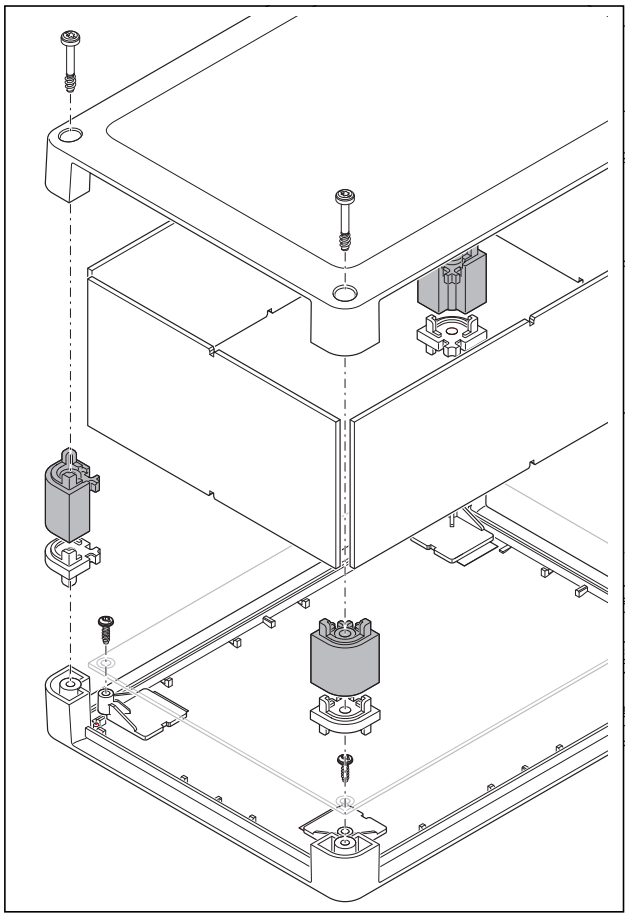


Figure 9 UCS HAC... height adapter

- When using tall housings, insert the UCS HAC height adapter in the correct direction.

  The pins must point upwards.

6.4 Attaching adhesive domes

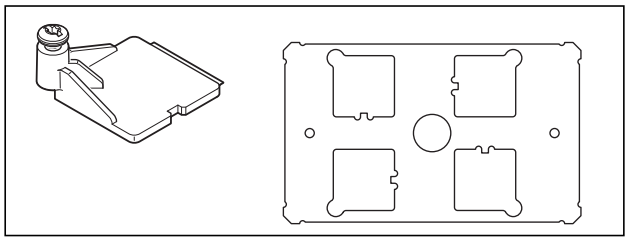


Figure 10 UCS GD adhesive dome with adhesive template

- Make sure that the surface of the housing is clean, dry, and free from grease.

  Temperature range: +18°C ... +25°C
- Attach the UCS GD adhesive domes to the housing half-shell using the appropriate template.
  - Pressing force: 60 N
  - Pressing time: 3 s

  We can produce adhesive templates for you on request.

  Adhesive templates for PCBs with form factor can be found at phoenixcontact.net/products.

6.5 Mounting the housing on a wall

The UCS WM-B... wall bracket is available for wall mounting

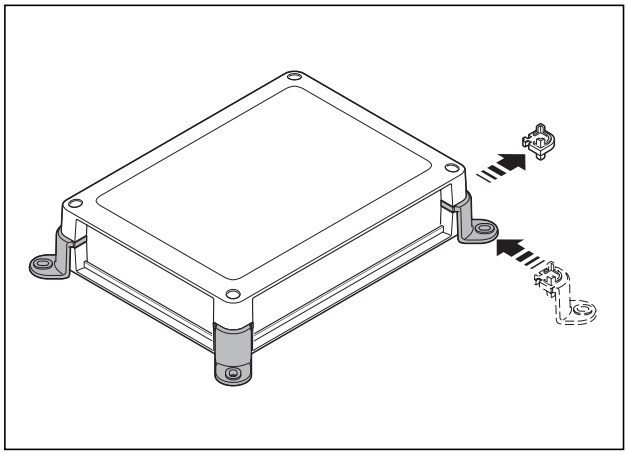


Figure 11 UCS WM-B... wall bracket

- Replace the corner inlays with corner inlays with longitudinal holes.

  Recommended screws for wall fastening:
  S5 dowel, ø 4.0

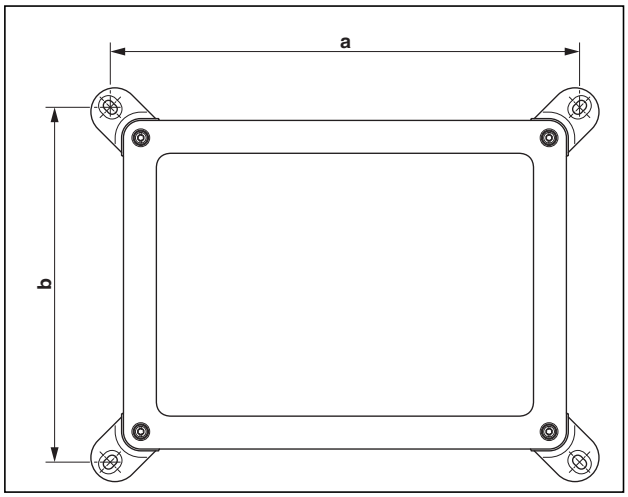


Figure 12 UCS WM-B... wall bracket, drilling diagram

For housing		Drill hole spacing	
		a	b
125	87	135	97
145	125	155	135
195	145	205	155
237	195	247	205

6.6 Snapping on the stand

The UCS PED... stand is available for the secure attachment of the flat housing (47 mm)

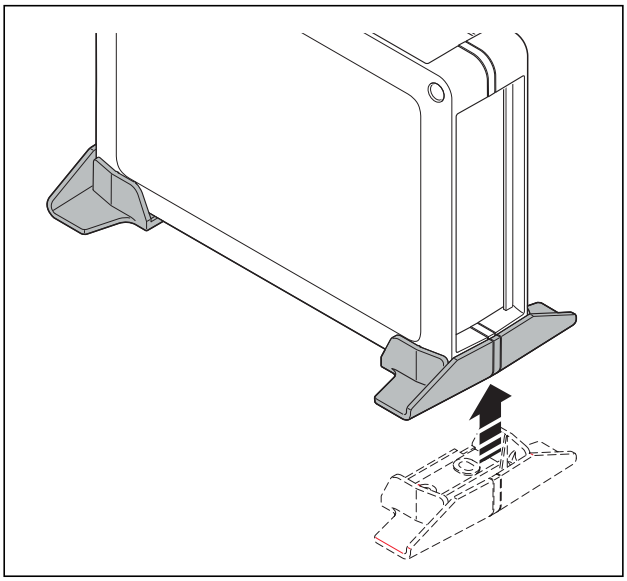


Figure 13 UCS PED... stand

- Snap the stand into the screw holes in the housing.

6.7 Mounting accessories

Stacking adapters

You can connect two housings using the UCS CS... stacking adapter.

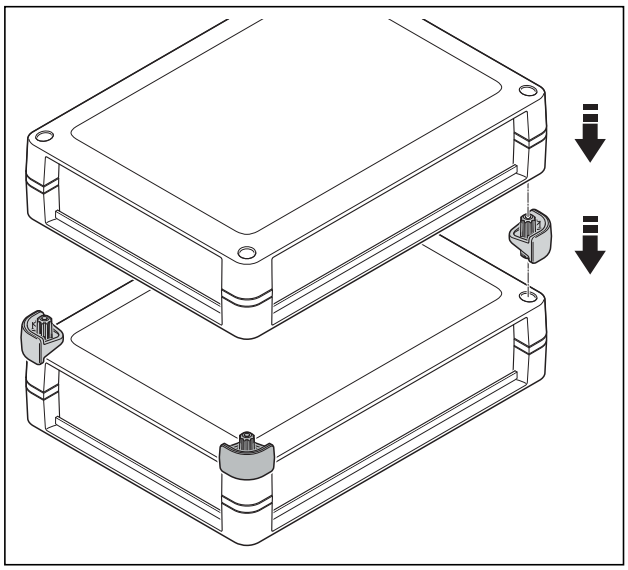


Figure 14 Mounting the UCS CS... stacking adapter

- Snap the stacking adapter into the screw holes in the housing.

Corner guards

UCS CP... corner guards are available for protecting the housing against impacts and providing an anti-slip function.

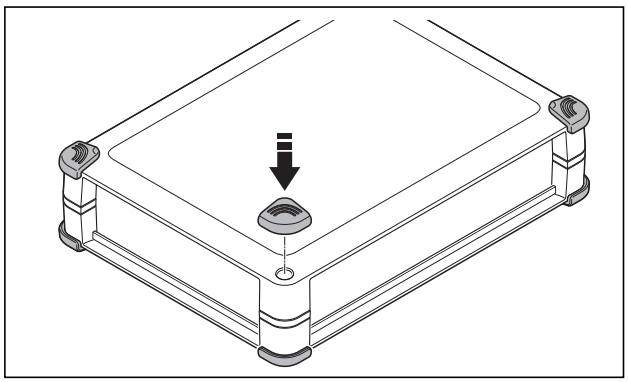


Figure 15 Mounting the UCS CP... corner guards

- Snap the corner guards into the screw holes in the housing.