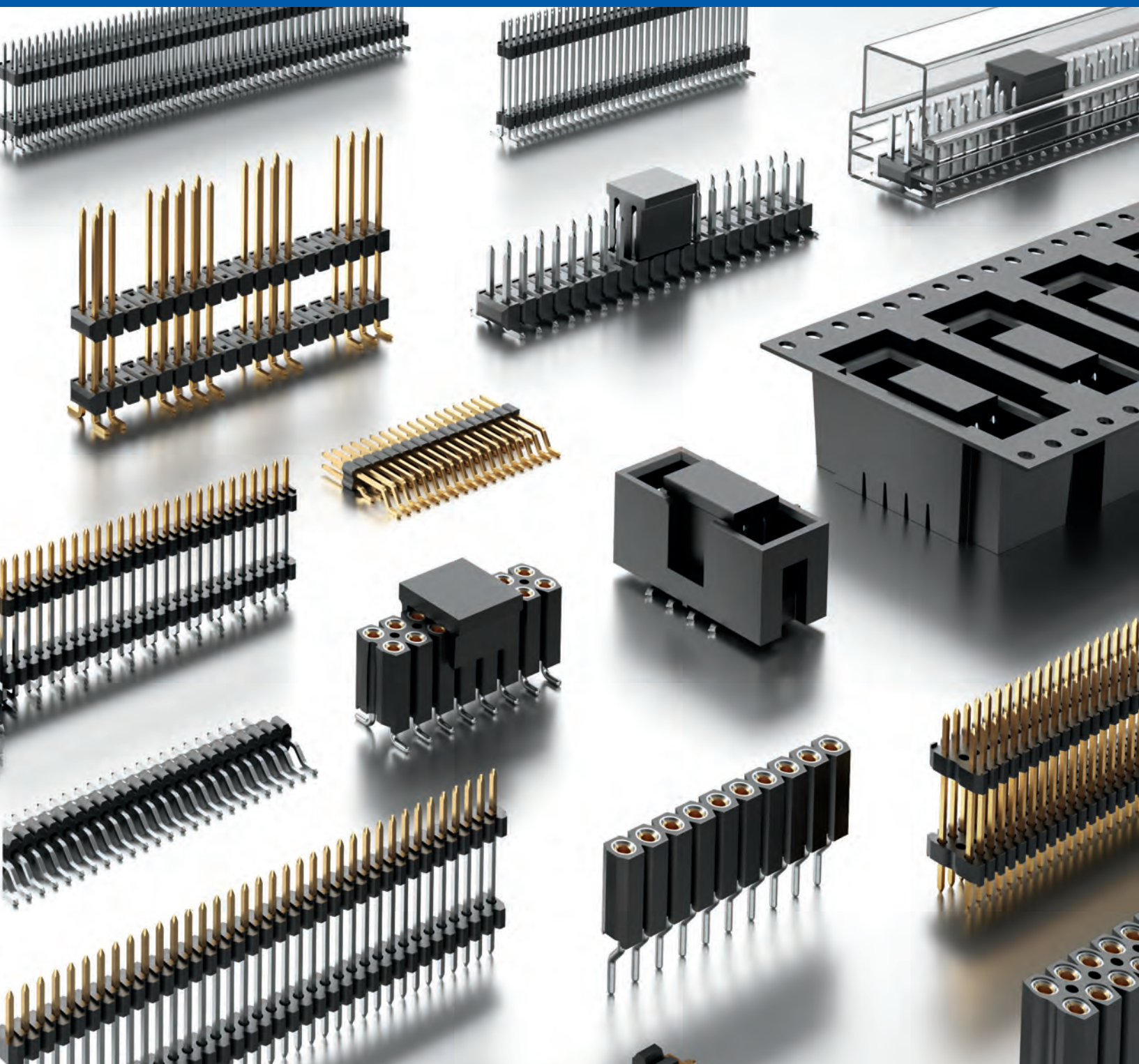


to cool to protect to connect



f.con.e

Sockets

Connectors



Brackets

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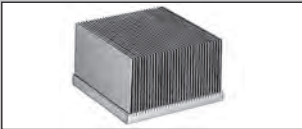
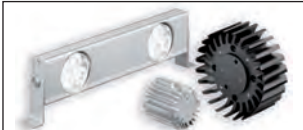
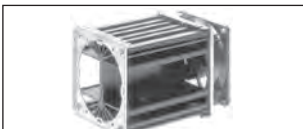
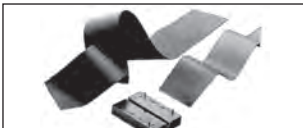
**flucticulus conjunctus
from the series
flucticulus,
Homage to Hokusai, 2020**

16.000 photos 10 x 15 on cardboard, 60 x 60 cm

from:

Thomas Kellner

www.thomaskellner.com

A	A 1 – A 172				
B	B 1 – B 78				
C	C 1 – C 36				
D	D 1 – D 57				
E	E 1 – E 105				
F	F 1 – F 26				
G	G 1 – G 107				
H	H 1 – H 19				
I	I 1 – I 42				
K	K 1 – K 32				
L	L 1 – L 16				
M	M 1 – M 82				
N	N 1 – N 69				

Extruded profiles: extruded heatsinks, extruded heatsinks for lock-in retaining spring, extruded heatsinks for PCB mounting, fin coolers, fluid coolers, high-performance heatsinks	A 1 – A 172	A
Heatsinks for processors and LED: heatsinks and fan coolers for universal PGA/BGA, DIL, PLCC, heatsinks for LED, pin heatsinks	B 1 – B 78	B
Board level heatsinks: finger-shaped heatsinks, heatsinks for transistors in plastic case, attachable heatsinks, small heatsinks, copper heatsinks for D PAK and others	C 1 – C 36	C
Cooling aggregates: miniature cooling aggregates, heatsink cooling aggregates, high capacity cooling aggregates, multi module cooling aggregates, hollow-fin aggregates, cooling aggregates with axial fan	D 1 – D 57	D
Thermal interface material and accessories for electronic components: thermally conductive foil made of siliconelastomer, silicone-free thermal conductive foils, GEL thermal conductive foils, aluminium oxide wafers, mica wafers, thermal conductive paste, thermally conductive adhesive, fixing clamp for mounting rail, guide rails, mounting material for heatsinks	E 1 – E 105	E
Sockets: IC-sockets for DIL, PLCC, sockets for transistors, crystal oscillators and connector-sleeves	F 1 – F 26	F
PCB connectors and accessories: male and female headers, grid spacing 2.54; 2.50; 2.00 and 1.27 mm, high precision contact strips, direct female connectors, jumpers	G 1 – G 107	G
IDC connectors: design DIL, shroud-male header, single and double row female headers, lockable connectors, ribbon cable	H 1 – H 19	H
D-Sub connectors: USB connectors, RJ45 connectors, D-Sub male and female headers, connectors with mounting option, connectors for ribbon cable, mixed layout connectors, SMD connectors, cover, accessories	I 1 – I 42	I
Brackets: brackets for PC and PCI with or without fixing tab, retainer for ISA versions	K 1 – K 32	K
Optoelectronics: LED-holders for front panel assembly, LED-holder without LED, LED-holder with mounted LED, light pipes for SMDs	L 1 – L 16	L
Cases: shell cases, extruded assembled cases, desk consoles, combination cases, tube cases, miniature aluminium cases, cooling cases, LED line modules, design cases, special front panels, accessories for cases	M 1 – M 82	M
19" Extension systems: basic case (Rack), plug-in chassis, subracks, insert modules, part front panels, rack handles, PCB holder, accessories	N 1 – N 69	N

Alphanumerical product list

art. no.	page	art. no.	page	art. no.	page	art. no.	page
1706 G	F 17	BL 18 219	G 71	DB 50 L	I 9	DIL 14 P	F 3
1831 Z	F 17	BL 18 G X 1	NEW F 18	DB 50 T	I 8	DIL 14 PEK	F 4
ASL 06 SMD	H 3	BL 19 141	G 71	DB 50 WW 3	I 11	DIL 14 U	F 3
ASL 08 SMD	H 3	BL 19 219	G 71	DB BK 09	I 14	DIL 14 W 90	F 6
ASL 10 SMD	H 3	BL 20 SMD	G 78	DB BK 15	I 14	DIL 16 06 E Z	F 5
ASL 12 SMD	H 3	BL 21 650	G 67	DB BK 25	I 14	DIL 16 06 H Z	F 5
ASL 14 SMD	H 3	BL 21 762	G 67	DB BK 37	I 14	DIL 16 E	F 4
ASL 16 SMD	H 3	BL 22 SHK 14 02 G	G 72	DB BK 50	I 14	DIL 16 G	F 6
ASL 20 SMD	H 3	BL 23 SHK 14 02 SMD G	G 78	DBM 13W3 L	I 23	DIL 16 M	F 2
ASL 26 SMD	H 3	BL KG 3	G 68	DBM 13W3 T	NEW I 25	DIL 16 N	F 2
ASL 34 SMD	H 3	BL LP 1	G 66	DBM 13W3 TA	I 26	DIL 16 O	F 2
ASL 40 SMD	H 3	BL LP 2	G 66	DBM 17W2 L	I 23	DIL 16 P	F 3
ASL 50 SMD	H 3	BL LP 3	G 66	DBM 17W2 T	NEW I 25	DIL 16 PEK	F 4
ASLA 06 G	H 2	BL LP 4	G 66	DBM 17W2 TA	I 26	DIL 16 Q	F 3
ASLA 08 G	H 2	BL LP 5 SMD	G 73	DBM 21WA4 L	I 23	DIL 16 SMD M	F 8
ASLA 10 G	H 2	BL LP 6 SMD	G 74	DBM 25W3 L	I 23	DIL 16 SMD SK5 Z	F 8
ASLA 12 G	H 2	BL LP 7 SMD	G 74	DBM 27W2 L	I 24	DIL 18 06 E Z	F 5
ASLA 14 G	H 2	BL LP 8 LED SMD	G 86	DBM 2W2C L	I 22	DIL 18 06 H Z	F 5
ASLA 16 G	H 2	BL LP 9 LED	G 85	DBM 3W3 L	I 22	DIL 18 E	F 4
ASLA 20 G	H 2	BLM 1 SMD	G 96	DBM 5W5 L	I 22	DIL 18 M	F 2
ASLA 26 G	H 2	BLM 2 SMD	G 96	DBM 7W2 L	I 22	DIL 20 E	F 4
ASLA 34 G	H 2	BLM 3 SMD	G 96	DBM 7W2 T	NEW I 25	DIL 20 G	F 6
ASLA 40 G	H 2	BLM KG 1	G 93	DBM 7W2 TA	I 26	DIL 20 M	F 2
ASLA 50 G	H 2	BLM KG 2	G 93	DBM 8W8 L	I 22	DIL 20 O	F 2
ASLAV 10 G	H 7	BLM LA 1	G 93	DBM 9W4 L	I 23	DIL 20 Q	F 3
ASLAV 20 G	H 7	BLM LG 1	G 93	DBM 9W4 T	NEW I 25	DIL 20 SMD M	F 8
ASLAV 26 G	H 7	BLM LG 2	G 93	DBM 9W4 TA	I 26	DIL 20 SMD SK5 Z	F 8
ASLAV 40 G	H 7	BLP 1	G 84	DB WE 3	I 12	DIL 22 03 M	F 2
ASLG 06	H 2	BLP 2	G 84	DB WE 4	I 12	DIL 22 M	F 2
ASLG 08	H 2	BLR 1 025 Z	G 95	DB WR 3	I 12	DIL 22 O	F 2
ASLG 10	H 2	BLR 1 050 Z	G 95	DB WR 4	I 12	DIL 22 U	F 3
ASLG 12	H 2	BLR 2 050 Z	G 95	DDH 3 E	L 7	DIL 24 03 M	F 2
ASLG 14	H 2	BLR 2 100 Z	G 95	DDH 3 M	L 7	DIL 24 03 SMD M	F 8
ASLG 16	H 2	BLR 3 025 Z	G 95	DDH 3 R	L 7	DIL 24 04 M	F 2
ASLG 20	H 2	BLR 3 050 Z	G 95	DDH 3L	L 7	DIL 24 M	F 2
ASLG 26	H 2	BLR 4 100 Z	G 95	DF 2 MK 9 Z	G 98	DIL 24 U	F 3
ASLG 34	H 2	BLR 6 SMD 100 Z	G 97	DF 2 OK 9 Z	G 98	DIL 28 03 M	F 2
ASLG 40	H 2	BLR 7 SMD 50 Z	G 97	DF OB 06	G 98	DIL 28 E	F 4
ASLG 50	H 2	BLV 2 10 G	G 94	DF OB 07	G 98	DIL 28 M	F 2
ASLGV 10 G	H 7	BLV 2 20 G	G 94	DF OB 10	G 98	DIL 28 SMD M	F 8
ASLGV 20 G	H 7	BLV 2 26 G	G 94	DF OB 17	G 98	DIL 32 E	F 4
ASLGV 26 G	H 7	BLV 2 30 G	G 94	DH ... 09 UN4	NEW I 33	DIL 32 M	F 2
ASLGV 40 G	H 7	BLV 2 40 G	G 94	DH ... 15 UN4	NEW I 33	DIL 36 M	F 2
ASLGY 10 G	H 4	BLV 2 50 G	G 94	DH ... 25 UN4	NEW I 33	DIL 40 E	F 4
ASLGY 20 G	H 4	BLV 2 72 G	G 94	DH ... 37 UN4	NEW I 33	DILS 04 PK 5	F 6
ASLGY 26 G	H 4	BLY 1	G 87	DH 3 R	L 6	DILS 06 PK 3	F 6
ASLGY 40 G	H 4	BLY 2	G 87	DH 3 V	L 5	DILS 08 GA LO	F 7
ASLGY 44 G	H 4	BLY 3	G 87	DH 3 W	L 6	DILS 08 GB LO	F 7
ASLGY 50 G	H 4	BLY 4	G 87	DH 5 R	L 6	DILS 08 GO	F 7
ASLV 10 SMD G	H 9	BLY 5 SMD	G 89	DH 5 SRC	L 5	DILS 14 GA LO	F 7
ASLV 20 SMD G	H 9	BLY 6 SMD	G 90	DH 5 VC	L 5	DILS 14 GB LO	F 7
ASLV 26 SMD G	H 9	BLY 8 SMD	G 91	DH 5 W	L 6	DILS 14 GO	F 7
ASLV 40 SMD G	H 9	BLY 9 SMD	G 92	DH 09	I 32	DILS 14 PK 3	F 6
ASLY 10 SMD G	H 6	BLY 10 SHK 14 02 G	G 88	DH 09 L IP 67	I 34	DILS 16 6 PK 3	F 7
ASLY 20 SMD G	H 6	CAB 3 06 03 Z	F 15	DH 15	I 32	DILS 16 GA LO	F 7
ASLY 26 SMD G	H 6	CAB 3 08 03 Z	F 15	DH 15 L IP 67	I 34	DILS 16 GB LO	F 7
ASLY 40 SMD G	H 6	CAB 3 12 03 Z	F 15	DH 25	I 32	DILS 16 GO	F 7
ASLY 44 SMD G	H 6	CAB 3 14 03 Z	F 15	DH 25 L IP 67	I 34	DILS 16 PK 3	F 6
ASLY 50 SMD G	H 6	CAB 3 16 03 Z	F 15	DH 37	I 32	DILS 16 PK 5	F 6
BADK 09	I 37	CAB 4 G	G 99	DH 50	I 32	DILS 18 GA LO	F 7
BADK 15	I 37	CAB 5 05 G	G 99	DH M 09 UN4	NEW I 32	DILS 18 GB LO	F 7
BADK 25	I 37	CAB 5 10 G	G 99	DH M 15 UN4	NEW I 32	DILS 18 GO	F 7
BADK 37	I 37	CAB 5 Z	G 99	DH M 25 UN4	NEW I 32	DILS 18 PK 5	F 6
BADK 50	I 37	CAB 6 05 G	G 99	DH M 37 UN4	NEW I 32	DILS 24 GA LO	F 7
BADM 09	I 37	CAB 6 10 G	G 99	DH MA 09 UN4	NEW I 33	DILS 24 GB LO	F 7
BADM 15	I 37	CAB 6 Z	G 99	DH MA 15 UN4	NEW I 33	DILS 24 GO	F 7
BADM 25	I 37	CAB 9 G	G 99	DH MA 25 UN4	NEW I 33	DILS 28 6 PK 3	F 7
BADM 37	I 37	CAB 10 G S	G 100	DH MA 37 UN4	NEW I 33	DILS 28 GB LO	F 7
BK 01 32	H 17	CAB 11 G S	G 100	DH SV 09	I 34	DILS 28 GO	F 7
BL 1	G 65	CAB 15 G S	G 100	DH SV 15	I 34	DILS 40 6 PK 3	F 7
BL 2	G 65	CAB 16 G	G 100	DH SV 25	I 34	DILS 40 GA LO	F 7
BL 3	G 65	CB 1	F 14	DH SV 37	I 34	DILS 40 GB LO	F 7
BL 4	G 65	CB 3	F 14	DH SV 50	I 34	DILS 40 GO	F 7
BL 5	G 68	CB 6	F 14	DIL 4 OR	F 5	DLH 21 AGEH	L 8
BL 5 025	G 68	DB 09 L	I 9	DIL 6 E	F 4	DLH 21 AYEH	L 8
BL 6	G 68	DB 09 L IP 67	I 10	DIL 6 M	F 2	DS 09 L	I 9
BL 6 025	G 68	DB 09 SMD TR	I 31	DIL 6 P	F 3	DS 09 L IP 67	I 10
BL 7	G 68	DB 09 T	I 8	DIL 8 1 OR	F 5	DS 09 SMD TR	I 31
BL 8	G 69	DB 09 WW 3	I 11	DIL 8 2 OR	F 5	DS 09 T	I 8
BL 9	G 70	DB 15 L	I 9	DIL 8 E	F 4	DS 09 WW 3	I 11
BL 10	G 70	DB 15 L IP 67	I 10	DIL 8 G	F 6	DS 15 L	I 9
BL 11 254	G 67	DB 15 SMD TR	I 31	DIL 8 M	F 2	DS 15 L IP 67	I 10
BL 11 508	G 67	DB 15 T	I 8	DIL 8 O	F 2	DS 15 SMD TR	I 31
BL 12 650	G 67	DB 15 WW 3	I 11	DIL 8 Q	F 3	DS 15 T	I 8
BL 12 762	G 67	DB 25 L	I 9	DIL 08 SMD SK5 Z	F 8	DS 15 WW 3	I 11
BL 13	G 70	DB 25 L IP 67	I 10	DIL 10 G	F 6	DS 25 L	I 9
BL 14	G 70	DB 25 SMD TR	I 31	DIL 10 M	F 2	DS 25 L IP 67	I 10
BL 15 SMD 043	G 75	DB 25 T	I 8	DIL 10 U	F 3	DS 25 SMD TR	I 31
BL 15 SMD 089	G 75	DB 25 WW 3	I 11	DIL 14 E	F 4	DS 25 T	I 8
BL 16 SMD 067	G 76	DB 37 L	I 9	DIL 14 G	F 6	DS 25 WW 3	I 11
BL 16 SMD 113	G 76	DB 37 SMD TR	I 31	DIL 14 M	F 2	DS 37 L	I 9
BL 17 SMD	G 77	DB 37 T	I 8	DIL 14 N	F 2	DS 37 SMD TR	I 31
BL 18 141	G 71	DB 37 WW 3	I 11	DIL 14 O	F 2	DS 37 T	I 8

Alphanumerical product list

art. no.	page	art. no.	page	art. no.	page	art. no.	page
DS 37 WW 3	I 11	HFD 37	I 39	KHPC 277	K 19	LL 30 PRL 089	NEW L 11
DS 50 L	I 9	HFK B 09	I 39	KHPC 295	K 20	LL 30 PRL 100	NEW L 11
DS 50 T	I 8	HFK B 15	I 39	KHPC 308	K 20	LL 30 PRL 127	NEW L 11
DS 50 WW 3	I 11	HFK B 25	I 39	KHPC 325	K 21	LL 30 PRL 159	NEW L 11
DS BK 09	I 14	HFK S 09	I 39	KHPC 365	K 22	LL 30 PRL 190	NEW L 11
DS BK 15	I 14	HFK S 15	I 39	KHPC 391	K 22	LL 30 QRL 032	L 13
DS BK 25	I 14	HFK S 25	I 39	KHPC 398 O	K 23	LL 30 QRL 064	L 13
DS BK 37	I 14	ISQ 04	F 13	KHPC 404	K 23	LL 30 QRL 095	L 13
DS BK 50	I 14	ISQ 05	F 13	KHPC 407	K 23	LL 30 QRL 127	L 13
DSM 13W3 L	I 18	ISQ 06	F 13	KHPC 439	K 24	LL 30 VRFS 024	L 13
DSM 13W3 T	NEW I 20	ISQ 07	F 13	KHPC 454	K 11	LL 30 VRFS 050	L 13
DSM 13W3 TA	I 21	ISQ 08	F 13	KHPC 455	K 15	LL 30 VRFS 075	L 13
DSM 17W2 L	I 18	KHPC 0 L	K 3	KHPC335L	K 22	LL 30 WRFP 038	L 9
DSM 17W2 T	NEW I 20	KHPC 0 O	K 3	KK 04 Z	H 16	LL 30 WRFP 050	L 9
DSM 17W2 TA	I 21	KHPC 002	K 8	KK 06 Z	H 16	LL 30 WRFP 076	L 9
DSM 21WA4 L	I 18	KHPC 003	K 8	KK 08 Z	H 16	LL 30 WRFP 102	L 9
DSM 25W3 L	I 18	KHPC 005	K 11	KK 10 Z	H 16	LL 35 HVS	L 9
DSM 27W2 L	I 19	KHPC 006	K 10	KK 12 Z	H 16	LL 50 PRB 032	NEW L 11
DSM 2W2C L	I 17	KHPC 007	K 8	KK 14 Z	H 16	LL 50 PRB 095	NEW L 11
DSM 3W3 L	I 17	KHPC 008	K 8	KK 16 Z	H 16	LL 50 PRB 127	NEW L 11
DSM 5W5 L	I 17	KHPC 009	K 11	KK 18 Z	H 16	LL 50 PRB 190	NEW L 11
DSM 7W2 L	I 17	KHPC 010	K 8	KK 20 Z	H 16	LL 50 PRB 254	NEW L 11
DSM 7W2 T	NEW I 20	KHPC 011	K 8	KK 24 Z	H 16	LL 50 PRB 318	NEW L 11
DSM 7W2 TA	I 21	KHPC 012	K 10	KK 28 Z	H 16	LL 50 PRK 032	L 12
DSM 8W8 L	I 17	KHPC 013	K 8	KK 40 Z	H 16	LL 50 PRK 064	L 12
DSM 9W4 L	I 18	KHPC 014	K 8	KK W	H 17	LL 50 PRK 095	L 12
DSM 9W4 T	NEW I 20	KHPC 015	K 11	KT 0915	I 37	LL 50 PRK 127	L 12
DSM 9W4 TA	I 21	KHPC 016	K 9	KT 2550	I 37	LL 50 PRL 089	NEW L 12
DS WE 3	I 12	KHPC 017	K 9	KT SV	I 35	LL 50 PRL 095	NEW L 12
DS WE 4	I 12	KHPC 018	K 16	LB 02 G	F 14	LL 50 PRL 159	NEW L 12
DS WR 3	I 12	KHPC 019	K 14	LB 03 G	F 14	LL 50 PRL 190	NEW L 12
DS WR 4	I 12	KHPC 022	K 15	LB 04 G	F 14	LL 50 PRL 254	NEW L 12
D W 9 37	H 17	KHPC 024	K 14	LB 06 G	F 14	LL 50 PRL 318	NEW L 12
FLMP 06	H 11	KHPC 026	K 17	LB SL 0508	F 15	LL 60 WRB 254	L 10
FLMP 08	H 11	KHPC 027	K 17	LB SL 0762	F 15	LL V 20 089 F	NEW L 14
FLMP 10	H 11	KHPC 028	K 17	LB SL 1016	F 15	LL V 20 102 F	NEW L 14
FLMP 12	H 11	KHPC 029	K 20	LB SL 1524	F 15	LL V 20 114 F	NEW L 14
FLMP 14	H 11	KHPC 031	K 20	LB SL LP 039 SMD	F 16	LL V 20 140 F	NEW L 14
FLMP 16	H 11	KHPC 032	K 20	LB SLY 06	F 15	LL V 20 152 F	NEW L 14
FLMP 20	H 11	KHPC 033	K 19	LEB 01 G	F 14	LL V 20 190	NEW L 14
FLMP 26	H 11	KHPC 034	K 20	LEB 02 G	F 14	LL V 20 254	NEW L 14
FLMP 34	H 11	KHPC 035	K 19	LEB 03 G	F 14	LL V 20 381 F	NEW L 14
FLMP 40	H 11	KHPC 036	K 20	LL 4 V 20 254	NEW L 16	LL V 30 114 F	NEW L 14
FLMP 50	H 11	KHPC 038	K 13	LL 4 V 30 254	NEW L 16	LL V 30 127 F	NEW L 14
FV 03	H 10	KHPC 040	K 13	LL 4 V 40 254	NEW L 16	LL V 30 152 F	NEW L 14
FV 04	H 10	KHPC 041	K 13	LL 4 W 20 254	NEW L 16	LL V 30 190 R	NEW L 14
FV 05	H 10	KHPC 042	K 16	LL 4 W 30 254	NEW L 16	LL V 30 254 F	NEW L 14
FV 06	H 10	KHPC 043	K 18	LL 4 W 40 254	NEW L 16	LL V 30 318 F	NEW L 14
FV 07	H 10	KHPC 051	K 20	LL 30 HRP	L 9	LL V 30 445 F	NEW L 14
FV 08	H 10	KHPC 052	K 17	LL 30 HRS	L 9	LL V 40 114 F	NEW L 14
FV 10	H 10	KHPC 053	K 10	LL 30 PRB 025	NEW L 10	LL V 40 127 R	NEW L 14
FV 12	H 10	KHPC 054	K 17	LL 30 PRB 032	NEW L 10	LL V 40 140	NEW L 14
FV 13	H 10	KHPC 058	K 19	LL 30 PRB 040	NEW L 10	LL V 40 152	NEW L 14
FV 14	H 10	KHPC 061	K 13	LL 30 PRB 051	NEW L 10	LL V 40 190 F	NEW L 14
FV 16	H 10	KHPC 065	K 11	LL 30 PRB 060	NEW L 10	LL V 40 445 R	NEW L 14
FV 17	H 10	KHPC 069	K 16	LL 30 PRB 064	NEW L 10	LL W 30 203 178	NEW L 15
FV 18	H 10	KHPC 070	K 17	LL 30 PRB 070	NEW L 10	LL W 30 203 254	NEW L 15
FV 20	H 10	KHPC 072	K 11	LL 30 PRB 080	NEW L 10	LL W 30 203 381 F	NEW L 15
FV 24	H 10	KHPC 073	K 14	LL 30 PRB 089	NEW L 10	LL W 30 203 762 F	NEW L 15
FV 25	H 10	KHPC 075	K 16	LL 30 PRB 095	NEW L 10	LL W 30 254 254 F	NEW L 15
HAB 10 C	I 29	KHPC 076	K 12	LL 30 PRB 117	NEW L 10	LL W 30 318 178 F	NEW L 15
HAB 10 L	I 29	KHPC 078	K 14	LL 30 PRB 127	NEW L 10	LL W 40 203 508 R	NEW L 15
HAB 10 T	NEW I 29	KHPC 085	K 22	LL 30 PRB 159	NEW L 10	MAH 31	L 2
HAB 10 TA	I 30	KHPC 093	K 8	LL 30 PRB 190	NEW L 10	MAH 41	L 2
HAB 20 C	I 29	KHPC 094	K 8	LL 30 PRE 032	L 12	MAH 51	L 2
HAB 20 L	I 29	KHPC 095	K 9	LL 30 PRE 064	L 12	MAH 61	L 2
HAB 20 T	NEW I 29	KHPC 096	K 8	LL 30 PRE 095	L 12	MAH 71	L 2
HAB 20 TA	I 30	KHPC 131	K 9	LL 30 PRE 127	L 12	MAH 81	L 2
HAB 40 C	I 29	KHPC 138	K 10	LL 30 PRF 025	NEW L 10	MAH 89	L 2
HAB 40 L	I 29	KHPC 141	K 10	LL 30 PRF 032	NEW L 10	MAH 99	L 2
HAB 40 T	NEW I 29	KHPC 142	K 10	LL 30 PRF 040	NEW L 10	MAH 301	L 3
HAB 40 TA	I 30	KHPC 143	K 11	LL 30 PRF 048	NEW L 10	MAH 302	L 3
HAS 10 C	I 27	KHPC 144	K 10	LL 30 PRF 050	NEW L 10	MAH 303	L 3
HAS 10 L	I 27	KHPC 160	K 11	LL 30 PRF 060	NEW L 10	MAH 304	L 3
HAS 10 T	NEW I 27	KHPC 177	K 12	LL 30 PRF 064	NEW L 10	MAH 305	L 3
HAS 10 TA	I 28	KHPC 178	K 12	LL 30 PRF 070	NEW L 10	MAH 306	L 3
HAS 20 C	I 27	KHPC 179	K 12	LL 30 PRF 080	NEW L 10	MAH 307	L 3
HAS 20 L	I 27	KHPC 185	K 13	LL 30 PRF 089	NEW L 10	MAH 308	L 3
HAS 20 T	NEW I 27	KHPC 187	K 13	LL 30 PRF 100	NEW L 10	MAH 309	L 3
HAS 20 TA	I 28	KHPC 188	K 14	LL 30 PRF 159	NEW L 10	MAH 310	L 3
HAS 40 C	I 27	KHPC 189	K 13	LL 30 PRF 211	NEW L 10	MAH 401	L 2
HAS 40 L	I 27	KHPC 200	K 15	LL 30 PRL 025	NEW L 11	MAH 402	L 2
HAS 40 T	NEW I 27	KHPC 218	K 15	LL 30 PRL 030	NEW L 11	MAH 403	L 2
HAS 40 TA	I 28	KHPC 225	K 15	LL 30 PRL 030 D	NEW L 11	MAH 404	L 2
HD B 15 L	I 13	KHPC 229	K 16	LL 30 PRL 032	NEW L 11	MAH 405	L 2
HD B 26 L	I 13	KHPC 230	K 15	LL 30 PRL 040	NEW L 11	MAH 406	L 2
HD B 44 L	I 13	KHPC 241	K 16	LL 30 PRL 048	NEW L 11	MAH 407	L 2
HD S 15 L	I 13	KHPC 242	K 16	LL 30 PRL 050	NEW L 11	MAH 408	L 2
HD S 26 L	I 13	KHPC 243	K 17	LL 30 PRL 055	NEW L 11	MAH 409	L 2
HD S 44 L	I 13	KHPC 262	K 18	LL 30 PRL 060	NEW L 11	MAH 410	L 2
HFD 09	I 39	KHPC 267	K 19	LL 30 PRL 064	NEW L 11	MAH 501	L 3
HFD 15	I 39	KHPC 270	K 19	LL 30 PRL 070	NEW L 11	MAH 502	L 3
HFD 25	I 39	KHPC 271	K 19	LL 30 PRL 080	NEW L 11	MAH 503	L 3

Alphanumerical product list

art. no.	page	art. no.	page	art. no.	page	art. no.	page
MAH 504	L 3	PCI 055	K 7	SBAU 1 20	H 15	SL 10 SMD 078	G 23
MAH 505	L 3	PCI 065	K 12	SBAU 06 Z	H 15	SL 10 SMD 104	G 23
MAH 506	L 3	PCI 071	K 15	SBAU 10 Z	H 15	SL 10 SMD 130	G 23
MAH 507	L 3	PCI 072	K 18	SBAU 14 Z	H 15	SL 11 097	G 7
MAH 508	L 3	PCI 076	K 18	SBAU 16 Z	H 15	SL 11 112	G 7
MAH 509	L 3	PCI 077	K 18	SBAU 20 Z	H 15	SL 11 124	G 7
MAH 510	L 3	PCI 083	K 21	SBAU 26 Z	H 15	SL 11 139	G 7
MIC 03	F 8	PCI 104	K 22	SBAU 34 Z	H 15	SL 11 164	G 7
MIC 06	F 8	PCI LP ... L	K 4	SB W	H 17	SL 11 190	G 7
MK 01	G 60	PCI LP ... O	K 4	SIL 1	G 64	SL 11 214	G 7
MK 02	G 2	PCI R1	K 6	SIL 2	G 64	SL 11 240	G 7
MK 03	G 2	PEK G	F 17	SIL 3	G 64	SL 11 265	G 7
MK 04	G 2	PF 53	F 10	SK 02	F 18	SL 11 316	G 7
MK 05	G 2	PF 54	F 10	SK 03	F 18	SL 11 SMD 040	G 24
MK 06	G 61	PF 58 2	F 10	SK 04 Z	F 18	SL 11 SMD 052	G 24
MK 07	G 61	PF 58 23	F 10	SK 05	F 18	SL 11 SMD 062	G 24
MK 08	G 3	PF 510	F 11	SK 06	F 17	SL 11 SMD 078	G 24
MK 10	G 3	PK 1	F 17	SK 08 G	F 18	SL 11 SMD 104	G 24
MK 12 X 2	G 60	PK 4 Z	F 18	SK 11	F 18	SL 11 SMD 130	G 24
MK 13 X 1	G 60	PLCC 20	F 9	SK 13 X 2 G	F 17	SL 12 SMD 031	G 25
MK 13 X 2	G 60	PLCC 20 SMD	F 9	SK 14 X 2	F 18	SL 12 SMD 032	G 25
MK 14 X 1	G 4	PLCC 28	F 9	SK 17	F 17	SL 12 SMD 035	G 25
MK 14 X 2	G 4	PLCC 28 SMD	F 9	SK 18	F 17	SL 12 SMD 058	G 25
MK 14 X 3	G 4	PLCC 32	F 9	SK 19	F 17	SL 12 SMD 083	G 25
MK 15	G 4	PLCC 32 SMD	F 9	SK 21 Z	F 17	SL 12 SMD 109	G 25
MK 17	G 60	PLCC 44	F 9	SK 40 G	F 18	SL 13 071	G 15
MK 21	G 69	PLCC 44 SMD	F 9	SK 41	F 18	SL 13 097	G 15
MK 22 SMD	G 79	PLCC 52	F 9	SK 42	F 18	SL 13 122	G 15
MK 23 SMD	G 81	PLCC 68	F 9	SKB 5 Z	F 17	SL 13 147	G 15
MK 24 SMD	G 80	PLCC 68 SMD	F 9	SKB 9 Z	F 17	SL 13 187	G 15
MK 25 SMD	G 80	PLCC 84	F 9	SL 1 025	G 7	SL 13 235	G 15
MK 26 SMD	G 20	PLCC 84 SMD	F 9	SL 1 053	G 7	SL 13 265	G 15
MK 27 SMD	G 22	PO A	G 63	SL 1 078	G 7	SL 13 310	G 15
MK 31	G 60	PQ 18	F 13	SL 1 104	G 7	SL 13 365	G 15
MK 51	G 4	PQ 18 W	F 13	SL 1 128	G 7	SL 14 071	G 15
MK 201	G 60	PSB 03 G	F 14	SL 1 154	G 7	SL 14 097	G 15
MK 202	G 2	PV 06	H 12	SL 1 179	G 7	SL 14 122	G 15
MK 203	G 2	PV 10	H 12	SL 1 230	G 7	SL 14 147	G 15
MK 204	G 2	PV 14	H 12	SL 2 025	G 8	SL 14 187	G 15
MK 205	G 2	PV 16	H 12	SL 2 053	G 8	SL 14 235	G 15
MK 207	G 61	PV 20	H 12	SL 2 078	G 8	SL 14 265	G 15
MK 208	G 3	PV 26	H 12	SL 2 104	G 8	SL 14 310	G 15
MK 210	G 3	PV 34	H 12	SL 2 128	G 8	SL 14 365	G 15
MK 212 X 2	G 60	PV 40	H 12	SL 2 154	G 8	SL 15 SMD 107	G 31
MK 213 X 1	G 60	PV 50	H 12	SL 2 179	G 8	SL 15 SMD 182	G 31
MK 213 X 2	G 60	PVV 10 G	H 14	SL 2 230	G 8	SL 15 SMD 207	G 31
MK 214 X 1	G 4	PVV 20 G	H 14	SL 3 025	G 10	SL 16 SMD 107	G 31
MK 214 X 2	G 4	PVV 26 G	H 14	SL 3 053	G 10	SL 16 SMD 157	G 31
MK 214 X 3	G 4	PVV 40 G	H 14	SL 3 080	G 10	SL 16 SMD 182	G 31
MK 217	G 60	PV W	H 17	SL 3 101	G 10	SL 16 SMD 207	G 31
MK 220 SMD	G 83	PVY 10 S	H 13	SL 3 131	G 10	SL 16 SMD 247	G 31
MK 221	G 69	PVY 20 S	H 13	SL 3 152	G 10	SL 17 SMD 058	G 26
MK 222 SMD	G 80	PVY 26 S	H 13	SL 3 182	G 10	SL 17 SMD 083	G 26
MK 223 SMD	G 82	PVY 40 S	H 13	SL 3 207	G 10	SL 17 SMD 109	G 26
MK 226 SMD	G 21	PVY 44 S	H 13	SL 4 025	G 10	SL 18 042	G 11
MK 228 THR	G 62	PVY 50 S	H 13	SL 4 101	G 10	SL 18 082	G 11
MK 231	G 60	PVY W	H 17	SL 4 152	G 10	SL 18 108	G 11
MK 251	G 4	QS 25 GS	F 13	SL 5 071	G 14	SL 18 132	G 11
MK LP 18	G 61	RAH 503	L 4	SL 5 097	G 14	SL 19 082	G 11
MK LP 19	G 61	RAH 504	L 4	SL 5 121	G 14	SL 19 108	G 11
MK LP 40	G 5	RAH 505	L 4	SL 5 147	G 14	SL 19 132	G 11
MK LP 41	G 5	RAH 506	L 4	SL 5 156 G	G 14	SL 20 THR 097	G 9
MK LP 42	G 5	RAH 507	L 4	SL 5 156 Z	G 14	SL 20 THR 112	G 9
MK LP 43	G 5	RAH 508	L 4	SL 5 172	G 14	SL 20 THR 124	G 9
MK LP 218	G 61	RAH 509	L 4	SL 5 197	G 14	SL 20 THR 139	G 9
MK LP 219	G 61	RAH 510	L 4	SL 5 223	G 14	SL 20 THR 164	G 9
MK LP 240	G 5	RJ 45 G	L 7	SL 5 237	G 14	SL 21 THR 097	G 9
MK LP 241	G 5	RJ 45 LED	L 7	SL 5 285	G 14	SL 21 THR 112	G 9
MK LP 242	G 5	RJ 45 U	L 7	SL 5 315	G 14	SL 21 THR 124	G 9
PCI 0 L	K 3	RS HH	L 34	SL 5 360	G 14	SL 21 THR 139	G 9
PCI 0 O	K 3	RS SH 3	L 35	SL 5 415	G 14	SL 21 THR 164	G 9
PCI 004	K 7	RS SH 4	L 35	SL 5 525	G 14	SL 22 097	G 8
PCI 005	K 7	RS SH D	L 35	SL 6 071	G 14	SL 22 112	G 8
PCI 006 O	K 7	SB 1	F 19	SL 6 097	G 14	SL 22 124	G 8
PCI 011	K 9	SB 2	F 19	SL 6 121	G 14	SL 22 139	G 8
PCI 012	K 10	SB 3	F 19	SL 6 147	G 14	SL 22 164	G 8
PCI 013	K 9	SB 4	F 19	SL 6 156 G	G 14	SL 22 190	G 8
PCI 014	K 14	SB 5	F 19	SL 6 156 Z	G 14	SL 22 214	G 8
PCI 015	K 14	SB 6	F 19	SL 6 172	G 14	SL 22 240	G 8
PCI 016 L	K 17	SB 9	F 20	SL 6 197	G 14	SL 22 265	G 8
PCI 017	K 17	SB 12	F 20	SL 6 223	G 14	SL 22 316	G 8
PCI 018	K 17	SB 13	F 20	SL 6 237	G 14	SL 23 LED SMD 031	G 37
PCI 020	K 19	SB 15	F 20	SL 6 285	G 14	SL 23 LED SMD 058	G 37
PCI 021	K 21	SB 16	F 20	SL 6 315	G 14	SL 24 LED 097	G 35
PCI 031 O	K 12	SBAU 1 04	H 15	SL 6 360	G 14	SL 24 LED 112	G 35
PCI 032	K 12	SBAU 1 06	H 15	SL 6 415	G 14	SL 24 LED 124	G 35
PCI 033	K 13	SBAU 1 08	H 15	SL 6 525	G 14	SL 25 LED THR 097	G 36
PCI 035	K 18	SBAU 1 10	H 15	SL 7	G 6	SL 25 LED THR 112	G 36
PCI 039 O	K 9	SBAU 1 12	H 15	SL 8	G 6	SL 25 LED THR 124	G 36
PCI 041	K 10	SBAU 1 14	H 15	SL 9	G 6	SL 26 SHK 14 02 G	G 19
PCI 045	K 14	SBAU 1 16	H 15	SL 10 SMD 040	G 23	SL 27 SHK 14 02 SMD G	G 32
PCI 047	K 15	SBAU 1 17	H 15	SL 10 SMD 052	G 23	SL 28 SMD THR 058	G 27
PCI 051	K 23	SBAU 1 18	H 15	SL 10 SMD 062	G 23	SL 28 SMD THR 083	G 27

Alphanumerical product list

art. no.		page	art. no.		page	art. no.		page	art. no.		page
SL 28 SMD THR 109	NEW	G 27	SLV W 1 130	NEW	G 48	SLY 3 041		G 38	VSLV 20 SMD G		H 9
SLK 3 025		G 10	SLV W 1 KA 030		G 50	SLY 3 082 ... G		G 38	VSLV 26 SMD G		H 9
SLK 4 025		G 10	SLV W 1 KA 055		G 50	SLY 3 082 ... Z		G 38	VSLV 40 SMD G		H 9
SL KA 3 072		G 18	SLV W 1 KA 080		G 50	SLY 4 035		G 38	WWPS 1 G		F 17
SL KA 3 085		G 18	SLV W 1 KA 105		G 50	SLY 4 041 ... G		G 38	ZEPV 06		H 12
SL KA 3 108		G 18	SLV W 1 SMD 048		G 53	SLY 4 041 ... Z		G 38	ZEPV 10		H 12
SL KG 3 113		G 18	SLV W 1 SMD 073		G 53	SLY 4 082 ... G		G 38	ZEPV 14		H 12
SL KG 3 126		G 18	SLV W 2 036	NEW	G 48	SLY 4 082 ... Z		G 38	ZEPV 16		H 12
SL KG 3 147		G 18	SLV W 2 055	NEW	G 48	SLY 5 040		G 39	ZEPV 20		H 12
SL LP 1 082		G 12	SLV W 2 080	NEW	G 48	SLY 5 075		G 39	ZEPV 26		H 12
SL LP 1 097		G 12	SLV W 2 105	NEW	G 48	SLY 5 081 ... G		G 39	ZEPV 34		H 12
SL LP 1 112		G 12	SLV W 2 130	NEW	G 48	SLY 5 081 ... Z		G 39	ZEPV 40		H 12
SL LP 1 139		G 12	SLV W 2 KA 030 10		G 50	SLY 5 122 ... G		G 39	ZEPV 50		H 12
SL LP 1 164		G 12	SLV W 2 KA 030 14		G 50	SLY 5 122 ... Z		G 39			
SL LP 1 190		G 12	SLV W 2 KA 030 16		G 50	SLY 6 040		G 39			
SL LP 2 082		G 12	SLV W 2 KA 030 20		G 50	SLY 6 075		G 39			
SL LP 2 097		G 12	SLV W 2 KA 030 26		G 50	SLY 6 081 ... G		G 39			
SL LP 2 112		G 12	SLV W 2 KA 030 30		G 50	SLY 6 081 ... Z		G 39			
SL LP 2 139		G 12	SLV W 2 KA 030 34		G 50	SLY 6 122 ... G		G 39			
SL LP 2 164		G 12	SLV W 2 KA 030 40		G 50	SLY 6 122 ... Z		G 39			
SL LP 2 190		G 12	SLV W 2 KA 030 50		G 50	SLY 7 SMD 036		G 42			
SL LP 3 041		G 13	SLV W 2 KA 030 72		G 50	SLY 7 SMD 045		G 42			
SL LP 3 069		G 13	SLV W 2 KA 054 10		G 50	SLY 7 SMD 062		G 42			
SL LP 4 041 ...		G 13	SLV W 2 KA 054 14		G 50	SLY 8 SMD 036		G 43			
SL LP 4 069		G 13	SLV W 2 KA 054 16		G 50	SLY 8 SMD 045		G 43			
SL LP 5 SMD 038		G 28	SLV W 2 KA 054 20		G 50	SLY 8 SMD 062		G 43			
SL LP 5 SMD 051		G 28	SLV W 2 KA 054 26		G 50	SLY 9 SMD 040		G 44			
SL LP 5 SMD 066		G 28	SLV W 2 KA 054 30		G 50	SLY 9 SMD 055		G 44			
SL LP 6 SMD 038		G 29	SLV W 2 KA 054 34		G 50	SLY 10 SMD 040		G 45			
SL LP 6 SMD 051		G 29	SLV W 2 KA 054 40		G 50	SLY 11 SMD 051		G 46			
SL LP 6 SMD 066		G 29	SLV W 2 KA 054 50		G 50	SLY 11 SMD 092		G 46			
SL LP 7 SMD 030		G 30	SLV W 2 KA 054 72		G 50	SLY 11 SMD 133		G 46			
SL LP 7 SMD 040		G 30	SLV W 2 SMD 048		G 54	SLY 12 SMD 051		G 46			
SL LP 7 SMD 055		G 30	SLV W 2 SMD 073		G 54	SLY 12 SMD 092		G 46			
SLM N 1 063		G 47	SLV W 3 SMD 048		G 56	SLY 12 SMD 133		G 46			
SLM N 1 092		G 47	SLV W 3 SMD 073		G 56	SLY 13 SHK 14 02 G		G 41			
SLM N 1 117		G 47	SLV W 4 036	NEW	G 49	SLY 14 SHK 14 02 G		G 41			
SLM N 11 063		G 47	SLV W 4 055	NEW	G 49	SSK B 09		I 40			
SLM N 11 117		G 47	SLV W 4 080	NEW	G 49	SSK B 15		I 40			
SLP 1 16 117		G 33	SLV W 4 105	NEW	G 49	SSK B 25		I 40			
SLP 1 16 129		G 33	SLV W 4 130	NEW	G 49	SSK B 37		I 40			
SLP 1 16 144		G 33	SLV W 4 KA 036 10		G 51	SSK S 09		I 40			
SLP 1 16 195 Z		G 33	SLV W 4 KA 036 14		G 51	SSK S 15		I 40			
SLP 2 16 117		G 33	SLV W 4 KA 036 16		G 51	SSK S 25		I 40			
SLP 2 16 129		G 33	SLV W 4 KA 036 20		G 51	SSK S 37		I 40			
SLP 2 16 144		G 33	SLV W 4 KA 036 26		G 51	TF 3 2		F 11			
SLP 2 16 195 Z		G 33	SLV W 4 KA 036 30		G 51	TF 53		F 12			
SLR 1 025		G 57	SLV W 4 KA 036 34		G 51	TF 54		F 12			
SLR 1 050		G 57	SLV W 4 KA 036 40		G 51	TF 56		F 12			
SLR 2 050		G 57	SLV W 4 KA 036 50		G 51	TF 58		F 12			
SLR 3 025		G 57	SLV W 4 KA 036 72		G 51	TF 183		F 12			
SLR 3 050		G 57	SLV W 4 KA 060 10		G 51	TF 184		F 12			
SLR 4 050		G 57	SLV W 4 KA 060 14		G 51	TF 510		F 12			
SLR 4 100		G 57	SLV W 4 KA 060 16		G 51	TF G		F 17			
SLR 5 SMD 50 G		G 58	SLV W 4 KA 060 20		G 51	USB 2 A 90		I 2			
SLU 10 165		G 17	SLV W 4 KA 060 26		G 51	USB 2 A 90 V		I 2			
SLU 10 191		G 17	SLV W 4 KA 060 30		G 51	USB 2 A 180		I 2			
SLU 10 241		G 17	SLV W 4 KA 060 34		G 51	USB 2 A SMD		I 4			
SLU 10 266		G 17	SLV W 4 KA 060 40		G 51	USB 2 B 90		I 3			
SLU 16 165		G 17	SLV W 4 KA 060 50		G 51	USB 2 B 180		I 3			
SLU 16 191		G 17	SLV W 4 KA 060 72		G 51	USB 2 B SMD		I 4			
SLU 16 241		G 17	SLV W 4 SMD 048		G 55	USB 3 A 90		I 6			
SLU 16 266		G 17	SLV W 4 SMD 073		G 55	USB 3 A 90 V		I 6			
SLU 20 165		G 17	SLV W 5 SMD 036	NEW	G 56	USB 31 C		I 6			
SLU 20 191		G 17	SLV W 6 092	NEW	G 51	USB MC 2 B SMD		I 5			
SLU 20 241		G 17	SLV W 6 117	NEW	G 51	USB MN 2 B		I 3			
SLU 20 266		G 17	SLV W 7 092	NEW	G 52	USB MN 2 B SMD		I 4			
SLU 26 165		G 17	SLV W 7 117	NEW	G 52	V		I 38			
SLU 26 191		G 17	SLV W 8 092	NEW	G 52	V 2		I 38			
SLU 26 241		G 17	SLV W 8 117	NEW	G 52	VBK 1		H 17			
SLU 26 266		G 17	SLV W 9 SMD 102	NEW	G 53	VFL 06		H 11			
SLU 40 165		G 17	SLV W 9 SMD 127	NEW	G 53	VFL 08		H 11			
SLU 40 191		G 17	SLV W 10 SMD 102	NEW	G 55	VFL 10		H 11			
SLU 40 241		G 17	SLV W 10 SMD 127	NEW	G 55	VFL 12		H 11			
SLU 40 266		G 17	SLV W 11 055	NEW	G 48	VFL 14		H 11			
SLU 50 165		G 17	SLV W 11 080	NEW	G 48	VFL 16		H 11			
SLU 50 191		G 17	SLV W 11 105	NEW	G 48	VFL 20		H 11			
SLU 50 241		G 17	SLV W 11 SMD 102	NEW	G 54	VFL 26		H 11			
SLU 50 266		G 17	SLV W 11 SMD 127	NEW	G 54	VFL 34		H 11			
SLUP 31 10		G 34	SLV W 22 055	NEW	G 48	VFL 40		H 11			
SLUP 31 16		G 34	SLV W 22 080	NEW	G 48	VFL 50		H 11			
SLUP 31 20		G 34	SLV W 22 105	NEW	G 48	VG 2		I 38			
SLV N 1 055		G 47	SLY 1 081		G 38	VSLGV 10 G		H 8			
SLV N 1 080		G 47	SLY 1 085		G 38	VSLGV 20 G		H 8			
SLV N 1 105		G 47	SLY 1 098		G 38	VSLGV 26 G		H 8			
SLV N 1 130		G 47	SLY 1 104		G 38	VSLGV 40 G		H 8			
SLV N 11 055		G 47	SLY 1 139		G 38	VSLGY 10 G		H 5			
SLV N 11 080		G 47	SLY 2 081		G 38	VSLGY 20 G		H 5			
SLV N 11 105		G 47	SLY 2 085		G 38	VSLGY 26 G		H 5			
SLV W 1 036	NEW	G 48	SLY 2 098		G 38	VSLGY 40 G		H 5			
SLV W 1 055	NEW	G 48	SLY 2 104		G 38	VSLGY 44 G		H 5			
SLV W 1 080	NEW	G 48	SLY 2 139		G 38	VSLGY 50 G		H 5			
SLV W 1 105	NEW	G 48	SLY 3 035		G 38	VSLV 10 SMD G		H 9			

Brackets for PC	K 3-24
Connector-sleeves	F 19-20
Direct female connectors	G 98
D-Sub accessories	I 37-40
D-Sub connector for flat ribbon cable	I 14-16
D-Sub connectors High Density	I 13
D-Sub hoods	I 32-36
D-Sub in SMD-mounting	I 31
D-Sub mixed layout connectors	I 17-26
D-Sub standard connectors	I 8-12
Female connector	H 10-14
Female headers	G 60-97
High-precision contacts, loose	F 17-18
High-precision sockets and plugs for DIL-IC	F 2-8
Jumper links / Separable jumpers	F 14-16
Jumpers	G 99-100
LED-holders	L 5-8
Light pipes for SMDs	L 9-16
Male headers	G 2-59
Pin contacts, loose	I 27-28
Printed circuit connector	H 15-17
RJ 45 connectors	I 7
Shroud-male header	H 2-9
Socket contact, loose	I 29-30
Sockets for crystal oscillators	F 13
Sockets for IC-PLCC	F 9
Sockets for TO ... cases	F 10-12
Spacers for LED	L 2-4
USB connectors	I 2-6



foyer of the company



motivated employees

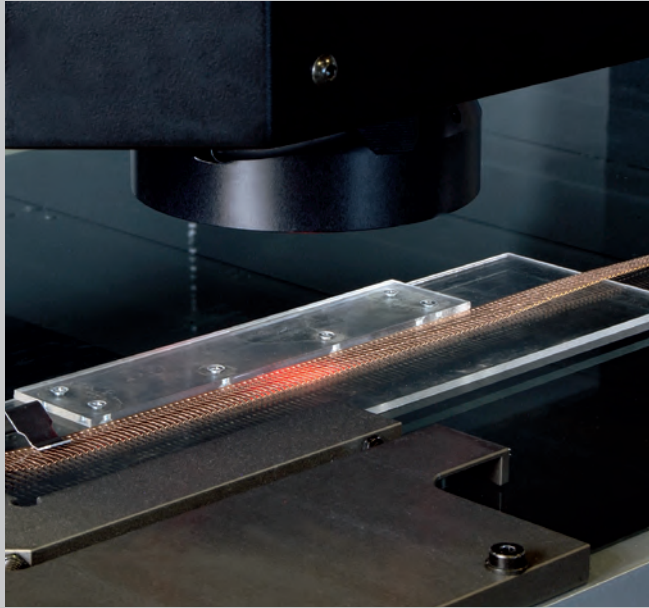


committed field service



innovative product development





certified quality management



own tool-making department



foresighted storekeeping



efficient special machines



up-to-date injection technology



modern surface refinement



Electronica, Fair Munich

D



Embedded World, „NürnbergMesse“

D



Light + Building, „Messe Frankfurt“

D



Amper, Brno Exhibition Centre

CZ



IPS - International Parts + Supply, MOC Munich

D

You can find current exhibition dates at
www.fischerelektronik.de/en/latest-news/exhibition-and-events-congresses



Quality-Management System ISO 9001

We are certified to ISO 9001.

This process-directed quality management system implies a constant focus on satisfying the demands of customers, and this is the major objective of our company.

The implementation and further development of our quality management system demonstrably ensures

- guaranteed customer satisfaction and thus the success of our company,
- compliance with customers' requirements at all times through defined processes,
- early detection and prevention of errors, and
- checking of both process effectiveness and efficiency on a regular basis together with steady improvement.

It is through constant vigilance and the provision of evidence that we deliver flawless products, which fully comply with quality requirements, that we maintain our quality certification.

In order to secure lasting company success and to meet our customers' expectations now and in the future, we define measurable objectives within the framework of our quality system, which are regularly checked and developed.

We are committed to constant measurement and improvement of our performance.

Our quality management system applies to all processes carried out by our company.

Certificate

Standard **ISO 9001:2015**

Certificate Registr. No. **09 100 4274**

Certificate Holder:

fischer elektronik 

Fischer Elektronik GmbH & Co. KG

Nottebohmstr. 28
58511 Lüdenscheid
Germany

Scope:

Design/construction, manufacture, assembly and technical advice for heatsinks, sockets, connectors, mounting parts, cases, 19" assembly systems, computer accessories

Proof has been furnished by means of an audit that the requirements of ISO 9001:2015 are met.

Validity:

The certificate is valid from 2021-11-01 until 2024-10-31.
First certification 1994

2021-09-09



TÜV Rheinland Cert GmbH
Am Grauen Stein · 51105 Köln

Certificate

Standard **ISO 14001:2015**

Certificate Registr. No. **01 104 8209**

Certificate Holder:

fischer elektronik 

Fischer Elektronik GmbH & Co. KG

Nottebohmstr. 28
58511 Lüdenscheid
Germany

Scope:

Design/construction, manufacture, assembly and technical advice for heatsinks, sockets, connectors, mounting parts, cases, 19" assembly systems, computer accessories

Proof has been furnished by means of an audit that the requirements of ISO 14001:2015 are met.

Validity:

The certificate is valid from 2021-10-09 until 2024-10-08.
First certification 1998

2021-09-09


TÜV Rheinland Cert GmbH
Am Grauen Stein · 51105 Köln

www.tuv.com



Environmental Management System ISO 14001

We consider protection of the environment and saving of natural resources entrepreneurial tasks of high priority.

Aware of this, our company was the first German heat-sink manufacturer to implement the environmental management system in accordance with ISO 14001 in 1998.

Our entrepreneurial responsibility comprises preventing accidents, safeguarding against occupational diseases, designing workplaces to suit human requirements, developing products which are safe to use, saving resources and avoiding environmental impact to the maximum extent possible.

We already consider environmental compatibility in the product and process development stage. The environmental impact of our activities is documented, assessed and in a continuous improvement process reduced to a minimum.

Implementation and consistent working on and with the environmental management system is a vital process and a constant challenge but finally it will always lead to better results.

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Information management norm DIN EN ISO/IEC 27001

Information security is becoming more important. For the success of our business information are essential values. Administering and protecting those has our top priority.

The information security management system to ISO/IEC 27001 considers three kinds of information: availability, confidentiality and integrity.

This information security management system is the basis for continuous monitoring and optimisation processes. It also ensures the scrupulous handling with information. A protection against attacks on the corporate network and theft is ensured.

Within the information security management system the risk evaluation such as human misconduct takes place by means of error-possibility-influence-analysis.



Europäische Gemeinschaft

AEO-Zertifikat

1. Inhaber des AEO-Zertifikats

Fischer Elektronik GmbH & Co KG
EORI-Nummer: DE 2499770
Nr. der amtl. Eintragung: HRA 2836
UST-IDNr(n): DE 125797501

DE AEOC 101367
(Nummer des Zertifikats)

2. Erteilende Behörde
Hauptzollamt Dortmund
Kronenburgallee 7
DE-44139 Dortmund



Der in Feld 1 genannte Inhaber ist

Zugelassener Wirtschaftsbeteiligter

"AEOC (zollrechtliche Vereinfachungen)"

3. Tag, ab dem das Zertifikat wirksam ist:

16.03.2010

Certificate

Standard **ISO/IEC 27001:2013**

Certificate Registr. No. **01 153 101878**

Certificate Holder:



Fischer Elektronik GmbH & Co. KG
Nottebohmstr. 28
58511 Lüdenscheid
Germany

Scope:

Design/construction, manufacture, assembly and sales for heatsinks, sockets, connectors, mounting parts, cases, 19" assembly systems, PCB accessory

SoA Version 2.2 dated 14.02.2020

Proof has been furnished by means of an audit that the requirements of ISO/IEC 27001:2013 are met.

Validity:

The certificate is valid from 2020-12-23 until 2023-09-30.

2021-01-12

TÜV Rheinland Cert GmbH
Am Grauen Stein · 51105 Köln

www.tuv.com



The authorised economic operator AEO-certificate

Since 1st January 2008 companies based in the European Union and involved in customs activities have been able to apply for the status of Authorised Economic Operator (AEO). The status entitles a benefit of safety-relevant custom controls and/or simplification according to custom regulations.

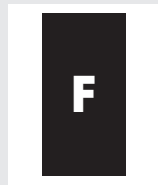
The goal is here to ensure an uninterrupted global supply chain from the producer to the end user. The status of an authorised economic operator is valid in all Member States and is not limited in time.

Our company has the status AEO-C (customs simplification).

The legal requirements of an authorised economic operator are essentially the result of:

Article 5a community custom code (ZK)

Article 14a - 14x community custom code implementing provision (ZK-DVO)



... index area:
shows topics/categories
"current"



... index area:
shows topics/categories
"following"

G 15

... page number

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

... option for surface finishing



... 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 THR-SMD technique



... components are suitable for press-fit mounting

2,54

... components are suitable for the corresponding grid

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; .eps)	without half-tone images, fonts transformed into paths or supplied
Adobe Acrobat (.pdf)	all fonts enclosed; half-tone images colour-separated (full-tone or scale colours) and
InDesign (.indd)	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 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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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 ± 0.2 mm
- the space allowance is ± 0.03 mm, the overall space allowance over 36 pins ± 0.2 mm
- the shape tolerance of the insulating body is defined by ± 0.15 mm
- the separation of number of pins by means of cutting: ± 0.6 mm/ ± 0.3 mm
- the separation of number of pins by means of sawing: ± 0.1 mm/ ± 0.4 mm (no standard)
- coplanarity of SMD solder connections max. 0.15 mm with a bar length of 50 mm according to DIN EN 61760-1

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 1.2 µm Au

Quality class 2: at least 200 cycles of operation, layer thickness accordingly at least 0.75 µm Au

Quality class 3: at least 50 cycles of operation, layer thickness accordingly at least 0.2 µm Au

In case that tinned contacts are used „tin on tin“ we can guarantee max. 10 cycles of operation.

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

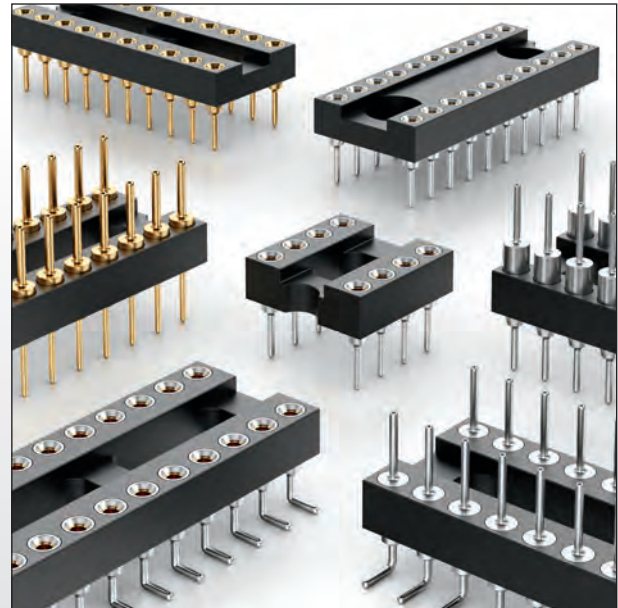
The plastics used for the male and female headers are mainly high-temperature resistant which means that they are suitable for the use in the reflow soldering technique.

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.



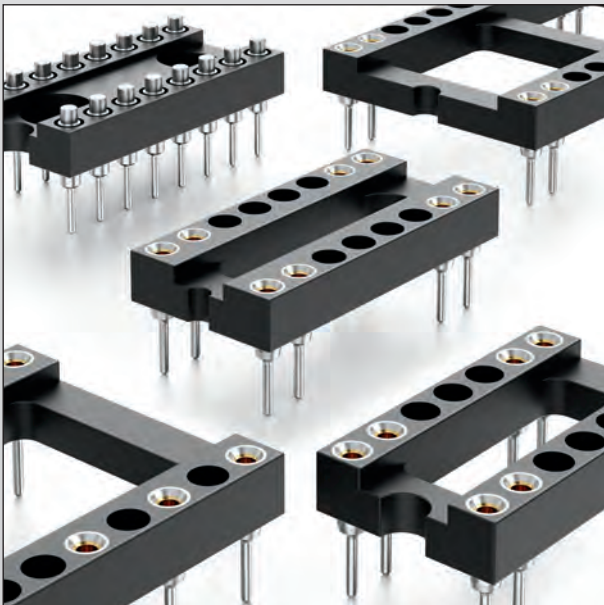
Precision sockets and plugs for ICs with high packing density

- 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]			
		A	B	C	D			A	B	C	D
DIL 6 M ...	6	7.62	10.1	3.8	7.6	DIL 22 M ...	22	10.16	12.7	6.6	27.9
DIL 8 M ...	8				10.1	DIL 24 03 M ...	24	7.62	10.1	4.0	30.6
DIL 10 M ...	10			4.7	12.7	DIL 24 04 M G		10.16	12.7	7.1	
DIL 14 M ...	14			4.9	17.7	DIL 24 M ...		15.24	17.7	11.6	
DIL 16 M ...	16			3.5	20.4	DIL 28 03 M ...	28	7.62	10.1	4.0	35.7
DIL 18 M ...	18			4.1	23.0	DIL 28 M ...		15.24	17.7	11.3	
DIL 20 M ...	20			3.4	25.5	DIL 32 M ...	11.2			40.6	
DIL 22 03 M Z	22			4.8	27.9	DIL 36 M G	10.6			45.6	

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

High-precision sockets and plugs for DIL-IC

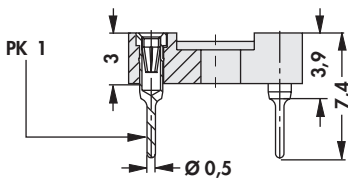
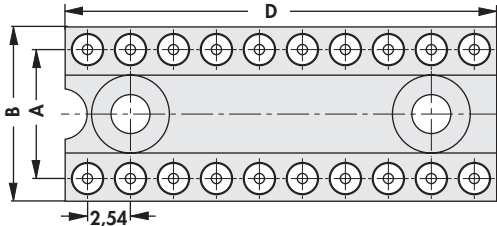
– other number of contacts on request!

art. no.	no. of contacts	dim. [mm]				art. no.	no. of contacts	dim. [mm]			
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			4.9	17.7						
art. no.	no. of contacts	dim. [mm]				art. no.	no. of contacts	dim. [mm]			
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			3.5	20.4						
art. no.	no. of contacts	dim. [mm]				art. no.	no. of contacts	dim. [mm]			
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			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											

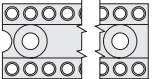
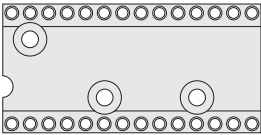
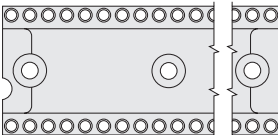
Socket layout for various numbers of contacts for DIL-IC, open frame

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

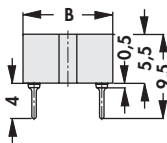
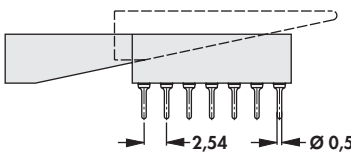
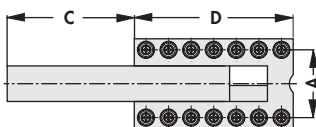
High-precision sockets and plugs for DIL-IC

									
art. no.	no. of contacts	dim. [mm]			art. no.	no. of contacts	dim. [mm]		
		A	B	D			A	B	D
DIL 6 E ...	6	7.62	10.3	7.6	DIL 20 E ...	20	15.24	17.7	25.5
DIL 8 E ...	8			10.1	DIL 28 E ...	28			35.5
DIL 14 E ...	14			17.7	DIL 32 E ...	32			40.6
DIL 16 E ...	16			20.4	DIL 40 E ...	40			50.8
DIL 18 E ...	18			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	7.62	10.1	12	17.0	DIL 16 PEK	16	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

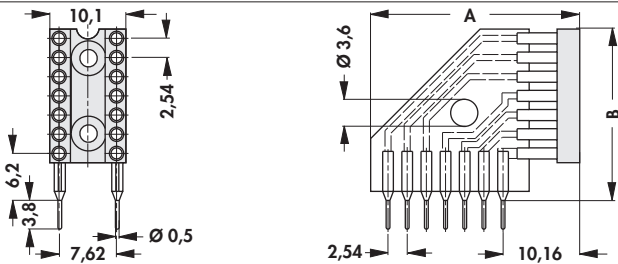
		DIL 4 OR ...	DIL 8 1 OR ...	DIL 8 2 OR ...	
art. no.	no. of contacts				
DIL 4 OR ...	4				
DIL 8 1 OR Z	8				
DIL 8 2 OR ...					
please indicate:	... surface of contact G = gold-plated Z = tin-plated				
contact spring:	gold-plated				

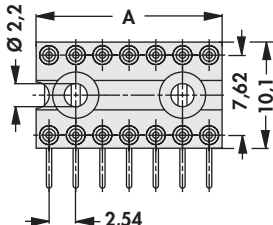
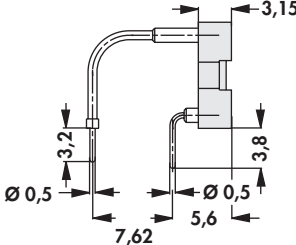
LED display sockets of 0.6" pitch

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

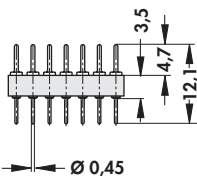
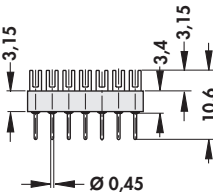
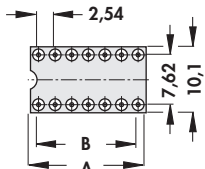
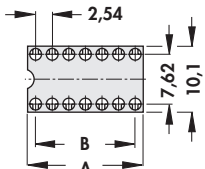
High-precision sockets and plugs for DIL-IC

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

	PK 3 			SK 02 (≙ PK 5) 			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 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								
DILS 14 PK 3	14	17.7	15.24	DILS 18 PK 5	18	23.0	20.32					
surface of contact:				gold-plated								

A

High-precision sockets and plugs for DIL-IC

B

C

D

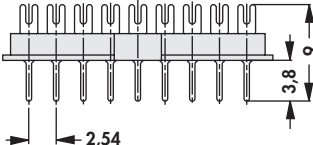
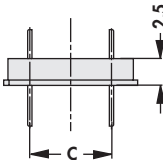
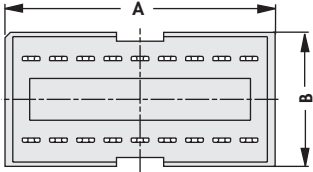
				PK 3			SK 02 (≅ PK 5)		
	art. no.	no. of contacts	dim. [mm]		art. no.	no. of contacts	dim. [mm]		
			A	B			A	B	
	DILS 28 6 PK 3	28	35.5	33.02	DILS 16 6 PK 3	16	20.3	17.78	
	DILS 40 6 PK 3	40	50.8	48.26					
surface of contact:				gold-plated					

DIL platforms

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

E

F

									
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			DILS 28 GO	28	37.8		
DILS 16 GO	16	22.6			DILS 40 GO	40	53.1		
DILS 18 GO	18	25.2							
surface of contact:				gold-plated					

G

H

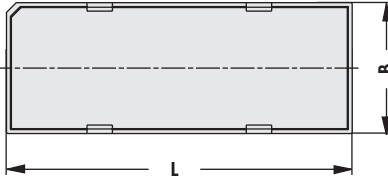
DIL cases - grid spacing 2.54 mm

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

I

K

L

							
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			20.0	DILS 16 GB LO			22.6
DILS 16 GA LO			22.6	DILS 18 GB LO			25.2
DILS 18 GA LO			25.2	DILS 24 GB LO			32.8
DILS 24 GA LO	20.1		32.8	DILS 28 GB LO	20.1		37.8
DILS 40 GA LO			53.1	DILS 40 GB LO			53.1
DILS 08 GB LO	12.5	11.7	12.4				

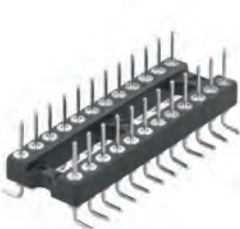
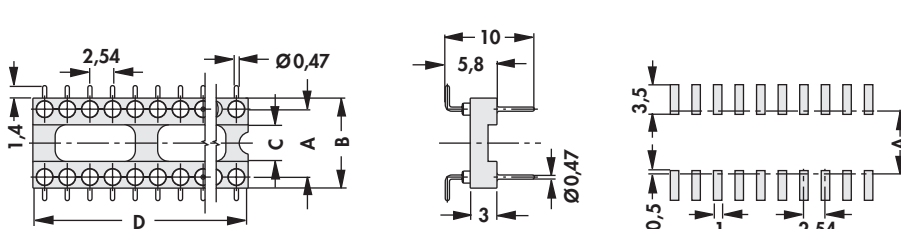
M

N

High-precision sockets and plugs for DIL-IC

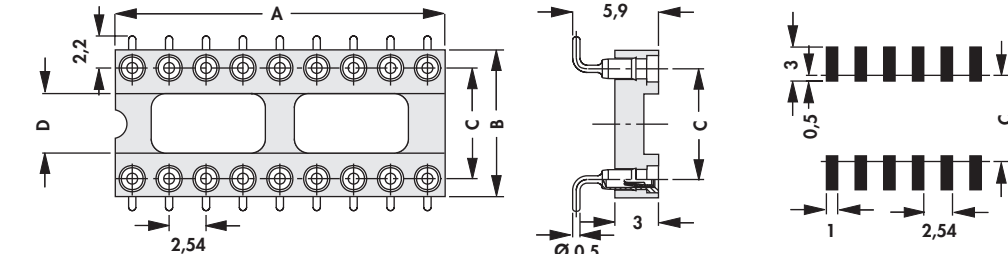
SMD-plug for DIL

- 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				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]			
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				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		10.16		20.70	22.2		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							

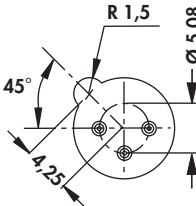
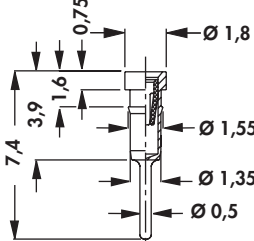
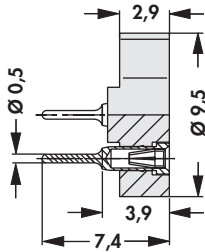
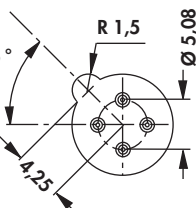
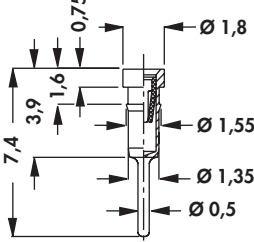
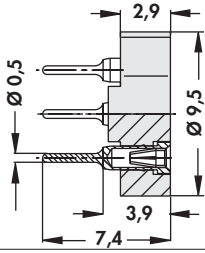
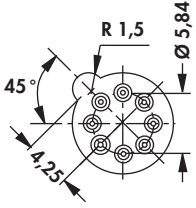
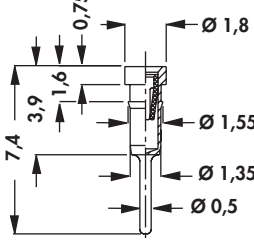
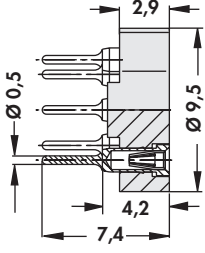
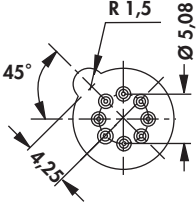
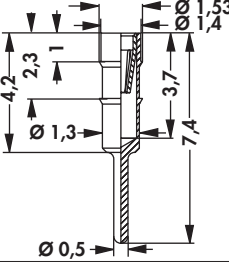
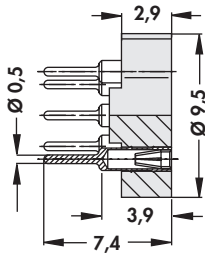
SMD sockets for PLCC - low profile housing

- 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	32	15.65	15.65	5.08	5.08	16.0
PLCC 28 SMD	28	27	18.16	18.16	7.62	7.62	20.6
PLCC 32 SMD	32	24		20.66		10.16	22.5
PLCC 44 SMD	44	22	23.27	23.27	12.70	12.70	27.5
PLCC 68 SMD	68	16	30.89	30.89	20.32	20.32	38.8
PLCC 84 SMD	84	14	35.97	35.97	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
	  
art. no.	no. of contacts
PF 58 2 G	8
contact spring:	gold-plated
contact sleeve:	gold-plated

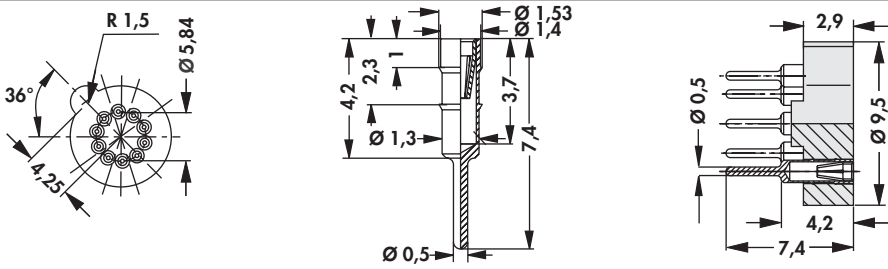
A

Sockets for TO ... cases

B

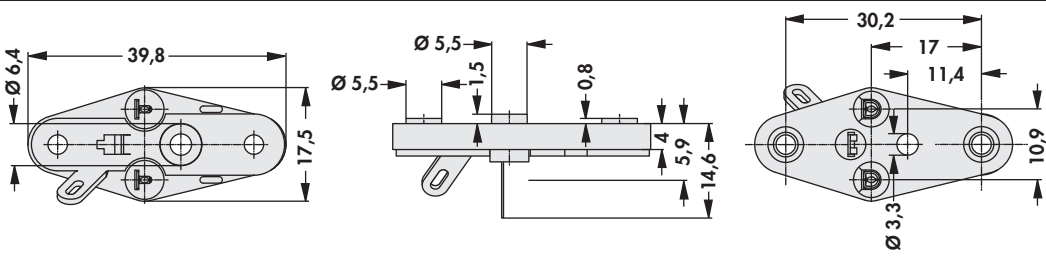
C

Sockets for TO 5

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

D

Sockets for power transistors TO 3

	
art. no.	no. of contacts
TF 3 2	3
surface of contact:	gold-plated

F

G

H

I

K

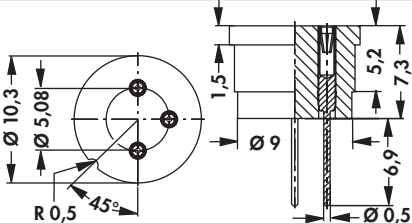
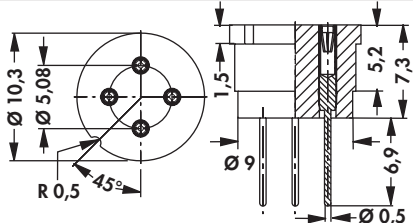
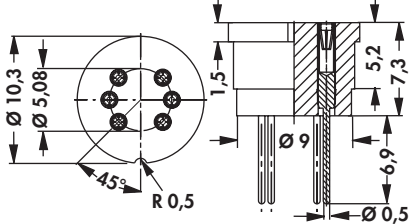
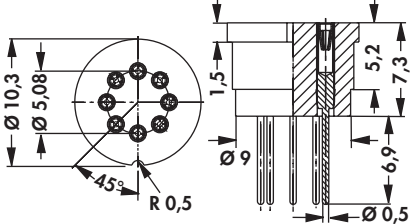
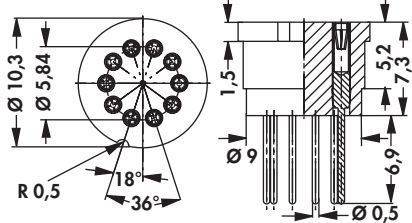
L

M

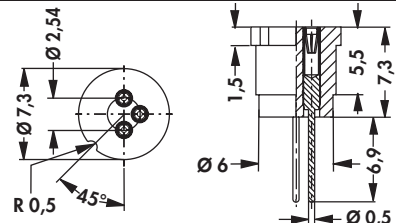
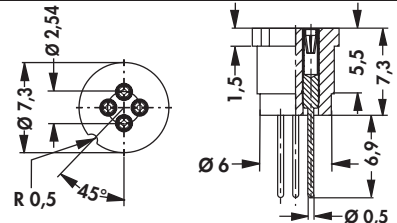
N

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		
TF 510	10		

Transistor sockets - teflon sockets for TO 18

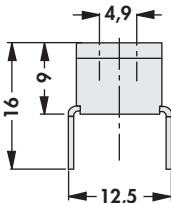
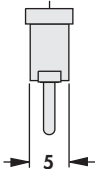
			
art. no.	no. of contacts	art. no.	no. of contacts
TF 183	3	TF 184	4
contact spring:	gold-plated		
contact sleeve:	gold-plated		

A

Sockets for crystal oscillators

B

C

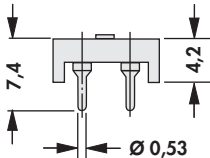
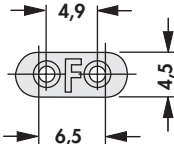
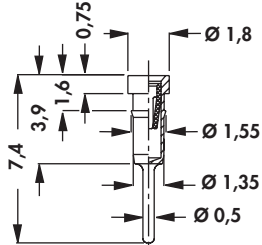
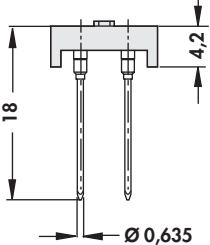
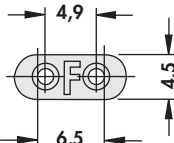
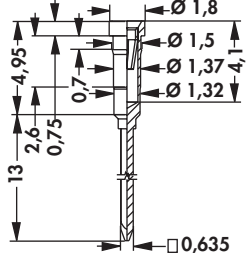
art. no.				
QS 25 GS				
surface of contact:			silver-plated	

Precision sockets for crystal oscillators in case HC 18

D

E

F

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

H

Insulators for crystal oscillators

* = equates self retaining

I

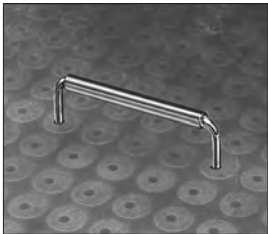
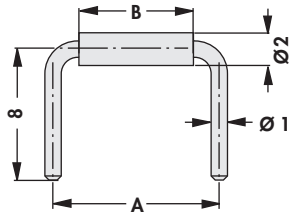
	* 		
art. no.	case design	dim. [mm]	
ISQ 04	HC-18/U/ HC-49/U/ HC-43/U	C	D
ISQ 05		-	0.71
ISQ 06		2.4	*
ISQ 07			0.71
ISQ 08	HC-50/U/ HC-42/U/ HC-25/U	-	1.30
dielectric strength:	9 kV		
name of foil:	MYLAR		
heat resistance:	250°C		
material thickness:	0.127 mm		

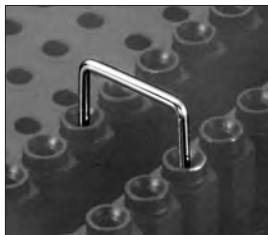
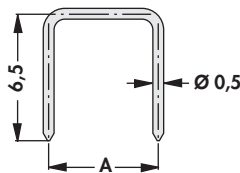
M

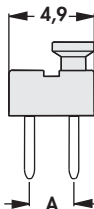
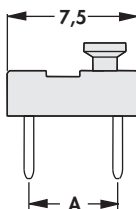
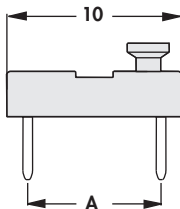
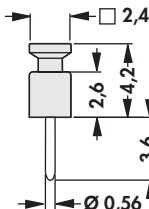
N

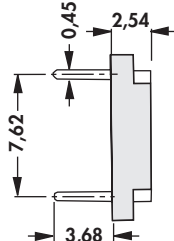
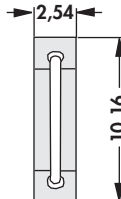
Jumper links / Separable jumpers

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

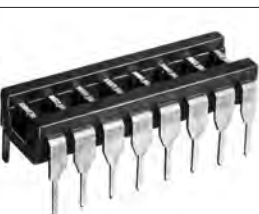
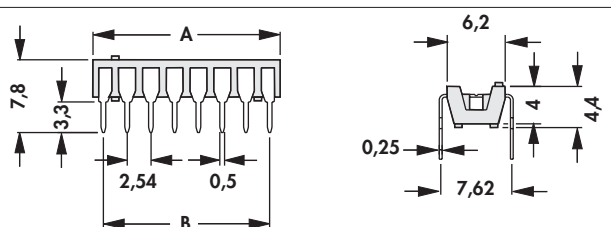
								
art. no.	dim. [mm]		art. no.	dim. [mm]				
	A			A				
LEB 01 G	2.54		LEB 03 G	7.62				
LEB 02 G	5.08							
surface of contact:		gold-plated						

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

Jumper links / Separable jumpers

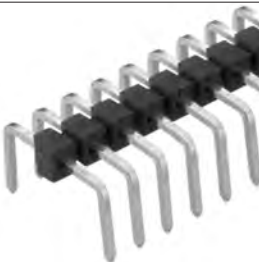
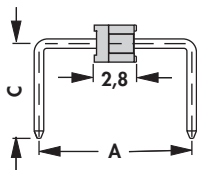
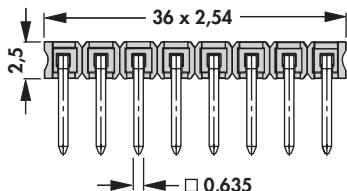
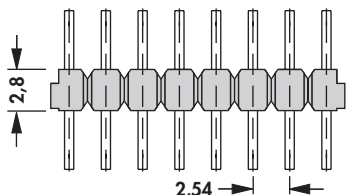
Separable jumpers for soldering technology

– 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					

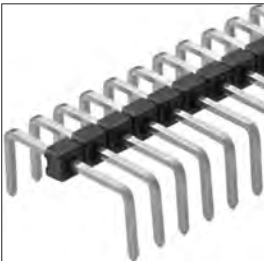
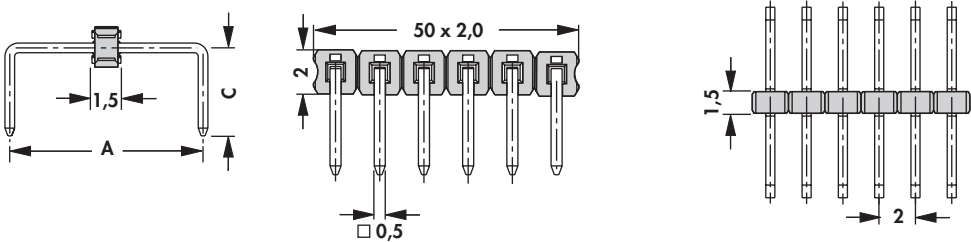
Jumper links, grid spacing 2.54 mm, □ 0.635 mm

– **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		LB SL 1524 ...	15.24		
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
- $\square$ 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

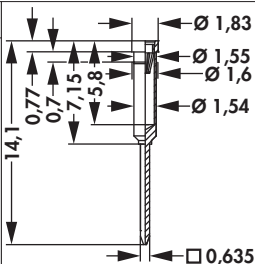
art. no.		art. no.		art. no.	
1706 G		PEK G		PK 1 ...	
art. no.		art. no.		art. no.	
1831 Z		WWPS 1 G		SK 06 ...	
art. no.		art. no.		art. no.	
SK 13 X 2 G		TF G		SK 19 ...	
art. no.		art. no.		art. no.	
SIL 1 ...		SK 17 ...		SK 18 ...	
please indicate: ... surface of contact G = gold-plated Z = tin-plated					
contact spring:		gold-plated			

Female contact for 0.64 mm □ and Ø 0.80 mm

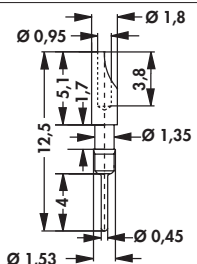
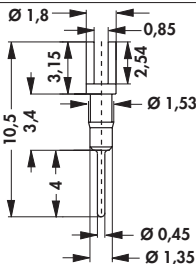
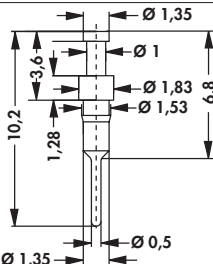
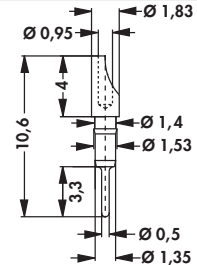
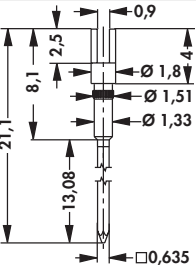
art. no.		art. no.		art. no.	
SKB 5 Z		SKB 9 Z		SK 21 Z	
contact spring:		gold-plated			
contact sleeve:		tin-plated			

High-precision contacts, loose

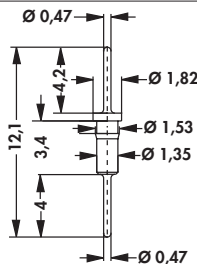
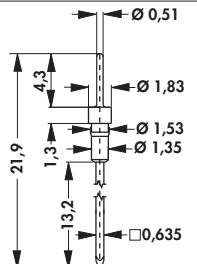
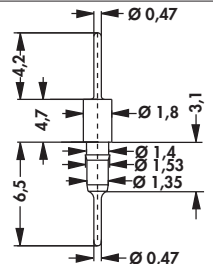
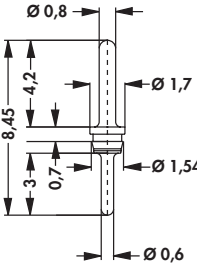
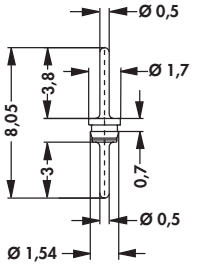
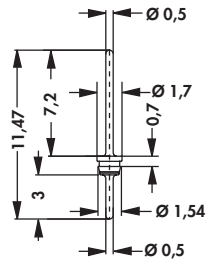
Female contact for 0.64 mm □ and Ø 0.80 mm

art. no.			
BL 18 G X 1			
contact spring:	gold-plated		
contact sleeve:	gold-plated		

Contacts with solder head

art. no.		art. no.		art. no.	
PK 4 Z		SK 02 ...		SK 03 ...	
art. no.		art. no.			
SK 04 Z		SK 08 G			
please indicate: ... surface of contact G = gold-plated Z = tin-plated					

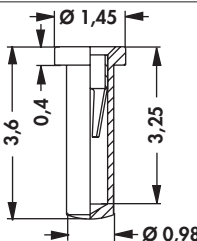
Pin contacts

art. no.		art. no.		art. no.	
SK 05 ...		SK 11 ...		SK 14 X 2 ...	
art. no.		art. no.		art. no.	
SK 40 G		SK 41 ...		SK 42 ...	
please indicate: ... surface of contact G = gold-plated Z = tin-plated					

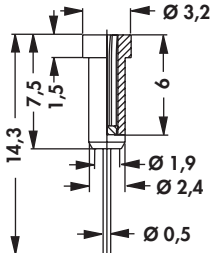


Connector-sleeves

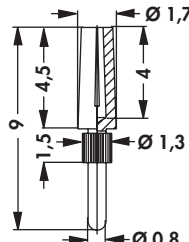
For 0.4 mm with BeCu spring 3 μ m Ni, at least 0.1 μ m Au

art. no.		
SB 1		

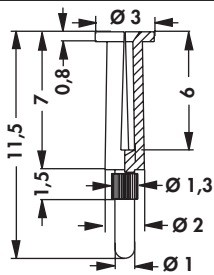
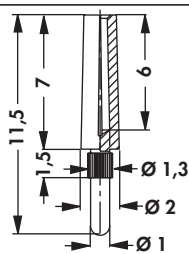
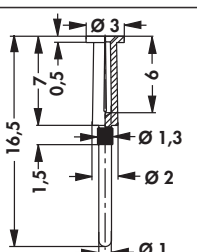
For 0.4 mm with bronze spring, teflon insulated

art. no.		
SB 2		

For 0.8 mm, slotted

art. no.		
SB 3		

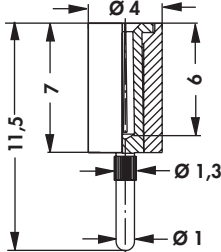
For 1 mm, slotted

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

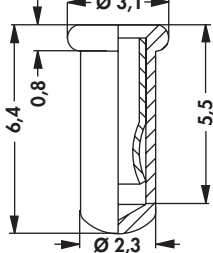


Connector-sleeves

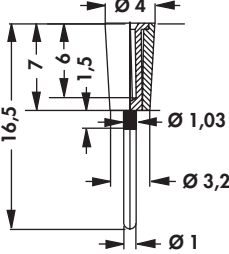
For 1 mm, slotted, plastic insulated

art. no.		
		
SB 9		

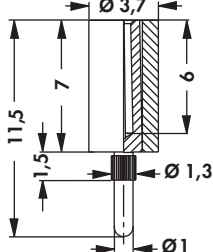
For 1 mm, with BeCu spring 3 µm Ni, 1 µm Au

art. no.		
		
SB 12		

For 1 mm, slotted, plastic insulated

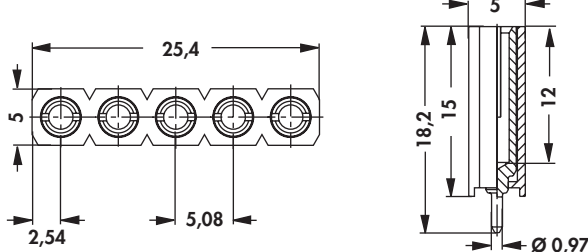
art. no.		
		
SB 16		

For 2 mm, slotted, plastic insulated

art. no.		
		
SB 13 ...		

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

For 2 mm, slotted, plastic insulated, separable

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

Technical data: Sockets

	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		Ø0,4...0,56mm/ 0,22x0,25mm... 0,4x0,55mm	
insert depth	2.5...3.6mm		2.5...3.6mm	
insertion / drawing force	4 lamellas contact/ 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 con- tacts	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 inflammability	UL 94 V-0			
specific insulation resistance	> 10 ¹² Ω·m			

Technical data: Sockets

	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 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 con- tacts	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 inflammability	UL 94 V-0			
specific insulation resistance	>10 ¹² Ω·m			

A

Technical data: Sockets

B

C

D

E

F

G

H

I

K

L

M

N

	DIL ... SMD M, DIL...SMD SK5	MIC ...	PLCC ..., PLCC ... SMD	PF ..., PQ 18 ...
contact material	CuZn-alloy		CuSn alloy	CuZn-alloy
surface contact / contact sleeve	Ni+ $\geq 0.2\mu\text{m}$ Au/ Ni +4... $6\mu\text{m}$ Sn		Ni+2... $4\mu\text{m}$ Sn	Ni+ $\geq 0.2\mu\text{m}$ Au/ Ni +4... $6\mu\text{m}$ Sn
inner contact spring material	CuBe-alloy			CuBe-alloy
inner contact spring surface	Ni+0,25 μm Au			Ni+0,75 μm Au
plugability for circuit points	0,22x0,25mm... 0,4x0,55mm/ $\varnothing 0,4$...0,56mm			0,22x0,25mm... 0,4x0,55mm/ $\varnothing 0,4$...0,56mm
insert depth	2.5...3.6mm			2.5...3.6mm
insertion / drawing force	4 lamellas contact/ 1.8 N/1.4 N			4 lamellas contact/ 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 con- tacts	0,4 pF			0,4 pF
nominal current	1.5 A		1 A	1.5 A
nominal voltage	150 V DC			60 V DC
test voltage	1000 V		500 V	
insulating body material	PPS, GF	polyacetal/ non-con- ductive	PPS, GF	PA 4.6. GF
temperature range	-40°C... +200°C/ (260°C/10 s)		-40°C... +105°C/ (260°C/10 s)	-40°C... +163°C/ (260°C/10 s)
class of inflammability	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 ⁷ $\Omega\cdot\text{m}$
	TF 3 2 (TO 3)	QS 25 GS	LB ... G	CB ...
contact material	CuSn-alloy, CuSn 6; Ni 1-2 μm , Au 0.2 μm	CuSn alloy	CuZn-alloy	
surface contact / contact sleeve		Ni+3 μm Ag	Ni+ $\geq 0.2\mu\text{m}$ Au	Ni+ $\geq 0.2\mu\text{m}$ Au/ Ni +4... $6\mu\text{m}$ Sn
volume resistance		10 m Ω		
contact resistance	<10 m Ω			
contact resistance after 1000 cycles		7 m Ω		
capacity between two adjacent con- tacts	1 pF			
nominal current		2.5 A		
nominal voltage		125 V DC		
test voltage	1650 V	500 V		
insulating body material	stanyl PA 4.6	PA, GF		
temperature range	-65°C ... +290°C	-40°C ... +180°C		
class of inflammability	UL 94 V-1	UL 94 V-0		
specific insulation resistance	>10 ⁷ $\Omega\cdot\text{m}$			
current rating	15 A max.			

Technical data: Sockets

	LEB ... G	PSB 03 G	CAB 3 ... 03 Z	LB SL ..., LB SL LP ...
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	250 V DC
test voltage	1000 V		1000 V	2000 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 inflammability	UL 94 V-0		UL 94 V-0	
specific insulation resistance			>10 ¹² Ω·m	>10 ⁷ Ω·m
	LB SLY 06 ...	1706 G, PEK 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	100 V DC	60 V DC		
test voltage	500 V	1000 V		
insulating body material	PA 4.6. GF			
temperature range	-40°C... +163°C/ (260°C/10 s)			
class of inflammability	UL 94 V-0			
specific insulation resistance	>10 ⁷ Ω·m			

Technical data: Sockets

	TF ..., TF G	SK 17 ...	SK 18 ...	SKB 5 Z, SKB 9 Z
contact material	CuZn-alloy			
surface contact / contact sleeve	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
plugability for circuit points	Ø0,4...0,56mm/ 0,22x0,25mm... 0,4x0,55mm	□0,22x0,25mm... □0,4x0,55mm/ Ø0,4...0,56mm	Ø0,4...0,56mm/ 0,22x0,25mm... 0,4x0,55mm	
insert depth	2.5...3.6mm			2.5...6mm
insertion / drawing force	4 lamellas contact/ 1.8 N/1.4 N	1.8 N/1.4 N		6 lamella contacts/ 1.3N/0.3N
shock resistance	50 g			
vibration resistance max.	15 g			
volume resistance	10 mΩ			
contact resistance	4 mΩ			
contact resistance after 1000 cycles	7 mΩ			
nominal current	1.5 A			3 A
nominal voltage	100 V DC	60 V DC		150 V DC
test voltage	1000 V			
insulating body material	PTFE			
temperature range	-200°C ... +260°C			
class of inflammability	UL 94 V-0			
specific insulation resistance	>10 ¹⁴ Ω·m			
	SK 21 Z	BL 18 G X 1	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
contact material	CuZn-alloy			
surface contact / contact sleeve	Ni+4...6μm Sn	Ni+≥0.2μm Au	Ni+≥0.2μm Au/ Ni +4...6μm Sn	Ni+≥0,1μm Au
inner contact spring material	CuBe-alloy			CuBe-alloy
inner contact spring surface	Ni+0,75μm Au			Ni+≥0,1μm Au
plugability for circuit points	□0,55...0,65mm/ Ø0,65...0,85mm			Ø0,35...0,5 mm
insert depth	2.5...3.6mm	2.5...6mm		1.5...3mm
insertion / drawing force	1.3N/0.3N			
nominal current	3 A		1.5 A	2 A
nominal voltage	150 V DC		60 V DC	
test voltage	1500 V		1000 V	

Technical data: Sockets

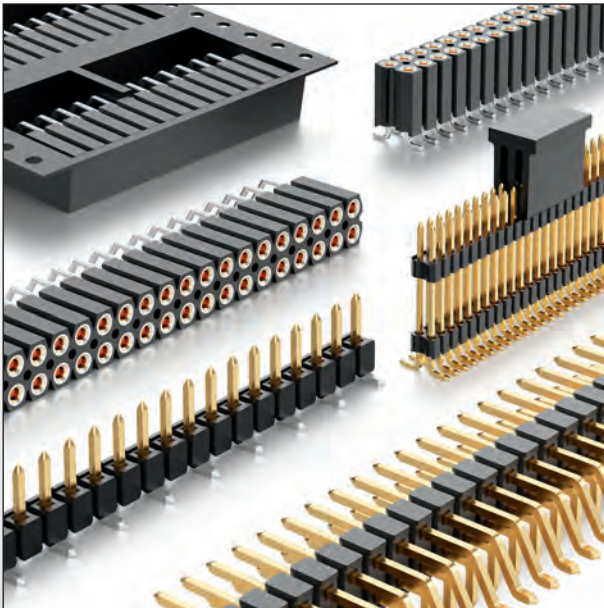
	SB 2	SB 3	SB 4, SB 5, SB 6	SB 9
contact material	CuZn-alloy			
surface contact / contact sleeve	Ni+≥0.2µm Au	Ni+0.25µm Au		
inner contact spring material	CuBe-alloy			
inner contact spring surface	Ni+0,75µm Au			
plugability for circuit points	Ø0,4...0,56mm/ 0,22x0,25mm... 0,4x0,55mm	Ø0,8mm	Ø1mm	
insert depth	2.8...3.8mm	4mm	6mm	
nominal current	2 A		3 A	
nominal current 70°C	1 A		2 A	
insulating body material	PTFE (teflon)			PA 6.6
dielectric strength	≤500 V		≤500 V	
	SB 12	SB 16	SB 13	SB 15
contact material	CuZn-alloy			
surface contact / contact sleeve	Ni+0.25µm Au			
inner contact spring material	CuBe-alloy			
inner contact spring surface	Ni+1µm Au			
plugability for circuit points	Ø1mm		Ø2mm	
insert depth	3.8...5.5mm	2...6mm	6mm	12mm
volume resistance	≤30 mΩ			
nominal current	4 A		3 A	
nominal current 70°C			2 A	
insulating body material		PBT, GF	polyolefin	PA 4.6. GF
class of inflammability		UL 94 V-0		UL 94 V-0
dielectric strength			≤500 V	

fischer

elektronik

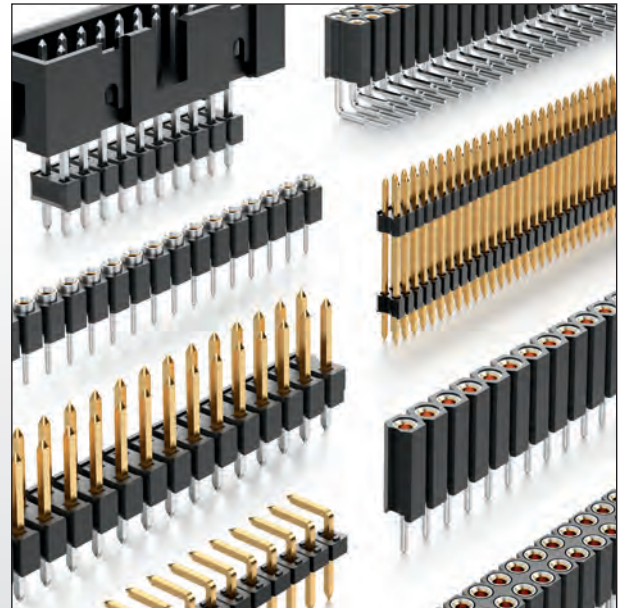
Male and female headers in SMD version
Male and female headers for solder technology (THT)

Male and female header in press-in mounting
Multipoint connector



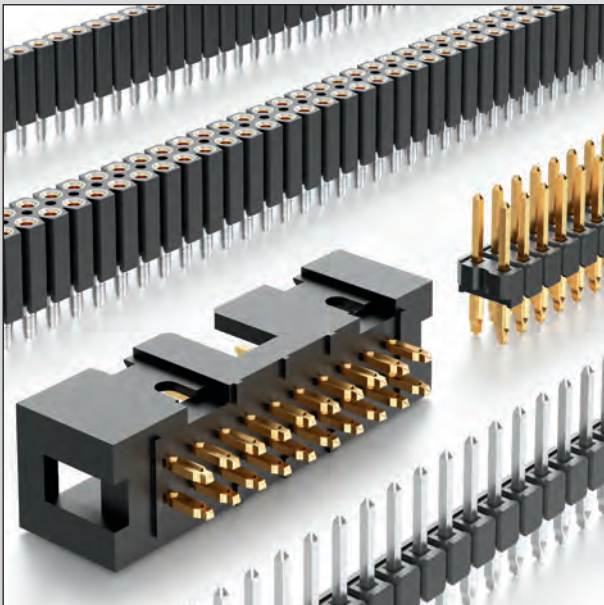
Male and female headers in SMD version

- 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



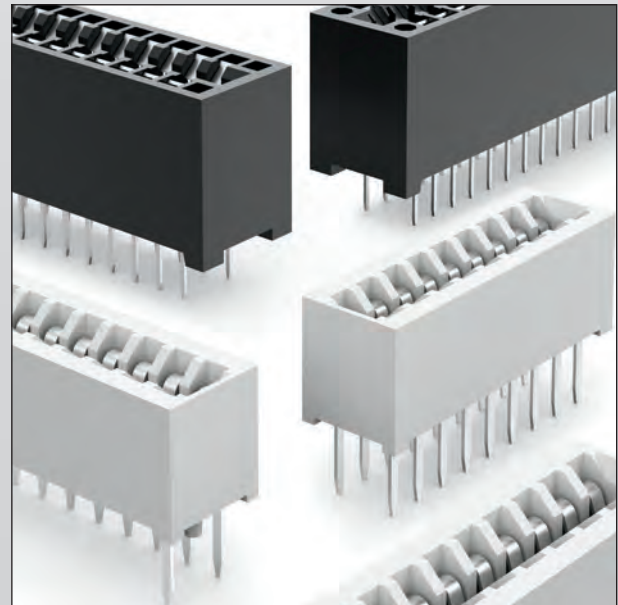
Male and female headers for solder technology (THT)

- 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



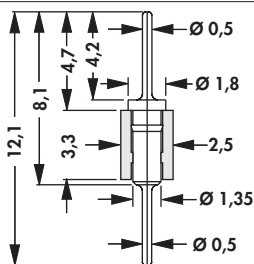
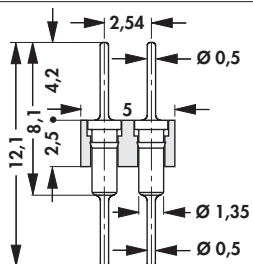
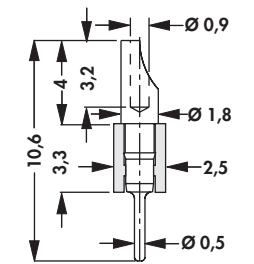
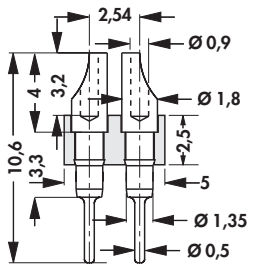
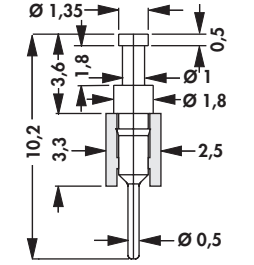
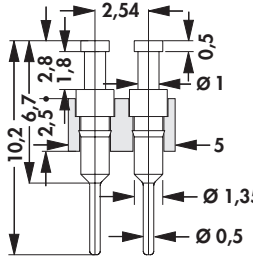
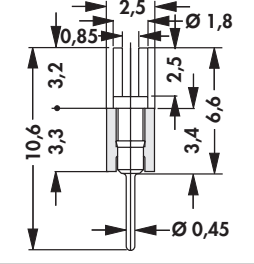
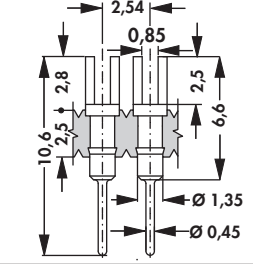
Multipoint connector

- 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

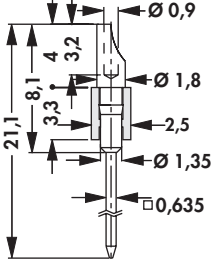
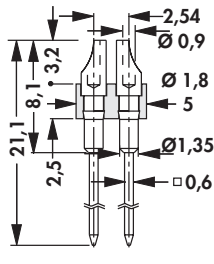
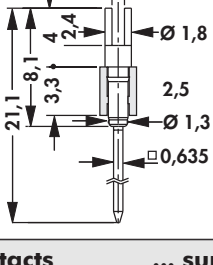
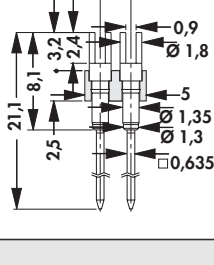
- also available as single contact, **SK ...** → F 18
- **version:**
 - MK 05 / MK 205:** contact pin on both sides
 - MK 04 / MK 204:** solder-cup
 - MK 03 / MK 203:** with solder head
 - MK 02 / MK 202:** with solder fork

art. no.			art. no.		
MK 05 ...			MK 205 ...		
art. no.			art. no.		
MK 04 ...			MK 204 ...		
art. no.			art. no.		
MK 03 ...			MK 203 ...		
art. no.			art. no.		
MK 02 ...			MK 202 ...		
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, Wire Wrap pin □ 0.635 mm

- version:
MK 10 / MK 210: with solder-cup
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 ... surface of contact					
		one row 1 - 50		G = gold-plated	
		two rows 2 - 100		Z = tin-plated	

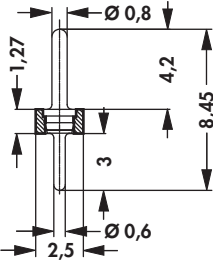
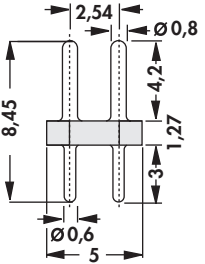
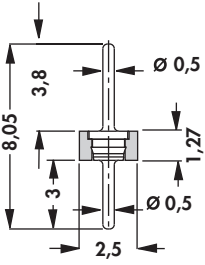
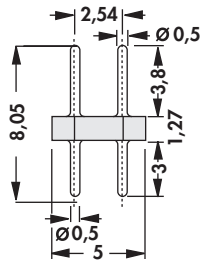
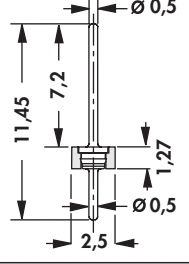
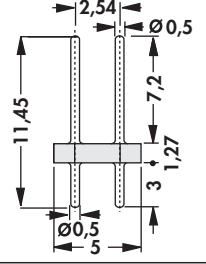
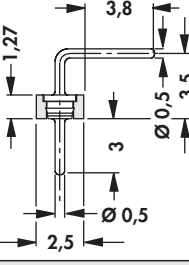
– parallel PCB connection

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						
one row 1 - 50						
two rows 2 - 100						
... surface of contact						
G = gold-plated						
Z = tin-plated						

Male headers

Precision contacts, low profile

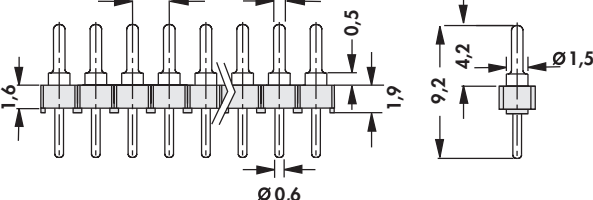
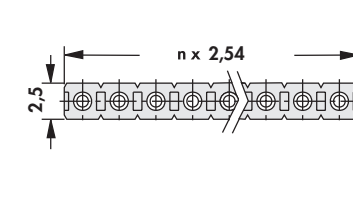
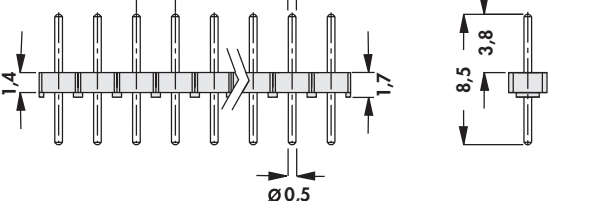
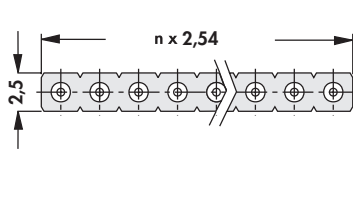
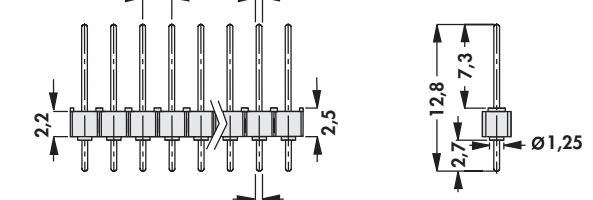
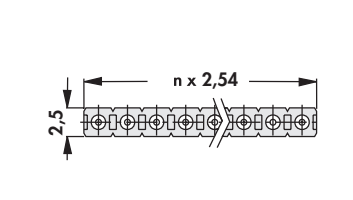
– also available as single contact, **SK ...** → F 18

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

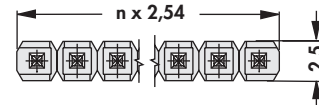
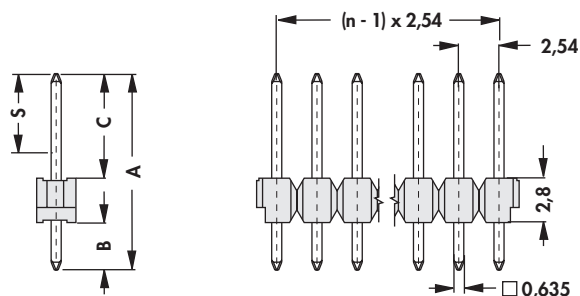
Precision contacts, low profile

- 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

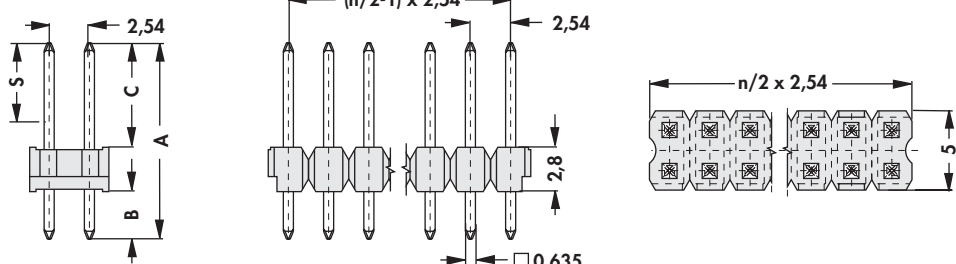
- every pin length is available on request
- one row, □ 0.635 mm



art. no.	dim. [mm]				art. no.	dim. [mm]			
	A	B	C	S		A	B	C	S
SL 11 097...	9.7	3.0	3.9	4	SL 1 025 ...	11.2	2.6	5.8	4
SL 11 112 ...	11.2		5.4		SL 1 053 ...	13.9	5.8	5.3	5
SL 11 124 ...	12.4		6.6	SL 1 078 ...	16.4	7.8			
SL 11 139 ...	13.9		8.1	SL 1 104 ...	19.0	10.4			
SL 11 164 ...	16.4		10.6	SL 1 128 ...	21.4	12.8		6	
SL 11 190 ...	19.0		13.2	SL 1 154 ...	24.0	15.4			
SL 11 214 ...	21.4		15.6	SL 1 179 ...	26.5	17.9			
SL 11 240 ...	24.0		18.2	SL 1 230 ...	31.6	23.0			
SL 11 265 ...	26.5		20.7						
SL 11 316 ...	31.6		25.8						
please indicate:	... no. of contacts one row 1 - 36								
	... surface of contact S = selective gold-plated G = gold-plated Z = tin-plated								

Male headers

- every pin length is available on request
- two rows, □ 0.635 mm

									
art. no.	dim. [mm]				art. no.	dim. [mm]			
	A	B	C	S		A	B	C	S
SL 22 097 ...	9.7	3.0	3.9	4	SL 2 025 ...	11.2	5.8	5.8	4
SL 22 112 ...	11.2		5.4		SL 2 053 ...	13.9		5.3	
SL 22 124 ...	12.4		6.6		SL 2 078 ...	16.4		7.8	5
SL 22 139 ...	13.9		8.1	5	SL 2 104 ...	19.0		10.4	
SL 22 164 ...	16.4		10.6		SL 2 128 ...	21.4		12.8	6
SL 22 190 ...	19.0		13.2		SL 2 154 ...	24.0		15.4	
SL 22 214 ...	21.4		15.6		6	SL 2 179 ...		26.5	
SL 22 240 ...	24.0		18.2	SL 2 230 ...		31.6		23.0	
SL 22 265 ...	26.5		20.7						
SL 22 316 ...	31.6		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

"Dimensions A + B" changeable

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

- one row, □ 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	S		A	B	C	S
SL 3 025 ...	4.5	3.0	5.8	5	SL 3 152 ...	16.7	15.2	5.8	6
SL 3 053 ...	6.9	5.4			SL 3 182 ...	19.7	18.2		
SL 3 080 ...	9.5	8.0			SL 3 207 ...	22.2	20.7		
SL 3 101 ...	11.6	10.1	6	6	SLK 3 025 ...	4.5	3.0	3.0	4
SL 3 131 ...	14.6	13.1							
please indicate: ... no. of contacts one row 1 - 36 ... surface of contact 									

- two rows, □ 0.635 mm
- **the surface of dimension "C"** of following articles is selective gold-plated: **SLK 4 025 ... S, SL 4 025 ... S**

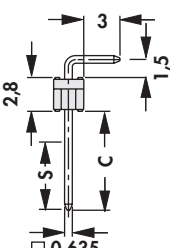
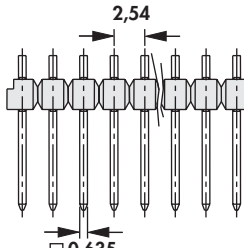
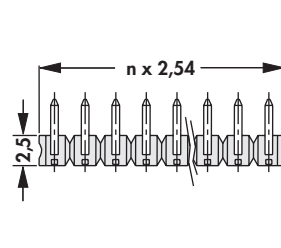
art. no.	dim. [mm]				art. no.	dim. [mm]						
	A	B	C	S		A	B	C	S			
SL 4 025 ...	4.5	3.0	5.8	5	SL 4 152 ...	16.7	15.2	5.8	6			
SL 4 101 ...	11.6	10.1		6	SLK 4 025 ...	4.5	3.0	3.0	4			
please indicate:												
... no. of contacts					... surface of contact							
two rows 2 - 72					S = selective 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	S		C	S	
SL 18 042 ...	4.2	5	SL 18 108 ...	10.8	5	
SL 18 082 ...	8.2		SL 18 132 ...	13.2	6	
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

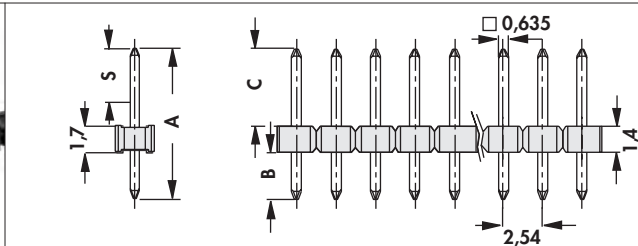
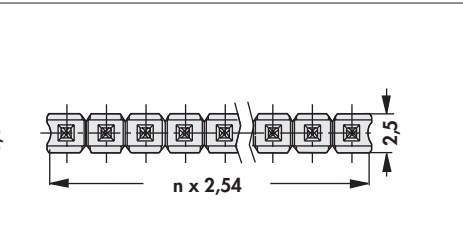
art. no.	dim. [mm]				art. no.	dim. [mm]			
	C	S			C	S			
SL 19 082 ...	8.2	5		SL 19 132 ...	13.2	6			
SL 19 108 ...	10.8								
please indicate:									
... no. of contacts			... surface of contact						
two rows 2 - 72			S = selective gold-plated						
			G = gold-plated						
			Z = tin-plated						

Male headers

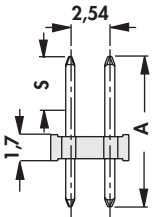
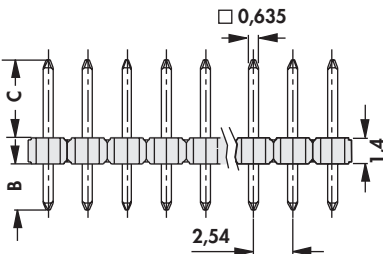
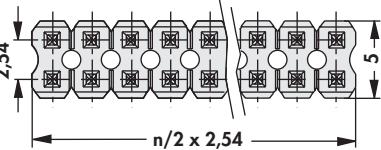
Low profile, straight

– any pin length is available on request

– one row, □ 0.635 mm

									
art. no.	dim. [mm]				art. no.	dim. [mm]			
	A	B	C	S		A	B	C	S
SL LP 1 082 ...	8.2	3	3.5	3	SL LP 1 139 ...	13.9	3	9.2	5
SL LP 1 097 ...	9.7		5.0	4	SL LP 1 164 ...	16.4		11.7	
SL LP 1 112 ...	11.2		6.5		SL LP 1 190 ...	19.0		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	S		A	B	C	S			
SL LP 2 082 ...	8.2	3	3.5	3	SL LP 2 139 ...	13.9	3	9.2	5			
SL LP 2 097 ...	9.7		5.0	4	SL LP 2 164 ...	16.4		11.7				
SL LP 2 112 ...	11.2		6.5		SL LP 2 190 ...	19.0		14.3				
please indicate:												
... no. of contacts												
two rows 2 - 72												
... surface of contact												
S = selective gold-plated												
G = gold-plated												
Z = tin-plated												

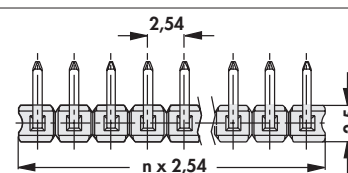
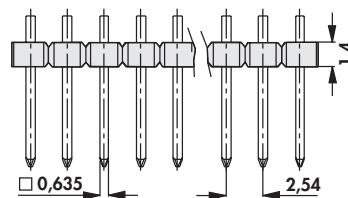
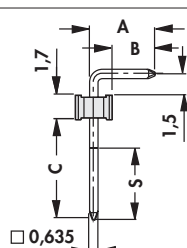
A

Male headers

Low profile, angled

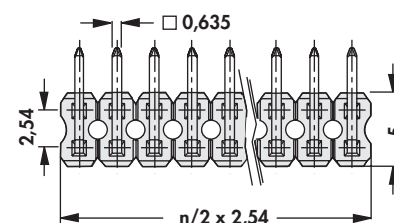
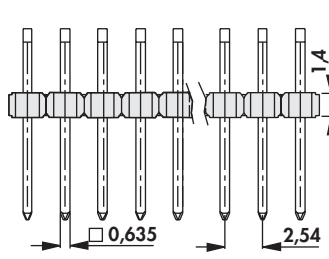
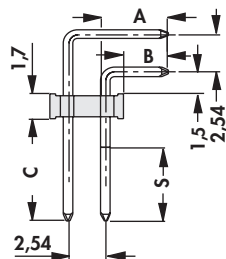
– any pin length is available on request

– one row, □ 0.635 mm



art. no.	dim. [mm]				art. no.	dim. [mm]			
	A	B	C	S		A	B	C	S
SL LP 3 041 ...	4.5	3	4.1	4	SL LP 3 069 ...	4.5	3	6.9	5
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	S
SL LP 4 041 ... G	4.5	3	4.1	SL LP 4 069 ...	4.5	3	6.9	5
SL LP 4 041 ... Z								
please indicate:	... no. of contacts two rows 2 - 72			... surface of contact S = selective gold-plated G = gold-plated Z = tin-plated				

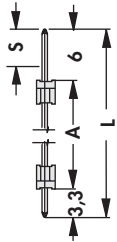
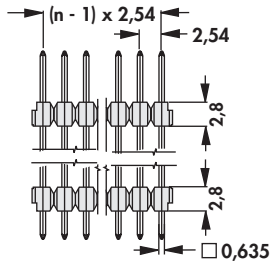
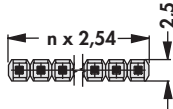
N

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]			art. no.	dim. [mm]			art. no.	dim. [mm]	
	A	L	S		A	L	S		A	L
SL 5 071 ...	7.1	16.4	5	SL 5 156 Z	15.6	24.9	6	SL 5 285 ...	28.5	37.8
SL 5 097 ...	9.7	19.0		SL 5 172 ...	17.2	26.5		SL 5 315 ...	31.5	40.8
SL 5 121 ...	12.1	21.4	6	SL 5 197 ...	19.7	29.0		SL 5 360 ...	36.0	45.3
SL 5 147 ...	14.7	24.0		SL 5 223 ...	22.3	31.6		SL 5 415 ...	41.5	50.8
SL 5 156 G	15.6	24.9		SL 5 237 ...	23.7	33.0		SL 5 525 ...	52.2	61.5
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

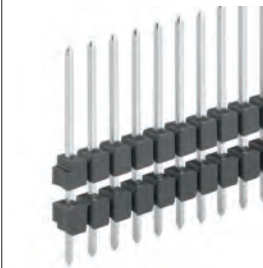
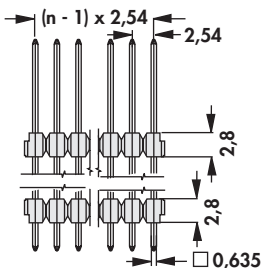
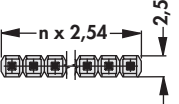
art. no.	dim. [mm]			art. no.	dim. [mm]			art. no.	dim. [mm]	
	A	L	S		A	L	S		A	L
SL 6 071 ...	7.1	16.4	5	SL 6 156 Z	15.6	24.9	6	SL 6 285 ...	28.5	37.8
SL 6 097 ...	9.7	19.0		SL 6 172 ...	17.2	26.5		SL 6 315 ...	31.5	40.8
SL 6 121 ...	12.1	21.4	6	SL 6 197 ...	19.7	29.0		SL 6 360 ...	36.0	45.3
SL 6 147 ...	14.7	24.0		SL 6 223 ...	22.3	31.6		SL 6 415 ...	41.5	50.8
SL 6 156 G	15.6	24.9		SL 6 237 ...	23.7	33.0		SL 6 525 ...	52.2	61.5
please indicate:		... no. of contacts two rows 2 - 72			... surface of contact S = selective gold-plated G = gold-plated Z = tin-plated					

Male headers

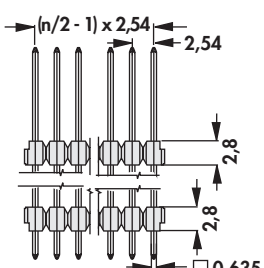
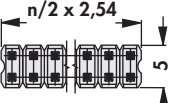
Sandwich-design

- "S" selective gold-plated up to 33 mm pin length
- for interconnections of stacked PCBs
- for plugging the female headers **BL 11 (SL 13 ...)** → G 67 and **BL 12 (SL 14 ...)** → G 67
- 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]		S	art. no.	dim. [mm]	
	A	L			A	L
SL 13 071 ...	7.1	21.4	6	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 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]		S	art. no.	dim. [mm]	
	A	L			A	L
SL 14 071 ...	7.1	21.4	6	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 two rows 2 - 72 ... surface of contact S = selective gold-plated G = gold-plated Z = tin-plated						

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

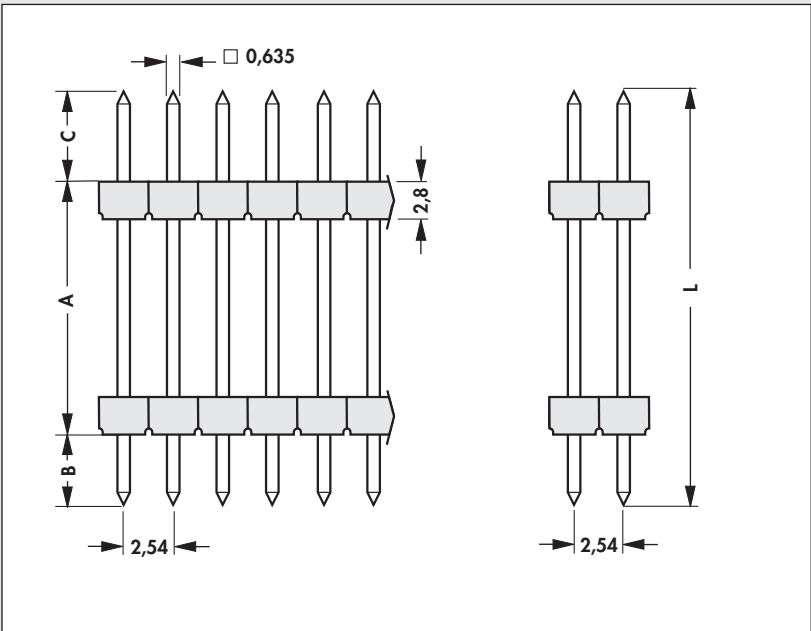
- ☐ inquiry
☐ order

surface finish

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

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

number of contacts



dimensions:

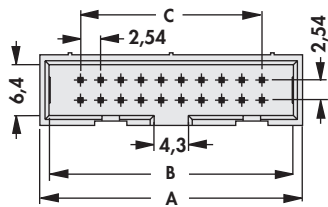
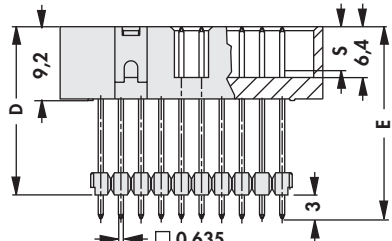
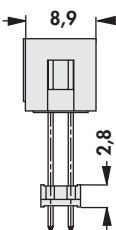
L
A
B
C

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

Male headers

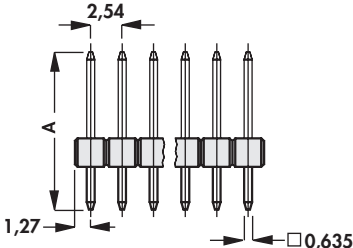
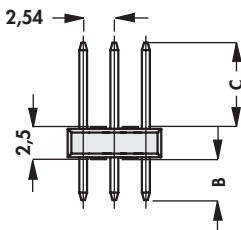
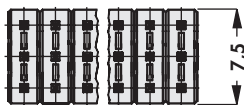
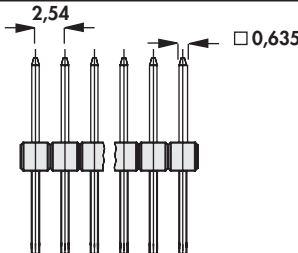
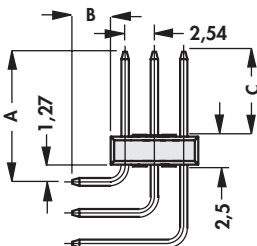
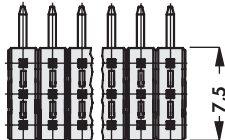
Shrouded male header, with coding and bolting device

– suitable for many flat cable connectors in 2.54 mm pitch

	  						
art. no.	no. of con- tacts	dim. [mm]					
		A	B	C	D	E	S
SLU 10 165 ...	10	20.4	17.8	10.16	13.5	16.5	5
SLU 10 191 ...					16.1	19.1	
SLU 10 241 ...					21.1	24.1	6
SLU 10 266 ...					23.6	26.6	
SLU 16 165 ...	16	28.0	25.4	17.78	13.5	16.5	5
SLU 16 191 ...					16.1	19.1	
SLU 16 241 ...					21.1	24.1	6
SLU 16 266 ...					23.6	26.6	
SLU 20 165 ...	20	33.1	30.5	22.86	13.5	16.5	5
SLU 20 191 ...					16.1	19.1	
SLU 20 241 ...					21.1	24.1	6
SLU 20 266 ...					23.6	26.6	
SLU 26 165 ...	26	40.7	38.1	30.48	13.5	16.5	5
SLU 26 191 ...					16.1	19.1	
SLU 26 241 ...					21.1	24.1	6
SLU 26 266 ...					23.6	26.6	
SLU 40 165 ...	40	58.5	55.9	48.26	13.5	16.5	5
SLU 40 191 ...					16.1	19.1	
SLU 40 241 ...					21.1	24.1	6
SLU 40 266 ...					23.6	26.6	
SLU 50 165 ...	50	71.2	68.6	60.96	13.5	16.5	5
SLU 50 191 ...					16.1	19.1	
SLU 50 241 ...					21.1	24.1	6
SLU 50 266 ...					23.6	26.6	
please indicate: ... surface of contact S = selective gold-plated Z = tin-plated							

Male headers

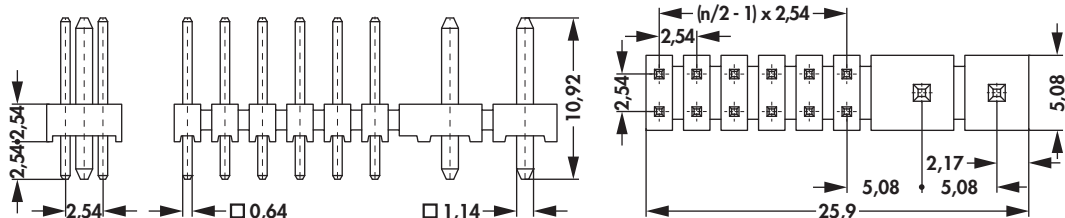
Three rows, □ 0.635 mm

											
art. no.			dim. [mm]								
			A			B			C		
SL KG 3 113 ...			11.3			3.3			5.5		
SL KG 3 126 ...			12.6						6.8		
SL KG 3 147 ...			14.7						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						4.7		
SL KA 3 108 ...			10.8						7.0		
please indicate:											
... no. of contacts			three rows 3 - 150			... surface of contact					
						G = gold-plated					
						Z = tin-plated					

Male headers

Turned precision male contacts

- Suitable for BL 22 SHK 14 02 G → G 72 and BL 23 SHK 14 02 SMD G → G 78
- Signal and high-power contacts
- Contacts gold-plated
- Other number of contacts / contact surface upon request

		
art. no.	signal contacts	high-power contacts
SL 26 SHK 14 02 G	12	2
surface of contact:	gold-plated	

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

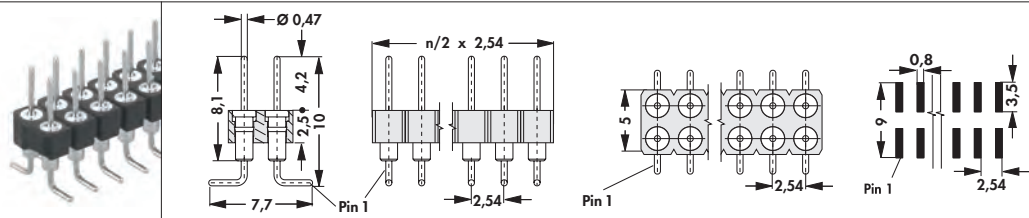
Option for automatic assembly

– reel diameter Ø 330 mm

... SM		MK 26 SMD ... SM	MK 26 SMD ... B SM
... B SM			
... B TR		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)	

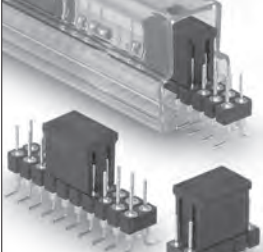
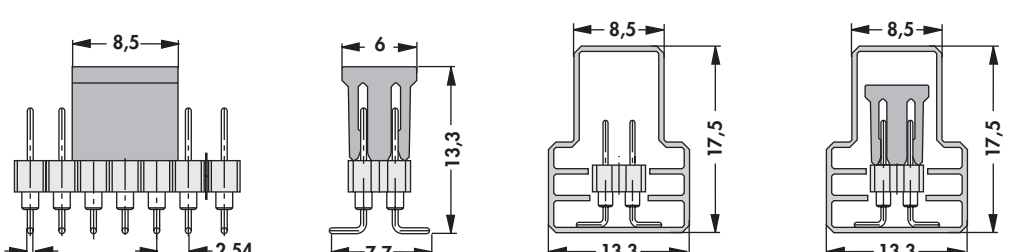
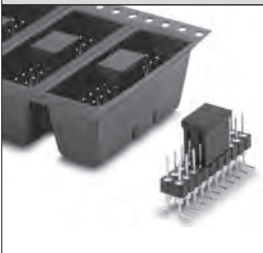
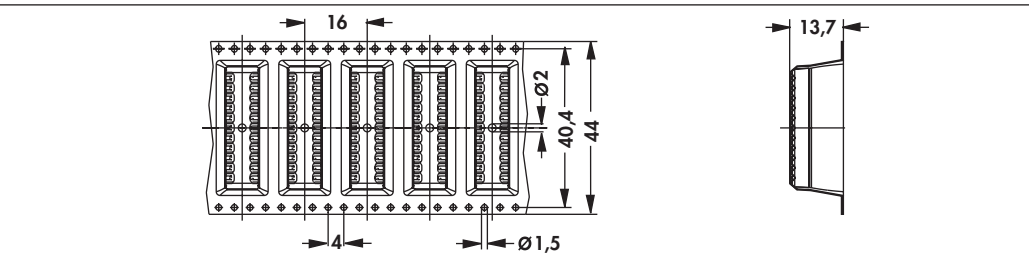
... packing (option) - additions:

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				
				
... 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

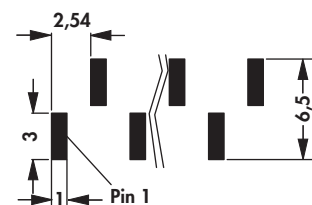
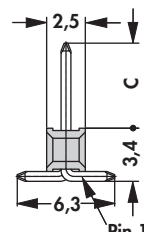
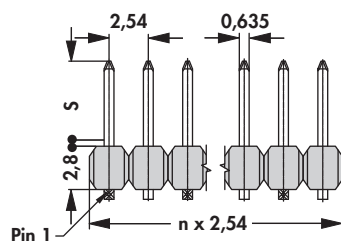
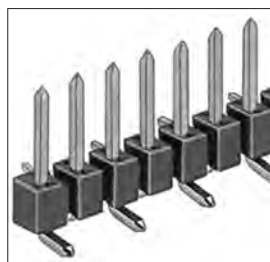
... packing (option) - additions:
MK 27 SMD ... SM: 3-20 contacts

Option for automatic assembly

... SM	

Male headers

□ 0.635 mm



art. no.		dim. [mm]		art. no.		dim. [mm]		art. no.		dim. [mm]	
		C	S			C	S			C	S
SL 10 SMD 040 ...		4.0	4	SL 10 SMD 062 ...		6.7	5	SL 10 SMD 104 ...		10.8	5
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 (optional) SM = bar magazine B SM = pick and place pad and bar magazine B TR = pick and place pad and tape and reel											

... packing (option) - additions:

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

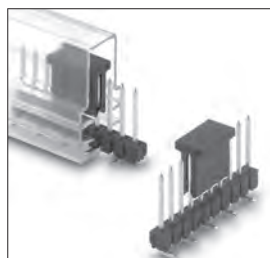
SL 10 SMD 040 - 062 ... B TR: 4-20 contacts, 250 pcs/reel

SL 10 SMD 078 ... B TR: 4-12 contacts, 250 pcs/reel

SL 10 SMD 104 - 130 ... B TR: 4-12 contacts, 150 pcs/reel

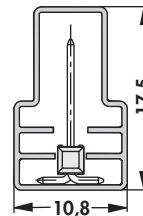
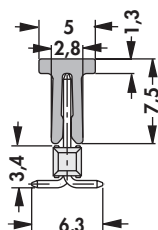
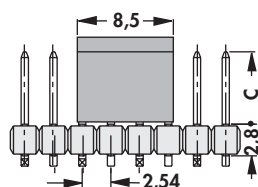
Option for automatic assembly

– reel diameter Ø 330 mm

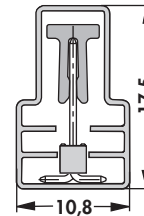


... SM

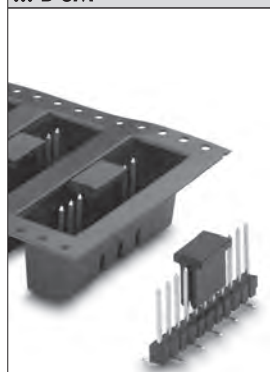
... B SM



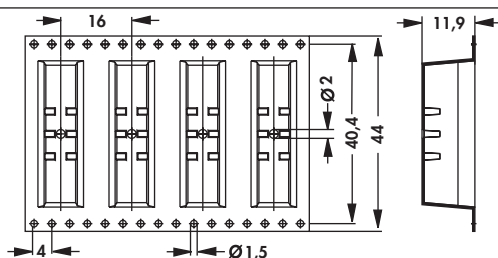
SL 10 SMD ... SM



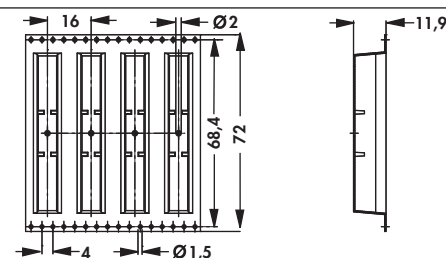
SL 10 SMD ... B SM



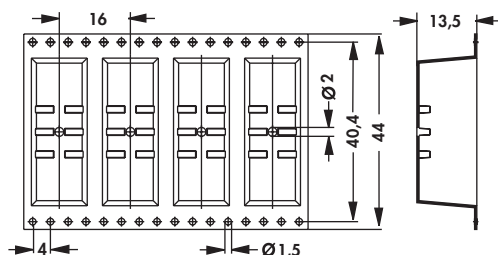
... B TR



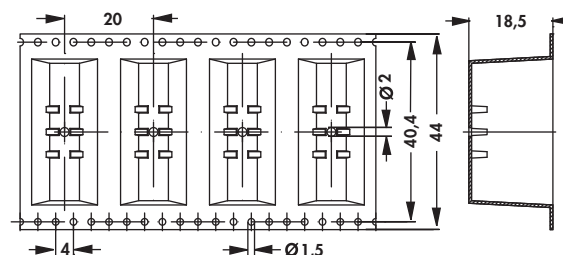
SL 10 SMD 040-062 ... 4-12 ... B TR



SL 10 SMD 040-062 ... 13-20 ... B TR



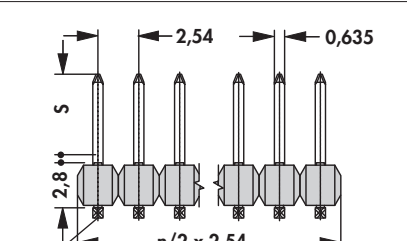
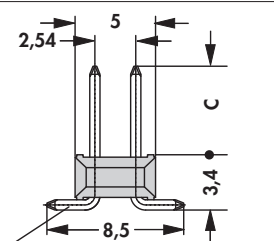
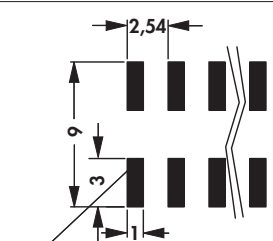
SL 10 SMD 078 ... 4-12 ... B TR



SL 10 SMD 104 - 130 ... 4-12 ... B TR

Male headers

□ **0.635 mm**

								
art. no.	dim. [mm] C S		art. no.	dim. [mm] C S		art. no.	dim. [mm] C S	
SL 11 SMD 040 ...	4.0	4	SL 11 SMD 062 ...	6.7	5	SL 11 SMD 104 ...	10.8	5
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 (150pcs/reel) 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 040-062 ... B TR: 26-40 contacts, 250 pcs/reel

SL 11 SMD 040-078 ... B TR: 6-24 contacts, 250 pcs/reel

SL 11 SMD 104-130 ... B TR: 6-24 contacts, 150 pcs/reel

Option for automatic assembly

... SM

... B SM

SL 11 SMD ... SM

SL 11 SMD ... B SM

SL 11 SMD 040-062 ... 6-24 ... B TR

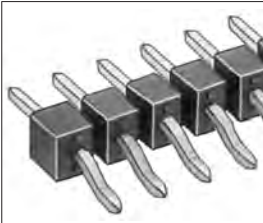
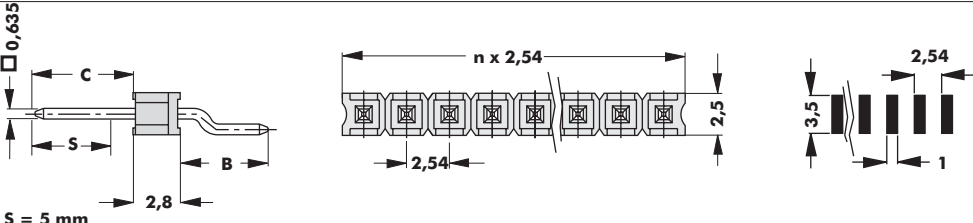
SL 11 SMD 040-062 ... 26-40 ... B TR

SL 11 SMD 078 ... B TR

SL 11 SMD 104-130 ... 6-24 ... B TR

Male headers

□ 0.635 mm

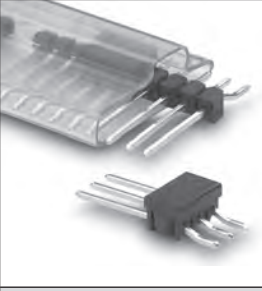
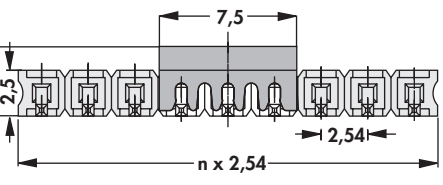
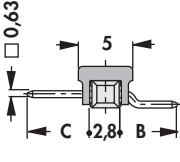
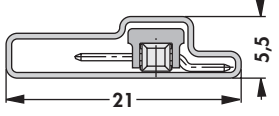
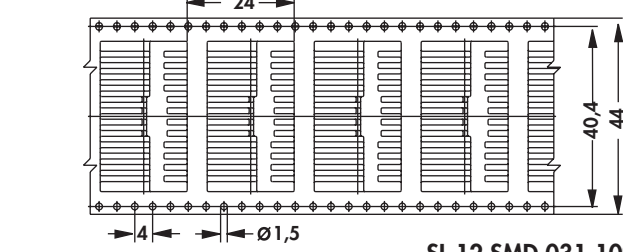
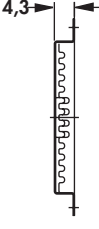
											
S = 5 mm											
art. no.	dim. [mm]			art. no.	dim. [mm]			art. no.	dim. [mm]		
	B	C	S		B	C	S		B	C	S
SL 12 SMD 031 ...	5.2	3.1	4	SL 12 SMD 035 ...	3.2	3.5	4	SL 12 SMD 083 ...	5.2	8.3	5
SL 12 SMD 032 ...	3.2	5.8	—	SL 12 SMD 058 ...	5.2	5.8	5	SL 12 SMD 109 ...		10.9	
please indicate: ... no. of contacts ... surface of contact ... packing (optional) one row 2 - 20 S = selective gold-plated B SM = pick and place pad											

... 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]	art. no.	dim. [mm]
SL 17 SMD 058 ...	C	SL 17 SMD 083 ...	C	SL 17 SMD 109 ...	C	SL 17 SMD 109 ...	S
please indicate:		... no. of contacts		... surface of contact		... packing (optional)	
		two rows 4 - 40		G = gold-plated Z = tin-plated		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

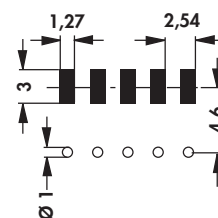
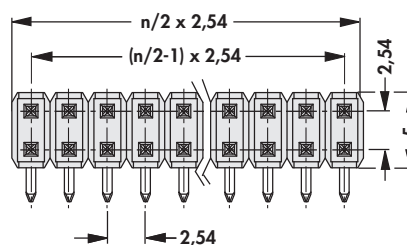
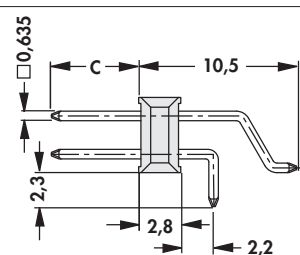
Option for automatic assembly

– reel diameter Ø 330 mm

... B SM	SL 17 SMD ... B SM		
... B TR	SL 17 SMD 058-109 ... B TR		

Male headers

□ **0.635 mm**



art. no.	dim. [mm] C	art. no.	dim. [mm] C	art. no.	dim. [mm] C
SL 28 SMD THR 058 ...	5.8	SL 28 SMD THR 083 ...	8.3	SL 28 SMD THR 109 ...	10.9
please indicate:	... no. of contacts two rows 4 - 40	... surface of contact G = gold-plated Z = tin-plated			

Male headers

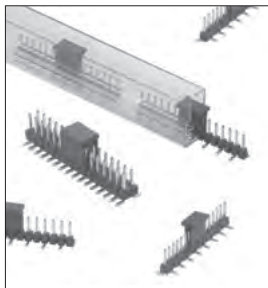
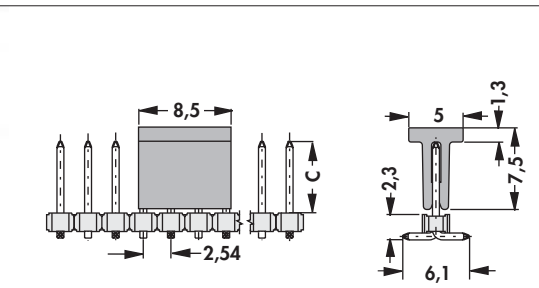
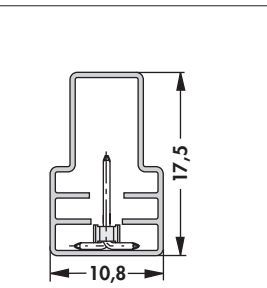
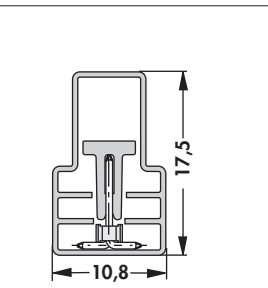
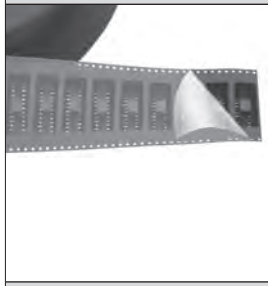
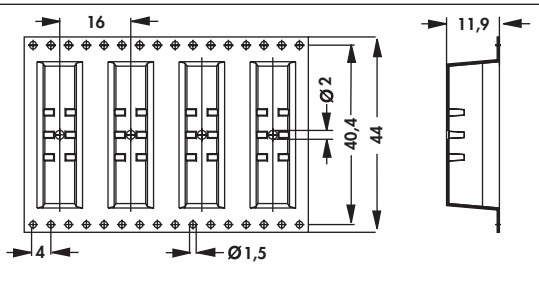
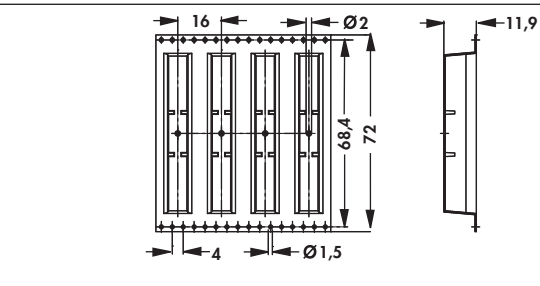
Low profile in SMD □ 0.635 mm

art. no.	dim. [mm]	art. no.	dim. [mm]	art. no.	dim. [mm]
	C S		C S		C S
SL LP 5 SMD 038 ...	3.8 3	SL LP 5 SMD 051 ...	5.1 4	SL LP 5 SMD 066 ...	6.6 4
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: 4-20 contacts

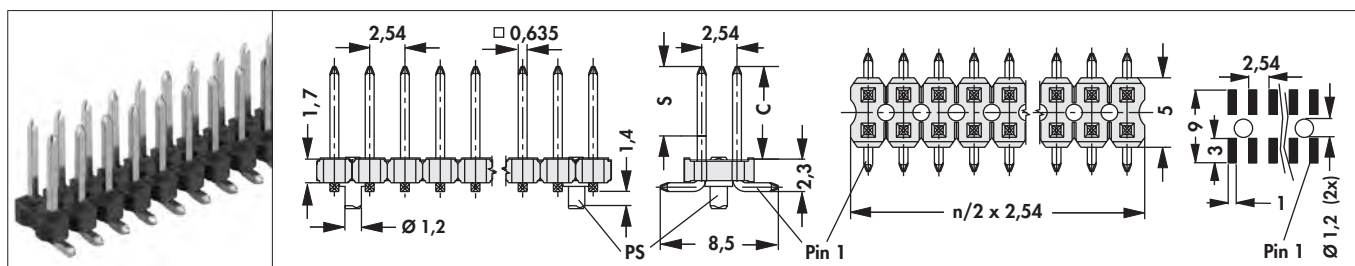
Option for automatic assembly

– 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 ... 4-12 ... B TR	SL LP 5 SMD 038-066 ... 13-20 ... B TR	

Male headers

Low profile in SMD □ 0.635 mm



art. no.	dim. [mm]		art. no.	dim. [mm]		art. no.	dim. [mm]	
	C	S		C	S		C	S
SL LP 6 SMD 038 ...	3,8	3	SL LP 6 SMD 051 ...	5,1	4	SL LP 6 SMD 066 ...	6,6	4

please indicate:

... no. of contacts
two rows 4 - 40

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

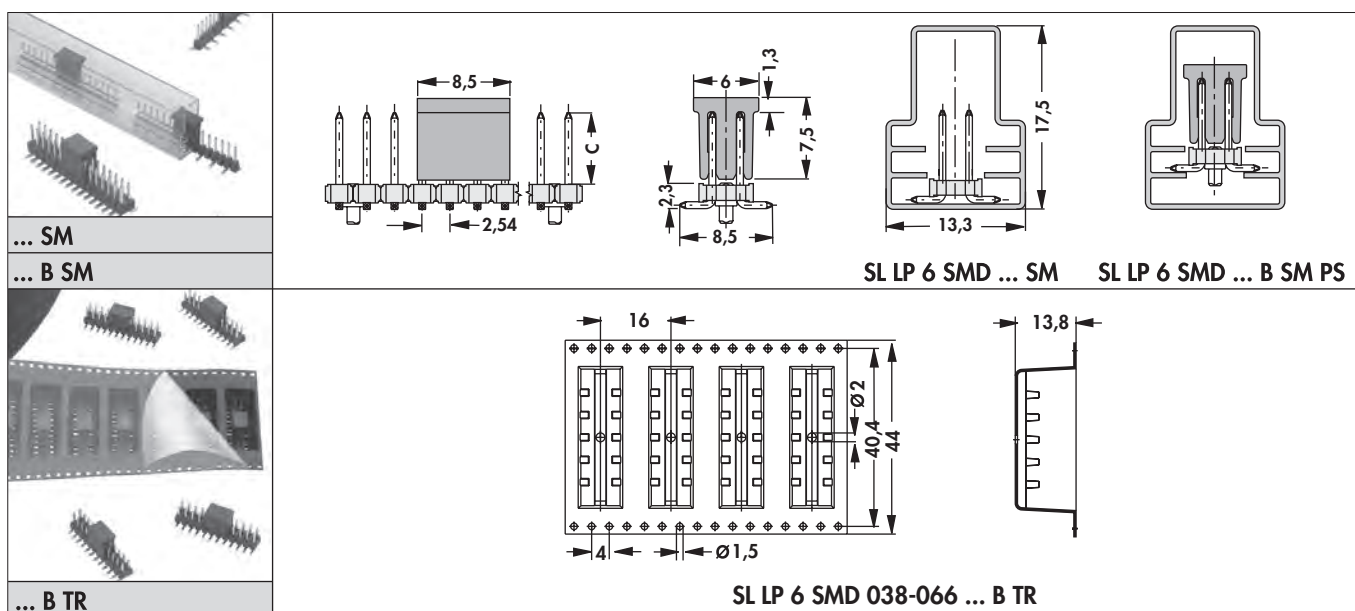
... packing (optional)
SM = bar magazine
B SM = pick and place pad
 and bar magazine
B TR = pick and place pad
 and tape and reel
(250pcs/reel)

... positioning (optional)
PS = locating pin (2 pcs/bar bigger than 6 contacts)

... 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



Male headers

Low profile in SMD □ 0.635 mm

art. no.	dim. [mm]			
	A	B	C	S
SL LP 7 SMD 030 ...	8.0	3.3	3.0	3
SL LP 7 SMD 040 ...	9.5	3.8	4.0	4
SL LP 7 SMD 055 ...	11.0		5.5	
please indicate:	... no. of contacts 2 - 20			
	... surface of contact S = selective gold-plated G = gold-plated Z = tin-plated			

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 S		art. no.	dim. [mm] A S		art. no.	dim. [mm] A S	
SL 15 SMD 107 ...	10.7	5	SL 15 SMD 182 ...	18.2	6	SL 15 SMD 207 ...	20.7	6
please indicate:								
... no. of contacts one row 4 - 20			... surface of contact S = selective gold-plated G = gold-plated Z = tin-plated					
... positioning (optional) P = end pins straight for positioning								

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

art. no.	dim. [mm] A S		art. no.	dim. [mm] A S		art. no.	dim. [mm] A S	
SL 16 SMD 107 ...	10.7	5	SL 16 SMD 182 ...	18.2	6	SL 16 SMD 247 ...	24.7	6
SL 16 SMD 157 ...	15.7	6	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					
... positioning (optional) P = end pins straight for positioning								

Male headers

Turned precision male contacts

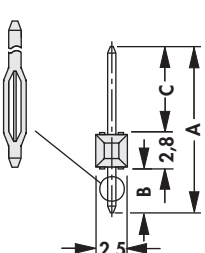
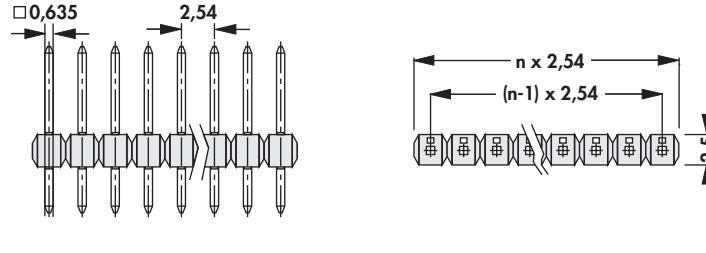
- suitable for BL 22 SHK 14 02 G → G 72 and BL 23 SHK 14 02 SMD G → G 78
- signal and high-power contacts
- contacts gold-plated
- other number of contacts / contact surface upon request

art. no.	signal contacts		high-power contacts
SL 27 SHK 14 02 SMD G	12		2
surface of contact:	gold-plated		

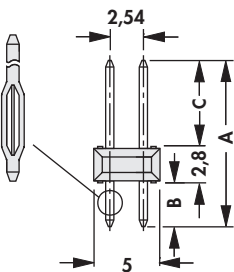
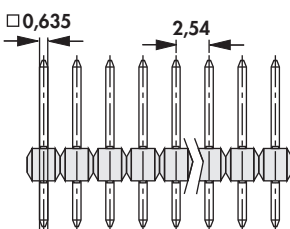
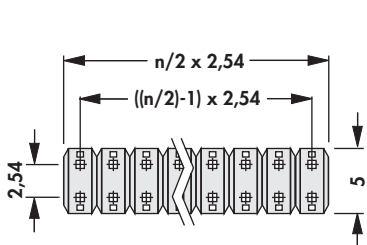
Male headers

Male connectors in pressfit technology

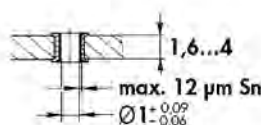
- press-fit mounting without soldering, resilient press-fit area, easy insertion into the PCB
- Pressfit bar with insulating body has to be inserted up to the PCB
- **separable!** any requested number of contact can be delivered
- **contact material:** CuSn6
- one row, 1-36 contacts
- for PCB thickness ≥ 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 16 144 ...	14.4	3.5	8.1
SLP 1 16 129 ...	12.9		6.6	SLP 1 16 195 Z	19.5		13.2
please indicate: ... no. of contacts ... surface of contact one row 1 - 36 G = gold-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 16 144 ...	14.4	3.5	8.1		
SLP 2 16 129 ...	12.9		6.6	SLP 2 16 195 Z	19.5		13.2		
please indicate:									
... no. of contacts two rows 2 - 72				... surface of contact G = gold-plated Z = tin-plated					

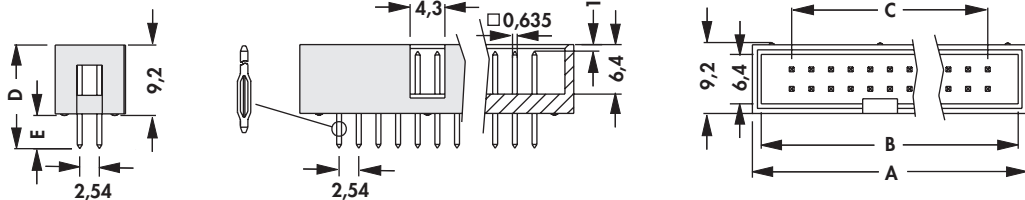
Hole diameter in PCB - hole structure acc. to DIN EN 60352-5



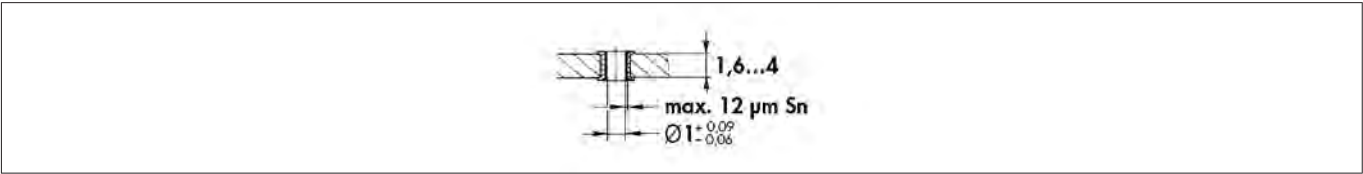
Male headers

Male header with shroud in pressfit technology

- suitable for lockable female multipoint connector **VFL ...** → H 11 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
- Pressfit bar with insulating body has to be inserted up to the PCB
- **contact material:** CuSn6

						
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		
SLUP 31 20 ...	20	33.1	30.5	22.86		
please indicate: ... surface of contact						
G = gold-plated						
Z = tin-plated						

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

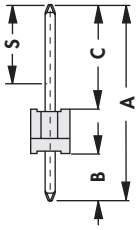


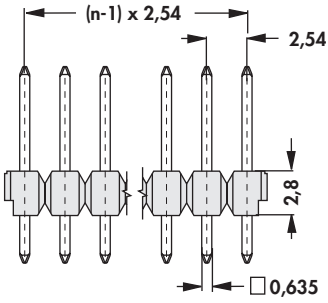
Male headers

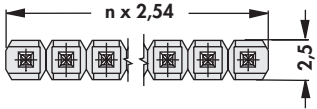
Male connectors for LED applications

- every pin length is available upon request
- insulating body made of white plastic (nature)
- one row, □ 0.635 mm









art. no.	dim. [mm]			
	A	B	C	S
SL 24 LED 097 ...	9.7	3	3.9	4
SL 24 LED 112 ...	11.2		5.4	
SL 24 LED 124 ...	12.4		6.6	5

please indicate:

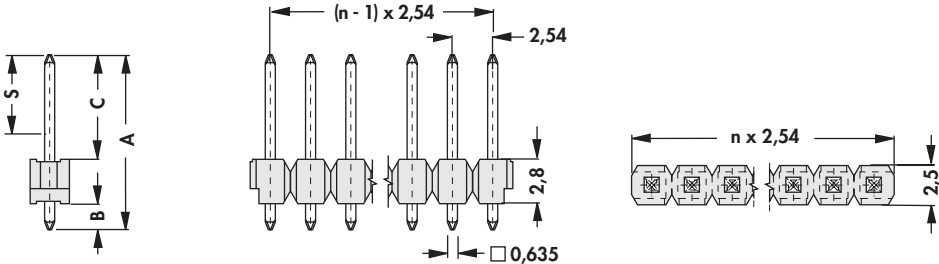
... no. of contacts
one row 1 - 36

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

Male headers

Male connectors for LED applications

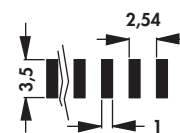
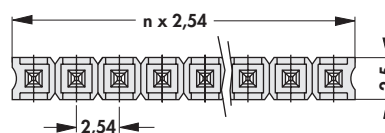
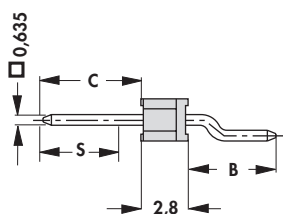
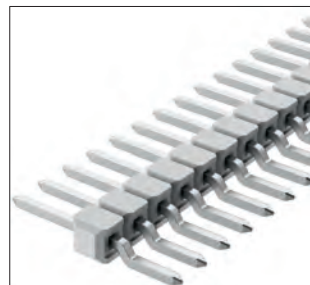
- every pin length is available upon request
- insulating body made of white plastic (nature)
- one row, □ 0.635 mm

				
art. no.	dim. [mm]			
	A	B	C	S
SL 25 LED THR 097 ...	9.7	2	4.9	4
SL 25 LED THR 112 ...	11.2		6.4	
SL 25 LED THR 124 ...	12.4		7.6	5
please indicate: ... no. of contacts one row 1 - 36 ... surface of contact S = selective gold-plated G = gold-plated Z = tin-plated				

Male headers

Male connectors for LED applications

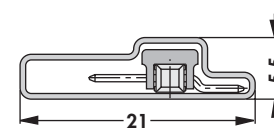
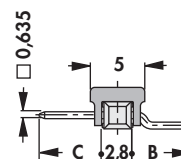
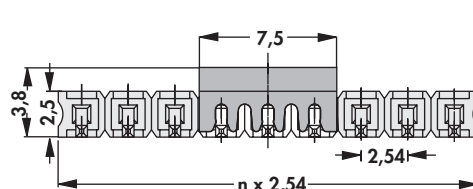
- insulating body made of white plastic (nature)
- one row, $\square 0.635$ mm



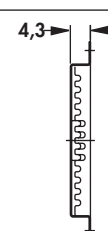
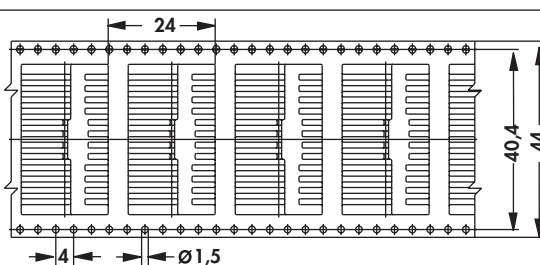
art. no.		dim. [mm]		
		B	C	S
SL 23 LED SMD 031 ...			3.1	4
SL 23 LED SMD 058 ...		5.2	5.8	5
please indicate:	... no. of contacts one row 2 - 20	... surface of contact S = selective gold-plated G = gold-plated Z = tin-plated	... packing (optional) B SM = pick and place pad and bar magazine B TR = pick and place pad and tape and reel (500pcs/reel)	

... packing (option) - additions:
SL 23 LED ... B TR: 2-13 contacts

Option for automatic assembly



SL 23 LED SMD ... B SM

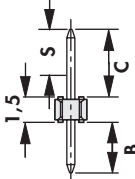
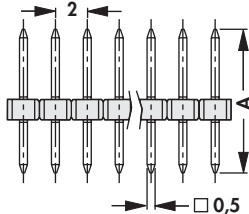
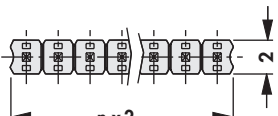
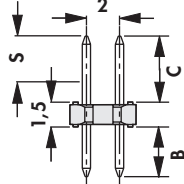
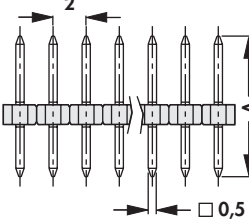
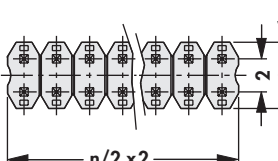
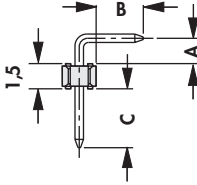
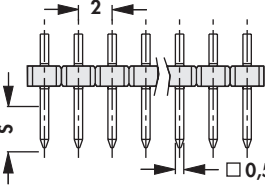
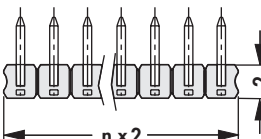
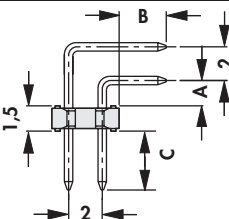
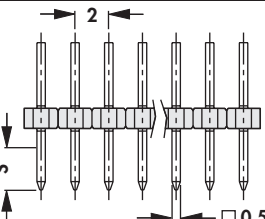
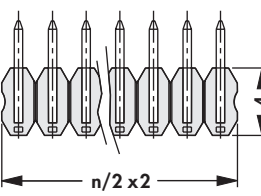


SL 23 LED SMD ... B TR

Male headers

Standard, □ 0.5 mm

– any requested number of contact is available

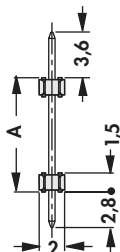
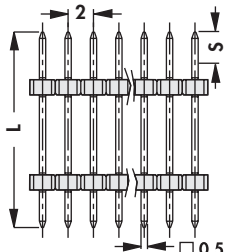
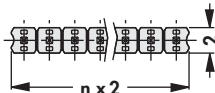
												
art. no.	dim. [mm]				art. no.	dim. [mm]						
	A	B	C	S		A	B	C	S			
SLY 1 081 ...	8.1	3	3.6	3.0	SLY 1 104 ...	10.4	3	5.9	3.5			
SLY 1 085 ...	8.5		4.0	3.5	SLY 1 139 ...	13.9		9.4				
SLY 1 098 ...	9.8		5.3									
												
art. no.	dim. [mm]				art. no.	dim. [mm]						
	A	B	C	S		A	B	C	S			
SLY 2 081 ...	8.1	3	3.6	3.0	SLY 2 104 ...	10.4	3	5.9	3.5			
SLY 2 085 ...	8.5		4.0	3.5	SLY 2 139 ...	13.9		9.4				
SLY 2 098 ...	9.8		5.3									
												
art. no.	dim. [mm]				art. no.	dim. [mm]						
	A	B	C	S		A	B	C				
SLY 3 035 ...	1.5	2.8	3.5	3.5	SLY 3 082 ... G	1.5	2.8	8.2				
SLY 3 041 ...			4.1		SLY 3 082 ... Z							
												
art. no.	dim. [mm]				art. no.	dim. [mm]						
	A	B	C	S		A	B	C				
SLY 4 035 ...	1.5	2.8	3.5	3.5	SLY 4 082 ... G	1.5	2.8	8.2				
SLY 4 041 ... G			4.1	—	SLY 4 082 ... Z							
SLY 4 041 ... Z												
please indicate:												
... no. of contacts					... surface of contact							
one row 1 - 50					S = selective gold-plated							
two rows 4 - 100					G = gold-plated							
					Z = tin-plated							

Male headers

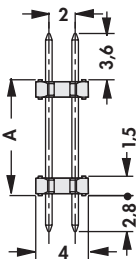
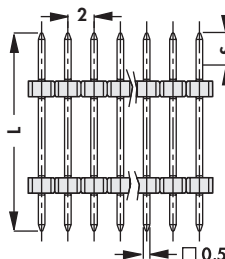
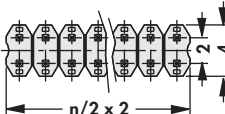
Design, matching for BLY ... → G 87

- are used 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, □ 0.5 mm

					
art. no.	dim. [mm]				
	A	L		S	
SLY 5 040 ...	4.0	10.4		3.5	
SLY 5 075 ...	7.5	13.9			
SLY 5 081 ... G	8.1	14.5		—	
SLY 5 081 ... Z					
SLY 5 122 ... G	12.2	18.6			
SLY 5 122 ... Z					
please indicate:	... no. of contacts one row 1 - 50	... surface of contact S = selective gold-plated G = gold-plated Z = tin-plated			

- two rows, □ 0.5 mm

	  		
art. no.	dim. [mm]		
	A	L	S
SLY 6 040 ...	4.0	10.4	3.5
SLY 6 075 ...	7.5	13.9	
SLY 6 081 ... G	8.1	14.5	—
SLY 6 081 ... Z			
SLY 6 122 ... G	12.2	18.6	
SLY 6 122 ... Z			
please indicate:	... no. of contacts two rows 2 - 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: _____

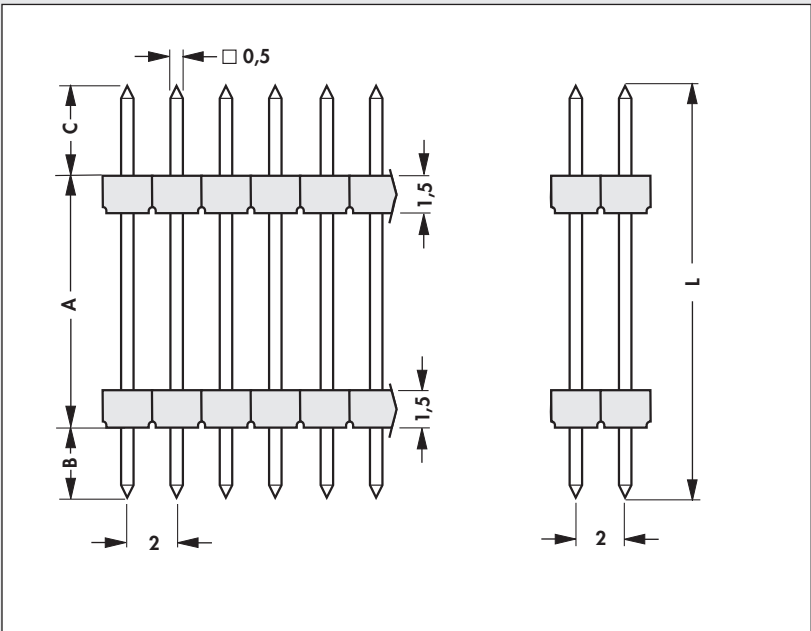
- ☐ inquiry
☐ order

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:

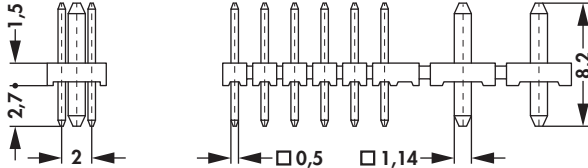
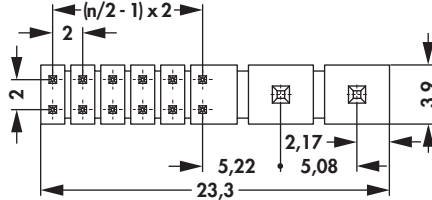
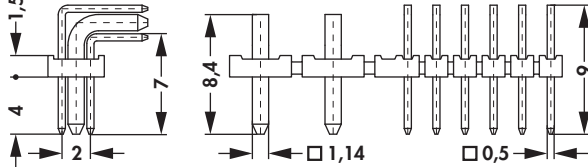
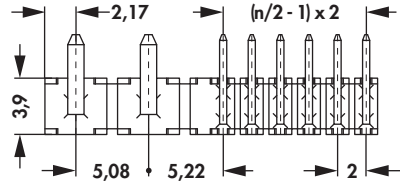
L
A
B
C

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

Male headers

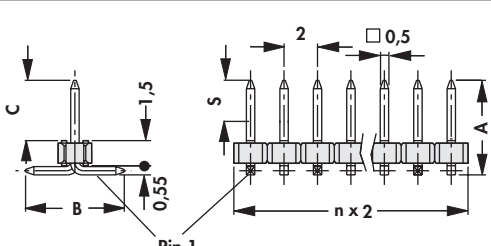
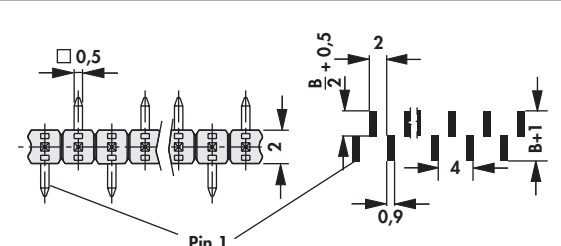
Turned precision male contacts

- suitable for **BLY 10 SHK 14 02 G** → G 88
- signal and high-power contacts
- contacts gold-plated
- other number of contacts / contact surface upon request

		
art. no.	signal contacts	high-power contacts
SLY 13 SHK 14 02 G	12	2
surface of contact:	gold-plated	
		
art. no.	signal contacts	high-power contacts
SLY 14 SHK 14 02 G	12	2
surface of contact:	gold-plated	

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			6.2				
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)			

... 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 9 SMD 040 ...	8.8	3.3	4.0	3.5
SLY 9 SMD 055 ...	10.3		5.5	
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

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

Male headers

□ 0.5 mm

art. no.	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)	

Option for automatic assembly

– reel diameter Ø 330 mm

	SLY 10 SMD ... B SM
... B TR	SLY 10 SMD 040 ... 4-16 ... B TR SLY 10 SMD 040 ... 18-40 ... B TR

Male headers

Design, matching for BLY ... → G 87

- are used to connect overlying PCBs
- within the total length of the pin the insulating body is variable upon request
- **separable!** every requested number of contact can be delivered

– one row, □ 0.5 mm

art. no.	dim. [mm] A	art. no.	dim. [mm] A	art. no.	dim. [mm] A
SLY 11 SMD 051 ...	5.1	SLY 11 SMD 092 ...	9.2	SLY 11 SMD 133 ...	13.3
please indicate: ... no. of contacts one row 4 - 20 ... surface of contact S = selective gold-plated G = gold-plated Z = tin-plated					

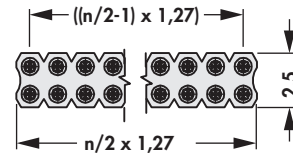
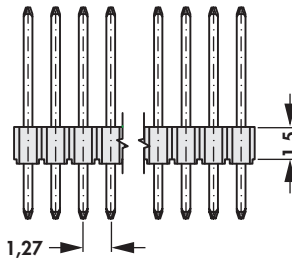
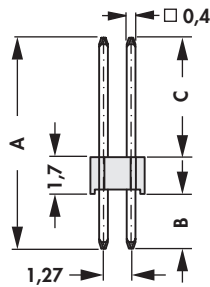
– two rows, □ 0.5 mm

art. no.	dim. [mm] A	art. no.	dim. [mm] A	art. no.	dim. [mm] A
SLY 12 SMD 051 ...	5.1	SLY 12 SMD 092 ...	9.2	SLY 12 SMD 133 ...	13.3
please indicate: ... no. of contacts two rows 4 - 40					
... surface of contact S = selective gold-plated G = gold-plated Z = tin-plated					

Male headers

Straight, pin cross section □ 0.4 mm

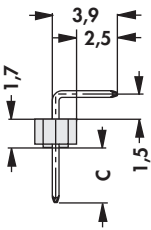
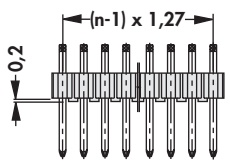
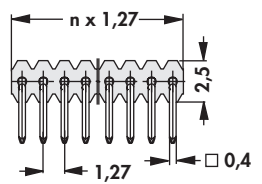
- matching for female header **BLV 2 ...** → G 94
- two rows 4-72 contacts
- grid spacing **1.27 x 1.27 mm**



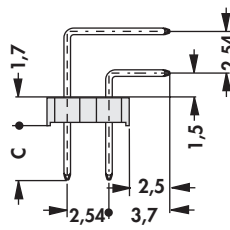
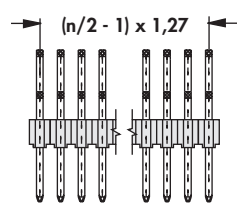
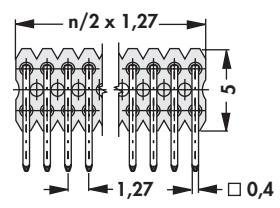
art. no.	dim. [mm]			art. no.	dim. [mm]		
	A	B	C		A	B	C
SLV W 4 036 ...	7.8	2.5	3.6	SLV W 4 105 ...	14.7	2.5	10.5
SLV W 4 055 ...	9.7		5.5	SLV W 4 130 ...	17.2		13.0
SLV W 4 080 ...	12.2		8.0				
please indicate: ... no. of contacts ... surface of contact two rows 4 - 72 G = gold-plated Z = tin-plated							

Male headers

Pin cross section matching for BLM ... → G 93,
□ 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			

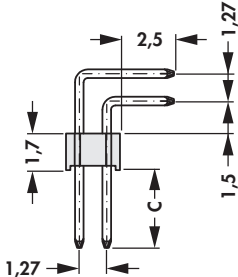
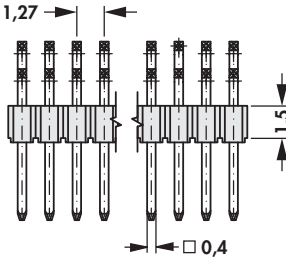
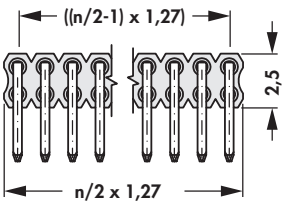
- two rows 6-72 contacts
- grid spacing 1.27 x 2.54 mm
- packing in a bar magazine
- VPE = packing unit (pieces/tube)
- preferred number of contacts, others upon request

							
art. no.	no. of contacts	packing unit	dim. [mm] C	art. no.	no. of contacts	packing 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		SLV W 2 KA 054 14 ...	14	55	
SLV W 2 KA 030 16 ...	16	50		SLV W 2 KA 054 16 ...	16	50	
SLV W 2 KA 030 20 ...	20	40		SLV W 2 KA 054 20 ...	20	40	
SLV W 2 KA 030 26 ...	26	31		SLV W 2 KA 054 26 ...	26	31	
SLV W 2 KA 030 30 ...	30	27		SLV W 2 KA 054 30 ...	30	27	
SLV W 2 KA 030 34 ...	34	24		SLV W 2 KA 054 34 ...	34	24	
SLV W 2 KA 030 40 ...	40	20		SLV W 2 KA 054 40 ...	40	20	
SLV W 2 KA 030 50 ...	50	16		SLV W 2 KA 054 50 ...	50	16	
SLV W 2 KA 030 72 ...	72	11		SLV W 2 KA 054 72 ...	72	11	
please indicate: ... surface of contact G = gold-plated Z = tin-plated							

Male headers

Angled, pin cross section □ 0,4 mm

- matching for female header **BLV 2 ...** → G 94
- two rows 4-72 contacts
- **grid spacing 1.27 x 1.27 mm**
- preferred number of contacts, others upon request

					
art. no.	no. of contacts	dim. [mm] C	art. no.	no. of contacts	dim. [mm] C
SLV W 4 KA 036 10 ...	10	3.6	SLV W 4 KA 060 10 ...	10	6.0
SLV W 4 KA 036 14 ...	14		SLV W 4 KA 060 14 ...	14	
SLV W 4 KA 036 16 ...	16		SLV W 4 KA 060 16 ...	16	
SLV W 4 KA 036 20 ...	20		SLV W 4 KA 060 20 ...	20	
SLV W 4 KA 036 26 ...	26		SLV W 4 KA 060 26 ...	26	
SLV W 4 KA 036 30 ...	30		SLV W 4 KA 060 30 ...	30	
SLV W 4 KA 036 34 ...	34		SLV W 4 KA 060 34 ...	34	
SLV W 4 KA 036 40 ...	40		SLV W 4 KA 060 40 ...	40	
SLV W 4 KA 036 50 ...	50		SLV W 4 KA 060 50 ...	50	
SLV W 4 KA 036 72 ...	72		SLV W 4 KA 060 72 ...	72	
please indicate: ... surface of contact G = gold-plated Z = tin-plated					

Sandwich-design

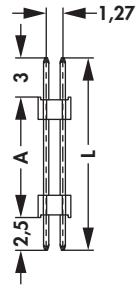
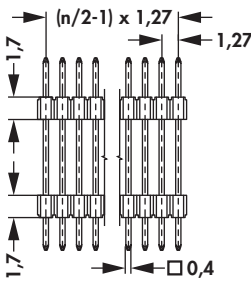
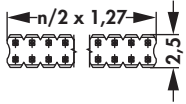
- for interconnections of stacked PCBs
- within the total length of the pin the insulator position can be changed as required
- **separable!** any requested number of contact can be delivered

- one row, □ 0.4 mm

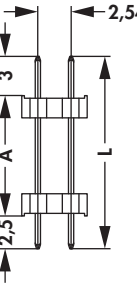
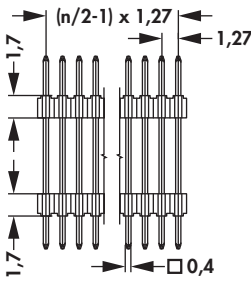
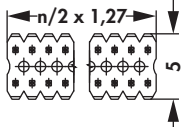
art. no.	dim. [mm]	
	A	L
SLV W 6 092 ...	9.2	14.7
SLV W 6 117 ...	11.7	17.2
please indicate: ... no. of contacts one row 1 - 36 ... surface of contact G = gold-plated Z = tin-plated		

Male headers

- two rows, □ 0.4 mm
- grid 1.27 x 1.27 mm

			
art. no.	dim. [mm]		
	A	L	
SLV W 7 092 ...	9.2	14.7	
SLV W 7 117 ...	11.7	17.2	
please indicate:	... no. of contacts two rows 4 - 72	... surface of contact G = gold-plated Z = tin-plated	

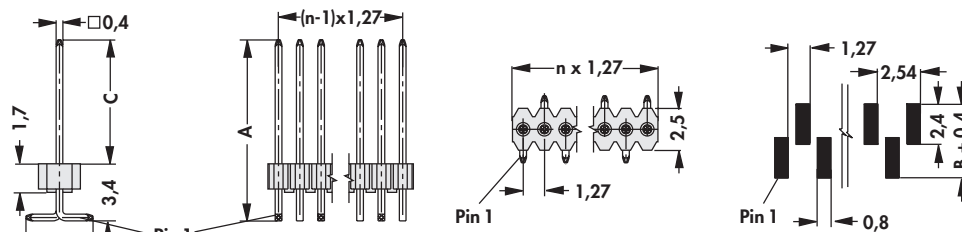
- two rows, □ 0.4 mm
- grid 1.27 x 2.54 mm

			
art. no.	dim. [mm]		
	A	L	
SLV W 8 092 ...	9.2	14.7	
SLV W 8 117 ...	11.7	17.2	
please indicate:	... no. of contacts two rows 4 - 72	... surface of contact G = gold-plated Z = tin-plated	

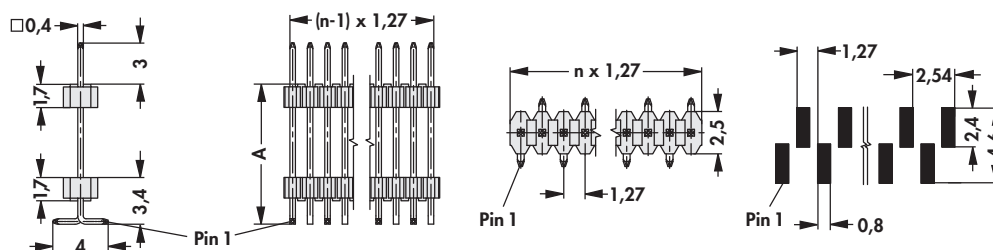
Male headers

Pin cross section □ 0.4 mm, expanded insulating body

- suitable for female header **BLM ...** → G 93
- 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



art. no.	dim. [mm] A	art. no.	dim. [mm] A
SLV W 9 SMD 102 ...	10.2	SLV W 9 SMD 127 ...	12.7

please indicate:	... no. of contacts one row 4 - 20	... surface of contact G = gold-plated Z = tin-plated
--------------------------------	--	---

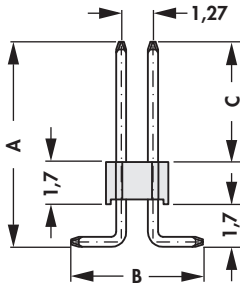
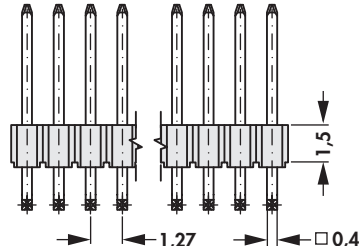
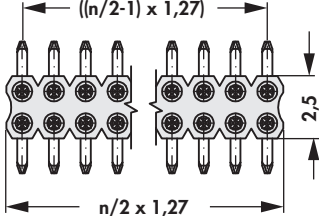
Male headers

- suitable for female header **BLM ...** → G 93
- 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
art. no.	dim. [mm]	art. no.	dim. [mm]
	A		A
SLV W 11 SMD 102 ...	10.2	SLV W 11 SMD 127 ...	12.7
please indicate: ... no. of contacts two rows 4 - 40 ... surface of contact G = gold-plated Z = tin-plated			

Male headers

- matching for female header **BLV 2 ...** → G 94
- two rows 4-40 contacts
- **grid spacing 1.27 x 1.27 mm**

									
art. no.	dim. [mm]			art. no.	dim. [mm]				
	A	B	C		A	B	C		
SLV W 4 SMD 048 ...	8.2	5.3	4.8	SLV W 4 SMD 073 ...	10.7	5.3	7.3		
please indicate:									
... no. of contacts		... surface of contact		... packing (optional)					
two rows 4 - 40		G = gold-plated Z = tin-plated		B TR = pick and place pad and tape and reel (250pcs/reel)					

... packing (option) - additions:

SLV W 4 SMD ... B TR: 4-12 contacts

Packaging options pick and place pad in bar magazine "... B SM" and pick and place pad in tape & reel "... B TR" on request.

Option for automatic assembly

... B TR	

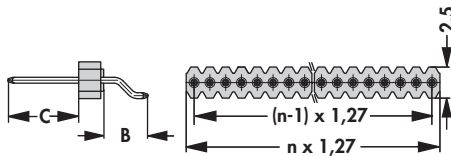
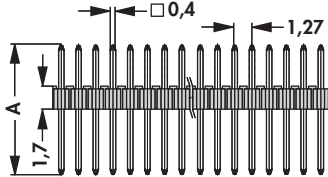
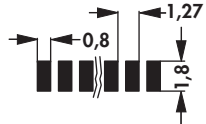
- matching for female header **BLV 2 ...** → G 94
- two rows 4-40 contacts
- **grid spacing 1.27 x 1.27 mm**

art. no.	dim. [mm]		art. no.	dim. [mm]
	A			A
SLV W 10 SMD 102 ...	10.2		SLV W 10 SMD 127 ...	12.7
please indicate: ... no. of contacts ... surface of contact				
two rows 4 - 40 G = gold-plated				
Z = tin-plated				

Male headers

Pin cross section □ 0.4 mm, expanded insulating body

- matching for female header **BLM ...** → G 93
- one row 2-20 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	
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:

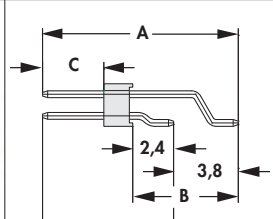
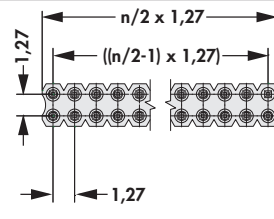
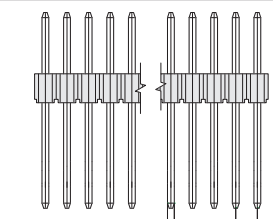
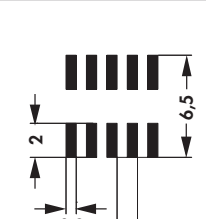
SLV W 3 SMD ... SM: 4-20 contacts

Packaging options pick and place pad in bar magazine "... B SM" and pick and place pad in tape & reel "... B TR" on request.

Option for automatic assembly

... SM		SLV W 3 SMD 048 ... SM		SLV W 3 SMD 073 ... SM	

- two rows 4-40 contacts

												
art. no.	dim. [mm]			dim. [mm]			dim. [mm]			dim. [mm]		
	A			B			C					
SLV W 5 SMD 036 ...	11.5			6.2			3.6					
please indicate:	... no. of contacts two rows 4 - 40			... surface of contact G = gold-plated Z = tin-plated								

Packaging options pick and place pad in bar magazine "... B SM" and pick and place pad in tape & reel "... B TR" on request.

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

A

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.

C

D

E

F

G

H

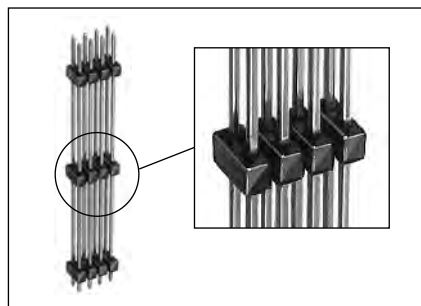
I

K

L

M

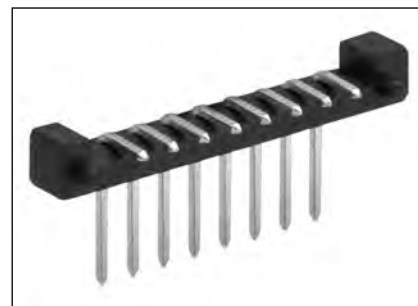
N



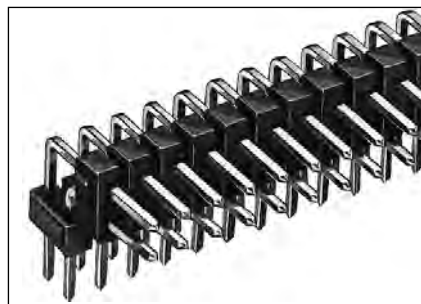
PCB connector,
extra long and additionally stabilized



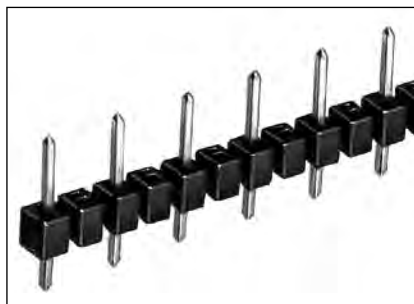
4-contact male header for THR-soldering;
grid 5.75 mm



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



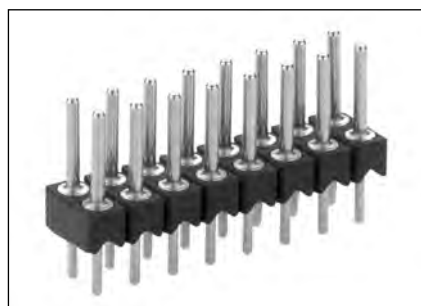
angled male header with two insulators



male header in 5.08 mm grid and
customised



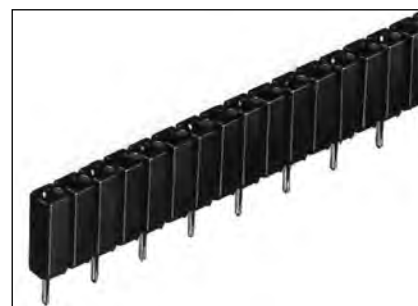
angled male and female header
1.27 mm grid, with customised
insulators



insulator body and precision contacts
according to customer's request



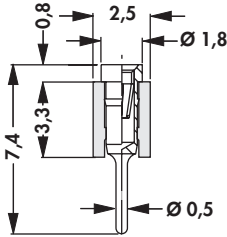
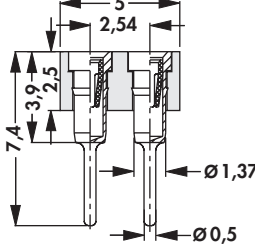
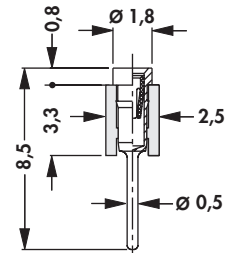
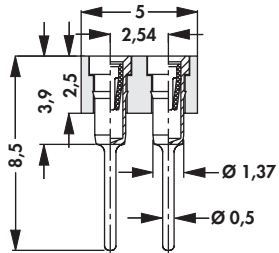
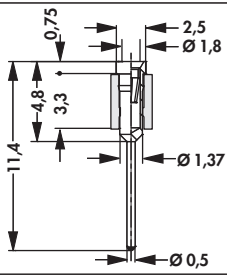
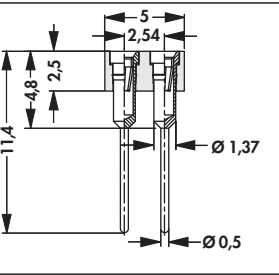
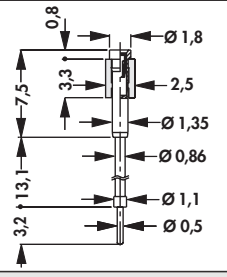
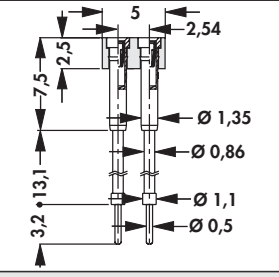
male header with various pin lengths

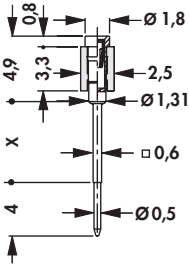
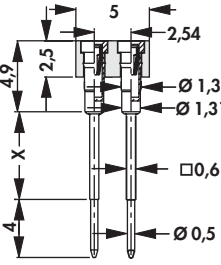


female header in 5.08 mm grid

Female headers

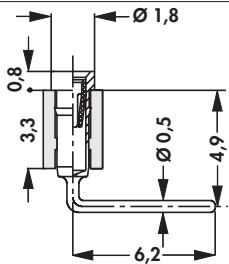
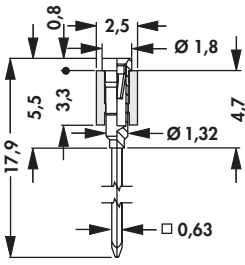
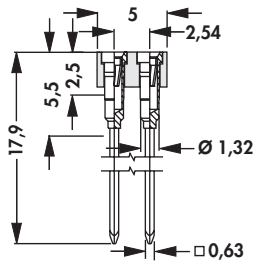
Precision contacts for pin cross section Ø 0.5 mm

art. no.			art. no.		
MK 01 ...			MK 201 ...		
art. no.			art. no.		
MK 17 ...			MK 217 ...		
art. no.			art. no.		
MK 31 ...			MK 231 ...		
art. no.			art. no.		
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] X	art. no.	dim. [mm] X
MK 13 X 1 ...	5.9	MK 213 X 1 ...	5.9
MK 13 X 2 ...	8.9	MK 213 X 2 ...	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

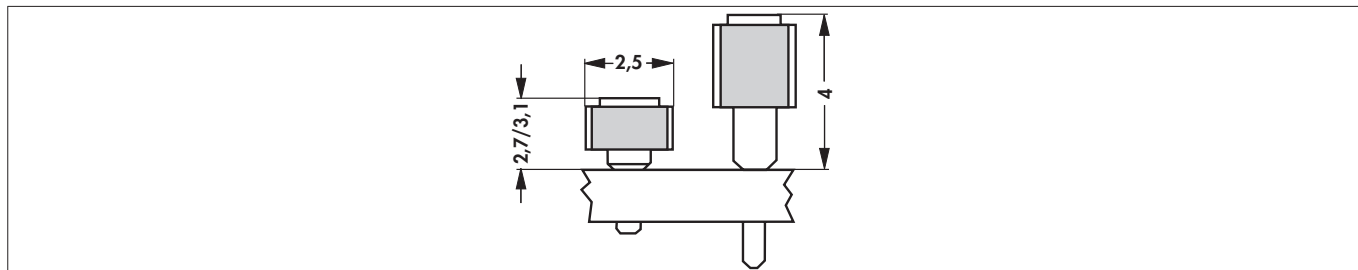
art. no.			
MK 06 ...			
art. no.			art. no.
MK 07 ...			
			
please indicate:			
... no. of contacts		... surface of contact	
one row 1 - 50		G = gold-plated	
two rows 2 - 100		Z = tin-plated	

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

– solder 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

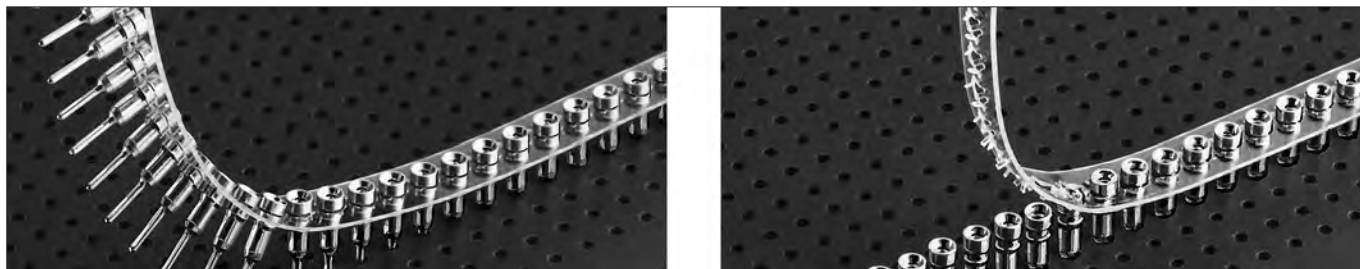
Precision contacts in THR-soldering technology for pin cross section Ø 0.5 mm

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

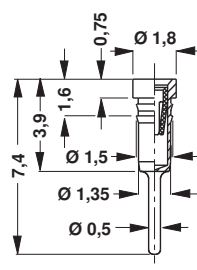
art. no.		
MK 228 THR ...		
please indicate:	... no. of contacts two rows 2 - 40	... surface of contact G = gold-plated Z = tin-plated
contact spring:	gold-plated	

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

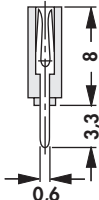
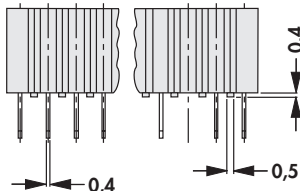
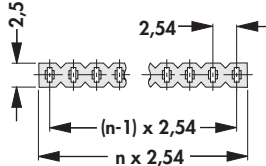
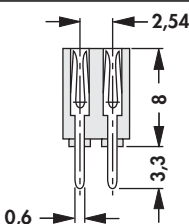
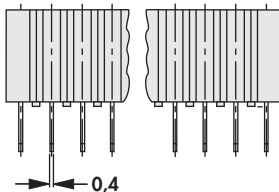
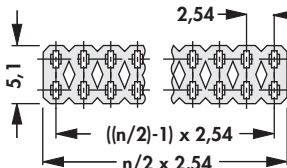
art. no.			
SIL 1 ...			
art. no.			
SIL 2 ...			
art. no.			
SIL 3 ...			
please indicate: ... no. of contacts ... surface of contact one row 2 - 100 G = gold-plated Z = tin-plated			
contact spring:	gold-plated		
annotation:	carrier strip: brass		

Female headers

Stamped contact spring (fork contact)

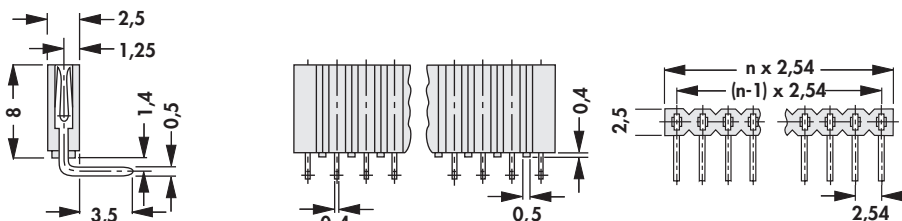
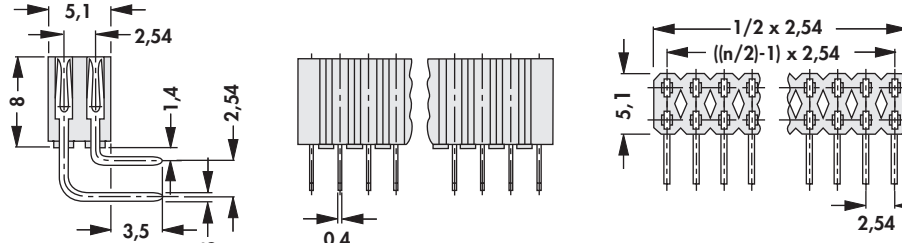
– **separable!** any requested number of contact can be delivered

– for □ 0.635 mm pin cross section, straight

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

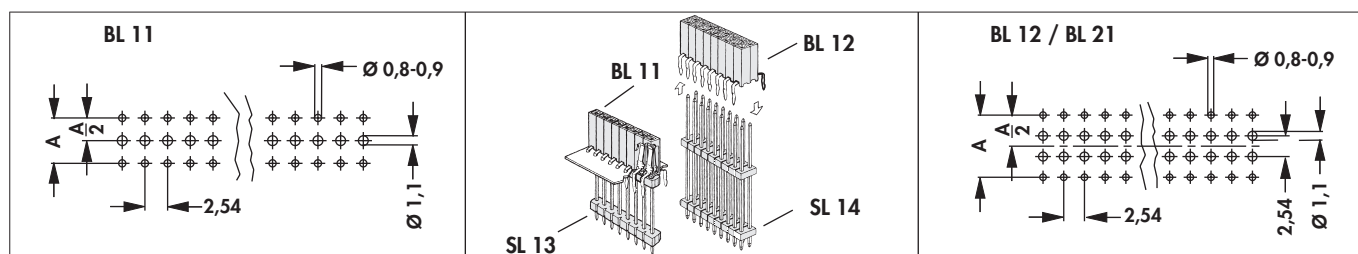
art. no.				
BL LP 1 ...				
art. no.				
BL LP 2 ...				
please indicate:	... no. of contacts one row 1 - 36 two rows 2 - 72		... surface of contact S = selective gold-plated Z = tin-plated	

– for □ 0.635 mm pin cross section, angled

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

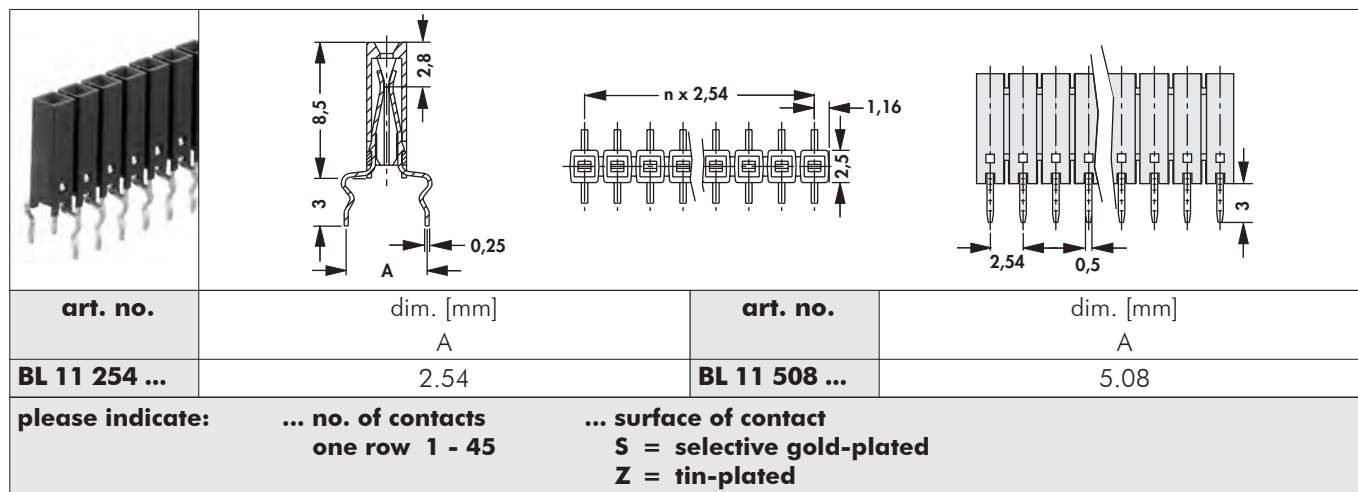
art. no.				
BL LP 3 ...				
art. no.				
BL LP 4 ...				
please indicate:	... no. of contacts one row 1 - 36 two rows 2 - 72		... surface of contact S = selective gold-plated Z = tin-plated	

Female headers



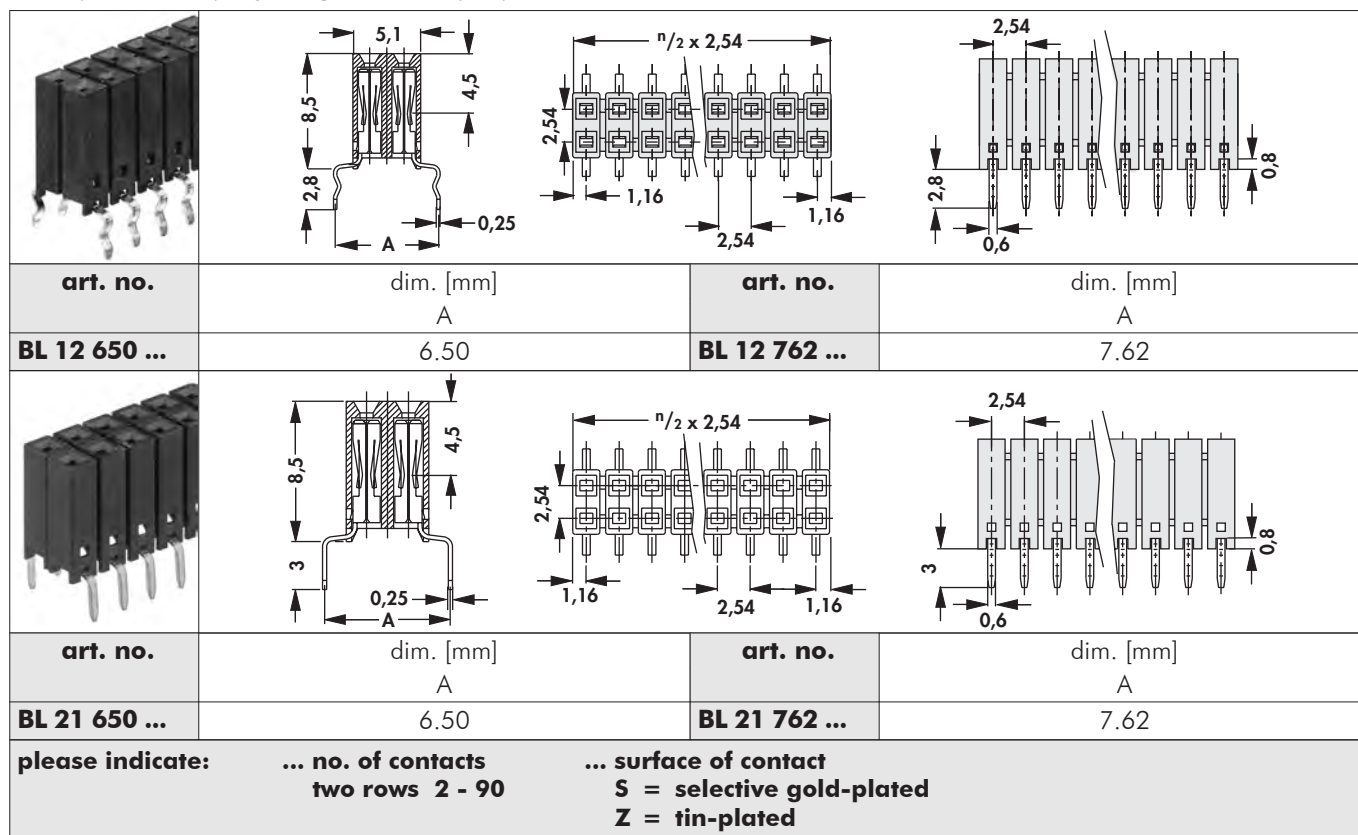
For □ 0.635 mm pin cross section, can be put through / 260 °C Reflow

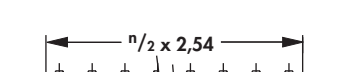
- for each contact both contact springs have to be interconnected via the PCB
- **packing:** bar magazine
- stamped contact spring; - **separable!** any requested number of contact can be delivered

[illegible]

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

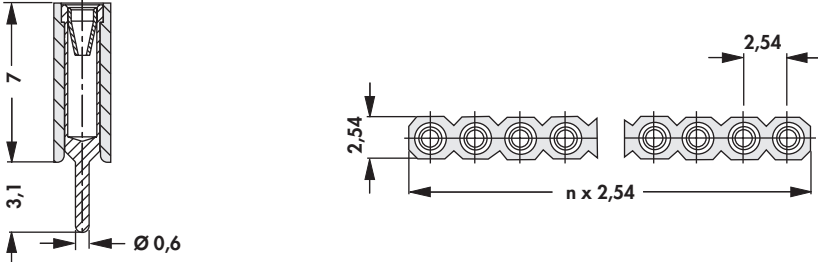
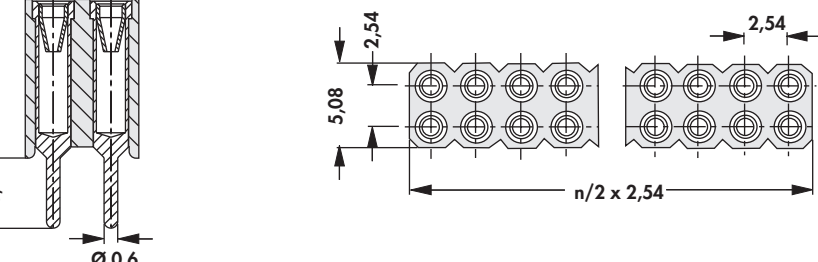
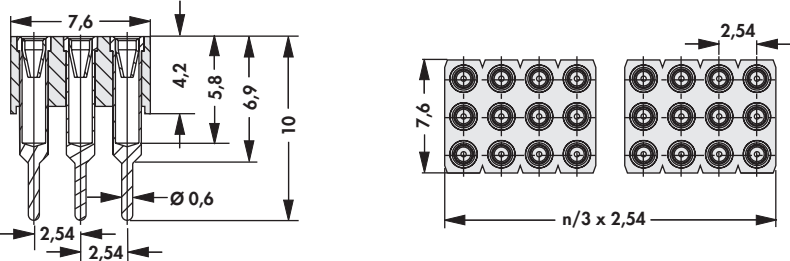
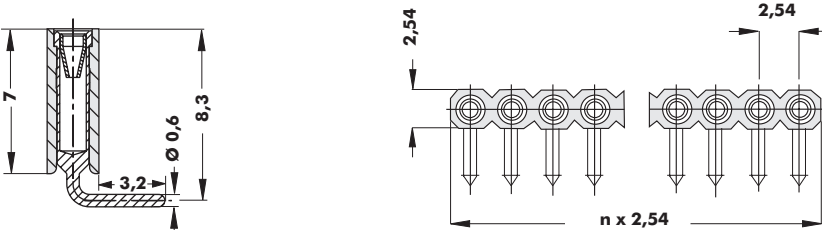
- **packing:** bar magazine
- stamped contact spring; - **separable!** any requested number of contact can be delivered



art. no.	dim. [mm] A	art. no.	dim. [mm] A
BL 12 650 ...	6.50	BL 12 762 ...	7.62
			
art. no.	dim. [mm] A	art. no.	dim. [mm] 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			

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 ...	≥ 0,75 µm Au
BL 5 025 ...	≥ 0,25 µm Au
please indicate: ... no. of contacts one row 1 - 36	
	
art. no.	inner contact spring surface
BL 6 ...	≥ 0,75 µm Au
BL 6 025 ...	≥ 0,25 µm 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 □ 0.635 mm and Ø 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		

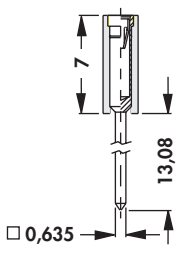
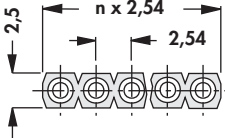
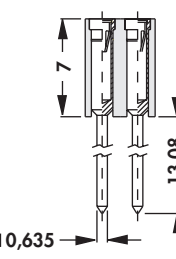
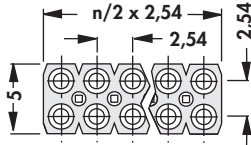
- no capillary action when soldering due to protected inner contact
- **separable!** any requested number of contact can be delivered

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		

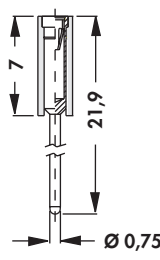
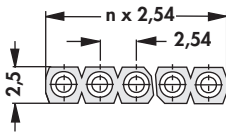
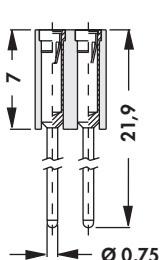
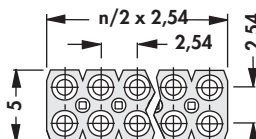
Female headers

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

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

art. no.			
BL 9 ...			
please indicate: ... no. of contacts one row 1 - 36			
art. no.			
BL 10 ...			
please indicate: ... no. of contacts two rows 2 - 72			
contact sleeve:	tin-plated		
contact spring:	gold-plated		

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

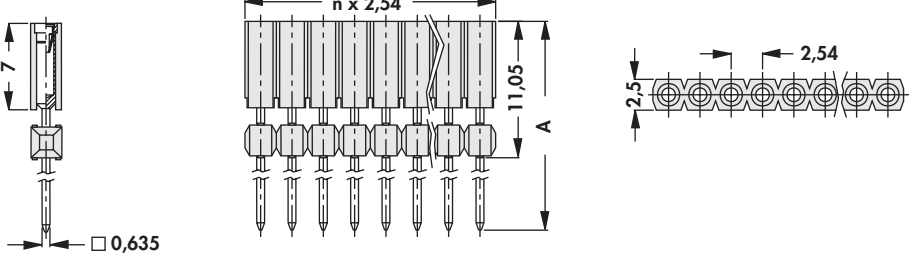
art. no.			
BL 13 ...			
please indicate: ... no. of contacts one row 1 - 36			
art. no.			
BL 14 ...			
please indicate: ... no. of contacts two rows 2 - 72			
contact sleeve:	gold-plated		
contact spring:	gold-plated		

Female headers

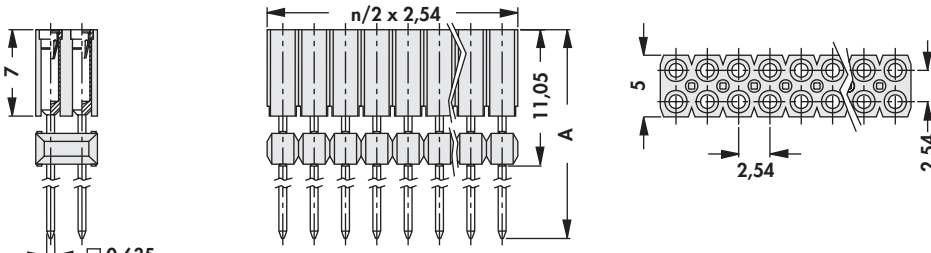
Precision contacts for □ 0.635 mm and Ø up to 0.85 mm pin cross section

- 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

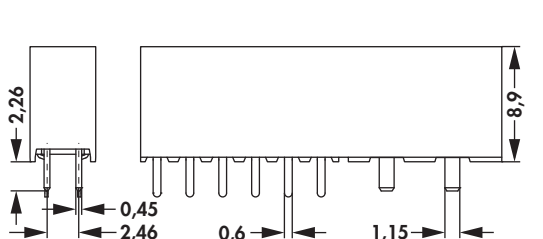
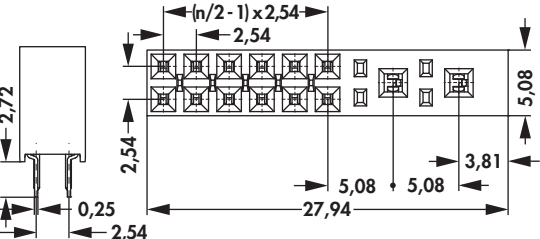
– two rows, 2-72 contacts

	
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

Turned precision female contacts

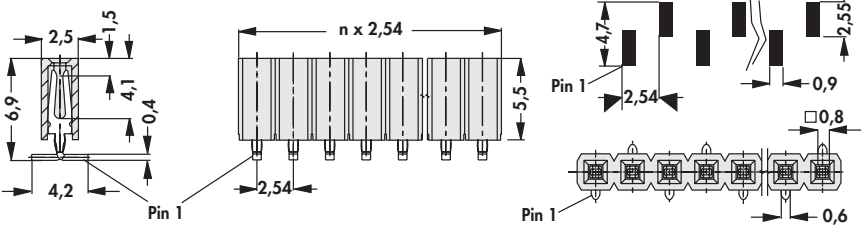
- suitable for SL 26 SHK 14 02 G → G 19 and SL 27 SHK 14 02 SMD G → G 32
- signal and high-power contacts
- contacts gold-plated
- other number of contacts / contact surface upon request

		
art. no.	signal contacts	high-power contacts
BL 22 SHK 14 02 G	12	2
surface of contact:	gold-plated	

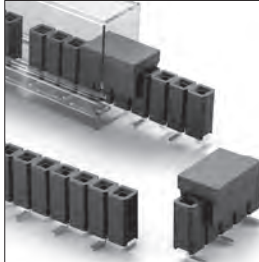
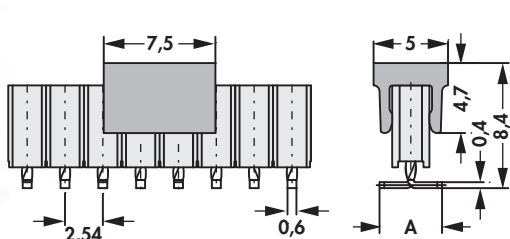
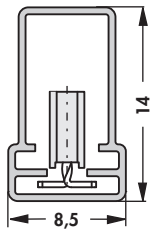
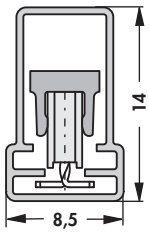
Female headers

Low profile, fork contact spring

- for □ 0.635 mm pin cross section
- 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			

Option for automatic assembly

			
... SM	BL LP 5 SMD ... B	BL LP 5 SMD ... SM	BL LP 5 SMD ... B SM
... B SM			

Female headers

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

... packing (option) - additions:
BL LP 6 SMD ... SM 6-40 contacts
BL LP 6 SMD ... B SM 4-40 contacts

Option for automatic assembly

... SM ... B SM	BL LP 6 SMD ... B	BL LP 6 SMD ... SM	BL LP 6 SMD ... B SM

art. no.			
BL LP 7 SMD ...			
please indicate:	... no. of contacts one row 1 - 20	... surface of contact S = selective gold-plated Z = tin-plated	... packing (optional) SM = bar magazine

... packing (option) - additions:
BL LP 7 SMD ... SM 4-20 contacts

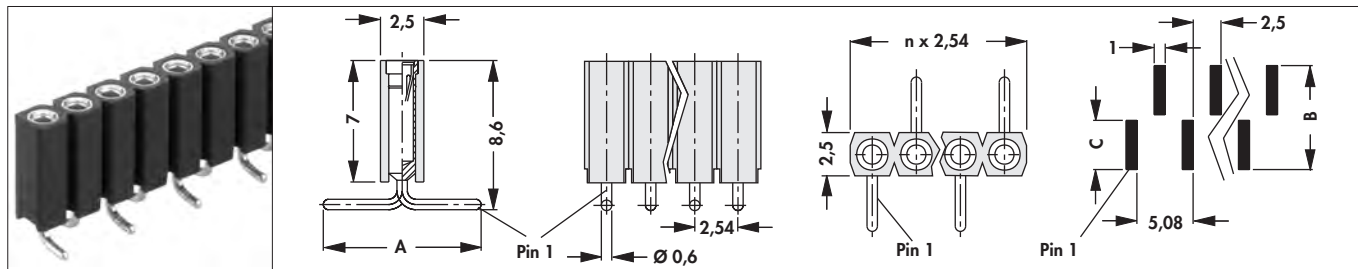
Option for automatic assembly

... SM	BL LP 7 SMD ... SM

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 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)			

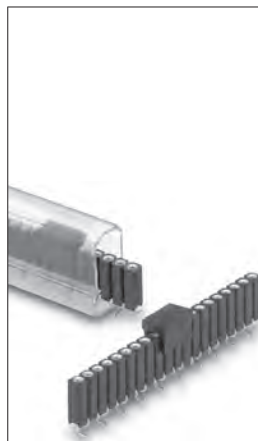
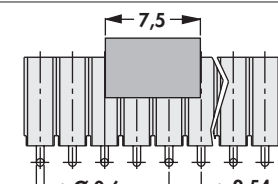
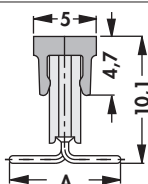
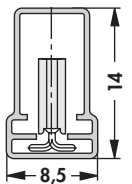
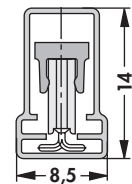
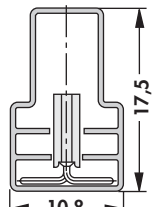
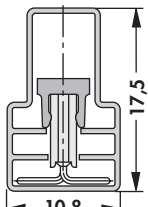
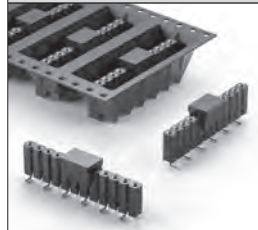
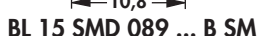
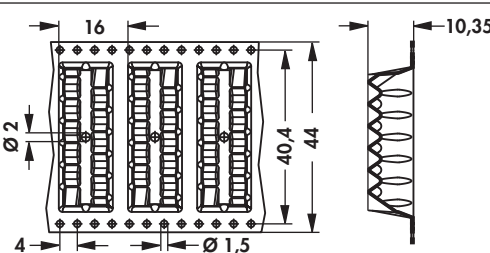
... packing (option) - additions:

BL 15 SMD ... B TR: 4-12 contacts

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

Option for automatic assembly

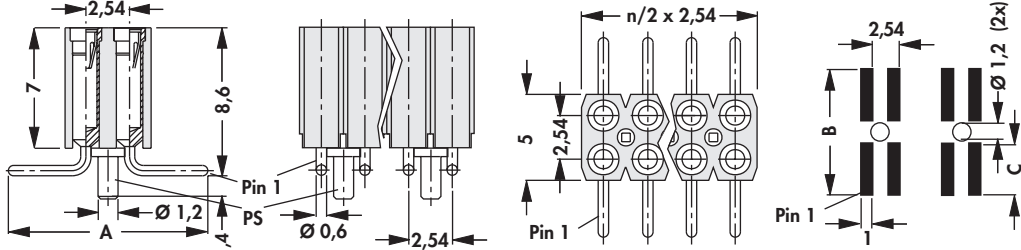
– reel diameter Ø 330 mm

		
		
	BL 15 SMD 043 ... SM	BL 15 SMD 043 ... B SM
		
		
	BL 15 SMD 089 ... SM	BL 15 SMD 089 ... B SM
... SM		
... B SM		
... 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 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		... packing (optional)	
two rows 4 - 40		SM = bar magazine	
		B SM = pick and place pad and bar magazine	
		B TR = pick and place pad and tape and reel	
... positioning (optional)			
PS = locating pin (2 pcs/bar bigger than 6 contacts)			

... packing (option) - additions:

BL 16 SMD 067 ... B TR: 4-6 contacts, 500 pcs/reel

BL 16 SMD ... B TR: 6-40 contacts, 250 pcs/reel

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

Option for automatic assembly

- reel diameter Ø 330 mm

... SM		BL 16 SMD ... SM			
... B SM		BL 16 SMD ... B SM			
		BL 16 SMD 067 ... 4-6 B TR			
... B TR		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

... SM	BL 17 SMD ... SM

... TR	BL 17 SMD ... TR

Female headers

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

art. no.					
BL 20 SMD ...					
please indicate:	... no. of contacts two rows 4 - 40		... packing (optional) SM = bar magazine TR = tape and reel (600pcs/reel)		

... packing (option) - additions:
BL 20 SMD ... TR: 4-26 contacts

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

Option for automatic assembly

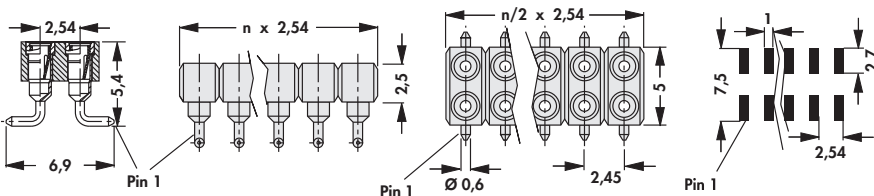
... SM	BL 20 SMD ... SM
... TR	BL 20 SMD ... 4-26 TR

Turned precision female contacts

- suitable for **SL 26 SHK 14 02 G** → G 19 and **SL 27 SHK 14 02 SMD G** → G 32
- signal and high-power contacts
- contacts gold-plated
- other number of contacts / contact surface upon request

art. no.	signal contacts	high-power contacts
BL 23 SHK 14 02 SMD G	12	2
surface of contact:	gold-plated	

Female headers

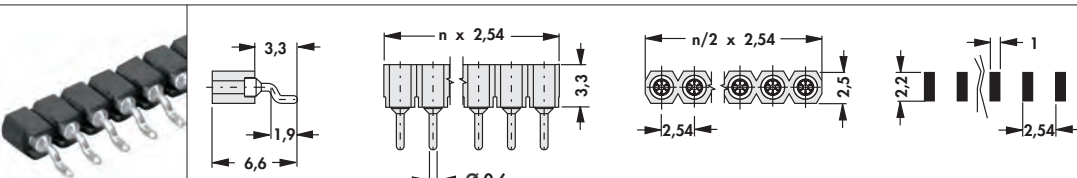
art. no.						
MK 222 SMD ...						
please indicate:		... no. of contacts two rows 4 - 40		... packing (optional) B SM = pick and place pad and bar magazine		
contact sleeve:		tin-plated				
contact spring:		gold-plated				

Option for automatic assembly

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

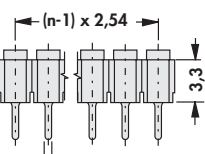
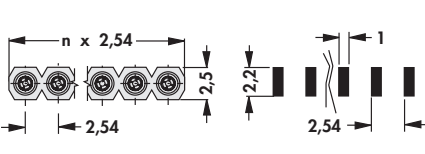
Precision contacts for □ 0.635 mm and up to Ø 0.85 mm pin cross section

- 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 Ø 0.5 mm

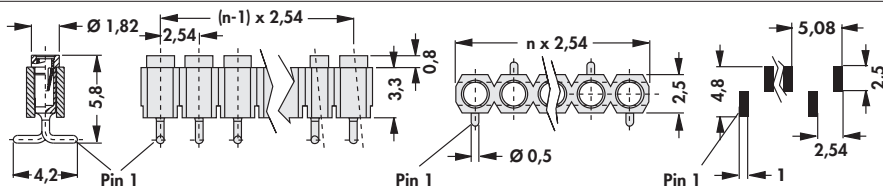
- one row
- no capillary action when soldering due to protected contact insert
- **separable!** any requested number of contact can be delivered

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 $\varnothing 0.5$ mm

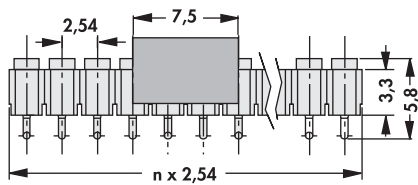
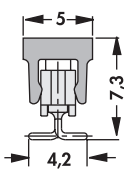
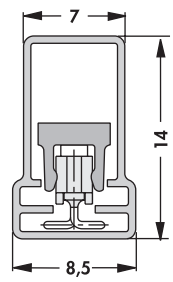
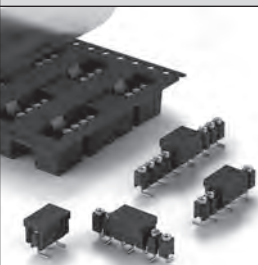
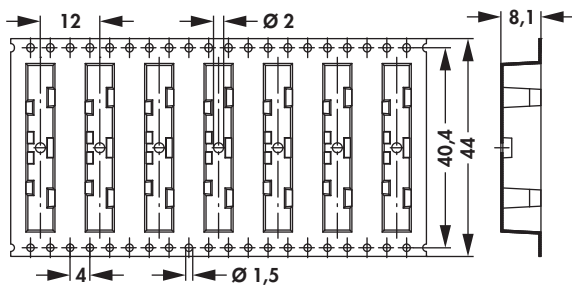
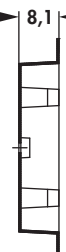
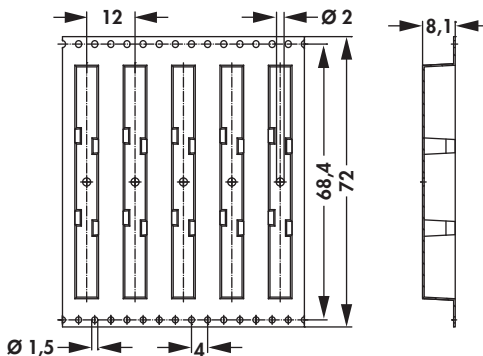
- one row
- no capillary action when soldering due to protected inner contact
- **separable!** any requested number of contact can be delivered

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 B TR = pick and place pad and tape and reel (600pcs/reel)

... packing (option) - additions:
MK 22 SMD ... B TR: 4-20 contacts

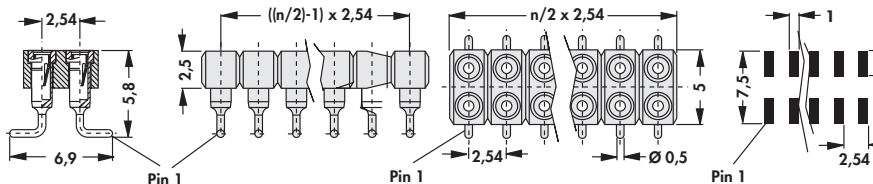
contact sleeve:	tin-plated
contact spring:	gold-plated

Option for automatic assembly

			
... B SM			MK 23 SMD ... B SM
			
... B TR	MK 23 SMD ... 4-13 B TR		
			
		MK 23 SMD ... 14-20 B TR	

Female headers

- 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			

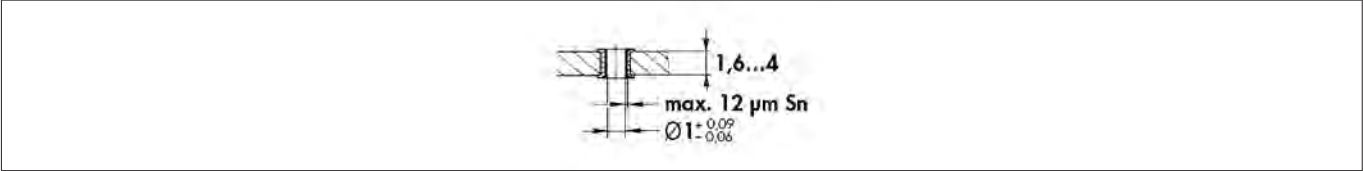
Female headers

Precision contacts for □ 0.635 mm and up to Ø 0.85 mm pin cross section in pressfit technology

- press-fit mounting without soldering, resilient press-fit area
- no capillary action when soldering due to protected inner contact contact
- Pressfit bar with insulating body has to be inserted up to the PCB
- **separable!** any requested number of contact can be delivered

art. no.				
BLP 1 ...				
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



Female headers

Female connectors for LED applications, low profile, fork contact spring

- insulating body made of white plastic (nature)
- for □ 0.635 mm pin cross section, straight
- **separable!** any requested number of contact can be delivered

art. no.				
BL LP 9 LED ...				
please indicate:	... no. of contacts one row 1 - 36		... surface of contact S = selective gold-plated Z = tin-plated	

Female headers

Female connectors for LED applications

- insulating body made of white plastic (nature)
- for □ 0.635 mm pin cross section, straight
- **separable!** any requested number of contact can be delivered

art. no.				
BL LP 8 LED SMD ...				
please indicate:	... no. of contacts one row 1 - 20	... surface of contact S = selective gold-plated Z = tin-plated	... packing (optional) SM = bar magazine	

... packing (option) - additions:
BL LP 8 LED SMD ... SM 4-20 contacts

Option for automatic assembly

... SM	BL LP 8 LED SMD ... SM

A

Female headers

Precision contacts for □ 0.5 mm and Ø 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		

H

I

K

L

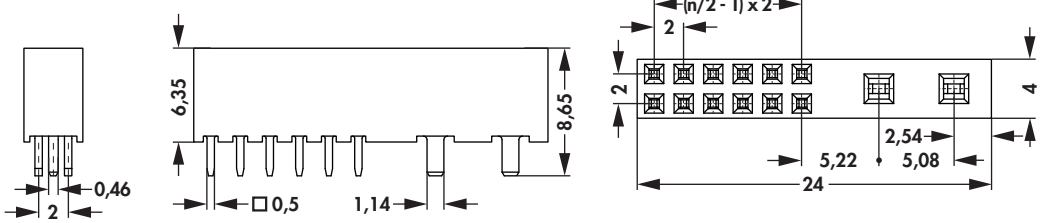
M

N

Female headers

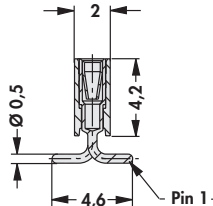
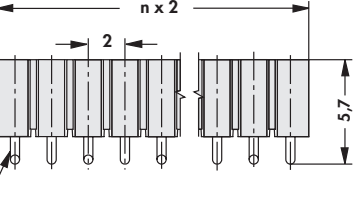
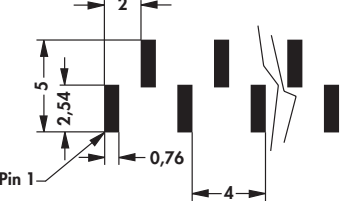
Turned precision female contacts

- suitable for **SLY 13 SHK 14 02 G** → G 41 and **SLY 14 SHK 14 02 G** → G 41
- signal and high-power contacts
- contacts gold-plated
- other number of contacts / contact surface upon request

		
art. no.	signal contacts	high-power contacts
BLY 10 SHK 14 02 G	12	2
surface of contact:	gold-plated	

Female headers

Precision contacts for □ 0.5 mm and Ø up to 0.56 mm, pin cross section

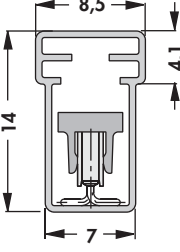
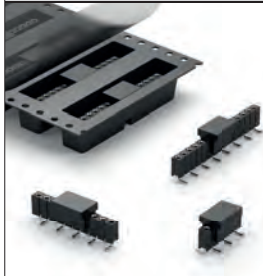
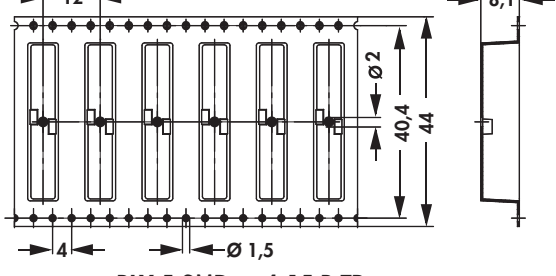
art. no.				
BLY 5 SMD ...				
please indicate:	... no. of contacts one row 4 - 20		... packing (optional) B SM = pick and place pad and bar magazine B TR = pick and place pad and tape and reel (700pcs/reel)	

... packing (option) - additions:

BLY 5 SMD ... B TR: 4-15 contacts

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

Option for automatic assembly

	
... B SM	BLY 5 SMD ... B SM
	
... B TR	BLY 5 SMD ... 4-15 B TR

Female headers

- 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

... packing (option) - additions:
BLY 6 SMD ... TR: 2-10 contacts
BLY 6 SMD ... TR: 11-20 contacts

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

Option for automatic assembly

- reel diameter Ø 330 mm

		BLY 6 SMD ... TR (2-10 contacts) (2.400 pcs/reel)
... TR		
		BLY 6 SMD ... TR (11-20 contacts) (2.200 pcs/reel)
... TR		

Female headers

Precision contacts for □ 0.5 mm and Ø 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

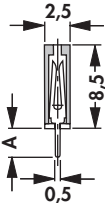
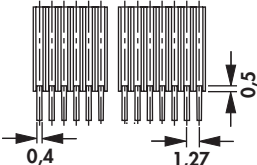
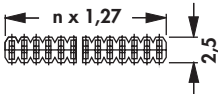
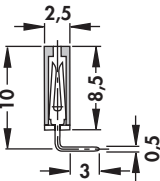
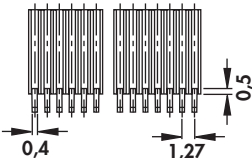
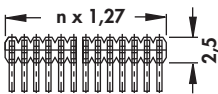
- reel diameter Ø 330 mm

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

Female headers

Stamped contact spring (fork contact)

- matching male header **SLM ...** → G 47 and **SLV ...** → G 47
- one row 1-36 contacts

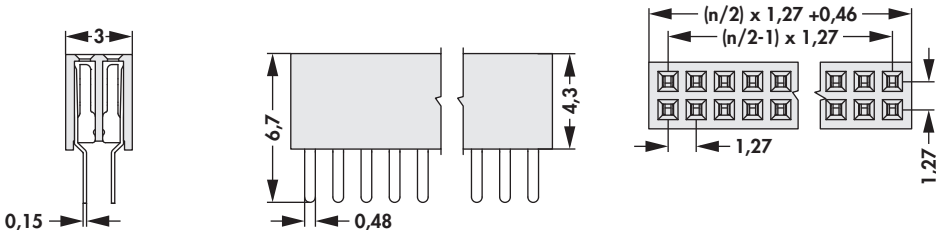
	  		
art. no.	dim. [mm]	art. no.	dim. [mm]
BLM KG 1 ...	3.0	BLM LG 1 ...	5.1
please indicate: ... no. of contacts one row 1 - 36 ... surface of contact G = gold-plated Z = tin-plated			
	  		
art. no.			
BLM LA 1 ...			
please indicate: ... no. of contacts one row 1 - 36 ... surface of contact G = gold-plated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

- suitable for male header **SLV** → G 47
- two rows 4-72 contacts - grid spacing 1.27 x 2.54 mm

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

Female headers

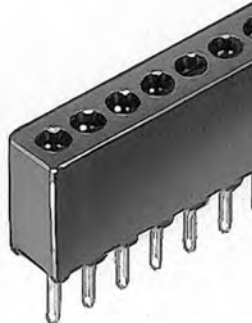
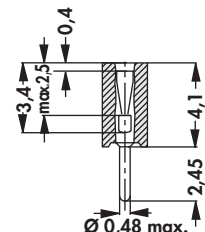
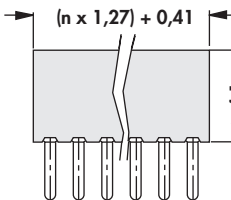
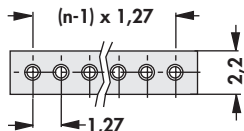
- suitable for male header **SLV W 4 ...** → G 49
- two rows 4-72 contacts
- Vorzugspolzahlen, andere auf Anfrage
- verzinnte Kontakte auf Anfrage

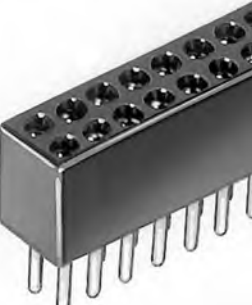
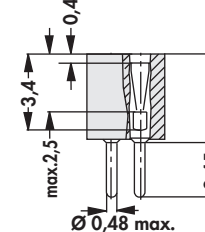
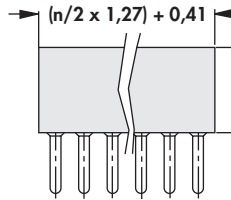
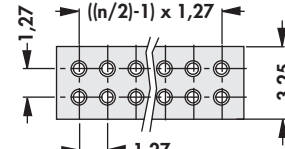
			
art. no.	no. of contacts		
BLV 2 10 G	10		
BLV 2 20 G	20		
BLV 2 26 G	26		
BLV 2 30 G	30		
BLV 2 40 G	40		
BLV 2 50 G	50		
BLV 2 72 G	72		
surface of contact:	gold-plated		

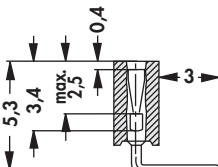
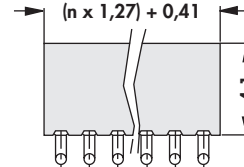
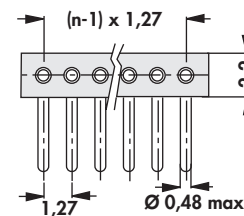
Female headers

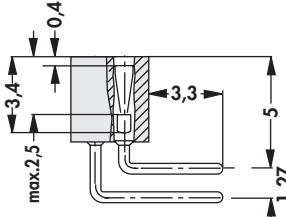
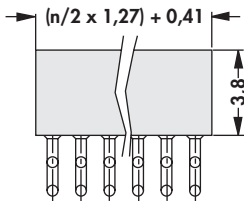
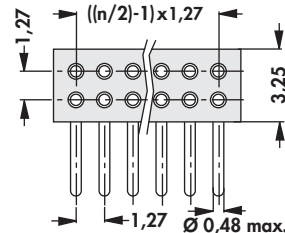
Precision contacts for Ø 0.35...0.46 mm, pin cross section

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

					
art. no.	no. of contacts	no. of contacts	art. no.	no. of contacts	no. of contacts
BLR 1 025 Z	25	25	BLR 1 050 Z	50	50

					
art. no.	no. of contacts	no. of contacts	art. no.	no. of contacts	no. of contacts
BLR 2 050 Z	50	50	BLR 2 100 Z	100	100

					
art. no.	no. of contacts	no. of contacts	art. no.	no. of contacts	no. of contacts
BLR 3 025 Z	25	25	BLR 3 050 Z	50	50

					
art. no.	no. of contacts		no. of contacts		
BLR 4 100 Z	100		100		
contact sleeve:		tin-plated			
contact spring:		gold-plated			

Female headers

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

- suitable for male header **SLM ...** → G 47 and **SLV ...** → G 47
- one row 4-20 contacts

art. no.			
BLM 1 SMD ...			
please indicate:	... no. of contacts 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 ...** → G 47
- 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** → G 47
- 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

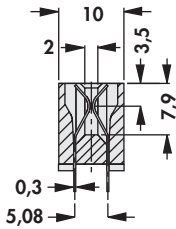
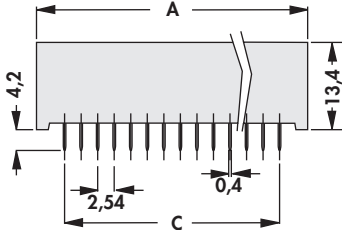
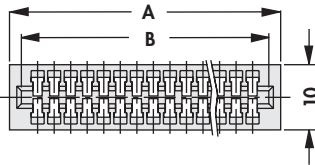
Turned precision contacts for Ø 0.35...0.46 mm

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

art. no.	no. of contacts				
BLR 6 SMD 100 Z	100				
art. no.	no. of contacts		no. of contacts		
BLR 7 SMD 50 Z	50		50		
contact sleeve:		tin-plated			
contact spring:		gold-plated			

Direct female connectors

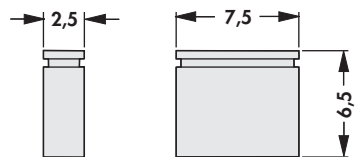
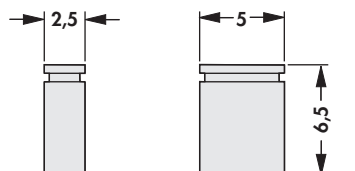
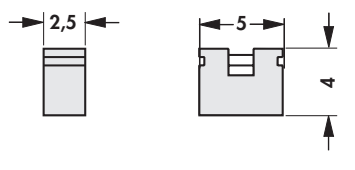
For PCB thickness: 1.4...1.8 mm

									
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							

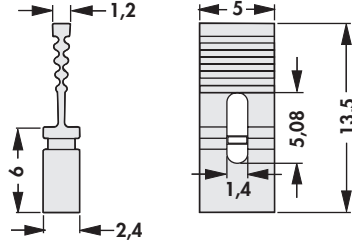
A

Jumpers

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

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

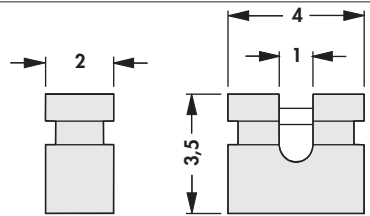
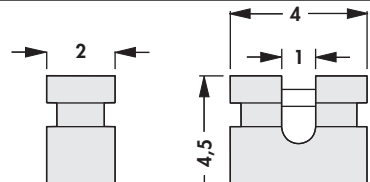
- the flexible contacts are short-circuiting two pins
- the jumpers can be mounted behind and next to each other

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

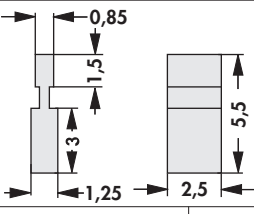
N

Jumpers

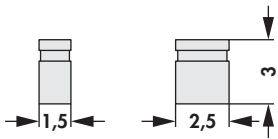
For □ 0.5 mm and for Ø 0.4...0.5 mm

				
art. no.	grid [mm]	surface of contact	no. of contacts	version
CAB 10 G S	2	0.1 μm Au	2	open, for miniature alligator clip
colour:		black		
				
art. no.	grid [mm]	surface of contact	no. of contacts	version
CAB 11 G S	2	0.1 μm Au	2	open, for miniature alligator clip
colour:		black		

For □ 0.3...0.4 mm and Ø 0.4...0.5 mm

 				
art. no.	grid [mm]	surface of contact	no. of contacts	version
CAB 15 G S	1.27	<0.1 µm Au	2	closed, tag
colour:		black		

For □ 0.3...0.4 mm and Ø 0.4...0.5 mm

 				
art. no.	grid [mm]	surface of contact	no. of contacts	version
CAB 16 G ...	1.27	<0.1 µm Au	2	closed
please indicate: ... colour S = black R = red B = blue				

A

Technical data: PCB connectors

B

C

D

E

F

G

H

I

K

L

M

N

	MK ..., MK LP 240 ..., MK LP 241 ..., MK LP 242 ..., MK LP 40 ..., MK LP 41 ..., MK LP 42 ..., MK LP 43 ...	SL 7 - 9	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 (se- lective)/ 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 con- tacts	≤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 inflammability	UL 94 V-0			
specific insulation resistance	> 10 ⁷ Ω·m			
	SL ... SHK ...	SL ..., SL ... THR, SLK ..., SL LP ...	SLP 1 ..., SLP 2 ..., SLUP 31 ...	SL ... LED ...
contact material	CuZn-alloy	CuSn alloy		
surface contact / contact sleeve	Ni+≥0.2μm Au	Ni+≥0.2μm Au/ Ni+4...6μm Sn		
volume resistance	≤10 mΩ	≤5 mΩ	≤10 mΩ	≤5 mΩ
nominal current	8.2 A/ 3 A	3 A		
nominal voltage	250 V AC			
test voltage	1000 V	2000 V	1000 V	2000 V
insulating body material	PCT, GF	PA 4.6. GF		LCP
temperature range	-40°C ... +105°C (260°C / 10s)	-40°C... +163°C/ (260°C/10 s)		-40°C...+230°C/ (260°C/10 s)
class of inflammability	UL 94 V-0			
specific insulation resistance		> 10 ⁷ Ω·m		> 10 ¹⁵ Ω·cm
	SLY ...	SLY ... SHK ...	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	Ni+≥0.2μm Au	Ni+≥0.2μm Au/ Ni+4...6μm Sn	
volume resistance	≤5 mΩ	≤10 mΩ	≤5 mΩ	≤20 mΩ
nominal current	3 A	8,2 A/ 2,5 A	1.5 A	1 A
nominal voltage	100 V DC	250 V AC	125 V AC	100 V AC/ 150 V DC
test voltage	500 V	1000 V	300 V	500 V
insulating body material	PA 4.6. GF	PCT, GF	PA 4.6. GF	PCT, GF
temperature range	-40°C... +163°C/ (260°C/10 s)	-40°C ... +105°C (260°C / 10s)	-40°C... +163°C/ (260°C/10 s)	-40°C... +105°C/ (260°C/10 s)
class of inflammability	UL 94 V-0			
specific insulation resistance	> 10 ⁷ Ω·m		> 10 ⁷ Ω·m	

	MK 06 ..., MK 07/207 ..., MK 12/212 ..., MK 13/213 ..., MK 17/217 ..., MK 31/231 ...	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+0.2μm Au/ Ni+4...6μm Sn		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
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 con- tacts	≤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 inflammability	UL 94 V-0			
specific insulation resistance	>10 ⁷ Ω·m			

Technical data: PCB connectors

	SIL 2 ...	BL 1 ..., BL 2 ..., BL 3 ..., BL 4 ...	BL LP ...	BL 11 ...
contact material	CuZn-alloy	CuSn alloy		
surface contact / contact sleeve	Ni+0.2µm Au/ Ni +4...6µm Sn	Ni+≥0.2µm Au/ Ni +4...6µm Sn	Ni+≥0.2µm Au (se- lective)/ Ni+2...4µm Sn (matt finished tin)	Ni+≥0.2µm Au (se- lective)/ 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	2...4mm	≥5mm from above/ ≥8mm from below
insertion / drawing force	1.8 N/1.4 N	1.5 N/1.3 N	2N/1.5N	1.5 N/0.5 N
shock resistance	50 g			
volume resistance	≤10 mΩ			≤20 mΩ
vibration resistance max.	15 g			
capacity between two adjacent con- tacts	≤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
temperature range		-40°C... +200°C/ (260°C/10 s)		-40°C... +163°C/ (260°C/10 s)
class of inflammability		UL 94 V-0		
specific insulation resistance		>10 ¹² Ω·m	>10 ¹² Ω	>10 ⁷ Ω·m

	BL 12 ..., BL 21 ...	BL 5 - 10 ...	BL KG 3 ...	BL 15 - 17 SMD ..., BL 20 SMD ..., BL 5 - 10 ...
contact material	CuSn alloy	CuZn-alloy		
surface contact / contact sleeve	Ni+ $\geq 0.2\mu\text{m}$ Au (se- lective)/ Ni+4... $6\mu\text{m}$ Sn	Ni+4... $6\mu\text{m}$ Sn		
inner contact spring material		CuBe-alloy		
inner contact spring surface		Ni+0,75 μm Au		
type internal spring	spring contact	6-fingers		
plugability for circuit points	$\square 0,6...0,65\text{mm}$	$\square 0,55...0,65\text{mm}/ \varnothing 0,65...0,85\text{mm}$		
insert depth	$\geq 6\text{mm}$ from above or from below	2.5...6mm		
insertion / drawing force	1.5 N/0.2 N	1.3N/0.3N		
shock resistance		50 g		50 g
volume resistance	$\leq 20\text{ m}\Omega$	$\leq 10\text{ m}\Omega$		$\leq 10\text{ m}\Omega$
vibration resistance max.		15 g		15 g
capacity between two adjacent con- tacts	$\leq 0,9\text{ pF}$	$\leq 0,3\text{ pF}$		$\leq 0,3\text{ pF}$
nominal current	3 A			
nominal voltage	250 V AC	150 V DC		
test voltage	500 V	1500 V	500 V	1500 V
insulating body material	LCP	PA 4.6. GF	PCT, GF	PA 4.6. GF
temperature range	-55°C... +125°C	-40°C... +163°C/ (260°C/10 s)	-55°C... +125°C/ (260°C/10 s)	-40°C... +163°C/ (260°C/10 s)
class of inflammability	UL 94 V-0			
specific insulation resistance	$> 10^{12}\text{ }\Omega\cdot\text{m}$	$> 10^7\text{ }\Omega\cdot\text{m}$		$> 10^7\text{ }\Omega\cdot\text{m}$

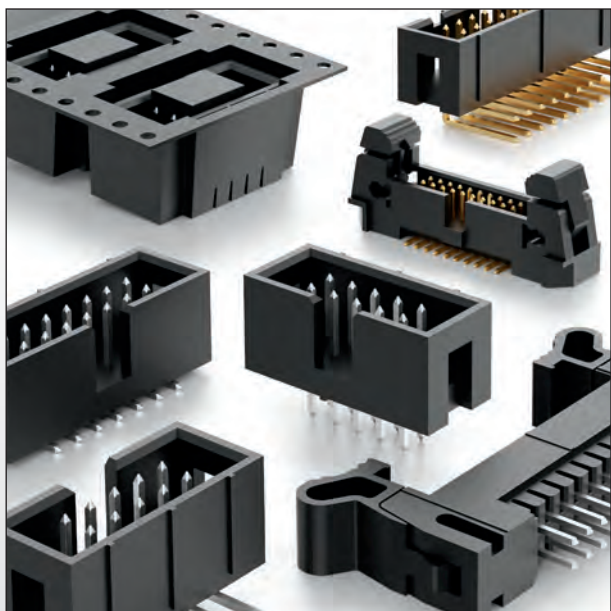
Technical data: PCB connectors

	BL 13 ..., BL 14 ..., BL 18 ..., BL 19 ...	BL ... SHK ...	MK 21/221 ..., MK 22/222 ..., MK 24 SMD ...	MK 01/201 ..., MK 220 SMD ..., MK 228 THR ..., MK 23/223 ..., MK 25 SMD ...
contact material	CuZn-alloy			
surface contact / contact sleeve	Ni+≥0.2μm Au		Ni+4...6μm Sn	
inner contact spring material	CuBe-alloy		CuBe-alloy	
inner contact spring surface	Ni+0,75μm Au		Ni+0,75μm Au	Ni+0,25μm Au
type internal spring	6-fingers	fork contact	6-fingers	4-fingers
plugability for circuit points	□0,55...0,65mm/ Ø0,65...0,85mm	□0,64mm/ □1,14mm	□0,55...0,65mm/ Ø0,65...0,85mm	□0,22x0,25mm... □0,4x0,55mm/ Ø0,4...0,56mm
insert depth	2.5...6mm	3.3...5.7mm	2.5...3.6mm	
insertion / drawing force	1.3N/0.3N		1.3N/0.3N	1.8 N/1.4 N
shock resistance	50 g		50 g	
volume resistance	≤10 mΩ			
vibration resistance max.	15 g		15 g	
capacity between two adjacent con- tacts	≤ 0,3 pF		≤0,3 pF	≤0,4 pF
nominal current	3 A	8.2 A/ 3 A	3 A	1.5 A
nominal voltage	150 V DC	250 V AC	150 V DC	60 V DC
test voltage	1500 V	1000 V	1500 V	1000 V
insulating body material	PA 4.6. GF	PCT, GF	PA 4.6. GF	
temperature range	-40°C... +163°C/ (260°C/10 s)	-40°C ... +105°C (260°C / 10s)	-40°C... +163°C/ (260°C/10 s)	
class of inflammability	UL 94 V-0			
specific insulation resistance	>10 ⁷ Ω·m		>10 ⁷ Ω·m	
	BLP 1 ..., BLP 2 ...	BL LP ... LED ...	BLY ...	BLY ... SHK ...
contact material	CuZn-alloy	CuSn alloy	CuZn-alloy	
surface contact / contact sleeve	Ni+4...6μm Sn	Ni+≥0.2μm Au (se- lective)/ Ni+2...4μm Sn (matt finished tin)	Ni+4...6μm Sn	Ni+≥0.2μm Au
inner contact spring material	CuBe-alloy		CuBe-alloy	
inner contact spring surface	Ni+0,75μm Au		Ni+0,25μm Au	
type internal spring	6-fingers	fork contact	6-fingers	fork contact
plugability for circuit points	□0,55...0,65mm/ Ø0,65...0,85mm	□0,5...0,7mm	□0,45...0,5mm/ Ø0,4...0,56mm	□0,45...0,5mm/ □1,14mm
insert depth	2.5...6mm	2...4mm	2.5...3.8mm	
insertion / drawing force	1.3N/0.3N	2N/1.5N	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 con- tacts	≤ 0,3 pF	≤ 0,9 pF	≤0,7 pF	
nominal current	2 A	3 A	2.5 A	8.2 A/ 2.5 A
nominal voltage	150 V DC	125 V AC	100 V DC	250 V AC
test voltage	1000 V	1500 V	500 V	
insulating body material	PA 4.6. GF	LCP	PA 4.6. GF	PCT, GF
temperature range	-40°C... +163°C/ (260°C/10 s)	-40°C...+230°C/ (260°C/10 s)	-40°C... +163°C/ (260°C/10 s)	-40°C ... +105°C (260°C / 10s)
class of inflammability	UL 94 V-0			
specific insulation resistance	>10 ⁷ Ω·m	>10 ¹⁵ Ω·cm	>10 ⁷ Ω·m	

	BLM ...	BLV 2 ...	BLR ...	DF 2 ...
contact material	CuSn alloy		CuZn-alloy	CuSn 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	
inner contact spring surface			Ni+0,25μm Au	
type internal spring	fork contact		3-fingers	
plugability for circuit points	□0,3...0,4mm	□0,4mm	Ø0,35...0,46mm	
insert depth	2.5...6mm	2.5...4.2	2.5...3mm	
insertion / drawing force	1.3 N/1.1 N		1.2N/0.6N	
shock resistance			50 g	
volume resistance	≤10 mΩ		≤20 mΩ	
vibration resistance max.			15 g	
capacity between two adjacent contacts	≤0,4 pF		≤1,0 pF	
nominal current	1.5 A	1 A		2 A
nominal voltage	125 V AC	100 V DC		125 V AC
test voltage	500 V			
insulating body material	PA 4.6. GF	PCT, GF		polycarbonate
temperature range	-40°C... +163°C/ (260°C/10 s)	-40°C... +105°C/ (260°C/10 s)		-40°C... +125°C
class of inflammability	UL 94 V-0			
specific insulation resistance	> 10 ⁷ Ω·m			
PCB thickness				0,7...0,9 mm

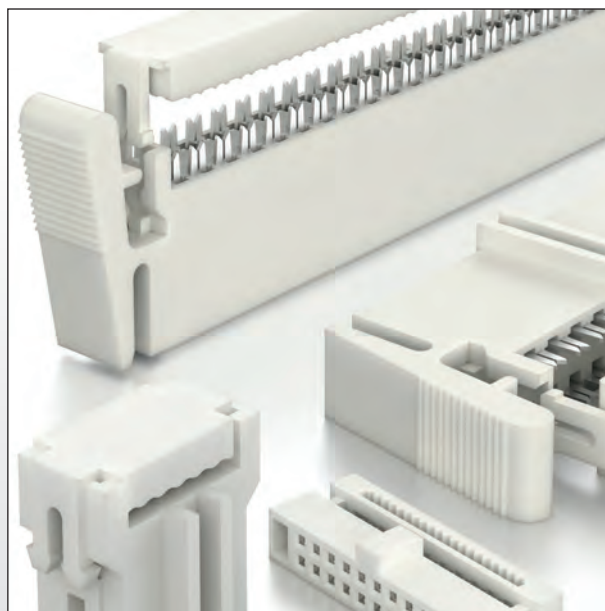
Technical data: PCB connectors

	DF OB ...	CAB 5 ...	CAB 4 G ...	CAB 6 ...
contact material	CuSn alloy			
surface contact / contact sleeve	Ni+7µm Sn	0.5 µm Au/ 1 µm Au/ 5 µm Sn	0.1 µm Au/ 5 µm Sn	0.5 µm Au/ 1 µm Au/ 5 µm Sn
type internal spring	spring contact			
insert depth		4...5.5mm	4...6.1mm	5mm...plug through
nominal current	3 A		1.5 A	
nominal voltage	125 V AC		250 V AC	
test voltage	800 V			
insulating body material	PA 4.6. GF	PA 66	PBT	PA 66
temperature range	-40°C... +125°C/ (260°C/10 s)		-40°C... +105°C	
class of inflammability	UL 94 V-0			
PCB thickness	1,4...1,8 mm			
mounting	without mounting eye-lets			
	CAB 9 ...	CAB 10 G S	CAB 11 G S	CAB 15 G S
surface contact / contact sleeve		0.1 µm Au		<0.1µm Au
insert depth	4...5.6mm	4mm...plug through	5mm...plug through	2.2...2.4mm
nominal current	3 A	1.5 A		1 A
nominal voltage	500 V AC	150 V DC		100 V AC
insulating body material		PBT		PA 66
temperature range	-40°C... +105°C/ (re-sistance to soldering heat 235°C/30-60s)	-40°C... +105°C		-40°C... +150°C
	CAB 16 G ...			
surface contact / contact sleeve		<0.1µm Au		
insert depth		2.2...2.4mm		
nominal current		1 A		
nominal voltage		100 V AC		
insulating body material		PBT		
temperature range		-40°C... +105°C		



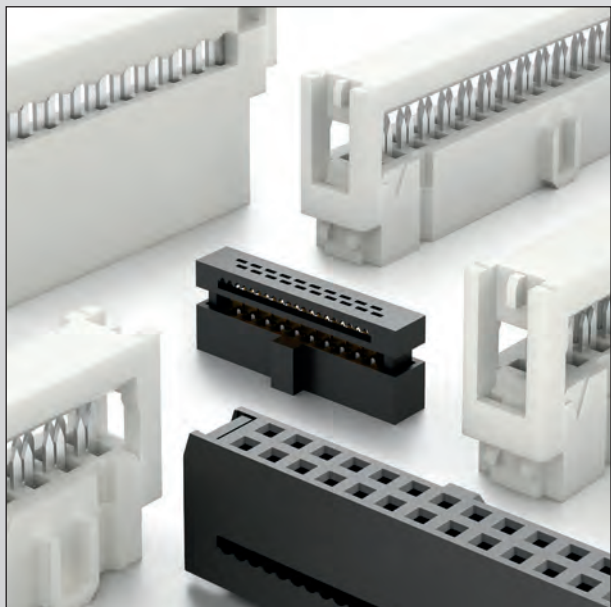
Shroud male headers

- 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 V-0



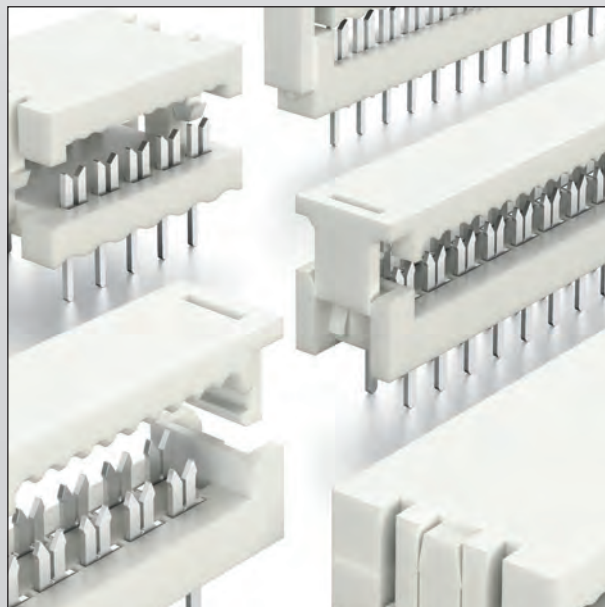
Multipoint connectors with and without lock

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



Multipoint connectors, 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 connectors

- 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 ...** → H 11, **FLMP ...** → H 11, **PV ...** → H 12
- in addition they can be combined with many other ribbon cable connectors in 2.54 mm pitch
- gold-plated plug-in area and tin-plated soldering area or completely tin plated available!

art. no.	no. of contacts	dim. [mm]			art. no.	no. of contacts	dim. [mm]		
ASLG 06 ...	6	A	B	C	ASLG 20 ...	20	A	B	C
ASLG 08 ...	8	15.3	12.7	5.08	ASLG 26 ...	26	33.1	30.5	22.86
ASLG 10 ...	10	17.8	15.2	7.62	ASLG 34 ...	34	40.7	38.1	30.48
ASLG 12 ...	12	20.4	17.8	10.16	ASLG 40 ...	40	50.9	48.3	40.64
ASLG 14 ...	14	22.9	20.3	12.70	ASLG 50 ...	50	58.5	55.9	48.26
ASLG 16 ...	16	25.4	22.9	15.24			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 ...** → H 11, **FLMP ...** → H 11, **PV ...** → H 12
- in addition they can be combined with many other ribbon cable connectors in 2.54 mm pitch
- gold-plated plug-in area and tin-plated soldering area available!

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

Shroud-male header

SMD, two rows, shrouded

- suitable for female multipoint connector **VFL ...** → H 11, **FLMP ...** → H 11, **PV ...** → H 12
- **VPE** = packing unit (pieces/tube)
- gold-plated plug-in area and tin-plated soldering area or completely tin-plated available!
- 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]		art. no.	no. of contacts	packing unit	dim. [mm]																
ASL 06 SMD ...	6	32	15.3	5.08	ASL 20 SMD ...	20	15	33.1	22.86	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 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 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 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 50 SMD ...	50	7	71.2	60.96															
ASL 16 SMD ...	16	17	28.0	17.78																									
please indicate: ... surface of contact															... packing (optional)														
G = gold-plated															SM = bar magazine														
Z = tin-plated															B SM = pick and place pad and bar magazine														
															B TR = pick and place pad and tape and reel (300pcs/reel)														

... packing (option) - additions:

ASL ... SMD ... B TR: 06 contacts; 08 contacts; 10 contacts; 26 contacts

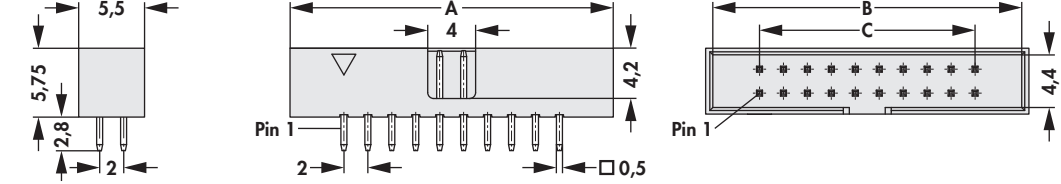
Option for automatic assembly

... B SM		ASL ... SMD ...		ASL ... SMD ... B SM	
... B TR		ASL 26 SMD ... B TR			
... B TR		ASL 06 - 10 SMD ... B TR			

Shroud-male header

Straight, two rows, shrouded

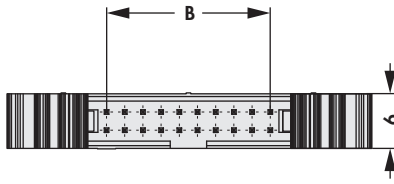
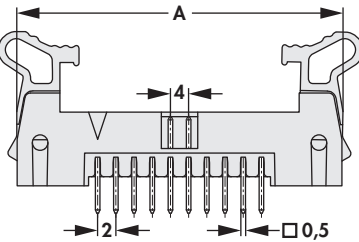
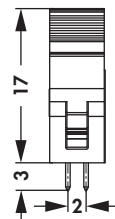
- suitable for female multipoint connector **PVY ...** → H 13
- they are also combinable with many other ribbon cable female multipoint connectors in grid 2.00 mm
- contacts are available in gold-plated, tin-plating upon request!

				
art. no.	no. of contacts	dim. [mm]		
		A	B	C
ASLGY 10 G	10	17	15.8	8
ASLGY 20 G	20	27	25.8	18
ASLGY 26 G	26	33	31.8	24
ASLGY 40 G	40	47	45.8	38
ASLGY 44 G	44	51	49.8	42
ASLGY 50 G	50	57	55.8	48

Shroud-male header

Straight, two rows, shrouded and with lock

- suitable for female multipoint connector **PVY ...** → H 13
- they are also combinable with many other ribbon cable female multipoint connectors in grid 2.00 mm
- contacts are available in gold-plated, tin-plating upon request!

					
art. no.	no. of contacts	dim. [mm]			
		A	B		
VSLGY 10 G	10	25.7	8		
VSLGY 20 G	20	35.7	18		
VSLGY 26 G	26	41.7	24		
VSLGY 40 G	40	55.7	38		
VSLGY 44 G	44	59.7	42		
VSLGY 50 G	50	65.7	48		

Shroud-male header

SMD, two rows, shrouded

- suitable for female multipoint connector **PVY ...** → H 13
- they are also combinable with many other ribbon cable female multipoint connectors in grid 2.00 mm
- contacts are available in gold-plated, tin-plating upon request!

art. no.	no. of contacts	dim. [mm]	
ASLY 10 SMD G	10	A	B
ASLY 20 SMD G	20	17	8
ASLY 26 SMD G	26	27	18
ASLY 40 SMD G	40	33	24
ASLY 44 SMD G	44	47	38
ASLY 44 SMD G	44	51	42
ASLY 50 SMD G	50	57	48

Shroud-male header

Straight, two rows, shrouded

- suitable for female multipoint connector **PVV ...** → H 14
- they are also combinable with many other ribbon cable female multipoint connectors in grid 1.27 mm
- contacts are available in gold-plated, tin-plating upon request!

art. no.	no. of contacts	dim. [mm]		
ASLGV 10 G	10	A	B	C
ASLGV 20 G	20	12.65	11.10	5.08
ASLGV 26 G	26	19.00	17.45	11.43
ASLGV 40 G	40	22.80	21.25	15.24
ASLGV 40 G	40	31.70	30.15	24.13

Angled, two rows, shrouded

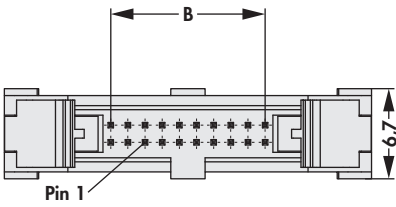
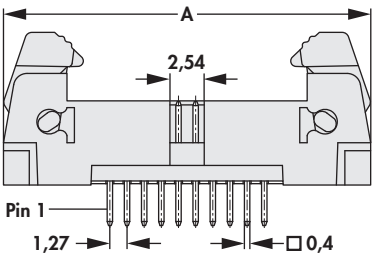
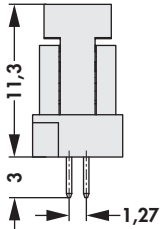
- suitable for female multipoint connector **PVV ...** → H 14
- they are also combinable with many other ribbon cable female multipoint connectors in grid 1.27 mm
- contacts are available in gold-plated, tin-plating upon request!

art. no.	no. of contacts	dim. [mm]		
ASLAV 10 G	10	A	B	C
ASLAV 20 G	20	12.65	11.10	5.08
ASLAV 26 G	26	19.00	17.45	11.43
ASLAV 40 G	40	22.80	21.25	15.24
ASLAV 40 G	40	31.70	30.15	24.13

Shroud-male header

Straight, two rows, shrouded and with lock

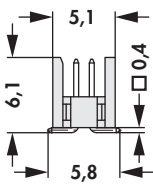
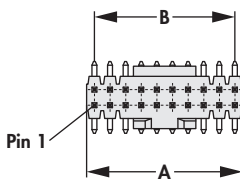
- suitable for female multipoint connector **PVV ...** → H 14
- they are also combinable with many other ribbon cable female multipoint connectors in grid 1.27 mm
- contacts are available in gold-plated, tin-plating upon request!

							
art. no.	no. of contacts	dim. [mm]					
		A		B			
VSLGV 10 G	10	20.83		5.08			
VSLGV 20 G	20	27.18		11.43			
VSLGV 26 G	26	30.89		15.24			
VSLGV 40 G	40	39.88		24.13			

Shroud-male header

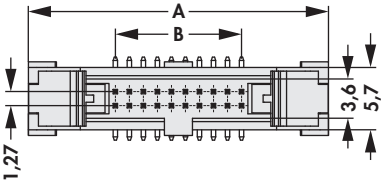
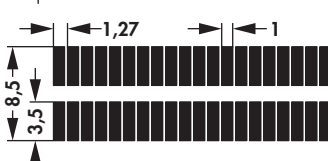
SMD, two rows, shrouded

- suitable for female multipoint connector **PVV ...** → H 14
- they are also combinable with many other ribbon cable female multipoint connectors in grid 1.27 mm
- contacts are available in gold-plated, tin-plating upon request!

						
	art. no.	no. of contacts	dim. [mm]			
ASLV 10 SMD G	10		A		B	
ASLV 20 SMD G	20		12.70		5.08	
ASLV 26 SMD G	26		16.51		11.43	
ASLV 40 SMD G	40		25.40		15.24	
					24.13	

SMD, two rows, shrouded and with lock

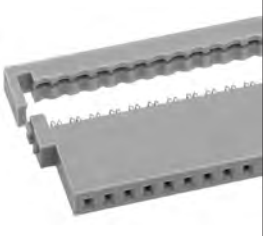
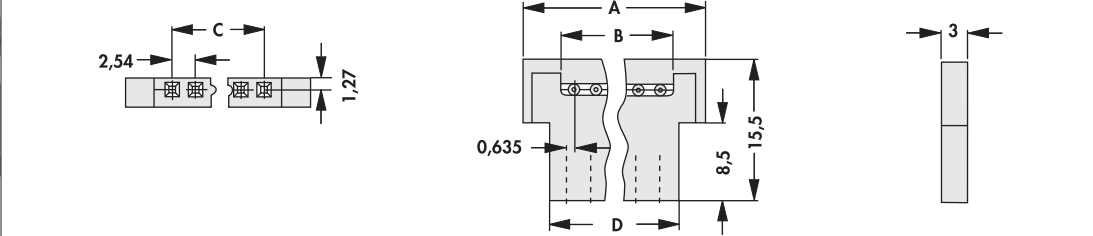
- suitable for female multipoint connector **PVV ...** → H 14
- they are also combinable with many other ribbon cable female multipoint connectors in grid 1.27 mm
- contacts are available in gold-plated, tin-plating upon request!

						
	art. no.	no. of contacts	dim. [mm]			
VSLV 10 SMD G	10		A		B	
VSLV 20 SMD G	20		20.83		5.08	
VSLV 26 SMD G	26		27.18		11.43	
VSLV 26 SMD G	26		30.89		15.24	
VSLV 40 SMD G	40		39.88		24.13	

Female connector

One row

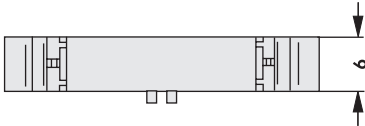
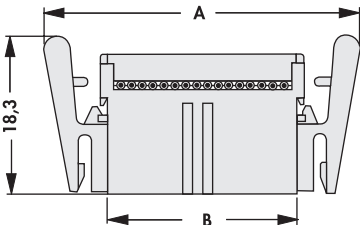
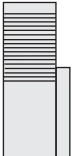
– excess length of the ribbon cable to the case at ≥ 1 mm!

					
art. no.	no. of contacts	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			
cross-section:		AWG 28...30 = 0,09...0,05 mm ²			
insulation diameter:		≤ 1,1 mm			
suitable ribbon cable round conductor flat cable:		AWG 28 = massive or strand			
recommended connector pins:		□ 0,635 mm			

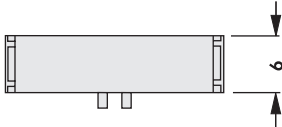
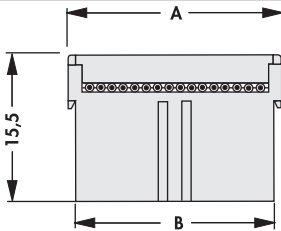
Female connector

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							

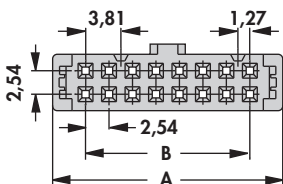
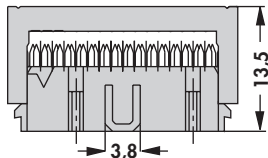
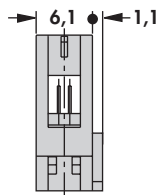
– suitable for shrouded male header **ASL ...**– excess length of the ribbon cable to the case at ≥ 1 mm!

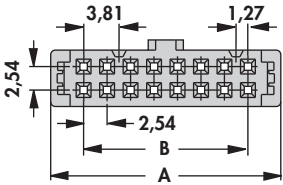
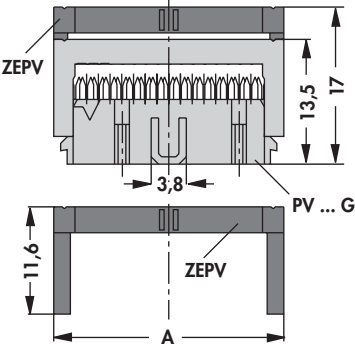
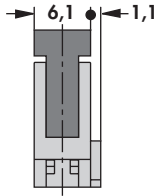
							
art. no.	no. of contacts	dim. [mm]		art. no.	no. of contacts	dim. [mm]	
		A	B			A	B
FLMP 06 ...	6	10.97	9.56	FLMP 20 ...	20	28.75	27.34
FLMP 08 ...	8	13.51	12.10	FLMP 26 ...	26	36.37	34.96
FLMP 10 ...	10	16.05	14.64	FLMP 34 ...	34	46.53	45.12
FLMP 12 ...	12	18.59	17.18	FLMP 40 ...	40	54.15	52.74
FLMP 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					
cross-section:		AWG 28...30 = 0,09...0,05 mm ²					
insulation diameter:		≤ 1,1 mm					
suitable ribbon cable round conductor flat cable:		AWG 28 = massive or strand					

Female connector

Two rows, with polarisation

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

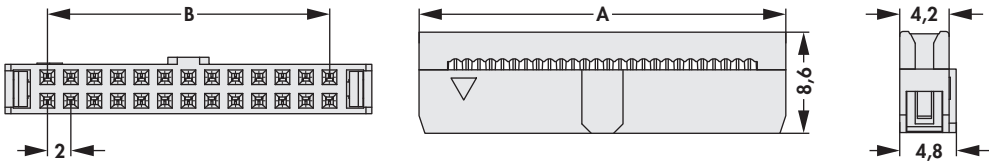
									
art. no.	no. of contacts	suitable strain relief	dim. [mm]		art. no.	no. of contacts	suitable strain relief	dim. [mm]	
PV 06 G	6	ZEPV 06	12.2	5.08	PV 26 G	26	ZEPV 26	37.6	30.48
PV 10 G	10	ZEPV 10	17.3	10.16	PV 34 G	34	ZEPV 34	47.8	40.64
PV 14 G	14	ZEPV 14	22.4	15.24	PV 40 G	40	ZEPV 40	55.4	48.26
PV 16 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						
cross-section:			AWG 28...30 = 0,09...0,05 mm ²						
insulation diameter:			≤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]	
ZEPV 06	6	A	B	ZEPV 26	26	A	B
ZEPV 10	10	12.2	5.08	ZEPV 34	34	37.6	30.48
ZEPV 14	14	17.3	10.16	ZEPV 40	40	47.8	40.64
ZEPV 16	16	22.4	15.24	ZEPV 50	50	55.4	48.26
ZEPV 20	20	24.9	17.78			68.1	60.96
		30.0	22.86				

Female connector

Two rows

- Suitable for **ASLGY ...**, **ASLY ... SMD** and **VSLGY ...**
- Protrusion length of the ribbon cable to the case ≥ 1 mm!

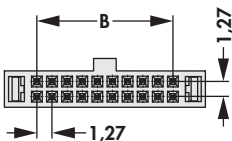
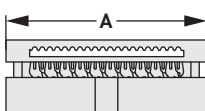
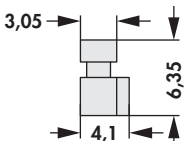


art. no.	no. of contacts	dim. [mm]	
		A	B
PVY 10 S	10	15.2	8
PVY 20 S	20	25.1	18
PVY 26 S	26	31.2	24
PVY 40 S	40	45.3	38
PVY 44 S	44	49.3	42
PVY 50 S	50	55.1	48
surface of contact:		selective gold-plated	
annotation:		IDC-pattern, 1 mm	
recommended connector pins:		□ 0,5 mm	

Female connector

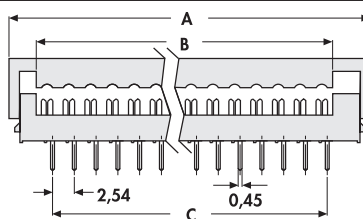
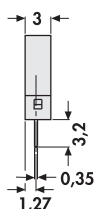
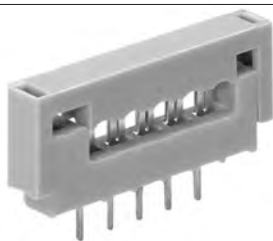
Two rows

- Suitable for **ASLGV ...**, **ASLAV ...**, **VSLGV ...**, **ASLV ... SMD** und **VSLV ... SMD**
- Protrusion length of the ribbon cable to the case ≥ 1 mm!

					
art. no.	no. of contacts	dim. [mm]			
		A	B		
PVV 10 G	10	10.54	5.08		
PVV 20 G	20	16.89	11.43		
PVV 26 G	26	20.70	15.24		
PVV 40 G	40	29.59	24.13		
surface of contact:		gold-plated			
annotation:		IDC-pattern 0.635mm			
recommended connector pins:		□ 0,4 mm			

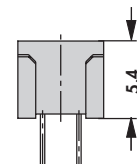
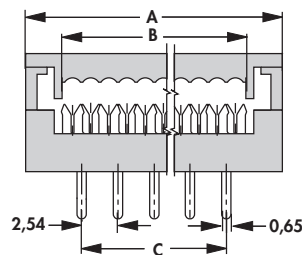
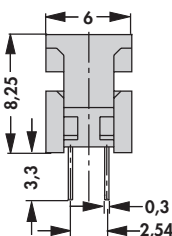
Printed circuit connector

– 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:		$\leq 1,1$ 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!

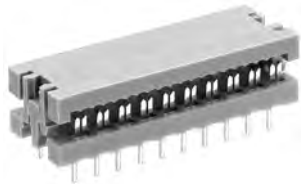
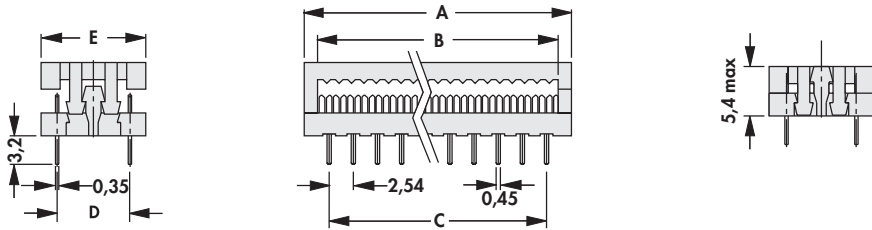


art. no.	no. of contacts	dim. [mm]		
		A	B	C
SBAU 06 Z	6	12.9	7.8	5.08
SBAU 10 Z	10	18.0	12.9	10.16
SBAU 14 Z	14	23.0	18.0	15.24
SBAU 16 Z	16	25.6	20.5	17.78
SBAU 20 Z	20	30.7	25.6	22.86
SBAU 26 Z	26	38.3	33.2	30.48
SBAU 34 Z	34	48.5	43.4	40.64
surface of contact:		tin-plated		
annotation:		IDC-pattern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

Printed circuit connector

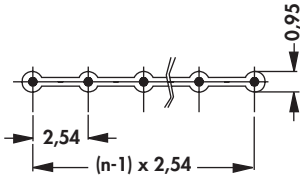
Design DIL

– excess length of the ribbon cable to the case at ≥ 1 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		
KK 08 Z	8	13.0	10.2	7.62		
KK 10 Z	10	15.4	12.7	10.16		
KK 12 Z	12	18.0	15.3	5.08		
KK 14 Z	14	20.5	17.8	15.24		
KK 16 Z	16	23.0	20.3	17.78		
KK 18 Z	18	25.6	22.9	20.32		
KK 20 Z	20	28.1	25.4	22.86	15.24	18.7
KK 24 Z	24	33.0	30.5	27.94		
KK 28 Z	28	38.1	35.6	33.02		
KK 40 Z	40	53.3	50.8	48.26		
surface of contact:		tin-plated				
annotation:		IDC-pattern 1.27mm				
insulation diameter:		≤1,1 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 **FLMP, FV, KK, PV, PVY, SB, VFL, DS/DB BK 09-37** 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
PV W	FLMP/ PV/ VFL
PVY W	PVY
SB W	SB
D W 9 37	D-Sub (9-37 contacts)

	ASL ..., ASLG ...	ASLGY ..., ASLY ... SMD G, VSLGY ...	ASLAV ..., ASLGV ..., ASLV ... SMD G, VSLGV ..., VSLV ... SMD G	FV ...
surface contact / contact sleeve	Ni+≥0.2µm Au/ Ni +4...8µm Sn	Ni+≥0.2µm Au		Ni+≥0.2µm Au/ Ni +5...10µm Sn
contact material	CuSn alloy	Cu-alloy		CuSn alloy
creeping current resistance				KC 175 nach DIN 53480
creepage	≥1,1mm VDE0110			1,4mm VDE0110
air gap	≥0,8 mm VDE0110			1mm VDE0110
nominal current	1 A	1.5 A	1 A	2 A
nominal voltage	250V AC insulation group A, according to VDE0110	150 V DC	100 V DC	250V AC insulation group A, according to VDE0110
test voltage	500 V AC		300 V AC	500 V AC
insertion / drawing force				≥0.3N ... ≤0.7N per contact
cycles of operation				≥50 according to DIN 41640
insulating body material	PPS	PBT		PC/ colour: RAL 7032
temperature range	-40°C ... +200°C (260°C / 10s)	-40°C ... +105°C (260°C / 10s)		-55°C... +125°C
class of inflammability	UL 94 V-0			
specific insulation resistance	>10 ⁷ Ω·m			
cross-section				AWG 28...30 = 0,09...0,05 mm²
	FLMP ..., VFL ...	PV ...	PVY ... S	PVW ... G
surface contact / contact sleeve	Ni+≥0.2µm Au/ Ni +5...10µm Sn	Ni+≥5µm Sn/ Ni +≥0.2µm Au	contact area: Ni +>0.1µm Au/ con- nection area: Ni +0.5...2.5µm Sn	contact area: Ni +>0.1µm Au
contact material	CuSn alloy		Cu-alloy	
creeping current resistance	KC 175 nach DIN 53480	KC 250		
creepage	1,4mm VDE0110			
air gap	1mm VDE0110			
nominal current	1 A	2 A	1.5 A	
nominal voltage	250V AC insulation group A, according to VDE0110		150 V DC	100 V DC
test voltage	500 V AC			
insertion / drawing force	≥0.3N ... ≤0.7N per contact		≥0.5 ... ≤1.8N per contact	
cycles of operation	≥50 according to DIN 41640	200 to DIN41651		
insulating body material	PC/ colour: RAL 7032		PBT, schwarz	
temperature range	-55°C... +125°C		-40°C... +105°C	
class of inflammability	UL 94 V-0			
specific insulation resistance	>10 ⁷ Ω·m		>10 ¹⁰ Ω·m	
cross-section	AWG 28...30 = 0,09...0,05 mm²			

A

Technical data: IDC-connectors

B

C

D

E

F

G

H

I

K

L

M

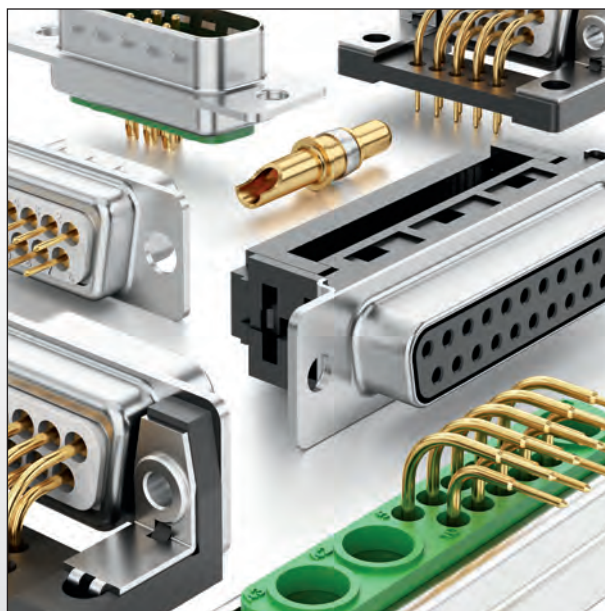
N

	SBAU ... Z	KK ... Z, SBAU 1 ... Z	BK 01 32
surface contact / contact sleeve	Ni+5µm Sn	Ni+5...10µm Sn	
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		
insulating body material	PC	colour: RAL 7032	
temperature range	-55°C... +125°C		-30°C... +105°C
class of inflammability	UL 94 V-1	UL 94 V-0	
specific insulation resistance	> 10 ¹² Ω·m		
conductor			7 x Ø 0,127 mm
cross-section	AWG 28...30 = 0,09...0,05 mm ²		AWG 28/~0,089 mm ²
capacity			≤ 65 pF/m symmetrical
conductor resistance			≤230mΩ/m
characteristic impedance			170 Ω symmetrisch



USB & RJ 45 connectors

- USB 2.0 type A and type B
- USB 2.0 mini type B
- USB 2.0 micro type B
- USB 3.0 type A
- USB 3.1 type C
- RJ 45



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 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

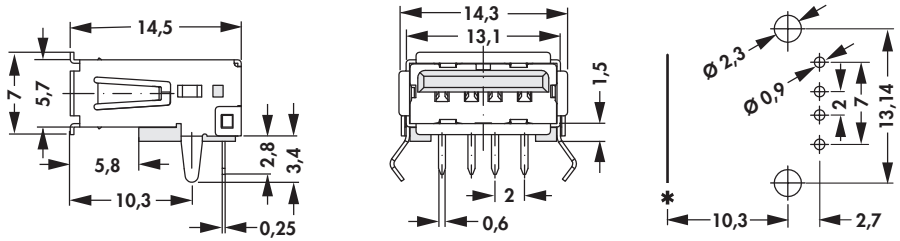
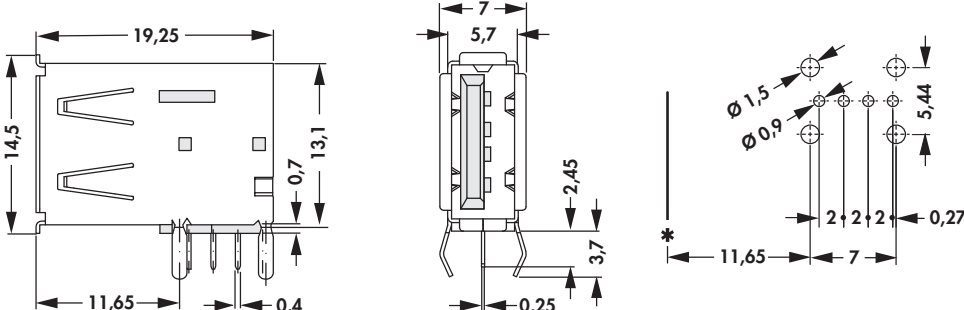
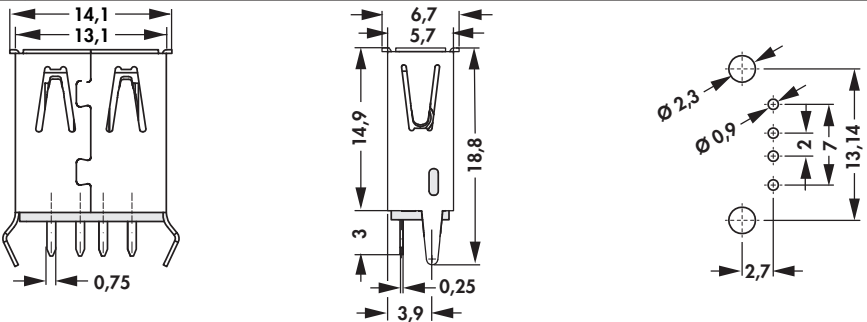
- cut-out covers
- HF-dense seal caps
- HF seals
- dust covers



USB connectors

USB 2.0 type A sockets

- for PCB mounting
- in THT design
- industrial standard
- * PCB edge (PCB)

				
art. no.	no. of contacts	type	connection type	packing
USB 2 A 90	4	USB Typ A	THT (soldering)	Tray
surface of contact:		selective gold-plated		
				
art. no.	no. of contacts	type	connection type	packing
USB 2 A 90 V	4	USB Typ A	THT (soldering)	Tray
surface of contact:		selective gold-plated		
				
art. no.	no. of contacts	type	connection type	packing
USB 2 A 180	4	USB Typ A	THT (soldering)	Tray
surface of contact:		selective gold-plated		

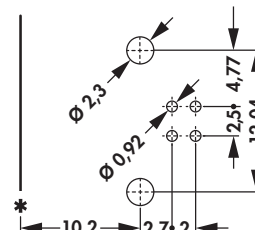
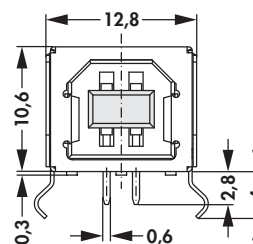
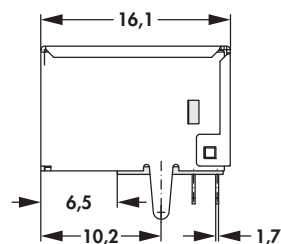


USB connectors

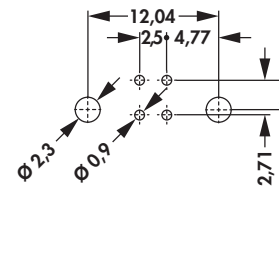
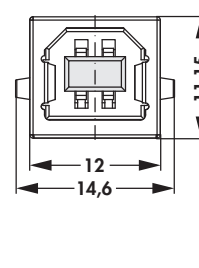
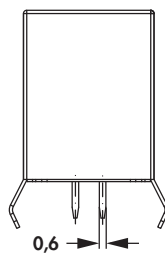
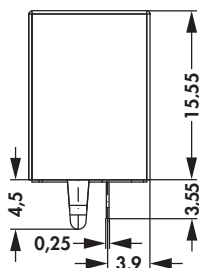
USB 2.0 type B sockets

- for PCB mounting
- in THT design
- industrial standard

* PCB edge (PCB)



art. no.	no. of contacts	type	connection type	packing
USB 2 B 90	4	USB Typ B	THT (soldering)	Tray
surface of contact:		selective gold-plated		

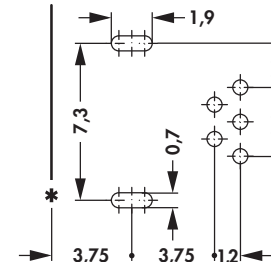
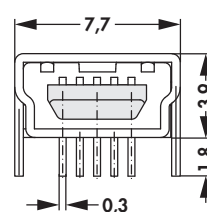
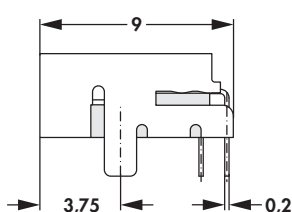


art. no.	no. of contacts	type	connection type	packing
USB 2 B 180	4	USB Typ B	THT (soldering)	Tray
surface of contact:		selective gold-plated		

USB 2.0 type B mini sockets

- for PCB mounting
- in THT design
- industrial standard

* PCB edge (PCB)



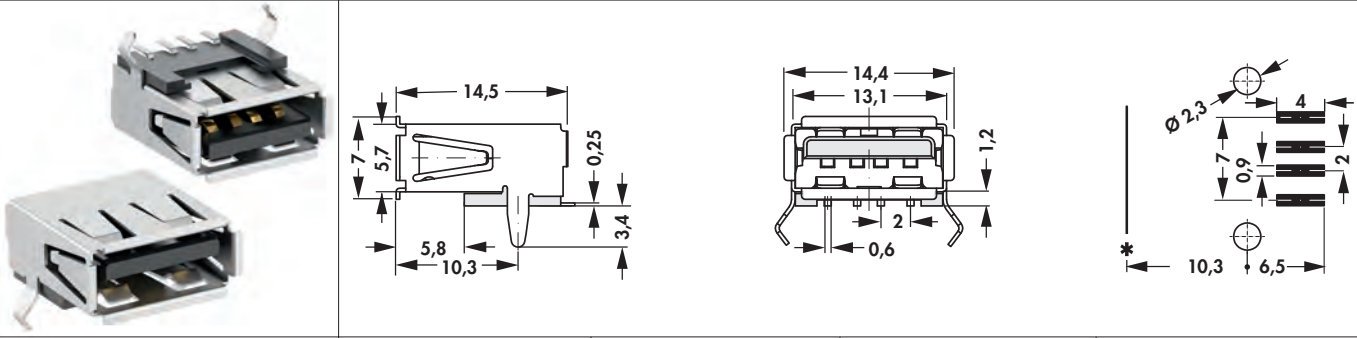
art. no.	no. of contacts	type	connection type	packing
USB MN 2 B	5	USB Typ B	THT (soldering)	Tray
surface of contact:		selective gold-plated		



USB connectors

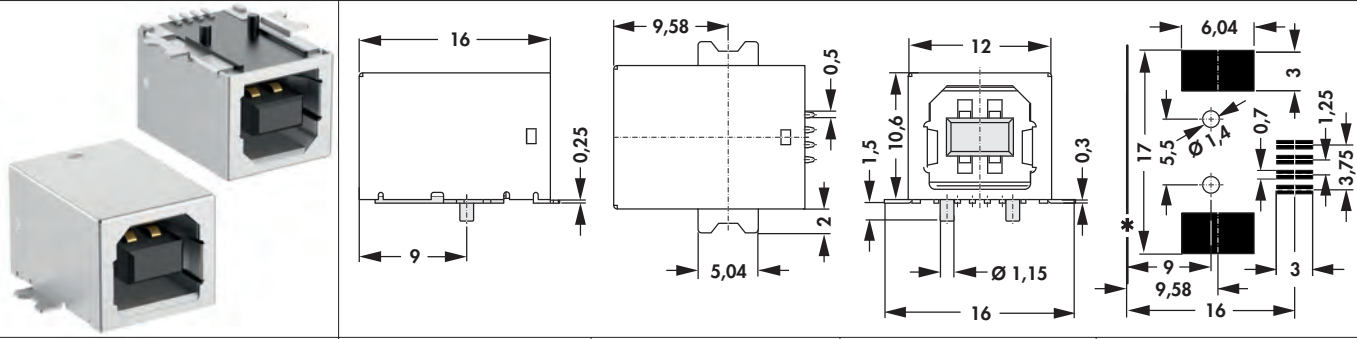
USB 2.0 type A sockets

- for PCB mounting
- in SMD design
- industrial standard
- * PCB edge (PCB)

				
art. no.	no. of contacts	type	connection type	packing
USB 2 A SMD	4	USB Typ A	SMD	Tray
surface of contact:		selective gold-plated		

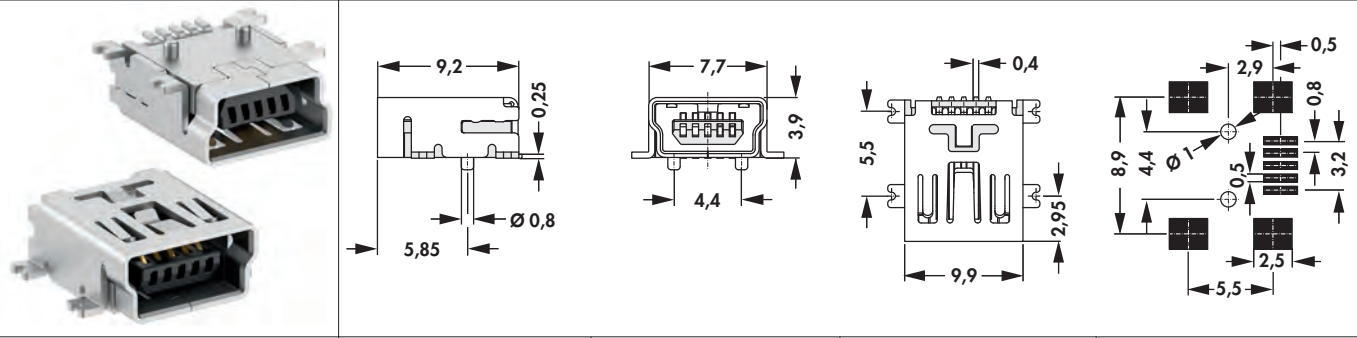
USB 2.0 type B sockets

- for PCB mounting
- in SMD design
- industrial standard
- * PCB edge (PCB)

				
art. no.	no. of contacts	type	connection type	packing
USB 2 B SMD	4	USB Typ B	SMD	Tray
surface of contact:		selective gold-plated		

USB 2.0 type B mini sockets

- for PCB mounting
- in SMD design
- industrial standard
- * PCB edge (PCB)

				
art. no.	no. of contacts	type	connection type	packing
USB MN 2 B SMD	5	USB Typ B	SMD	Tray
surface of contact:		selective gold-plated		

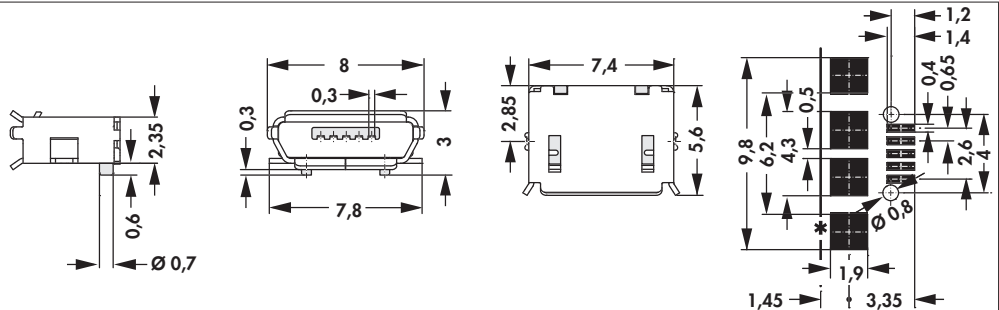


USB connectors

USB 2.0 type B micro sockets

- for PCB mounting
- in SMD design
- industrial standard
- * PCB edge (PCB)





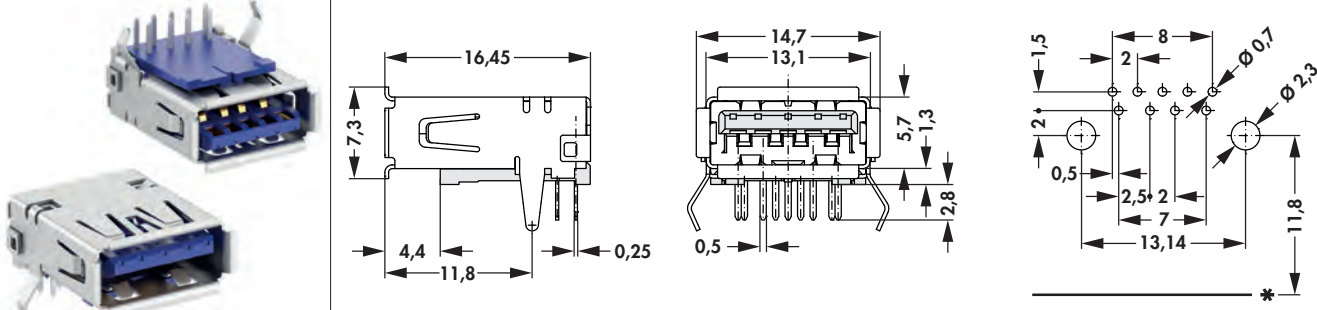
art. no.	no. of contacts	type	connection type	packing
USB MC 2 B SMD	5	USB Typ B	SMD	tape and reel
surface of contact:		selective gold-plated		

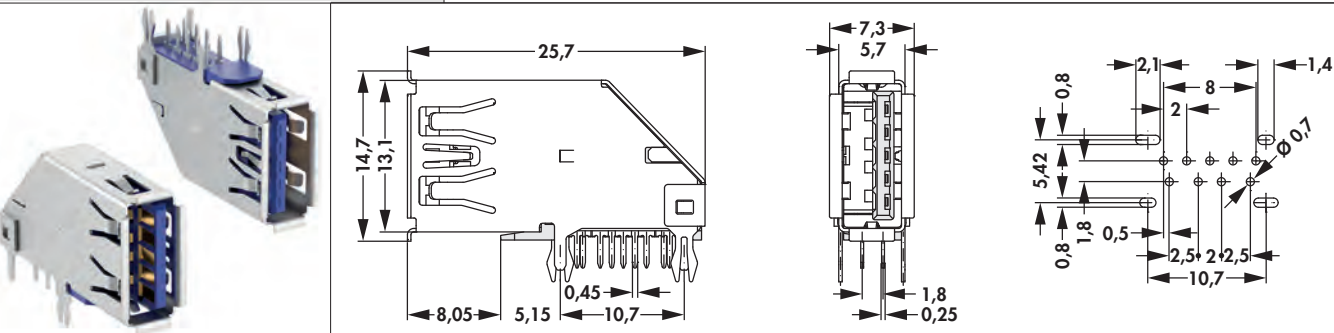


USB connectors

USB 3.0 type A sockets

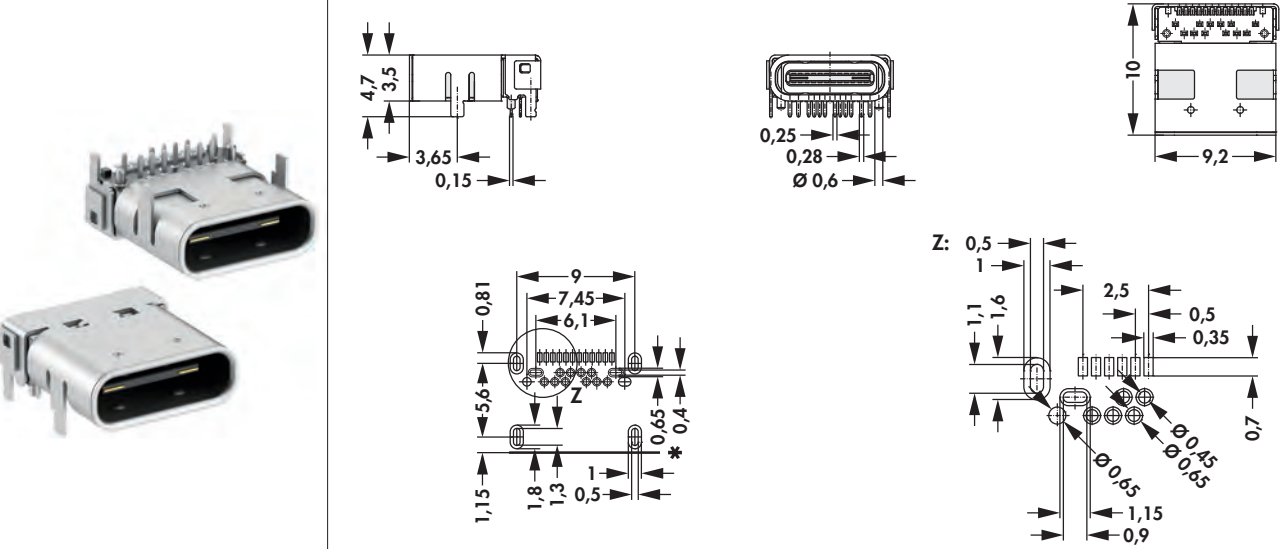
- for PCB mounting
- in THT design
- industrial standard

				
art. no.	no. of contacts	type	connection type	packing
USB 3 A 90	9	USB Typ A	THT (soldering)	Tray
surface of contact:		selective gold-plated		

				
art. no.	no. of contacts	type	connection type	packing
USB 3 A 90 V	9	USB Typ A	THT (soldering)	Tray
surface of contact:		selective gold-plated		

USB 3.1 type C sockets

- for PCB mounting
- in THR / SMD design
- industrial standard

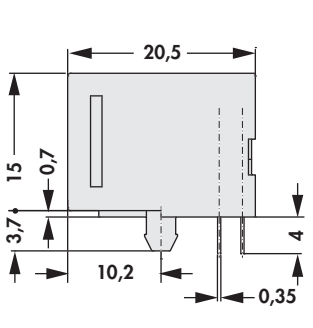
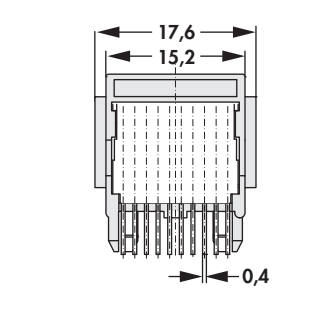
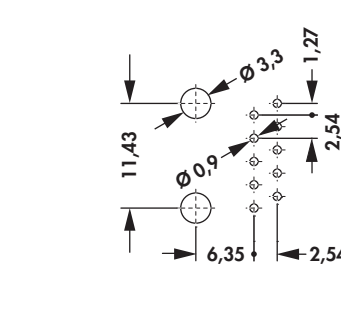
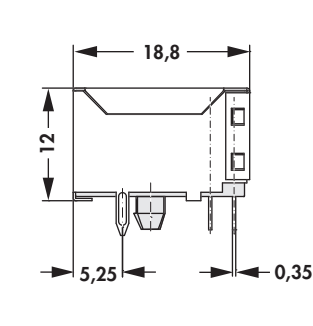
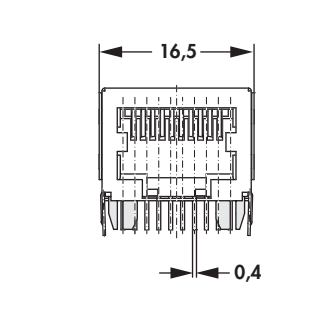
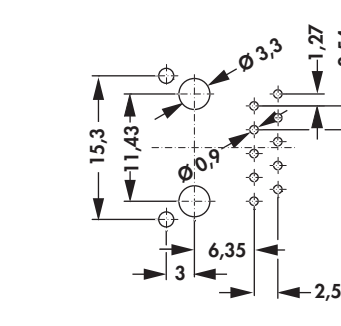
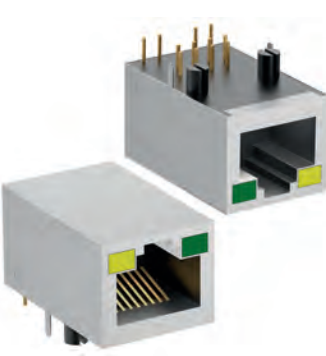
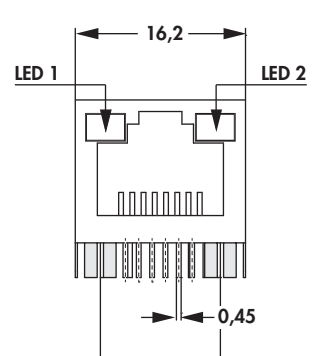
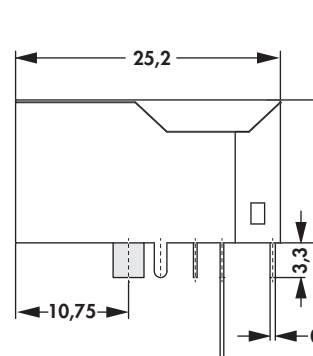
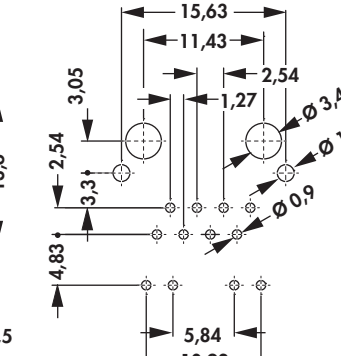
				
art. no.	no. of contacts	type	connection type	packing
USB 31 C	24	USB Typ C	THR / SMD	tape and reel
surface of contact:		selective gold-plated		



RJ 45 connectors

RJ 45 sockets

- for PCB mounting
- in THT design
- industrial standard

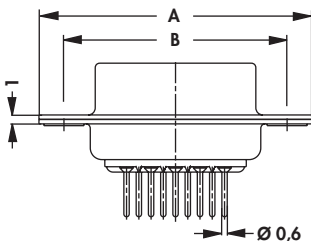
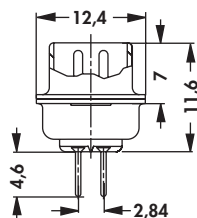
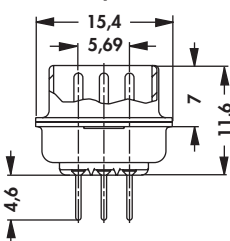
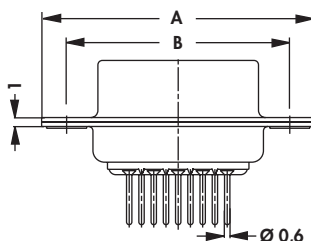
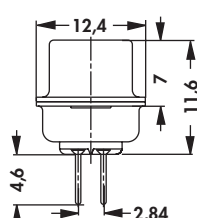
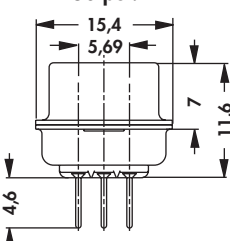
				
art. no.	no. of contacts	type	connection type	packing
RJ 45 U	10	RJ 45	THT (soldering)	Tray
surface of contact:		selective gold-plated		
				
art. no.	no. of contacts	type	connection type	packing
RJ 45 G	10	RJ 45	THT (soldering)	Tray
surface of contact:		selective gold-plated		
				
art. no.	no. of contacts	type	connection type	packing
RJ 45 LED	8	RJ 45	THT (soldering)	Tray

LED 1: yellow

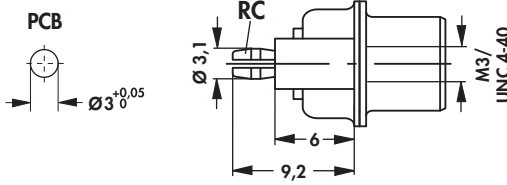
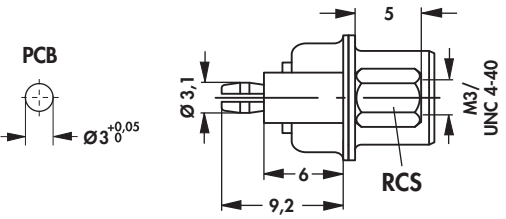
LED 2: green

surface of contact: selective gold-plated

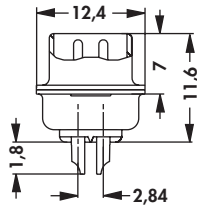
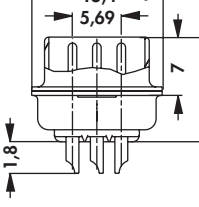
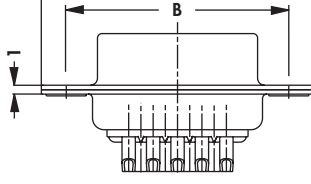
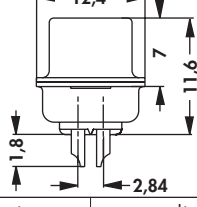
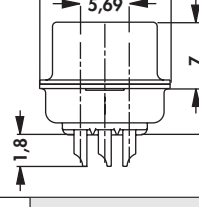
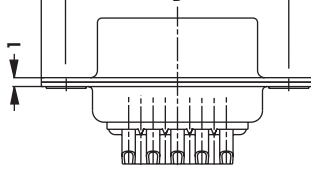
Male and female headers

	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 ...		39.2	33.3	DS 50 T ...		67.0	61.1		
DS 25 T ...		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 ...		39.2	33.3	DB 50 T ...		67.0	61.1		
DB 25 T ...		53.1	47.0						
please indicate:									
... type of mounting (optional)									
RC M3 = snap-in-clip with M3									
RC UN = snap-in-clip with UNC 4-40									
RCS M3 = snap-in-clip and screwing bolt with M3									
RCS UN = snap-in-clip and screwing bolt with UNC 4-40									

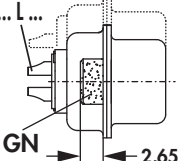
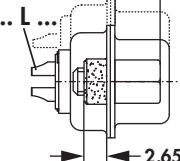
Overview type of mounting (optional)

... RC M3 ... RC UN		... RCS M3 ... RCS UN	
			

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 ...		39.2	33.3	DS 50 L ...		67.0	61.1			
DS 25 L ...		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 ...		39.2	33.3	DB 50 L ...		67.0	61.1			
DB 25 L ...		53.1	47.0							
please indicate:										
... type of mounting (optional)										
GN M3 = threaded rivet with M3										
GN UN = threaded rivet with UNC 4-40										
GNS M3 = threaded rivet and screwing bolt with M3										
GNS UN = threaded rivet and screwing bolt with UNC 4-40										

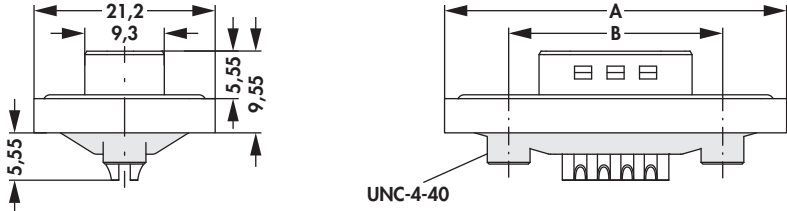
Overview type of mounting (optional)

... GN M3 ... GN UN 		... GNS M3 ... GNS UN 	
---	--	--	--

D-Sub standard connectors

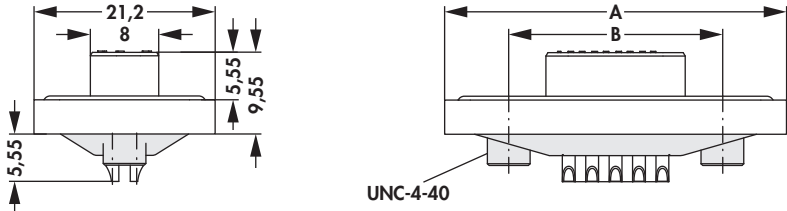
Male headers with IP protection

- IP 67 protected
- solder bucket connection

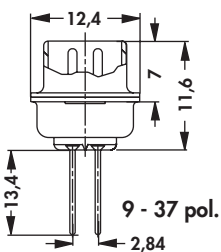
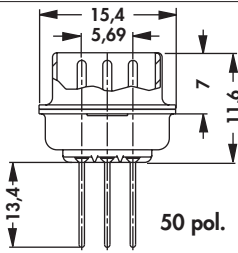
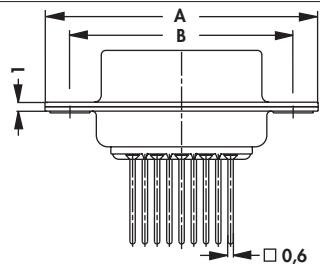
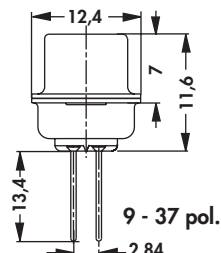
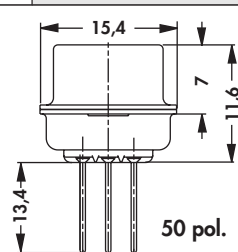
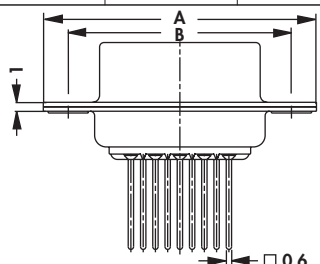
			
art. no.	design	dim. [mm]	
		A	B
DS 09 L IP 67	male	40.0	25.0
DS 15 L IP 67		48.4	33.3
DS 25 L IP 67		62.0	47.0

Female headers with IP protection

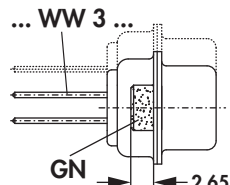
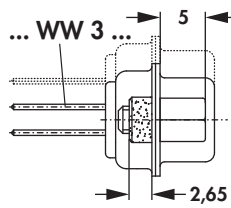
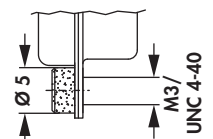
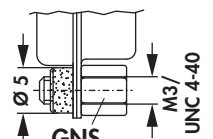
- IP 67 protected
- solder bucket connection

			
art. no.	design	dim. [mm]	
		A	B
DB 09 L IP 67	female	40.0	25.0
DB 15 L IP 67		48.4	33.3
DB 25 L IP 67		62.0	47.0

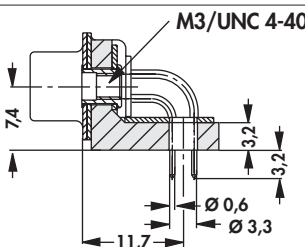
D-Sub standard connectors
Male and female headers

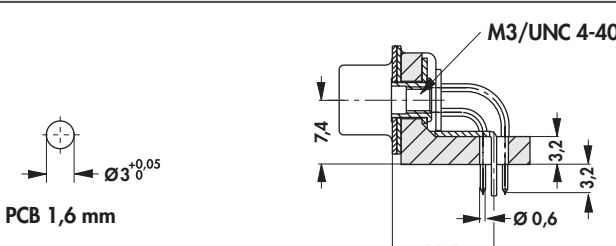
							
art. no.	design	dim. [mm]		art. no.	design	dim. [mm]	
DS 09 WW 3 ...	male	A	B	DS 37 WW 3 ...	male	A	B
DS 15 WW 3 ...		30.8	25.0	DS 50 WW 3 ...		69.5	63.5
DS 25 WW 3 ...		39.2	33.3			67.0	61.1
		53.1	47.0				
							
art. no.	design	dim. [mm]		art. no.	design	dim. [mm]	
DB 09 WW 3 ...	female	A	B	DB 37 WW 3 ...	female	A	B
DB 15 WW 3 ...		30.8	25.0	DB 50 WW 3 ...		69.5	63.5
DB 25 WW 3 ...		39.2	33.3			67.0	61.1
		53.1	47.0				
please indicate: ... type of mounting (optional) GN M3 = threaded rivet with M3 GN UN = threaded rivet with UNC 4-40 GNS M3 = threaded rivet and screwing bolt with M3 GNS UN = threaded rivet and screwing bolt with UNC 4-40							

Overview type of mounting (optional)

... GN M3 ... GN UN ... WW 3 ... 		... GNS M3 ... GNS UN ... WW 3 ... 	
			

D-Sub standard connectors with mounting bracket

		
art. no.	design	fixing part
DS WE 3 ...	male	plastic angle with earthing plate, threaded rivet M3
DS WE 4 ...		plastic angle with earthing plate, threaded rivet UNC 4-40
DB WE 3 ...	female	plastic angle with earthing plate, threaded rivet M3
DB WE 4 ...		plastic angle with earthing plate, threaded rivet UNC 4-40
please indicate: ... no. of contacts 9 15 25 37		

		
art. no.	design	fixing part
DS WR 3 ...	male	plastic angle with earthing plate, threaded rivet M3, snap-on clip
DS WR 4 ...		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 ...		plastic angle with earthing plate, threaded rivet UNC 4-40, snap-on clip
please indicate: ... no. of contacts 9 15 25 37		

A

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]		
HD S 15 L ...	15	male	A	B	
HD S 26 L ...	26		30.8	25.0	
HD S 44 L ...	44		39.2	33.3	
			53.1	47.0	
casing frame:		steel, tin plated			
art. no.	no. of contacts	design	dim. [mm]		
HD B 15 L ...	15	female	A	B	
HD B 26 L ...	26		30.8	25.0	
HD B 44 L ...	44		39.2	33.3	
			53.1	47.0	
please indicate:		... type of mounting (optional) GN M3 = threaded rivet with M3 GN UN = threaded rivet with UNC 4-40 GNS M3 = threaded rivet and screwing bolt with M3 GNS UN = threaded rivet and screwing bolt with UNC 4-40			
casing frame:		steel, tin plated			

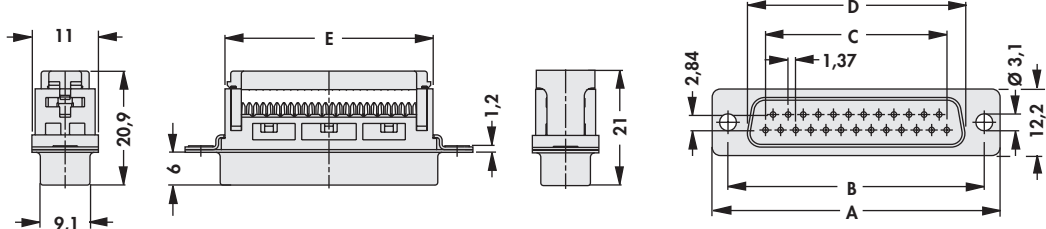
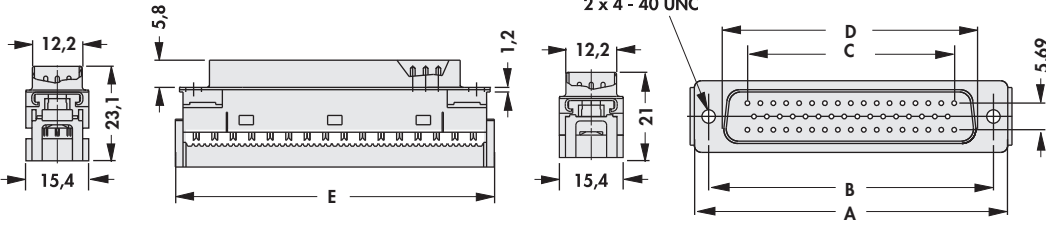
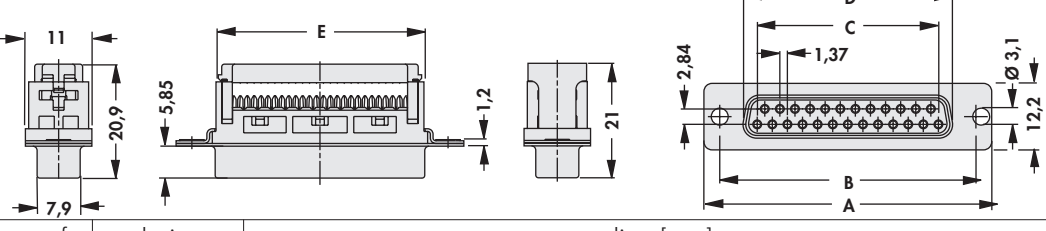
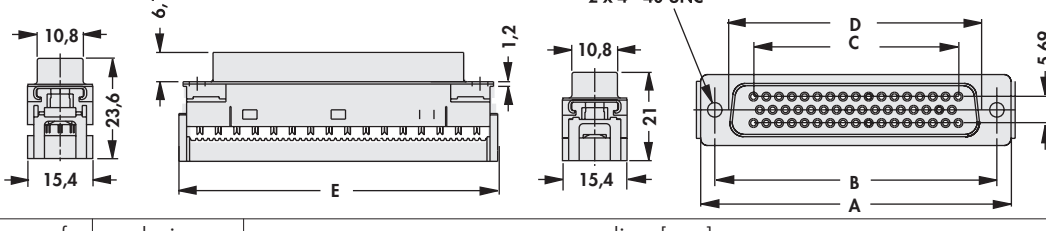
Overview type of mounting (optional)

... GN M3 ... GN UN		... GNS M3 ... GNS UN	

N

D-Sub connector for flat ribbon cable

Male and female headers

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

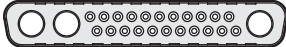
D-Sub mixed layout connectors

Order example (case and assembly type)

DSM / DBM	7W2	L	GN	UN
connector (DSM = D-Sub male header mixed layout DBM = D-Sub female header mixed layout)	Contact pattern (see overview)	connection type signal contact (L = solder bucket connection)	assembly type (see overview)	internal thread (UNC 4-40)
case			assembly type (optional)	

Overview contact pattern

- the contact pattern is valid for male headers
- for using socket connectors the hole pattern has to be mirrored

 ... 2W2C ...	 ... 3W3 ...	 ... 5W5 ...	 ... 8W8 ...
	 ... 7W2 ...	 ... 9W4 ...	 ... 21WA4 ...
		 ... 13W3 ...	 ... 25W3 ...
		 ... 17W2 ...	 ... 27W2 ...

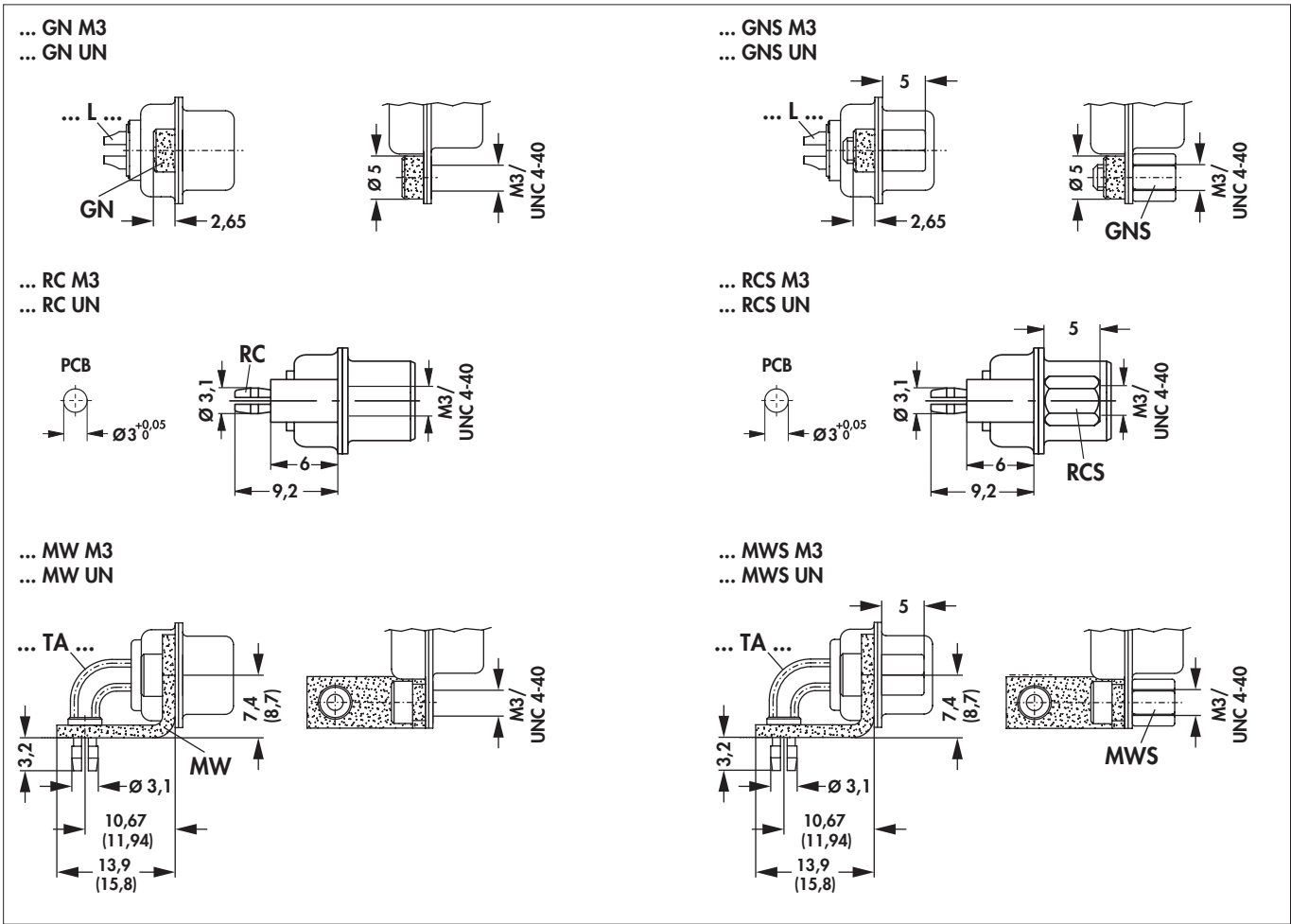
Order example (mixed layout contacts)

HAS	10	TA
high-power contacts (HAS = high-power contacts male)	current (10 A)	connection type mixed layout contacts (see overview)
mixed layout contacts		

Overview mixed layout contacts, connection type

	solder bucket connection straight ... L	crimp connection straight ... C	PCB connection straight ... T	PCB connection angled
male				
female				

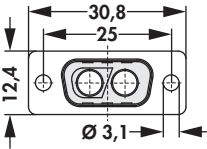
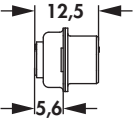
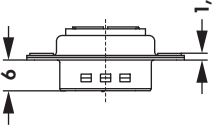
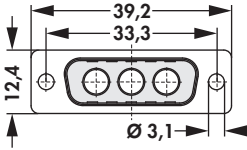
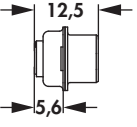
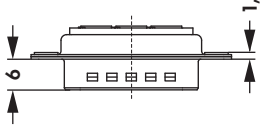
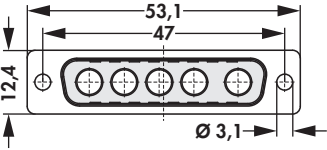
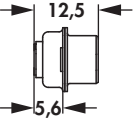
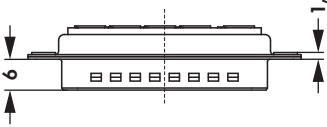
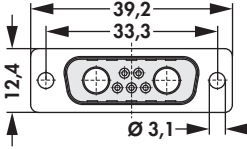
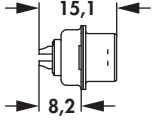
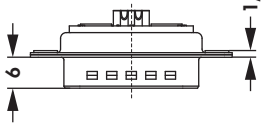
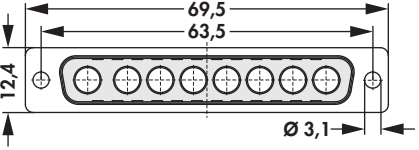
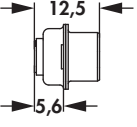
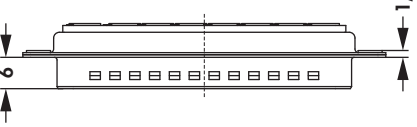
Overview assembly type (optional)

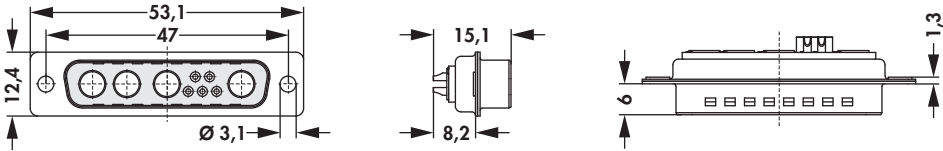
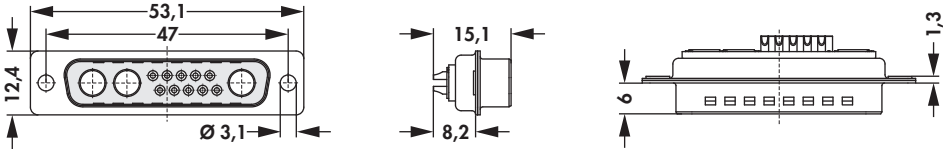
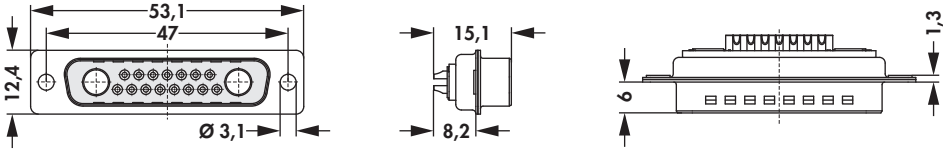
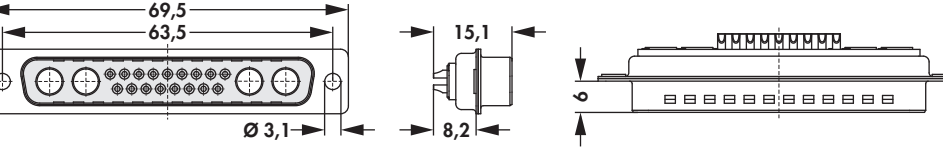
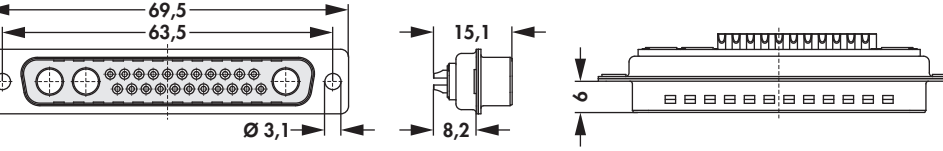


D-Sub mixed layout connectors

Male headers

- gold-plated signal contacts, straight
- equipped with turned precision contacts
- for power cables up to AWG 16
- combinable with high-power contacts **HAS ...** → I 27 - I 28

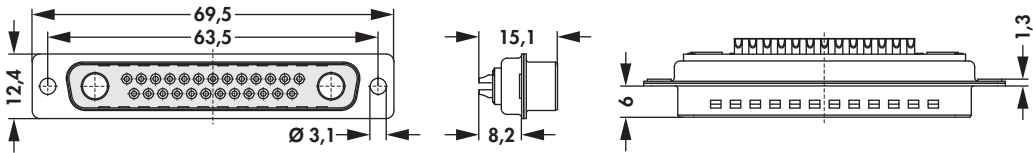
			
art. no. DSM 2W2C L ...	design male	signal contacts 0	high-power contacts max. 2
			
art. no. DSM 3W3 L ...	design male	signal contacts 0	high-power contacts max. 3
			
art. no. DSM 5W5 L ...	design male	signal contacts 0	high-power contacts max. 5
			
art. no. DSM 7W2 L ...	design male	signal contacts 5	high-power contacts max. 2
			
art. no. DSM 8W8 L ...	design male	signal contacts 0	high-power contacts max. 8
please indicate:			
... type of mounting (optional)			
GN M3 = threaded rivet with M3			
GN UN = threaded rivet with UNC 4-40			
GNS M3 = threaded rivet and screwing bolt with M3			
GNS UN = threaded rivet and screwing bolt with UNC 4-40			
casing frame:	steel, tin plated		

			
art. no.	design	signal contacts	high-power contacts
DSM 9W4 L ...	male	5	max. 4
			
art. no.	design	signal contacts	high-power contacts
DSM 13W3 L ...	male	10	max. 3
			
art. no.	design	signal contacts	high-power contacts
DSM 17W2 L ...	male	15	max. 2
			
art. no.	design	signal contacts	high-power contacts
DSM 21W4 L ...	male	17	max. 4
			
art. no.	design	signal contacts	high-power contacts
DSM 25W3 L ...	male	22	max. 3
please indicate:	... type of mounting (optional) GN M3 = threaded rivet with M3 GN UN = threaded rivet with UNC 4-40 GNS M3 = threaded rivet and screwing bolt with M3 GNS UN = threaded rivet and screwing bolt with UNC 4-40		
casing frame:	steel, tin plated		

A

D-Sub mixed layout connectors

B



C

art. no.	design	signal contacts	high-power contacts
DSM 27W2 L ...	male	25	max. 2
please indicate: ... type of mounting (optional) GN M3 = threaded rivet with M3 GN UN = threaded rivet with UNC 4-40 GNS M3 = threaded rivet and screwing bolt with M3 GNS UN = threaded rivet and screwing bolt with UNC 4-40			
casing frame:		steel, tin plated	

D

E

F

G

H

I

K

L

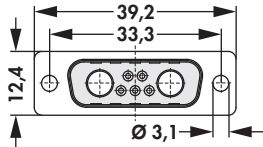
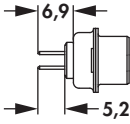
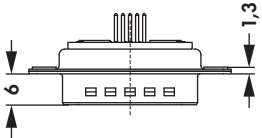
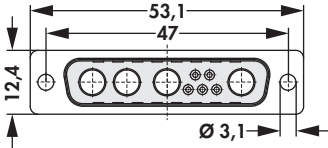
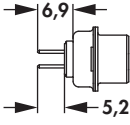
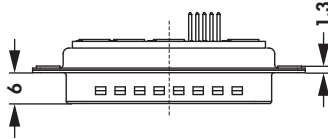
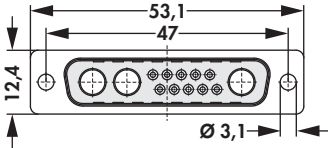
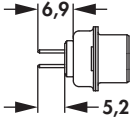
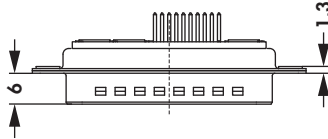
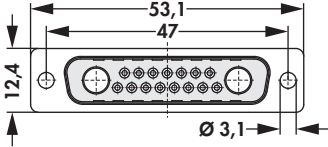
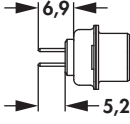
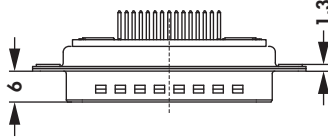
M

N

D-Sub mixed layout connectors

Male headers

- gold-plated signal contacts, straight
- equipped with turned precision contacts
- with PCB connection, straight
- combinable with high-power contacts **art. HAS ...** → I 27 - I 28

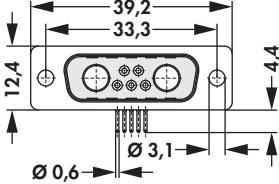
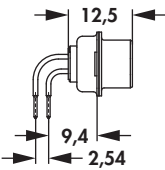
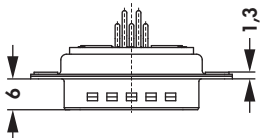
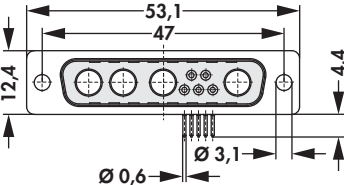
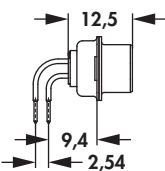
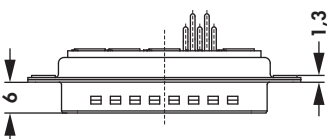
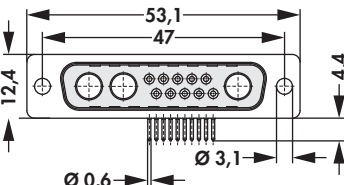
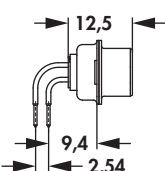
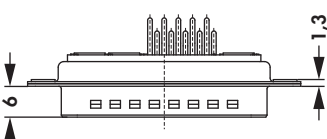
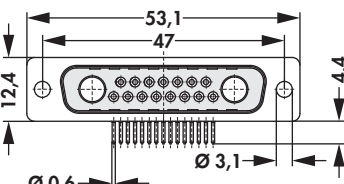
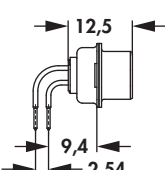
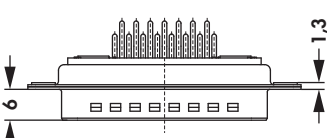
			
art. no.	design	signal contacts	high-power contacts
DSM 7W2 T ...	male	5	max. 2
			
art. no.	design	signal contacts	high-power contacts
DSM 9W4 T ...	male	5	max. 4
			
art. no.	design	signal contacts	high-power contacts
DSM 13W3 T ...	male	10	max. 3
			
art. no.	design	signal contacts	high-power contacts
DSM 17W2 T ...	male	15	max. 2
please indicate:	... type of mounting (optional) RC M3 = snap-in-clip with M3 RC UN = snap-in-clip with UNC 4-40 RCS M3 = snap-in-clip and screwing bolt with M3 RCS UN = snap-in-clip and screwing bolt with UNC 4-40		
casing frame:	steel, tin plated		

A

D-Sub mixed layout connectors

Male headers

- gold-plated signal contacts, angled
- equipped with turned precision contacts
- with PCB connection, angled
- combinable with high-power contacts **HAS ...** → I 27 - I 28

			
art. no.	design	signal contacts	high-power contacts
DSM 7W2 TA ...	male	5	max. 2
			
art. no.	design	signal contacts	high-power contacts
DSM 9W4 TA ...	male	5	max. 4
			
art. no.	design	signal contacts	high-power contacts
DSM 13W3 TA ...	male	10	max. 3
			
art. no.	design	signal contacts	high-power contacts
DSM 17W2 TA ...	male	15	max. 2
please indicate: ... type of mounting (optional) MW M3 = metal angle with M3 MW UN = metal angle with UNC 4-40 MWS M3 = metal angle screwing bolt with M3 MWS UN = metal angle and screwing bolt with UNC 4-40			
casing frame:	steel, tin plated		

K

L

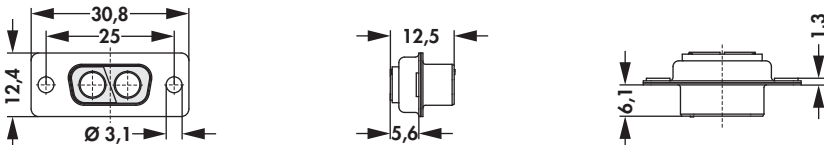
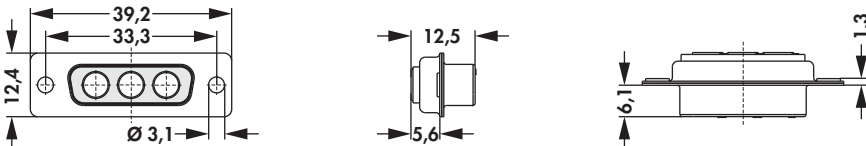
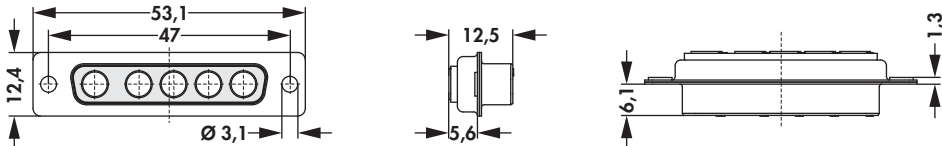
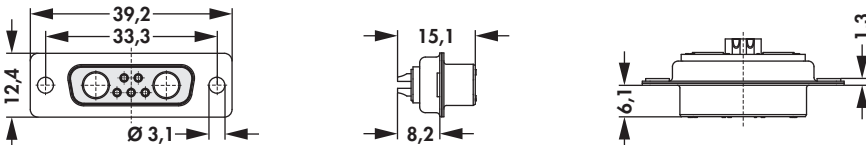
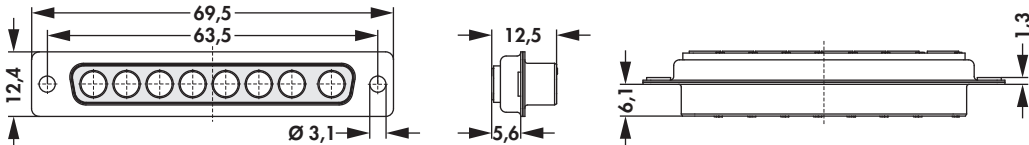
M

N

D-Sub mixed layout connectors

Female headers

- gold-plated signal contacts, straight
- equipped with turned precision contacts
- for power cables up to AWG 16
- combinable with high-power contacts **HAB ...** → I 27 - I 28

			
art. no.	design	signal contacts	high-power contacts
DBM 2W2C L ...	female	0	max. 2
			
art. no.	design	signal contacts	high-power contacts
DBM 3W3 L ...	female	0	max. 3
			
art. no.	design	signal contacts	high-power contacts
DBM 5W5 L ...	female	0	max. 5
			
art. no.	design	signal contacts	high-power contacts
DBM 7W2 L ...	female	5	max. 2
			
art. no.	design	signal contacts	high-power contacts
DBM 8W8 L ...	female	0	max. 8
please indicate: ... type of mounting (optional) GN M3 = threaded rivet with M3 GN UN = threaded rivet with UNC 4-40 GNS M3 = threaded rivet and screwing bolt with M3 GNS UN = threaded rivet and screwing bolt with UNC 4-40			
casing frame:		steel, tin plated	

A

D-Sub mixed layout connectors

B

C

D

E

F

G

H

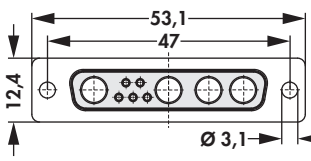
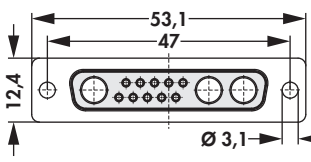
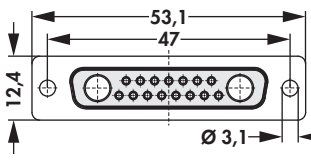
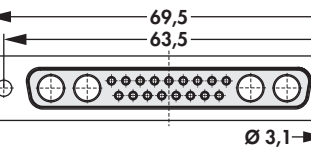
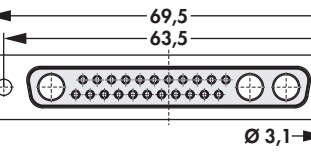
I

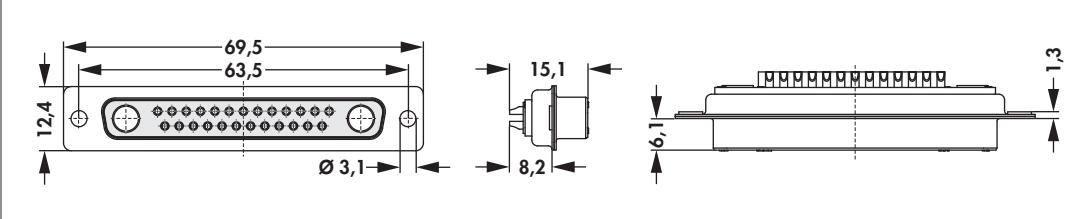
K

L

M

N

    			
    			
art. no.	design	signal contacts	high-power contacts
DBM 9W4 L ...	female	5	max. 4
art. no.	design	signal contacts	high-power contacts
DBM 13W3 L ...	female	10	max. 3
art. no.	design	signal contacts	high-power contacts
DBM 17W2 L ...	female	15	max. 2
art. no.	design	signal contacts	high-power contacts
DBM 21WA4 L ...	female	17	max. 4
art. no.	design	signal contacts	high-power contacts
DBM 25W3 L ...	female	22	max. 3
please indicate: ... type of mounting (optional) GN M3 = threaded rivet with M3 GN UN = threaded rivet with UNC 4-40 GNS M3 = threaded rivet and screwing bolt with M3 GNS UN = threaded rivet and screwing bolt with UNC 4-40			
casing frame:		steel, tin plated	

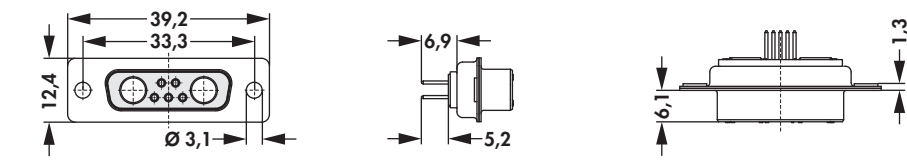
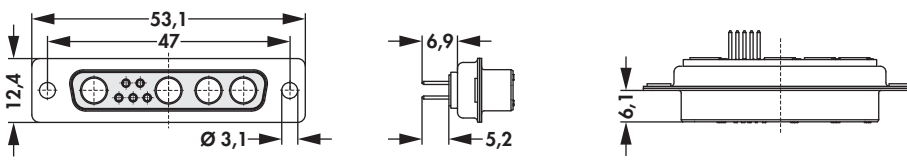
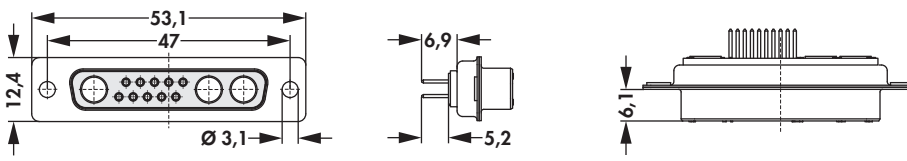
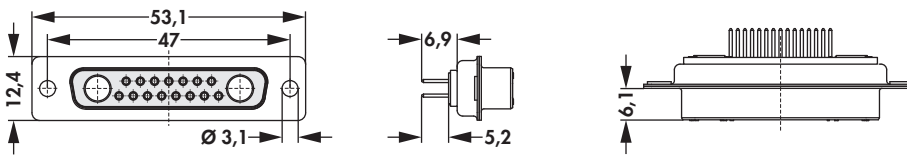
 			
art. no.	design	signal contacts	high-power contacts
DBM 27W2 L ...	female	25	max. 2
please indicate:	... type of mounting (optional) GN M3 = threaded rivet with M3 GN UN = threaded rivet with UNC 4-40 GNS M3 = threaded rivet and screwing bolt with M3 GNS UN = threaded rivet and screwing bolt with UNC 4-40		
casing frame:	steel, tin plated		

A

D-Sub mixed layout connectors

Female headers

- gold-plated signal contacts, straight
- equipped with turned precision contacts
- with PCB connection, straight
- combinable with high-power contacts **HAB ...** → I 29 - I 30

			
			
art. no.	design	signal contacts	high-power contacts
DBM 7W2 T ...	female	5	max. 2
			
			
art. no.	design	signal contacts	high-power contacts
DBM 9W4 T ...	female	5	max. 4
			
			
art. no.	design	signal contacts	high-power contacts
DBM 13W3 T ...	female	10	max. 3
			
			
art. no.	design	signal contacts	high-power contacts
DBM 17W2 T ...	female	15	max. 2
please indicate: ... type of mounting (optional) RC M3 = snap-in-clip with M3 RC UN = snap-in-clip with UNC 4-40 RCS M3 = snap-in-clip and screwing bolt with M3 RCS UN = snap-in-clip and screwing bolt with UNC 4-40			
casing frame:		steel, tin plated	

K

L

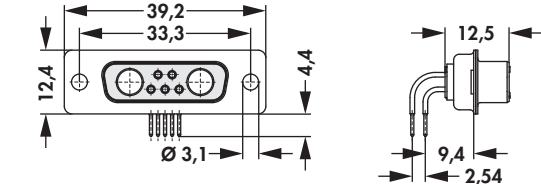
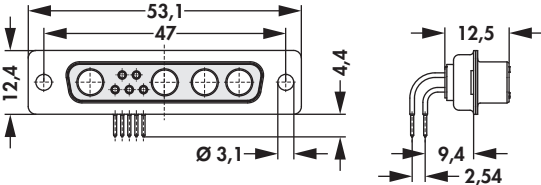
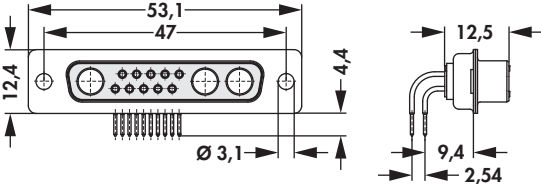
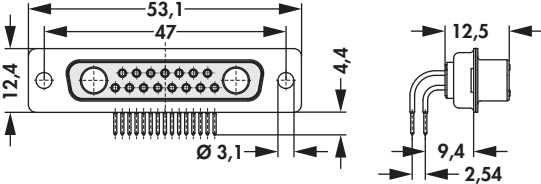
M

N

D-Sub mixed layout connectors

Female headers

- gold-plated signal contacts, angled
- equipped with turned precision contacts
- with PCB connection, angled
- combinable with high-power contacts **HAB ...** → I 27 - I 28

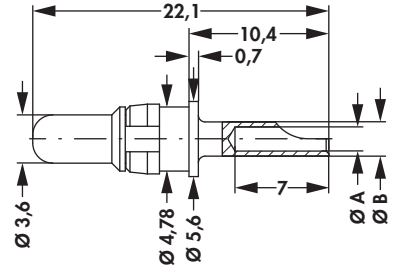
			
art. no.	design	signal contacts	high-power contacts
DBM 7W2 TA ...	female	5	max. 2
			
art. no.	design	signal contacts	high-power contacts
DBM 9W4 TA ...	female	5	max. 4
			
art. no.	design	signal contacts	high-power contacts
DBM 13W3 TA ...	female	10	max. 3
			
art. no.	design	signal contacts	high-power contacts
DBM 17W2 TA ...	female	15	max. 2
please indicate: ... type of mounting (optional) MW M3 = metal angle with M3 MW UN = metal angle with UNC 4-40 MWS M3 = metal angle screwing bolt with M3 MWS UN = metal angle and screwing bolt with UNC 4-40			
casing frame:		steel, tin plated	

High-power contacts, loose

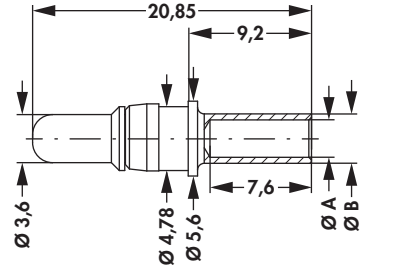
Pin contacts

- 10 A / 20 A / 40 A
- combinable with cases **DSM ... → I 17-I 21**

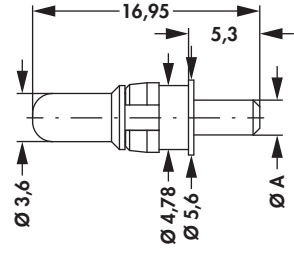
- straight, with solder bucket connection

			
	art. no.	current [A]	dim. [mm]
HAS 10 L	10	A	B
HAS 20 L	20	1.8	2.55
HAS 40 L	40	2.8	3.70
		4.8	5.60

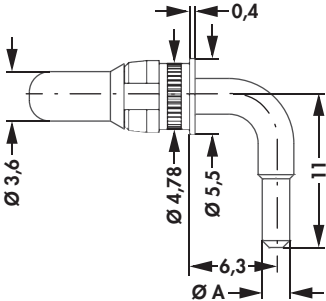
- straight, with connection crimp

			
	art. no.	current [A]	dim. [mm]
HAS 10 C	10	A	B
HAS 20 C	20	1.8	2.55
HAS 40 C	40	2.8	3.70
		4.8	5.60

- straight, with PCB connection

			
	art. no.	current [A]	dim. [mm]
HAS 10 T	10	A	
HAS 20 T	20	2.0	
HAS 40 T	40	2.6	
		3.2	

– angled, with PCB connection (tin-plated)

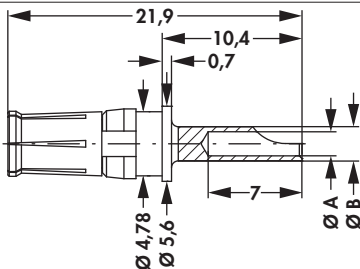
		
art. no.	current [A]	dim. [mm] A
HAS 10 TA	10	2.00
HAS 20 TA	20	2.85
HAS 40 TA	40	3.75

High-power contacts, loose

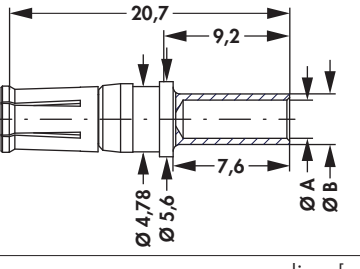
Socket contact

- 10 A / 20 A / 40 A
- combinable with cases **DBM ...** → I 22-I 26

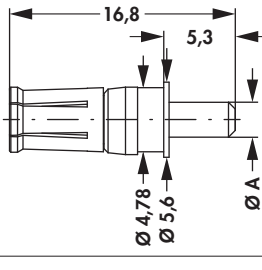
- straight, with solder bucket connection

			
	art. no.	current [A]	dim. [mm]
HAB 10 L	10	1.8	2.55
HAB 20 L	20	2.8	3.70
HAB 40 L	40	4.8	5.60

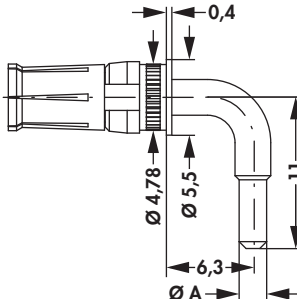
- straight, with connection crimp

			
	art. no.	current [A]	dim. [mm]
HAB 10 C	10	1.8	2.55
HAB 20 C	20	2.8	3.70
HAB 40 C	40	4.8	5.60

- straight, with PCB connection

			
	art. no.	current [A]	dim. [mm]
HAB 10 T	10		2.0
HAB 20 T	20		2.6
HAB 40 T	40		3.2

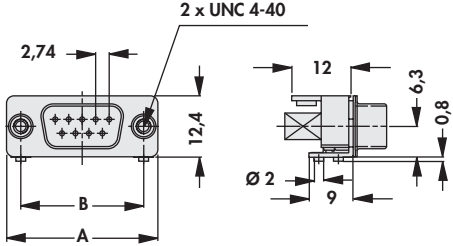
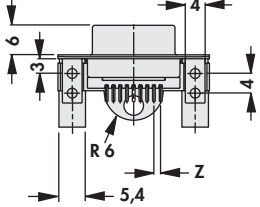
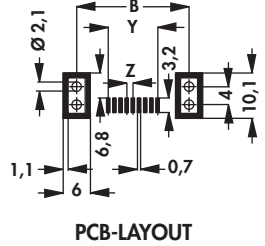
– angled, with PCB connection (tin-plated)

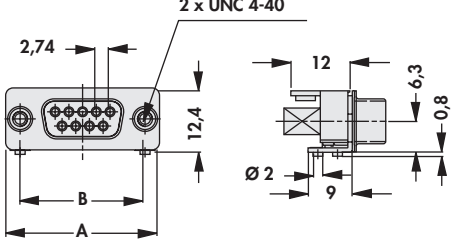
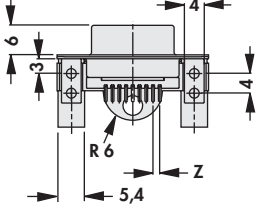
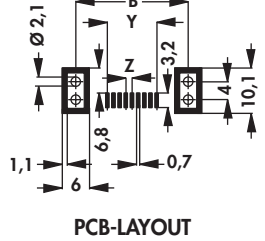
		
art. no.	current [A]	dim. [mm] A
HAB 10 TA	10	2.00
HAB 20 TA	20	2.85
HAB 40 TA	40	3.75

D-Sub in SMD-mounting

Male and female headers

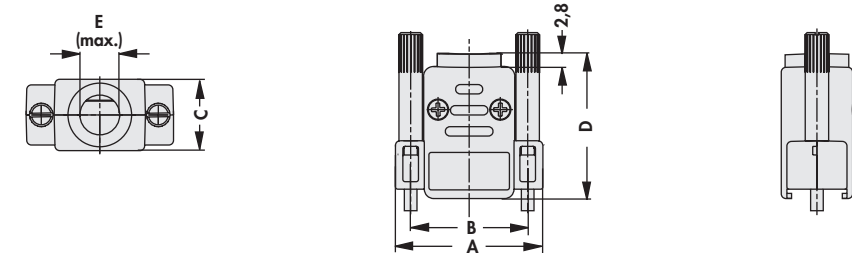
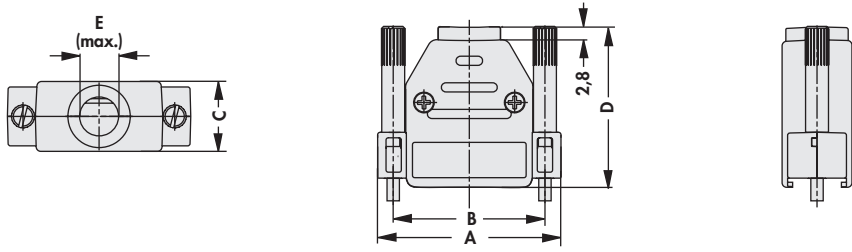
– **packing:** tape and reel (150 pcs/reel); reel outer diameter 330 mm

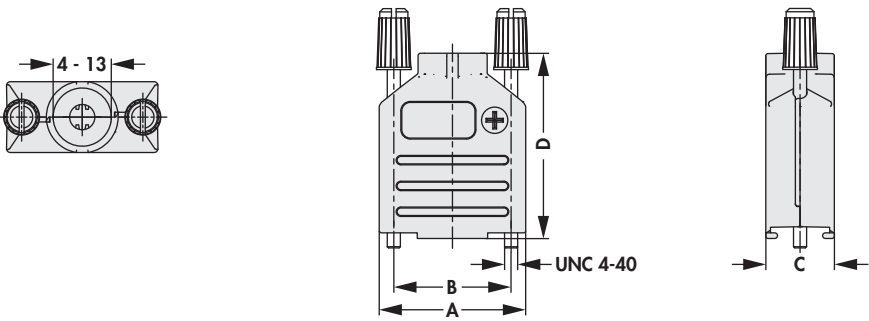
	   PCB-LAYOUT				
art. no.	no. of contacts	dim. [mm]			
		A	B	Y	Z
DS 09 SMD TR	9	30.8	25.0	10.98	1.37
DS 15 SMD TR	15	39.2	33.3	19.20	
DS 25 SMD TR	25	53.1	47.0	33.12	1.38
DS 37 SMD TR	37	69.5	63.5	49.68	

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

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		38.0	11.0
DH 37 ...	37	70.0	63.5		40.0	
DH 50 ...	50	67.5	61.1	18.2	40.0	12.0
please indicate: ... surface of case S = plastic, black M = plastic, metallized						

				
art. no.	dim. [mm]			
	A	B	C	D
DH M 09 UN4	31.2	25.00	15	39.9
DH M 15 UN4	39.5	33.30		41.5
DH M 25 UN4	53.4	47.04		48.6
DH M 37 UN4	69.7	63.50		50.0

A

D-Sub hoods

B

C

D

E

F

G

H

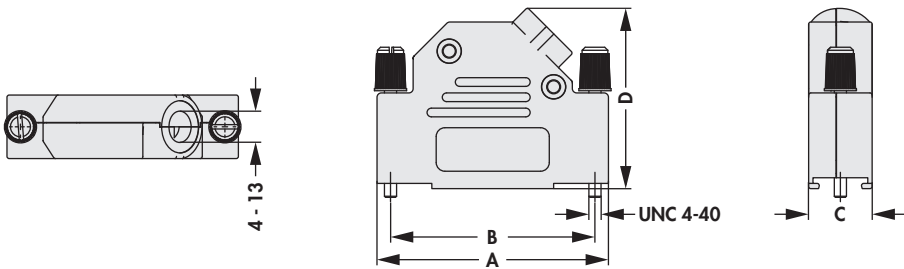
I

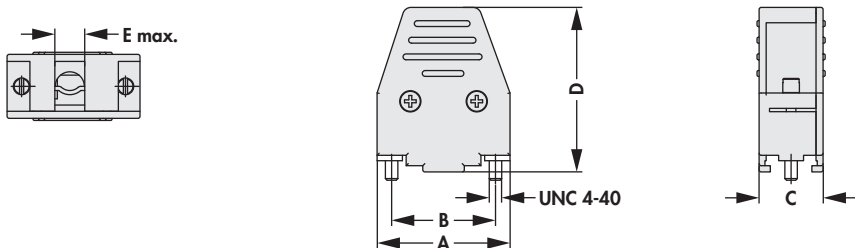
K

L

M

N

				
art. no.	dim. [mm]			
	A	B	C	D
DH MA 09 UN4	31.0	25.00	14.5	36.3
DH MA 15 UN4	39.5	33.30		40.3
DH MA 25 UN4	53.2	47.04		
DH MA 37 UN4	69.7	63.50		

					
art. no.	dim. [mm]				
	A	B	C	D	E
DH ... 09 UN4	32.0	25.00	16.4	39.6	7.0
DH ... 15 UN4	40.2	33.30		41.2	9.2
DH ... 25 UN4	54.0	47.04		45.0	11.0
DH ... 37 UN4	70.6	63.50		50.0	12.0
please indicate: ... surface of case K = plastic, black KM = plastic, metallized					

D-Sub hoods

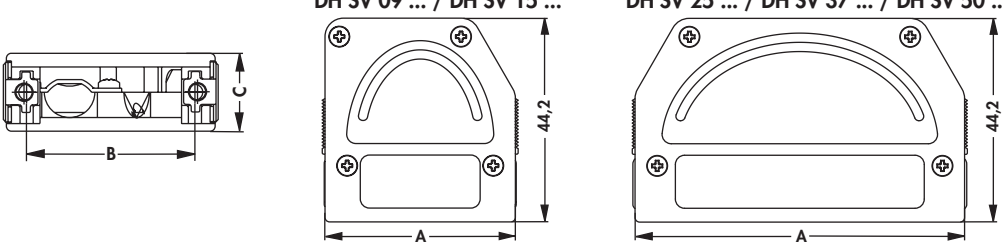
IP 67 protected

- straight cable outlet with pre-assembled strain relief
- threaded bolt UNC 4-40

				
art. no.	dim. [mm]			
	A	B	C	D
DH 09 L IP 67	40.8	77	25.00	10
DH 15 L IP 67	49.5	79	33.30	12
DH 25 L IP 67	63.0	87	47.04	

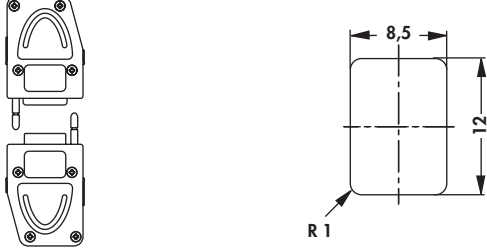
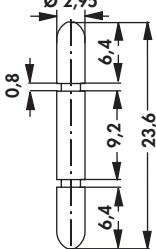
D-Sub hoods with quick-action locking system

- 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	
DH SV 25 ...	25	55.0	47.0	
DH SV 37 ...	37	71.5	63.5	
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

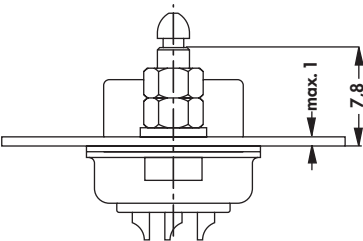
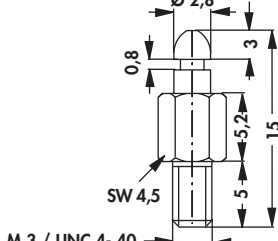
- 2 locking pins including locking plates

		
art. no.		
RS HH		

D-Sub hoods

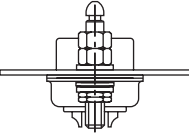
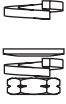
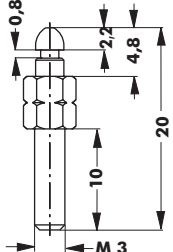
Accessories – locking pin for plug connector – hood connection

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

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

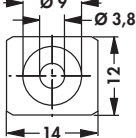
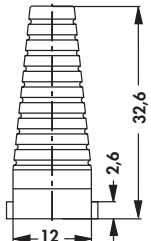
Accessories – locking pin for plug connector – hood connection

– 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	

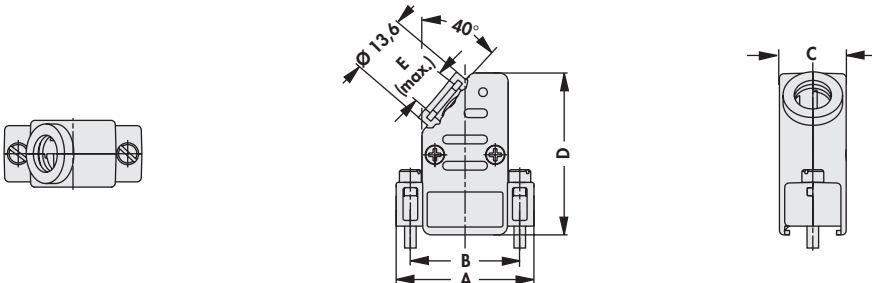
D-Sub hoods

D-Sub-hoods-compact

9-50 contacts



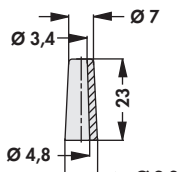
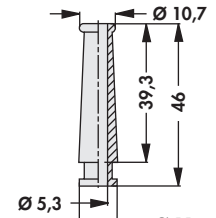
- width C - 3 HP
- version 9-37 pins can be mounted in series in 3 HP grid, thus especially suitable for 19" technology
- metallized version with excellent shielding against electrical and magnetic alternating fields
- integrated dust protective shroud
- captive latching screws with UNC 4-40 treads
- 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		41	11.0
DH 25 ...	25	53.5	47.0			
DH 37 ...	37	70.0	63.5	18.2		12.0
DH 50 ...	50	67.8	61.1			
please indicate: ... surface of case						
K = plastic, black						
KM = plastic, metallized						

D-Sub accessories

Suitable cable bushing

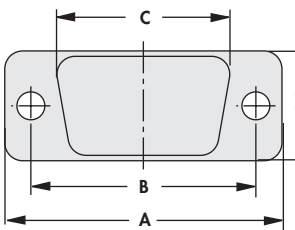
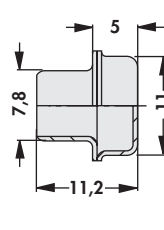
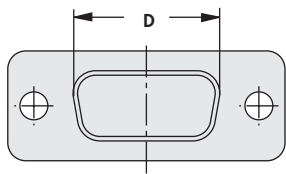
– protects the cable against damage by buckling

	 KT 0915	 KT 2550	
art. no.	for no. of contacts	art. no.	for no. of contacts
KT 0915	9/ 15	KT 2550	25/ 37/ 50

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

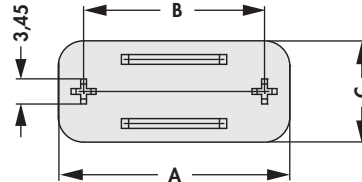
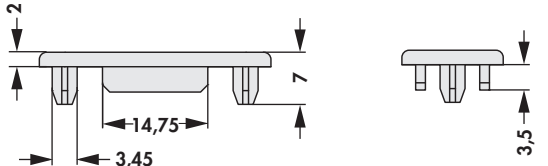
– suitable for EMC application, closed on one side

– 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]											
		A			B			C			D		
BADM 09		30.8			25.0			19.2			16.3		
BADM 15		39.3			33.3			27.5			24.5		
BADM 25		53.0			47.0			41.2			38.3		
BADM 37		69.4			63.5			57.7			54.8		
casing frame:					tin-plated								

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

– simple mounting by clamping

						
art. no.	dim. [mm]					
	A		B		C	
BADK 09	32.0		25.0		14.0	
BADK 15	40.3		33.3			
BADK 25	54.0		47.0			
BADK 37	70.5		63.5			
BADK 50	68.0		61.0		16.5	

D-Sub accessories

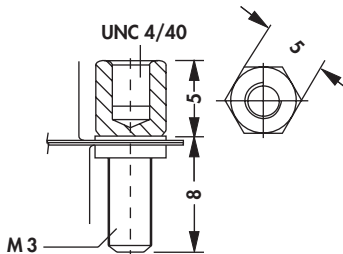
Screw fastening, mounted

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

art. no.	
... V	

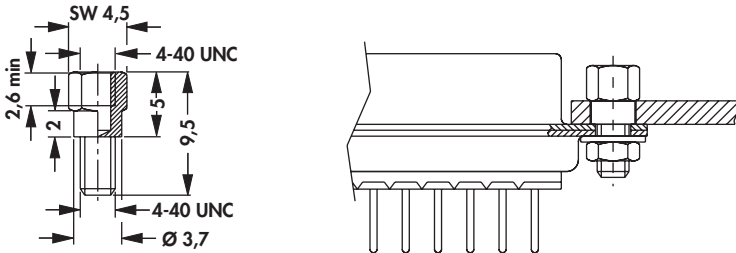
Screw fastening, loose

- 2 separate screw fasteners, with washer and nut

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

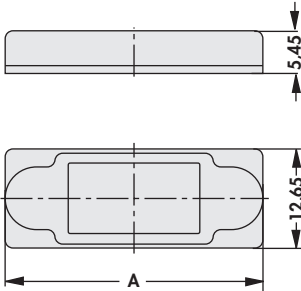
Screw fastening for assembly of cases, separate

- 2 screw fastenings incl. spacer, washer, nut

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

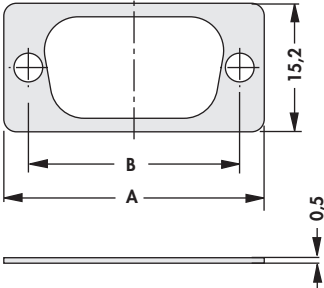
HF-tight caps, male and female headers

– prevent HF-radiation at open interfaces

							
art. no.	design	colour	dim. [mm] A	art. no.	design	colour	dim. [mm] A
HFK S 09	male	blue	32.9	HFK B 09	female	red	32.9
HFK S 15			41.3	HFK B 15			41.3
HFK S 25			55.7	HFK B 25			55.7
annotation:		internal 50 μ m electromagnetical protective coating					

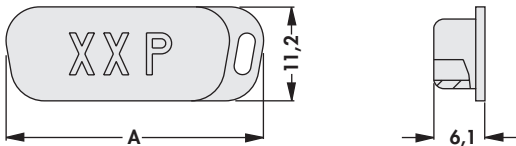
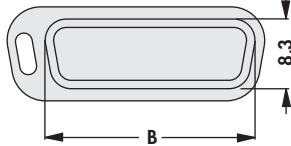
HF-seals

– as seal between plug and housing

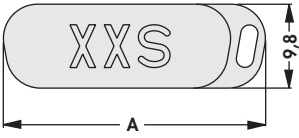
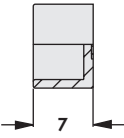
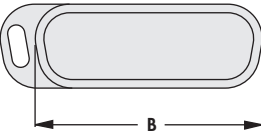
			
art. no.	dim. [mm]		
	A		B
HFD 09	30.8		25.0
HFD 15	39.4		33.3
HFD 25	53.4		47.0
HFD 37	70.7		63.5
annotation:		extremely low transition resistance	

Dust protection caps

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			

Technical data: USB / RJ / D-Sub connectors

	USB 2 A 180, USB 2 A 90, USB 2 A 90 V, USB 2 B 90	USB 2 B 180	USB MN 2 B, USB MN 2 B SMD	USB 2 A SMD, USB 2 B SMD
contact material	CuSn alloy			
surface contact / contact sleeve	Ni+ ≥0.2μm Au (selective)			
cycles of operation	1500		5000	1500
nominal current	0.5 A			
nominal voltage	40 V _{RMS} /V _{DC}			
insulating body material		PA, white		
temperature range	-25°C ... +85°C (230°C / 5s)		-40°C ... +105°C (260°C / 10s)	-25°C ... +85°C (260°C / 10s)
class of inflammability	UL 94 V-0			
	USB MC 2 B SMD	USB 3 A 90, USB 3 A 90 V	USB 31 C	RJ 45 G, RJ 45 U
contact material	CuSn alloy			
surface contact / contact sleeve	Ni+ ≥0.2μm Au (selective)			
cycles of operation	10000	1500	10000	750
nominal current	1 A for Pin 1-5 / 1.8 A for Pin 1, 5 / 0.5 A for Pin 2-4	0.5 A	5 A for VBUS Pin / 1.25 A for VCONN Pin	1 A
nominal voltage	40 V _{RMS} /V _{DC}			125 V _{RMS} /V _{DC}
insulating body material				
temperature range	-30°C ... +80°C (260°C / 10s)	-25°C ... +85°C (230°C / 5s)	40°C ... +85°C (260°C / 10s)	-55°C ... +105°C (230°C / 5s)
class of inflammability	UL 94 V-0			
	RJ 45 LED	DB ... L IP 67, DS ... L IP 67	DS ..., DB ...	HD B ..., HD S ...
contact material	CuSn alloy	Cu-alloy		
surface contact / contact sleeve	Ni+ ≥0.2μm Au (se- lective)	hard gold plated over nickel		
cycles of operation	750			
quality class / cyces of operation		quality class 2 = 200 cycles of operation		
volume resistance			≤10 mΩ before strain, ΔR 10 mΩ after strain according to DIN 41652. part 2 (MIL- C-24308)	
air gap and creep distance			cont.-contact <1 mm/ contact-earth <1 mm	cont.-contact <0.6mm/ contact- earth <0.6mm
nominal current	1 A	5A (20°C)		3A (20°C)
nominal voltage	125 V _{RMS} /V _{DC}	125 V AC	125 V DC	60 V AC
test voltage		1000 V		
insulating body material		PBT, GF		
temperature range	0°C ... +70°C	-55°C... +125°C		
class of inflammability	UL 94 V-0			
insulation resistance		≥5 GΩ		

	DS BK ..., DB BK ...	DBM ..., DBM ... TA, DSM ..., DSM ... TA	HAB ... C, HAB ... L, HAB ... T, HAS ... C, HAS ... L, HAS ... T	HAB ... TA, HAS ... TA
contact material	Cu-alloy			
surface contact / contact sleeve	hard gold plated over nickel	nickel-phosphorus- gold-surface/ (≥0.1µm Au over 2...4µm chem. NiP)	Ni+ ≥0.2µm Au	Ni+ ≥0.2µm Au (se- lective)
quality class / cyces of operation	quality class 3 = 50 cycles of operation	quality class 2 = 200 cycles of operation		
volume resistance	≤10 mΩ			
air gap and creep distance	<0.9mm according to VDE0110			
nominal current	1A at AWG 28/ 1.5A at AWG 26	signal contact: ≤5 A/ power contact: ≤10 A / 20 A / 40 A	power contact: ≤10 A / 20 A / 40 A	
nominal voltage		125 V AC		
test voltage	1000 V DC	1000 V		
insulating body material	PBTP, GF	Polyester, GF		
temperature range	-55°C... +125°C		-55°C... +150°C	
class of inflammability	UL 94 V-0			
insulation resistance	1 GΩ	≥5 GΩ		
	DH M ... UN4, DH MA ... UN4	DH K ... UN4, DH KM ... UN4	DH ... L IP 67	DH ... S, DH ... M, DH SV ...
insulating body material	zinc die-casting nickel- plated	ABS		
temperature range	-40°C... +120°C	-40°C... +85°C		
class of inflammability	UL 94 V-0			
surface of case	zinc die-casting nickel- plated	plastic, black/ plastic, metallized	plastic, black	plastic, black/ plastic, metallized
	KT SV	DH ... K DH ... KM	BADM ...	BADK ...
insulating body material	EPTR	ABS		ABS
class of inflammability	UL 94 V-0 (at thickness ≥3mm), UL 94 V-1	UL 94 V-0		UL 94 V-0
surface of case		plastic, black/ plastic, metallized	metal	plastic, grey
	HFK S ... HFK B ...	HFD ...		SSK S ... SSK B ...
insulating body material	ABS	Silicone, filled with silver-plated coper particles		Polyethylene
temperature range	-35°C ... +85°C			
class of inflammability	UL 94 V-0			



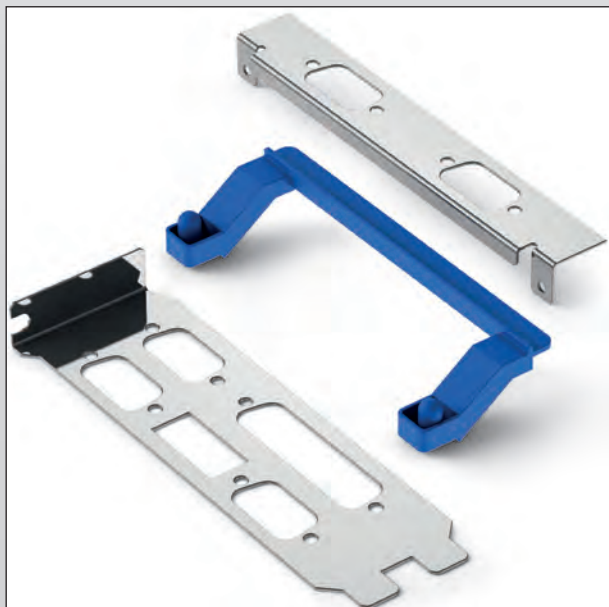
Brackets for PCI

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



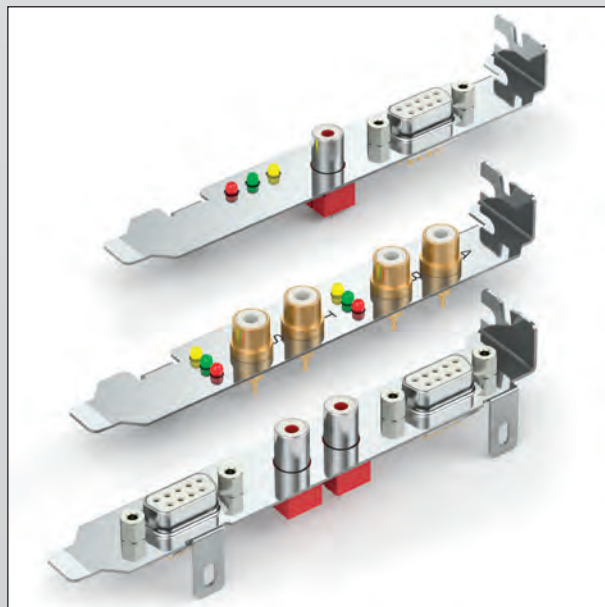
Brackets for AT and similar

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



Custom-specific brackets

- double width
- special width
- with printing
- bracket (Retainer) for PCI cards

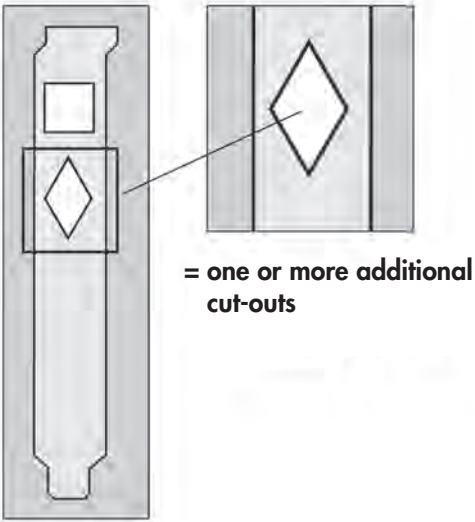


Equipped brackets

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

page	PCI	7		9			12	13	14		15		17	18
	KHPC	8	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

B

Brackets with fixing strap and without cutout

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

G

Bracket without fixing strap and without cutout

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

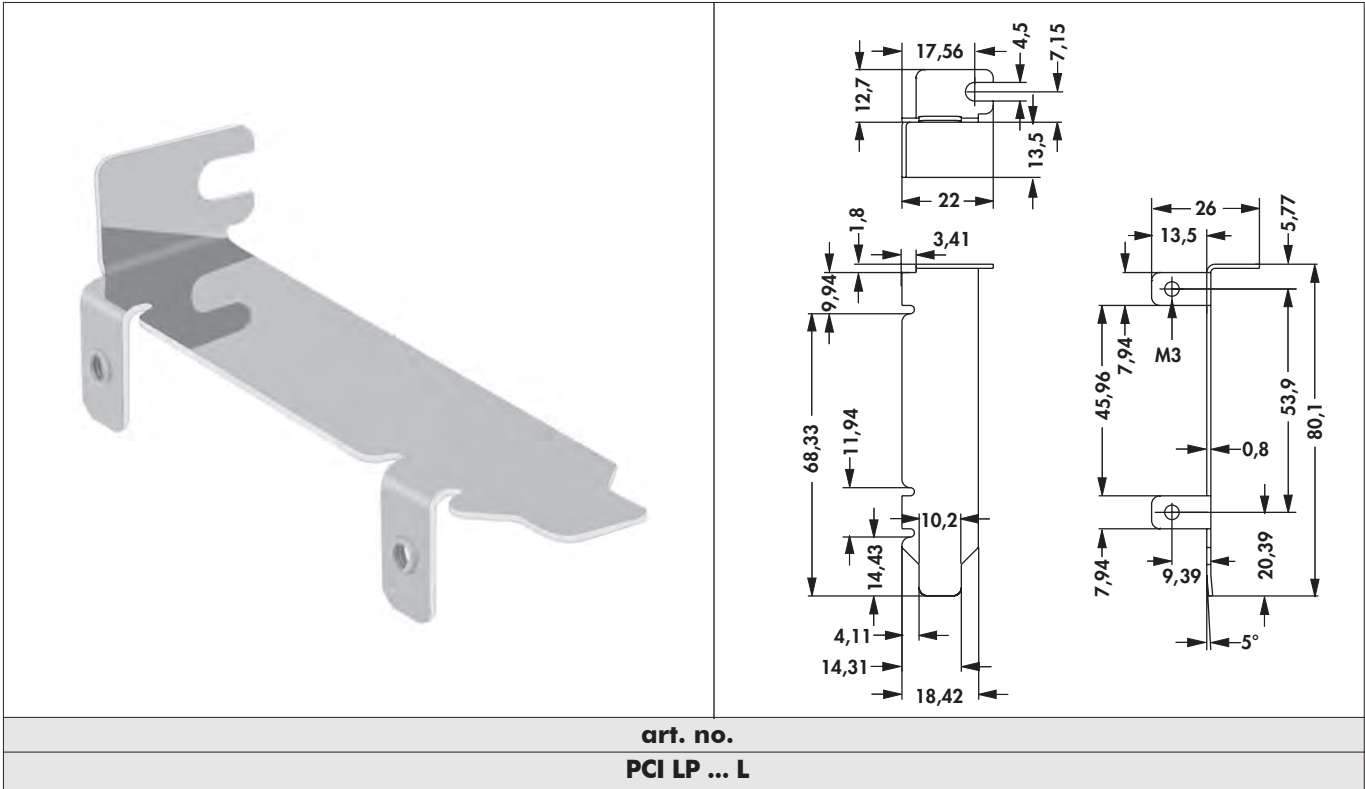
M

N

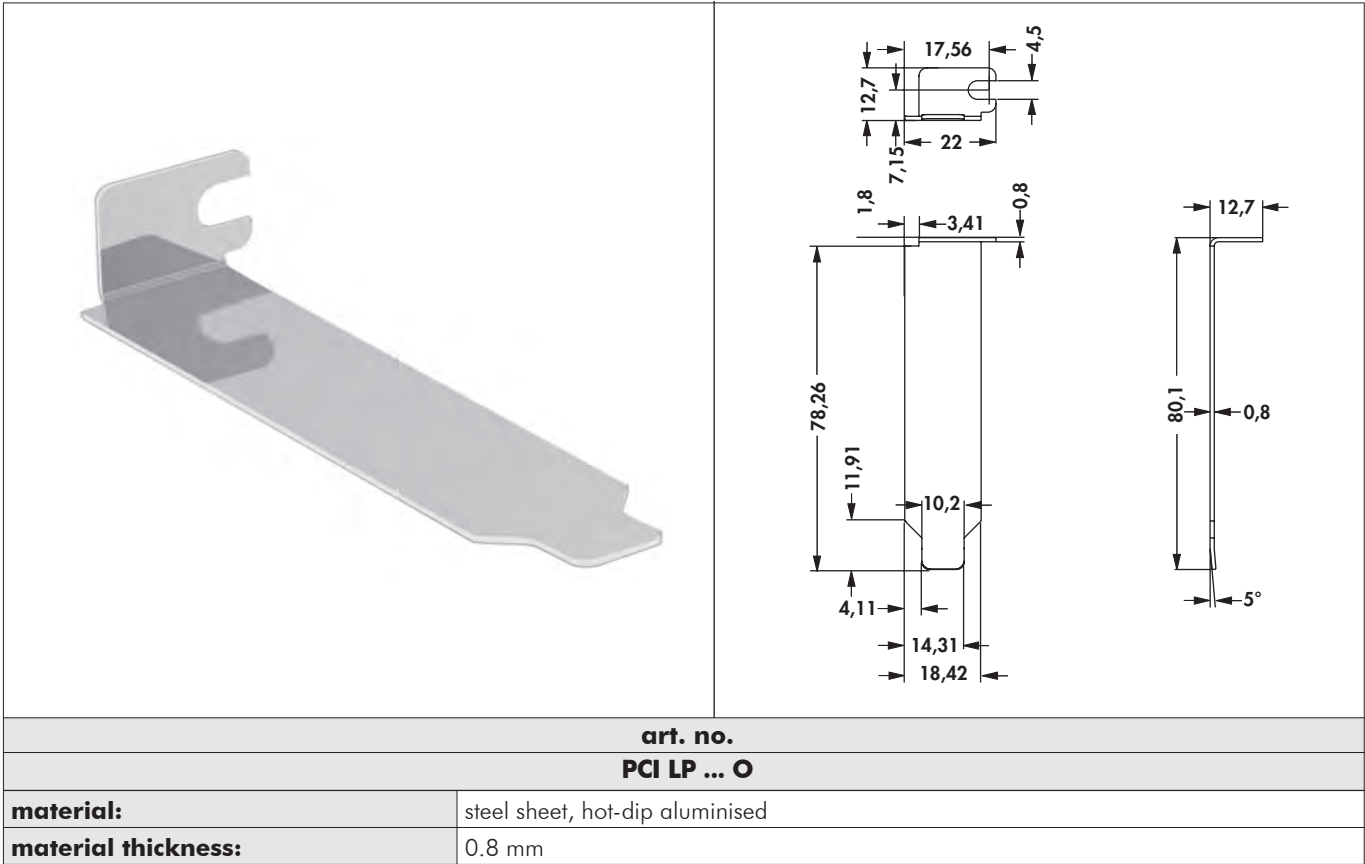
Low Profile bracket for PC

Low Profile bracket with fixing strap 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 strap and without cutout



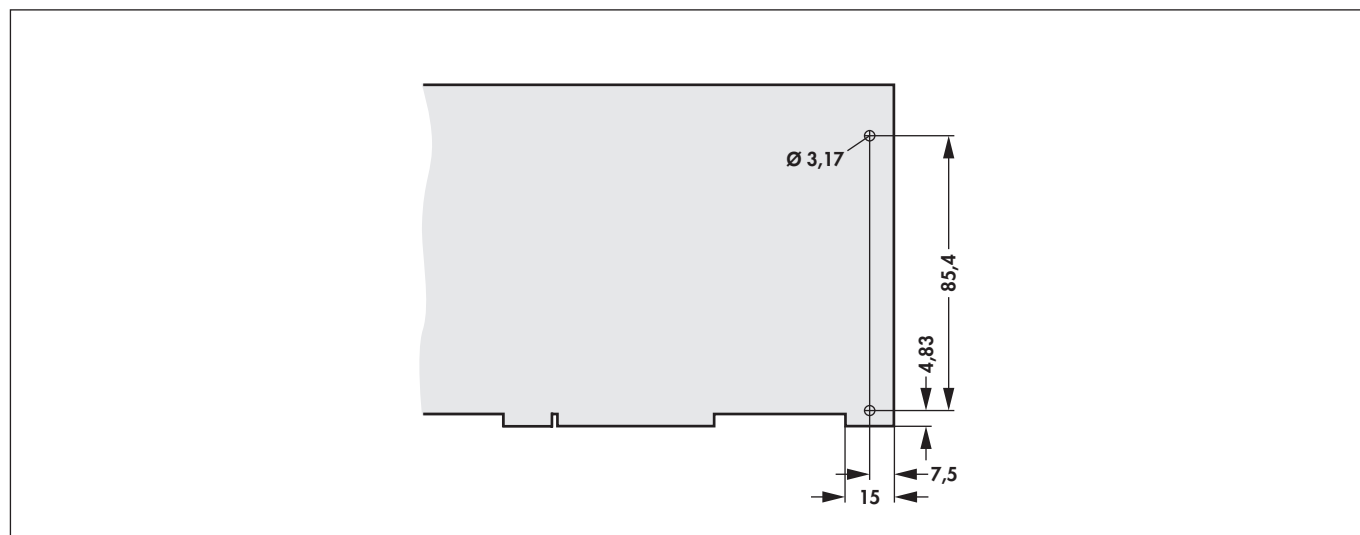
A

Dimensional drawing for PCBs

B

C

D



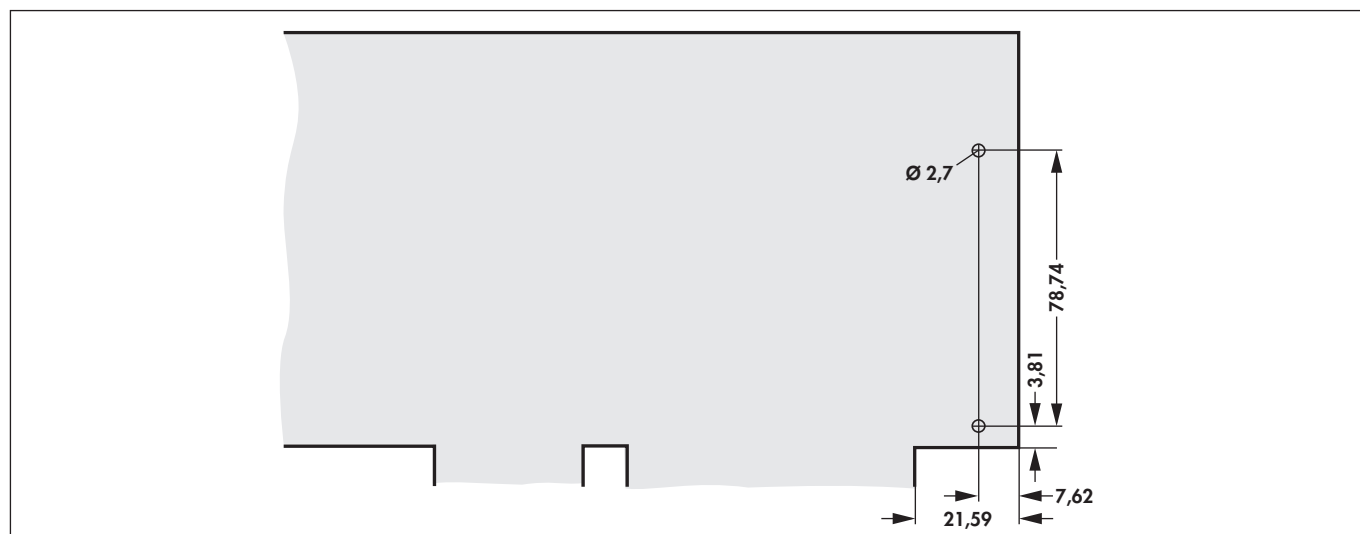
E

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

F

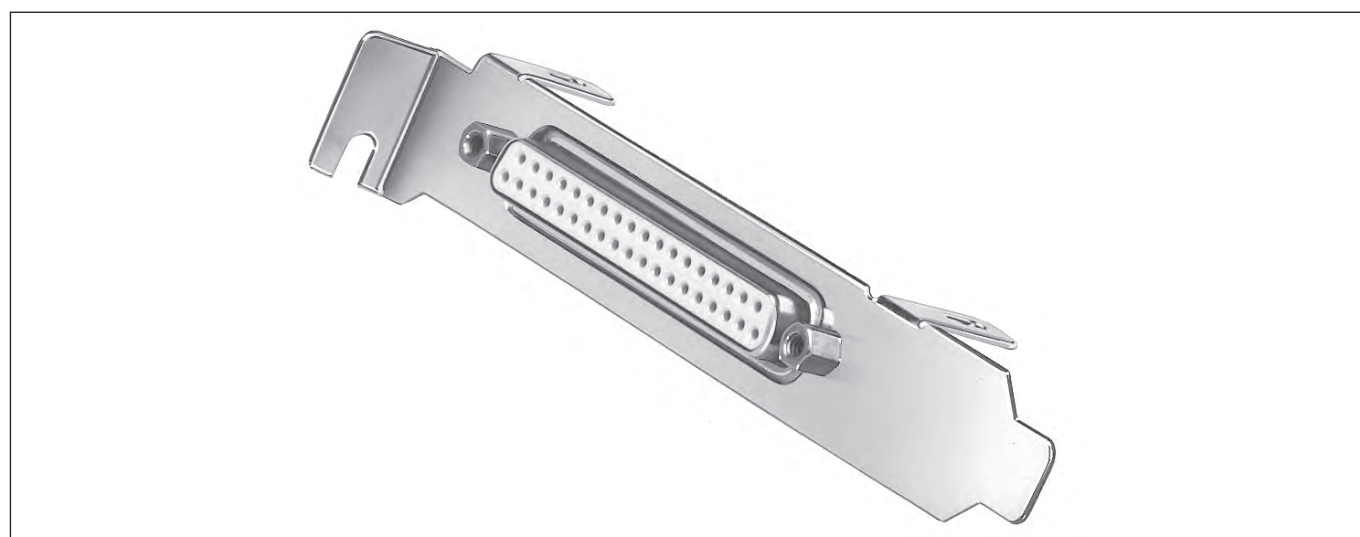
G

H

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

I

K

**On request also available with D-Sub connector!**

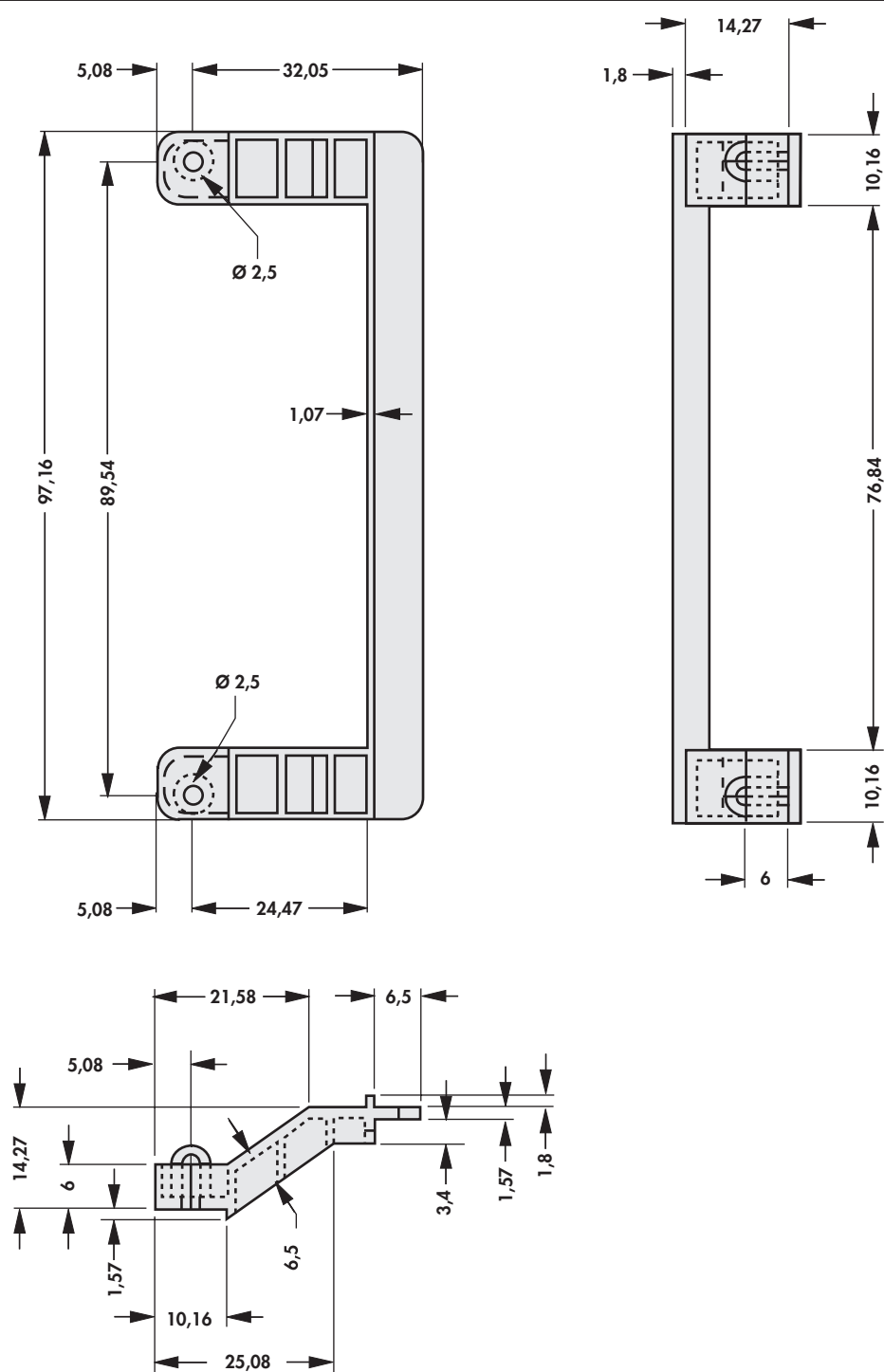
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Retainers for PCI-cards

- suitable for all ISA-versions



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

A

Brackets for PC

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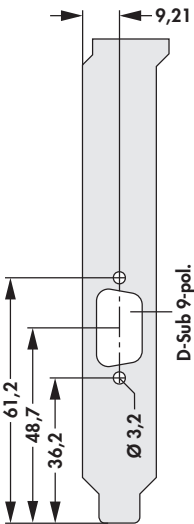
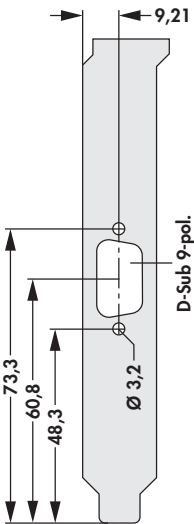
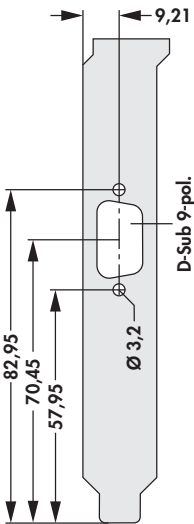
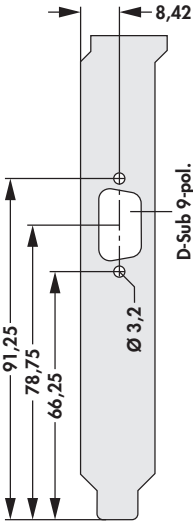
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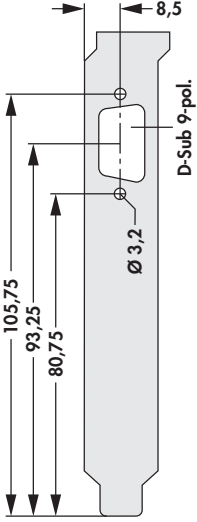
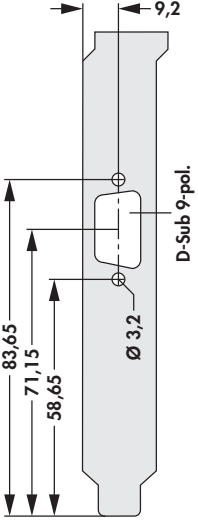
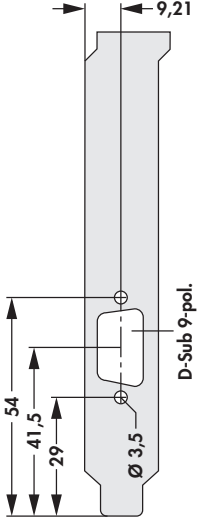
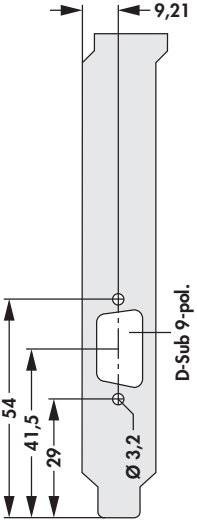
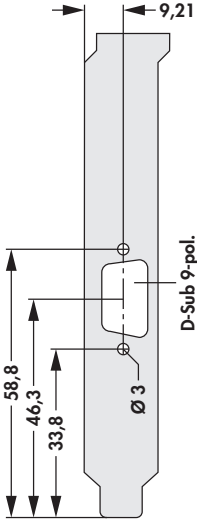
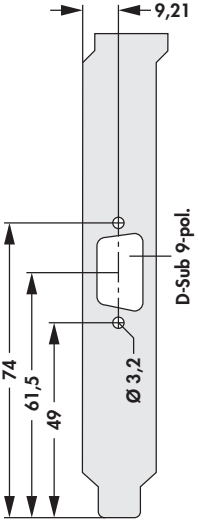
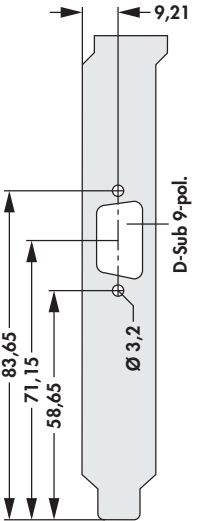
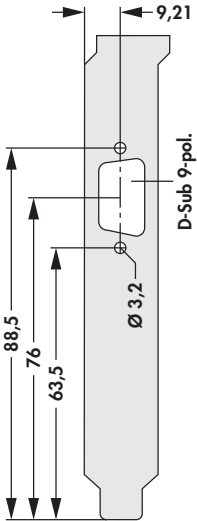
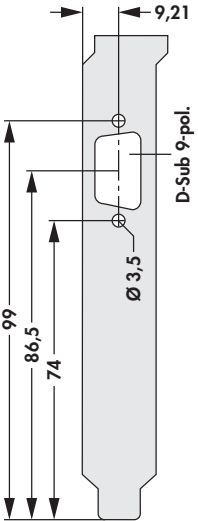
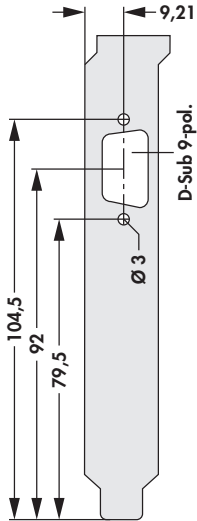
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	PCI 055 ...	PCI 004 ...	PCI 005 ...
			
PCI 006 O			
			

	KHPC 002 O 	KHPC 003 ... 	KHPC 007 O 
	KHPC 011 O 	KHPC 013 O 	KHPC 010 ... 
KHPC 094 O 	KHPC 096 O 	KHPC 008 O 	KHPC 014 O 

please indicate:
... fixing strap
O = without fixing strap
L = with fixing straps

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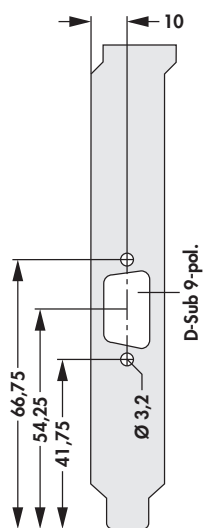
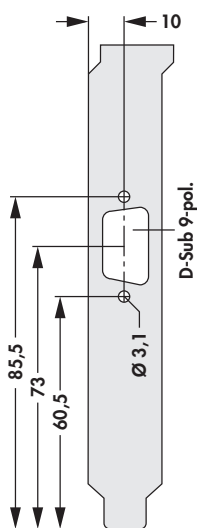
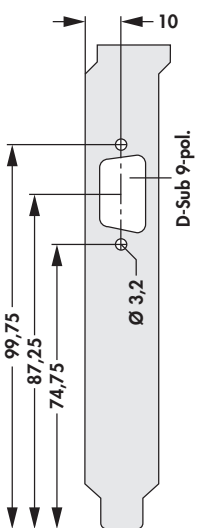
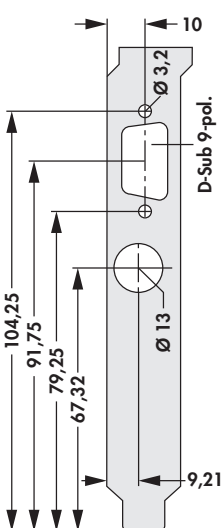
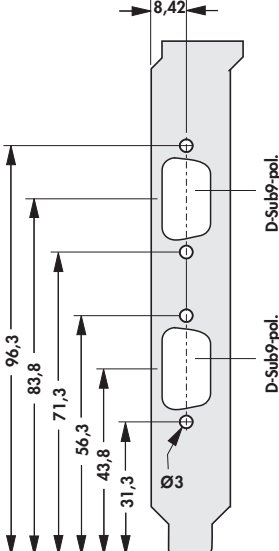
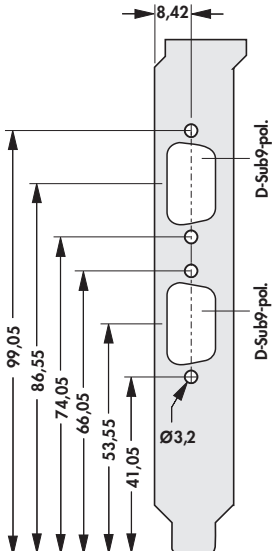
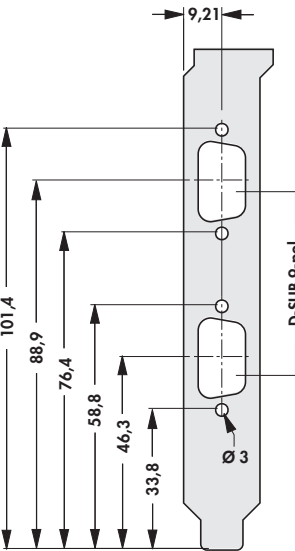
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	KHPC 016 O 	KHPC 095 O 	KHPC 017 ... 
	KHPC 131 L 		
	PCI 011 ... 	PCI 013 ... 	PCI 039 O 

PCI 041 ...	PCI 012 ...		
	KHPC 144 O	KHPC 142 O	KHPC 053 O
KHPC 138 O	KHPC 006 O	KHPC 012 O	KHPC 141 O

please indicate: ... fixing strap
O = without fixing strap
L = with fixing straps

A

Brackets for PC

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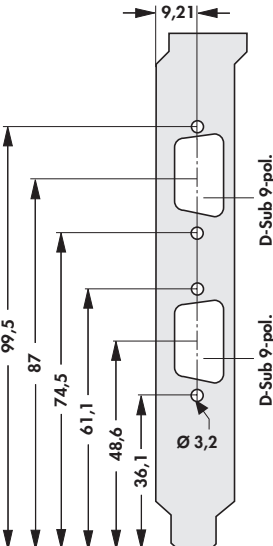
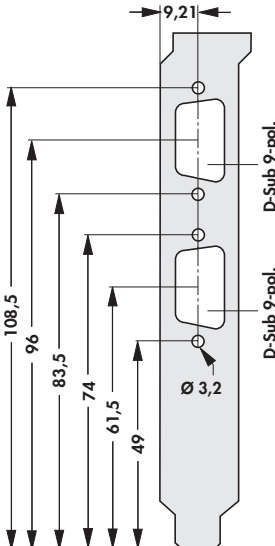
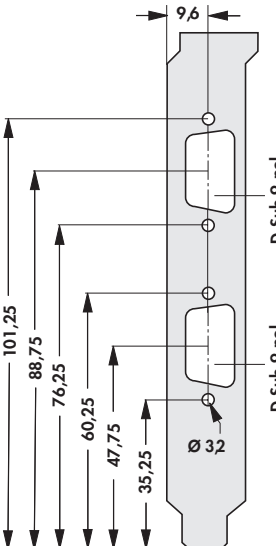
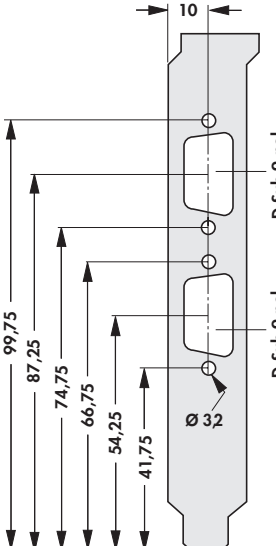
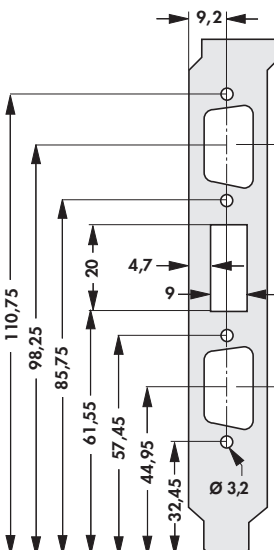
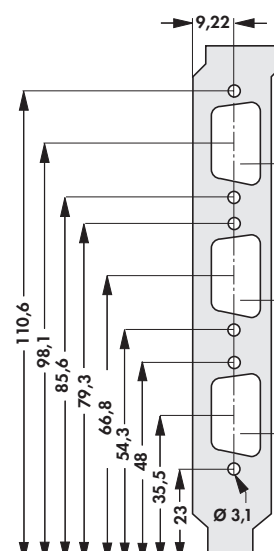
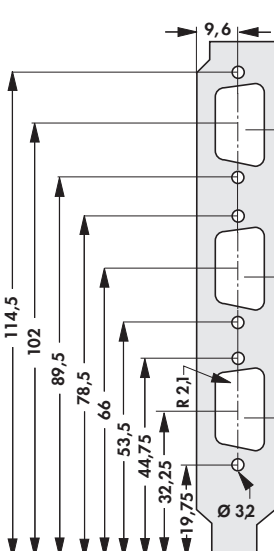
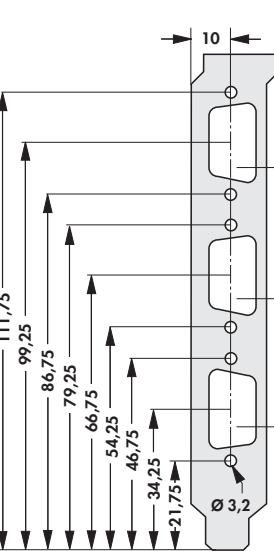
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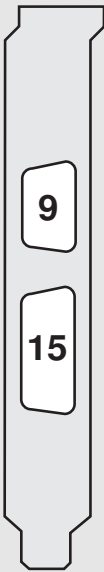
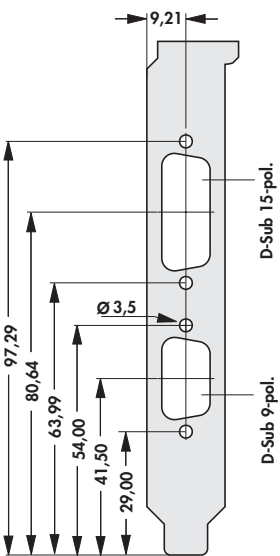
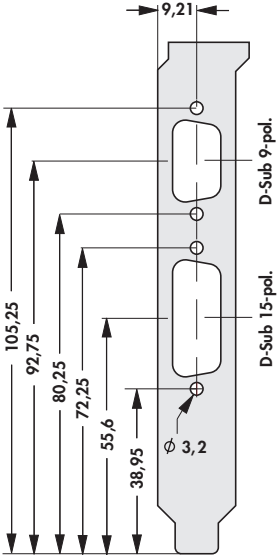
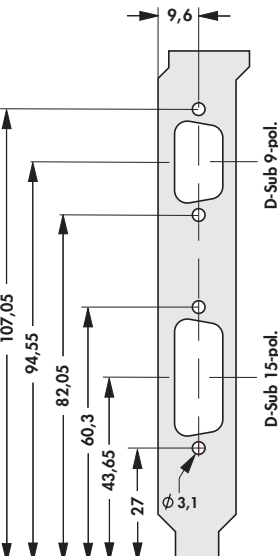
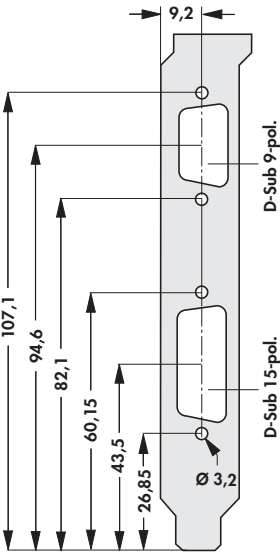
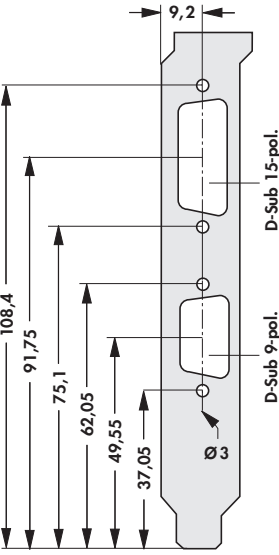
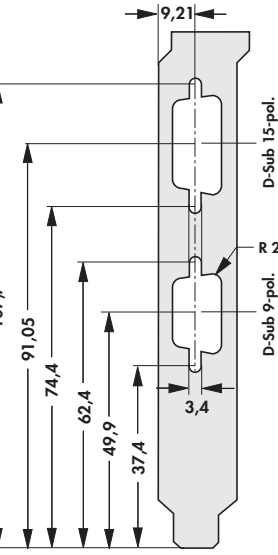
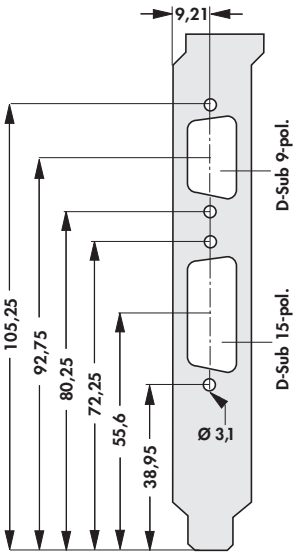
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KHPC 072 	KHPC 009 O 	KHPC 143 O 	KHPC 015 L 
	KHPC 160 O 		
	KHPC 065 O 	KHPC 454 O 	KHPC 005 O 

If you do not find a suitable bracket,
please use the PCI / KHPC design sheet
at the end of section "K".

	PCI 065 O 	PCI 031 O 	PCI 032 O 
	KHPC 179 O 	KHPC 177 O 	KHPC 178 O 
	KHPC 076 O 		

please indicate:

- ... fixing strap
O = without fixing strap
L = with fixing straps

A

Brackets for PC

B

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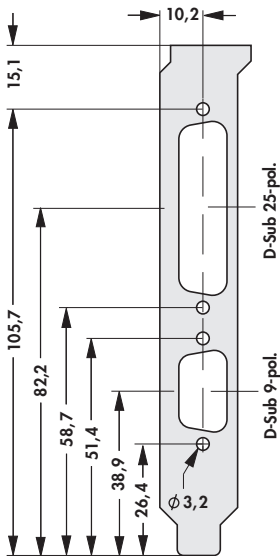
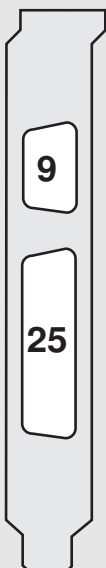
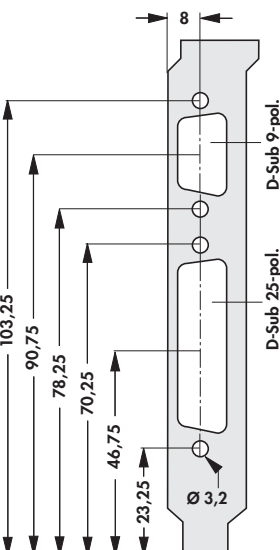
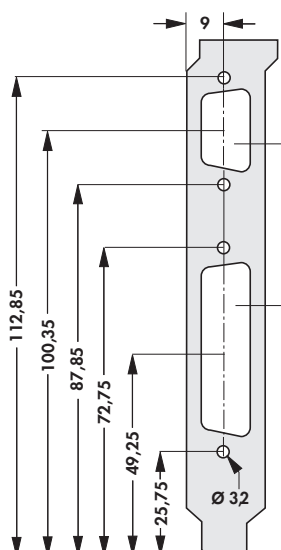
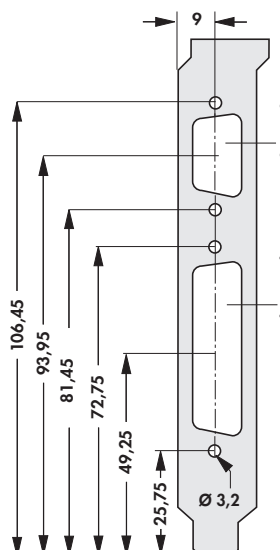
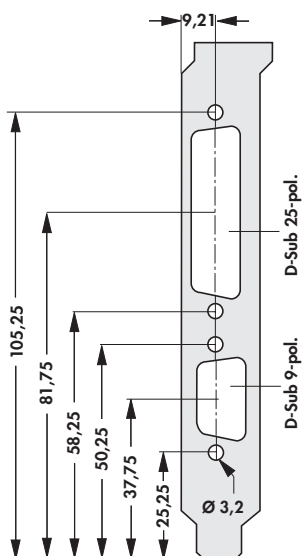
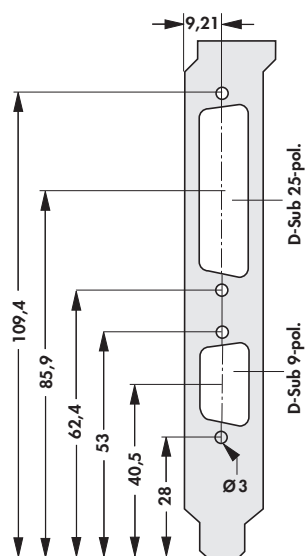
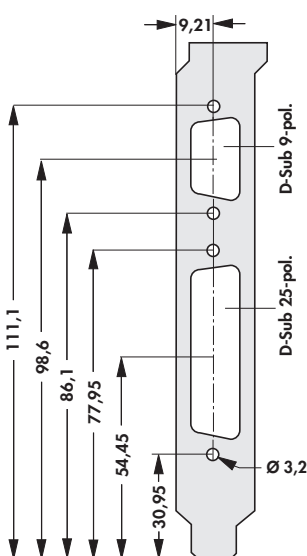
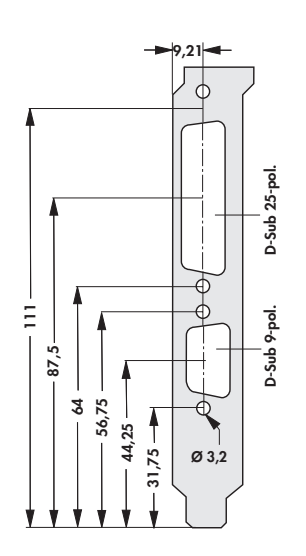
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	PCI 033 ... 		
	KHPC 189 L 	KHPC 041 O 	KHPC 040 O 
KHPC 185 O 	KHPC 061 O 	KHPC 038 O 	KHPC 187 O 

KHPC 188 O D-Sub 25-pol. D-Sub 9-pol.	KHPC 078 O D-Sub 25-pol. D-Sub 9-pol.		
15	PCI 014 L D-Sub 15-pol.	PCI 045 ... D-Sub 15-pol.	PCI 015 ... D-Sub 15-pol.
15	KHPC 019 O D-Sub 15-pol.	KHPC 073 ... D-Sub 15-pol.	KHPC 024 O D-Sub 15-pol.

please indicate:

... fixing strap
O = without fixing strap
L = with fixing straps

A

Brackets for PC

B

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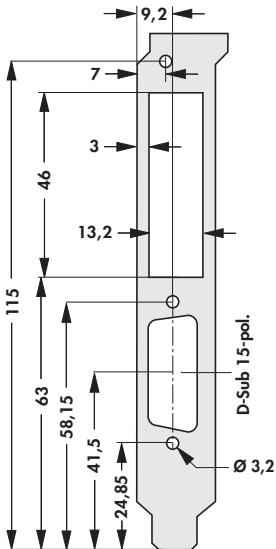
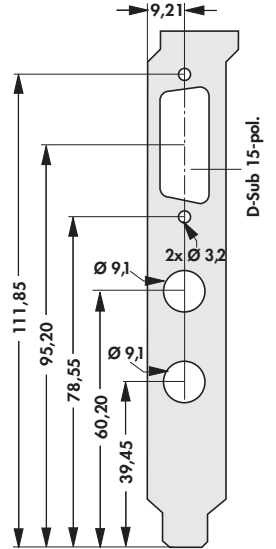
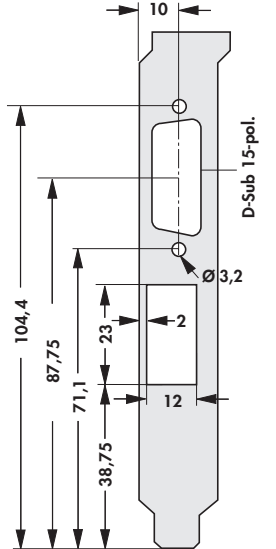
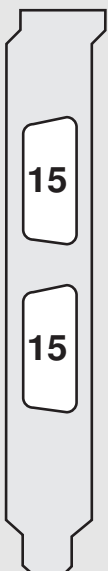
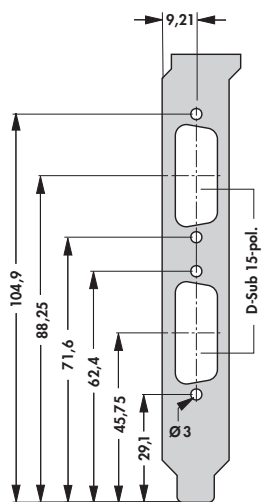
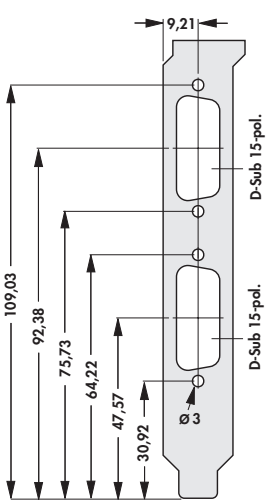
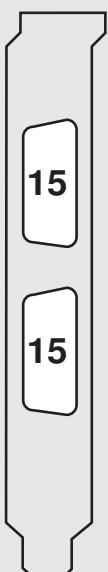
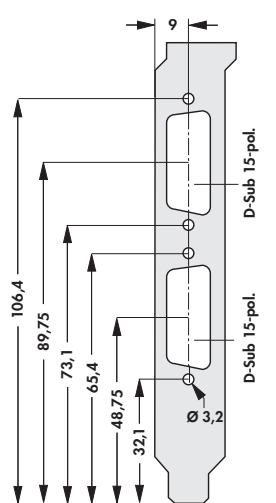
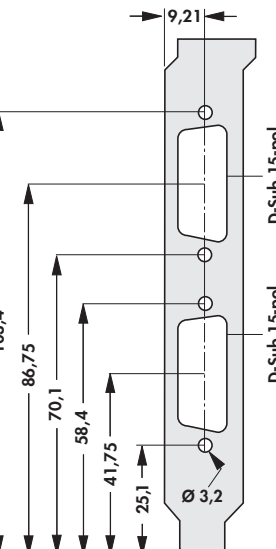
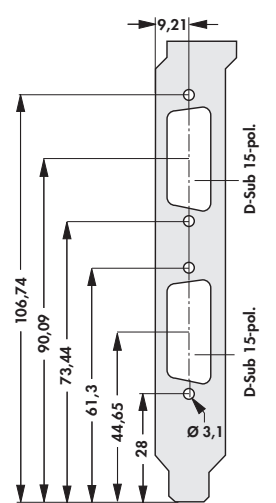
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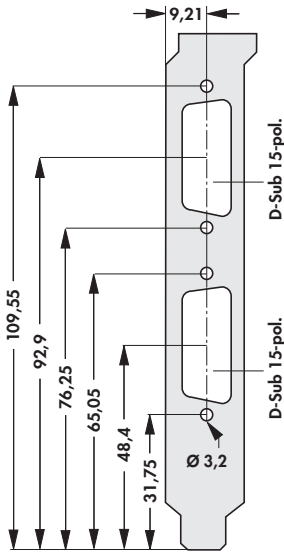
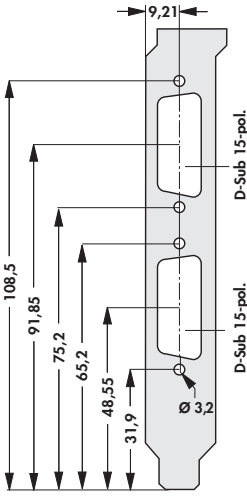
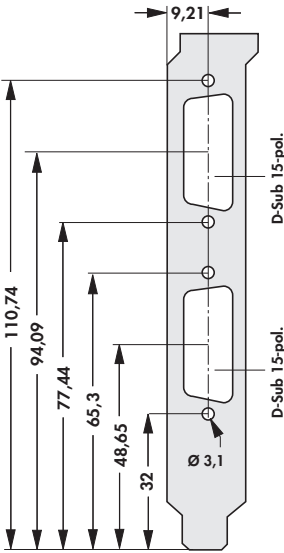
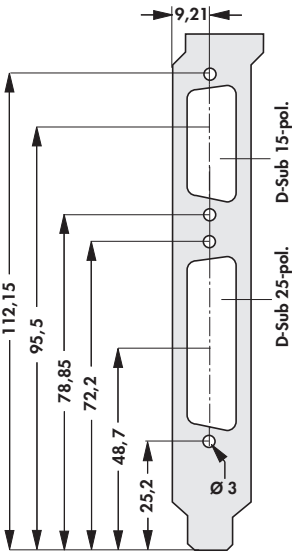
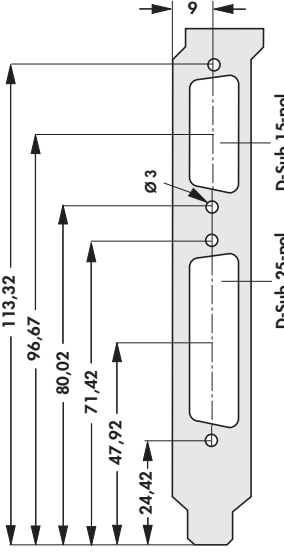
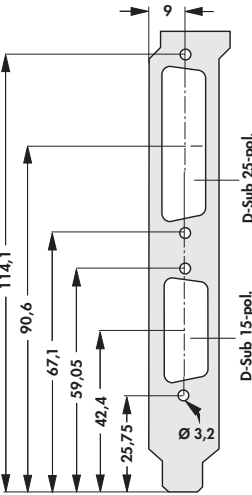
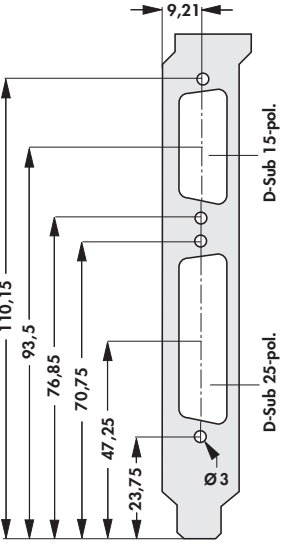
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	KHPC 200 O 	KHPC 455 L 	KHPC 218 O 
	PCI 047 O 	PCI 071 O 	
	KHPC 230 O 	KHPC 022 L 	KHPC 225 O 

K 15

If you do not find a suitable bracket,
please use the PCI / KHPC design sheet
at the end of section "K".

KHPC 069 O 	KHPC 229 O 	KHPC 018 O 	
	KHPC 042 O 	KHPC 241 O 	KHPC 242 O 

please indicate:

... fixing strap
O = without fixing strap
L = with fixing straps

A

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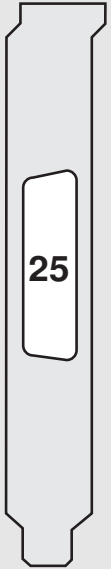
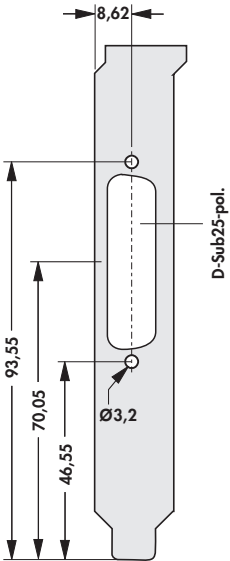
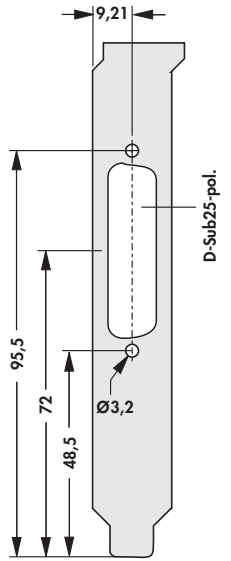
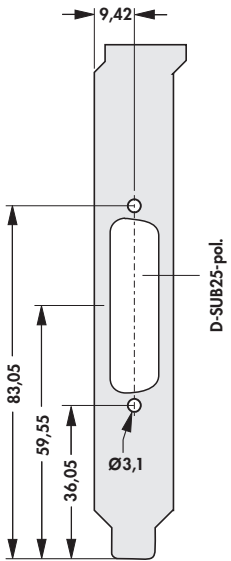
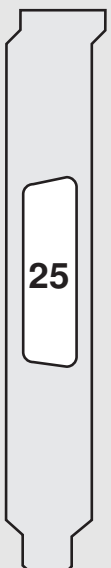
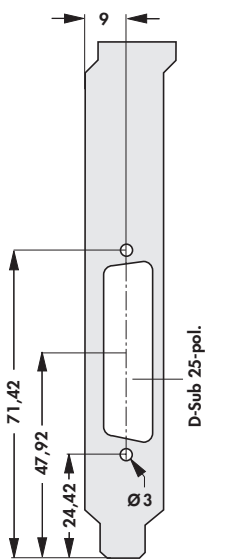
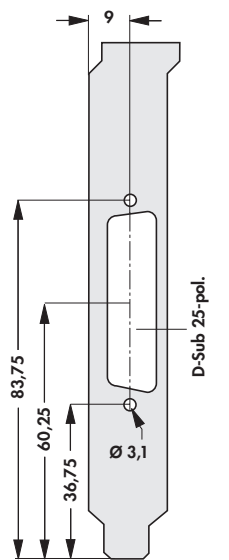
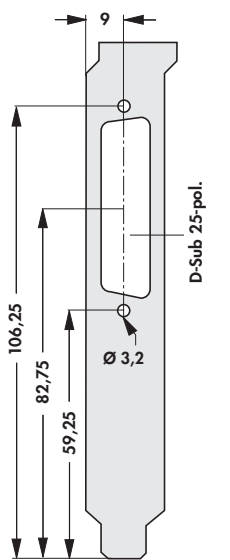
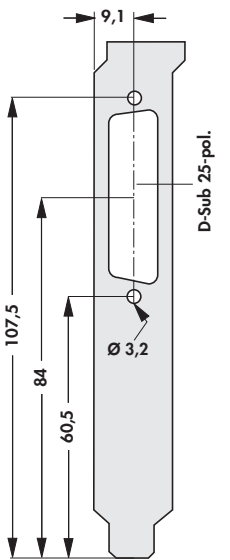
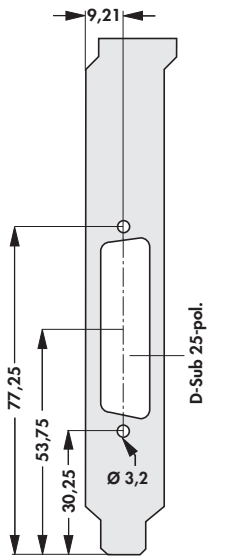
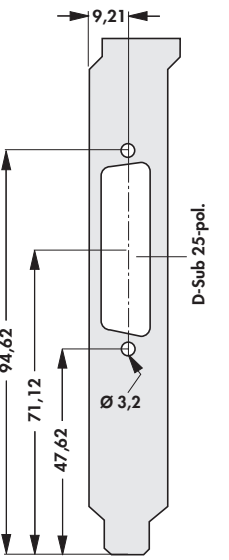
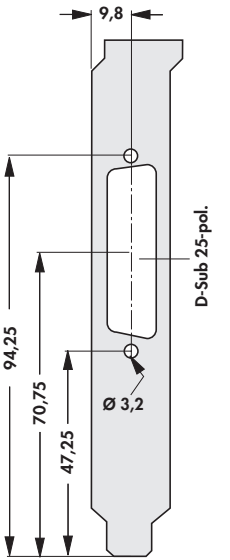
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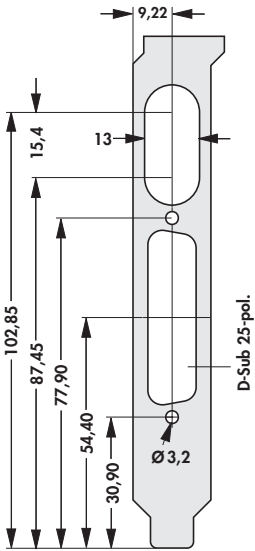
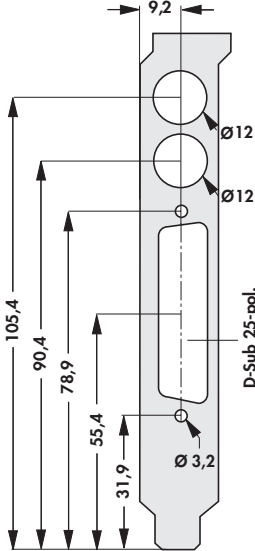
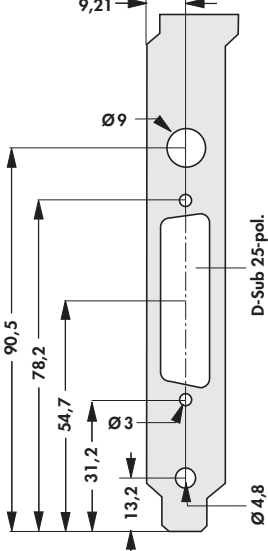
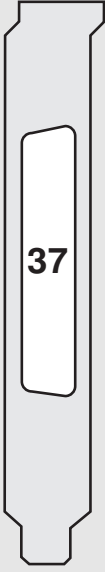
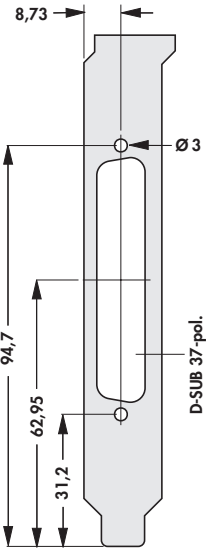
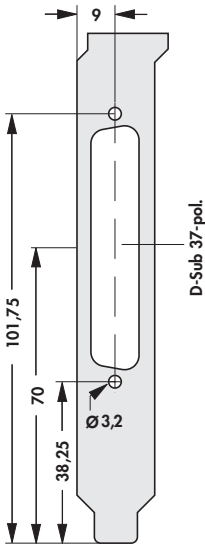
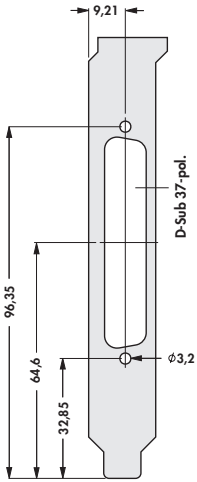
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	PCI 017 ... 	PCI 018 ... 	PCI 016 L 
	KHPC 243 O 	KHPC 070 O 	KHPC 027 O 
KHPC 054 O 	KHPC 028 O 	KHPC 026 ... 	KHPC 052 L 

	PCI 072 O		
			
	KHPC 262 O	KHPC 043 O	
			
	PCI 076 O	PCI 035 L	PCI 077 ...
			

please indicate:

... fixing strap
O = without fixing strap
L = with fixing straps

A

Brackets for PC

B

C

D

E

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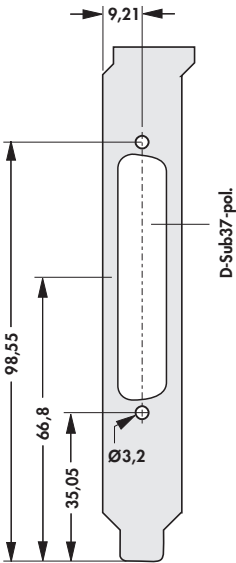
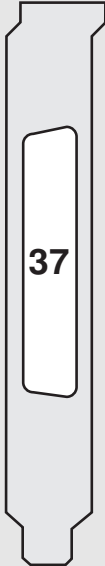
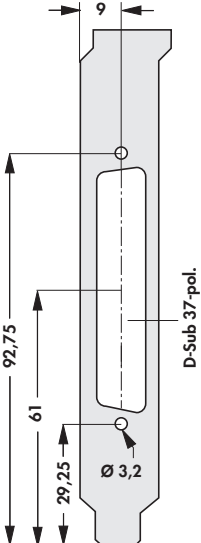
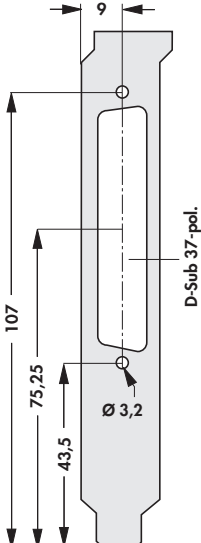
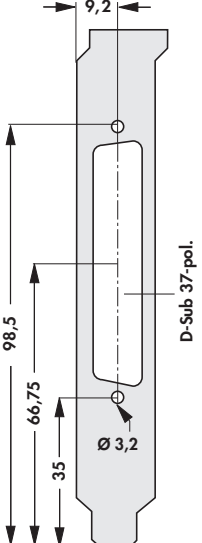
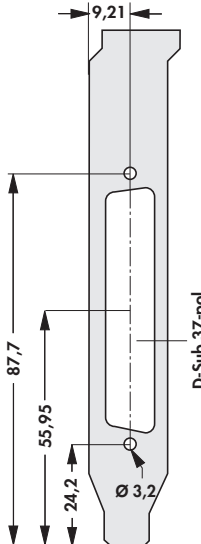
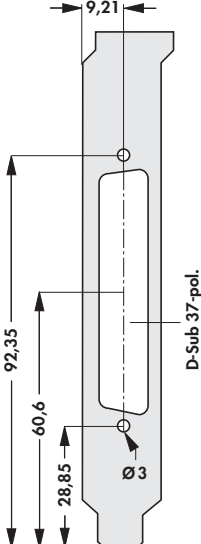
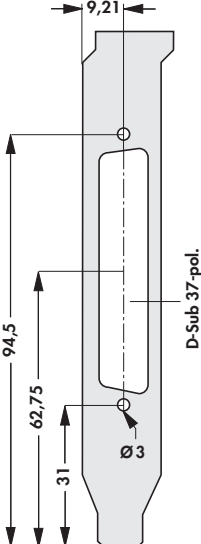
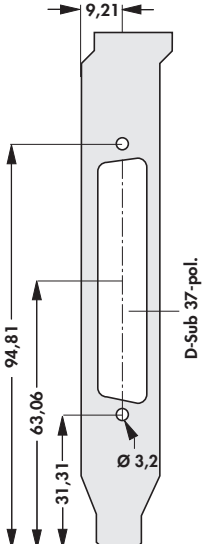
I

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L

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PCI 020 ... 			
	KHPC 058 O 	KHPC 035 O 	KHPC 277 O 
KHPC 267 O 	KHPC 033 O 	KHPC 270 O 	KHPC 271 O 

KHPC 034 O	KHPC 031 O	KHPC 032 O	
	KHPC 029 O	KHPC 295 O	
	KHPC 036 ...	KHPC 051 O	KHPC 308 L

please indicate:

... fixing strap
O = without fixing strap
L = with fixing straps

A

Brackets for PC

B

C

D

E

F

G

H

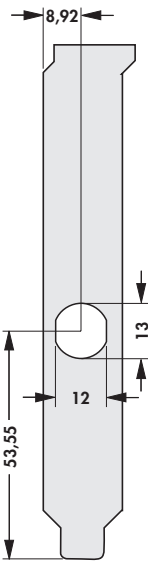
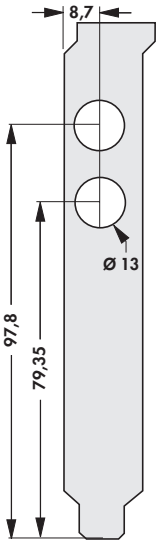
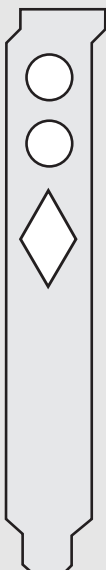
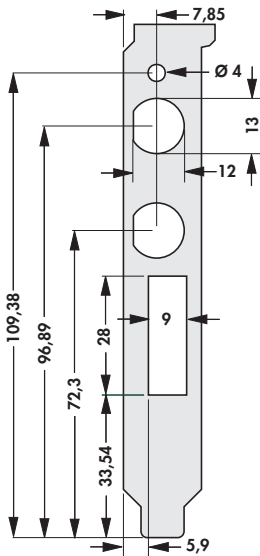
I

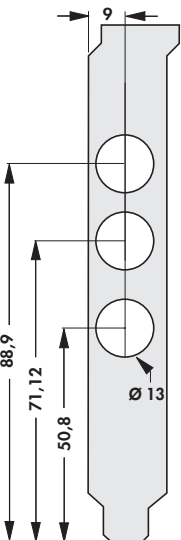
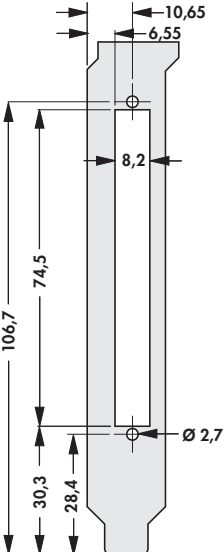
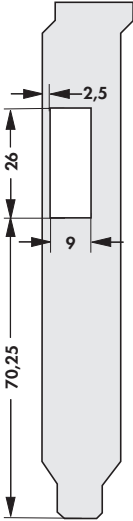
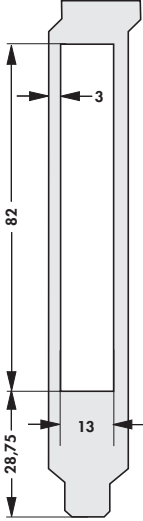
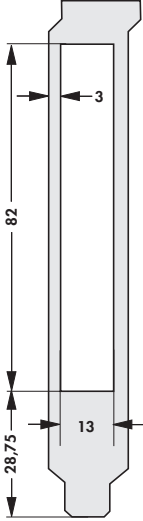
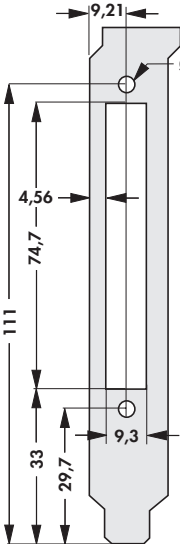
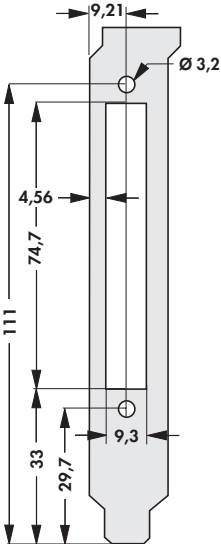
K

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	PCI 021 O		
			
	KHPC 325 O		
			
	PCI 083 L		
			

	KHPC 335 L		
			
	PCI 104 O		
			
	KHPC 365 L		
			
	KHPC 085 L		
			
	KHPC 391 O		
			

please indicate:

... fixing strap
O = without fixing strap
L = with fixing straps

A

Brackets for PC

B

C

D

E

F

G

H

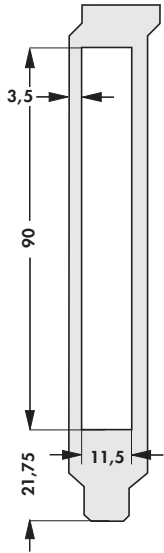
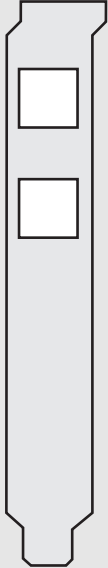
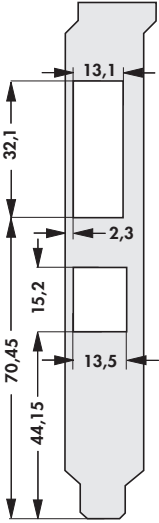
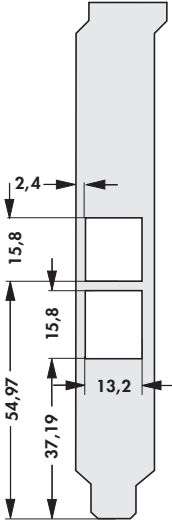
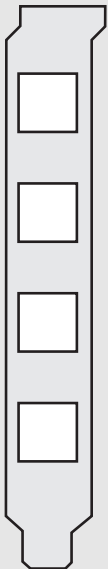
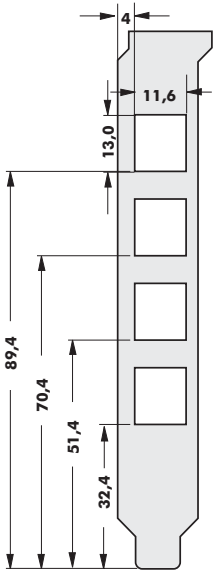
I

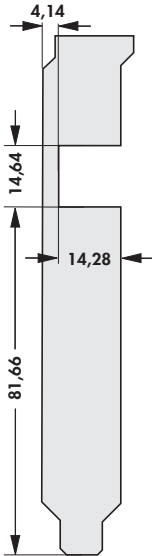
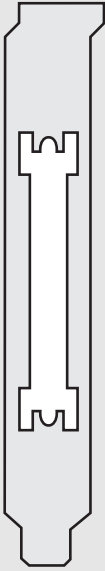
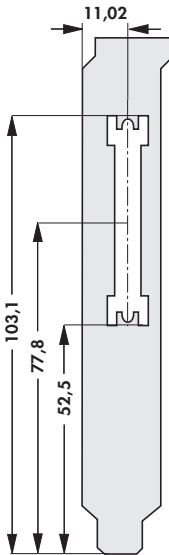
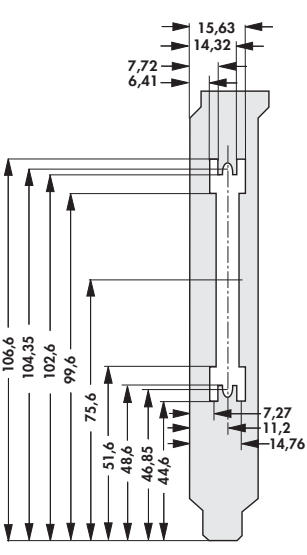
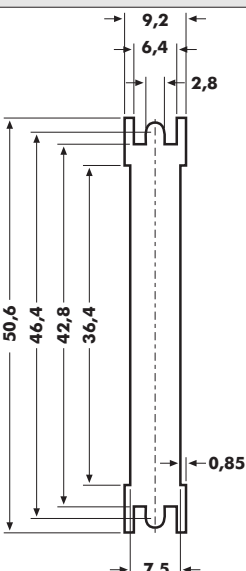
K

L

M

N

KHPC 398 O 			
	KHPC 404 L 	KHPC 407 L 	
	PCI 051 ... 		

	KHPC 439 O		
			
	KHPC 449 O		
		KHPC 469 O	
			Detail - B
			

please indicate:

- ... fixing strap
O = without fixing strap
L = with fixing straps

A

User information für PCI and KHPC-Design

B

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.

C

D

Example

E

F

G

H

I

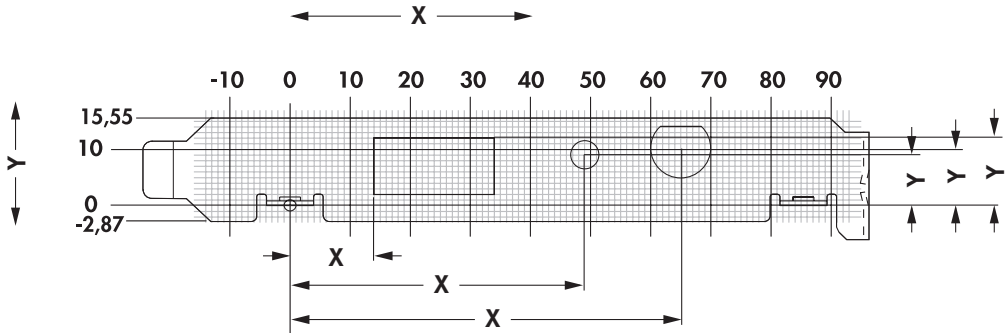
K

L

M

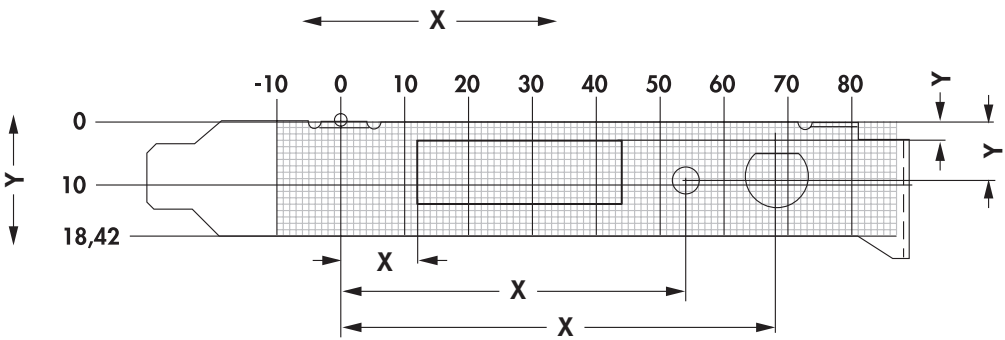
N

PCI

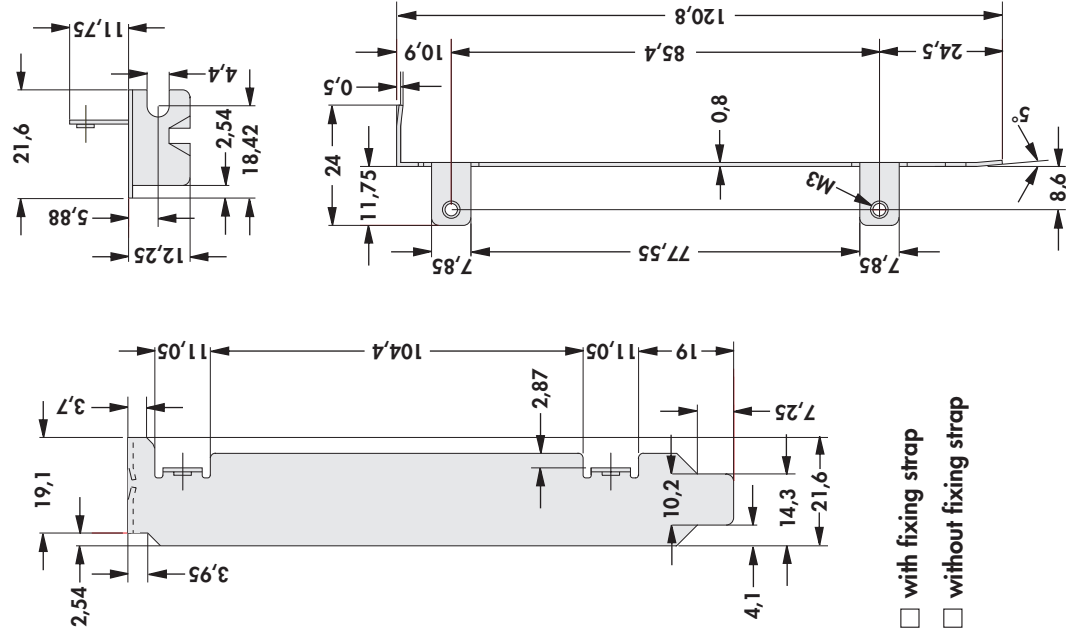


Shape		X-dimension	Y-dimension
A	A = 20 B = 10	14	12
E	D = 5	49	9
D1	D = 12 D1 = 11	65	10

KHPC



Shape		X-dimension	Y-dimension
A	A = 33 B = 10	12	3
E	D = 5	54	9
D1	D = 9,5 D1 = 8,7	68	9



61,1

D-Sub 50 pol.
shape: F 5

25,0

D-Sub 9 pol.
shape: F 4

D-Sub 37 pol.
shape: F 1

D-Šub 15 pol.
shape: F3

D-Sub 9 pol.
shape: F 4

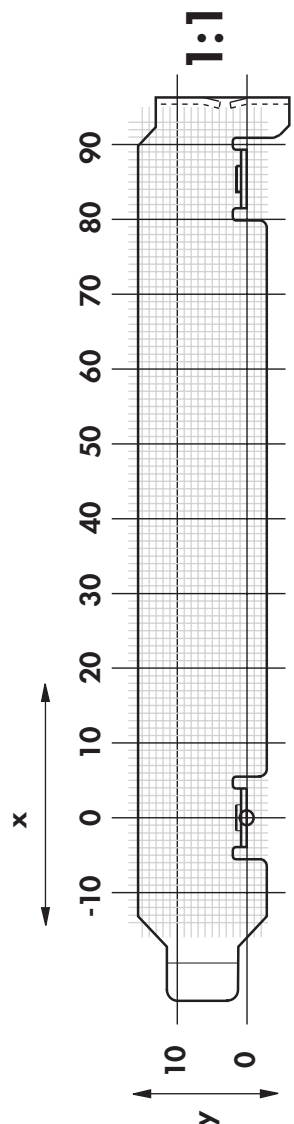
Diagram of a pulley system. A rope, labeled 'D', passes over a pulley, labeled 'E'. The rope is attached to a fixed point on the left and extends to the right, where it is labeled 'shape: E'.

Technical drawing of a pulley. The drawing shows a circular body with a central shaft hole. Dimensions are indicated: D for the outer diameter, d for the width, and $D/1$ for a specific height. The shape is labeled as **shape: D 1**.

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

shape: B
with radius, mm:

shape: C

[illegible]

PCI DESIGN

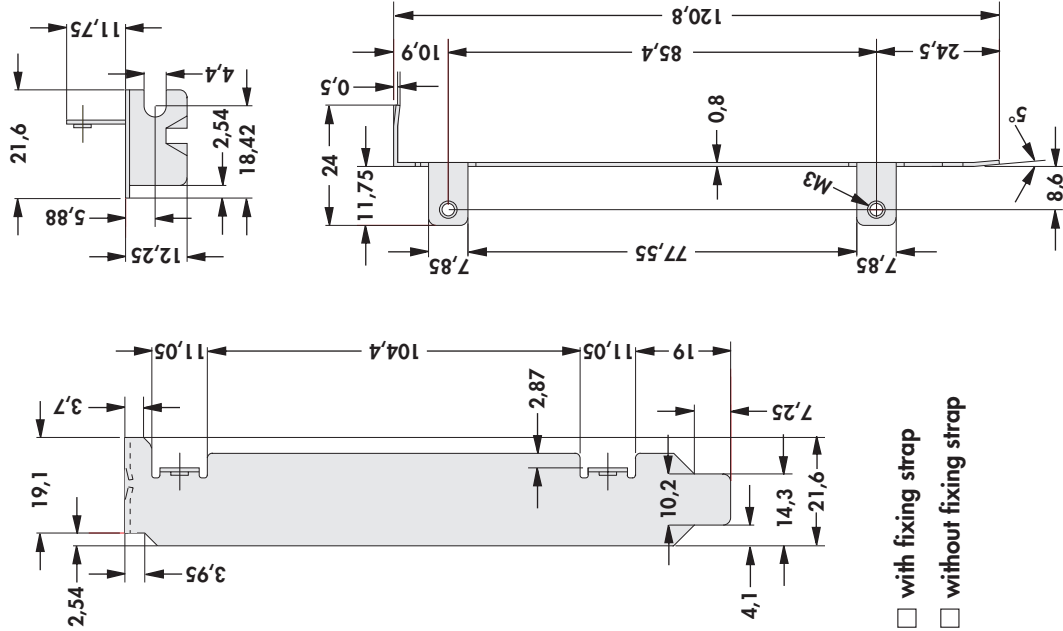


Fischer elektronik

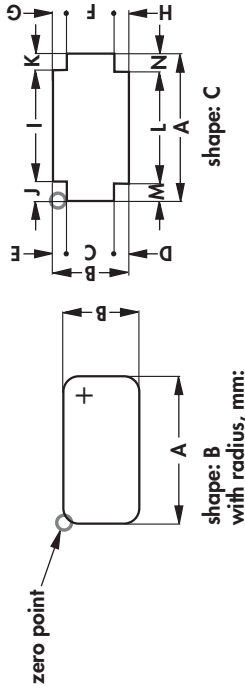
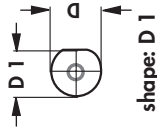
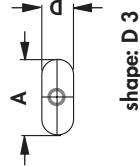
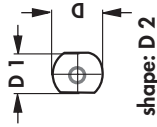
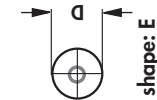
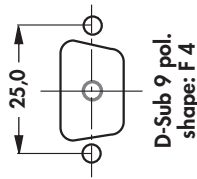
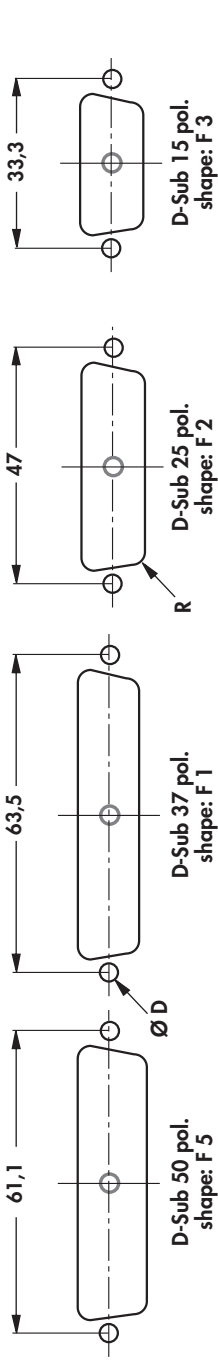
company name:

part name:

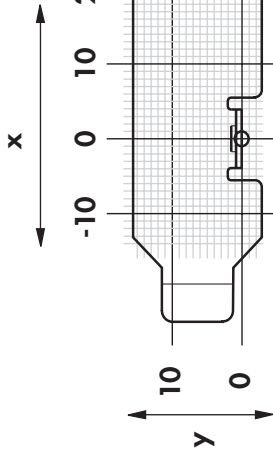
drawing number:



- ☐ with fixing strap
☐ without fixing strap

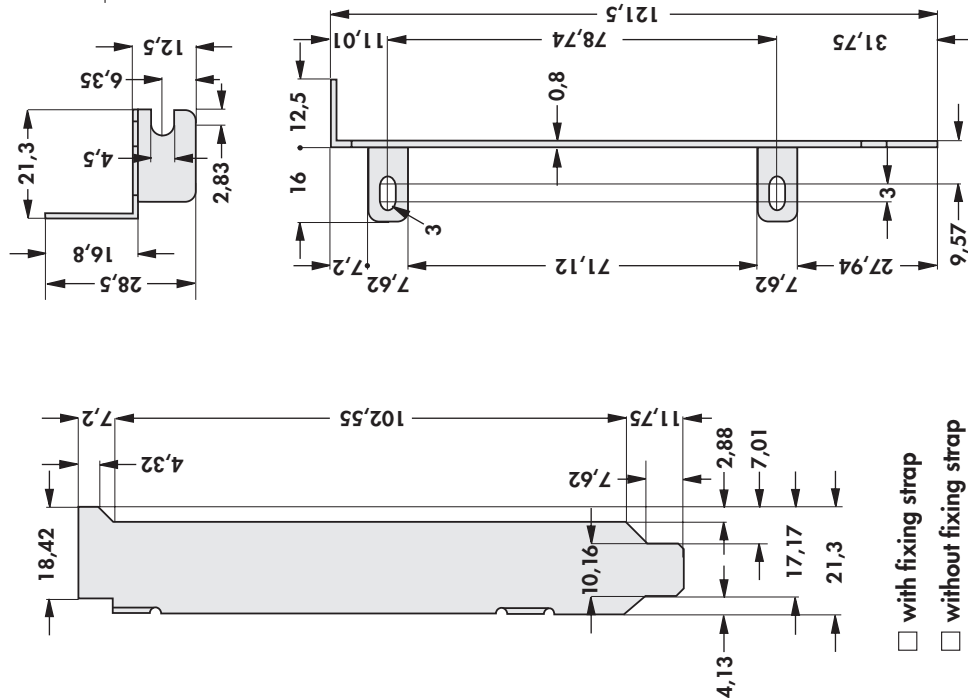


- radius F 1 ... 4
build in mode:
☐ 3,4 mm rear
☐ 2,1 mm front

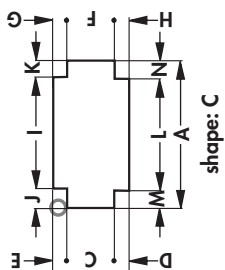
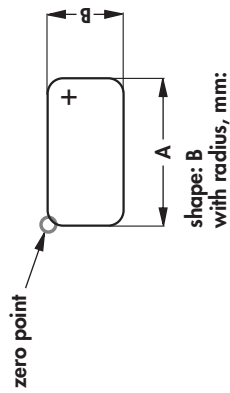
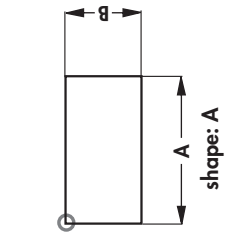
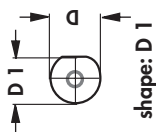
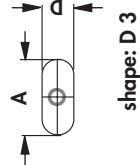
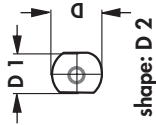
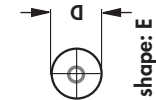
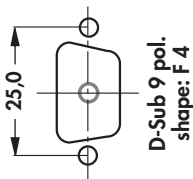
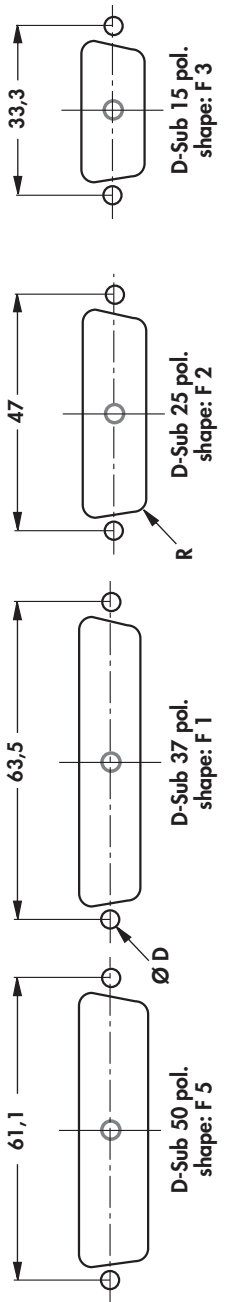


shape	X-dim.	Y-dim.	A	B	C	D	D 1	E	F	G	H	I	J	K	L	M	N

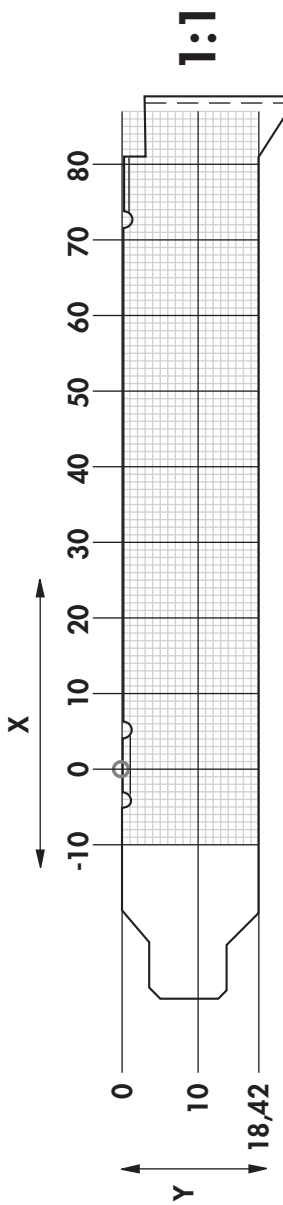
PCI DESIGN



- ☐ with fixing strap
☐ without fixing strap

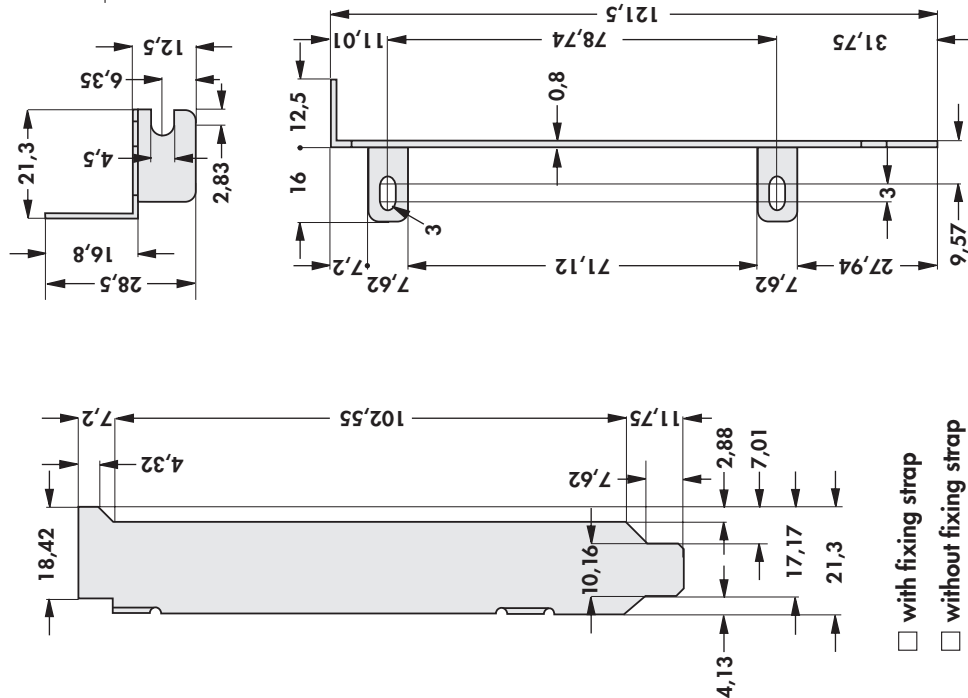


- radius F 1 ... 4
build in mode:
☐ 3,4 mm rear
☐ 2,1 mm front

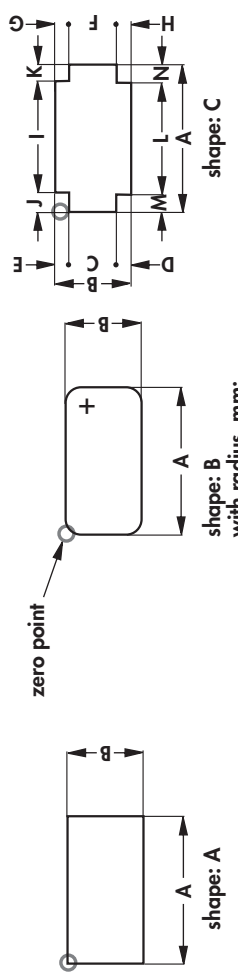
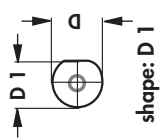
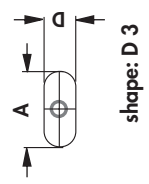
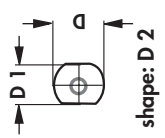
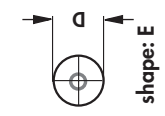
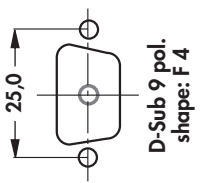
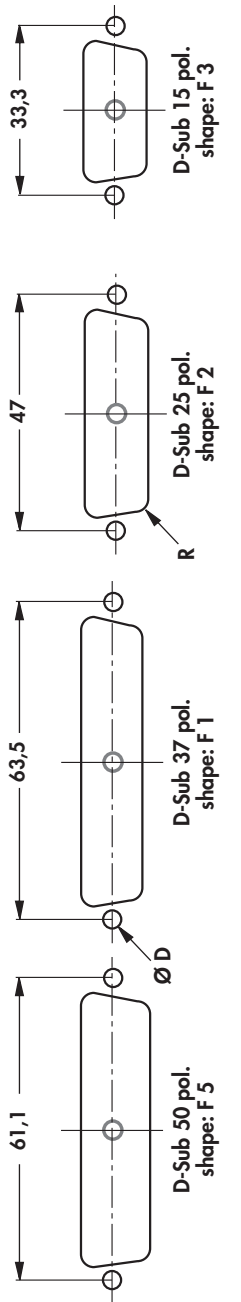


shape	X-dim.	Y-dim.	A	B	C	D	D 1	E	F	G	H	I	J	K	L	M	N

**KHPC
DESIGN**

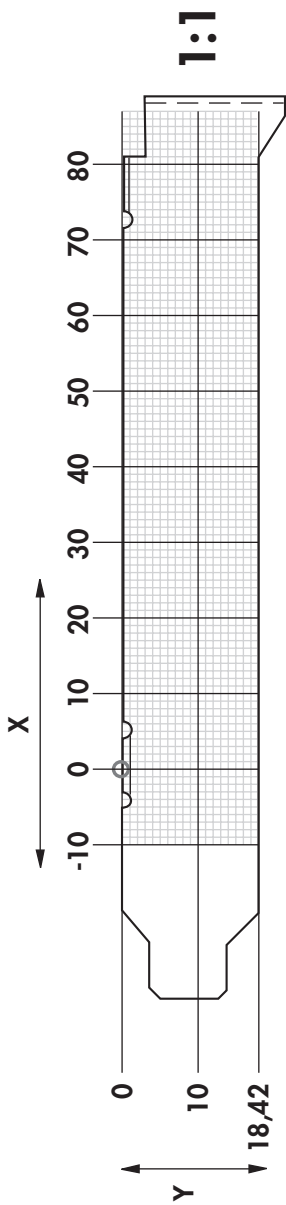


- ☐ with fixing strap
☐ without fixing strap



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

zero point



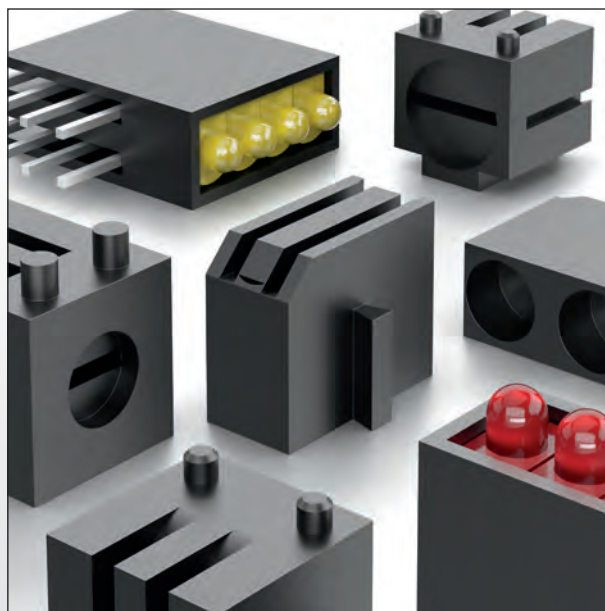
shape	X-dim.	Y-dim.	A	B	C	D	D 1	E	F	G	H	I	J	K	L	M	N

**KHPC
DESIGN**



Mounting material

- spacers for standard LEDs
- class of flammability acc. to UL 94 V-0



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

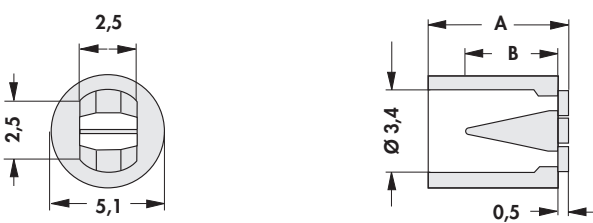


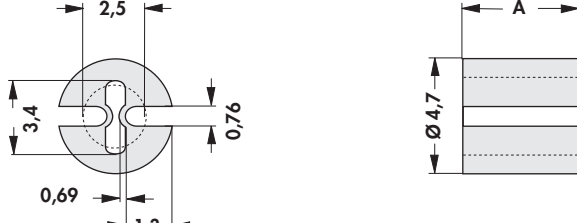
LED fastener for front panel mounting

- 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

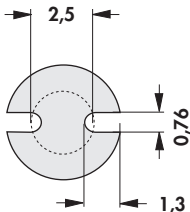
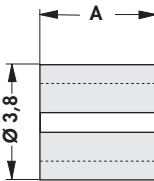
					
art. no.	B [mm]	dim. [mm] A	art. no.	B [mm]	dim. [mm] A
MAH 31	1.5	3.1	MAH 71	4.7	7.1
MAH 41		4.1	MAH 81		8.1
MAH 51		5.1	MAH 89		8.9
MAH 61		6.1	MAH 99		9.9
insulating body material:		MPPS, black			
temperature range:		-40°C...+240°C/ (260°C/5 s)			
class of inflammability:		UL 94 V-0			

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

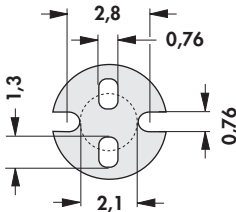
A

Spacers for LED

– for LED Ø 3 mm, thin mount

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

– for LED Ø 5 mm, self-retaining

					
art. no.	dim. [mm] A	art. no.	dim. [mm] A	art. no.	dim. [mm] A
MAH 501	1	MAH 505	5	MAH 508	8
MAH 502	2	MAH 506	6	MAH 509	9
MAH 503	3	MAH 507	7	MAH 510	10
MAH 504	4				
insulating body material:		PVC Blend, black			
temperature range:		-40°C... +85°C			
class of inflammability:		UL 94 V-0			

F

G

H

I

K

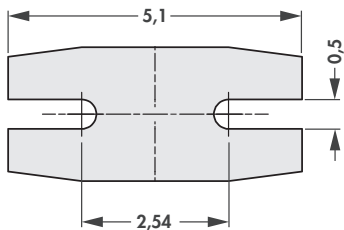
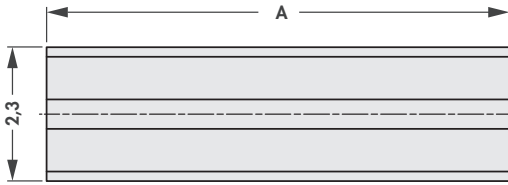
L

M

N

Spacers for LED

– for rectangular LED

					
art. no.	dim. [mm]	art. no.	dim. [mm]	art. no.	dim. [mm]
RAH 503	A	RAH 506	A	RAH 509	A
RAH 504	3	RAH 507	6	RAH 510	9
RAH 505	4	RAH 508	7		10
	5		8		
insulating body material:		PVC Blend, black			
temperature range:		-40°C... +85°C			
class of inflammability:		UL 94 V-0			

A

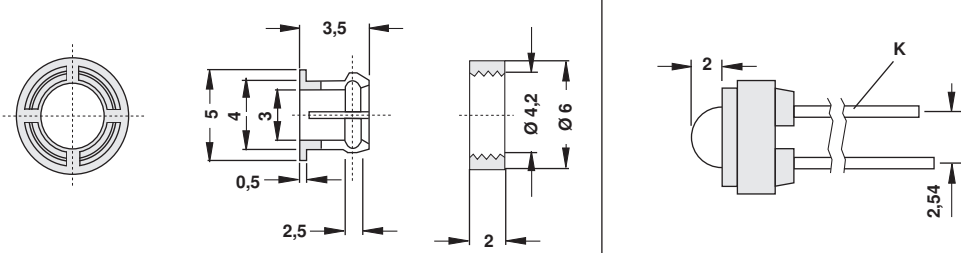
LED-holders

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

B

C

D

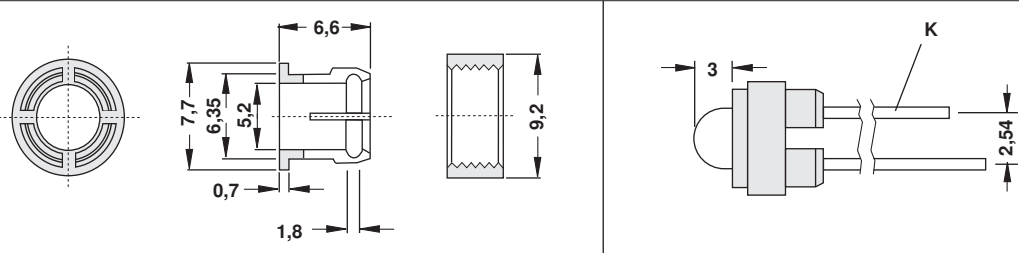
			
art. no.		type	
DH 3 V		for LED Ø3mm	
insulating body material:		PA, GF	

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

E

F

G

			
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

H

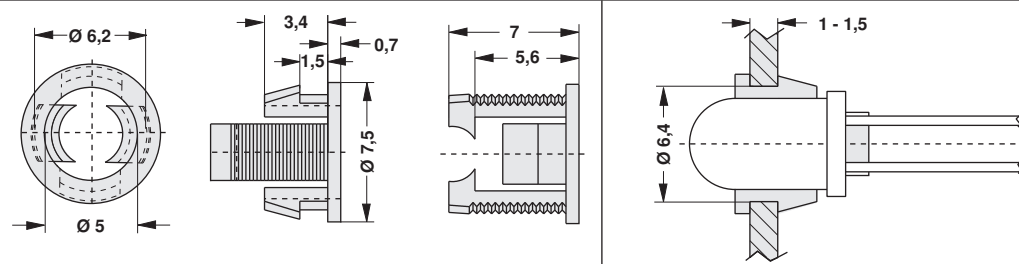
I

K

L

M

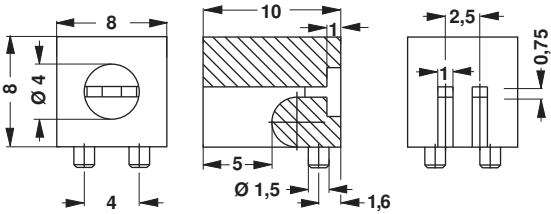
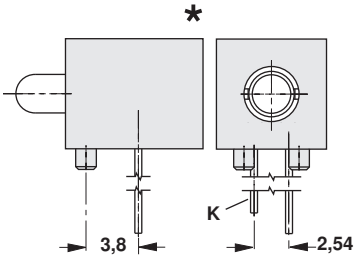
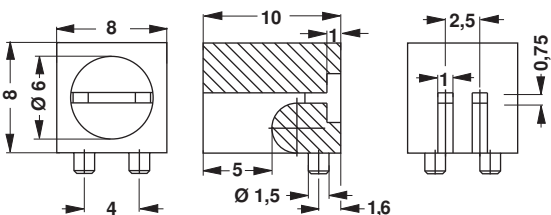
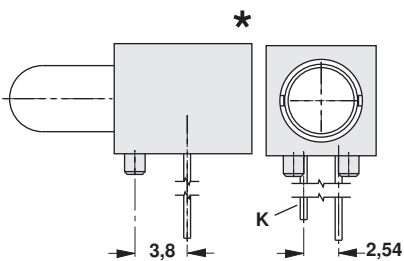
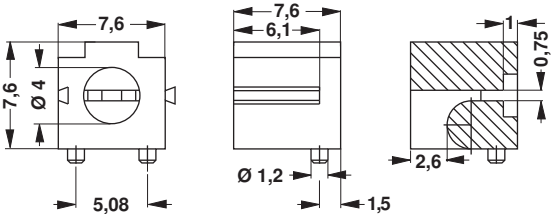
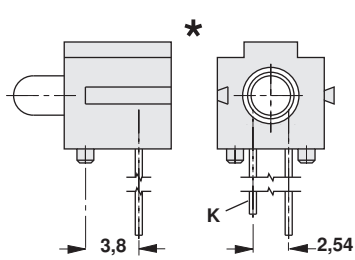
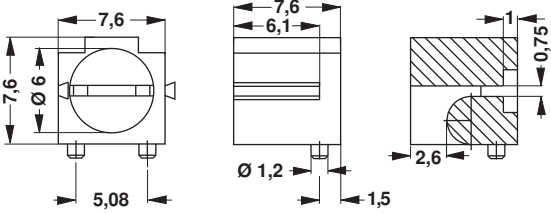
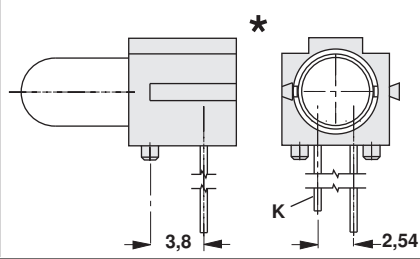
N

			
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.	type	
DH 3 W	for LED Ø3mm	
		
art. no.	type	
DH 5 W	for LED Ø5mm	
		
art. no.	type	
DH 3 R	for LED Ø3mm	
		
art. no.	type	
DH 5 R	for LED Ø5mm	
insulating body material:	PA 4.6. GF	
temperature range:	-40°C... +163°C/ (260°C/10 s)	
class of inflammability:	UL 94 V-0	

A

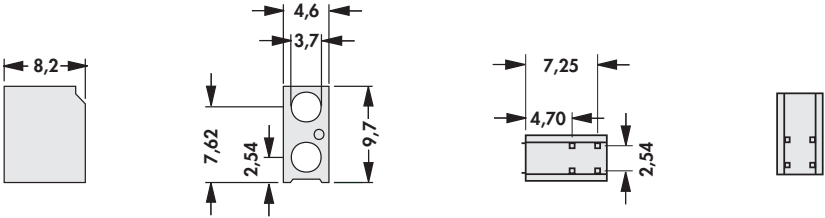
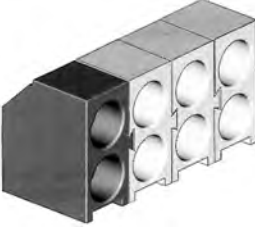
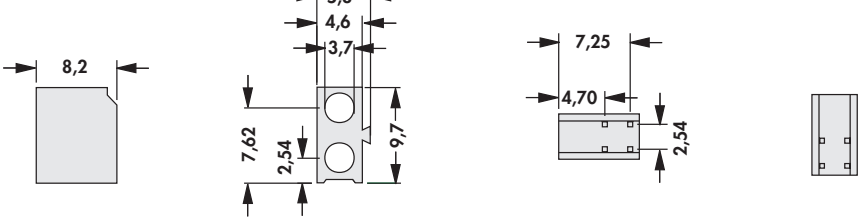
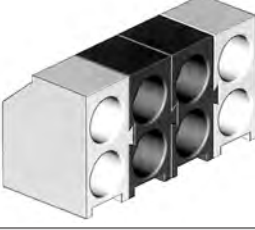
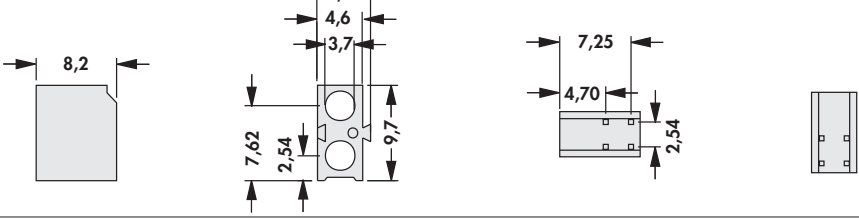
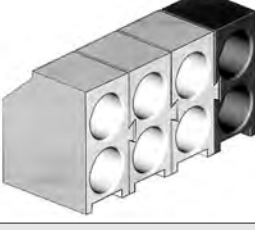
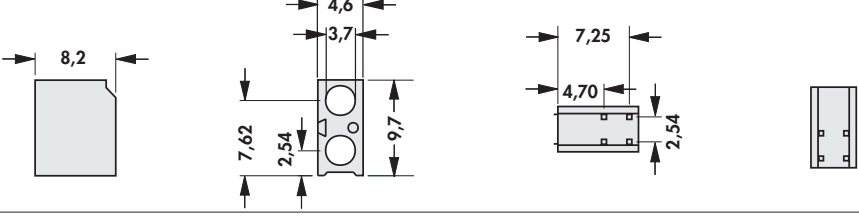
LED-holders

B

LED-holder for LED Ø 3 mm

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

C

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

K

L

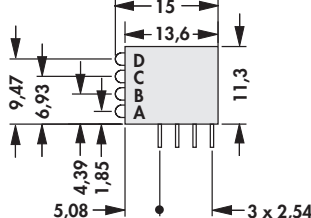
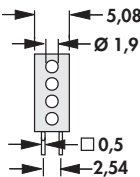
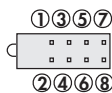
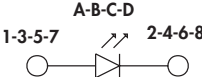
M

N

LED-holders

Fourfold-LED-holders

- standard case, standard colours, diffuse lens, space-saving design, round lens, rectangular lens
- typical data at T_{amb}=25°C und I_F=I_{Ftyp}, 100% DC

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

A

Light pipes for SMDs

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

B

C

D

E

F

G

H

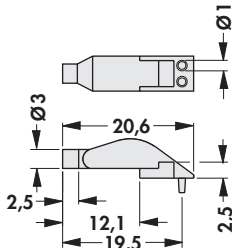
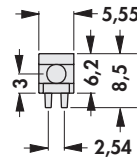
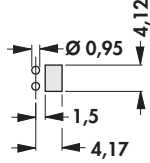
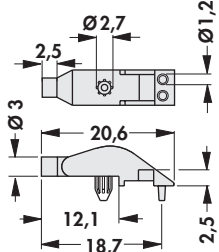
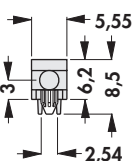
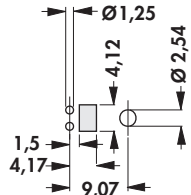
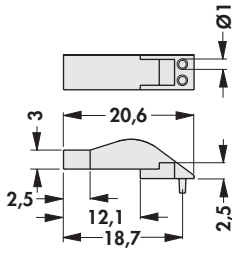
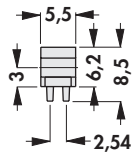
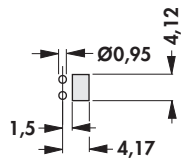
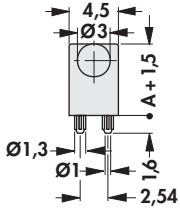
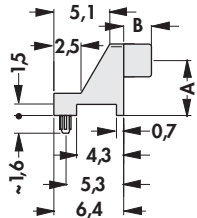
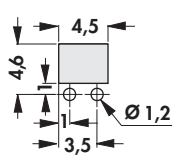
I

K

L

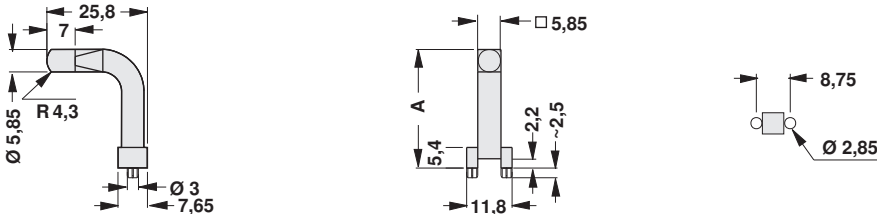
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N

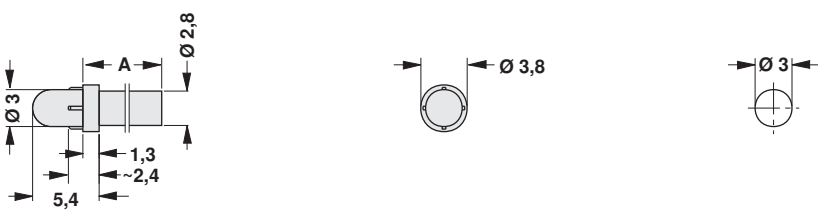
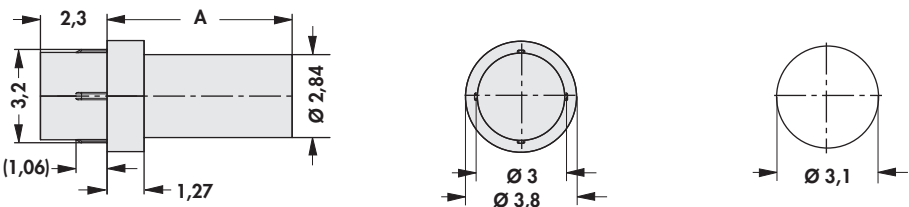
				
art. no.	diameter of lense	way of fixation		
LL 30 HRS	Ø3mm	by alignment pins		
				
art. no.	diameter of lense	way of fixation		
LL 30 HRP	Ø3mm	by press-in pins		
				
art. no.	diameter of lense	way of fixation		
LL 35 HVS	□ 5.5x3mm	by alignment pins		
				
art. no.	diameter of lense	way of fixation	dim. [mm]	
LL 30 WRFP 038	Ø3mm	by press-in pins	A	B
LL 30 WRFP 050			3.8	2.5
LL 30 WRFP 076			5.0	
LL 30 WRFP 102			7.6	
			10.2	
insulating body material:		Polycarbonate, clear		
temperature range:		-30°C... +100°C		
class of inflammability:		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
insulating body material:		Polycarbonate, clear		
temperature range:		-30°C... +100°C		
class of inflammability:		UL 94 V-0		

– 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 025	Ø3mm	2.5	LL 30 PRB 080	Ø3mm	8.0
LL 30 PRB 032		3.2	LL 30 PRB 089		8.9
LL 30 PRB 040		4.0	LL 30 PRB 095		9.5
LL 30 PRB 051		5.1	LL 30 PRB 117		11.7
LL 30 PRB 060		6.0	LL 30 PRB 127		12.7
LL 30 PRB 064		6.4	LL 30 PRB 159		15.9
LL 30 PRB 070		7.0	LL 30 PRB 190		19.0
					
art. no.	diameter of lense	dim. [mm] A	art. no.	diameter of lense	dim. [mm] A
LL 30 PRF 025	Ø3mm	2.5	LL 30 PRF 070	Ø3mm	7.0
LL 30 PRF 032		3.2	LL 30 PRF 080		8.0
LL 30 PRF 040		4.0	LL 30 PRF 089		8.9
LL 30 PRF 048		4.8	LL 30 PRF 100		10.0
LL 30 PRF 050		5.0	LL 30 PRF 159		15.9
LL 30 PRF 060		6.0	LL 30 PRF 211		21.1
LL 30 PRF 064		6.4			
insulating body material:		Polycarbonate, clear			
temperature range:		-30°C... +100°C			
class of inflammability:		UL 94 V-0			

A

Light pipes for SMDs

– panel light pipe 5 mm, ESD protection from panel to PCB

B

C

D

E

F

G

H

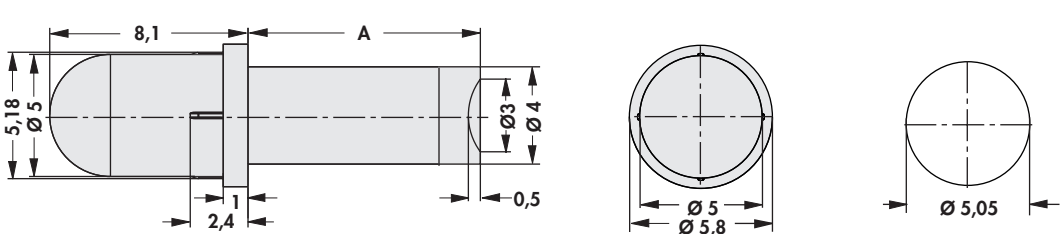
I

K

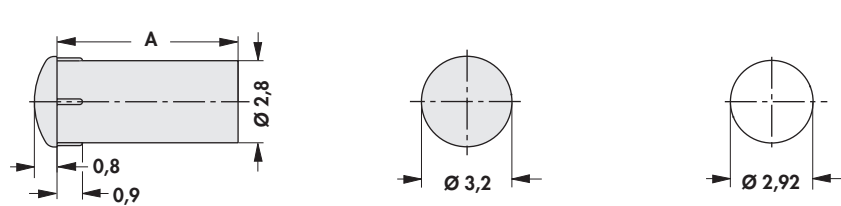
L

M

N

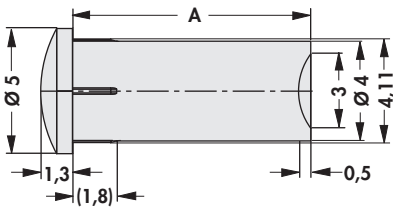
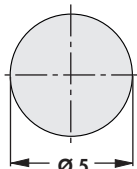
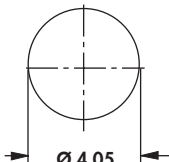
					
art. no.	diameter of lense	dim. [mm] A	art. no.	diameter of lense	dim. [mm] A
LL 50 PRB 032	Ø5mm	3.2	LL 50 PRB 190	Ø5mm	19.0
LL 50 PRB 095		9.5	LL 50 PRB 254		25.4
LL 50 PRB 127		12.7	LL 50 PRB 318		31.8
insulating body material:		Polycarbonate, clear			
temperature range:		-30°C... +100°C			
class of inflammability:		UL 94 V-0			
Lichtleitermaterial:		polycarbonate, clear			

panel light pipe 3 mm, ESD protection from panel to PCB, lentil type "clear" if not specified

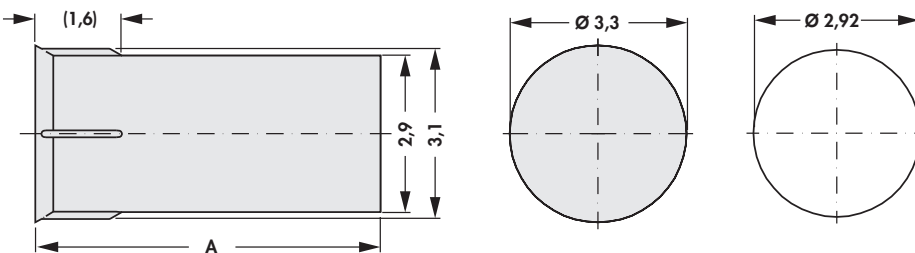
						
art. no.	diameter of lense	dim. [mm] A	art. no.	diameter of lense	dim. [mm] A	
LL 30 PRL 025 ...	Ø3mm	2.5	LL 30 PRL 064	Ø3mm	6.4	
LL 30 PRL 030		3.0	LL 30 PRL 070		7.0	
LL 30 PRL 030 D			LL 30 PRL 080		8.0	
LL 30 PRL 032 ...		3.2	LL 30 PRL 089		8.9	
LL 30 PRL 040		4.0	LL 30 PRL 100		10.0	
LL 30 PRL 048		4.8	LL 30 PRL 127		12.7	
LL 30 PRL 050		5.0	LL 30 PRL 159		15.9	
LL 30 PRL 055		5.5	LL 30 PRL 190		19.0	
LL 30 PRL 060		6.0				
please indicate: ... Lentil type (optional) D = diffuse S = shaded						
insulating body material:		Polycarbonate, clear				
temperature range:		-30°C... +100°C				
class of inflammability:		UL 94 V-0				

Light pipes for SMDs

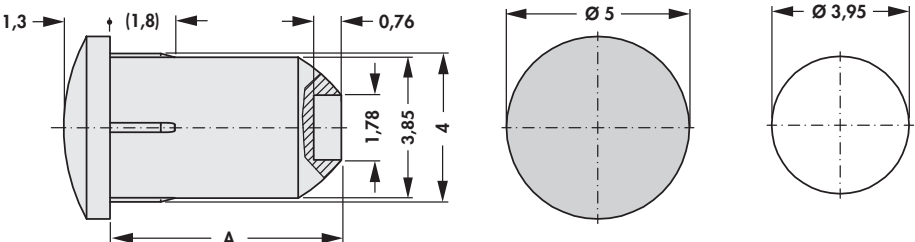
– panel light pipe 5 mm, ESD protection from panel to PCB

	  				
art. no.	diameter of lense	dim. [mm] A	art. no.	diameter of lense	dim. [mm] A
LL 50 PRL 089	Ø5mm	8.9	LL 50 PRL 190	Ø5mm	19.0
LL 50 PRL 095		9.5	LL 50 PRL 254		25.4
LL 50 PRL 159		15.9	LL 50 PRL 318		31.8
insulating body material:		Polycarbonate, clear			
temperature range:		-30°C... +100°C			
class of inflammability:		UL 94 V-0			

panel light pipe 5 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 PRE 032	Ø3mm	3.2	LL 30 PRE 095	Ø3mm	9.5
LL 30 PRE 064		6.4	LL 30 PRE 127		12.7
insulating body material:		Polycarbonate, clear			
temperature range:		-30°C... +100°C			
class of inflammability:		UL 94 V-0			

– panel light pipe 5 mm, ESD protection from panel to PCB

					
art. no.	diameter of lense	dim. [mm] A	art. no.	diameter of lense	dim. [mm] A
LL 50 PRK 032	Ø5mm	3.2	LL 50 PRK 095	Ø5mm	9.5
LL 50 PRK 064		6.4	LL 50 PRK 127		12.7
insulating body material:		Polycarbonate, clear			
temperature range:		-30°C... +100°C			
class of inflammability:		UL 94 V-0			

A

Light pipes for SMDs

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

B

C

D

E

F

G

H

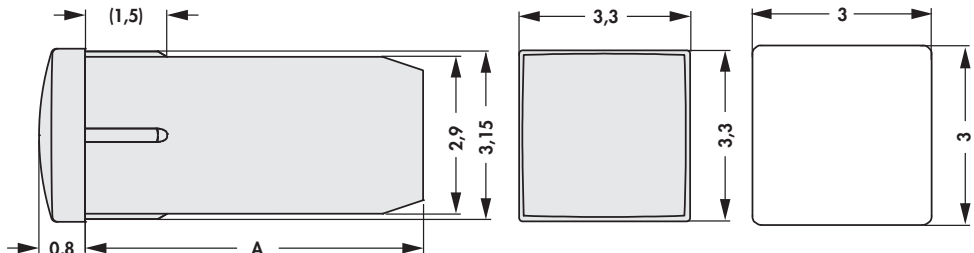
I

K

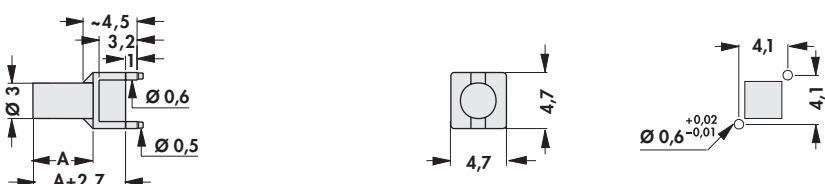
L

M

N

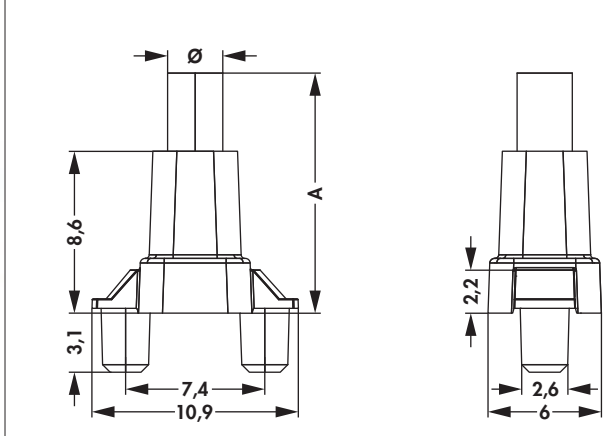
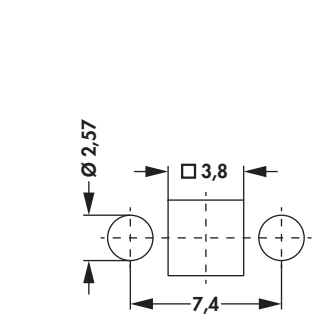
					
art. no.	diameter of lense	dim. [mm] A	art. no.	diameter of lense	dim. [mm] A
LL 30 QRL 032	□ 3,3mm	3.2	LL 30 QRL 095	□ 3,3mm	9.5
LL 30 QRL 064		6.4	LL 30 QRL 127		12.7
insulating body material:		Polycarbonate, clear			
temperature range:		-30°C... +100°C			
class of inflammability:		UL 94 V-0			

– 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			5.0
LL 30 VRFS 075			7.5
insulating body material:		Polycarbonate, clear	
temperature range:		-30°C... +100°C	
class of inflammability:		UL 94 V-0	

Light pipes for SMDs

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

	 				
art. no.	diameter of lense	dim. [mm] A	art. no.	diameter of lense	dim. [mm] A
LL V 20 089 F	Ø2mm	8.9	LL V 30 190 R	Ø3mm	19.0
LL V 20 102 F		10.2	LL V 30 254 F		25.4
LL V 20 114 F		11.4	LL V 30 318 F		31.8
LL V 20 140 F		14.0	LL V 30 445 F		44.5
LL V 20 152 F		15.2	LL V 40 114 F	Ø4mm	11.4
LL V 20 190 ...		19.0	LL V 40 127 R		12.7
LL V 20 254 ...		25.4	LL V 40 140 ...		14.0
LL V 20 381 F		38.1	LL V 40 152 ...		15.2
LL V 30 114 F	Ø3mm	11.4	LL V 40 190 F		19.0
LL V 30 127 F		12.7	LL V 40 445 R		44.5
LL V 30 152 F		15.2			
please indicate: ... lens design (optional) R = round F = shallow					
insulating body material:		PA 4.6. GF			
temperature range:		-30°C... +100°C			
class of inflammability:		UL 94 V-0			
Lichtleitermaterial:		polycarbonate, clear			

A

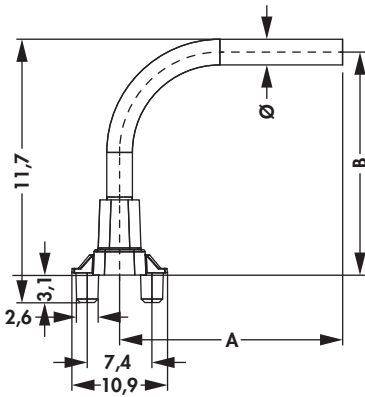
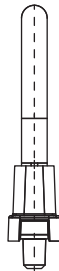
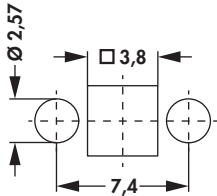
Light pipes for SMDs

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

B

C

D

	  						
art. no.	diameter of lense	dim. [mm]		art. no.	diameter of lense	dim. [mm]	
		A	B			A	B
LL W 30 203 178 ...	Ø3mm	20.3	17.8	LL W 30 254 254 F	Ø3mm	25.4	25.4
LL W 30 203 254 ...			25.4	LL W 30 318 178 F		31.8	17.8
LL W 30 203 381 F			38.1	LL W 40 203 508 R	Ø4mm	20.3	50.8
LL W 30 203 762 F			76.2				
please indicate: ... lens design (optional) R = round F = shallow							
insulating body material:		PA 4.6. GF					
temperature range:		-30°C... +100°C					
class of inflammability:		UL 94 V-0					
Lichtleitermaterial:		polycarbonate, clear					

F

G

H

I

K

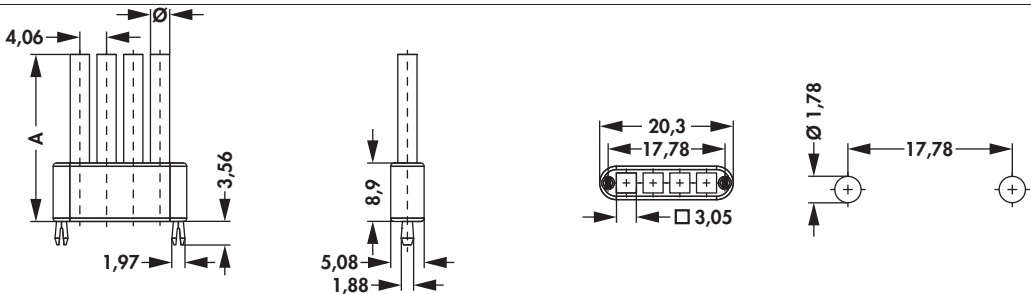
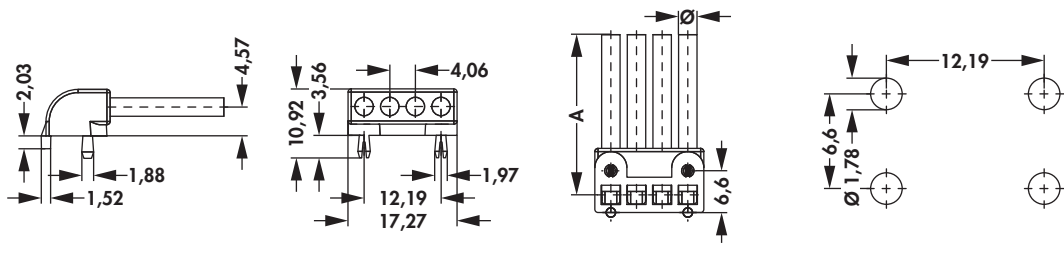
L

M

N

Light pipes for SMDs

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

			
art. no.	diameter of lense	dim. [mm] A	
LL 4 V 20 254 ...	Ø2mm	25.4	
LL 4 V 30 254 ...	Ø3mm		
LL 4 V 40 254 ...	Ø4mm		
insulating body material:		PA 4.6. GF	
temperature range:		-30°C... +100°C	
class of inflammability:		UL 94 V-0	
Lichtleitermaterial:		polycarbonate, clear	
			
art. no.	diameter of lense	dim. [mm] A	
LL 4 W 20 254 ...	Ø2mm	25.4	
LL 4 W 30 254 ...	Ø3mm		
LL 4 W 40 254 ...	Ø4mm		
please indicate:		... lens design (optional) R = round F = shallow	
insulating body material:		PA 4.6. GF	
temperature range:		-30°C... +100°C	
class of inflammability:		UL 94 V-0	
Lichtleitermaterial:		polycarbonate, clear	



OBERFLÄCHEN- VEREDELUNG GMBH

High quality surface treatment for electronic components



Gold-plating

properties: high resistance to wear, good corrosion resistance, temperature stability and solderability

process: drum technology

materials: non-ferrous metals

coating system: copper/nickel/gold



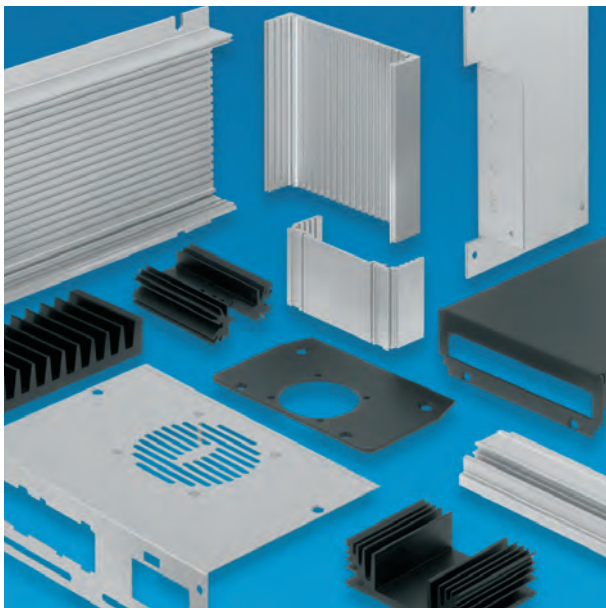
Tin-plating

properties: solderable layers with improved tarnishing and corrosion resistance

process: drum technology

materials: non-ferrous metals

coating system: copper/nickel/tin



Anodising

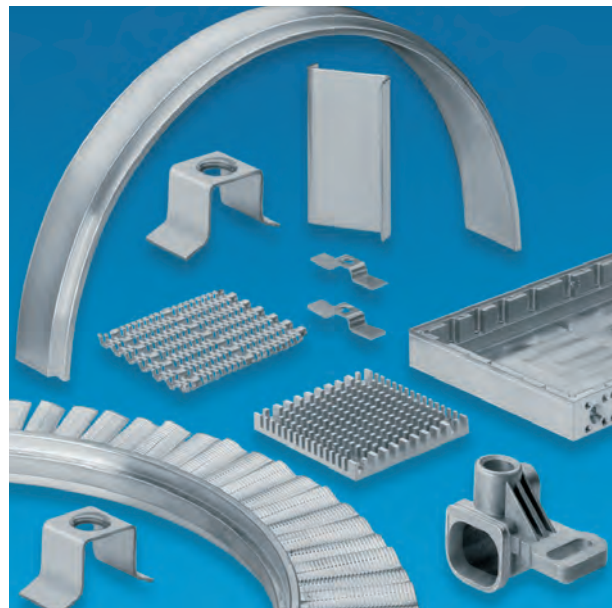
performance: fabrication of corrosion resistant, decorative oxide films

process: anodic oxidation in fully automated equipment

materials: aluminium and aluminium alloys

max. component size: 1500 x 2000 x 450 mm

colour: natural aluminium or black



Degreasing

performance: degreasing of oily or greasy metallic surfaces

process: steam degreasing using chlorinated hydro-carbons in hermetically sealed equipment

material: aluminium and aluminium alloys

min. component size: 30 x 30 x 30 mm

max. component size: 600 x 400 x 380 mm

max. component weight: 80 kg

High quality surface treatment for electronic components



Transparent passivating (surface free from chromium)

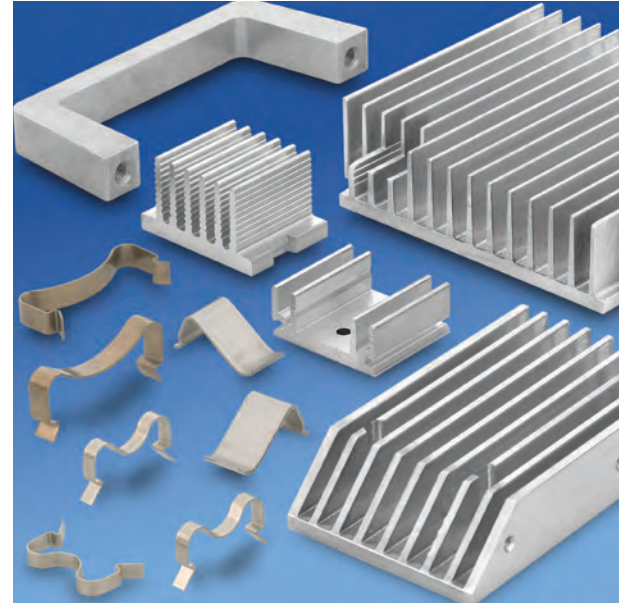
characteristics: environmental compatibility due to chrome free passivation of the aluminium surfaces

process: fabrication of conversion coatings by immersion process

materials: aluminium und aluminium alloys

max. component size: 1500 x 2000 x 450 mm

colour: natural aluminium



Vibratory grinding (trowalization)

characteristics: deburring, removing of sharp edges, rough and fine grinding

process: treatment using vibration technique and grinding tools (trowalization)

materials: aluminium

max. component size: 230 x 200 mm



Anodisation facility

- economization of water by using spray-rinsing, automatized ion exchange installation, cascade water guided system and recirculation of splash water
- reduction of electrical energy by means of current density regulation
- reduction of chemicals by recirculation of the dragged-off chemicals using a compensation of the evaporation losses
- recycling of the sulphuric acid out of the anodizing bathes

Zertifikat

Prüfungsnorm **ISO 9001:2015**

Zertifikat-Registrier-Nr. **01 100 052055**

Unternehmen:



Fischer Oberflächenveredelung GmbH
Nottebohmstr. 26
58511 Lüdenscheid
Deutschland

Geltungsbereich:

Oberflächen für die Elektronik: vergolden, verzinnen, vernickeln, eloxieren, passivieren, trowalisieren

Durch ein Audit wurde der Nachweis erbracht, dass die Forderungen der ISO 9001:2015 erfüllt sind.

Gültigkeit:

Dieses Zertifikat ist gültig vom 15.12.2020 bis 14.12.2023.
Erstzertifizierung 2005

18.01.2021

LiDias

TÜV Rheinland Cert GmbH
Am Grauen Stein · 51105 Köln

Terms and conditions of business

1. General provisions

1.1. The present General Terms and Conditions (GTC) apply to all of our business relationships with our customers ("Purchaser"). The GTC only apply if the Purchaser is an entrepreneur (§ 14 of the German Civil Code), a legal entity of public law or a special fund under public law.

The GTC particularly apply for contracts about the sale and/or the delivery of transportable objects ("Goods"), regardless of whether we manufacture the Goods ourselves or buy them in from suppliers (§§ 433, 651 of the German Civil Code). Unless otherwise agreed, the GTC apply, in the version valid at the time of the Purchaser's order or in the version last transmitted to them, as a framework agreement for similar future contracts, without us having to refer to them each time.

1.2. Our GTC apply exclusively. Deviating, contradicting or additional General Terms and Conditions of the Purchaser are only part of the contract if we have expressly authorised their validity. This approval requirement applies in any case, also if we make deliveries to the Purchaser without reserve, in full knowledge of their Terms and Conditions. Individual, isolated agreements with the Purchaser (including ancillary agreements, additions and changes) always take priority over these GTC. The content of this type of agreement, subject to counterevidence, is to be determined according to a written contract or our written confirmation.

1.3. Legally relevant declarations and announcements of the Purchaser with regards to the contract (for example deadline agreements, defect notifications, withdrawal or reduction) are to be submitted in writing, i.e. in written or text form (for example letter, e-mail, fax). Legal form provisions and other certificates, especially in case of doubts about the legitimation of the declaring party, remain unaffected.

1.4. References to the validity of legal provisions are only for clarification purposes. The legal provisions therefore apply even if there is no reference, unless they have been modified directly in these GTC or expressly excluded.

2. Quotations and orders

Our quotations shall be subject to change without notice and are non-binding. This applies also to information contained in price lists, leaflets etc. Delivery dates stated in our quotations or given to the purchaser by any other means are approximate, and we shall endeavour to keep to them. Delays in delivery shall give no right to claims, unless we have explicitly confirmed such delivery dates and an adequate period of grace granted to us has expired. Orders shall only be binding on us when they have been explicitly confirmed in writing, regardless of the form in which they have been placed with us. Statements made in catalogues are simply descriptions of goods and under no circumstances do they constitute warranted qualities. Furthermore, the characteristics of our samples cannot be regarded as warranted characteristics.

3. Prices

Prices shall be valid only when confirmed by us in writing. They are exclusive of VAT at the current rate and incidentals such as postage and packing, freight, insurance etc., as of storage. If delivery is made more than 3 months after the date of order, we shall be entitled to invoice the price valid at the date of despatch, even though different prices were initially confirmed. The price valid at the date of despatch shall also apply if the order was confirmed without prices being stated. When an order on call is placed, partial deliveries shall be invoiced at the price valid at the date of despatch. Any request by the purchaser for subsequent modifications shall entitle us to amend prices.

4. Conditions of payment

The invoiced sum is to be paid net within 30 days of date of invoice and delivery. If the purchaser is in default with any payment, we are entitled to claim interest for such default at the normal rate of interest charged for current accounts. If we are able to prove that we have incurred greater losses as a result of the delay, we shall be entitled to claim compensation for such damages. We are however entitled at any time, in the context of an ongoing business relationship, to execute a delivery in full or in part only against an advance deposit. We shall declare a corresponding reserve at the latest at the confirmation of the contract.

5. Set-off, right to retention

Only claims which have been recognised by us or have become legally binding may be offset against our invoices. Any right to a retention to be exercised by the purchaser in connection with our claims is explicitly excluded. In case of defects in the delivery, the rights of the Purchaser remain unaffected, particularly with regards to point 10.3. of these GTC.

6. Delivery

The delivery is performed from the storage, wherever the place of fulfilment for the delivery and any subsequent fulfilment may be. Upon request by the Purchaser, the Goods will be sent to a different place of their choice (shipped purchase). Delivery of our goods is explicitly made on behalf of and at the risk of the purchaser. The risk shall pass over to the purchaser when the ordered goods leave our premises. The same applies if goods are collected in our premises from the point in time at which we notify the purchaser that they are ready for collection. Unless we have received instructions to the contrary from the purchaser, we shall decide at our discretion on the most economical delivery method without assuming any liability for the chosen means of delivery.

7. Specially manufactured goods

Components made according to a sample or a drawing or by special request must be taken over and paid for, unless they have a defect we are answerable for and which makes the components completely unfit for the purchaser's purposes. If their fitness for the purchaser's purposes is only reduced, the purchaser may request a reduction of payment but the contract shall not be cancelled.

8. Quantities

We are entitled to supply quantities which are above or below the ordered quantities by up to 10%. Such deviations are usual in this trade and the deliveries are deemed as being in compliance with the contract. If delivery quantities fall below the ordered quantities there shall be no right to subsequent delivery of the missing quantity.

9. Reservation of proprietary rights

9.1. All goods supplied shall remain our property until all current and future claims resulting from the Purchase contract and the business relationship with the purchaser (secured claims) have been paid in full. The purchaser is entitled to dispose of the purchased goods in the ordinary course of business transactions. Reservation of proprietary rights also applies to products resulting from processing, mixing up or combining our goods, in which case we are considered as manufacturers. In the case where our goods are processed, mixed up or combined with goods of third parties, and the proprietary rights of such third parties remain in force, we are entitled to co-ownership according to the proportion of the amount invoiced for such processed goods. In such cases such rights to co-ownership shall be safeguarded by the purchaser.

9.2. The purchaser shall transfer to us, as a security, his claims against third parties resulting from the re-sale of our goods in full or in the proportion of our co-ownership (see subparagraph 9.1). He is entitled to collect the amount of such claims on our behalf until revoked or until cessation of his payments made to us. The purchaser is not entitled to assign these claims to third parties.

9.3. The purchaser is not entitled to mortgage or transfer the goods which are subject to reservation by way of security.

9.4. The purchaser shall advise us immediately at any seizure of our goods or of any infringement of our rights by third parties.

9.5. In case of a default in payment or a deterioration in the financial situation, we are entitled to request immediate handing over of the goods which are subject to reservation. Any time limited claims shall immediately become due.

9.6. If the value of the securities exceeds our claims by more than 20%, securities to a corresponding amount will be released by us on request at our discretion.

9.7. The extended retention of title (9.1.) does not apply to prepayment orders that have been paid in full.

10. Warranty

10.1. We expressly point out that all information and data is given to the best of our knowledge and belief. The user is solely responsible for the proper use of our products and he should check their suitability for the intended application. Fischer Elektronik do not assume any warranty, whether expressed or implied, for the suitability, function or merchantability of their products in specific or general applications, and they cannot be held liable for accidental or consequential damage due to non-observance of the above.

10.2. Claims for defects can only be considered if the purchaser has complied with their obligation to check goods and submit a complaint as per Sections 377, 381 of the German Commercial Code [HGB]. If goods have a defect attributable to us, we are obliged to effect a cure, excluding the purchaser's right to withdraw from the contract or to reduce the purchase price

(reduction), unless we are entitled to refuse to effect a cure by virtue of legal regulations. The purchaser shall grant us an adequate period of grace for effecting a cure. A cure may at our discretion be an elimination of the defect (rectification) or the supply of new products. We are entitled to determine the cure owed according to the payment of the purchase price due by the Purchaser. The Purchaser, however, is entitled to retain a part of the purchase price that is proportionate to the defect. The expenses incurred for the verification and cure, particularly transport, road, work and materials costs (not: expansion and installation costs) are borne by us, if there is indeed a defect. Otherwise, we can require that the Purchaser bear the costs arising from the unjustified defect rectification request (particularly examination and transport costs), unless the Purchaser could not have been aware that the defect rectification was unnecessary.

10.3. If rectification of the defect has failed, the purchaser shall be entitled to request a reduction in the purchase price (abatement) or to withdraw from the contract. Rectification shall be deemed to have failed after the second vain attempt, unless further attempts are reasonable in view of the object of the contract and can be reasonably imposed on the purchaser.

10.4. The purchaser's right to put forward further claims for damages shall remain unaffected by this.

10.5. The purchaser's warranty claims shall be subject to a time limit of 12 months from the delivery of the goods to the purchaser, unless we have fraudulently concealed the defect. In this case, the legal regulations shall apply.

10.6. The purchaser's claims for damages shall be subject to a time limit of 12 months from the delivery of the goods. This does not apply if we, our legal representatives or other vicarious agents are responsible for death, personal injury or physical harm, or if we or our legal representatives have been grossly negligent, or if our vicarious agents have acted with intent.

10.7. Contractual penalties which have been agreed between our customers and their customers cannot be imposed upon us unless we have been notified of them and have agreed to them in writing prior to accepting an order.

10.8. If it becomes apparent (by the opening of an application for an insolvency procedure for example) after the conclusion of the contract that our claims to the purchase price are endangered due to lacking payment capacities of the Purchaser, we will then be entitled to refuse the delivery and – after a possible period of notice – to withdraw from the contract in accordance with the legal provisions (§ 321 of the German Civil Code). For contracts about the manufacturing of specific items (making to specification), we can declare the withdrawal immediately; the legal regulations about the dispensability of giving a period of notice remain unaffected.

11. Withdrawal

When delivery in accordance with the contract is not possible for reasons beyond our control, we are entitled to withdraw from the contract. Such withdrawal shall not entitle the purchaser to assert any right against us.

12. Export clause

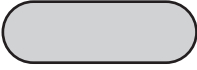
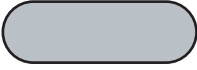
We are not obliged to reimburse damages arising from delays in delivery or it being completely impossible to deliver as a result of statutory or official export restrictions, unless we act with intent or gross negligence suffered by the Customer or other persons. The Customer's duty to pay the agreed remuneration shall not be affected by disruptions in our performance as a result of export restrictions. We shall be entitled to withdraw from the contract if, after the contract is signed, our performance is disrupted as a result of export restrictions.

13. Place of performance and jurisdiction, applicable law

13.1. The place of performance and the place of venue for deliveries and payments and for any litigation arising between us and the purchaser shall be the headquarters of our company.

13.2. The relationship between the contractual parties shall be regulated solely in accordance with the law in force in the Federal Republic of Germany. The regulations of international uniform law, particularly the UN CISG, shall not apply.

art. no.	HEATSINKS SURFACES & CASES SURFACES
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AL	 raw degreased aluminium
BZ	 raw pickled aluminium
LP	 outside black lacquered RAL 9005 / chrome-free transparent passivated
ME	 clear anodised
MI	 solderable surface
SA	 black anodised
TP	 chrome-free transparent passivated

art. no.	CONNECTOR CONTACT SURFACE FINISH
----------	----------------------------------

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

art. no.	RAL	COLOURS	ARTICLES
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NB	5022	 night blue	system cases "RackCase" / shell cases
S	9005	 deep black	TG / shell cases / system cases "RackCase"
TB	5018	 turquoise blue	system cases "RackCase" / shell cases
UL	5002	 ultramarine blue	Plusline / shell cases

The surface coatings and colours listed here in the catalogue only represent the standard designs.
Other coating types and colours can be realised on request according to customer-specific requirements.

fischer elektronik

to cool to protect to connect



f.cool.e

Extruded heatsinks LED headsinks Cooling aggregates



Extruded heatsinks
LED-headsinks
Cooling aggregates
Thermally conductive mat.

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Cases 19" technology Accessories



Cases
19" technology
Accessories

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f.collect



Slip-Case for
collecting the Fischer
catalogues

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