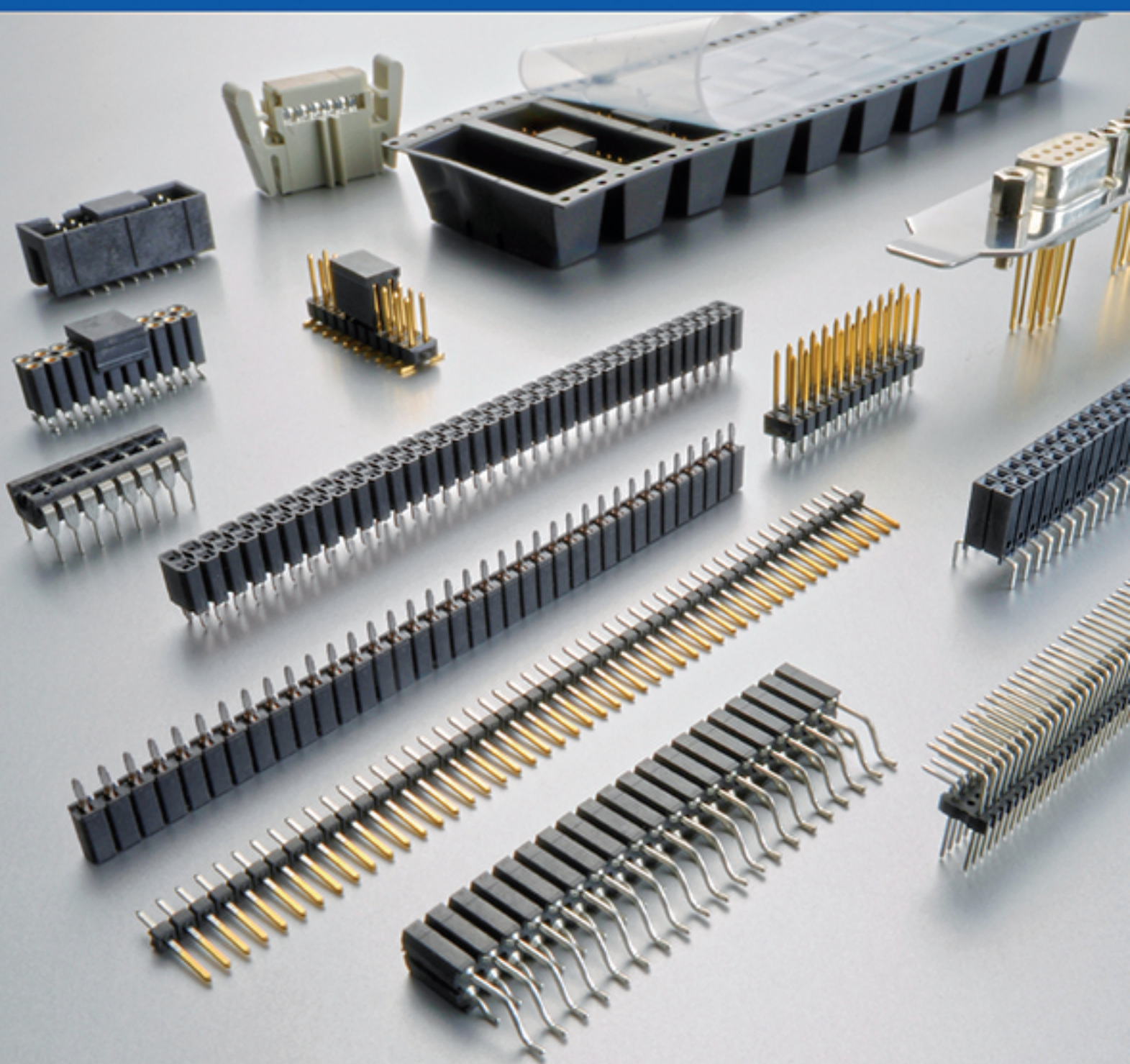


to cool to protect to connect



f.con.e 14/15

Sockets

Connectors



ISO 9001
ISO 14001
ISO 27001

Brackets

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ASL 12 SMD	H 3	BL LP 5 SMD	G 57	DB 50 T	I 2	DIL 14 G	F 6
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ASL 26 SMD	H 3	BLM 3 SMD	G 73	DB BK 15	I 11	DIL 14 P	F 3
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ASLA 08 G	H 2	BLM LG 2	G 71	DB BK 37 LP	I 12	DIL 16 06 H Z	F 5
ASLA 10 G	H 2	BLP 1	G 66	DB BK 50	I 11	DIL 16 E	F 4
ASLA 12 G	H 2	BLP 2	G 66	DBM 13K3 L20	I 14	DIL 16 G	F 6
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ASLA 16 G	H 2	BLR 1 050 Z	G 72	DBM 7K2 L20	I 14	DIL 16 N	F 2
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BL 18 141	G 56	DB 25 L	I 3	DIL 8 1 OR	F 5	DILS 18 GA LO	F 7
BL 18 219	G 56	DB 25 LA	I 4	DIL 8 2 OR	F 5	DILS 18 GB LO	F 7
BL 19 141	G 56	DB 25 SMD TR	I 15	DIL 8 E	F 4	DILS 18 GO	F 7
BL 19 219	G 56	DB 25 T	I 2	DIL 8 G	F 6	DILS 18 PK 5	F 6
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BL 21 650	G 52	DB 37 L	I 3	DIL 8 O	F 2	DILS 24 GB LO	F 7
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SL 17 SMD 109	G 24	SLR 1 025	G 42	SLV W 2 KA 054 72	G 39	VFL 14	H 5
SL 18 042	G 10	SLR 1 050	G 42	SLV W 2 SMD 048	G 40	VFL 16	H 5
SL 18 082	G 10	SLR 2 050	G 42	SLV W 2 SMD 073	G 40	VFL 20	H 5
SL 18 108	G 10	SLR 3 025	G 42	SLV W 3 SMD 048	G 41	VFL 26	H 5
SL 18 132	G 10	SLR 3 050	G 42	SLV W 3 SMD 073	G 41	VFL 34	H 5
SL 19 082	G 10	SLR 4 050	G 42	SLV W 11 055	G 38	VFL 40	H 5
SL 19 108	G 10	SLR 4 100	G 42	SLV W 11 080	G 38	VFL 50	H 5
SL 19 132	G 10	SLR 5 SMD 50 G	G 43	SLV W 11 105	G 38	VG 2	I 23
SL 20 THR 097	G 8	SLU 10 165	G 16	SLV W 22 055	G 38	WWPS 1 G	F 17
SL 20 THR 112	G 8	SLU 10 191	G 16	SLV W 22 080	G 38	ZEPV 06	H 6
SL 20 THR 124	G 8	SLU 10 241	G 16	SLV W 22 105	G 38	ZEPV 10	H 6
SL 20 THR 139	G 8	SLU 10 266	G 16	SLY 1 081	G 30	ZEPV 14	H 6
SL 20 THR 164	G 8	SLU 16 165	G 16	SLY 1 085	G 30	ZEPV 16	H 6
SL 21 THR 097	G 8	SLU 16 191	G 16	SLY 1 098	G 30	ZEPV 20	H 6
SL 21 THR 112	G 8	SLU 16 241	G 16	SLY 1 104	G 30	ZEPV 26	H 6
SL 21 THR 124	G 8	SLU 16 266	G 16	SLY 1 139	G 30	ZEPV 34	H 6
SL 21 THR 139	G 8	SLU 20 165	G 16	SLY 2 081	G 30	ZEPV 40	H 6
SL 21 THR 164	G 8	SLU 20 191	G 16	SLY 2 085	G 30	ZEPV 50	H 6
SL 22 097	G 7	SLU 20 241	G 16	SLY 2 098	G 30		
SL 22 112	G 7	SLU 20 266	G 16	SLY 2 104	G 30		
SL 22 124	G 7	SLU 26 165	G 16	SLY 2 139	G 30		
SL 22 139	G 7	SLU 26 191	G 16	SLY 3 035	G 30		
SL 22 164	G 7	SLU 26 241	G 16	SLY 3 041	G 30		
SL 22 190	G 7	SLU 26 266	G 16	SLY 3 082 ... G	G 30		
SL 22 214	G 7	SLU 40 165	G 16	SLY 3 082 ... Z	G 30		
SL 22 240	G 7	SLU 40 191	G 16	SLY 4 035	G 30		
SL 22 265	G 7	SLU 40 241	G 16	SLY 4 082 ... G	G 30		
SL 22 316	G 7	SLU 40 266	G 16	SLY 4 082 ... Z	G 30		
SLK 3 025	G 9	SLU 50 165	G 16	SLY 4 041... G	G 30		
SLK 4 025	G 9	SLU 50 191	G 16	SLY 4 041... Z	G 30		
SL KA 3 072	G 17	SLU 50 241	G 16	SLY 5 040	G 31		
SL KA 3 085	G 17	SLU 50 266	G 16	SLY 5 075	G 31		
SL KA 3 108	G 17	SLUP 31 10	G 29	SLY 5 081 ... G	G 31		
SL KG 3 113	G 17	SLUP 31 16	G 29	SLY 5 081 ... Z	G 31		
SL KG 3 126	G 17	SLUP 31 20	G 29	SLY 5 122 ... G	G 31		
SL KG 3 147	G 17	SLV N 1 055	G 37	SLY 5 122 ... Z	G 31		
SL LP 1 082	G 11	SLV N 1 080	G 37	SLY 6 040	G 31		
SL LP 1 097	G 11	SLV N 1 105	G 37	SLY 6 075	G 31		
SL LP 1 112	G 11	SLV N 1 130	G 37	SLY 6 081 ... G	G 31		
SL LP 1 139	G 11	SLV N 11 055	G 37	SLY 6 081 ... Z	G 31		
SL LP 1 164	G 11	SLV N 11 080	G 37	SLY 6 122 ... G	G 31		
SL LP 1 190	G 11	SLV N 11 105	G 37	SLY 6 122 ... Z	G 31		
SL LP 2 082	G 11	SLV W 1 055	G 38	SLY 7 SMD 036	G 33		
SL LP 2 097	G 11	SLV W 1 080	G 38	SLY 7 SMD 045	G 33		
SL LP 2 112	G 11	SLV W 1 105	G 38	SLY 7 SMD 062	G 33		
SL LP 2 139	G 11	SLV W 1 130	G 38	SLY 8 SMD 036	G 34		
SL LP 2 164	G 11	SLV W 1 KA 030	G 39	SLY 8 SMD 045	G 34		
SL LP 2 190	G 11	SLV W 1 KA 055	G 39	SLY 8 SMD 062	G 34		
SL LP 3 041	G 12	SLV W 1 KA 080	G 39	SLY 9 SMD 040	G 35		
SL LP 3 069	G 12	SLV W 1 KA 105	G 39	SLY 9 SMD 055	G 35		
SL LP 4 041 ...	G 12	SLV W 1 SMD 048	G 40	SLY 10 SMD 040	G 36		
SL LP 4 069	G 12	SLV W 1 SMD 073	G 40	SSK B 09	I 25		
SL LP 5 SMD 038	G 25	SLV W 2 055	G 38	SSK B 15	I 25		
SL LP 5 SMD 051	G 25	SLV W 2 080	G 38	SSK B 25	I 25		
SL LP 5 SMD 066	G 25	SLV W 2 105	G 38	SSK B 37	I 25		
SL LP 6 SMD 038	G 26	SLV W 2 130	G 38	SSK S 09	I 25		
SL LP 6 SMD 051	G 26	SLV W 2 KA 030 10	G 39	SSK S 15	I 25		
SL LP 6 SMD 066	G 26	SLV W 2 KA 030 14	G 39	SSK S 25	I 25		

Brackets for PC	K 3-24
Connector-sleeves	F 19-20
Direct female connectors	G 75
D-Sub accessoires	I 22-25
D-Sub connector for flat ribbon cable	I 11-12
D-Sub connector in pressfit technology	I 16-17
D-Sub connectors High Density	I 7-8
D-Sub filter connector	I 9-10
D-Sub hoods	I 18-21
D-Sub in SMD-mounting	I 15
D-Sub mixed layout connectors	I 13-14
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Female connector	H 4-7
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High-precision contacts, loose	F 17-18
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Jumper links / Separable jumpers	F 14-16
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Sockets for IC-PLCC	F 9
Sockets for TO ... cases	F 10-12
Spacers for LED	L 2-3

General points

Product specified characteristics for the particular article can be found in the category "technical data"! Additional customer specified advice and solution proposals will be supported from the R&D department of company Fischer Elektronik GmbH & Co. KG.

Surface – electroplating processes

In general all contacts are coated with a nickel barrier layer (1,3-3 µm) before they get tinned or gold-plated. This will also apply for selective gold-plated contacts.

For the selective coated contacts the complete contact will be nickel-plated including the carrier strip first. After this the contact side will be gold-plated and the solder side tinned, usually in the "dipping method" or "brush method". Depending on the overall contact length the middle area is exclusively nickel-plated.

The layer thickness of the gold-plating is at least 0,2 µm Au, the layer thickness of the tinning is 4-6 µm! Other layer thicknesses are possible upon request.

The tinning is done with pure tin. The solderability is guaranteed for at least 1 year after shipment. At appropriate storage in closed packing this period can be increased significantly.

Dimensional tolerance

Generally the DIN ISO 2768m is applied to all products! Moreover following additions have to be noticed:

- the length tolerance of contact pins is +/-0,2mm
- the space allowance is +/-0,03mm, the overall space allowance over 36 pins +/-0,2mm
- the shape tolerance of the insulating body is defined by +/-0,15mm
- the separation of number of pins by means of cutting: +0,6mm/-0,3mm
- the separation of number of pins by means of sawing: +0,1mm/-0,4mm (no standard)

Quality grading in conformity with DIN 41652

Depending on the layer thickness of the gold-plating the contacts can be classified in quality classes.

A distinction is made in three quality classes:

Quality class 1: at least 500 cycles of operation, layer thickness accordingly at least 1,2µm Au

Quality class 2: at least 200 cycles of operation, layer thickness accordingly at least 0,75µm Au

Quality class 3: at least 50 cycles of operation, layer thickness accordingly at least 0,2µm Au

By tinning contacts max. 10 cycles of operation can be guaranteed by using "tin on tin".

Precision socket contacts

These contacts are two-piece parts and consist on a sleeve (turned part) and a spring element (stamped part). The spring element (Clip) is always gold-plated (depending on the article at least 0,2 µm Au or at least 0,75 µm Au). The sleeve is usually tinned, for some versions also optionally gold-plated (at least 0,2 µm Au).

Contact carrier material made of high-temperature resistant plastic

The plastics used for the male and female headers are mainly high-temperature resistant which means that they are suitable for the use in the reflow soldering technique.

This applies primarily for SMD components as well as for plug connectors which are constructed for wave soldering. In the catalogue those products are marked with a 260°C logo in the header of the particular page.

Explanations – references – printings



... plastic of the insulator is suitable for reflow-soldering up to 260 °C



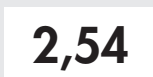
... components are suitable for soldering technique (THT)



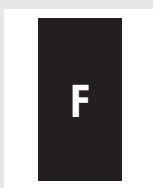
... components are suitable for SMD technique



... components are suitable for press-fit mounting

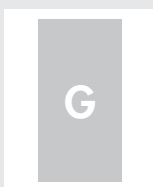


... components are suitable for the corresponding grid



... index area:
shows topics/categories

“current”



“following”



... page number

Male headers 2.00 THT	→ G 50 - 52
Male headers 2.54 THT	→ G 8 - 18
Technical data	→ G 72 - 76
Flat cable	→ H 11

... footnotes, give references to pages with combinable or similar products

G = gold-plated
Z = tin-plated
S = selective gold-plated

... option for surface finishing

Imprinting of cardholders - Your and our time is expensive

An order for imprinting must state the font, the font size and the exact position of the imprint with dimensions, taking in account of countersunk holes etc.. When placing the first order, the company logo must be supplied as a vector file. If these conditions are not complied with, the order for imprinting may have to be rejected, or additional costs will have to be charged.

Compliance with the following criteria ensures smooth handling:

Adobe Illustrator (.ai)

CorelDraw (.cdr)

Macromedia Free Hand (.fh)

QuarkXPress (.qxd)

without half-tone images, fonts transformed into paths or supplied

all fonts enclosed; half-tone images colour-separated (full-tone or scale colours) and with correct resolution (300 dpi colour, black / white 600 dpi), no RGB

All this takes additional time and consequently incurs extra costs.

The usability must be checked by our printing shop:

In most cases, Adobe Acrobat (.pdf); screen formats (.jpg, .gif, .png) and paper copies, stickers and similar are not suitable for preparing printer's copies!

Copies that definitely cannot be used:

Imperfect copies such as fax copies / Microsoft Office files (.doc, .xls, .ppt) can only be used for information or for transmitting texts.

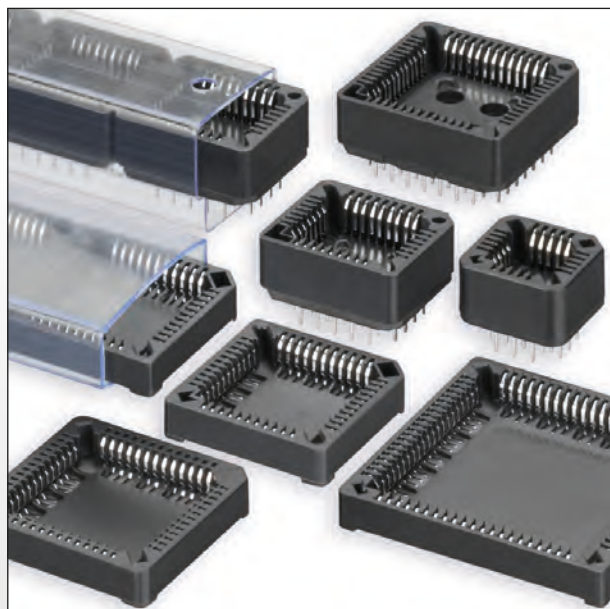
Please always add dimensional drawings (.dxf) to the parts to be imprinted!

Please note as a general rule: Retouching work extending beyond the standard time will be invoiced additionally at cost price.

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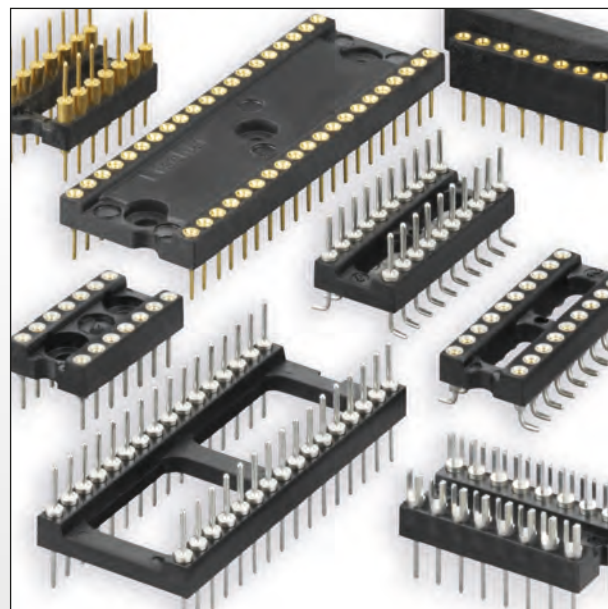
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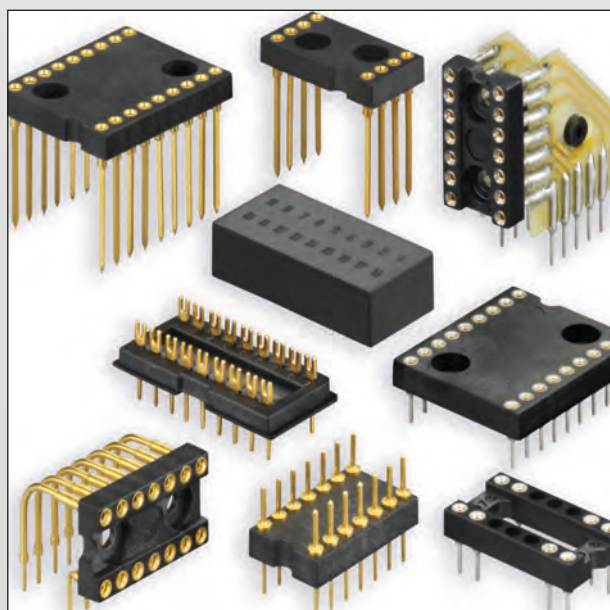
Precision sockets and plugs for ICs with high packing density

- PLCC-socket for soldering technology (THT)
- PLCC-socket for SMD technology - low profile
- type of packaging: bar magazine



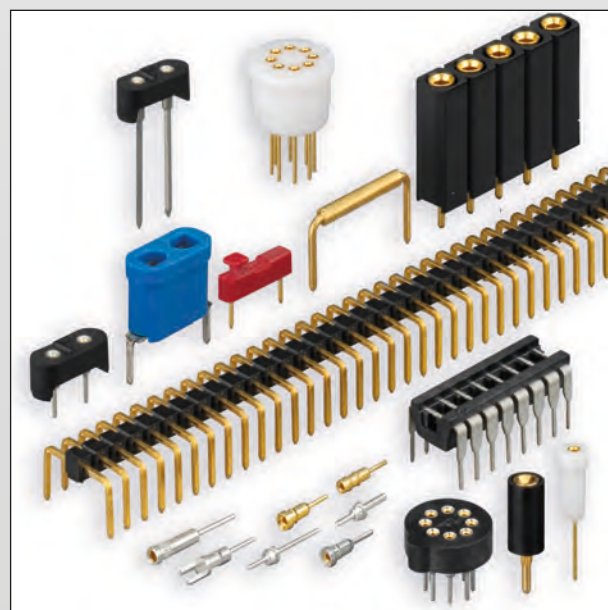
Precision sockets and plugs for DIL-ICs

- precision sockets and plugs in soldering (THT) and SMD technology
- DIL-IC sockets with extractor
- open and closed design



Customer specified DIL-IC sockets

- sockets for LED displays
- Dual-in-line plug in adapter
- IC-sockets partially loaded with oscillators and relays

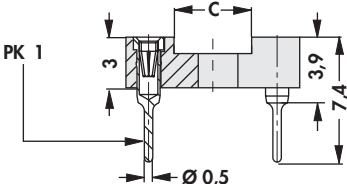
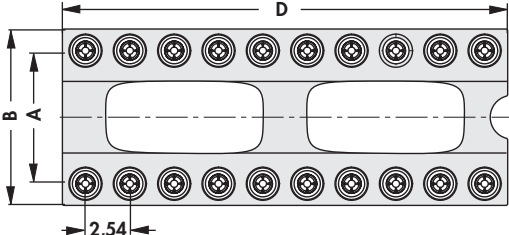


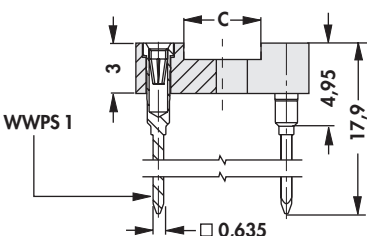
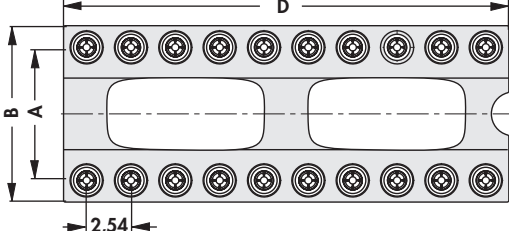
Mounting sockets for discrete components, jumper links and connectors

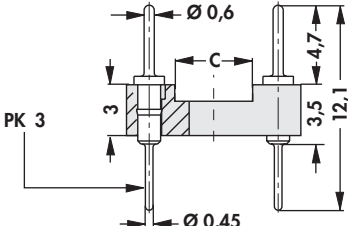
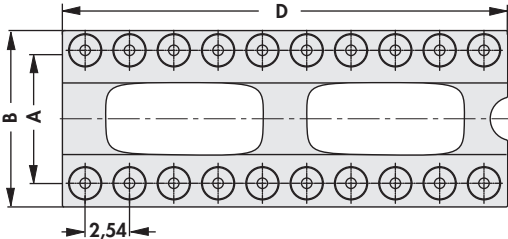
- sockets for TO 5 cases
- plug-in sockets for crystal oscillators
- jumper links with and without insulators
- precision pins and bushings, bulk
- connectors, with and without insulator

High-precision sockets and plugs for DIL-IC

– other number of contacts upon request!

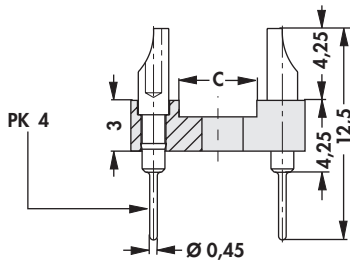
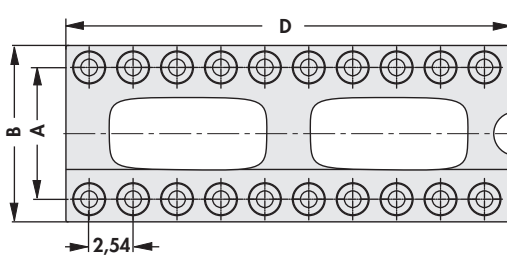
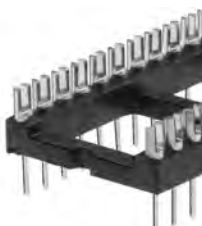
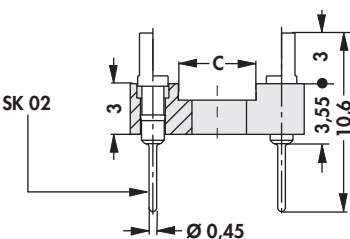
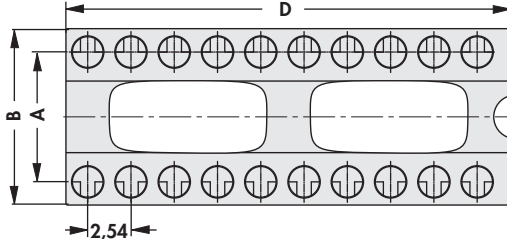
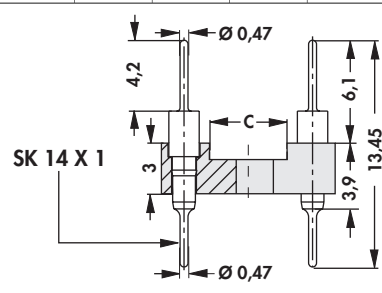
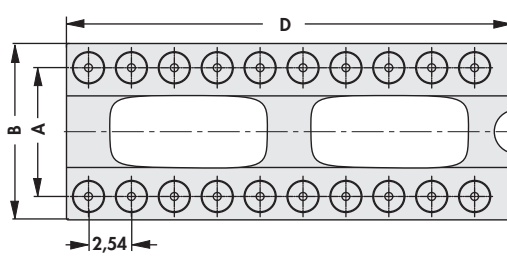
											
art. no.	no. of contacts	dim. [mm]				art. no.	no. of contacts	dim. [mm]			
DIL 6 M ...	6	A	B	C	D	DIL 22 03 M Z	22	A	B	C	D
DIL 8 M ...	8	7.62	10.1	3.8	7.6	DIL 24 M ...	24	7.62	10.1	4.8	27.9
DIL 10 M ...	10	7.62	10.1	3.8	10.1	DIL 24 03 M ...	24	15.24	17.7	11.6	30.6
DIL 14 M ...	14	7.62	10.1	4.7	12.7	DIL 24 04 M G	24	7.62	10.1	4.0	30.6
DIL 16 M ...	16	7.62	10.1	4.9	17.7	DIL 28 M ...	24	10.16	12.7	7.1	30.6
DIL 18 M ...	18	7.62	10.1	3.5	20.4	DIL 28 03 M ...	28	15.24	17.7	11.3	35.7
DIL 20 M ...	20	7.62	10.1	4.1	23.0	DIL 32 M ...	28	7.62	10.1	4.0	35.7
DIL 22 M ...	22	7.62	10.1	3.4	25.5	DIL 36 M G	32	15.24	17.7	11.2	40.6
		10.16	12.7	6.6	27.9		36	15.24	17.7	10.6	45.6

											
art. no.	no. of contacts	dim. [mm]				art. no.	no. of contacts	dim. [mm]			
DIL 14 N ...	14	7.62	10.1	4.9	17.7	DIL 16 N ...	16	7.62	10.1	3.5	20.4
please indicate: ... surface of contact G = gold-plated Z = tin-plated											
contact spring:		gold-plated									

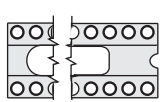
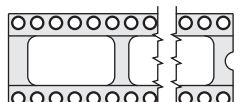
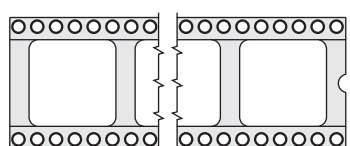
											
art. no.	no. of contacts	dim. [mm]				art. no.	no. of contacts	dim. [mm]			
		A	B	C	D			A	B	C	D
DIL 8 O ...	8	7.62	10.1	3.8	10.1	DIL 20 O G	20	7.62	10.1	3.4	25.5
DIL 14 O ...	14	7.62	10.1	4.9	17.7	DIL 22 O ...	22	10.16	12.7	6.6	27.9
DIL 16 O ...	16	7.62	10.1	3.5	20.4						
please indicate: ... surface of contact G = gold-plated Z = tin-plated											

High-precision sockets and plugs for DIL-IC

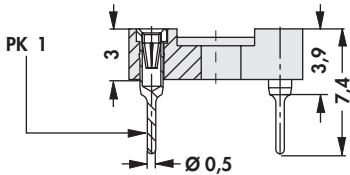
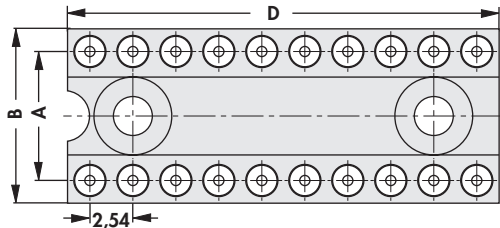
– other number of contacts on request!

											
art. no.	no. of contacts	dim. [mm]				art. no.	no. of contacts	dim. [mm]			
		A	B	C	D			A	B	C	D
DIL 6 P Z	6	7.62	10.1	3.8	7.6	DIL 16 P Z	16	7.62	10.1	3.5	20.4
DIL 14 P Z	14	7.62	10.1	4.9	17.7						
											
art. no.	no. of contacts	dim. [mm]				art. no.	no. of contacts	dim. [mm]			
		A	B	C	D			A	B	C	D
DIL 8 Q G	8	7.62	10.1	3.8	10.1	DIL 20 Q Z	20	7.62	10.1	3.4	25.5
DIL 16 Q Z	16	7.62	10.1	3.5	20.4						
											
art. no.	no. of contacts	dim. [mm]				art. no.	no. of contacts	dim. [mm]			
		A	B	C	D			A	B	C	D
DIL 10 U Z	10	7.62	10.1	4.7	12.7	DIL 22 U ...	22	10.16	12.7	6.6	27.9
DIL 14 U G	14	7.62	10.1	4.9	17.7	DIL 24 U ...	24	15.24	17.7	11.6	30.6
please indicate: ... surface of contact G = gold-plated Z = tin-plated											

Socket layout for various numbers of contacts for DIL-IC, open frame

6-16 pol.	18-32 pol.	36 pol.
		

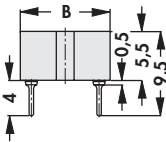
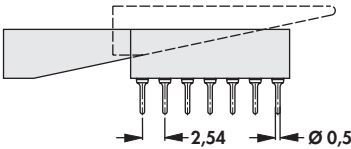
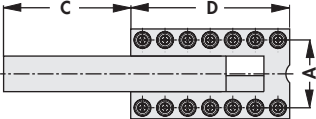
High-precision sockets and plugs for DIL-IC

									
art. no.	no. of contacts	dim. [mm]			art. no.	no. of contacts	dim. [mm]		
DIL 6 E ...	6	7.62	10.3	7.6	DIL 20 E ...	20	7.62	10.3	25.5
DIL 8 E ...	8	7.62	10.3	10.1	DIL 28 E ...	28	15.24	17.7	35.5
DIL 14 E ...	14	7.62	10.3	17.7	DIL 32 E ...	32	15.24	17.7	40.6
DIL 16 E ...	16	7.62	10.3	20.4	DIL 40 E ...	40	15.24	17.7	50.8
DIL 18 E ...	18	7.62	10.3	23.0					
please indicate: ... surface of contact G = gold-plated Z = tin-plated									
contact spring:		gold-plated							

Socket layout for various numbers of contacts for DIL-IC, closed frame

6 pol.	8 pol.	14-22 pol.
28 pol.	32-40 pol.	

DIL-IC-sockets with extractor

											
art. no.	no. of contacts	dim. [mm]				art. no.	no. of contacts	dim. [mm]			
DIL 14 PEK	14	A	B	C	D	DIL 16 PEK	16	A	B	C	D
		7.62	10.1	12	17.0			7.62	10.1	12	20.3
contact spring:		gold-plated									
contact sleeve:		gold-plated									

High-precision sockets and plugs for DIL-IC

IC-sockets partially equipped, e.g. for oscillators and relays

art. no.		no. of contacts			
DIL 4 OR ...		4			
DIL 8 1 OR Z		8			
DIL 8 2 OR ...		8			
please indicate:		... surface of contact G = gold-plated Z = tin-plated			
contact spring:		gold-plated			

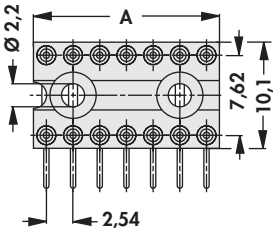
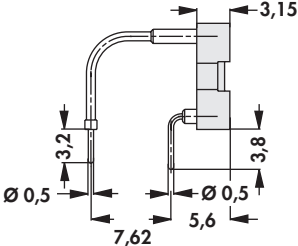
LED display sockets of 0.6" pitch

art. no.	no. of contacts	dim. [mm]	art. no.	no. of contacts	dim. [mm]
DIL 16 06 E Z	16	A 20.3	DIL 18 06 E Z	18	A 22.8
art. no.	no. of contacts	dim. [mm]	art. no.	no. of contacts	dim. [mm]
DIL 16 06 H Z	16	A 20.3	DIL 18 06 H Z	18	A 22.8
contact spring:		gold-plated			
contact sleeve:		tin-plated			

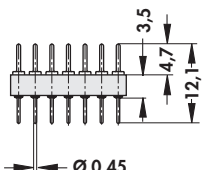
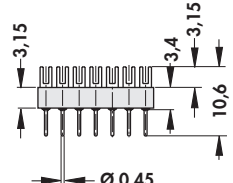
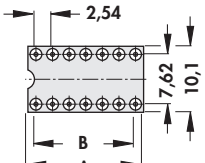
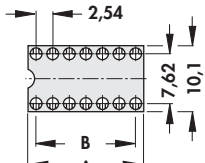
High-precision sockets and plugs for DIL-IC

LED display sockets in vertical construction

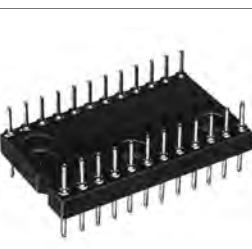
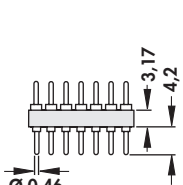
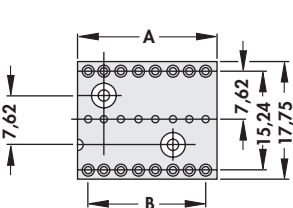
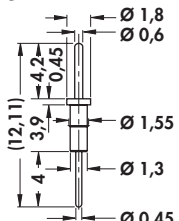
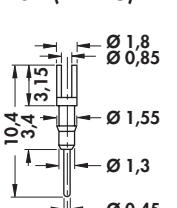
art. no.	no. of contacts	dim. [mm]	
		A	B
DIL 14 W 90	14	27.7	22.7
contact spring:		gold-plated	
contact sleeve:		tin-plated	

					
art. no.	no. of contacts	dim. [mm] A	art. no.	no. of contacts	dim. [mm] A
DIL 8 G Z	8	10.1	DIL 16 G ...	16	20.3
DIL 10 G ...	10	12.7	DIL 20 G ...	20	25.4
DIL 14 G ...	14	17.7			
please indicate: ... surface of contact G = gold-plated Z = tin-plated					
contact spring:		gold-plated			

DIL adaptor plugs

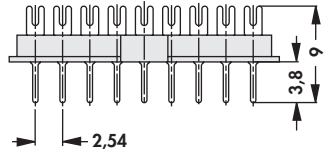
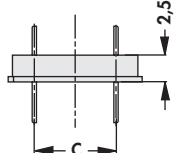
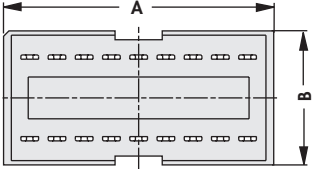
							
art. no.	no. of contacts	dim. [mm]		art. no.	no. of contacts	dim. [mm]	
		A	B			A	B
DILS 04 PK 5	4	5.0	2.54	DILS 16 PK 3	16	20.3	17.78
DILS 06 PK 3	6	7.6	5.08	DILS 16 PK 5	16	20.3	17.78
DILS 14 PK 3	14	17.7	15.24	DILS 18 PK 5	18	23.0	20.32
surface of contact:		gold-plated					

High-precision sockets and plugs for DIL-IC

							PK 3 			SK 02 (≅ PK 5) 		
art. no.	no. of contacts	dim. [mm]			art. no.	no. of contacts	dim. [mm]					
		A	B				A	B				
DILS 16 6 PK 3	16	20.3	17.78		DILS 40 6 PK 3	40	50.8	48.26				
DILS 28 6 PK 3	28	35.5	33.02									
surface of contact:		gold-plated										

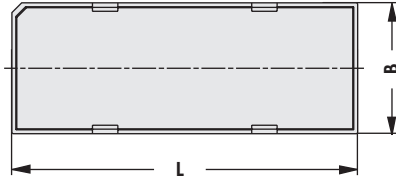
DIL platforms

– suitable for **DIL-cases** DILS ... GA LO

									
art. no.	no. of contacts	dim. [mm]			art. no.	no. of contacts	dim. [mm]		
		A	B	C			A	B	C
DILS 08 GO	8	12.4	12.5	7.62	DILS 24 GO	24	32.8	20.1	15.24
DILS 14 GO	14	20.0	12.5	7.62	DILS 28 GO	28	37.8	20.1	15.24
DILS 16 GO	16	22.6	12.5	7.62	DILS 40 GO	40	53.1	20.1	15.24
DILS 18 GO	18	25.2	12.5	7.62					
surface of contact:		gold-plated							

DIL cases - grid spacing 2.54 mm

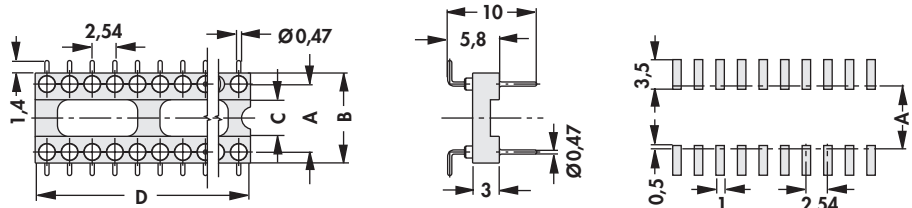
– suitable for **DIL** plugs DILS ... GO

							
art. no.	dim. [mm]			art. no.	dim. [mm]		
	B	H	L		B	H	L
DILS 08 GA LO	12.5	6.7	12.4	DILS 14 GB LO	12.5	11.7	20.0
DILS 14 GA LO	12.5	6.7	20.0	DILS 16 GB LO	12.5	11.7	22.6
DILS 16 GA LO	12.5	6.7	22.6	DILS 18 GB LO	12.5	11.7	25.2
DILS 18 GA LO	12.5	6.7	25.2	DILS 24 GB LO	20.1	11.7	32.8
DILS 24 GA LO	20.1	6.7	32.8	DILS 28 GB LO	20.1	11.7	37.8
DILS 40 GA LO	20.1	6.7	53.1	DILS 40 GB LO	20.1	11.7	53.1
DILS 08 GB LO	12.5	11.7	12.4				

High-precision sockets and plugs for DIL-IC

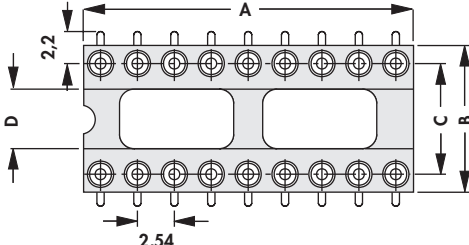
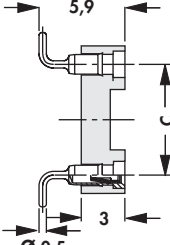
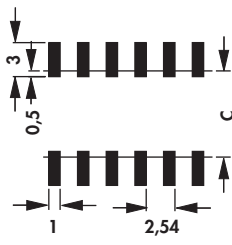
SMD-plug for DIL

- with **SK 5**-contacts
- other number of contacts on request!

											
art. no.	no. of contacts	dim. [mm]				art. no.	no. of contacts	dim. [mm]			
DIL 08 SMD SK5 Z	8	7.62	10.1	3.5	10.0	DIL 20 SMD SK5 Z	20	7.62	10.1	3.5	25.2
DIL 16 SMD SK5 Z	16	7.62	10.1	3.5	20.1						
surface of contact:				tin-plated							

SMD-socket for DIL-IC

- other number of contacts upon request!

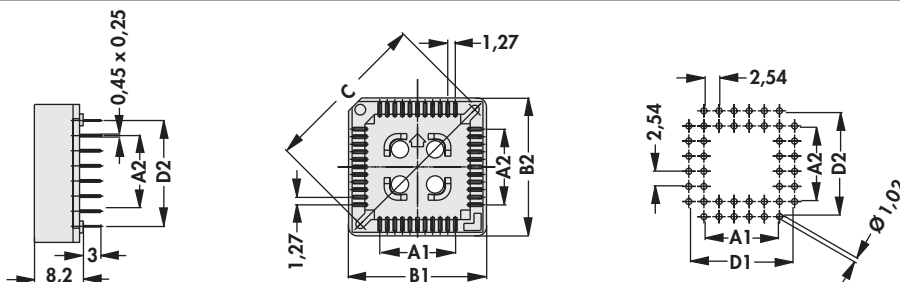
											
art. no.	no. of contacts	dim. [mm]				art. no.	no. of contacts	dim. [mm]			
		A	B	C	D			A	B	C	D
DIL 16 SMD M	16	20.1	10.1	7.62	3.5	DIL 24 03 SMD M	24	30.3	10.1	7.62	3.5
DIL 20 SMD M	20	25.2	10.1	7.62	3.5	DIL 28 SMD M	28	35.4	17.6	15.24	11.2
contact spring:			gold-plated								
contact sleeve:			tin-plated								

IC-mounting tools - Design DIL

					
art. no.		spacing of contact rows [mm]			
MIC 03		7.62			
MIC 06		15.24			
material:		polyacetole, non-conductive			

Sockets for IC-PLCC

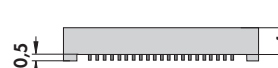
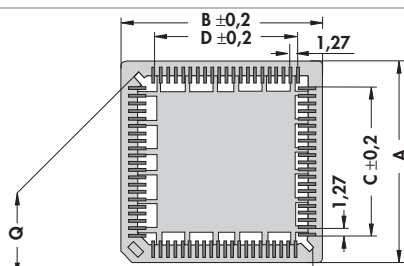
- PLCC sockets for case design EIA/JEDEC TYPE "A"
- **VPE** = packing unit (pieces/tube)
- data sheet for pin configuration of individual PLCC sockets available upon request
- dual polarity indicators guarantee the correct alignment of the chip
- drainage holes for easier inside cleaning
- test holes are moulded next to each contact



art. no.	no. of contacts	packing unit	dim. [mm]						
			A 1	A 2	B 1	B 2	C	Ø D1	Ø D2
PLCC 20	20	39	5.08	5.08	15.55	15.55	16.7	10.16	10.16
PLCC 28	28	33	7.62	7.62	18.10	18.10	20.3	12.70	12.70
PLCC 32	32	29	7.62	10.16	18.10	20.70	22.2	12.70	15.24
PLCC 44	44	25	12.70	12.70	23.20	23.20	27.5	17.78	17.78
PLCC 52	52	23	15.24	15.24	25.70	25.70	31.0	20.32	20.32
PLCC 68	68	19	20.32	20.32	30.80	30.80	37.3	25.40	25.40
PLCC 84	84	16	25.40	25.40	36.00	36.00	44.5	30.48	30.48
surface of contact:			tin-plated						

SMD sockets for PLCC - low profile housing

- these PLCC sockets conform to case designs EIA/JEDEC TYPE "A"
- **VPE** = packing unit (pieces/tube)*dimensions ± 0.2 mm; tin-plated phosphorbronze socket contacts
- dual polarity indicators guarantee the correct alignment of the chip
- drainage holes for easier inside cleaning
- test holes are moulded next to each contact
- efficient heat dissipation
- **packing:** bar magazine



art. no.	no. of contacts	packing unit	dim. [mm]				
			A	B	C	D	Q
PLCC 20 SMD	20	39	15.58	15.58	5.08	5.08	16.0
PLCC 28 SMD	28	33	18.12	18.12	7.62	7.62	20.6
PLCC 32 SMD	32	29	18.12	20.66	7.62	10.16	22.5
PLCC 44 SMD	44	26	23.40	23.40	12.70	12.70	27.5
PLCC 52 SMD	52	23	25.74	25.74	15.24	15.24	31.1
PLCC 68 SMD	68	20	30.82	30.82	20.32	20.32	38.8
PLCC 84 SMD	84	17	35.90	35.90	25.40	25.40	44.8
surface of contact:			tin-plated				

Sockets for TO ... cases

Transistor sockets for TO 5

art. no.		no. of contacts	
PF 53 ...		3	
art. no.		no. of contacts	
PF 54 ...		4	
art. no.		no. of contacts	
PF 58 23 ...		8	
please indicate:	... surface of contact G = gold-plated Z = tin-plated		
contact spring:	gold-plated		
contact sleeve:	gold-plated		
art. no.		no. of contacts	
PF 58 2 G		8	
contact spring:	gold-plated		
contact sleeve:	gold-plated		

A

Sockets for TO ... cases

B

C

D

E

F

G

H

I

K

L

M

Sockets for TO 5

art. no.	no. of contacts
PF 510 G	10
contact spring:	gold-plated
contact sleeve:	gold-plated

N

F 11

Teflon sockets/TO 5 & TO 18
 Connector-sleeves
 Sockets for DIL-IC
 Single precision contacts

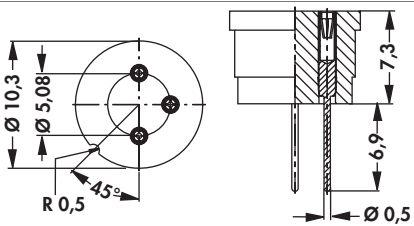
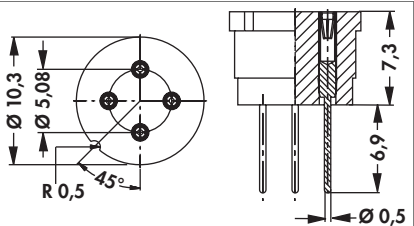
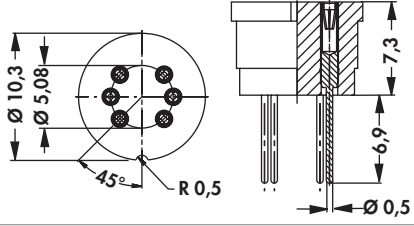
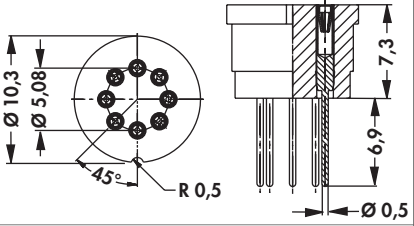
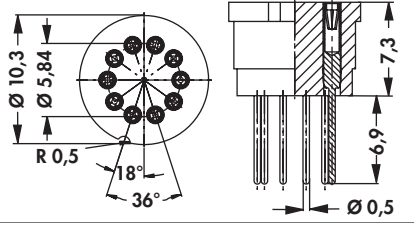
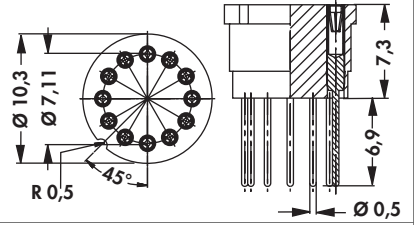
→ F 12
 → F 19 – 20
 → F 2 – 4
 → F 17 – 18

Jumper links
 Sockets for LED
 SMD socket for DIL-IC
 Technical data

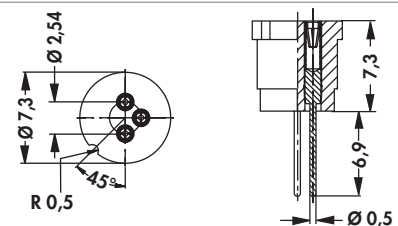
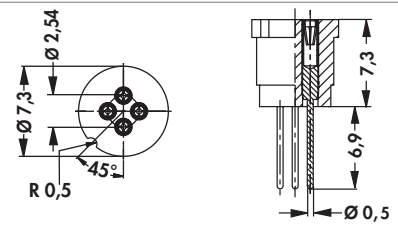
→ F 14 – 15
 → F 5 – 6
 → F 8
 → F 21 – 27

Sockets for TO ... cases

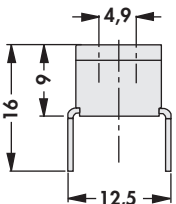
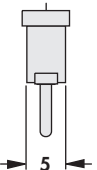
Transistor sockets - teflon sockets for TO 5

			
art. no.	no. of contacts	art. no.	no. of contacts
TF 53	3	TF 54	4
			
art. no.	no. of contacts	art. no.	no. of contacts
TF 56	6	TF 58	8
			
art. no.	no. of contacts	art. no.	no. of contacts
TF 510	10	TF 512	12
contact spring:		gold-plated	
contact sleeve:		gold-plated	

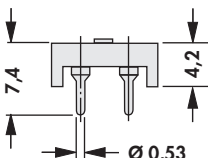
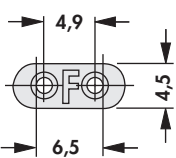
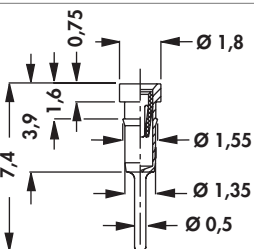
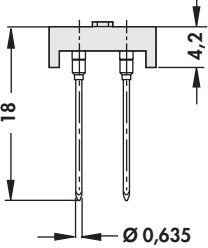
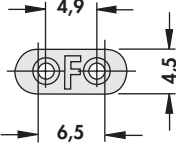
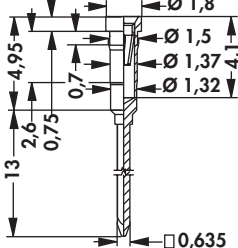
Transistor sockets - teflon sockets for TO 18

			
art. no.	no. of contacts	art. no.	no. of contacts
TF 183	3	TF 184	4
contact spring:		gold-plated	
contact sleeve:		gold-plated	

Sockets for crystal oscillators

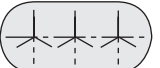
art. no.			
QS 25 GS			
surface of contact:		silver-plated	

Precision sockets for crystal oscillators in case HC 18

art. no.				
PQ 18 ...				
art. no.				
PQ 18 W ...				
please indicate: ... surface of contact G = gold-plated Z = tin-plated				
contact spring:		gold-plated		

Insulators for crystal oscillators

* = equates self retaining

			
art. no.	case design	dim. [mm]	
ISQ 04	HC-18/U/ HC-49/U/ HC-43/U	C	D
ISQ 05	HC-18/U/ HC-49/U/ HC-43/U	-	0.71
ISQ 06	HC-18/U/ HC-49/U/ HC-43/U	-	*
ISQ 07	HC-18/U/ HC-49/U/ HC-43/U	2.4	0.71
ISQ 08	HC-18/U/ HC-49/U/ HC-43/U	2.4	*
	HC-50/U/ HC-42/U/ HC-25/U	-	1.30
dielectric strength:		9 kV	
name of foil:		MYLAR	
heat resistance:		250°C	
material thickness:		0.127 mm	

Jumper links

art. no.	dim. [mm]		art. no.	dim. [mm]	
	A	B		A	B
LB 02 G	5.08	2.0	LB 04 G	10.16	7.0
LB 03 G	7.62	4.5	LB 06 G	15.24	12.0
surface of contact:		gold-plated			

art. no.	dim. [mm]	art. no.	dim. [mm]
	A		A
CB 1 ...	2.54	CB 6 ...	7.62
CB 3 ...	5.08		
please indicate:	... surface of contact G = gold-plated Z = tin-plated		

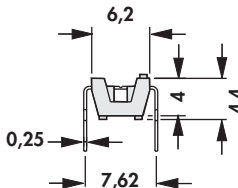
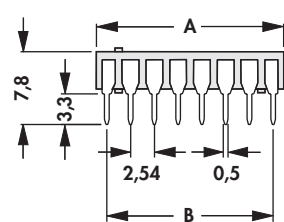
art. no.	dim. [mm]		art. no.	dim. [mm]	
	A			A	
LEB 01 G	2.54		LEB 03 G	7.62	
LEB 02 G	5.08				
surface of contact:		gold-plated			

art. no.		
PSB 03 G		
surface of contact:		gold-plated

Jumper links / Separable jumpers

separable jumpers for soldering technology

– the contacts have a preformed dividing groove and can easily be separated with a screwdriver



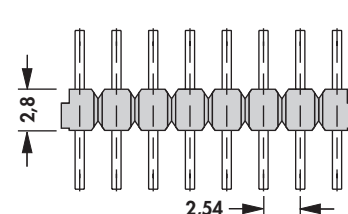
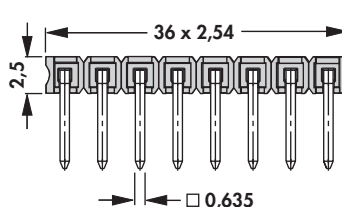
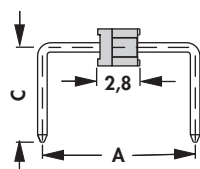
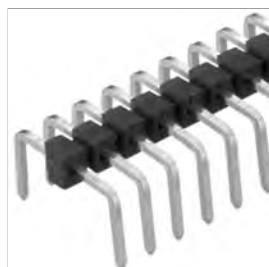
art. no.	no. of contacts	dim. [mm]		art. no.	no. of contacts	dim. [mm]	
		A	B			A	B
CAB 3 06 03 Z	6	7.30	5.08	CAB 3 14 03 Z	14	17.46	15.24
CAB 3 08 03 Z	8	9.84	7.62	CAB 3 16 03 Z	16	20.00	17.78
CAB 3 12 03 Z	12	14.92	12.70				

surface of contact:

tin-plated

Jumper links, grid spacing 2.54 mm, □ 0.635 mm

– **separable!** any requested number of contact can be delivered



art. no.	dim. [mm]		art. no.	dim. [mm]	
	A	C		A	C
LB SL 0508 ...	5.08	6.1	LB SL 1016 ...	10.16	6.1
LB SL 0762 ...	7.62	6.1	LB SL 1524 ...	15.24	6.1

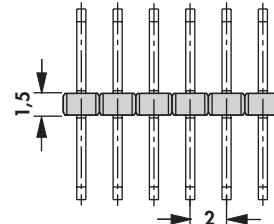
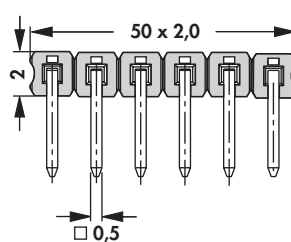
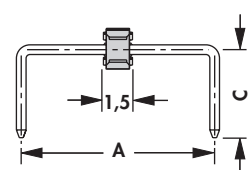
please indicate:

... no. of contacts
1 - 36

... surface of contact
G = gold-plated
Z = tin-plated

Jumper links, grid spacing 2.00 mm, □ 0.5 mm

– **separable!** any requested number of contact can be delivered



art. no.	dim. [mm]	
	A	C
LB SLY 06 ...	6	4.5

please indicate:

... no. of contacts
1 - 50

... surface of contact
G = gold-plated
Z = tin-plated

Jumper links / Separable jumpers

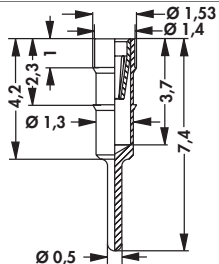
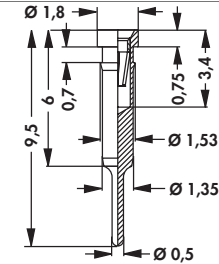
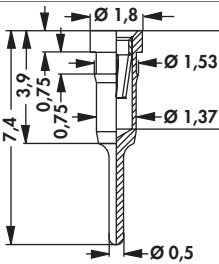
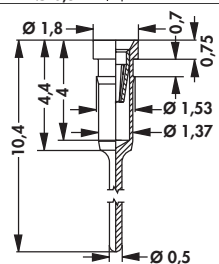
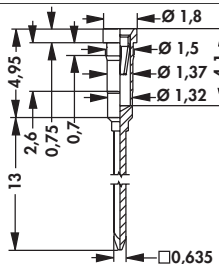
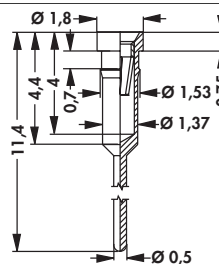
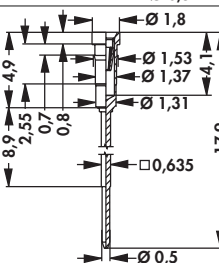
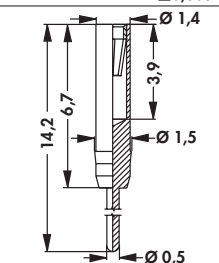
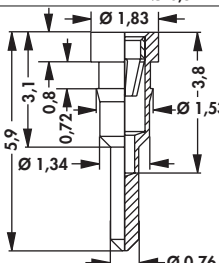
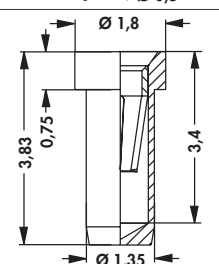
Jumper link for LED- and standard-PCBs

- in SMD-technology
- 0,635 mm
- **separable!** any requested number of contact can be delivered

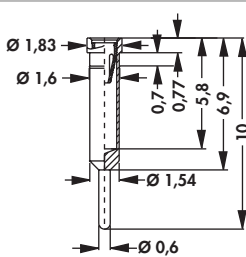
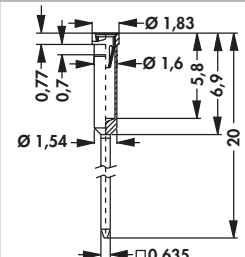
art. no.		
LB SL LP 039 SMD ...		
please indicate:	... no. of contacts 2 - 20	... surface of contact G = gold-plated Z = tin-plated

High-precision contacts, loose

Female contacts for Ø 0.5 mm

art. no. 1706 G		art. no. PEK G		art. no. PK 1 ...	
art. no. 1831 Z		art. no. WWPS 1 G		art. no. SK 06 ...	
art. no. SK 13 X 2 G		art. no. TF G		art. no. SK 19 ...	
art. no. SIL 1 ...					
please indicate: ... surface of contact G = gold-plated Z = tin-plated					
contact spring:		gold-plated			

Female contact for 0.64 mm □ and Ø 0.80 mm

art. no.		art. no.	
SKB 5 Z		SKB 9 Z	
contact spring:		gold-plated	
contact sleeve:		tin-plated	

High-precision contacts, loose

Contacts with solder head

art. no. PK 4 Z		art. no. SK 02 ...		art. no. SK 03 ...	
art. no. SK 04 Z		art. no. SK 08 G			

please indicate: ... surface of contact
G = gold-plated
Z = tin-plated

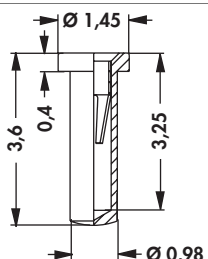
Male contacts

art. no. SK 05 ...		art. no. SK 14 X 2 ...		art. no. SK 40 G	
art. no. SK 41 ...		art. no. SK 42 ...			

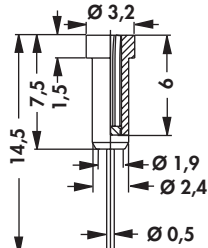
please indicate: ... surface of contact
G = gold-plated
Z = tin-plated

Connector-sleeves

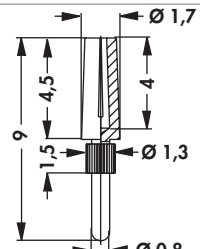
For 0.4 mm with BeCu spring 3 μ m Ni, 1 μ m Au

art. no.		
SB 1		

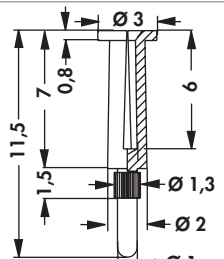
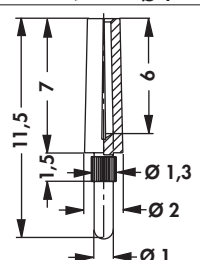
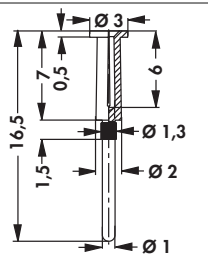
For 0.4 mm with bronze spring, teflon insulated

art. no.		
SB 2		

For 0.8 mm, slotted

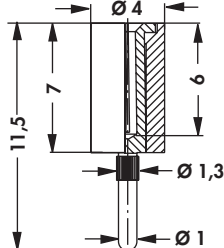
art. no.		
SB 3		

For 1 mm, slotted

art. no.		
SB 4		
art. no.		
SB 5		
art. no.		
SB 6		
surface of contact:		gold-plated

Connector-sleeves

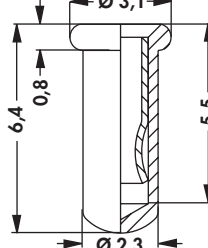
For 1 mm, slotted, plastic insulated

art. no.		
SB 9		

B

C

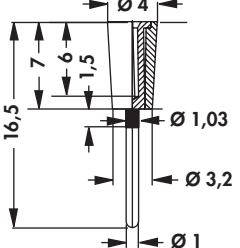
For 1 mm, with BeCu spring 3 µm Ni, 1 µm Au

art. no.		
SB 12		

D

E

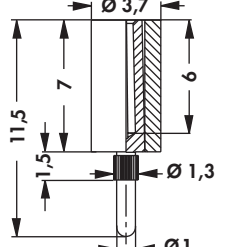
For 1 mm, slotted, plastic insulated

art. no.		
SB 16		

F

G

For 2 mm, slotted, plastic insulated

art. no.		
SB 13 ...		

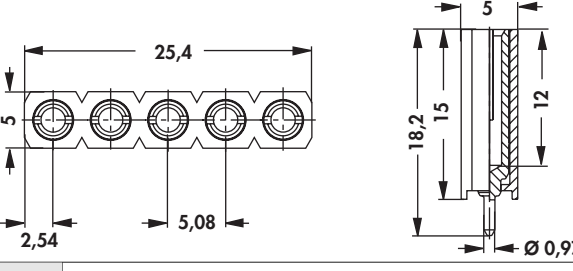
H

I

please indicate: ... case colour
S = black
R = red
B = blue

K

For 2 mm, slotted, plastic insulated, separable

art. no.		
SB 15		
surface of contact:	gold-plated	

L

M

High-prec. male headers 2.54 THT
Teflon sockets/TO 5 & TO 18
High-precision female headers THT
Jumper links

→ G 45 – 46
→ F 12
→ G 2 – 6
→ F 14 – 15

Sockets für PLCC
Sockets for LED
Sockets for crystal oscillators
Technical data

→ F 9
→ F 5 – 6
→ F 13
→ F 21 – 27

F 20

N

	DIL ... E ..., DIL ... M ..., DIL ... N ..., DIL ... OR ...	DIL ... O ..., DIL ... P ..., DIL ... Q ..., DIL ... U ...	DIL ... PEK	DIL ... 06 E Z, DIL ... 06 H Z
contact material	CuZn-alloy			
surface contact / contact sleeve	Ni+≥0.2μm Au/ Ni+4...6μm Sn		Ni+≥0.2μm Au	Ni+4...6μm Sn
inner contact spring material	CuBe-alloy		CuBe-alloy	
inner contact spring surface	Ni+0,25μm Au		Ni+0,75μm Au	Ni+0,25μm Au
plugability for circuit points	0,22x0,25mm... 0,4x0,55mm/ Ø0,4...0,56mm		0,22x0,25mm... 0,4x0,55mm/ Ø0,4...0,56mm	
insert depth	2.5...3.6mm		2.5...3.6mm	
insertion / drawing force	4 lamellas con- tact/ 1.8 N/1.4 N		4 lamellas contact/ 1.8 N/1.4 N	
shock resistance	50 g			
vibration resistance max.	15 g			
volume resistance	10 mΩ			
contact resistance	4 mΩ			
contact resistance after 1000 cycles	7 mΩ			
capacity between two adjacent contacts	0,4 pF			
nominal current	1.5 A			
nominal voltage	150 V DC			
test voltage	1000 V			
insulating body material	PPS, GF			
temperature range	-40°C... +200°C/ (260°C/10 s)			
class of flammibility	UL 94 V-0			
specific insulation resistance	>10 ¹² Ω·m			

	DIL ... G ..., DIL 14 W 90	DILS ... PK ...	DILS ... GO	DILS ... LO
contact material	CuZn-alloy		CuSn alloy	
surface contact / contact sleeve	Ni+4...6µm Sn	Ni+≥0.2µm Au		
inner contact spring material	CuBe-alloy			
inner contact spring surface	Ni+0,75µm Au			
plugability for circuit points	0,22x0,25mm... 0,4x0,55mm/ Ø0,4...0,56mm			
insert depth	2.5...3.6mm			
insertion / drawing force	4 lamellas con- tact/ 1.8 N/1.4 N			
shock resistance	50 g			
vibration resistance max.	15 g			
volume resistance	10 mΩ			
contact resistance	4 mΩ			
contact resistance after 1000 cycles	7 mΩ			
capacity between two adjacent contacts	0,4 pF			
nominal current	1.5 A			
nominal voltage	150 V DC			
test voltage	1000 V			
insulating body material	PPS, GF			PA 4.6. GF
temperature range	-40°C... +200°C/ (260°C/10 s)			-40°C... +163°C/ (260°C/10 s)
class of flammability	UL 94 V-0			
specific insulation resistance	> 10 ¹² Ω·m			

	DIL ... SMD M, DIL...SMD SK5	MIC ...	PLCC ..., PLCC ... SMD	TF ...
contact material	CuZn-alloy		CuSn alloy	CuZn-alloy
surface contact / contact sleeve	Ni+ $\geq 0.2\mu\text{m Au}$ / Ni+ $4\ldots 6\mu\text{m Sn}$		Ni+ $2\ldots 4\mu\text{m Sn}$	Ni+ $\geq 0.2\mu\text{m Au}$
inner contact spring material	CuBe-alloy			CuBe-alloy
inner contact spring surface	Ni+ $0,25\mu\text{m Au}$			Ni+ $0,75\mu\text{m Au}$
plugability for circuit points	0,22x0,25mm... 0,4x0,55mm/ $\varnothing 0,4\ldots 0,56\text{mm}$			0,22x0,25mm... 0,4x0,55mm/ $\varnothing 0,4\ldots 0,56\text{mm}$
insert depth	2.5...3.6mm			2.5...3.6mm
insertion / drawing force	4 lamellas con- tact/ 1.8 N/1.4 N			4 lamellas con- tact/ 1.8 N/1.4 N
shock resistance	50 g			50 g
vibration resistance max.	15 g			15 g
volume resistance	10 m Ω		>30 m Ω	10 m Ω
contact resistance				4 m Ω
contact resistance after 1000 cycles				7 m Ω
capacity between two adjacent contacts	0,4 pF			
nominal current	1.5 A		1 A	1.5 A
nominal voltage	150 V DC			100 V DC
test voltage	1000 V		500 V	1000 V
insulating body material	PPS, GF	polyacetal/ non- conductive	PPS, GF	PTFE
temperature range	-40°C... +200°C/ (260°C/10 s)		-40°C... +105°C/ (260°C/10 s)	-200°C ... +260°C
class of flammability	UL 94 V-0	UL 94 V-0 (at thickness $\geq 3\text{mm}$), UL 94 V-1	UL 94 V-0	
specific insulation resistance	>10 ¹² $\Omega\cdot\text{m}$		>10 ⁸ $\Omega\cdot\text{m}$	>10 ¹⁴ $\Omega\cdot\text{m}$

	QS 25 GS	PF ..., PQ 18 ...	LB ... G	CB ...
contact material	CuSn alloy	CuZn-alloy		
surface contact / contact sleeve	Ni+3 μ m Ag	Ni+ $\geq 0.2\mu$ m Au/ Ni+4...6 μ m Sn	Ni+ $\geq 0.2\mu$ m Au	Ni+ $\geq 0.2\mu$ m Au/ Ni+4...6 μ m Sn
inner contact spring material		CuBe-alloy		
inner contact spring surface		Ni+0,75 μ m Au		
plugability for circuit points		0,22x0,25mm... 0,4x0,55mm/ Ø0,4...0,56mm		
insert depth		2.5...3.6mm		
insertion / drawing force		4 lamellas con- tact/ 1.8 N/1.4 N		
shock resistance		50 g		
vibration resistance max.		15 g		
volume resistance	10 m Ω			
contact resistance		4 m Ω		
contact resistance after 1000 cycles	7 m Ω			
capacity between two adjacent contacts		0,4 pF		
nominal current	2.5 A	1.5 A		
nominal voltage	125 V DC	60 V DC		
test voltage	500 V			
insulating body material	PA, GF	PA 4.6. GF		
temperature range	-40°C ... +180°C	-40°C... +163°C/ (260°C/10 s)		
class of flammability	UL 94 V-0			
specific insulation resistance	>10 ⁷ Ω ·m			

Technical data Sockets

	LEB ... G	PSB 03 G	CAB 3 ... 03 Z	LB SLY 06 ...
contact material	CuZn-alloy	phosphor bronze	brass	CuSn alloy
surface contact / contact sleeve	Ni+0.15µm Au	Ni+≥0.2µm Au	Ni+4...6µm Sn	Ni+4...6µm Sn/ Ni+≥0.2µm Au
volume resistance				5 mΩ
nominal current	3 A		1.5 A	3 A
nominal voltage	150 V DC	125 V AC	100 V DC	
test voltage	1000 V		1000 V	500 V
insulating body material	thermoplastic polyester	PA 6. GF	PPS, GF	PA 4.6. GF
temperature range	-55°C... +125°C		-40°C... +200°C/ (260°C/10 s)	-40°C... +163°C/ (260°C/10 s)
class of flammability	UL 94 V-0		UL 94 V-0	
specific insulation resistance			>10 ¹² Ω·m	>10 ⁷ Ω·m

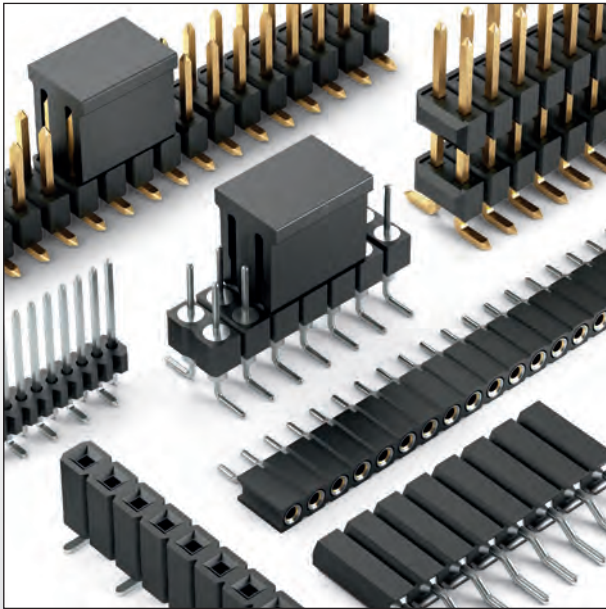
	LB SL ..., LB SL LP ...	1706 G, PEK G, TF G, WWPS 1 G	PK 1 ..., SK 19 ...	1831 Z, SIL 1 ..., SK 06 ..., SK 13 X 2 G
contact material	CuSn alloy	CuZn-alloy		
surface contact / contact sleeve	Ni+4...6µm Sn/ Ni+≥0.2µm Au	Ni+≥0.2µm Au	Ni+≥0.2µm Au/ Ni+4...6µm Sn	
inner contact spring material		CuBe-alloy		
inner contact spring surface		Ni+0,75µm Au	Ni+0,25µm Au	Ni+0,75µm Au
insert depth		2.5...3.6mm		
insertion / drawing force		4 lamellas contact/ 1.8 N/1.4 N		
volume resistance	5 mΩ			
nominal current	3 A	1.5 A		
nominal voltage	250 V DC	60 V DC		
test voltage	2000 V	1000 V		
insulating body material	PA 4.6. GF			
temperature range	-40°C... +163°C/ (260°C/10 s)			
class of flammibility	UL 94 V-0			
specific insulation resistance	>10 ⁷ Ω·m			

	SKB 5 Z, SKB 9 Z	PK 4 Z, SK 02 ..., SK 03 ..., SK 04 Z, SK 05 ..., SK 08 G, SK 14 X 2 ..., SK 40 G, SK 41 ..., SK 42 ...	SB 1	SB 2
contact material	CuZn-alloy			
surface contact / contact sleeve	Ni+4...6µm Sn	Ni+≥0.2µm Au/ Ni+4...6µm Sn	Ni+0.25µm Au	Ni+≥0.2µm Au
inner contact spring material	CuBe-alloy		CuBe-alloy	
inner contact spring surface	Ni+0,75µm Au		Ni+0,5µm Au	Ni+0,75µm Au
plugability for circuit points			Ø0,35...0,5 mm	
insert depth	2.5...6mm		1.5...3mm	2.8...3.8mm
insertion / drawing force	6 lamella con- tacts/ 1.3N/0.3N			
nominal current	3 A	1.5 A		2 A
nominal current 70°C				1 A
nominal voltage	150 V DC	60 V DC		
test voltage	1000 V			
insulating body material				PTFE (teflon)
dielectric strength				≤500 V

Technical data Sockets

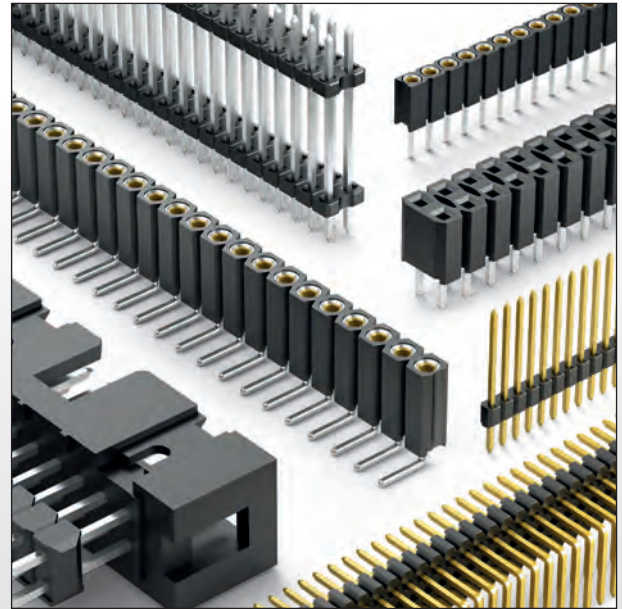
	SB 3	SB 4, SB 5, SB 6	SB 9	SB 12
contact material	CuZn-alloy			
surface contact / contact sleeve	Ni+0.25 μ m Au			
inner contact spring material				CuBe-alloy
inner contact spring surface				Ni+1 μ m Au
plugability for circuit points	Ø0,8mm	Ø1mm		
insert depth	4mm	6mm	3.8...5.5mm	
volume resistance				>30 Ω
nominal current		3 A	4 A	
nominal current 70°C		2 A		
insulating body material			PA 6.6	
dielectric strength		$\leq$ 500 V		

	SB 16	SB 13	SB 15
contact material	CuZn-alloy		
surface contact / contact sleeve	Ni+0.25 μ m Au		
plugability for circuit points	Ø1mm	Ø2mm	
insert depth	2...6mm	6mm	12mm
nominal current		3 A	
nominal current 70°C		2 A	
insulating body material	PBT, GF	polyolefin	PA 4.6. GF
class of flammability	UL 94 V-0		UL 94 V-0
dielectric strength		$\leq$ 500 V	



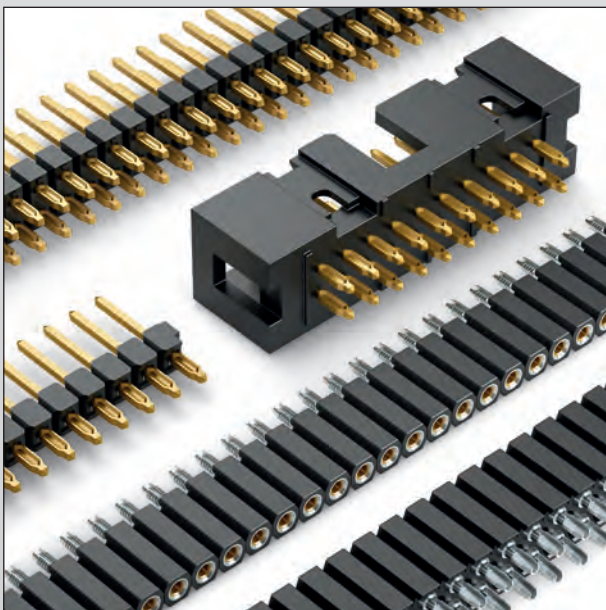
Male and female headers in SMD version

- male header, one and two rows with pick and place pad, horizontal and vertical version
- female header, one and two rows with pick and place pad, horizontal and vertical version
- grid spacing: 2,54 mm, 2,00 mm and 1,27 mm
- optional selectable type of packaging: bar magazine and tape and reel



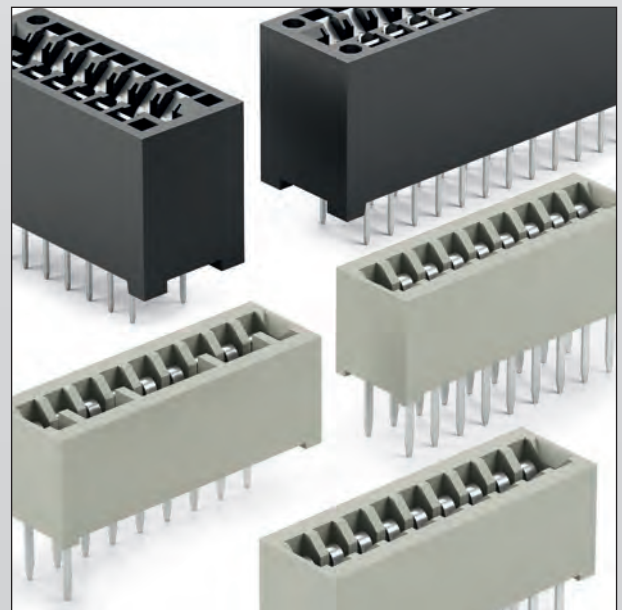
Male and female headers for solder technology (THT)

- male header, one and two rows, straight and angled version with square and precision contacts
- shrouded-header with second insulating body
- female header, one and two rows, straight and angled version with stamped contacts or precision contacts
- through-hole female headers, one and two rows
- grid spacing 2,54 mm, 2,0 mm and 1,27 mm



Male and female header in press-in mounting

- male header, one and two rows, straight version
- female header, one and two rows, straight version
- shrouded male header, two rows, straight version



Multipoint connector

- direct multipoint connector for additional circuit board with a thickness of 0,7 to 0,9 mm
- direct multipoint connector for a circuit board thickness of 1,6 mm

Male headers

Präzisionskontakte, solder and plug pins Ø 0.5 mm

– also available as single contact, **SK ...**

– **version:**

MK 05 / MK 205: contact pin on both sides

MK 04 / MK 204: with diagonal solder cup

MK 03 / MK 203: with solder head

MK 02 / MK 202: with solder fork

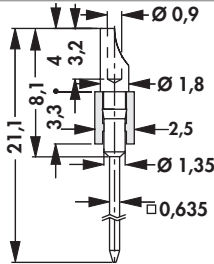
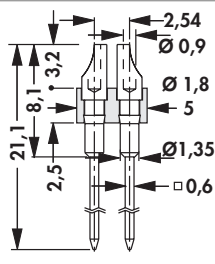
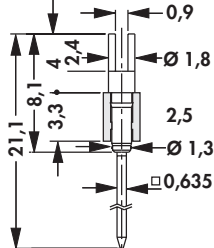
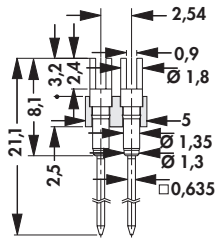
art. no.			art. no.		
MK 05 ...			MK 205 ...		
MK 04 ...			MK 204 ...		
MK 03 ...			MK 203 ...		
MK 02 ...			MK 202 ...		
please indicate: ... no. of contacts one row 1 - 50 two rows 2 - 100 ... surface of contact G = gold-plated Z = tin-plated					

Male headers

Precision contacts, Wire Wrap pin □ 0.635 mm

– version:

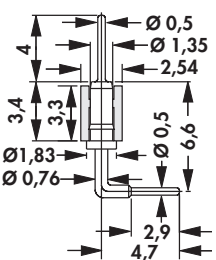
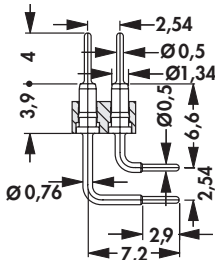
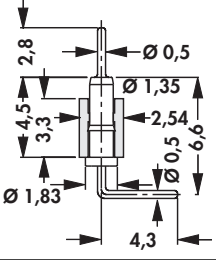
MK 10 / MK 210: with diagonal solder bucket**MK 08 / MK 208:** with solder fork

art. no.			art. no.		
MK 10 ...			MK 210 ...		
art. no.			art. no.		
MK 08 ...			MK 208 ...		
please indicate:					
... no. of contacts		... surface of contact			
one row 1 - 50		G = gold-plated			
two rows 2 - 100		Z = tin-plated			

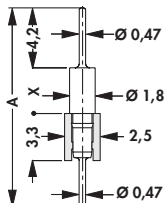
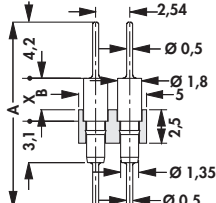
Male headers

Precision contacts, solder and plug pins, Ø 0,5 mm

– rectangular PCB connection

art. no.			art. no.		
MK 51 ...			MK 251 ...		
MK 15 ...					
please indicate: ... no. of contacts one row 1 - 50 two rows 2 - 100 ... surface of contact G = gold-plated Z = tin-plated					

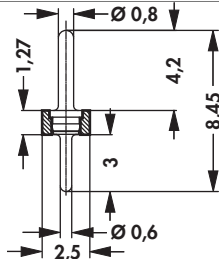
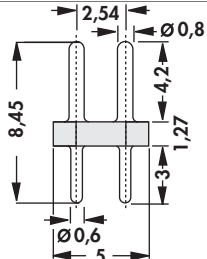
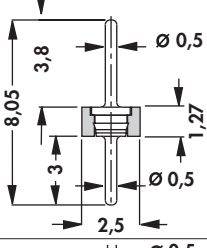
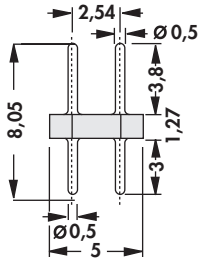
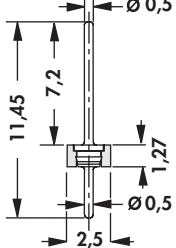
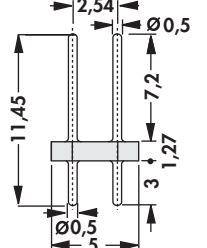
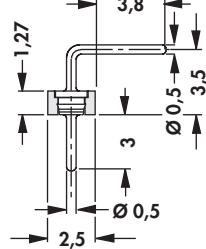
– parallel PCB connection

						
art. no.	dim. [mm]		art. no.	dim. [mm]		
	A	X		A	B	X
MK 14 X 1 ... G	13.4	2.7	MK 214 X 1 ... G	13.4	1.9	2.7
MK 14 X 2 ... G	15.4	4.7	MK 214 X 2 ... G	15.4	3.9	4.7
MK 14 X 3 ...	22.2	11.7	MK 214 X 3 ...	22.2	10.9	11.7
please indicate:						
... no. of contacts		... surface of contact				
one row 1 - 50		G = gold-plated				
two rows 2 - 100		Z = tin-plated				

Male headers

Precision contacts, low profile

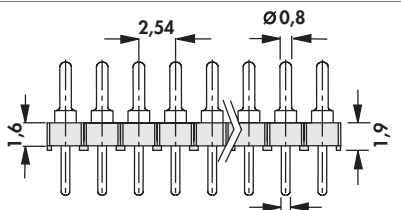
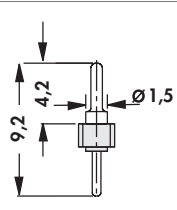
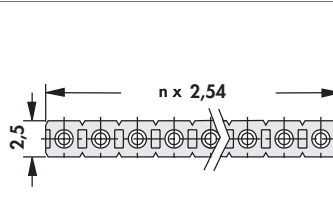
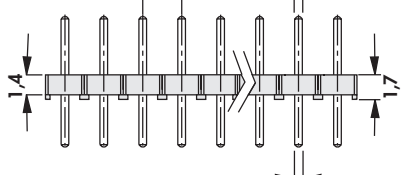
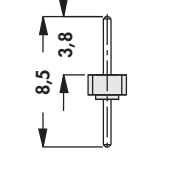
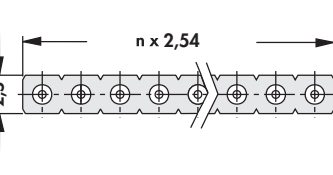
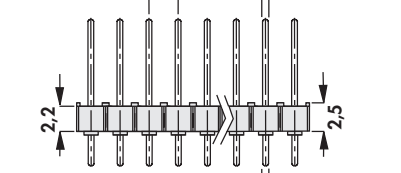
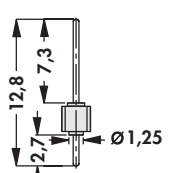
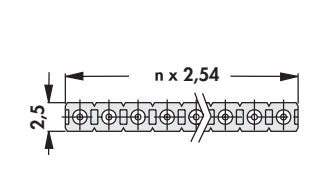
– also available as single contact, **SK** ...

art. no.			art. no.		
MK LP 40 ...			MK LP 240 ...		
art. no.			art. no.		
MK LP 41 ...			MK LP 241 ...		
art. no.			art. no.		
MK LP 42 ...			MK LP 242 ...		
art. no.					
MK LP 43 ...					
please indicate: ... no. of contacts ... surface of contact					
one row 1 - 50 G = gold-plated					
two rows 4 - 100 Z = tin-plated					

Male headers

Precision contacts, low profile

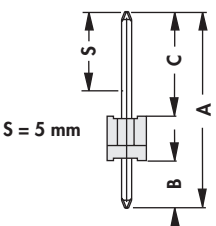
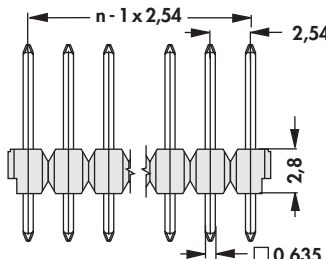
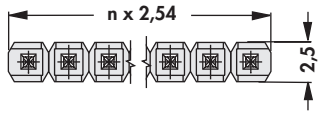
- one row

art. no.				
SL 7 ...				
art. no.				
SL 8 ...				
art. no.				
SL 9 ...				
please indicate: ... no. of contacts one row 1 - 20 ... surface of contact G = gold-plated Z = tin-plated				

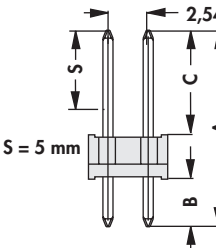
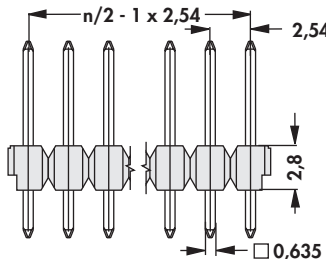
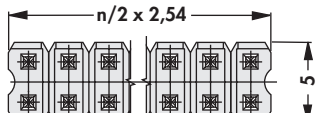
Male headers

– every pin length is available on request

– one row, □ 0.635 mm

   							
art. no.	dim. [mm]			art. no.	dim. [mm]		
	A	B	C		A	B	C
SL 11 097...	9.7	3.0	3.9	SL 1 025 ...	11.2	2.6	5.8
SL 11 112 ...	11.2	3.0	5.4	SL 1 053 ...	13.9	5.8	5.3
SL 11 124 ...	12.4	3.0	6.6	SL 1 078 ...	16.4	5.8	7.8
SL 11 139 ...	13.9	3.0	8.1	SL 1 104 ...	19.0	5.8	10.4
SL 11 164 ...	16.4	3.0	10.6	SL 1 128 ...	21.4	5.8	12.8
SL 11 190 ...	19.0	3.0	13.2	SL 1 154 ...	24.0	5.8	15.4
SL 11 214 ...	21.4	3.0	15.6	SL 1 179 ...	26.5	5.8	17.9
SL 11 240 ...	24.0	3.0	18.2	SL 1 230 ...	31.6	5.8	23.0
SL 11 265 ...	26.5	3.0	20.7				
SL 11 316 ...	31.6	3.0	25.8				
please indicate: ... no. of contacts one row 1 - 36 ... surface of contact S = selective gold-plated G = gold-plated Z = tin-plated							

– two rows, □ 0.635 mm

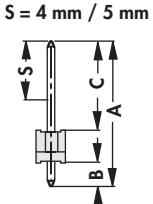
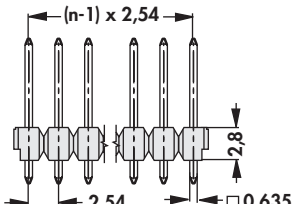
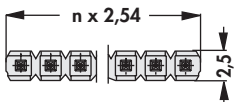
   							
art. no.	dim. [mm]			art. no.	dim. [mm]		
	A	B	C		A	B	C
SL 22 097 ...	9.7	3.0	3.9	SL 2 025 ...	11.2	2.6	5.8
SL 22 112 ...	11.2	3.0	5.4	SL 2 053 ...	13.9	5.8	5.3
SL 22 124 ...	12.4	3.0	6.6	SL 2 078 ...	16.4	5.8	7.8
SL 22 139 ...	13.9	3.0	8.1	SL 2 104 ...	19.0	5.8	10.4
SL 22 164 ...	16.4	3.0	10.6	SL 2 128 ...	21.4	5.8	12.8
SL 22 190 ...	19.0	3.0	13.2	SL 2 154 ...	24.0	5.8	15.4
SL 22 214 ...	21.4	3.0	15.6	SL 2 179 ...	26.5	5.8	17.9
SL 22 240 ...	24.0	3.0	18.2	SL 2 230 ...	31.6	5.8	23.0
SL 22 265 ...	26.5	3.0	20.7				
SL 22 316 ...	31.6	3.0	25.8				
please indicate: ... no. of contacts two rows 2 - 72 ... surface of contact S = selective gold-plated G = gold-plated Z = tin-plated							

Male headers

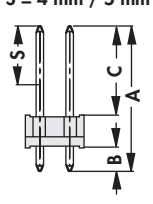
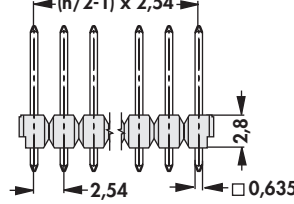
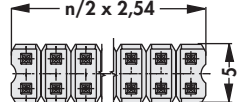
Through-Hole-Reflow (THR) soldering technology

– every pin length is available upon request

– one row, □ 0.635 mm

							
							
							
							
art. no.	dim. [mm]			art. no.	dim. [mm]		
	A	B	C		A	B	C
SL 20 THR 097 ...	9.7	2	4.9	SL 20 THR 139 ...	13.9	2	9.1
SL 20 THR 112 ...	11.2	2	6.4	SL 20 THR 164 ...	16.4	2	11.6
SL 20 THR 124 ...	12.4	2	7.6				
please indicate: ... no. of contacts one row 1 - 36 ... surface of contact S = selective gold-plated G = gold-plated Z = tin-plated							

– two rows, □ 0.635 mm

							
							
							
							
art. no.	dim. [mm]			art. no.	dim. [mm]		
	A	B	C		A	B	C
SL 21 THR 097 ...	9.7	2	4.9	SL 21 THR 139 ...	13.9	2	9.1
SL 21 THR 112 ...	11.2	2	6.4	SL 21 THR 164 ...	16.4	2	11.6
SL 21 THR 124 ...	12.4	2	7.6				
please indicate: ... no. of contacts two rows 2 - 72 ... surface of contact S = selective gold-plated G = gold-plated Z = tin-plated							

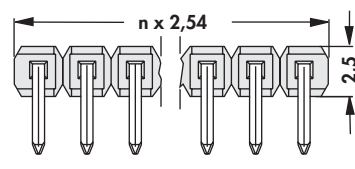
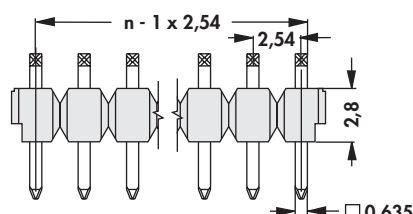
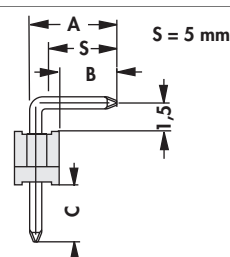
Male headers

"Dimensions A + B" changeable

- **separable!** any requested number of contact can be delivered
- any pin length is available upon request

– one row, $\square$ 0.635 mm

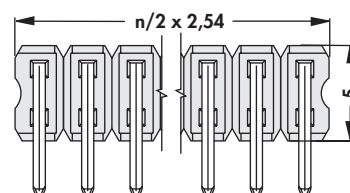
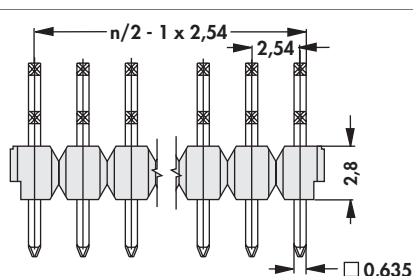
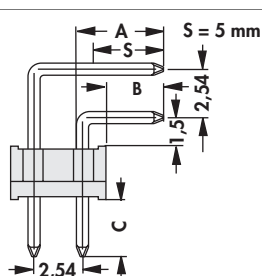
– **the surface of dimension "C"** of following articles is selective gold-plated: **SLK 3 025 ... S, SL 3 025 ... S**



art. no.	dim. [mm]			art. no.	dim. [mm]		
	A	B	C		A	B	C
SLK 3 025 ...	4.5	3.0	3.0	SL 3 131 ...	14.6	13.1	5.8
SL 3 025 ...	4.5	3.0	5.8	SL 3 152 ...	16.7	15.2	5.8
SL 3 053 ...	6.9	5.4	5.8	SL 3 182 ...	19.7	18.2	5.8
SL 3 080 ...	9.5	8.0	5.8	SL 3 207 ...	22.2	20.7	5.8
SL 3 101 ...	11.6	10.1	5.8				
please indicate: ... no. of contacts one row 1 - 36 ... surface of contact S = selective gold-plated G = gold-plated Z = tin-plated							

– two rows, $\square$ 0.635 mm

– **the surface of dimension "C"** of following articles is selective gold-plated: **SLK 4 025 ... S, SL 4 025 ... S**



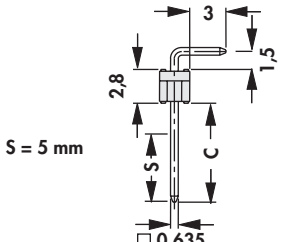
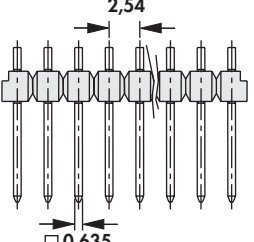
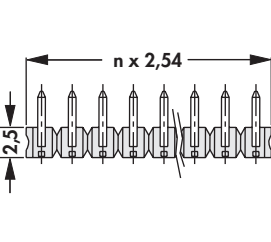
art. no.	dim. [mm]			art. no.	dim. [mm]		
	A	B	C		A	B	C
SLK 4 025 ...	4.5	3.0	3.0	SL 4 101 ...	11.6	10.1	5.8
SL 4 025 ...	4.5	3.0	5.8	SL 4 152 ...	16.7	15.2	5.8
please indicate: ... no. of contacts two rows 2 - 72 ... surface of contact S = selective gold-plated G = gold-plated Z = tin-plated							

Male headers

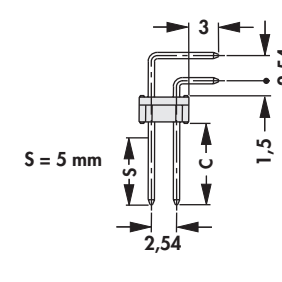
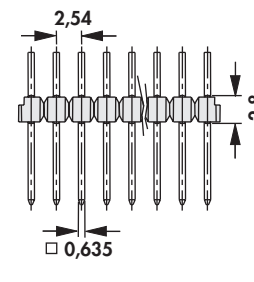
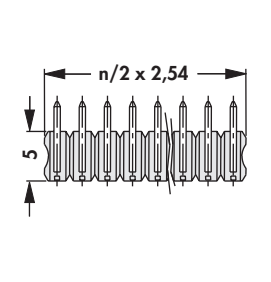
Insertion side "dimension C" changeable

- **separable!** any requested number of contact can be delivered
- any pin length is available on request

– one row, □ 0.635 mm

			
			
			
art. no.	dim. [mm]	art. no.	dim. [mm]
	C		C
SL 18 042 ...	4.2	SL 18 108 ...	10.8
SL 18 082 ...	8.2	SL 18 132 ...	13.2
please indicate: ... no. of contacts one row 1 - 36 ... surface of contact S = selective gold-plated G = gold-plated Z = tin-plated			

– two rows, □ 0.635 mm

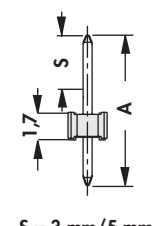
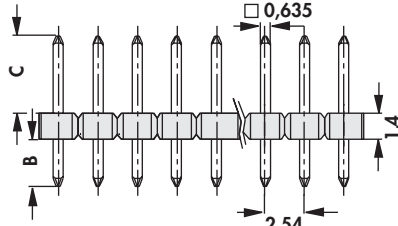
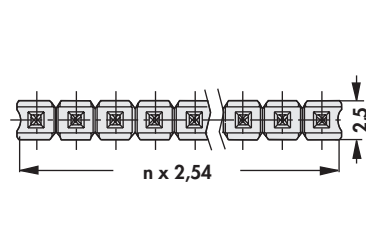
			
			
			
art. no.	dim. [mm]	art. no.	dim. [mm]
	C		C
SL 19 082 ...	8.2	SL 19 132 ...	13.2
SL 19 108 ...	10.8		
please indicate: ... no. of contacts two rows 2 - 72 ... surface of contact S = selective gold-plated G = gold-plated Z = tin-plated			

Male headers

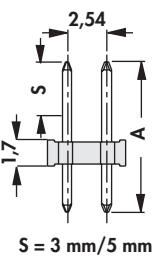
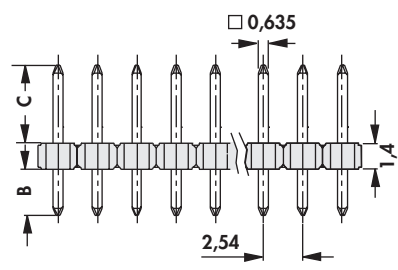
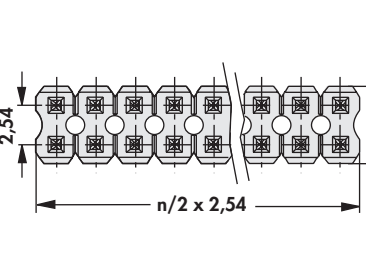
Low profile, straight

– any pin length is available on request

– one row, □ 0.635 mm

   							
art. no.	dim. [mm]			art. no.	dim. [mm]		
	A	B	C		A	B	C
SL LP 1 082 ...	8.2	3	3.5	SL LP 1 139 ...	13.9	3	9.2
SL LP 1 097 ...	9.7	3	5.0	SL LP 1 164 ...	16.4	3	11.7
SL LP 1 112 ...	11.2	3	6.5	SL LP 1 190 ...	19.0	3	14.3
please indicate: ... no. of contacts one row 1 - 36 ... surface of contact S = selective gold-plated G = gold-plated Z = tin-plated							

– two rows, □ 0.635 mm

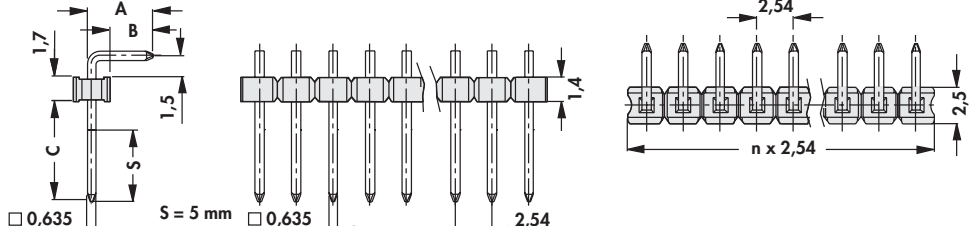
   							
art. no.	dim. [mm]			art. no.	dim. [mm]		
	A	B	C		A	B	C
SL LP 2 082 ...	8.2	3	3.5	SL LP 2 139 ...	13.9	3	9.2
SL LP 2 097 ...	9.7	3	5.0	SL LP 2 164 ...	16.4	3	11.7
SL LP 2 112 ...	11.2	3	6.5	SL LP 2 190 ...	19.0	3	14.3
please indicate: ... no. of contacts two rows 2 - 72 ... surface of contact S = selective gold-plated G = gold-plated Z = tin-plated							

Male headers

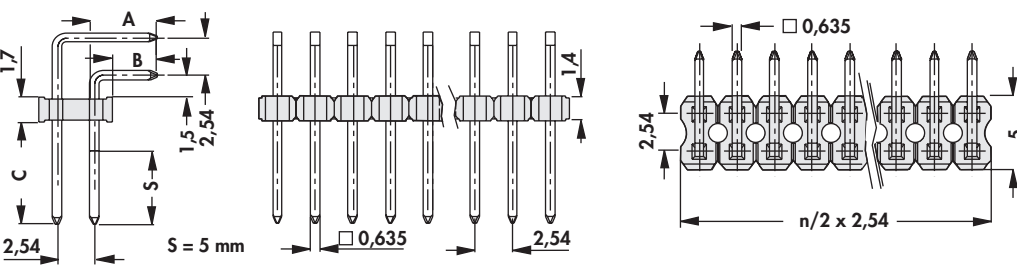
Low profile, angled

– any pin length is available on request

– one row, □ 0.635 mm

							
art. no.		dim. [mm]		art. no.		dim. [mm]	
A	B	C		A	B	C	
SL LP 3 041 ...	4.5	3	4.1	SL LP 3 069 ...	4.5	3	6.9
please indicate:		... no. of contacts one row 1 - 36		... surface of contact S = selective gold-plated G = gold-plated Z = tin-plated			

– two rows, □ 0.635 mm

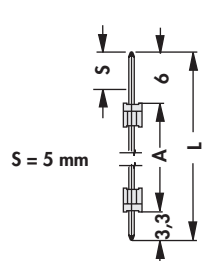
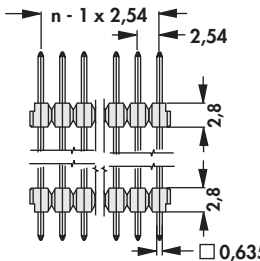
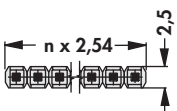
							
art. no.		dim. [mm]		art. no.		dim. [mm]	
A	B	C		A	B	C	
SL LP 4 041 ... G	4.5	3	4.1	SL LP 4 069 ...	4.5	3	6.9
SL LP 4 041 ... Z	4.5	3	4.1				
please indicate:		... no. of contacts two rows 2 - 72		... surface of contact S = selective gold-plated G = gold-plated Z = tin-plated			

Male headers

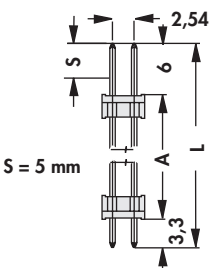
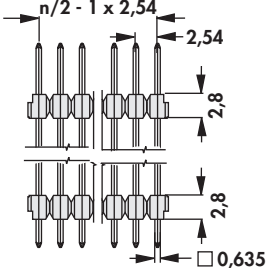
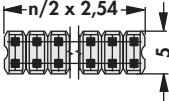
Sandwich-design

- "S" selective gold-plated up to 33 mm pin length
- for interconnections of stacked PCBs
- within the total length of the pin the insulator position can be changed as required ... **Design specification-sheet**
- **separable!** any requested number of contact can be delivered

– one row, □ 0,635 mm

								
art. no.	dim. [mm] A L		art. no.	dim. [mm] A L		art. no.	dim. [mm] A L	
SL 5 071 ...	7.1	16.4	SL 5 172 ...	17.2	26.5	SL 5 315 ...	31.5	40.8
SL 5 097 ...	9.7	19.0	SL 5 197 ...	19.7	29.0	SL 5 360 ...	36.0	45.3
SL 5 121 ...	12.1	21.4	SL 5 223 ...	22.3	31.6	SL 5 415 ...	41.5	50.8
SL 5 147 ...	14.7	24.0	SL 5 237 ...	23.7	33.0	SL 5 525 ...	52.2	61.5
SL 5 156 ...	15.6	24.9	SL 5 285 ...	28.5	37.8			
please indicate:	... no. of contacts one row 1 - 36		... surface of contact S = selective gold-plated G = gold-plated Z = tin-plated					

– two rows, □ 0,635 mm

								
art. no.	dim. [mm] A L		art. no.	dim. [mm] A L		art. no.	dim. [mm] A L	
SL 6 071 ...	7.1	16.4	SL 6 172 ...	17.2	26.5	SL 6 315 ...	31.5	40.8
SL 6 097 ...	9.7	19.0	SL 6 197 ...	19.7	29.0	SL 6 360 ...	36.0	45.3
SL 6 121 ...	12.1	21.4	SL 6 223 ...	22.3	31.6	SL 6 415 ...	41.5	50.8
SL 6 147 ...	14.7	24.0	SL 6 237 ...	23.7	33.0	SL 6 525 ...	52.2	61.5
SL 6 156 ...	15.6	24.9	SL 6 285 ...	28.5	37.8			
please indicate:	... no. of contacts two rows 2 - 72		... surface of contact S = selective gold-plated G = gold-plated Z = tin-plated					

Male headers

Sandwich-design

- "S" selective gold-plated up to 33 mm pin length
- for interconnections of stacked PCBs
- for plugging the the female headers **BL 11 (SL 13 ...)** and **BL 12 (SL 14 ...)**.
- suitable for PCB thicknesses between 1.5 mm and 33 mm
- **separable!** any requested number of contact can be delivered
- one row □ 0.635 mm

art. no.	dim. [mm]		art. no.	dim. [mm]	
	A	L		A	L
SL 13 071 ...	7.1	21.4	SL 13 235 ...	23.5	37.8
SL 13 097 ...	9.7	24.0	SL 13 265 ...	26.5	40.8
SL 13 122 ...	12.2	26.5	SL 13 310 ...	31.0	45.3
SL 13 147 ...	14.7	29.0	SL 13 365 ...	36.5	50.8
SL 13 187 ...	18.7	33.0			
please indicate: ... no. of contacts ... surface of contact one row 1 - 36 S = selective gold-plated G = gold-plated Z = tin-plated					

– two rows, □ 0.635 mm

art. no.	dim. [mm]		art. no.	dim. [mm]	
	A	L		A	L
SL 14 071 ...	7.1	21.4	SL 14 235 ...	23.5	37.8
SL 14 097 ...	9.7	24.0	SL 14 265 ...	26.5	40.8
SL 14 122 ...	12.2	26.5	SL 14 310 ...	31.0	45.3
SL 14 147 ...	14.7	29.0	SL 14 365 ...	36.5	50.8
SL 14 187 ...	18.7	33.0			
please indicate: ... no. of contacts ... surface of contact two rows 2 - 72 S = selective gold-plated G = gold-plated Z = tin-plated					

date: _____
 pieces per order: _____
 company: _____
 name, dept.: _____
 town: _____
 street: _____
 fax: _____
 signature: _____

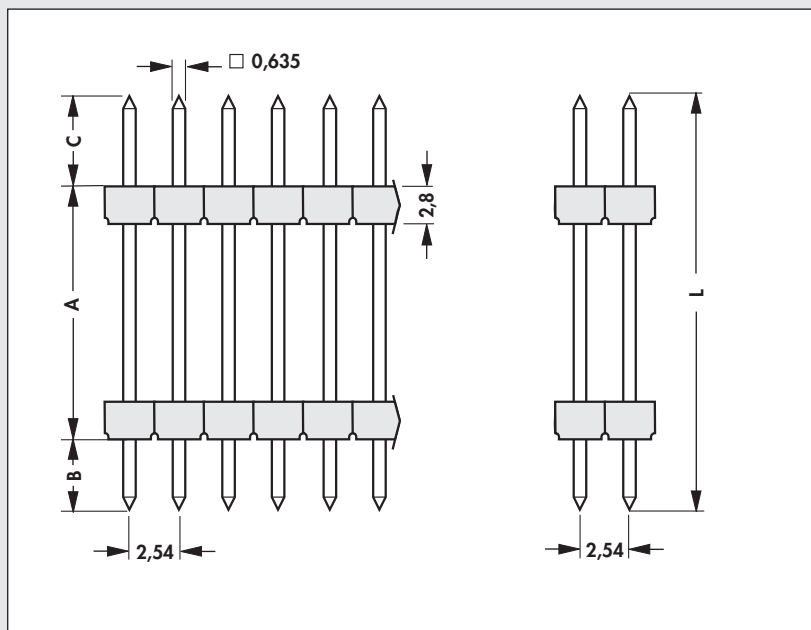
- ☐ inquiry
☐ order

surface finish

- ☐ selective gold-plated
☐ gold-plated
☐ tin-plated

- ☐ one row 1 - 36 contacts possible
☐ two rows 2 - 72 contacts possible

number of contacts


dimensions:

L

A

B

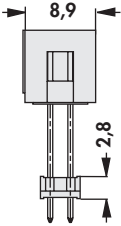
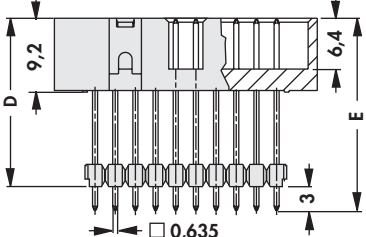
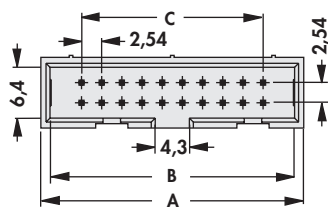
C

L = total contact length
 A = distance between PCBs
 B = solder side
 C = insertion side

Male headers

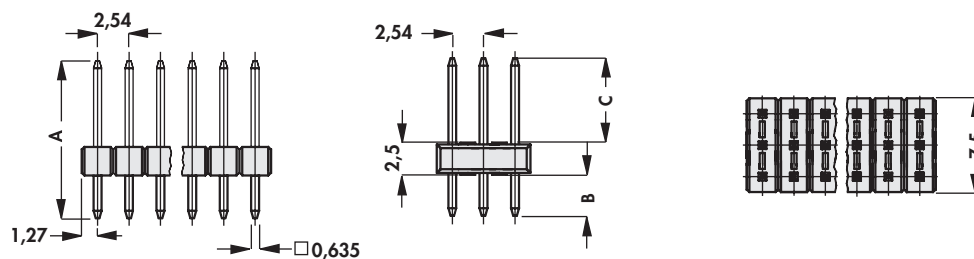
Shrouded male header, with coding and bolting device

– suitable for many flat cable connectors in 2.54 mm pitch

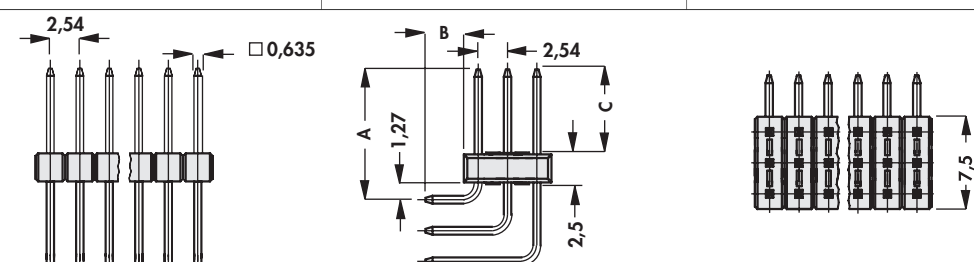
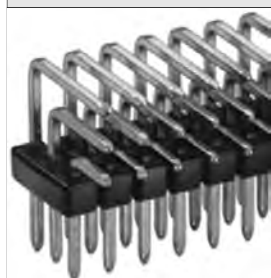
						
art. no.	no. of contacts	dim. [mm]				
		A	B	C	D	E
SLU 10 165 ...	10	20.4	17.8	10.16	13.5	16.5
SLU 10 191 ...	10	20.4	17.8	10.16	16.1	19.1
SLU 10 241 ...	10	20.4	17.8	10.16	21.1	24.1
SLU 10 266 ...	10	20.4	17.8	10.16	23.6	26.6
SLU 16 165 ...	16	28.0	25.4	17.78	13.5	16.5
SLU 16 191 ...	16	28.0	25.4	17.78	16.1	19.1
SLU 16 241 ...	16	28.0	25.4	17.78	21.1	24.1
SLU 16 266 ...	16	28.0	25.4	17.78	23.6	26.6
SLU 20 165 ...	20	33.1	30.5	22.86	13.5	16.5
SLU 20 191 ...	20	33.1	30.5	22.86	16.1	19.1
SLU 20 241 ...	20	33.1	30.5	22.86	21.1	24.1
SLU 20 266 ...	20	33.1	30.5	22.86	23.6	26.6
SLU 26 165 ...	26	40.7	38.1	30.48	13.5	16.5
SLU 26 191 ...	26	40.7	38.1	30.48	16.1	19.1
SLU 26 241 ...	26	40.7	38.1	30.48	21.1	24.1
SLU 26 266 ...	26	40.7	38.1	30.48	23.6	26.6
SLU 40 165 ...	40	58.5	55.9	48.26	13.5	16.5
SLU 40 191 ...	40	58.5	55.9	48.26	16.1	19.1
SLU 40 241 ...	40	58.5	55.9	48.26	21.1	24.1
SLU 40 266 ...	40	58.5	55.9	48.26	23.6	26.6
SLU 50 165 ...	50	71.2	68.6	60.96	13.5	16.5
SLU 50 191 ...	50	71.2	68.6	60.96	16.1	19.1
SLU 50 241 ...	50	71.2	68.6	60.96	21.1	24.1
SLU 50 266 ...	50	71.2	68.6	60.96	23.6	26.6
please indicate: ... surface of contact S = selective gold-plated Z = tin-plated						

A

Male headers

Three rows, □ 0.635 mm


art. no.	dim. [mm]		
	A	B	C
SL KG 3 113 ...	11.3	3.3	5.5
SL KG 3 126 ...	12.6	3.3	6.8
SL KG 3 147 ...	14.7	3.3	8.9



art. no.	dim. [mm]		
	A	B	C
SL KA 3 072 ...	7.2	3.3	3.4
SL KA 3 085 ...	8.5	3.3	4.7
SL KA 3 108 ...	10.8	3.3	7.0

please indicate:
... no. of contacts
three rows 3 - 150
... surface of contact
G = gold-plated
Z = tin-plated

B

C

D

E

F

G

H

I

K

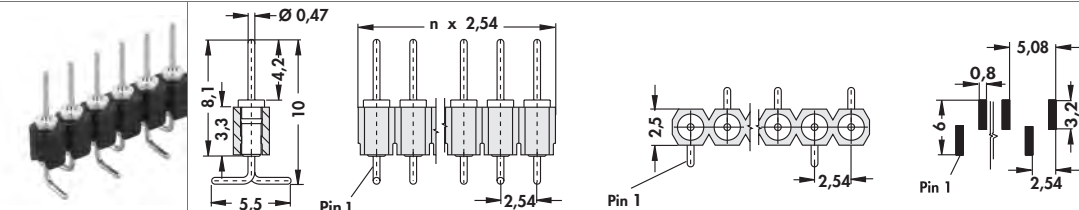
L

M

N

Male headers

Precision contacts, plug pins Ø 0.5 mm

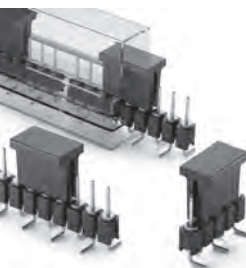
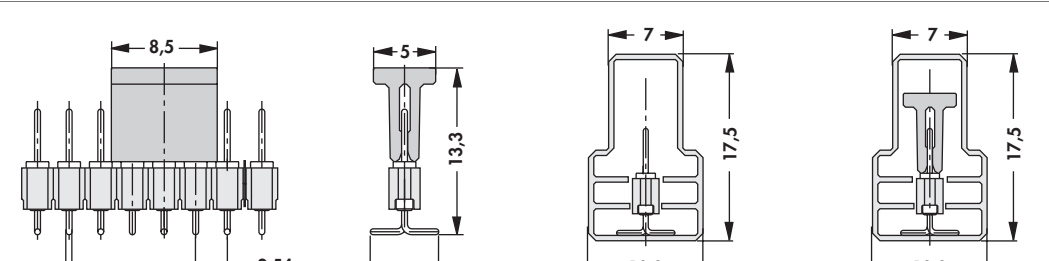
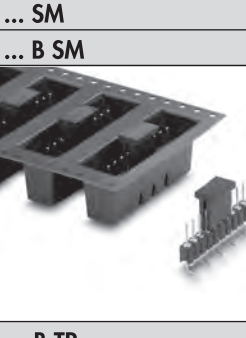
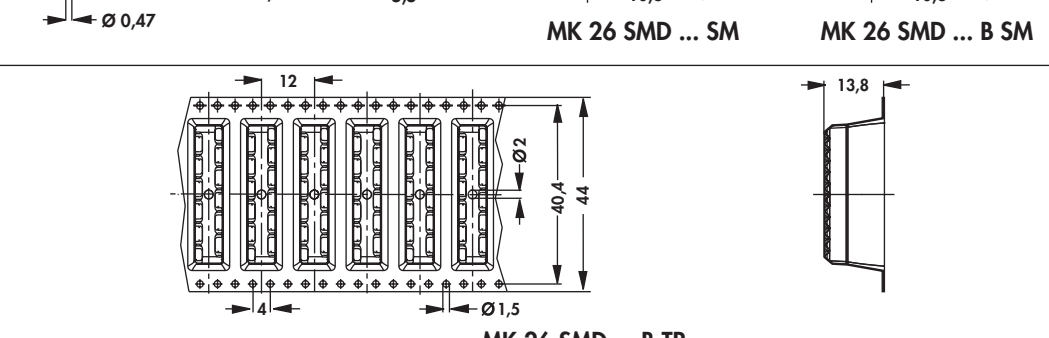
art. no.				
MK 26 SMD ...				
please indicate:	... no. of contacts one row 4 - 20	... surface of contact G = gold-plated Z = tin-plated	... packing (optional) SM = bar magazine B SM = pick and place pad and bar magazine B TR = pick and place pad and tape and reel (250pcs/reel)	

... packing (option) - additions:

MK 26 SMD ... B TR: 4-12 contacts

Option, for automatic assembly

– reel diameter Ø 330 mm

 ... SM ... B SM	 Technical drawings of MK 26 SMD ... SM components. The drawings include a side view of a component with dimensions: 8,5 (width), 2,54 (pitch), Ø 0,47 (pin diameter), 5 (top width), 13,3 (height), 5,5 (base width), 7 (top width), 17,5 (height), 10,8 (base width), and 7 (top width). The drawings are labeled MK 26 SMD ... SM and MK 26 SMD ... B SM.
 ... B TR	 Technical drawings of MK 26 SMD ... B TR components. The drawings include a top view of a component with dimensions: 12 (width), 4 (pitch), 40,4 (height), 44 (height), Ø 2 (hole diameter), 13,8 (height), and Ø 1,5 (hole diameter). The drawing is labeled MK 26 SMD ... B TR.

Male headers

Precision contacts, plug pins Ø 0.5 mm

art. no.			
MK 226 SMD ...			
please indicate:	... no. of contacts two rows 4 - 40	... surface of contact G = gold-plated Z = tin-plated	... packing (optional) SM = bar magazine B SM = pick and place pad and bar magazine B TR = pick and place pad and tape and reel (250pcs/reel)

... packing (option) - additions:

MK 226 SMD ... SM; ... B SM: 6-40 contacts

MK 226 SMD ... B TR: 6-24 contacts

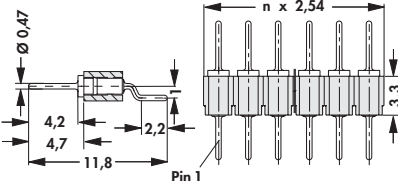
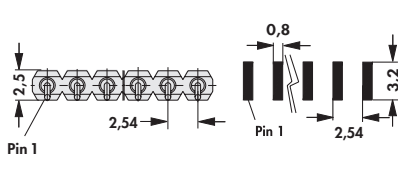
Option, for automatic assembly

– reel diameter Ø 330 mm

... SM ... B SM		MK 226 SMD ... SM	MK 226 SMD ... B SM
... B TR	MK 226 SMD ... B TR		

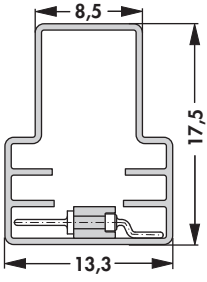
Male headers

Precision contacts, plug pins Ø 0.5 mm

art. no.			
MK 27 SMD ...			
please indicate:	... no. of contacts one row 2 - 20	... surface of contact G = gold-plated Z = tin-plated	... packing (optional) SM = bar magazine

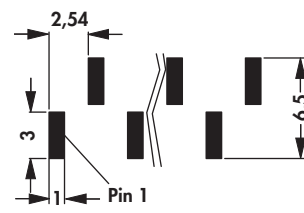
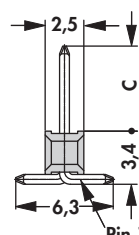
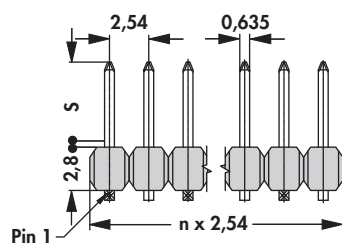
... packing (option) - additions:
MK 27 SMD ... SM: 3-20 contacts

Option, for automatic assembly

	
... SM	MK 27 SMD ... SM

Male headers

□ 0.635 mm



art. no.	dim. [mm] C	art. no.	dim. [mm] C	art. no.	dim. [mm] C
SL 10 SMD 040 ...	4.0	SL 10 SMD 062 ...	6.7	SL 10 SMD 104 ...	10.8
SL 10 SMD 052 ...	5.5	SL 10 SMD 078 ...	8.2	SL 10 SMD 130 ...	13.4

please indicate: ... no. of contacts one row 4 - 20 ... surface of contact S = selective gold-plated G = gold-plated Z = tin-plated ... packing SM = bar magazine B SM = pick and place pad and bar magazine B TR = pick and place pad and tape and reel (250pcs/reel)

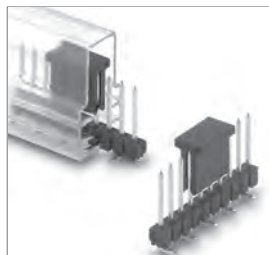
... packing (option) - additions:

SL 10 SMD 040-104 ... SM; ... B SM: 4-20 contacts

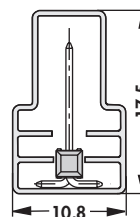
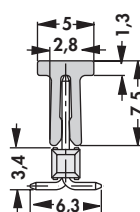
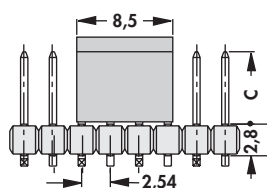
SL 10 SMD 040-078 ... B TR: 4-12 contacts

Option, for automatic assembly

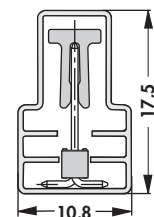
– reel diameter Ø 330 mm



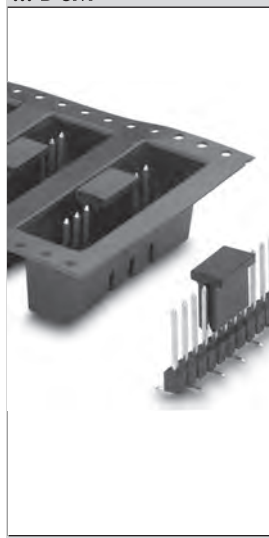
... SM
... B SM



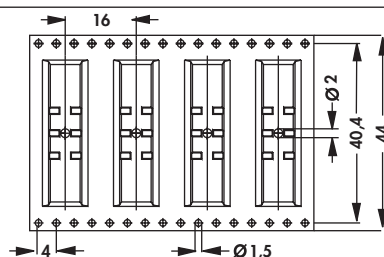
SL 10 SMD ... SM



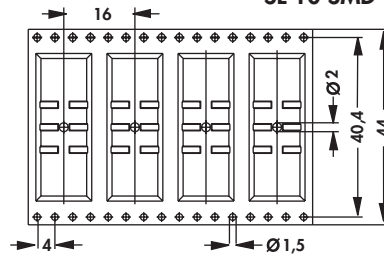
SL 10 SMD ... B SM



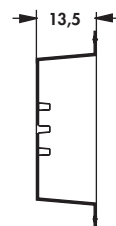
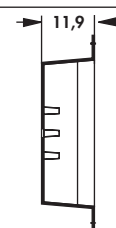
... B TR



SL 10 SMD 040-062 ... B TR

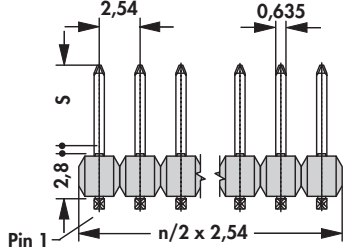
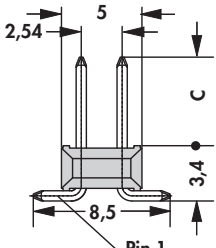
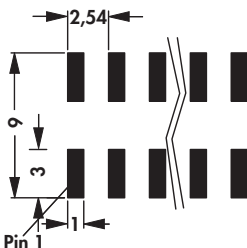


SL 10 SMD 078 ... B TR



Male headers

□ 0.635 mm

					
					
art. no.	dim. [mm]	art. no.	dim. [mm]	art. no.	dim. [mm]
SL 11 SMD 040 ...	4.0	SL 11 SMD 062 ...	6.7	SL 11 SMD 104 ...	10.8
SL 11 SMD 052 ...	5.5	SL 11 SMD 078 ...	8.2	SL 11 SMD 130 ...	13.4
please indicate: ... no. of contacts two rows 4 - 40 ... surface of contact S = selective gold-plated G = gold-plated Z = tin-plated ... packing (optional) SM = bar magazine B SM = pick and place pad and bar magazine B TR = pick and place pad and tape and reel (250pcs/reel)					

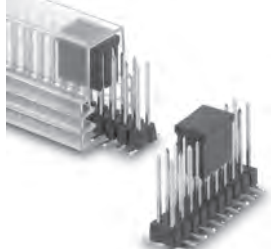
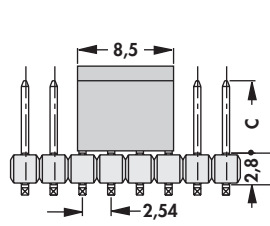
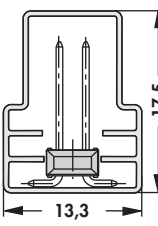
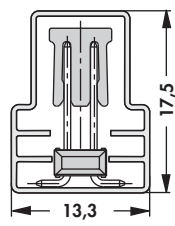
... packing (option) - additions:

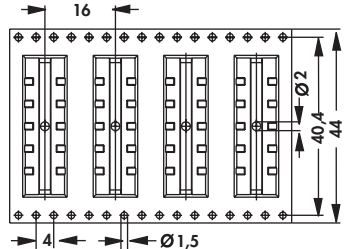
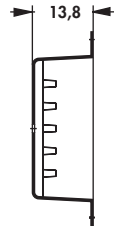
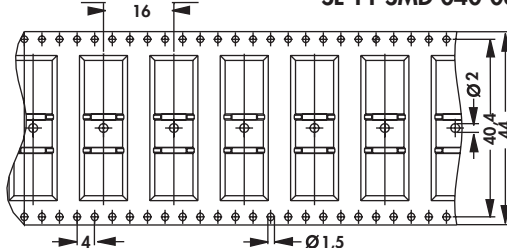
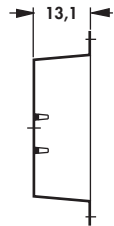
SL 11 SMD 040-104 ... SM; ... B SM: 6-40 contacts

SL 11 SMD 040-078 ... B TR: 6-24 contacts

Option, for automatic assembly

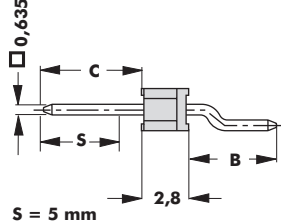
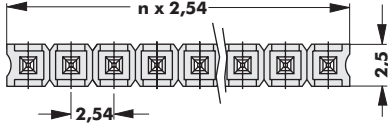
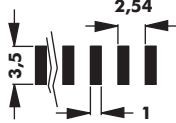
– reel diameter Ø 330 mm

						
... SM			SL 11 SMD ... SM		SL 11 SMD ... B SM	
... B SM						

				
	SL 11 SMD 040-062 ... B TR			
... B TR				
	SL 11 SMD 078 ... B TR			

Male headers

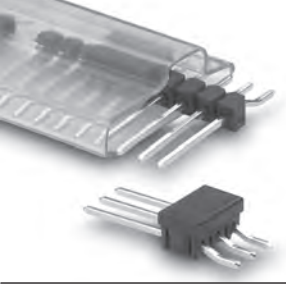
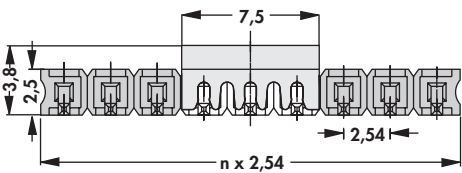
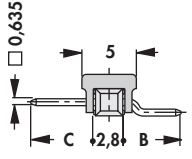
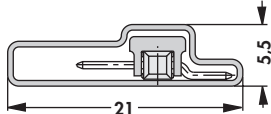
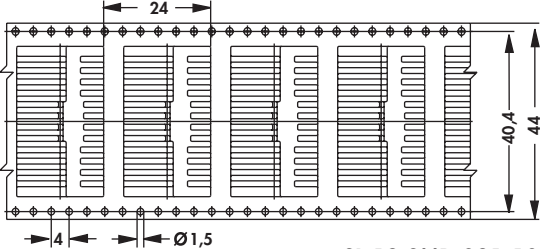
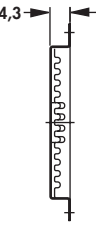
□ 0.635 mm

								
S = 5 mm								
art. no.	dim. [mm] B C		art. no.	dim. [mm] B C		art. no.	dim. [mm] B C	
SL 12 SMD 031 ...	5.2	3.1	SL 12 SMD 035 ...	3.2	3.5	SL 12 SMD 083 ...	5.2	8.3
SL 12 SMD 032 ...	3.2	5.8	SL 12 SMD 058 ...	5.2	5.8	SL 12 SMD 109 ...	5.2	10.9
please indicate: ... no. of contacts one row 2 - 20			... surface of contact S = selective gold-plated G = gold-plated Z = tin-plated			... packing (optional) B SM = pick and place pad and bar magazine B TR = pick and place pad and tape and reel (500pcs/reel)		

... packing (option) - additions:
SL 12 SMD ... B TR: 2-13 contacts

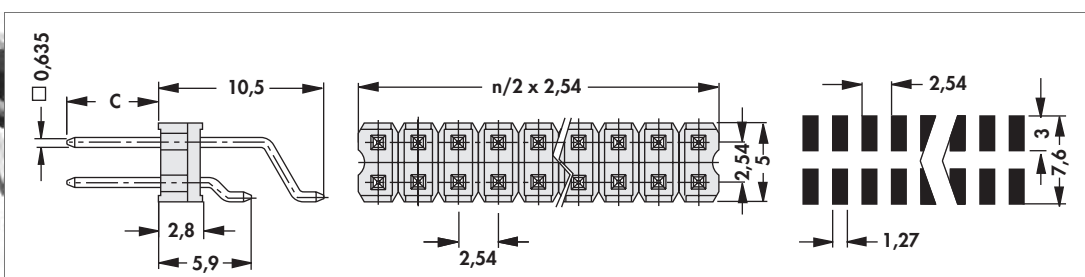
Option, for automatic assembly

– reel diameter Ø 330 mm

 ... B SM		   SL 12 SMD ... B SM	
 ... B TR		  SL 12 SMD 031-109 ... B TR	

Male headers

□ 0.635 mm

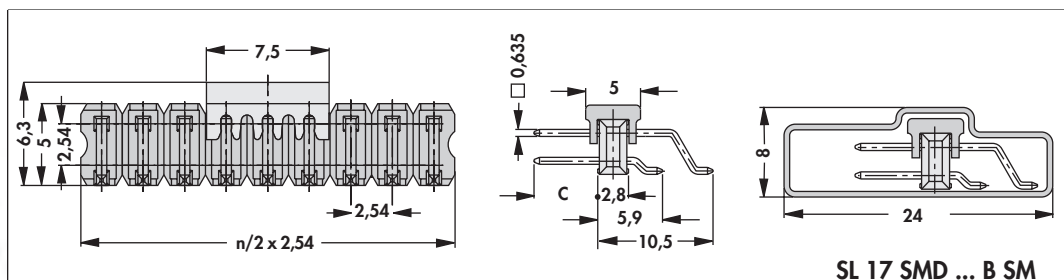


art. no.	dim. [mm]	art. no.	dim. [mm]	art. no.	dim. [mm]
	C		C		C
SL 17 SMD 058 ...	5.8	SL 17 SMD 083 ...	8.3	SL 17 SMD 109 ...	10.9
please indicate: ... no. of contacts two rows 4 - 40 ... surface of contact G = gold-plated Z = tin-plated ... packing (optional) B SM = pick and place pad and bar magazine B TR = pick and place pad and tape and reel (300pcs/reel)					

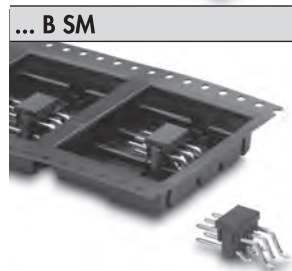
... packing (option) - additions:
SL 17 SMD ... B TR: 6-24 contacts

Option, for automatic assembly

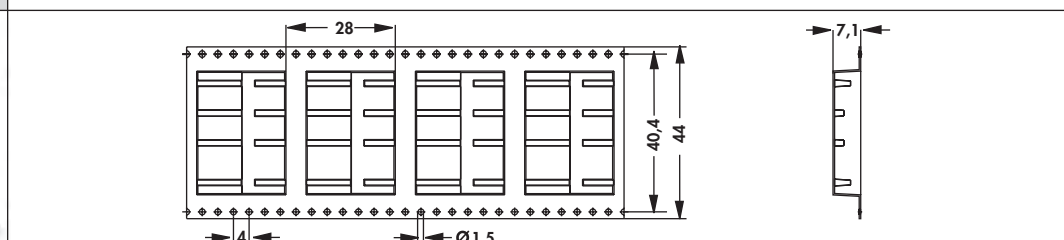
– reel diameter Ø 330 mm



SL 17 SMD ... B SM



... B SM



SL 17 SMD 058-109 ... B TR

... B TR

Female headers 2.54 press-fit
Female headers 2.00 SMD
Jumpers
Female headers 2.54 THT

→ G 66
→ G 68 – 69
→ G 76 – 77
→ G 52

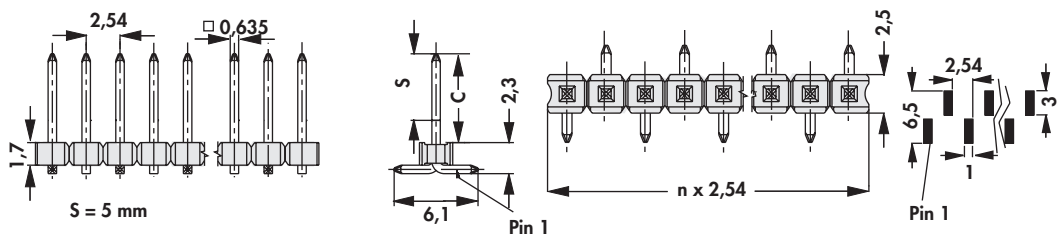
High-prec. fem. headers 2.54 THT
Direct female connectors
Male headers 2.00 SMD
Technical data

→ G 53 – 56
→ G 75
→ G 33 – 35
→ G 78 – 84

G 24

Male headers

Low profile in SMD □ 0.635 mm

 					
art. no.	dim. [mm]	art. no.	dim. [mm]	art. no.	dim. [mm]
SL LP 5 SMD 038 ...	C 3.8	SL LP 5 SMD 051 ...	C 5.1	SL LP 5 SMD 066 ...	C 6.6
please indicate: ... no. of contacts one row 4 - 20 ... surface of contact S = selective gold-plated G = gold-plated Z = tin-plated ... packing (optional) SM = bar magazine B SM = pick and place pad and bar magazine B TR = pick and place pad and tape and reel (250pcs/reel)					

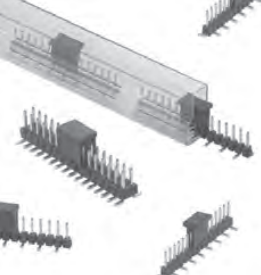
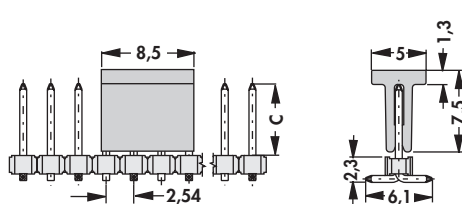
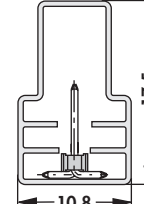
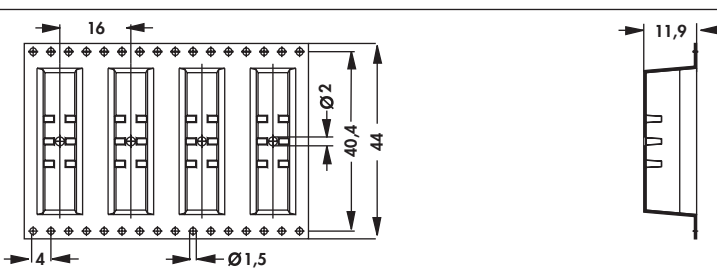
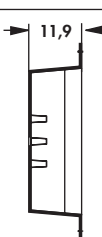
... packing (option) - additions:

SL LP 5 SMD ... SM; ... B SM: 4-20 contacts

SL LP 5 SMD ... B TR: 4-12 contacts

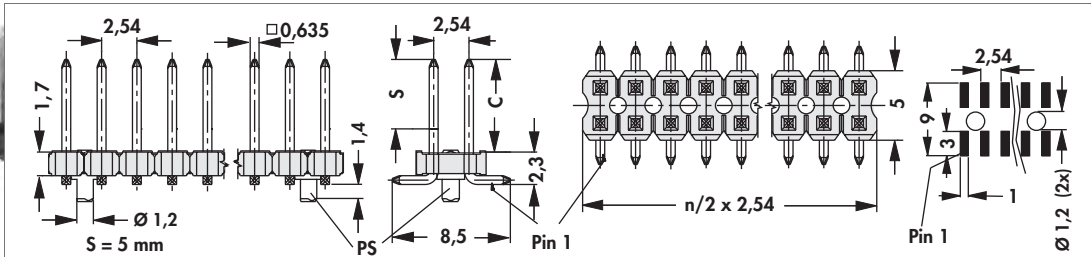
Option, for automatic assembly

– reel diameter Ø 330 mm

				
... SM	SL LP 5 SMD ... SM		SL LP 5 SMD ... B SM	
... B SM				
				
... B TR	SL LP 5 SMD 038-066 ... B TR			

Male headers

Low profile in SMD □ 0.635 mm



art. no.	dim. [mm] C	art. no.	dim. [mm] C	art. no.	dim. [mm] C
SL LP 6 SMD 038 ...	3.8	SL LP 6 SMD 051 ...	5.1	SL LP 6 SMD 066 ...	6.6
please indicate:	... no. of contacts two rows 4 - 40	... surface of contact S = selective gold-plated G = gold-plated Z = tin-plated	... packing (optional) SM = bar magazine B SM = pick and place pad and bar magazine B TR = pick and place pad and tape and reel (250pcs/reel)		

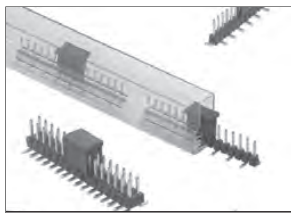
... packing (option) - additions:

SL LP 6 SMD ... SM; ... B SM: 6-40 contacts

SL LP 6 SMD ... B TR: 6-24 contacts

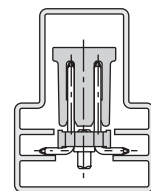
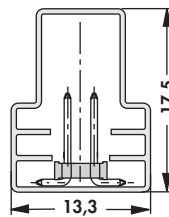
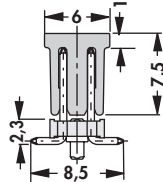
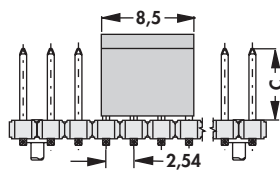
Option, for automatic assembly

- reel diameter $\varnothing$ 330 mm



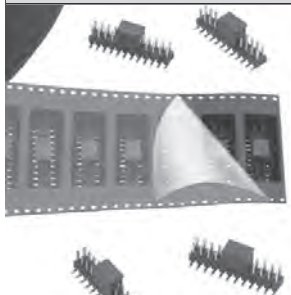
... SM

... B SM

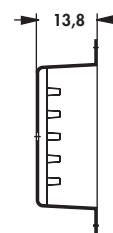
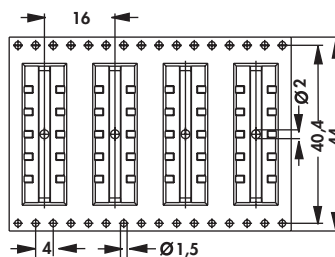


SL LP 6 SMD ... SM

SL LP 6 SMD ... B SM PS



... B TR

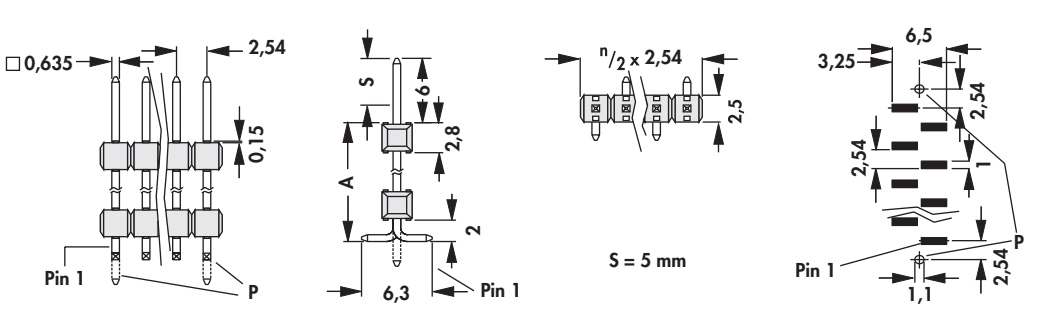


SL LP 6 SMD 038-066 ... B TR

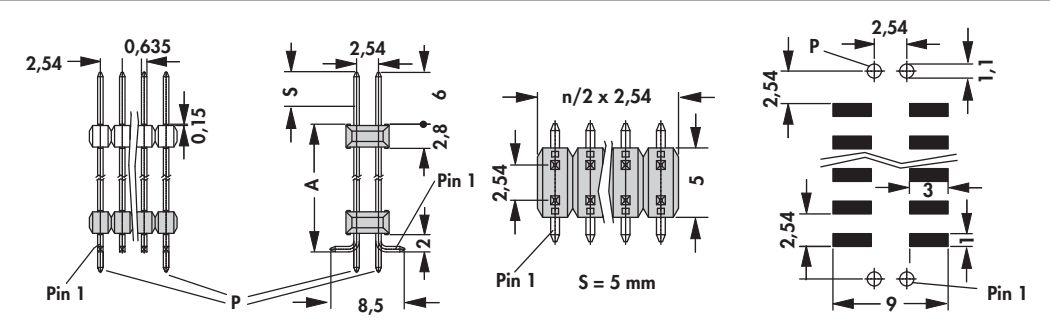
Male headers

□ 0.635 mm – for interconnections of stacked PCBs

- one row, 4-20 contacts
- within the total length of the pin the insulator can be changed according to customer's request

 					
art. no.	dim. [mm] A	art. no.	dim. [mm] A	art. no.	dim. [mm] A
SL 15 SMD 107 ...	10.7	SL 15 SMD 182 ...	18.2	SL 15 SMD 207 ...	20.7
please indicate: ... no. of contacts one row 4 - 20 ... surface of contact S = selective gold-plated G = gold-plated Z = tin-plated					

- two rows, 4-40 contacts
- within the total length of the pin the insulator can be changed according to customer's request

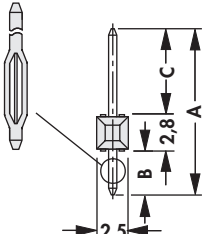
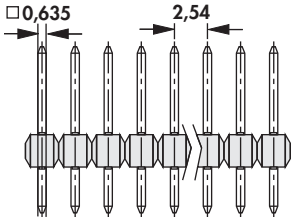
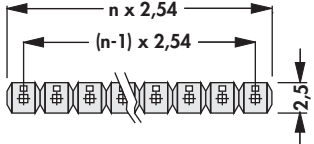
 					
art. no.	dim. [mm] A	art. no.	dim. [mm] A	art. no.	dim. [mm] A
SL 16 SMD 107 ...	10.7	SL 16 SMD 182 ...	18.2	SL 16 SMD 247 ...	24.7
SL 16 SMD 157 ...	15.7	SL 16 SMD 207 ...	20.7		
please indicate: ... no. of contacts two rows 4 - 40 ... surface of contact S = selective gold-plated G = gold-plated Z = tin-plated					

Male headers

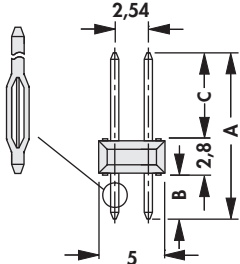
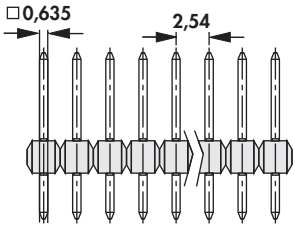
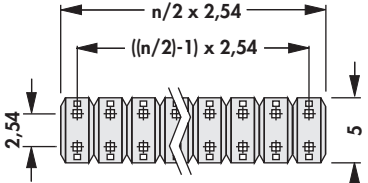
Male connectors

- press-fit mounting without soldering, resilient press-fit area, easy insertion into the PCB
- **separable!** any requested number of contact can be delivered
- **contact material:** Cu Sn 6

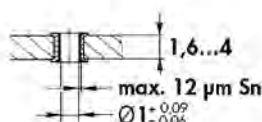
- one row, 1-36 contacts
- for PCB thickness ≥ 1.6 mm dimension B = 3.5 mm and ≥ 3.0 mm dimension B = 4.5 mm

									
art. no.	dim. [mm]			art. no.	dim. [mm]				
	A	B	C		A	B	C		
SLP 1 16 117 ...	11.7	3.5	5.4	SLP 1 16 195 ...	19.5	3.5	13.2		
SLP 1 16 129 ...	12.9	3.5	6.6	SLP 1 32 139 ...	13.9	4.5	6.6		
SLP 1 16 144 ...	14.4	3.5	8.1	SLP 1 32 164 ...	16.4	4.5	9.1		
please indicate:	... no. of contacts one row 1 - 36			... surface of contact G = gold-plated Z = tin-plated					

- two rows, 2-72 contacts
- for PCB thickness ≥ 1.6 mm dimension B = 3.5 mm and ≥ 3.0 mm dimension B = 4.5 mm

									
art. no.	dim. [mm]			art. no.	dim. [mm]				
	A	B	C		A	B	C		
SLP 2 16 117 ...	11.7	3.5	5.4	SLP 2 16 195 ...	19.5	3.5	13.2		
SLP 2 16 129 ...	12.9	3.5	6.6	SLP 2 32 139 ...	13.9	4.5	6.6		
SLP 2 16 144 ...	14.4	3.5	8.1	SLP 2 32 164 ...	16.4	4.5	9.1		
please indicate:									
... no. of contacts two rows 2-72				... surface of contact G = gold-plated Z = tin-plated					

Hole diameter in PCB - hole structure acc. to DIN EN 60352-5



Male headers 2.00 SMD
High-prec. male headers 1.27 SMD
Male headers 2.54 THT
Female headers 1.27 THT

→ G 33 – 35
→ G 43
→ G 7
→ G 71

Jumpers
High-prec. fem. headers 2.54 THT
Female headers 2.00 SMD
Technical data

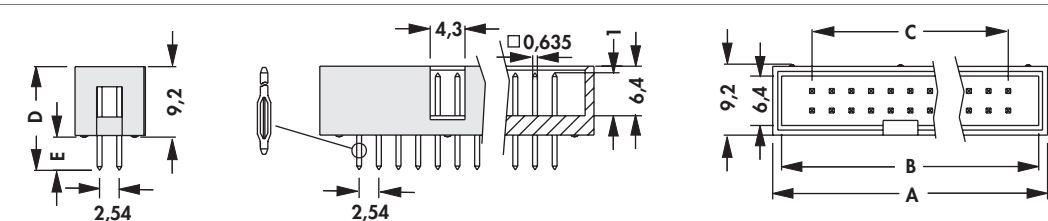
→ G 76 – 77
→ G 53 – 56
→ G 68
→ G 78 – 84

G 28

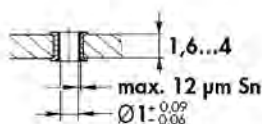
Male headers

Male header with shroud

- suitable for lockable female multipoint connector **VFL** and can be combined with many other female multipoint connectors with grid spacing 2.54 mm (e. g.: **PV, BL**)
- press-fit mounting without soldering, resilient press-fit area, easy insertion into PCB
- **contact material:** Cu Sn 6

						
art. no.	no. of contacts	dim. [mm]				
		A	B	C	D	E
SLUP 31 10 ...	10	20.4	17.8	10.16	12.6	3.5
SLUP 31 16 ...	16	28.0	25.4	17.78	12.6	3.5
SLUP 31 20 ...	20	33.1	30.5	22.86	12.6	3.5
please indicate: ... surface of contact G = gold-plated Z = tin-plated						

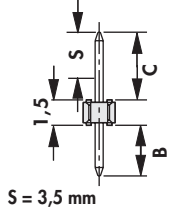
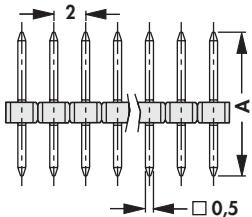
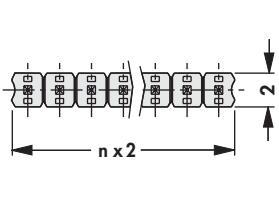
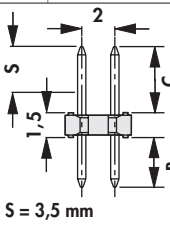
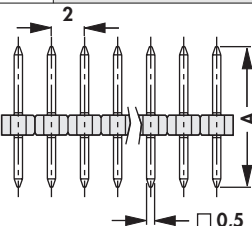
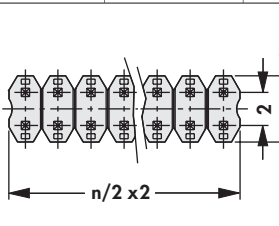
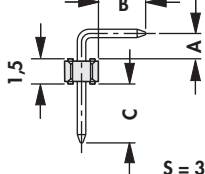
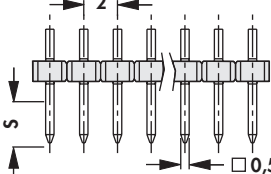
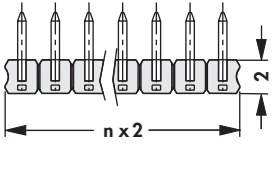
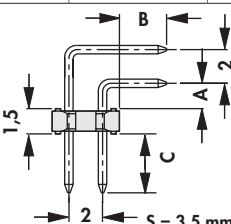
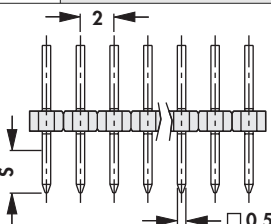
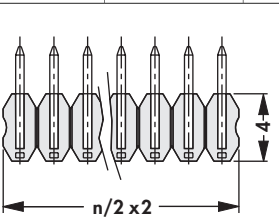
Hole diameter in PCB - hole structure acc. to DIN EN 60352-5



Male headers

Standard, □ 0.5 mm

– any requested number of contact is available

	 S = 3,5 mm			 □ 0,5			 n x 2		
art. no.	dim. [mm]			art. no.	dim. [mm]				
	A	B	C		A	B	C		
SLY 1 081 ...	8.1	3	3.6	SLY 1 104 ...	10.4	3	5.9		
SLY 1 085 ...	8.5	3	4.0	SLY 1 139 ...	13.9	3	9.4		
SLY 1 098 ...	9.8	3	5.3						
	 S = 3,5 mm			 □ 0,5			 n/2 x 2		
art. no.	dim. [mm]			art. no.	dim. [mm]				
	A	B	C		A	B	C		
SLY 2 081 ...	8.1	3	3.6	SLY 2 104 ...	10.4	3	5.9		
SLY 2 085 ...	8.5	3	4.0	SLY 2 139 ...	13.9	3	9.4		
SLY 2 098 ...	9.8	3	5.3						
	 S = 3,5 mm			 □ 0,5			 n x 2		
art. no.	dim. [mm]			art. no.	dim. [mm]				
	A	B	C		A	B	C		
SLY 3 035 ...	1.5	2.8	3.5	SLY 3 082 ... G	1.5	2.8	8.2		
SLY 3 041 ...	1.5	2.8	4.1	SLY 3 082 ... Z	1.5	2.8	8.2		
	 S = 3,5 mm			 □ 0,5			 n/2 x 2		
art. no.	dim. [mm]			art. no.	dim. [mm]				
	A	B	C		A	B	C		
SLY 4 035 ...	1.5	2.8	3.5	SLY 4 082 ... G	1.5	2.8	8.2		
SLY 4 041... G	1.5	2.8	4.1	SLY 4 082 ... Z	1.5	2.8	8.2		
SLY 4 041... Z	1.5	2.8	4.1						
please indicate:	... no. of contacts one row 1 - 50 two rows 4 - 100			... surface of contact S = selective gold-plated G = gold-plated Z = tin-plated					

date: _____
 pieces per order: _____
 company: _____
 name, dept.: _____
 town: _____
 street: _____
 fax: _____
 signature: _____

☐ inquiry

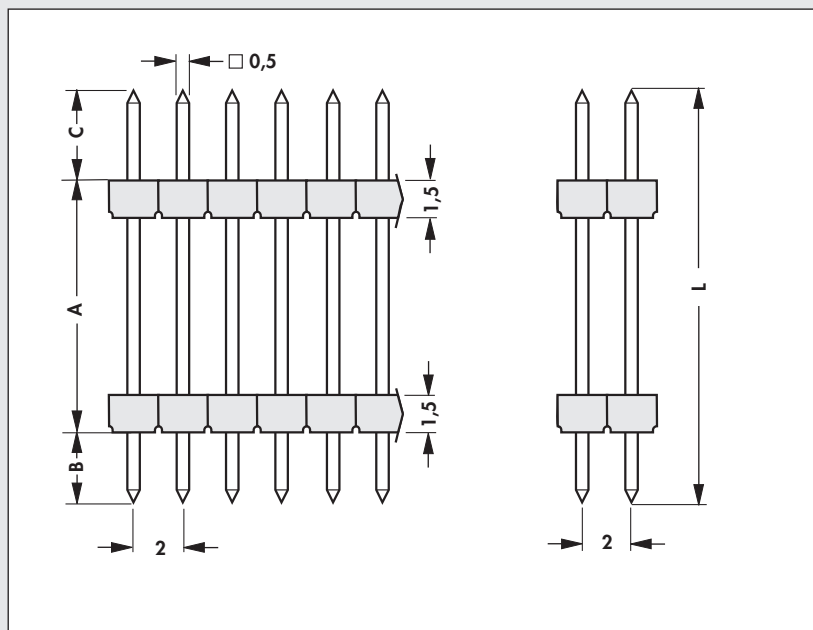
☐ order

surface finish

- ☐ selective gold-plated
☐ gold-plated
☐ tin-plated

- ☐ one row 1 - 50 contacts possible
☐ two rows 2 - 100 contacts possible

 number of contacts

dimensions:


L = total contact length
A = distance between PCBs
B = solder side
C = insertion side

 L

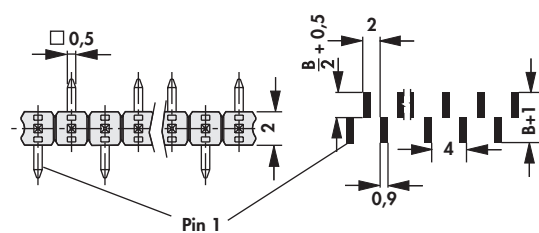
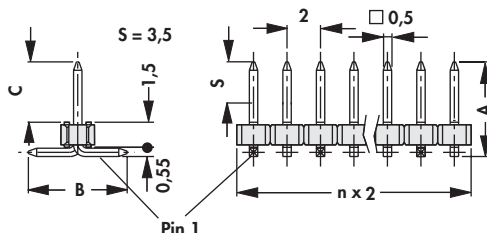
 A

 B

 C

Male headers

□ 0.5 mm



art. no.	dim. [mm]			
	A	B	C	S
SLY 7 SMD 036 ...	5.6	6.3	3.6	3.0
SLY 7 SMD 045 ...	6.5	4.6	4.5	3.5
SLY 7 SMD 062 ...	8.2	4.6	6.2	3.5

please indicate:	... no. of contacts one row 4 - 20	... surface of contact S = selective gold-plated G = gold-plated Z = tin-plated	... packing (optional) SM = bar magazine B SM = pick and place pad and bar magazine B TR = pick and place pad and tape and reel (650pcs/reel)
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... packing (option) - additions:
SLY 7 SMD 036-045 ... B TR: 4-15 contacts

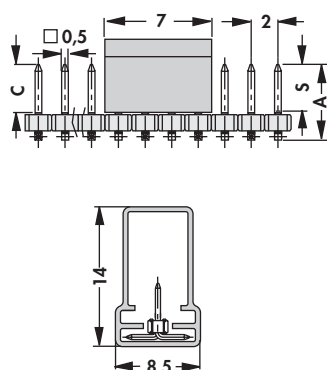
Option, for automatic assembly

– reel diameter Ø 330 mm

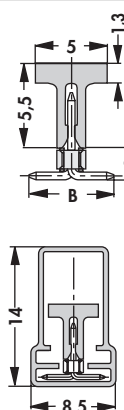


... SM

... B SM



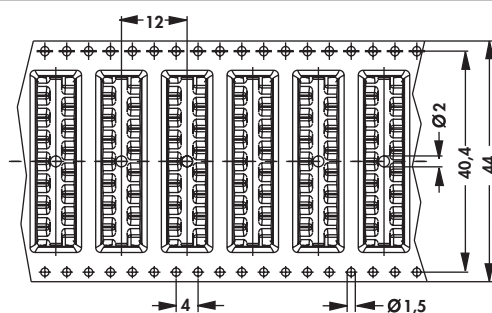
SLY 7 SMD ... SM



SLY 7 SMD ... B SM



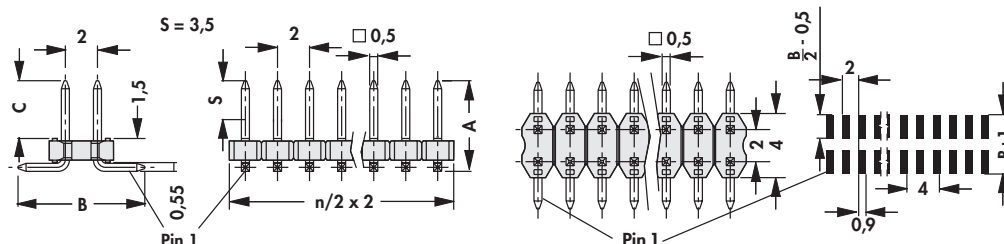
... B TR



SLY 7 SMD 036-045 ... B TR

Male headers

□ 0.5 mm



art. no.	dim. [mm]			
	A	B	C	S
SLY 8 SMD 036 ...	5.6	8.5	3.6	3.0
SLY 8 SMD 045 ...	6.5	6.5	4.5	3.5
SLY 8 SMD 062 ...	8.2	6.5	6.2	3.5

please indicate: ... no. of contacts two rows 4 - 40

... surface of contact
 S = selective gold-plated
 G = gold-plated
 Z = tin-plated

... packing (optional)
 SM = bar magazine
 B SM = pick and place pad and bar magazine
 B TR = pick and place pad and tape and reel (650pcs/reel)

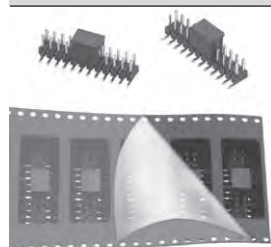
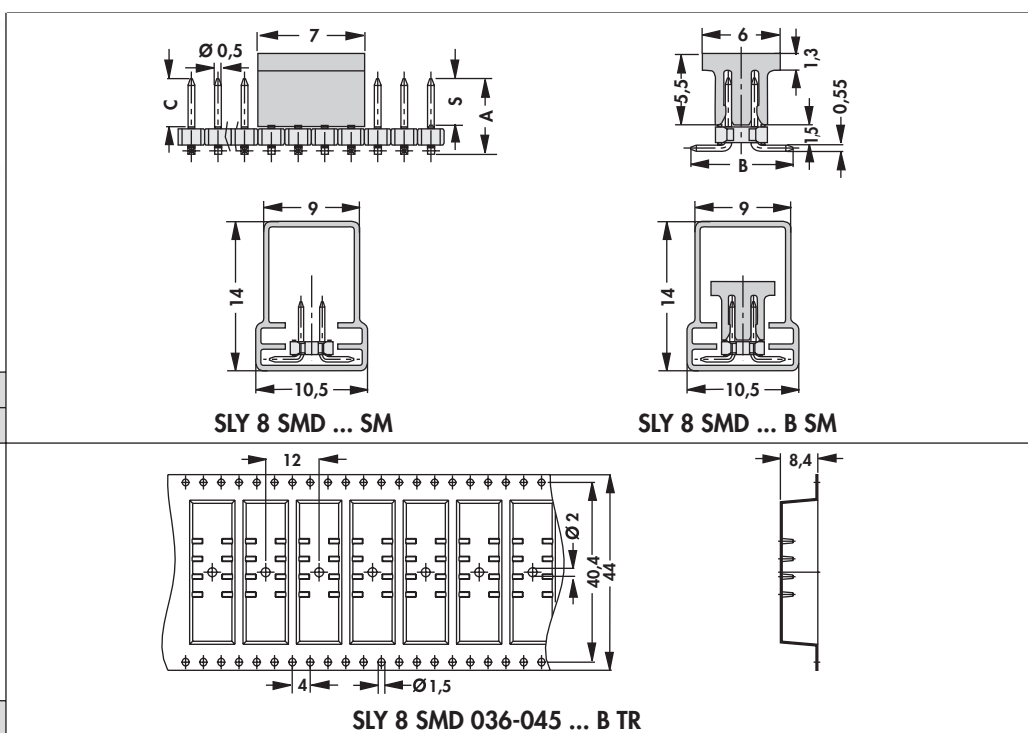
... packing (option) - additions:
 SLY 8 SMD ... SM; ... B SM: 6-40 contacts
 SLY 8 SMD 036-045 ... B TR: 6-30 contacts

Option, for automatic assembly

– reel diameter Ø 330 mm



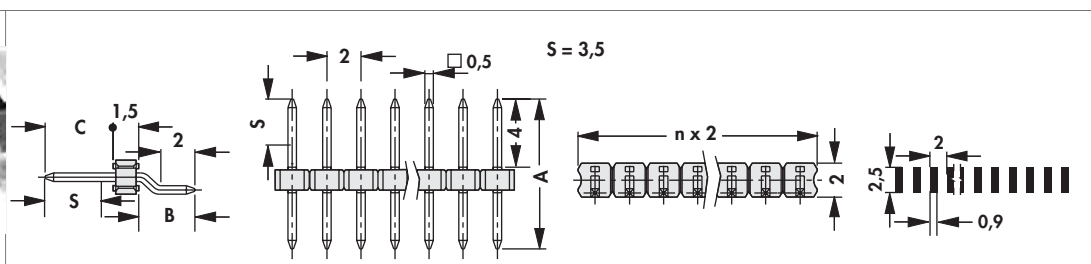
... SM
 ... B SM



... B TR

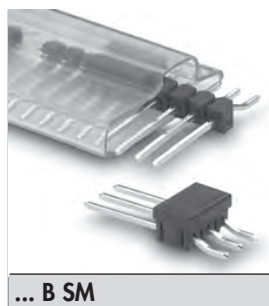
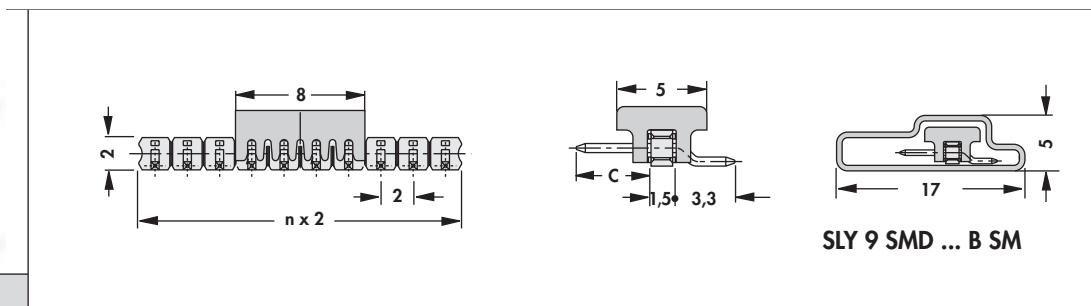
Male headers

□ 0.5 mm

				
art. no.	dim. [mm]			
	A	B	C	S
SLY 9 SMD 040 ...	8.8	3.3	4.0	3.5
SLY 9 SMD 055 ...	10.3	3.3	5.5	3.5
please indicate:	... no. of contacts one row 2 - 20	... surface of contact S = selective gold-plated G = gold-plated Z = tin-plated	... packing (optional) B SM = pick and place pad and bar magazine	

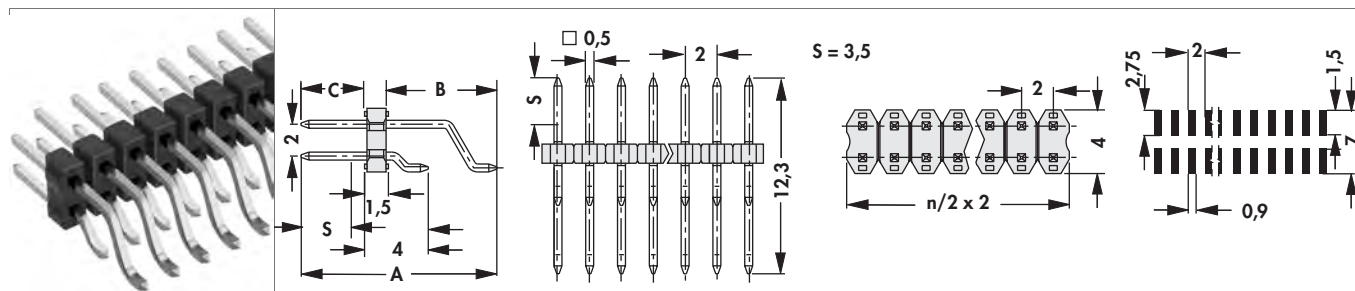
Option, for automatic assembly

– reel diameter Ø 330 mm

 ... B SM	 SLY 9 SMD ... B SM
--	---

Male headers

□ 0.5 mm

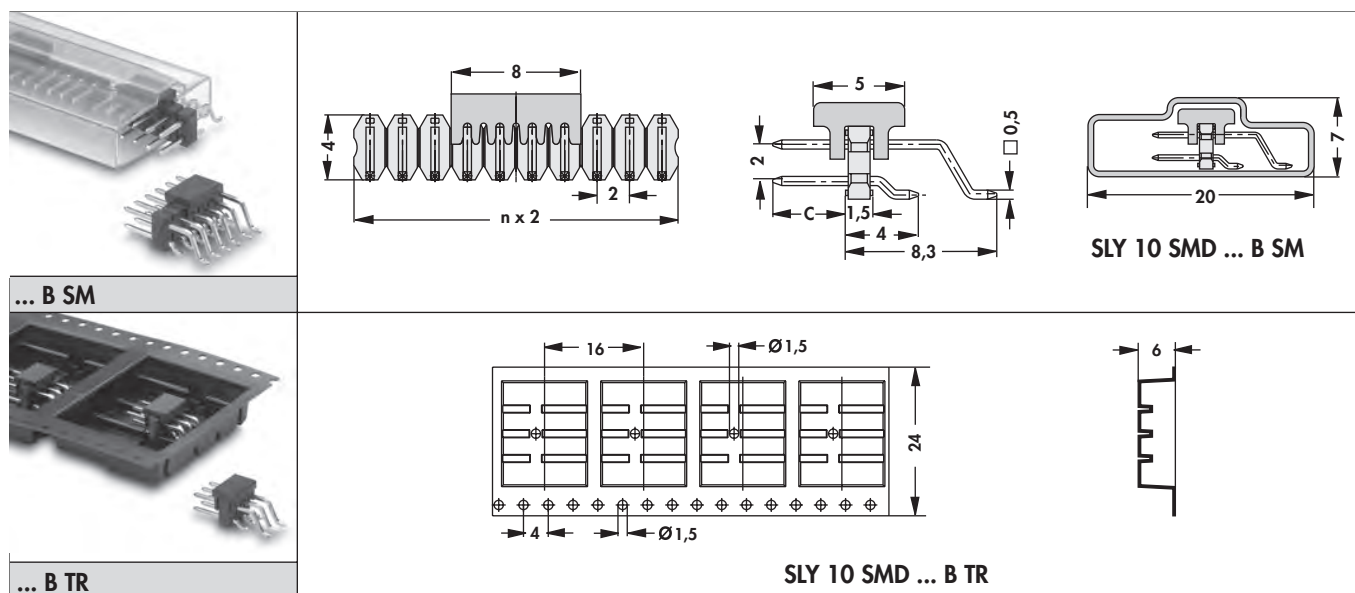


art. no.	dim. [mm]			
	A	B	C	S
SLY 10 SMD 040 ...	12.3	6.8	4	3.5
please indicate:	... no. of contacts two rows 4 - 40 ... surface of contact S = selective gold-plated G = gold-plated Z = tin-plated ... packing (optional) B SM = pick and place pad and bar magazine B TR = pick and place pad and tape and reel (700pcs/reel)			

... packing (option) - additions:
SLY 10 SMD 40 ... B TR: 4-16 contacts

Option, for automatic assembly

– reel diameter Ø 330 mm



Male headers

Contact cross section □ 0.4 mm, straight, slim insulating body

- suitable for female header **BLM**
- one row 1-36 contacts

art. no.	dim. [mm]			art. no.	dim. [mm]			art. no.	dim. [mm]			art. no.	dim. [mm]		
	A	B	C		A	B	C		A	B	C		A	B	C
SLV W 1 055 ...	9.7	2.5	5.5	SLV W 11 055 ...	12.2	5.0	5.5	SLV W 11 055 ...	12.2	5.0	5.5	SLV W 11 080 ...	14.7	5.0	8.0
SLV W 1 080 ...	12.2	2.5	8.0	SLV W 11 080 ...	14.7	5.0	8.0	SLV W 11 105 ...	17.2	5.0	10.5	SLV W 11 105 ...	17.2	5.0	10.5
SLV W 1 105 ...	14.7	2.5	10.5	SLV W 11 130 ...	17.2	5.0	13.0								
SLV W 1 130 ...	17.2	2.5	13.0												
please indicate: ... no. of contacts one row 1 - 36				... surface of contact G = gold-plated Z = tin-plated											

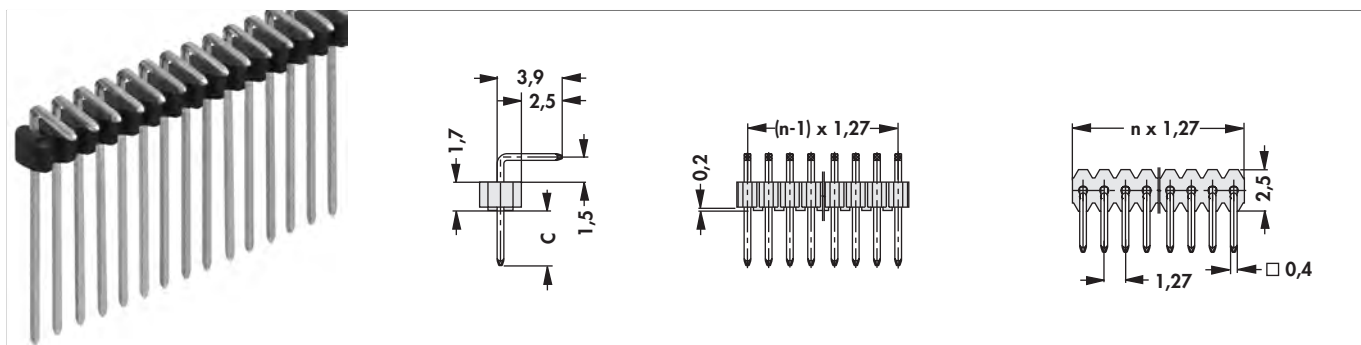
- matching for female header **BLM**
- two rows 4-72 contacts
- grid spacing 1.27 x 2.54 mm

art. no.	dim. [mm]			art. no.	dim. [mm]			art. no.	dim. [mm]			art. no.	dim. [mm]		
	A	B	C		A	B	C		A	B	C		A	B	C
SLV W 2 055 ...	9.7	2.5	5.5	SLV W 22 055 ...	12.2	5.0	5.5	SLV W 22 055 ...	12.2	5.0	5.5	SLV W 22 080 ...	14.7	5.0	8.0
SLV W 2 080 ...	12.2	2.5	8.0	SLV W 22 080 ...	14.7	5.0	8.0	SLV W 22 105 ...	17.2	5.0	10.5	SLV W 22 105 ...	17.2	5.0	10.5
SLV W 2 105 ...	14.7	2.5	10.5	SLV W 22 130 ...	17.2	5.0	13.0								
SLV W 2 130 ...	17.2	2.5	13.0												
please indicate: ... no. of contacts two rows 4 - 72				... surface of contact G = gold-plated Z = tin-plated											

Male headers

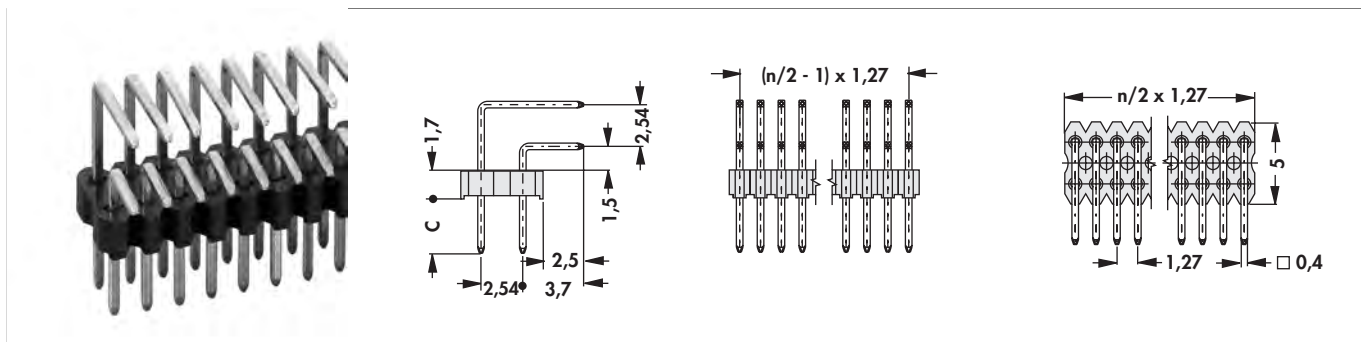
Contact cross section matching for BLM ..., □ 0.4 mm, 90° angled, expanded insulating body

- one row 1-36 contacts



art. no.	dim. [mm] C	art. no.	dim. [mm] C
SLV W 1 KA 030 ...	3.0	SLV W 1 KA 080 ...	8.0
SLV W 1 KA 055 ...	5.5	SLV W 1 KA 105 ...	10.5
please indicate:	... no. of contacts one row 1 - 36	... surface of contact G = gold-plated Z = tin-plated	

- two rows 6-72 contacts
- grid spacing 1.27 x 2.54 mm
- **packing in a bar magazine**
- **VPE** = packing unit (pieces/tube)
- preferred number of contacts, further ones can be made upon request



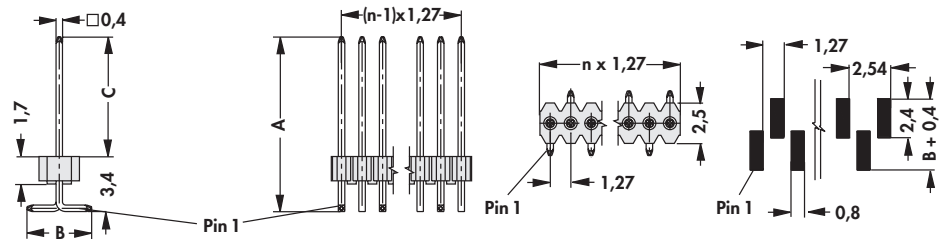
art. no.	no. of con- tacts	pack- ing unit	dim. [mm] C	art. no.	no. of con- tacts	pack- ing unit	dim. [mm] C
SLV W 2 KA 030 10 ...	10	78	3.0	SLV W 2 KA 054 10 ...	10	78	5.4
SLV W 2 KA 030 14 ...	14	55	3.0	SLV W 2 KA 054 14 ...	14	55	5.4
SLV W 2 KA 030 16 ...	16	50	3.0	SLV W 2 KA 054 16 ...	16	50	5.4
SLV W 2 KA 030 20 ...	20	40	3.0	SLV W 2 KA 054 20 ...	20	40	5.4
SLV W 2 KA 030 26 ...	26	31	3.0	SLV W 2 KA 054 26 ...	26	31	5.4
SLV W 2 KA 030 30 ...	30	27	3.0	SLV W 2 KA 054 30 ...	30	27	5.4
SLV W 2 KA 030 34 ...	34	24	3.0	SLV W 2 KA 054 34 ...	34	24	5.4
SLV W 2 KA 030 40 ...	40	20	3.0	SLV W 2 KA 054 40 ...	40	20	5.4
SLV W 2 KA 030 50 ...	50	16	3.0	SLV W 2 KA 054 50 ...	50	16	5.4
SLV W 2 KA 030 72 ...	72	11	3.0	SLV W 2 KA 054 72 ...	72	11	5.4

please indicate: ... surface of contact
G = gold-plated
Z = tin-plated

Male headers

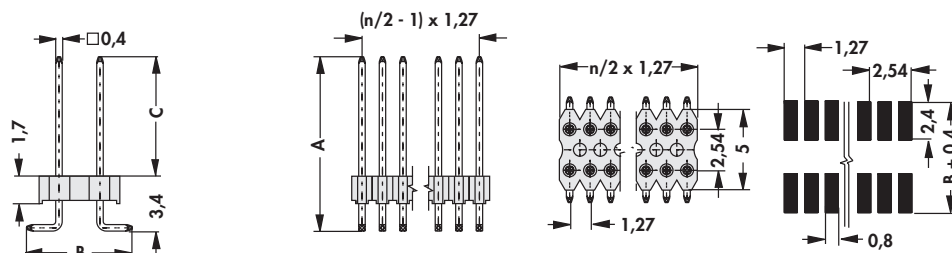
Contact cross section $\square$ 0.4 mm, expanded insulating body

- suitable for female header **BLM**
- one row 4-20 contacts



art. no.		dim. [mm]		art. no.		dim. [mm]			
		A	B	C			A	B	C
SLV W 1 SMD 048 ...		8.2	4	4.8	SLV W 1 SMD 073 ...		10.7	4	7.3
please indicate:		... no. of contacts			... surface of contact				
		one row 4 - 20			G = gold-plated				
					Z = tin-plated				

- suitable for female header **BLM**
- two rows 4-40 contacts
- grid spacing 1.27 x 2.54 mm

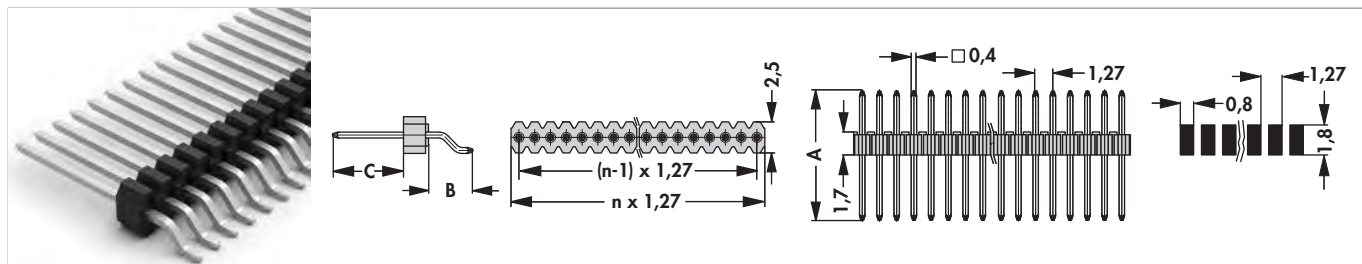


art. no.		dim. [mm]		art. no.		dim. [mm]			
		A	B	C			A	B	C
SLV W 2 SMD 048 ...		8.2	6.6	4.8	SLV W 2 SMD 073 ...		10.7	6.6	7.3
please indicate:									
... no. of contacts		... surface of contact							
two rows 4 - 40		G = gold-plated							
		Z = tin-plated							

Male headers

Pin cross section $\square$ 0.4 mm, expanded insulating body

- matching for female header **BLM**
- one row 2-20 contacts



art. no.	dim. [mm]			art. no.	dim. [mm]		
	A	B	C		A	B	C
SLV W 3 SMD 048 ...	9.5	3	4.8	SLV W 3 SMD 073 ...	12.0	3	7.3
please indicate:		... no. of contacts one row 2 - 20		... surface of contact G = gold-plated Z = tin-plated		... packing (optional) SM = bar magazine	

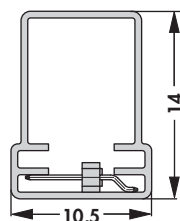
... packing (option) - additions:

SLV W 3 SMD ... SM: 4-20 contacts

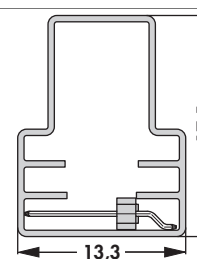
Option, for automatic assembly



... SM



SLV W 3 SMD 048 ... SM

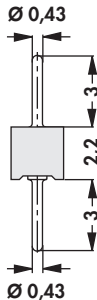
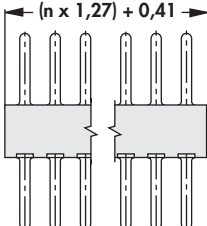
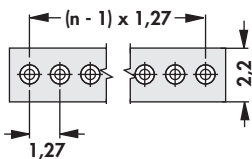
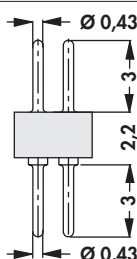
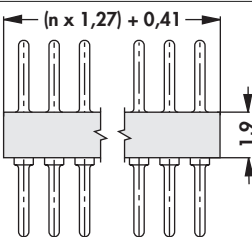
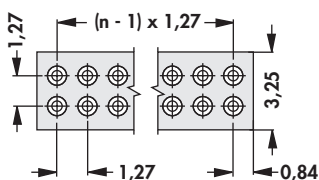
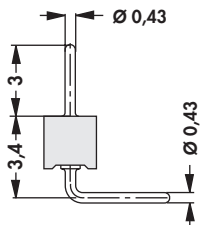
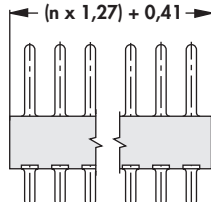
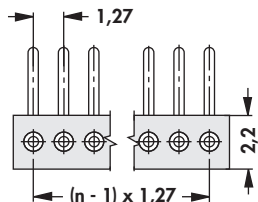
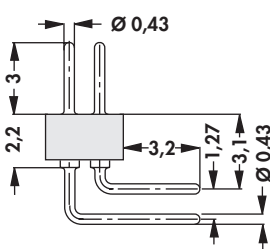
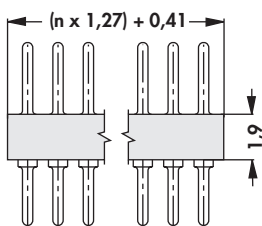
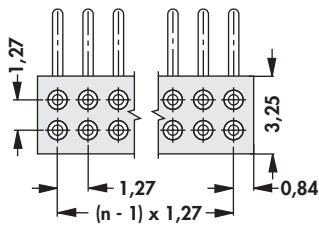


SLV W 3 SMD 073 ... SM

Male headers

Precision contacts, solder and plug pins, Ø 0.43 mm

- turned precision contacts, less space required on PCB
- other number of contacts on request

			
art. no. SLR 1 025 ...	no. of contacts 25	art. no. SLR 1 050 ...	no. of contacts 50
please indicate: ... surface of contact G = gold-plated Z = tin-plated			
			
art. no. SLR 2 050 G	no. of contacts 50		
			
art. no. SLR 3 025 G	no. of contacts 25	art. no. SLR 3 050 G	no. of contacts 50
			
art. no. SLR 4 050 G	no. of contacts 50	art. no. SLR 4 100 G	no. of contacts 100
surface of contact:		gold-plated	

Male headers

Precision contacts, solder and plug pins Ø 0.43 mm

- less space required on PCB
- other number of contacts on request

art. no.	no. of contacts	
SLR 5 SMD 50 G	50	
surface of contact:	gold-plated	

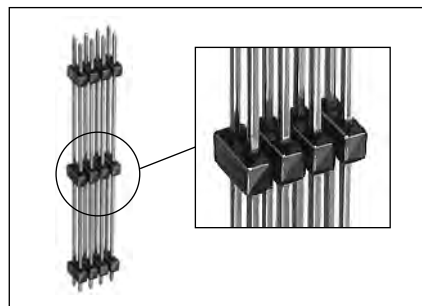
Customer specified male and female headers

We manufacture male and female headers for your specific application.

All pin lengths from 7.5 to 45.3 mm for grid 2.54 mm and 7.5 to 30 mm for grid 2.00 mm available on request.

The insulator can be mounted at any requested position on the full length of the pin.

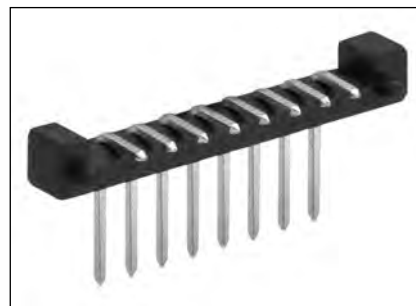
Grid spacing insertion with selective gold-plated contacts on request.



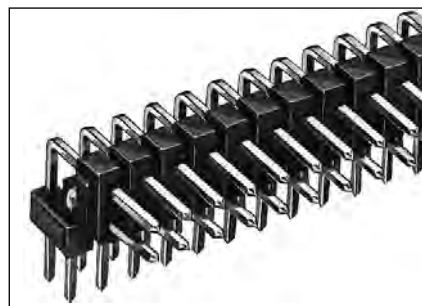
PCB connector,
extra long and additionally stabilized



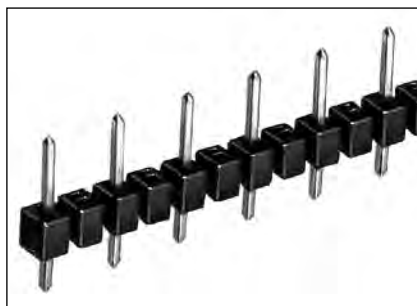
4-contact male header for THR-soldering;
grid 5.75 mm



8-contact male header with special
insulating body including locating pin



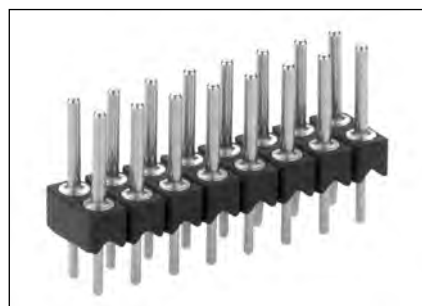
angled male header with two insulators



male header in 5.08 mm grid and
customised



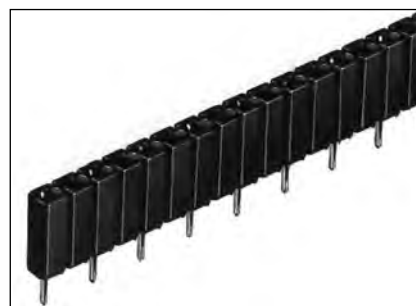
angled male and female header
1.27 mm grid, with customised
insulators



insulator body and precision contacts
according to customer's request



male header with various pin lengths



female header in 5.08 mm grid

Jumpers
Female headers 1.27 SMD
Female headers 1.27 THT
Female headers 2.00 SMD

→ **G 76 – 77**
→ **G 73 – 74**
→ **G 71 – 72**
→ **G 68 – 70**

High-prec. fem. headers 1.27 THT
High-prec. female headers 1.27 SMD
Direct female connectors
Technical data

→ **G 72**
→ **G 74**
→ **G 75**
→ **G 78 – 84**

G 44

A

B

C

D

E

F

G

H

I

K

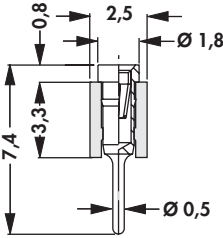
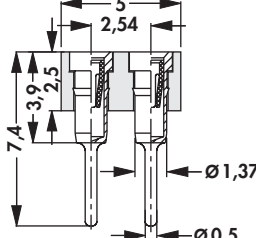
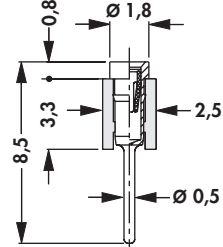
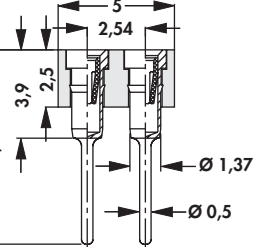
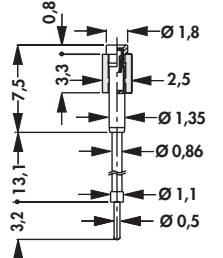
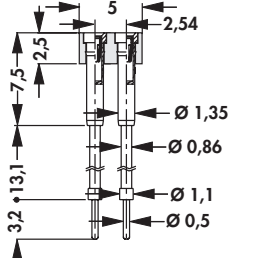
L

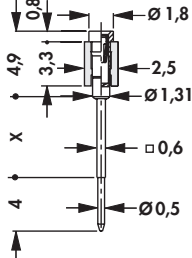
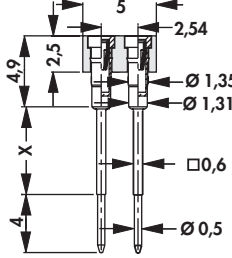
M

N

Female headers

Precision contacts, plug pins Ø 0.5 mm

art. no.			art. no.		
MK 01 ...			MK 201 ...		
MK 17 ...			MK 217 ...		
MK 12 X 2 ...			MK 212 X 2 ...		
please indicate: ... no. of contacts ... surface of contact one row 1 - 50 G = gold-plated two rows 2 - 100 Z = tin-plated					

			
art. no.	dim. [mm]	art. no.	dim. [mm]
MK 13 X 1 ...	X	MK 213 X 1 ...	X
MK 13 X 2 ...	5.9	MK 213 X 2 ...	5.9
	8.9		8.9
please indicate: ... no. of contacts ... surface of contact one row 1 - 50 G = gold-plated two rows 2 - 100 Z = tin-plated			
contact spring:		gold-plated	

Female headers

Precision contacts for pin cross section Ø 0.5 mm

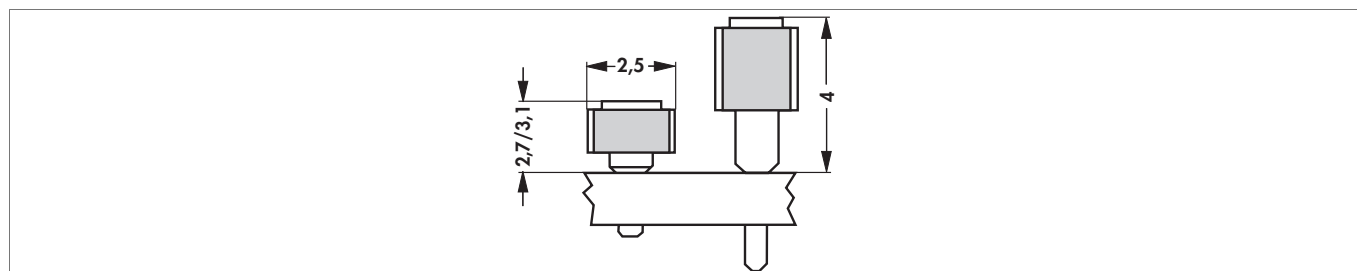
art. no.			
MK 06 ...			
art. no.			art. no.
MK 07 ...			
MK 207 ...			
please indicate: ... no. of contacts ... surface of contact one row 1 - 50 G = gold-plated two rows 2 - 100 Z = tin-plated			

Low profile, less than 2.7/3.1 mm - with contact spring for Ø 0.5 mm pins

– solder and plug pin Ø 0.76 mm

art. no.			art. no.		
MK LP 18 ...			MK LP 218 ...		
art. no.			art. no.		
MK LP 19 ...			MK LP 219 ...		
please indicate: ... no. of contacts ... surface of contact one row 1 - 50 G = gold-plated two rows 4 - 100 Z = tin-plated					
contact spring:		gold-plated			

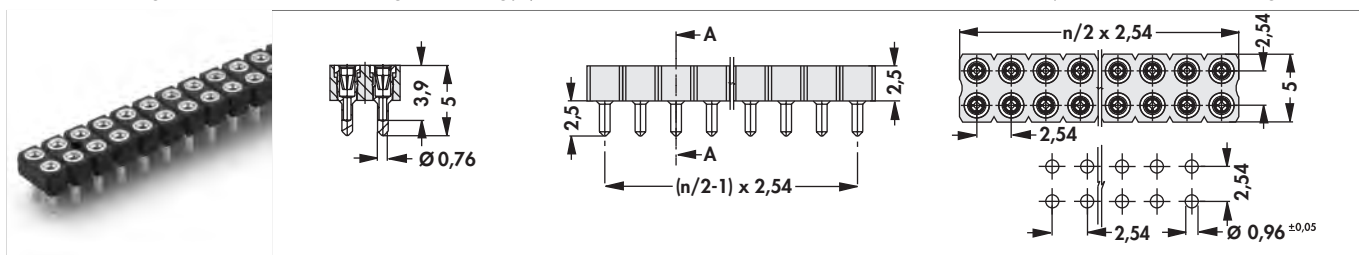
Low profile: 2.7/3.1 mm; standard profile: 4 mm



Female headers

Precision contacts in THR-soldering technology for pin cross section Ø 0.5 mm

– **THR**: Through-Hole-Reflow-soldering technology (connector to be soldered with modified insert technique in Reflow-soldering method)



art. no.

MK 228 THR ...

please indicate:

... no. of contacts
two rows 2 - 40

... surface of contact
G = gold-plated
Z = tin-plated

contact spring:

gold-plated

G 47

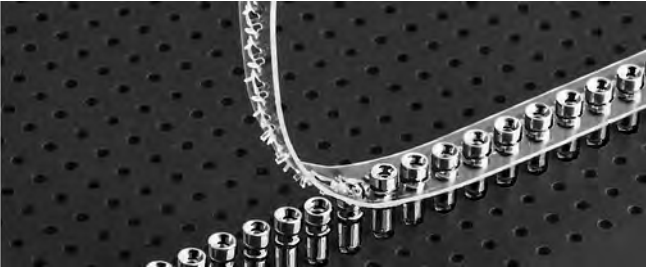
Direct female connectors
Single precision contacts
Jumpers
Single contacts metal strip

→ G 75
→ F 17 – 18
→ G 76 – 77
→ G 49

High-prec.male head.soldering techn.→ G 3 – 17
High-precis.male head.in SMD mount.→ G 18
Jumper links 2 & 2.54 THT → F 15
Technical data → G 78 – 84

Female headers

Peel-Off

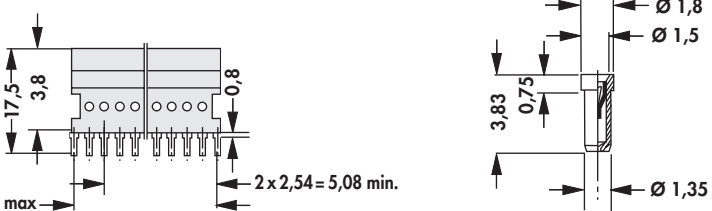
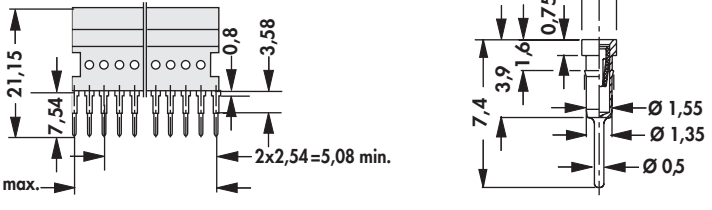
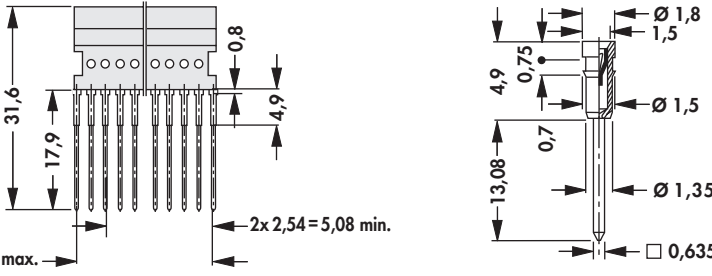


- precision contacts are mounted in a temperature-resistant carrier strip which is removed after soldering
- special loadings upon request

art. no.		
PO A ... G		
please indicate:	... no. of contacts from 2 pins to endless	
contact sleeve:	gold-plated	
contact spring:	gold-plated	
annotation:	Technical data of carrier foil: max. tensile strength: 193 N/mm ² max. thermal expansion - longitudinal direction: 1.7x10 ⁻⁵ mm/°C melting point: 250°C	

Female headers

Precision contacts on metal strip for pin cross section Ø 0.5 mm

art. no. SIL 1 ...		
art. no. SIL 2 ...		
art. no. SIL 3 ...		
please indicate: ... no. of contacts ... surface of contact one row 2 - 100 G = gold-plated Z = tin-plated		
contact spring:	gold-plated	
annotation:	carrier strip: brass	

Female headers

Stamped contact spring (fork contact)

– **separable!** any requested number of contact can be delivered

– for □ 0.635 mm pin cross section, straight

art. no.					
BL 1 ...					
art. no.					
BL 2 ...					
please indicate:	... no. of contacts one row 1 - 36 two rows 2 - 72		... surface of contact G = gold-plated Z = tin-plated		

– for □ 0.635 mm pin cross section, angled

– **BL 4 ...:** packing (option) bar magazine (≥6 contacts)

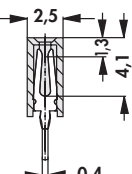
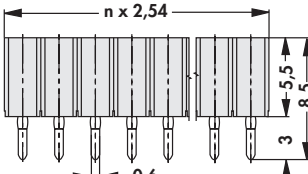
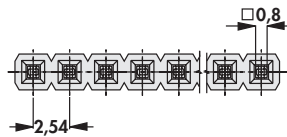
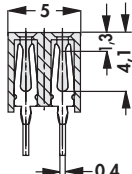
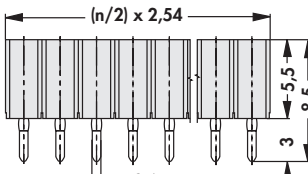
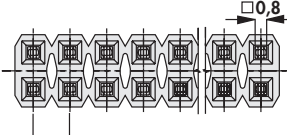
art. no.					
BL 3 ...					
art. no.					
BL 4 ...					
please indicate:	... no. of contacts one row 1 - 36 two rows 2 - 72		... surface of contact G = gold-plated Z = tin-plated		

Female headers

Low profile, fork contact spring

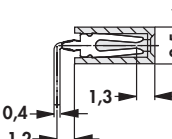
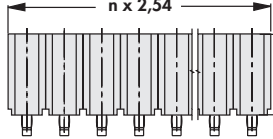
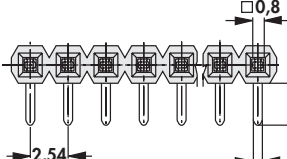
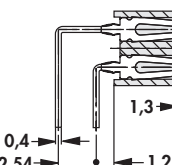
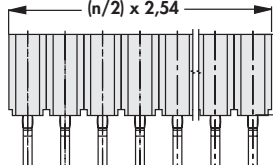
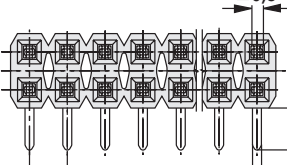
– **separable!** any requested number of contact can be delivered

– for □ 0.635 mm pin cross section, straight

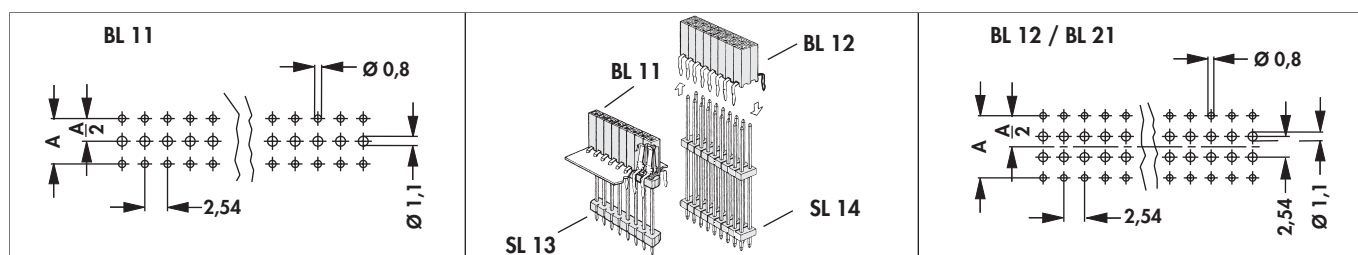
art. no.				
BL LP 1 ...				
art. no.				
BL LP 2 ...				
please indicate:				
... no. of contacts		... surface of contact		
one row 1 - 36		S = selective gold-plated		
two rows 2 - 72		Z = tin-plated		

– for □ 0.635 mm pin cross section, angled

– **BL LP 4 ...:** packing in a bar magazine (min. 6 contacts)

art. no.				
BL LP 3 ...				
art. no.				
BL LP 4 ...				
please indicate:	... no. of contacts one row 1 - 36 two rows 2 - 72	... surface of contact S = selective gold-plated Z = tin-plated		

Female headers



For ☐ 0.635 mm pin cross section, can be put through / 260 °C Reflow

- for each contact both contact springs have to be interconnected via the PCB
- **packing:** bar magazine
- stamped contact spring; - **separable!** any requested number of contact can be delivered

art. no.	dim. [mm]	art. no.	dim. [mm]
	A		A
BL 11 254 ...	2.54	BL 11 508 ...	5.08
please indicate: ... no. of contacts one row 1 - 45 ... surface of contact S = selective gold-plated Z = tin-plated			

For ☐ 0.635 mm pin cross section, can be put through

- **packing:** bar magazine
- stamped contact spring; - **separable!** any requested number of contact can be delivered

art. no.	dim. [mm]	art. no.	dim. [mm]
	A		A
BL 12 650 ...	6.50	BL 12 762 ...	7.62
art. no.	dim. [mm]	art. no.	dim. [mm]
	A		A
BL 21 650 ...	6.50	BL 21 762 ...	7.62
please indicate: ... no. of contacts two rows 2 - 90 ... surface of contact S = selective gold-plated Z = tin-plated			

Single precision contacts → F 17 – 18
 Single contacts metal strip → G 49
 High-precision female headers THT → G 2 – 6
 High-prec. male headers 2.54 THT → G 45 – 55

Jumpers
 Direct female connectors
 Male headers 2.54 SMD
 Technical data

→ G 76 – 77
 → G 75
 → G 21 – 27
 → G 78 – 84

G 52

Female headers

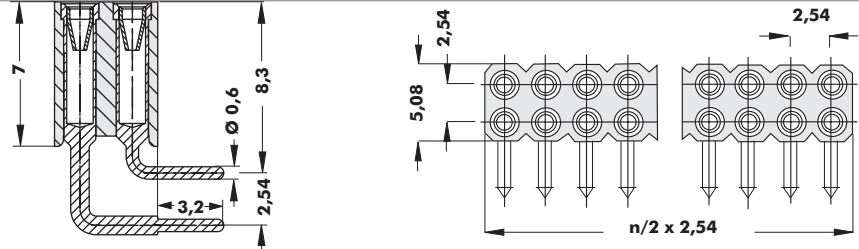
Precision contacts for □ 0.635 mm and Ø up to 0.85 mm, pin cross section

art. no.	inner contact spring surface
BL 5 ...	$\geq 0,75 \mu\text{m Au}$
BL 5 025 ...	$\geq 0,25 \mu\text{m Au}$
please indicate:	... no. of contacts one row 1 - 36
art. no.	inner contact spring surface
BL 6 ...	$\geq 0,75 \mu\text{m Au}$
BL 6 025 ...	$\geq 0,25 \mu\text{m Au}$
please indicate:	... no. of contacts two rows 2 - 72
contact sleeve:	tin-plated
contact spring:	gold-plated
art. no.	
BL KG 3 ...	please indicate: ... no. of contacts three rows 9 - 96
art. no.	
BL 7 ...	please indicate: ... no. of contacts one row 1 - 36
contact sleeve:	tin-plated
contact spring:	gold-plated

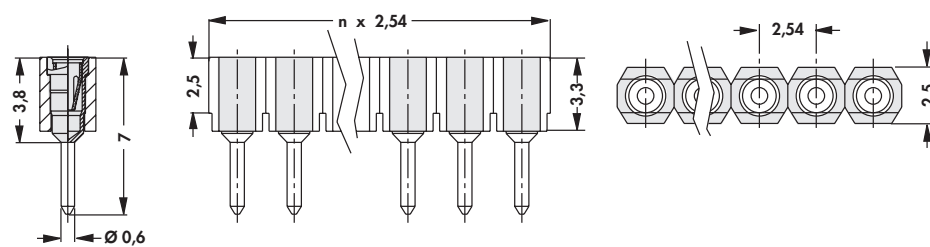
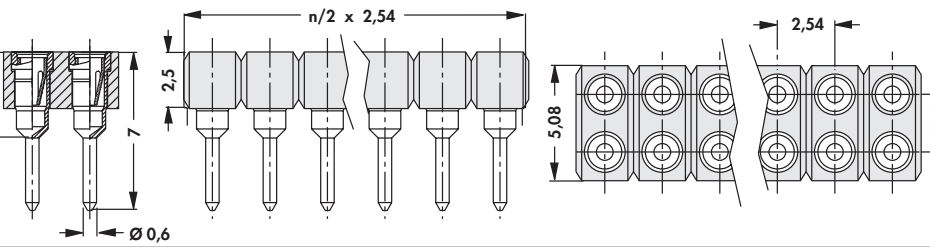
Female headers

Precision contacts for $\square$ 0.635 mm and $\varnothing$ up to 0.85 mm, pin cross section

- packing in a bar magazine (≥ 6 contacts)
- no capillary action when soldering due to protected inner contact
- **separable!** any requested number of contact can be delivered

art. no.		
BL 8 ...		
please indicate: ... no. of contacts two rows 4 - 72		
contact sleeve:	tin-plated	
contact spring:	gold-plated	

- no capillary action when soldering due to protected inner contact
- **separable!** any requested number of contact can be delivered

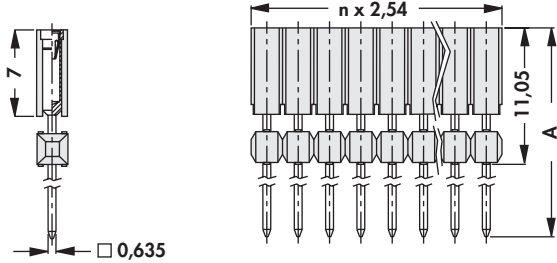
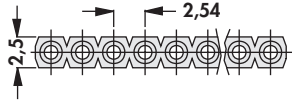
art. no.		
MK 21 ...		
please indicate: ... no. of contacts one row 1 - 50		
art. no.		
MK 221 ...		
please indicate: ... no. of contacts two rows 2 - 100		
contact sleeve:	tin-plated	
contact spring:	gold-plated	

Female headers

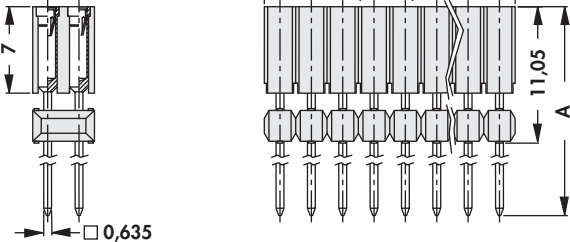
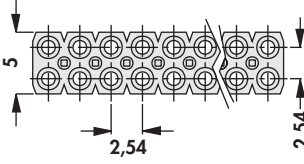
Precision contacts for $\square$ 0.635 mm and $\varnothing$ up to 0.85 mm, pin cross section

- for PC 104 modules
- no capillary action when soldering due to protected contact insert
- **separable!** any requested number of contact can be delivered

– one row, 1-36 contacts

		
art. no.	dim. [mm]	
	A	
BL 18 141 ...	14.1	
BL 18 219 ...	21.9	
please indicate:	... no. of contacts one row 1 - 36	
contact sleeve:	gold-plated	
contact spring:	gold-plated	

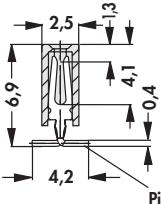
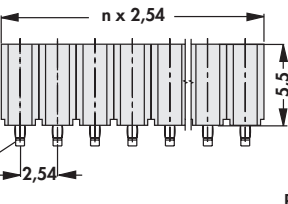
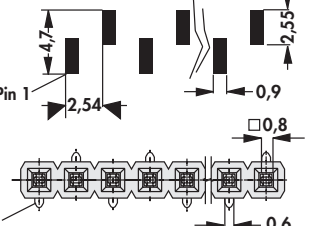
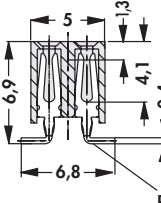
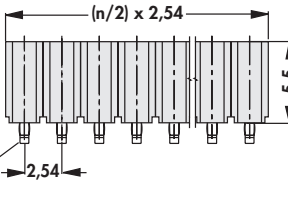
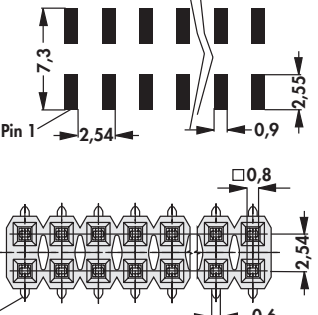
– two rows, 2-72 contacts

		
art. no.	dim. [mm]	
	A	
BL 19 141 ...	14.1	
BL 19 219 ...	21.9	
please indicate:	... no. of contacts two rows 2 - 72	
contact sleeve:	gold-plated	
contact spring:	gold-plated	

Female headers

Low profile, fork contact spring

- for □ 0.635 mm plug pins
- other number of contacts on request

art. no. BL LP 5 SMD ...		 	
please indicate:	... no. of contacts one row 4 - 20	... surface of contact S = selective gold-plated Z = tin-plated	... packing (optional) SM = bar magazine B SM = pick and place pad and bar magazine
art. no. BL LP 6 SMD ...		 	
please indicate:	... no. of contacts two rows 4 - 40	... surface of contact S = selective gold-plated Z = tin-plated	... packing (optional) SM = bar magazine B SM = pick and place pad and bar magazine

Female headers

Precision contacts for $\square$ 0.635 mm and $\varnothing$ up to 0.85 mm, pin cross section

- no capillary action when soldering due to protected contact insert
- **separable!** any requested number of contact can be delivered

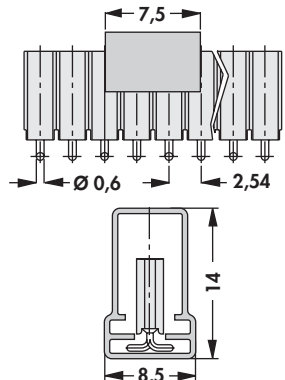
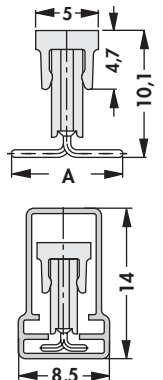
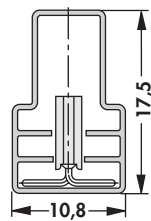
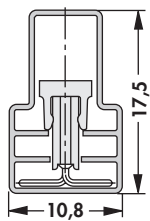
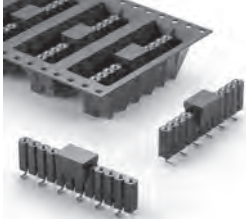
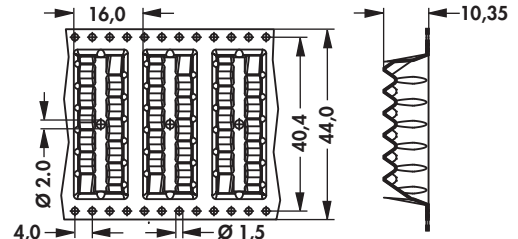
art. no.	dim. [mm]		
	A	B	C
BL 15 SMD 043...	4.3	5.0	2.5
BL 15 SMD 089...	8.9	9.5	4.8
please indicate: ... no. of contacts ... packing (optional) one row 4 - 20 SM = bar magazine B SM = pick and place pad and bar magazine B TR = pick and place pad and tape and reel (400pcs/reel)			

... packing (option) - additions:
BL 15 SMD ... B TR: 4-12 contacts

contact sleeve:	tin-plated
contact spring:	gold-plated

Option, for automatic assembly

- reel diameter $\varnothing$ 330 mm

	 BL 15 SMD 043 ... SM  BL 15 SMD 043 ... B SM
... SM ... B SM	 BL 15 SMD 089 ... SM  BL 15 SMD 089 ... B SM
	
... B TR	

Female headers 1.27 SMD
Female headers 2.00 SMD
Female headers 2.54 press-fit
Single contacts metal strip

→ G 73
→ G 68
→ G 66
→ G 49

Single precision contacts
Male headers 2.54 THT
Male headers 2.54 SMD
Technical data

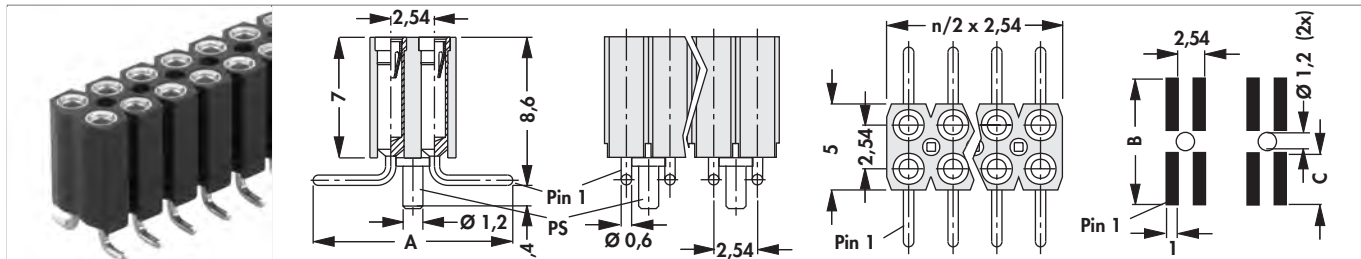
→ F 17 - 18
→ G 7 - 17
→ G 21 - 27
→ G 78 - 84

G 58

Female headers

Precision contacts for $\square$ 0.635 mm and $\varnothing$ up to 0.85 mm, pin cross section

- no capillary action when soldering due to protected contact insert
- **separable!** any requested number of contact can be delivered

			
art. no.	dim. [mm]		
	A	B	C
BL 16 SMD 067 ...	6.7	7.5	2.5
BL 16 SMD 113 ...	11.3	12.0	4.8
please indicate: ... no. of contacts two rows 4 - 40 ... packing (optional) SM = bar magazine B SM = pick and place pad and bar magazine B TR = pick and place pad and tape and reel (250pcs/reel)			

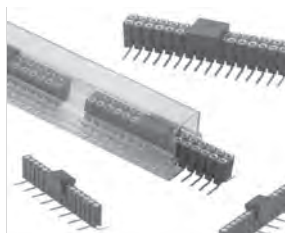
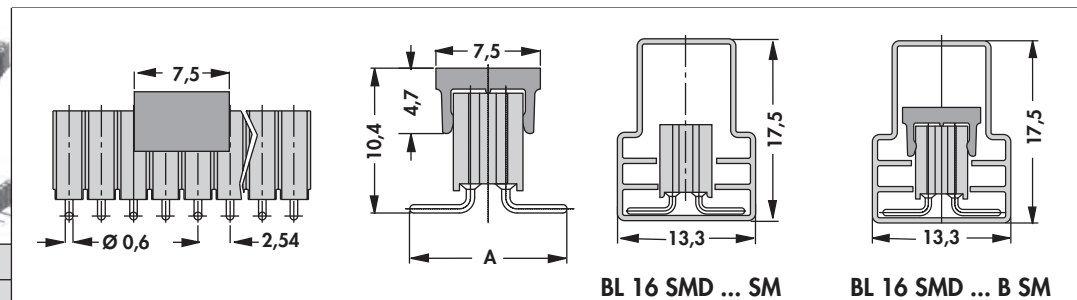
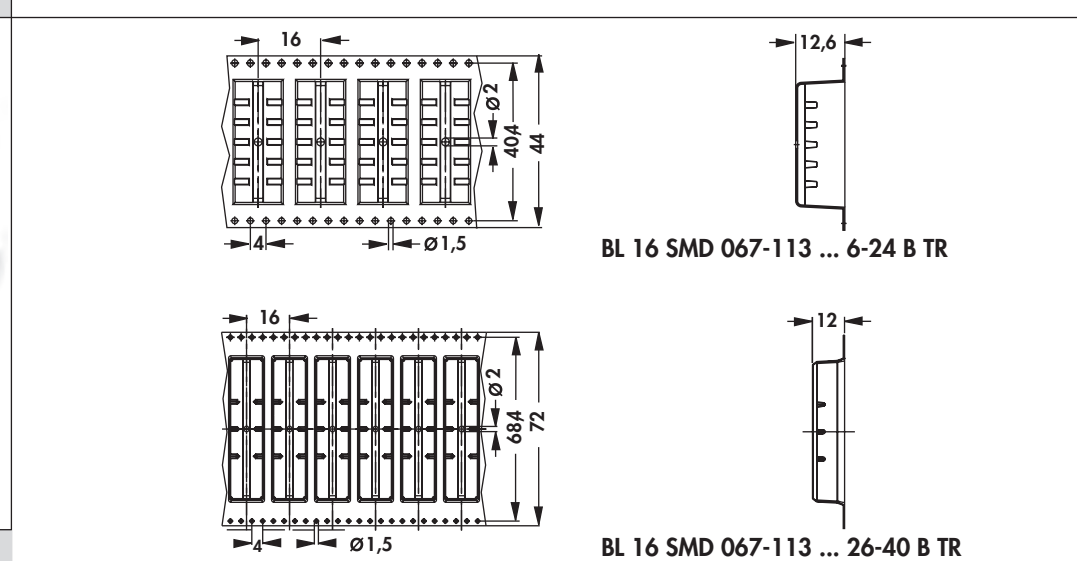
... packing (option) - additions:

BL 16 SMD ... B TR: 6-40 contacts

contact sleeve:	tin-plated
contact spring:	gold-plated

Option, for automatic assembly

– reel diameter $\varnothing$ 330 mm

 ... SM ... B SM	 BL 16 SMD ... SM BL 16 SMD ... B SM			
	 BL 16 SMD 067-113 ... 6-24 B TR BL 16 SMD 067-113 ... 26-40 B TR			

Female headers

Precision contacts for □ 0.635 mm and Ø up to 0.85 mm, pin cross section

- no capillary action when soldering due to protected inner contact
- **separable!** any requested number of contact can be delivered

art. no.		
BL 17 SMD ...		
please indicate:	... no. of contacts one row 2 - 20	... packing (optional) SM = bar magazine TR = tape and reel (1.300pcs./reel)

packing (option) - additions:
BL 17 SMD ... SM: 3-20 contacts
BL 17 SMD ...TR: 2-13 contacts

contact sleeve:	tin-plated
contact spring:	gold-plated

Option, for automatic assembly

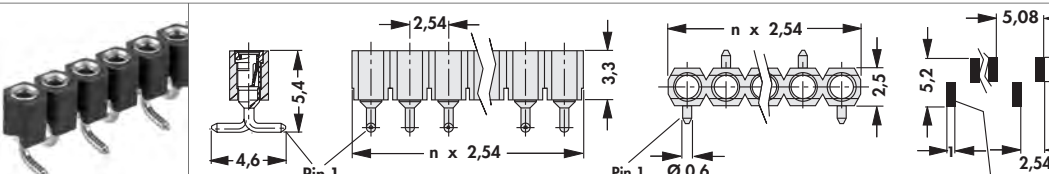
- reel diameter Ø 330 mm

... SM	BL 17 SMD ... SM
... TR	BL 17 SMD ... TR

Female headers

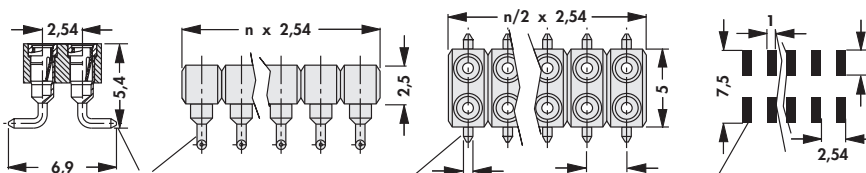
Precision contacts for $\square$ 0.635 mm and $\varnothing$ up to 0.85 mm, pin cross section

- no capillary action when soldering due to protected inner contact
- **separable!** any requested number of contact can be delivered

art. no.			
MK 22 SMD ...			
please indicate:		... no. of contacts one row 4 - 20	... packing (optional) B SM = pick and place pad and bar magazine
contact sleeve:		tin-plated	
contact spring:		gold-plated	

Option, for automatic assembly

... B SM	MK 22 SMD ... B SM		

art. no.					
MK 222 SMD ...					
please indicate:		... no. of contacts two rows 4 - 40		... packing (optional) B SM = pick and place pad and bar magazine	
contact sleeve:		tin-plated			
contact spring:		gold-plated			

Option, for automatic assembly

... B SM	MK 222 SMD ... B SM		

Single contacts metal strip

Male headers 2.54 THT

Male headers 2.54 SMD

High-precision female headers THT

→ G 49

→ G 7 - 17

→ G 21 - 27

→ G 2 - 6

Female headers 1.27 SMD

Female headers 2.00 SMD

Female headers 2.54 press-fit

Technical data

→ G 73

→ G 68

→ G 66

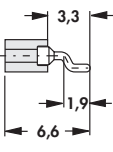
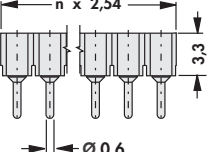
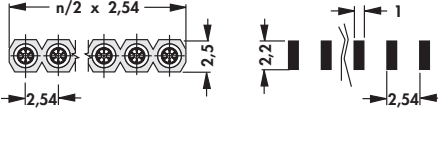
→ G 78 - 84

G 62

Female headers

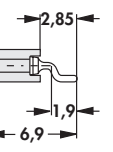
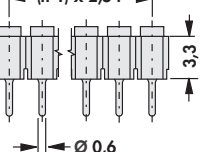
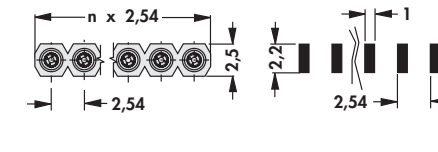
Precision contacts for $\square$ 0.635 mm and up to $\varnothing$ 0.85 mm, pin cross section

- no capillary action when soldering due to protected inner contact
- **separable!** any requested number of contact can be delivered

art. no.				
MK 24 SMD ...				
please indicate:	... no. of contacts one row 2 - 20			
contact sleeve:	tin-plated			
contact spring:	gold-plated			

Precision contacts for pin cross section $\varnothing$ 0,5 mm

- one row
- no capillary action when soldering due to protected contact insert
- **separable!** any requested number of contact can be delivered

art. no.				
MK 25 SMD ...				
please indicate:	... no. of contacts one row 2 - 20			
contact sleeve:	tin-plated			
contact spring:	gold-plated			

Female headers

Precision contacts for pin cross section Ø 0,5 mm

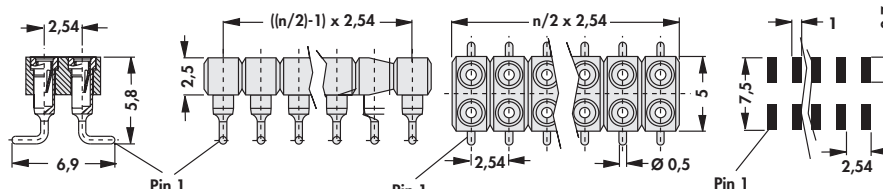
- one row
- no capillary action when soldering due to protected inner contact
- **separable!** any requested number of contact can be delivered

art. no.			
MK 23 SMD ...			
please indicate:	... no. of contacts one row 4 - 20	... packing (optional) B SM = pick and place pad and bar magazine	
contact sleeve:	tin-plated		
contact spring:	gold-plated		

Option, for automatic assembly

... B SM	MK 23 SMD ... B SM		

- two rows
- no capillary action when soldering due to protected inner contact
- **separable!** any requested number of contact can be delivered

art. no.			
MK 223 SMD ...			
please indicate:		... no. of contacts two rows 4 - 40	... packing (optional) B SM = pick and place pad and bar magazine
contact sleeve:		tin-plated	
contact spring:		gold-plated	

Option, for automatic assembly

... B SM	MK 223 SMD ... B SM		

Female headers

Precision contacts for pin cross section Ø 0,5 mm

- no capillary action when soldering due to protected contact insert
- **separable!** any requested number of contact can be delivered

art. no.			
MK 220 SMD ...			
please indicate:	... no. of contacts two rows 4 - 40	... packing (optional) B SM = pick and place pad and bar magazine B TR = pick and place pad and tape and reel	

... packing (option) - additions:

MK 220 SMD ... BTR 6-12 contacts; 800 pcs/reel

MK 220 SMD ... BTR 14-40 contacts; 500 pcs/reel

contact sleeve:	tin-plated
contact spring:	gold-plated

Option, for automatic assembly

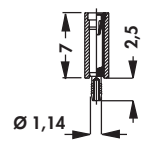
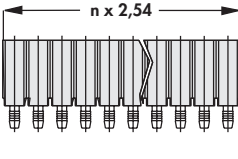
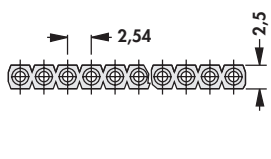
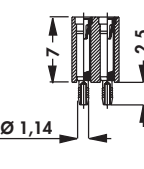
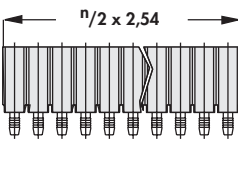
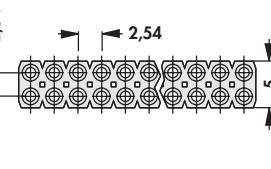
- reel diameter Ø 330 mm

... B SM		MK 220 SMD ... B SM
... B TR	MK 220 SMD ... 6-12 B TR	MK 220 SMD ... 14-40 B TR

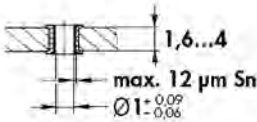
Female headers

Precision contacts for 0.635 mm and up to Ø 0.85 mm, pin cross section

- press-fit mounting without soldering, resilient press-fit area
- no capillary action when soldering due to protected inner contact contact
- **separable!** any requested number of contact can be delivered

art. no.				
BLP 1 ...				
art. no.				
BLP 2 ...				
please indicate: ... no. of contacts one row 1 - 36 two rows 2 - 72				
contact sleeve:	tin-plated			
contact spring:	gold-plated			

Hole diameter in PCB - hole structure acc. to DIN EN 60352-5



B

C

D

E

F

G

H

I

K

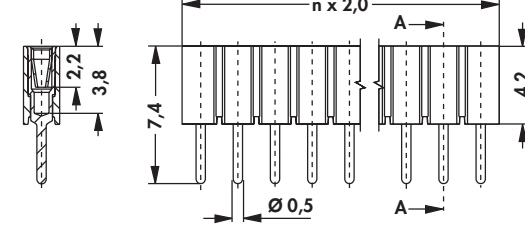
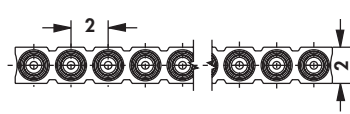
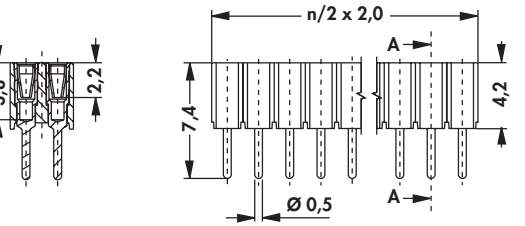
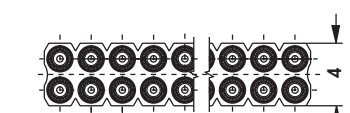
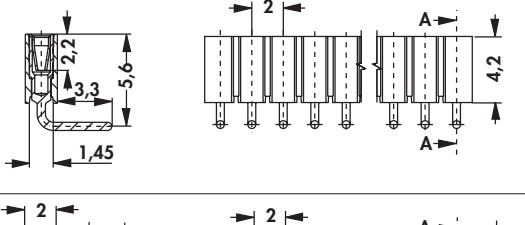
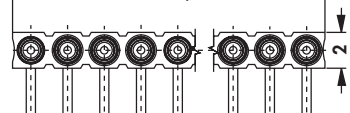
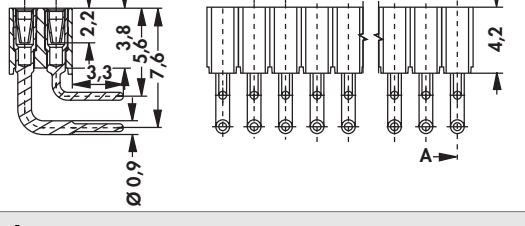
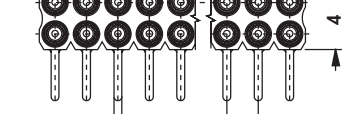
L

M

Female headers

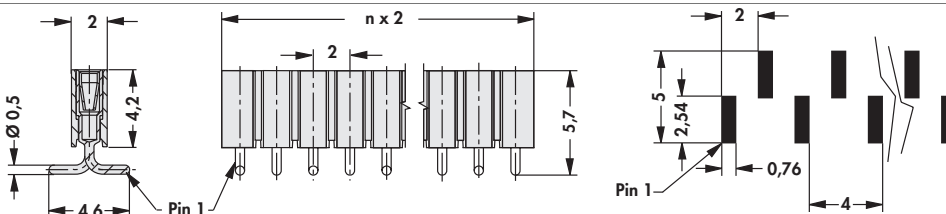
Precision contacts for $\square$ 0.5 mm and $\varnothing$ up to 0.56 mm, pin cross section

- no capillary action when soldering due to protected inner contact
- **separable!** any requested number of contact can be delivered

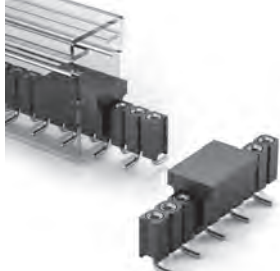
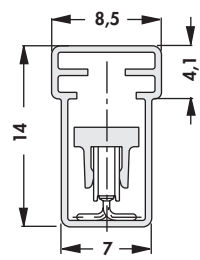
art. no.				
BLY 1 ...				
art. no.				
BLY 2 ...				
art. no.				
BLY 3 ...				
art. no.				
BLY 4 ...				
please indicate: ... no. of contacts one row 1 - 50 two rows 2 - 100				
contact sleeve:	tin-plated			
contact spring:	gold-plated			

Female headers

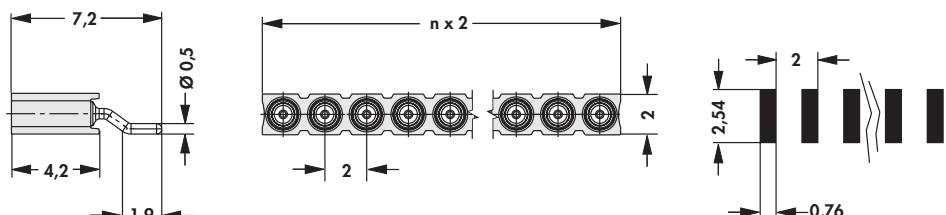
Precision contacts for $\square$ 0.5mm and $\varnothing$ up to 0.56mm, pin cross section

art. no.	 		
BLY 5 SMD ...			
please indicate:	... no. of contacts one row 4 - 20	... packing (optional) B SM = pick and place pad and bar magazine	
contact sleeve:	tin-plated		
contact spring:	gold-plated		

Option, for automatic assembly

	
... B SM	BLY 5 SMD ... B SM

- no capillary action when soldering due to protected inner contact
- **separable!** any requested number of contact can be delivered

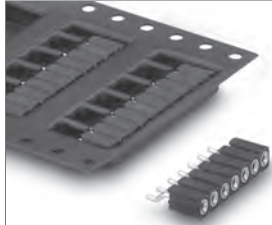
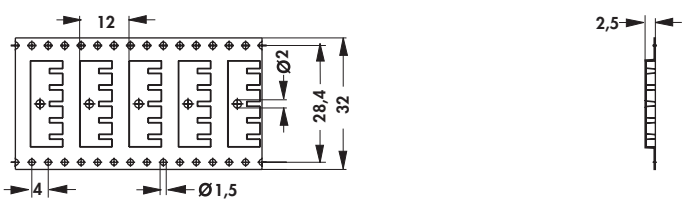
art. no.	 		
BLY 6 SMD ...			
please indicate:	... no. of contacts one row 2 - 20	... packing (optional) TR = tape and reel (2.400pcs/reel)	

... packing (option) - additions:
BLY 6 SMD ... TR: 2-10 contacts

contact sleeve:	tin-plated
contact spring:	gold-plated

Option, for automatic assembly

- reel diameter $\varnothing$ 330 mm

	
... TR	BLY 6 SMD ... TR

Female headers

Precision contacts for $\square$ 0.5 mm and $\varnothing$ up to 0.56 mm, pin cross section

- no capillary action when soldering due to protected inner contact
- **separable!** any requested number of contact can be delivered

art. no.			
BLY 8 SMD ...			
please indicate:	... no. of contacts two rows 4 - 40	... packing (optional) B SM = pick and place pad and bar magazine B TR = pick and place pad and tape and reel (650pcs/reel)	

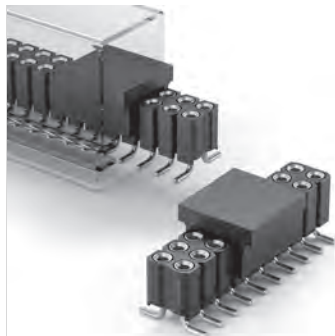
... packing (option) - additions:

BLY 8 SMD ... B TR: 6-30 contacts

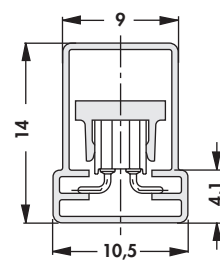
contact sleeve:	tin-plated
contact spring:	gold-plated

Option, for automatic assembly

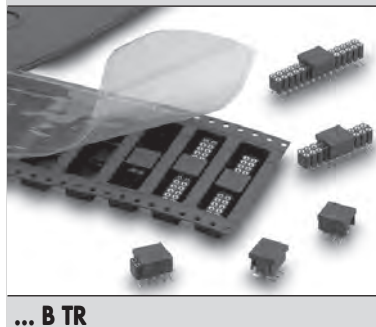
- reel diameter $\varnothing$ 330 mm



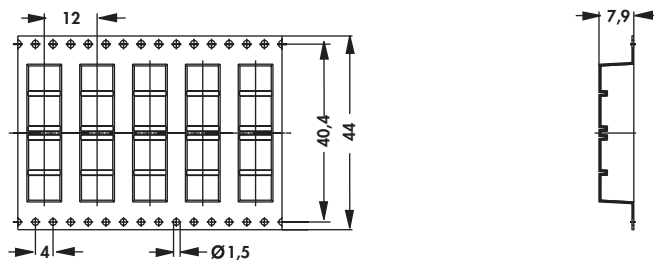
... B SM



BLY 8 SMD ... B SM



... B TR

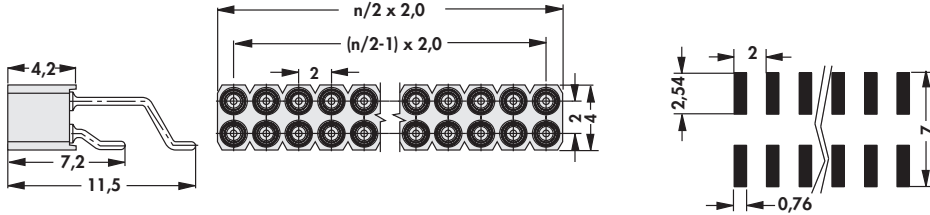


BLY 8 SMD ... B TR

Female headers

Precision contacts for $\square$ 0.5 mm and $\varnothing$ up to 0.56 mm, pin cross section

- no capillary action when soldering due to protected inner contact
- **separable!** any requested number of contact can be delivered

art. no.			
BLY 9 SMD ...			
please indicate:	... no. of contacts two rows 4 - 40	... packing (optional) SM = bar magazine TR = tape and reel (800pcs./reel)	

... packing (option) - additions:

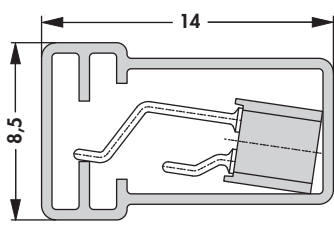
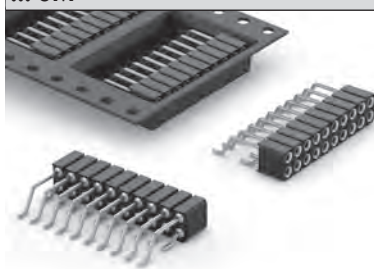
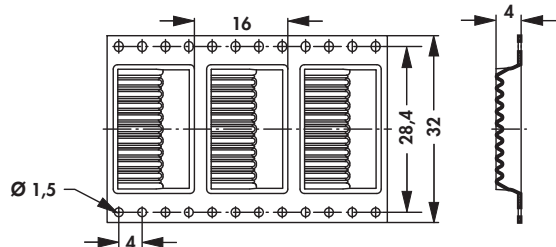
BLY 9 SMD ... SM: 8-40 contacts

BLY 9 SMD ... TR: 4-20 contacts

contact sleeve:	tin-plated
contact spring:	gold-plated

Option, for automatic assembly

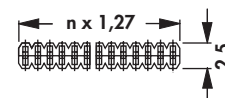
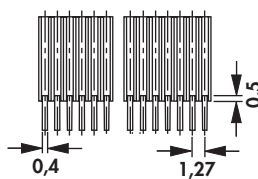
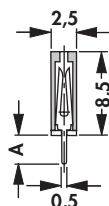
- reel diameter $\varnothing$ 330 mm

	
... SM	BLY 9 SMD ... SM
	
... TR	BLY 9 SMD ...TR

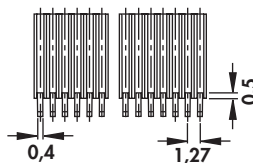
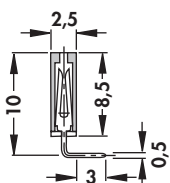
Female headers

Stamped contact spring (fork contact)

- matching male header **SLM** and **SLV**
- one row 1-36 contacts

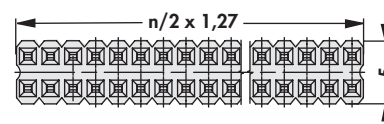
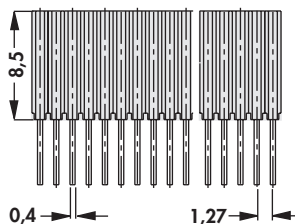
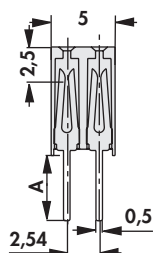
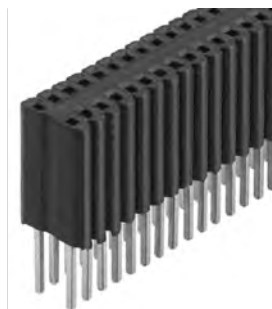


art. no.	dim. [mm] A	art. no.	dim. [mm] A
BLM KG 1 ...	3.0	BLM LG 1 ...	5.1
please indicate: ... no. of contacts ... surface of contact one row 1 - 36 G = gold-plated Z = tin-plated			



art. no.			
BLM LA 1 ...			
please indicate: ... no. of contacts ... surface of contact one row 1 - 36 G = gold-plated Z = tin-plated			

- suitable for male header **SLV**
- two rows 4-72 contacts - grid spacing 1.27 x 2.54 mm



art. no.	dim. [mm] A	art. no.	dim. [mm] A
BLM KG 2 ...	3.0	BLM LG 2 ...	5.1
please indicate: ... no. of contacts ... surface of contact two rows 4 - 72 G = gold-plated Z = tin-plated			

Female headers

Precision contacts for Ø 0.35...0.46 mm, pin cross section

- no capillary action when soldering due to protected inner contact
- other number of contacts on request!

art. no. BLR 1 025 Z	no. of contacts 25	art. no. BLR 1 050 Z	no. of contacts 50
art. no. BLR 2 050 Z	no. of contacts 50	art. no. BLR 2 100 Z	no. of contacts 100
art. no. BLR 3 025 Z	no. of contacts 25	art. no. BLR 3 050 Z	no. of contacts 50
art. no. BLR 4 100 Z	no. of contacts 100		
contact sleeve:	tin-plated		
contact spring:	gold-plated		

Shroud male head./press-fit mount. → **G 29**
 Female headers 1.27 THT → **G 71 – 72**
 High-prec. male headers 1.27 SMD → **G 43**
 Male headers 1.27 SMD → **G 40**

Male headers 2.54 press-fit
 Direct female connectors
 High-prec. male head. 1.27 THT
 Technical data

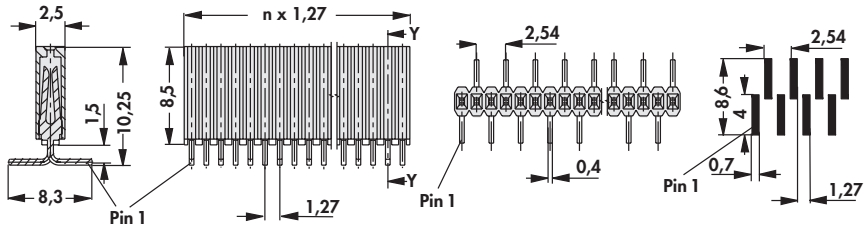
→ **G 28**
 → **G 75**
 → **G 42**
 → **G 78 – 84**

G 72

Female headers

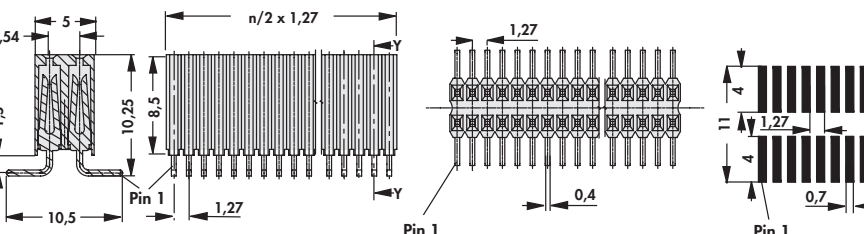
Fork contact for ☐ 0.3 mm and ☐ 0.4 mm pin cross section, wide insulating body

- suitable for male header **SLM** and **SLV**
- one row 4-20 contacts

art. no.		
BLM 1 SMD ...		
please indicate:	... no. of contacts two rows 100 - 100 one row 4 - 20	... surface of contact G = gold-plated Z = tin-plated

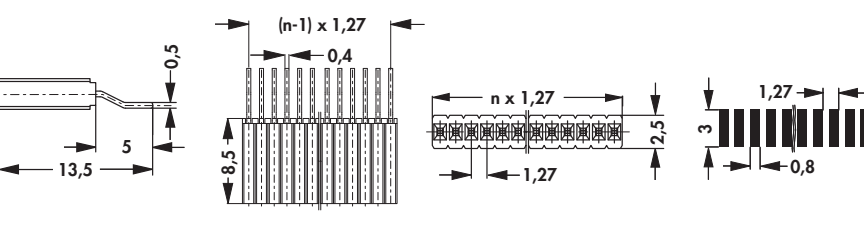
Grid spacing 1.27 x 2.54 mm

- suitable for male header **SLV**
- two rows 4-40 contacts

art. no.		
BLM 2 SMD ...		
please indicate:	... no. of contacts two rows 4 - 40	... surface of contact G = gold-plated Z = tin-plated

Fork contact for ☐ 0.3 mm and ☐ 0.4 mm pin cross section, wide insulating body

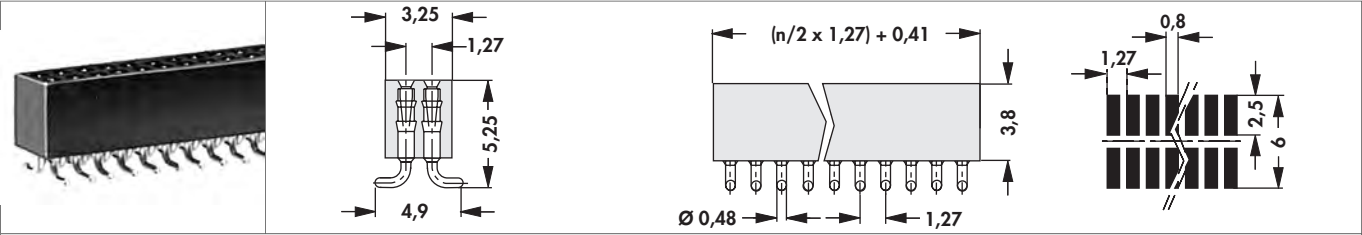
- matching for male header **SLV**
- one row 2-20 contacts

art. no.		
BLM 3 SMD ...		
please indicate:	... no. of contacts one row 2 - 20	... surface of contact G = gold-plated Z = tin-plated

Female headers

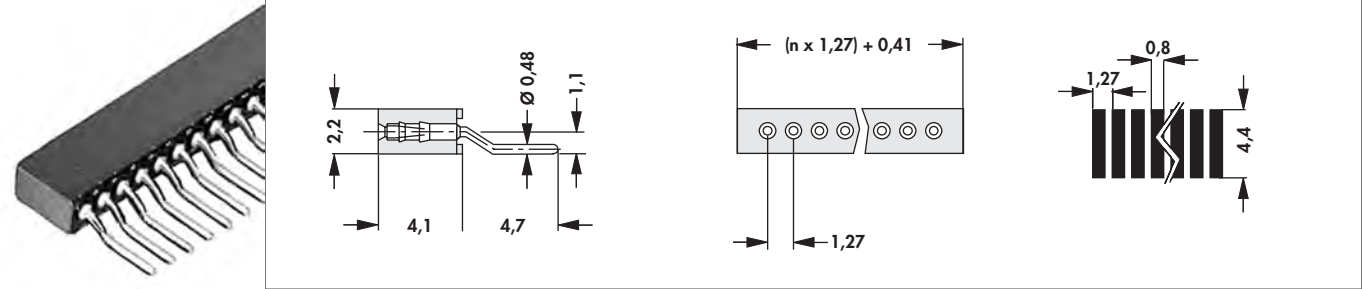
Turned precision contacts for Ø 0.35...0.46 mm

- closed precision turned part with 3-finger contact prevents rising of flux agents
- other number of contacts on request!



art. no.

BLR 6 SMD 100 Z



art. no.

no. of contacts

BLR 7 SMD 50 Z

50

contact sleeve:	tin-plated
contact spring:	gold-plated

B

C

D

E

F

G

H

I

K

L

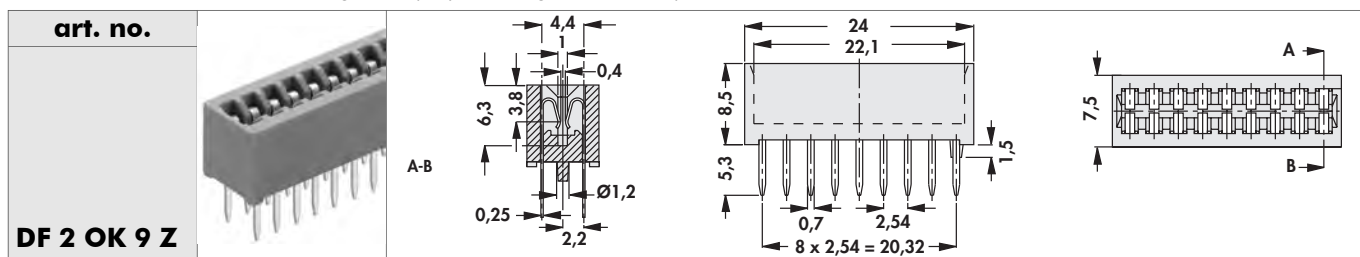
M

N

Direct female connectors

Without short circuit contact for PCB thickness: 0.7...0.9 mm

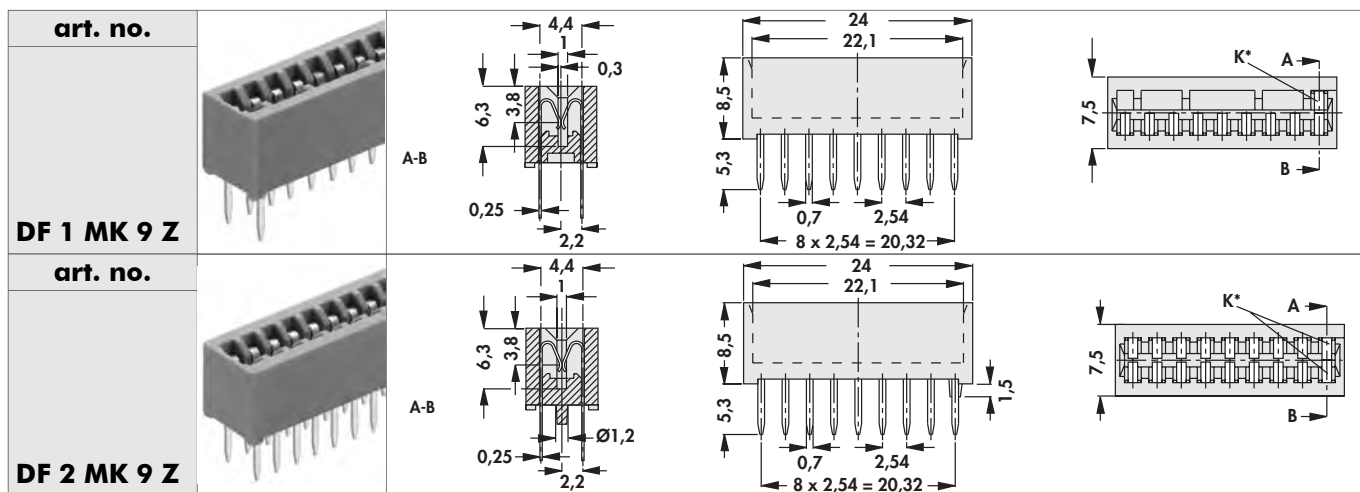
– for removable connection of digital displays, coding switches, impulse counters



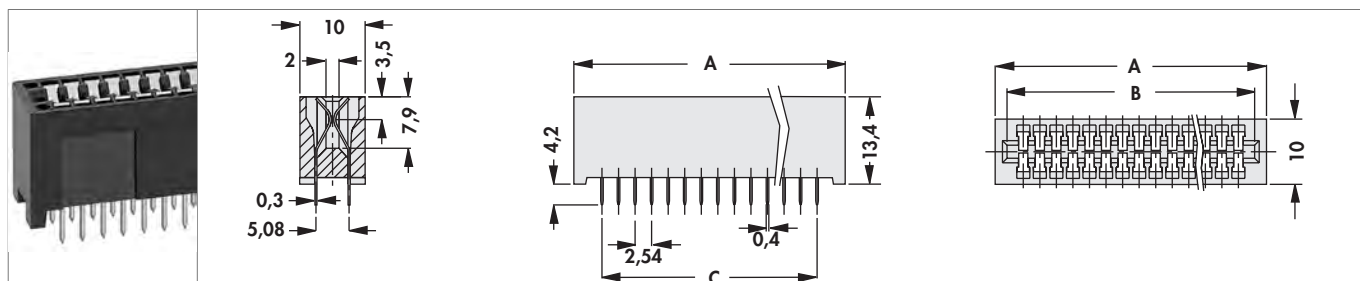
With short circuit contact for PCB thickness: 0.7...0.9 mm

– for removable connection of digital displays, coding switches, impulse counters

– **K*** = arcing contact

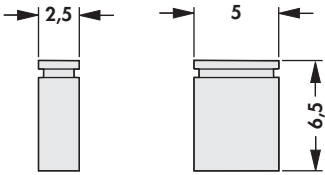
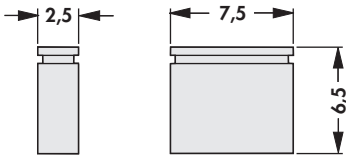
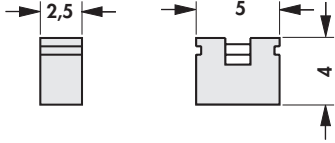


For PCB thickness: 1.4...1.8 mm



art. no.	no. of contacts	dim. [mm]		
		A	B	C
DF OB 06	12	21.33	17.70	12.70
DF OB 07	14	23.87	20.24	15.24
DF OB 10	20	31.49	27.86	22.86
DF OB 17	34	49.27	45.64	40.64
surface of contact:		tin-plated		

For 0.6...0.64 mm wire wrap pins and for Ø 0.6...0.7 mm

				
art. no.	no. of contacts	surface of contact	grid [mm]	version
CAB 4 G ...	2	0.1 µm gold	2.54	closed
CAB 4 Z ...	2	5.0 µm tin	2.54	closed
				
art. no.	no. of contacts	surface of contact	grid [mm]	version
CAB 5 05 G ...	2	0.5 µm gold	5.08	closed, hole for test probe
CAB 5 10 G ...	2	1.0 µm gold	5.08	closed, hole for test probe
CAB 5 Z ...	2	5.0 µm tin	5.08	closed, hole for test probe
				
art. no.	no. of contacts	surface of contact	grid [mm]	version
CAB 6 05 G ...	2	0.5 µm gold	2.54	open, for miniature alligator clip
CAB 6 10 G ...	2	1.0 µm gold	2.54	open, for miniature alligator clip
CAB 6 Z ...	2	5.0 µm tin	2.54	open, for miniature alligator clip
please indicate: ... colour S = black R = red B = blue G = grey				

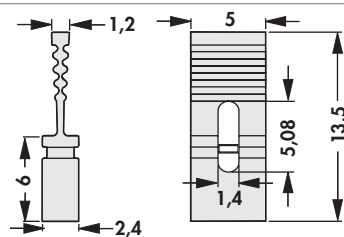
A

Jumpers

- the flexible contacts are short-circuiting two pins
- the jumpers can be mounted behind and next to each other

B

C

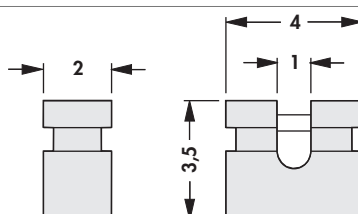


art. no.	no. of contacts	surface of contact	grid [mm]	version
CAB 9 G ...	2	<0.1 μ m gold	2.54	tag, open
please indicate: ... colour S = black R = red				

D

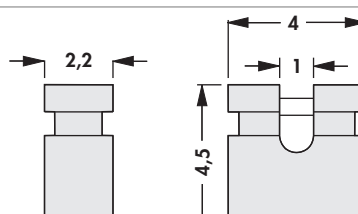
For ☐ 0.5 mm and for $\varnothing$ 0.4...0.5 mm

E



art. no.	no. of contacts	grid [mm]	version	colour
CAB 10 G S	2	2	open, for miniature alligator clip	black

G

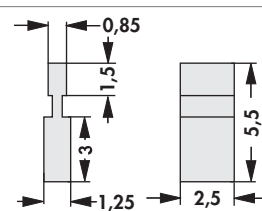
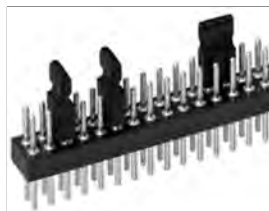


art. no.	no. of contacts	grid [mm]	version	colour
CAB 11 G S	2	2	open, for miniature alligator clip	black

I

For ☐ 0.3...0.4 mm and $\varnothing$ 0.4...0.5 mm

K



art. no.	no. of contacts	grid [mm]	version	colour
CAB 15 G S	2	1.27	closed, tag	black

L

M

N

G 77

Male headers 2.54 SMD
 Male headers 2.54 THT
 Male headers 2.54 press-fit
 Male headers 2.00 SMD

→ G 21 – 27
 → G 7
 → G 28
 → G 33 – 35

Male headers 2.00 THT
 High-precision female headers THT
 High-prec. male headers 1.27 SMD
 Technical data

→ G 30 – 31
 → G 2 – 6
 → G 43
 → G 78 – 84

	MK ..., MK LP ...	SL ..., SL ... THR, SLK ..., SL LP ...	SLU ...	SL KA 3 ..., SL KG 3 ...
contact material	CuZn-alloy	CuSn alloy		CuZn-alloy
surface contact / contact sleeve	Ni+≥0.2μm Au/ Ni+4...6μm Sn		Ni+0.2μm Au (selective)/ Ni+4...6μm Sn	Ni+≥0.2μm Au/ Ni+4...6μm Sn
shock resistance	50 g			
volume resistance	≤10 mΩ	≤5 mΩ	≤10 mΩ	≤20 mΩ
vibration resistance max.	15 g			
capacity between two adjacent contacts	≤0,4 pF			
nominal current	1.5 A	3 A		
nominal voltage	60 V DC	250 V AC	100 V DC	250 V AC
test voltage	1000 V	2000 V	1000 V	
insulating body material	PA 4.6. GF			
temperature range	-40°C... +163°C/ (260°C/10 s)			-40°C... +163°C/ (260°C/5 s)
class of flammibility	UL 94 V-0			
specific insulation resistance	>10 ⁷ Ω·m			

	SLP 1 ..., SLP 2 ..., SLUP 31 ...	SLY ...	SLM N ..., SLV N ..., SLV W ...	SLR ...
contact material	CuSn alloy		CuZn-alloy	
surface contact / contact sleeve	Ni+≥0.2μm Au/ Ni+4...6μm Sn			
volume resistance	≤10 mΩ	≤5 mΩ		≤20 mΩ
nominal current	3 A		1.5 A	1 A
nominal voltage	250 V AC	100 V DC	125 V AC	100 V AC/ 150 V DC
test voltage	1000 V	500 V	300 V	500 V
insulating body material	PA 4.6. GF			PCT, GF
temperature range	-40°C... +163°C/ (260°C/10 s)			-40°C... +105°C/ (260°C/10 s)
class of flammability	UL 94 V-0			
specific insulation resistance	>10 ⁷ Ω·m			

	MK 06 ..., MK 07/207 ..., MK 12/212 ..., MK 13/213 ..., MK 17/217 ...	MK 01/201 ..., MK 220 SMD ..., MK 228 THR ..., MK 23/223 ..., MK 25 SMD ..., MK LP 18 ..., MK LP 19 ..., MK LP 218 ..., MK LP 219 ...	PO A ...	SIL 1 ..., SIL 3 ...
contact material	CuZn-alloy			
surface contact / contact sleeve	Ni+4...6µm Sn		Ni+≥0.2µm Au/ Ni+4...6µm Sn	Ni+4...6µm Sn
inner contact spring material	CuBe-alloy			
inner contact spring surface	Ni+0,75µm Au	Ni+0,25µm Au		Ni+0,75µm Au
type internal spring	4-fingers			
plugability for circuit points	□0,22x0,25mm... □0,4x0,55mm/ Ø0,4...0,56mm			
insert depth	2.5...3.6mm		2.5...3.4mm	2.5...3.6mm
insertion / drawing force	1.8 N/1.4 N			
shock resistance	50 g			50 g
volume resistance	≤10 mΩ			≤10 mΩ
vibration resistance max.	15 g			15 g
capacity between two adjacent contacts	≤0,4 pF			≤0,4 pF
nominal current	1.5 A		3 A	1.5 A
nominal voltage	60 V DC		150 V DC	60 V DC
test voltage	1000 V		1000 V / 1 min.	1000 V
insulating body material	PA 4.6. GF			
temperature range	-40°C... +163°C/ (260°C/10 s)		-55°C... +125°C/ (260°C/10 s)	
class of flammibility	UL 94 V-0			
specific insulation resistance	>10 ⁷ Ω·m			

	SIL 2 ...	BL 1 ..., BL 2 ..., BL 3 ..., BL 4 ...	BL 11 ...	BL 12 ..., BL 21 ...
contact material	CuZn-alloy	CuSn alloy		
surface contact / contact sleeve	Ni+4...6µm Sn	Ni+≥0.2µm Au/ Ni+4...6µm Sn	Ni+4...6µm Sn	
inner contact spring material	CuBe-alloy			
inner contact spring surface	Ni+0,25µm Au			
type internal spring	4-fingers	fork contact	spring contact	
plugability for circuit points	□0,22x0,25mm... □0,4x0,55mm/ Ø0,4...0,56mm	□0,5...0,7mm	□0,6...0,65mm	
insert depth	2.5...3.6mm	1.5...5mm	≤5mm from above/ ≤8mm from below	≤6mm from above or from be- low
insertion / drawing force	1.8 N/1.4 N	1.5 N/1.3 N	1.5 N/0.5 N	1.5 N/0.2 N
shock resistance	50 g			
volume resistance	≤10 mΩ		≤20 mΩ	
vibration resistance max.	15 g			
capacity between two adjacent contacts	≤0,4 pF	≤ 0,9 pF		
nominal current	1.5 A	3 A		
nominal voltage	60 V DC	125 V AC	250 V AC	
test voltage	1000 V	1500 V	500 V	
insulating body material		PPS	PA 4.6. GF	LCP
temperature range		-40°C... +200°C/ (260°C/10 s)	-40°C... +163°C/ (260°C/10 s)	-55°C... +125°C
class of flammibility		UL 94 V-0		
specific insulation resistance		>10 ¹² Ω·m	>10 ⁷ Ω·m	>10 ¹² Ω·m

	BL KG 3 ...	BL 13 ..., BL 14 ..., BL 18 ..., BL 19 ...	BL LP ...	BL 15 - 17 SMD ..., BL 20 SMD ..., BL 5 - 10 ...
contact material	CuZn-alloy		CuSn alloy	CuZn-alloy
surface contact / contact sleeve	Ni+4...6µm Sn	Ni+≥0.2µm Au	Ni+0.2µm Au (selective)/ Ni+2...4µm Sn (matt finished tin)	Ni+4...6µm Sn
inner contact spring material	CuBe-alloy			CuBe-alloy
inner contact spring surface	Ni+0,75µm Au			Ni+0,75µm Au
type internal spring	6-fingers		fork contact	6-fingers
plugability for circuit points	□0,55...0,65mm/ Ø0,65...0,85mm		□0,5...0,7mm	□0,55...0,65mm/ Ø0,65...0,85mm
insert depth	2.5...6mm		2...4mm	2.5...6mm
insertion / drawing force	1.3N/0.3N			1.3N/0.3N
shock resistance		50 g		50 g
volume resistance		≤10 mΩ		
vibration resistance max.		15 g		15 g
capacity between two adjacent contacts		≤ 0,3 pF	≤ 0,9 pF	≤ 0,3 pF
nominal current	3 A			
nominal voltage	150 V DC		125 V AC	150 V DC
test voltage	500 V	1500 V		
insulating body material	PCT, GF	PA 4.6. GF	PPS	PA 4.6. GF
temperature range	-55°C... +125°C/ (260°C/10 s)	-40°C... +163°C/ (260°C/10 s)	-40°C... +200°C/ (260°C/10 s)	-40°C... +163°C/ (260°C/10 s)
class of flammability	UL 94 V-0			
specific insulation resistance		>10 ⁷ Ω·m	>10 ¹² Ω	>10 ⁷ Ω·m

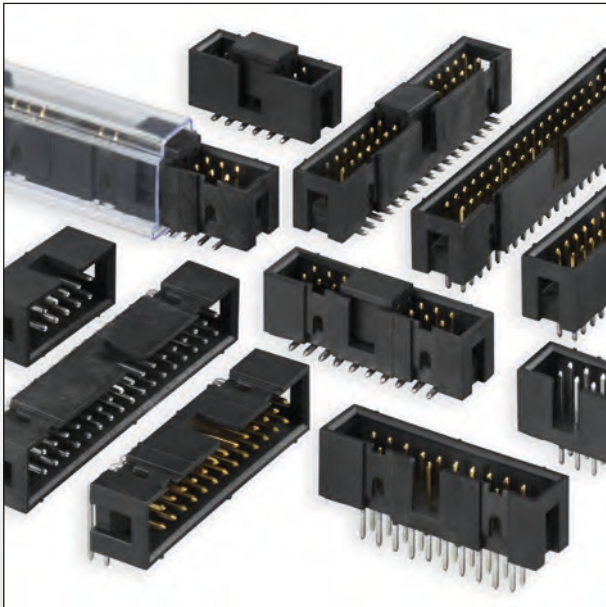
	MK 21/221 ..., MK 22/222 ..., MK 24 SMD ...	BLP 1 ..., BLP 2 ...	BLY ...	BLR ...
contact material	CuZn-alloy			
surface contact / contact sleeve	Ni+4...6µm Sn			
inner contact spring material	CuBe-alloy			
inner contact spring surface	Ni+0,75µm Au		Ni+0,25µm Au	Ni+0,75µm Au
type internal spring	6-fingers			3-fingers
plugability for circuit points	□0,55...0,65mm/ Ø0,65...0,85mm		□0,45...0,5mm/ Ø0,4...0,56mm	Ø0,35...0,46mm
insert depth	2.5...3.6mm	2.5...6mm	2.5...3.8mm	2.5...3mm
insertion / drawing force	1.3N/0.3N			1.2N/0.6N
shock resistance	50 g			
volume resistance	≤10 mΩ			≤20 mΩ
vibration resistance max.	15 g			
capacity between two adjacent contacts	≤0,3 pF	≤ 0,3 pF	≤0,7 pF	≤1,0 pF
nominal current	3 A	2 A	2.5 A	1 A
nominal voltage	150 V DC		100 V DC	
test voltage	1500 V	1000 V	500 V	
insulating body material	PA 4.6. GF			PCT, GF
temperature range	-40°C... +163°C/ (260°C/10 s)			-40°C... +105°C/ (260°C/10 s)
class of flammability	UL 94 V-0			
specific insulation resistance	>10 ⁷ Ω·m			

Technical data PCB connectors

	BLM ...	DF 1 ..., DF 2 ...	DF OB ...	CAB 4 ...
contact material	CuSn alloy			
surface contact / contact sleeve	Ni+ $\geq 0.2\mu\text{m}$ Au/ Ni+4...6 μm Sn	Ni+4...6 μm Sn	Ni+7 μm Sn	0.1 μm Au/ 5 μm Sn
type internal spring	fork contact		spring contact	
plugability for circuit points	□0,3...0,4mm			
insert depth	2.5...6mm			4...6.1mm
insertion / drawing force	1.3 N/1.1 N			
volume resistance	$\leq 10\text{ m}\Omega$			
capacity between two adjacent contacts	$\leq 0,4\text{ pF}$			
nominal current	1.5 A	2 A	3 A	1.5 A
nominal voltage	125 V AC			250 V AC
test voltage	500 V		800 V	
insulating body material	PA 4.6. GF	polycarbonate	PA 4.6. GF	PBT
temperature range	-40°C... +163°C/ (260°C/10 s)	-40°C... +125°C	-40°C... +125°C/ (260°C/10 s)	-40°C... +105°C
class of flammability	UL 94 V-0			
specific insulation resistance	$> 10^7\text{ }\Omega\cdot\text{m}$			
PCB thickness		0,7...0,9 mm	1,4...1,8 mm	
mounting			without mounting eyelets	

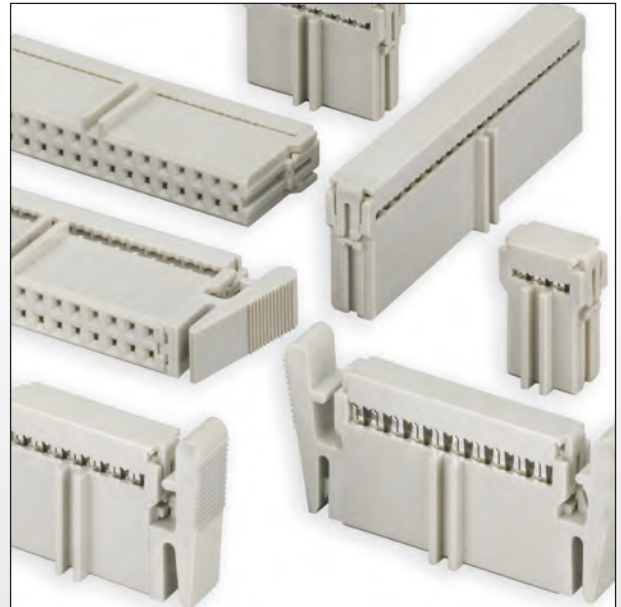
	CAB 5 ...	CAB 6 ...	CAB 9 ...	CAB 10 G S
surface contact / contact sleeve	0.5 μm Au/ 1 μm Au/ 5 μm Sn		0.1 μm Au	
insert depth	4...5.5mm	5mm...plug through	4...5.6mm	4mm...plug through
nominal current	3 A	1.5 A	3 A	1.5 A
nominal voltage	250 V AC		500 V AC	150 V DC
insulating body material	PA 6		PBT	
temperature range	-40°C... +105°C		-40°C... +105°C/ (resistance to soldering heat 235°C/30-60s)	-40°C... +105°C

	CAB 11 G S	CAB 15 G S
surface contact / contact sleeve	0.1 μm Au	<0.1 μm Au
insert depth	5mm...plug through	2.2...2.4mm
nominal current	1.5 A	1 A
nominal voltage	150 V DC	100 V AC
insulating body material	PBT	PA 66
temperature range	-40°C... +105°C	-40°C... +150°C



Shroud male headers

- shroud male headers for lockable multipoint connector
- version: 2 rows, 6 contacts up to 50 contacts, grid 2,54 mm
- straight, angled and for SMD technology
- reflow solderable insulator
- class of flammability acc. to UL 94 V0



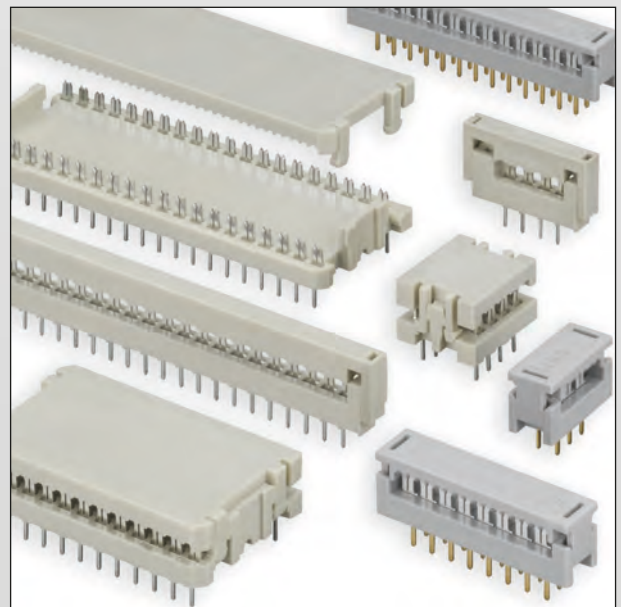
Multipoint connector with and without lock

- multipoint connector for ribbon cable
- version: two rows, 6 contacts up to 50 contacts, grid 2,54mm
- version without lock
- with polarisation



Multipoint connector, one and two rows

- multipoint connector for ribbon cable
- two rows with and without pull relief, grid 2,54, 6 contacts up to 50 contacts
- two rows in grid 2,0 mm, 20 contacts up to 50 contacts
- polarisation at the two row version
- one row in grid 2,54 mm, 3 contacts up to 25 contacts



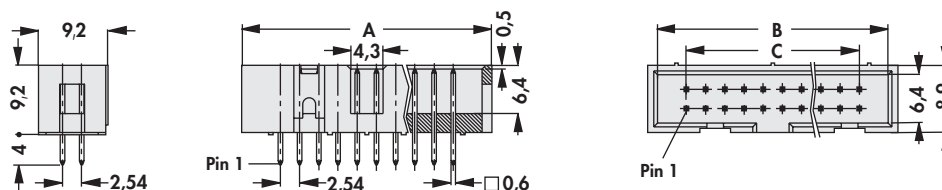
PCB connector

- PCB connector for ribbon cable
- one row in grid 2,54 mm, 4 contacts up to 20 contacts
- two rows in grid 2,54 mm, 6 contacts up to 34 contacts
- two rows in DIL design, grid 2,54 mm, 4 contacts up to 40 contacts

Shroud-male header

Straight, two rows, shrouded

- suitable for female multipoint connector **VFL, FLMP, PV**
- in addition they can be combined with many other ribbon cable connectors in 2.54 mm pitch
- plug-in area available in gold-plated or completely tin-plated!

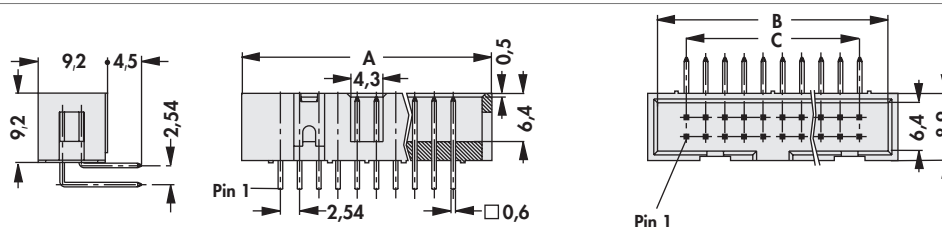


art. no.	no. of contacts	dim. [mm]			art. no.	no. of contacts	dim. [mm]		
		A	B	C			A	B	C
ASLG 06 ...	6	15.3	12.7	5.08	ASLG 20 ...	20	33.1	30.5	22.86
ASLG 08 ...	8	17.8	15.2	7.62	ASLG 26 ...	26	40.7	38.1	30.48
ASLG 10 ...	10	20.4	17.8	10.16	ASLG 34 ...	34	50.9	48.3	40.64
ASLG 12 ...	12	22.9	20.3	12.70	ASLG 40 ...	40	58.5	55.9	48.26
ASLG 14 ...	14	25.4	22.9	15.24	ASLG 50 ...	50	71.2	68.6	60.96
ASLG 16 ...	16	28.0	25.4	17.78					

please indicate: ... surface of contact
G = gold-plated
Z = tin-plated

Angled, two rows, shrouded

- suitable for female multipoint connector **VFL, FLMP, PV**
- in addition they can be combined with many other ribbon cable connectors in 2.54 mm pitch
- plug-in area available in gold-plated or completely tin-plated!



art. no.	no. of contacts	dim. [mm]			art. no.	no. of contacts	dim. [mm]		
		A	B	C			A	B	C
ASLA 06 G	6	15.3	12.7	5.08	ASLA 20 G	20	33.1	30.5	22.86
ASLA 08 G	8	17.8	15.2	7.62	ASLA 26 G	26	40.7	38.1	30.48
ASLA 10 G	10	20.4	17.8	10.16	ASLA 34 G	34	50.9	48.3	40.64
ASLA 12 G	12	22.9	20.3	12.70	ASLA 40 G	40	58.5	55.9	48.26
ASLA 14 G	14	25.4	22.9	15.24	ASLA 50 G	50	71.2	68.6	60.96
ASLA 16 G	16	28.0	25.4	17.78					

Shroud-male header

SMD, two rows, shrouded

- suitable for female multipoint connector **VFL, FLMP, PV**
- **VPE** = packing unit (pieces/tube)
- plug-in area available in gold-plated or completely tin-plated!
- in addition they can be combined with many other ribbon cable connectors in 2.54 mm pitch

art. no.	no. of contacts	packing unit	dim. [mm]		art. no.	no. of contacts	packing unit	dim. [mm]	
			A	B				A	B
ASL 06 SMD ...	6	32	15.3	5.08	ASL 20 SMD ...	20	15	33.1	22.86
ASL 08 SMD ...	8	27	17.8	7.62	ASL 26 SMD ...	26	12	40.7	30.48
ASL 10 SMD ...	10	24	20.4	10.16	ASL 34 SMD ...	34	9	50.9	40.64
ASL 12 SMD ...	12	21	22.9	12.70	ASL 40 SMD ...	40	8	58.5	48.26
ASL 14 SMD ...	14	19	25.4	15.24	ASL 50 SMD ...	50	7	71.2	60.96
ASL 16 SMD ...	16	17	28.0	17.78					
please indicate: ... surface of contact G = gold-plated Z = tin-plated ... packing SM = bar magazine B SM = pick and place pad and bar magazine									

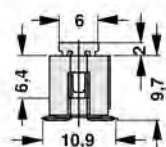
Option, for automatic assembly

Pick and place pad "B" and bar magazin "SM"

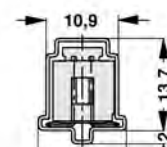
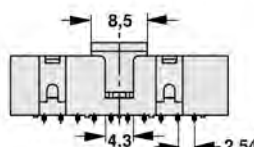
- position of the pick and place pad in the middle



... B SM



ASL ... SMD ...

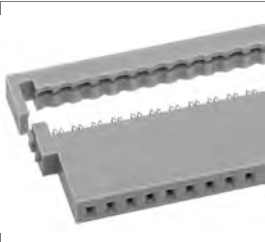
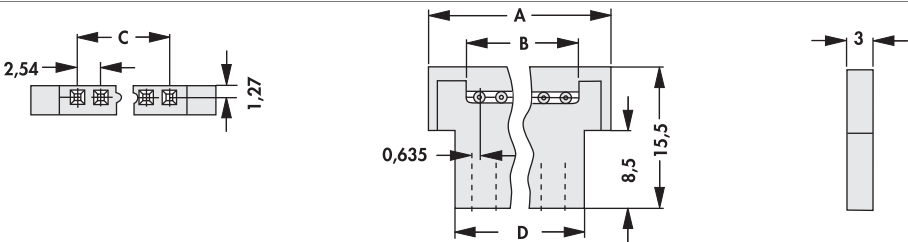


ASL ... SMD ... B SM

Female connector

One row

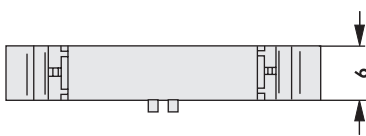
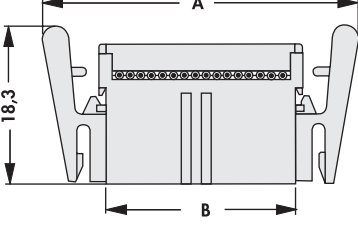
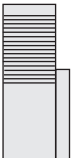
– excess length of the ribbon cable to the case at ≥ 1 mm!

					
art. no.	no. of con- tacts	dim. [mm]			
		A	B	C	D
FV 03 ...	3	15.24	7.62	5.08	8.89
FV 04 ...	4	17.78	10.16	7.62	11.43
FV 05 ...	5	20.32	12.70	10.16	7.62
FV 06 ...	6	22.86	15.24	5.08	16.51
FV 07 ...	7	25.40	17.78	15.24	19.05
FV 08 ...	8	27.94	20.32	17.78	21.59
FV 10 ...	10	33.02	25.40	22.86	26.67
FV 12 ...	12	38.10	30.48	27.94	31.75
FV 13 ...	13	40.64	33.02	30.48	34.29
FV 14 ...	14	43.18	35.66	33.02	36.83
FV 16 ...	16	48.26	40.64	38.10	41.91
FV 17 ...	17	50.80	43.18	40.64	44.45
FV 18 ...	18	53.34	45.72	43.18	46.99
FV 20 ...	20	58.42	50.80	48.26	52.07
FV 24 ...	24	68.58	60.96	58.42	62.23
FV 25 ...	25	71.12	63.50	60.96	64.77
please indicate: ... surface of contact G = gold-plated Z = tin-plated					
annotation:		IDC-pattern 2.54mm			
conductor cross-section:		AWG 28...30 = 0,09...0,05 mm²			
insulation diameter:		≤1,1 mm			
suitable ribbon cable round conductor flat cable:		AWG 28 = massive or strand			
recommended connector pins:		□ 0,635 mm			

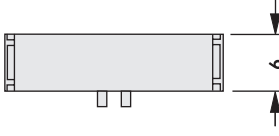
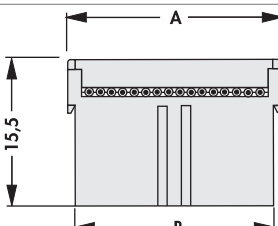
Female connector

Two rows, with polarisation

– lockable female multipoint connector, suitable for shrouded male header **ASL ...**

							
art. no.	no. of contacts	dim. [mm]		art. no.	no. of contacts	dim. [mm]	
		A	B			A	B
VFL 06 ...	6	23.58	9.56	VFL 20 ...	20	41.36	27.34
VFL 08 ...	8	26.12	12.10	VFL 26 ...	26	48.98	34.96
VFL 10 ...	10	28.66	14.64	VFL 34 ...	34	59.14	45.12
VFL 12 ...	12	31.20	17.18	VFL 40 ...	40	66.76	52.74
VFL 14 ...	14	33.74	19.72	VFL 50 ...	50	79.46	65.44
VFL 16 ...	16	36.28	22.26				
please indicate: ... surface of contact G = gold-plated Z = tin-plated							

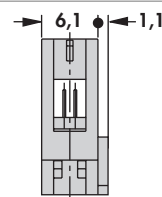
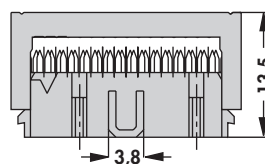
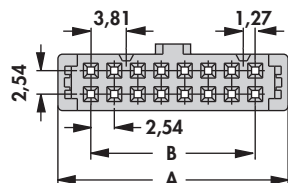
- suitable for shrouded male header **ASL ...**
- excess length of the ribbon cable to the case at ≥ 1 mm!

							
art. no.	no. of contacts	dim. [mm]		art. no.	no. of contacts	dim. [mm]	
		A	B			A	B
FLMP 06 ...	6	10.97	9.56	FLMP 20 ...	20	28.75	27.34
FLMP 08 ...	8	13.51	12.10	FLMP 26 ...	26	36.37	34.96
FLMP 10 ...	10	16.05	14.64	FLMP 34 ...	34	46.53	45.12
FLMP 12 ...	12	18.59	17.18	FLMP 40 ...	40	54.15	52.74
FLMP 14 ...	14	21.13	19.72	FLMP 50 ...	50	66.85	65.44
FLMP 16 ...	16	23.67	22.26				
please indicate: ... surface of contact G = gold-plated Z = tin-plated							
annotation:		IDC-pattern 1.27mm					
conductor cross-section:		AWG 28...30 = 0,09...0,05 mm ²					
insulation diameter:		$\leq 1,1$ mm					
suitable ribbon cable round		AWG 28 = massive or strand					
conductor flat cable:							

Female connector

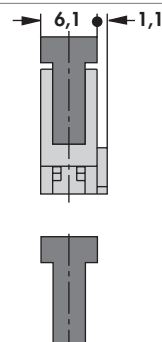
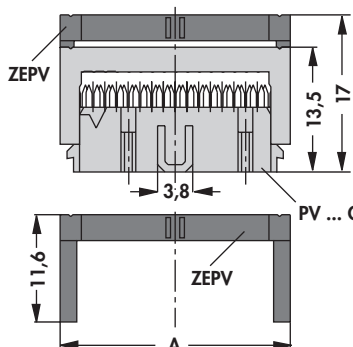
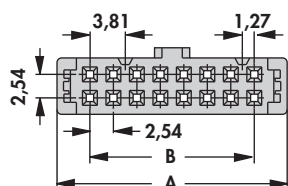
Two rows, with polarisation

- suitable for shrouded male header **ASL ...**
- excess length of the ribbon cable to the case at ≥ 1 mm!



art. no.	no. of contacts	passende Zugentlastung	dim. [mm]		art. no.	no. of contacts	passende Zugentlastung	dim. [mm]	
			A	B				A	B
PV 06 G	6	ZEPV 06	12.2	5.08	PV 26 G	26	ZEPV 26	37.6	30.48
PV 10 G	10	ZEPV 10	17.3	10.16	PV 34 G	34	ZEPV 34	47.8	40.64
PV 14 G	14	ZEPV 14	22.4	15.24	PV 40 G	40	ZEPV 40	55.4	48.26
PV 16 G	16	ZEPV 16	24.9	17.78	PV 50 G	50	ZEPV 50	68.1	60.96
PV 20 G	20	ZEPV 20	30.0	22.86					

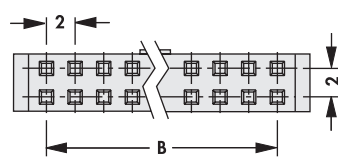
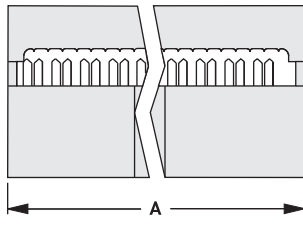
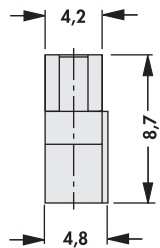
surface of contact:	gold-plated
annotation:	IDC-pattern 1.27mm
conductor cross-section:	AWG 28...30 = 0,09...0,05 mm ²
insulation diameter:	$\leq 1,1$ mm
suitable ribbon cable round conductor flat cable:	AWG 28 = massive or strand



art. no.	no. of contacts	dim. [mm]		art. no.	no. of contacts	dim. [mm]	
		A	B			A	B
ZEPV 06	6	12.2	5.08	ZEPV 26	26	37.6	30.48
ZEPV 10	10	17.3	10.16	ZEPV 34	34	47.8	40.64
ZEPV 14	14	22.4	15.24	ZEPV 40	40	55.4	48.26
ZEPV 16	16	24.9	17.78	ZEPV 50	50	68.1	60.96
ZEPV 20	20	30.0	22.86				

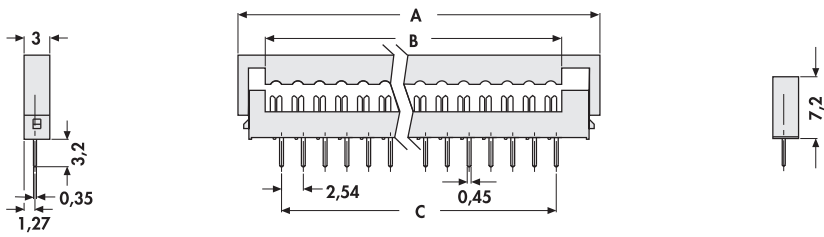
Female connector**Two rows**

– excess length of the ribbon cable to the case ≥ 1 mm!

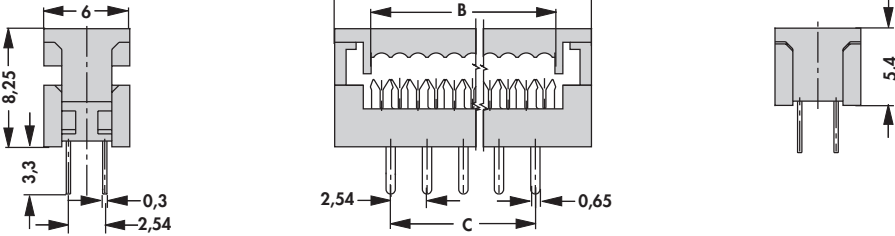
	  		
art. no.	no. of contacts	dim. [mm]	
		A	B
PVY 20 S	20	25.1	18
PVY 40 S	40	45.3	38
PVY 44 S	44	49.3	42
PVY 50 S	50	55.1	48
surface of contact:		selective gold-plated	
annotation:		IDC-pattern, 1 mm	
recommended connector pins:		☐ 0,5 mm	

Printed circuit connector

– excess length of the ribbon cable to the case at ≥ 1 mm!

				
art. no.	no. of contacts	dim. [mm]		
		A	B	C
SBAU 1 04 Z	4	17.78	10.16	7.62
SBAU 1 06 Z	6	22.86	15.24	12.70
SBAU 1 08 Z	8	27.94	20.32	17.78
SBAU 1 10 Z	10	33.02	25.40	22.86
SBAU 1 12 Z	12	38.10	30.48	27.94
SBAU 1 14 Z	14	43.18	35.56	33.02
SBAU 1 16 Z	16	48.26	40.64	38.10
SBAU 1 17 Z	17	50.80	43.18	40.64
SBAU 1 18 Z	18	53.34	45.72	43.18
SBAU 1 20 Z	20	58.42	50.80	48.26
surface of contact:		tin-plated		
annotation:		IDC-pattern 2.54mm		
insulation diameter:		≤ 1,1 mm		
suitable ribbon cable round conductor flat cable:		AWG 28 = massive or strand		

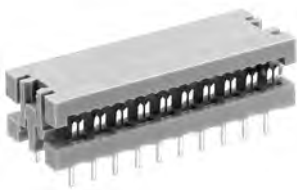
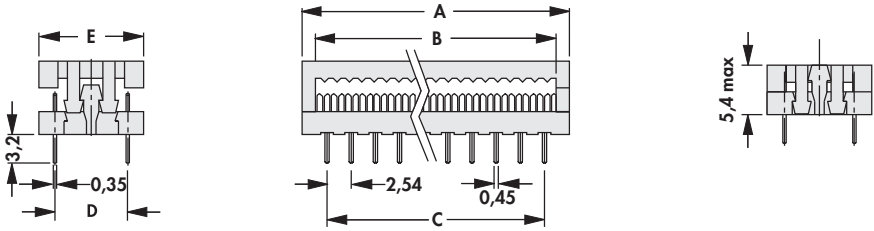
– excess length of the ribbon cable to the case at ≥ 1 mm!

				
art. no.	no. of contacts	dim. [mm]		
		A	B	C
SBAU 06 S	6	12.9	7.8	5.08
SBAU 10 S	10	18.0	12.9	10.16
SBAU 14 S	14	23.0	18.0	15.24
SBAU 16 S	16	25.6	20.5	17.78
SBAU 20 S	20	30.7	25.6	22.86
SBAU 26 S	26	38.3	33.2	30.48
SBAU 34 S	34	48.5	43.4	40.64
surface of contact:		selective gold-plated: solder area gold-plated, IDC area nickel-plated		
annotation:		IDC-pattern 1.27mm		
insulation diameter:		≤ 1,1 mm		
suitable ribbon cable round conductor flat cable:		AWG 28 = massive or strand		

Printed circuit connector

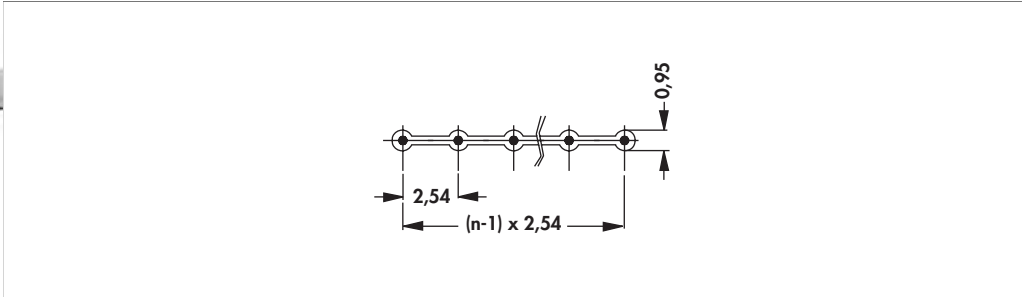
Design DIL

– excess length of the ribbon cable to the case at $\geq 1\text{mm}$!

						
art. no.	no. of contacts	dim. [mm]				
		A	B	C	D	E
KK 04 Z	4	8.0	5.1	2.54	7.62	11.0
KK 06 Z	6	10.3	7.6	5.08	7.62	11.0
KK 08 Z	8	13.0	10.2	7.62	7.62	11.0
KK 10 Z	10	15.4	12.7	10.16	7.62	11.0
KK 12 Z	12	18.0	15.3	5.08	7.62	11.0
KK 14 Z	14	20.5	17.8	15.24	7.62	11.0
KK 16 Z	16	23.0	20.3	17.78	7.62	11.0
KK 18 Z	18	25.6	22.9	20.32	7.62	11.0
KK 20 Z	20	28.1	25.4	22.86	7.62	11.0
KK 24 Z	24	33.0	30.5	27.94	15.24	18.7
KK 28 Z	28	38.1	35.6	33.02	15.24	18.7
KK 40 Z	40	53.3	50.8	48.26	15.24	18.7
surface of contact:		tin-plated				
annotation:		IDC-pattern 1.27mm				
insulation diameter:		$\leq 1,1\text{ mm}$				
suitable ribbon cable round conductor flat cable:		AWG 28 = massive or strand				

Accessories for flat ribbon cable and application tools

Flat ribbon cable - Spacing 2.54 mm - suitable for connectors FV, SBAU 1



art. no.	no. of contacts
BK 01 32	32

Bench press

- height without handle: 28 cm, weight: 9.02 kg
- the bench press **VBK 1** connects all contacts of IDC connector types **KK, SB, SV, PV, VFL, FV, PVZ** in one simple operation
- the contacts separate the insulation of the flat ribbon cable, whereas a gas-tight and corrosion-proof connection is effected by the construction of the contacts form



art. no.
VBK 1

Accessories, suitable for ribbon cable connector

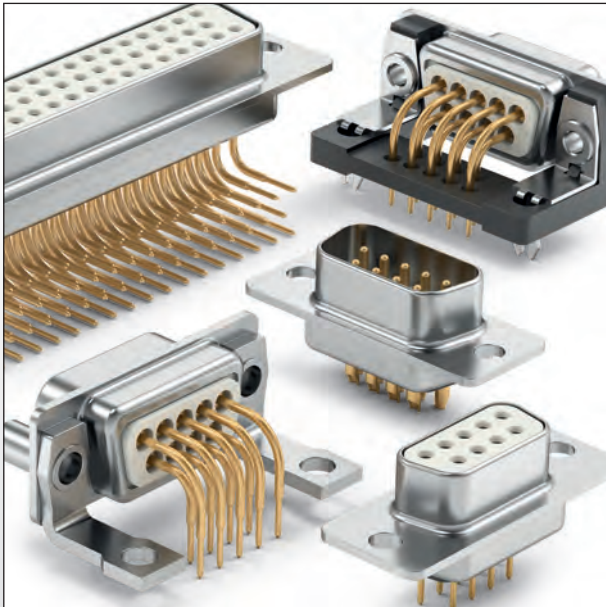
- exchangeable crimping dies for any indicated types available

art. no.	suitable for male connectors and female headers
KK W	KK
SB W	SB
PV W	PV/ VFL/ FLMP
D W 9 37	D-Sub (9-37 contacts)
PVY W	PVY

Technical data IDC-connectors

	ASL ...	FV ...	FLMP ..., VFL ...	PV ...
surface contact / contact sleeve	Ni+≥0.2μm Au/ Ni+4...8μm Sn	Ni+≥0.2μm Au/ Ni+5...10μm Sn		Ni+≥5μm Sn/ Ni+≥0.2μm Au
contact material	CuSn alloy			
creeping current resistance		KC 175 nach DIN 53480		KC 250
creepage	≥1,1mm VDE0110	1,4mm VDE0110		
air gap	≥0,8 mm VDE0110	1mm VDE0110		
nominal current	1 A	2 A	1 A	2 A
nominal voltage	250V AC insulation group A, according to VDE0110			
test voltage	500 V AC			
insertion / drawing force		≥0.3N ... ≤0.7N per contact		
cycles of operation		≥50 according to DIN 41640		200 to DIN41651
insulating body material	PA 4.6. GF	PC/ colour: RAL 7032		
temperature range	-40°C... +163°C/ (260°C/10 s)	-55°C... +125°C		
class of flammability	UL 94 V-0			
specific insulation resistance	>10 ⁷ Ω·m			
conductor cross-section		AWG 28...30 = 0,09...0,05 mm ²		

	PVY ... S	KK ... Z, SBAU 1 ... Z	SBAU ... S	BK 01 32
surface contact / contact sleeve	contact area: Ni+ <0.1µm Au (flashgold)/ con- nection area: Ni+0.5...2.5µm Sn	Ni+5...10µm Sn	soldering area: Ni+ >0.1µm Au (flashgold)/ IDC area nickel-plated	
contact material	CuSn alloy			
creeping current resistance		KC 175 nach DIN 53480		
creepage		≥0,7mm VDE 0110		
air gap		≥0,5 mm VDE 0110		
nominal current	1 A			2 A
nominal voltage		250V AC insulation group A, according to VDE0110		300 V _{eff} max.
test voltage	500 V AC			
insertion / drawing force	≥0.5 ... ≤1.8N per contact			
insulating body material	PBT/ colour: black	PC/ colour: RAL 7032		
temperature range	-55°C... +105°C	-40°C... +125°C		-30°C... +105°C
class of flammability	UL 94 V-0		UL 94 V-1	
specific insulation resistance	>10 ¹⁰ Ω·m	>10 ¹² Ω·m		
conductor				7 x Ø 0,127 mm
conductor cross-section		AWG 28...30 = 0,09...0,05 mm²		AWG 28/~0,089 mm²
capacity				≤ 65 pF/m sym- metrical
conductor resistance				≤230mΩ/m
characteristic impedance				170 Ω symmet- risch



D-Sub connectors

- with Wire Wrap, solder cup and dip soldering connection
- with plastic angle and rivet, earthing plate, snap-in clip
- with metal angle and rivet



D-Sub special design

- high density connector
- filter connectors
- ribbon cable connector
- mixed layout connectors
- SMD technology
- press-in connector



D-Sub hoods

- design with large cable space
- hoods with self-cutting threaded bolts
- hoods with quick fastener
- compact hoods with cable outlet on the side

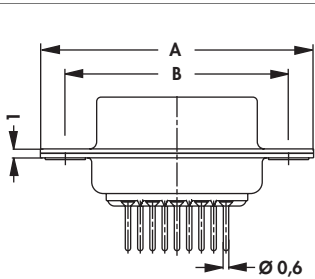
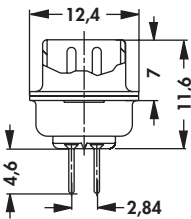
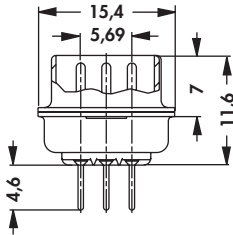


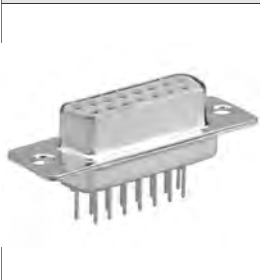
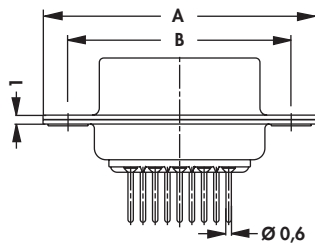
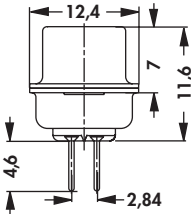
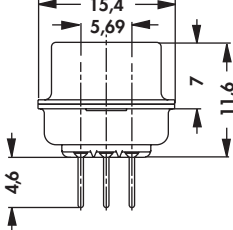
D-Sub accessories

- cable reels
- cut-out covers
- HF-dense seal caps
- HF seals
- Dust covers
- Threaded couplings

D-Sub standard connectors

Male and female headers

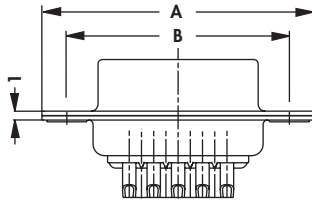
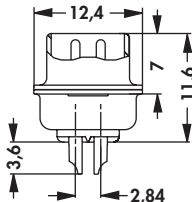
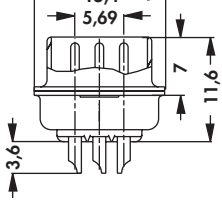
	9 - 37 pol.			50 pol.					
									
art. no.	design	dim. [mm]		art. no.	design	dim. [mm]			
		A	B			A	B		
DS 09 T ...	male	30.8	25.0	DS 37 T ...	male	69.5	63.5		
DS 15 T ...	male	39.2	33.3	DS 50 T ...	male	67.0	61.1		
DS 25 T ...	male	53.1	47.0						

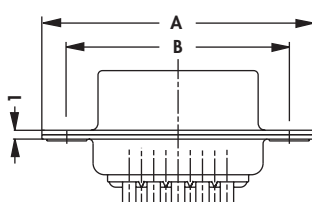
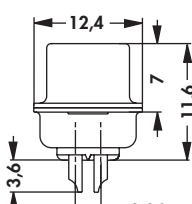
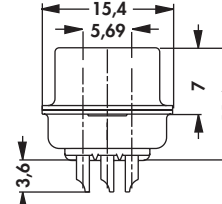
	9 - 37 pol.			50 pol.					
									
art. no.	design	dim. [mm]		art. no.	design	dim. [mm]			
		A	B			A	B		
DB 09 T ...	female	30.8	25.0	DB 37 T ...	female	69.5	63.5		
DB 15 T ...	female	39.2	33.3	DB 50 T ...	female	67.0	61.1		
DB 25 T ...	female	53.1	47.0						

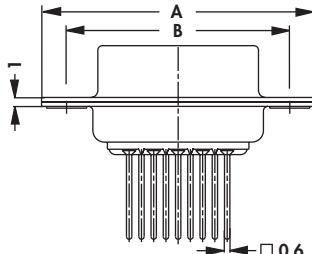
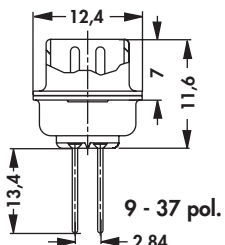
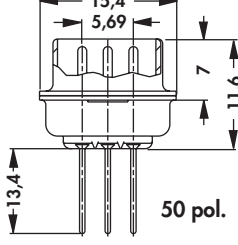
please indicate:		... type of mounting (optional)	
RC UN		= snap-in-clip with UNC 4-40	
RC M3		= snap-in-clip with M3	
RCS UN		= snap-in-clip and screwing bolt with UNC 4-40	
RCS M3		= snap-in-clip and screwing bolt with M3	

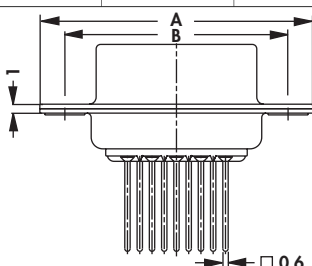
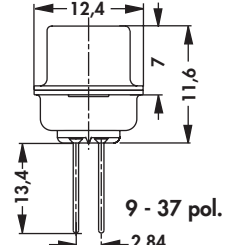
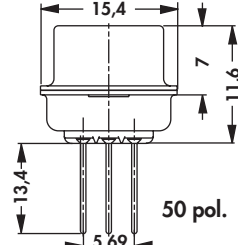
D-Sub standard connectors

Male and female headers

	9 - 37 pol.			50 pol.					
									
art. no.	design	dim. [mm]		art. no.	design	dim. [mm]			
		A	B			A	B		
DS 09 L	male	30.8	25.0	DS 37 L	male	69.5	63.5		
DS 15 L	male	39.2	33.3	DS 50 L	male	67.0	61.1		
DS 25 L	male	53.1	47.0						

	9 - 37 pol.			50 pol.					
									
art. no.	design	dim. [mm]		art. no.	design	dim. [mm]			
		A	B			A	B		
DB 09 L	female	30.8	25.0	DB 37 L	female	69.5	63.5		
DB 15 L	female	39.2	33.3	DB 50 L	female	67.0	61.1		
DB 25 L	female	53.1	47.0						

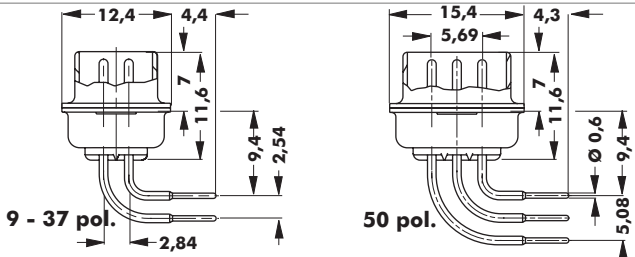
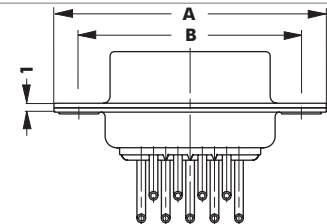
	9 - 37 pol.			50 pol.					
									
art. no.	design	dim. [mm]		art. no.	design	dim. [mm]			
		A	B			A	B		
DS 09 WW 3	male	30.8	25.0	DS 37 WW 3	male	69.5	63.5		
DS 15 WW 3	male	39.2	33.3	DS 50 WW 3	male	67.0	61.1		
DS 25 WW 3	male	53.1	47.0						

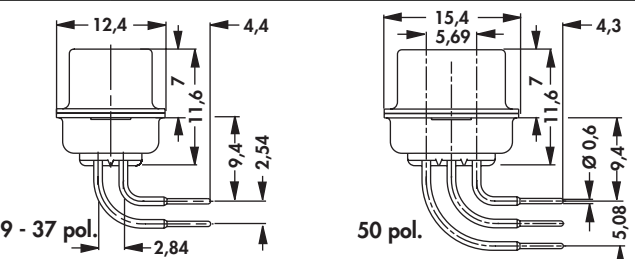
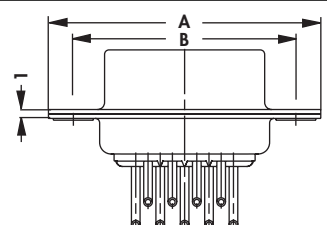
	9 - 37 pol.			50 pol.					
									
art. no.	design	dim. [mm]		art. no.	design	dim. [mm]			
		A	B			A	B		
DB 09 WW 3	female	30.8	25.0	DB 37 WW 3	female	69.5	63.5		
DB 15 WW 3	female	39.2	33.3	DB 50 WW 3	female	67.0	61.1		
DB 25 WW 3	female	53.1	47.0						

D-Sub standard connectors

Male and female headers

- with turned precision contacts
- with shielding springs

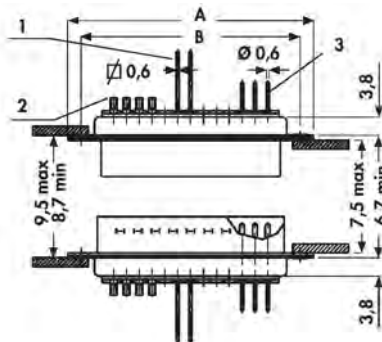
				
art. no.	design	dim. [mm]		
		A	B	
DS 09 LA	male	30.8	25.0	
DS 15 LA	male	39.2	33.3	
DS 25 LA	male	53.1	47.0	
DS 37 LA	male	69.5	63.5	
DS 50 LA	male	67.0	61.1	

				
art. no.	design	dim. [mm]		
		A	B	
DB 09 LA	female	30.8	25.0	
DB 15 LA	female	39.2	33.3	
DB 25 LA	female	53.1	47.0	
DB 37 LA	female	69.5	63.5	
DB 50 LA	female	67.0	61.1	

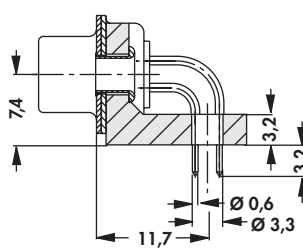
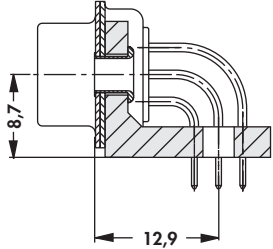
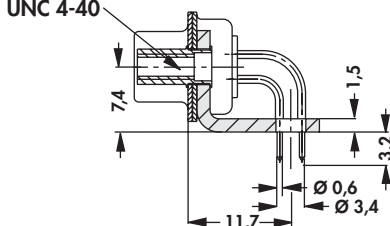
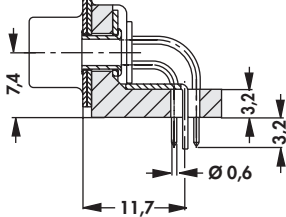
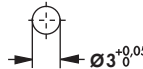
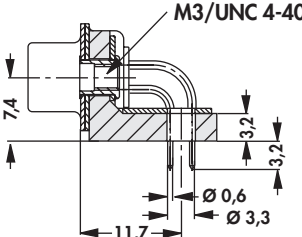
casing frame: steel, tin plated

Installation diagram

1 = wire wrap pin; 2 = solder terminal; 3 = solder pin for PCB

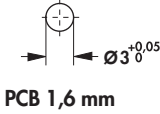


D-Sub standard connectors with mounting bracket

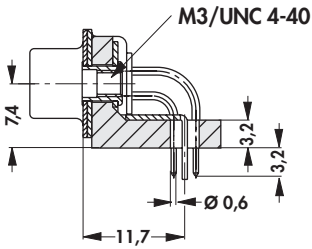
	9 - 37 pol.		50 pol.	
				
art. no.	design	fixing part		
DS WK ...	male	plastic angle, riveted		
DB WK ...	female	plastic angle, riveted		
please indicate: ... no. of contacts 9 15 25 37 50				
				
art. no.	design	fixing part		
DS WMV 4 ...	male	metal angle with screw fastening, thread UNC4-40		
DB WMV 4 ...	female	metal angle with screw fastening, thread UNC4-40		
	  PCB 1,6 mm			
art. no.	design	fixing part		
DS WR ...	male	plastic angle with earthing plate, snap-on clip		
DB WR ...	female	plastic angle with earthing plate, snap-on clip		
				
art. no.	design	fixing part		
DS WE 3 ...	male	plastic angle with earthing plate and threaded rivet M3		
DS WE 4 ...	male	plastic angle with earthing plate, threaded rivet UNC 4-40		
DB WE 3 ...	female	plastic angle with earthing plate and threaded rivet M3		
DB WE 4 ...	female	plastic angle with earthing plate, threaded rivet UNC 4-40		
please indicate: ... no. of contacts 9 15 25 37				

D-Sub standard connectors





PCB 1,6 mm



M3/UNC 4-40

art. no.	design	fixing part
DS WR 3 ...	male	plastic angle with earthing plate, threaded rivet M3, snap-on clip
DS WR 4 ...	male	plastic angle with earthing plate, threaded rivet UNC 4-40, snap-on clip
DB WR 3 ...	female	plastic angle with earthing plate, threaded rivet M3, snap-on clip
DB WR 4 ...	female	plastic angle with earthing plate, threaded rivet UNC 4-40, snap-on clip

please indicate:

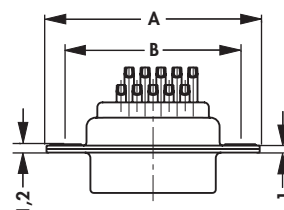
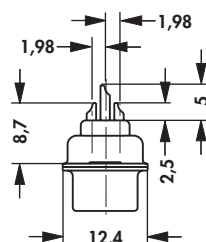
... no. of contacts

9 15 25 37

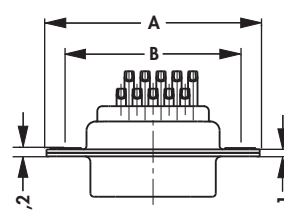
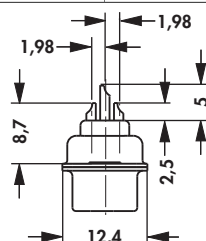
D-Sub connectors High Density

Male and female headers

- our D-Sub connectors **HD** are loaded with turned precision contacts
- with shielding springs



art. no.	no. of contacts	design	dim. [mm]	
			A	B
HD S 15 L	15	male	30.8	25.0
HD S 26 L	26	male	39.2	33.3
HD S 44 L	44	male	53.1	47.0



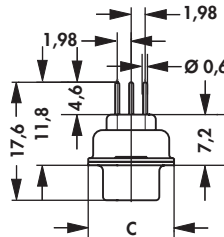
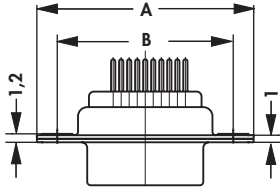
art. no.	no. of contacts	design	dim. [mm]	
			A	B
HD B 15 L	15	female	30.8	25.0
HD B 26 L	26	female	39.2	33.3
HD B 44 L	44	female	53.1	47.0

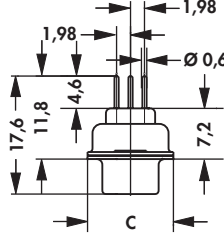
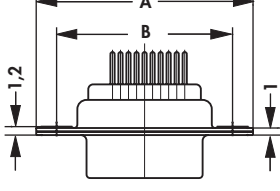
casing frame: steel, tin plated

D-Sub connectors High Density

Male and female headers

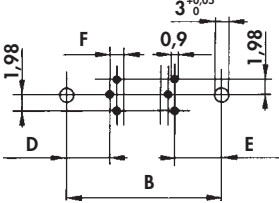
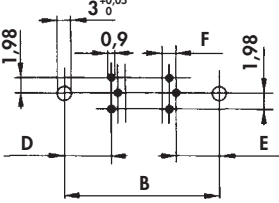
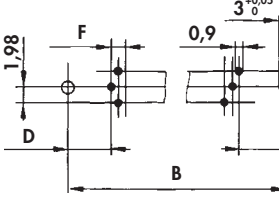
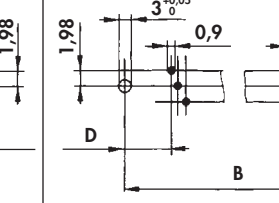
- our D-Sub connectors **HD** are loaded with turned precision contacts
- with shielding springs

								
art. no.	no. of contacts	design	dim. [mm]					
			A	B	C	D	E	F
HD S 15 T	15	male	30.8	25.0	12.4	7.04	7.67	2.29
HD S 26 T	26	male	39.2	33.3	12.4	6.87	7.00	2.29
HD S 44 T	44	male	53.1	47.0	12.4	6.88	7.01	2.29

								
art. no.	no. of contacts	design	dim. [mm]					
			A	B	C	D	E	F
HD B 15 T	15	female	30.8	25.0	12.4	7.67	7.04	2.29
HD B 26 T	26	female	39.2	33.3	12.4	7.00	6.87	2.29
HD B 44 T	44	female	53.1	47.0	12.4	7.01	6.88	2.29

casing frame:		steel, tin plated
---------------	--	-------------------

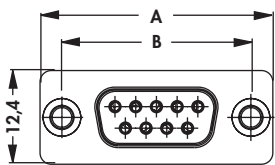
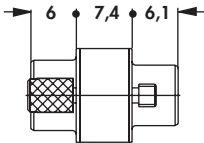
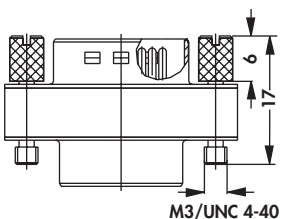
1 = male, 15 contacts; 2 = female, 15 contacts; 3 = male, 26/44 contacts; 4 = female, 26/44 contacts

1	2	3	4
			

D-Sub filter connector

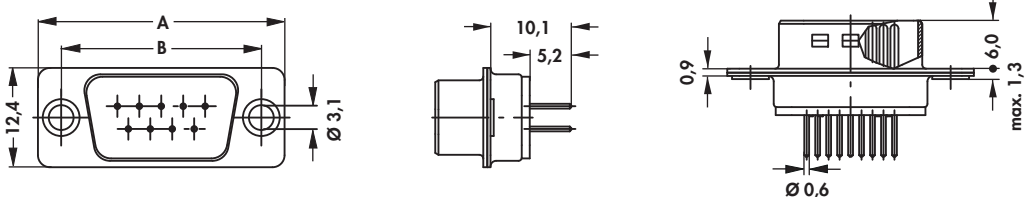
Adapter, 9-37 contacts

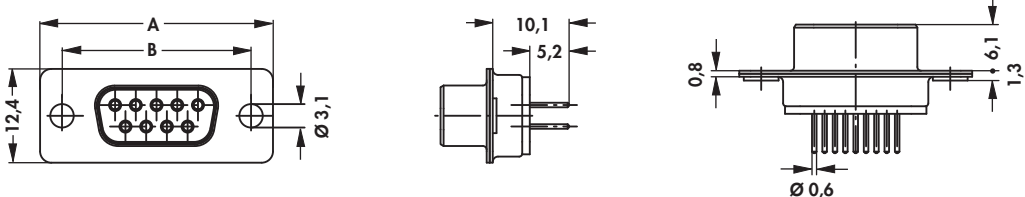
- capacity per contact: 1000 pF
- standard installation dimensions
- stud bolt mountable on both sides
- compatible with standard accessories

			
art. no.	no. of contacts	dim. [mm]	
FD A ... 09 1000	9	A	B
FD A ... 15 1000	15	30.8	25.0
FD A ... 25 1000	25	39.2	33.3
FD A ... 37 1000	37	53.1	47.0
FD A ... 37 1000	37	69.5	63.5
please indicate: ... type of thread 3 = M3 UNC = UNC 4-40			

Male headers and female headers, straight

- capacity per contact: 1000 pF
- other capacity on request

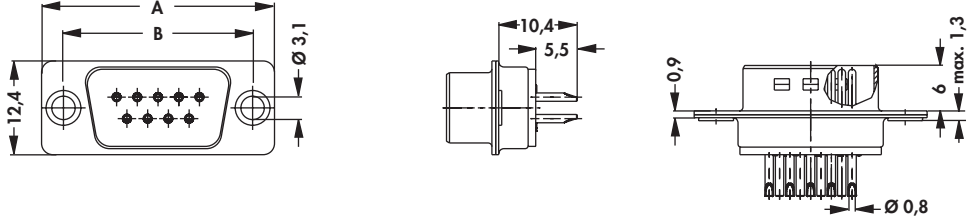
				
art. no.	no. of contacts	design	dim. [mm]	
			A	B
FD S 09 T 1000	9	male	30.8	25.0
FD S 15 T 1000	15	male	39.2	33.3
FD S 25 T 1000	25	male	53.1	47.0
FD S 37 T 1000	37	male	69.5	63.5

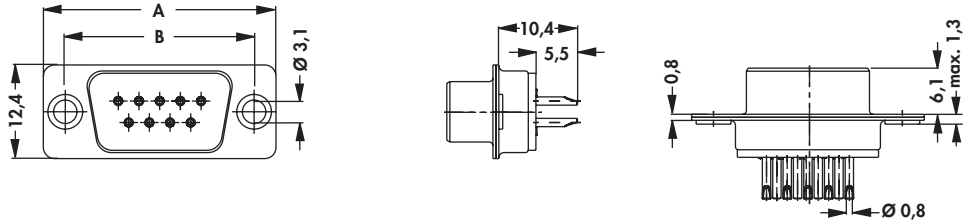
				
art. no.	no. of contacts	design	dim. [mm]	
			A	B
FD B 09 T 1000	9	female	30.8	25.0
FD B 15 T 1000	15	female	39.2	33.3
FD B 25 T 1000	25	female	53.1	47.0
FD B 37 T 1000	37	female	69.5	63.5

D-Sub filter connector

Male and female headers, with solder cup

- capacity per contact: 1000 pF
- other capacity on request
- suitable for AWG 22
- standard installation dimensions
- HF-tight, closed metal rear panel
- compatible with standard accessories

				
	art. no.	no. of contacts	design	dim. [mm]
				A B
	FD S 09 L 1000	9	male	30.8 25.0
	FD S 15 L 1000	15	male	39.2 33.3
	FD S 25 L 1000	25	male	53.1 47.0
	FD S 37 L 1000	37	male	69.5 63.5

				
	art. no.	no. of contacts	design	dim. [mm]
				A B
	FD B 09 L 1000	9	female	30.8 25.0
	FD B 15 L 1000	15	female	39.2 33.3
	FD B 25 L 1000	25	female	53.1 47.0
	FD B 37 L 1000	37	female	69.5 63.5

Application tools
D-Sub hoods
D-Sub cut-out cover
D-Sub connector in pressfit techn.

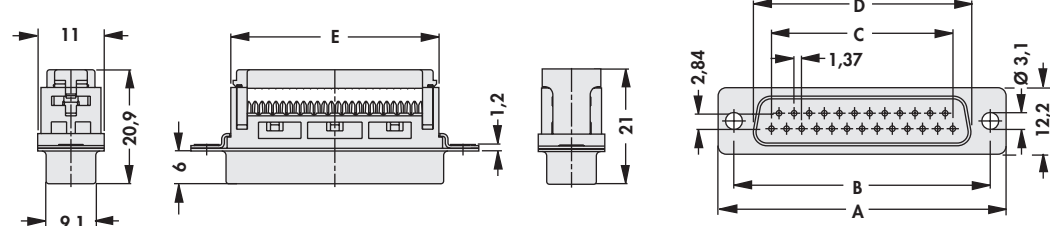
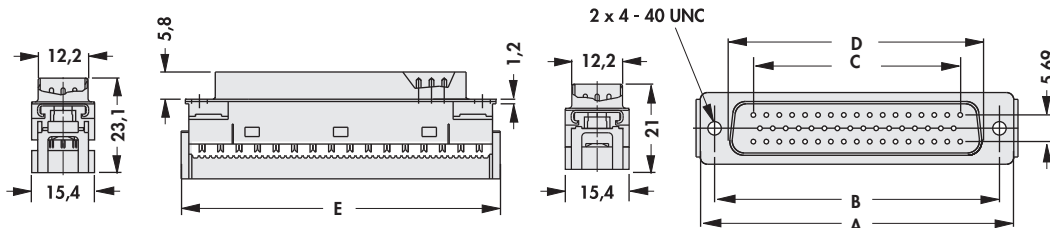
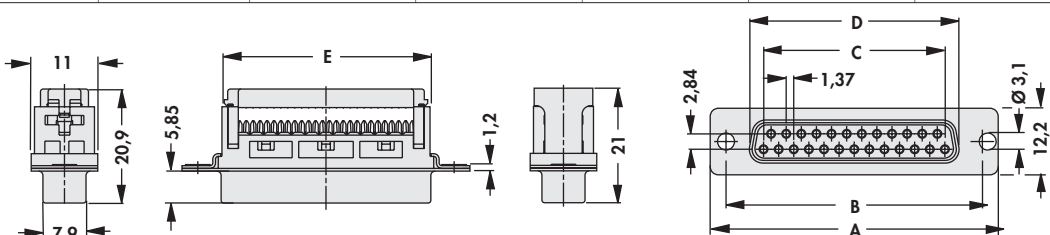
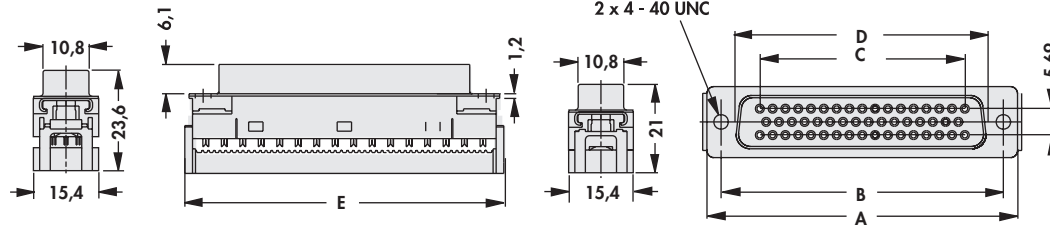
→ H 10
→ I 18 – 21
→ I 22
→ I 16 – 17

D-Sub mixed layout
HF-tight caps
Screw fastening
Technical data

→ I 13 – 14
→ I 24
→ I 23
→ I 26 – 28

D-Sub connector for flat ribbon cable

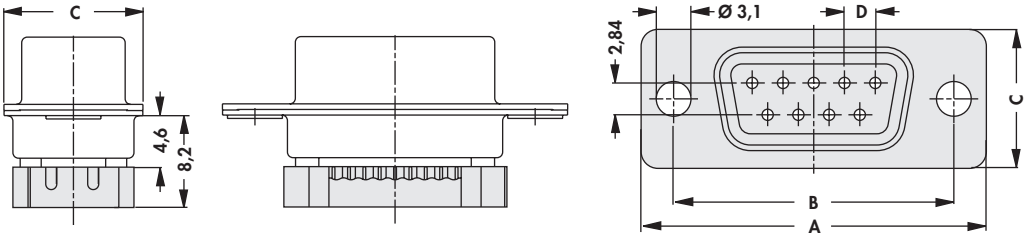
Male and female headers

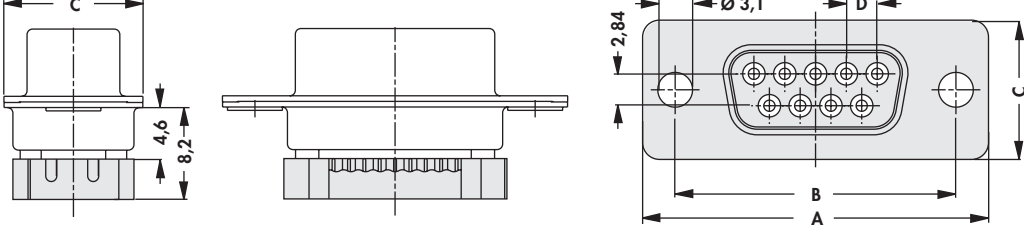
							
art. no.	no. of contacts	design	dim. [mm]				
			A	B	C	D	E
DS BK 09	9	male	30.6	25.0	10.96	17.9	16.1
DS BK 15	15	male	39.0	33.3	19.33	26.2	23.9
DS BK 25	25	male	52.8	47.0	33.13	39.9	38.1
DS BK 37	37	male	69.2	63.5	49.70	56.3	54.7
							
art. no.	no. of contacts	design	dim. [mm]				
			A	B	C	D	E
DS BK 50	50	male	66.8	61.1	44.2	54	68.6
							
art. no.	no. of contacts	design	dim. [mm]				
			A	B	C	D	E
DB BK 09	9	female	30.6	25.0	10.96	16.3	16.1
DB BK 15	15	female	39.0	33.3	19.33	24.5	23.9
DB BK 25	25	female	52.8	47.0	33.13	38.5	38.1
DB BK 37	37	female	69.2	63.5	49.70	54.8	54.7
							
art. no.	no. of contacts	design	dim. [mm]				
			A	B	C	D	E
DB BK 50	50	female	66.8	61.1	44.2	52.4	68.6

D-Sub connector for flat ribbon cable

Male and female headers, low profile

– useable ribbon cable: AWG 26 ... 28

						
art. no.	no. of contacts	design	dim. [mm]			
			A	B	C	D
DS BK 09 LP	9	male	30.8	25.0	12.4	2.74
DS BK 15 LP	15	male	39.2	33.3	12.4	2.74
DS BK 25 LP	25	male	53.1	47.0	12.4	2.77
DS BK 37 LP	37	male	69.5	63.5	12.4	2.77

						
art. no.	no. of contacts	design	dim. [mm]			
			A	B	C	D
DB BK 09 LP	9	female	30.8	25.0	12.4	2.74
DB BK 15 LP	15	female	39.2	33.3	12.4	2.74
DB BK 25 LP	25	female	53.1	47.0	12.4	2.77
DB BK 37 LP	37	female	69.5	63.5	12.4	2.77
casing frame:		steel, tin plated				
annotation:		IDC-cable pitch/ 1.27mm				

D-Sub mixed layout connectors

Male headers - suitable for standard D-Sub accessories

- gold-plated contacts
- with high current contacts up to 20 A
- for cables up to AWG 16

- 3 high current contacts

art. no. DSM 3K3 L20	design male

- 2 high current contacts, 5 signal contacts

art. no. DSM 7K2 L20	design male

- 3 high current contacts, 10 signal contacts

art. no. DSM 13K3 L20	design male

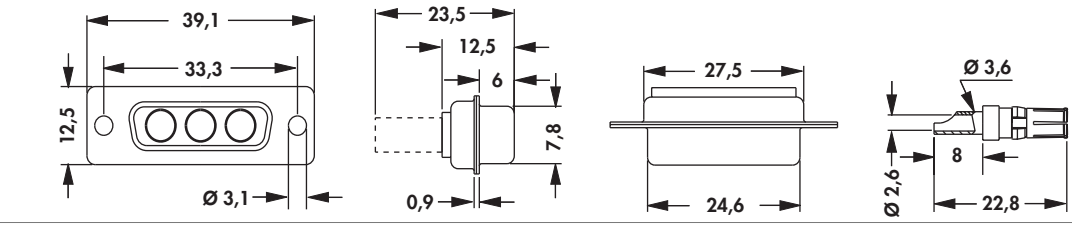
D-Sub mixed layout connectors

Female headers - suitable for standard D-Sub accessories

- gold-plated contacts
- with high current contacts up to 20 A
- for cables up to AWG 16

– 3 high current contacts

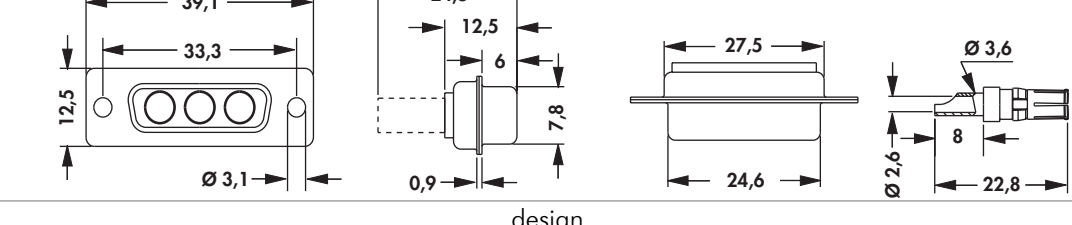




art. no.	design
DBM 3K3 L20	female

– 2 high current contacts, 5 signal contacts

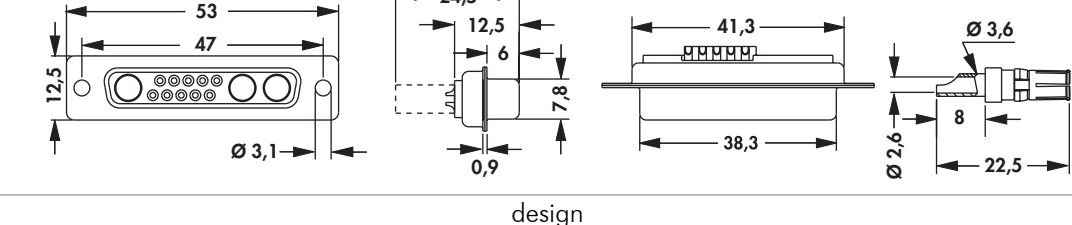




art. no.	design
DBM 7K2 L20	female

– 3 high current contacts, 10 signal contacts



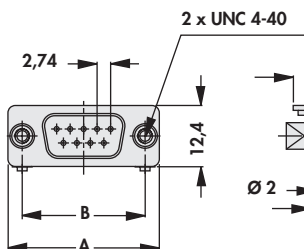
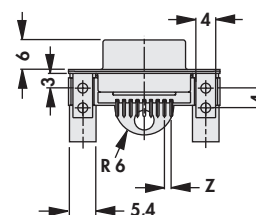
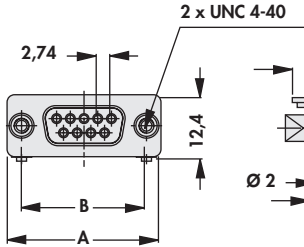
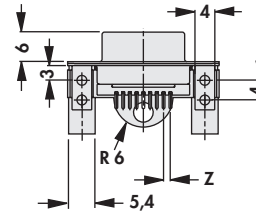


art. no.	design
DBM 13K3 L20	female

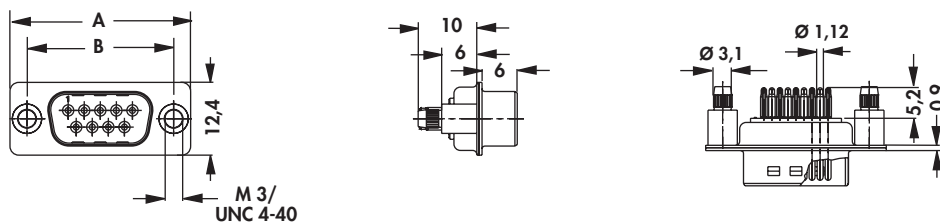
D-Sub in SMD-mounting

Male and female headers

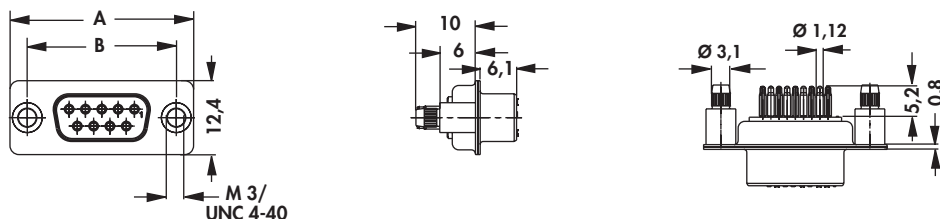
– **packing:** tape and reel (150 pcs/reel); reel outer diameter 330 mm

							
art. no.	no. of contacts	dim. [mm]				PCB-LAYOUT	
DS 09 SMD TR	9	A	B	Y	Z		
DS 15 SMD TR	15	30.8	25.0	10.98	1.37		
DS 25 SMD TR	15	39.2	33.3	19.20	1.37		
DS 25 SMD TR	25	53.1	47.0	33.12	1.38		
DS 37 SMD TR	37	69.5	63.5	49.68	1.38		
							
art. no.	no. of contacts	dim. [mm]				PCB-LAYOUT	
DB 09 SMD TR	9	A	B	Y	Z		
DB 15 SMD TR	15	30.8	25.0	10.98	1.37		
DB 15 SMD TR	15	39.2	33.3	19.20	1.37		
DB 25 SMD TR	25	53.1	47.0	33.12	1.38		
DB 37 SMD TR	37	69.5	63.5	49.68	1.38		

Male and female headers



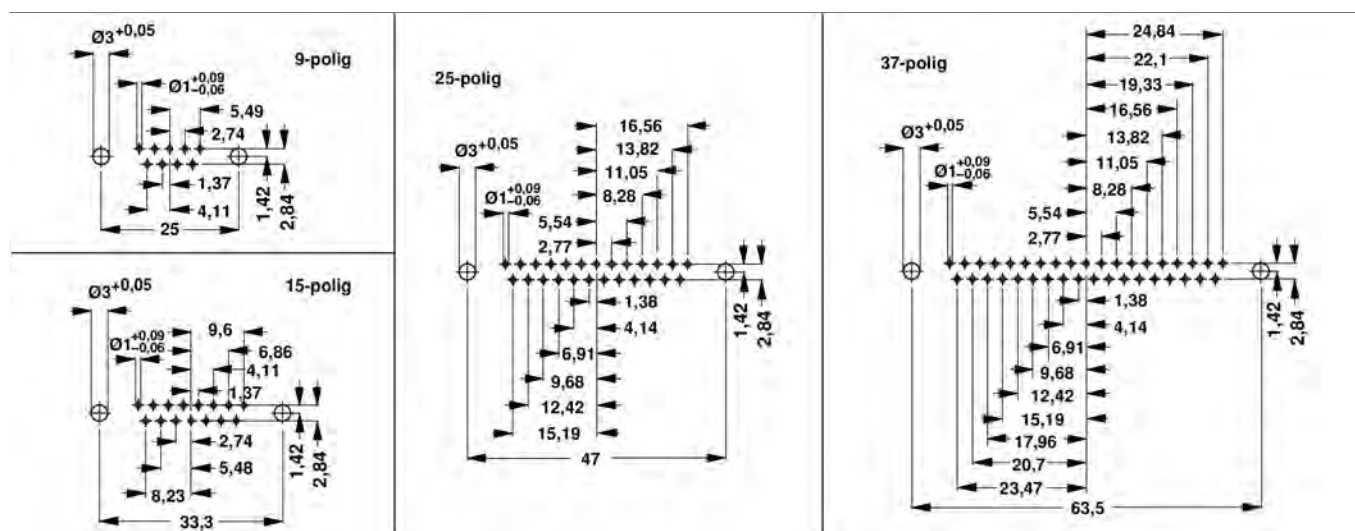
art. no.	no. of contacts	dim. [mm]	
		A	B
DS ... 9 P	9	30.8	25.0
DS ... 15 P	15	39.2	33.3
DS ... 25 P	25	53.1	47.0
DS ... 37 P	37	69.5	63.5



art. no.	no. of contacts	dim. [mm]	
		A	B
DB ... 9 P	9	30.8	25.0
DB ... 15 P	15	39.2	33.3
DB ... 25 P	25	53.1	47.0
DB ... 37 P	37	69.5	63.5

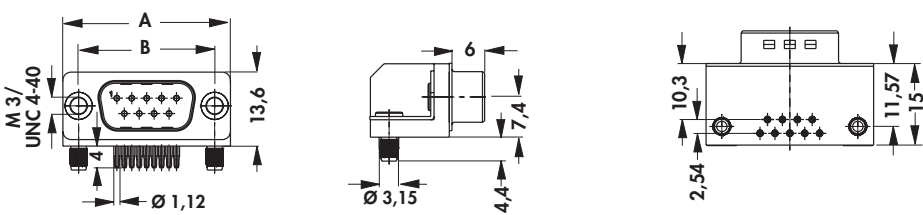
please indicate: ... type of thread
3 = M3
UNC = UNC 4-40

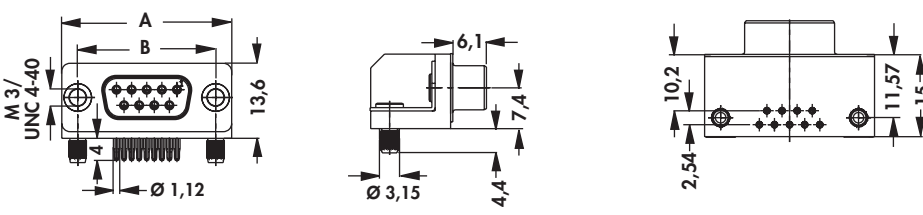
casing frame: steel, tin plated



D-Sub connector in pressfit technology

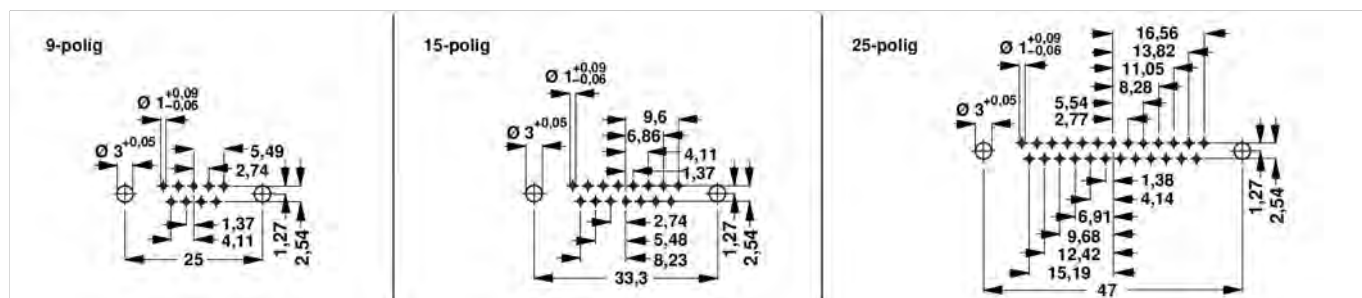
Male and female headers

			
art. no.	no. of contacts	dim. [mm]	
DS WP ... 9	9	A	B
DS WP ... 15	15	30.8	25.0
DS WP ... 25	15	39.2	33.3
DS WP ... 25	25	53.1	47.0

			
art. no.	no. of contacts	dim. [mm]	
DB WP ... 9	9	A	B
DB WP ... 15	15	30.8	25.0
DB WP ... 15	15	39.2	33.3
DB WP ... 25	25	53.1	47.0

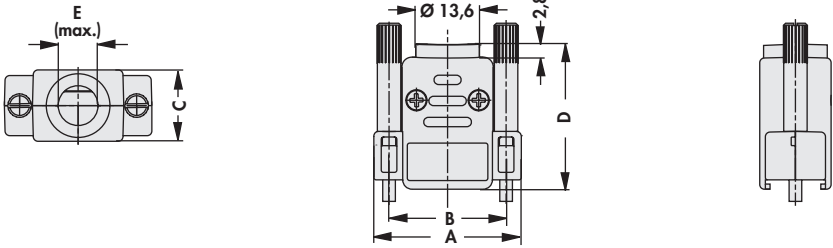
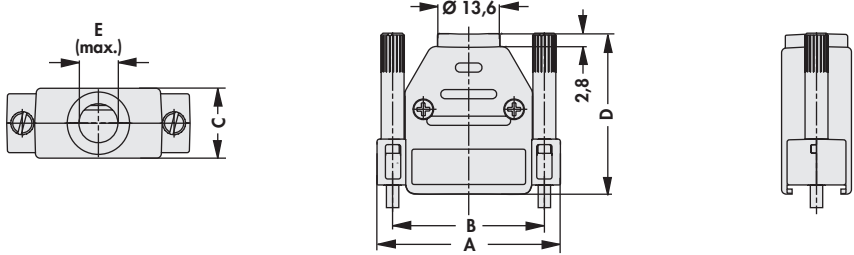
please indicate: ... type of thread
3 = M3
UNC = UNC 4-40

casing frame: steel, tin plated



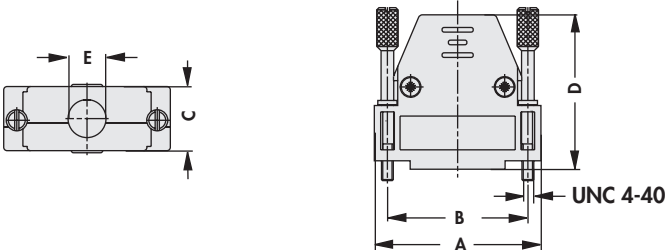
D-Sub hoods

- **E** = max. diameter of the cable entry in mm
- threaded bolt UNC 4-40
- large cable space with few components
- **9-37 contacts can be mounted in series in (C = 3 HP) grid, thus especially suitable for 19" technology**

						
art. no.	no. of contacts	dim. [mm]				
		A	B	C	D	E
DH 09 ...	9	31.5	25	15.2	31	8.5
						
art. no.	no. of contacts	dim. [mm]				
		A	B	C	D	E
DH 15 ...	15	40.0	33.3	15.2	33.5	8.5
DH 25 ...	25	53.5	47.0	15.2	38.0	11.0
DH 37 ...	37	70.0	63.5	15.2	40.0	11.0
DH 50 ...	50	67.5	61.1	18.2	40.0	12.0
please indicate: ... surface of case S = plastic, black M = plastic, metallized						

With self-cutting threaded bolt

- straight cable outlet with pre-assembled strain relief

						
art. no.	no. of contacts	dim. [mm]				
		A	B	C	D	E
DH SG 09 ...	9	31.0	25.0	16.0	35.6	8
DH SG 15 ...	15	39.5	33.3	16.0	36.6	9
DH SG 25 ...	25	53.0	47.0	16.0	41.0	10
DH SG 37 ...	37	69.5	63.5	16.0	45.3	11
DH SG 50 ...	50	67.0	61.1	19.8	51.4	14
please indicate: ... surface of case S = plastic, black M = plastic, metallized						

D-Sub filter connector
 D-Sub filter adapter
 D-Sub high density
 D-Sub standard connectors

→ I 10
 → I 9
 → I 7 – 8
 → I 3 – 6

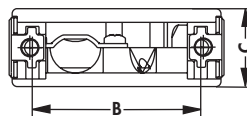
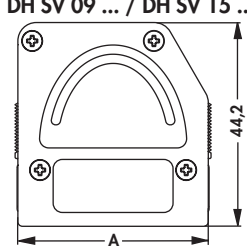
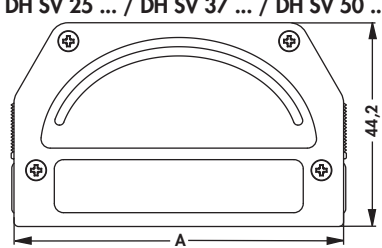
D-Sub connectors /flat cable
 D-Sub mixed layout
 D-Sub connector in pressfit techn.
 Technical data

→ I 11 – 12
 → I 13 – 14
 → I 16 – 17
 → I 26 – 28

D-Sub hoods

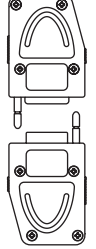
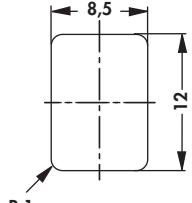
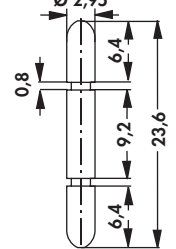
D-Sub hoods with quick-action locking system

– straight and side-gated cable outlet

						
art. no.	no. of contacts	dim. [mm]				
		A	B	C		
DH SV 09 ...	9	33.0	25.0	15.4		
DH SV 15 ...	15	41.3	33.3	15.4		
DH SV 25 ...	25	55.0	47.0	15.4		
DH SV 37 ...	37	71.5	63.5	15.4		
DH SV 50 ...	50	69.1	61.1	18.4		
please indicate:						
... surface of case						
S = plastic, black						
M = plastic, metallized						

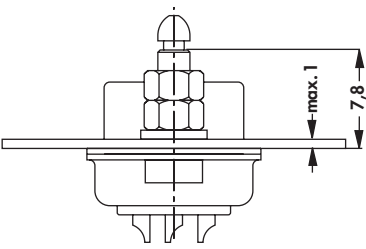
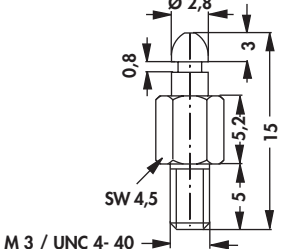
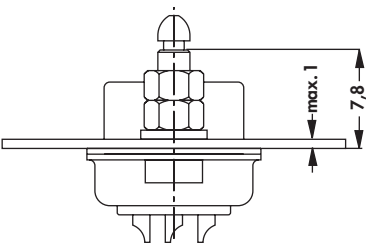
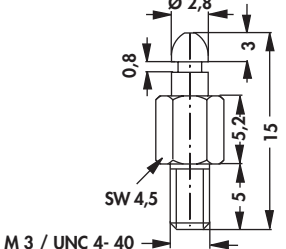
Accessories – locking pin for hood – hood connection

– 2 locking pins including locking plates

				art. no.
				RS HH

Accessories – locking pin for plug connector – hood connection

– 2 latch Pins including locking ring for connectors with thread M3/UNC 4-40

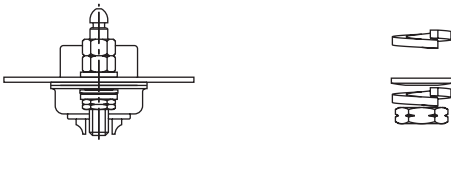
			art. no.	type of thread
			RS SH 3	M3
			art. no.	type of thread
			RS SH 4	UNC 4-40

D-Sub hoods

Accessories – locking pin for plug connector – hood connection

– 2 locking pins including spring washer, washer and nut for existing connector with through hole



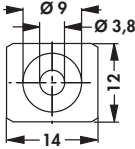


art. no.
RS SH D

Cable sleeve - quick-release hood DH SV ...

– cable sleeves are supplied with chamfers, which are adequate to a diameter-grading of 0.5 mm; they can be cut off depending on the existing diameter of the cable.
– for cable diameters 3...9 mm





art. no.	no. of contacts
KT SV	9

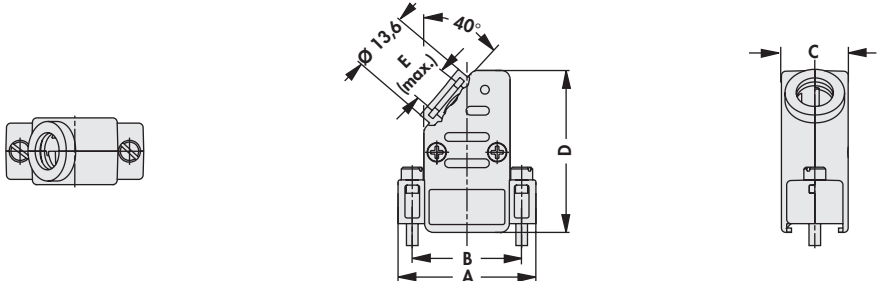
D-Sub hoods

D-Sub-hoods-compact

9-50 contacts



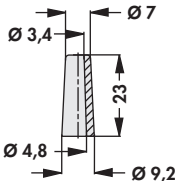
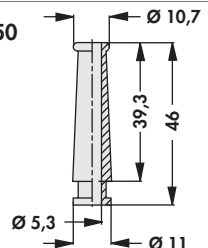
- width C - 3 HP
- version 9-37 pins can be mounted in series in 3 HP grid, thus especially suitable for 19" technology
- metallized version with excellent shielding against electrical and magnetic alternating fields
- integrated dust protective shroud
- captive latching screws with UNC 4-40 threads
- 2 side cable outputs:
 - 40° exit (9-50 contacts)
 - 90° exit (25-50 contacts)
- **E = max. diameter of the cable bushing in mm**

						
art. no.	no. of contacts	dim. [mm]				
		A	B	C	D	E
DH 09 ...	9	31.5	25.0	15.2	37	8.5
DH 15 ...	15	40.0	33.3	15.2	37	8.5
DH 25 ...	25	53.5	47.0	15.2	41	11.0
DH 37 ...	37	70.0	63.5	15.2	41	11.0
DH 50 ...	50	67.8	61.1	18.2	41	12.0
please indicate: ... surface of case						
K = plastic, black						
KM = plastic, metallized						

D-Sub accessoires

Suitable cable bushing

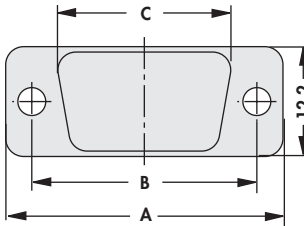
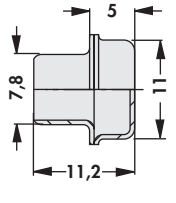
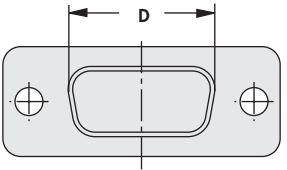
– protects the cable against damage by buckling

	KT 0915 	KT 2550 
art. no.		art. no.
KT 0915		KT 2550

Cover for D-Sub cut outs in front and back panel

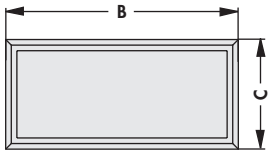
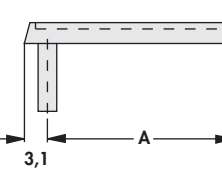
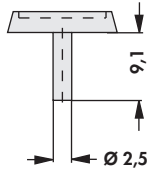
– suitable for EMC application, closed on one side

– blank covers for exact sealing of unused D-Sub cut outs in front- and backpanels, size and form are like D-Sub housings

			
art. no.	dim. [mm]	art. no.	dim. [mm]
BADM 09	A B C D	BADM 25	A B C D
BADM 15	30.8 25.0 19.2 16.3	BADM 37	53.0 47.0 41.2 38.3
BADM 15	39.3 33.3 27.5 24.5	BADM 37	69.4 63.5 57.7 54.8
casing frame:	tin-plated	surface of case:	metal

– plastic cover, blank, for blind D-Sub and other connector cutouts in front and rear panels

– easy to mount with enclosed clamping springs

			
art. no.	dim. [mm]	art. no.	dim. [mm]
BADP 09	A B C	BADP 37	A B C
BADP 15	25.0 31.2 14.7	BADP 37	63.5 69.9 14.7
BADP 15	33.3 39.6 14.7	BADP 50	61.1 67.6 14.7
BADP 25	47.0 53.3 14.7		
surface of case:	plastic, black	fixing clamp:	steel

D-Sub accessoires

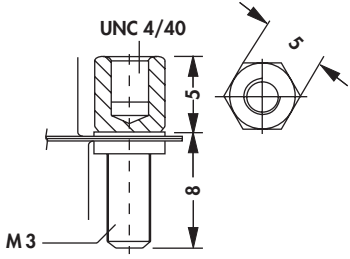
Screw fastening, mounted

- 2 screw fastenings incl. spacer, washer, nut
- please add a **V** to the corresponding art. no. ...

art. no.	
... V	

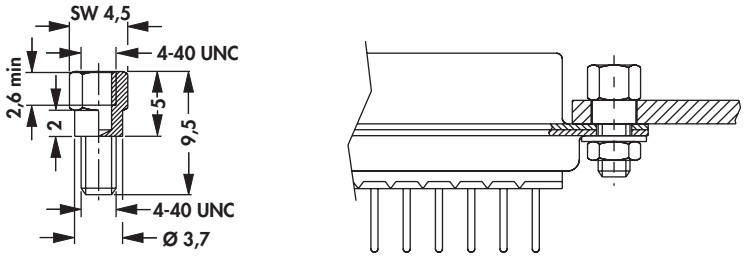
Screw fastening, loose

- 2 separate screw fasteners, with washer and nut

art. no.	
V 2	
material:	screw - brass nickel-plated/ steel-washer tin-plated/ screw-nut - steel nickel-plated

Screw fastening for assembly of cases, separate

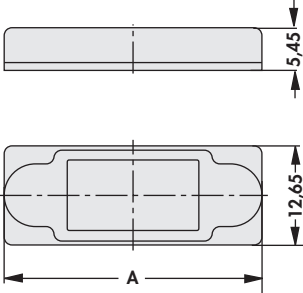
- 2 screw fastenings incl. spacer, washer, nut

art. no.	
VG 2	
material:	steel-washer tin-plated/ screw and steel-screw-nut nickel-plated

D-Sub accessoires

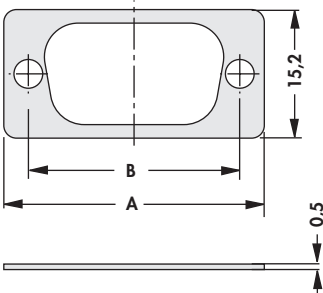
HF-tight caps, male and female headers

– prevent HF-radiation at open interfaces

					
art. no.	colour	dim. [mm] A	art. no.	colour	dim. [mm] A
HFK S 09	blue	32.9	HFK B 09	red	32.9
HFK S 15	blue	41.3	HFK B 15	red	41.3
HFK S 25	blue	55.7	HFK B 25	red	55.7
annotation:		inside nickel-plated			

HF-seals

– as seal between plug and housing

		
art. no.	dim. [mm]	
	A	B
HFD 09	30.8	25.0
HFD 15	39.4	33.3
HFD 25	53.4	47.0
HFD 37	70.7	63.5
annotation:		extremely low transition resistance

A

Dust protection caps

B

C

D

E

F

G

H

I

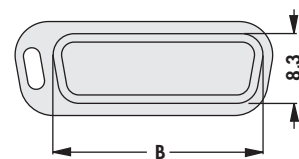
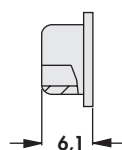
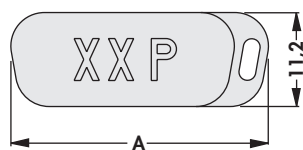
K

L

M

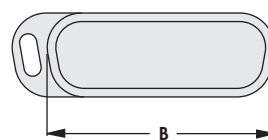
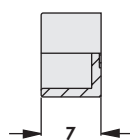
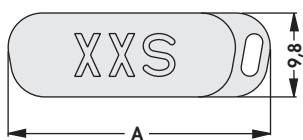
N

For male headers



art. no.	dim. [mm]	
	A	B
SSK S 09	22.5	18.2
SSK S 15	30.6	26.5
SSK S 25	43.7	39.8
SSK S 37	60.3	56.2

For female headers



art. no.	dim. [mm]	
	A	B
SSK B 09	22.3	17.00
SSK B 15	30.6	25.00
SSK B 25	44.1	38.65
SSK B 37	60.7	55.30
annotation: extremely low transition resistance		

	DS ..., DB ...	HD B ..., HD S ...	FD A ..., FD B ..., FD S ...	DS BK ..., DB BK ...
contact material	Cu-alloy			
surface contact / contact sleeve	hard gold plated over nickel			
quality class / cycles of operation	quality class 2 = 200 cycles of operation			quality class 3 = 50 cycles of operation
volume resistance	≤10 mΩ before strain, ΔR 10 mΩ after strain according to DIN 41652. part 2 (MIL-C-24308)			≤10 mΩ
air gap and creep distance	cont.-contact <1mm/ contact- earth <1mm	cont.-contact <0.6mm/ con- tact-earth <0.6mm	cont.-contact <1mm/ contact- earth <1mm	<0.9mm accord- ing to VDE0110
nominal current	5A (20°C)	3A (20°C)	5A (20°C)	1A at AWG 28/ 1.5A at AWG 26
nominal voltage	125 V AC	60 V AC	100 V DC	
test voltage	1000 V		250 V DC	1000 V DC
insulating body material	PBT, GF		PCT, GF	PBTP, GF
temperature range	-55°C... +125°C			
class of flammability	UL 94 V-0			
insulation resistance	≥5 GΩ		≥1 GΩ (100V DC)	1 GΩ

Technical data D-Sub connectors

	DS BK LP ..., DB BK LP ...	DBM ..., DSM ...	DH ... S, DH ... M, DH SG ..., DH SV ...	KT SV
contact material	Cu-alloy			
surface contact / contact sleeve	hard gold plated over nickel	nickel-phosphor- us-gold-surface/ (≥0.1μm Au over 2...4μm chem. NiP)		
quality class / cyces of operation	quality class 2 = 200 cycles of op- eration	≥500 cycles of operation		
volume resistance	≤10 mΩ before strain, ΔR 10 mΩ after strain accord- ing to DIN 41652. part 2 (MIL-C-24308)			
air gap and creep distance	cont.-contact < 1 mm/ contact- earth < 1 mm	≥ 1 mm		
nominal current	1 A (20°C)	signal contact: ≤5 A/ power contact: ≤20 A		
nominal voltage	125 V AC	400 V/ degree of pollution 1		
test voltage	1000 V			
insulating body material	PBT, GF	Polyester, GF	ABS	EPTR
temperature range	-55°C... +125°C	-55°C... +150°C		
class of flammibility	UL 94 V-0			UL 94 V-0 (at thickness ≥3mm), UL 94 V-1
insulation resistance	≥5 GΩ	≥10 ⁹ Ω		
surface of case			plastic, black/ plastic, metallized	

	DH ... K DH ... KM	BADM ...	BADP ...	HFK S ... HFK B ...
insulating body material	ABS		ABS	
temperature range				-25°C... +70°C
class of flammability	UL 94 V-0		UL 94 V-0	
surface of case	plastic, black/ plastic, metallized	metal	plastic, black	

	HFD ...	SSK S ... SSK B ...
insulating body material	Silicone, filled with silver-plated copper particles	Polyethylene



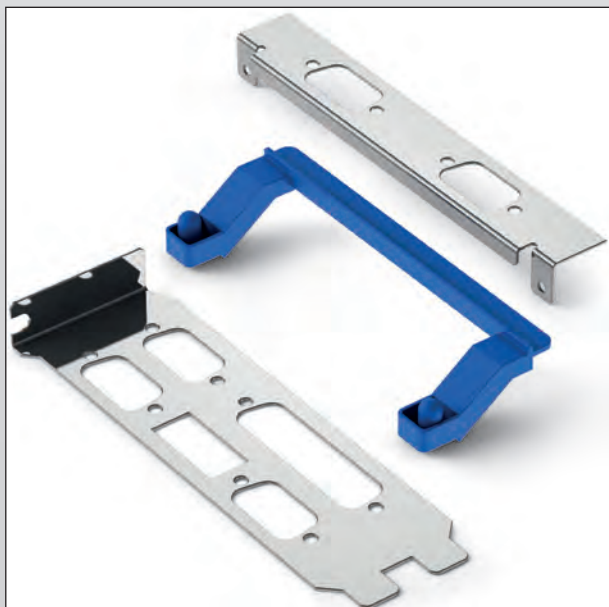
Brackets for PCI

- with or without fixing tab
- standard cut-outs
- custom-specific cut-outs
- custom-specific printings



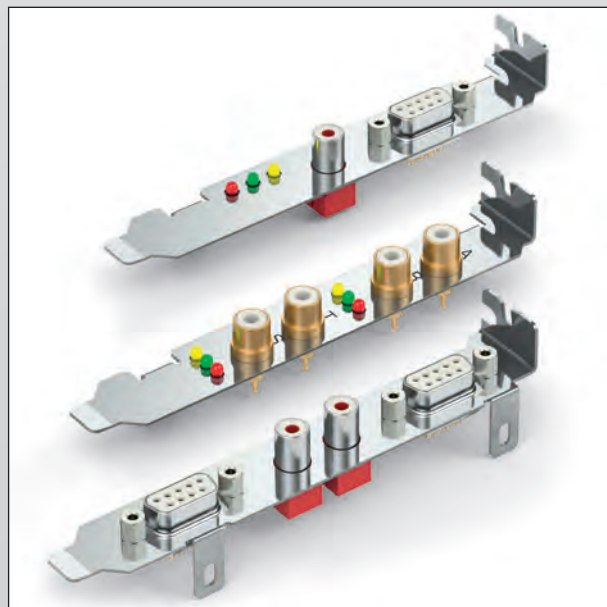
Brackets for AT and similar

- with or without fixing tab
- standard cut-outs
- custom-specific cut-outs
- custom-specific printings



Custom-specific brackets

- double width
- special width
- with printing

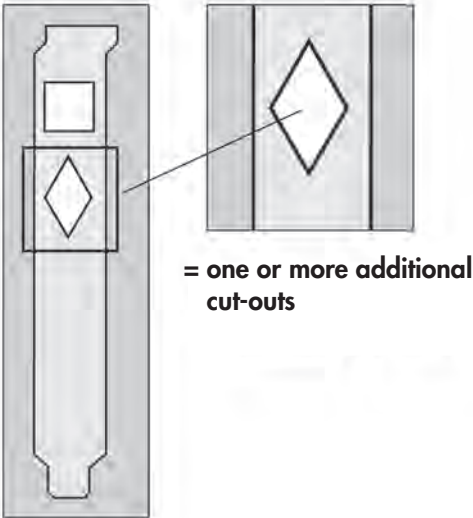


Equipped brackets

- equipped with D-Sub
- equipped with LED
- equipped with custom-specific components

page	PCI	7		9			12	13	14		15		17	18
	KHPC	9	9	10	11	11	12	13	14	15	15	16	17	18

page	PCI	18			21	21			22	23				
	KHPC	19	20	20			21	22	22		23	24	24	



A

Brackets for PC

B

Brackets with fixing tap and without cutout

PCI PCI ... L	KHPC KHPC ... L
art. no. PCI 0 L	art. no. KHPC 0 L

G

Bracket without fixing tab and without cutout

PCI PCI ... O	KHPC KHPC ... O
art. no. PCI 0 O	art. no. KHPC 0 O
material: material thickness:	stainless steel (V 2 A) 0.8 mm

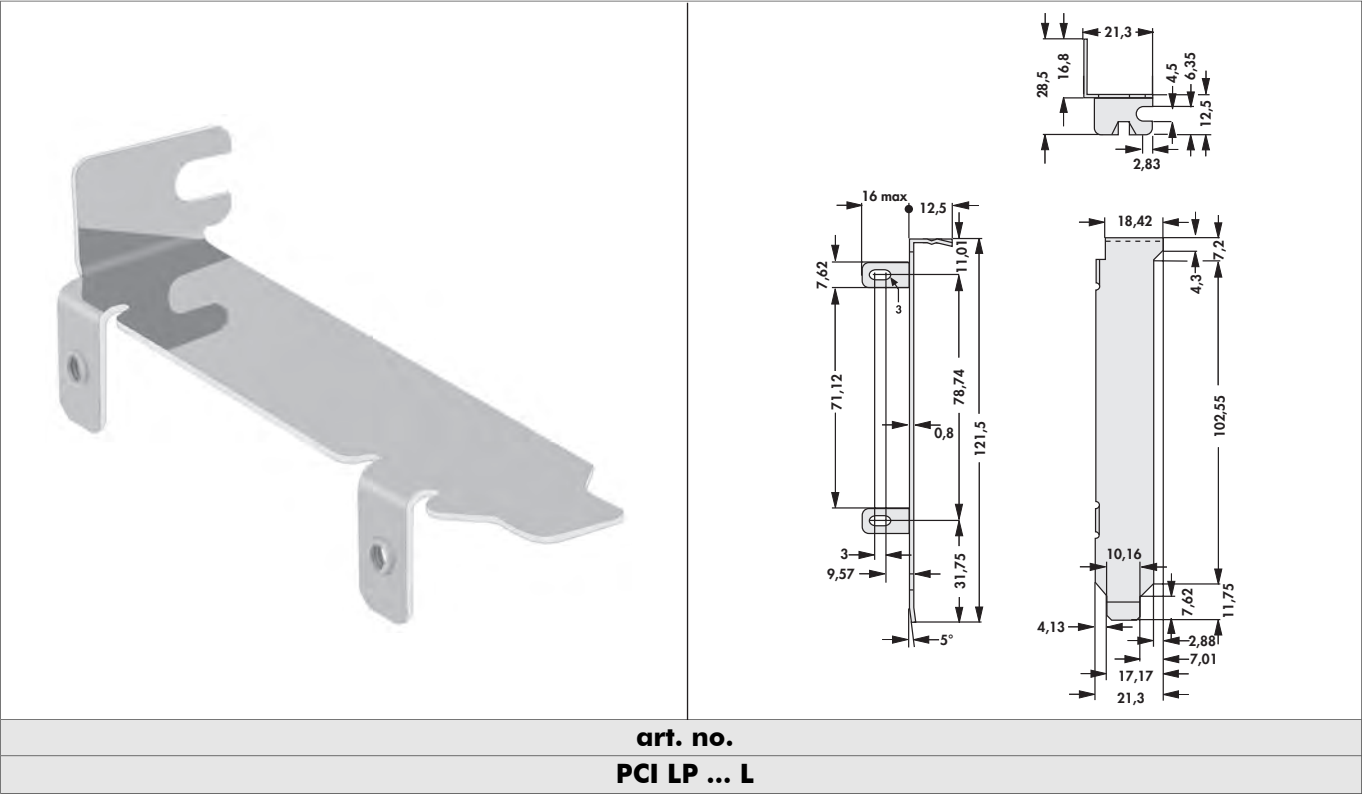
M

N

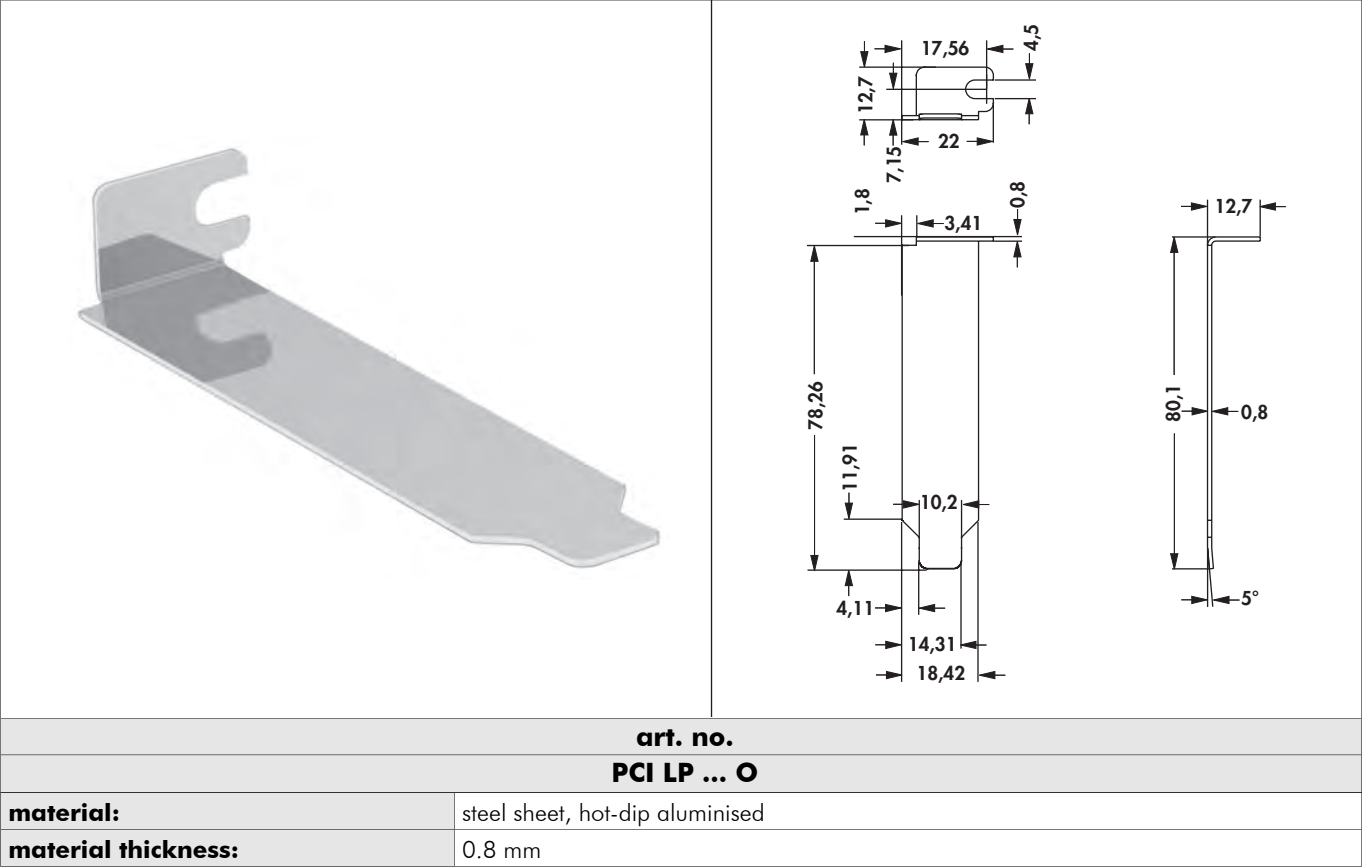
Low Profile bracket for PC

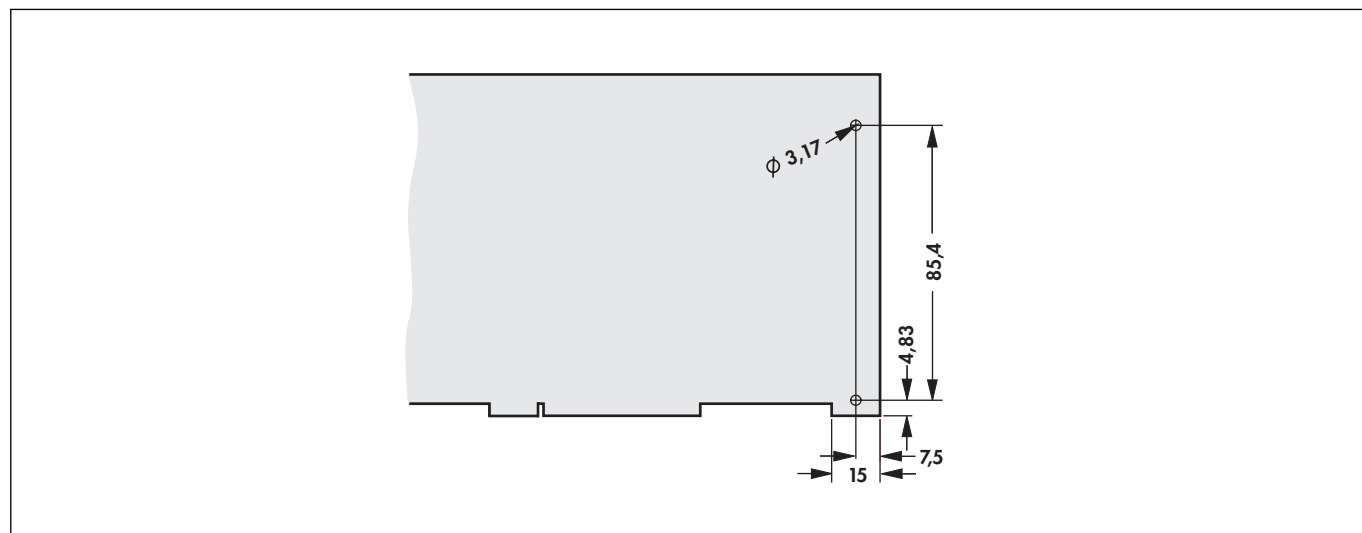
Low Profile bracket with fixing tap and without cutout

- with or without fixing tap; standard cutouts
- customer-specific cutouts and printing; double width (special widths) on request

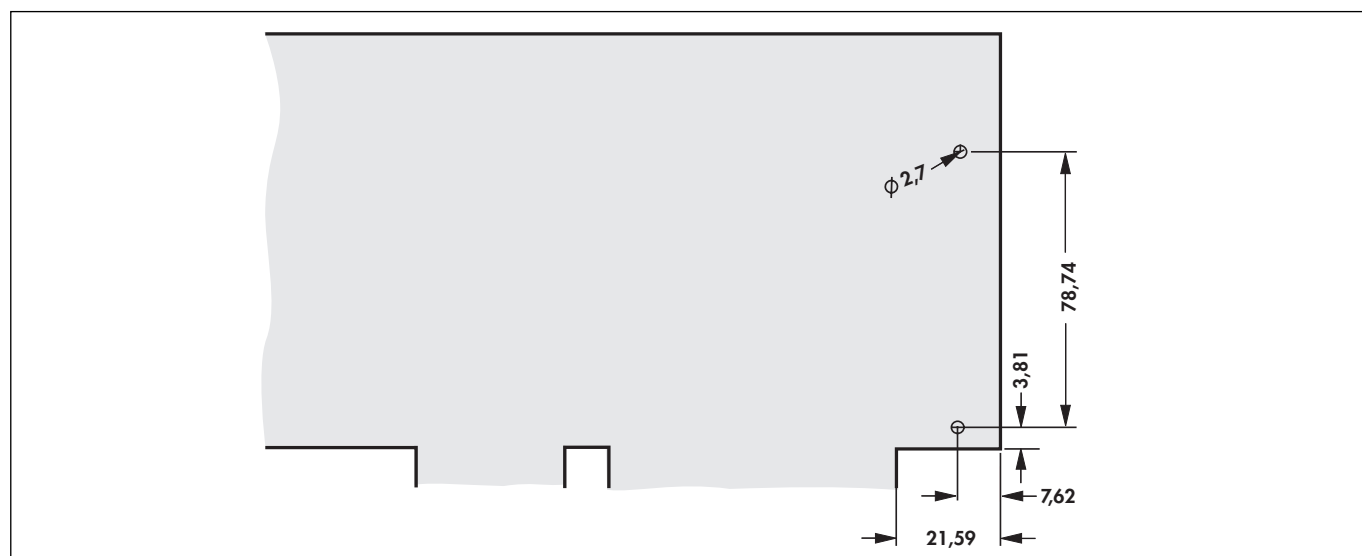


Low Profile bracket without fixing tap and without cutout

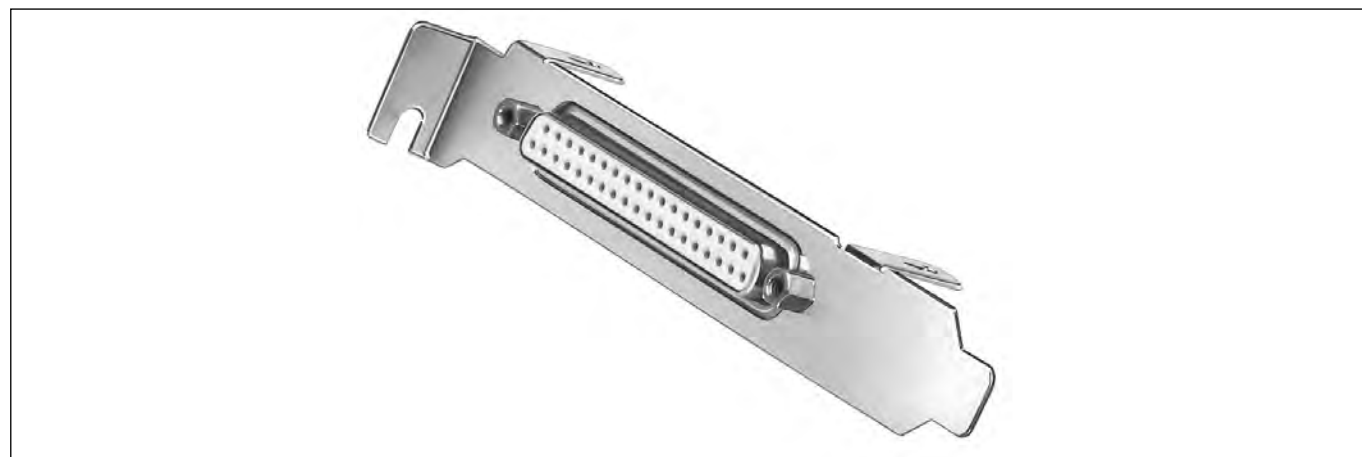




Dimensions to fix the PCI L ... - bracket to the PCB



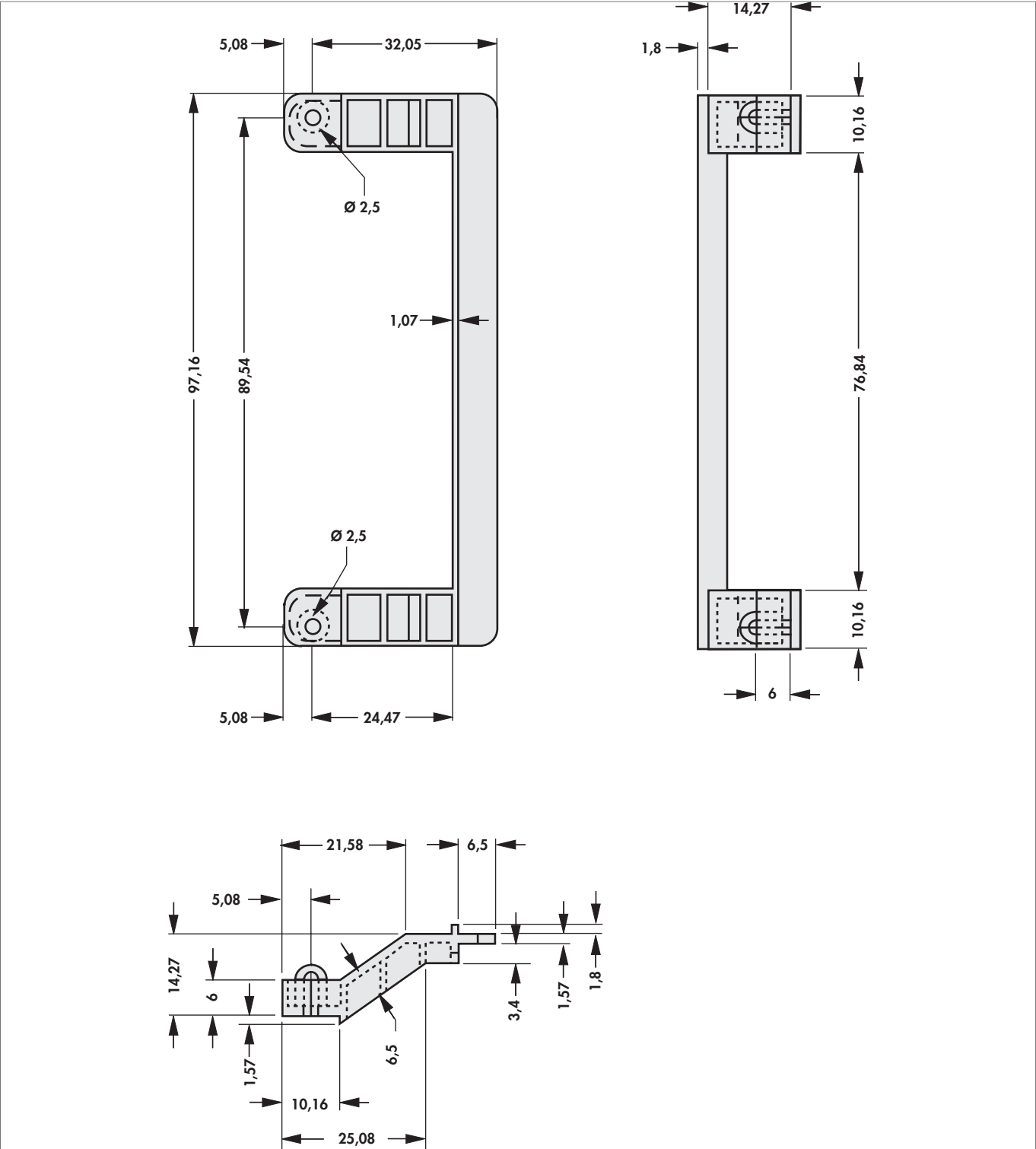
Dimensions to fix the KHPC L ... - bracket to the PCB



On request also available with D-Sub connector!

Retainers for PCI-cards

– suitable for all ISA-versions



art. no.	
PCI R1	
class of flammibility:	UL 94 V-0
material:	polycarbonate

A

Brackets for PC

B

C

D

E

F

G

H

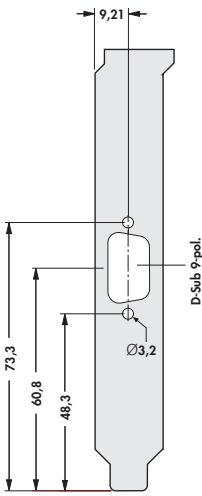
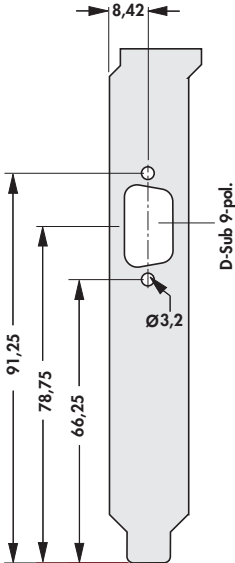
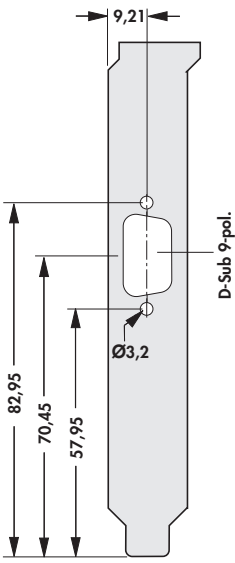
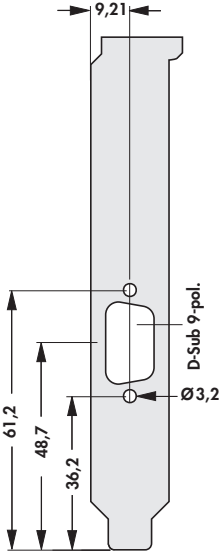
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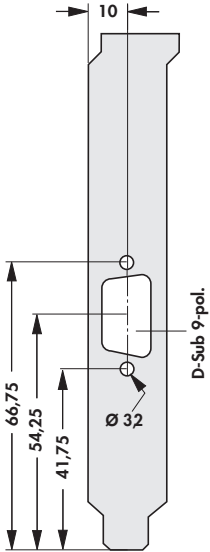
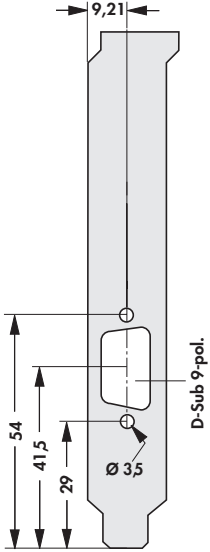
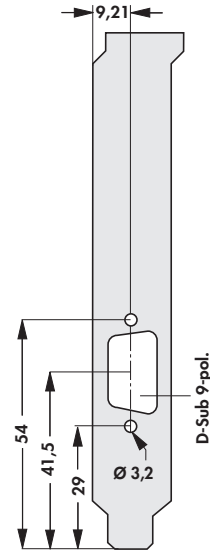
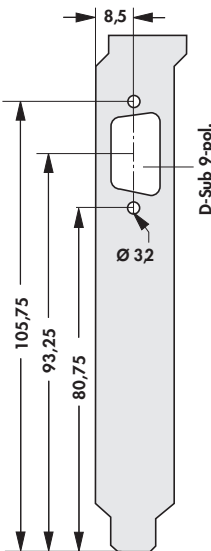
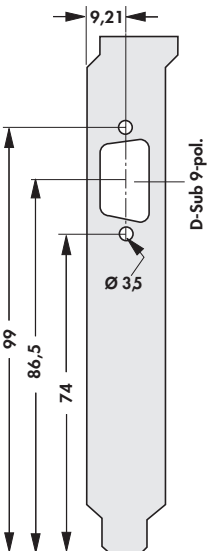
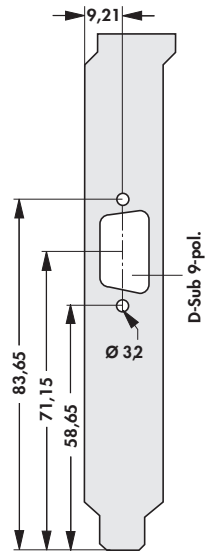
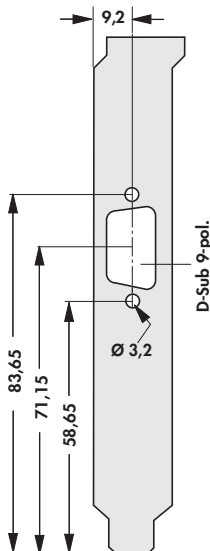
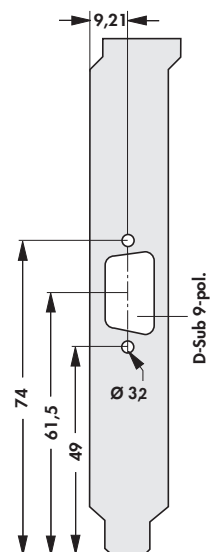
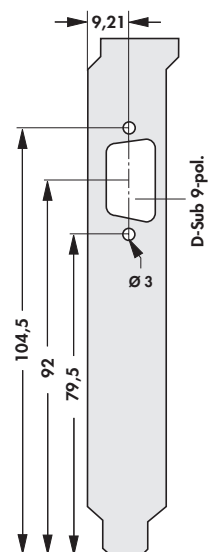
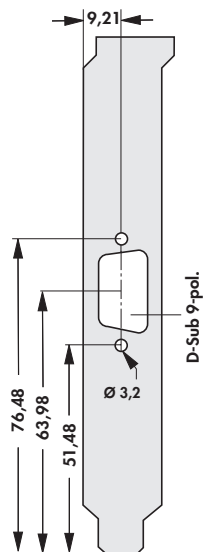
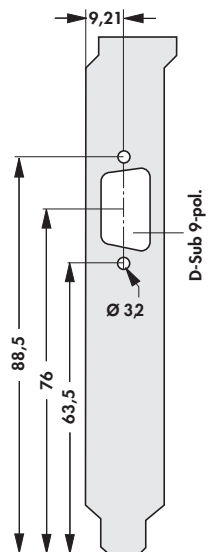
K

L

M

N

	PCI 004	PCI 006	PCI 005
 9			
PCI 055			
			

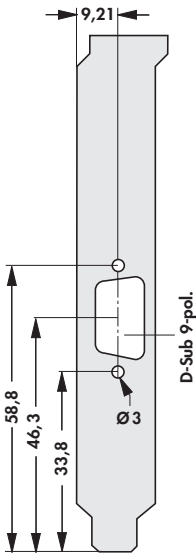
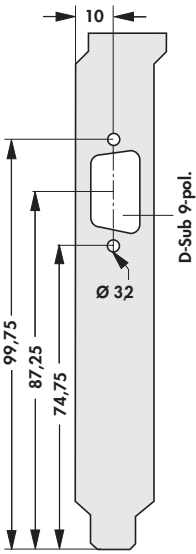
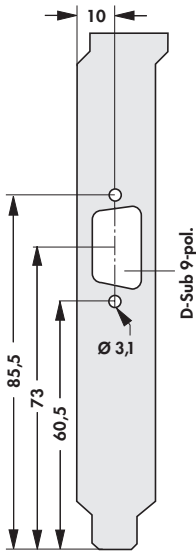
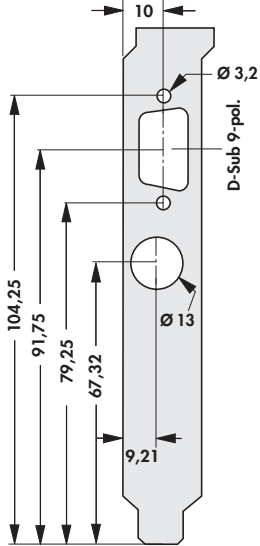
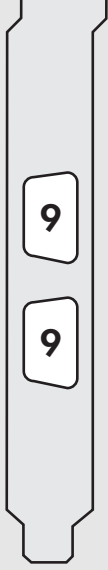
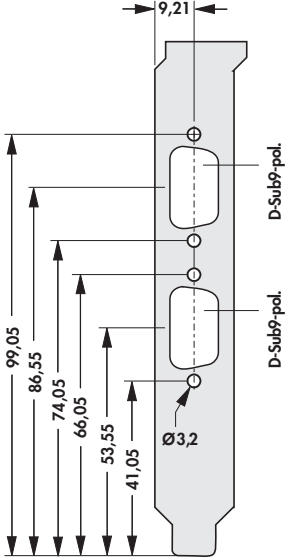
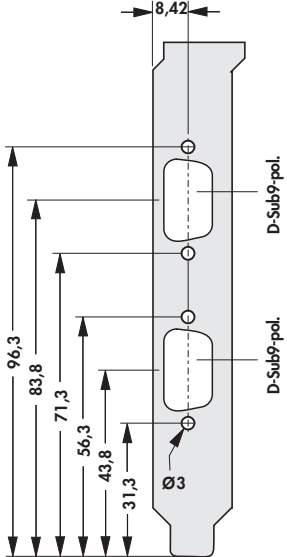
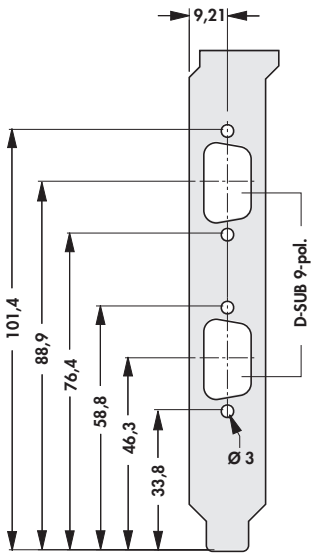
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KHPC 002  8,5 105,75 93,25 80,75 Ø 32 D-Sub 9-pol.	KHPC 008  9,21 99 86,5 74 Ø 3,5 D-Sub 9-pol.	KHPC 094 O  9,21 83,65 71,15 58,65 Ø 32 D-Sub 9-pol.	KHPC 003  9,2 83,65 71,15 58,65 Ø 3,2 D-Sub 9-pol.
KHPC 010  9,21 74 61,5 49 Ø 32 D-Sub 9-pol.	KHPC 014  9,21 104,5 92 79,5 Ø 3 D-Sub 9-pol.	KHPC 093  9,21 76,48 63,98 51,48 Ø 3,2 D-Sub 9-pol.	KHPC 096  9,21 88,5 76 63,5 Ø 32 D-Sub 9-pol.

please indicate:

... fixing tab

O = bracket without fixing tab

L = bracket with fixing tab

	KHPC 013 	KHPC 017 	KHPC 095 
	KHPC 131 		
	PCI 012 	PCI 011 	PCI 039 L 

PCI 013	PCI 041		
	KHPC 142	KHPC 072	KHPC 012
KHPC 015	KHPC 006	KHPC 009	KHPC 053 O

please indicate:

... fixing tab

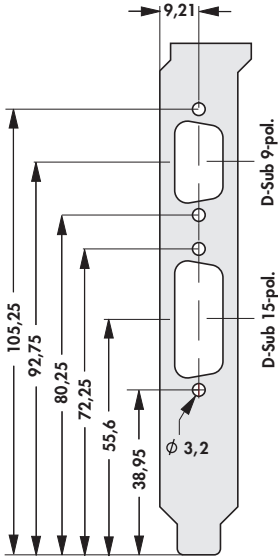
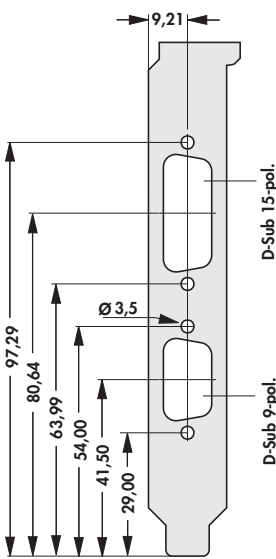
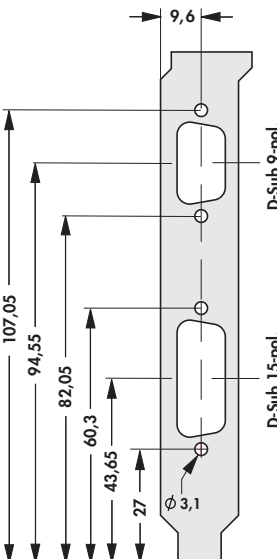
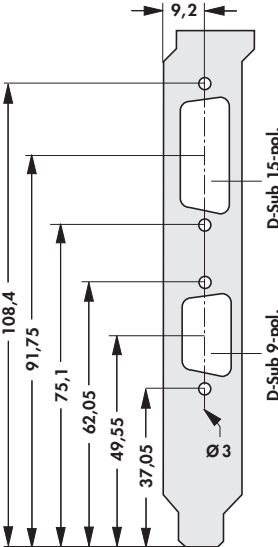
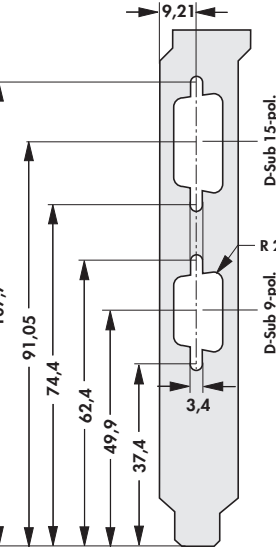
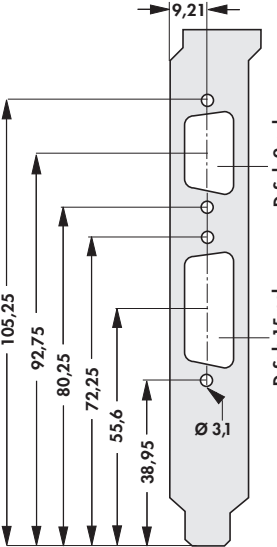
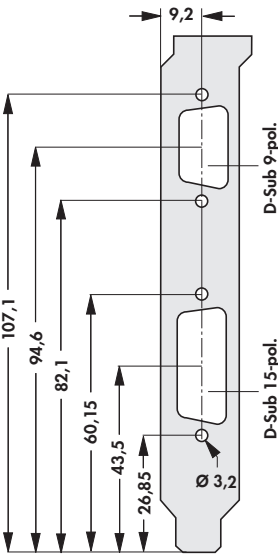
O = bracket without fixing tab

L = bracket with fixing tab

K 10

Brackets for PC

KHPC 141	KHPC 144	KHPC 138	KHPC 143
	KHPC 160		
	KHPC 005 O	KHPC 065 O	KHPC 454 O

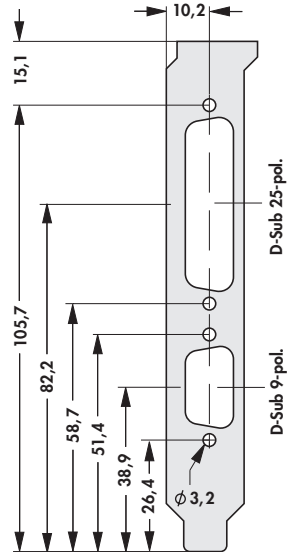
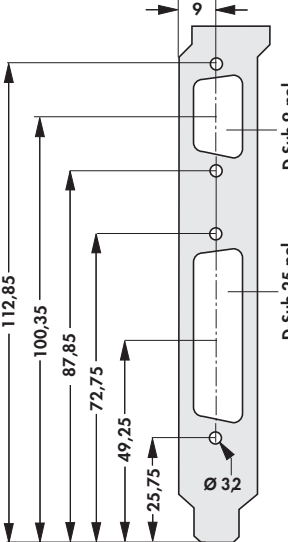
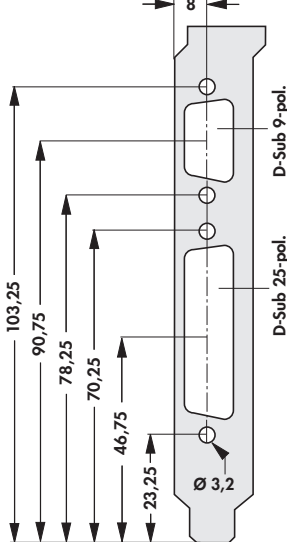
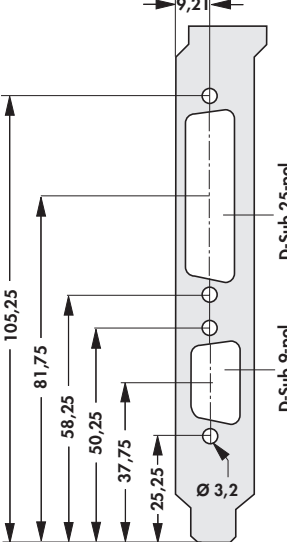
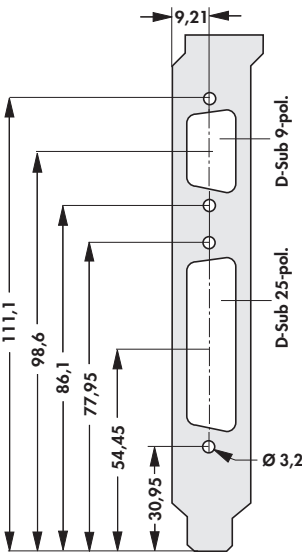
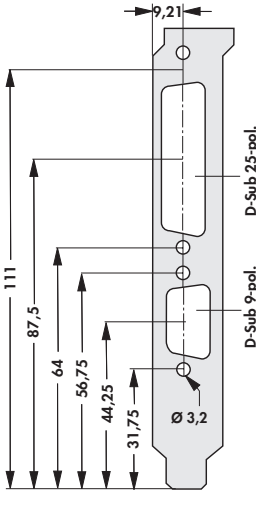
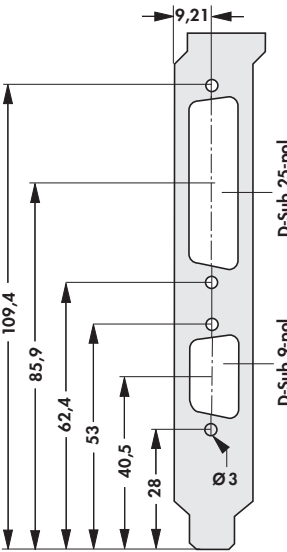
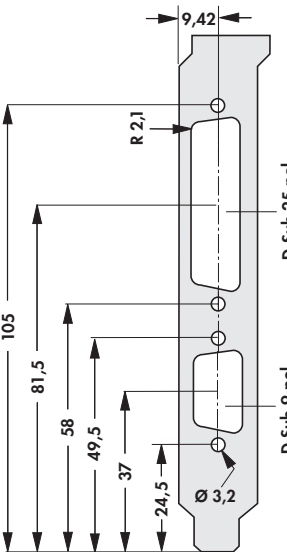
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	KHPC 177 O 	KHPC 178 	KHPC 076 
KHPC 179 			

please indicate:

... fixing tab

O = bracket without fixing tab

L = bracket with fixing tab

	PCI 033 ... 		
	KHPC 041 	KHPC 189 	KHPC 185 
KHPC 038 	KHPC 187 	KHPC 061 	KHPC 078 O 

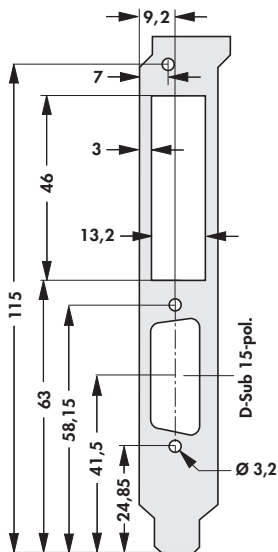
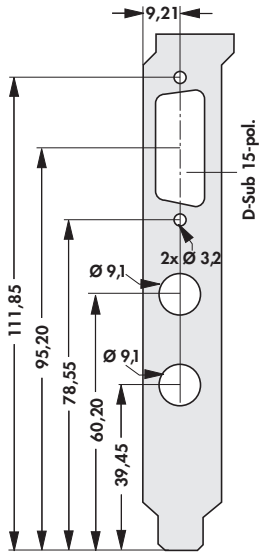
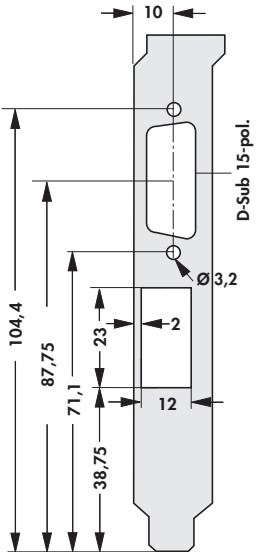
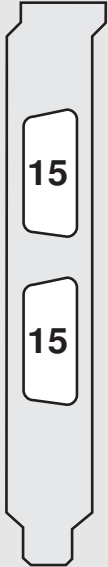
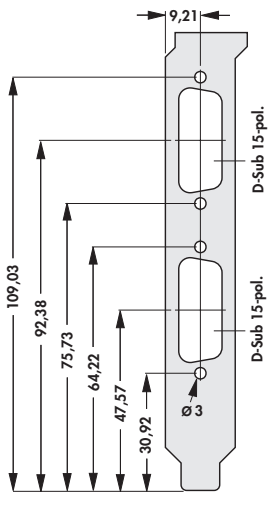
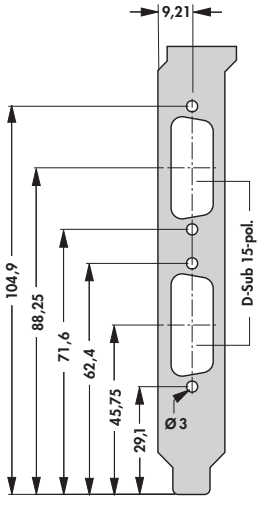
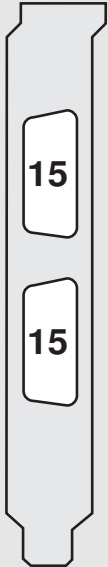
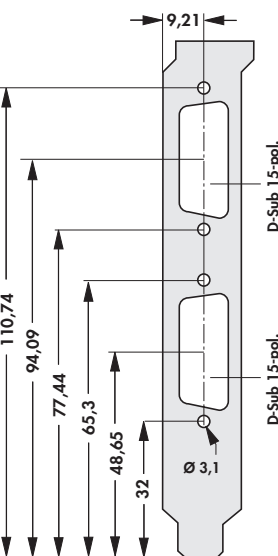
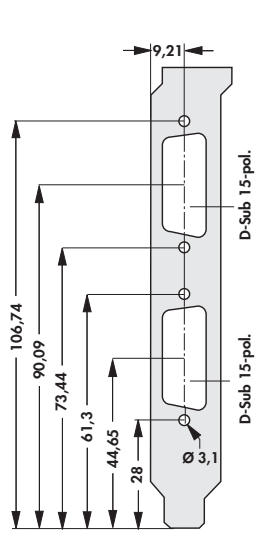
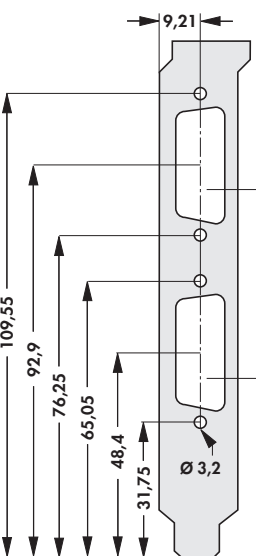
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	PCI 045 	PCI 014 L 	PCI 015
	KHPC 024 	KHPC 019 	KHPC 073

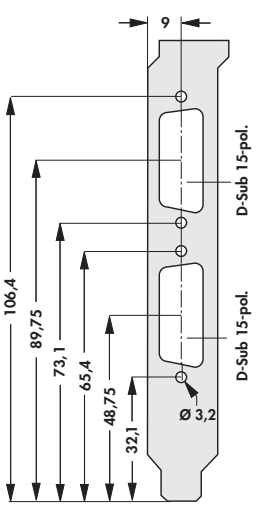
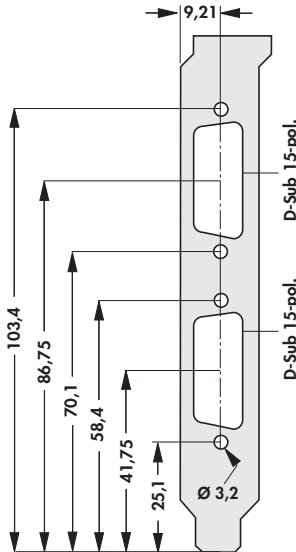
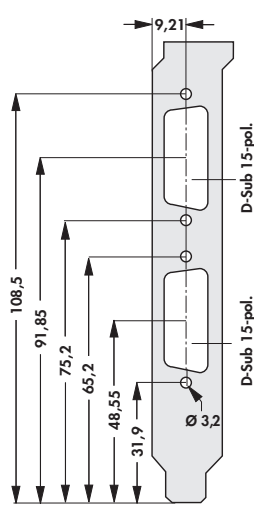
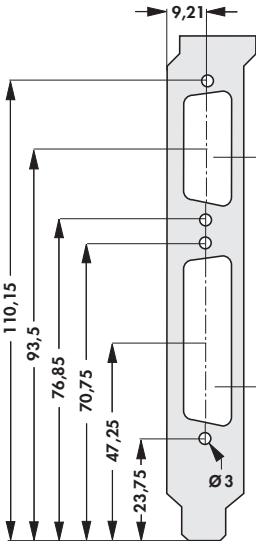
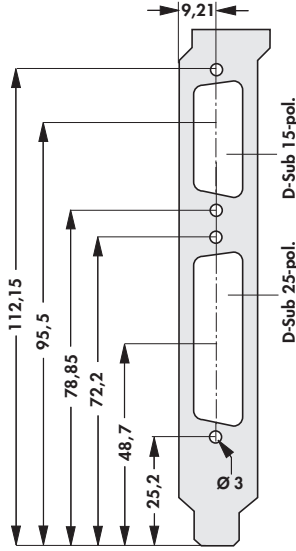
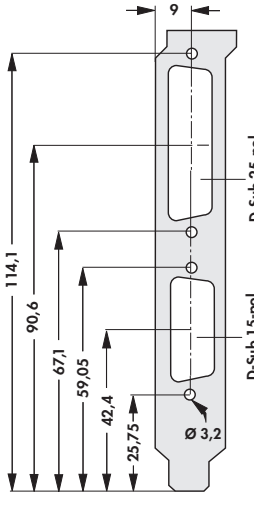
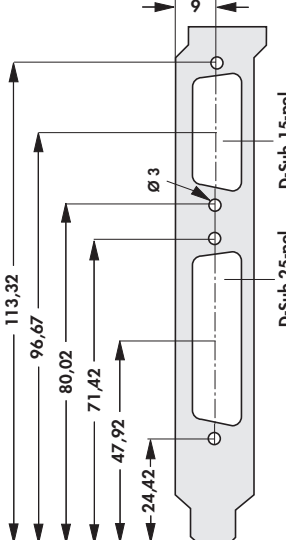
please indicate:

... fixing tab

O = bracket without fixing tab

L = bracket with fixing tab

	KHPC 200 	KHPC 455 ... 	KHPC 218 
	PCI 071 	PCI 047 	
	KHPC 018 	KHPC 225 	KHPC 069 

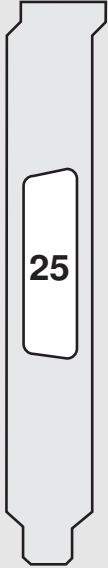
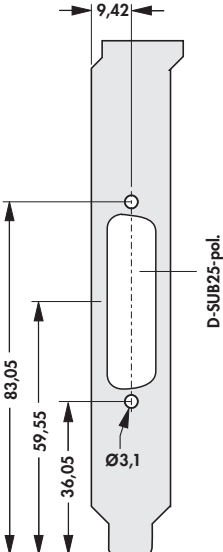
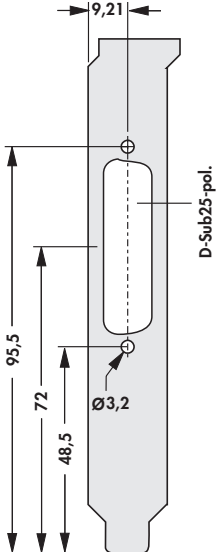
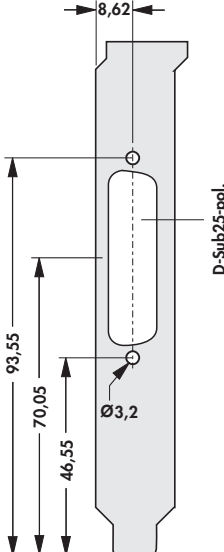
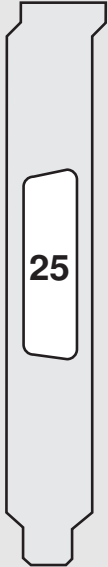
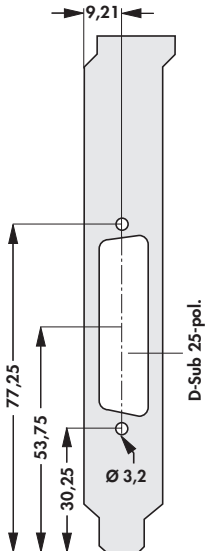
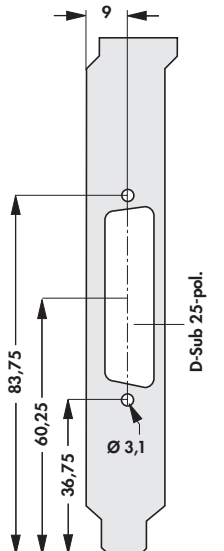
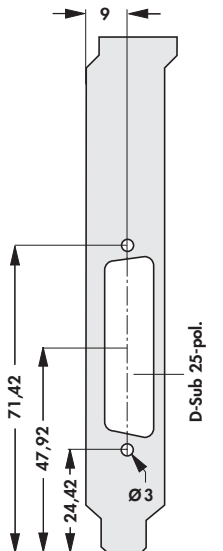
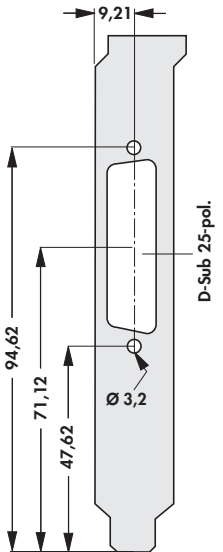
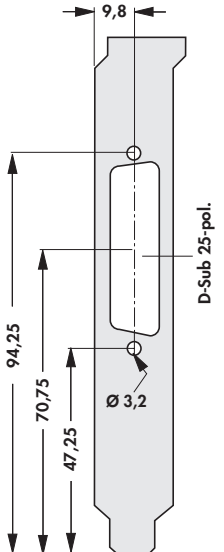
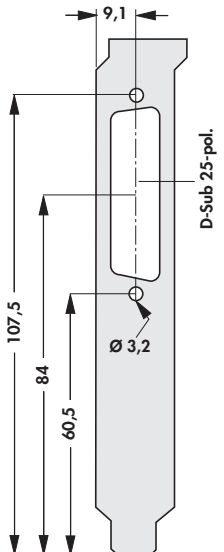
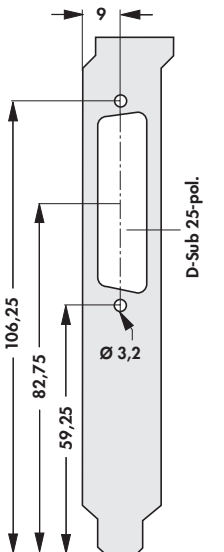
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	KHPC 075 	KHPC 241 	KHPC 042 
KHPC 242			

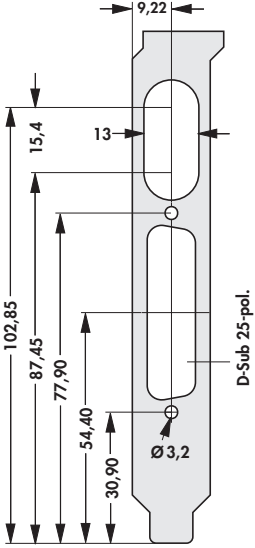
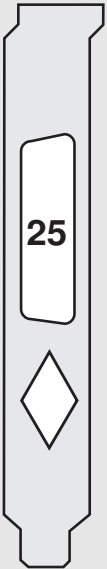
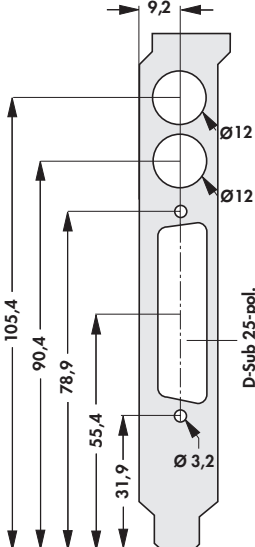
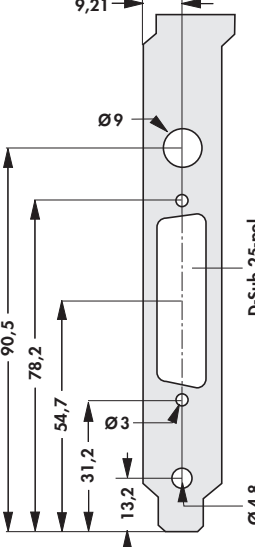
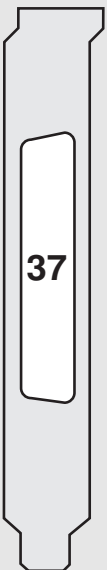
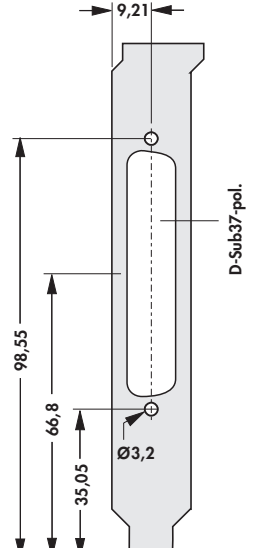
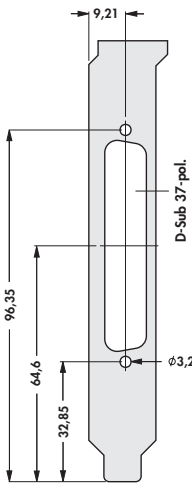
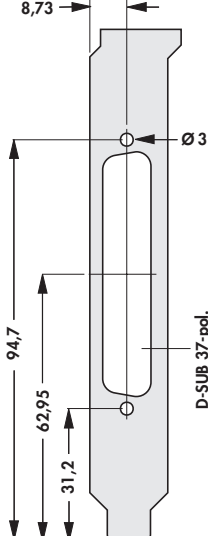
please indicate:

... fixing tab

O = bracket without fixing tab

L = bracket with fixing tab

	PCI 016 	PCI 018 	PCI 017 
	KHPC 028 	KHPC 070 	KHPC 243 
KHPC 026 	KHPC 052 	KHPC 054 	KHPC 027 

	PCI 072 		
	KHPC 262 	KHPC 043 	
	PCI 020 	PCI 077 	PCI 076 O 

please indicate:

... fixing tab

O = bracket without fixing tab

L = bracket with fixing tab

A

Brackets for PC

B

C

D

E

F

G

H

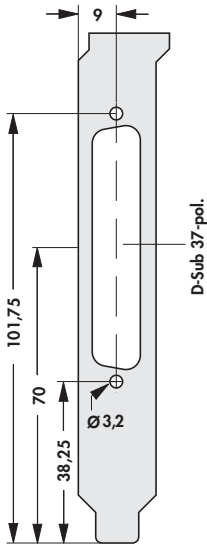
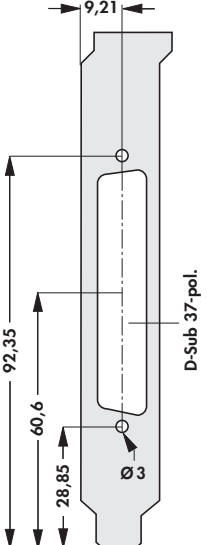
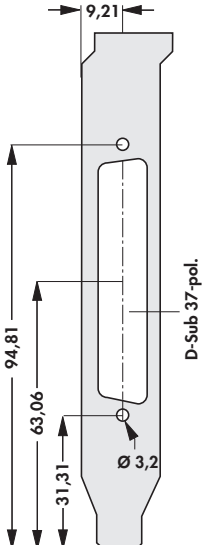
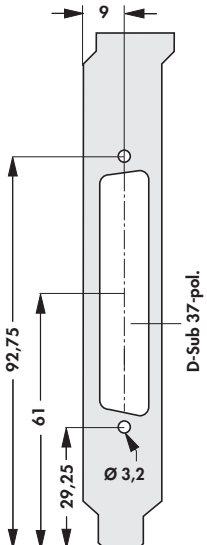
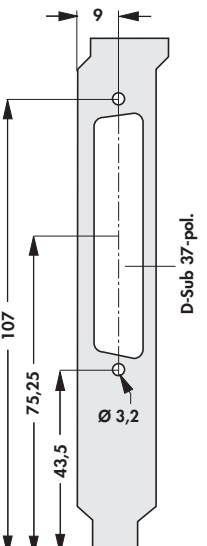
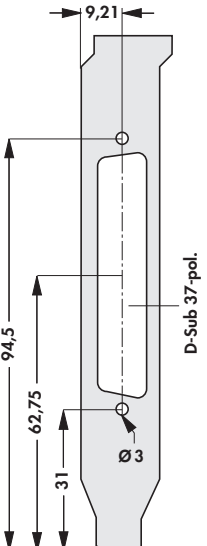
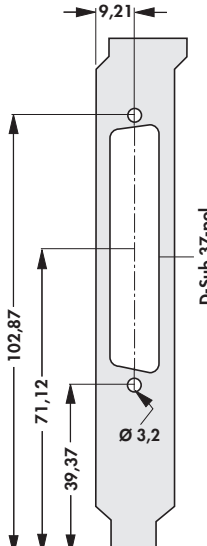
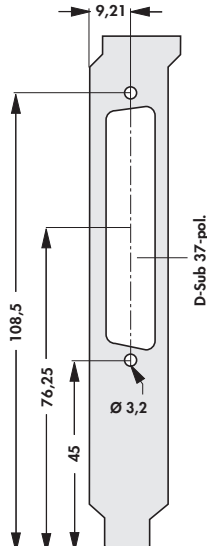
I

K

L

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PCI 035 L 			
	KHPC 033	KHPC 271 	KHPC 058 
	KHPC 035 	KHPC 270 	KHPC 031 
KHPC 032 			

KHPC 034 	KHPC 267 O 	KHPC 277 	
37 	KHPC 029 	KHPC 295 O 	
50 	KHPC 036 	KHPC 051 	KHPC 308

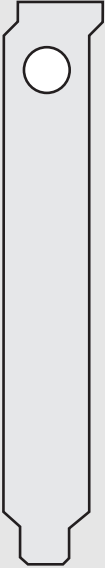
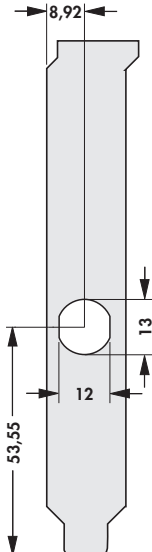
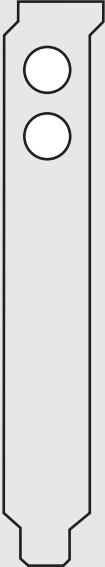
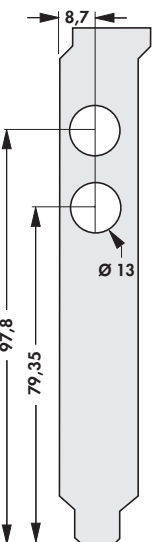
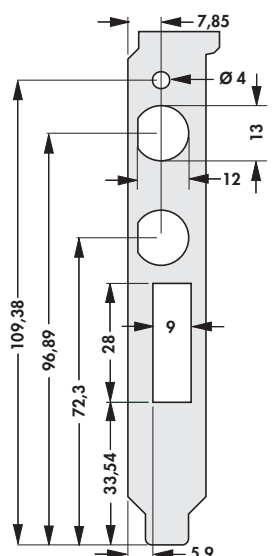
please indicate:

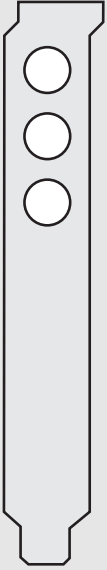
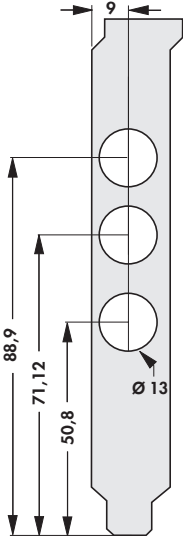
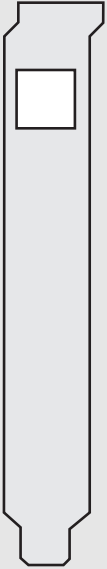
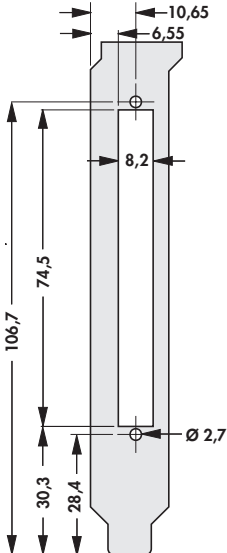
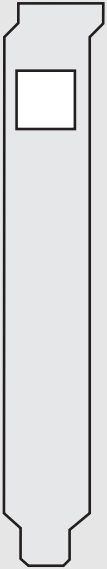
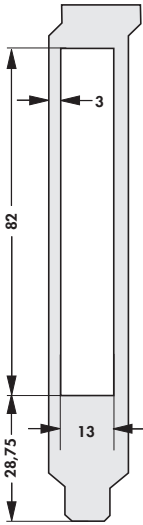
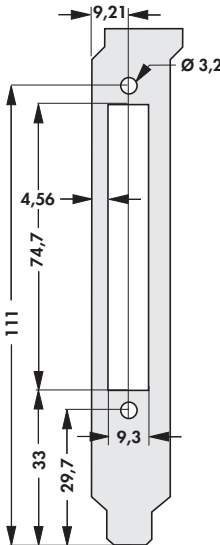
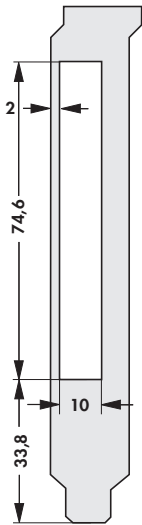
... fixing tab

O = bracket without fixing tab

L = bracket with fixing tab

Brackets for PC

	PCI 021 O 		
	KHPC 325 		
	PCI 083 L 		

	KHPC 335 L		
			
	PCI 104 O		
			
	KHPC 085	KHPC 391	KHPC 390
			

please indicate:

... fixing tab
O = bracket without fixing tab
L = bracket with fixing tab

A

Brackets for PC

B

C

D

E

F

G

H

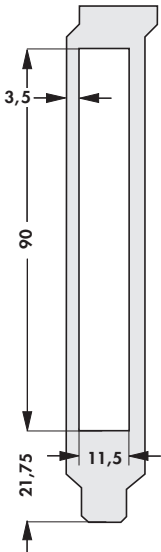
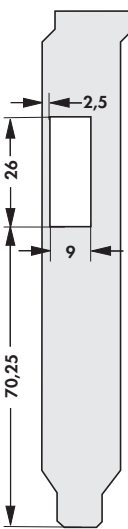
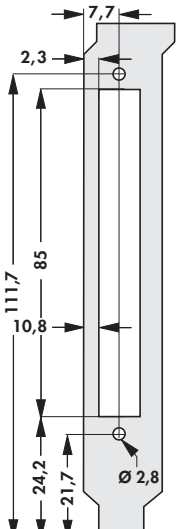
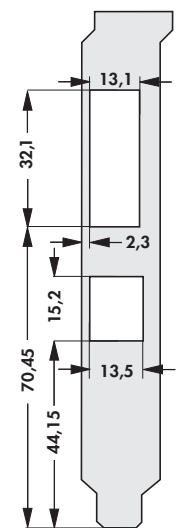
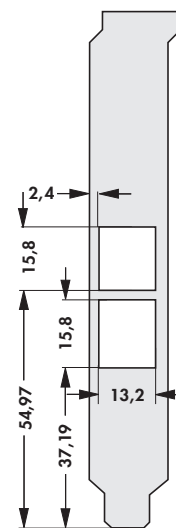
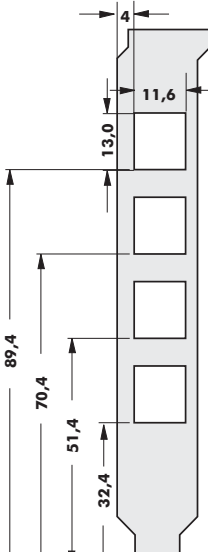
I

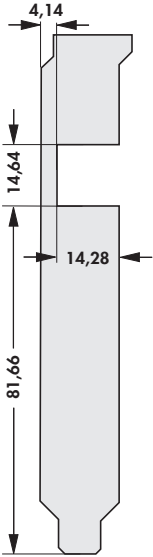
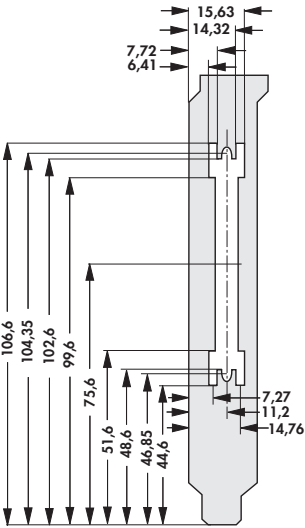
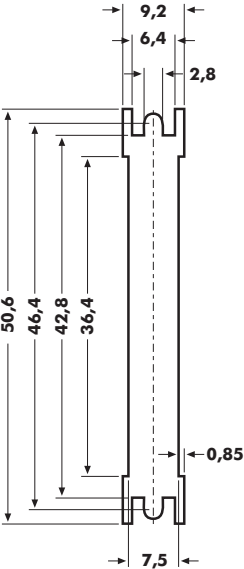
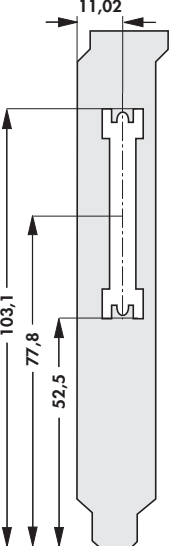
K

L

M

N

KHPC 398	KHPC 365 L	KHPC 394	
			
	KHPC 404	KHPC 407	
			
	PCI 051		
			

	KHPC 439 O		
			
	KHPC 469 O	KHPC 447	KHPC 449 O
			

please indicate:

- ... fixing tab
- O = bracket without fixing tab
- L = bracket with fixing tab

PCI and KHPC-DESIGN

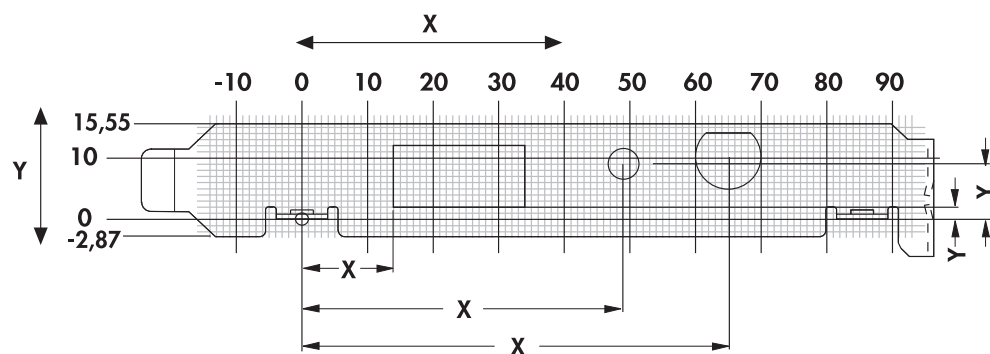
The cutouts shown on the Design sheet should be positioned on the pictured grid.

The zero point of the respective cutout is to be placed on the grid point of the PC card bracket, whereby the X/Y coordinates should be entered in the table as absolute dimensions. Positioning of the cutouts can be specified with an accuracy of max. 0,01 mm. The grid specifies the max. area of the cutout including the component. Please mark whether the version is with or without bent fixing tabs. Other contours, dimensions and cutouts are possible, to the extent that they are technically possible to produce.

Please contact us with regard to this.

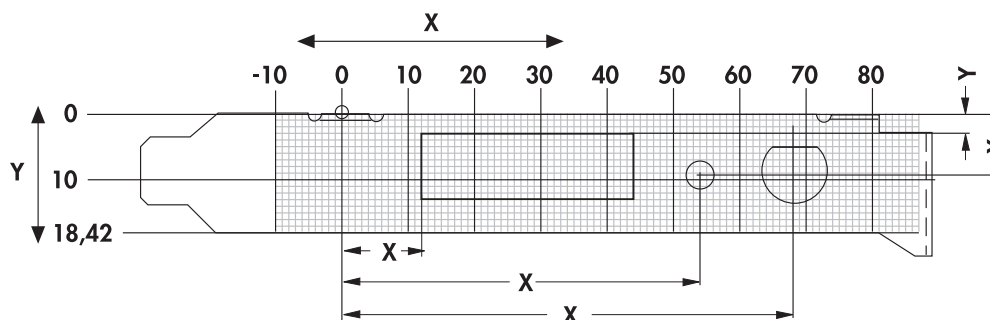
Example

PCI

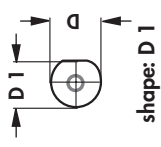
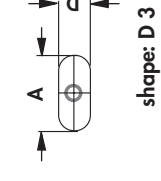
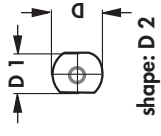
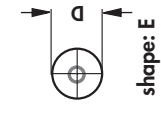
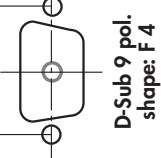
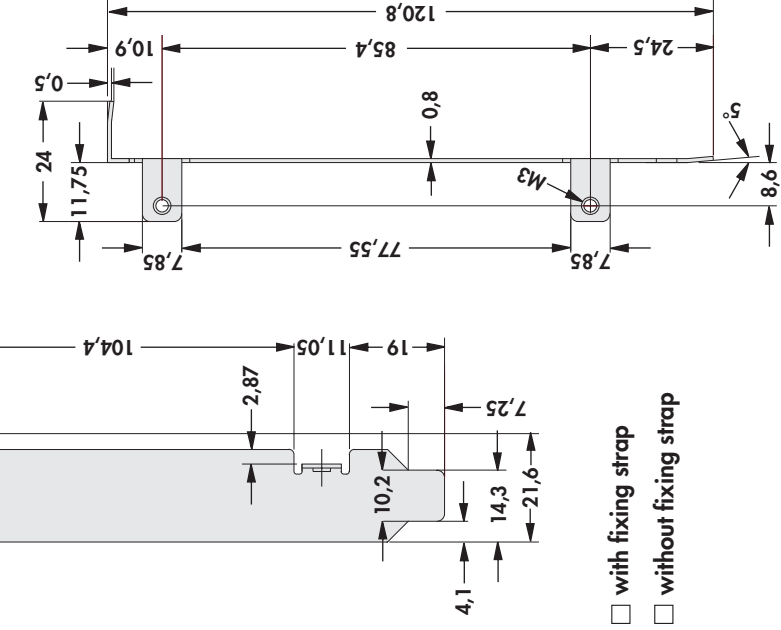
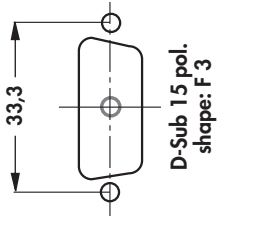
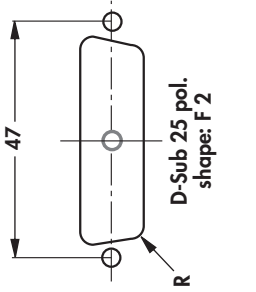
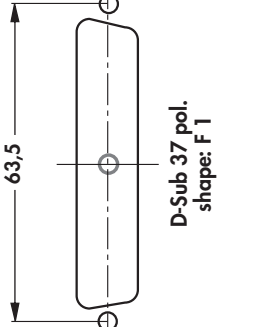
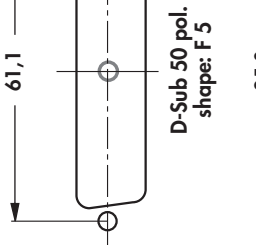
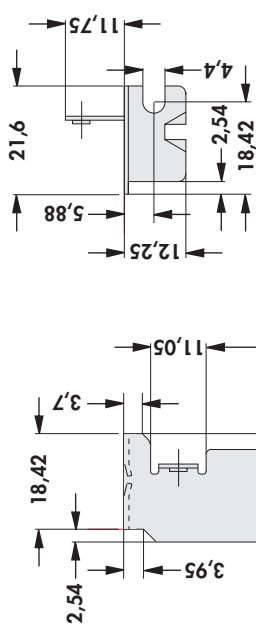


Shape			X-dimension	Y-dimension
A	A = 20	B = 10	14	2
E	D = 5		49	9
D1	D = 12	D1 = 11	65	9

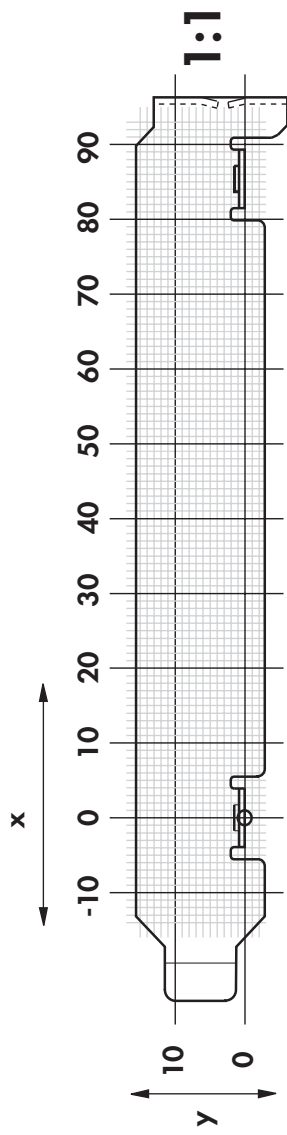
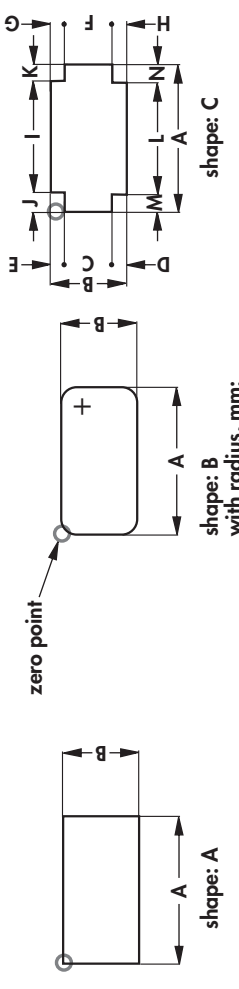
KHPC



Shape			X-dimension	Y-dimension
A	A = 33	B = 10	12	3
E	D = 2		50	9
D	D = 9,5	D1 = 8,7	69	9



radius F 1 ... 4
build in mode:
☐ 3,4 mm rear
☐ 2,1 mm front

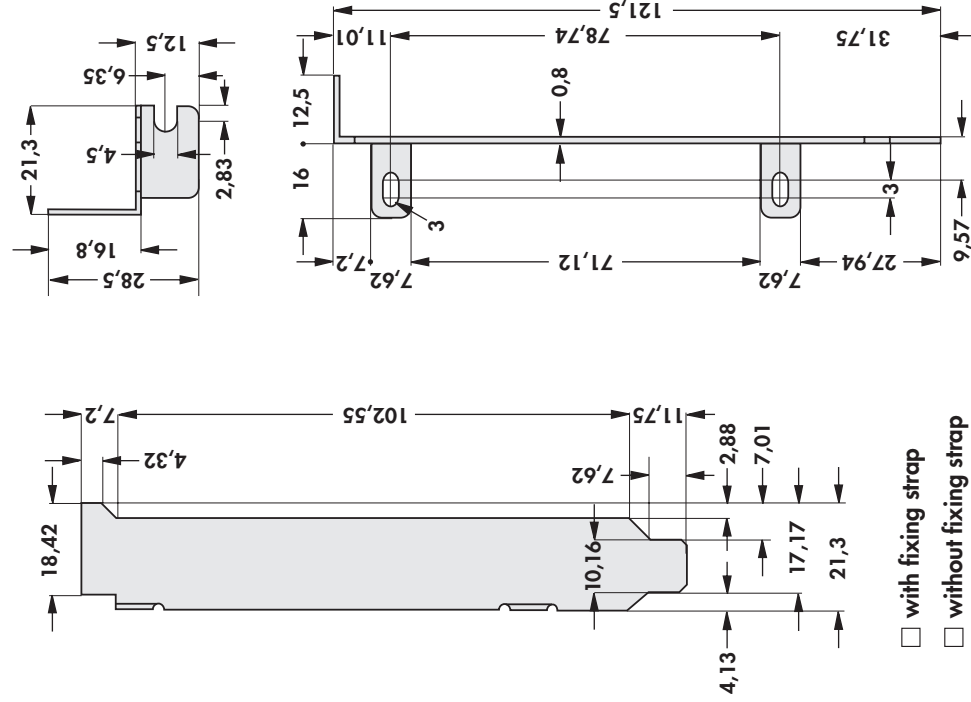
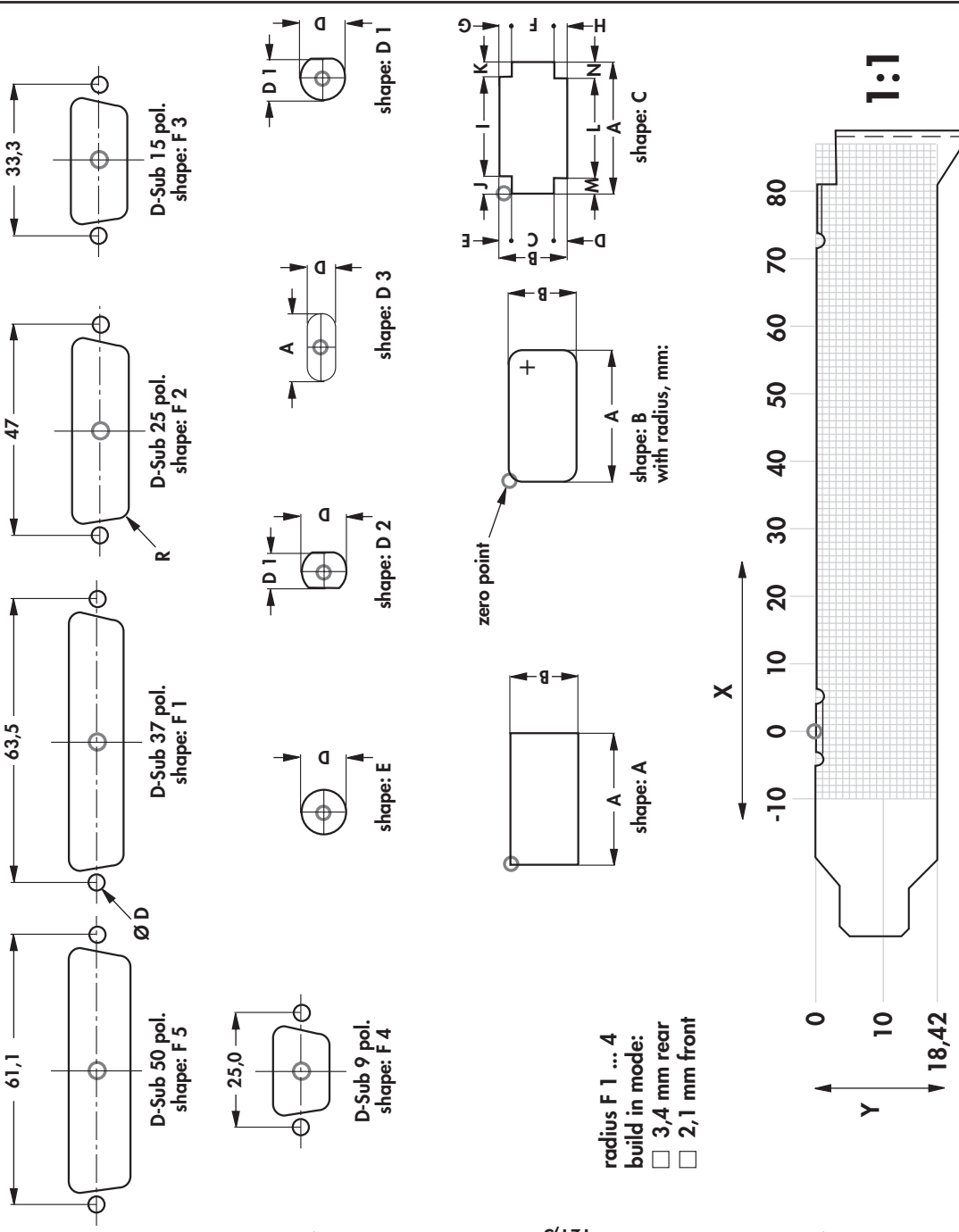


☐ with fixing strap

☐ without fixing strap

[illegible]

PCI DESIGN

☐ with fixing strap☐ without fixing strap

radius F 1 ... 4

build in mode:

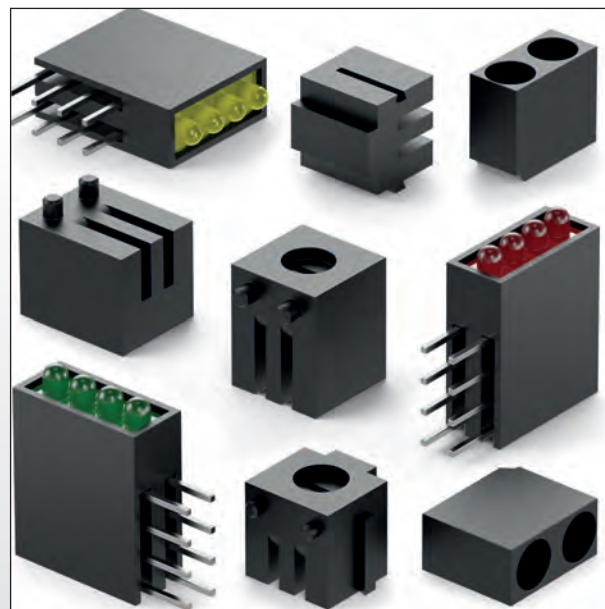
☐ 3,4 mm rear☐ 2,1 mm front[illegible]

**KHPC
DESIGN**



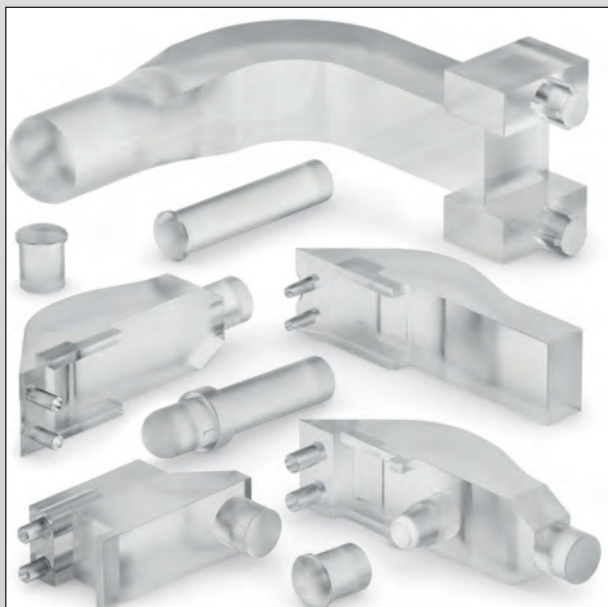
Mounting material

- spacers for standard LEDs
- class of flammability acc. to UL 94 VO



LED fastener for horizontal PCB mounting

- single and double fasteners for a standard diameter of 3 and 5 mm
- equipped multi-fastener
- single fasteners and fasteners connectable in series



Fibre-optics for SMD-LED components

- horizontal, fixed fibre-optics with round or rectangular lense made of transparent plastics – also for gauge displays
- vertical, fixed fibre-optics with round or rectangular lense made of transparent plastics

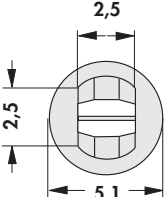
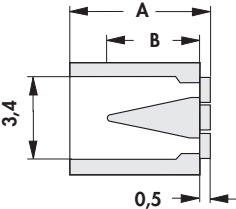


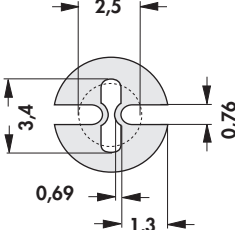
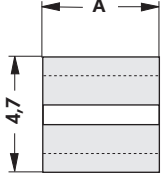
LED fastener for front panel mounting

- clipable fastener for 5 mm LEDs
- fastener for 3 and 5 mm LED with clamping ring

Spacers for LED

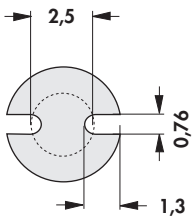
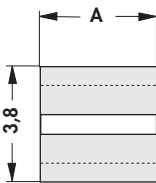
– universal mount for LED Ø 3 mm and 5 mm, self retaining

  					
art. no.	B [mm]	dim. [mm] A	art. no.	B [mm]	dim. [mm] A
MAH 31	1.5	3.1	MAH 71	4.7	7.1
MAH 41	1.5	4.1	MAH 81	4.7	8.1
MAH 51	1.5	5.1	MAH 89	4.7	8.9
MAH 61	1.5	6.1	MAH 99	7.9	9.9
insulating body material:		MPPS, black			
temperature range:		-40°C...+240°C/ (260°C/5 s)			
class of flammability:		UL 94 V-0			

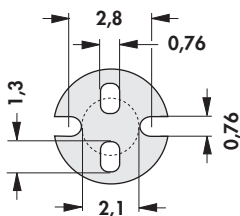
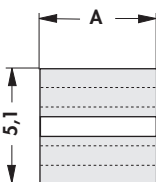
							
art. no.		dim. [mm]		art. no.		dim. [mm]	
		A				A	
MAH 401		1		MAH 406		6	
MAH 402		2		MAH 407		7	
MAH 403		3		MAH 408		8	
MAH 404		4		MAH 409		9	
MAH 405		5		MAH 410		10	
insulating body material:			PVC Blend, black				
temperature range:			-40°C... +85°C				
class of flammability:			UL 94 V-0				

Spacers for LED

– for LED Ø 3 mm, thin mount

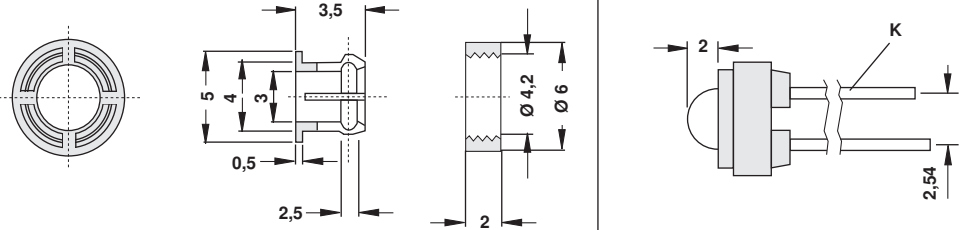
					
art. no.	dim. [mm]	art. no.	dim. [mm]	art. no.	dim. [mm]
MAH 301	A	MAH 305	A	MAH 308	A
MAH 302	1	MAH 306	5	MAH 309	8
MAH 303	2	MAH 307	6	MAH 310	9
MAH 304	3		7		10
MAH 304	4				
insulating body material:		PVC Blend, black			
temperature range:		-40°C... +85°C			
class of flammability:		UL 94 V-0			

– for LED Ø 5 mm, self-retaining

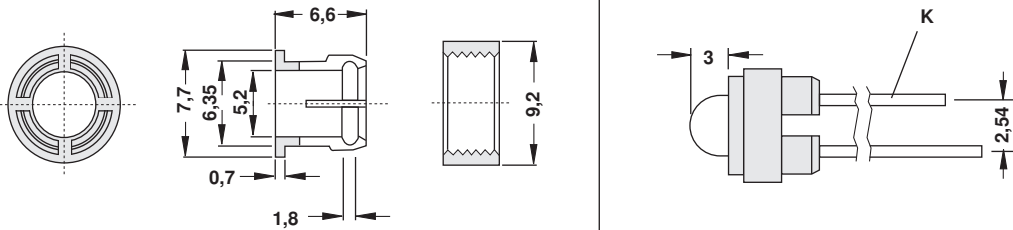
					
art. no.	dim. [mm]	art. no.	dim. [mm]	art. no.	dim. [mm]
MAH 501	A	MAH 504	A	MAH 508	A
MAH 502	1	MAH 505	4	MAH 509	8
MAH 503	2	MAH 506	5	MAH 510	9
MAH 503	3		6		10
insulating body material:		PVC Blend, black			
temperature range:		-40°C... +85°C			
class of flammability:		UL 94 V-0			

LED-holders

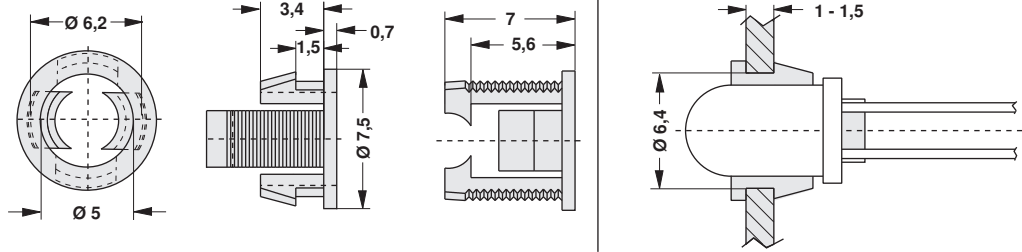
- suitable for 3 mm diodes with a collar height of 0.6 mm
- **K** = cathode

			
art. no.		type	
DH 3 V		for LED Ø3mm	
insulating body material:		PA, GF	

- suitable for 5 mm diodes with a collar height of 0.6 mm/1 mm
- **K** = cathode

			
art. no.		type	
DH 5 VC		for LED Ø5mm	
insulating body material:		PA, GF	

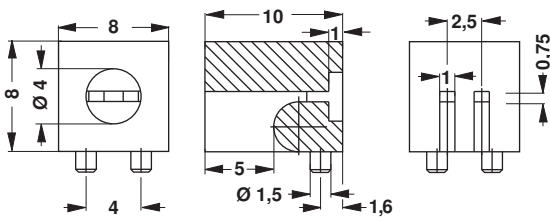
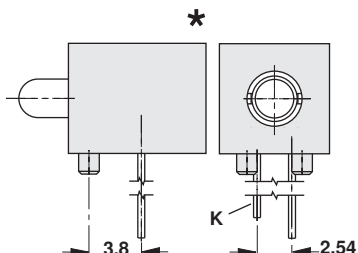
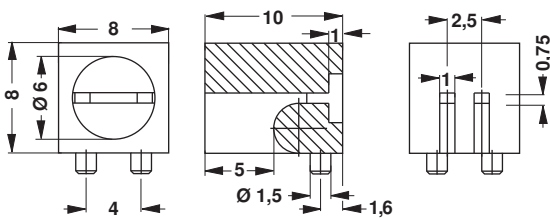
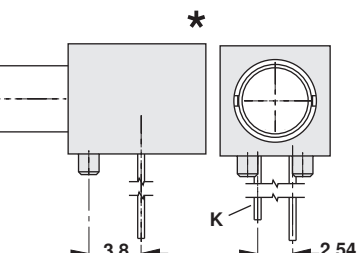
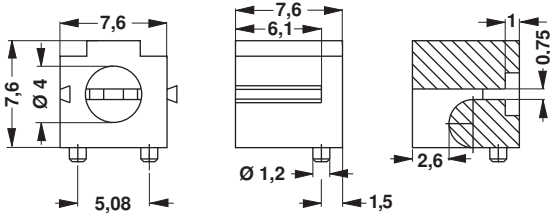
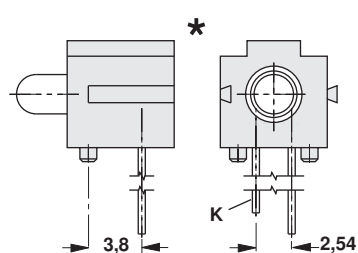
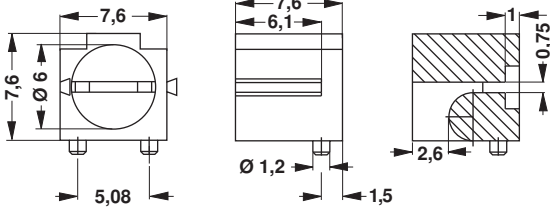
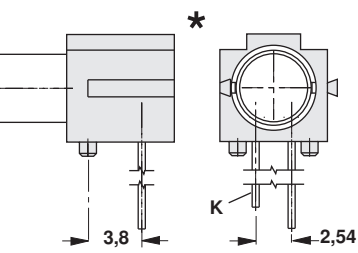
- suitable for 5 mm diodes with a collar height of 0.6 mm/1 mm
- **K** = cathode

			
art. no.		type	
DH 5 SRC		for LED Ø5mm	
insulating body material:		PA, GF	

LED-holders

LED-holder for LED Ø 3 mm and 5 mm

– K = cathode / * = presentation with diode

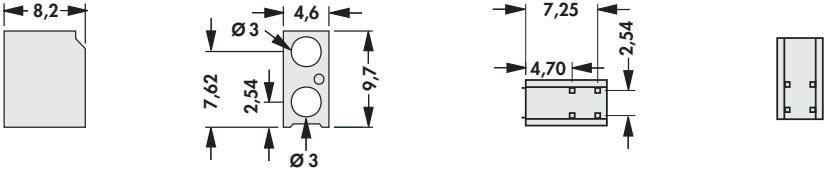
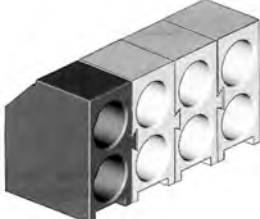
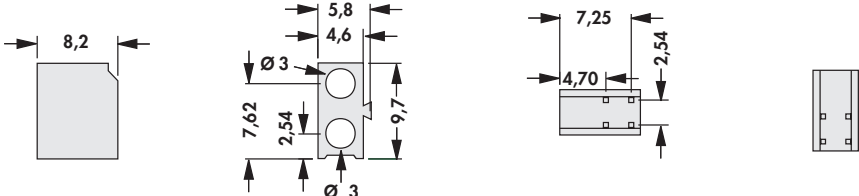
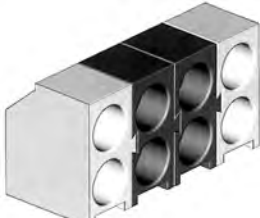
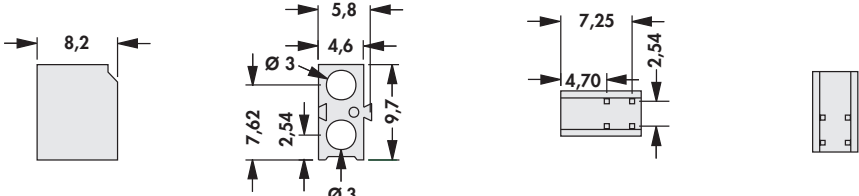
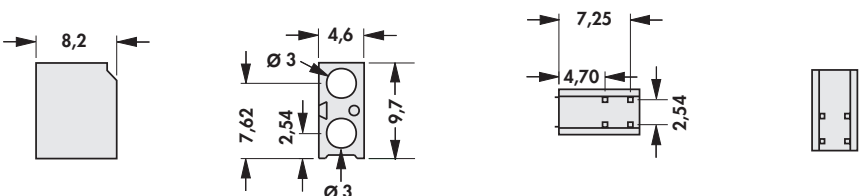
		
art. no. DH 3 W	type for LED Ø3mm	
		
art. no. DH 5 W	type for LED Ø5mm	
		
art. no. DH 3 R	type for LED Ø3mm	
		
art. no. DH 5 R	type for LED Ø5mm	

insulating body material:	PA 4.6. GF
temperature range:	-40°C... +163°C/ (260°C/10 s)
class of flammability:	UL 94 V-0

LED-holders

LED-holder for LED Ø 3 mm

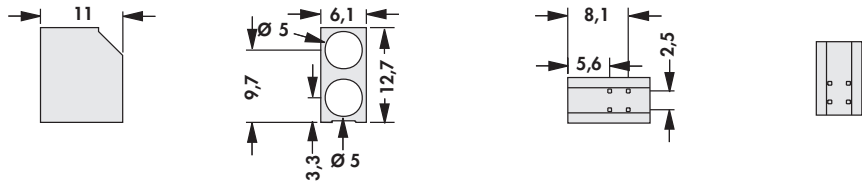
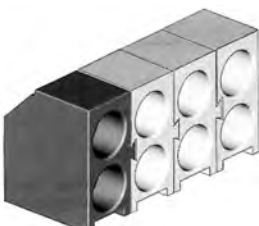
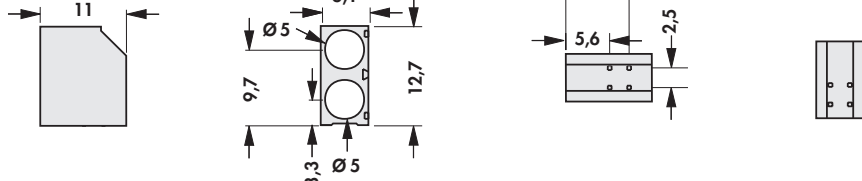
– stackable LED-holders: single holder/can be strung, left/can be strung, middle/can be strung, right

	
art. no. DDH 3 E	type for LED Ø3mm
	
art. no. DDH 3 L	type for LED Ø3mm, can be strung left
	
art. no. DDH 3 M	type for LED Ø3mm, can be strung middle
	
art. no. DDH 3 R	type for LED Ø3mm, can be strung right
insulating body material:	PA 6/6, GF
temperature range:	-20°C... +85°C
class of flammability:	UL 94 V-0

LED-holders

LED-holder for LED Ø 5 mm

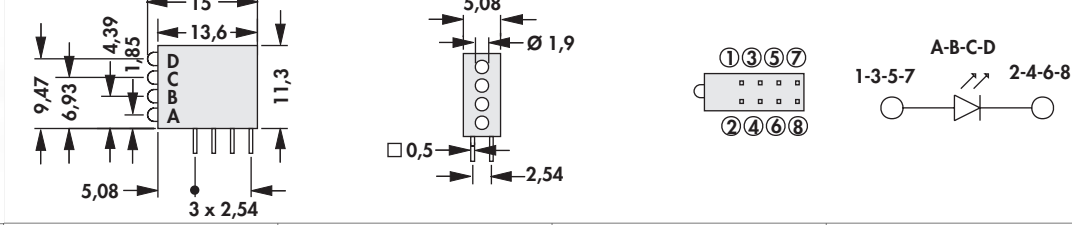
– stackable LED-holders: single holder/can be strung, left/can be strung, middle/can be strung, right

				
art. no.		type		
DDH 5 E		for LED Ø5mm, single holder		
				
art. no.		type		
DDH 5 L		for LED Ø5mm, can be strung left		
insulating body material:		PA 6/6, GF		
temperature range:		-20°C... +85°C		
class of flammability:		UL 94 V-0		

Fourfold-LED-holders

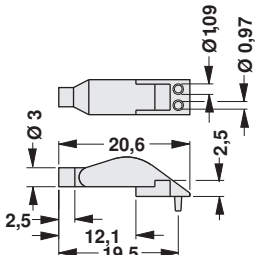
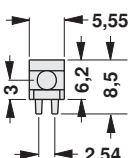
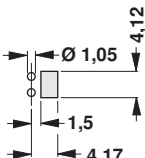
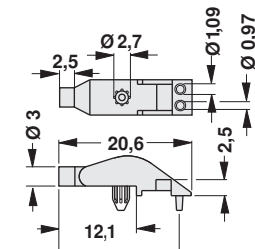
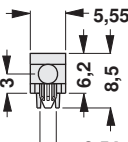
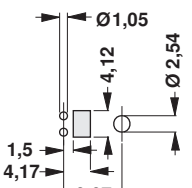
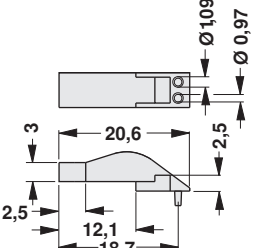
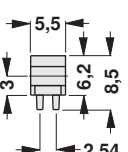
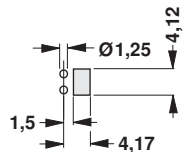
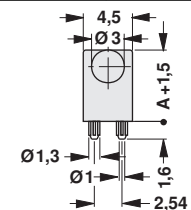
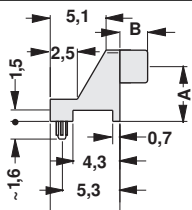
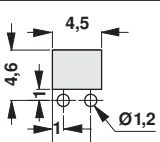
– standard case, standard colours, diffuse lens, space-saving design, round lens, rectangular lens

– typical data at $T_{amb}=25^{\circ}\text{C}$ und $I_F=I_{Ftyp}$, 100% DC

				
art. no.	type	emission colour	Spannungen $U_{f\text{typ}}$ / $U_{r\text{max}}$ [V]	wavelength λ_{max} [nm]
DLH 21 ASEH	with LED Ø2mm, fourfold	super red	2.0 / 2.6	635
DLH 21 AYEh	with LED Ø2mm, fourfold	yellow	2.1 / 2.6	585
DLH 21 AGEH	with LED Ø2mm, fourfold	green	2.2 / 2.6	565
insulating body material:	Nylon, black			
temperature range:	-20°C... +85°C			
class of flammability:	UL 94 V-0			
beam angle 2 ϕ :	80 °			
design:	2mm round			
for cases:	in terms of colour diffuse			
derating:	from $T_{amb} < 20^{\circ}\text{C}$, operating current reduced by 0.4 mA/K .			
light intensity I:	12 mcd			
flows $I_{F\text{typ}}$ / $I_{F\text{max}}$:	20/30 mA			

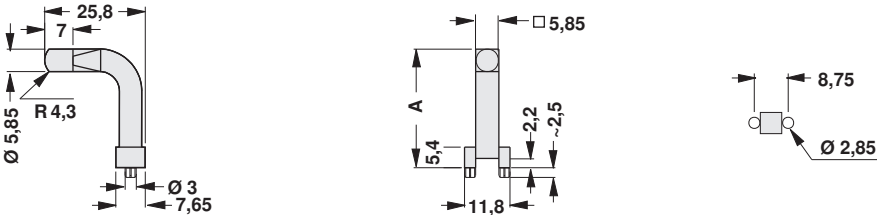
Light pipes for SMDs

- suitable for current SMD types
- 3 mm light pipes
- horizontal
- ESD-protection from panel to PCB

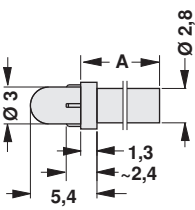
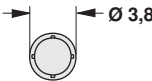
							
art. no.	diameter of lens	way of fixation					
LL 30 HRS	Ø3mm	by alignment pins					
							
art. no.	diameter of lens	way of fixation					
LL 30 HRP	Ø3mm	by press-in pins					
							
art. no.	diameter of lens	way of fixation					
LL 35 HVS	rectangle 5.5x3mm	by alignment pins					
							
art. no.	diameter of lens	way of fixation		dim. [mm]			
LL 30 WRFP 038	Ø3mm	by press-in pins		A		B	
LL 30 WRFP 050	Ø3mm	by press-in pins		3.8		2.5	
LL 30 WRFP 076	Ø3mm	by press-in pins		5.0		2.5	
LL 30 WRFP 102	Ø3mm	by press-in pins		7.6		2.5	
insulating body material:		Polycarbonate, clear					
temperature range:		-30°C... +100°C					
class of flammability:		UL 94 V-0					

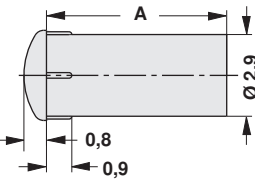
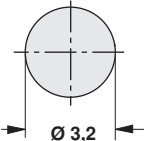
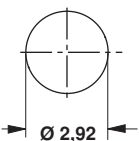
Light pipes for SMDs

– panel light pipe, 6 mm lens, suitable for common SMD LEDs, white lens, large angle of radiation

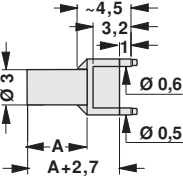
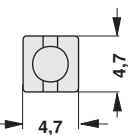
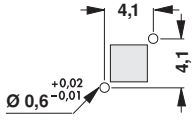
			
art. no.	diameter of lense	way of fixation	dim. [mm] A
LL 60 WRB 254	Ø6mm	by press-in pins	25.4

– panel light pipe 3 mm, ESD protection from panel to PCB

					
art. no.	diameter of lense	dim. [mm] A	art. no.	diameter of lense	dim. [mm] A
LL 30 PRB 032	Ø3mm	3.2	LL 30 PRB 089	Ø3mm	8.9
LL 30 PRB 064	Ø3mm	6.4			

					
art. no.	diameter of lense	dim. [mm] A	art. no.	diameter of lense	dim. [mm] A
LL 30 PRL 032	Ø3mm	3.2	LL 30 PRL 127	Ø3mm	12.7
LL 30 PRL 064	Ø3mm	6.4	LL 30 PRL 159	Ø3mm	15.9
LL 30 PRL 089	Ø3mm	8.9			

– suitable for current SMD LEDs, vertical, rigid light pipe Ø 3 mm, ESD protection from panel to PCB

					
art. no.	diameter of lense	way of fixation	dim. [mm] A		
LL 30 VRFS 024	Ø3mm	by alignment pins	2.4		
LL 30 VRFS 050	Ø3mm	by alignment pins	5.0		
LL 30 VRFS 075	Ø3mm	by alignment pins	7.5		
insulating body material:		Polycarbonate, clear			
temperature range:		-30°C... +100°C			
class of flammability:		UL 94 V-0			