ME-IO

ME-IO series multifunctional housings

Data sheet
105787_en_05

1 Description

The housings of the ME-IO product range are suitable for applications with a limited amount of installation space and high function requirements. Thanks to the modular design, electronics modules such as controllers and I/O modules can be easily assembled. You can use devices with up to 54 positions per 18.8 mm overall width.

The **lower housing part** offers space for the PCB assembly. The lower housing parts come in three overall widths.

The lower housing part can be combined with various housing covers and connectors. The lower housing part is subdivided into 9 or 10 units (1 unit = 11 mm).

The **connectors** correspond to a unit and have a Push-in connection. As a counter-part to the connectors, there are **headers** in 2 or 3 unit versions that are soldered onto the PCB. The **housing covers** in 2 to 10 unit versions are especially suited for installing connection systems.

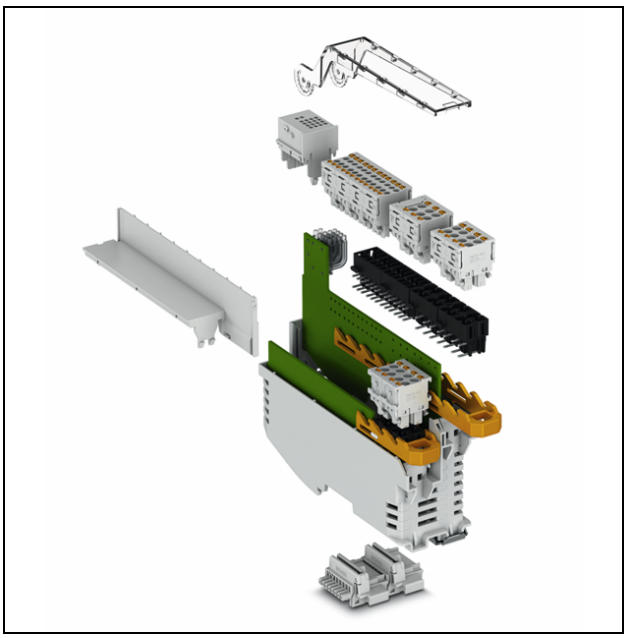

Figure 1 Housing components

A configurator for selecting the products is available at phoenixcontact.com, web code: #0512. You can use it to configure 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 from phoenixcontact.net/product/2201809.

This data sheet is valid for the products listed in Section “Ordering data” on page 5.

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2 Overview of the ME-IO products

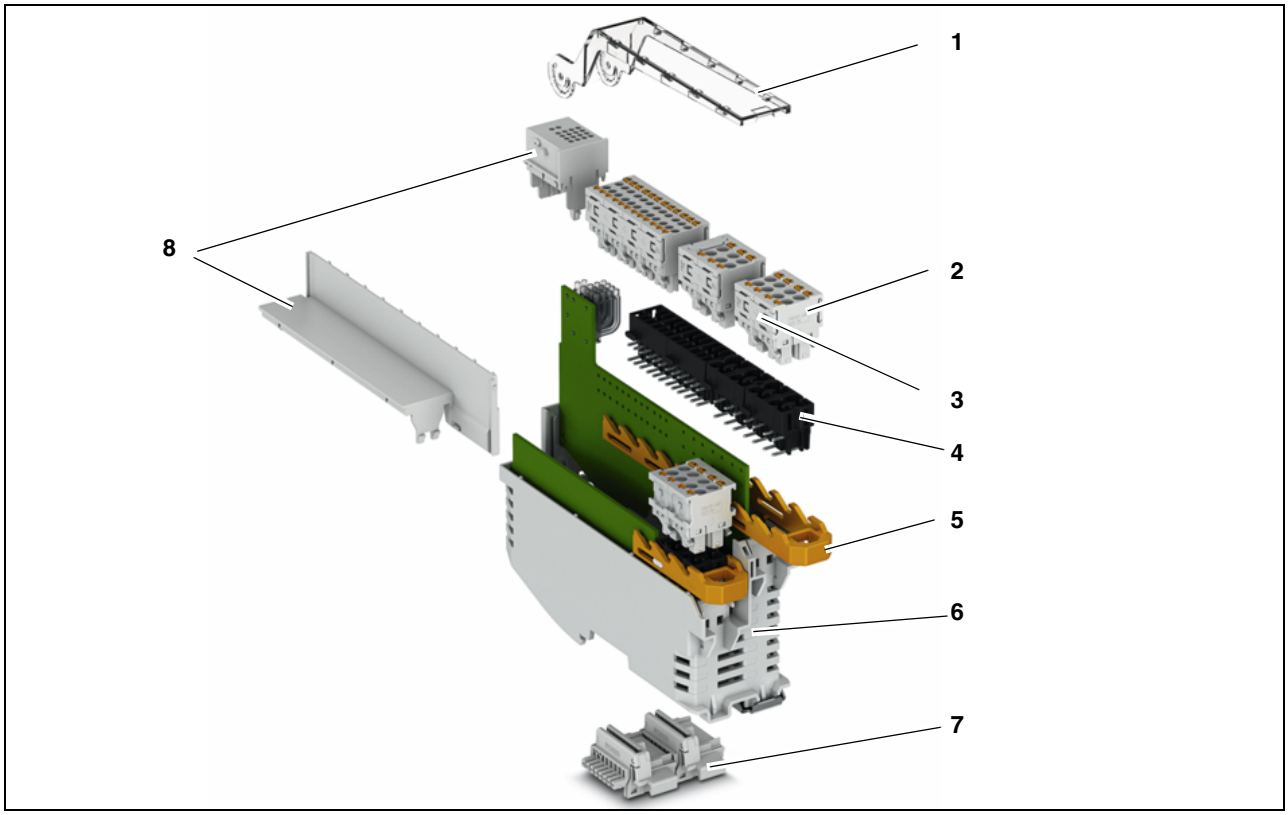


Figure 2 Example of a housing structure

1 Marking lid
2 Push-in connector
3 Fastening clip (Blockbelt)
4 Header
5 Lock and Release system
6 Lower housing part with base latch and optional FE contact
7 DIN rail connector
8 Housing cover

The orange lever of the Lock and Release system is used for locking and unlocking the Push-in connectors. This way, a module can be replaced without the need for connection. Several connectors can be connected mechanically with one another using a fastening clip.

Three Push-in connector versions are available. They come fully and partially assembled, and as a TWIN connectors. On a TWON connector, two positions each are bridged with one another.

There are 4-pos. connectors for conductor cross sections of up to 2.5 mm^2, and 6-pos. connectors for conductor cross sections of up to 1.5 mm^2.

The counter-part to the Push-in connectors are the headers.

The housing covers in 2 to 10 unit versions are especially suited for installing connection systems. You can install USB or D-SUB connectors as well as display and operating elements, for example. We would be glad to install the required openings for you.

The housing can be optionally combined with a DIN rail connector. Data or the power supply is transmitted from module to module via the DIN rail connector.

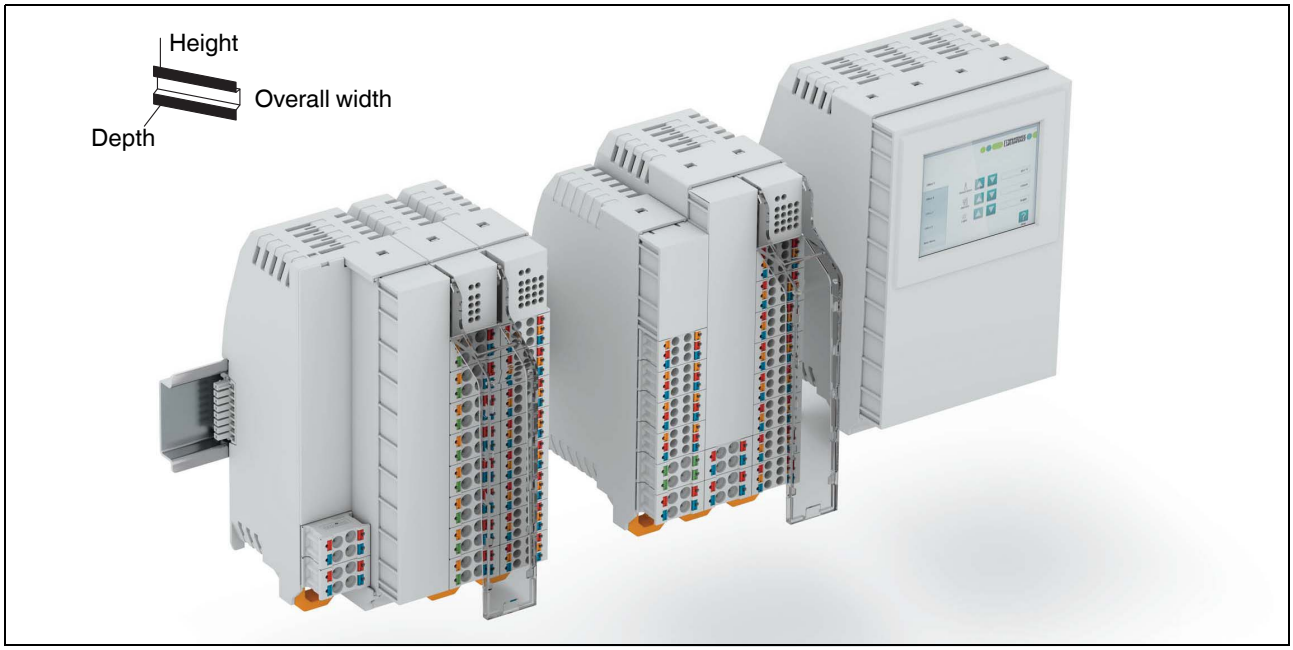


Figure 3 Examples of housing systems

The lower housing parts come in different designs.

–	Overall width	18.8 mm (1x)
		37.6 mm (2x)
		75.2 mm (4x)
–	Height	9 units (see Figure 6)
		10 units (see Figure 6)
–	Depth	Uniform depth
		L-type

The housing covers are also available in different widths (1x to 4x) and heights (2U to 10U). The housing covers are also available as marking covers with a swiveling transparent holder for insert labels.

3 Ordering data

Lower housing parts

Description	Type	Order No.	Pcs./Pkt.
Lower housing part, **overall width: 18.8 mm**, pre-assembled, with metal foot catch for DIN rail mounting, without DIN rail connector, color: similar to RAL 7035			
9 units (with integrated FE contact, see Section 7.5)	ME-IO 18,8 B/FE 9U TBUS 7035	2201809	10
10 units (without integrated FE contact, see Section 7.5)	ME-IO 18,8 B 10U TBUS 7035	2202506	10
Lower housing part, **overall width: 37.6 mm**, pre-assembled, with metal foot catch for DIN rail mounting, without DIN rail connector, color: similar to RAL 7035			
10 units (without integrated FE contact)	ME-IO 37,6 B 10U TBUS 7035	2202663	10
10 units (L-type), without integrated FE contact	ME-IO 37,6 LB 10U TBUS 7035	2202618	10
10 units (L-type), with integrated FE contact	ME-IO 37,6 LB/FE 10U TBUS 7035	2202619	10
Lower housing part, **overall width: 75.2**, pre-assembled, with metal foot catch for DIN rail mounting, without integrated FE contact, without DIN rail connector, color: similar to RAL 7035			
10 units	ME-IO 75,2 B 10U TBUS 7035	2202664	10
10 units (L-type)	ME-IO 75,2 LB 10U TBUS 7035	2202620	10

Housing covers

Description	Type	Order No.	Pcs./Pkt.
Housing cover, **overall width: 18.8**, for different units, color: similar to RAL 7035			
2 units	ME-IO 18,8 C 2U 7035	2201799	10
3 units	ME-IO 18,8 C 3U 7035	2201800	10
3 units (covers 2 units and 1 unit with header)	ME-IO 18,8 C 3U S1 7035	2201801	10
4 units	ME-IO 18,8 C 4U 7035	2201802	10
5 units	ME-IO 18,8 C 5U 7035	2201803	10
6 units	ME-IO 18,8 C 6U 7035	2201804	10
7 units	ME-IO 18,8 C 7U 7035	2201805	10
8 units	ME-IO 18,8 C 8U 7035	2202634	10
9 units	ME-IO 18,8 C 9U 7035	2201806	10
10 units	ME-IO 18,8 C 10U 7035	2202630	10
Housing cover for larger overall widths, 10 units, color: similar to RAL 7035			
Overall width: 37.6	ME-IO 37,6 C 10U 7035	2202665	10
Overall width: 56.4	ME-IO 56,4 C 10U 7035	2202662	10
Overall width: 75.2	ME-IO 75,2 C 10U 7035	2202583	10
Housing cover for L-type, with side panel for the step			
Housing cover, 8 units	ME-IO 18,8 LC 8U 7035	2202622	10
Housing cover, 10 units	ME-IO 18,8 LC 10U 7035	2202626	10
Marking cover, moveable transparent holder for insert labels, for snapping onto special housing covers, snap-on = 2 units	ME-IO 18,8 MC 8U TRANS	2202627	10
Housing cover for the marking lid, for overall width: 18.8	ME-IO 18,8 C 2U MC 7035	2202616	10
Housing cover for the marking lid, for overall width: 18.8, with bore holes for 10 light guides	ME-IO 18,8 C 2U MC10 7035	2202582	10
Housing cover for the marking lid, for overall width: 18.8, with bore holes for 18 light guides	ME-IO 18,8 C 2U MC18 7035	2202581	10
Marking material, insert label	EMT (80X15,5)R	0804286	100

Connection technology and accessories

Description	Type	Order No.	Pcs./Pkt.
Header, touch-proof, color: similar to RAL 9005			
2 units, 8 connections	HSCH 2,5-2U/ 8 9005	2201789	50
2 units, 6 connections	HSCH 2,5-2U-2220 9005	2201792	50
2 units, 4 connections	HSCH 2,5-2U-TTTT 9005	2201790	50
2 units, 2 connections	HSCH 2.5-2U-TT00 9005	2201791	50
3 units, 12 connections	HSCH 2,5-3U/12 9005	2201788	50
2 units, 12 connections	HSCH 1,5-2U/12 9005	2202233	50
3 units, 18 connections	HSCH 1,5-3U/18 9005	2202232	50
Push-in connector for header, with integrated test point, color: similar to RAL 7035			
1 unit, 4-pos., fully assembled			
Orange test point (RAL 2003)	HSCP-SP 2,5-1U4-7035	2201780	50
Yellow test point (RAL 1018)	HSCP-SP 2,5-1U4-44/44-7035	2202567	50
White test point (RAL 9010)	HSCP-SP 2,5-1U4-99/99-7035	2202568	50
Black test point (RAL 9005)	HSCP-SP 2,5-1U4-00/00-7035	2202569	50
Blue test point (RAL 5015)	HSCP-SP 2,5-1U4-66/66-7035	2202570	50
Green test point (RAL 6021)	HSCP-SP 2,5-1U4-55/55-7035	2202571	50
Red test point (RAL 3013)	HSCP-SP 2,5-1U4-22/22-7035	2202572	50
Two blue test points on bottom (RAL 5015), two white test points on top (RAL 9010)	HSCP-SP 2,5-1U4-69/69-7035	2202605	50
Two white test points on left (RAL 9010), blue test point on bottom right (RAL 5015), red test point on top right (RAL 3013)	HSCP-SP 2,5-1U4-99/62-7035	2202608	50
Two red test points on bottom (RAL 3013), two white test points on top (RAL 9010)	HSCP-SP 2,5-1U4-29/29-7035	2203192	50
Two blue test points on bottom (RAL 5015), two green test points on top (RAL 6021)	HSCP-SP 2,5-1U4-65/65-7035	2203195	50
1 unit, 2 TWIN connections			
Orange test point (RAL 2003)	HSCP-SP 2,5-1UTT-7035	2201781	50
Two blue test points on bottom (RAL 5015), two red test points on top (RAL 3013)	HSCP-SP 2,5-1UTT-62/62-7035	2202606	50
Green test point (RAL 6021)	HSCP-SP 2,5-1UTT-55/55-7035	2202607	50
1 unit, 2-pos., partially assembled			
Orange test point (RAL 2003)	HSCP-SP 2,5-1U20-7035	2201782	50
1 unit, 0-pos., empty			
Orange test point (RAL 2003)	HSCP-SP 2,5-1U00-7035	2202610	50
1 unit, 6-pos., fully assembled			
Orange test point (RAL 2003)	HSCP-SP 1,5-1U6-7035	2202234	50
Two blue test points on bottom (RAL 5015), two red test points in the center (RAL 3013), two white test points on top (RAL 9010)	HSCP-SP 1,5-1U6-629/629-7035	2202609	50

Connection technology and accessories

Description	Type	Order No.	Pcs./Pkt.
Lock and Release, with included spring, color: similar to RAL 2003			
3 units	HSC-LR 3U KIT 2003	2201797	10
5 units	HSC-LR 5U KIT 2003	2201796	10
7 units	HSC-LR 7U KIT 2003	2201795	10
9 units	HSC-LR 9U KIT 2003	2201794	10
Blockbelt, fastening clip for Push-in connectors, color: similar to RAL 7035			
2 units	HSCP-CB 2U 7035	1056724	50
3 units	HSCP-CB 3U 7035	1056723	50
4 units	HSCP-CB 4U 7035	1056722	50
5 units	HSCP-CB 5U 7035	1056892	50
6 units	HSCP-CB 6U 7035	1037100	50
FE contact	ME BUS FE CONTACT	2278076	50
DIN rail connector, color: similar to RAL 7035			
5-pos.	ME 18,8 TBUS 1,5/5-ST-3,81KMGY	2201813	50
8-pos., 8 parallel contacts	TBUS8-18,8-PPPPPPPP-7035	2202396	50
8-pos., 7 parallel contacts, 1 serial contact	TBUS8-18,8-PPPPPPPS-7035	2202399	50
8-pos., 6 parallel contacts, 2 serial contacts	TBUS8-18,8-PPPPPPSS-7035	2202403	50
Filler plug, for closing the Lock and Release area (see Section 9.11)	ME-IO 18,8 F-LR	2202635	10
Partition plate, for supporting headers and housing covers	ME-IO P 10U 7035	2202629	10
Coding profile, for header and Push-in connector, color: natural	CP-DMC 1,5-THR NAT	1790647	60
Base latch, for DIN rail mounting, with included spring	ME-IO 18,8 FOOT CATCH KIT	2201812	50

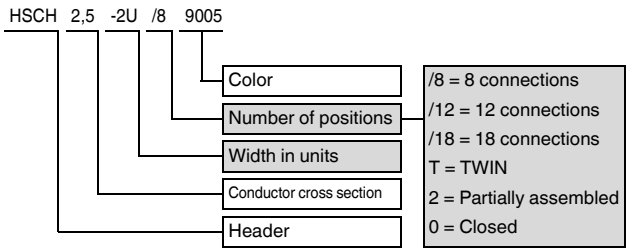
4 Technical data

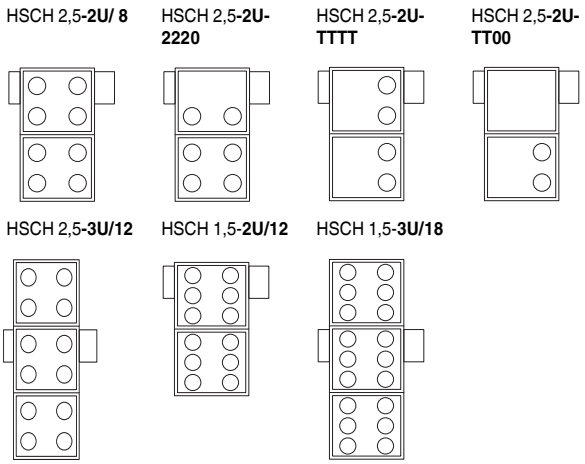
Electrical data	
DIN rail connector, nominal voltage	125 V
DIN rail connector, nominal current	8 A, maximum, per position
Number of positions	5
Housing design	
Insulation material	Polyamide
Flammability rating according to UL 94	V0
Color	Similar to RAL 7035, light gray
Power dissipation P_V at 20°C in the horizontal mounting position	2.8 W, approximately

5 Combination of headers and connectors

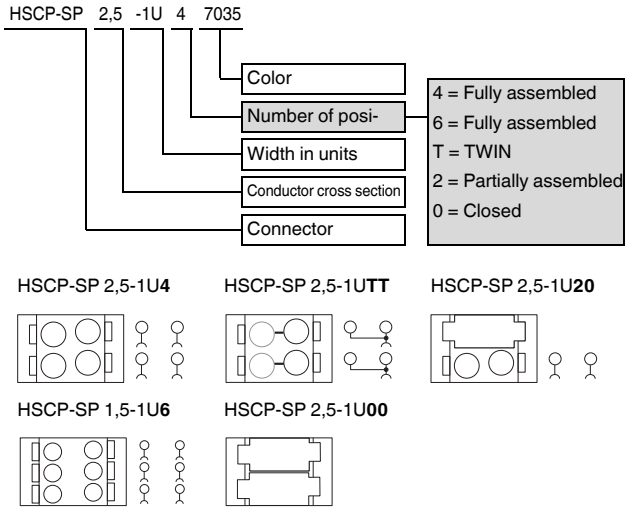
5.1 Connections of headers and connectors

Headers





Connectors



5.2 Selecting headers and connectors

The connectors correspond to a unit. For the connectors, there are matching headers in 2 or 3 unit versions that are soldered onto the PCB.

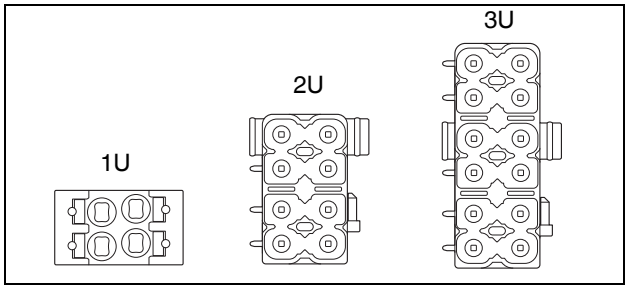


Figure 4 Connector 1U and headers (5 mm pitch)

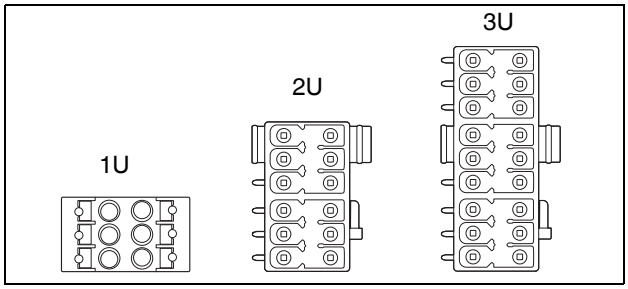


Figure 5 Connector 1U and headers (3.45 mm pitch)

Different connector versions are available. Please make sure that connectors and headers match. In the case of the partially assembled connector with two 1U20 connections, you must observe the position in the header.

Headers	Connections	**Suitable connectors**	Number
HSCH 2,5- 2U/ **8** ...	8	HSCP-SP 2,5- 1U**4** ...	2x
HSCH 2,5- 2U-**2220** ...	6	HSCP-SP 2,5- 1U**4** ... 1U**20** ...	1x 1x
HSCH 2,5- 2U-**TTTT** ...	4	HSCP-SP 2,5- 1U**TT** ...	2x
HSCH 2,5- 2U-**TT00** ...	6	HSCP-SP 2,5- 1U**TT** ... 1U**00** ...	1x 1x
HSCH 2,5- 3U/**12** ...	12	HSCP-SP 2,5- 1U**4** ...	3x
HSCH 1,5- 2U/**12** ...	12	HSCP-SP 1,5- 1U**6** ...	2x
HSCH 1,5- 3U/**18** ...	18	HSCP-SP 1,5- 1U**6** ...	3x

You can code the connectors and the headers in order to prevent them from being connected incorrectly (see “Coding the connectors” on page 43).

5.3 Installing headers next to one another

You have to install the headers next to one another in such a way that you can attach the Lock and Release system. The Lock and Release system is available in different lengths (3U – 9U).

The headers have guide pins, which have to fit into the recesses of the Lock and Release system.

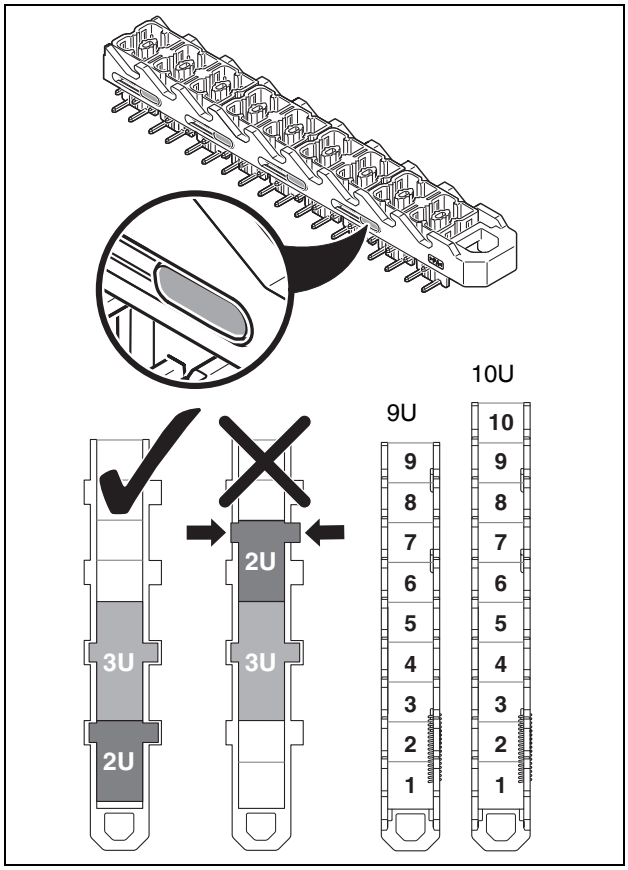


Figure 6 Guide pins and Lock and Release system

The housing is designed for 9 or 10 units. You can only install the headers next to one another at certain positions. In order for the guide pins to fit into the Lock and Release system, you must observe the combination of the headers.

It is therefore not possible to install the 3U headers directly next to one another because the guide pins will then no longer fit into the Lock and Release system. For the same reason, the 2U headers must always be positioned **in front of** the 3U headers. Insert the 2U header in position 1 and 2, for example, and the 3U header in positions 3 – 5.

In addition to the headers, you can also position housing covers, which are available in 2 to 10 unit versions. The position of the housing covers can be chosen freely.

Possible positions of 3U headers

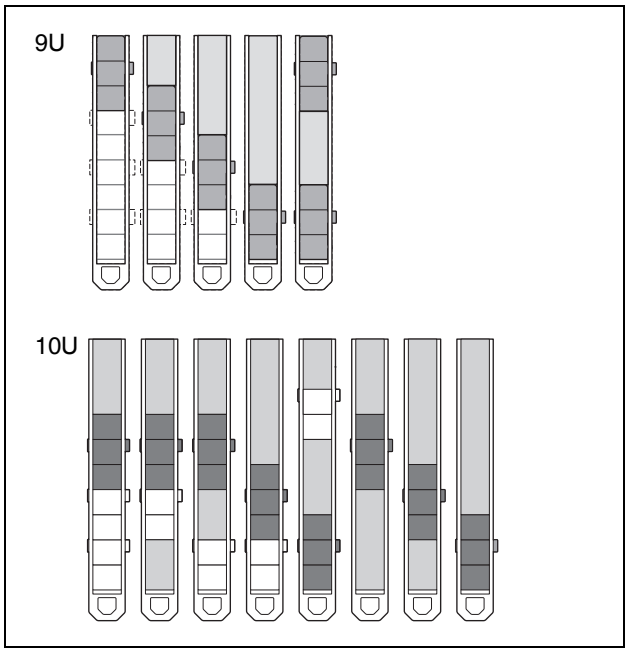


Figure 7 Possible positions and combinations of HSCH ...-3U... 3U headers

In Figure 7, the possible positions of the 3U headers are displayed. This shows that direct installation of 3U headers next to one another is not possible.

2U headers can be installed in front of the 3U headers; housing covers are provided behind and between them.

Possible positions of 2U headers

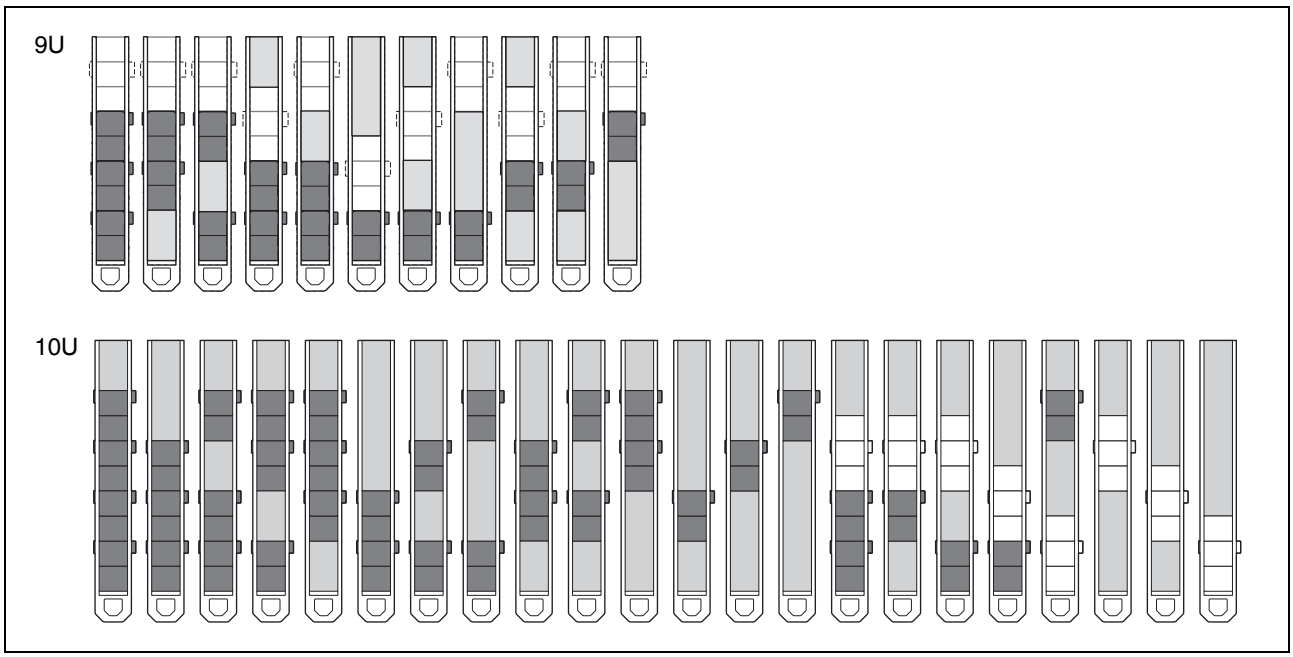


Figure 8 Possible positions and combinations of HSCH ...-2U... 2U headers

You can directly install the 2U headers next to one another. Figure 8 shows all possible positions. You can use the different versions of the 2U headers for this purpose.

To some extent, 3U headers fit on the unoccupied positions behind the 2U headers (see Figure 6 and Figure 7). Otherwise, housing covers are provided. Please note that there are no 1U housing covers.

Possible positions of headers with 3U S1 housing cover

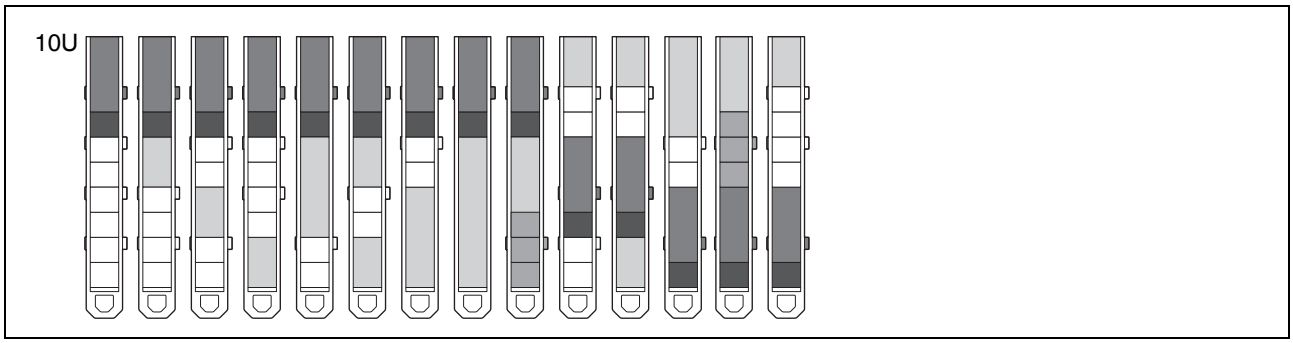


Figure 9 Possible positions and combinations of headers with ME-IO 18,8 C 3U S1 7035

The ME-IO 18,8 C 3U S1 7035 housing cover is used for covering a unit of the header. The snap-in hook is therefore positioned at an offset of 1 unit. At the position to be covered, there are no connectors in the header.

5.4 Fastening clip (Blockbelt)

Several connectors can be connected mechanically to one another using a fastening clip (Blockbelt).

This way, the connection technology can be grouped flexibly. The HSCP-CB fastening clip is available from 2U to 6U.

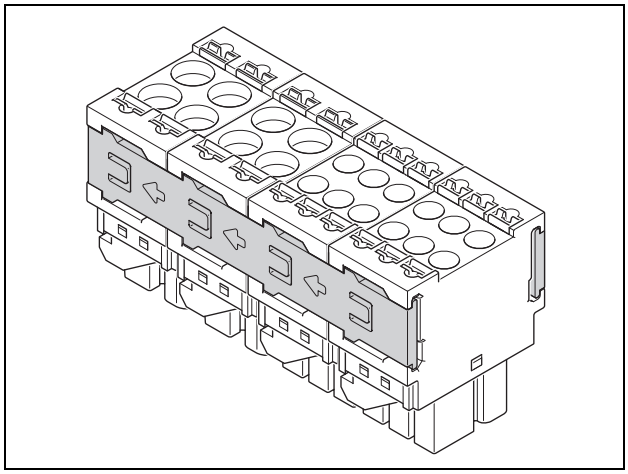


Figure 10 Blockbelt HSCP-CB

For information on how to mount the fastening clip, please refer to Page 39.

6 Dimensions

6.1 External dimensions

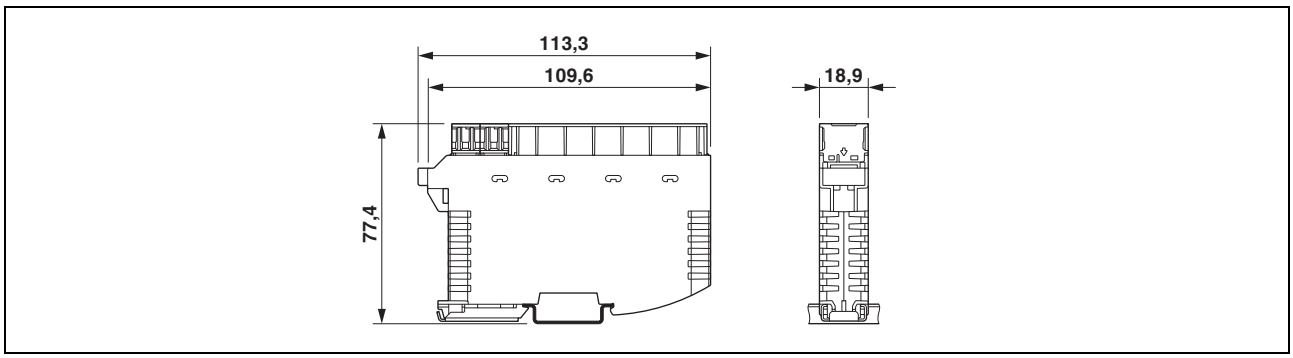


Figure 11 9U lower housing part with housing cover

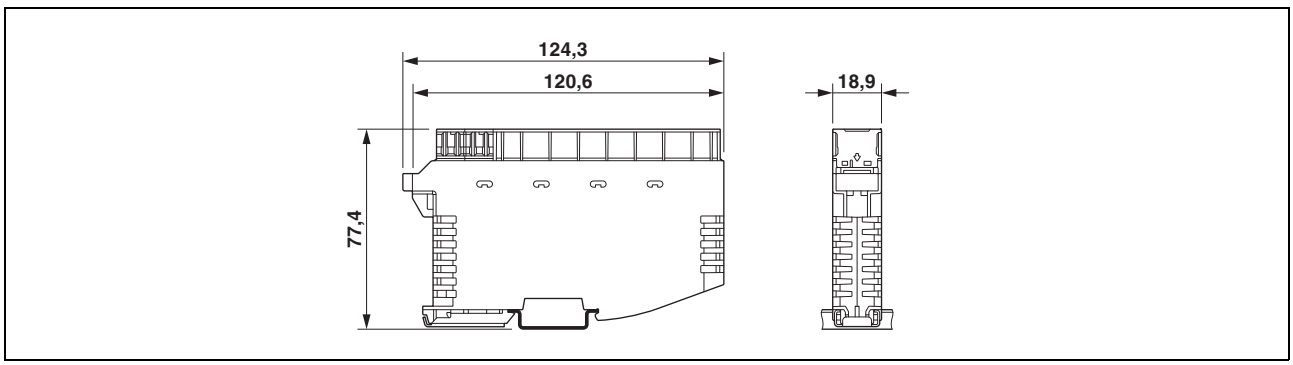


Figure 12 10U lower housing part with housing cover

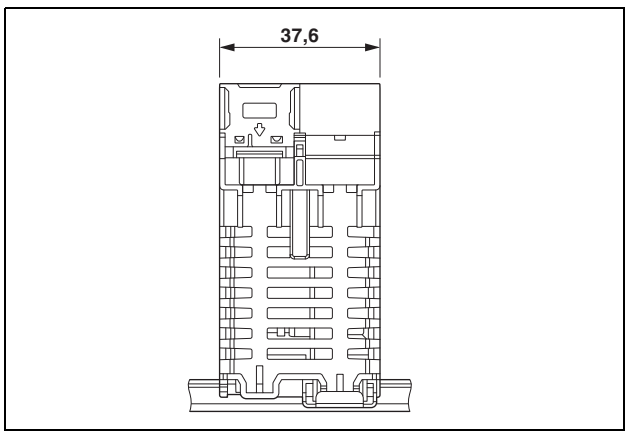


Figure 13 ME-IO 37,6 B 10U TBUS 7035

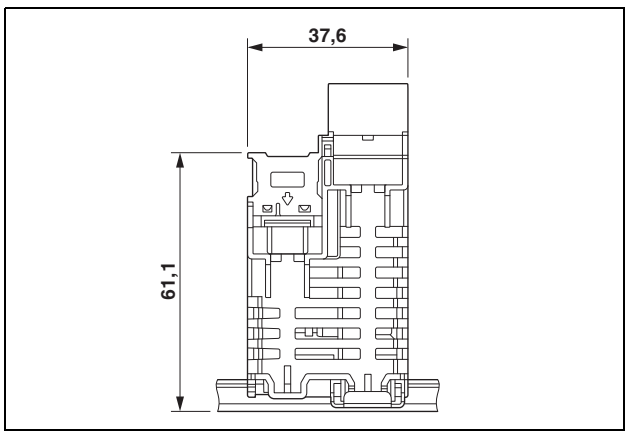


Figure 14 ME-IO 37,6 LB 10U TBUS 7035

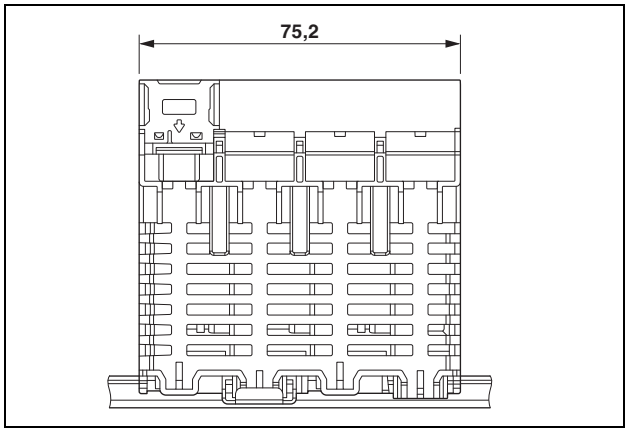


Figure 15 ME-IO 75,2 B 10U TBUS 7035

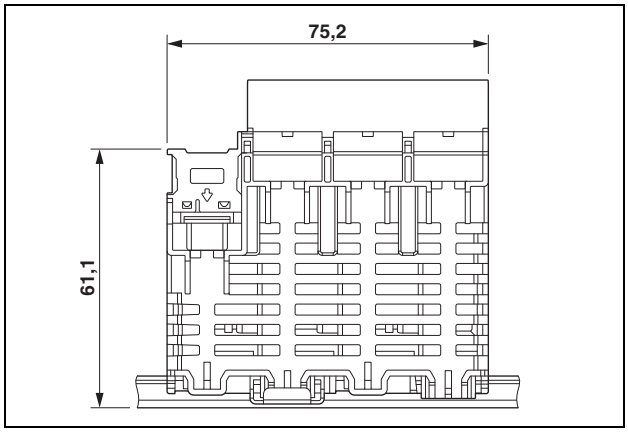


Figure 16 ME-IO 75,2 LB 10U TBUS 7035

6.2 Internal dimensions of lower housing part

With vertical PCBs

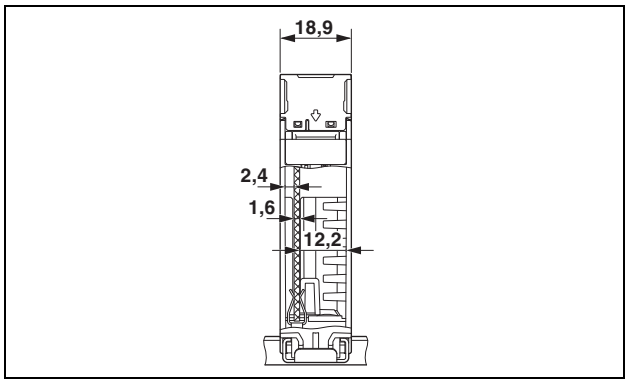


Figure 17 Inside view (overall width 18.8)

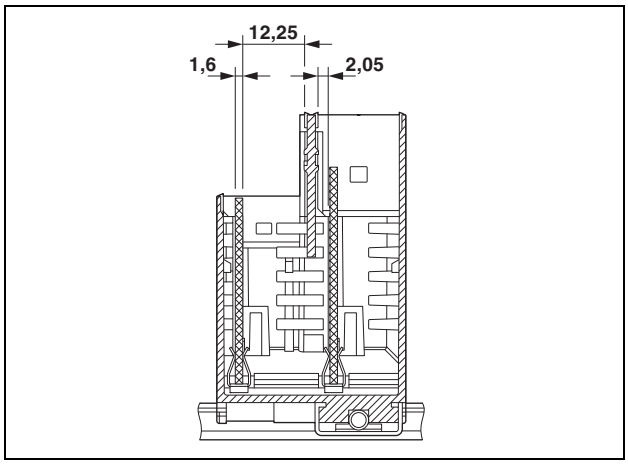


Figure 18 Inside view (overall width 37.6, L-type)

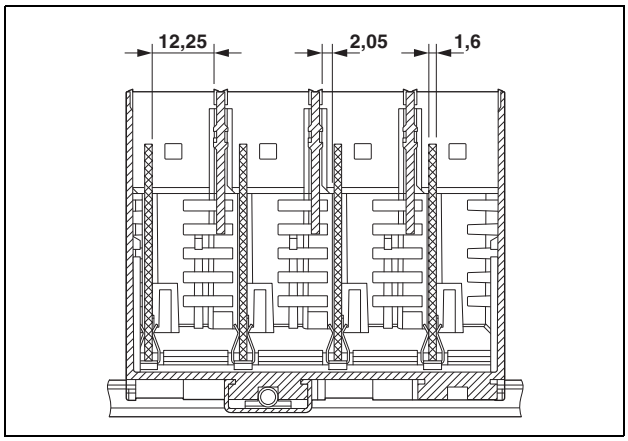


Figure 19 Inside view (overall width 75.2)

Recommended PCB thickness	1.4 mm ... 1.8 mm

With horizontal PCBs

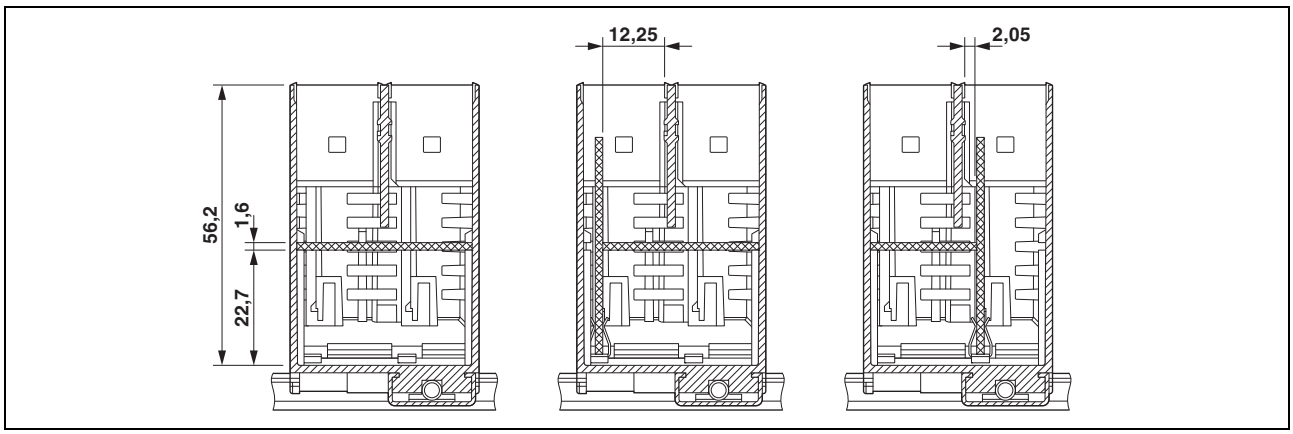


Figure 20 Inside view (PCB, overall width 37.6)

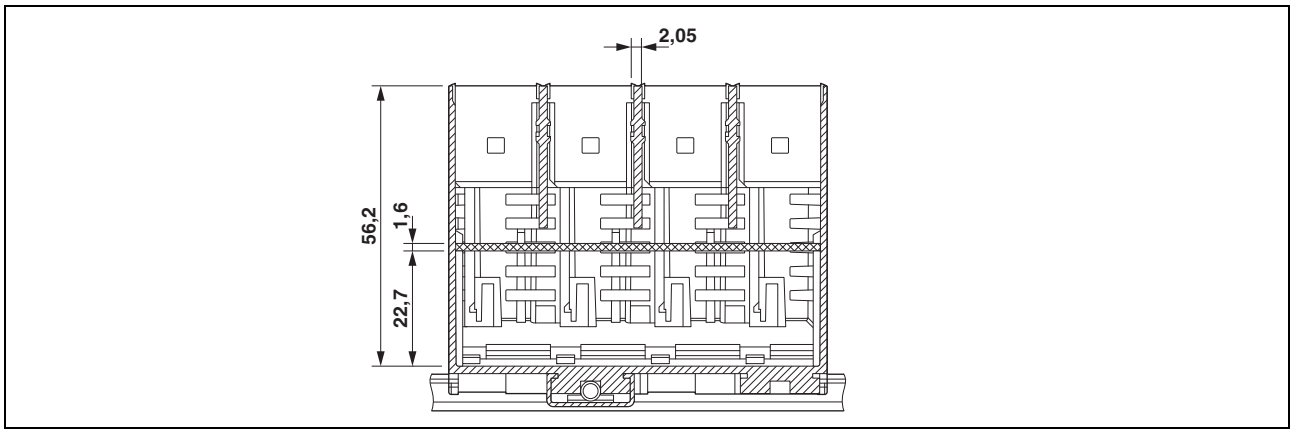


Figure 21 Inside view (horizontal PCB, overall width 75.2)

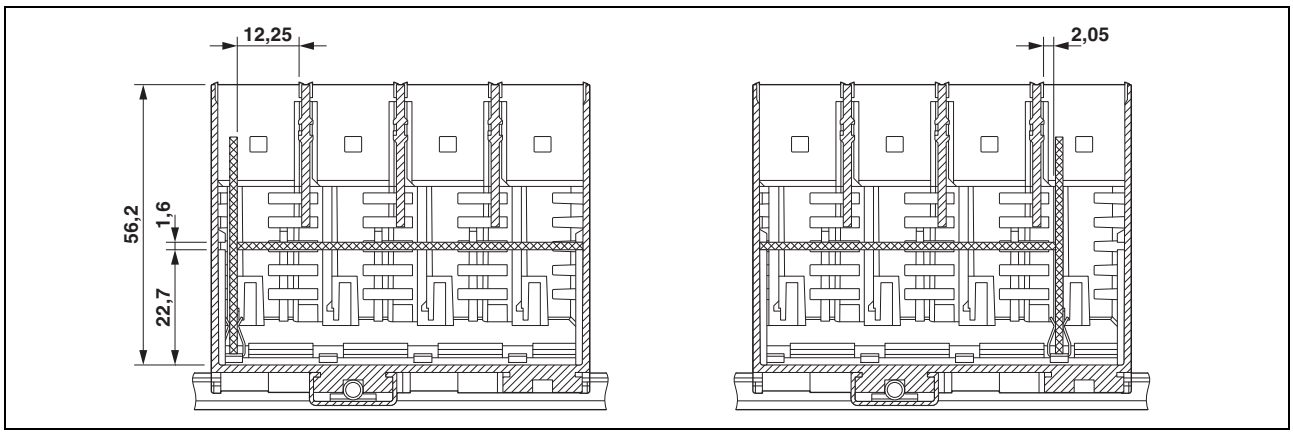


Figure 22 Inside view (horizontal and vertical PCB, overall width 75.2)

Recommended PCB thickness	1.4 mm ... 1.8 mm

6.3 Dimensions of the housing cover

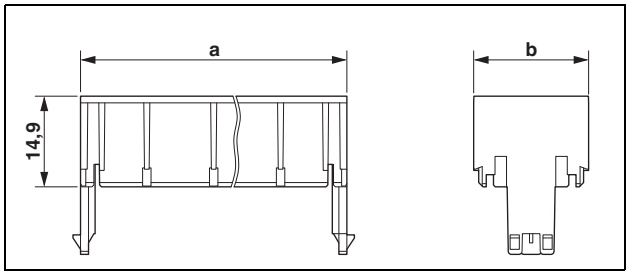


Figure 23 Dimensions of the housing cover

	a	b
ME-IO 18,8 C 2U 7035	22 mm	18.9 mm
ME-IO 18,8 C 3U 7035	33 mm	18.9 mm
ME-IO 18,8 C 3U S1 7035	33 mm	18.9 mm
ME-IO 18,8 C 4U 7035	44 mm	18.9 mm
ME-IO 18,8 C 5U 7035	55 mm	18.9 mm
ME-IO 18,8 C 6U 7035	66 mm	18.9 mm
ME-IO 18,8 C 7U 7035	77 mm	18.9 mm
ME-IO 18,8 C 8U 7035	88 mm	18.9 mm
ME-IO 18,8 C 9U 7035	99 mm	18.9 mm
ME-IO 18,8 C 10U 7035	110 mm	18.9 mm
ME-IO 37,6 C 10U 7035	110 mm	37.9 mm
ME-IO 56,4 C 10U 7035	110 mm	56.9 mm
ME-IO 75,2 C 10U 7035	110 mm	75.9 mm

3U S1 housing cover

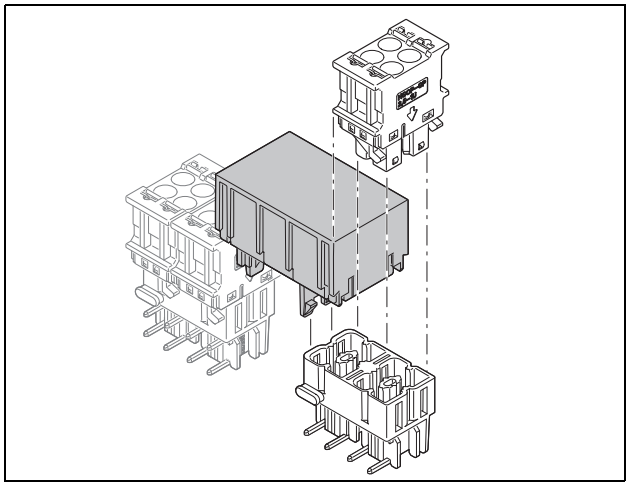


Figure 24 Housing cover ME-IO 18,8 C 3U **S1** 7035

The ME-IO 18,8 C 3U S1 7035 housing cover is used for covering a unit of the header. The snap-in hook is therefore positioned at an offset of 1 unit. At the position to be covered, there are no connectors in the header.

However, you can use the housing cover for all other headers.

Marking lid

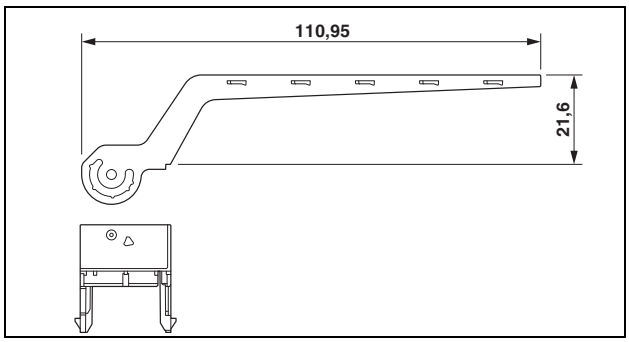


Figure 25 ME-IO 18,8 MC 8U TRANS marking lid dimensions with ME-IO 18,8 C 2U MC... housing cover

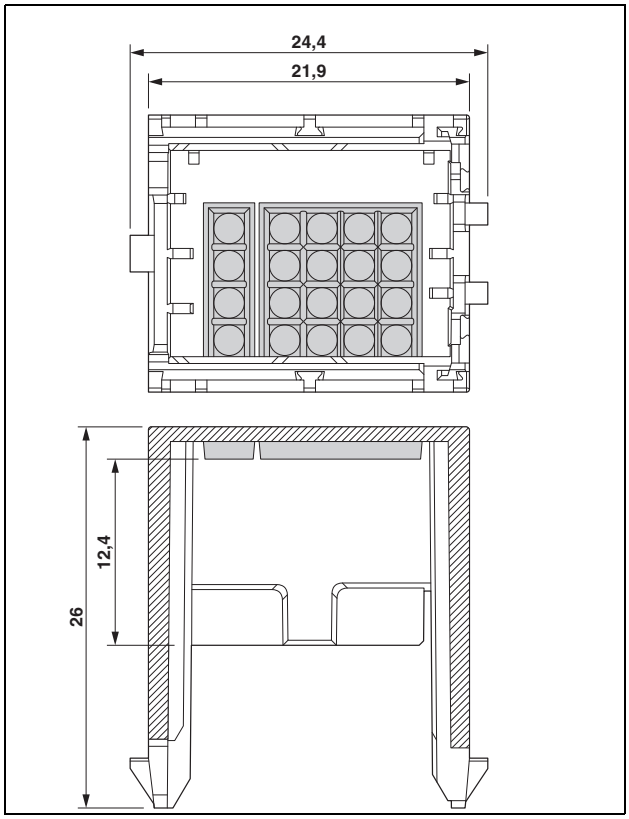


Figure 26 Internal dimensions of the ME-IO 18,8 C 2U MC 7035 housing cover

Each of the three housing covers for the marking lid has a honeycomb structure for the light guides on the inner side. This honeycomb structure is appropriate for the specified light guides. If you wish to use the housing cover for other applications, you have to consider the height of the honeycomb structure.

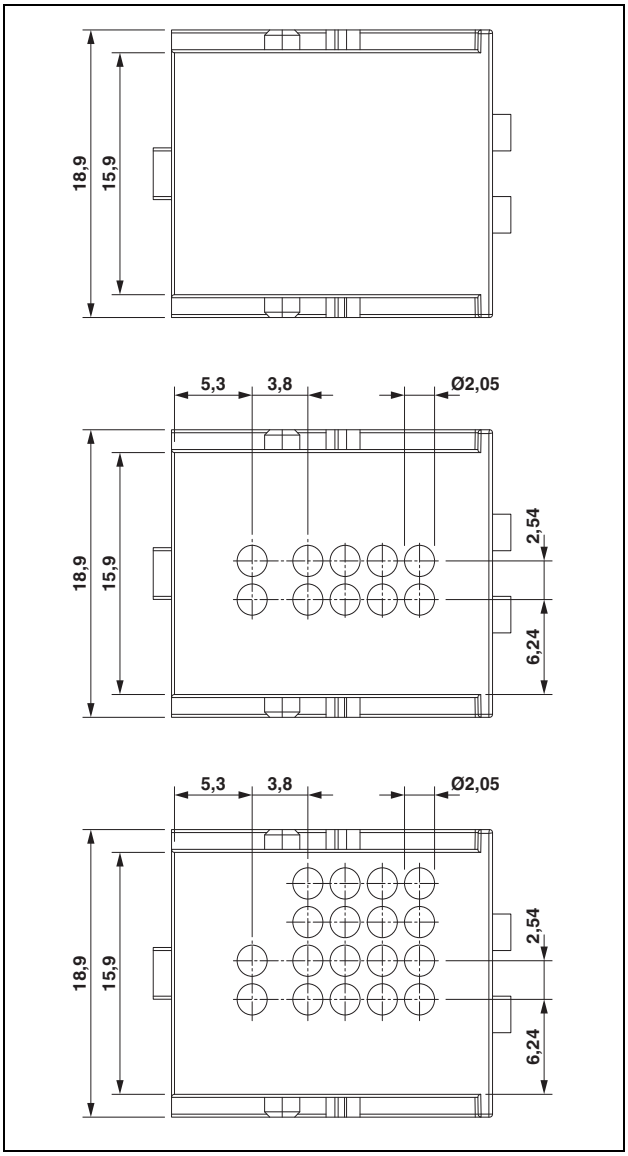


Figure 27 External dimensions of the ME-IO 18,8 C 2U MC... housing cover

Suitable for light guides

- HS LC-H-D2/ R2xC1-2,54, 2202316
- HS LC-H-D2/ R2xC4-2,54, 2202531
- HS LC-H-D2/ R4xC4-2,54, 2202532

7 PCB dimensions

The PCB dimensions are located in the housing selector at phoenixcontact.net/products, web code: #0512.

7.1 Maximum PCB dimensions in the 9U lower housing part

Without DIN rail connector

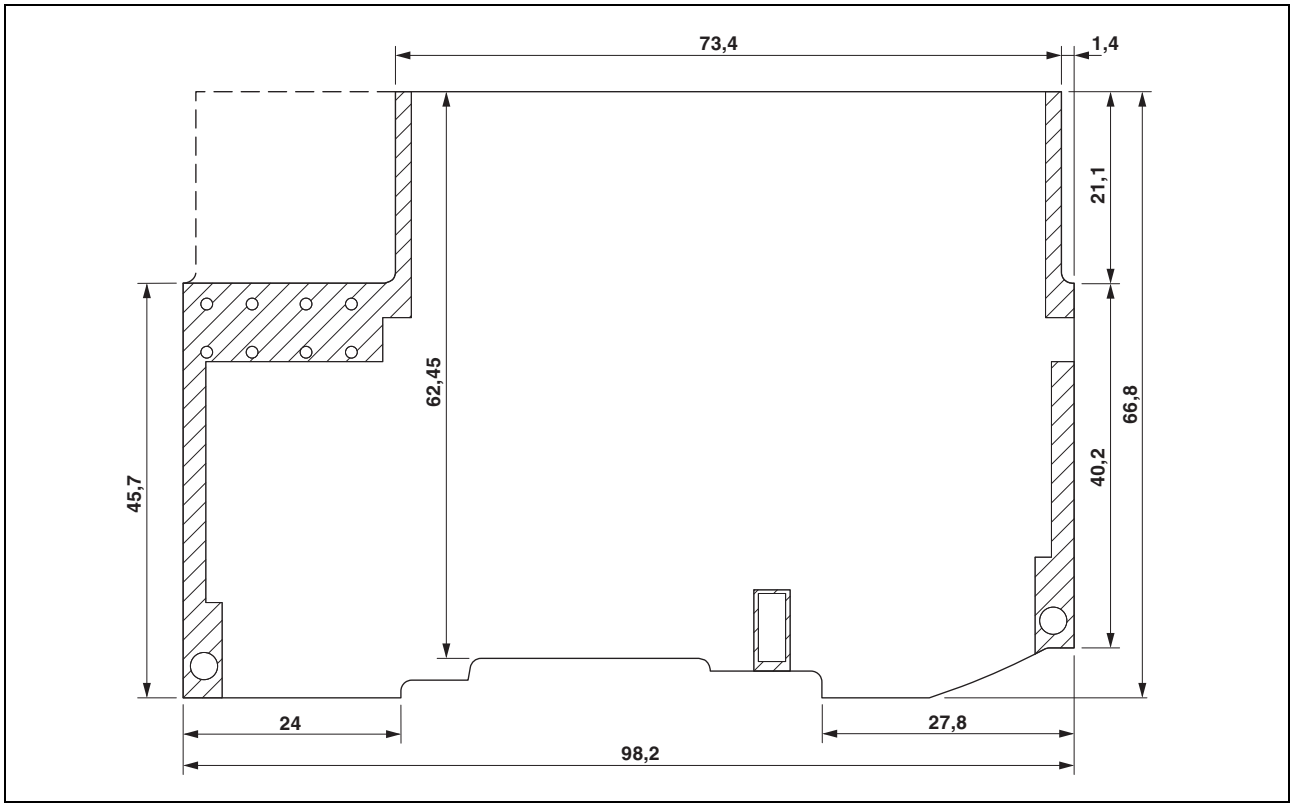


Figure 28 Maximum dimensions of the PCB of the 9U lower housing part **without** the use of the DIN rail connector, with 7U and 9U housing cover

Keep-out zone, no components at these positions

With DIN rail connector

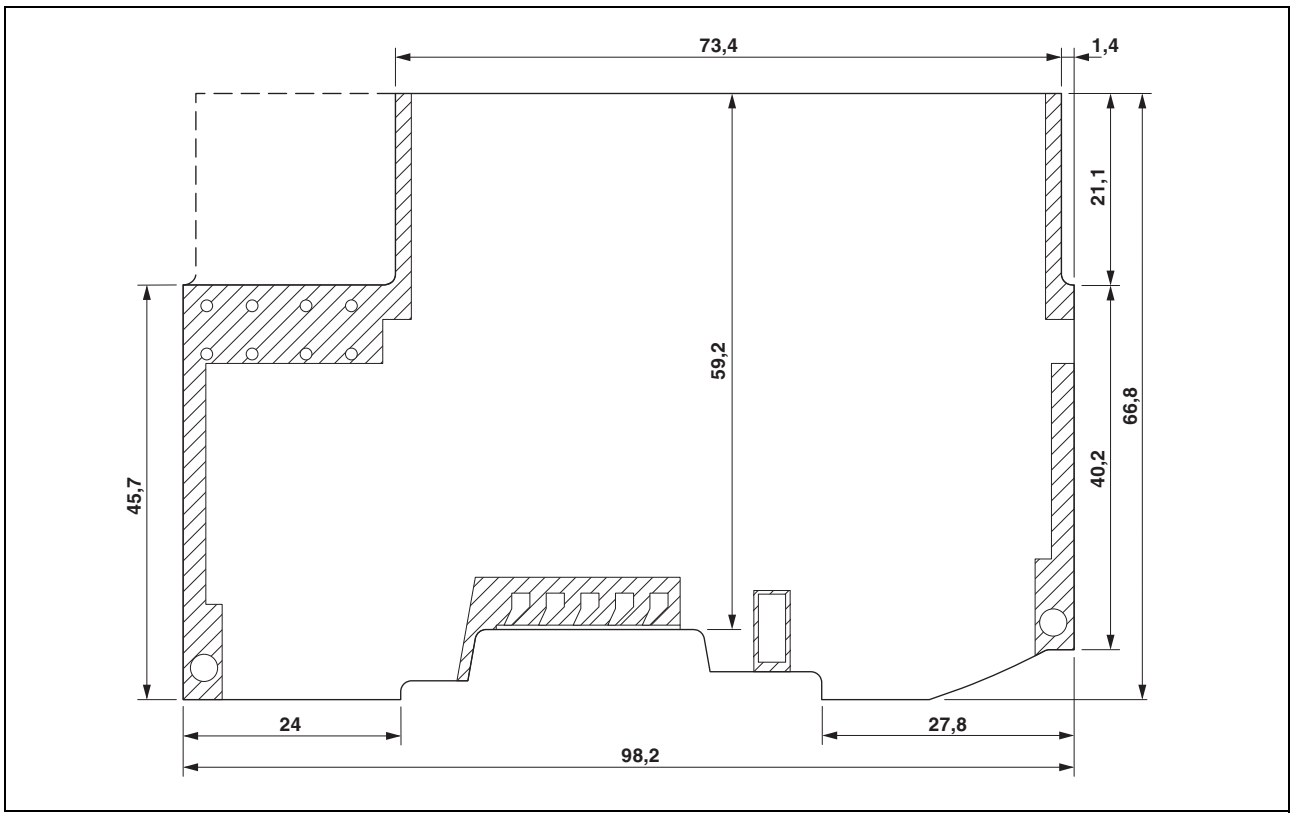


Figure 29 Maximum dimensions of the PCB of the 9U lower housing part **with** the use of the DIN rail connector, with 7U and 9U housing cover

For dimensions of the contact pads, please refer to “DIN rail connector” on page 35.

	Keep-out zone, no components at these positions

7.2 Maximum PCB dimensions in the 10U lower housing part

Without DIN rail connector

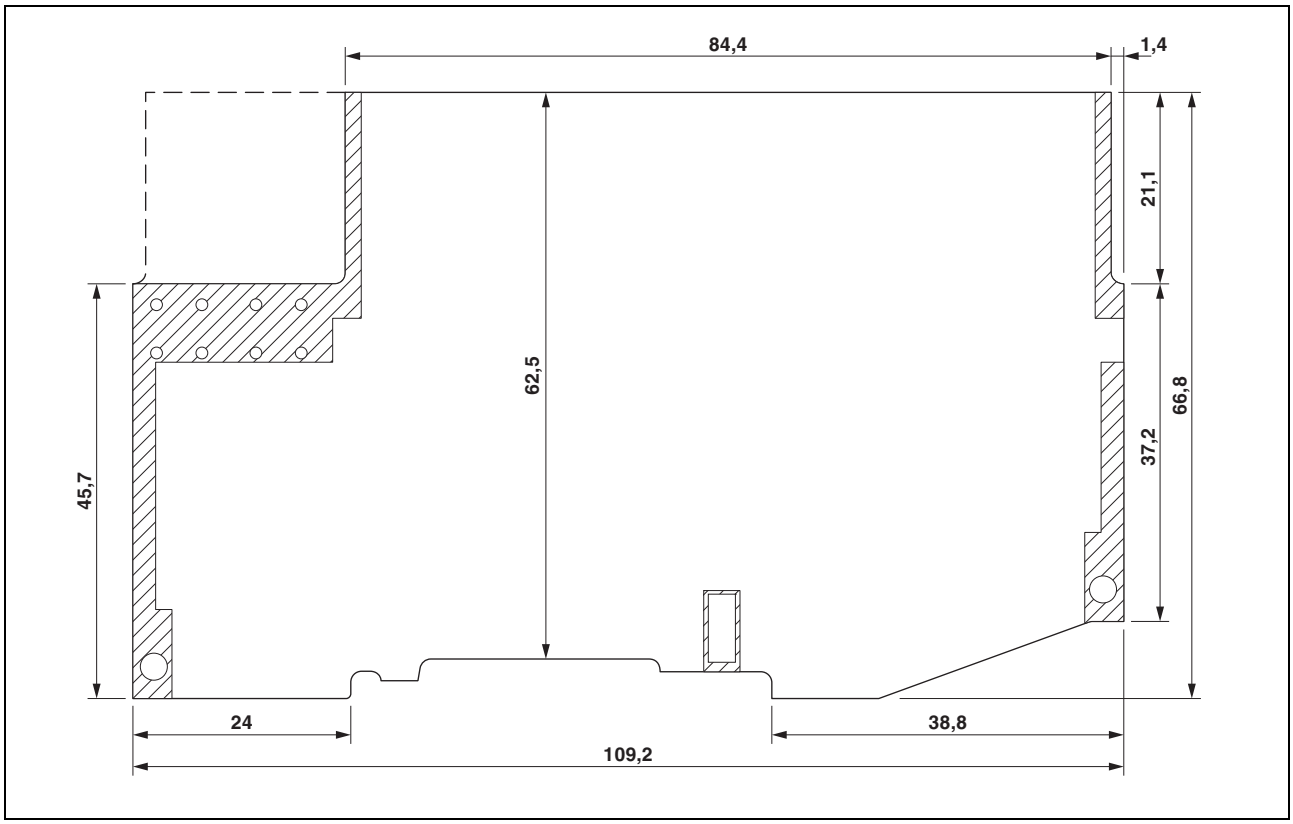


Figure 30 Maximum dimensions of the PCB of the 10U lower housing part **without** the use of the DIN rail connector, with 8U and 10U housing cover

	Keep-out zone, no components at these positions

With DIN rail connector

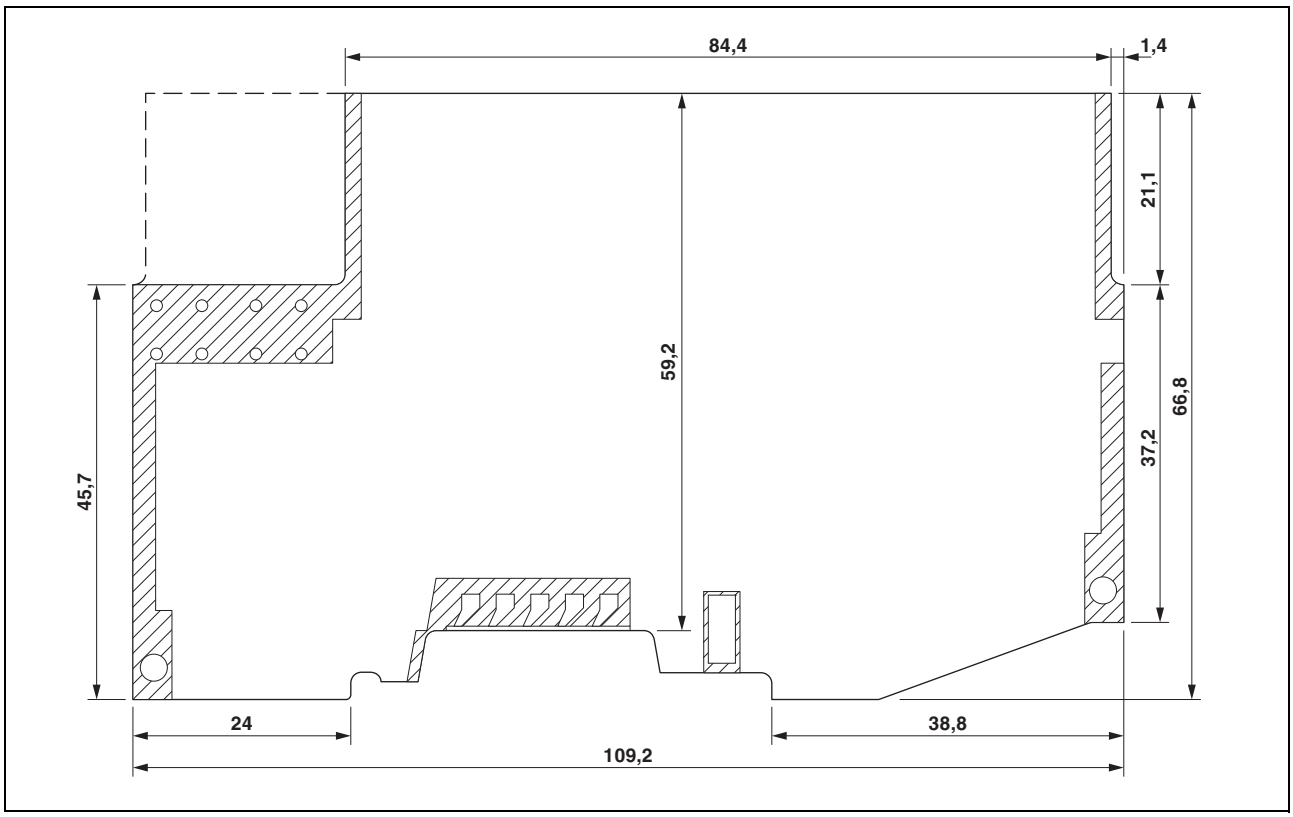


Figure 31 Maximum dimensions of the PCB of the 10U lower housing part **with** the use of the DIN rail connector, with 8U and 10U housing cover

For dimensions of the contact pads, please refer to “DIN rail connector” on page 35.

	Keep-out zone, no components at these positions

7.3 Maximum PCB dimensions in the 10U L-type

Without DIN rail connector (lower housing part in 37.6 L and 75.2 L)

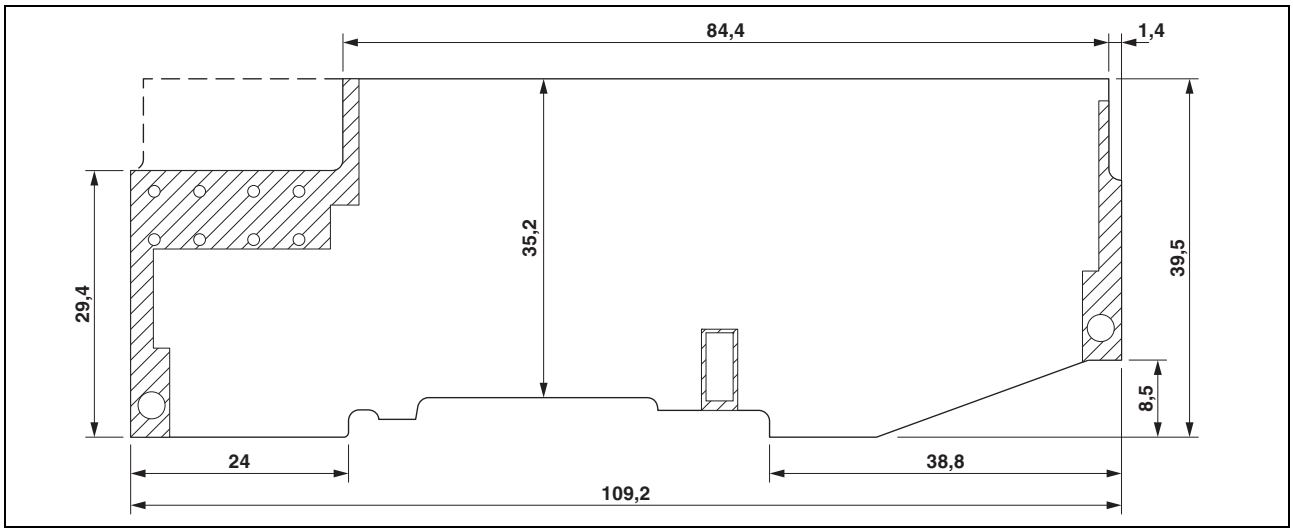


Figure 32 Maximum dimensions of the vertical low PCB of the 10U L lower housing part **without** the use of the DIN rail connector, with 8U and 10U housing cover

If you wish to use the RJ45 Ethernet socket, we recommend
RJ45 socket insert CUC-V04-BU-90, 1407408.

With DIN rail connector (lower housing part in 37.6 L and 75.2 L)

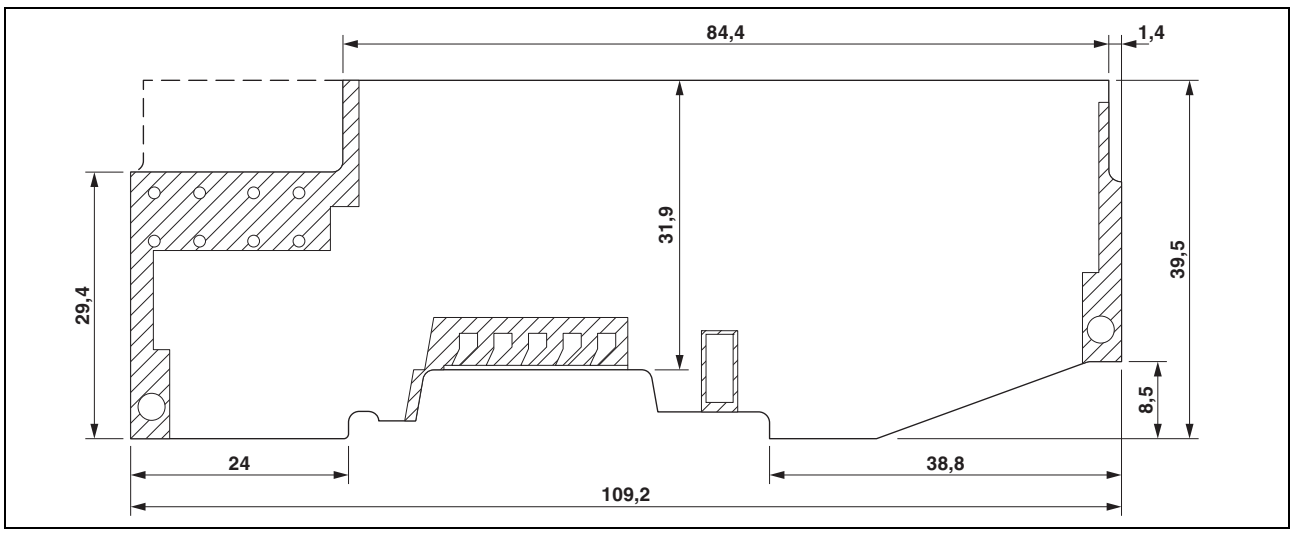


Figure 33 Maximum dimensions of the vertical low PCB of the 10U L lower housing part **with** the use of the DIN rail connector, with 8U and 10U housing cover

	Keep-out zone, no components at these positions

Horizontal PCBs for 37.5 lower housing part

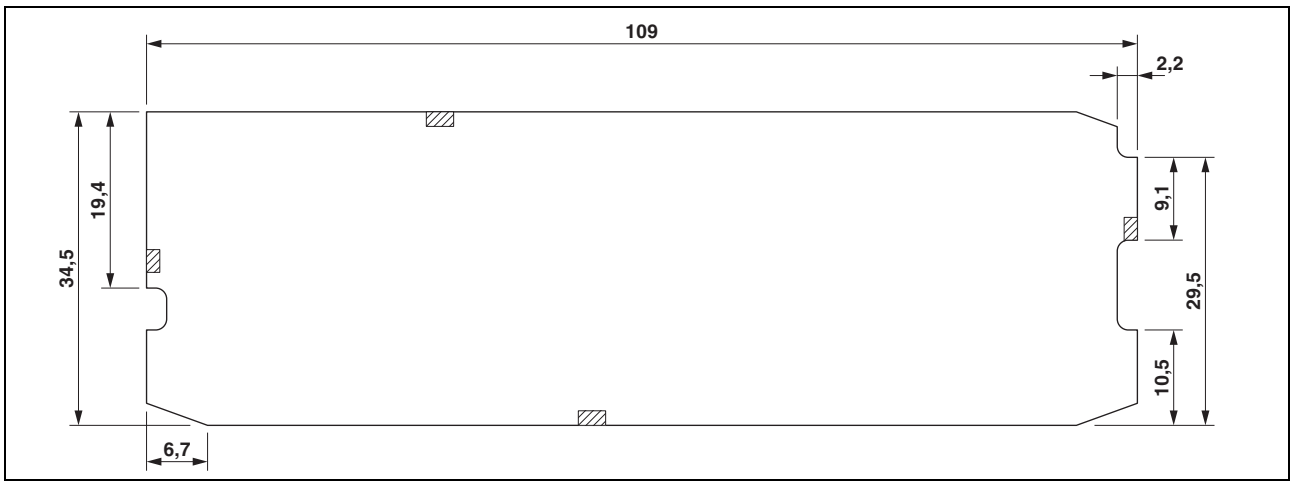


Figure 34 Maximum dimensions of the horizontal PCB of the 37.5 lower housing part

Horizontal PCBs for 75.2 lower housing part

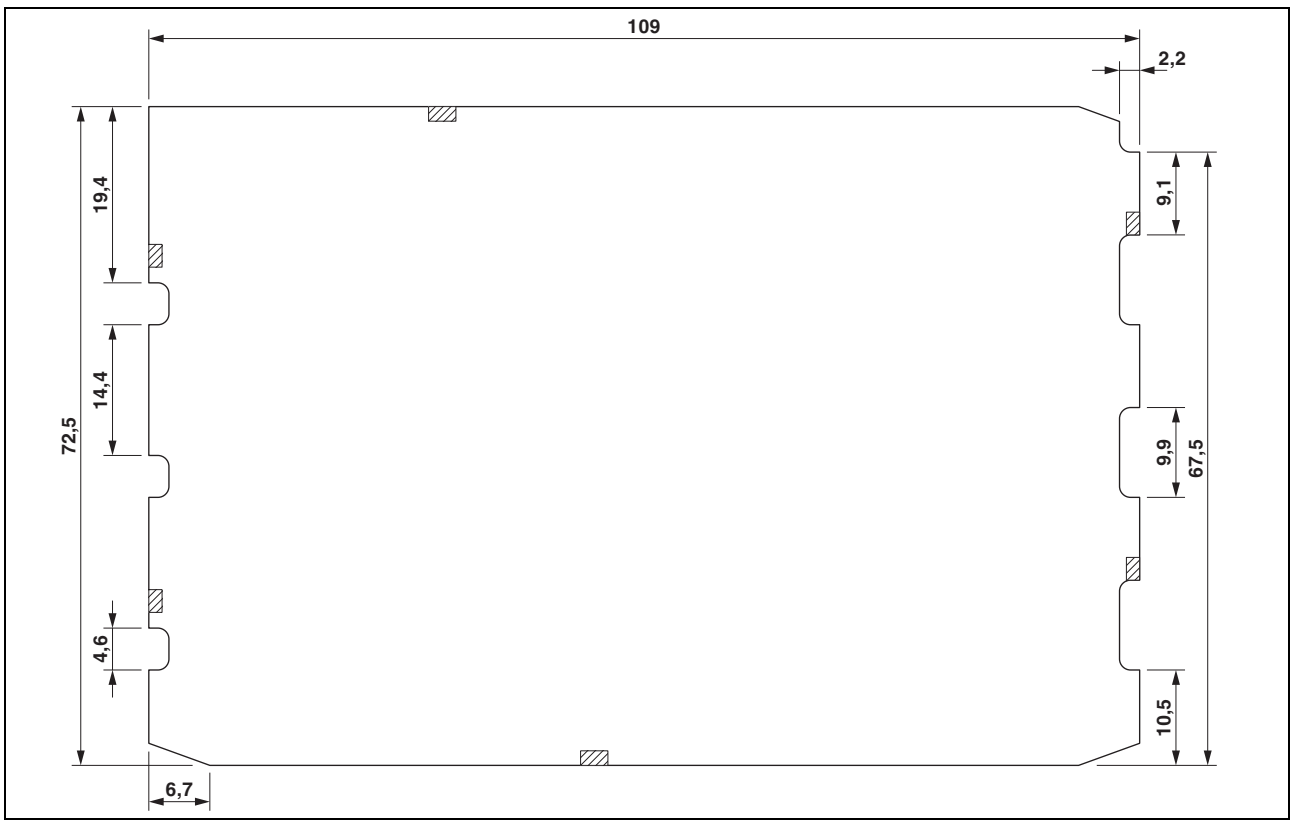


Figure 35 Maximum dimensions of the horizontal PCB of the 75.2 lower housing part

	Keep-out zone, no components at these positions

7.4 PCB dimensions according to housing cover

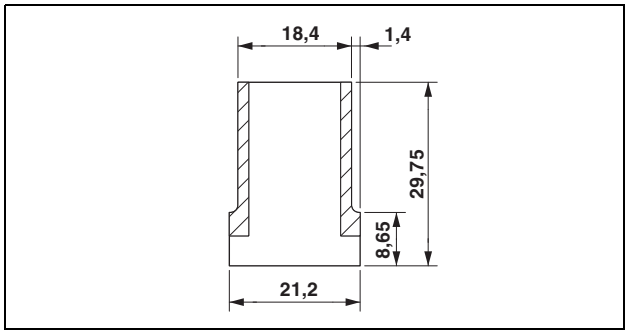


Figure 36 Dimensions of the PCB with housing covers ME-IO 18,8 C 2U 7035 and ME-IO 18,8 C 3U S1 7035

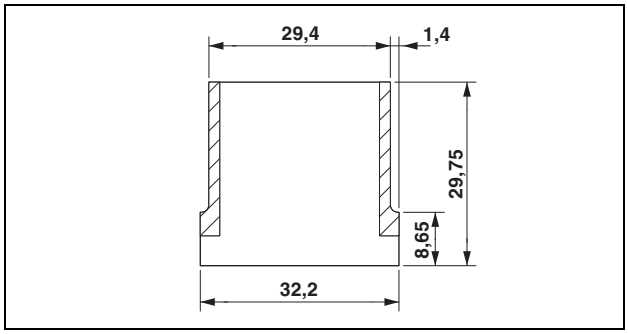


Figure 37 Dimensions of the PCB with housing cover ME-IO 18,8 C 3U 7035

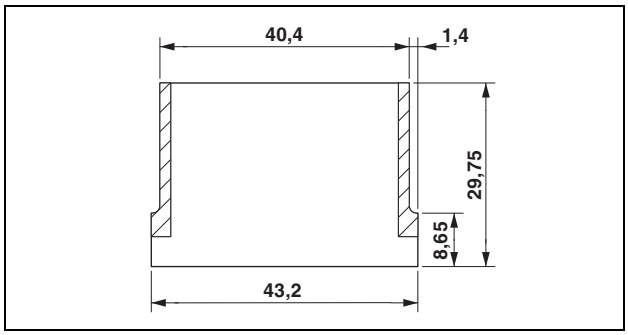


Figure 38 Dimensions of the PCB with housing cover ME-IO 18,8 C 4U 7035

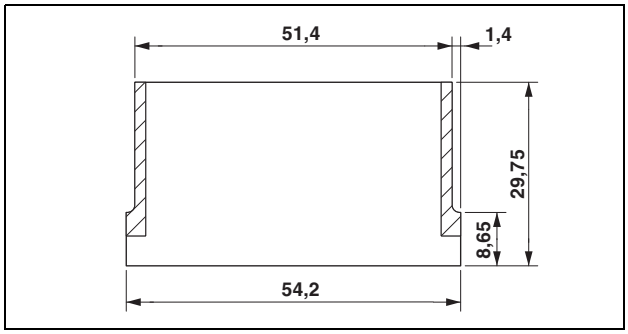


Figure 39 Dimensions of the PCB with housing cover ME-IO 18,8 C 5U 7035

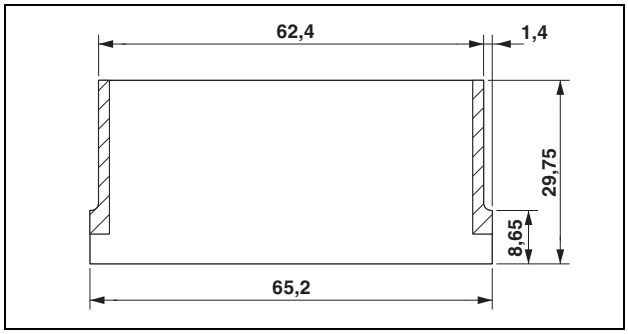


Figure 40 Dimensions of the PCB with housing cover ME-IO 18,8 C 6U 7035

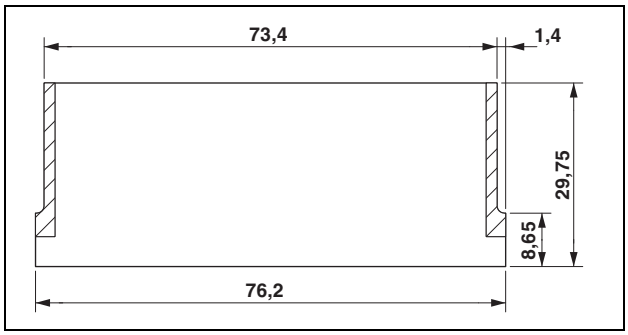


Figure 41 Dimensions of the PCB with housing cover ME-IO 18,8 C 7U 7035

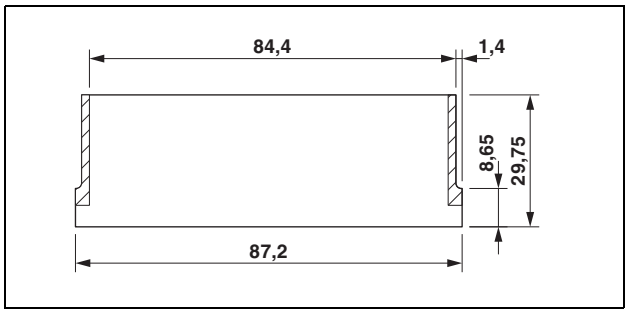


Figure 42 Dimensions of the PCB with housing cover ME-IO 18,8 C 8U 7035

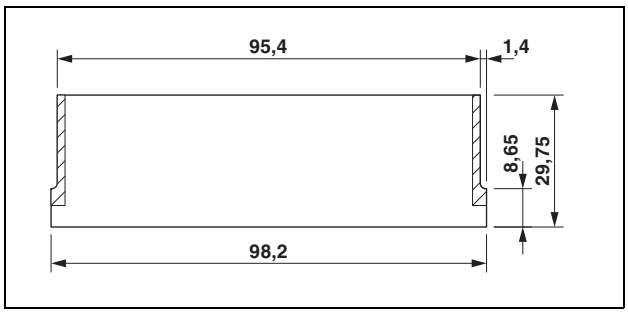


Figure 43 Dimensions of the PCB with housing cover ME-IO 18,8 C 9U 7035

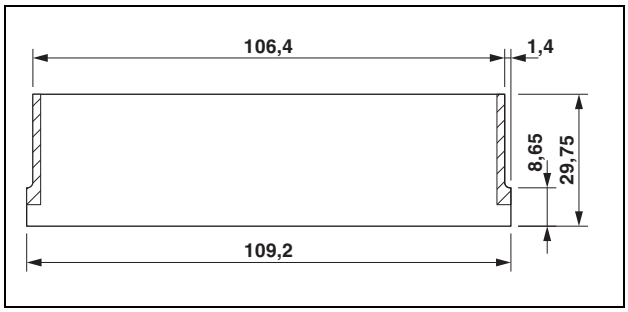


Figure 44 Dimensions of the PCB with housing cover ME-IO 18,8 C 10U 7035

Keep-out zone, no components at these positions

7.5 PCB with FE contact

The FE contact establishes contact between the electronics module and the DIN rail in order to discharge electromagnetic interference.

Some of the lower housing parts are delivered with a pre-assembled FE contact.

If the lower housing part is delivered without an FE contact, you can order the FE contact as an accessory and mount it (see “Mounting the FE contact” on page 38).

You have to provide a pad on the PCB for the FE contact (FE contact pad with tin surface, Sn2-4µm).

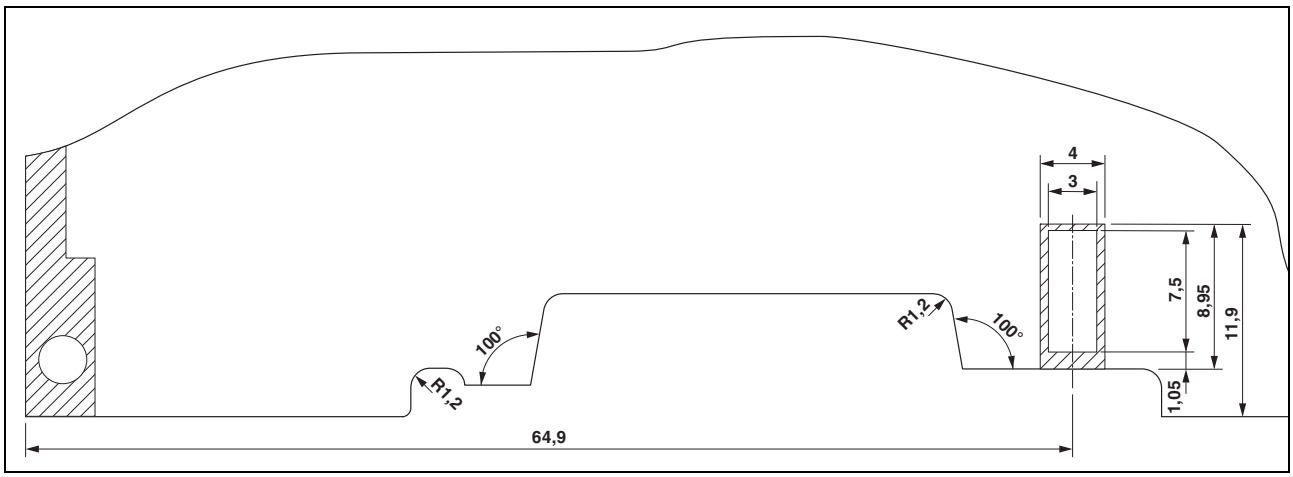


Figure 45 FE contact

8 Connection technology

8.1 Headers (5 mm pitch)

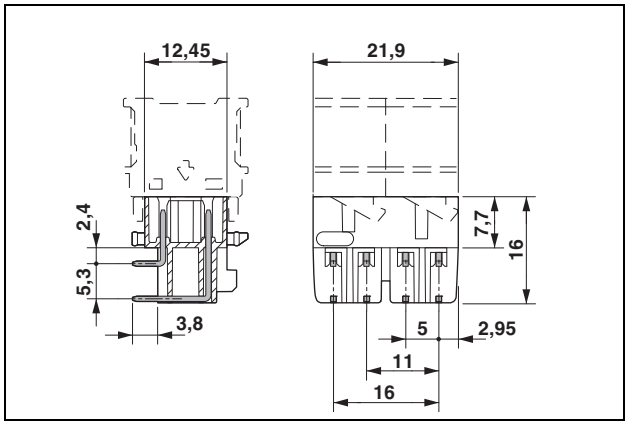


Figure 46 Dimensions of header HSCH 2,5-2U/ 8 9005

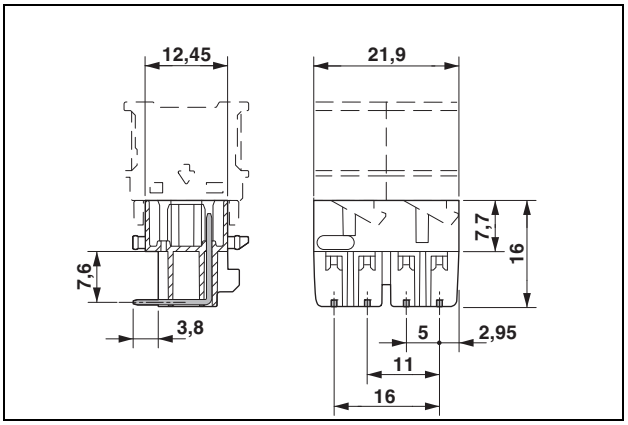


Figure 48 Dimensions of header HSCH 2,5-2U-TTTT 9005

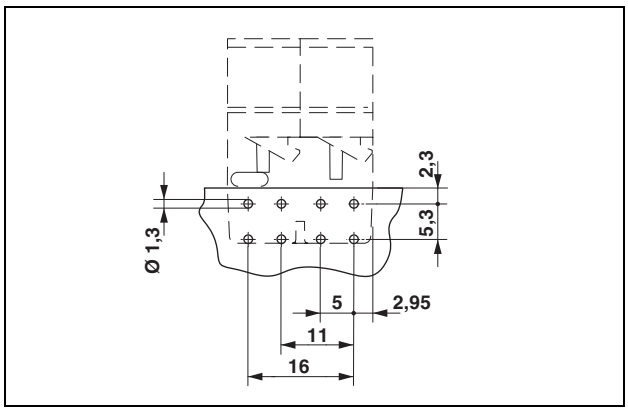


Figure 47 Drilling diagram of header HSCH 2,5-2U/ 8 9005

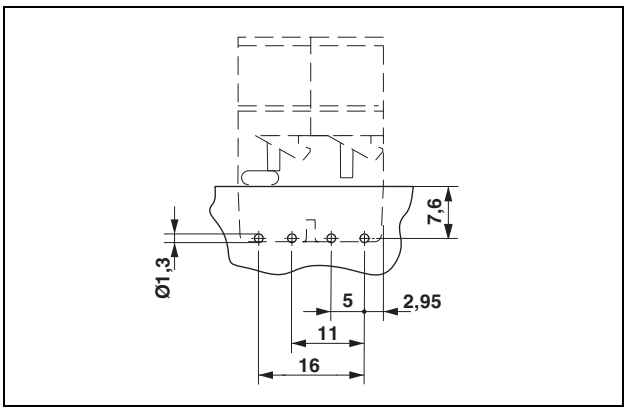


Figure 49 Drilling diagram of header HSCH 2,5-2U-TTTT 9005

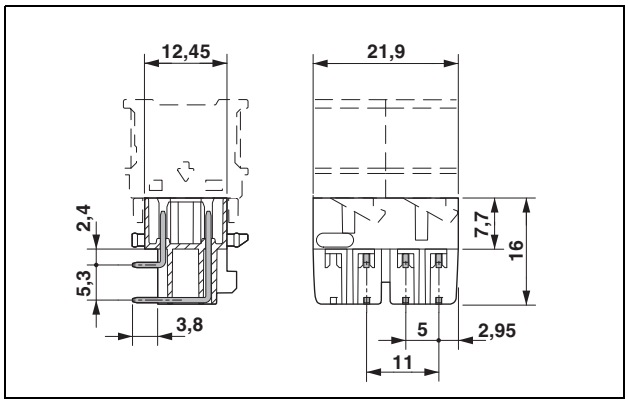


Figure 50 Dimensions of header HSCH 2,5-2U-2220 9005

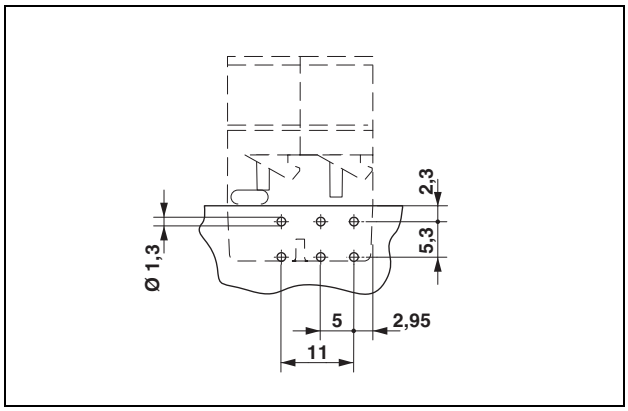


Figure 51 Drilling diagram of header HSCH 2,5-2U-2220 9005

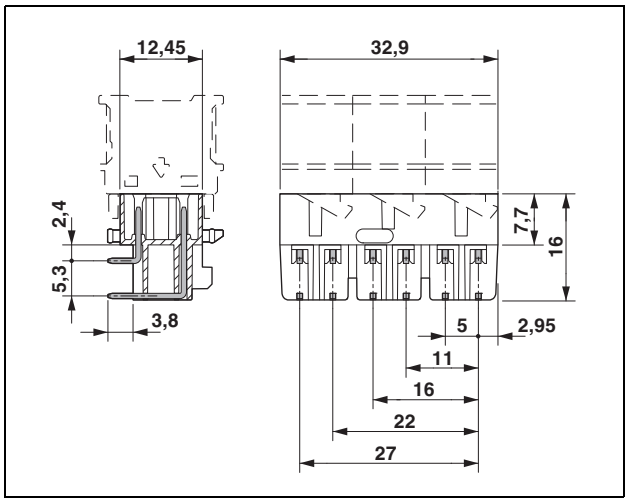


Figure 52 Dimensions of header HSCH 2,5-3U/12 9005

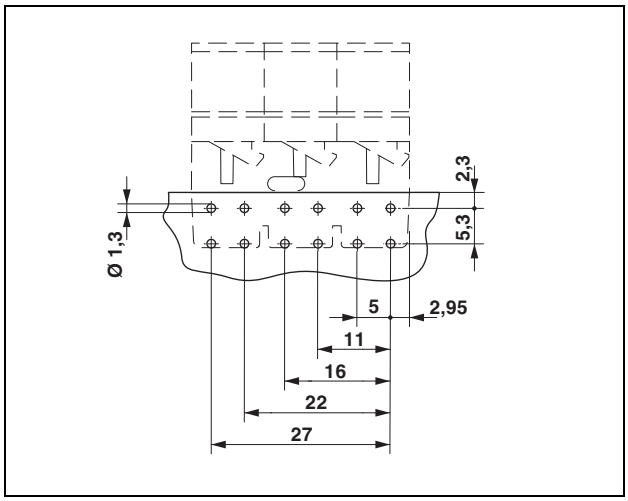


Figure 53 Drilling diagram of header HSCH 2,5-3U/12 9005

HSCH 2,5-...

Dimensions/positions	
Pitch	5 mm
Number of positions	
HSCH 2,5-2U/ 8 9005	8
HSCH 2,5-2U-TTTT 9005	4
HSCH 2,5-2U-2220 9005	6
HSCH 2,5-3U/12 9005	12

Technical data	
Insulation material group	I (CTI 600)
Rated surge voltage (III/3)	4 kV
Rated surge voltage (III/2)	4 kV
Rated surge voltage (II/2)	2.5 kV
Rated voltage (III/3)	250 V
Rated voltage (III/2)	300 V
Rated voltage (II/2)	600 V
Connection in accordance with standard	DIN EN 61984
Nominal current I_N, depending on the connector used	8 A
Insulation material	PA
Flammability rating UL 94	V0
Color	RAL 9005, black

Mask for wave soldering process

The header protrudes from the PCB on the soldering side. Be aware of this protrusion during the wave soldering process. The protrusion has to be covered by the soldering mask.

8.2 Headers (3.45 mm pitch)

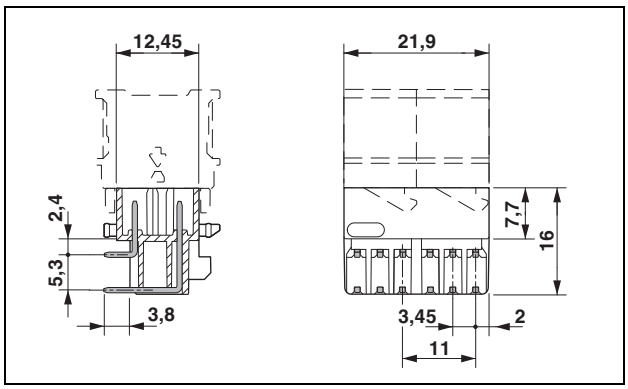


Figure 54 Dimensions of header HSCH 1,5-2U/12 9005

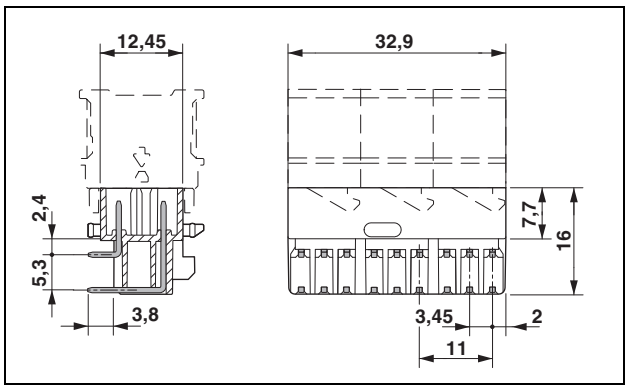


Figure 56 Dimensions of header HSCH 1,5-3U/18 9005

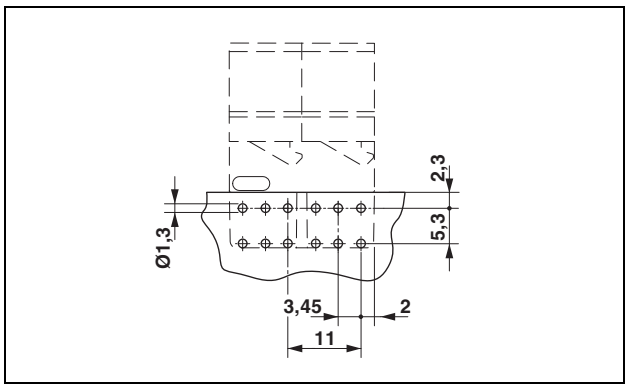


Figure 55 Drilling diagram of header HSCH 1,5-2U/12 9005

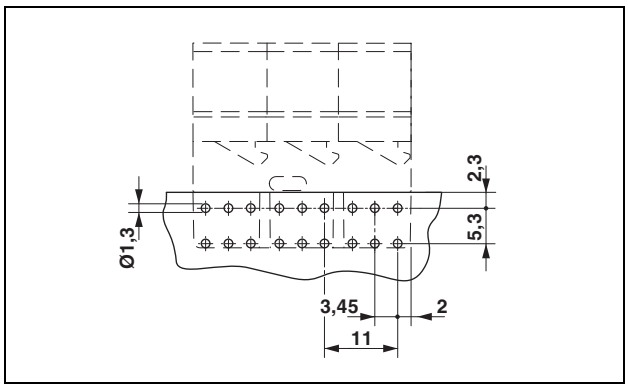


Figure 57 Drilling diagram of header HSCH 1,5-3U/18 9005

HSCH 1,5-...

Dimensions/positions	
Pitch	3.45 mm
Number of positions	
HSCH 1,5-2U/12	12
HSCH 1,5-3U/18	18

Technical data	
Insulation material group	I (CTI 600)
Rated surge voltage (III/3)	2.5 kV
Rated surge voltage (III/2)	2.5 kV
Rated surge voltage (II/2)	2.5 kV
Rated voltage (III/3)	63 V
Rated voltage (III/2)	320 V
Rated voltage (II/2)	320 V
Connection in accordance with standard	DIN EN 61984
Nominal current I_N, depending on the connector used	8 A
Insulation material	PA
Flammability rating according to UL 94	V0
Color	RAL 9005, black

8.3 Connector (5 mm pitch)

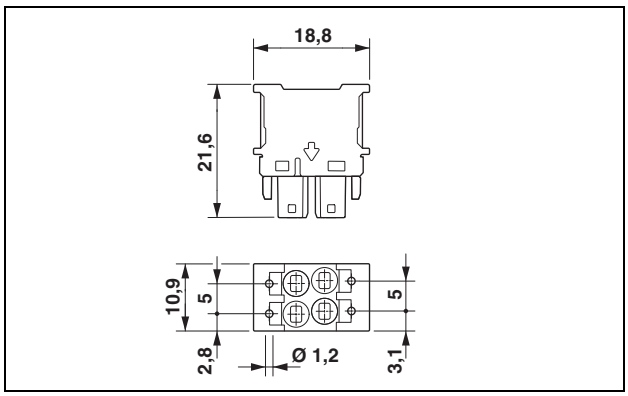


Figure 58 Dimensions of connector HSCP-SP 2,5-1UTT-7035

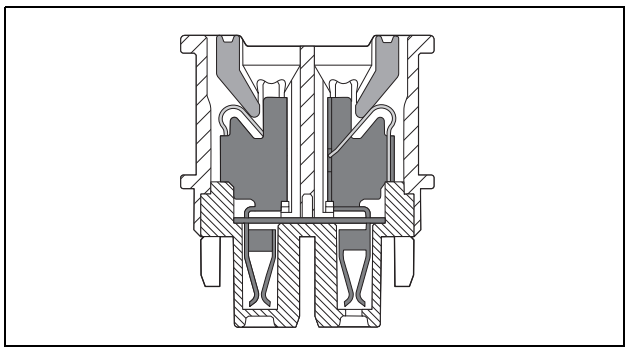


Figure 59 Cross section of connector with TWIN connection HSCP-SP 2,5-1UTT-7035

Derating

Representation in accordance with DIN EN 60512-5-2

- Reduction factor: 0.8
- Number of positions: 4

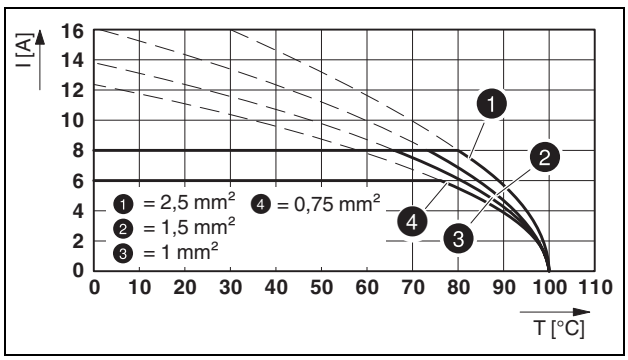


Figure 60 Derating (current strength I [A], ambient temperature T [°C])

HSCP-SP 2,5-...

Dimensions/positions	
Number of positions	
HSCP-SP 2,5-1U4-7035	4
HSCP-SP 2,5-1UTT-7035	2 TWIN
HSCP-SP 2,5-1U20-7035	2

Technical data	
Insulation material group	I (CTI 600)
Rated surge voltage (III/3)	4 kV
Rated surge voltage (III/2)	4 kV
Rated surge voltage (II/2)	2.5 kV
Rated voltage (III/3)	250 V
Rated voltage (III/2)	300 V
Rated voltage (II/2)	600 V
Connection in accordance with standard	DIN EN 61984
Nominal current I_N	8 A
Nominal cross section	2.5 mm²
Insulation material	PA
Flammability rating UL 94	V0

Connection data	
Stripping length without ferrule	8 mm ... 9.5 mm
Ferrule	8 mm ... 10 mm
Conductor cross section, rigid	0.20 mm² ... 1.5 mm² AWG 24 ... 16
Conductor cross section, flexible	0.20 mm² ... 2.5 mm² AWG 24 ... 14
Conductor cross section, flexible, with ferrule without plastic sleeve	0.25 mm² ... 1.5 mm² AWG 24 ... 16
Conductor cross section, flexible, with ferrule with plastic sleeve	0.25 mm² ... 1.5 mm² AWG 24 ... 16

Test point

For the test point, we recommend test probe MPS-MT 1-S4-B RD, 1982800. Observe the rated voltage of 60 V for the test probe.

Color versions and printing

You can request different colors for the the spring levers and the connector housing.

The connector surface can be printed.

8.4 Connector (3.45 mm pitch)

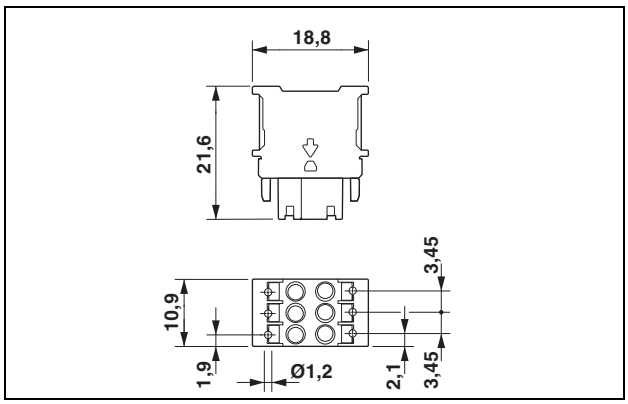


Figure 61 Dimensions of connector HSCP-SP 1,5-1U6-7035

Derating

Representation in accordance with DIN EN 60512-5-2

– Reduction factor: 0.8
– Number of positions: 6

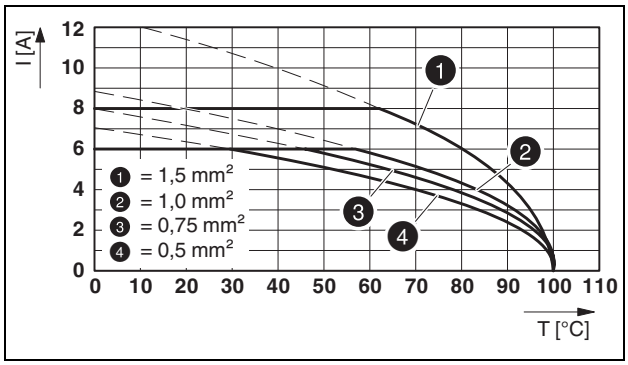


Figure 62 Derating (current strength I [A], ambient temperature T [°C])

We recommend using trapezoidal crimp contacts, and crimping them using the CRIMPFOX 6 (1212034) crimping pliers.

HSCP-SP 1,5-...

Dimensions/positions	
Number of positions	
HSCP-SP 1,5-1U6-7035	6

Technical data	
Insulation material group	I (CTI 600)
Rated surge voltage (III/3)	2.5 kV
Rated surge voltage (III/2)	2.5 kV
Rated surge voltage (II/2)	2.5 kV
Rated voltage (III/3)	63 V
Rated voltage (III/2)	320 V
Rated voltage (II/2)	320 V
Connection in accordance with standard	DIN EN 61984
Nominal current I_N	8 A
Nominal cross section	1.5 mm²
Insulation material	PA
Flammability rating UL 94	V0

Connection data	
Stripping length without ferrule	10 mm
Ferrule	10 mm
Conductor cross section, rigid	0.2 mm² ... 1.5 mm² AWG 24 ... 16
Conductor cross section, flexible	0.25 mm²... 1.5 mm² AWG 24 ... 18
Conductor cross section, flexible, with ferrule without plastic sleeve	0.25 mm² ... 1.5 mm² AWG 24 ... 16
Conductor cross section, flexible, with ferrule with plastic sleeve	0.25 mm² ... 1.0 mm² AWG 24 ... 18

Test point

For the test point, we recommend the test probe MPS-MT 1-S4-B RD, 1982800. Observe the rated voltage of 60 V for the test probe.

Color versions and printing

You can request different colors for the the spring levers and the connector housing.

The connector surface can be printed.

8.5 DIN rail connector

The housing can be combined with a DIN rail connector (TBUS). Data or the power supply is transmitted from module to module via the DIN rail connector.

The DIN rail connector is inserted in the NS 35/7,5 DIN rail. The housing is snapped onto the DIN rail connector.

This concept allows complete individual devices to be removed from the group without interrupting the contact chain.

The DIN rail connector is available with five or eight positions.

8.5.1 DIN rail connector, 5-pos.

The 5-pos. DIN rail connector is compatible with the ME-IO with 9U housing range, ME-MAX housing range, and ME-TBUS housing range.

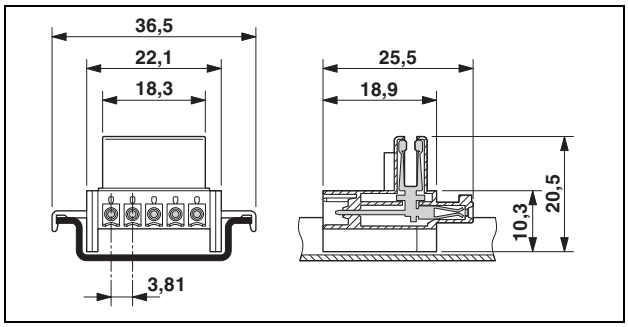


Figure 63 Dimensions of 5-pos. DIN rail connector

ME 18,8 TBUS 1,5/5-ST-3,81KMGY

Dimensions/positions	
Pitch	3.81 mm
Number of positions	5

Technical data	
Insulation material group	I (CTI 600)
Rated surge voltage (III/3)	2.5 kV
Rated surge voltage (III/2)	2.5 kV
Rated surge voltage (II/2)	2.5 kV
Rated voltage (III/3)	125 V
Rated voltage (III/2)	160 V
Rated voltage (II/2)	320 V
Connection in accordance with standard	DIN EN 61984
Nominal current I_N	8 A
Nominal voltage U_N	125 V
Insulation material	PA
Flammability rating UL 94	V0

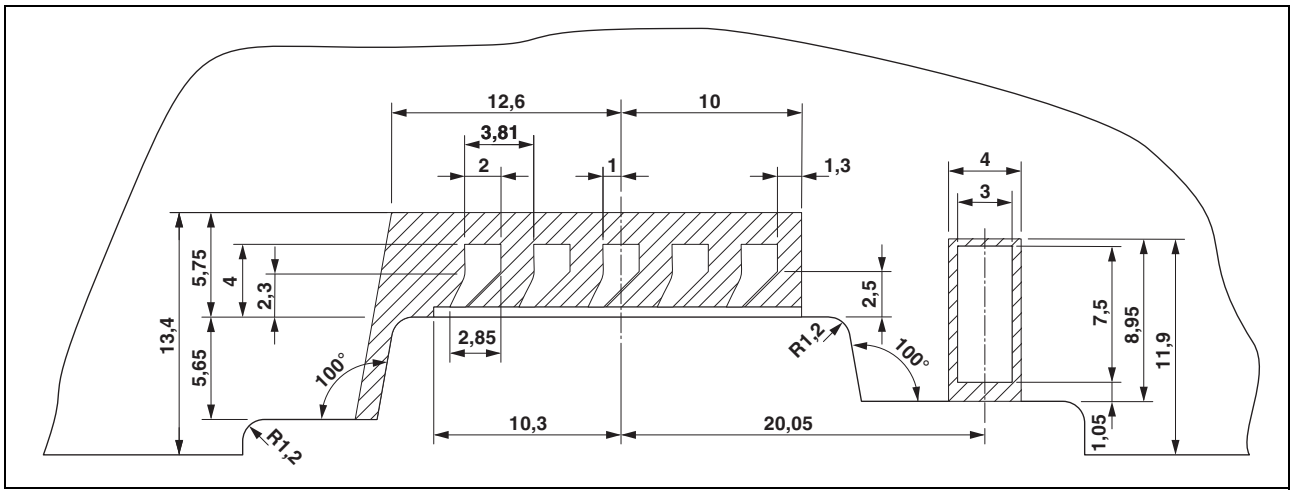


Figure 64 Detailed dimensional drawing of the contact pads of the 5-pos. DIN rail connector for the 9U housing with FE contact

8.5.2 DIN rail connector, 8-pos.

The 8-pos. DIN rail connector is compatible with the ME-IO with 10U housing range. It enables transmission of data or power supply from module to module. It is inserted in the DIN rail and replaces individual wiring.

The TBUS8 is available with parallel and serial contacts.

– P = Parallel contact (8, maximum)

  The same signal and voltage are applied to each parallel contact.

– S = Serial contact (2, maximum)

  A serial contact makes contact with the front of the PCB. The signal is routed across the PCB, and processed. On the rear of the PCB, the signal is connected to the mating contact. When you remove a housing, the voltage and signal flow is interrupted.

Contacts 1 to 8 are counted starting at the swiveling side. Counting starts on the side with the base latch. The serial contacts are at positions 7 and 8. If you swivel open the housing, the serial contacts are the last ones to be connected to the PCB.

You can combine the different TBUS8 versions. However, the versions are not coded against incorrect plugging of the differently contacted PCBs.

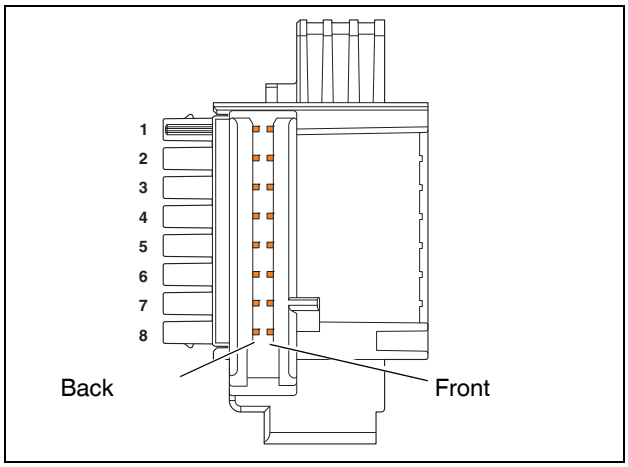


Figure 65 Position of the PCB

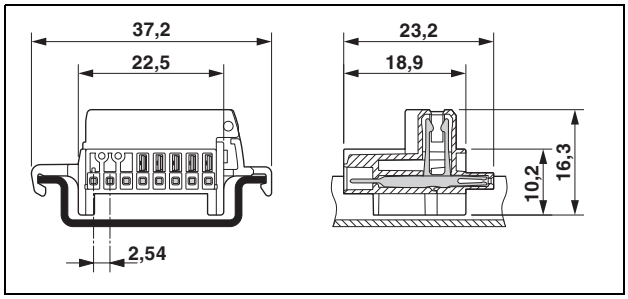


Figure 66 Dimensions of 8-pos. DIN rail connector

TBUS8-18,8-....

Dimensions/positions	
Pitch	2.54 mm
Number of positions	8

Technical data	
Insulation material group	I (CTI 600)
Rated surge voltage (III/2)	1.5 kV
Rated surge voltage (II/2)	1.5 kV
Rated voltage (III/3)	32 V
Rated voltage (III/2)	32 V
Connection in accordance with standard	DIN EN 61984
Nominal current I_N, parallel contacts	6 A
Nominal current I_N, serial contacts	4 A
Nominal voltage U_N, maximum	30 V
Insulation material	PA
Flammability rating UL 94	V0

Soldering pad geometry

For the geometry of the soldering pad, please refer to the download area for the relevant product at phoenixcontact.com.

– TBUS8-18,8-PPPPPPPP-7035 2202396
– TBUS8-18,8-PPPPPPPS-7035 2202399
– TBUS8-18,8-PPPPPPSS-7035 2202403

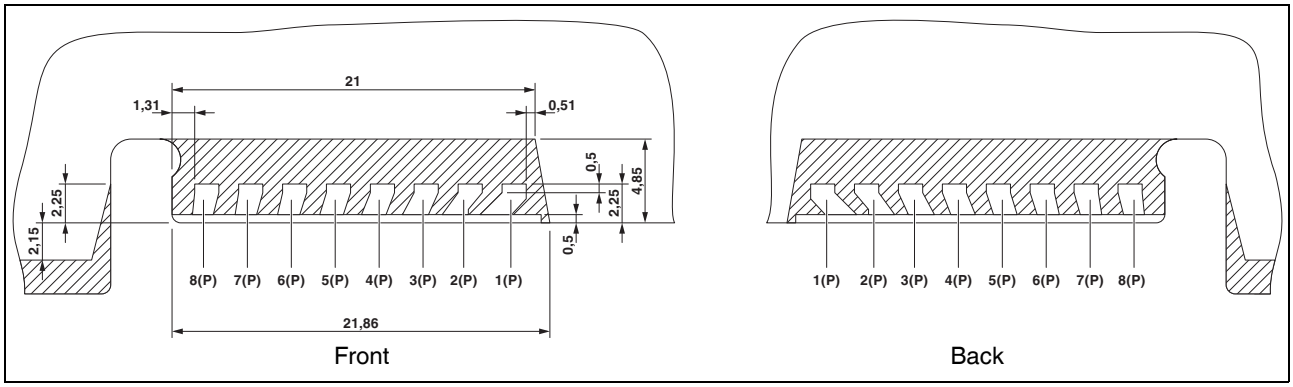


Figure 67 Detailed dimensional drawing of TBUS8-18,8-PPPPPPPP contact pads

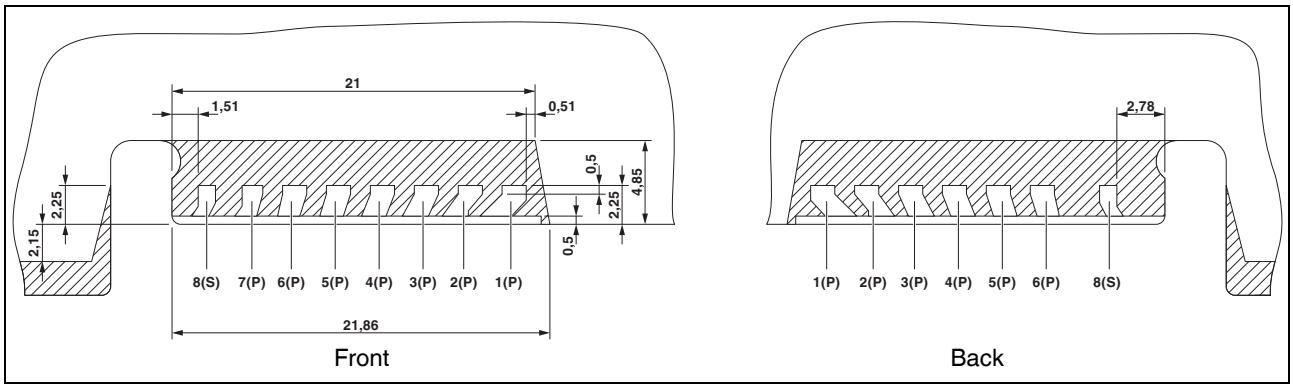


Figure 68 Detailed dimensional drawing of TBUS8-18,8-PPPPPPPS contact pads

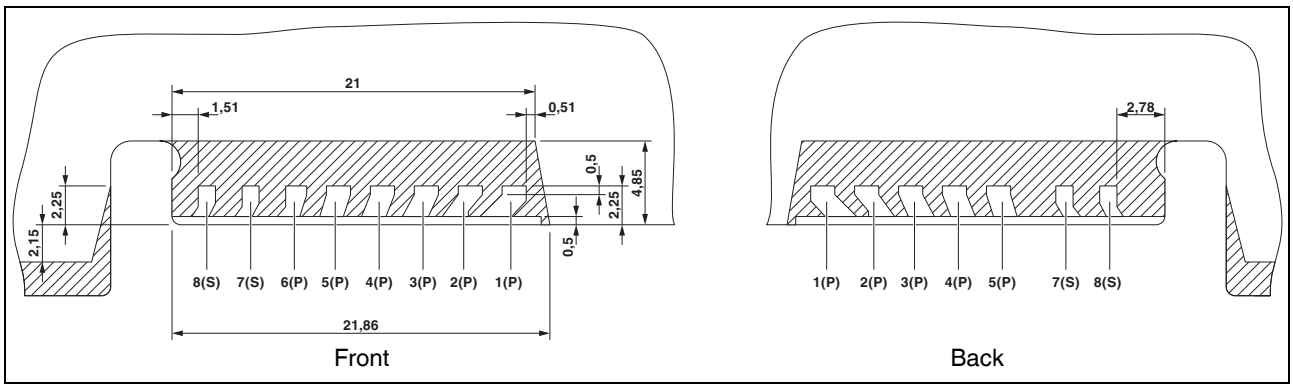


Figure 69 Detailed dimensional drawing of TBUS8-18,8-PPPPPPSS contact pads

9 Mounting the housing

9.1 Mounting the FE contact

If the lower housing part is delivered without FE contact, you have to mount the FE contact.

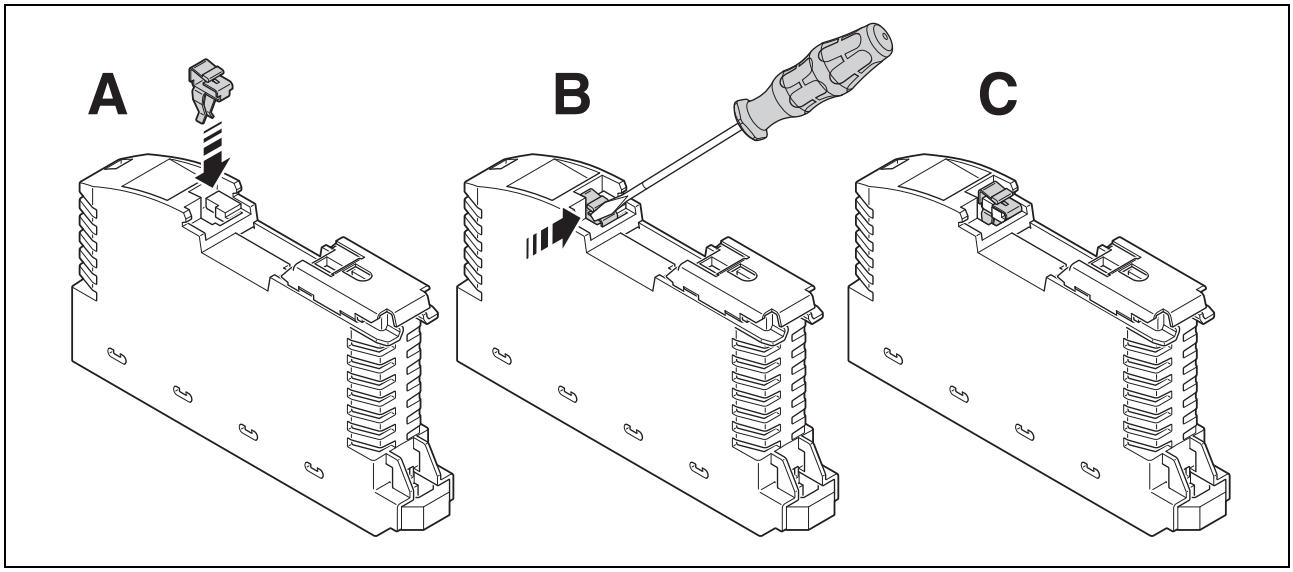


Figure 70 Mounting the FE contact (ME BUS FE CONTACT, 2278076)

- Place the FE contact at the intended location in the lower housing part.
- Using a screwdriver, push in the FE contact as far as possible.

9.2 Assembling the Lock and Release system

When the PCB is completely equipped, you have to assemble the Lock and Release system.

Pay attention to the positioning of the connectors and the header (see Page 10).

To do this, proceed as follows:

- Solder the header onto the PCB.

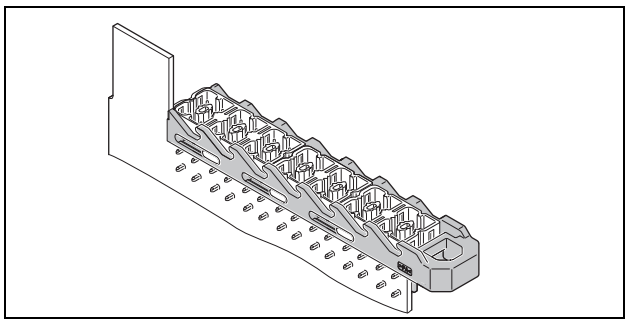


Figure 71 Inserting the Lock and Release system

- Place the orange Lock and Release system on the header. The recesses of the Lock and Release system have to fit over the protruding guide pins of the header. Press the Lock and Release system against the header.

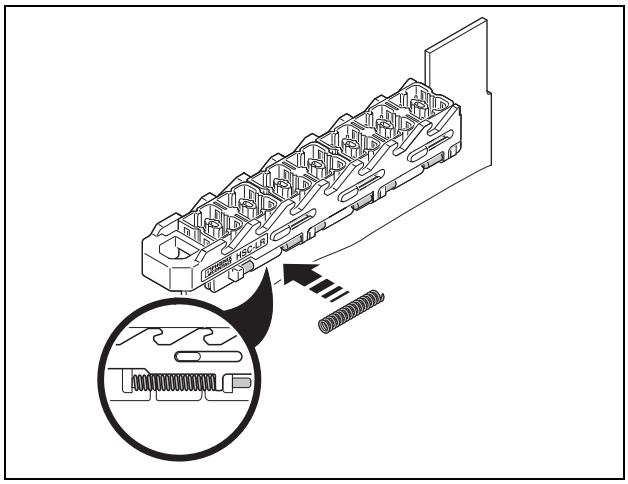


Figure 72 Attaching the spring

- Attach the spring, which is included in the scope of delivery. The spring is inserted at one of the possible positions.

9.3 Mounting the fastening clip

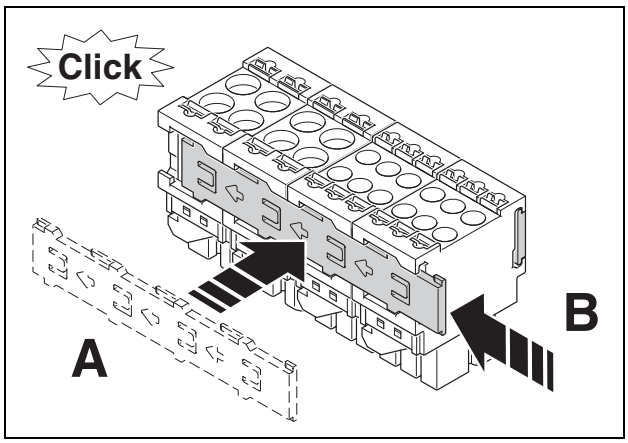


Figure 73 Mounting the fastening clip (Blockbelt)

You can combine connectors from 2U to 6U in a block. This way, you can create functional groups. The combined connectors are easier to mount or remove.

- Place the fastening clip on the connectors.
- Slide the fastening clip in the direction of the arrow.

9.4 Inserting the partition plate

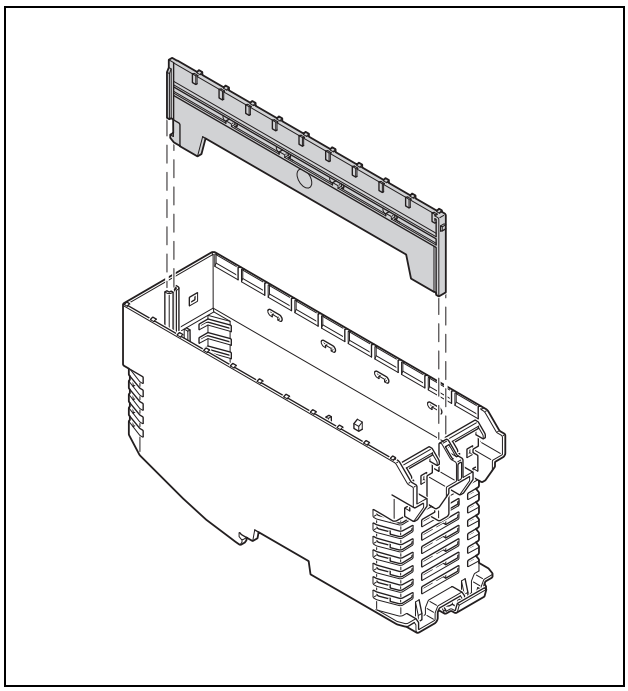


Figure 74 Inserting the partition plate

You can insert partition plates when the housings are wider. The partition plates are used to support the headers and housing covers. Otherwise a support is missing between two PCBs.

- Push the partition plate straight into the guide from above.

  The snap-in latch has to hook at the back in the ventilation grid.

9.5 Inserting the PCB

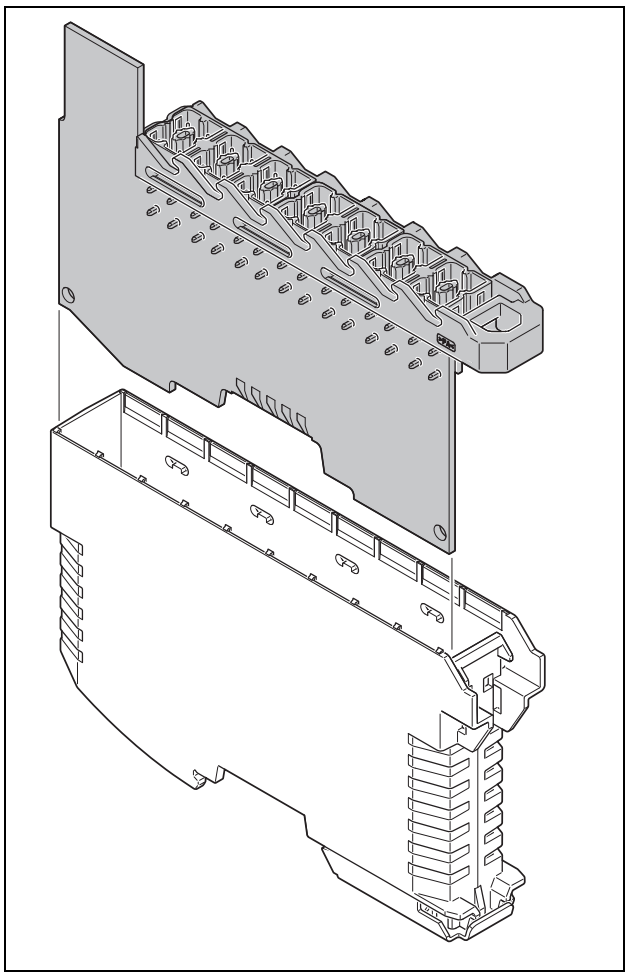


Figure 75 Inserting the PCB

- Insert the PCB into the guide slot of the housing.
- Push the PCB downward until it audibly snaps in.

9.6 Mounting the housing cover

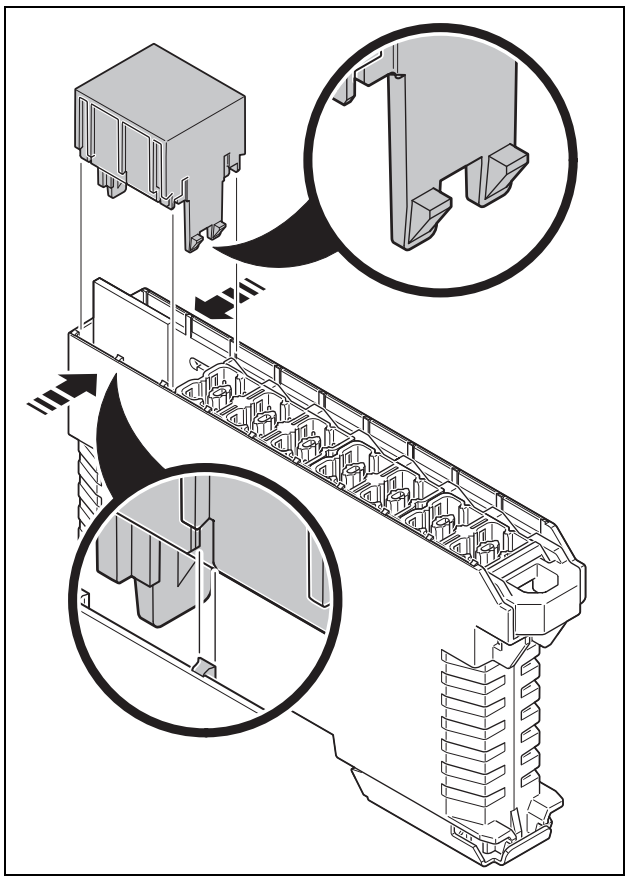


Figure 76 Mounting the housing cover

- Mount the housing covers if provided.
  The housing cover has two snap-in hooks on one side and only one on the other side. The side with the two snap-in hooks must be facing the base latch.
  Make sure that the concealed side guides are also snapped in. To do so, it helps if you lightly push the sides of the housing together.

Mounting wider housing covers

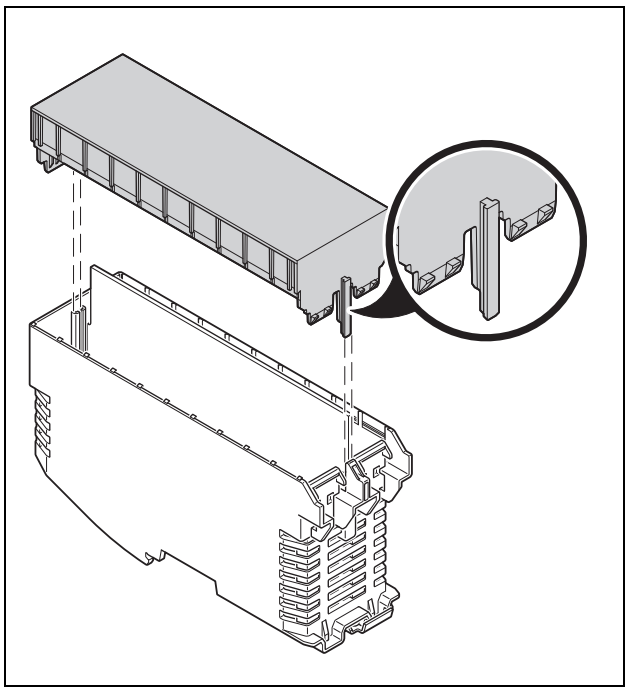


Figure 77 Mounting a wide housing cover

The wider housing covers have additional tabs.

- Push the tabs into the guides at front and back.

Mounting the covers for the L-type

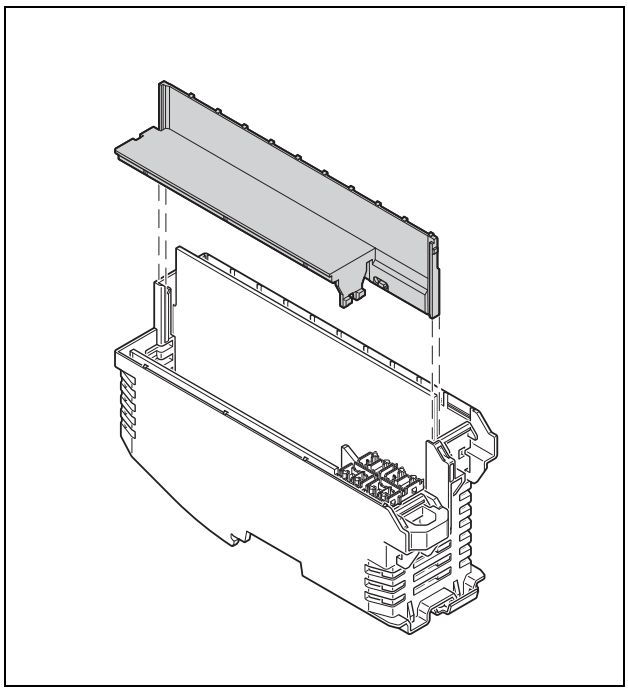


Figure 78 Mounting the housing cover for the L-type

For the L-type, there are special housing covers (ME-IO 18,8 LC...) which cover the open side panel of the step.

- Push the housing cover from above into the guide.

9.7 Mounting the connectors

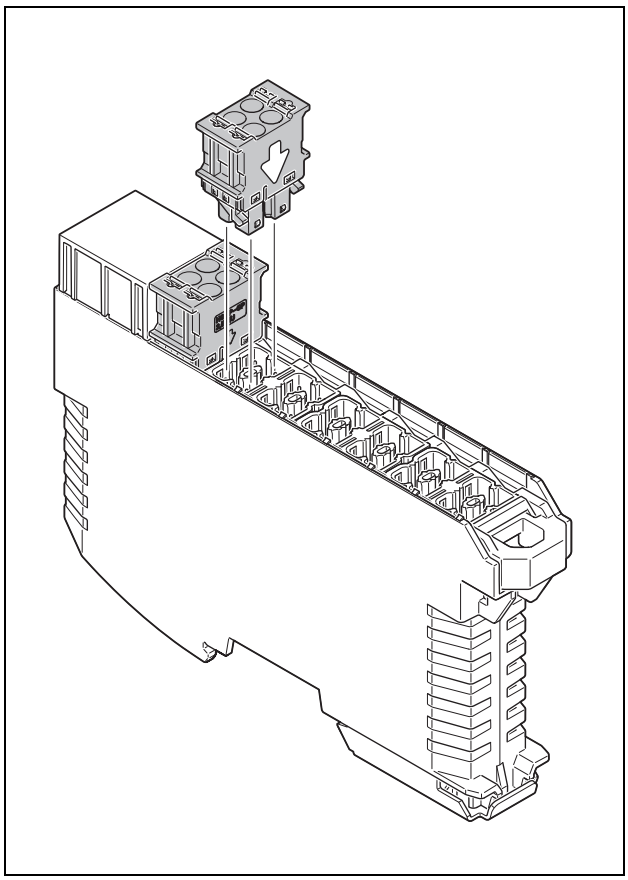


Figure 79 Inserting the connector

- Insert the connectors.
  The connectors only fit with certain headers. You can also code the connectors.
  Each connector has an engraved arrow that must be facing the base latch.

9.8 Releasing the connectors (Lock and Release)

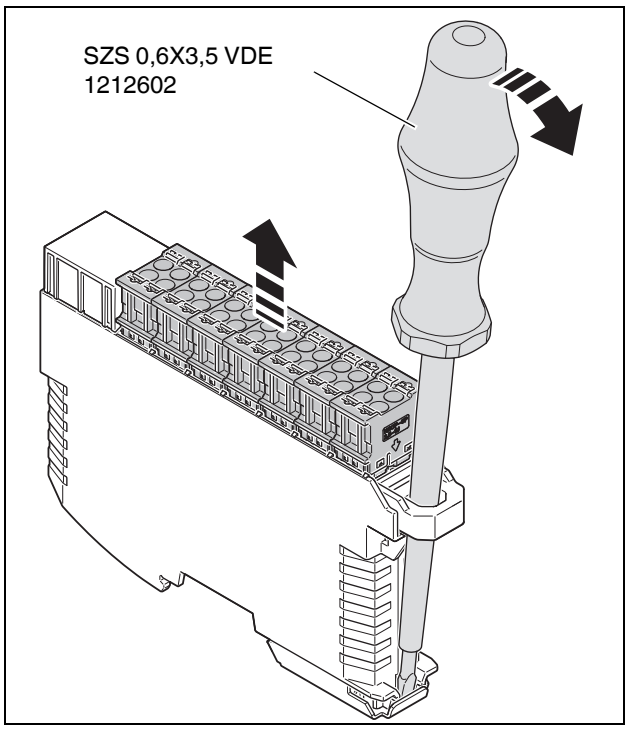


Figure 80 Releasing the connectors

WARNING: Electric shock
Make sure that the module is free of current.

- Insert a screwdriver through the opening of the Lock and Release system.
- Hook the tip of the screwdriver into the base latch.
- Pull the screwdriver forward to release the Lock and Release system.

  The connectors are lifted and the contact is released. However, the connectors do not fall out.

  The housing cover remains in its position.

9.9 Coding the connectors

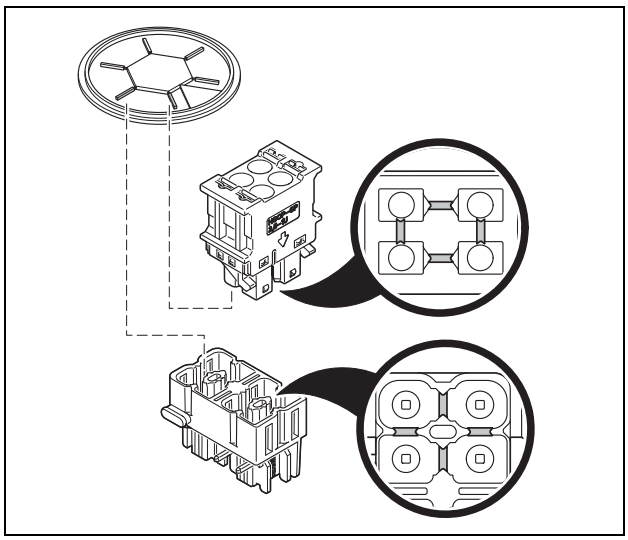


Figure 81 Coding the connector (5 mm pitch)

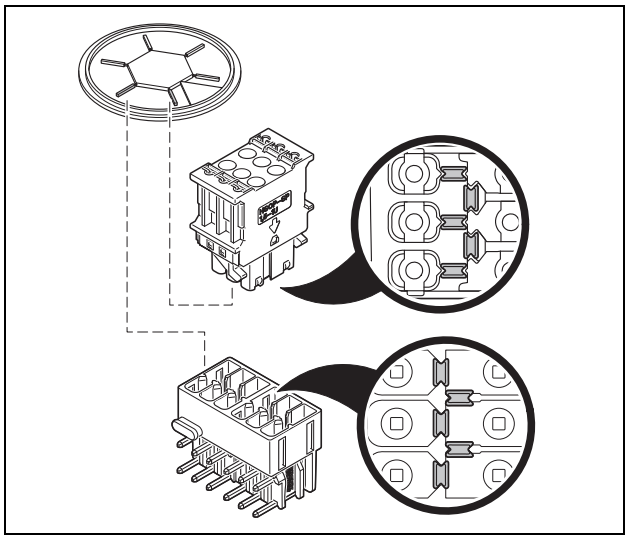


Figure 82 Coding the connector (3.45 mm pitch)

You can code the connectors and the headers in order to prevent them from being connected incorrectly.

Each connector has four or five possible positions for attaching coding plates.

Use coding profile CP-DMC 1,5-THR NAT, 1790647.

- Insert a coding plate at the correct position and twist it off the hexagonal holder.

9.10 Connecting conductors (Push-in connection)

Conductor cross section 1.5 mm² ... 2.5 mm², rigid or with ferrule

- Insert the stripped conductor into the round opening of the terminal block without using a tool.

Conductors with a smaller cross section or flexible conductors without ferrule

- Push in the pushbutton with a screwdriver to open the spring.

Removal

- Push in the pushbutton with a screwdriver to release.
- Pull out the conductor.

We recommend bladed screwdriver SZS 0,4X2,5 VDE, 1205037.

9.11 Mounting the filler plugs

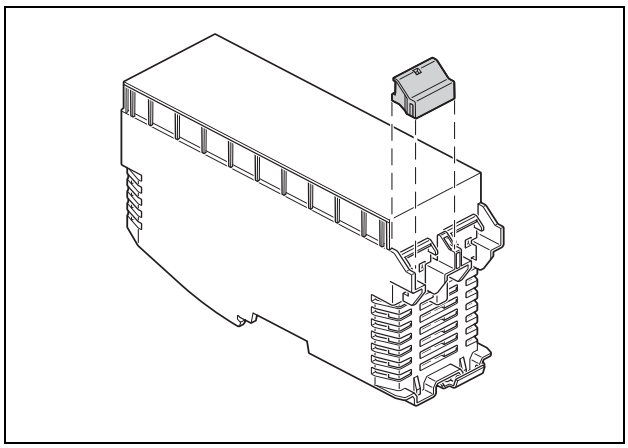


Figure 83 Mounting the filler plugs

If no Lock and Release system is used, you can close the space with a filler plug (ME-IO 18,8 F-LR, 2202635).

- Push the filler plug straight into the guide from above.

9.12 Mounting the marking lid

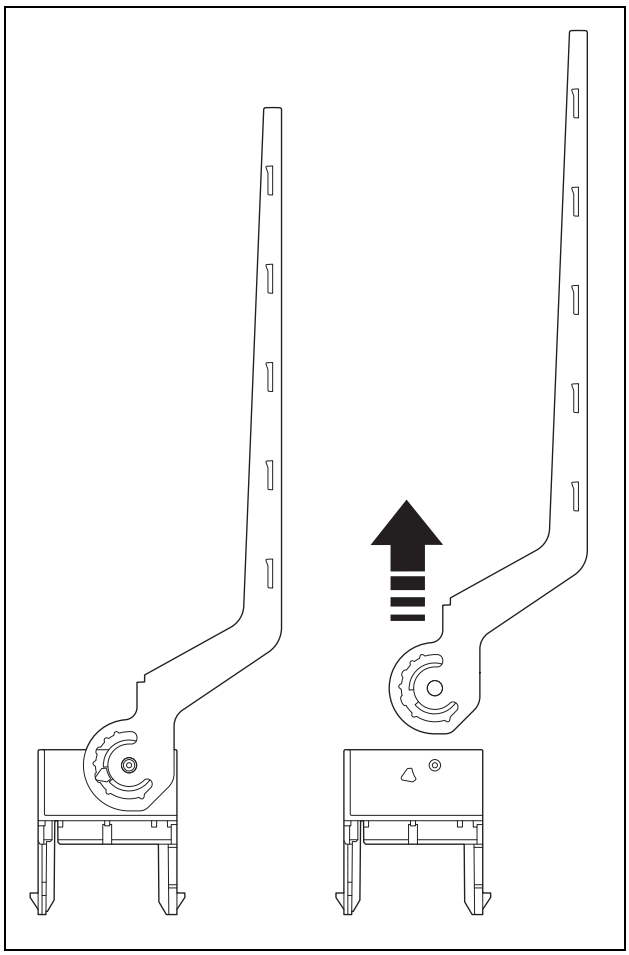


Figure 84 Mounting the marking lid

The marking lid is mounted on housing cover ME-IO 18,8 C 2U MC...

- Bring the marking lid into a 90° angle to the housing cover.
- Only in this position can you mount or remove the marking lid.

9.13 Mounting the base latch

All lower housing parts are delivered with a mounted base latch.

For lower housing parts with an overall width of 75.2, you can move the base latch, or mount a second base latch.

Ordering data of base latch: ME-IO 18,8 FOOT CATCH KIT, 2201812

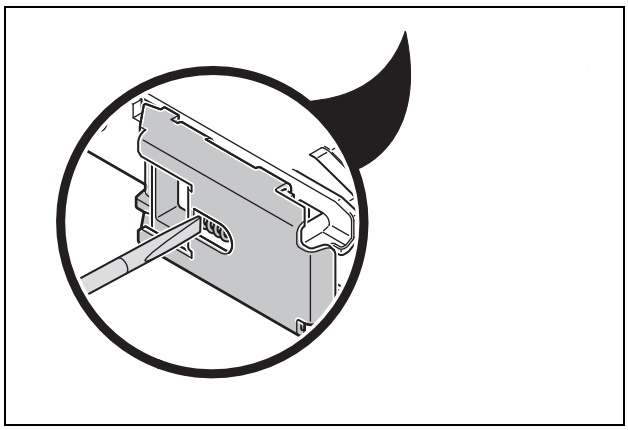


Figure 85 Mounting the base latch

- Place the base latch at the relevant position.
- Push the spring into the base latch using a screwdriver.

9.14 Mounting the housing on a DIN rail

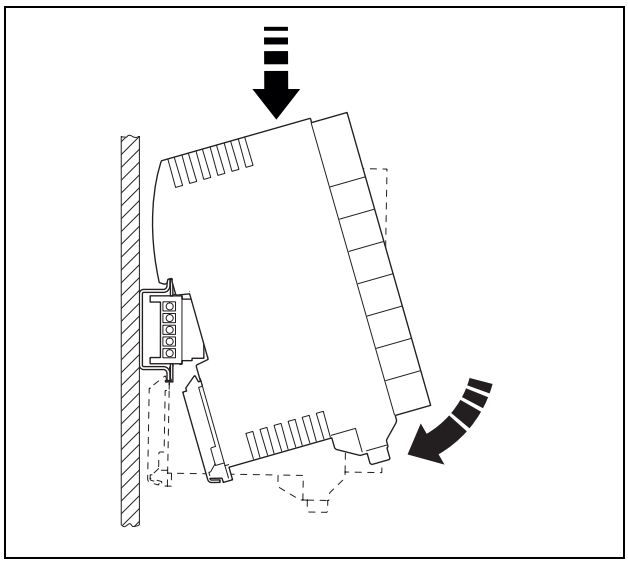


Figure 86 Snapping the housing onto the DIN rail

Mounting

- If you use a DIN rail connector, then lay it into the DIN rail. Make sure that the protruding connector side is facing to the left.
- Place the device onto a grounded 35 mm DIN rail from above. For this, hook the upper housing keyway onto the top edge of the DIN rail.
- Holding the device by the housing cover, carefully push it toward the mounting surface.
- Once the snap-on foot has audibly snapped onto the DIN rail, check that it is attached securely.

10 Removing the housing

10.1 Releasing the housing from the DIN rail

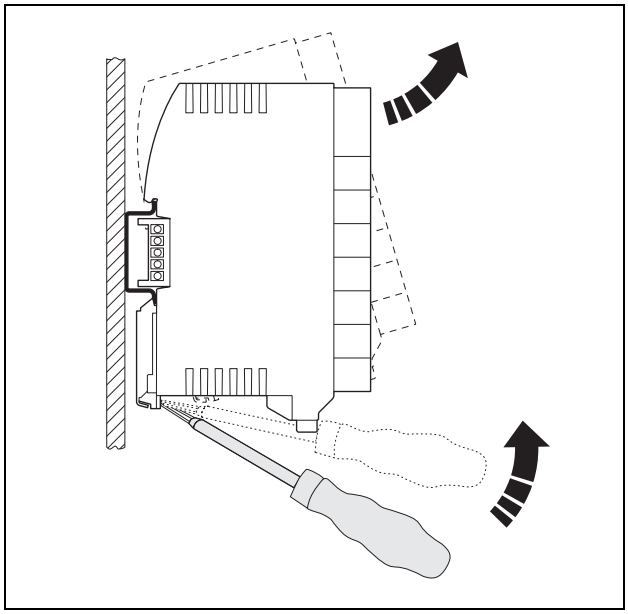


Figure 87 Releasing the housing from the DIN rail

- Release the connectors using the Lock and Release system (see Page 43).
- Make sure that the module is free of current.
- Lever the module off the DIN rail.

10.2 Removing the housing covers

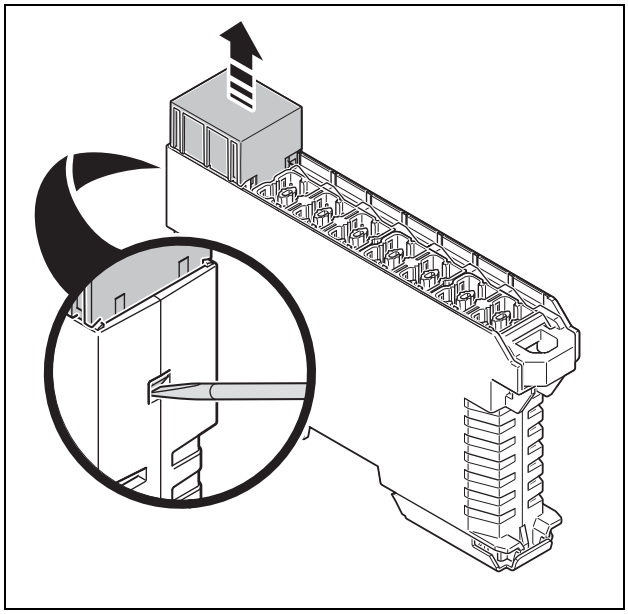


Figure 88 Removing the housing covers

Housing cover snapped into the lower housing part on one side

- Push in the snap-in hooks on the slim side of the housing using a screwdriver.

Housing cover is between headers

- A housing cover between the headers is removed together with the PCB.
  See “Removing the PCB” on page 48.

10.3 Removing the base latch

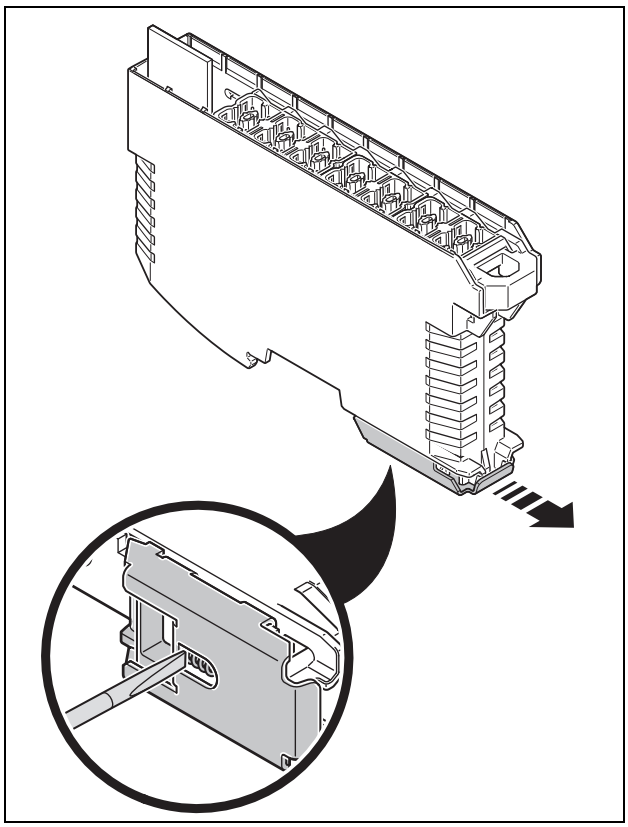


Figure 89 Removing the base latch

- To do so, you must first remove the spring, e.g., using a screwdriver.
- Then pull off the base latch.

10.4 Removing the PCB

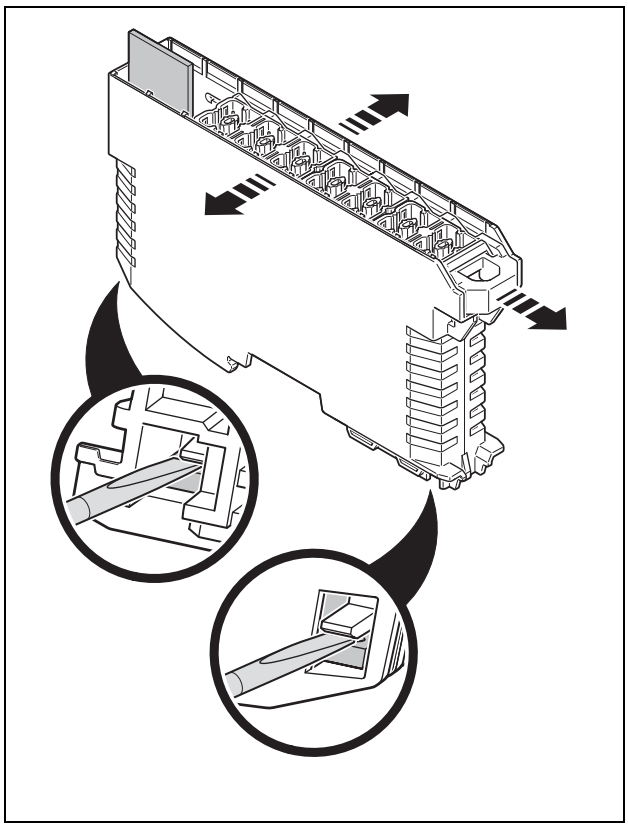


Figure 90 Removing the PCB

- On the bottom of the housing, there are two openings at the outermost ends. Release the latching there using a screwdriver. Keep both latchings open.
- To remove the PCB, you have to slightly bend the housing wall up while pulling the Lock and Release system forward at the same time.
- Pull the PCB out.

10.5 Taking off the Lock and Release system

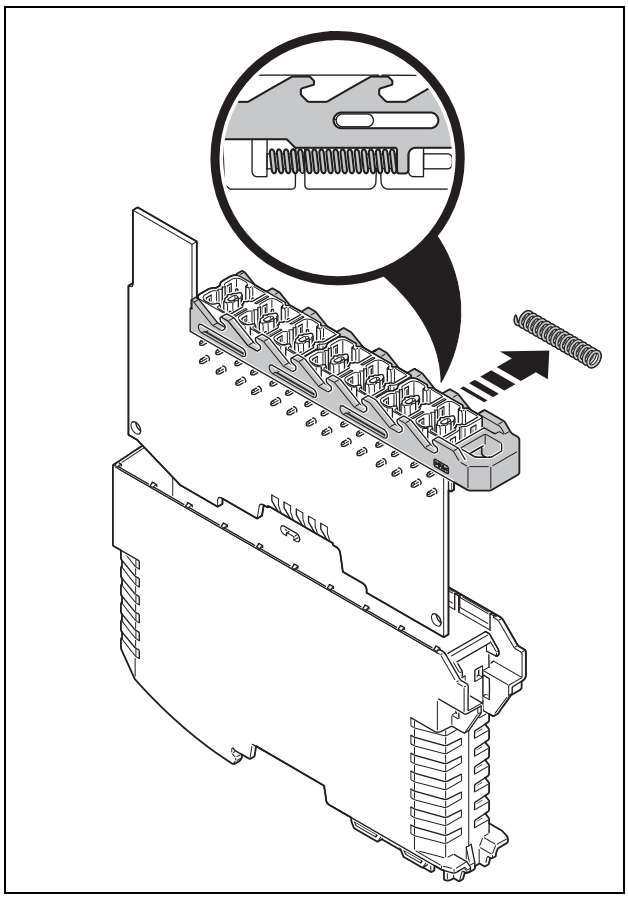


Figure 91 Taking off the Lock and Release system

- Remove the spring and take off the Lock and Release system.
- Push the Lock and Release system so that the guide pins of the header are positioned in the center of the recesses of the Lock and Release system.

11 Accessories and customization

11.1 Accessories

FE contact (functional ground contact)

Figure 92 ME BUS FE CONTACT, 2278076

When you snap the housing onto a DIN rail, you can establish a conductive connection between the PCB and the DIN rail.

HS-LC light guide

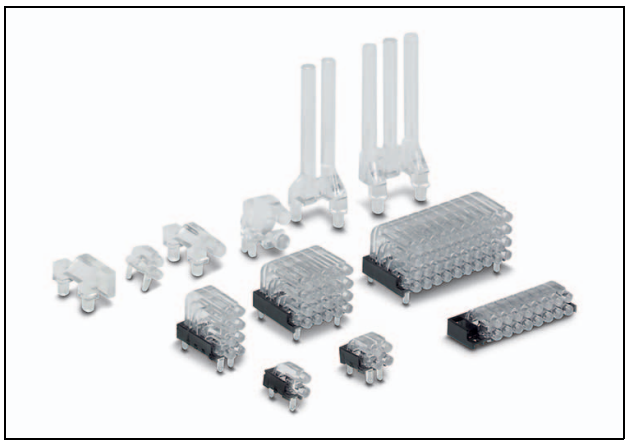


Figure 93 HS-LC... light guides

Light guides for visualization are available in a variety of designs. HS-LC... light guides are fixed to the PCB.

The complete list of accessories can be found at phoenixcontact.com, web code: #1638.

11.2 Housing customization

Customer-specific solutions are available in addition to the standard range.

- **Color versions**
- **Markings** using different printing technologies
  - Pad printing: ideal for single-color or two-color printing
  - Screen printing: for multi-color markings on larger surfaces
  - Laser marking: particularly suitable for content that changes on a regular basis, e.g., serial numbers
- **Mechanical processing** of the housing parts.

For additional information, please visit phoenixcontact.com, web code #0685.