ME

ME series electronics housings

Data sheet
107719_en_00

1 Description

ME series electronics housings consist of lower housing parts that can be combined with different upper housing parts. The housings are available in seven overall widths from 12.5 to 90 mm, with and without vents. The lower housing parts are available in three depths, allowing for total depths of 51.5 to 114.5 mm in combination with upper housing parts.

The upper housing parts are snapped onto the lower housing part. Different versions of upper housing parts are available for a range of connection technologies. Use screw or spring-cage PCB terminal blocks on up to two connection levels or plug-in terminal blocks on up to three connection levels.

The design ensures shock and contamination-proof accommodation of electronic components.

The housings are snapped onto an NS 35 DIN rail in accordance with EN 60715.

When combined with the DIN rail connector, you can change modules without interrupting the supply voltage.

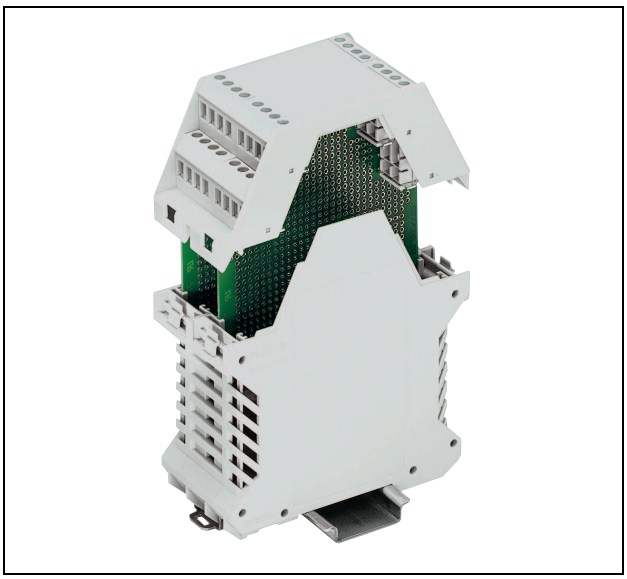

Figure 1 ME housing design

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 at phoenixcontact.net/products.

This document is valid for the products listed in the “Ordering data” section on Page 4 onwards.

Table of contents

2 Overview of ME products

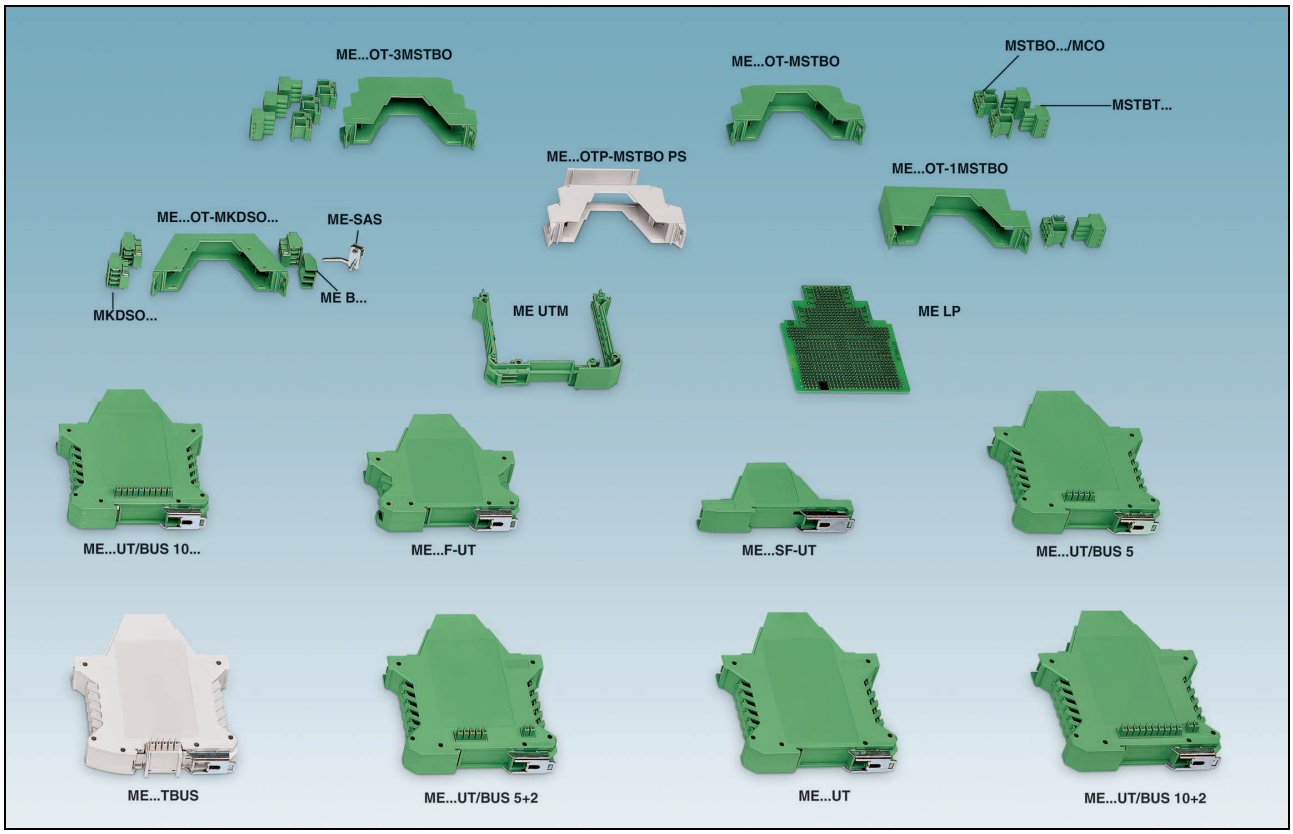

Figure 2 Overview

The complete product list for ME modular component housings can be found at phoenixcontact.com, web code: #0305.

3 Ordering data

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.

In addition to the configurator, a visual product overview to facilitate product selection is also available at phoenixcontact.com, web code: #0305. The overview shows you the single parts that can be ordered for your housing.

Order key

The designation of ME series electronics housings consists of the following components:

Upper part

ME	17,5	OT	-3	-MSTBO	KMGY
	Width 12.5 mm 17.5 mm 22.5 mm 35 mm 45 mm 67.5 mm 90 mm	**OT** = upper part **OTU** = upper part, universal, for PCB terminal block connection **OTP** = upper part, suitable for insertion plate and ejector for COMBICON connectors	Number of levels **-2** = 2 levels **-3** = 3 levels	Connection technology	Color similar to RAL… Color similar to RAL… **GN** = RAL 6021 **KMGY** = RAL 7035

Lower part

ME	17,5	F-	UT	/FE	BUS	5+2	KMGY
	Width 12.5 mm 17.5 mm 22.5 mm 35 mm 45 mm 67.5 mm 90 mm	Design **No abbreviation** = standard (depth: 114.5 mm) **F** = flat (depth: 106 mm) **SF** = super flat (depth: 92 mm)	**UT** = lower part **UTG** = lower part without vents **UTM** = middle part	**/FE** = FE contact integrated in the bottom of the housing	Bus connector **BUS** = integrated bus connector **TBUS** = DIN rail connector	Number of positions of cross connector **5** = 5 positions **10** = 10 positions **5+2** = 5 parallel and 2 serial contacts **10+2** = 10 parallel and 2 serial contacts	Color similar to RAL… **GN** = RAL 6021 **KMGY** = RAL 7035

4 Technical data

Housing design			
Insulation material	PA (polyamide)		
Flammability rating UL 94	V0		
Degree of protection in accordance with DIN EN 60259	IP20		
Power dissipation			
Maximum dissipated power in direct apposition	5.2 W ... 10.4 W		
Temperature range			
Ambient temperature			
Storage/transport	-40°C ... +55°C (80% relative humidity)		
Mounting	-5°C ... +100°C		
Operation	-40°C ... +100°C (depending on power dissipation)		
Dimensions			
Width	12.5 mm 17.5 mm 22.5 mm	35 mm 45 mm	67.5 mm 90 mm
Depth	92 mm (super flat) 106 mm (flat) 114.5 mm (standard)		
Height	99 mm		
PCBs			
PCB surface, maximum usable	2000 mm^2 ... 6600 mm^2		
PCB connection	5 positions ... 40 positions with 3.5 mm pitch 4 positions ... 32 positions with 5.0 mm pitch 3 positions ... 24 positions with 7.25 mm and 7.5 mm pitch		
Bus connectors			
5-pos. DIN rail connector:	ME 17,5 TBUS, ME 22,5 TBUS		
Current carrying capacity	5 x 8 A, 100 V DC, depending on derating		
5-pos. or 10-pos. integrated cross connectors	Part of ME ... BUS... housing		
Current carrying capacity	8 A, 125 V DC (per position), depending on derating		

For the technical data for the connection technology, please refer to “Selecting the connection technology” on page 12.

4.1 Calculating the power dissipation

Power dissipation values should be used as a guide only. They are largely dependent on the following factors:

– The PCB arrangement in the housing
– The position of components (as a source of heat)
– The number of assembled PCBs in the housing
– The mounting position of the housing

The maximum permissible power dissipation decreases as the ambient temperature increases. The listed reduction factor (K_l) must therefore be taken into account when calculating the permissible power dissipation.

	+20°C	+30°C	+40°C	+50°C	+60°C
K_l	1	0.91	0.81	0.7	0.57

Formula for calculating the power dissipation depending on the ambient temperature

$P_v t_u = P_t \times K_l$

P_v = power dissipation
t_u = ambient temperature
t = 20°C
K_l = reduction factor

Example: power dissipation at +50°C

P 50°C = P 20°C x K_l

P 50°C = 10.8 W x 0.7 = 7.56 W

5 Bus connectors

Bus connectors are passive plug-in components that connect several housing modules fitted with electronics.

The main priority is quick and reliable contacting of the modules. This enables communication to be established between the modules.

5.1 DIN rail connectors

Figure 3 ME...TBUS DIN rail connector

The ME...TBUS DIN rail connector is integrated into the DIN rail. The bus connector has 5 positions for energy supply and data transmission. It connects several electronics modules, which are mounted on the DIN rail. When you remove a device from the topology, the contact chain (in the case of parallel contacts) is not interrupted.

DIN rail connectors are available with five parallel contacts or four parallel contacts and one serial contact.

Several DIN rail connectors are required for housings wider than 35 mm. These can be freely combined.

The DIN rail connector can be snapped onto an NS 35/7,5 or NS 35/15 DIN rail.

It has five gold-plated contacts for transmitting up to 8 A and 100 V per position.

When combined with the DIN rail connector, you can change modules without interrupting the supply voltage.

5.2 Supplying signals to the DIN rail connector

The E/ME TBUS NS35 GY end bracket (2713780) is available for supplying signals to the DIN rail connector.

Figure 4 Signal supply with strain relief

The signals are supplied via MINI COMBICON connectors (MC 1,5…AU or IMC 1,5…AU). Strain relief can be integrated in the end bracket.

5.3 Integrated cross connectors

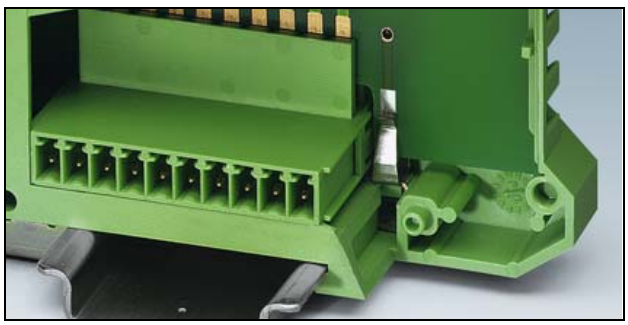

Figure 5 Integrated cross connectors

The integrated cross connector is part of the bottom of the housing. The conductive path contact points on the PCB make direct contact with the gold-plated contact forks of the cross connector when the module electronics are inserted.

Integrated cross connectors are available with five or ten parallel contacts. Variants are also available where you can additionally connect two serial contacts.

Some housing variants with integrated cross connector (ME...UT/FE...BUS) also have an FE contact integrated in the bottom of the housing. The FE contact connects the inserted PCB directly to the grounded DIN rail.

6 Housing dimensions

Depth and height with single-level or double-level upper part

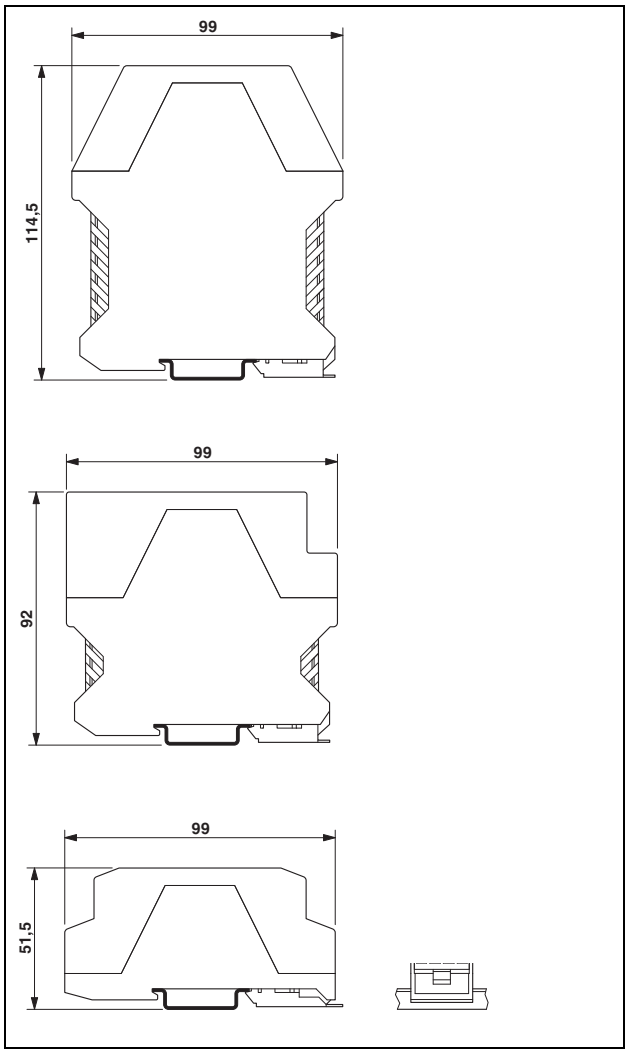

Figure 6 Height and depth with single-level and double-level upper part (examples)

Depth and height with triple-level upper part

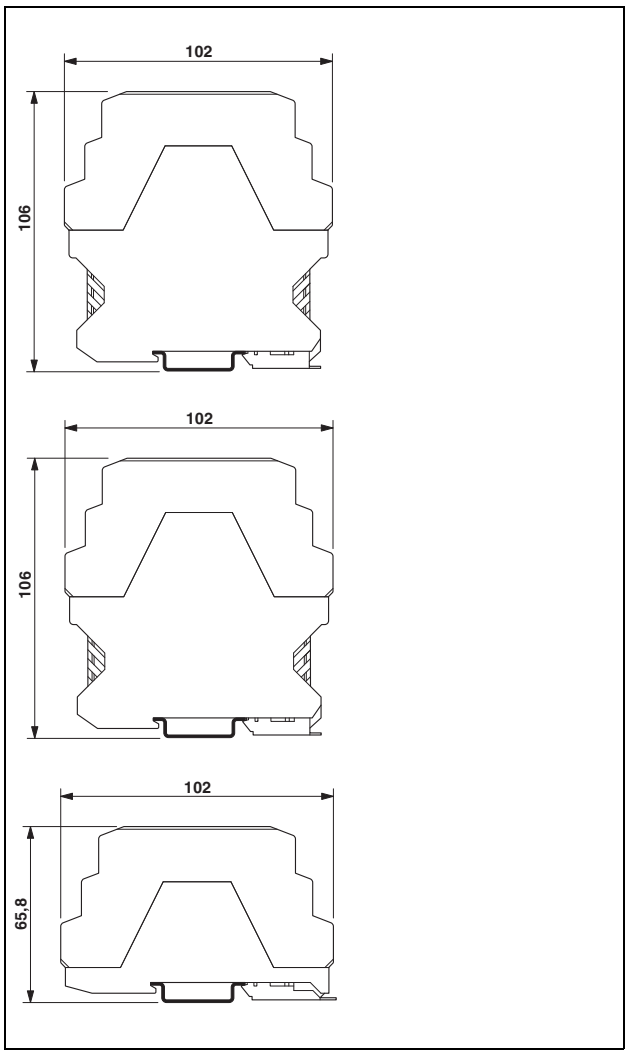

Figure 7 Height and depth with triple-level upper part (examples)

The dimensions are available in the download area for the relevant product.

6.1 Width

Lower housing part without integrated cross connector

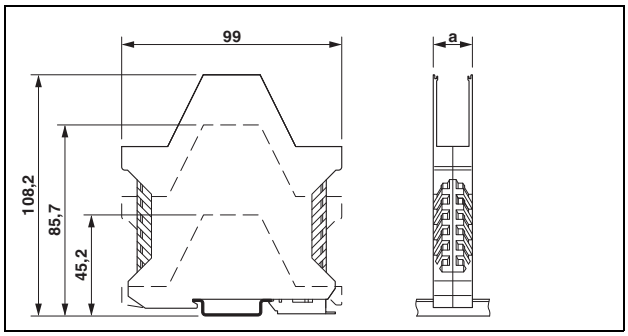

Figure 8 Lower housing part without integrated cross connector (example)

Lower housing part with integrated cross connector

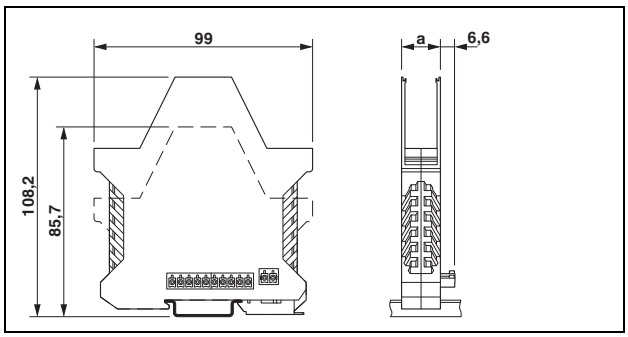

Figure 9 Lower housing part with integrated cross connector (example)

Seven overall widths:

a
12.5 mm
17.5 mm
22.5 mm
35 mm
45 mm
67.5 mm
90 mm

The dimensions are available in the download area for the relevant product.

6.2 Inner dimensions

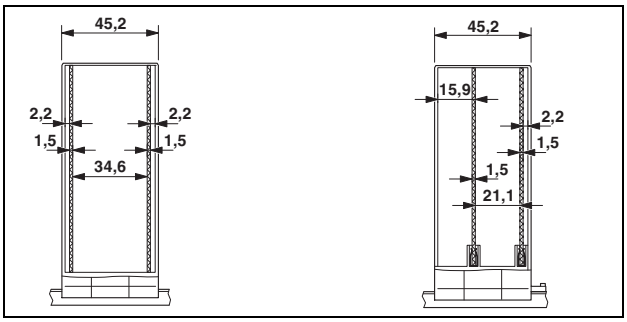

Figure 10 Example illustration, 45 mm overall width

The dimensions are available in the download area for the relevant product.

6.3 Increasing the housing width

You can increase housing widths with 17.5 mm or 22.5 mm pitch as required by aligning intermediate elements.

– With vents (UTM) or without vents (UTMG) in gray or green (GN)
  ME 35 UTM, 2908265
  ME 45 UTM GN, 2853404
  ME 35 UTMG, 2908275
  ME 45 UTMG GN, 2853417

When intermediate elements are used, the ME MF 17,5 base latch (290828) is required to ensure secure latching on the DIN rail.

6.4 Dimensions of upper housing parts

Connectors with header

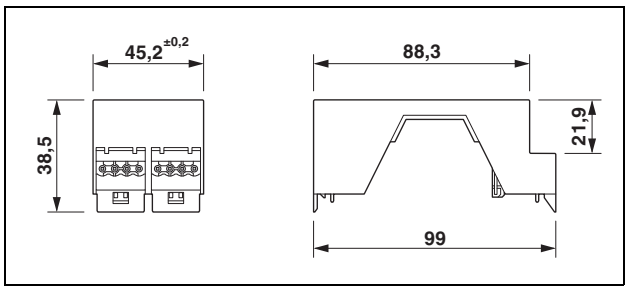

Figure 11 ME 45 OT-1MSTBO... (single-level)

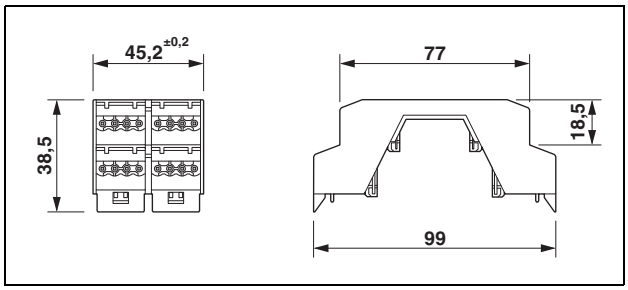

Figure 12 ME 45 OT-MSTBO... (double-level)

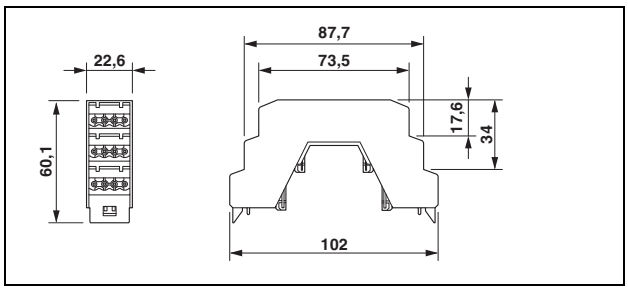

Figure 13 ME 22,5 OT-3MSTBO... (triple-level)

PCB terminal blocks

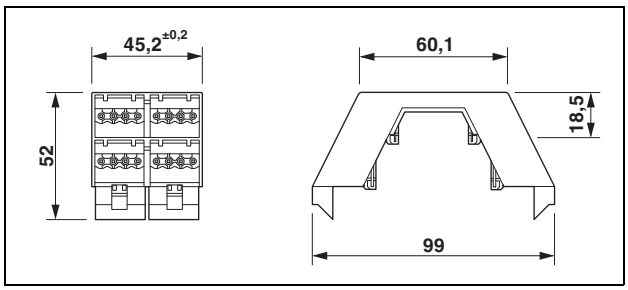

Figure 14 ME 45 OT-MKDSO... (screw connection)

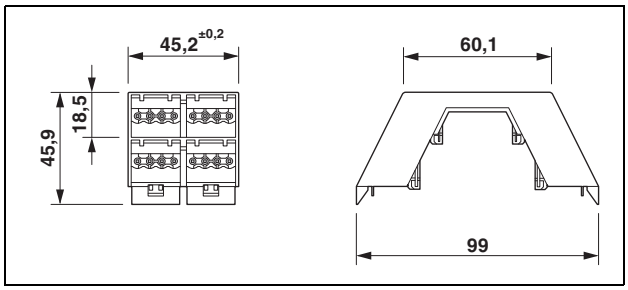

Figure 15 ME 45 OT-FDKSO... (spring connection)

The dimensions are available in the download area for the relevant product.

7 PCB dimensions

You can configure your housing in the configurator at phoenixcontact.com, web code: #0512. You will receive 3D data, order lists, and PCB layouts.

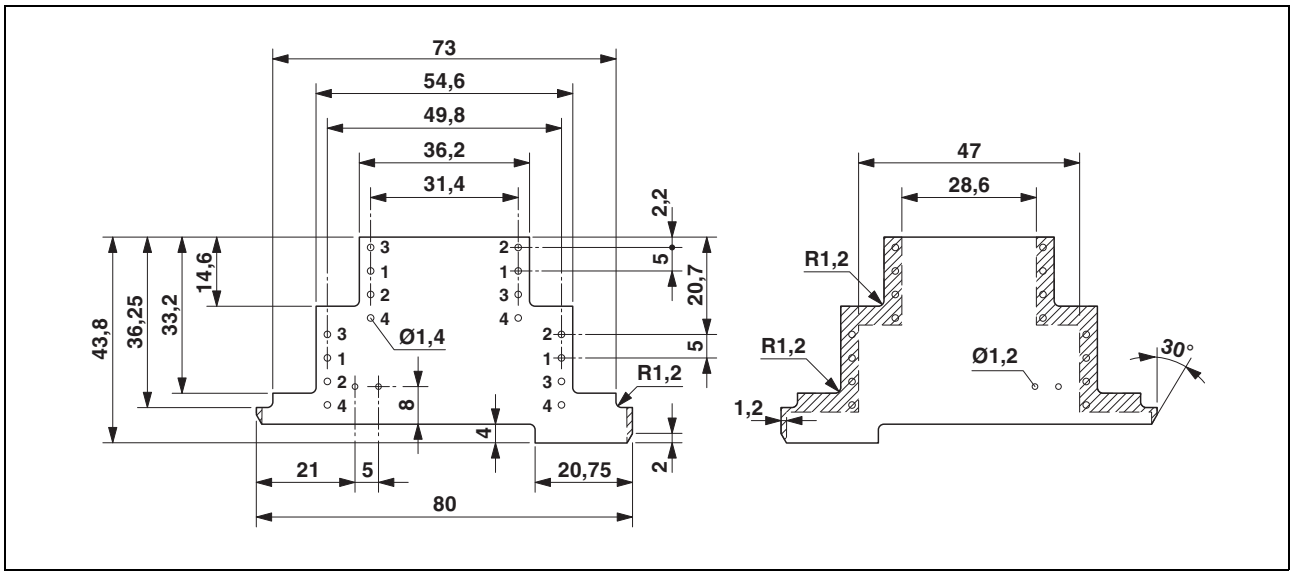

Figure 16 Example illustration of ME ... OT-MSTBO (double-level upper part)

DIN rail connector

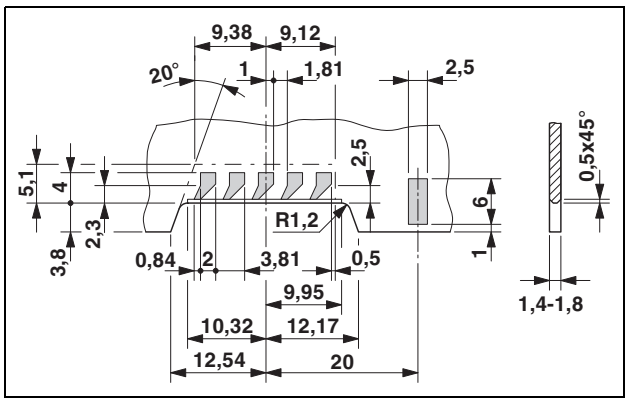

Figure 17 Example illustration of DIN rail connector

8 Selecting the connection technology

Upper housing part	Header with connector						
	3.5 mm pitch			Suitable connectors			
	Left		Right				
	Header, wave soldering, see Page 17			Screw connection, see Page 22	Push-in connection, see Page 25	Push-in connection, see Page 25	
ME 22,5 OT-1MSTBO	1x	MCO 1,5/ 5-G1L-3,5	MCO 1,5/ 5-G1R-3,5	MC 1,5/ 5-ST-3,5	FMC 1,5/ 5-ST-3,5	FK-MCP 1,5/ 5-ST-3,5	
ME 45 OT-1MSTBO	2x						
ME 67,5 OT-1MSTBO	3x						
ME 90 OT-1MSTBO	4x						
ME 12,5 OT-MSTBO	4x	MCO 1,5/ 3-G1L-3,5	MCO 1,5/ 3-G1R-3,5	MC 1,5/ 3-ST-3,5	–	–	
ME 17,5 OT-MSTBO	4x	MCO 1,5/ 4-G1L-3,5	MCO 1,5/ 4-G1R-3,5	MC 1,5/ 4-ST-3,5	FMC 1,5/ 4-ST-3,5	FK-MCP 1,5/ 4-ST-3,5	
ME 22,5 OT-MSTBO	4x	MCO 1,5/ 5-G1L-3,5	MCO 1,5/ 5-G1R-3,5	MC 1,5/ 5-ST-3,5	FMC 1,5/ 5-ST-3,5	FK-MCP 1,5/ 5-ST-3,5	
ME 35 OT-MSTBO	8x	MCO 1,5/ 4-G1L-3,5	MCO 1,5/ 4-G1R-3,5	MC 1,5/ 4-ST-3,5	FMC 1,5/ 4-ST-3,5	FK-MCP 1,5/ 4-ST-3,5	
ME 45 OT-MSTBO	8x	MCO 1,5/ 5-G1L-3,5	MCO 1,5/ 5-G1R-3,5	MC 1,5/ 5-ST-3,5	FMC 1,5/ 5-ST-3,5	FK-MCP 1,5/ 5-ST-3,5	
ME 22,5 OT-3MSTBO	6x	MCO 1,5/ 5-G1L-3,5	MCO 1,5/ 5-G1R-3,5	MC 1,5/ 5-ST-3,5	FMC 1,5/ 5-ST-3,5	FK-MCP 1,5/ 5-ST-3,5	

Upper housing part	Header with connector				
	5 mm pitch			Suitable connectors	
	Left		Right		
	Header Wave soldering: MSTBO 2,5/ ...-G1 (see Page 18) or MSTBO 2,5/ ...-G1P (see Page 19) Reflow soldering (THR): MSTBO 2,5/ ... G1L THR (see Page 20)			Screw connection, see Page 25	Push-in connection, see Page 25
ME 22,5 OT-1MSTBO	1x	MSTBO 2,5/ 4-G1...L ...	MSTBO 2,5/ 4-G1...R ...	MSTBT 2,5 HC/ 4-STP	PSPT 2,5/ 4-ST
ME 45 OT-1MSTBO	2x				
ME 67,5 OT-1MSTBO	3x				
ME 90 OT-1MSTBO	4x				
ME 12,5 OT-MSTBO	4x	MSTBO 2,5/ 2-G1...L ...	MSTBO 2,5/ 2-G1...R ...	MSTBT 2,5 HC/ 2-STP	PSPT 2,5/ 2-ST
ME 17,5 OT-MSTBO	4x	MSTBO 2,5/ 3 G1...L ...	MSTBO 2,5/ 3 G1...R ...	MSTBT 2,5 HC/ 3-STP	PSPT 2,5/ 3-ST
ME 22,5 OT-MSTBO	4x	MSTBO 2,5/ 4-G1...L ...	MSTBO 2,5/ 4-G1...R ...	MSTBT 2,5 HC/ 4-STP	PSPT 2,5/ 4-ST
ME 35 OT-MSTBO	8x	MSTBO 2,5/ 3 G1...L ...	MSTBO 2,5/ 3 G1...R ...	MSTBT 2,5 HC/ 3-STP	PSPT 2,5/ 3-ST
ME 45 OT-MSTBO	8x	MSTBO 2,5/ 4-G1...L ...	MSTBO 2,5/ 4-G1...R ...	MSTBT 2,5 HC/ 4-STP	PSPT 2,5/ 4-ST
ME 22,5 OT-3MSTBO	6x	MSTBO 2,5/ 4-G1...L ...	MSTBO 2,5/ 4-G1...R ...	MSTBT 2,5 HC/ 4-STP	PSPT 2,5/ 4-ST

Upper housing part	Header with connector			
	7.25 mm pitch			Suitable connectors
	Left		Right	
	Header Reflow soldering (THR): GMSTBO 2,5 HV/…-G…THR (see Page 21)			Screw connection, see Page 25
ME 22,5 OT-1MSTBO	1x			
ME 45 OT-1MSTBO	2x			
ME 67,5 OT-1MSTBO	3x			
ME 90 OT-1MSTBO	4x	GMSTBO 2,5 HV/3-GL-7,25 THR	GMSTBO 2,5 HV/3-GR-7,25 THR	GMSTBT 2,5 HV/3-ST-7,25 GY7035
ME 17,5 OT-MSTBO	4x	GMSTBO 2,5 HV/2-GL-7,25 THR	GMSTBO 2,5 HV/2-GR-7,25 THR	GMSTBT 2,5 HV/2-ST-7,25 GY7035
ME 22,5 OT-MSTBO	4x	GMSTBO 2,5 HV/3-GL-7,25 THR	GMSTBO 2,5 HV/3-GR-7,25 THR	GMSTBT 2,5 HV/3-ST-7,25 GY7035
ME 35 OT-MSTBO	8x	GMSTBO 2,5 HV/2-GL-7,25 THR	GMSTBO 2,5 HV/2-GR-7,25 THR	GMSTBT 2,5 HV/2-ST-7,25 GY7035
ME 45 OT-MSTBO	8x			
ME 22,5 OT-3MSTBO	6x	GMSTBO 2,5 HV/3-GL-7,25 THR	GMSTBO 2,5 HV/3-GR-7,25 THR	GMSTBT 2,5 HV/3-ST-7,25 GY7035

Upper housing part	PCB terminal block							
	3.5 mm pitch				5 mm pitch			
	Left		Right		Left		Right	
	PCB terminal block with screw connection, see Page 14				PCB terminal block with screw connection, see Page 15			
ME 12,5 OTU-MKDSO	2x	MKDSO 1,5/ 3-L-3,5	2x	MKDSO 1,5/ 3-R-3,5	2x	MKDSO 2,5/ 2-L	2x	MKDSO 2,5/ 2-R
ME 17,5 OTU-MKDSO	2x	MKDSO 1,5/ 4-L-3,5	2x	MKDSO 1,5/ 4-R-3,5	2x	MKDSO 2,5/ 3-L	2x	MKDSO 2,5/ 3-R
ME 22,5 OTU-MKDSO	2x	MKDSO 1,5/ 5-L-3,5	2x	MKDSO 1,5/ 5-R-3,5	2x	MKDSO 2,5/ 4-L	2x	MKDSO 2,5/ 4-R
ME 45 OTU-MKDSO	4x	MKDSO 1,5/ 5-L-3,5	4x	MKDSO 1,5/ 5-R-3,5	4x	MKDSO 2,5/ 4-L	4x	MKDSO 2,5/ 4-R
					PCB terminal block with spring connection, see Page 16			
ME 12,5 OT-FKDSO		–		–	2x	FKDSO 2,5/ 2-L	2x	FKDSO 2,5/ 2-R
ME 17,5 OT-FKDSO		–		–	2x	FKDSO 2,5/ 3-L	2x	FKDSO 2,5/ 3-R
ME 22,5 OT-FKDSO		–		–	2x	FKDSO 2,5/ 4-L	2x	FKDSO 2,5/ 4-R
ME 45 OT-FKDSO		–		–	4x	FKDSO 2,5/ 4-L	4x	FKDSO 2,5/4-R

9 Connection technology – Technical data

9.1 PCB terminal blocks

9.1.1 PCB terminal blocks, soldered, 3.5 mm pitch

Mounting: soldering

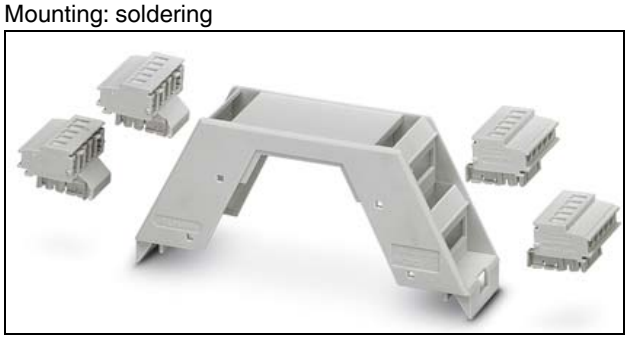

Figure 18 MKDSO PCB terminal blocks

The latest data and drawings for the product can be found at phoenixcontact.com.

MKDSO 1,5/...3,5

Dimensions	
Pitch	3.5 mm
Pin dimensions	0.8 x 0.8
Hole diameter	1.2 mm

Product		Dimension a	No. of pos.
MKDSO 1,5/ 5-L-3,5 KMGY	2278393	14.00	5
MKDSO 1,5/ 5-R-3,5 KMGY	2278416	14.00	5
MKDSO 1,5/ 4-R-3,5 KMGY	2278429	10.50	4
MKDSO 1,5/ 4-L-3,5 KMGY	2278432	10.50	4
MKDSO 1,5/ 3-L-3,5 KMGY	2278445	7.00	3
MKDSO 1,5/ 3-R-3,5 KMGY	2278458	7.00	3

Technical data	
Insulation material group	PA / I
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)	160 V
Rated voltage (III/2)	160 V
Rated voltage (II/2)	320 V
Connection in acc. with standard	EN-VDE
Nominal current I_N	24 A
Nominal cross section	1.5 mm²
Rated current, with 1.5 mm² conductor cross section	8 A
Insulation material	PA
Flammability rating UL 94	V0
Internal cylindrical gauge	A1
Stripping length	7 mm
Screw thread	M2
Tightening torque	0.22 Nm ... 0.25 Nm

Conductor cross section	
Conductor cross section rigid	0.14 mm² ... 1.5 mm²
Conductor cross section flexible	0.14 mm² ... 1.5 mm²
Conductor cross section flexible with ferrule without plastic sleeve	0.25 mm² ... 1.5 mm²
Conductor cross section flexible with ferrule with plastic sleeve	0.25 mm² ... 0.5 mm²
Conductor cross section AWG	28 ... 16
2 conductors with the same cross section rigid	0.08 mm² ... 0.5 mm²
2 conductors with the same cross section flexible	0.08 mm² ... 0.75 mm²
2 conductors with the same cross section flexible with ferrule without plastic sleeve	0.25 mm² ... 0.34 mm²
2 conductors with the same cross section flexible with TWIN ferrule and plastic sleeve	0.5 mm² ... 0.5 mm²

9.1.2 PCB terminal blocks, soldered, 5 mm pitch, screw connection

Mounting: soldering

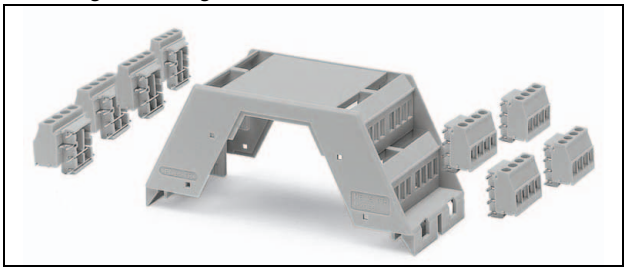

Figure 19 MKDSO PCB terminal blocks

The latest data and drawings for the product can be found at phoenixcontact.com.

MKDSO 2,5

Dimensions	
Pitch	5 mm
Pin dimensions	0.8 x 1.0
Hole diameter	1.4 mm

Product		Dimension a	No. of pos.
MKDSO 2,5/ 2-L	2915261	5	2
MKDSO 2,5/ 2-R	2915258	5	2
MKDSO 2,5/ 3-R	2854102	10	3
MKDSO 2,5/ 3-L	2854092	10	3
MKDSO 2,5/ 4-L	2908485	15	4
MKDSO 2,5/ 4-R	2908472	15	4

Technical data	
Insulation material group	PA / I
Rated surge voltage (III/3)	4 kV
Rated surge voltage (III/2)	4 kV
Rated surge voltage (II/2)	4 kV
Rated voltage (III/3)	250 V
Rated voltage (III/2)	320 V
Rated voltage (II/2)	630 V
Connection in acc. with standard	EN-VDE
Nominal current I_N	24 A
Nominal cross section	2.5 mm²
Insulation material	PA
Flammability rating UL 94	V0
Internal cylindrical gauge	A2
Stripping length	8 mm
Screw thread	M3
Tightening torque, min.	0.5 Nm ... 0.6 Nm

Conductor cross section	
Conductor cross section rigid	0.14 mm² ... 2.5 mm²
Conductor cross section flexible	0.14 mm² ... 2.5 mm²
Conductor cross section AWG	26 ... 14
2 conductors with the same cross section rigid	0.14 mm² ... 0.75 mm²
2 conductors with the same cross section flexible	0.14 mm² ... 0.75 mm²
2 conductors with the same cross section flexible with ferrule without plastic sleeve	0.25 mm² ... 0.75 mm²
2 conductors with the same cross section flexible with TWIN ferrule and plastic sleeve	0.5 mm² ... 1.5 mm²

9.1.3 PCB terminal blocks, soldered, 5 mm pitch, spring connection

Mounting: soldering

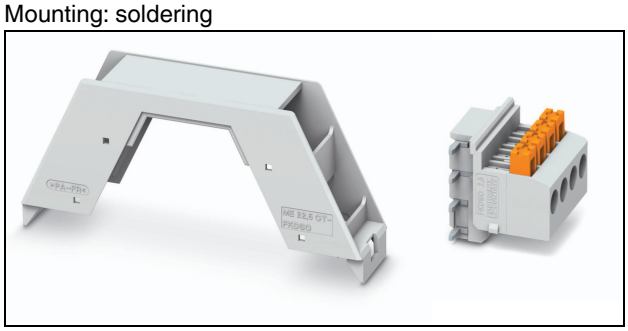

Figure 20 FKDSO 2,5 PCB terminal blocks

The latest data and drawings for the product can be found at phoenixcontact.com.

FKDSO 2,5

Dimensions	
Pitch	5 mm
Pin dimensions	0.8 x 1.0
Hole diameter	1.4 mm

Product		Dimension a	No. of pos.
FKDSO 2,5/ 2-L	2200315	5	2
FKDSO 2,5/ 2-R	2200316	5	2
FKDSO 2,5/ 3-R	2200317	10	3
FKDSO 2,5/ 3-L	2200318	10	3
FKDSO 2,5/ 4-L	2200319	15	4
FKDSO 2,5/ 4-R	2200320	15	4

Technical data	
Insulation material group	PA / I
Rated surge voltage (III/3)	4 kV
Rated surge voltage (III/2)	4 kV
Rated surge voltage (II/2)	4 kV
Rated voltage (III/3)	250 V
Rated voltage (III/2)	320 V
Rated voltage (II/2)	630 V
Connection in acc. with standard	EN-VDE
Nominal current I_N	22 A
Nominal cross section	2.5 mm²
Insulation material	PA
Flammability rating UL 94	V0
Stripping length	10 mm

Conductor cross section	
Conductor cross section rigid	0.2 mm² ... 2.5 mm²
Conductor cross section flexible	0.2 mm² ... 2.5 mm²
Conductor cross section AWG	24 ... 14
Conductor cross section flexible with ferrule without plastic sleeve	0.14 mm² ... 0.75 mm²
Conductor cross section flexible with ferrule and plastic sleeve	0.25 mm² ... 2.5 mm²
2 conductors with the same cross section flexible with ferrule without plastic sleeve	0.25 mm² ... 2.5 mm²
2 conductors with the same cross section flexible with TWIN ferrule and plastic sleeve	0.5 mm² ... 1.5 mm²

9.2 Header

9.2.1 Header, soldered, 3.5 mm pitch

Mounting: soldering

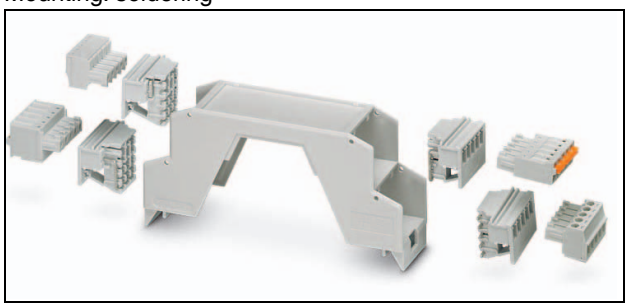

Figure 21 MCO 1,5 header with connectors

The latest data and drawings for the product can be found at phoenixcontact.com.

MCO 1,5/...G1...3,5

Dimensions	
Pitch	3.5 mm
Pin dimensions	0.8 x 0.8
Length of solder pin	3.0 mm
Hole diameter	1.2 mm

Product		Dimension a	No. of pos.
MCO 1,5/ 3-G1L-3,5	2278319	7	3
MCO 1,5/ 3-G1R-3,5	2278322	7	3
MCO 1,5/ 4-G1L-3,5	2278364	10.5	4
MCO 1,5/ 4-G1R-3,5	2278377	10.5	4
MCO 1,5/ 5-G1L-3,5	2278380	14	5
MCO 1,5/ 5-G1R-3,5	2278351	14	5

Technical data	
Insulation material group	PA / I
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)	160 V
Rated voltage (III/2)	160 V
Rated voltage (II/2)	20 V
Connection in acc. with standard	EN-VDE
Nominal current I_N	8 A
Maximum load current	8 A
Insulation material	PA
Flammability rating UL 94	V0

9.2.2 Header, wave soldered, 5 mm pitch

Mounting: soldering

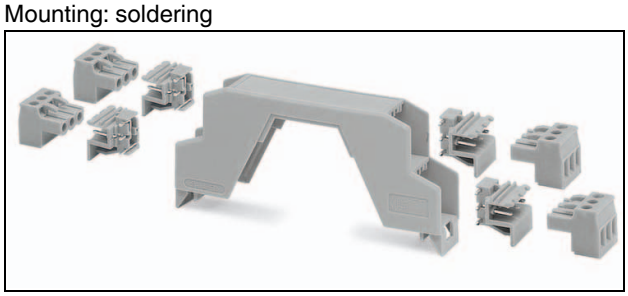

Figure 22 MSTBO 2,5/... G1 header with connectors

The latest data and drawings for the product can be found at phoenixcontact.com.

MSTBO 2,5/...G1...

Dimensions	
Pitch	5 mm
Pin dimensions	1 x 1
Length of solder pin	3.5 mm
Hole diameter	1.4 mm

Product		Dimension a	No. of pos.
MSTBO 2,5/ 2-G1L KMGY	2854788	5	2
MSTBO 2,5/ 2-G1R KMGY	2854791	5	2
MSTBO 2,5/ 3-G1L KMGY	2853750	10	3
MSTBO 2,5/ 3-G1R KMGY	2853763	10	3
MSTBO 2,5/ 4-G1L KMGY	2907774	15	4
MSTBO 2,5/ 4-G1R KMGY	2907787	15	4

Technical data	
Insulation material group	PA / I
Rated surge voltage (III/3)	4 kV
Rated surge voltage (III/2)	4 kV
Rated surge voltage (II/2)	4 kV
Rated voltage (III/3)	250 V
Rated voltage (III/2)	320 V
Rated voltage (II/2)	400 V
Connection in acc. with standard	EN-VDE
Nominal current I_N	12 A
Maximum load current	12 A
Insulation material	PA
Flammability rating UL 94	V0

9.2.3 Header, wave soldered, 5 mm pitch

Mounting: soldering

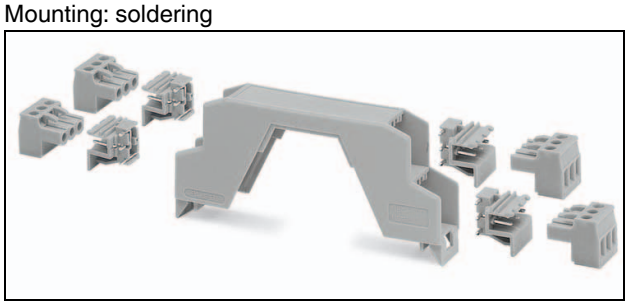

Figure 23 MSTBO 2,5/... G1P header with connectors

The latest data and drawings for the product can be found at phoenixcontact.com.

MSTBO 2,5/...G1P...

Dimensions	
Pitch	5 mm
Pin dimensions	1 x 1
Length of solder pin	3.5 mm
Hole diameter	1.4 mm

Product		Dimension a	No. of pos.
MSTBO 2,5/ 2-G1PL GY7035	2200330	5	2
MSTBO 2,5/ 2-G1PR GY7035	2200331	5	2
MSTBO 2,5/ 3-G1PL GY7035	2200328	10	3
MSTBO 2,5/ 3-G1PR GY7035	2200329	10	3
MSTBO 2,5/ 4-G1PL GY7035	2200325	15	4
MSTBO 2,5/ 4-G1PR GY7035	2200326	15	4

Technical data	
Insulation material group	PA / I
Rated surge voltage (III/3)	4 kV
Rated surge voltage (III/2)	4 kV
Rated surge voltage (II/2)	4 kV
Rated voltage (III/3)	250 V
Rated voltage (III/2)	320 V
Rated voltage (II/2)	400 V
Connection in acc. with standard	EN-VDE
Nominal current I_N	16 A
Maximum load current	16 A
Insulation material	PA
Flammability rating UL 94	V0

9.2.4 Header, reflow soldered (THR), 5 mm pitch

Mounting: reflow soldering (THR)

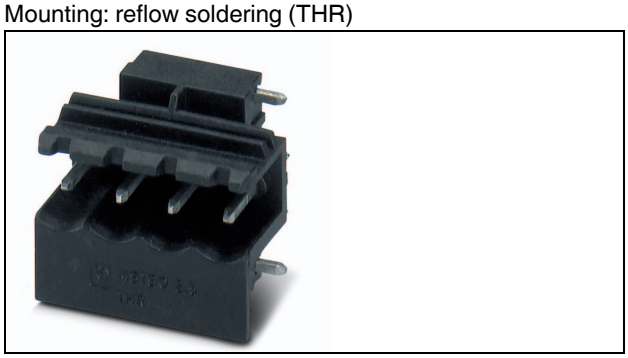

Figure 24 MSTBO 2,5/... G1...THR header

The latest data and drawings for the product can be found at phoenixcontact.com.

MSTBO 2,5/...G1...THR

Dimensions	
Pitch	5 mm
Pin dimensions	1 x 1
Length of solder pin	3.5 mm
Hole diameter	1.6 mm

Product		Dimension a	No. of pos.
MSTBO 2,5/ 2-G1L THRR32 BK	2200251	5	2
MSTBO 2,5/ 2-G1R THRR32 BK	2200252	5	2
MSTBO 2,5/ 3 G1L THRR44 BK	2915216	10	3
MSTBO 2,5/ 3 G1R THRR44 BK	2915229	10	3
MSTBO 2,5/ 4-G1L THRR44 BK	2697194	15	4
MSTBO 2,5/ 4-G1R THRR44 BK	2697204	15	4

Technical data	
Insulation material group	PA / I
Rated surge voltage (III/3)	4 kV
Rated surge voltage (III/2)	4 kV
Rated surge voltage (II/2)	4 kV
Rated voltage (III/3)	250 V
Rated voltage (III/2)	320 V
Rated voltage (II/2)	400 V
Connection in acc. with standard	EN-VDE
Nominal current I_N	16 A
Maximum load current	16 A
Insulation material	PA
Flammability rating UL 94	V0

9.2.5 Header, reflow soldered (THR), 7.25 mm pitch

Mounting: reflow soldering (THR)

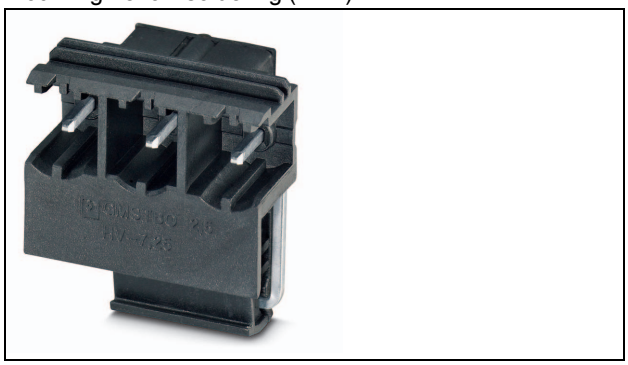

Figure 25 GMSTBO 2,5/... G...-7,25 THR header

The latest data and drawings for the product can be found at phoenixcontact.com.

GMSTBO 2,5/...G...-7,25 THR

Dimensions	
Pitch	7.25 mm
Pin dimensions	1 x 1 mm
Hole diameter	1.5 mm

Product		Dimension a	No. of pos.
GMSTBO 2,5 HV/2-GL-7,25 THR	2199867	7.25	2
GMSTBO 2,5 HV/2-GR-7,25 THR	2199760	7.25	2
GMSTBO 2,5 HV/3-GL-7,25 THR	2199663	14.5	3
GMSTBO 2,5 HV/3-GR-7,25 THR	2199566	14.5	3

Technical data	
Insulation material group	IIIa
Rated surge voltage (III/3)	6 kV
Rated surge voltage (III/2)	6 kV
Rated surge voltage (II/2)	6 kV
Rated voltage (III/3)	400 V
Rated voltage (III/2)	630 V
Rated voltage (II/2)	630 V
Connection in acc. with standard	EN-VDE
Nominal current I_N	16 A
Maximum load current	16 A
Insulation material	LCP
Flammability rating UL 94	V0

9.3 Connector

9.3.1 Connector, 3.5 mm pitch, screw connection

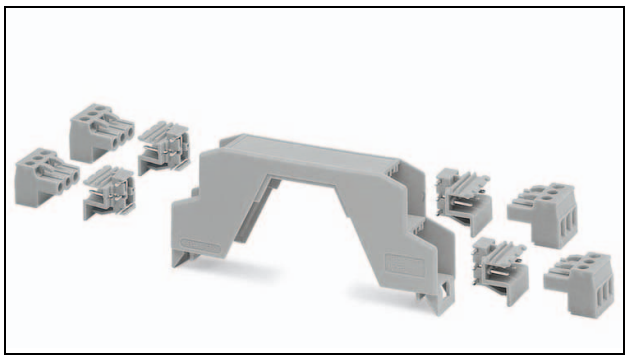

Figure 26 MC 1,5/ ...-ST-3,5 connector with MCO 1,5...G1...-3,5 header

The latest data and drawings for the product can be found at phoenixcontact.com.

MC 1,5/ ...-ST-3,5

Dimensions	
Pitch	3.5 mm

Product		Dimension a	No. of pos.
MC 1,5/ 3-ST-3,5 GY7035	1769061	7	3
MC 1,5/ 4-ST-3,5 GY7035	1769074	10.5	4
MC 1,5/ 5-ST-3,5 GY7035	1769087	14	5

Technical data	
Insulation material group	PA / I
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)	160 V
Rated voltage (III/2)	160 V
Rated voltage (II/2)	320 V
Connection in acc. with standard	EN-VDE
Nominal current I_N	8 A
Nominal cross section	1.5 mm²
Insulation material	PA
Flammability rating UL 94	V0
Internal cylindrical gauge	A1
Stripping length	7 mm
Screw thread	M2
Tightening torque, min.	0.22 Nm ... 0.25 Nm

Conductor cross section	
Conductor cross section rigid	0.14 mm² ... 1.5 mm²
Conductor cross section flexible	0.14 mm² ... 1.5 mm²
Conductor cross section AWG	28 ... 16
2 conductors with the same cross section rigid	0.08 mm² ... 0.5 mm²
2 conductors with the same cross section flexible	0.08 mm² ... 0.75 mm²
2 conductors with the same cross section flexible with ferrule without plastic sleeve	0.25 mm² ... 0.34 mm²
2 conductors with the same cross section flexible with TWIN ferrule and plastic sleeve	0.5 mm² ... 0.5 mm²

9.3.2 Connector, 3.5 mm pitch, Push-in connection, FK-MCP

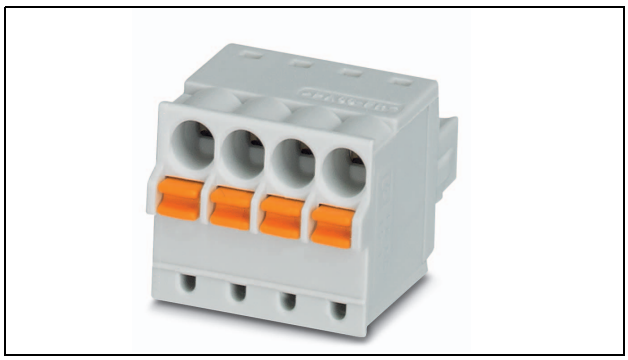

Figure 27 FK-MCP 1,5/ ...-ST-3,5 connector

The latest data and drawings for the product can be found at phoenixcontact.com.

FK-MCP 1,5/ ...-ST-3,5

Dimensions	
Pitch	3.5 mm

Product		Dimension a	No. of pos.
FK-MCP 1,5/ 4-ST-3,5 GY7035	1773594	10.5	4
FK-MCP 1,5/ 5-ST-3,5 GY7035	1773604	14	5

Technical data	
Insulation material group	PA / I
Rated surge voltage (III/3)	2.5 kV
Rated voltage (III/3)	160 V
Connection in acc. with standard	EN-VDE
Nominal current I_N	8 A
Nominal cross section	1.5 mm²
Insulation material	PA
Flammability rating UL 94	V0

Conductor cross section	
Conductor cross section rigid	0.14 mm² ... 1.5 mm²
Conductor cross section flexible	0.14 mm² ... 1.5 mm²
Conductor cross section AWG	28 ... 16
Conductor cross section flexible with ferrule without plastic sleeve	0.25 mm² ... 1.5 mm²
Conductor cross section flexible with ferrule and plastic sleeve	0.25 mm² ... 0.5 mm²

9.3.3 Connector, 3.5 mm pitch, Push-in connection, FMC

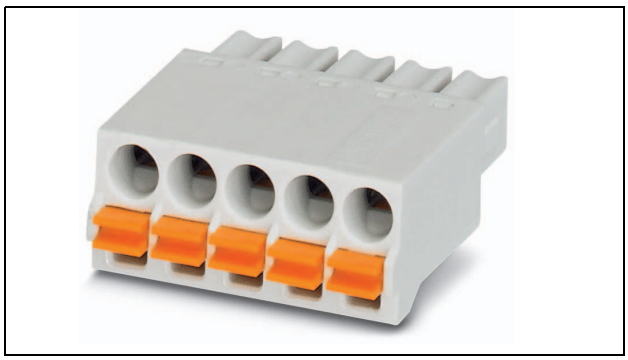

Figure 28 FMC 1,5/ ...-ST-3,5 connector

The latest data and drawings for the product can be found at phoenixcontact.com.

FMC 1,5/ ...-ST-3,5

Dimensions	
Pitch	3.5 mm

Product		Dimension a	No. of pos.
FMC 1,5/ 4-ST-3,5 GY7035	1773578	10.5	4
FMC 1,5/ 5-ST-3,5 GY7035	1773581	14	5

Technical data	
Insulation material group	PA / I
Rated surge voltage (III/3)	2.5 kV
Rated voltage (III/3)	160 V
Connection in acc. with standard	EN-VDE
Nominal current I_N	8 A
Nominal cross section	1.5 mm²
Insulation material	PA
Flammability rating UL 94	V0

Conductor cross section	
Conductor cross section rigid	0.2 mm² ... 1.5 mm²
Conductor cross section flexible	0.2 mm² ... 1.5 mm²
Conductor cross section AWG	24 ... 16
Conductor cross section flexible with ferrule without plastic sleeve	0.25 mm² ... 1.5 mm²
Conductor cross section flexible with ferrule and plastic sleeve	0.25 mm² ... 0.75 mm²

9.3.4 Connector, 5 mm pitch, screw connection

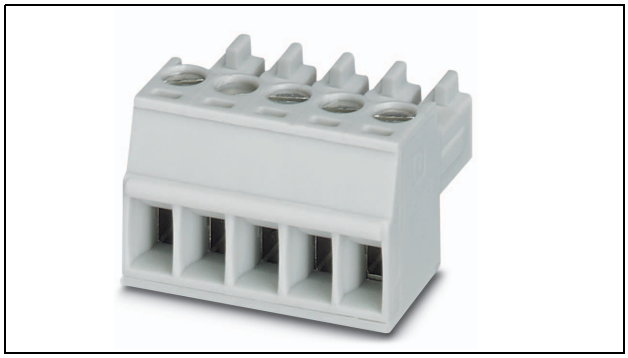

Figure 29 MC 1,5/ 3-HC connector

The latest data and drawings for the product can be found at phoenixcontact.com.

MSTBT 2,5 HC

Dimensions	
Pitch	5 mm

Product		Dimension a	No. of pos.
MSTBT 2,5 HC/ 2-STP GY7035	2200334	5	2
MSTBT 2,5 HC/ 3-STP GY7035	2200333	10	3
MSTBT 2,5 HC/ 4-STP GY7035	1769087	15	4

Technical data	
Insulation material group	PA / I
Rated surge voltage (III/3)	4 kV
Rated surge voltage (III/2)	4 kV
Rated surge voltage (II/2)	4 kV
Rated voltage (III/3)	250 V
Rated voltage (III/2)	320 V
Rated voltage (II/2)	630 V
Connection in acc. with standard	EN-VDE
Nominal current I_N	16 A
Maximum load current, for 2.5 mm^2 conductor cross section	16 A
Nominal cross section	2.5 mm^2
Insulation material	PA
Flammability rating UL 94	V0
Internal cylindrical gauge	A3
Stripping length	7 mm
Screw thread	M3
Tightening torque, min.	0.5 Nm ... 0.6 Nm

Conductor cross section	
Conductor cross section rigid	0.2 mm^2 ... 2.5 mm^2
Conductor cross section flexible	0.2 mm^2 ... 2.5 mm^2
Conductor cross section AWG	24 ... 12
2 conductors with the same cross section rigid	0.2 mm^2 ... 1 mm^2
2 conductors with the same cross section flexible	0.2 mm^2 ... 1.5 mm^2
2 conductors with the same cross section flexible with ferrule without plastic sleeve	0.25 mm^2 ... 1 mm^2
2 conductors with the same cross section flexible with TWIN ferrule and plastic sleeve	0.5 mm^2 ... 1.5 mm^2

9.3.5 Connector, 5 mm pitch, Push-in connection

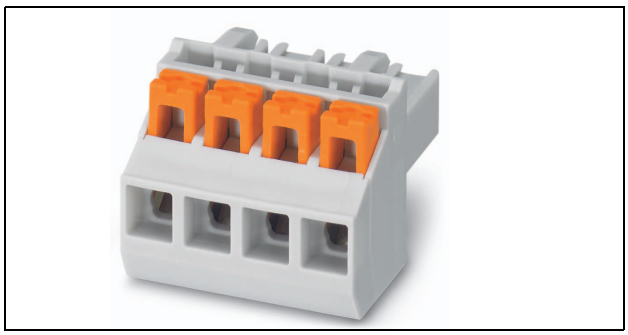

Figure 30 PSPT 2,5 connector

The latest data and drawings for the product can be found at phoenixcontact.com.

PSPT 2,5/ ...-ST

Dimensions	
Pitch	5 mm

Product		Dimension a	No. of pos.
PSPT 2,5/ 2-ST KMGY	2202346	5	2
PSPT 2,5/ 3-ST KMGY	2202345	10	3
PSPT 2,5/ 4-ST KMGY	2202344	15	4

Technical data	
Insulation material group	PA / I
Rated surge voltage (III/3)	4 kV
Rated surge voltage (III/2)	4 kV
Rated surge voltage (II/2)	4 kV
Rated voltage (III/2)	300 V
Rated voltage (II/2)	600 V
Connection in acc. with standard	EN-VDE
Nominal current I_N	16 A
Nominal cross section	2.5 mm²
Insulation material	PA
Flammability rating UL 94	V0

Conductor cross section	
Conductor cross section rigid	0.2 mm² ... 2.5 mm²
Conductor cross section flexible	0.2 mm² ... 2.5 mm²
Conductor cross section AWG	24 ... 16
Conductor cross section flexible with ferrule without plastic sleeve	0.20 mm² ... 2.5 mm²
Conductor cross section flexible with ferrule and plastic sleeve	0.25 mm² ... 2.5 mm²
2 conductors with the same cross section flexible with ferrule without plastic sleeve	0.25 mm² ... 0.34 mm²
2 conductors with the same cross section flexible with TWIN ferrule and plastic sleeve	0.5 mm² ... 1.5 mm²

9.3.6 Connector, 7.25 mm pitch, screw connection

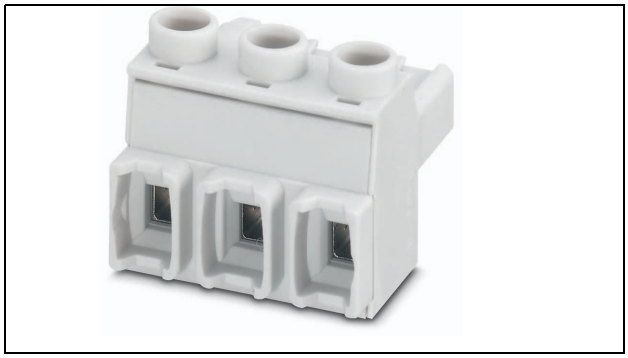

Figure 31 GMSTBT 2,5 connector

The latest data and drawings for the product can be found at phoenixcontact.com.

GMSTBT 2,5

Dimensions	
Pitch	3.5 mm

Product		Dimension a	No. of pos.
GMSTBT 2,5 HV/2-ST-7,25 GY7035	1769061	7.25	2
GMSTBT 2,5 HV/3-ST-7,25 GY7035	1769074	14.5	3

Technical data	
Insulation material group	I
Rated surge voltage (III/3)	8 kV
Rated surge voltage (III/2)	8 kV
Rated surge voltage (II/2)	8 kV
Rated voltage (III/3)	1000 V
Rated voltage (III/2)	1000 V
Rated voltage (II/2)	1000 V
Connection in acc. with standard	EN-VDE
Nominal current I_N	16 A
Nominal cross section	2.5 mm²
Maximum load current	16 A
Insulation material	PA
Flammability rating UL 94	V0
Stripping length	8 mm
Screw thread	M3
Tightening torque	0.5 Nm ... 0.6 Nm

Conductor cross section	
Conductor cross section rigid	0.1 mm² ... 1.0 mm²
Conductor cross section flexible	0.2 mm² ... 1.5 mm²
Conductor cross section AWG	24 ... 12
2 conductors with the same cross section rigid	0.1 mm² ... 1.0 mm²
2 conductors with the same cross section flexible	0.2 mm² ... 1.5 mm²
2 conductors with the same cross section flexible with ferrule without plastic sleeve	0.25 mm² ... 2.5 mm²
2 conductors with the same cross section flexible with ferrule and plastic sleeve	0.25 mm² ... 2.5 mm²
AWG in acc. with UL/CUL	24 ... 12

10 Mounting the housing

10.1 Mounting the DIN rail connector

If using a DIN rail connector, you must first insert it into the DIN rail.

The DIN rail connector is used to bridge the power supply and communication.

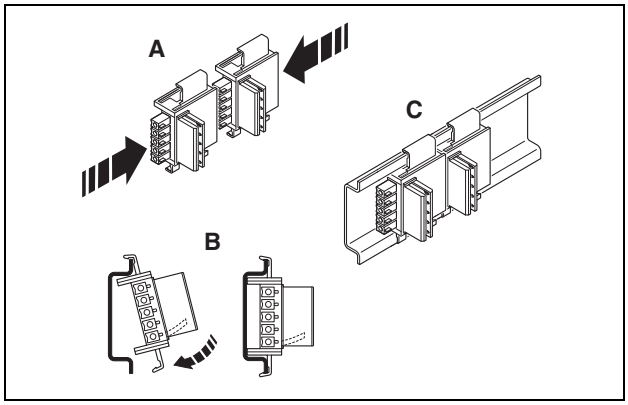

Figure 32 DIN rail connectors

Observe the snap-in direction of the housing and DIN rail connector: snap-on foot below and connector on the left.

- Connect the DIN rail connectors together.
- Push the connected DIN rail connectors onto the DIN rail.
- Place the device onto the DIN rail from above.
- Push the front of the device toward the mounting surface until it snaps into place with a click.

10.2 Mounting on a DIN rail

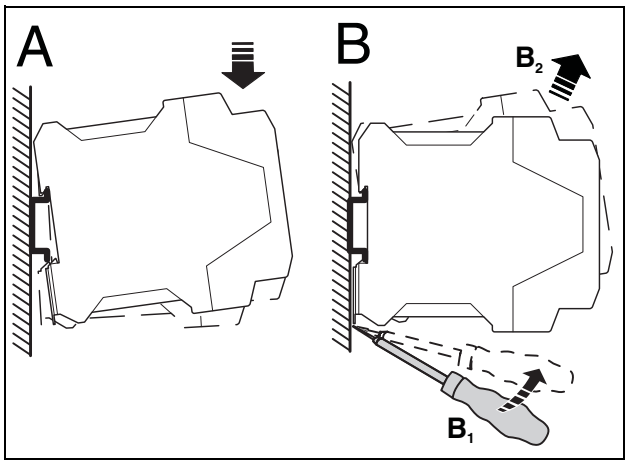

Figure 33 Mounting (A) and removal (B)

Mounting

- Place the device onto a 35 mm DIN rail from above. The upper housing keyway hooks onto the top edge of the DIN rail (A).
- 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.

Removal

- Use a suitable screwdriver to release the locking mechanism on the snap-on foot of the device (B).
- Hold onto the device by the housing cover and carefully tilt it upwards.
- Carefully lift the device off the DIN rail.

10.3 Assembling the housing

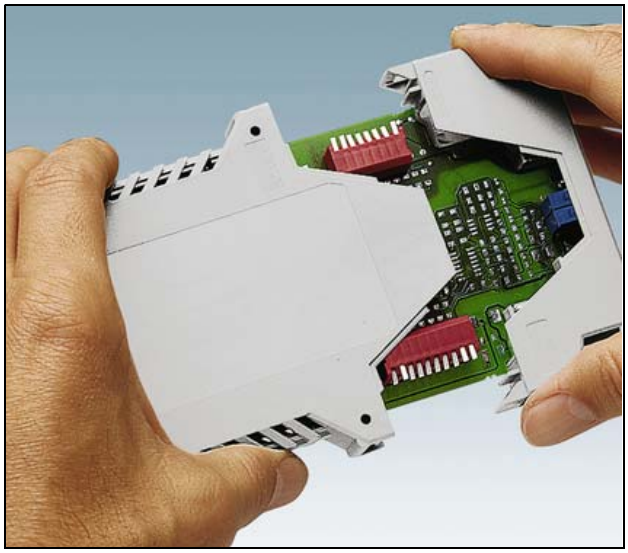

Figure 34 Mounting the upper housing part

- Latch the upper housing part to the soldered connection technology.
- Push the pre-assembled upper housing part into the lower housing part using the guide provided. It automatically locks in place.

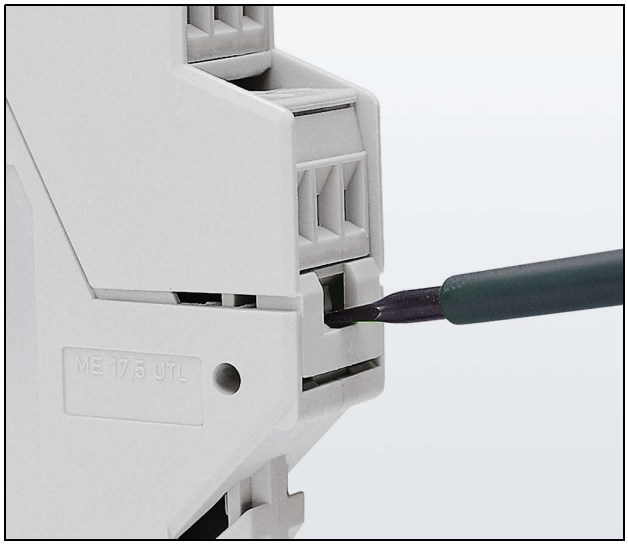

Figure 35 Opening the upper housing part

- Open the housing by simply pressing on the lock hook, e.g., using a screwdriver.

11 Accessories and customization

11.1 Accessories

Filler plugs

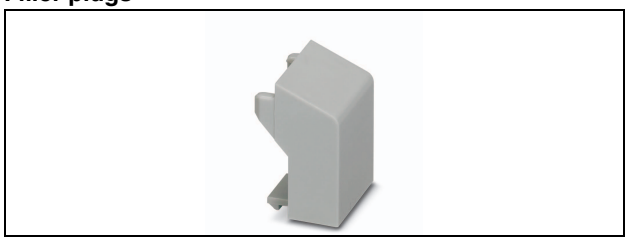

Figure 36 ME B-17,5 MSTBO KMGY, 2853776

ME B... filler plugs are used to seal unused terminal points. One filler plug is required per terminal point.

Shield connection clamp

Figure 37 ME MAX-SAS, 2853899

The ME SAS shield connection clamp is used for the potential connection of shielded cables.

Functional ground contact

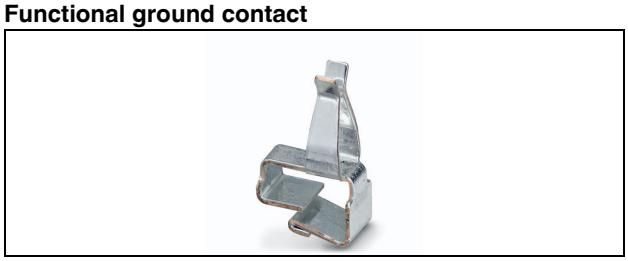

Figure 38 ME BUS FE CONTACT, 2278076

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

Coding section

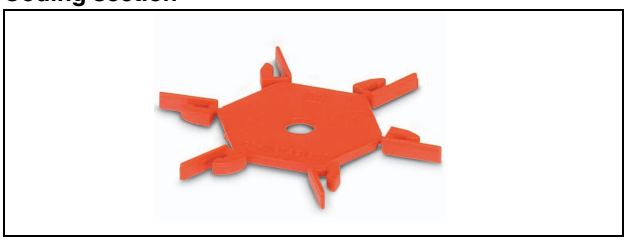

Figure 39 CR MSTBO-G1 coding section, 2199618

Using the coding section for MSTBO headers, you can ensure that connectors are only plugged onto the appropriate header.

Base latch

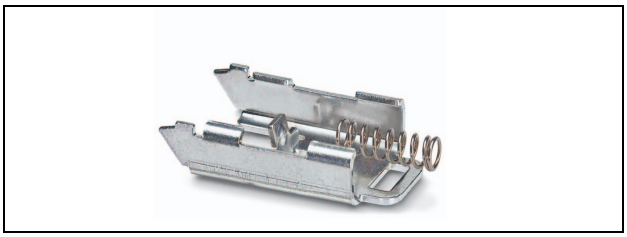

Figure 40 ME MF 12,5/17,5 base latch

Base latch for increasing the housing width with an ME...UTM... intermediate element. The base latch ensures that the housing is securely attached to the DIN rail.

– ME MF 12,5, 2707466
– ME MF 17,5, 2908281

Ejector for COMBICON connectors

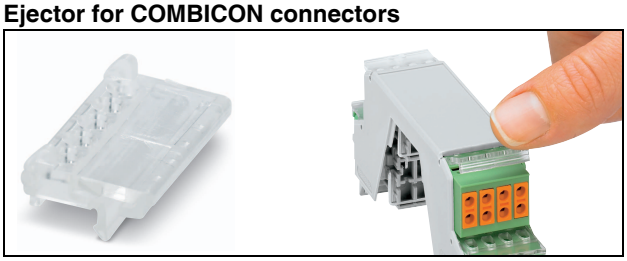

Figure 41 ME PS-22,5 MC TRANS, 2279745

ME PS... ejector for COMBICON connectors. For use with ME...OTP-MSTBO PS upper housing parts.

For the following connectors:

MC FMC FKCT MSTBT TVFKCL TVFKC

PCB

Sample PCB, for self-assembly with contact for DIN rail in accordance with EN 60715.

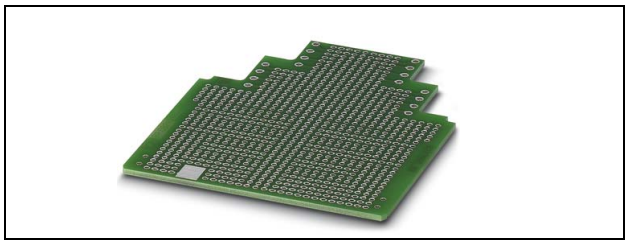

Figure 42 Sample PCB: ME LP 29, 2906908

ME LPZS PCB stop

Figure 43 ME LPZS PCB stop, 2906911

The ME LPZS PCB stop prevents the PCB from being removed completely. The PCB stop simultaneously locks the PCB in place. It allows you to remove the PCB by approximately 4 cm.

HS LC light guide

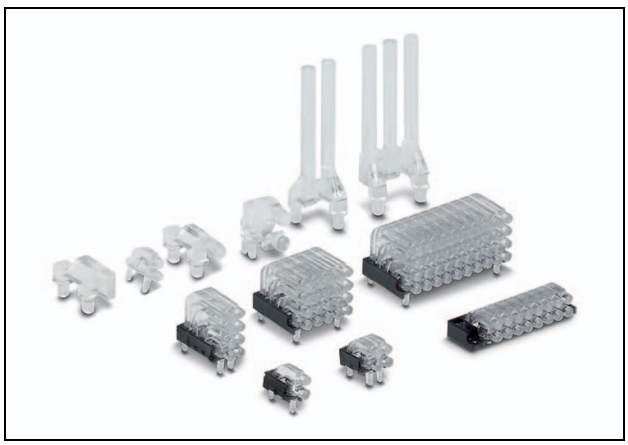

Figure 44 HS LC... light guide

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

TFT display for ME housing

2.4" TFT display for use in ME...90... upper part. The display is locked into the upper part with matching recess.

11.2 Housing customization

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

- **Color variants**
- **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.

Further information can be found under web code #0685.

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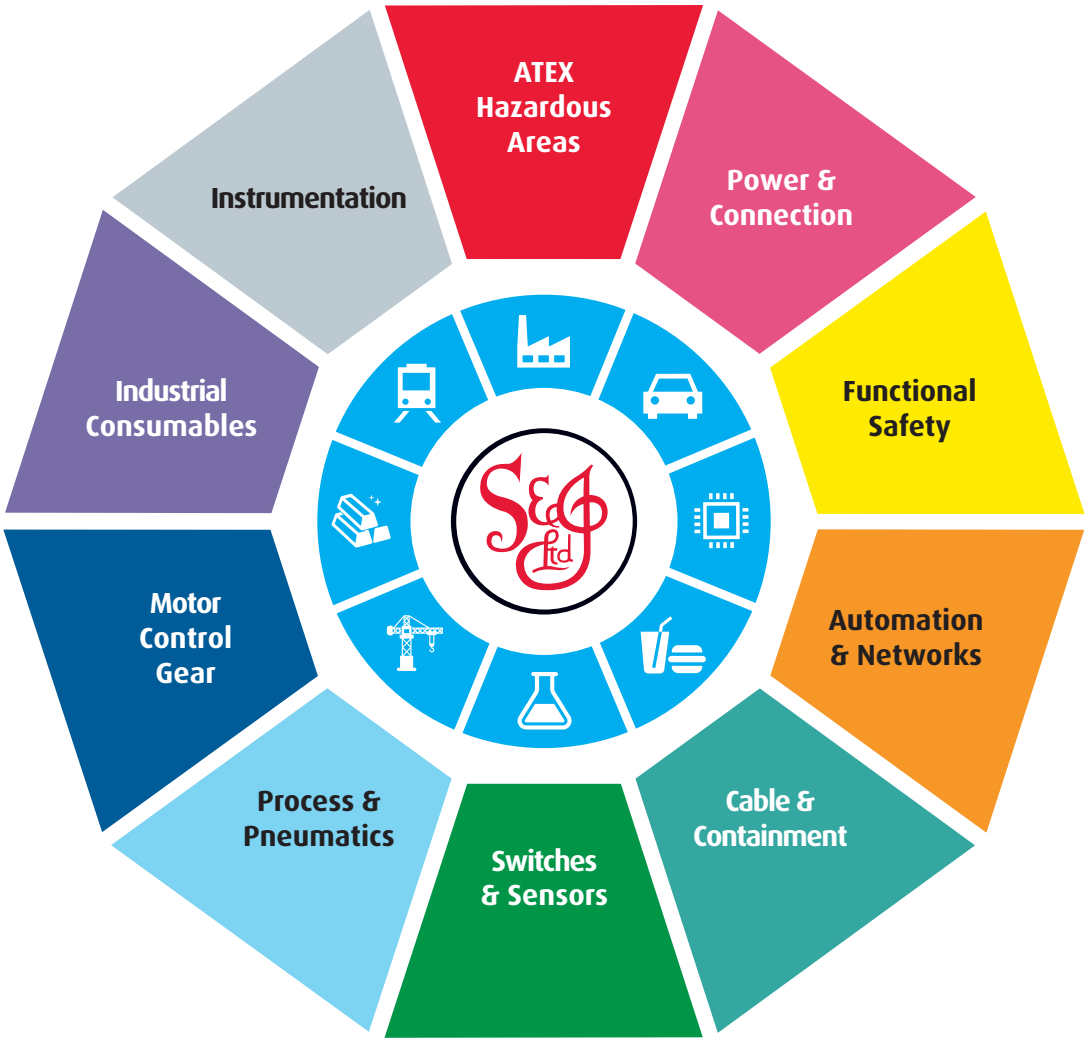

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