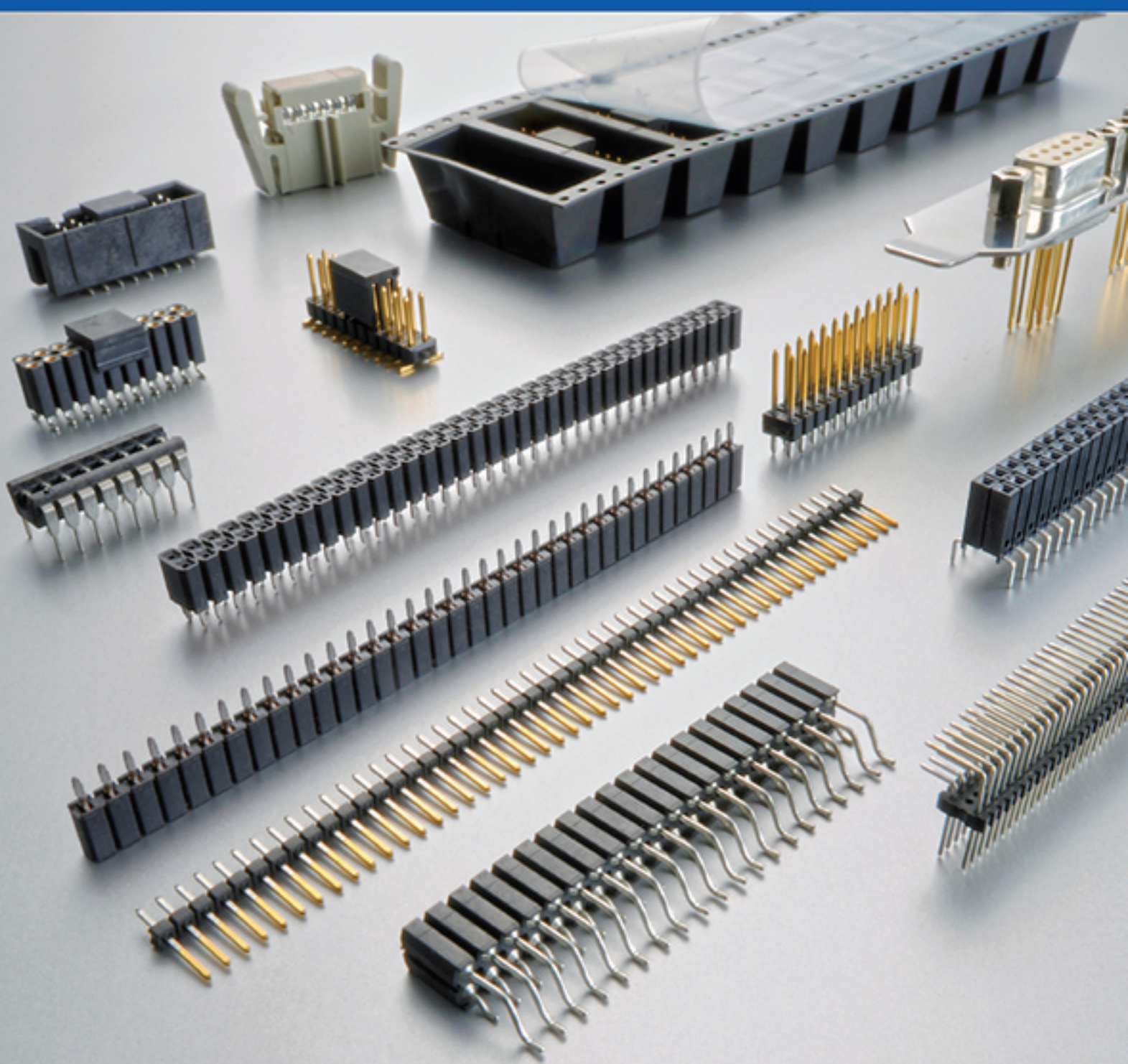


to cool to protect to connect



f.con.e 14/15

Sockets

Connectors



ISO 9001
ISO 14001
ISO 27001

Brackets

Alphanumerical product list

| art. no. | page | art. no. | page | art. no. | page | art. no. | page |
|---------------|------|-----------------|------|--------------|------|------------------|------|
| 1706 G | F 17 | BL KG 3 | G 53 | DB 37 SMD TR | I 15 | DIL 08 SMD SK5 Z | F 8 |
| 1831 Z | F 17 | BL LP 1 | G 51 | DB 37 T | I 2 | DIL 10 G | F 6 |
| ASL 06 SMD | H 3 | BL LP 2 | G 51 | DB 37 WW 3 | I 3 | DIL 10 M | F 2 |
| ASL 08 SMD | H 3 | BL LP 3 | G 51 | DB 50 L | I 3 | DIL 10 U | F 3 |
| ASL 10 SMD | H 3 | BL LP 4 | G 51 | DB 50 LA | I 4 | DIL 14 E | F 4 |
| ASL 12 SMD | H 3 | BL LP 5 SMD | G 57 | DB 50 T | I 2 | DIL 14 G | F 6 |
| ASL 14 SMD | H 3 | BL LP 6 SMD | G 57 | DB 50 WW 3 | I 3 | DIL 14 M | F 2 |
| ASL 16 SMD | H 3 | BLM 1 SMD | G 73 | DB BK 09 | I 11 | DIL 14 N | F 2 |
| ASL 20 SMD | H 3 | BLM 2 SMD | G 73 | DB BK 09 LP | I 12 | DIL 14 O | F 2 |
| ASL 26 SMD | H 3 | BLM 3 SMD | G 73 | DB BK 15 | I 11 | DIL 14 P | F 3 |
| ASL 34 SMD | H 3 | BLM KG 1 | G 71 | DB BK 15 LP | I 12 | DIL 14 PEK | F 4 |
| ASL 40 SMD | H 3 | BLM KG 2 | G 71 | DB BK 25 | I 11 | DIL 14 U | F 3 |
| ASL 50 SMD | H 3 | BLM LA 1 | G 71 | DB BK 25 LP | I 12 | DIL 14 W 90 | F 6 |
| ASLA 06 G | H 2 | BLM LG 1 | G 71 | DB BK 37 | I 11 | DIL 16 06 E Z | F 5 |
| ASLA 08 G | H 2 | BLM LG 2 | G 71 | DB BK 37 LP | I 12 | DIL 16 06 H Z | F 5 |
| ASLA 10 G | H 2 | BLP 1 | G 66 | DB BK 50 | I 11 | DIL 16 E | F 4 |
| ASLA 12 G | H 2 | BLP 2 | G 66 | DBM 13K3 L20 | I 14 | DIL 16 G | F 6 |
| ASLA 14 G | H 2 | BLR 1 025 Z | G 72 | DBM 3K3 L20 | I 14 | DIL 16 M | F 2 |
| ASLA 16 G | H 2 | BLR 1 050 Z | G 72 | DBM 7K2 L20 | I 14 | DIL 16 N | F 2 |
| ASLA 20 G | H 2 | BLR 2 050 Z | G 72 | DB WE 3 | I 5 | DIL 16 O | F 2 |
| ASLA 26 G | H 2 | BLR 2 100 Z | G 72 | DB WE 4 | I 5 | DIL 16 P | F 3 |
| ASLA 34 G | H 2 | BLR 3 025 Z | G 72 | DB WK | I 5 | DIL 16 PEK | F 4 |
| ASLA 40 G | H 2 | BLR 3 050 Z | G 72 | DB WMV 4 | I 5 | DIL 16 Q | F 3 |
| ASLA 50 G | H 2 | BLR 4 100 Z | G 72 | DB WP ... 9 | I 17 | DIL 16 SMD M | F 8 |
| ASLG 06 | H 2 | BLR 6 SMD 100 Z | G 74 | DB WP ... 15 | I 17 | DIL 16 SMD SK5 Z | F 8 |
| ASLG 08 | H 2 | BLR 7 SMD 50 Z | G 74 | DB WP ... 25 | I 17 | DIL 18 06 E Z | F 5 |
| ASLG 10 | H 2 | BLY 1 | G 67 | DB WR | I 5 | DIL 18 06 H Z | F 5 |
| ASLG 12 | H 2 | BLY 2 | G 67 | DB WR 3 | I 6 | DIL 18 E | F 4 |
| ASLG 14 | H 2 | BLY 3 | G 67 | DB WR 4 | I 6 | DIL 18 M | F 2 |
| ASLG 16 | H 2 | BLY 4 | G 67 | DDH 3 E | I 6 | DIL 20 E | F 4 |
| ASLG 20 | H 2 | BLY 5 SMD | G 68 | DDH 3 M | I 6 | DIL 20 G | F 6 |
| ASLG 26 | H 2 | BLY 6 SMD | G 68 | DDH 3 R | I 6 | DIL 20 M | F 2 |
| ASLG 34 | H 2 | BLY 8 SMD | G 69 | DDH 5 E | I 7 | DIL 20 O | F 2 |
| ASLG 40 | H 2 | BLY 9 SMD | G 70 | DDH 5 L | I 7 | DIL 20 Q | F 3 |
| ASLG 50 | H 2 | CAB 3 06 03 Z | F 15 | DDH 3L | I 6 | DIL 20 SMD M | F 8 |
| BADM 09 | I 22 | CAB 3 08 03 Z | F 15 | DF 1 MK 9 Z | G 75 | DIL 20 SMD SK5 Z | F 8 |
| BADM 15 | I 22 | CAB 3 12 03 Z | F 15 | DF 2 MK 9 Z | G 75 | DIL 22 03 M | F 2 |
| BADM 25 | I 22 | CAB 3 14 03 Z | F 15 | DF 2 OK 9 Z | G 75 | DIL 22 M | F 2 |
| BADM 37 | I 22 | CAB 3 16 03 Z | F 15 | DF OB 06 | G 75 | DIL 22 O | F 2 |
| BADP 09 | I 22 | CAB 4 G | G 76 | DF OB 07 | G 75 | DIL 22 U | F 3 |
| BADP 15 | I 22 | CAB 4 Z | G 76 | DF OB 10 | G 75 | DIL 24 03 M | F 2 |
| BADP 25 | I 22 | CAB 5 05 G | G 76 | DF OB 17 | G 75 | DIL 24 03 SMD M | F 8 |
| BADP 37 | I 22 | CAB 5 10 G | G 76 | DH 3 R | I 5 | DIL 24 04 M | F 2 |
| BADP 50 | I 22 | CAB 5 Z | G 76 | DH 3 V | I 4 | DIL 24 M | F 2 |
| BK 01 32 | H 10 | CAB 6 05 G | G 76 | DH 3 W | I 5 | DIL 24 U | F 3 |
| BL 1 | G 50 | CAB 6 10 G | G 76 | DH 5 R | I 5 | DIL 28 03 M | F 2 |
| BL 2 | G 50 | CAB 6 Z | G 76 | DH 5 SRC | I 4 | DIL 28 E | F 4 |
| BL 3 | G 50 | CAB 9 G | G 77 | DH 5 VC | I 4 | DIL 28 M | F 2 |
| BL 4 | G 50 | CAB 10 G S | G 77 | DH 5 W | I 5 | DIL 28 SMD M | F 8 |
| BL 5 | G 53 | CAB 11 G S | G 77 | DH 09 | I 21 | DIL 32 E | F 4 |
| BL 5 025 | G 53 | CAB 15 G S | G 77 | DH 15 | I 21 | DIL 32 M | F 2 |
| BL 6 | G 53 | CB 1 | F 14 | DH 25 | I 21 | DIL 36 M | F 2 |
| BL 6 025 | G 53 | CB 3 | F 14 | DH 37 | I 21 | DIL 40 E | F 4 |
| BL 7 | G 53 | CB 6 | F 14 | DH 50 | I 21 | DILS 04 PK 5 | F 6 |
| BL 8 | G 54 | DB ... 9 P | I 16 | DH SG 09 ... | I 18 | DILS 06 PK 3 | F 6 |
| BL 9 | G 55 | DB ... 15 P | I 16 | DH SG 15 ... | I 18 | DILS 08 GA LO | F 7 |
| BL 10 | G 55 | DB ... 25 P | I 16 | DH SG 25 ... | I 18 | DILS 08 GB LO | F 7 |
| BL 11 254 | G 52 | DB ... 37 P | I 16 | DH SG 37 ... | I 18 | DILS 08 GO | F 7 |
| BL 11 508 | G 52 | DB 09 L | I 3 | DH SG 50 ... | I 18 | DILS 14 GA LO | F 7 |
| BL 12 650 | G 52 | DB 09 LA | I 4 | DH SV 09 | I 19 | DILS 14 GB LO | F 7 |
| BL 12 762 | G 52 | DB 09 SMD TR | I 15 | DH SV 15 | I 19 | DILS 14 GO | F 7 |
| BL 13 | G 55 | DB 09 T | I 2 | DH SV 25 | I 19 | DILS 14 PK 3 | F 6 |
| BL 14 | G 55 | DB 09 WW 3 | I 3 | DH SV 37 | I 19 | DILS 16 6 PK 3 | F 7 |
| BL 15 SMD 043 | G 58 | DB 15 L | I 3 | DH SV 50 | I 19 | DILS 16 GA LO | F 7 |
| BL 15 SMD 089 | G 58 | DB 15 LA | I 4 | DIL 4 OR | F 5 | DILS 16 GB LO | F 7 |
| BL 16 SMD 067 | G 59 | DB 15 SMD TR | I 15 | DIL 6 E | F 4 | DILS 16 GO | F 7 |
| BL 16 SMD 113 | G 59 | DB 15 T | I 2 | DIL 6 M | F 2 | DILS 16 PK 3 | F 6 |
| BL 17 SMD | G 60 | DB 15 WW 3 | I 3 | DIL 6 P | F 3 | DILS 16 PK 5 | F 6 |
| BL 18 141 | G 56 | DB 25 L | I 3 | DIL 8 1 OR | F 5 | DILS 18 GA LO | F 7 |
| BL 18 219 | G 56 | DB 25 LA | I 4 | DIL 8 2 OR | F 5 | DILS 18 GB LO | F 7 |
| BL 19 141 | G 56 | DB 25 SMD TR | I 15 | DIL 8 E | F 4 | DILS 18 GO | F 7 |
| BL 19 219 | G 56 | DB 25 T | I 2 | DIL 8 G | F 6 | DILS 18 PK 5 | F 6 |
| BL 20 SMD | G 61 | DB 25 WW 3 | I 3 | DIL 8 M | F 2 | DILS 24 GA LO | F 7 |
| BL 21 650 | G 52 | DB 37 L | I 3 | DIL 8 O | F 2 | DILS 24 GB LO | F 7 |
| BL 21 762 | G 52 | DB 37 LA | I 4 | DIL 8 Q | F 3 | DILS 24 GO | F 7 |

Alphanumerical product list

| art. no. | page | art. no. | page | art. no. | page | art. no. | page |
|------------------|------|----------------|------|------------|------|------------------|------|
| DILS 28 6 PK 3 | F 7 | FD S 15 L 1000 | I 10 | KHPC 016 | K 8 | KHPC 398 O | K 23 |
| DILS 28 GB LO | F 7 | FD S 15 T 1000 | I 9 | KHPC 017 | K 9 | KHPC 404 | K 23 |
| DILS 28 GO | F 7 | FD S 25 L 1000 | I 10 | KHPC 018 | K 15 | KHPC 407 | K 23 |
| DILS 40 6 PK 3 | F 7 | FD S 25 T 1000 | I 9 | KHPC 019 | K 14 | KHPC 439 | K 24 |
| DILS 40 GA LO | F 7 | FD S 37 L 1000 | I 10 | KHPC 022 | K 16 | KHPC 454 | K 11 |
| DILS 40 GB LO | F 7 | FD S 37 T 1000 | I 9 | KHPC 024 | K 14 | KHPC 455 | K 15 |
| DILS 40 GO | F 7 | FLMP 06 | H 5 | KHPC 026 | K 17 | KK 04 Z | H 9 |
| DLH 21 AGEH | L 7 | FLMP 08 | H 5 | KHPC 027 | K 17 | KK 06 Z | H 9 |
| DLH 21 ASEH | L 7 | FLMP 10 | H 5 | KHPC 028 | K 17 | KK 08 Z | H 9 |
| DLH 21 AYEH | L 7 | FLMP 12 | H 5 | KHPC 029 | K 20 | KK 10 Z | H 9 |
| DS ... 9 P | I 16 | FLMP 14 | H 5 | KHPC 031 | K 19 | KK 12 Z | H 9 |
| DS ... 15 P | I 16 | FLMP 16 | H 5 | KHPC 032 | K 19 | KK 14 Z | H 9 |
| DS ... 25 P | I 16 | FLMP 20 | H 5 | KHPC 033 | K 19 | KK 16 Z | H 9 |
| DS ... 37 P | I 16 | FLMP 26 | H 5 | KHPC 034 | K 20 | KK 18 Z | H 9 |
| DS 09 L | I 3 | FLMP 34 | H 5 | KHPC 035 | K 19 | KK 20 Z | H 9 |
| DS 09 LA | I 4 | FLMP 40 | H 5 | KHPC 036 | K 20 | KK 24 Z | H 9 |
| DS 09 SMD TR | I 15 | FLMP 50 | H 5 | KHPC 038 | K 13 | KK 28 Z | H 9 |
| DS 09 T | I 2 | FV 03 | H 4 | KHPC 040 | K 14 | KK 40 Z | H 9 |
| DS 09 WW 3 | I 3 | FV 04 | H 4 | KHPC 041 | K 13 | KK W | H 10 |
| DS 15 L | I 3 | FV 05 | H 4 | KHPC 042 | K 16 | KT 0915 | I 22 |
| DS 15 LA | I 4 | FV 06 | H 4 | KHPC 043 | K 18 | KT 2550 | I 22 |
| DS 15 SMD TR | I 15 | FV 07 | H 4 | KHPC 051 | K 20 | KT SV | I 20 |
| DS 15 T | I 2 | FV 08 | H 4 | KHPC 052 | K 17 | LB 02 G | F 14 |
| DS 15 WW 3 | I 3 | FV 10 | H 4 | KHPC 053 | K 10 | LB 03 G | F 14 |
| DS 25 L | I 3 | FV 12 | H 4 | KHPC 054 | K 17 | LB 04 G | F 14 |
| DS 25 LA | I 4 | FV 13 | H 4 | KHPC 058 | K 19 | LB 06 G | F 14 |
| DS 25 SMD TR | I 15 | FV 14 | H 4 | KHPC 061 | K 13 | LB SL 0508 | F 15 |
| DS 25 T | I 2 | FV 16 | H 4 | KHPC 065 | K 11 | LB SL 0762 | F 15 |
| DS 25 WW 3 | I 3 | FV 17 | H 4 | KHPC 069 | K 15 | LB SL 1016 | F 15 |
| DS 37 L | I 3 | FV 18 | H 4 | KHPC 070 | K 17 | LB SL 1524 | F 15 |
| DS 37 LA | I 4 | FV 20 | H 4 | KHPC 072 | K 10 | LB SL LP 039 SMD | F 16 |
| DS 37 SMD TR | I 15 | FV 24 | H 4 | KHPC 073 | K 14 | LB SLY 06 | F 15 |
| DS 37 T | I 2 | FV 25 | H 4 | KHPC 075 | K 16 | LEB 01 G | F 14 |
| DS 37 WW 3 | I 3 | HD B 15 L | I 7 | KHPC 076 | K 12 | LEB 02 G | F 14 |
| DS 50 L | I 3 | HD B 15 T | I 8 | KHPC 078 | K 13 | LEB 03 G | F 14 |
| DS 50 LA | I 4 | HD B 26 L | I 7 | KHPC 085 | K 22 | LL 30 HRP | L 8 |
| DS 50 T | I 2 | HD B 26 T | I 8 | KHPC 093 | K 8 | LL 30 HRS | L 8 |
| DS 50 WW 3 | I 3 | HD B 44 L | I 7 | KHPC 094 | K 8 | LL 30 PRB 032 | L 9 |
| DS BK 09 | I 11 | HD B 44 T | I 8 | KHPC 095 | K 9 | LL 30 PRB 064 | L 9 |
| DS BK 09 LP | I 12 | HD S 15 L | I 7 | KHPC 096 | K 8 | LL 30 PRB 089 | L 9 |
| DS BK 15 | I 11 | HD S 15 T | I 8 | KHPC 131 | K 9 | LL 30 PRL 032 | L 9 |
| DS BK 15 LP | I 12 | HD S 26 L | I 7 | KHPC 138 | K 11 | LL 30 PRL 064 | L 9 |
| DS BK 25 | I 11 | HD S 26 T | I 8 | KHPC 141 | K 11 | LL 30 PRL 089 | L 9 |
| DS BK 25 LP | I 12 | HD S 44 L | I 7 | KHPC 142 | K 10 | LL 30 PRL 127 | L 9 |
| DS BK 37 | I 11 | HD S 44 T | I 8 | KHPC 143 | K 11 | LL 30 PRL 159 | L 9 |
| DS BK 37 LP | I 12 | HFD 09 | I 24 | KHPC 144 | K 11 | LL 30 VRFS 024 | L 9 |
| DS BK 50 | I 11 | HFD 15 | I 24 | KHPC 160 | K 11 | LL 30 VRFS 050 | L 9 |
| DSM 13K3 L20 | I 13 | HFD 25 | I 24 | KHPC 177 | K 12 | LL 30 VRFS 075 | L 9 |
| DSM 3K3 L20 | I 13 | HFD 37 | I 24 | KHPC 178 | K 12 | LL 30 WRFP 038 | L 8 |
| DSM 7K2 L20 | I 13 | HFK B 09 | I 24 | KHPC 179 | K 12 | LL 30 WRFP 050 | L 8 |
| DS WE 3 | I 15 | HFK B 15 | I 24 | KHPC 185 | K 13 | LL 30 WRFP 076 | L 8 |
| DS WE 4 | I 15 | HFK B 25 | I 24 | KHPC 187 | K 13 | LL 30 WRFP 102 | L 8 |
| DS WK | I 15 | HFK S 09 | I 24 | KHPC 188 | K 14 | LL 35 HVS | L 8 |
| DS WMV 4 | I 15 | HFK S 15 | I 24 | KHPC 189 | K 13 | LL 60 WRB 254 | L 9 |
| DS WP ... 9 | I 17 | HFK S 25 | I 24 | KHPC 200 | K 15 | MAH 31 | L 2 |
| DS WP ... 15 | I 17 | ISQ 04 | F 13 | KHPC 218 | K 15 | MAH 41 | L 2 |
| DS WP ... 25 | I 17 | ISQ 05 | F 13 | KHPC 225 | K 15 | MAH 51 | L 2 |
| DS WR | I 15 | ISQ 06 | F 13 | KHPC 229 | K 16 | MAH 61 | L 2 |
| DS WR 3 | I 16 | ISQ 07 | F 13 | KHPC 230 | K 16 | MAH 71 | L 2 |
| DS WR 4 | I 16 | ISQ 08 | F 13 | KHPC 241 | K 16 | MAH 81 | L 2 |
| D W 9 37 | H 10 | KHPC 0 L | K 3 | KHPC 242 | K 16 | MAH 89 | L 2 |
| FD A ... 09 1000 | I 9 | KHPC 0 O | K 3 | KHPC 243 | K 17 | MAH 99 | L 2 |
| FD A ... 15 1000 | I 9 | KHPC 002 | K 8 | KHPC 262 | K 18 | MAH 301 | L 3 |
| FD A ... 25 1000 | I 9 | KHPC 003 | K 8 | KHPC 267 | K 20 | MAH 302 | L 3 |
| FD A ... 37 1000 | I 9 | KHPC 005 | K 11 | KHPC 270 | K 19 | MAH 303 | L 3 |
| FD B 09 L 1000 | I 10 | KHPC 006 | K 10 | KHPC 271 | K 19 | MAH 304 | L 3 |
| FD B 09 T 1000 | I 9 | KHPC 007 | K 8 | KHPC 277 | K 20 | MAH 305 | L 3 |
| FD B 15 L 1000 | I 10 | KHPC 008 | K 8 | KHPC 295 | K 20 | MAH 306 | L 3 |
| FD B 15 T 1000 | I 9 | KHPC 009 | K 10 | KHPC 308 | K 20 | MAH 307 | L 3 |
| FD B 25 L 1000 | I 10 | KHPC 010 | K 8 | KHPC 325 | K 21 | MAH 308 | L 3 |
| FD B 25 T 1000 | I 9 | KHPC 011 | K 8 | KHPC 335 | K 22 | MAH 309 | L 3 |
| FD B 37 L 1000 | I 10 | KHPC 012 | K 10 | KHPC 365 | K 23 | MAH 310 | L 3 |
| FD B 37 T 1000 | I 9 | KHPC 013 | K 9 | KHPC 390 | K 22 | MAH 401 | L 2 |
| FD S 09 L 1000 | I 10 | KHPC 014 | K 8 | KHPC 391 | K 22 | MAH 402 | L 2 |
| FD S 09 T 1000 | I 9 | KHPC 015 | K 10 | KHPC 394 O | K 23 | MAH 403 | L 2 |

Alphanumerical product list

| art. no. | page | art. no. | page | art. no. | page | art. no. | page |
|------------|------|--------------|------|-------------|------|---------------|------|
| MAH 404 | L 2 | MK LP 242 | G 5 | PVY 50 | H 7 | SL 3 182 | G 9 |
| MAH 405 | L 2 | PCI 0 L | K 3 | PVY W | H 10 | SL 3 207 | G 9 |
| MAH 406 | L 2 | PCI 0 O | K 3 | QS 25 GS | F 13 | SL 4 025 | G 9 |
| MAH 407 | L 2 | PCI 004 | K 7 | RS HH | I 19 | SL 4 101 | G 9 |
| MAH 408 | L 2 | PCI 005 | K 7 | RS SH 3 | I 19 | SL 4 152 | G 9 |
| MAH 409 | L 2 | PCI 006 O | K 7 | RS SH 4 | I 19 | SL 5 071 | G 13 |
| MAH 410 | L 2 | PCI 011 | K 9 | RS SH D | I 20 | SL 5 097 | G 13 |
| MAH 501 | L 3 | PCI 012 | K 9 | SB 1 | F 19 | SL 5 121 | G 13 |
| MAH 502 | L 3 | PCI 013 | K 10 | SB 2 | F 19 | SL 5 147 | G 13 |
| MAH 503 | L 3 | PCI 014 | K 14 | SB 3 | F 19 | SL 5 156 | G 13 |
| MAH 504 | L 3 | PCI 015 | K 14 | SB 4 | F 19 | SL 5 172 | G 13 |
| MAH 505 | L 3 | PCI 016 L | K 17 | SB 5 | F 19 | SL 5 197 | G 13 |
| MAH 506 | L 3 | PCI 017 | K 17 | SB 6 | F 19 | SL 5 223 | G 13 |
| MAH 508 | L 3 | PCI 018 | K 17 | SB 9 | F 20 | SL 5 237 | G 13 |
| MAH 509 | L 3 | PCI 020 | K 18 | SB 12 | F 20 | SL 5 285 | G 13 |
| MAH 510 | L 3 | PCI 021 | K 21 | SB 13 | F 20 | SL 5 315 | G 13 |
| MIC 03 | F 8 | PCI 031 O | K 12 | SB 15 | F 20 | SL 5 360 | G 13 |
| MIC 06 | F 8 | PCI 032 | K 12 | SB 16 | F 20 | SL 5 415 | G 13 |
| MK 01 | G 45 | PCI 033 | K 13 | SBAU 1 04 | H 8 | SL 5 525 | G 13 |
| MK 02 | G 2 | PCI 035 | K 19 | SBAU 1 06 | H 8 | SL 6 071 | G 13 |
| MK 03 | G 2 | PCI 039 O | K 9 | SBAU 1 08 | H 8 | SL 6 097 | G 13 |
| MK 04 | G 2 | PCI 041 | K 10 | SBAU 1 10 | H 8 | SL 6 121 | G 13 |
| MK 05 | G 2 | PCI 045 | K 14 | SBAU 1 12 | H 8 | SL 6 147 | G 13 |
| MK 06 | G 46 | PCI 047 | K 15 | SBAU 1 14 | H 8 | SL 6 156 | G 13 |
| MK 07 | G 46 | PCI 051 | K 23 | SBAU 1 16 | H 8 | SL 6 172 | G 13 |
| MK 08 | G 3 | PCI 055 | K 7 | SBAU 1 17 | H 8 | SL 6 197 | G 13 |
| MK 10 | G 3 | PCI 065 | K 12 | SBAU 1 18 | H 8 | SL 6 223 | G 13 |
| MK 12 X 2 | G 45 | PCI 071 | K 15 | SBAU 1 20 | H 8 | SL 6 237 | G 13 |
| MK 13 X 1 | G 45 | PCI 072 | K 18 | SBAU 06 S | H 8 | SL 6 285 | G 13 |
| MK 13 X 2 | G 45 | PCI 076 | K 18 | SBAU 10 S | H 8 | SL 6 315 | G 13 |
| MK 14 X 1 | G 4 | PCI 077 | K 18 | SBAU 14 S | H 8 | SL 6 360 | G 13 |
| MK 14 X 2 | G 4 | PCI 083 | K 21 | SBAU 16 S | H 8 | SL 6 415 | G 13 |
| MK 14 X 3 | G 4 | PCI 104 | K 22 | SBAU 20 S | H 8 | SL 6 525 | G 13 |
| MK 15 | G 4 | PCI LP ... L | K 4 | SBAU 26 S | H 8 | SL 7 | G 6 |
| MK 17 | G 45 | PCI LP ... O | K 4 | SBAU 34 S | H 8 | SL 8 | G 6 |
| MK 21 | G 54 | PCI R1 | K 6 | SB W | H 10 | SL 9 | G 6 |
| MK 22 SMD | G 62 | PEK G | F 17 | SIL 1 | G 49 | SL 10 SMD 040 | G 21 |
| MK 23 SMD | G 64 | PF 53 | F 10 | SIL 2 | G 49 | SL 10 SMD 052 | G 21 |
| MK 24 SMD | G 63 | PF 54 | F 10 | SIL 3 | G 49 | SL 10 SMD 062 | G 21 |
| MK 25 SMD | G 63 | PF 58 2 | F 10 | SK 02 | F 18 | SL 10 SMD 078 | G 21 |
| MK 26 SMD | G 18 | PF 58 23 | F 10 | SK 03 | F 18 | SL 10 SMD 104 | G 21 |
| MK 27 SMD | G 20 | PF 510 | F 11 | SK 04 Z | F 18 | SL 10 SMD 130 | G 21 |
| MK 51 | G 4 | PK 1 | F 17 | SK 05 | F 18 | SL 11 097 | G 7 |
| MK 201 | G 45 | PK 4 Z | F 18 | SK 06 | F 17 | SL 11 112 | G 7 |
| MK 202 | G 2 | PLCC 20 | F 9 | SK 08 G | F 18 | SL 11 124 | G 7 |
| MK 203 | G 2 | PLCC 20 SMD | F 9 | SK 13 X 2 G | F 17 | SL 11 139 | G 7 |
| MK 204 | G 2 | PLCC 28 | F 9 | SK 14 X 2 | F 18 | SL 11 164 | G 7 |
| MK 205 | G 2 | PLCC 28 SMD | F 9 | SK 19 | F 17 | SL 11 190 | G 7 |
| MK 207 | G 46 | PLCC 32 | F 9 | SK 40 G | F 18 | SL 11 214 | G 7 |
| MK 208 | G 3 | PLCC 32 SMD | F 9 | SK 41 | F 18 | SL 11 240 | G 7 |
| MK 210 | G 3 | PLCC 44 | F 9 | SK 42 | F 18 | SL 11 265 | G 7 |
| MK 212 X 2 | G 45 | PLCC 44 SMD | F 9 | SKB 5 Z | F 17 | SL 11 316 | G 7 |
| MK 213 X 1 | G 45 | PLCC 52 | F 9 | SKB 9 Z | F 17 | SL 11 SMD 040 | G 22 |
| MK 213 X 2 | G 45 | PLCC 52 SMD | F 9 | SL 1 025 | G 7 | SL 11 SMD 052 | G 22 |
| MK 214 X 1 | G 4 | PLCC 68 | F 9 | SL 1 053 | G 7 | SL 11 SMD 062 | G 22 |
| MK 214 X 2 | G 4 | PLCC 68 SMD | F 9 | SL 1 078 | G 7 | SL 11 SMD 078 | G 22 |
| MK 214 X 3 | G 4 | PLCC 84 | F 9 | SL 1 104 | G 7 | SL 11 SMD 104 | G 22 |
| MK 217 | G 45 | PLCC 84 SMD | F 9 | SL 1 128 | G 7 | SL 11 SMD 130 | G 22 |
| MK 220 SMD | G 65 | PO A | G 48 | SL 1 154 | G 7 | SL 12 SMD 031 | G 23 |
| MK 221 | G 54 | PQ 18 | F 13 | SL 1 179 | G 7 | SL 12 SMD 032 | G 23 |
| MK 222 SMD | G 62 | PQ 18 W | F 13 | SL 1 230 | G 7 | SL 12 SMD 035 | G 23 |
| MK 223 SMD | G 64 | PSB 03 G | F 14 | SL 2 025 | G 7 | SL 12 SMD 058 | G 23 |
| MK 226 SMD | G 19 | PV 06 | H 6 | SL 2 053 | G 7 | SL 12 SMD 083 | G 23 |
| MK 228 THR | G 47 | PV 10 | H 6 | SL 2 078 | G 7 | SL 12 SMD 109 | G 23 |
| MK 251 | G 4 | PV 14 | H 6 | SL 2 104 | G 7 | SL 13 071 | G 14 |
| MK LP 18 | G 46 | PV 16 | H 6 | SL 2 128 | G 7 | SL 13 097 | G 14 |
| MK LP 19 | G 46 | PV 20 | H 6 | SL 2 154 | G 7 | SL 13 122 | G 14 |
| MK LP 40 | G 5 | PV 26 | H 6 | SL 2 179 | G 7 | SL 13 147 | G 14 |
| MK LP 41 | G 5 | PV 34 | H 6 | SL 2 230 | G 7 | SL 13 187 | G 14 |
| MK LP 42 | G 5 | PV 40 | H 6 | SL 3 025 | G 9 | SL 13 235 | G 14 |
| MK LP 43 | G 5 | PV 50 | H 6 | SL 3 053 | G 9 | SL 13 265 | G 14 |
| MK LP 218 | G 46 | PV W | H 10 | SL 3 080 | G 9 | SL 13 310 | G 14 |
| MK LP 219 | G 46 | PVY 20 | H 7 | SL 3 101 | G 9 | SL 13 365 | G 14 |
| MK LP 240 | G 5 | PVY 40 | H 7 | SL 3 131 | G 9 | SL 14 071 | G 14 |
| MK LP 241 | G 5 | PVY 44 | H 7 | SL 3 152 | G 9 | SL 14 097 | G 14 |

Alphanumerical product list

| art. no. | page | art. no. | page | art. no. | page | art. no. | page |
|-----------------|------|-------------------|------|-------------------|------|----------|------|
| SL 14 122 | G 14 | SLM N 1 063 | G 37 | SLV W 2 KA 030 16 | G 39 | SSK S 37 | I 25 |
| SL 14 147 | G 14 | SLM N 1 092 | G 37 | SLV W 2 KA 030 20 | G 39 | TF 53 | F 12 |
| SL 14 187 | G 14 | SLM N 1 117 | G 37 | SLV W 2 KA 030 26 | G 39 | TF 54 | F 12 |
| SL 14 235 | G 14 | SLM N 11 063 | G 37 | SLV W 2 KA 030 30 | G 39 | TF 56 | F 12 |
| SL 14 265 | G 14 | SLM N 11 117 | G 37 | SLV W 2 KA 030 34 | G 39 | TF 58 | F 12 |
| SL 14 310 | G 14 | SLP 1 16 117 | G 28 | SLV W 2 KA 030 40 | G 39 | TF 183 | F 12 |
| SL 14 365 | G 14 | SLP 1 16 129 | G 28 | SLV W 2 KA 030 50 | G 39 | TF 184 | F 12 |
| SL 15 SMD 107 | G 27 | SLP 1 16 144 | G 28 | SLV W 2 KA 030 72 | G 39 | TF 510 | F 12 |
| SL 15 SMD 182 | G 27 | SLP 1 16 195 | G 28 | SLV W 2 KA 054 10 | G 39 | TF 512 | F 12 |
| SL 15 SMD 207 | G 27 | SLP 1 32 139 | G 28 | SLV W 2 KA 054 14 | G 39 | TF G | F 17 |
| SL 16 SMD 107 | G 27 | SLP 1 32 164 | G 28 | SLV W 2 KA 054 16 | G 39 | V | I 23 |
| SL 16 SMD 157 | G 27 | SLP 2 16 117 | G 28 | SLV W 2 KA 054 20 | G 39 | V 2 | I 23 |
| SL 16 SMD 182 | G 27 | SLP 2 16 129 | G 28 | SLV W 2 KA 054 26 | G 39 | VBK 1 | H 10 |
| SL 16 SMD 207 | G 27 | SLP 2 16 144 | G 28 | SLV W 2 KA 054 30 | G 39 | VBL 06 | H 5 |
| SL 16 SMD 247 | G 27 | SLP 2 16 195 | G 28 | SLV W 2 KA 054 34 | G 39 | VFL 08 | H 5 |
| SL 17 SMD 058 | G 24 | SLP 2 32 139 | G 28 | SLV W 2 KA 054 40 | G 39 | VFL 10 | H 5 |
| SL 17 SMD 083 | G 24 | SLP 2 32 164 | G 28 | SLV W 2 KA 054 50 | G 39 | VFL 12 | H 5 |
| SL 17 SMD 109 | G 24 | SLR 1 025 | G 42 | SLV W 2 KA 054 72 | G 39 | VFL 14 | H 5 |
| SL 18 042 | G 10 | SLR 1 050 | G 42 | SLV W 2 SMD 048 | G 40 | VFL 16 | H 5 |
| SL 18 082 | G 10 | SLR 2 050 | G 42 | SLV W 2 SMD 073 | G 40 | VFL 20 | H 5 |
| SL 18 108 | G 10 | SLR 3 025 | G 42 | SLV W 3 SMD 048 | G 41 | VFL 26 | H 5 |
| SL 18 132 | G 10 | SLR 3 050 | G 42 | SLV W 3 SMD 073 | G 41 | VFL 34 | H 5 |
| SL 19 082 | G 10 | SLR 4 050 | G 42 | SLV W 11 055 | G 38 | VFL 40 | H 5 |
| SL 19 108 | G 10 | SLR 4 100 | G 42 | SLV W 11 080 | G 38 | VFL 50 | H 5 |
| SL 19 132 | G 10 | SLR 5 SMD 50 G | G 43 | SLV W 11 105 | G 38 | VG 2 | I 23 |
| SL 20 THR 097 | G 8 | SLU 10 165 | G 16 | SLV W 22 055 | G 38 | WWPS 1 G | F 17 |
| SL 20 THR 112 | G 8 | SLU 10 191 | G 16 | SLV W 22 080 | G 38 | ZEPV 06 | H 6 |
| SL 20 THR 124 | G 8 | SLU 10 241 | G 16 | SLV W 22 105 | G 38 | ZEPV 10 | H 6 |
| SL 20 THR 139 | G 8 | SLU 10 266 | G 16 | Sly 1 081 | G 30 | ZEPV 14 | H 6 |
| SL 20 THR 164 | G 8 | SLU 16 165 | G 16 | Sly 1 085 | G 30 | ZEPV 16 | H 6 |
| SL 21 THR 097 | G 8 | SLU 16 191 | G 16 | Sly 1 098 | G 30 | ZEPV 20 | H 6 |
| SL 21 THR 112 | G 8 | SLU 16 241 | G 16 | Sly 1 104 | G 30 | ZEPV 26 | H 6 |
| SL 21 THR 124 | G 8 | SLU 16 266 | G 16 | Sly 1 139 | G 30 | ZEPV 34 | H 6 |
| SL 21 THR 139 | G 8 | SLU 20 165 | G 16 | Sly 2 081 | G 30 | ZEPV 40 | H 6 |
| SL 21 THR 164 | G 8 | SLU 20 191 | G 16 | Sly 2 085 | G 30 | ZEPV 50 | H 6 |
| SL 22 097 | G 7 | SLU 20 241 | G 16 | Sly 2 098 | G 30 | | |
| SL 22 112 | G 7 | SLU 20 266 | G 16 | Sly 2 104 | G 30 | | |
| SL 22 124 | G 7 | SLU 26 165 | G 16 | Sly 2 139 | G 30 | | |
| SL 22 139 | G 7 | SLU 26 191 | G 16 | Sly 3 035 | G 30 | | |
| SL 22 164 | G 7 | SLU 26 241 | G 16 | Sly 3 041 | G 30 | | |
| SL 22 190 | G 7 | SLU 26 266 | G 16 | Sly 3 082 ... G | G 30 | | |
| SL 22 214 | G 7 | SLU 40 165 | G 16 | Sly 3 082 ... Z | G 30 | | |
| SL 22 240 | G 7 | SLU 40 191 | G 16 | Sly 4 035 | G 30 | | |
| SL 22 265 | G 7 | SLU 40 241 | G 16 | Sly 4 082 ... G | G 30 | | |
| SL 22 316 | G 7 | SLU 40 266 | G 16 | Sly 4 082 ... Z | G 30 | | |
| SLK 3 025 | G 9 | SLU 50 165 | G 16 | Sly 4 041... G | G 30 | | |
| SLK 4 025 | G 9 | SLU 50 191 | G 16 | Sly 4 041... Z | G 30 | | |
| SL KA 3 072 | G 17 | SLU 50 241 | G 16 | Sly 5 040 | G 31 | | |
| SL KA 3 085 | G 17 | SLU 50 266 | G 16 | Sly 5 075 | G 31 | | |
| SL KA 3 108 | G 17 | SLUP 31 10 | G 29 | Sly 5 081 ... G | G 31 | | |
| SL KG 3 113 | G 17 | SLUP 31 16 | G 29 | Sly 5 081 ... Z | G 31 | | |
| SL KG 3 126 | G 17 | SLUP 31 20 | G 29 | Sly 5 122 ... G | G 31 | | |
| SL KG 3 147 | G 17 | SLV N 1 055 | G 37 | Sly 5 122 ... Z | G 31 | | |
| SL LP 1 082 | G 11 | SLV N 1 080 | G 37 | Sly 6 040 | G 31 | | |
| SL LP 1 097 | G 11 | SLV N 1 105 | G 37 | Sly 6 075 | G 31 | | |
| SL LP 1 112 | G 11 | SLV N 1 130 | G 37 | Sly 6 081 ... G | G 31 | | |
| SL LP 1 139 | G 11 | SLV N 11 055 | G 37 | Sly 6 081 ... Z | G 31 | | |
| SL LP 1 164 | G 11 | SLV N 11 080 | G 37 | Sly 6 122 ... G | G 31 | | |
| SL LP 1 190 | G 11 | SLV N 11 105 | G 37 | Sly 6 122 ... Z | G 31 | | |
| SL LP 2 082 | G 11 | SLV W 1 055 | G 38 | Sly 7 SMD 036 | G 33 | | |
| SL LP 2 097 | G 11 | SLV W 1 080 | G 38 | Sly 7 SMD 045 | G 33 | | |
| SL LP 2 112 | G 11 | SLV W 1 105 | G 38 | Sly 7 SMD 062 | G 33 | | |
| SL LP 2 139 | G 11 | SLV W 1 130 | G 38 | Sly 8 SMD 036 | G 34 | | |
| SL LP 2 164 | G 11 | SLV W 1 KA 030 | G 39 | Sly 8 SMD 045 | G 34 | | |
| SL LP 2 190 | G 11 | SLV W 1 KA 055 | G 39 | Sly 8 SMD 062 | G 34 | | |
| SL LP 3 041 | G 12 | SLV W 1 KA 080 | G 39 | Sly 9 SMD 040 | G 35 | | |
| SL LP 3 069 | G 12 | SLV W 1 KA 105 | G 39 | Sly 9 SMD 055 | G 35 | | |
| SL LP 4 041 ... | G 12 | SLV W 1 SMD 048 | G 40 | Sly 10 SMD 040 | G 36 | | |
| SL LP 4 069 | G 12 | SLV W 1 SMD 073 | G 40 | SSK B 09 | I 25 | | |
| SL LP 5 SMD 038 | G 25 | SLV W 2 055 | G 38 | SSK B 15 | I 25 | | |
| SL LP 5 SMD 051 | G 25 | SLV W 2 080 | G 38 | SSK B 25 | I 25 | | |
| SL LP 5 SMD 066 | G 25 | SLV W 2 105 | G 38 | SSK B 37 | I 25 | | |
| SL LP 6 SMD 038 | G 26 | SLV W 2 130 | G 38 | SSK S 09 | I 25 | | |
| SL LP 6 SMD 051 | G 26 | SLV W 2 KA 030 10 | G 39 | SSK S 15 | I 25 | | |
| SL LP 6 SMD 066 | G 26 | SLV W 2 KA 030 14 | G 39 | SSK S 25 | I 25 | | |

Index

| | |
|--|---------|
| Brackets for PC | K 3-24 |
| Connector-sleeves | F 19-20 |
| Direct female connectors | G 75 |
| D-Sub accessoires | I 22-25 |
| D-Sub connector for flat ribbon cable | I 11-12 |
| D-Sub connector in pressfit technology | I 16-17 |
| D-Sub connectors High Density | I 7-8 |
| D-Sub filter connector | I 9-10 |
| D-Sub hoods | I 18-21 |
| D-Sub in SMD-mounting | I 15 |
| D-Sub mixed layout connectors | I 13-14 |
| D-Sub standard connectors | I 2-6 |
| Female connector | H 4-7 |
| Female headers | G 45-74 |
| 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 76-77 |
| LED-holders | L 4-7 |
| Light pipes for SMDs | L 8-9 |
| Male headers | G 2-45 |
| Printed circuit connector | H 8-10 |
| Shroud-male header | H 2-3 |
| Sockets for crystal oscillators | F 13 |
| Sockets for IC-PLCC | F 9 |
| Sockets for TO ... cases | F 10-12 |
| Spacers for LED | L 2-3 |

General points

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

Surface – electroplating processes

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

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

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

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

Dimensional tolerance

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

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

Quality grading in conformity with DIN 41652

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

A distinction is made in three quality classes:

- Quality class 1: at least 500 cycles of operation, layer thickness accordingly at least 1,2µm Au
 - Quality class 2: at least 200 cycles of operation, layer thickness accordingly at least 0,75µm Au
 - Quality class 3: at least 50 cycles of operation, layer thickness accordingly at least 0,2µm Au
- By tinning contacts max. 10 cycles of operation can be guaranteed by using "tin on tin".

Precision socket contacts

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

Contact carrier material made of high-temperature resistant plastic

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

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

Explanations – references – printings



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



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



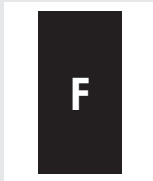
... components are suitable for SMD technique



... components are suitable for press-fit mounting

2,54

... components are suitable for the corresponding grid



... index area:
shows topics/categories

“current”



“following”

G 15

... page number

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

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

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

... option for surface finishing

Imprinting of cardholders - Your and our time is expensive

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

Compliance with the following criteria ensures smooth handling:

Adobe Illustrator (.ai)

CorelDraw (.cdr)

Macromedia Free Hand (.fh)

QuarkXPress (.qxd)

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

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

All this takes additional time and consequently incurs extra costs.

The usability must be checked by our printing shop:

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

Copies that definitely cannot be used:

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

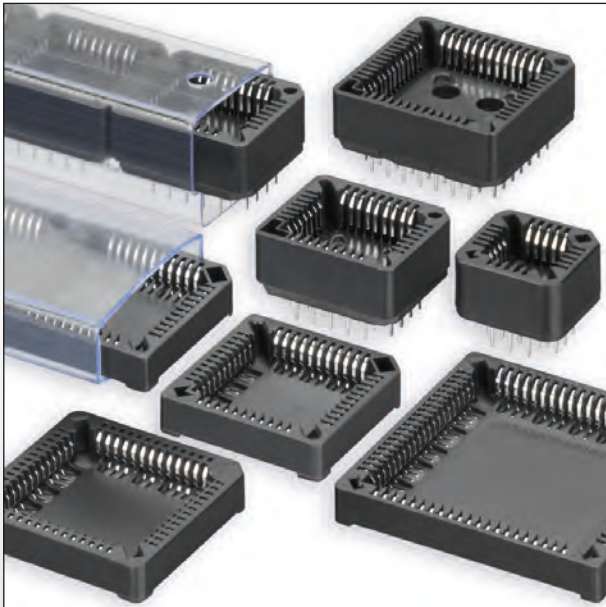
Please always add dimensional drawings (.dxf) to the parts to be imprinted!

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

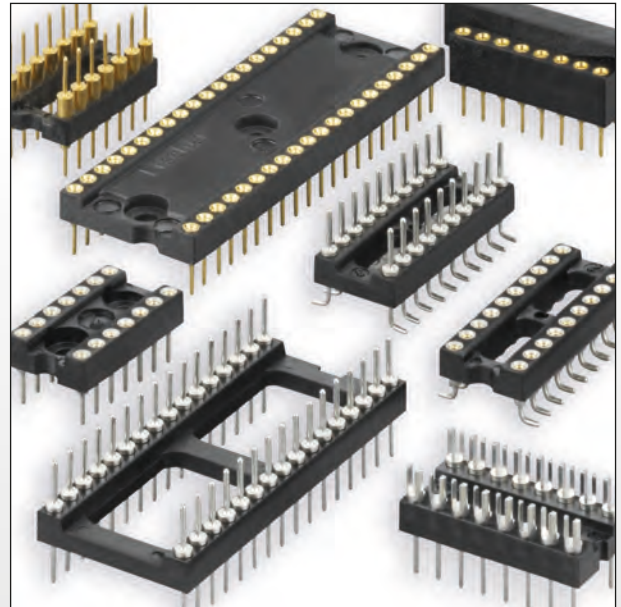
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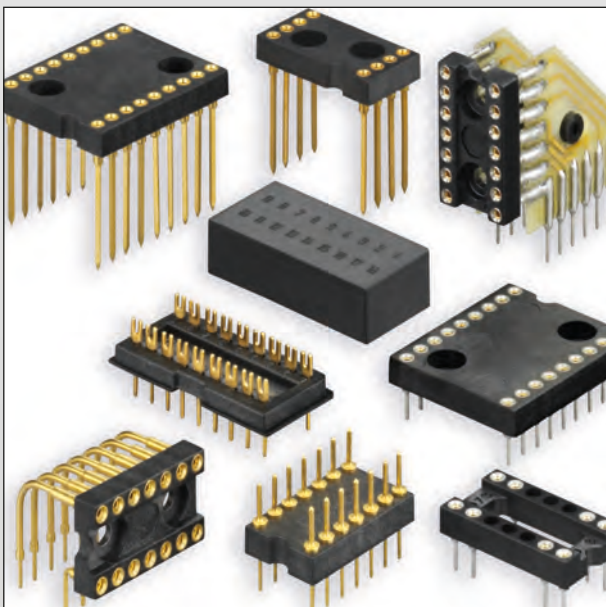
© Copyright Fischer Elektronik 1969 ... 2014



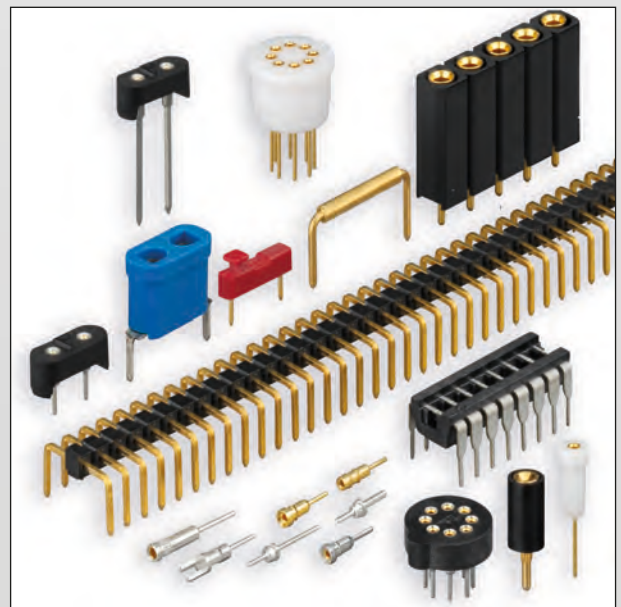
Precision sockets and plugs for ICs with high packing density
 – PLCC-socket for soldering technology (THT)
 – PLCC-socket for SMD technology – low profile
 – type of packaging: bar magazine



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



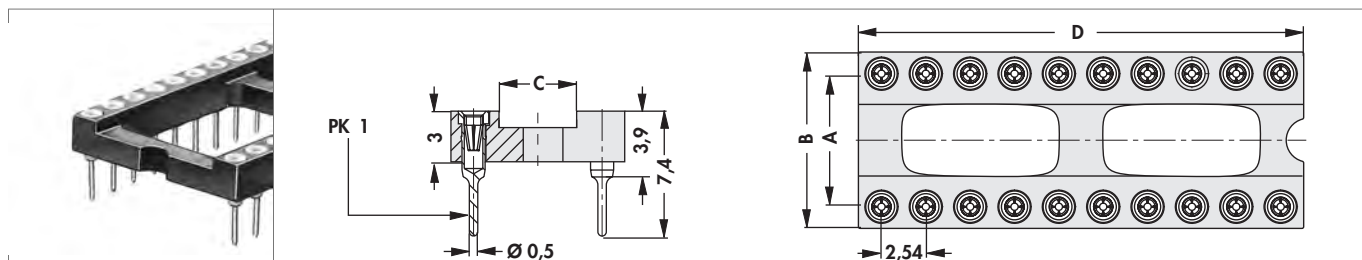
Customer specified DIL-IC sockets
 – sockets for LED displays
 – Dual-in-line plug in adapter
 – IC-sockets partially loaded with oscillators and relays



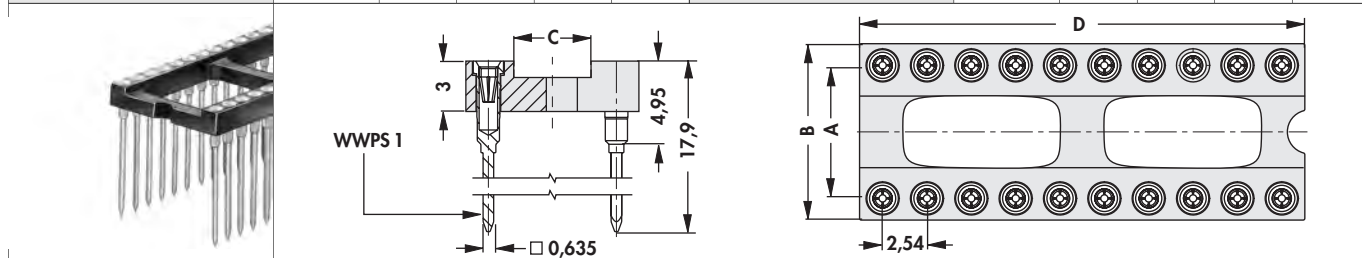
Mounting sockets for discrete components, jumper links and connectors
 – sockets for TO 5 cases
 – plug-in sockets for crystal oscillators
 – jumper links with and without insulators
 – precision pins and bushings, bulk
 – connectors, with and without insulator

High-precision sockets and plugs for DIL-IC

– other number of contacts upon request!



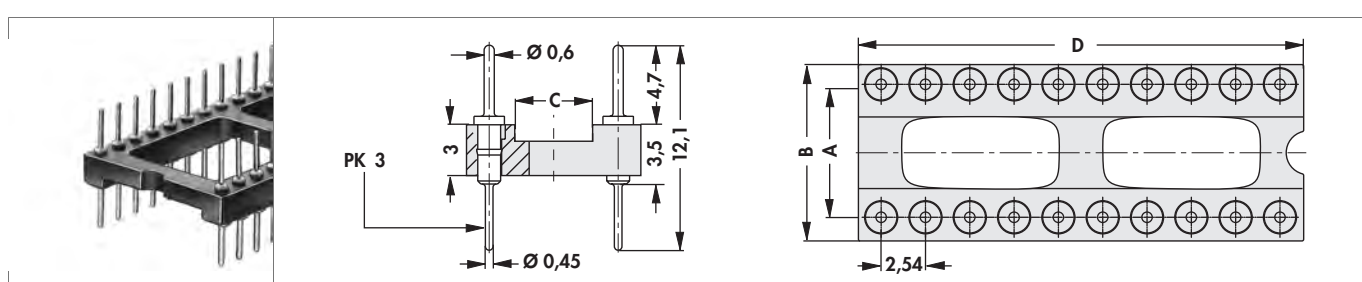
| art. no. | no. of contacts | dim. [mm] | | | | art. no. | no. of contacts | dim. [mm] | | | |
|--------------|-----------------|-----------|------|-----|------|-----------------|-----------------|-----------|------|------|------|
| | | A | B | C | D | | | A | B | C | D |
| DIL 6 M ... | 6 | 7.62 |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

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

High-precision sockets and plugs for DIL-IC

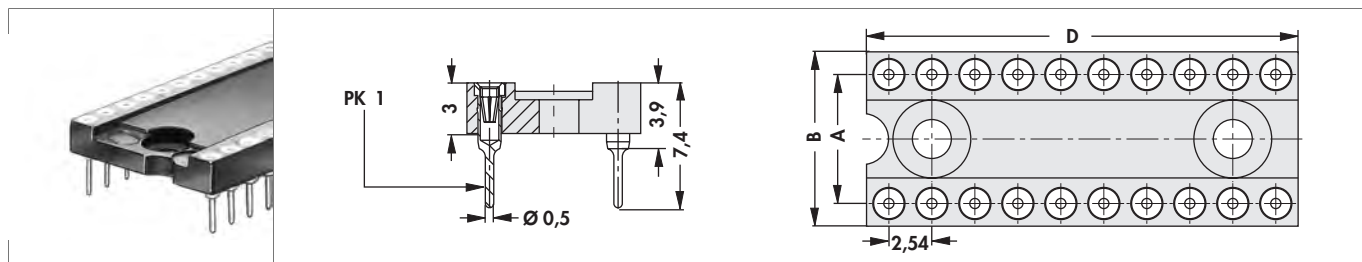
– other number of contacts on request!

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

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

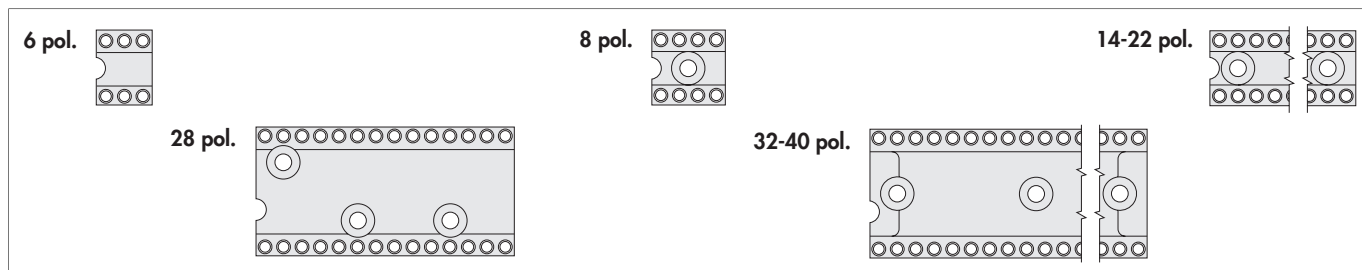


| art. no. | no. of contacts | dim. [mm] | | | art. no. | no. of contacts | dim. [mm] | | |
|--------------|-----------------|-----------|------|------|--------------|-----------------|-----------|------|------|
| | | A | B | D | | | A | B | D |
| DIL 6 E ... | 6 | 7.62 | 10.3 | 7.6 | DIL 20 E ... | 20 | 7.62 | 10.3 | 25.5 |
| DIL 8 E ... | 8 | 7.62 | 10.3 | 10.1 | DIL 28 E ... | 28 | 15.24 | 17.7 | 35.5 |
| DIL 14 E ... | 14 | 7.62 | 10.3 | 17.7 | DIL 32 E ... | 32 | 15.24 | 17.7 | 40.6 |
| DIL 16 E ... | 16 | 7.62 | 10.3 | 20.4 | DIL 40 E ... | 40 | 15.24 | 17.7 | 50.8 |
| DIL 18 E ... | 18 | 7.62 | 10.3 | 23.0 | | | | | |

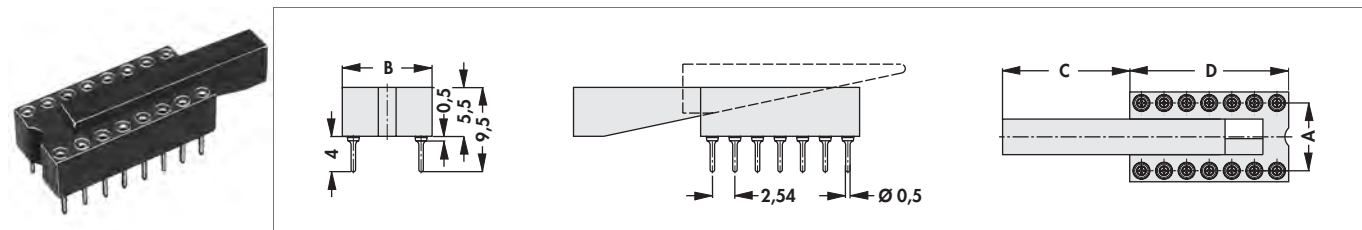
please indicate: ... surface of contact
G = gold-plated
Z = tin-plated

contact spring: gold-plated

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



DIL-IC-sockets with extractor



| art. no. | no. of contacts | dim. [mm] | | | | art. no. | no. of contacts | dim. [mm] | | | |
|------------|-----------------|-----------|------|----|------|------------|-----------------|-----------|------|----|------|
| | | A | B | C | D | | | A | B | C | D |
| 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 ... | DIL 8 2 OR ... | | | |
| art. no. | no. of contacts | | | |
| DIL 4 OR ... | 4 | | | |
| DIL 8 1 OR Z | 8 | | | |
| DIL 8 2 OR ... | 8 | | | |
| please indicate: | ... surface of contact G = gold-plated Z = tin-plated | | | |
| contact spring: | gold-plated | | | |

LED display sockets of 0.6" pitch

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

High-precision sockets and plugs for DIL-IC

LED display sockets in vertical construction

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

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

High-precision sockets and plugs for DIL-IC

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

DIL platforms

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

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

DIL cases - grid spacing 2.54 mm

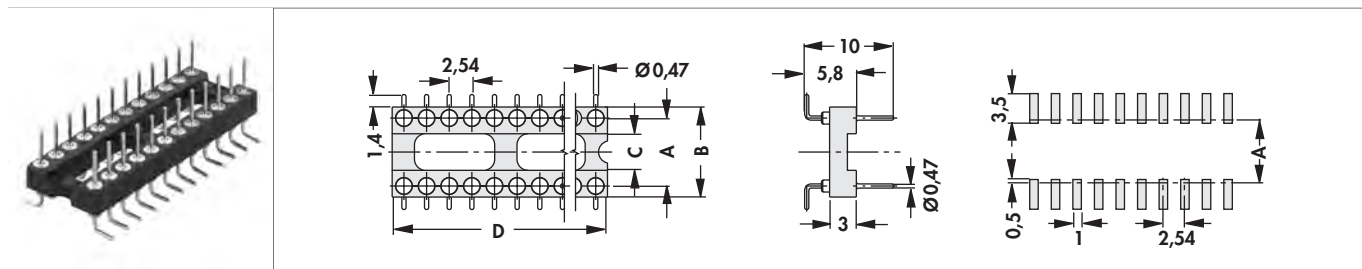
– suitable for **DIL** plugs DILS ... GO

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

High-precision sockets and plugs for DIL-IC

SMD-plug for DIL

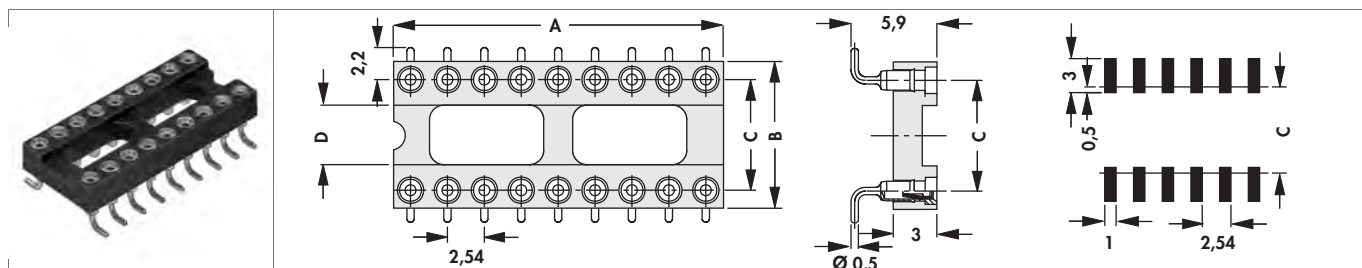
- with SK 5-contacts
- other number of contacts on request!



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

SMD-socket for DIL-IC

- other number of contacts upon request!



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

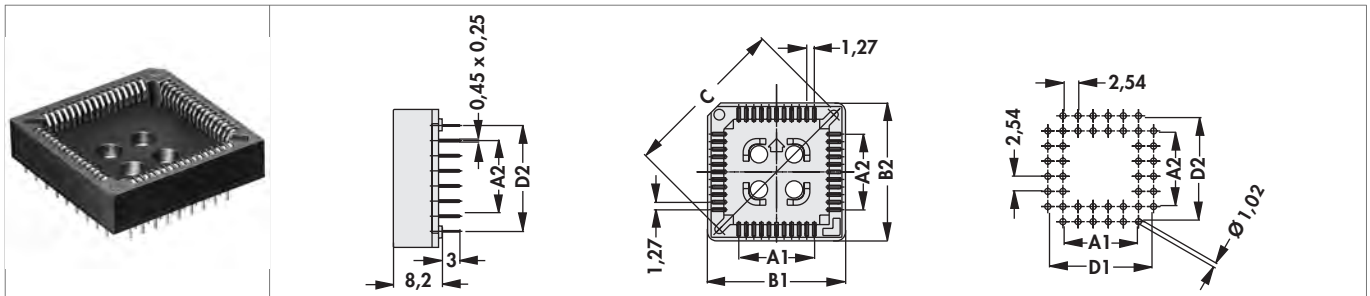
IC-mounting tools - Design DIL



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

Sockets for IC-PLCC

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

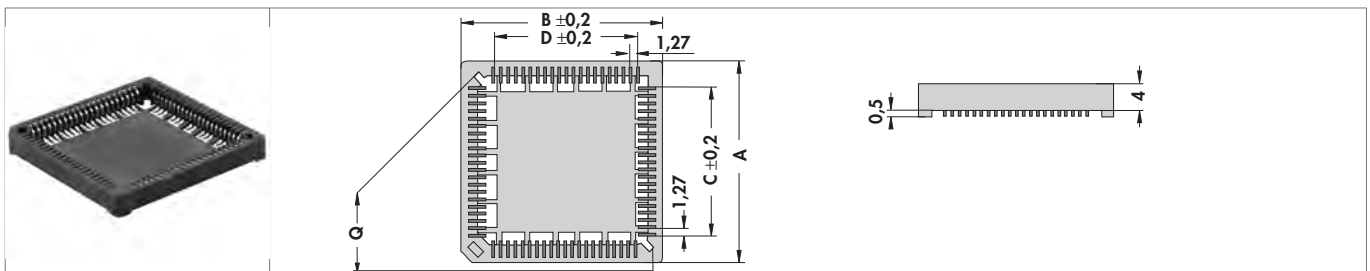


| art. no. | no. of contacts | packing unit | dim. [mm] | | | | | | |
|----------------|-----------------|--------------|-----------|-------|-------|-------|------|-------|-------|
| | | | A 1 | A 2 | B 1 | B 2 | C | Ø D1 | Ø D2 |
| PLCC 20 | 20 | 39 | 5.08 | 5.08 | 15.55 | 15.55 | 16.7 | 10.16 | 10.16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

surface of contact: tin-plated

SMD sockets for PLCC - low profile housing

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


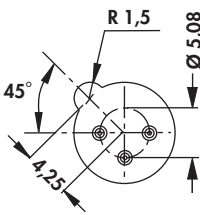
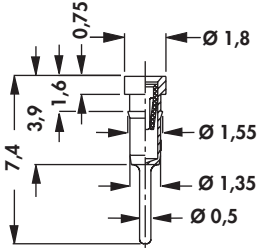
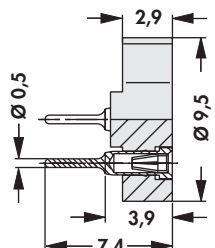

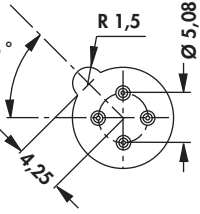
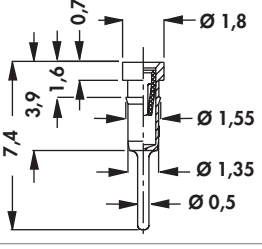
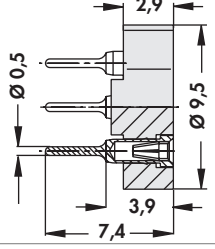

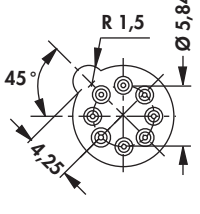
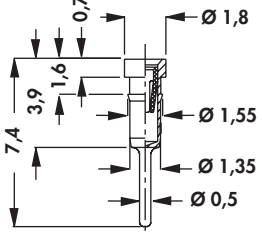
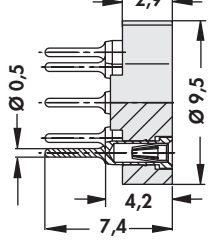

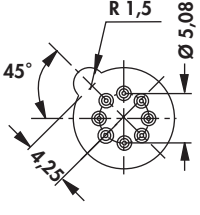
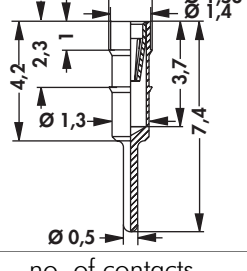
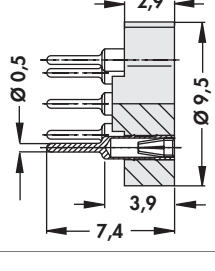


| art. no. | no. of contacts | packing unit | dim. [mm] | | | | |
|--------------------|-----------------|--------------|-----------|-------|-------|-------|------|
| | | | A | B | C | D | Q |
| PLCC 20 SMD | 20 | 39 | 15.58 | 15.58 | 5.08 | 5.08 | 16.0 |
| PLCC 28 SMD | 28 | 33 | 18.12 | 18.12 | 7.62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

surface of contact: tin-plated

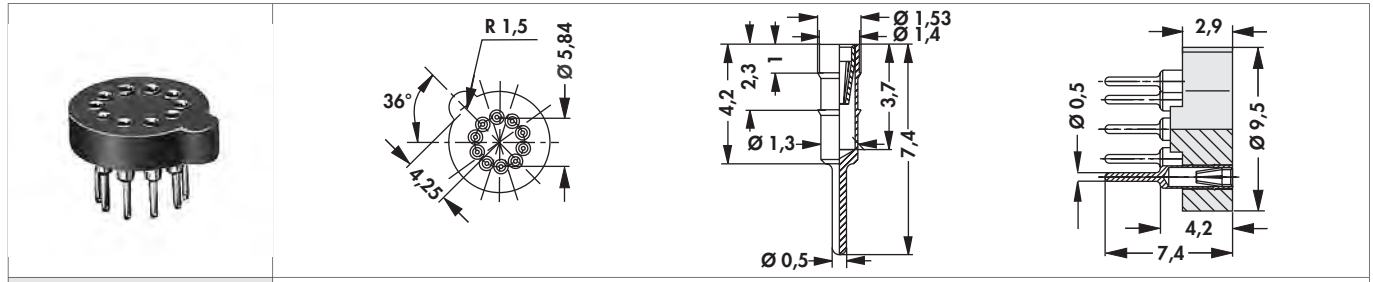
Sockets for TO ... cases

Transistor sockets for TO 5

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

Sockets for TO ... cases

Sockets for TO 5


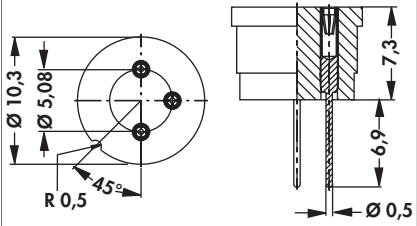

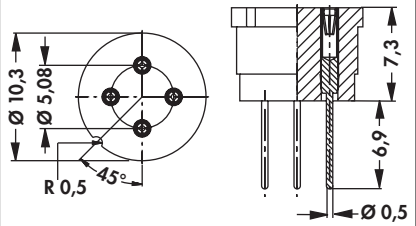

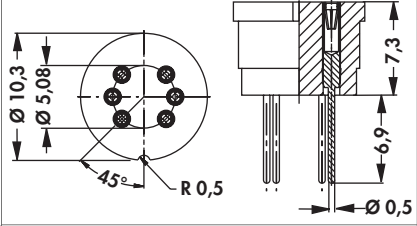

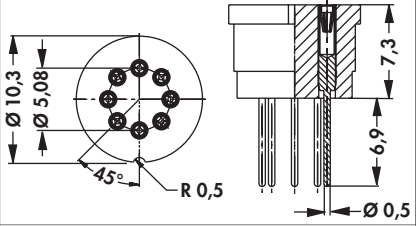

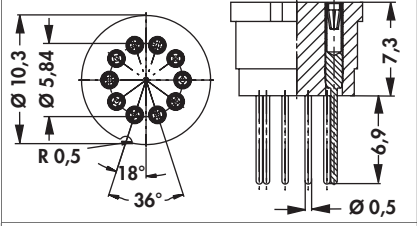

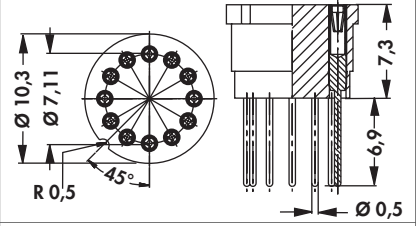


| | | |
|------------------------|-----------------|--|
| art. no. | no. of contacts | |
| PF 510 G | 10 | |
| contact spring: | gold-plated | |
| contact sleeve: | gold-plated | |


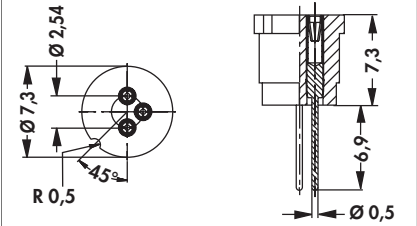

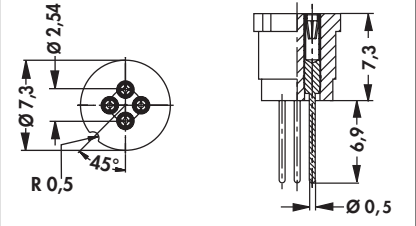
A
B
C
D
E
F
G
H
I
K
L
M
N

Sockets for TO ... cases


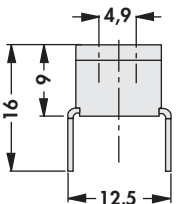
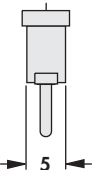
Transistor sockets - teflon sockets for TO 5

| | | | |
|--|--|--|--|
|  |  |  |  |
| 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 | art. no. | no. of contacts |
| TF 510 | 10 | TF 512 | 12 |
| contact spring: | | gold-plated | |
| contact sleeve: | | gold-plated | |


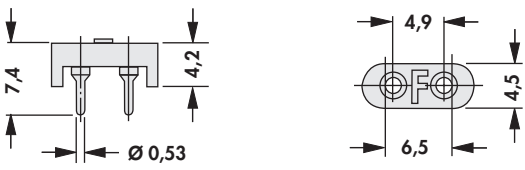
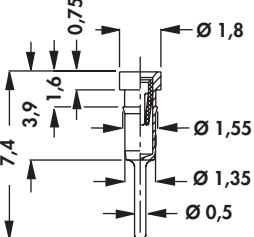

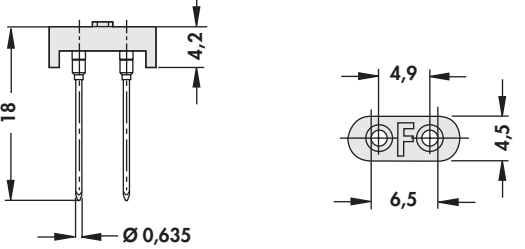
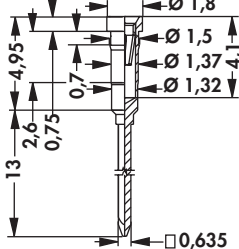
Transistor sockets - teflon sockets for TO 18

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

Sockets for crystal oscillators



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

Precision sockets for crystal oscillators in case HC 18

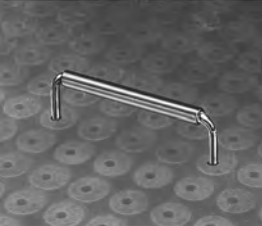
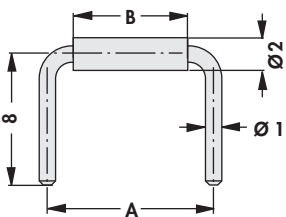

| | | | |
|-------------------------|--|---|--|
| art. no. |  |  |  |
| PQ 18 ... | | | |
| art. no. |  |  |  |
| PQ 18 W ... | | | |
| please indicate: | ... surface of contact G = gold-plated Z = tin-plated | | |
| contact spring: | gold-plated | | |


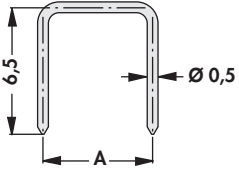

Insulators for crystal oscillators


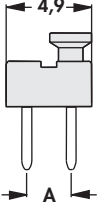
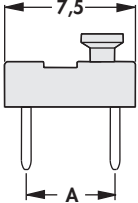
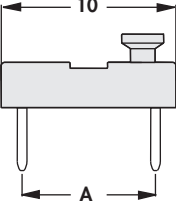
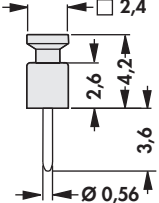
* = equates self retaining


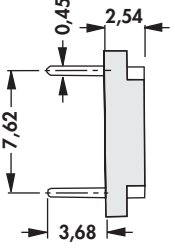
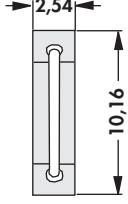
| | | | |
|---|--|-----------|------|
|  |  | | |
| art. no. | case design | dim. [mm] | |
| | | C | D |
| ISQ 04 | HC-18/U/ HC-49/U/ HC-43/U | - | 0.71 |
| ISQ 05 | HC-18/U/ HC-49/U/ HC-43/U | - | * |
| ISQ 06 | HC-18/U/ HC-49/U/ HC-43/U | 2.4 | 0.71 |
| ISQ 07 | HC-18/U/ HC-49/U/ HC-43/U | 2.4 | * |
| 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 | | |

Jumper links

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

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

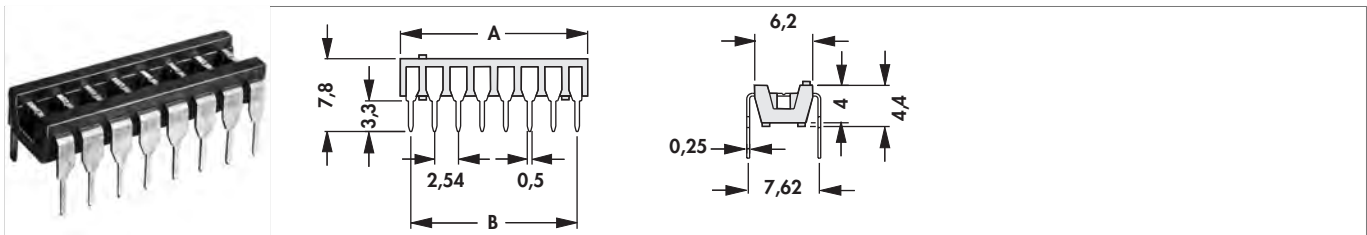
| | | | | |
|--|---|---|--|---|
|  |  |  |  |  |
| art. no. | dim. [mm] | art. no. | dim. [mm] | |
| | A | | A | |
| LEB 01 G | 2.54 | LEB 03 G | 7.62 | |
| LEB 02 G | 5.08 | | | |
| surface of contact: | | gold-plated | | |

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

Jumper links / Separable jumpers

separable jumpers for soldering technology

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

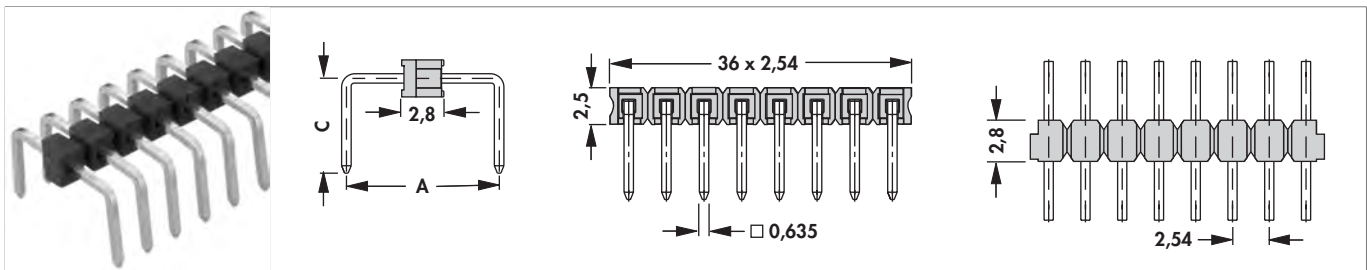


| art. no. | no. of contacts | dim. [mm] | | art. no. | no. of contacts | dim. [mm] | |
|----------------------|-----------------|-----------|-------|----------------------|-----------------|-----------|-------|
| | | A | B | | | A | B |
| CAB 3 06 03 Z | 6 | 7.30 | 5.08 | CAB 3 14 03 Z | 14 | 17.46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

surface of contact: tin-plated

Jumper links, grid spacing 2.54 mm, □ 0.635 mm

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

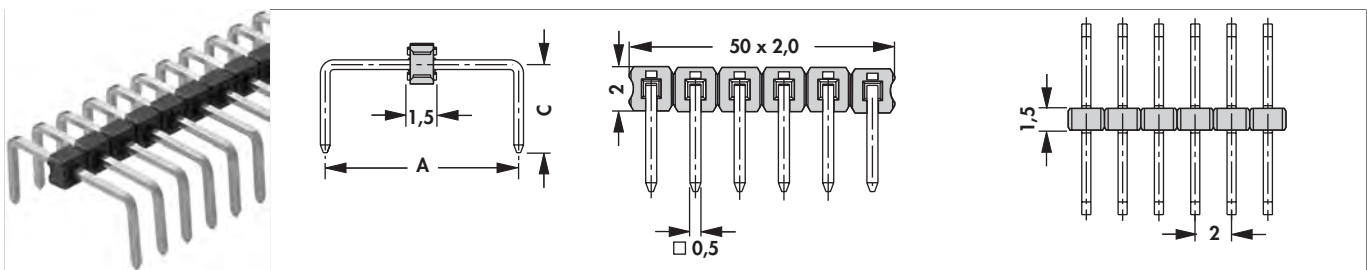


| art. no. | dim. [mm] | | art. no. | dim. [mm] | |
|-----------------------|-----------|-----|-----------------------|-----------|-----|
| | A | C | | A | C |
| LB SL 0508 ... | 5.08 | 6.1 | LB SL 1016 ... | 10.16 | 6.1 |
| LB SL 0762 ... | 7.62 | 6.1 | LB SL 1524 ... | 15.24 | 6.1 |

please indicate: ... no. of contacts 1 - 36 ... surface of contact G = gold-plated Z = tin-plated

Jumper links, grid spacing 2.00 mm, □ 0.5 mm

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



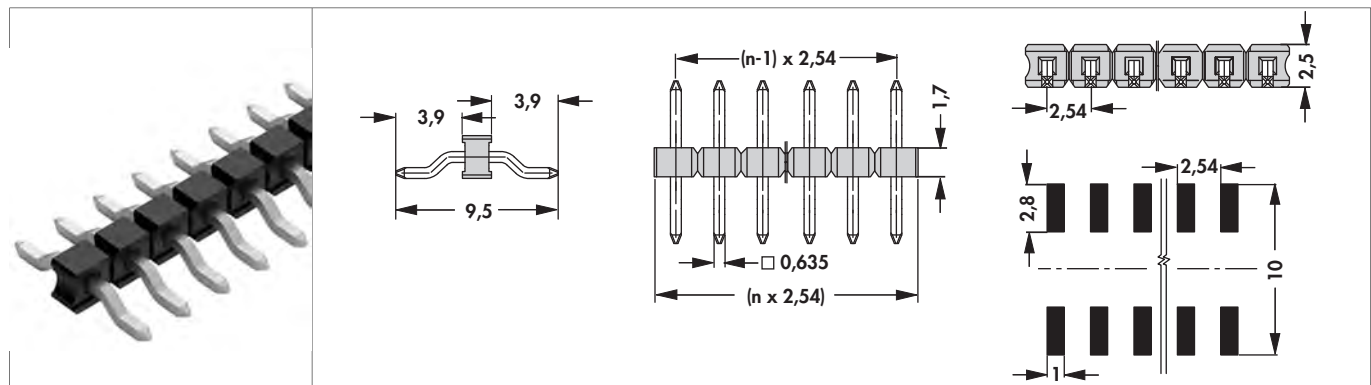
| art. no. | dim. [mm] | |
|----------------------|-----------|-----|
| | A | C |
| LB SLY 06 ... | 6 | 4.5 |

please indicate: ... no. of contacts 1 - 50 ... surface of contact G = gold-plated Z = tin-plated

Jumper links / Separable jumpers

Jumper link for LED- and standard-PCBs

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



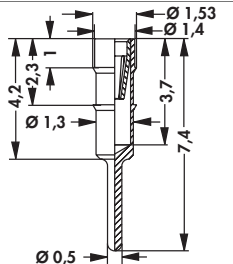
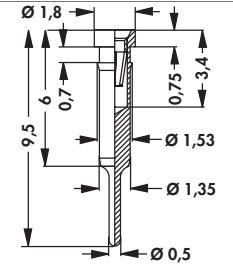
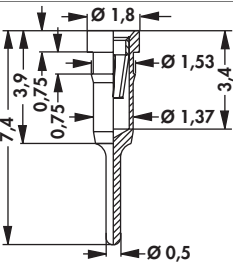
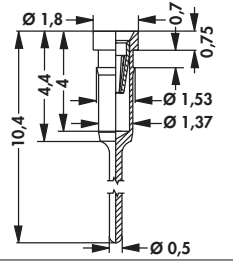
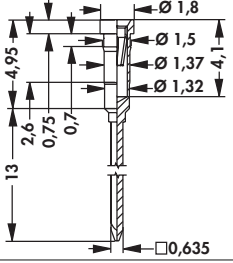
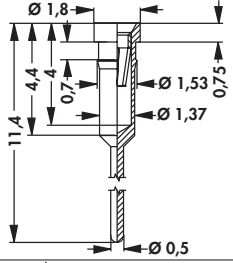
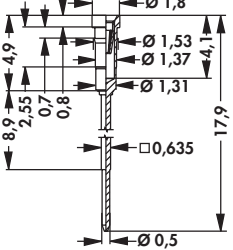
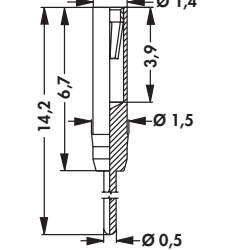
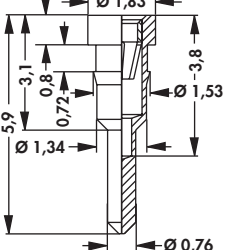
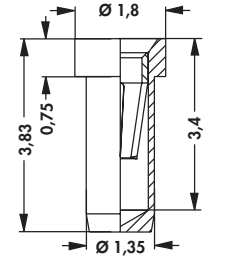
art. no.

LB SL LP 039 SMD ...

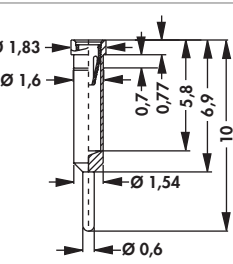
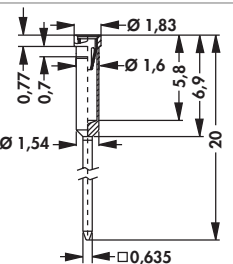
| | | |
|------------------|---------------------|-----------------------------------|
| please indicate: | ... no. of contacts | ... surface of contact |
| | 2 - 20 | G = gold-plated Z = tin-plated |

High-precision contacts, loose

Female contacts for $\varnothing 0.5$ mm

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

Female contact for 0.64 mm \square and $\varnothing 0.80$ mm

| | | | | | |
|---------------------------------------|---|---------------------------------------|--|--|--|
| <p>art. no.</p> <p>SKB 5 Z</p> |  | <p>art. no.</p> <p>SKB 9 Z</p> |  | | |
| <p>contact spring:</p> | | <p>gold-plated</p> | | | |
| <p>contact sleeve:</p> | | <p>tin-plated</p> | | | |

High-precision contacts, loose

Contacts with solder head

| | | | | | |
|---------------------------------------|--|---|--|---|--|
| <p>art. no.</p> <p>PK 4 Z</p> | | <p>art. no.</p> <p>SK 02 ...</p> | | <p>art. no.</p> <p>SK 03 ...</p> | |
| <p>art. no.</p> <p>SK 04 Z</p> | | <p>art. no.</p> <p>SK 08 G</p> | | | |

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

Male contacts


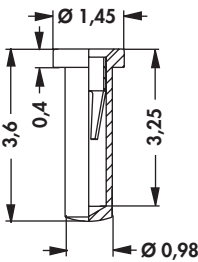
| | | | | | |
|---|--|---|--|---------------------------------------|--|
| <p>art. no.</p> <p>SK 05 ...</p> | | <p>art. no.</p> <p>SK 14 X 2 ...</p> | | <p>art. no.</p> <p>SK 40 G</p> | |
| <p>art. no.</p> <p>SK 41 ...</p> | | <p>art. no.</p> <p>SK 42 ...</p> | | | |

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


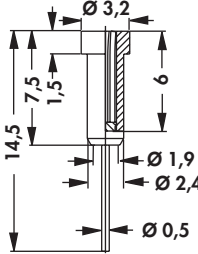


Connector-sleeves


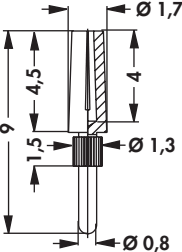
For 0.4 mm with BeCu spring 3 μm Ni, 1 μm Au

| | | |
|----------|---|--|
| art. no. |  |  |
| SB 1 | | |


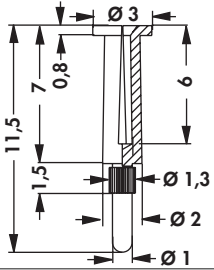

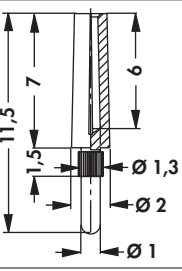

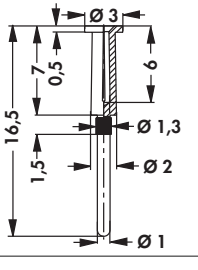
For 0.4 mm with bronze spring, teflon insulated

| | | |
|----------|---|--|
| art. no. |  |  |
| SB 2 | | |

For 0.8 mm, slotted

| | | |
|----------|--|---|
| art. no. |  |  |
| SB 3 | | |


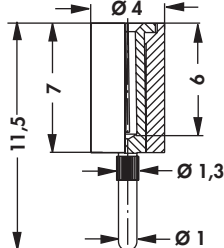
For 1 mm, slotted

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


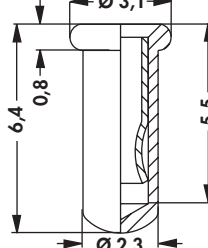


Connector-sleeves


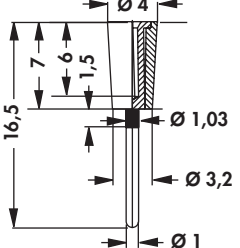
For 1 mm, slotted, plastic insulated

| | | |
|----------|---|--|
| art. no. |  |  |
| SB 9 | | |


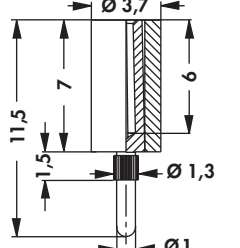
For 1 mm, with BeCu spring 3 μm Ni, 1 μm Au

| | | |
|----------|---|--|
| art. no. |  |  |
| SB 12 | | |

For 1 mm, slotted, plastic insulated


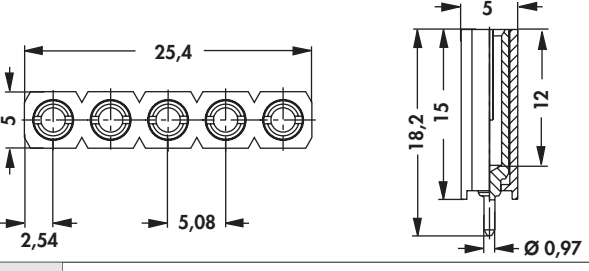
| | | |
|----------|--|---|
| art. no. |  |  |
| SB 16 | | |

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+ $\geq 0.2\mu\text{m Au}$ / Ni+4...6 $\mu\text{m Sn}$ | | 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 $\mu\text{m Au}$ | | Ni+0,75 $\mu\text{m Au}$ | Ni+0,25 $\mu\text{m Au}$ |
| plugability for circuit points | 0,22x0,25mm... 0,4x0,55mm/ $\varnothing 0,4...0,56\text{mm}$ | | 0,22x0,25mm... 0,4x0,55mm/ $\varnothing 0,4...0,56\text{mm}$ | |
| 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 m Ω | | | |
| contact resistance | 4 m Ω | | | |
| contact resistance after 1000 cycles | 7 m Ω | | | |
| capacity between two adjacent contacts | 0,4 pF | | | |
| nominal current | 1.5 A | | | |
| nominal voltage | 150 V DC | | | |
| test voltage | 1000 V | | | |
| insulating body material | PPS, GF | | | |
| temperature range | -40°C... +200°C / (260°C/10 s) | | | |
| class of flammibility | UL 94 V-0 | | | |
| specific insulation resistance | $> 10^{12} \Omega \cdot \text{m}$ | | | |

| | DIL ... G ..., DIL 14 W 90 | DILS ... PK ... | DILS ... GO | DILS ... LO |
|---|---|---------------------------|--------------------|-------------------------------------|
| contact material | CuZn-alloy | | CuSn alloy | |
| surface contact / contact sleeve | Ni+4...6 μ m Sn | Ni+ \geq 0.2 μ m Au | | |
| inner contact spring material | CuBe-alloy | | | |
| inner contact spring surface | Ni+0,75 μ m Au | | | |
| plugability for circuit points | 0,22x0,25mm... 0,4x0,55mm/ \varnothing 0,4...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 m Ω | | | |
| contact resistance | 4 m Ω | | | |
| contact resistance after 1000 cycles | 7 m Ω | | | |
| capacity between two adjacent contacts | 0,4 pF | | | |
| nominal current | 1.5 A | | | |
| nominal voltage | 150 V DC | | | |
| test voltage | 1000 V | | | |
| insulating body material | PPS, GF | | | PA 4.6. GF |
| temperature range | -40°C... +200°C/ (260°C/10 s) | | | -40°C... +163°C/ (260°C/10 s) |
| class of flammability | UL 94 V-0 | | | |
| specific insulation resistance | $>10^{12} \Omega \cdot m$ | | | |

Technical data Sockets

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

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

Technical data Sockets

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

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

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

Technical data Sockets

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

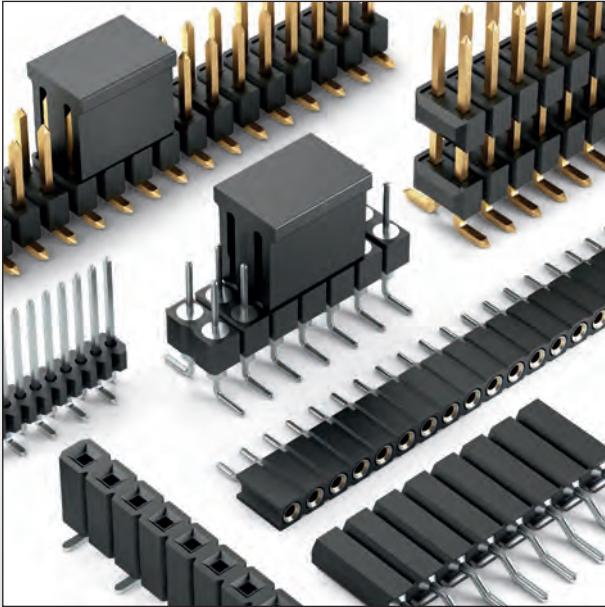
| | SB 16 | SB 13 | SB 15 |
|---|--------------------|--------------|--------------|
| contact material | CuZn-alloy | | |
| surface contact / contact sleeve | Ni+0.25 μ m Au | | |
| plugability for circuit points | Ø1mm | Ø2mm | |
| insert depth | 2...6mm | 6mm | 12mm |
| nominal current | | | 3 A |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

fischer

elektronik

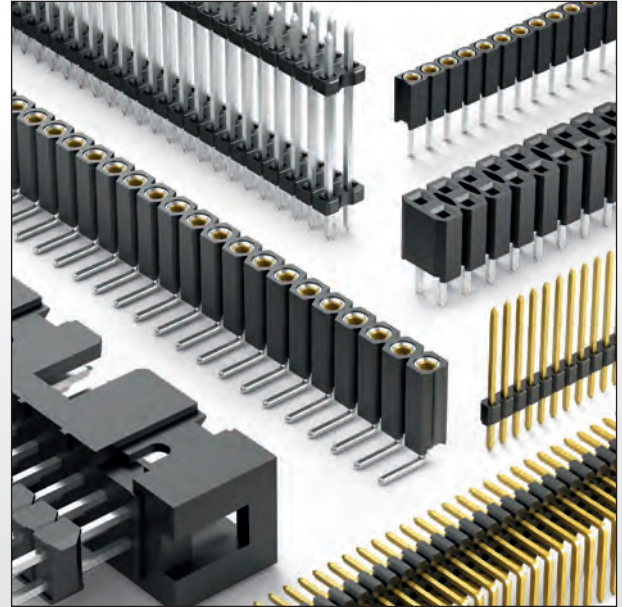
Male and female headers in SMD version
Male and female headers for solder
technology (THT)

Male and female header in press-in mounting
Multipoint connector



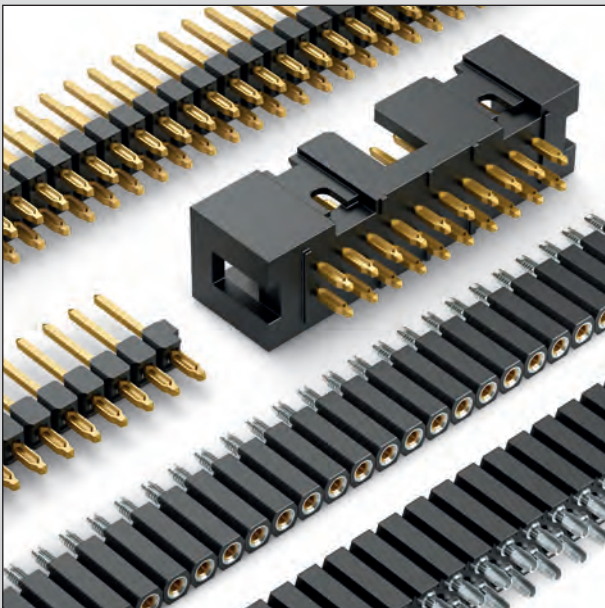
Male and female headers in SMD version

- 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



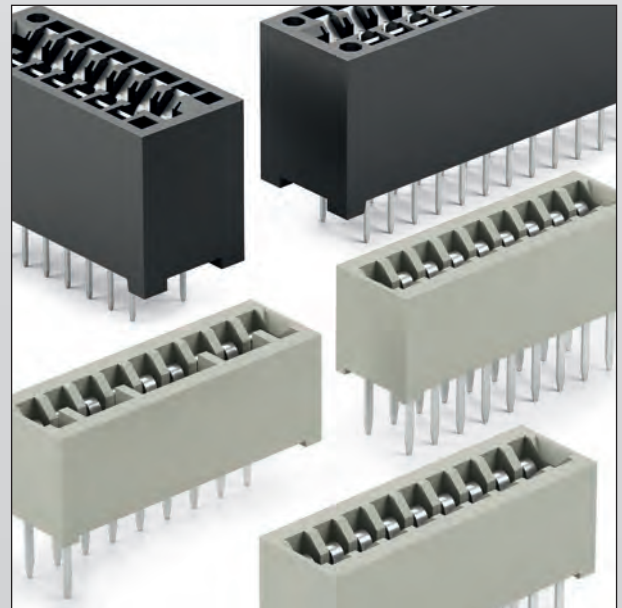
Male and female headers for solder technology (THT)

- 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 ...


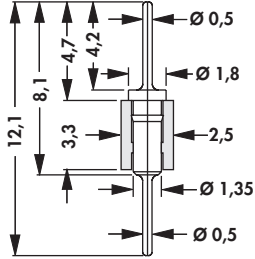

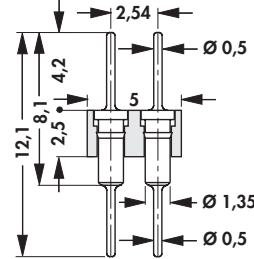

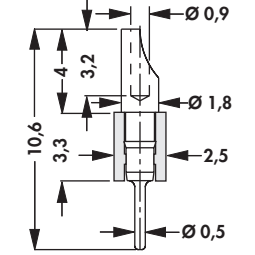

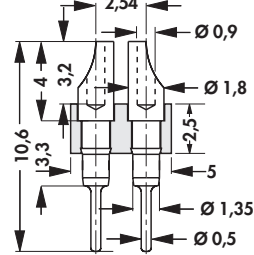

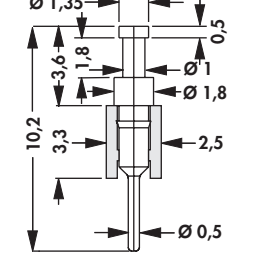

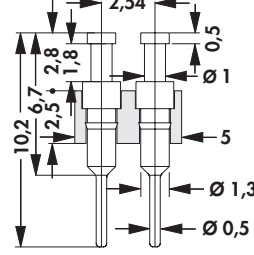

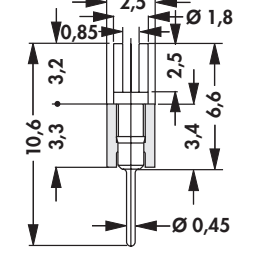

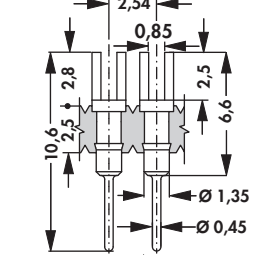
– version:

MK 05 / MK 205: contact pin on both sides

MK 04 / MK 204: with diagonal solder cup

MK 03 / MK 203: with solder head

MK 02 / MK 202: with solder fork

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

Male headers

Precision contacts, Wire Wrap pin □ 0.635 mm

– version:

MK 10 / MK 210: with diagonal solder bucket

MK 08 / MK 208: with solder fork

| | | | | | | | | | | | |
|--|------------------------|--|--|--|--|---------------------|------------------------|----------------|-----------------|------------------|----------------|
| <p>art. no.</p> <p>MK 10 ...</p> | | | <p>art. no.</p> <p>MK 210 ...</p> | | | | | | | | |
| <p>art. no.</p> <p>MK 08 ...</p> | | | <p>art. no.</p> <p>MK 208 ...</p> | | | | | | | | |
| <p>please indicate:</p> <table border="0"> <tr> <td>... no. of contacts</td> <td>... surface of contact</td> </tr> <tr> <td>one row 1 - 50</td> <td>G = gold-plated</td> </tr> <tr> <td>two rows 2 - 100</td> <td>Z = tin-plated</td> </tr> </table> | | | | | | ... no. of contacts | ... surface of contact | one row 1 - 50 | G = gold-plated | two rows 2 - 100 | Z = tin-plated |
| ... 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

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


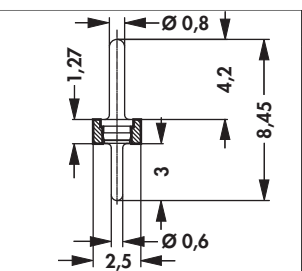

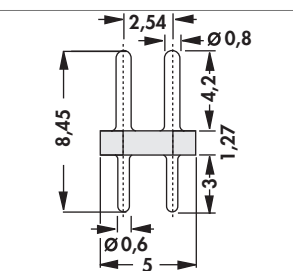

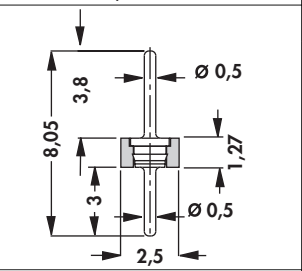

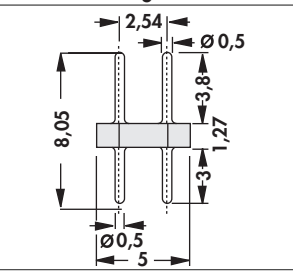

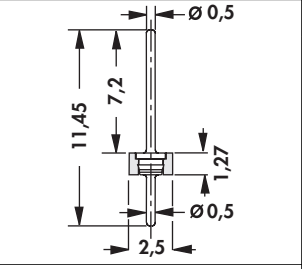

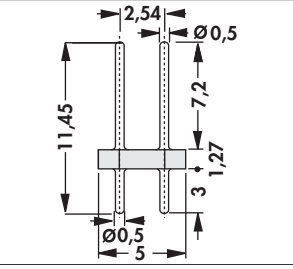

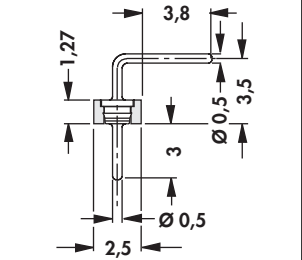
– parallel PCB connection

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

Male headers

Precision contacts, low profile

– also available as single contact, SK ...

| | | | | | | | | | |
|--|---|--|--|---------------------|------------------------|----------------|-----------------|------------------|----------------|
| <p>art. no.</p>  <p>MK LP 40 ...</p> |  | <p>art. no.</p>  <p>MK LP 240 ...</p> |  | | | | | | |
| <p>art. no.</p>  <p>MK LP 41 ...</p> |  | <p>art. no.</p>  <p>MK LP 241 ...</p> |  | | | | | | |
| <p>art. no.</p>  <p>MK LP 42 ...</p> |  | <p>art. no.</p>  <p>MK LP 242 ...</p> |  | | | | | | |
| <p>art. no.</p>  <p>MK LP 43 ...</p> |  | | | | | | | | |
| <p>please indicate:</p> <table border="0"> <tr> <td>... no. of contacts</td> <td>... surface of contact</td> </tr> <tr> <td>one row 1 - 50</td> <td>G = gold-plated</td> </tr> <tr> <td>two rows 4 - 100</td> <td>Z = tin-plated</td> </tr> </table> | | | | ... no. of contacts | ... surface of contact | one row 1 - 50 | G = gold-plated | two rows 4 - 100 | Z = tin-plated |
| ... 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

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

B

C

D

E

F

G

H

I

K

L

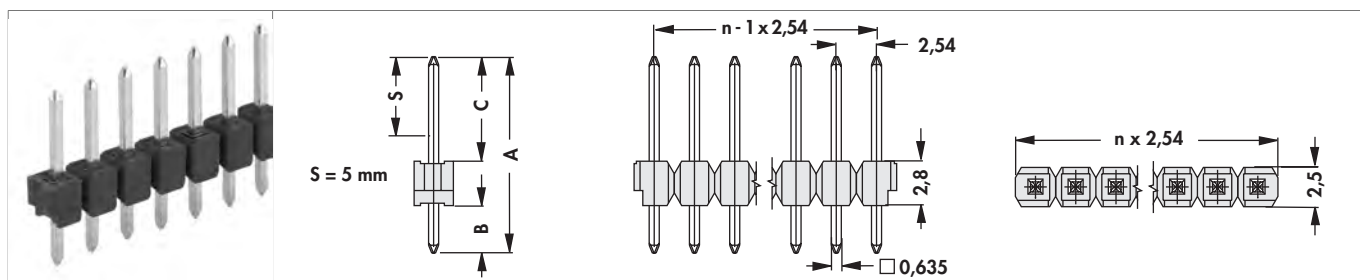
M

N

Male headers

– every pin length is available on request

– one row, □ 0.635 mm



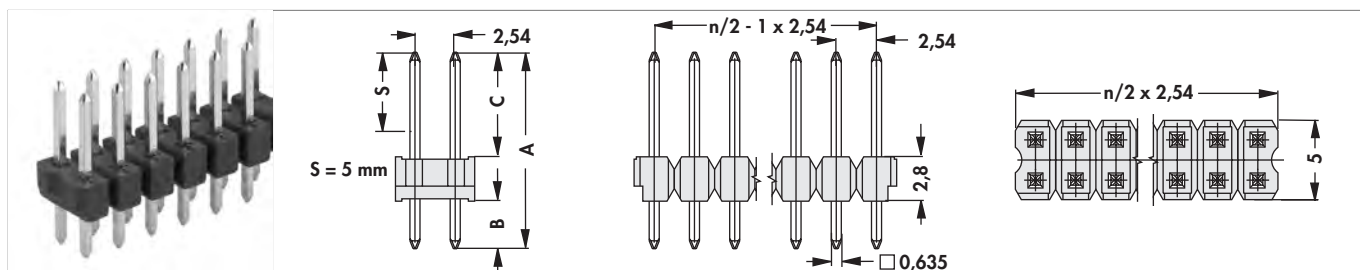
| art. no. | dim. [mm] | | | art. no. | dim. [mm] | | |
|----------------------|-----------|-----|------|---------------------|-----------|-----|------|
| | A | B | C | | A | B | C |
| SL 11 097... | 9.7 | 3.0 | 3.9 | SL 1 025 ... | 11.2 | 2.6 | 5.8 |
| SL 11 112 ... | 11.2 | 3.0 | 5.4 | SL 1 053 ... | 13.9 | 5.8 | 5.3 |
| SL 11 124 ... | 12.4 | 3.0 | 6.6 | SL 1 078 ... | 16.4 | 5.8 | 7.8 |
| SL 11 139 ... | 13.9 | 3.0 | 8.1 | SL 1 104 ... | 19.0 | 5.8 | 10.4 |
| SL 11 164 ... | 16.4 | 3.0 | 10.6 | SL 1 128 ... | 21.4 | 5.8 | 12.8 |
| SL 11 190 ... | 19.0 | 3.0 | 13.2 | SL 1 154 ... | 24.0 | 5.8 | 15.4 |
| SL 11 214 ... | 21.4 | 3.0 | 15.6 | SL 1 179 ... | 26.5 | 5.8 | 17.9 |
| SL 11 240 ... | 24.0 | 3.0 | 18.2 | SL 1 230 ... | 31.6 | 5.8 | 23.0 |
| SL 11 265 ... | 26.5 | 3.0 | 20.7 | | | | |
| SL 11 316 ... | 31.6 | 3.0 | 25.8 | | | | |

please indicate:

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

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

– two rows, □ 0.635 mm



| art. no. | dim. [mm] | | | art. no. | dim. [mm] | | |
|----------------------|-----------|-----|------|---------------------|-----------|-----|------|
| | A | B | C | | A | B | C |
| SL 22 097 ... | 9.7 | 3.0 | 3.9 | SL 2 025 ... | 11.2 | 2.6 | 5.8 |
| SL 22 112 ... | 11.2 | 3.0 | 5.4 | SL 2 053 ... | 13.9 | 5.8 | 5.3 |
| SL 22 124 ... | 12.4 | 3.0 | 6.6 | SL 2 078 ... | 16.4 | 5.8 | 7.8 |
| SL 22 139 ... | 13.9 | 3.0 | 8.1 | SL 2 104 ... | 19.0 | 5.8 | 10.4 |
| SL 22 164 ... | 16.4 | 3.0 | 10.6 | SL 2 128 ... | 21.4 | 5.8 | 12.8 |
| SL 22 190 ... | 19.0 | 3.0 | 13.2 | SL 2 154 ... | 24.0 | 5.8 | 15.4 |
| SL 22 214 ... | 21.4 | 3.0 | 15.6 | SL 2 179 ... | 26.5 | 5.8 | 17.9 |
| SL 22 240 ... | 24.0 | 3.0 | 18.2 | SL 2 230 ... | 31.6 | 5.8 | 23.0 |
| SL 22 265 ... | 26.5 | 3.0 | 20.7 | | | | |
| SL 22 316 ... | 31.6 | 3.0 | 25.8 | | | | |

please indicate:

... no. of contacts
two rows 2 - 72

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

Male headers

Through-Hole-Reflow (THR) soldering technology

– every pin length is available upon request

– one row, □ 0.635 mm

| art. no. | dim. [mm] | | | art. no. | dim. [mm] | | |
|-------------------|-----------|---|-----|-------------------|-----------|---|------|
| | A | B | C | | A | B | C |
| SL 20 THR 097 ... | 9.7 | 2 | 4.9 | SL 20 THR 139 ... | 13.9 | 2 | 9.1 |
| SL 20 THR 112 ... | 11.2 | 2 | 6.4 | SL 20 THR 164 ... | 16.4 | 2 | 11.6 |
| SL 20 THR 124 ... | 12.4 | 2 | 7.6 | | | | |

please indicate: ... no. of contacts one row 1 - 36

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

– two rows, □ 0.635 mm

| art. no. | dim. [mm] | | | art. no. | dim. [mm] | | |
|-------------------|-----------|---|-----|-------------------|-----------|---|------|
| | A | B | C | | A | B | C |
| SL 21 THR 097 ... | 9.7 | 2 | 4.9 | SL 21 THR 139 ... | 13.9 | 2 | 9.1 |
| SL 21 THR 112 ... | 11.2 | 2 | 6.4 | SL 21 THR 164 ... | 16.4 | 2 | 11.6 |
| SL 21 THR 124 ... | 12.4 | 2 | 7.6 | | | | |

please indicate: ... no. of contacts two rows 2 - 72

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

Male headers

"Dimensions A + B" changeable

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

- one row, □ 0.635 mm

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

| art. no. | dim. [mm] | | | art. no. | dim. [mm] | | |
|----------------------|-----------|------|-----|---------------------|-----------|------|-----|
| | A | B | C | | A | B | C |
| SLK 3 025 ... | 4.5 | 3.0 | 3.0 | SL 3 131 ... | 14.6 | 13.1 | 5.8 |
| SL 3 025 ... | 4.5 | 3.0 | 5.8 | SL 3 152 ... | 16.7 | 15.2 | 5.8 |
| SL 3 053 ... | 6.9 | 5.4 | 5.8 | SL 3 182 ... | 19.7 | 18.2 | 5.8 |
| SL 3 080 ... | 9.5 | 8.0 | 5.8 | SL 3 207 ... | 22.2 | 20.7 | 5.8 |
| SL 3 101 ... | 11.6 | 10.1 | 5.8 | | | | |

please indicate:

| | |
|--|---|
| ... no. of contacts one row 1 - 36 | ... surface of contact S = selective gold-plated G = gold-plated Z = tin-plated |
|--|---|

- two rows, □ 0,635 mm

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

| art. no. | dim. [mm] | | | art. no. | dim. [mm] | | |
|----------------------|-----------|-----|-----|---------------------|-----------|------|-----|
| | A | B | C | | A | B | C |
| SLK 4 025 ... | 4.5 | 3.0 | 3.0 | SL 4 101 ... | 11.6 | 10.1 | 5.8 |
| SL 4 025 ... | 4.5 | 3.0 | 5.8 | SL 4 152 ... | 16.7 | 15.2 | 5.8 |

please indicate:


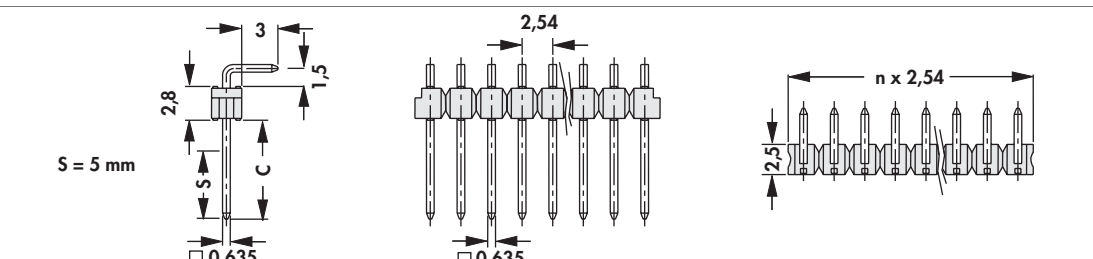
| | |
|---|---|
| ... no. of contacts two rows 2 - 72 | ... surface of contact S = selective gold-plated G = gold-plated Z = tin-plated |
|---|---|

Male headers

Insertion side "dimension C" changeable

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

- one row, □ 0.635 mm


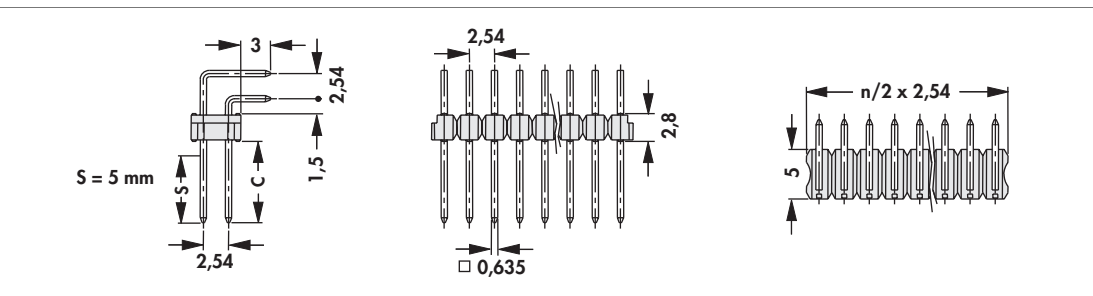



| art. no. | dim. [mm] | art. no. | dim. [mm] |
|----------------------|-----------|----------------------|-----------|
| | C | | C |
| SL 18 042 ... | 4.2 | SL 18 108 ... | 10.8 |
| SL 18 082 ... | 8.2 | SL 18 132 ... | 13.2 |

please indicate:

| | |
|---|---|
| ... no. of contacts one row 1 - 36 | ... surface of contact S = selective gold-plated G = gold-plated Z = tin-plated |
|---|---|

- two rows, □ 0.635 mm

| art. no. | dim. [mm] | art. no. | dim. [mm] |
|----------------------|-----------|----------------------|-----------|
| | C | | C |
| SL 19 082 ... | 8.2 | SL 19 132 ... | 13.2 |
| SL 19 108 ... | 10.8 | | |

please indicate:

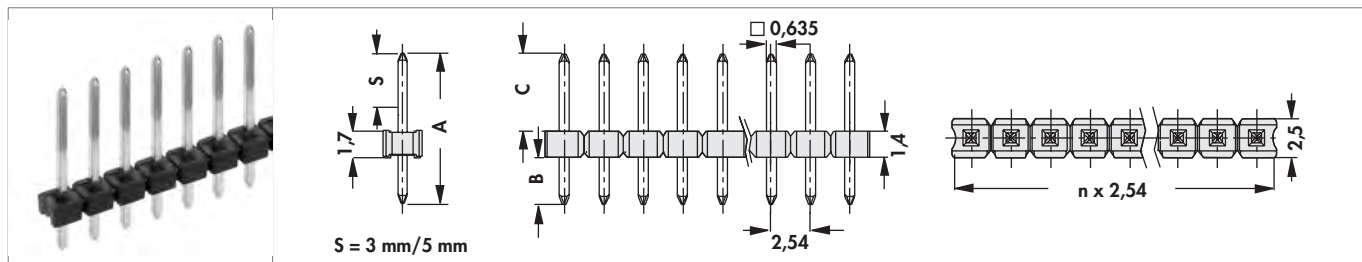
| | |
|--|---|
| ... no. of contacts two rows 2 - 72 | ... surface of contact S = selective gold-plated G = gold-plated Z = tin-plated |
|--|---|

Male headers

Low profile, straight

– any pin length is available on request

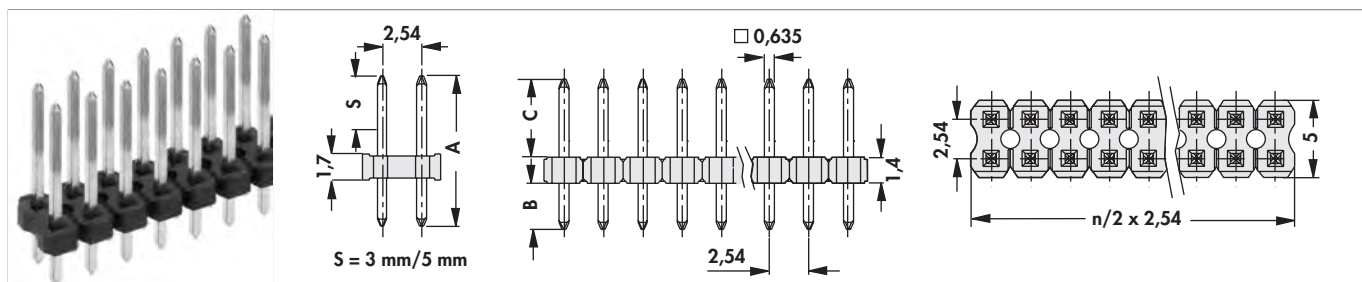
– one row, □ 0.635 mm



| art. no. | dim. [mm] | | | art. no. | dim. [mm] | | |
|-----------------|-----------|---|-----|-----------------|-----------|---|------|
| | A | B | C | | A | B | C |
| SL LP 1 082 ... | 8.2 | 3 | 3.5 | SL LP 1 139 ... | 13.9 | 3 | 9.2 |
| SL LP 1 097 ... | 9.7 | 3 | 5.0 | SL LP 1 164 ... | 16.4 | 3 | 11.7 |
| SL LP 1 112 ... | 11.2 | 3 | 6.5 | SL LP 1 190 ... | 19.0 | 3 | 14.3 |

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

– two rows, □ 0.635 mm



| art. no. | dim. [mm] | | | art. no. | dim. [mm] | | |
|-----------------|-----------|---|-----|-----------------|-----------|---|------|
| | A | B | C | | A | B | C |
| SL LP 2 082 ... | 8.2 | 3 | 3.5 | SL LP 2 139 ... | 13.9 | 3 | 9.2 |
| SL LP 2 097 ... | 9.7 | 3 | 5.0 | SL LP 2 164 ... | 16.4 | 3 | 11.7 |
| SL LP 2 112 ... | 11.2 | 3 | 6.5 | SL LP 2 190 ... | 19.0 | 3 | 14.3 |

please indicate: ... no. of contacts two rows 2 - 72 ... surface of contact
S = selective gold-plated
G = gold-plated
Z = tin-plated

Male headers

Low profile, angled

– any pin length is available on request

– one row, □ 0.635 mm

| art. no. | dim. [mm] | | | art. no. | dim. [mm] | | |
|-----------------|-----------|---|-----|-----------------|-----------|---|-----|
| | A | B | C | | A | B | C |
| SL LP 3 041 ... | 4.5 | 3 | 4.1 | SL LP 3 069 ... | 4.5 | 3 | 6.9 |

please indicate:

- ... no. of contacts one row 1 - 36
- ... surface of contact
 - S = selective gold-plated
 - G = gold-plated
 - Z = tin-plated

– two rows, □ 0.635 mm

| art. no. | dim. [mm] | | | art. no. | dim. [mm] | | |
|-------------------|-----------|---|-----|-----------------|-----------|---|-----|
| | A | B | C | | A | B | C |
| SL LP 4 041 ... G | 4.5 | 3 | 4.1 | SL LP 4 069 ... | 4.5 | 3 | 6.9 |
| SL LP 4 041 ... Z | 4.5 | 3 | 4.1 | | | | |

please indicate:

- ... no. of contacts two rows 2 - 72
- ... surface of contact
 - S = selective gold-plated
 - G = gold-plated
 - Z = tin-plated

Male headers

Sandwich-design

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

- one row, □ 0,635 mm

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

please indicate:

- ... no. of contacts one row 1 - 36
- ... surface of contact
 S = selective gold-plated
 G = gold-plated
 Z = tin-plated

- two rows, □ 0,635 mm

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

please indicate:

- ... no. of contacts two rows 2 - 72
- ... surface of contact
 S = selective gold-plated
 G = gold-plated
 Z = tin-plated

Male headers

Sandwich-design

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

| art. no. | dim. [mm] | | art. no. | dim. [mm] | |
|----------------------|-----------|------|----------------------|-----------|------|
| | A | L | | A | L |
| SL 13 071 ... | 7.1 | 21.4 | SL 13 235 ... | 23.5 | 37.8 |
| SL 13 097 ... | 9.7 | 24.0 | SL 13 265 ... | 26.5 | 40.8 |
| SL 13 122 ... | 12.2 | 26.5 | SL 13 310 ... | 31.0 | 45.3 |
| SL 13 147 ... | 14.7 | 29.0 | SL 13 365 ... | 36.5 | 50.8 |
| SL 13 187 ... | 18.7 | 33.0 | | | |

please indicate:

| | |
|---------------------------------------|--|
| ... no. of contacts 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 | L | | A | L |
| SL 14 071 ... | 7.1 | 21.4 | SL 14 235 ... | 23.5 | 37.8 |
| SL 14 097 ... | 9.7 | 24.0 | SL 14 265 ... | 26.5 | 40.8 |
| SL 14 122 ... | 12.2 | 26.5 | SL 14 310 ... | 31.0 | 45.3 |
| SL 14 147 ... | 14.7 | 29.0 | SL 14 365 ... | 36.5 | 50.8 |
| SL 14 187 ... | 18.7 | 33.0 | | | |

please indicate:

| | |
|--|--|
| ... no. of contacts two rows 2 - 72 | ... surface of contact S = selective gold-plated G = gold-plated Z = tin-plated |
|--|--|

Design specification for connectors, grid spacing 2.54 mm

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

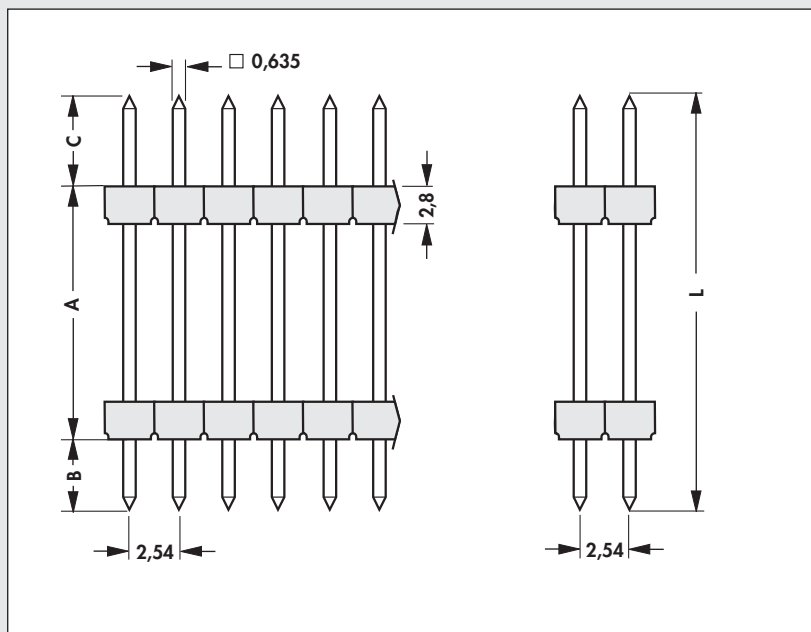
- inquiry
 order

surface finish

- selective gold-plated
 gold-plated
 tin-plated

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

number of contacts



dimensions:

L

A

B

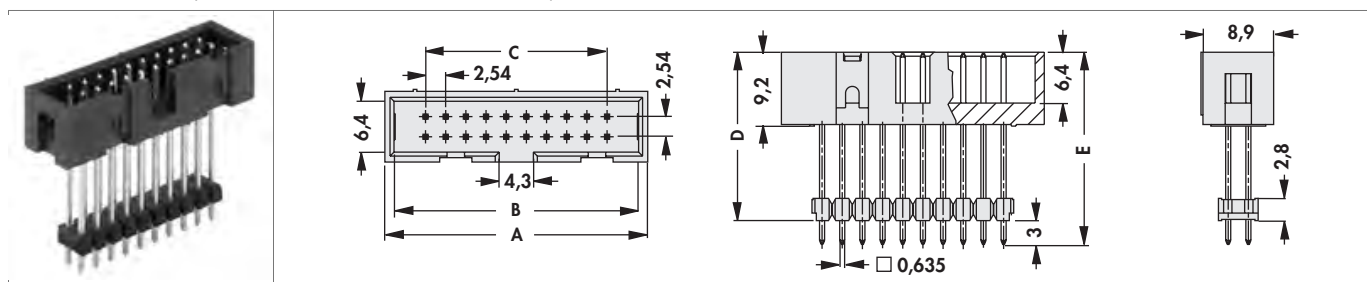
C

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

Male headers

Shrouded male header, with coding and bolting device

– suitable for many flat cable connectors in 2.54 mm pitch

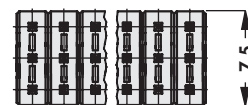
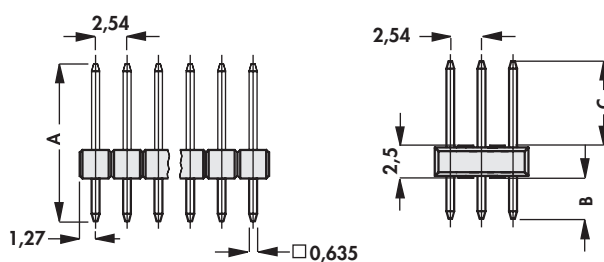


| art. no. | no. of contacts | dim. [mm] | | | | |
|----------------|-----------------|-----------|------|-------|------|------|
| | | A | B | C | D | E |
| SLU 10 165 ... | 10 | 20.4 | 17.8 | 10.16 | 13.5 | 16.5 |
| SLU 10 191 ... | 10 | 20.4 | 17.8 | 10.16 | 16.1 | 19.1 |
| SLU 10 241 ... | 10 | 20.4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

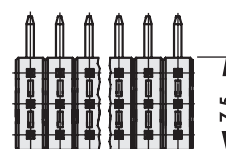
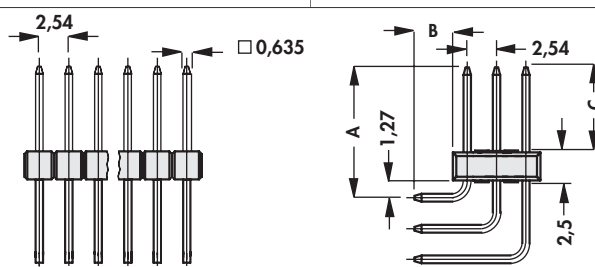
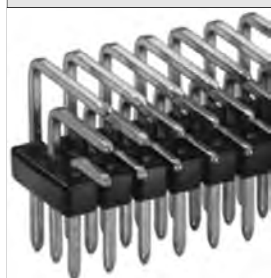
please indicate: ... surface of contact
S = selective gold-plated
Z = tin-plated

Male headers

Three rows, □ 0.635 mm



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



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

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

Male headers

Precision contacts, plug pins Ø 0.5 mm

| | | | | | |
|---|---|--|--|-------------------------------------|---|
| <p>art. no.</p> <p>MK 26 SMD ...</p> | | <p>Ø 0,47</p> <p>8,1</p> <p>3,3</p> <p>4,2</p> <p>10</p> <p>5,5</p> | <p>n x 2,54</p> <p>2,54</p> <p>Pin 1</p> | <p>2,5</p> <p>2,54</p> <p>Pin 1</p> | <p>5,08</p> <p>0,8</p> <p>6</p> <p>2,54</p> <p>3,2</p> <p>Pin 1</p> |
| <p>please indicate:</p> | <p>... no. of contacts one row 4 - 20</p> | <p>... surface of contact G = gold-plated Z = tin-plated</p> | <p>... packing (optional)</p> <p>SM = bar magazine</p> <p>B SM = pick and place pad and bar magazine</p> <p>B TR = pick and place pad and tape and reel (250pcs/reel)</p> | | |

... packing (option) - additions:
MK 26 SMD ... B TR: 4-12 contacts

Option, for automatic assembly

- reel diameter Ø 330 mm

| | | | | |
|-------------------------------|--|--|--|--|
| | <p>8,5</p> <p>5</p> <p>13,3</p> <p>5,5</p> <p>7</p> <p>17,5</p> <p>10,8</p> <p>7</p> <p>17,5</p> <p>10,8</p> <p>Ø 0,47</p> <p>2,54</p> <p>MK 26 SMD ... SM</p> <p>MK 26 SMD ... B SM</p> | | | |
| <p>... SM</p> <p>... B SM</p> | <p>12</p> <p>4</p> <p>40,4</p> <p>44</p> <p>Ø 2</p> <p>Ø 1,5</p> <p>13,8</p> <p>MK 26 SMD ... B TR</p> | | | |
| <p>... B TR</p> | | | | |

Male headers

Precision contacts, plug pins Ø 0.5 mm

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

... packing (option) - additions:
MK 226 SMD ... SM; ... B SM: 6-40 contacts
MK 226 SMD ... B TR: 6-24 contacts

Option, for automatic assembly

– reel diameter Ø 330 mm

| | | | | | |
|-----------------|-----------------|----------------------------|--|--------------------------|----------------------------|
| | | | | | |
| ... SM | ... B SM | | | MK 226 SMD ... SM | MK 226 SMD ... B SM |
| | | | | | |
| ... B TR | | MK 226 SMD ... B TR | | | |

Male headers

Precision contacts, plug pins Ø 0.5 mm

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

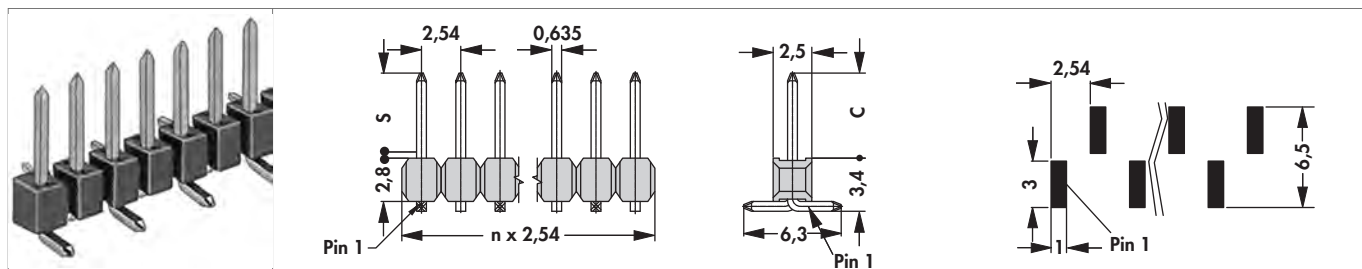
... packing (option) - additions:
MK 27 SMD ... SM: 3-20 contacts

Option, for automatic assembly

| | |
|---------------|-------------------------|
| | |
| <p>... SM</p> | <p>MK 27 SMD ... SM</p> |

Male headers

□ 0.635 mm



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

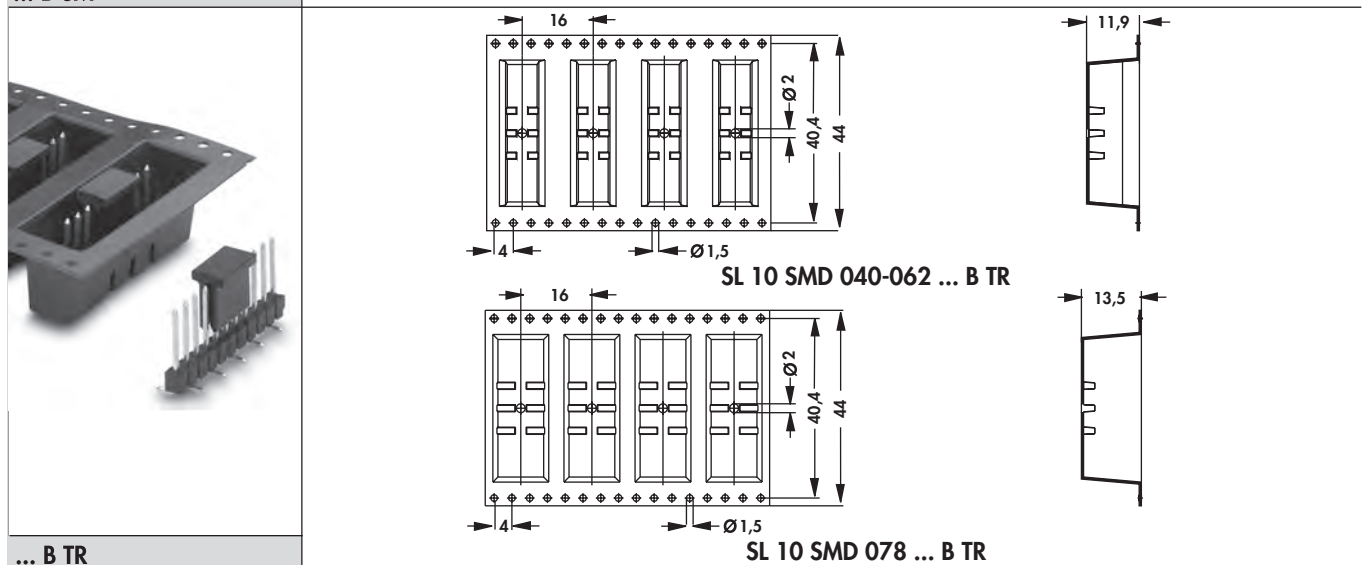
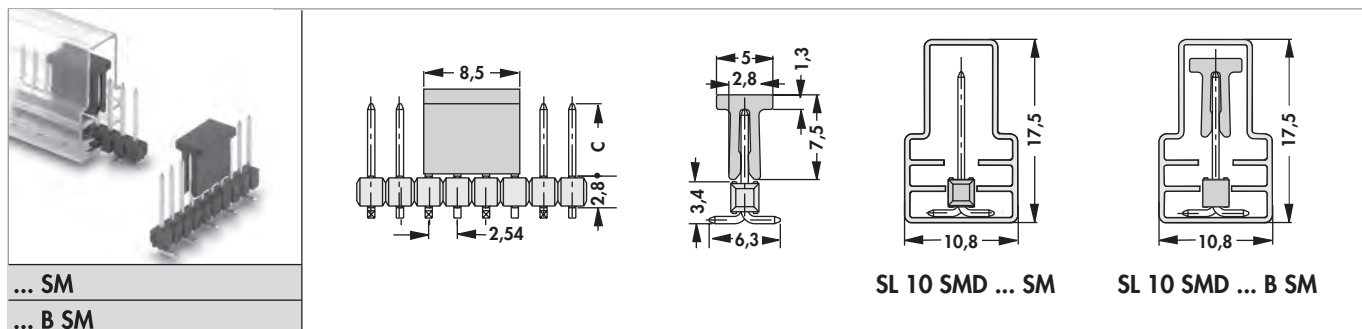
please indicate: ... no. of contacts one row 4 - 20 ... surface of contact
 S = selective gold-plated
 G = gold-plated
 Z = tin-plated

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

... packing (option) - additions:
 SL 10 SMD 040-104 ... SM; ... B SM: 4-20 contacts
 SL 10 SMD 040-078 ... B TR: 4-12 contacts

Option, for automatic assembly

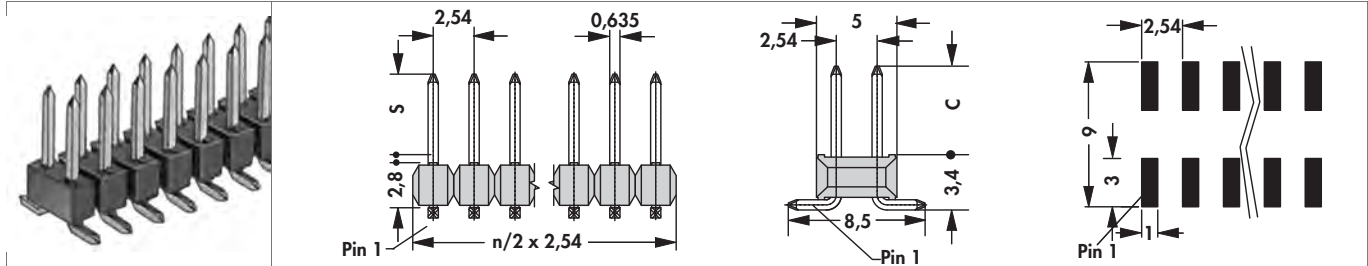
- reel diameter Ø 330 mm



... B TR

Male headers

□ 0.635 mm



| art. no. | dim. [mm] C | art. no. | dim. [mm] C | art. no. | dim. [mm] C |
|-------------------|----------------|-------------------|----------------|-------------------|----------------|
| SL 11 SMD 040 ... | 4.0 | SL 11 SMD 062 ... | 6.7 | SL 11 SMD 104 ... | 10.8 |
| SL 11 SMD 052 ... | 5.5 | SL 11 SMD 078 ... | 8.2 | SL 11 SMD 130 ... | 13.4 |

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

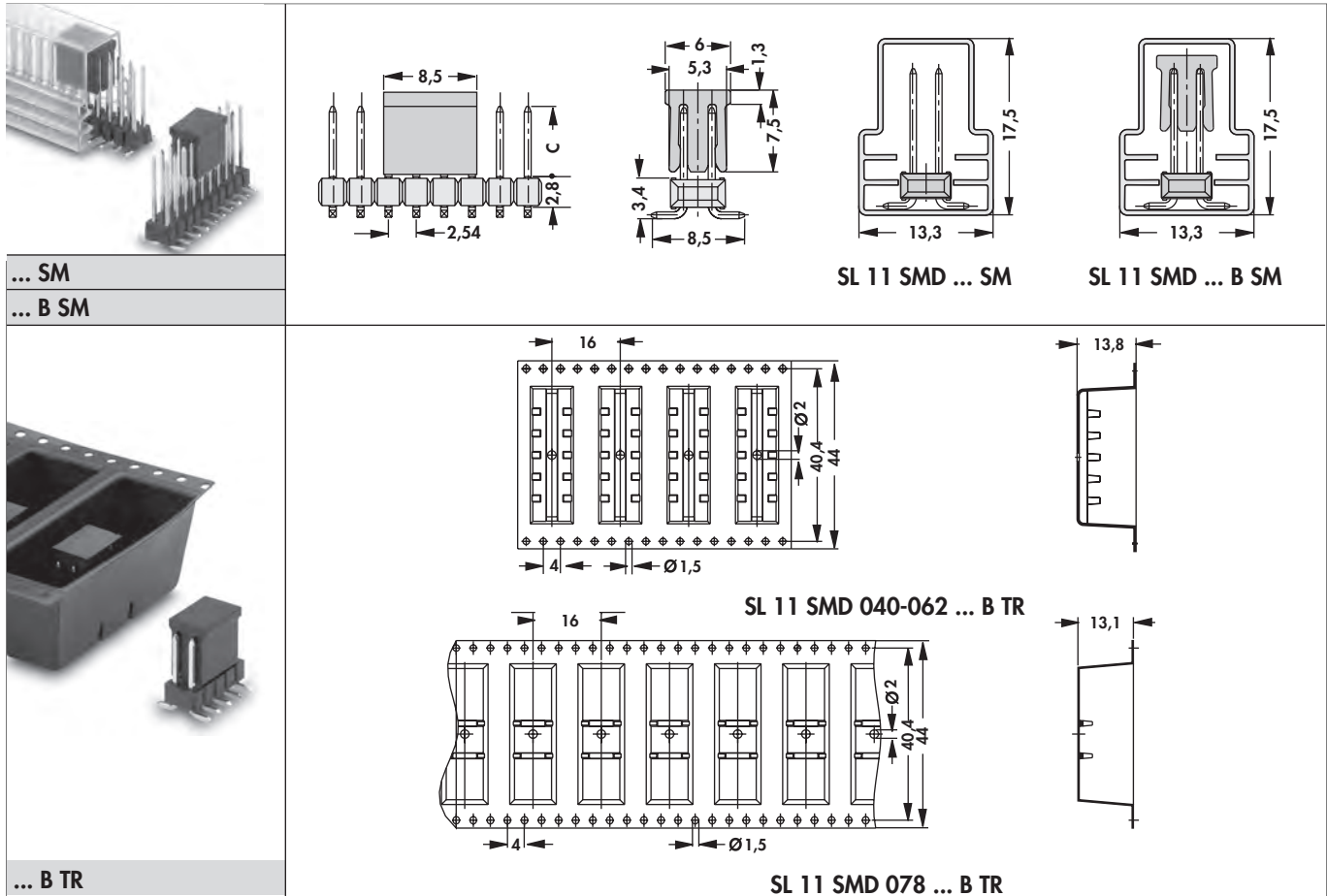
... surface of contact
S = selective gold-plated
G = gold-plated
Z = tin-plated

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

... packing (option) - additions:
 SL 11 SMD 040-104 ... SM; ... B SM: 6-40 contacts
 SL 11 SMD 040-078 ... B TR: 6-24 contacts

Option, for automatic assembly

- reel diameter Ø 330 mm



... SM
 ... B SM

... B TR

Female headers for PC 104 Jumpers
 Female headers for PC 104 Direct female connectors


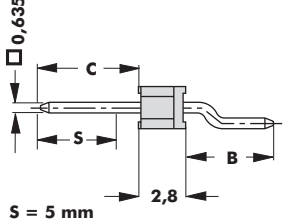
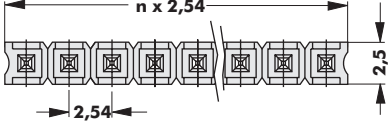
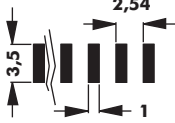
→ G 55 - 56
 → G 76 - 77
 → G 55 - 56
 → G 75

High-prec. male headers 2.54 THT
 Female headers 2.54 THT
 Female headers 2.54 SMD
 Technical data

→ G 45 - 55
 → G 52
 → G 58 - 63
 → G 78 - 84

Male headers

0.635 mm

| art. no. | dim. [mm] | | art. no. | dim. [mm] | | art. no. | dim. [mm] | |
|-------------------|-----------|-----|-------------------|-----------|-----|-------------------|-----------|------|
| | B | C | | B | C | | B | C |
| SL 12 SMD 031 ... | 5.2 | 3.1 | SL 12 SMD 035 ... | 3.2 | 3.5 | SL 12 SMD 083 ... | 5.2 | 8.3 |
| SL 12 SMD 032 ... | 3.2 | 5.8 | SL 12 SMD 058 ... | 5.2 | 5.8 | SL 12 SMD 109 ... | 5.2 | 10.9 |

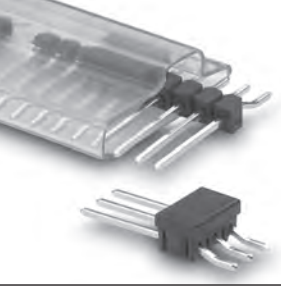
please indicate:

- ... no. of contacts one row 2 - 20
- ... surface of contact
 S = selective gold-plated
 G = gold-plated
 Z = tin-plated
- ... packing (optional)
 B SM = pick and place pad and bar magazine
 B TR = pick and place pad and tape and reel (500pcs/reel)

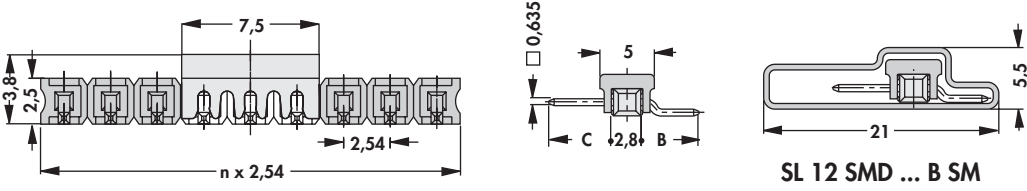
... packing (option) - additions:
 SL 12 SMD ... B TR: 2-13 contacts

Option, for automatic assembly

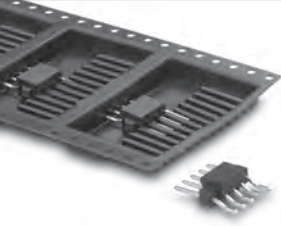
- reel diameter Ø 330 mm



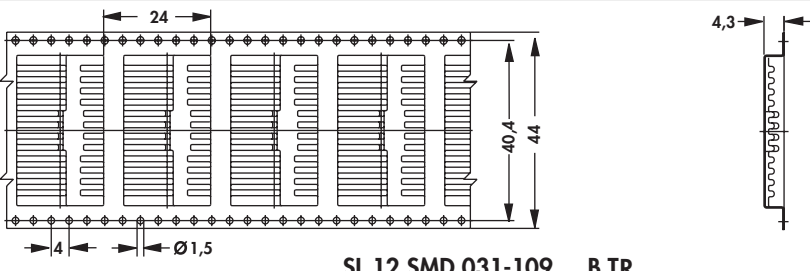
... B SM



SL 12 SMD ... B SM



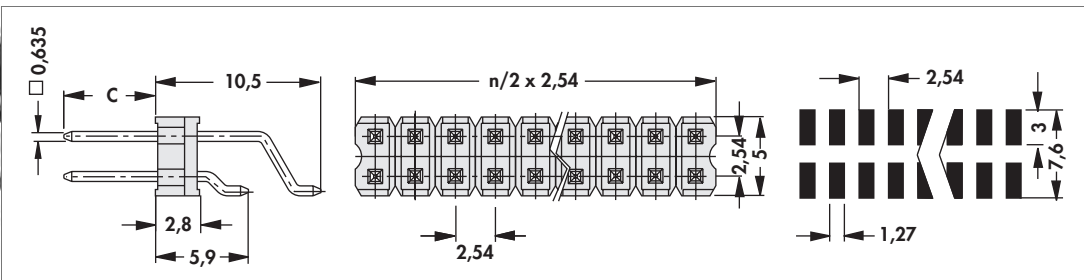
... B TR



SL 12 SMD 031-109 ... B TR

Male headers

□ 0.635 mm



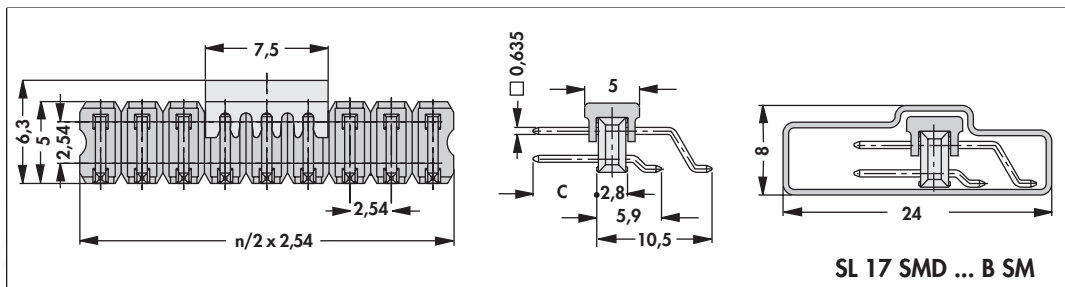
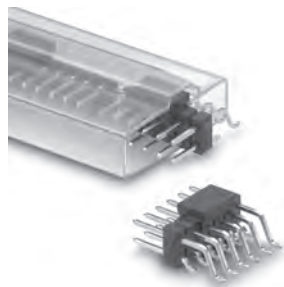
| art. no. | dim. [mm] | art. no. | dim. [mm] | art. no. | dim. [mm] |
|-------------------|-----------|-------------------|-----------|-------------------|-----------|
| | C | | C | | C |
| SL 17 SMD 058 ... | 5.8 | SL 17 SMD 083 ... | 8.3 | SL 17 SMD 109 ... | 10.9 |

| | | | |
|------------------|---------------------|-----------------------------------|---|
| please indicate: | ... no. of contacts | ... 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) |

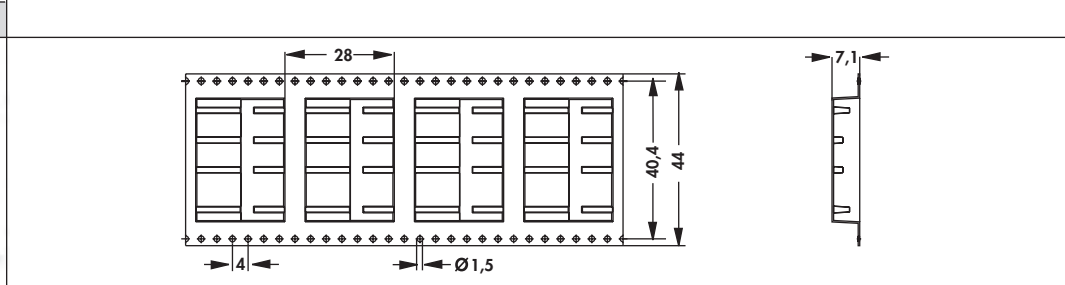
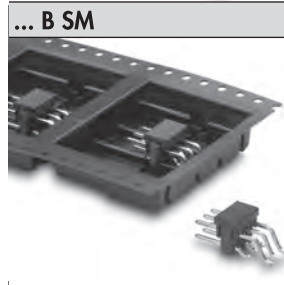
... packing (option) - additions:
SL 17 SMD ... B TR: 6-24 contacts

Option, for automatic assembly

- reel diameter Ø 330 mm



SL 17 SMD ... B SM

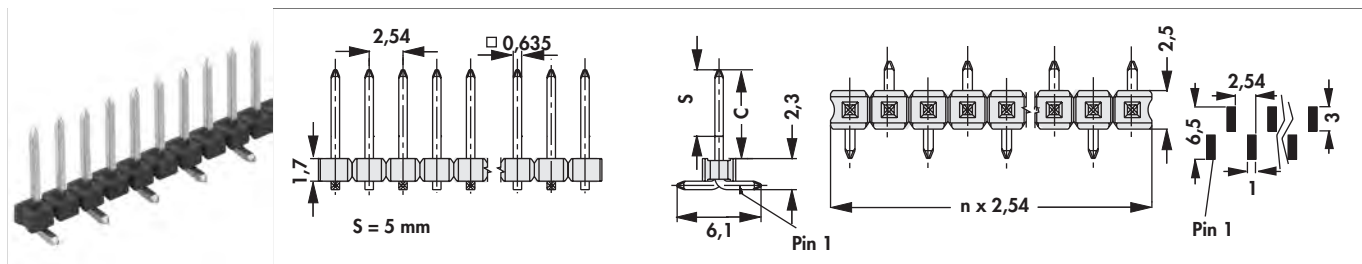


SL 17 SMD 058-109 ... B TR

... B TR

Male headers

Low profile in SMD □ 0.635 mm



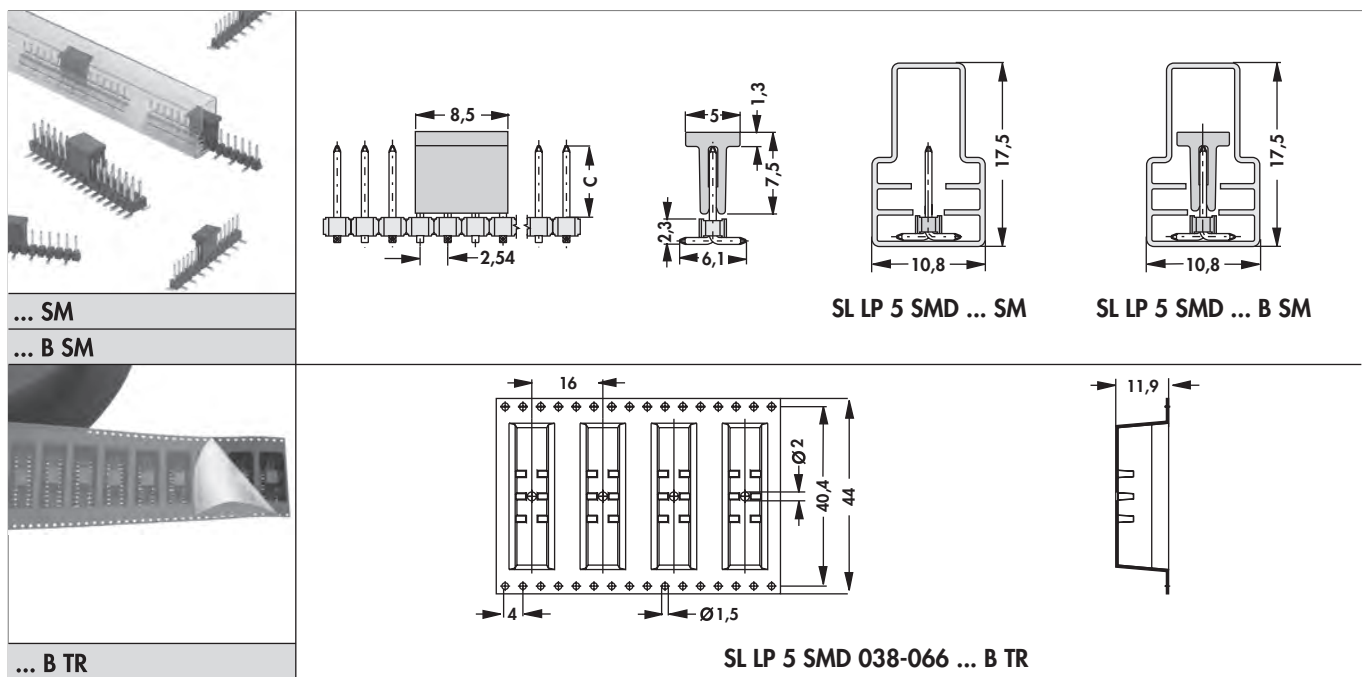
| art. no. | dim. [mm] | art. no. | dim. [mm] | art. no. | dim. [mm] |
|---------------------|-----------|---------------------|-----------|---------------------|-----------|
| | C | | C | | C |
| SL LP 5 SMD 038 ... | 3.8 | SL LP 5 SMD 051 ... | 5.1 | SL LP 5 SMD 066 ... | 6.6 |

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

... packing (option) - additions:
 SL LP 5 SMD ... SM; ... B SM: 4-20 contacts
 SL LP 5 SMD ... B TR: 4-12 contacts

Option, for automatic assembly

- reel diameter Ø 330 mm



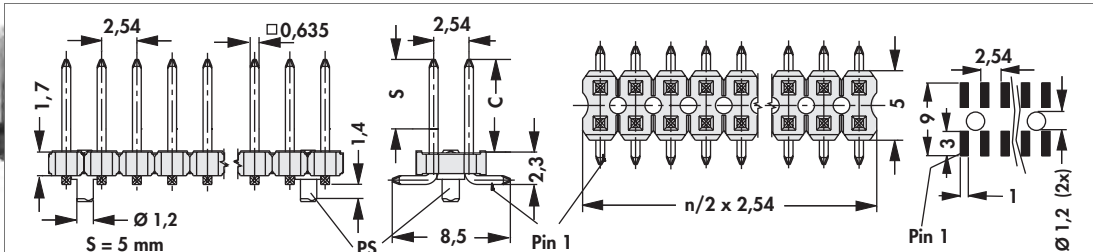
... SM
 ... B SM

... B TR

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

Male headers

Low profile in SMD □ 0.635 mm



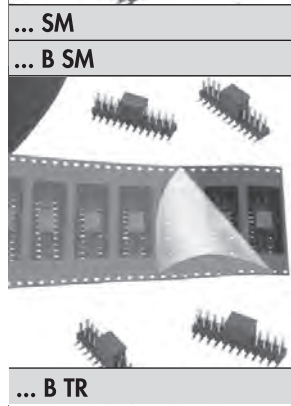
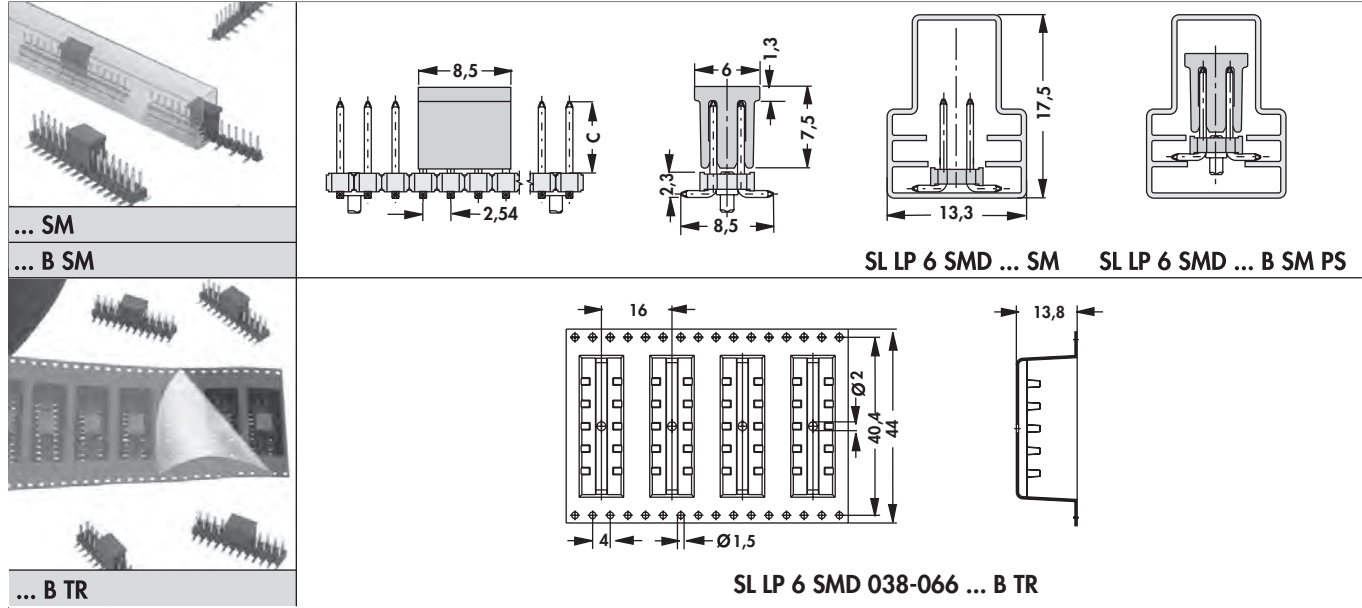
| art. no. | dim. [mm] | art. no. | dim. [mm] | art. no. | dim. [mm] |
|---------------------|-----------|---------------------|-----------|---------------------|-----------|
| | C | | C | | C |
| SL LP 6 SMD 038 ... | 3.8 | SL LP 6 SMD 051 ... | 5.1 | SL LP 6 SMD 066 ... | 6.6 |

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

... packing (option) - additions:
 SL LP 6 SMD ... SM; ... B SM: 6-40 contacts
 SL LP 6 SMD ... B TR: 6-24 contacts

Option, for automatic assembly

- reel diameter Ø 330 mm



Female headers 1.27 THT
 Female headers 2.00 SMD
 Jumpers
 Direct female connectors

→ G 71
 → G 68
 → G 76 - 77
 → G 75

High-prec. fem. headers 1.27 THT
 High-prec. male head. 1.27 THT
 Male headers 2.00 THT
 Technical data

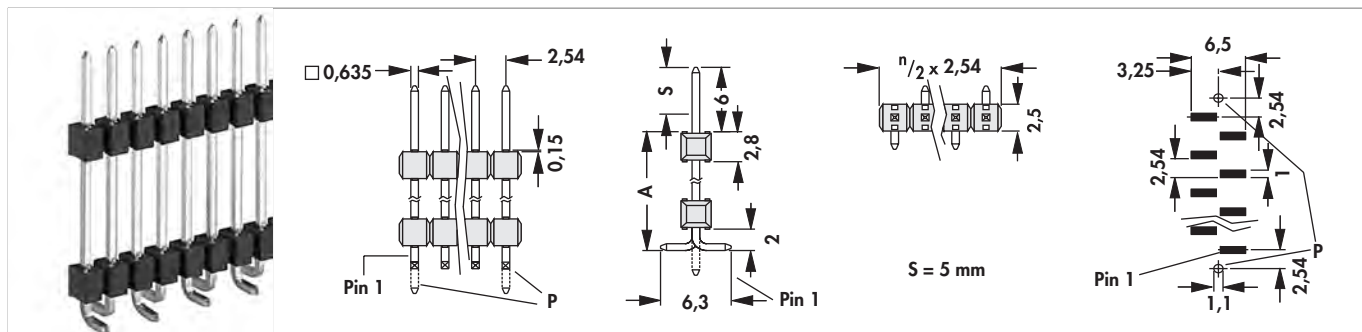
→ G 72
 → G 42
 → G 30 - 31
 → G 78 - 84

A
B
C
D
E
F
G
H
I
K
L
M
N

Male headers

□ 0.635 mm – for interconnections of stacked PCBs

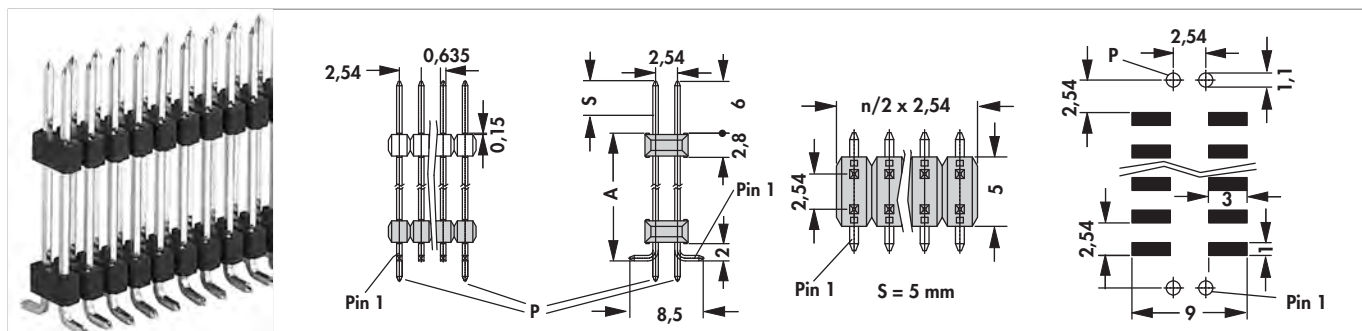
- one row, 4-20 contacts
- within the total length of the pin the insulator can be changed according to customer's request



| art. no. | dim. [mm] A | art. no. | dim. [mm] A | art. no. | dim. [mm] A |
|-------------------|----------------|-------------------|----------------|-------------------|----------------|
| SL 15 SMD 107 ... | 10.7 | SL 15 SMD 182 ... | 18.2 | SL 15 SMD 207 ... | 20.7 |

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

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



| art. no. | dim. [mm] A | art. no. | dim. [mm] A | art. no. | dim. [mm] A |
|-------------------|----------------|-------------------|----------------|-------------------|----------------|
| SL 16 SMD 107 ... | 10.7 | SL 16 SMD 182 ... | 18.2 | SL 16 SMD 247 ... | 24.7 |
| SL 16 SMD 157 ... | 15.7 | SL 16 SMD 207 ... | 20.7 | | |

please indicate: ... no. of contacts two rows 4 - 40 ... surface of contact
 S = selective gold-plated
 G = gold-plated
 Z = tin-plated

Male headers

Male connectors

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

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

| art. no. | dim. [mm] | | | art. no. | dim. [mm] | | |
|------------------|-----------|-----|-----|------------------|-----------|-----|------|
| | A | B | C | | A | B | C |
| SLP 1 16 117 ... | 11.7 | 3.5 | 5.4 | SLP 1 16 195 ... | 19.5 | 3.5 | 13.2 |
| SLP 1 16 129 ... | 12.9 | 3.5 | 6.6 | SLP 1 32 139 ... | 13.9 | 4.5 | 6.6 |
| SLP 1 16 144 ... | 14.4 | 3.5 | 8.1 | SLP 1 32 164 ... | 16.4 | 4.5 | 9.1 |

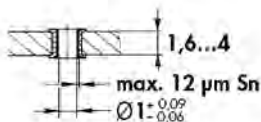
please indicate: ... no. of contacts one row 1 - 36 ... surface of contact G = gold-plated Z = tin-plated

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

| art. no. | dim. [mm] | | | art. no. | dim. [mm] | | |
|------------------|-----------|-----|-----|------------------|-----------|-----|------|
| | A | B | C | | A | B | C |
| SLP 2 16 117 ... | 11.7 | 3.5 | 5.4 | SLP 2 16 195 ... | 19.5 | 3.5 | 13.2 |
| SLP 2 16 129 ... | 12.9 | 3.5 | 6.6 | SLP 2 32 139 ... | 13.9 | 4.5 | 6.6 |
| SLP 2 16 144 ... | 14.4 | 3.5 | 8.1 | SLP 2 32 164 ... | 16.4 | 4.5 | 9.1 |

please indicate: ... no. of contacts two rows 2 - 72 ... surface of contact G = gold-plated Z = tin-plated

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



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

→ G 33 - 35
→ G 43
→ G 7
→ G 71

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


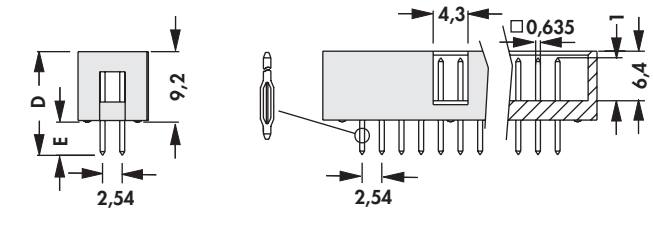
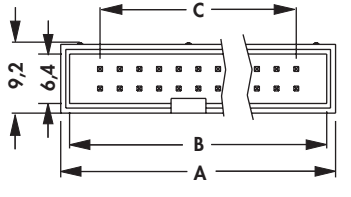
→ G 76 - 77
→ G 53 - 56
→ G 68
→ G 78 - 84

G 28

Male headers

Male header with shroud

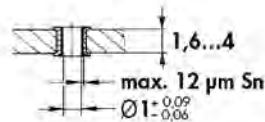
- suitable for lockable female multipoint connector **VFL** and can be combined with many other female multipoint connectors with grid spacing 2.54 mm (e. g.: **PV, BL**)
- press-fit mounting without soldering, resilient press-fit area, easy insertion into PCB
- **contact material:** Cu Sn 6

| art. no. | no. of contacts | dim. [mm] | | | | |
|-----------------------|-----------------|-----------|------|-------|------|-----|
| | | A | B | C | D | E |
| SLUP 31 10 ... | 10 | 20.4 | 17.8 | 10.16 | 12.6 | 3.5 |
| SLUP 31 16 ... | 16 | 28.0 | 25.4 | 17.78 | 12.6 | 3.5 |
| SLUP 31 20 ... | 20 | 33.1 | 30.5 | 22.86 | 12.6 | 3.5 |

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

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



Male headers

Standard, □ 0.5 mm

– any requested number of contact is available

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

Male headers

Design, matching for BLY ...

- 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 |
| SLY 5 040 ... | 4.0 | 10.4 |
| SLY 5 075 ... | 7.5 | 13.9 |
| SLY 5 081 ... G | 8.1 | 14.5 |
| SLY 5 081 ... Z | 8.1 | 14.5 |
| SLY 5 122 ... G | 12.2 | 18.6 |
| SLY 5 122 ... Z | 12.2 | 18.6 |

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 |
| SLY 6 040 ... | 4.0 | 10.4 |
| SLY 6 075 ... | 7.5 | 13.9 |
| SLY 6 081 ... G | 8.1 | 14.5 |
| SLY 6 081 ... Z | 8.1 | 14.5 |
| SLY 6 122 ... G | 12.2 | 18.6 |
| SLY 6 122 ... Z | 12.2 | 18.6 |

please indicate:

- ... no. of contacts two rows 2 - 100
- ... surface of contact
 - S** = selective gold-plated
 - G** = gold-plated
 - Z** = tin-plated

Design specification for connectors, grid spacing 2 mm

date: _____

pieces per order: _____

company: _____

name, dept.: _____

town: _____

street: _____

fax: _____

signature: _____

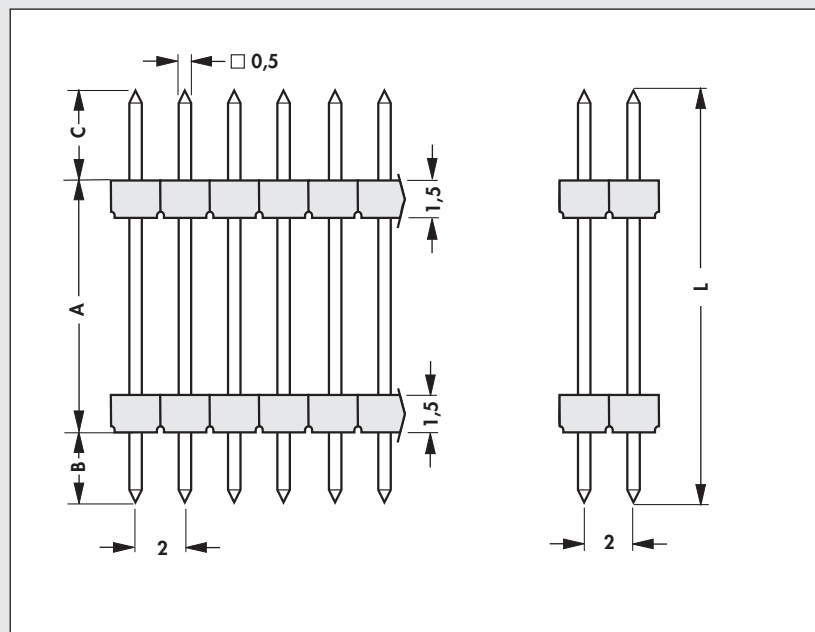
- inquiry
- order

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

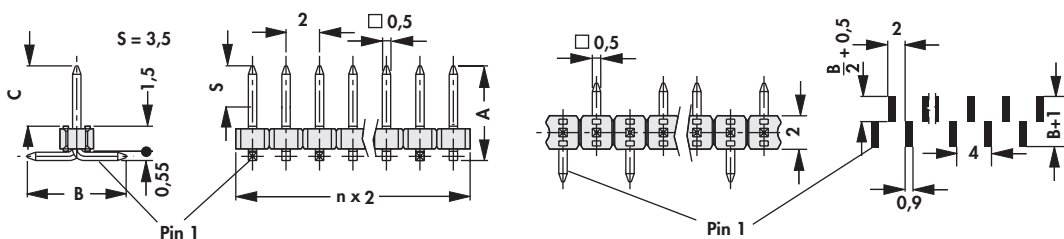
B

C

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

Male headers

□ 0.5 mm



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

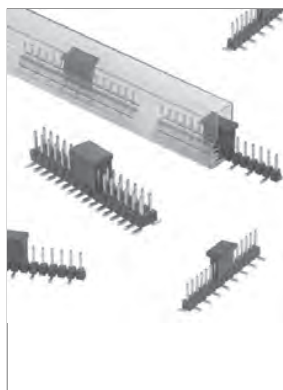
please indicate:

- ... no. of contacts one row 4 - 20
- ... surface of contact
 - S = selective gold-plated
 - G = gold-plated
 - Z = tin-plated
- ... packing (optional)
 - SM = bar magazine
 - B SM = pick and place pad and bar magazine
 - B TR = pick and place pad and tape and reel (650pcs/reel)

... packing (option) - additions:
SLY 7 SMD 036-045 ... B TR: 4-15 contacts

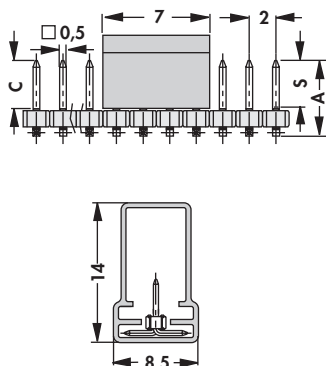
Option, for automatic assembly

- reel diameter \varnothing 330 mm

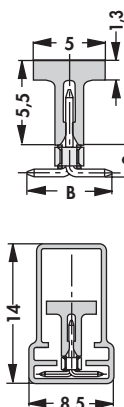


... SM

... B SM



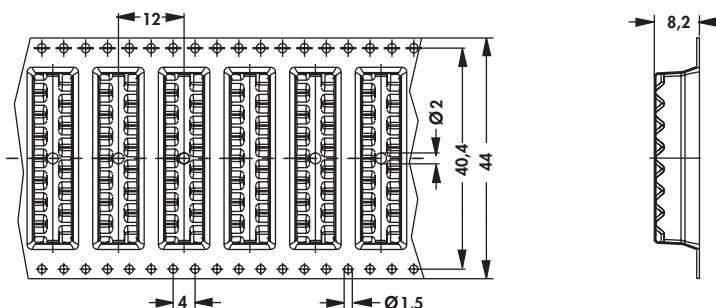
SLY 7 SMD ... SM



SLY 7 SMD ... B SM



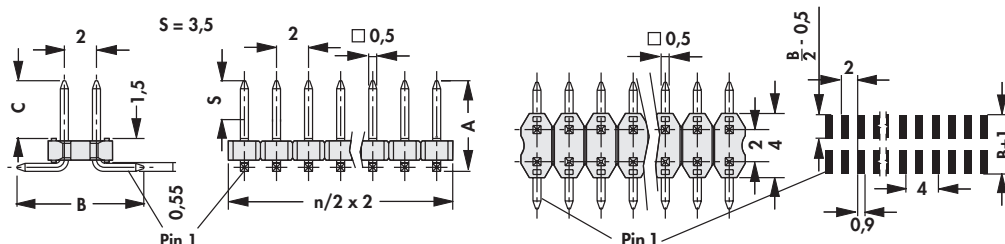
... B TR



SLY 7 SMD 036-045 ... B TR

Male headers

□ 0.5 mm



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

please indicate:

| | | |
|---|---|---|
| ... no. of contacts two rows 4 - 40 | ... surface of contact S = selective gold-plated G = gold-plated Z = tin-plated | ... packing (optional) SM = bar magazine B SM = pick and place pad and bar magazine B TR = pick and place pad and tape and reel (650pcs/reel) |
|---|---|---|

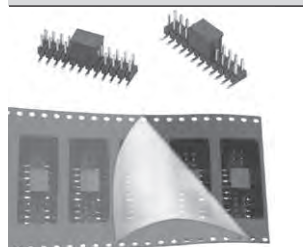
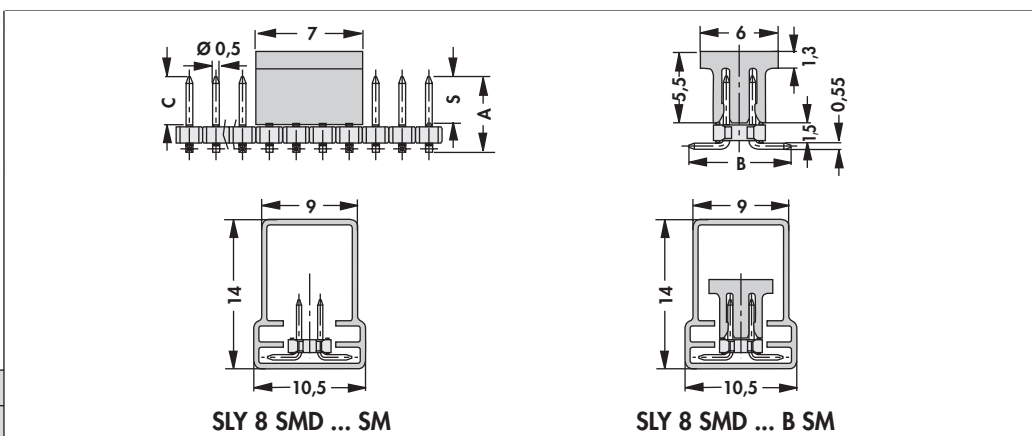
... packing (option) - additions:
SLY 8 SMD ... SM; ... B SM: 6-40 contacts
SLY 8 SMD 036-045 ... B TR: 6-30 contacts

Option, for automatic assembly

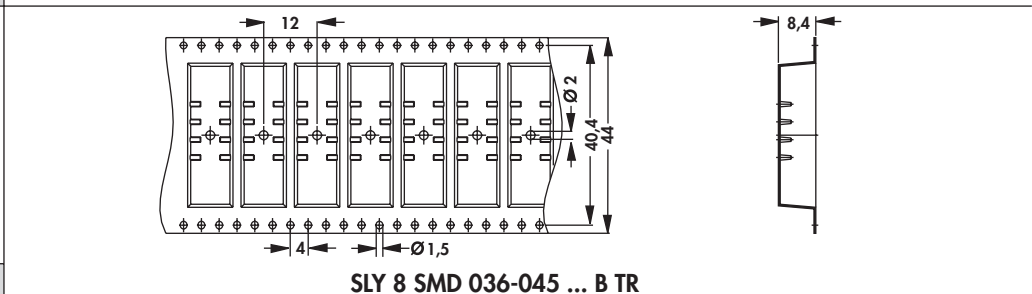
– reel diameter Ø 330 mm



... SM
... B SM



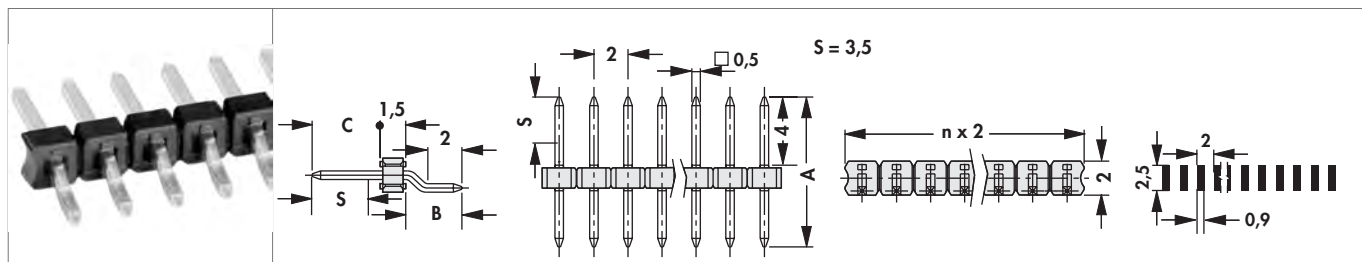
... B TR



A
B
C
D
E
F
G
H
I
K
L
M
N

Male headers

0.5 mm

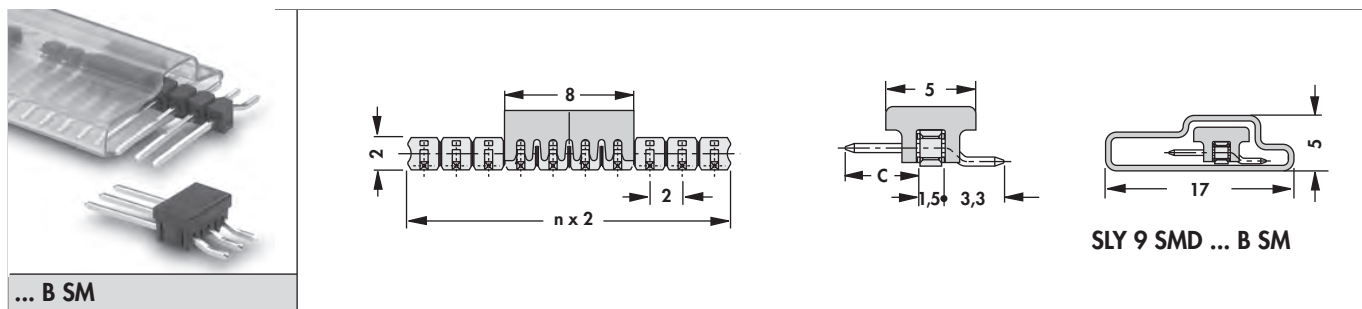


| art. no. | dim. [mm] | | | |
|-------------------|-----------|-----|-----|-----|
| | A | B | C | S |
| SLY 9 SMD 040 ... | 8.8 | 3.3 | 4.0 | 3.5 |
| SLY 9 SMD 055 ... | 10.3 | 3.3 | 5.5 | 3.5 |

please indicate: ... no. of contacts one row 2 - 20 ... surface of contact S = selective gold-plated G = gold-plated Z = tin-plated ... packing (optional) B SM = pick and place pad and bar magazine

Option, for automatic assembly

- reel diameter Ø 330 mm



G 35

Jumpers
Female header grid 2.00
Female headers 2.00 THT
Direct female connectors

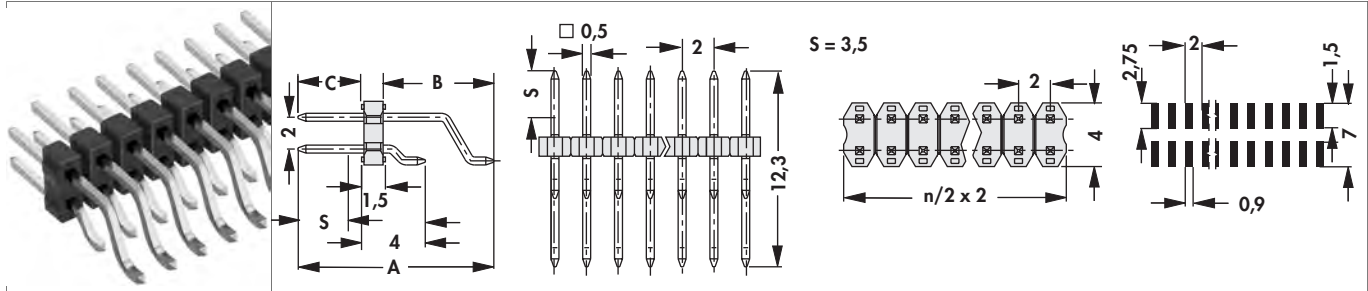
→ G 76 - 77
→ H 7
→ G 67
→ G 75

High-precis.male head.in SMD mount.→
Male headers 2.00 THT
Female headers 2.54 press-fit
Technical data

→ G 18
→ G 30 - 31
→ G 50 - 66
→ G 78 - 84

Male headers

□ 0.5 mm

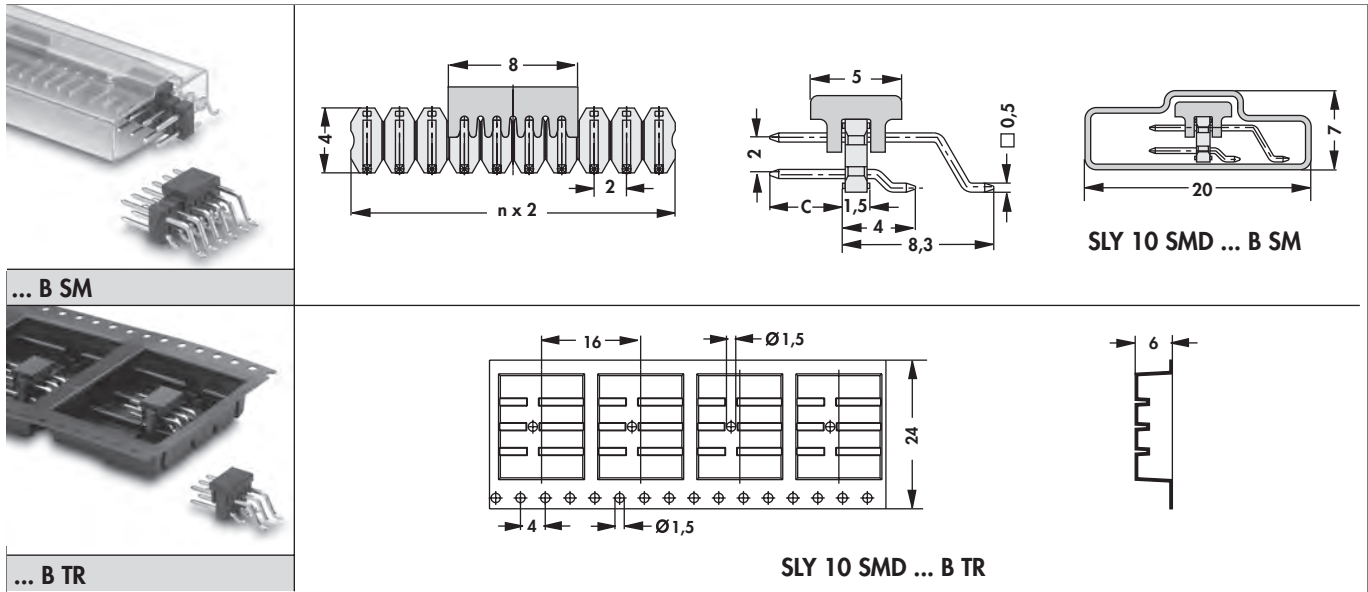


| art. no. | dim. [mm] | | | |
|---------------------------|---|---|--|-----|
| | A | B | C | S |
| SLY 10 SMD 040 ... | 12.3 | 6.8 | 4 | 3.5 |
| please indicate: | ... no. of contacts two rows 4 - 40 | ... surface of contact S = selective gold-plated G = gold-plated Z = tin-plated | ... packing (optional)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

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

Option, for automatic assembly

- reel diameter Ø 330 mm



... B SM

... B TR

Male headers

Contact cross section \square 0.3 mm, straight, slim insulating body

- suitable for female header **BLM**
- one row 1-20 contacts

| art. no. | dim. [mm] | | | art. no. | dim. [mm] | | |
|-------------------------|---------------------------------------|-----|------|---|-----------|-----|------|
| | A | B | C | | A | B | C |
| SLM N 1 063 ... | 11.1 | 3.1 | 6.3 | SLM N 11 063 ... | 12.8 | 4.8 | 6.3 |
| SLM N 1 092 ... | 14.0 | 3.1 | 9.2 | SLM N 11 117 ... | 18.2 | 4.8 | 11.7 |
| SLM N 1 117 ... | 16.5 | 3.1 | 11.7 | | | | |
| please indicate: | ... no. of contacts one row 1 - 20 | | | ... surface of contact G = gold-plated Z = tin-plated | | | |

Contact cross section \square 0.4 mm, straight, slim insulating body


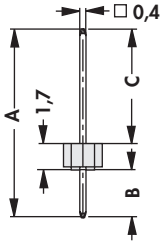
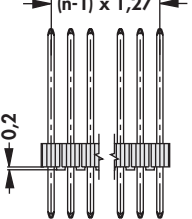
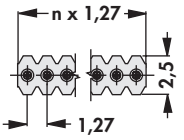
- matching for female header **BLM**
- one row 1-20 contacts

| art. no. | dim. [mm] | | | art. no. | dim. [mm] | | |
|-------------------------|---------------------------------------|-----|------|---|-----------|-----|------|
| | A | B | C | | A | B | C |
| SLV N 1 055 ... | 9.7 | 2.5 | 5.5 | SLV N 11 055 ... | 12.2 | 5.0 | 5.5 |
| SLV N 1 080 ... | 12.2 | 2.5 | 8.0 | SLV N 11 080 ... | 14.7 | 5.0 | 8.0 |
| SLV N 1 105 ... | 14.7 | 2.5 | 10.5 | SLV N 11 105 ... | 17.2 | 5.0 | 10.5 |
| SLV N 1 130 ... | 17.2 | 2.5 | 13.0 | | | | |
| please indicate: | ... no. of contacts one row 1 - 20 | | | ... surface of contact G = gold-plated Z = tin-plated | | | |

Male headers

Contact cross section $\square 0.4$ mm, straight, slim insulating body


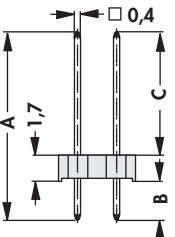
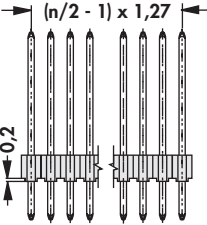
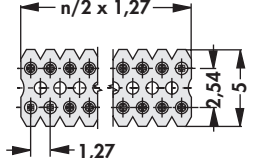
- suitable for female header **BLM**
- one row 1-36 contacts

| art. no. | dim. [mm] | | | art. no. | dim. [mm] | | |
|------------------------|-----------|-----|------|-------------------------|-----------|-----|------|
| | A | B | C | | A | B | C |
| SLV W 1 055 ... | 9.7 | 2.5 | 5.5 | SLV W 11 055 ... | 12.2 | 5.0 | 5.5 |
| SLV W 1 080 ... | 12.2 | 2.5 | 8.0 | SLV W 11 080 ... | 14.7 | 5.0 | 8.0 |
| SLV W 1 105 ... | 14.7 | 2.5 | 10.5 | SLV W 11 105 ... | 17.2 | 5.0 | 10.5 |
| SLV W 1 130 ... | 17.2 | 2.5 | 13.0 | | | | |

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

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

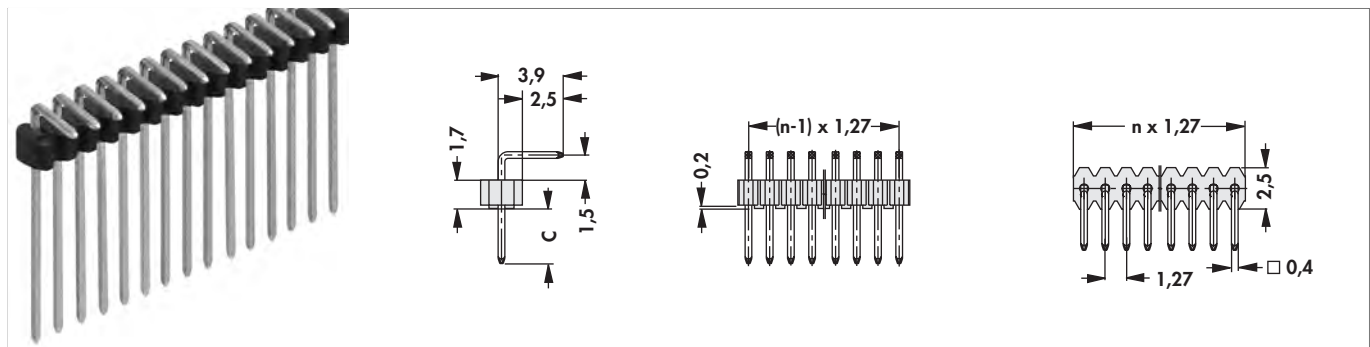





| art. no. | dim. [mm] | | | art. no. | dim. [mm] | | |
|------------------------|-----------|-----|------|-------------------------|-----------|-----|------|
| | A | B | C | | A | B | C |
| SLV W 2 055 ... | 9.7 | 2.5 | 5.5 | SLV W 22 055 ... | 12.2 | 5.0 | 5.5 |
| SLV W 2 080 ... | 12.2 | 2.5 | 8.0 | SLV W 22 080 ... | 14.7 | 5.0 | 8.0 |
| SLV W 2 105 ... | 14.7 | 2.5 | 10.5 | SLV W 22 105 ... | 17.2 | 5.0 | 10.5 |
| SLV W 2 130 ... | 17.2 | 2.5 | 13.0 | | | | |

please indicate: ... no. of contacts two rows 4 - 72 ... surface of contact
G = gold-plated
Z = tin-plated

Male headers

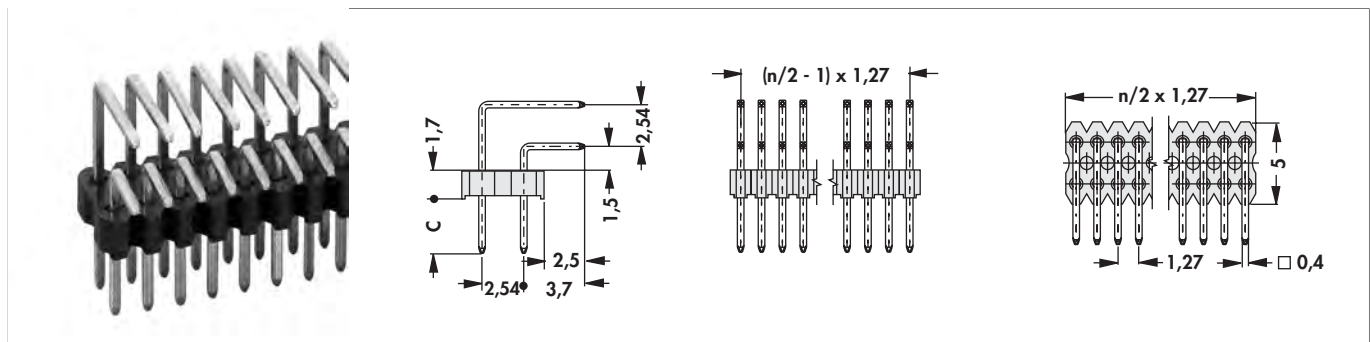
Contact cross section matching for BLM ..., □ 0.4 mm, 90° angled, expanded insulating body
 – one row 1-36 contacts



| art. no. | dim. [mm] C | art. no. | dim. [mm] C |
|--------------------|----------------|--------------------|----------------|
| SLV W 1 KA 030 ... | 3.0 | SLV W 1 KA 080 ... | 8.0 |
| SLV W 1 KA 055 ... | 5.5 | SLV W 1 KA 105 ... | 10.5 |

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

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



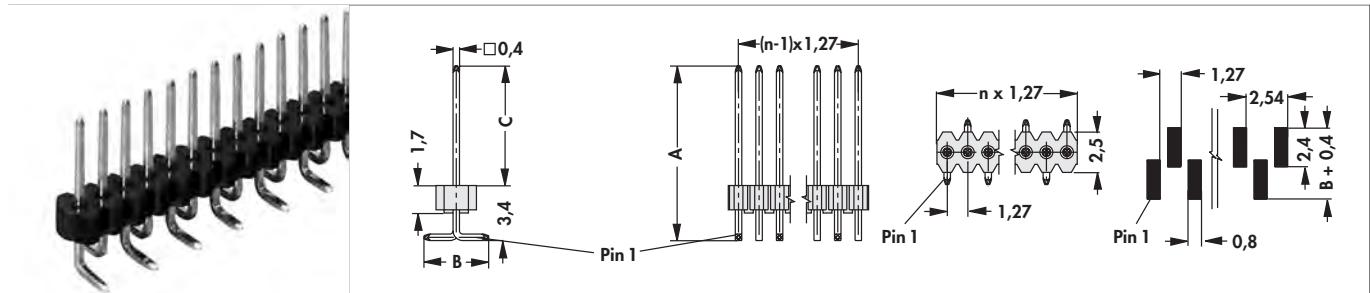
| art. no. | no. of contacts | pack- ing unit | dim. [mm] C | art. no. | no. of contacts | pack- ing unit | dim. [mm] C |
|-----------------------|-----------------|----------------|----------------|-----------------------|-----------------|----------------|----------------|
| SLV W 2 KA 030 10 ... |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

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

Male headers

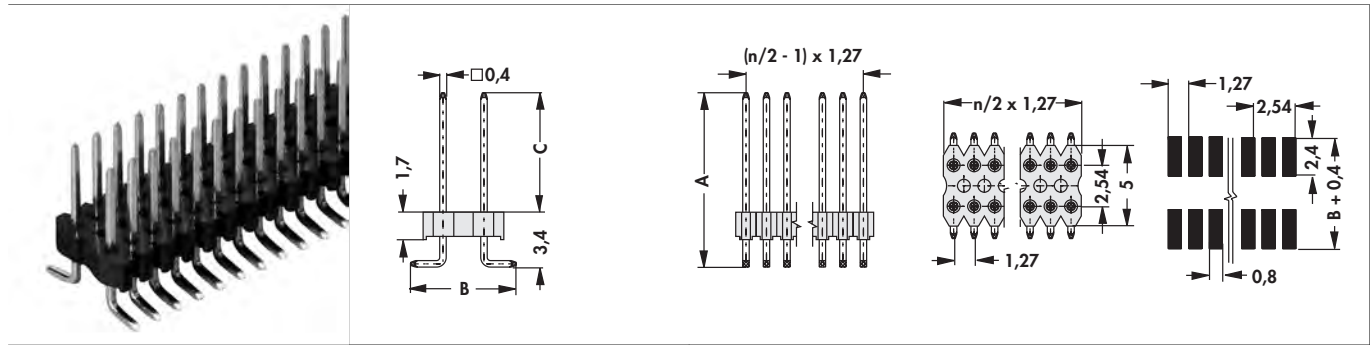
Contact cross section \square 0.4 mm, expanded insulating body

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



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

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



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

Female headers 1.27 THT Jumpers

→ G 71 - 72
→ G 76 - 77

High-prec. fem. headers 1.27 THT

→ G 72

High-prec. female headers 1.27 SMD

→ G 74

Female headers 1.27 SMD Direct female connectors

→ G 73 - 74
→ G 75

Female headers 2.00 SMD

→ G 68 - 70

Technical data

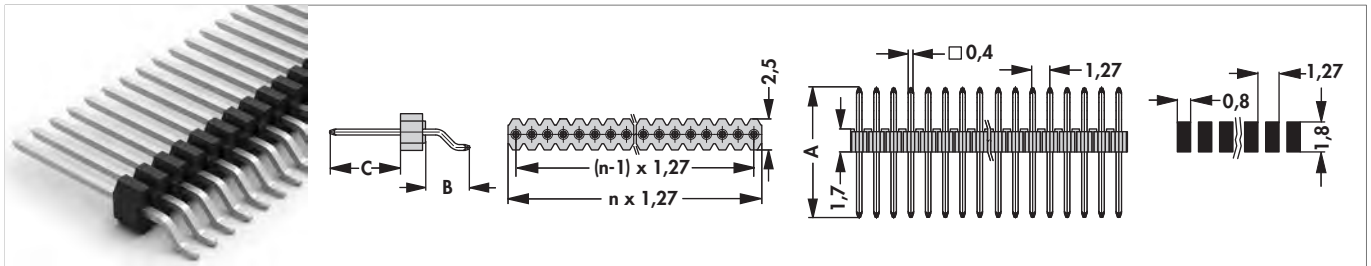
→ G 78 - 84

G 40

Male headers

Pin cross section \square 0.4 mm, expanded insulating body

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



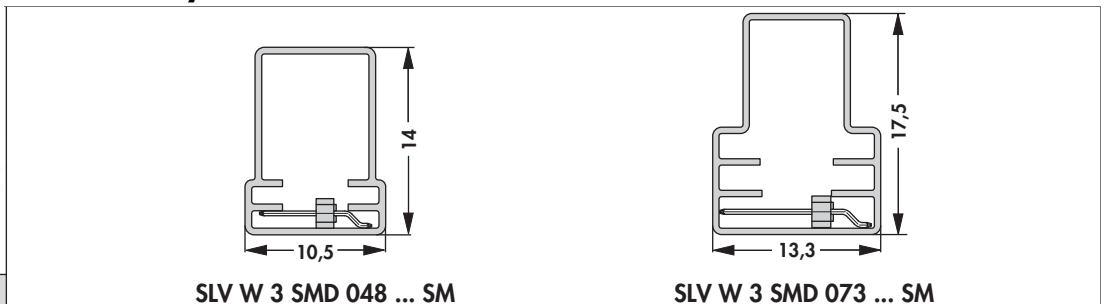
| art. no. | dim. [mm] | | | art. no. | dim. [mm] | | |
|----------------------------|-------------------------------------|---|---|----------------------------|--|---|-----|
| | A | B | C | | A | B | C |
| SLV W 3 SMD 048 ... | 9.5 | 3 | 4.8 | SLV W 3 SMD 073 ... | 12.0 | 3 | 7.3 |
| please indicate: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

... packing (option) - additions:
SLV W 3 SMD ... SM: 4-20 contacts

Option, for automatic assembly



... SM



SLV W 3 SMD 048 ... SM

SLV W 3 SMD 073 ... SM

Male headers

Precision contacts, solder and plug pins, Ø 0.43 mm

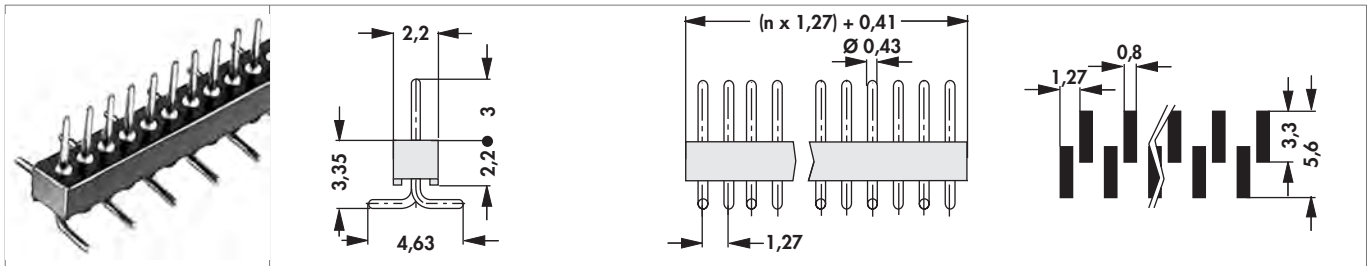
- turned precision contacts, less space required on PCB
- other number of contacts on request

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

Male headers

Precision contacts, solder and plug pins Ø 0.43 mm

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



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

A
B
C
D
E
F
G
H
I
K
L
M
N

G 43

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

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

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

→ G 72
→ G 74
→ G 75
→ G 78 – 84

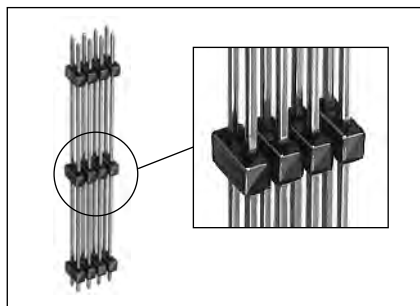
Customer specified male and female headers

We manufacture male and female headers for your specific application.

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

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

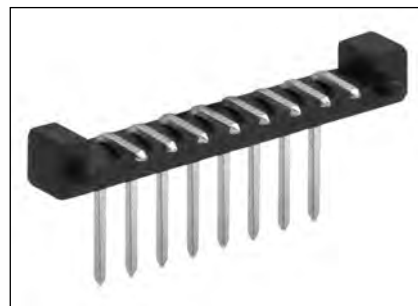
Grid spacing insertion with selective gold-plated contacts on request.



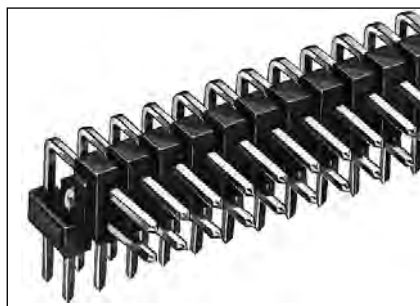
PCB connector,
extra long and additionally stabilized



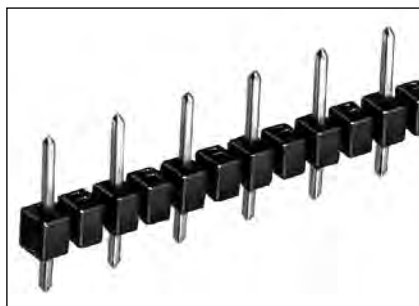
4-contact male header for THR-soldering;
grid 5.75 mm



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



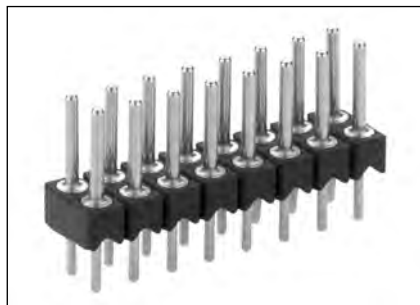
angled male header with two insulators



male header in 5.08 mm grid and
customised



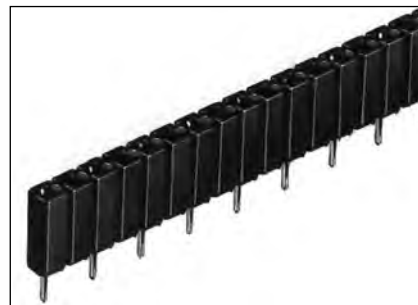
angled male and female header
1.27 mm grid, with customised
insulators



insulator body and precision contacts
according to customer's request



male header with various pin lengths



female header in 5.08 mm grid

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

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

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

→ G 72
→ G 74
→ G 75
→ G 78 – 84

G 44

A

B

C

D

E

F

G

H

I

K

L

M

N

Female headers

Precision contacts, plug pins Ø 0.5 mm

| | | | | | |
|----------------------|--|--|-----------------------|--|--|
| art. no. | | | art. no. | | |
| MK 01 ... | | | MK 201 ... | | |
| art. no. | | | art. no. | | |
| MK 17 ... | | | MK 217 ... | | |
| 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] | art. no. | dim. [mm] |
| | X | | 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

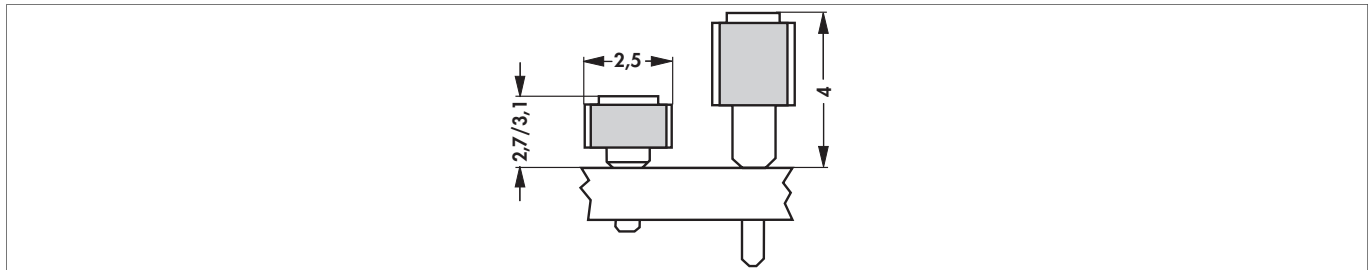
| | | | |
|--|--|---|---|
| <p>art. no.</p> <p>MK 06 ...</p> | | <p>Dimensions: 0,8, 3,3, Ø 1,8, Ø 0,5, 4,9, 6,2</p> | |
| <p>art. no.</p> <p>MK 07 ...</p> | | <p>Dimensions: 0,8, 2,5, Ø 1,8, 5,5, 3,3, Ø 1,32, 4,7, 17,9, □ 0,63</p> | <p>art. no.</p> <p>MK 207 ...</p> <p>Dimensions: 5, 2,54, 5,5, 2,5, 17,9, Ø 1,32, □ 0,63</p> |
| <p>please indicate: ... no. of contacts ... surface of contact</p> <p> one row 1 - 50 G = gold-plated</p> <p> two rows 2 - 100 Z = tin-plated</p> | | | |

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

- solder and plug pin Ø 0.76 mm

| | | | |
|--|--|---|---|
| <p>art. no.</p> <p>MK LP 18 ...</p> | | <p>Dimensions: 0,52, 2,5, Ø 1,83, 1,27, 2,7, 5, Ø 0,76, 1,35</p> | <p>art. no.</p> <p>MK LP 218 ...</p> <p>Dimensions: 2,54, 5, 0,52, 1,27, 2,7, 1,35, Ø 0,76, 5</p> |
| <p>art. no.</p> <p>MK LP 19 ...</p> | | <p>Dimensions: 0,8, 2,5, Ø 1,83, 1,27, 3,1, 5,9, Ø 0,76, 1,35</p> | <p>art. no.</p> <p>MK LP 219 ...</p> <p>Dimensions: 2,54, 5,9, 0,8, 1,27, 3,1, 1,35, Ø 0,76, 5</p> |
| <p>please indicate: ... no. of contacts ... surface of contact</p> <p> one row 1 - 50 G = gold-plated</p> <p> two rows 4 - 100 Z = tin-plated</p> | | | |
| <p>contact spring:</p> | | <p>gold-plated</p> | |

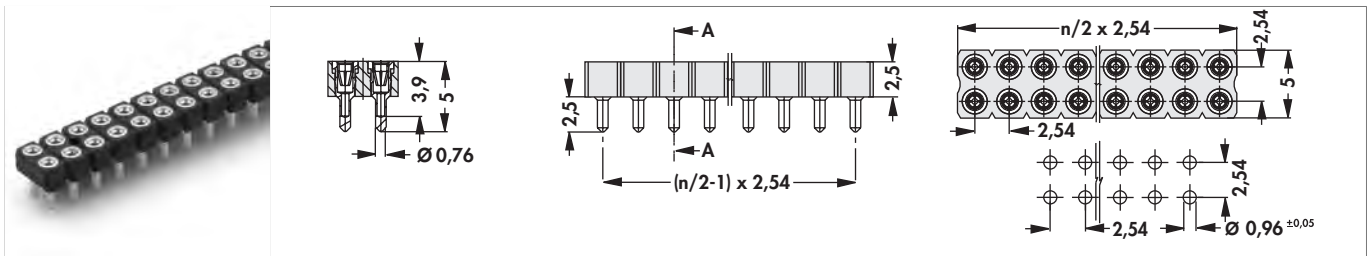
Low profile: 2.7/3.1 mm; standard profile: 4 mm



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

A
B
C
D
E
F
G
H
I
K
L
M
N

G 47

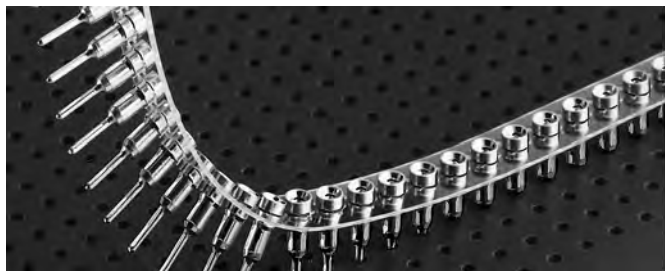
Direct female connectors
Single precision contacts
Jumpers
Single contacts metal strip

→ G 75
→ F 17 - 18
→ G 76 - 77
→ G 49


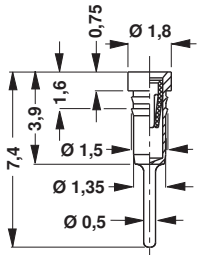
High-prec.male head.soldering techn. → G 3 - 17
High-precis.male head.in SMD mount. → G 18
Jumper links 2 & 2.54 THT → F 15
Technical data → G 78 - 84

Female headers

Peel-Off



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

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

Female headers

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

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

G 49

- | | | | |
|-----------------------------------|-------------|-----------------------------|-------------|
| Female headers 2.54 press-fit | → G 66 | Male headers 2.54 SMD | → G 21 - 27 |
| High-precision female headers THT | → G 2 - 6 | Single precision contacts | → F 17 - 18 |
| Jumper links 2 & 2.54 THT | → F 15 | Single contacts metal strip | → G 49 |
| High-prec. male headers 2.54 THT | → G 45 - 55 | Technical data | → G 78 - 84 |

Female headers

Stamped contact spring (fork contact)

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

– for \square 0.635 mm pin cross section, straight

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

– for \square 0.635 mm pin cross section, angled

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

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

Female headers

Low profile, fork contact spring

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

– for □ 0.635 mm pin cross section, straight

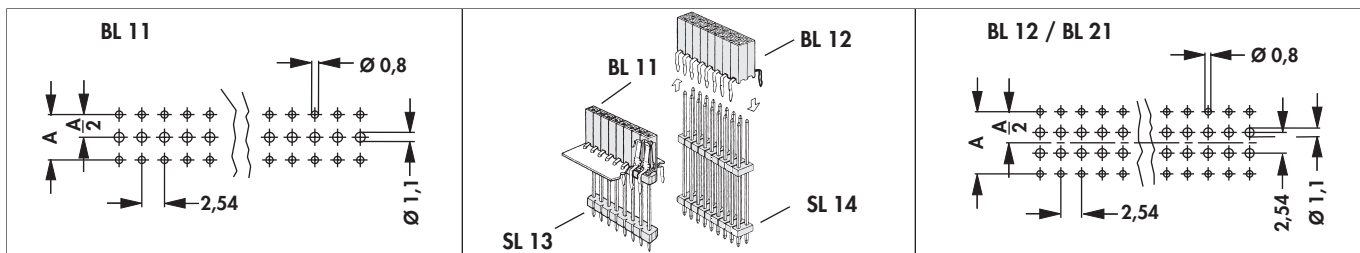
| | | | | | | | | | | | | |
|---|-----------------------|-------------------------------|----------------------------------|--|----------------------------|-----------------------|-------------------------------|----------------------------------|------------------------|--|-----------------------|--|
| <p>art. no.</p> <p>BL LP 1 ...</p> | | | | | | | | | | | | |
| <p>art. no.</p> <p>BL LP 2 ...</p> | | | | | | | | | | | | |
| <p>please indicate:</p> <table border="0"> <tr> <td style="padding-right: 20px;">... no. of contacts</td> <td>one row 1 - 36</td> <td style="padding-right: 20px;">... surface of contact</td> <td>S = selective gold-plated</td> </tr> <tr> <td>two rows 2 - 72</td> <td></td> <td>Z = tin-plated</td> <td></td> </tr> </table> | | | | | ... no. of contacts | one row 1 - 36 | ... surface of contact | S = selective gold-plated | two rows 2 - 72 | | Z = tin-plated | |
| ... no. of contacts | one row 1 - 36 | ... surface of contact | S = selective gold-plated | | | | | | | | | |
| two rows 2 - 72 | | Z = tin-plated | | | | | | | | | | |

– for □ 0.635 mm pin cross section, angled

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

| | | | | | | | | | | | | |
|---|-----------------------|-------------------------------|----------------------------------|--|----------------------------|-----------------------|-------------------------------|----------------------------------|------------------------|--|-----------------------|--|
| <p>art. no.</p> <p>BL LP 3 ...</p> | | | | | | | | | | | | |
| <p>art. no.</p> <p>BL LP 4 ...</p> | | | | | | | | | | | | |
| <p>please indicate:</p> <table border="0"> <tr> <td style="padding-right: 20px;">... no. of contacts</td> <td>one row 1 - 36</td> <td style="padding-right: 20px;">... surface of contact</td> <td>S = selective gold-plated</td> </tr> <tr> <td>two rows 2 - 72</td> <td></td> <td>Z = tin-plated</td> <td></td> </tr> </table> | | | | | ... no. of contacts | one row 1 - 36 | ... surface of contact | S = selective gold-plated | two rows 2 - 72 | | Z = tin-plated | |
| ... no. of contacts | one row 1 - 36 | ... surface of contact | S = selective gold-plated | | | | | | | | | |
| two rows 2 - 72 | | Z = tin-plated | | | | | | | | | | |

Female headers



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

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

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

For 0.635 mm pin cross section, can be put through

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

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

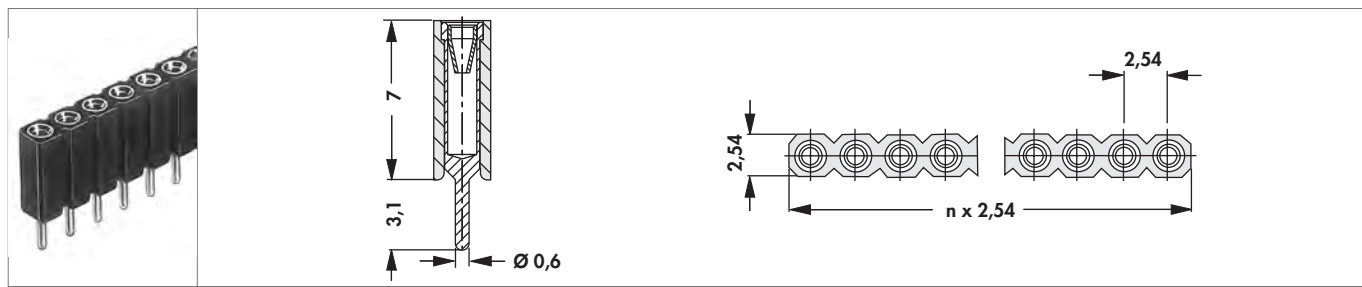
- Single precision contacts → F 17 - 18
- Single contacts metal strip → G 49
- High-precision female headers THT → G 2 - 6
- High-prec. male headers 2.54 THT → G 45 - 55

- Jumpers → G 76 - 77
- Direct female connectors → G 75
- Male headers 2.54 SMD → G 21 - 27
- Technical data → G 78 - 84

A
B
C
D
E
F
G
H
I
K
L
M
N

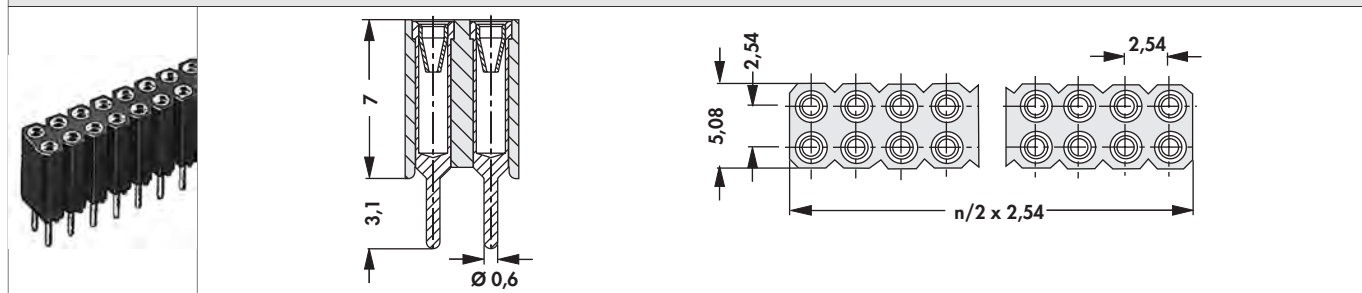
Female headers

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 |

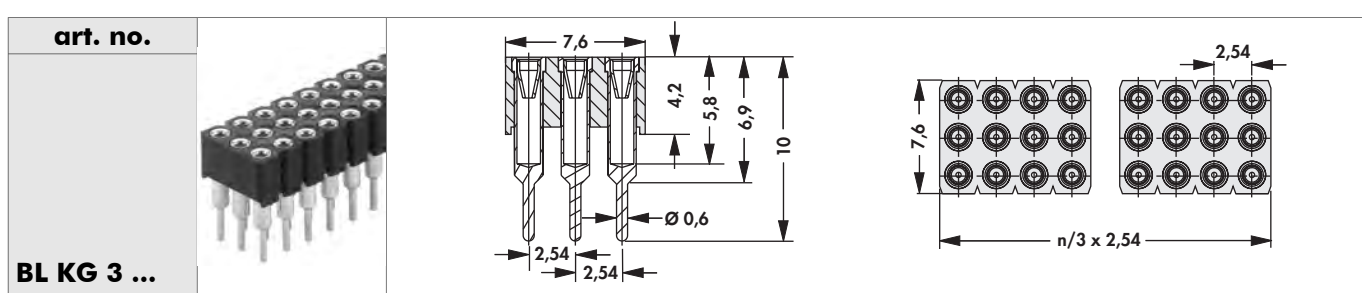
please indicate: ... no. of contacts one row 1 - 36



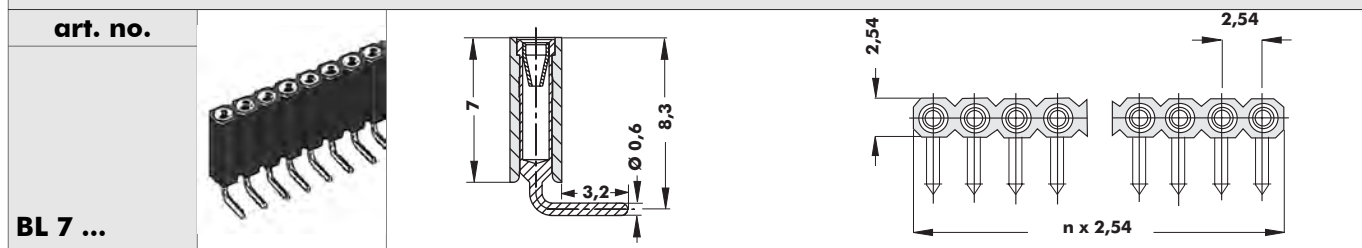
| | |
|---------------------|------------------------------|
| art. no. | inner contact spring surface |
| BL 6 ... | ≥ 0,75 μm Au |
| BL 6 025 ... | ≥ 0,25 μm Au |

please indicate: ... no. of contacts two rows 2 - 72

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



please indicate: ... no. of contacts three rows 9 - 96



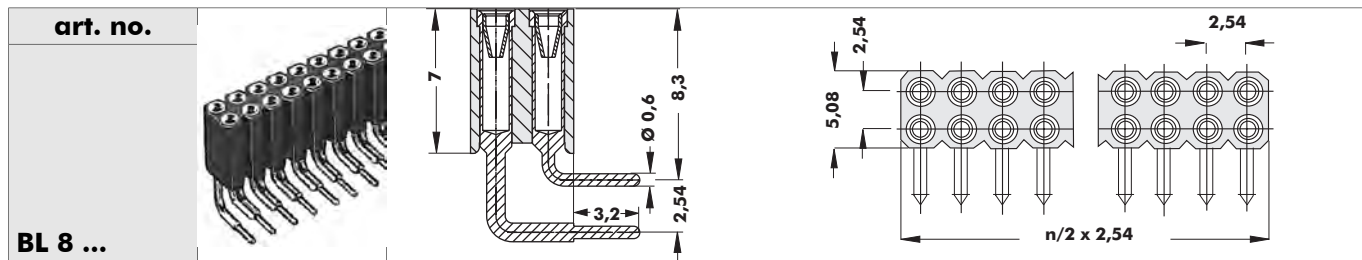
please indicate: ... no. of contacts one row 1 - 36

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

Female headers

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

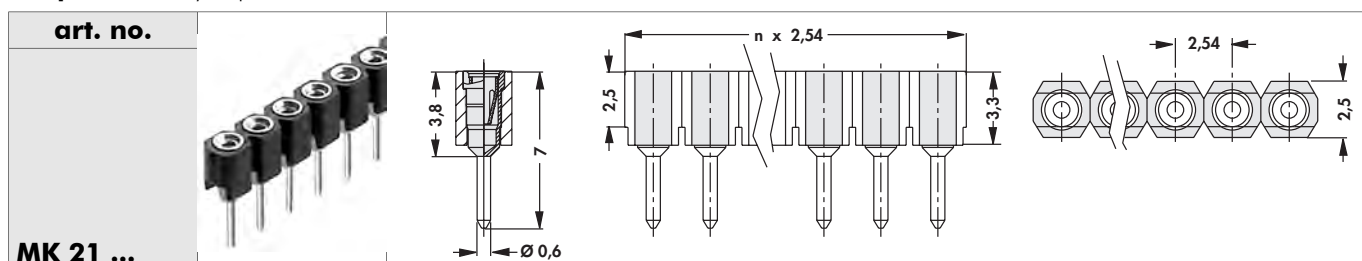
- packing in a bar magazine (≥ 6 contacts)
- no capillary action when soldering due to protected inner contact
- **separable!** any requested number of contact can be delivered



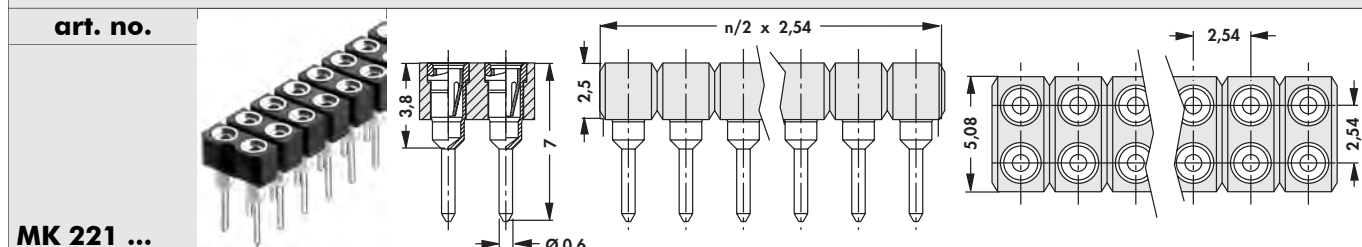
please indicate: ... no. of contacts
two rows 4 - 72

| | |
|------------------------|-------------|
| 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



please indicate: ... no. of contacts
one row 1 - 50



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 ... | | □ 0,635 | |

please indicate: ... no. of contacts one row 1 - 36

| | | | |
|------------------|--|---------|--|
| art. no. | | | |
| BL 10 ... | | □ 0,635 | |

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 ... | | Ø 0,75 | |

please indicate: ... no. of contacts one row 1 - 36

| | | | |
|------------------|--|--------|--|
| art. no. | | | |
| BL 14 ... | | Ø 0,75 | |

please indicate: ... no. of contacts two rows 2 - 72

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

Female headers

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

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

- one row, 1-36 contacts

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

- two rows, 2-72 contacts

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

Female headers

Low profile, fork contact spring

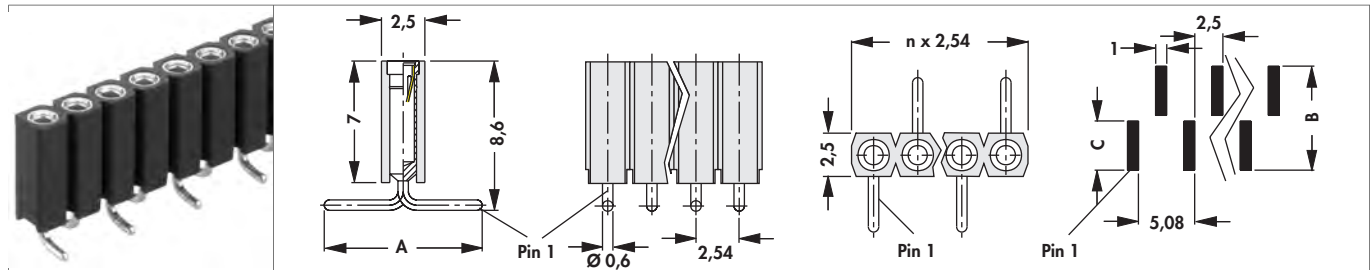
- for □ 0.635 mm plug pins
- other number of contacts on request

| | | | |
|--|--|--|--|
| <p>art. no.</p> <p>BL LP 5 SMD ...</p> | | | |
| <p>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</p> | | | |
| <p>art. no.</p> <p>BL LP 6 SMD ...</p> | | | |
| <p>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</p> | | | |

Female headers

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

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



| art. no. | dim. [mm] | | |
|------------------|-----------|-----|-----|
| | A | B | C |
| BL 15 SMD 043... | 4.3 | 5.0 | 2.5 |
| BL 15 SMD 089... | 8.9 | 9.5 | 4.8 |

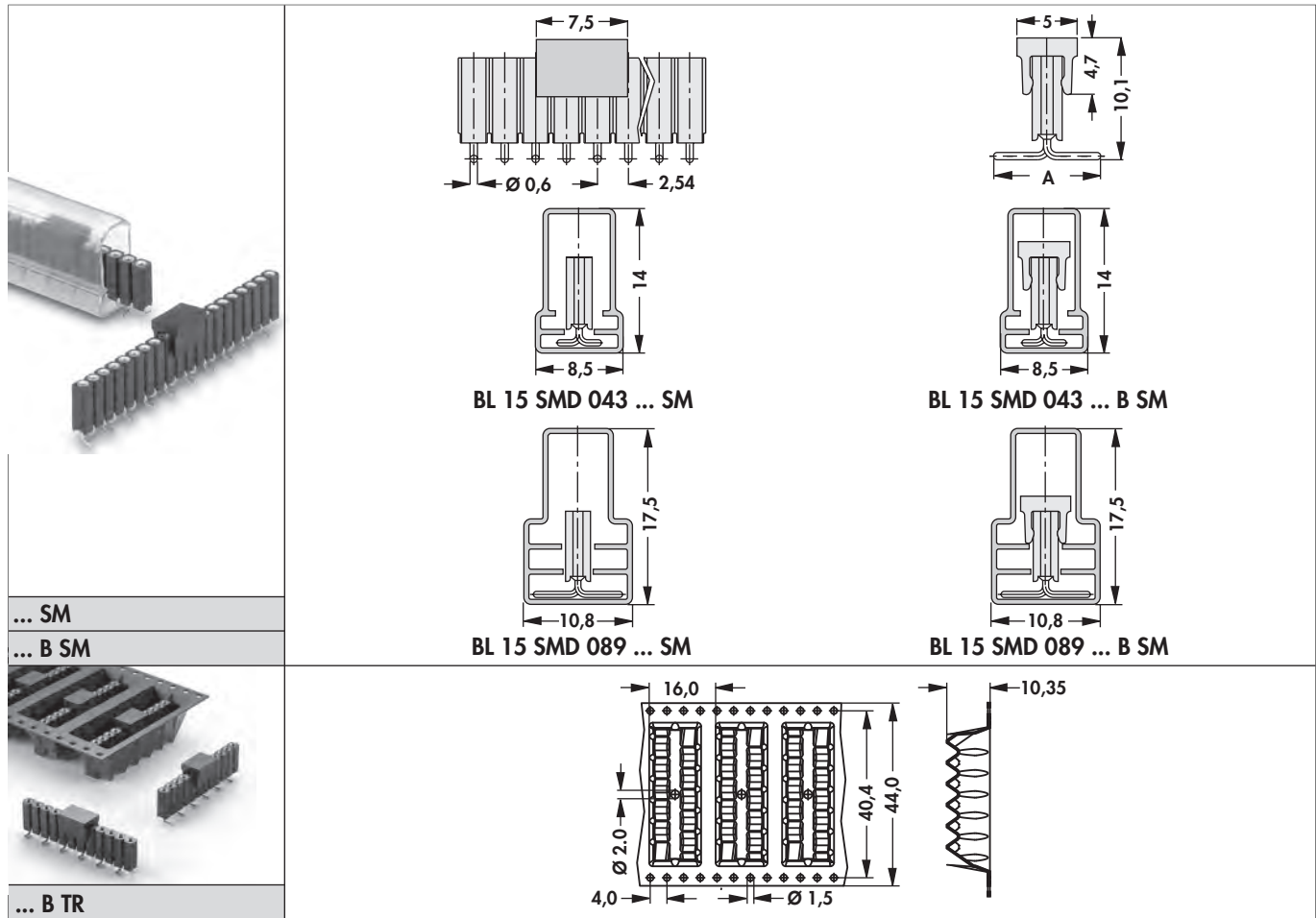
please indicate: ... no. of contacts one row 4 - 20 ... packing (optional)
 SM = bar magazine
 B SM = pick and place pad and bar magazine
 B TR = pick and place pad and tape and reel (400pcs/reel)

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

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

Option, for automatic assembly

- reel diameter \varnothing 330 mm



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

→ G 73
 → G 68
 → G 66
 → G 49

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

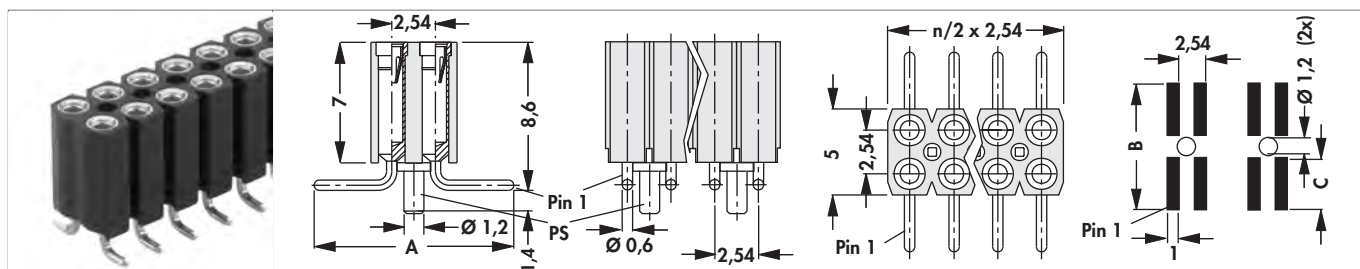
→ F 17 - 18
 → G 7 - 17
 → G 21 - 27
 → G 78 - 84

G 58

Female headers

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

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



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

... packing (option) - additions:
BL 16 SMD ... B TR: 6-40 contacts

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

Option, for automatic assembly

- reel diameter \varnothing 330 mm

| | | | |
|----------------------------|-----------------|-------------------------|--|
| <p>... SM ... B SM</p> | | <p>BL 16 SMD ... SM</p> | <p>BL 16 SMD ... B SM</p> |
| | <p>... B TR</p> | | <p>BL 16 SMD 067-113 ... 6-24 B TR</p> |

Female headers

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

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

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

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

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

Option, for automatic assembly

- reel diameter \varnothing 330 mm

| | |
|---------------|-------------------------|
| | |
| ... SM | BL 17 SMD ... SM |
| | |
| ... TR | BL 17 SMD ... TR |

Single contacts metal strip
 Male headers 2.54 THT
 Male headers 2.54 SMD
 High-precision female headers THT

→ G 49
 → G 7 - 17
 → G 21 - 27
 → G 2 - 6

Female headers 1.27 SMD
 Female headers 2.00 SMD
 Female headers 2.54 press-fit
 Technical data

→ G 73
 → G 68
 → G 66
 → G 78 - 84

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 | | | |

packing (option) - additions:
BL 20 SMD ... SM: 10-40 contacts

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

Option, for automatic assembly

| | |
|---------------|-------------------------|
| | |
| ... SM | BL 20 SMD ... SM |

Female headers

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

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

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

Option, for automatic assembly

| | | | |
|-----------------|--|--|--|
| | | | |
| ... B SM | | | |

| | | | |
|-------------------------|---|---|--|
| 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 | | | |

Single contacts metal strip
Male headers 2.54 THT
Male headers 2.54 SMD
High-precision female headers THT

→ G 49
→ G 7 - 17
→ G 21 - 27
→ G 2 - 6

Female headers 1.27 SMD
Female headers 2.00 SMD
Female headers 2.54 press-fit
Technical data

→ G 73
→ G 68
→ G 66
→ G 78 - 84

G 62

Female headers

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

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

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

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

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

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

Female headers

Precision contacts for pin cross section Ø 0,5 mm

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

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

Option, for automatic assembly

| | | |
|-----------------|---------------------------|--|
| | | |
| ... B SM | MK 23 SMD ... B SM | |

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

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

Option, for automatic assembly

| | | |
|-----------------|----------------------------|--|
| | | |
| ... B SM | MK 223 SMD ... B SM | |

Female headers

Precision contacts for pin cross section Ø 0,5 mm

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

| | | | | |
|-------------------------|---|--|-------|-------|
| art. no. | | | | |
| MK 220 SMD ... | | Pin 1 | Pin 1 | Pin 1 |
| please indicate: | ... no. of contacts two rows 4 - 40 | ... packing (optional) B SM = pick and place pad and bar magazine B TR = pick and place pad and tape and reel | | |

... packing (option) - additions:

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

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

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

Option, for automatic assembly

- reel diameter Ø 330 mm

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

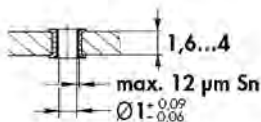
Female headers

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

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

| | | | | |
|---|--------------------|--------------------------------------|-------------------------------------|----------------------------------|
| <p>art. no.</p> <p>BLP 1 ...</p> | | <p>\varnothing 1,14</p> | <p>$n \times 2,54$</p> | <p>2,54</p> <p>2,5</p> |
| <p>art. no.</p> <p>BLP 2 ...</p> | | <p>\varnothing 1,14</p> | <p>$n/2 \times 2,54$</p> | <p>2,54</p> <p>2,54</p> <p>5</p> |
| <p>please indicate: ... no. of contacts one row 1 - 36 two rows 2 - 72</p> | | | | |
| <p>contact sleeve:</p> | <p>tin-plated</p> | | | |
| <p>contact spring:</p> | <p>gold-plated</p> | | | |

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



B

C

D

E

F

G

H

I

K

L

M

N

Female headers

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

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

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

Female headers

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

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

Option, for automatic assembly

| | |
|-----------------|---------------------------|
| | |
| ... B SM | BLY 5 SMD ... B SM |

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

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

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

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

Option, for automatic assembly

- reel diameter Ø 330 mm

| | |
|---------------|-------------------------|
| | |
| ... TR | BLY 6 SMD ... 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 8 SMD ... | | | |
| please indicate: | ... no. of contacts two rows 4 - 40 | ... packing (optional) B SM = pick and place pad and bar magazine B TR = pick and place pad and tape and reel (650pcs/reel) | |

... packing (option) - additions:
BLY 8 SMD ... B TR: 6-30 contacts

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

Option, for automatic assembly

- reel diameter Ø 330 mm

| | |
|-----------------|---------------------------|
| | |
| ... B SM | BLY 8 SMD ... B SM |
| | |
| ... B TR | BLY 8 SMD ... B TR |

Female headers

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

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

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

... packing (option) - additions:
BLY 9 SMD ... SM: 8-40 contacts
BLY 9 SMD ... TR: 4-20 contacts

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

Option, for automatic assembly

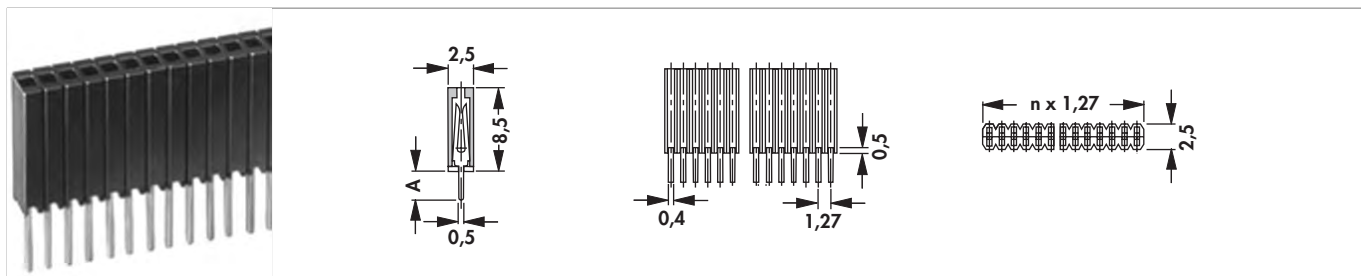
- reel diameter \varnothing 330 mm

| | |
|---------------|-------------------------|
| | |
| ... SM | BLY 9 SMD ... SM |
| | |
| ... TR | BLY 9 SMD ...TR |

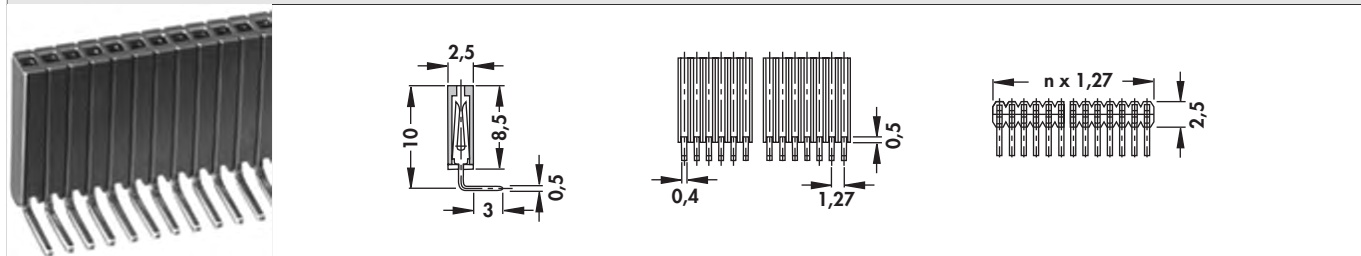
Female headers

Stamped contact spring (fork contact)

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

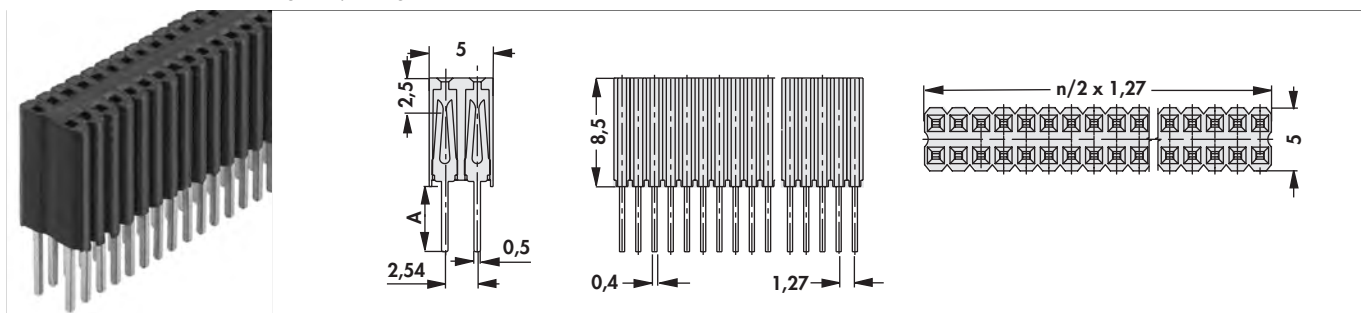


| art. no. | dim. [mm] | art. no. | dim. [mm] |
|-------------------------|---|--|-----------|
| | A | | A |
| BLM KG 1 ... | 3.0 | BLM LG 1 ... | 5.1 |
| please indicate: | ... no. of contacts one row 1 - 36 | ... surface of contact G = gold-plated Z = tin-plated | |



| 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**
- two rows 4-72 contacts - grid spacing 1.27 x 2.54 mm



| art. no. | dim. [mm] | art. no. | dim. [mm] |
|-------------------------|--|--|-----------|
| | A | | A |
| 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

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!

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

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

Male headers 2.54 press-fit → G 28
 Direct female connectors → G 75
 High-prec. male head. 1.27 THT → G 42
 Technical data → G 78 – 84

G 72

Female headers

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

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

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

Grid spacing 1.27 x 2.54 mm

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

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

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

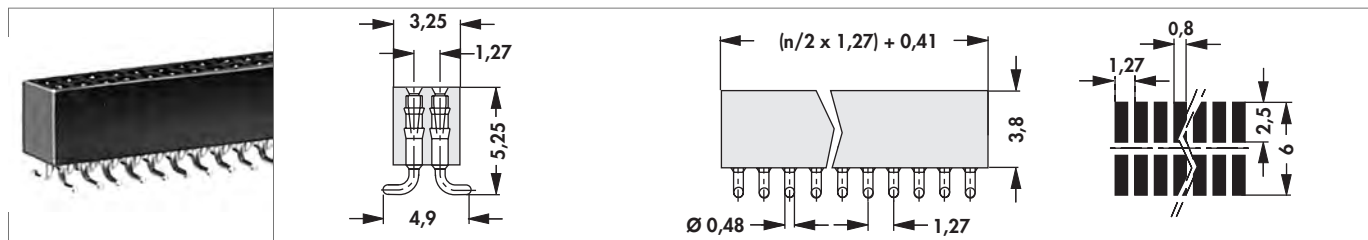
- matching for male header **SLV**
- one row 2-20 contacts

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

Female headers

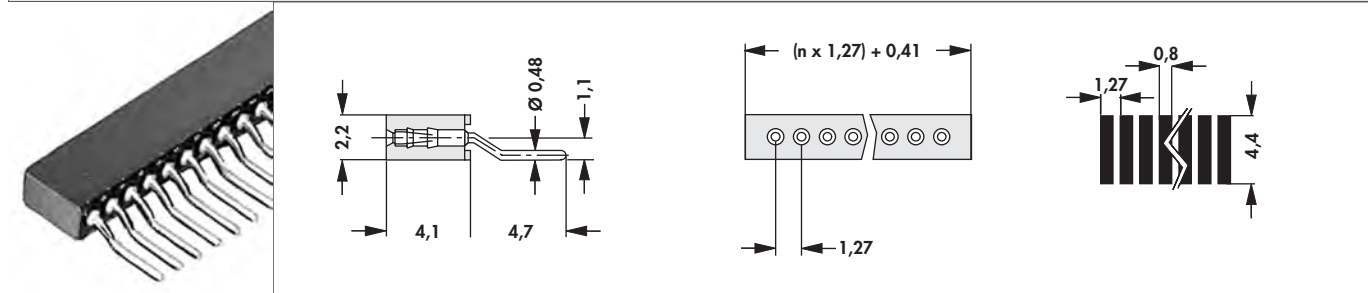
Turned precision contacts for Ø 0.35...0.46 mm

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



art. no.

BLR 6 SMD 100 Z



art. no.

no. of contacts

BLR 7 SMD 50 Z

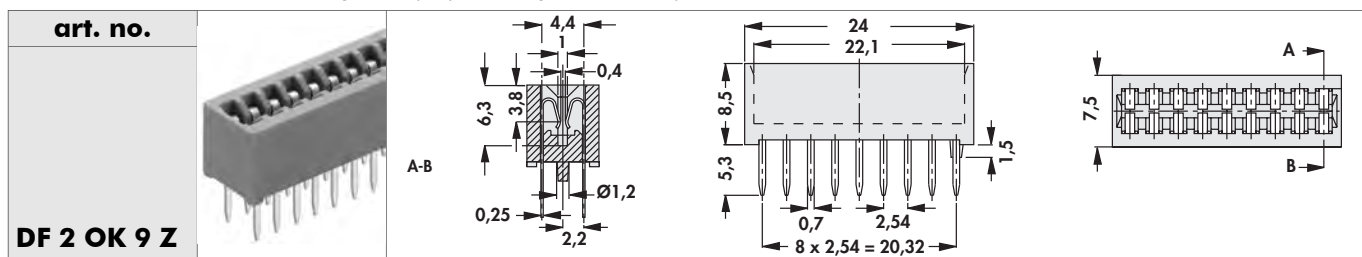
50

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

Direct female connectors

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

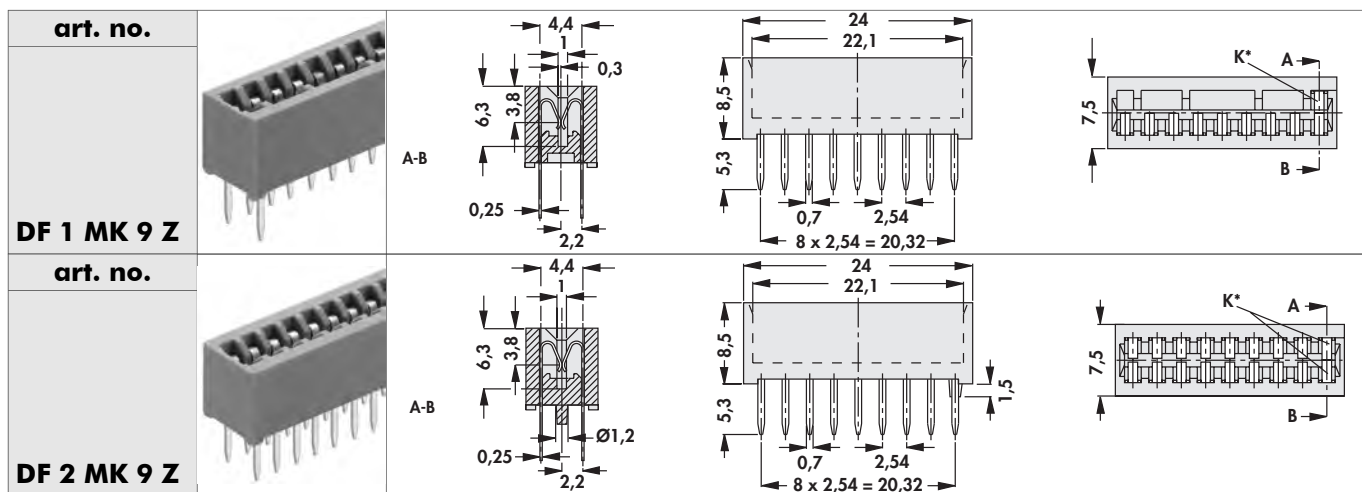
– for removable connection of digital displays, coding switches, impulse counters



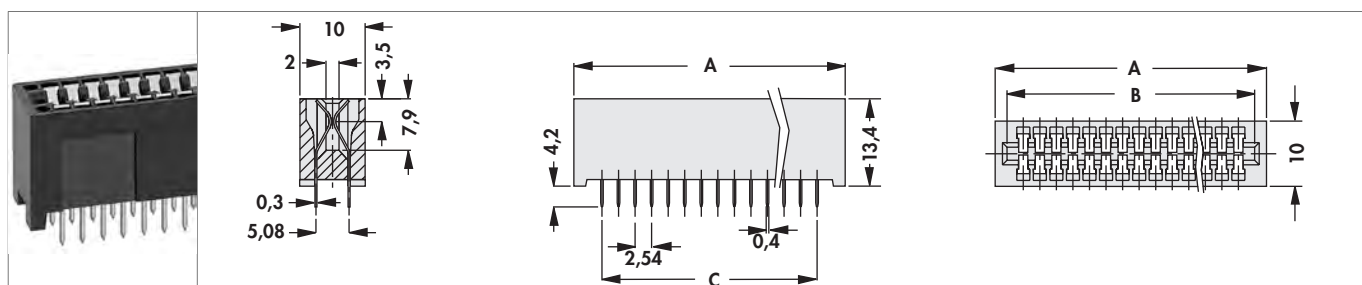
With short circuit contact for PCB thickness: 0.7...0.9 mm

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

– **K*** = arcing contact


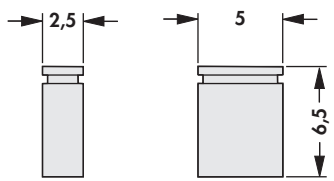

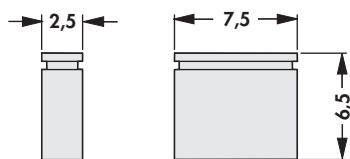

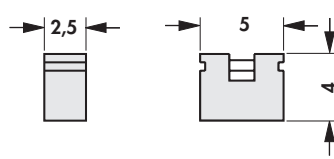


For PCB thickness: 1.4...1.8 mm




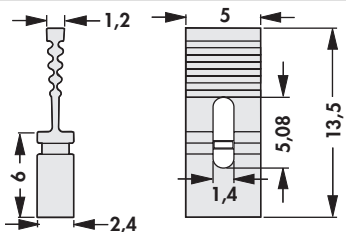
| art. no. | no. of contacts | dim. [mm] | | |
|---------------------|-----------------|------------|-------|-------|
| | | A | B | C |
| DF OB 06 | 12 | 21.33 | 17.70 | 12.70 |
| DF OB 07 | 14 | 23.87 | 20.24 | 15.24 |
| DF OB 10 | 20 | 31.49 | 27.86 | 22.86 |
| DF OB 17 | 34 | 49.27 | 45.64 | 40.64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

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


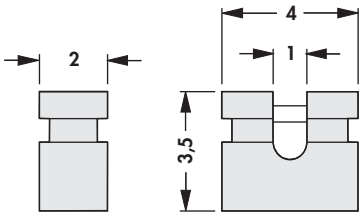
|  |  | | | |
|---|---|--------------------|-----------|------------------------------------|
| art. no. | no. of contacts | surface of contact | grid [mm] | version |
| CAB 4 G ... | 2 | 0.1 µm gold | 2.54 | closed |
| CAB 4 Z ... | 2 | 5.0 µm tin | 2.54 | closed |
|  |  | | | |
| art. no. | no. of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


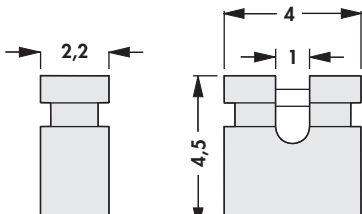
Jumpers

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


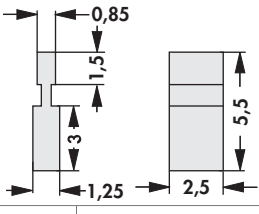
|  |  | | | |
|---|--|--------------------|-----------|-----------|
| art. no. | no. of contacts | surface of contact | grid [mm] | version |
| CAB 9 G ... | 2 | <0.1 µm gold | 2.54 | tag, open |
| please indicate: ... colour S = black R = red | | | | |

For □ 0.5 mm and for Ø 0.4...0.5 mm

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

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

For □ 0.3...0.4 mm and Ø 0.4...0.5 mm

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

| | MK ..., MK LP ... | SL ..., SL ... THR, SLK ... , SL LP ... | SLU ... | SL KA 3 ..., SL KG 3 ... |
|---|--|--|--|---|
| contact material | CuZn-alloy | CuSn alloy | | CuZn-alloy |
| surface contact / contact sleeve | Ni+ $\geq 0.2\mu\text{m Au}$ / Ni+4...6 $\mu\text{m Sn}$ | | Ni+0.2 $\mu\text{m Au}$ (selective)/ Ni+4...6 $\mu\text{m Sn}$ | Ni+ $\geq 0.2\mu\text{m Au}$ / Ni+4...6 $\mu\text{m Sn}$ |
| shock resistance | 50 g | | | |
| volume resistance | $\leq 10\text{ m}\Omega$ | $\leq 5\text{ m}\Omega$ | $\leq 10\text{ m}\Omega$ | $\leq 20\text{ m}\Omega$ |
| vibration resistance max. | 15 g | | | |
| capacity between two adjacent contacts | $\leq 0,4\text{ pF}$ | | | |
| 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 flammability | UL 94 V-0 | | | |
| specific insulation resistance | $> 10^7\ \Omega\cdot\text{m}$ | | | |

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

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

| | SIL 2 ... | BL 1 ..., BL 2 ..., BL 3 ..., BL 4 ... | BL 11 ... | BL 12 ..., BL 21 ... |
|---|--|---|--|---|
| contact material | CuZn-alloy | CuSn alloy | | |
| surface contact / contact sleeve | Ni+4...6 μ m Sn | Ni+ \geq 0.2 μ m Au/ Ni+4...6 μ m Sn | Ni+4...6 μ m Sn | |
| inner contact spring material | CuBe-alloy | | | |
| inner contact spring surface | Ni+0,25 μ m 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 | \leq 5mm from above/ \leq 8mm from below | \leq 6mm from above or from be- low |
| insertion / drawing force | 1.8 N/1.4 N | 1.5 N/1.3 N | 1.5 N/0.5 N | 1.5 N/0.2 N |
| shock resistance | 50 g | | | |
| volume resistance | \leq 10 m Ω | | \leq 20 m Ω | |
| vibration resistance max. | 15 g | | | |
| capacity between two adjacent contacts | \leq 0,4 pF | \leq 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 | |
| insulating body material | | PPS | PA 4.6. GF | LCP |
| temperature range | | -40°C... +200°C/ (260°C/10 s) | -40°C... +163°C/ (260°C/10 s) | -55°C... +125°C |
| class of flammability | UL 94 V-0 | | | |
| specific insulation resistance | | $>10^{12}$ Ω ·m | $>10^7$ Ω ·m | $>10^{12}$ Ω ·m |

Technical data PCB connectors

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

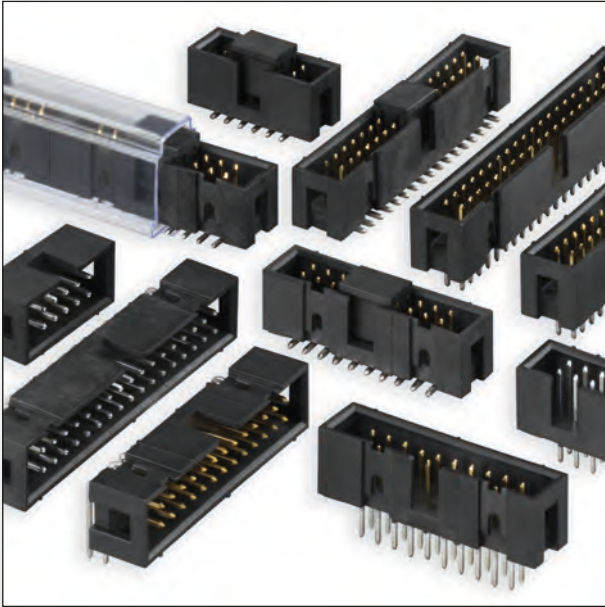
| | MK 21/221 ..., MK 22/222 ..., MK 24 SMD ... | BLP 1 ..., BLP 2 ... | BLY ... | BLR ... |
|---|--|---------------------------------|---------------------------------|-------------------------------------|
| contact material | CuZn-alloy | | | |
| surface contact / contact sleeve | Ni+4...6μm Sn |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

Technical data PCB connectors

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

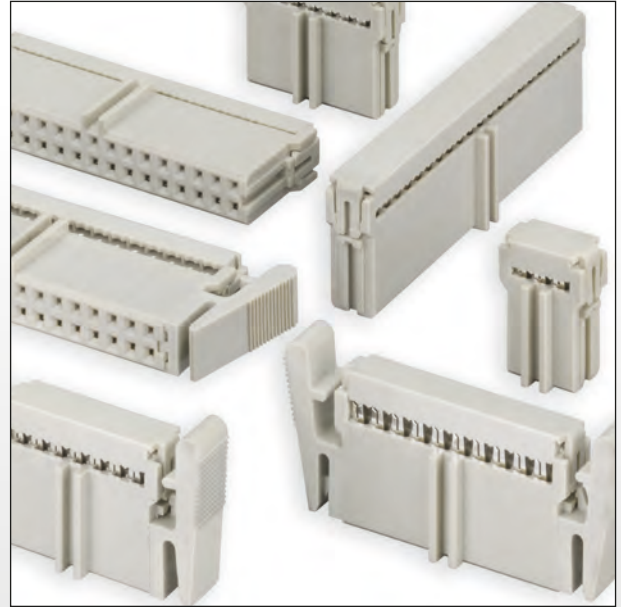
| | CAB 5 ... | CAB 6 ... | CAB 9 ... | CAB 10 G S |
|---|--|--------------------|--|--------------------|
| surface contact / contact sleeve | 0.5 μm Au/ 1 μm Au/ 5 μm Sn | | 0.1 μm Au | |
| insert depth | 4...5.5mm | 5mm...plug through | 4...5.6mm | 4mm...plug through |
| nominal current | 3 A | 1.5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

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



Shroud male headers

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



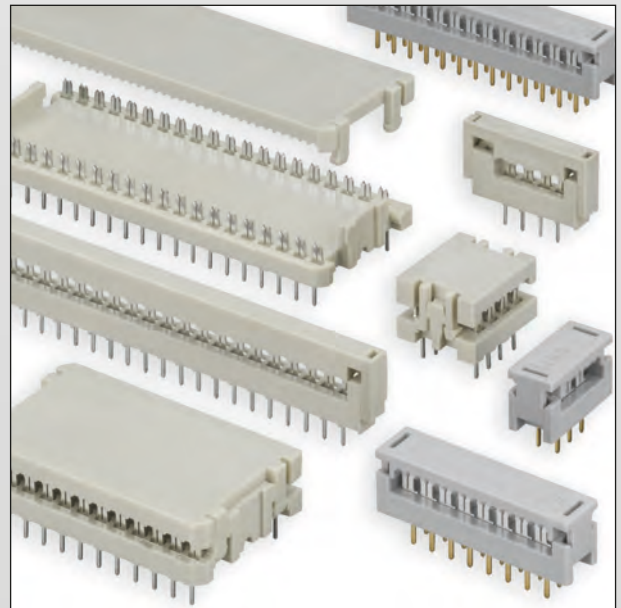
Multipoint connector with and without lock

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



Multipoint connector, one and two rows

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



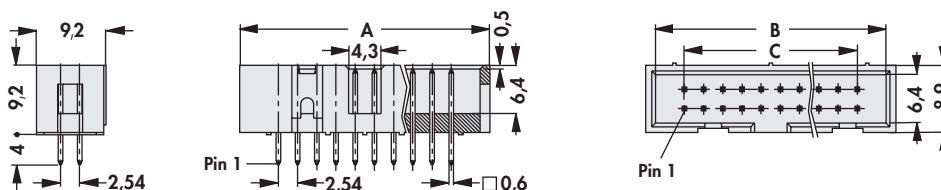
PCB connector

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

Shroud-male header

Straight, two rows, shrouded

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

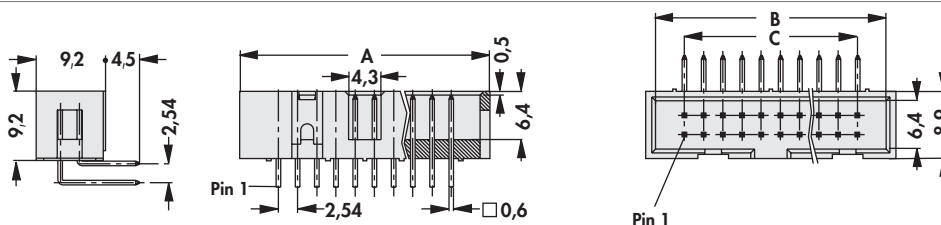


| art. no. | no. of contacts | dim. [mm] | | | art. no. | no. of contacts | dim. [mm] | | |
|--------------------|-----------------|-----------|------|-------|--------------------|-----------------|-----------|------|-------|
| | | A | B | C | | | A | B | C |
| ASLG 06 ... | 6 | 15.3 | 12.7 | 5.08 |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

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

Angled, two rows, shrouded

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

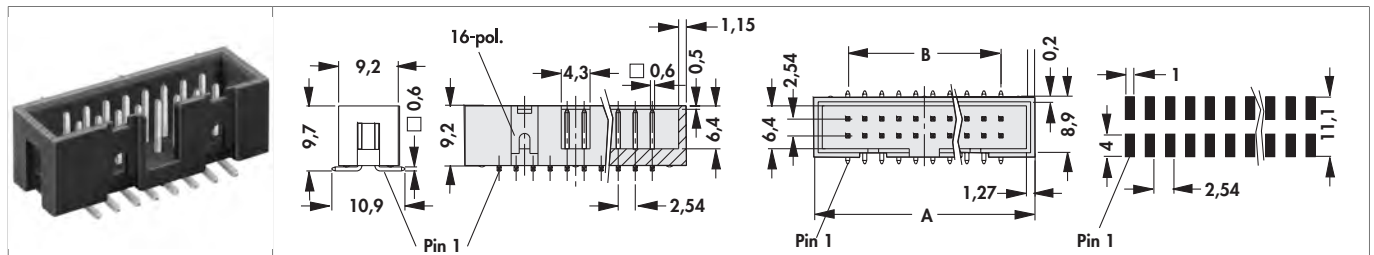


| art. no. | no. of contacts | dim. [mm] | | | art. no. | no. of contacts | dim. [mm] | | |
|------------------|-----------------|-----------|------|-------|------------------|-----------------|-----------|------|-------|
| | | A | B | C | | | A | B | C |
| ASLA 06 G | 6 | 15.3 | 12.7 | 5.08 | ASLA 20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

Shroud-male header

SMD, two rows, shrouded

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



| art. no. | no. of contacts | packing unit | dim. [mm] | | art. no. | no. of contacts | packing unit | dim. [mm] | |
|-----------------------|-----------------|--------------|-----------|-------|-----------------------|-----------------|--------------|-----------|-------|
| | | | A | B | | | | A | B |
| ASL 06 SMD ... | 6 | 32 | 15.3 | 5.08 | ASL 20 SMD ... | 20 | 15 | 33.1 | 22.86 |
| ASL 08 SMD ... | 8 | 27 | 17.8 | 7.62 | ASL 26 SMD ... | 26 | 12 | 40.7 | 30.48 |
| ASL 10 SMD ... | 10 | 24 | 20.4 | 10.16 | ASL 34 SMD ... | 34 | 9 | 50.9 | 40.64 |
| ASL 12 SMD ... | 12 | 21 | 22.9 | 12.70 | ASL 40 SMD ... | 40 | 8 | 58.5 | 48.26 |
| ASL 14 SMD ... | 14 | 19 | 25.4 | 15.24 | ASL 50 SMD ... | 50 | 7 | 71.2 | 60.96 |
| ASL 16 SMD ... | 16 | 17 | 28.0 | 17.78 | | | | | |

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

... packing
SM = bar magazine
B SM = pick and place pad and bar magazine

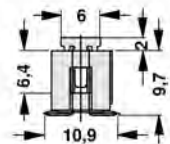
Option, for automatic assembly

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

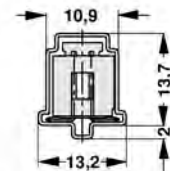
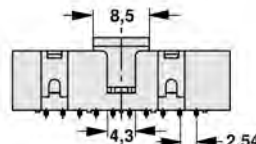
- position of the pick and place pad in the middle



... B SM



ASL ... SMD ...

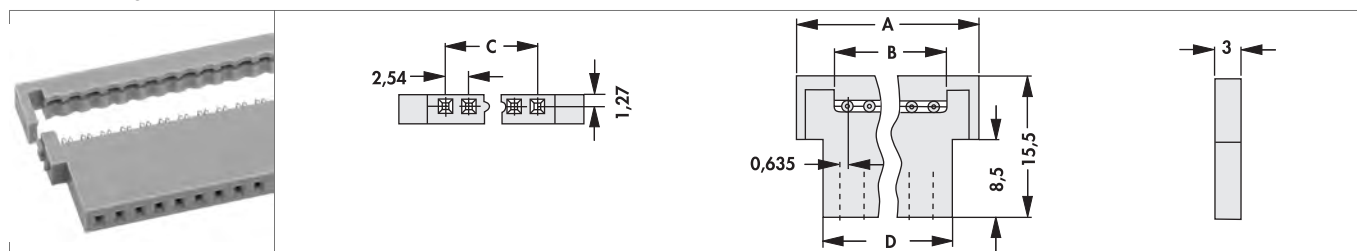


ASL ... SMD ... B SM

Female connector

One row

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



| art. no. | no. of 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 |

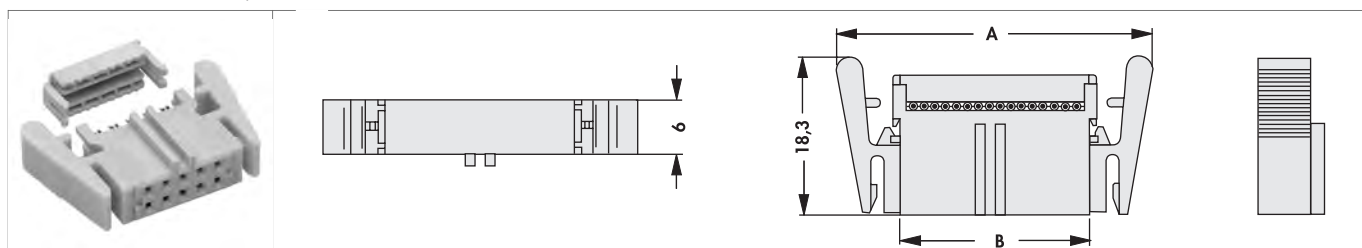
please indicate: ... surface of contact
G = gold-plated
Z = tin-plated

| | |
|--|---|
| annotation: | IDC-pattern 2.54mm |
| conductor cross-section: | AWG 28...30 = 0,09...0,05 mm ² |
| insulation diameter: | $\leq 1,1$ mm |
| suitable ribbon cable round conductor flat cable: | AWG 28 = massive or strand |
| recommended connector pins: | <input type="checkbox"/> 0,635 mm |

Female connector

Two rows, with polarisation

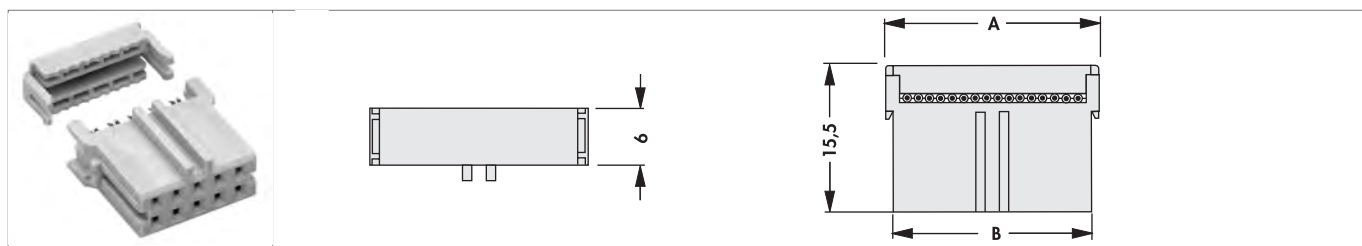
– lockable female multipoint connector, suitable for shrouded male header **ASL ...**



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

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

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



| art. no. | no. of contacts | dim. [mm] | | art. no. | no. of contacts | dim. [mm] | |
|--------------------|-----------------|-----------|-------|--------------------|-----------------|-----------|-------|
| | | A | B | | | A | B |
| FLMP 06 ... | 6 | 10.97 | 9.56 | FLMP 20 ... | 20 | 28.75 | 27.34 |
| FLMP 08 ... | 8 | 13.51 | 12.10 | FLMP 26 ... | 26 | 36.37 | 34.96 |
| FLMP 10 ... | 10 | 16.05 | 14.64 | FLMP 34 ... | 34 | 46.53 | 45.12 |
| FLMP 12 ... | 12 | 18.59 | 17.18 | FLMP 40 ... | 40 | 54.15 | 52.74 |
| FLMP 14 ... | 14 | 21.13 | 19.72 | FLMP 50 ... | 50 | 66.85 | 65.44 |
| FLMP 16 ... | 16 | 23.67 | 22.26 | | | | |

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

annotation: IDC-pattern 1.27mm

conductor cross-section: AWG 28...30 = 0,09...0,05 mm²

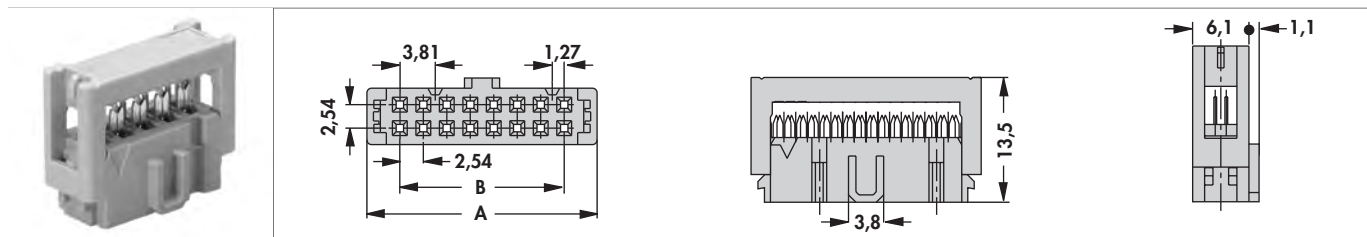
insulation diameter: $\leq 1,1$ mm

suitable ribbon cable round conductor flat cable: AWG 28 = massive or strand

Female connector

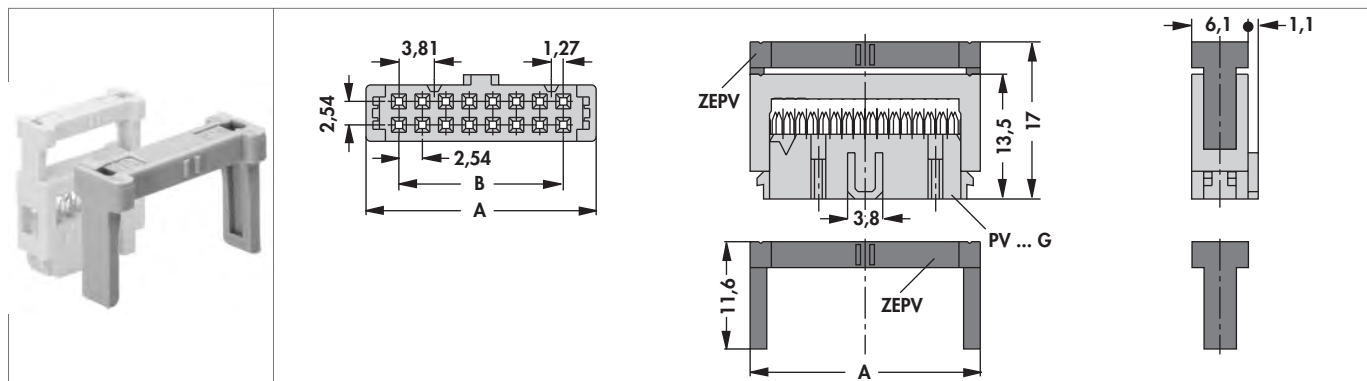
Two rows, with polarisation

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



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

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



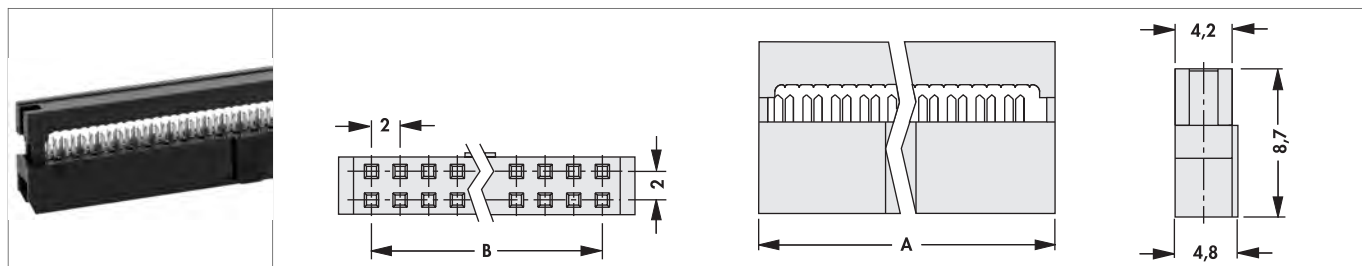
| art. no. | no. of contacts | dim. [mm] | | art. no. | no. of contacts | dim. [mm] | |
|----------------|-----------------|-----------|-------|----------------|-----------------|-----------|-------|
| | | A | B | | | A | B |
| ZEPV 06 | 6 | 12.2 | 5.08 | ZEPV 26 | 26 | 37.6 | 30.48 |
| ZEPV 10 | 10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

A
B
C
D
E
F
G
H
I
K
L
M
N

Female connector

Two rows

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

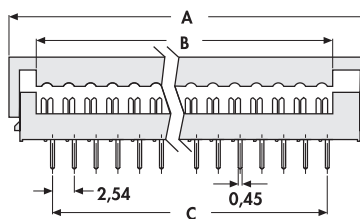
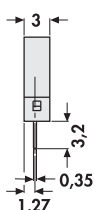


| art. no. | no. of contacts | dim. [mm] | |
|-----------------|-----------------|-----------|----|
| | | A | B |
| PVY 20 S | 20 | 25.1 | 18 |
| PVY 40 S | 40 | 45.3 | 38 |
| PVY 44 S | 44 | 49.3 | 42 |
| PVY 50 S | 50 | 55.1 | 48 |

| | |
|------------------------------------|-----------------------|
| surface of contact: | selective gold-plated |
| annotation: | IDC-pattern, 1mm |
| recommended connector pins: | □ 0,5 mm |

Printed circuit connector

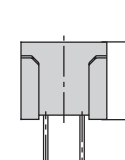
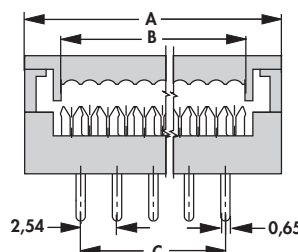
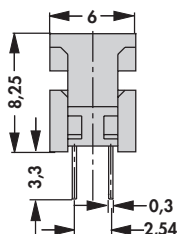
– excess length of the ribbon cable to the case at ≥ 1 mm!



| art. no. | no. of contacts | dim. [mm] | | |
|--------------------|-----------------|-----------|-------|-------|
| | | A | B | C |
| SBAU 1 04 Z | 4 | 17.78 | 10.16 | 7.62 |
| SBAU 1 06 Z | 6 | 22.86 | 15.24 | 12.70 |
| SBAU 1 08 Z | 8 | 27.94 | 20.32 | 17.78 |
| SBAU 1 10 Z | 10 | 33.02 | 25.40 | 22.86 |
| SBAU 1 12 Z | 12 | 38.10 | 30.48 | 27.94 |
| SBAU 1 14 Z | 14 | 43.18 | 35.56 | 33.02 |
| SBAU 1 16 Z | 16 | 48.26 | 40.64 | 38.10 |
| SBAU 1 17 Z | 17 | 50.80 | 43.18 | 40.64 |
| SBAU 1 18 Z | 18 | 53.34 | 45.72 | 43.18 |
| SBAU 1 20 Z | 20 | 58.42 | 50.80 | 48.26 |

| | |
|--|----------------------------|
| surface of contact: | tin-plated |
| annotation: | IDC-pattern 2.54mm |
| insulation diameter: | $\leq 1,1$ 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 S | 6 | 12.9 | 7.8 | 5.08 |
| SBAU 10 S | 10 | 18.0 | 12.9 | 10.16 |
| SBAU 14 S | 14 | 23.0 | 18.0 | 15.24 |
| SBAU 16 S | 16 | 25.6 | 20.5 | 17.78 |
| SBAU 20 S | 20 | 30.7 | 25.6 | 22.86 |
| SBAU 26 S | 26 | 38.3 | 33.2 | 30.48 |
| SBAU 34 S | 34 | 48.5 | 43.4 | 40.64 |

| | |
|--|--|
| surface of contact: | selective gold-plated: solder area gold-plated, IDC area nickel-plated |
| annotation: | IDC-pattern 1.27mm |
| insulation diameter: | $\leq 1,1$ mm |
| suitable ribbon cable round conductor flat cable: | AWG 28 = massive or strand |

Female header one row
D-Sub connectors / flat cable
PC connector design DIL
Female header two rows

→ H 4
→ I 11
→ H 9
→ H 6

Application tools
Flat cable
Female header grid 2.00
Technical data

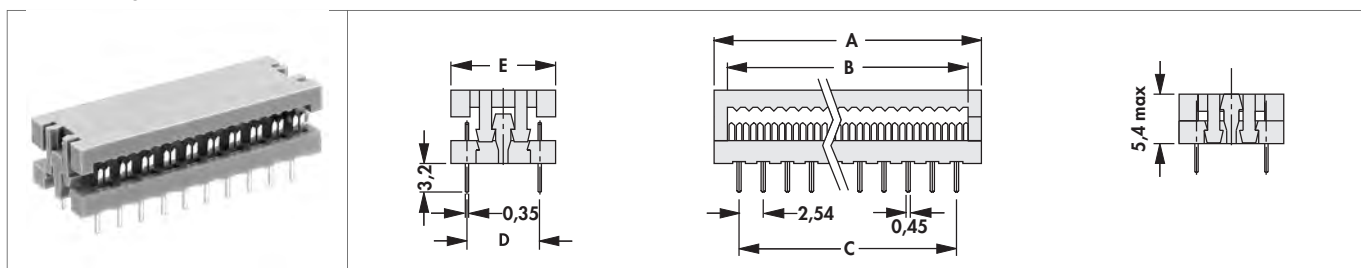
→ H 10
→ H 10
→ H 7
→ H 11 – 12

H 8

Printed circuit connector

Design DIL

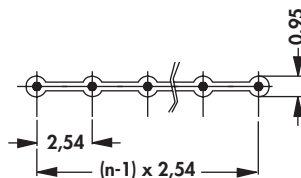
– excess length of the ribbon cable to the case at $\geq 1\text{mm}$!



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

Accessories for flat ribbon cable and application tools

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



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

Bench press

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



art. no.
VBK 1

Accessories, suitable for ribbon cable connector

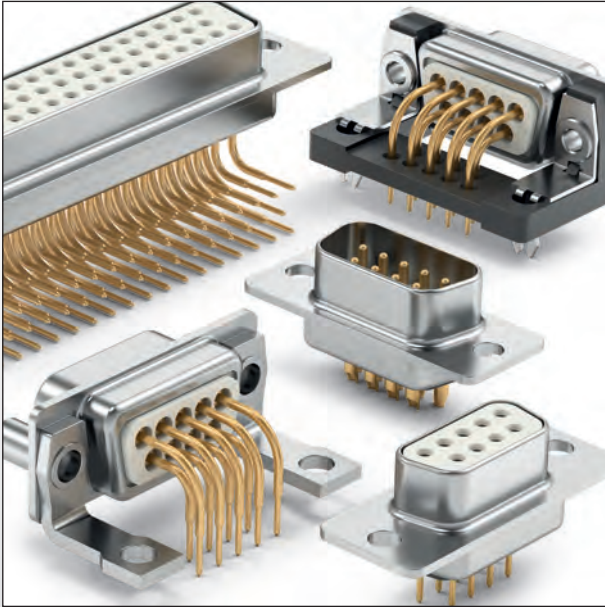
- exchangeable crimping dies for any indicated types available

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

Technical data IDC-connectors

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

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



D-Sub connectors

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



D-Sub special design

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



D-Sub hoods

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


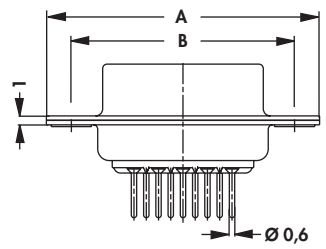
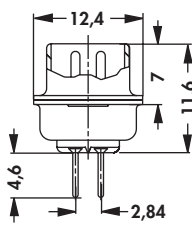
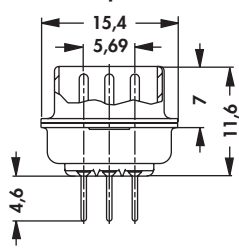



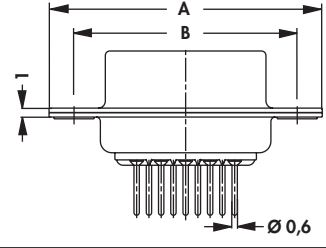
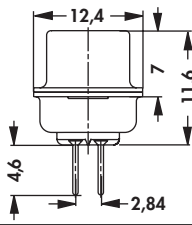
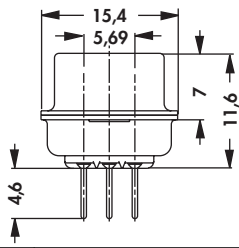
D-Sub accessories

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

D-Sub standard connectors

Male and female headers

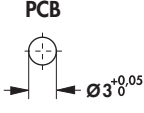
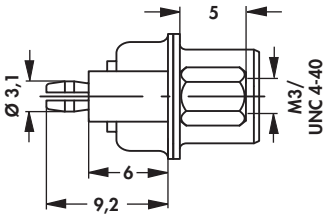
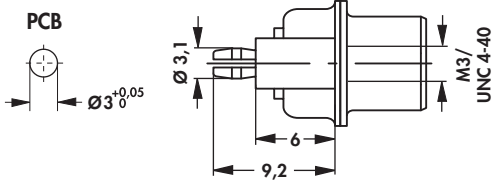
|  | 9 - 37 pol. | | 50 pol. | |  | | |
|--|---|---|---------|--------------------|---|-----------|------|
| |  |  | | | | | |
| art. no. | design | dim. [mm] | | art. no. | design | dim. [mm] | |
| | | A | B | | | A | B |
| DS 09 T ... | male | 30.8 | 25.0 | DS 37 T ... | male | 69.5 | 63.5 |
| DS 15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

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

please indicate:

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


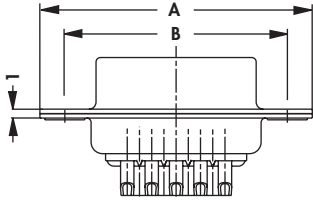
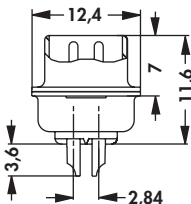
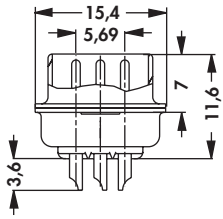

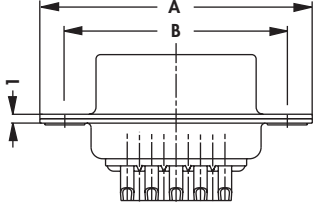
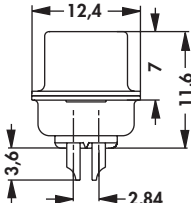
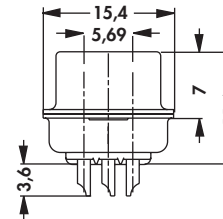

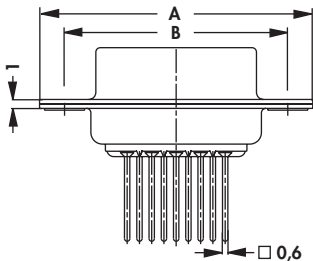
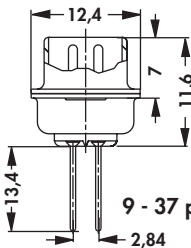
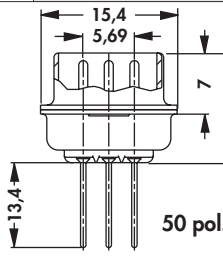

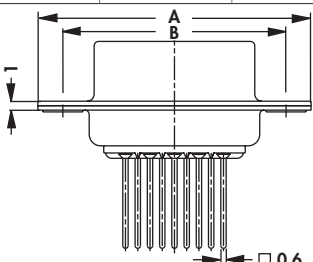
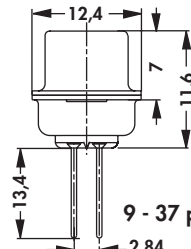
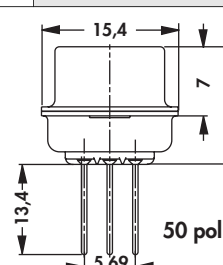
type of mounting

| | | | | |
|---|--|---|--|--|
|  | DB/DS ... T RCSM3 DB/DS ... T RCSUN |  | DB/DS ... T RCM3 DB/DS ... T RCUN |  |
| | | | | |

A
B
C
D
E
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G
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I
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L
M
N

D-Sub standard connectors

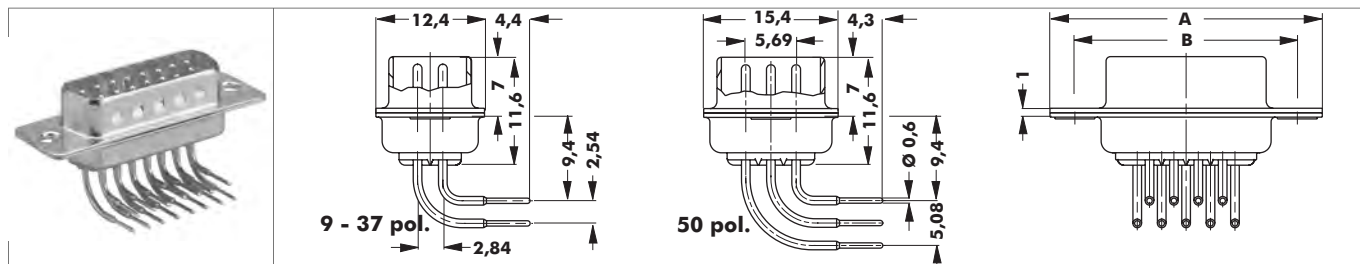
Male and female headers

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

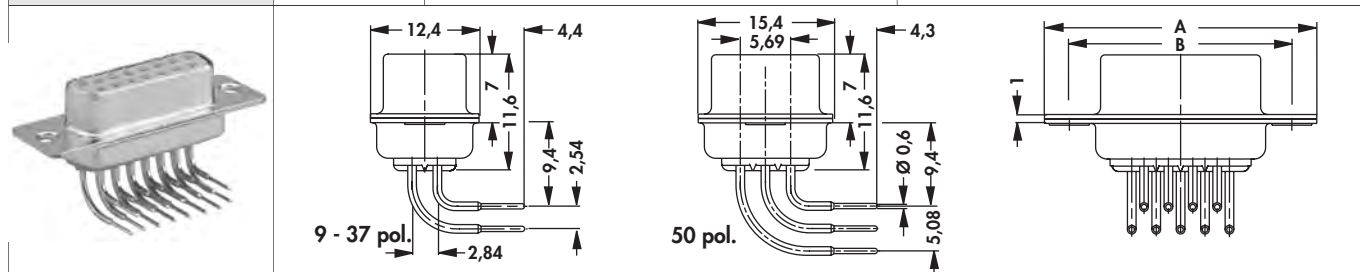
D-Sub standard connectors

Male and female headers

- with turned precision contacts
- with shielding springs



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

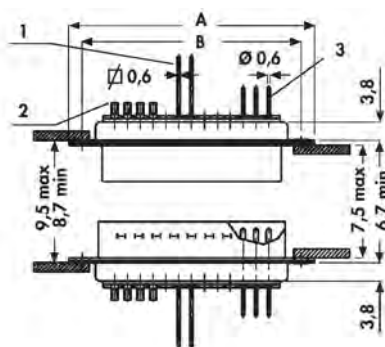


| art. no. | design | dim. [mm] | |
|-----------------|--------|-----------|------|
| | | A | B |
| DB 09 LA | female | 30.8 | 25.0 |
| DB 15 LA | female | 39.2 | 33.3 |
| DB 25 LA | female | 53.1 | 47.0 |
| DB 37 LA | female | 69.5 | 63.5 |
| DB 50 LA | female | 67.0 | 61.1 |

caseing frame: steel, tin plated

Installation diagram

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


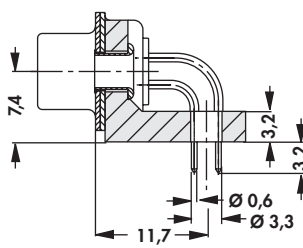
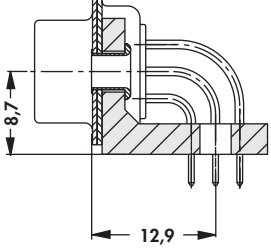

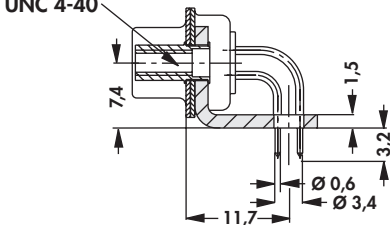

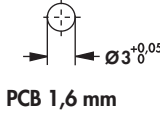
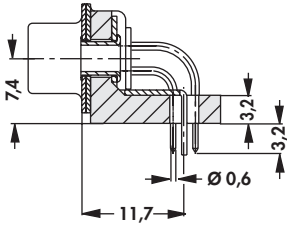

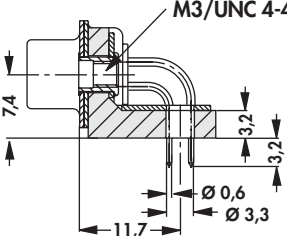


- D-Sub high density → I 7 - 8
- D-Sub in SMD technique → I 15
- D-Sub cut-out cover → I 22
- D-Sub connector in pressfit techn. → I 16


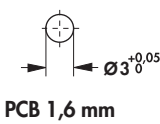
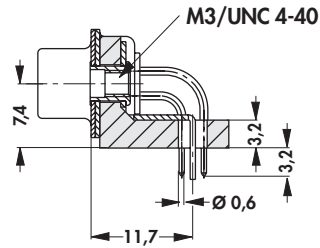
- Screw fastening → I 23
- D-Sub mixed layout → I 13
- HF-seals → I 24
- Technical data → I 26 - 28

A
B
C
D
E
F
G
H
I
K
L
M
N

D-Sub standard connectors with mounting bracket

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


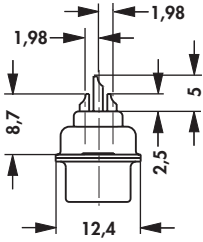
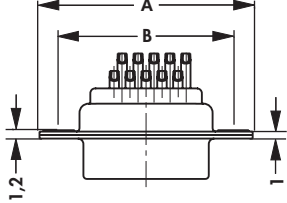

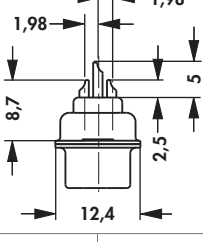
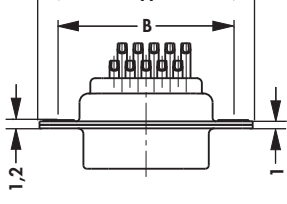
D-Sub standard connectors

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

D-Sub connectors High Density

Male and female headers


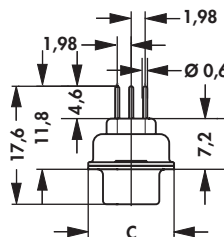
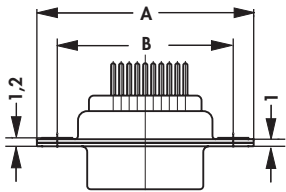

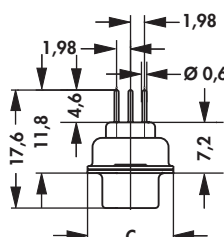
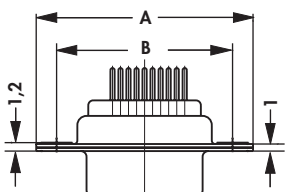
- our D-Sub connectors **HD** are loaded with turned precision contacts
- with shielding springs

| | | | | |
|---|---|-------------------|---|------|
|  |  | |  | |
| art. no. | no. of contacts | design | dim. [mm] | |
| | | | A | B |
| HD S 15 L | 15 | male | 30.8 | 25.0 |
| HD S 26 L | 26 | male | 39.2 | 33.3 |
| HD S 44 L | 44 | male | 53.1 | 47.0 |
|  |  | |  | |
| art. no. | no. of contacts | design | dim. [mm] | |
| | | | A | B |
| HD B 15 L | 15 | female | 30.8 | 25.0 |
| HD B 26 L | 26 | female | 39.2 | 33.3 |
| HD B 44 L | 44 | female | 53.1 | 47.0 |
| casing frame: | | steel, tin plated | | |

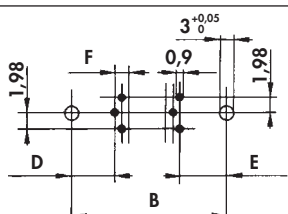
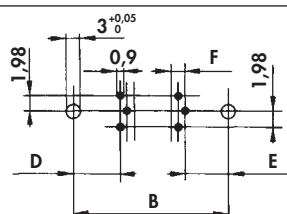
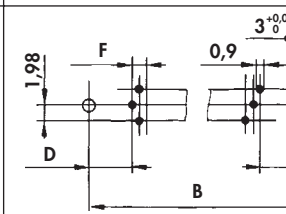
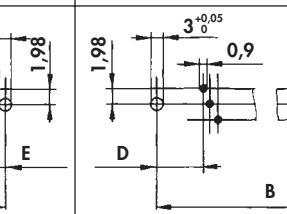
D-Sub connectors High Density

Male and female headers

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

|  |  | |  | | | | | |
|--|---|-----------------|--|-----------|------|------|------|------|
| | art. no. | no. of contacts | design | dim. [mm] | | | | |
| HD S 15 T | 15 | male | A | B | C | D | E | F |
| HD S 26 T | 26 | male | 30.8 | 25.0 | 12.4 | 7.04 | 7.67 | 2.29 |
| HD S 44 T | 44 | male | 39.2 | 33.3 | 12.4 | 6.87 | 7.00 | 2.29 |
| HD S 44 T | 44 | male | 53.1 | 47.0 | 12.4 | 6.88 | 7.01 | 2.29 |
|  |  | |  | | | | | |
| | art. no. | no. of contacts | design | dim. [mm] | | | | |
| HD B 15 T | 15 | female | A | B | C | D | E | F |
| HD B 26 T | 26 | female | 30.8 | 25.0 | 12.4 | 7.67 | 7.04 | 2.29 |
| HD B 26 T | 26 | female | 39.2 | 33.3 | 12.4 | 7.00 | 6.87 | 2.29 |
| HD B 44 T | 44 | female | 53.1 | 47.0 | 12.4 | 7.01 | 6.88 | 2.29 |
| caseing frame: | | | steel, tin plated | | | | | |

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

| 1 | 2 | 3 | 4 |
|--|---|---|--|
|  |  |  |  |

Application tools
Screw fastening
D-Sub filter adapter
D-Sub connectors /flat cable

→ H 10
→ I 23
→ I 9 – 10
→ I 11 – 12

HF-seals
HF-tight caps
D-Sub cut-out cover
Technical data

→ I 24
→ I 24
→ I 22
→ I 26 – 28

D-Sub filter connector

Adapter, 9-37 contacts

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

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

Male headers and female headers, straight


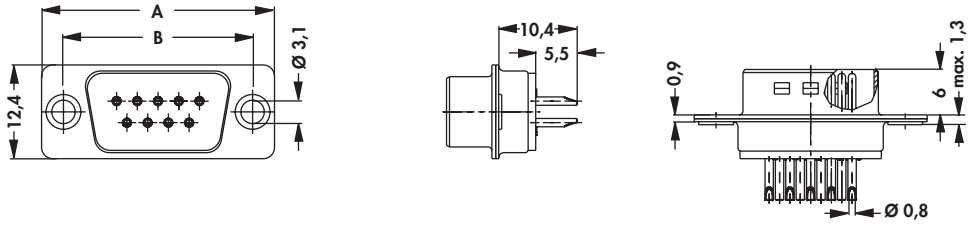
- capacity per contact: 1000 pF
- other capacity on request


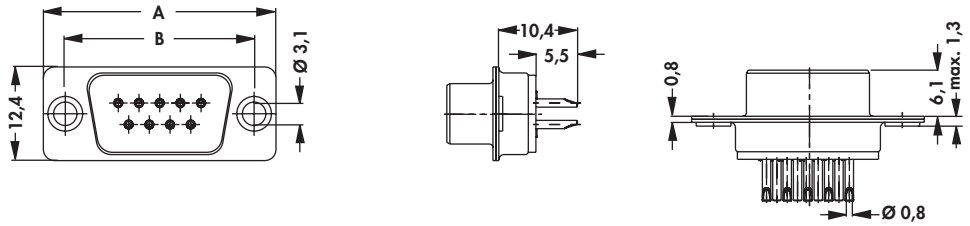
| art. no. | no. of contacts | design | dim. [mm] | |
|-----------------------|-----------------|--------|-----------|------|
| | | | A | B |
| FD S 09 T 1000 | 9 | male | 30.8 | 25.0 |
| FD S 15 T 1000 | 15 | male | 39.2 | 33.3 |
| FD S 25 T 1000 | 25 | male | 53.1 | 47.0 |
| FD S 37 T 1000 | 37 | male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

D-Sub filter connector

Male and female headers, with solder cup

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

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

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

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

→ H 10

→ I 18 - 21

→ I 22

→ I 16 - 17

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

→ I 13 - 14

→ I 24


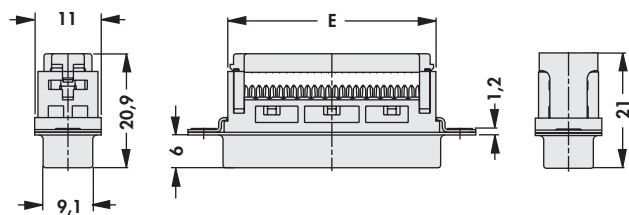
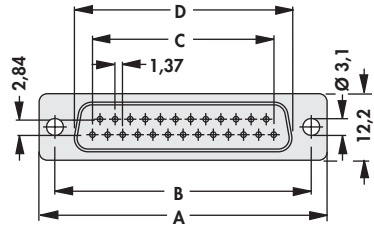

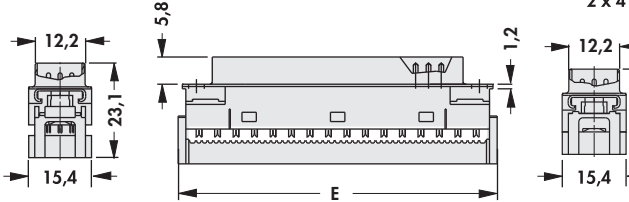
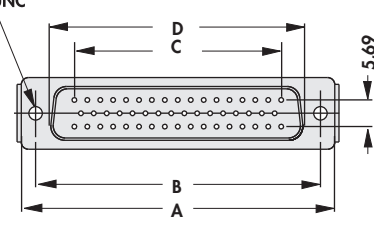

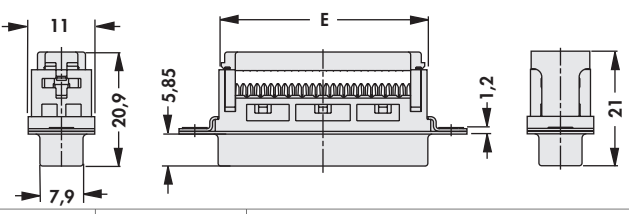
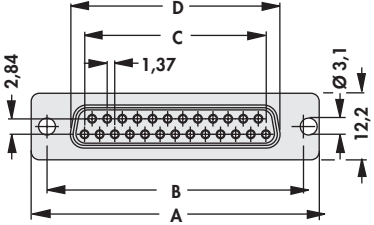

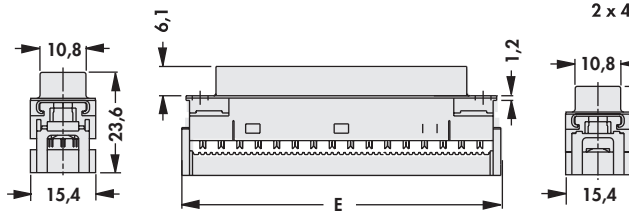
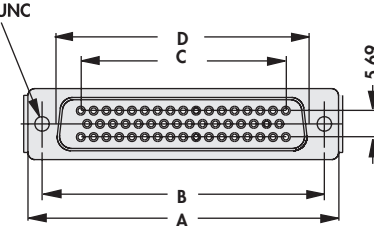
→ I 23

→ I 26 - 28

I 10

D-Sub connector for flat ribbon cable


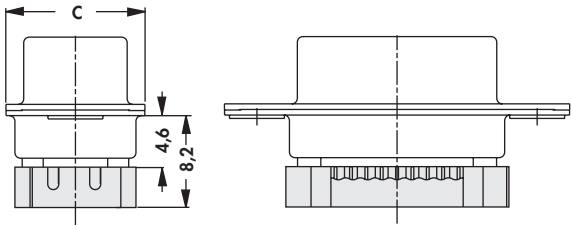
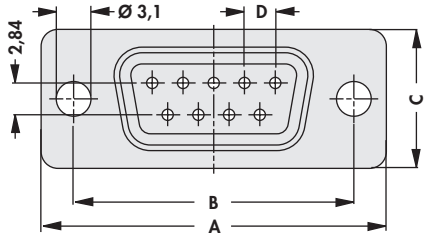

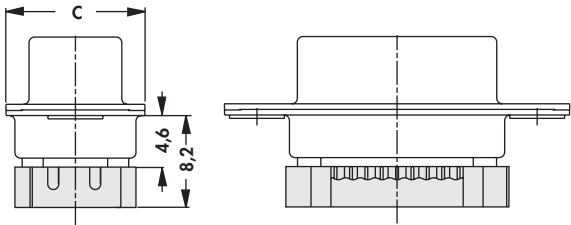
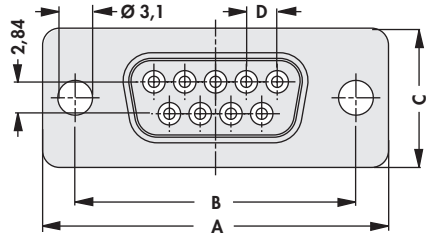
Male and female headers

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

D-Sub connector for flat ribbon cable

Male and female headers, low profile

– useable ribbon cable: AWG 26 ... 28

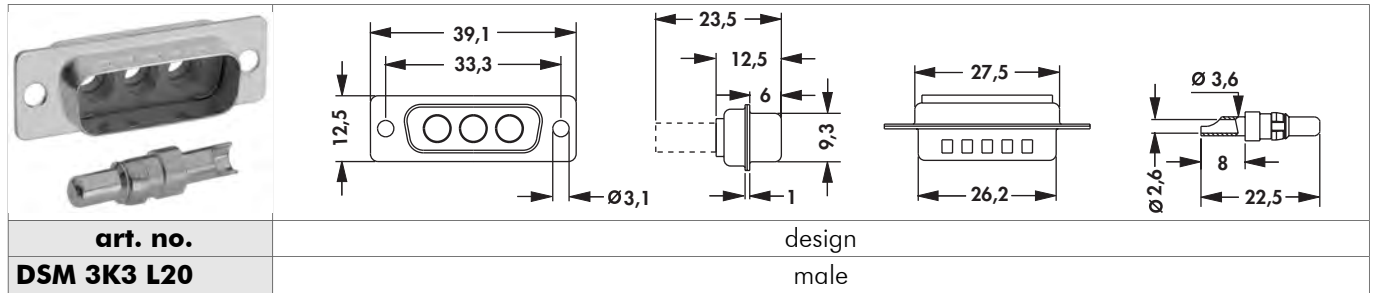
| | | | | | | |
|--|---|--|-----------|------|------|------|
|  |  |  | | | | |
| art. no. | no. of contacts | design | dim. [mm] | | | |
| | | | A | B | C | D |
| DS BK 09 LP | 9 | male | 30.8 | 25.0 | 12.4 | 2.74 |
| DS BK 15 LP | 15 | male | 39.2 | 33.3 | 12.4 | 2.74 |
| DS BK 25 LP | 25 | male |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

D-Sub mixed layout connectors

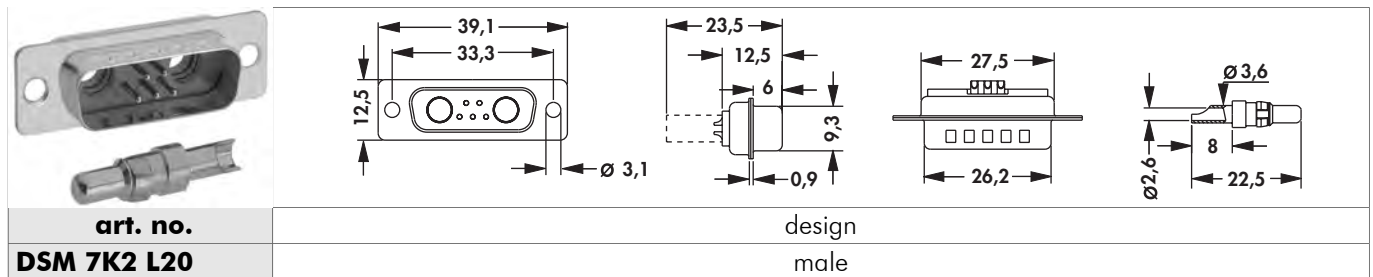
Male headers - suitable for standard D-Sub accessories

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

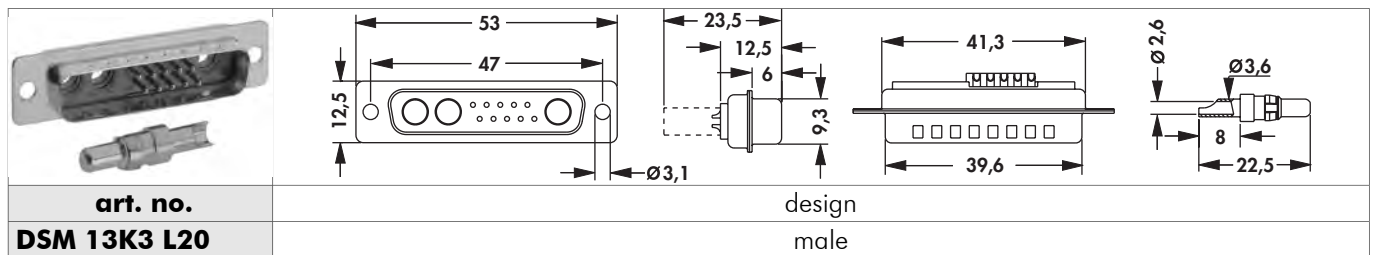
- 3 high current contacts



- 2 high current contacts, 5 signal contacts



- 3 high current contacts, 10 signal contacts



D-Sub mixed layout connectors

Female headers - suitable for standard D-Sub accessories

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

- 3 high current contacts

| | | | | |
|---|----------------------|--|--|--|
| | | | | |
| <p>art. no. DBM 3K3 L20</p> | <p>design female</p> | | | |

- 2 high current contacts, 5 signal contacts

| | | | | |
|---|----------------------|--|--|--|
| | | | | |
| <p>art. no. DBM 7K2 L20</p> | <p>design female</p> | | | |

- 3 high current contacts, 10 signal contacts

| | | | | |
|--|----------------------|--|--|--|
| | | | | |
| <p>art. no. DBM 13K3 L20</p> | <p>design female</p> | | | |

D-Sub in SMD-mounting

Male and female headers

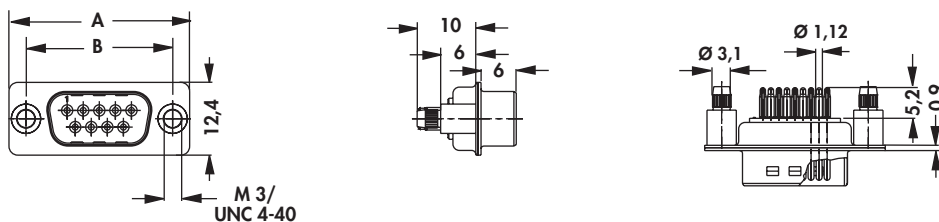
– **packing:** tape and reel (150 pcs/reel); reel outer diameter 330 mm

| art. no. | no. of contacts | dim. [mm] | | | |
|---------------------|-----------------|-----------|------|-------|------|
| | | 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 | 1.37 |
| DS 25 SMD TR | 25 | 53.1 | 47.0 | 33.12 | 1.38 |
| DS 37 SMD TR | 37 | 69.5 | 63.5 | 49.68 | 1.38 |

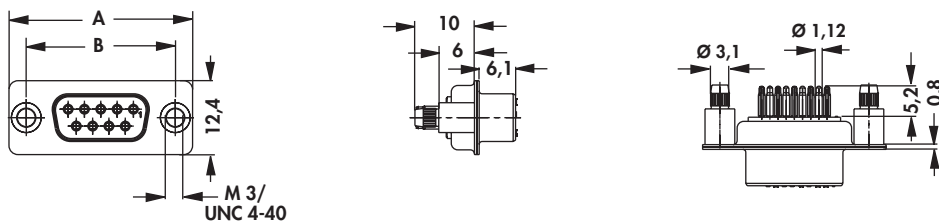
| art. no. | no. of contacts | dim. [mm] | | | |
|---------------------|-----------------|-----------|------|-------|------|
| | | A | B | Y | Z |
| DB 09 SMD TR | 9 | 30.8 | 25.0 | 10.98 | 1.37 |
| DB 15 SMD TR | 15 | 39.2 | 33.3 | 19.20 | 1.37 |
| DB 25 SMD TR | 25 | 53.1 | 47.0 | 33.12 | 1.38 |
|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

D-Sub connector in pressfit technology

Male and female headers



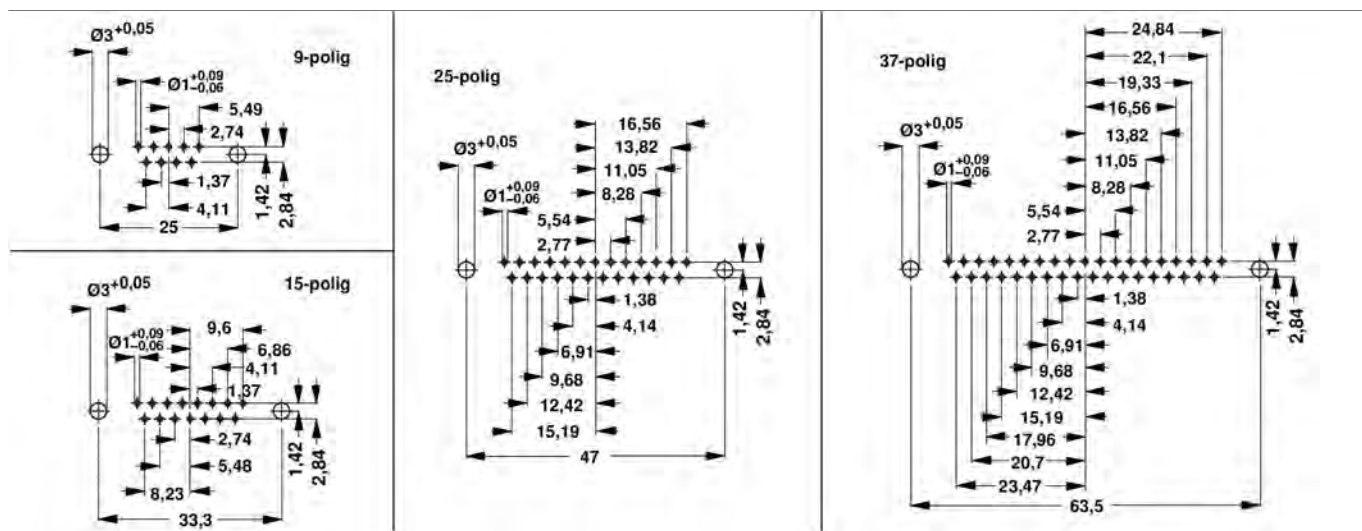
| art. no. | no. of contacts | dim. [mm] | |
|-------------|-----------------|-----------|------|
| | | A | B |
| DS ... 9 P | 9 | 30.8 | 25.0 |
| DS ... 15 P | 15 | 39.2 | 33.3 |
| DS ... 25 P | 25 | 53.1 | 47.0 |
| DS ... 37 P | 37 | 69.5 | 63.5 |



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

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

caseing frame: steel, tin plated



D-Sub mixed layout
 Application tools
 D-Sub filter adapter
 Screw fastening

→ I 13 - 14
 → H 10
 → I 9
 → I 23

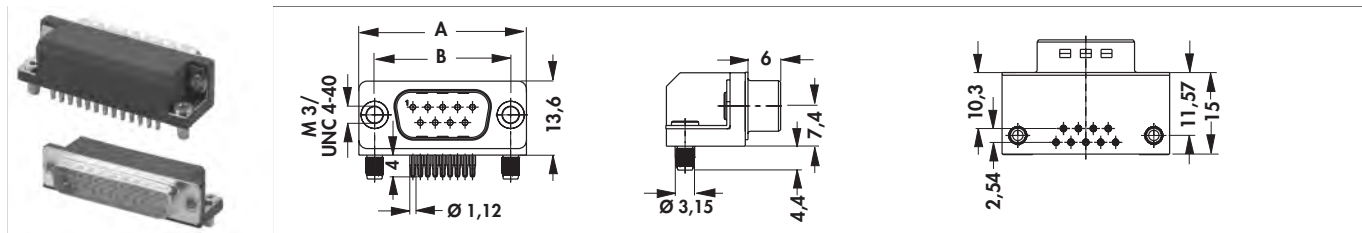
HF-seals
 D-Sub connectors /flat cable
 D-Sub hoods
 Technical data

→ I 24
 → I 11 - 12
 → I 18 - 21
 → I 26 - 28

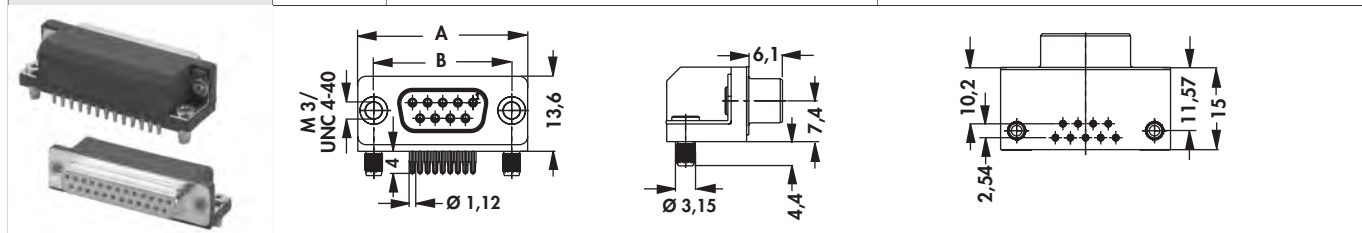
A
B
C
D
E
F
G
H
I
K
L
M
N

D-Sub connector in pressfit technology

Male and female headers



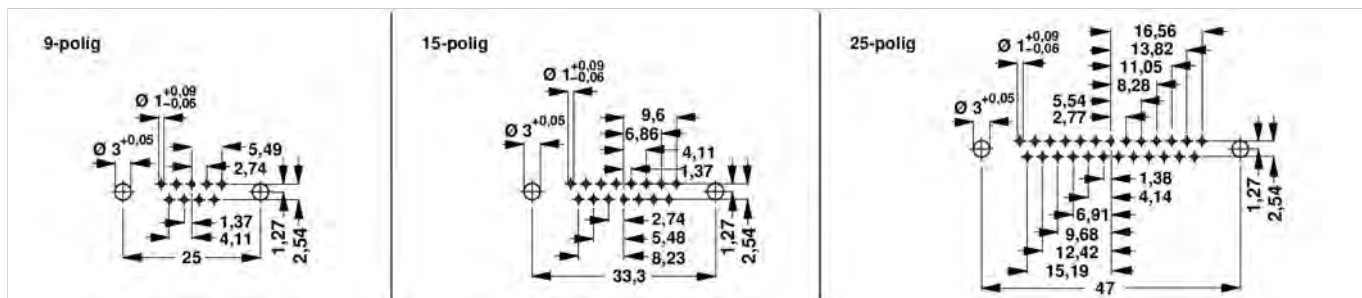
| art. no. | no. of contacts | dim. [mm] | |
|--------------|-----------------|-----------|------|
| | | A | B |
| DS WP ... 9 | 9 | 30.8 | 25.0 |
| DS WP ... 15 | 15 | 39.2 | 33.3 |
| DS WP ... 25 | 25 | 53.1 | 47.0 |



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


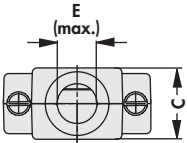
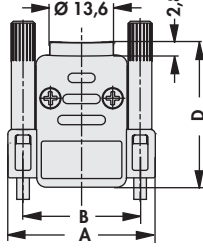
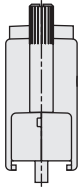

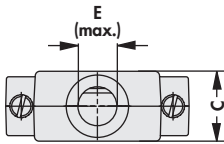
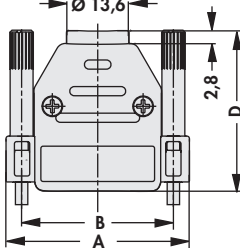
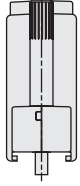
please indicate: ... type of thread
3 = M3
UNC = UNC 4-40

casings frame: steel, tin plated




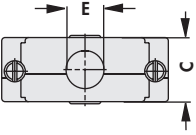
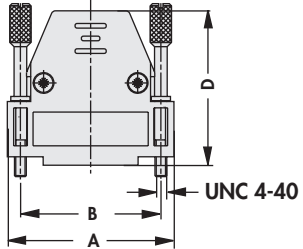
D-Sub hoods

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

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

With self-cutting threaded bolt

- straight cable outlet with pre-assembled strain relief

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


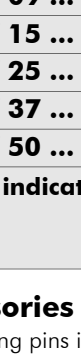

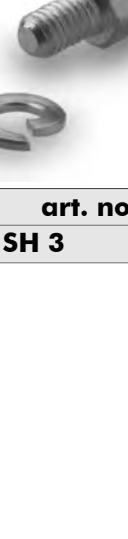
D-Sub filter connector → I 10
 D-Sub filter adapter → I 9
 D-Sub high density → I 7 - 8
 D-Sub standard connectors → I 3 - 6

D-Sub connectors /flat cable → I 11 - 12
 D-Sub mixed layout → I 13 - 14
 D-Sub connector in pressfit techn. → I 16 - 17
 Technical data → I 26 - 28

D-Sub hoods

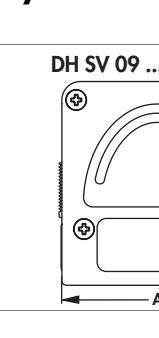

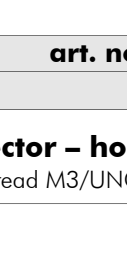

D-Sub hoods with quick-action locking system

– straight and side-gated cable outlet

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

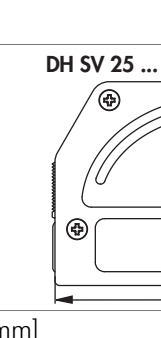


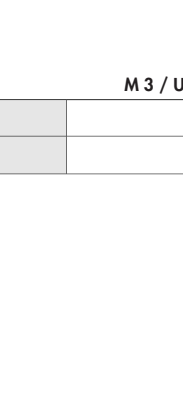
Accessories – locking pin for hood – hood connection

– 2 locking pins including locking plates

|  |  |  |  |
|---|---|---|---|
| art. no. | | | |
| RS HH | | | |

Accessories – locking pin for plug connector – hood connection


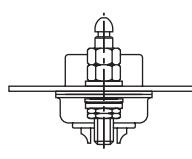
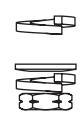
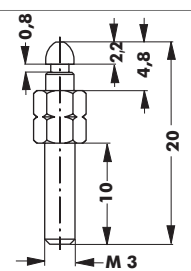
– 2 latch Pins including locking ring for connectors with thread M3/UNC 4-40

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

D-Sub hoods

Accessories – locking pin for plug connector – hood connection

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


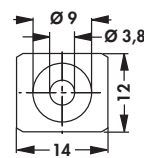
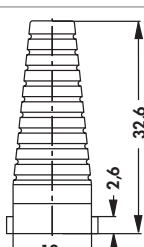





| | |
|-----------------|--|
| art. no. | |
| RS SH D | |

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

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

– for cable diameters 3...9 mm

| | |
|-----------------|-----------------|
| art. no. | no. of contacts |
| KT SV | 9 |

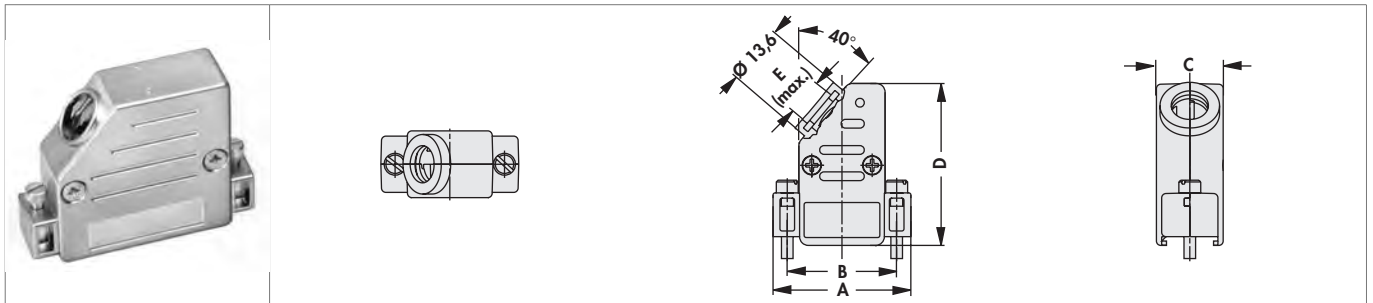
D-Sub hoods

D-Sub-hoods-compact

9-50 contacts



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




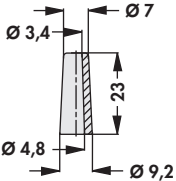
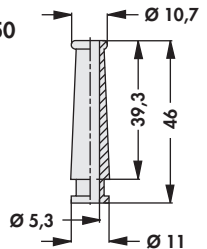
| art. no. | no. of contacts | dim. [mm] | | | | |
|-----------|-----------------|-----------|------|------|----|------|
| | | A | B | C | D | E |
| DH 09 ... | 9 | 31.5 | 25.0 | 15.2 | 37 | 8.5 |
| DH 15 ... | 15 | 40.0 | 33.3 | 15.2 | 37 | 8.5 |
| DH 25 ... | 25 | 53.5 | 47.0 | 15.2 | 41 | 11.0 |
| DH 37 ... | 37 | 70.0 | 63.5 | 15.2 | 41 | 11.0 |
| DH 50 ... | 50 | 67.8 | 61.1 | 18.2 | 41 | 12.0 |

please indicate: ... surface of case
K = plastic, black
KM = plastic, metallized

D-Sub accessoires

Suitable cable bushing


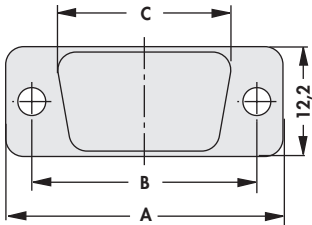
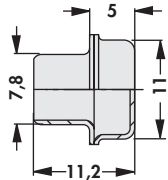
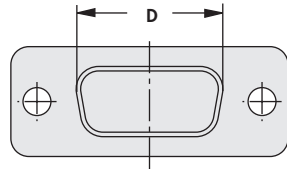
– protects the cable against damage by buckling

| | | | |
|---|---|---|--|
|  | <p>KT 0915</p>  | <p>KT 2550</p>  | |
| art. no. | | art. no. | |
| KT 0915 | | KT 2550 | |

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


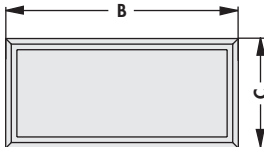
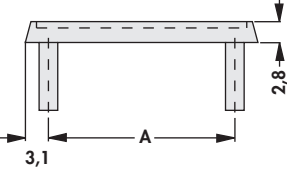
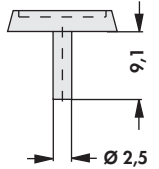
– suitable for EMC application, closed on one side

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

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

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

– easy to mount with enclosed clamping springs

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

D-Sub accessoires


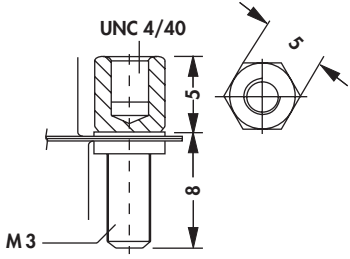
Screw fastening, mounted

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

| | |
|-----------------|--|
| art. no. |  |
| ... V | |


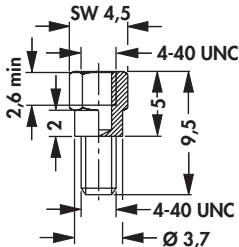
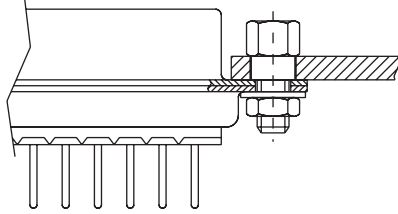
Screw fastening, loose

- 2 separate screw fasteners, with washer and nut

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

Screw fastening for assembly of cases, separate


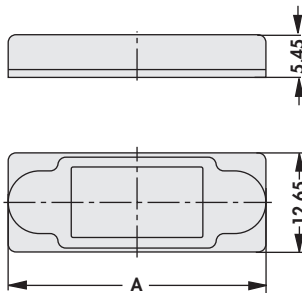
- 2 screw fastenings incl. spacer, washer, nut

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

D-Sub accessoires


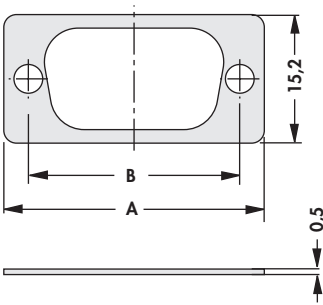
HF-tight caps, male and female headers

– prevent HF-radiation at open interfaces

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

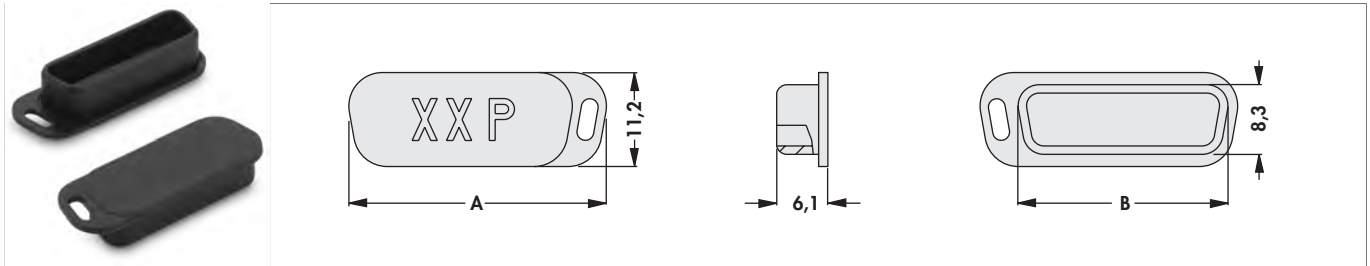
HF-seals

– as seal between plug and housing

| | | | | | |
|---|---|-------------------------------------|------|----------------|--|
|  |  | | | | |
| | art. no. | dim. [mm] A | | dim. [mm] 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 | | | |

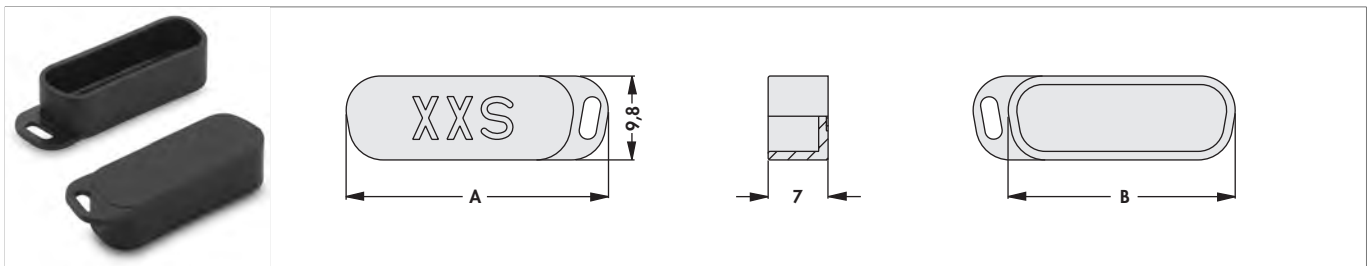
Dust protection caps

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

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

Technical data D-Sub connectors

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

Technical data D-Sub connectors

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

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



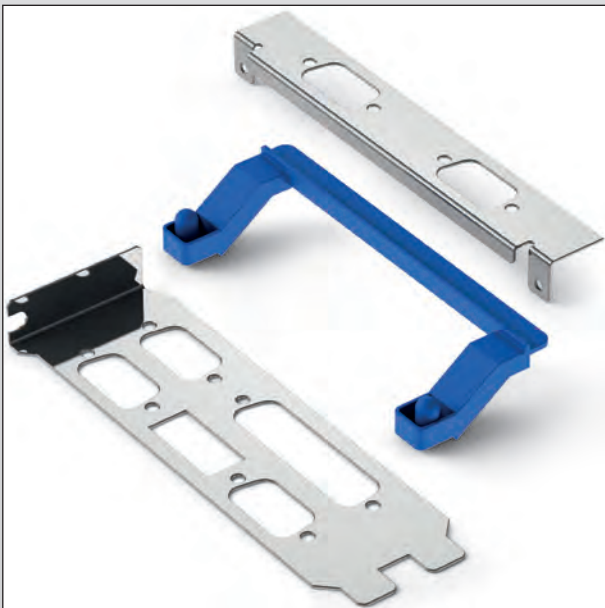
Brackets for PCI

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



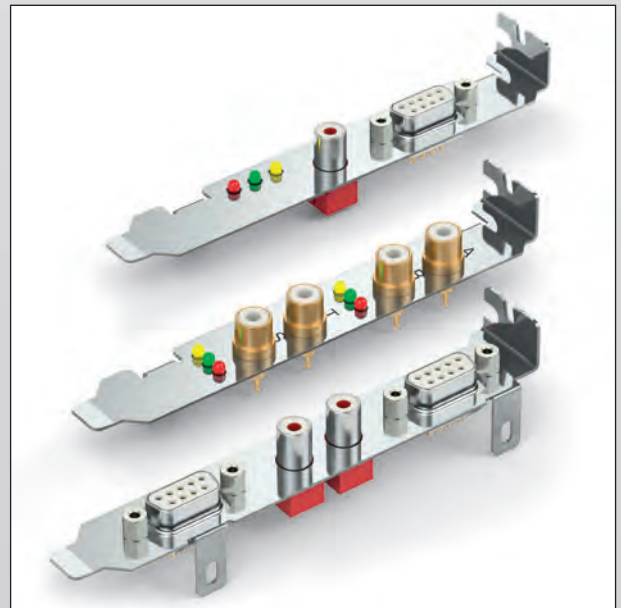
Brackets for AT and similar

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



Custom-specific brackets

- double width
- special width
- with printing

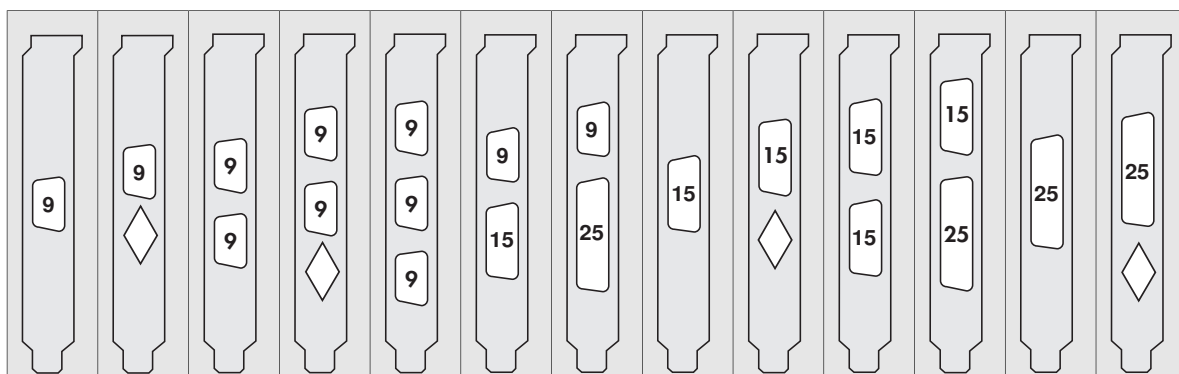


Equipped brackets

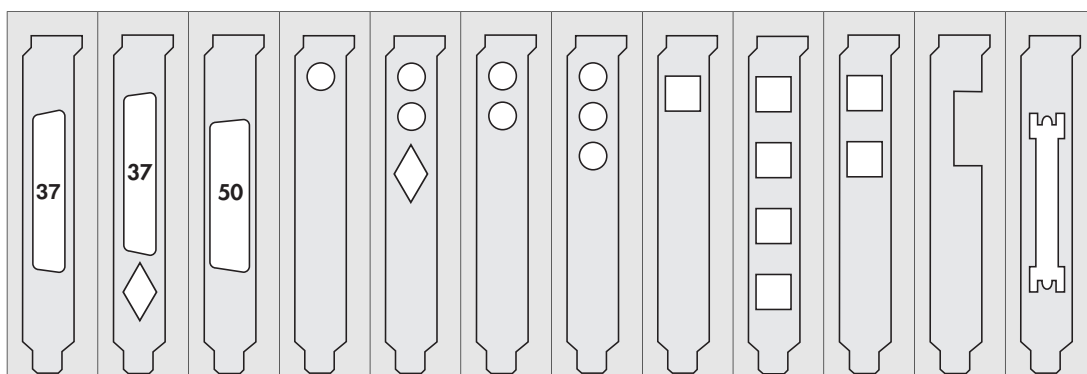
- equipped with D-Sub
- equipped with LED
- equipped with custom-specific components

Index Bracket-Groups

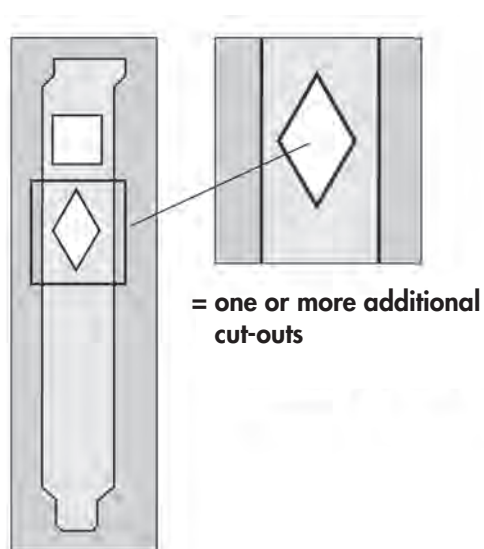
A
B
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F
G
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I
K
L
M
N



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



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



Brackets for PC

Brackets with fixing tab and without cutout

| | |
|---|---|
| <p>PCI</p> <p>PCI ... L</p> | <p>KHPC</p> <p>KHPC ... L</p> |
| <p>art. no. PCI 0 L</p> | <p>art. no. KHPC 0 L</p> |

Bracket without fixing tab and without cutout

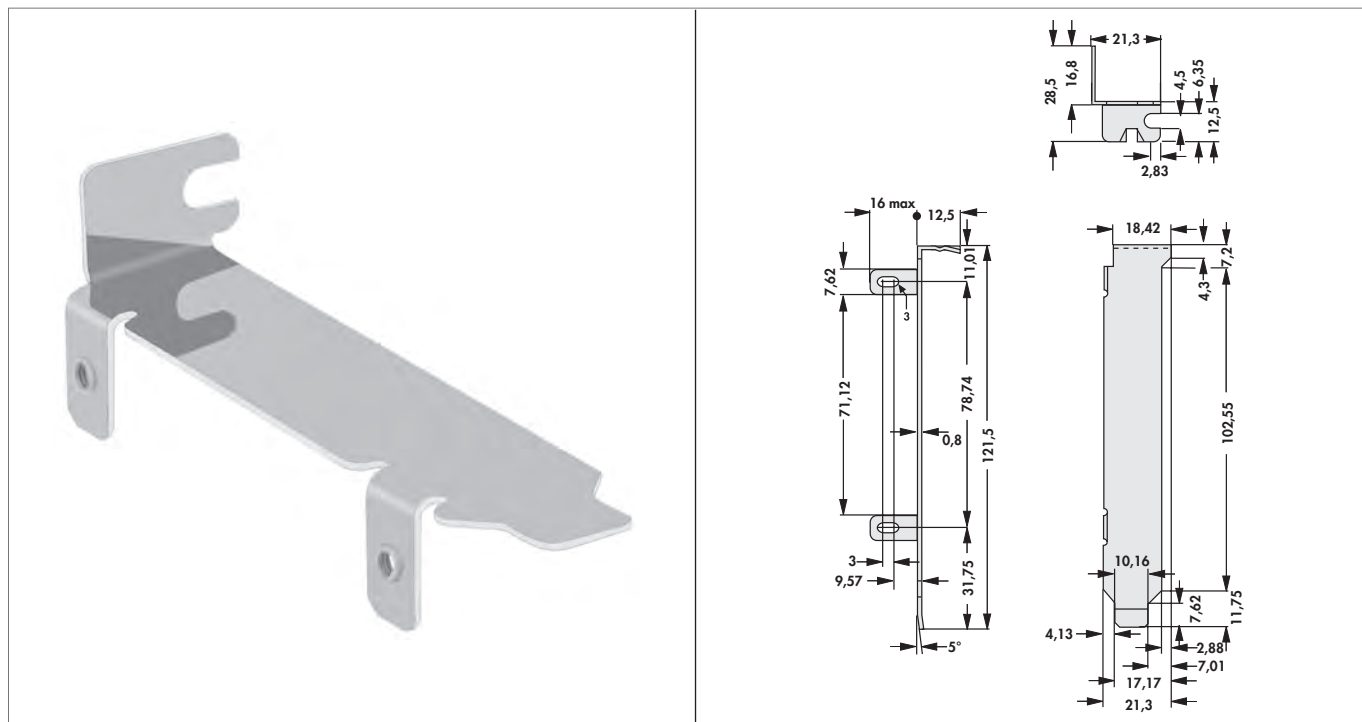
| | |
|---|---|
| <p>PCI</p> <p>PCI ... O</p> | <p>KHPC</p> <p>KHPC ... O</p> |
| <p>art. no. PCI 0 O</p> | <p>art. no. KHPC 0 O</p> |

| | |
|-----------------------------------|--------------------------------|
| <p>material:</p> | <p>stainless steel (V 2 A)</p> |
| <p>material thickness:</p> | <p>0.8 mm</p> |

Low Profile bracket for PC

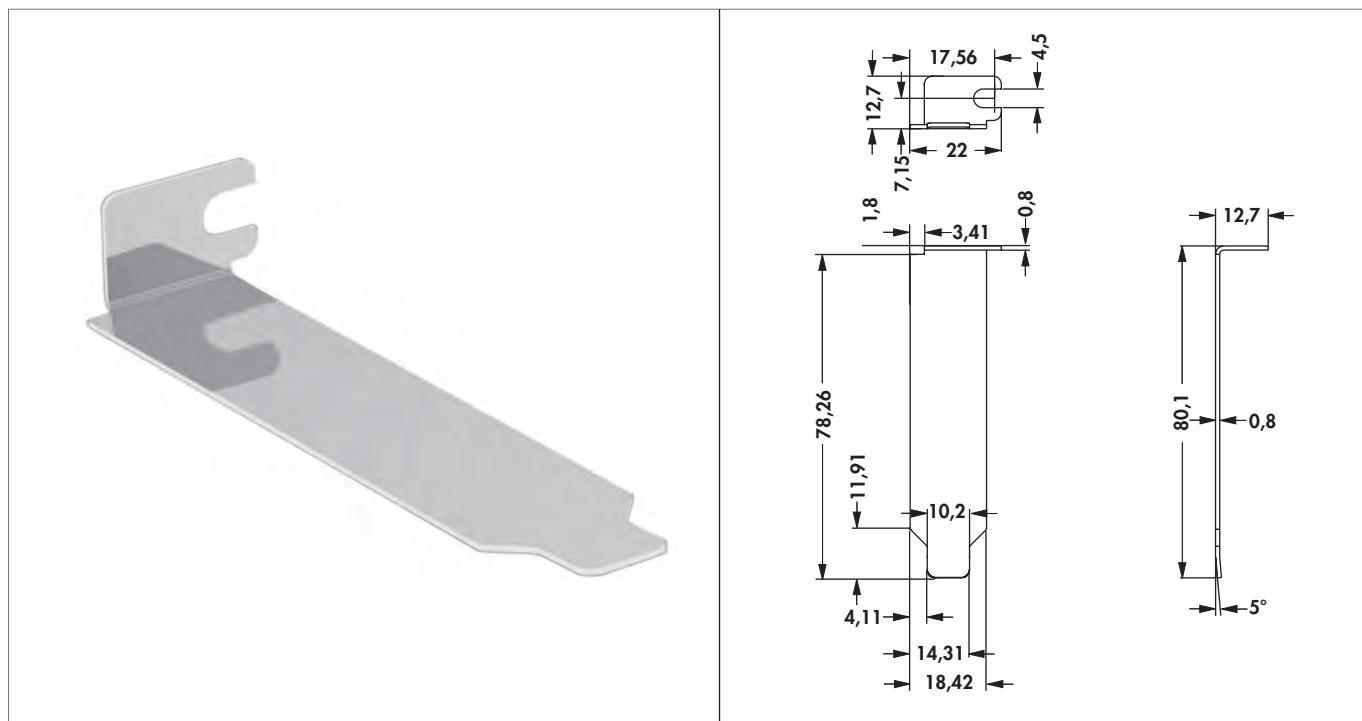
Low Profile bracket with fixing tap and without cutout

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



art. no.
PCI LP ... L

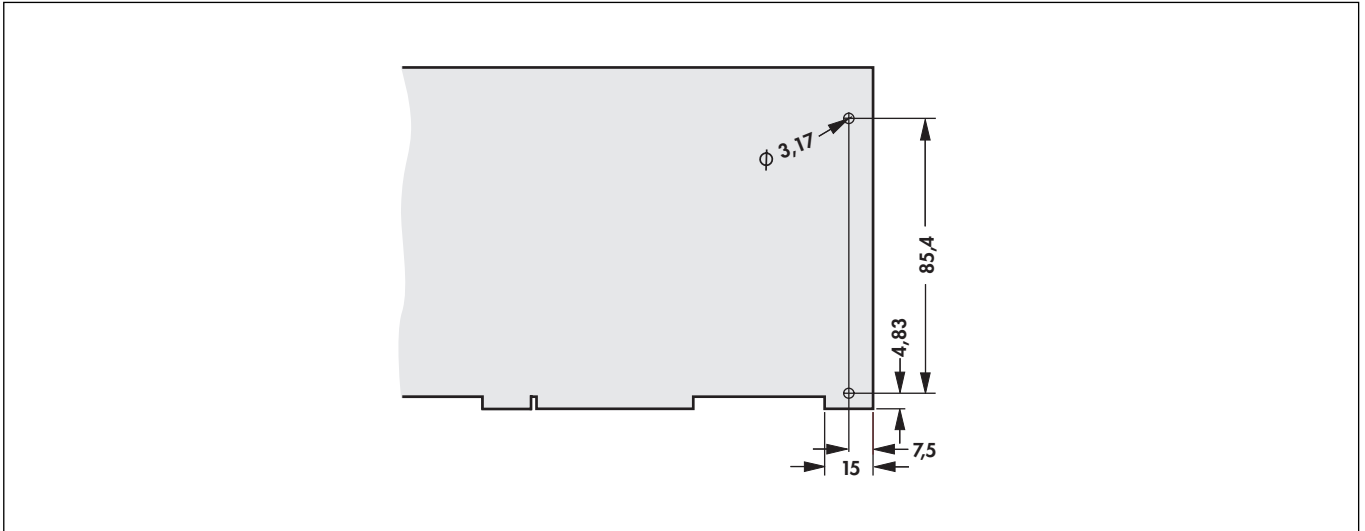
Low Profile bracket without fixing tap and without cutout



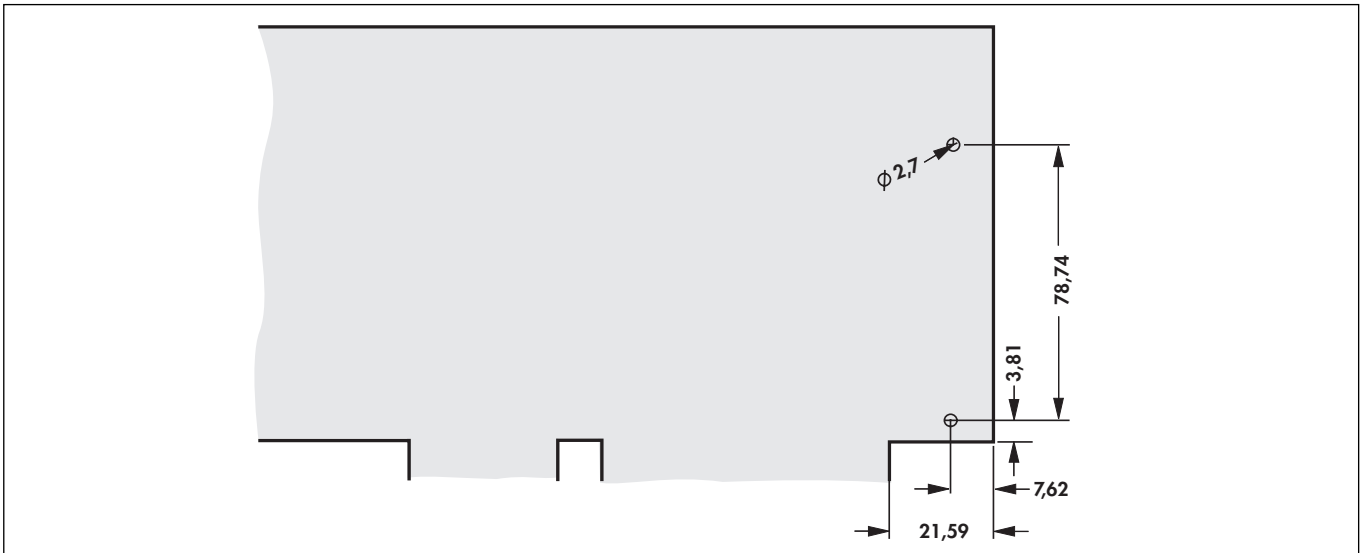
art. no.
PCI LP ... O

| | |
|---------------------|---------------------------------|
| material: | steel sheet, hot-dip aluminised |
| material thickness: | 0.8 mm |

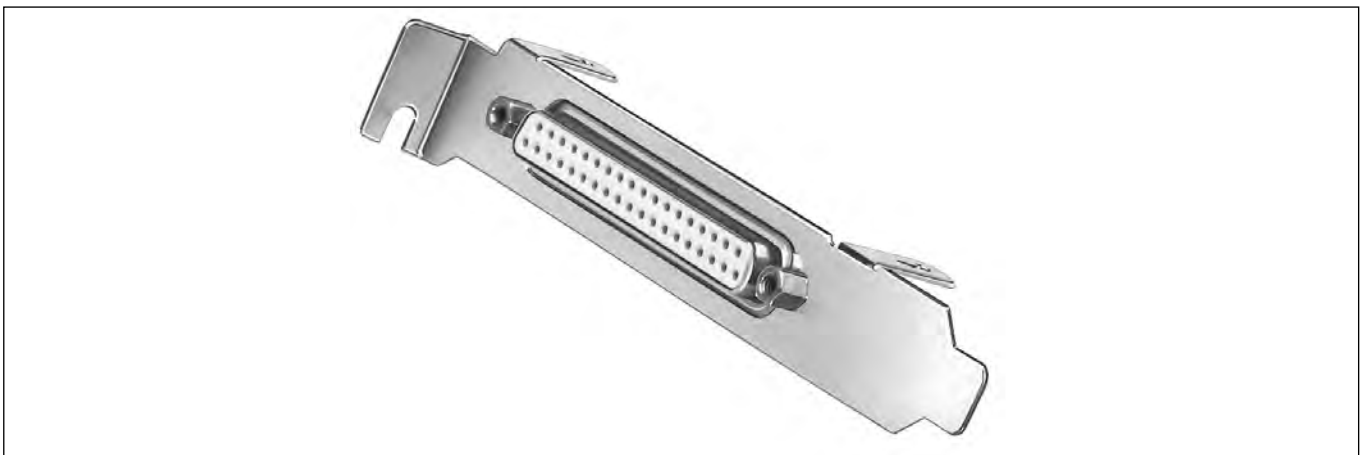
Dimensional drawing for PCBs



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



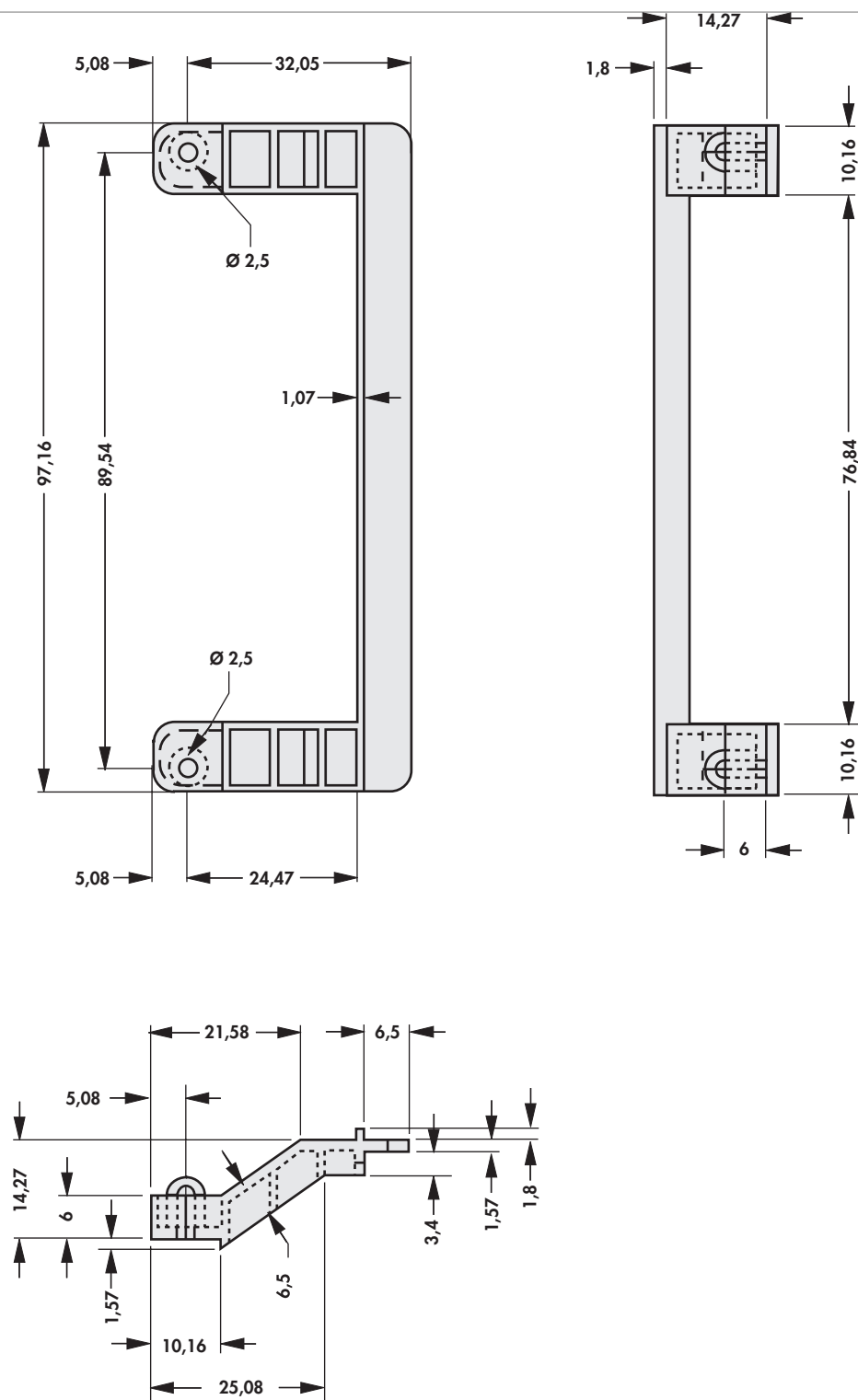
Dimensions to fix the KHPC L ... - bracket to the PCB



On request also available with D-Sub connector!

Retainers for PCI-cards

– suitable for all ISA-versions



art. no.
PCI R1


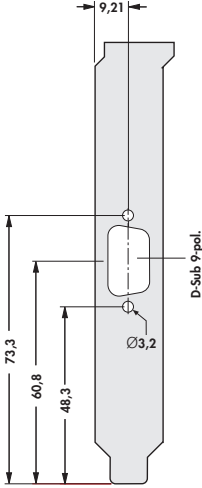
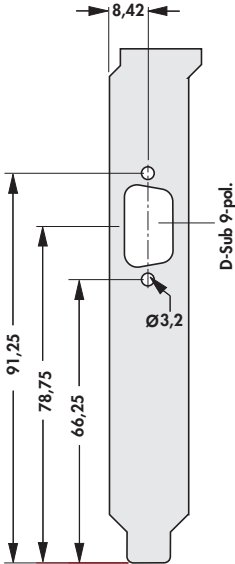
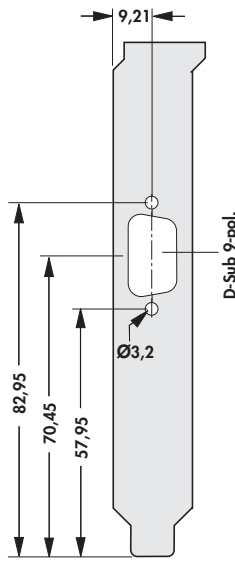
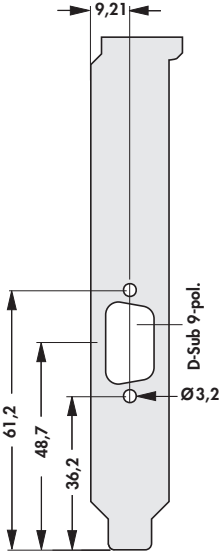
class of flammability:

UL 94 V-0

material:

polycarbonate

Brackets for PC

| | | | |
|--|---|--|---|
|  <p style="text-align: center;">9</p> | <p style="text-align: center;">PCI 004</p>  | <p style="text-align: center;">PCI 006</p>  | <p style="text-align: center;">PCI 005</p>  |
| <p style="text-align: center;">PCI 055</p>  | | | |


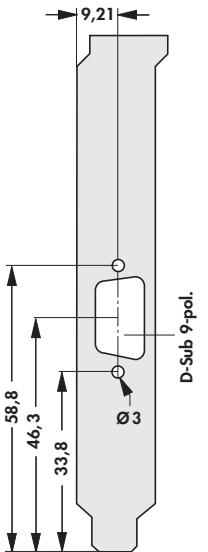
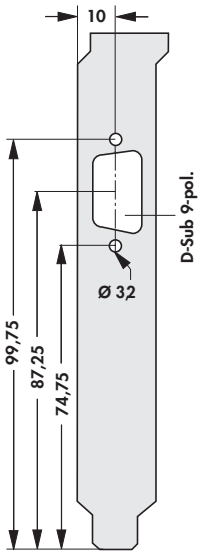
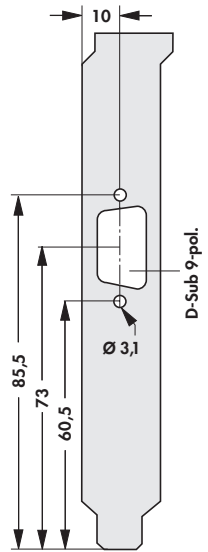

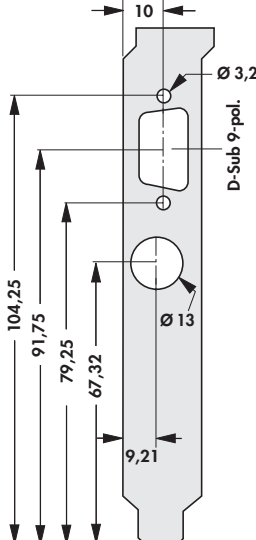
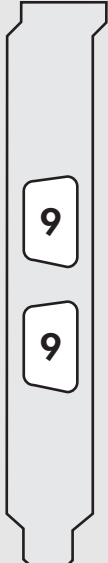
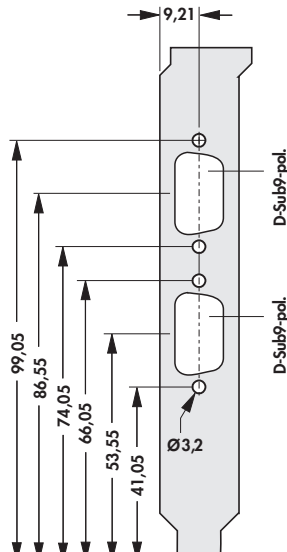
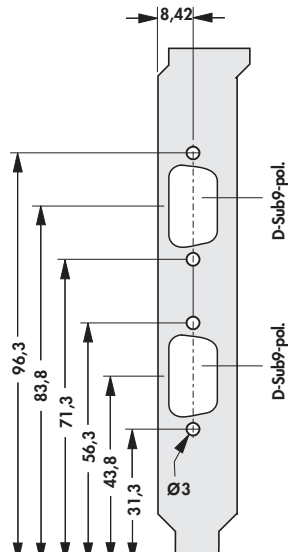
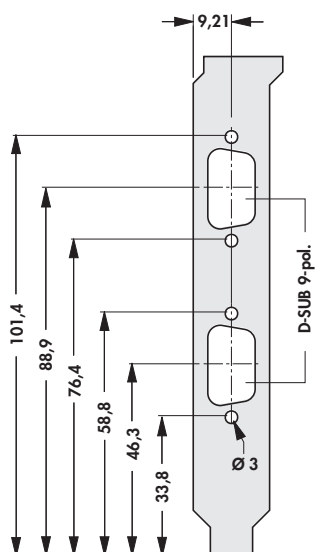
| | | | |
|------------------------|------------------------|--------------------------|------------------------|
| | <p>KHPC 016</p> | <p>KHPC 007</p> | <p>KHPC 011</p> |
| <p>KHPC 002</p> | <p>KHPC 008</p> | <p>KHPC 094 O</p> | <p>KHPC 003</p> |
| | | | |
| <p>KHPC 010</p> | <p>KHPC 014</p> | <p>KHPC 093</p> | <p>KHPC 096</p> |
| | | | |
| <p>KHPC 009</p> | <p>KHPC 013</p> | <p>KHPC 092</p> | <p>KHPC 095</p> |

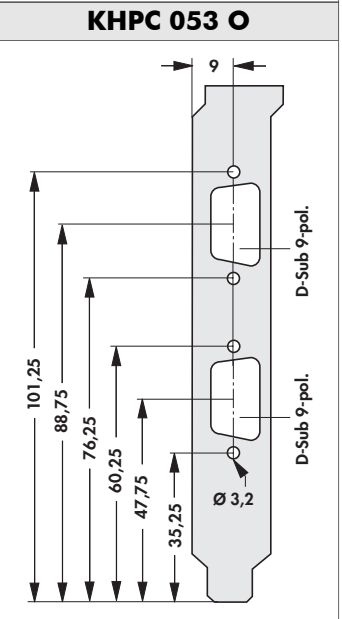
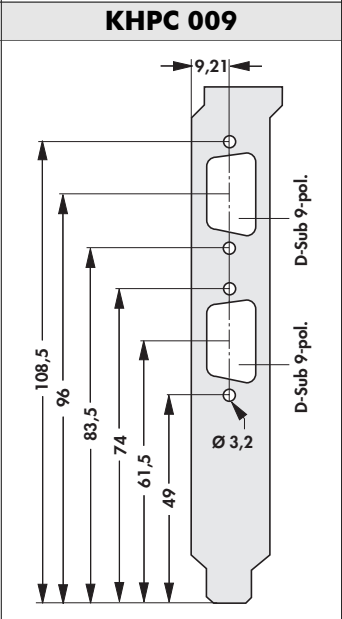
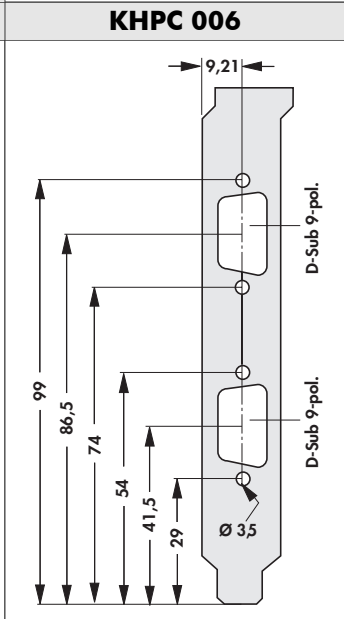
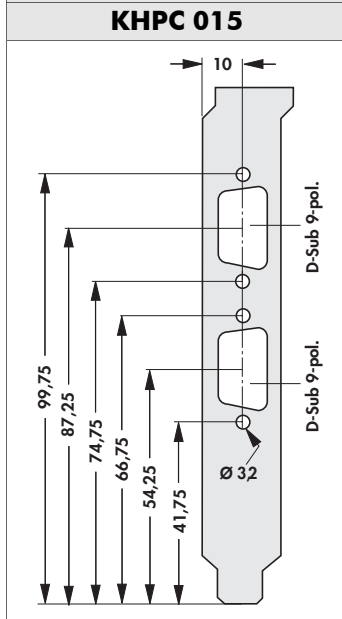
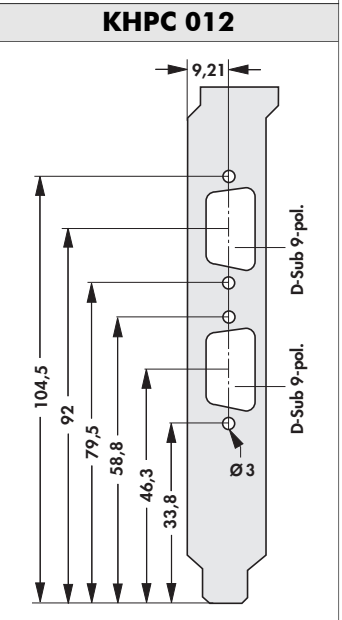
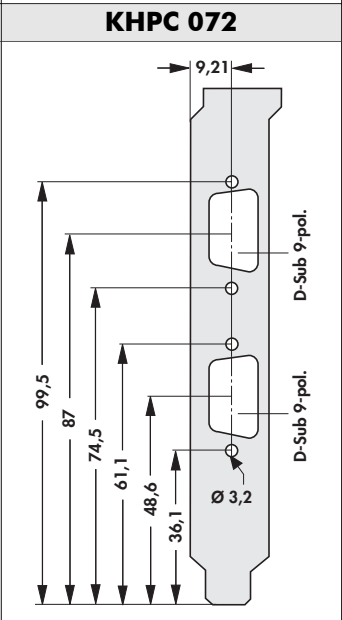
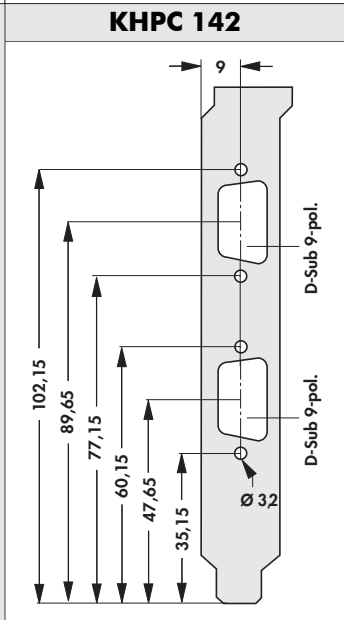
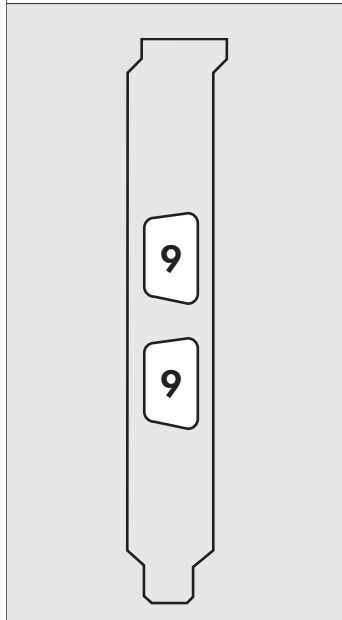
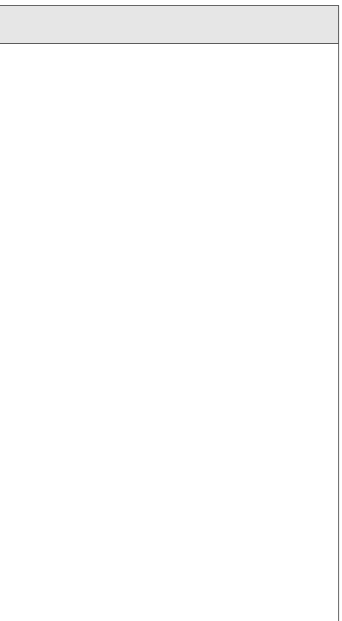
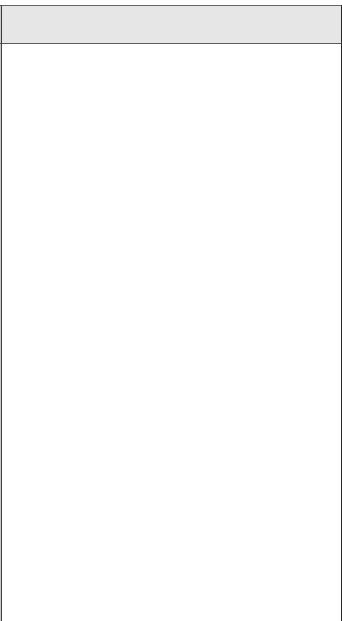
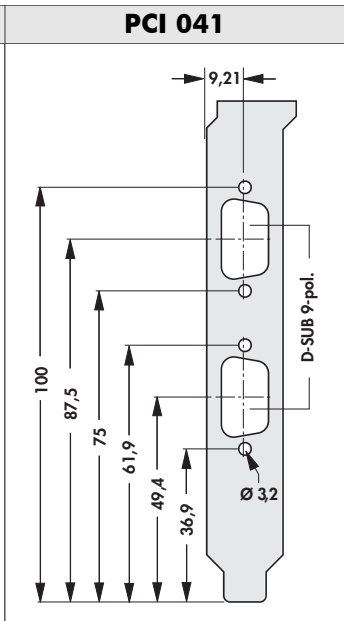
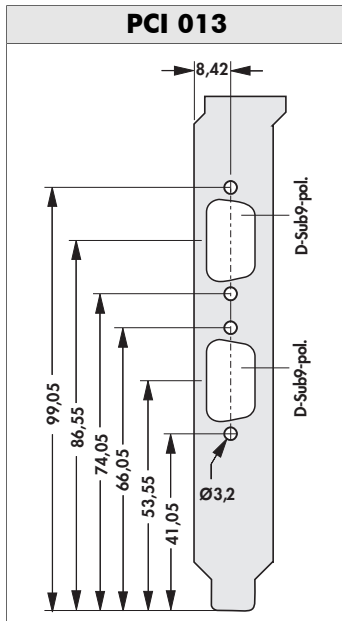
please indicate:

... fixing tab

O = bracket without fixing tab

L = bracket with fixing tab

| | | | |
|---|---|--|---|
|  | <p>KHPC 013</p>  | <p>KHPC 017</p>  | <p>KHPC 095</p>  |
|  | <p>KHPC 131</p>  | | |
|  | <p>PCI 012</p>  | <p>PCI 011</p>  | <p>PCI 039 L</p>  |



please indicate:

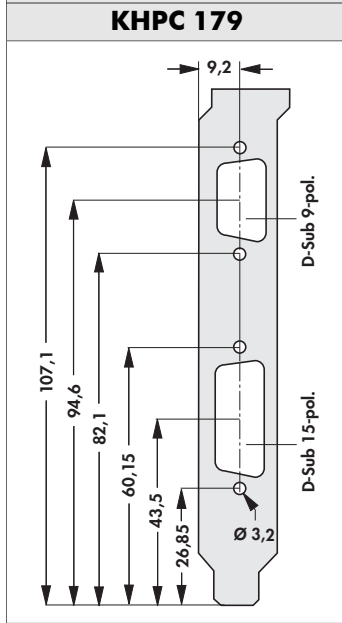
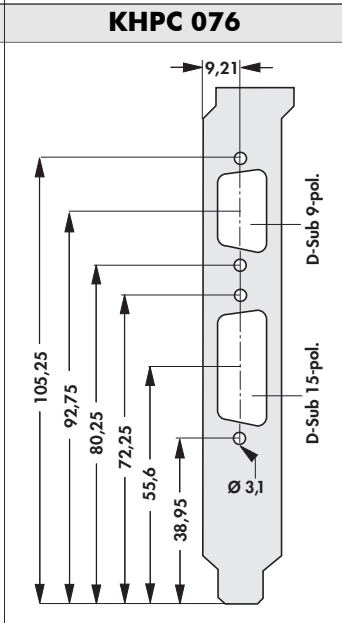
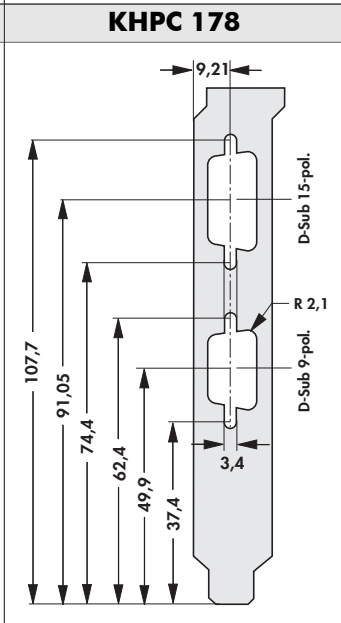
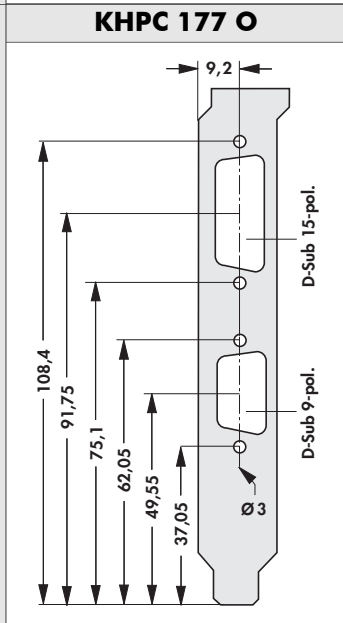
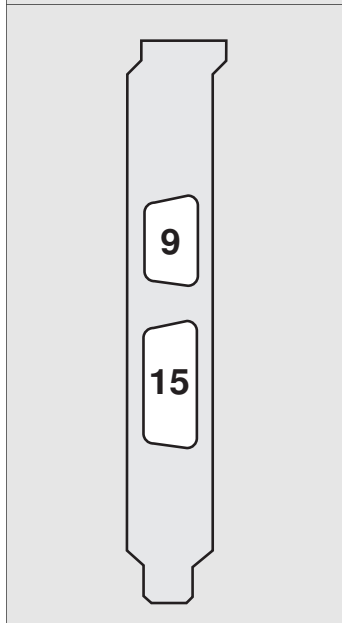
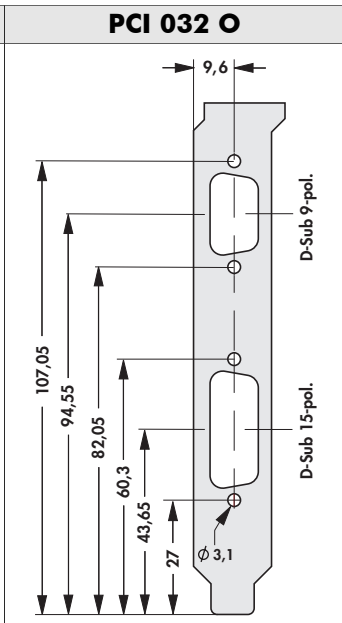
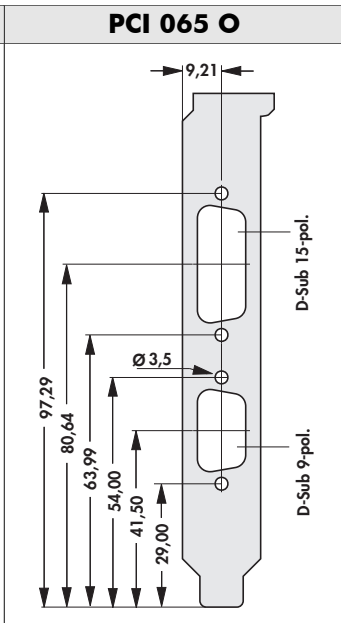
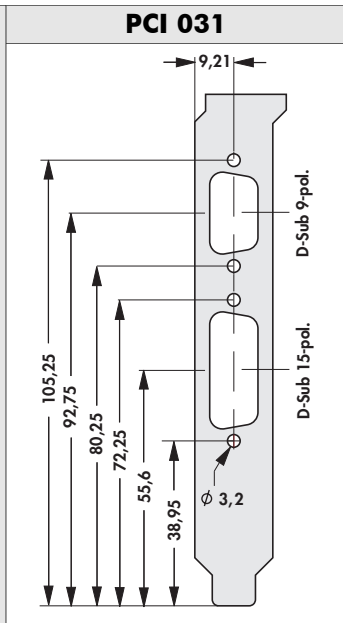
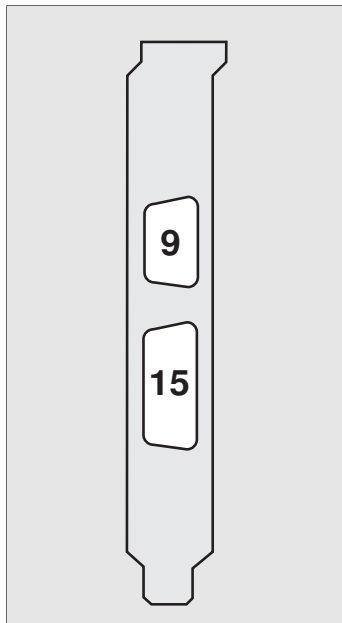
... fixing tab

O = bracket without fixing tab

L = bracket with fixing tab


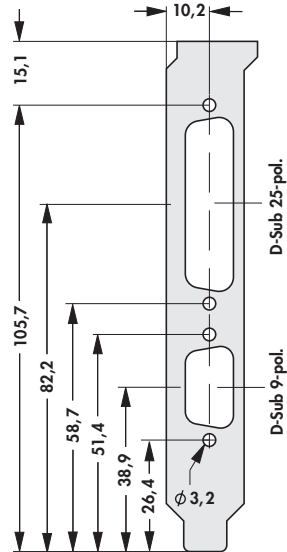
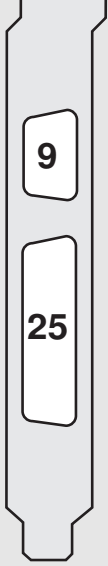
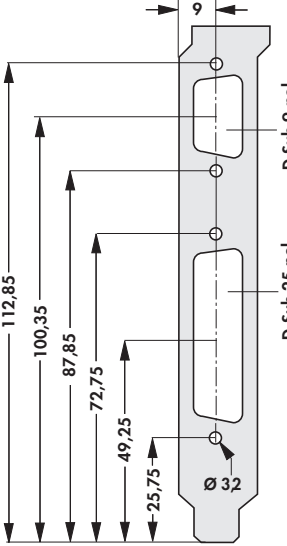
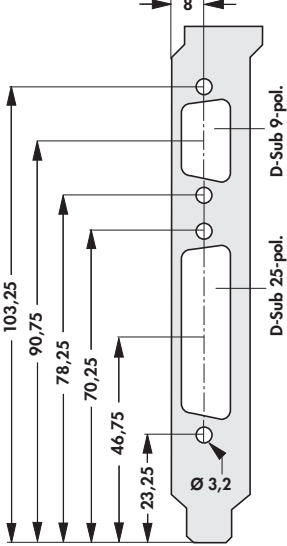
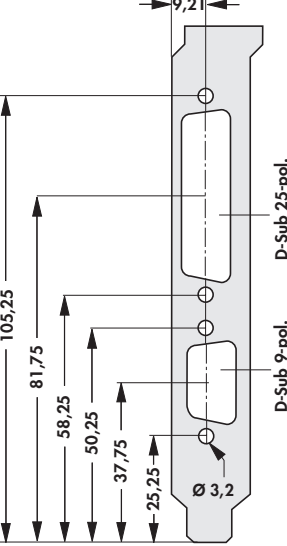
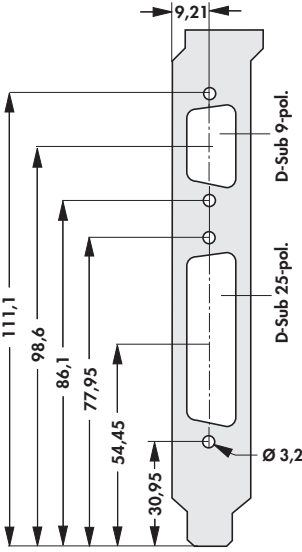
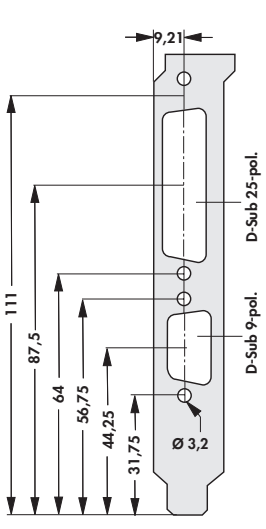
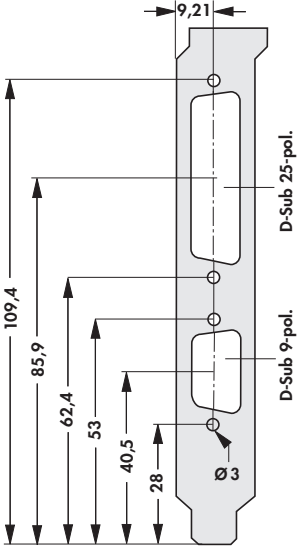
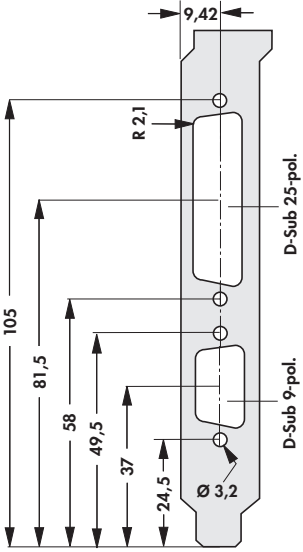
K 10

| | | | |
|------------------------|--------------------------|--------------------------|--------------------------|
| <p>KHPC 141</p> | <p>KHPC 144</p> | <p>KHPC 138</p> | <p>KHPC 143</p> |
| | <p>KHPC 160</p> | | |
| | <p>KHPC 005 O</p> | <p>KHPC 065 O</p> | <p>KHPC 454 O</p> |



please indicate:

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

| | | | |
|--|---|---|--|
|  | <p>PCI 033 ...</p>  | | |
|  | <p>KHPC 041</p>  | <p>KHPC 189</p>  | <p>KHPC 185</p>  |
| <p>KHPC 038</p>  | <p>KHPC 187</p>  | <p>KHPC 061</p>  | <p>KHPC 078 O</p>  |

| | | | |
|------------------------|------------------------|-------------------------|------------------------|
| <p>KHPC 188</p> | <p>KHPC 040</p> | | |
| | <p>PCI 045</p> | <p>PCI 014 L</p> | <p>PCI 015</p> |
| | <p>KHPC 024</p> | <p>KHPC 019</p> | <p>KHPC 073</p> |

please indicate:

... fixing tab

O = bracket without fixing tab

L = bracket with fixing tab

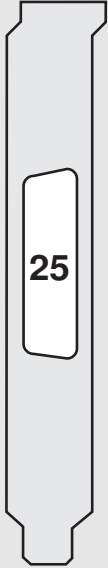
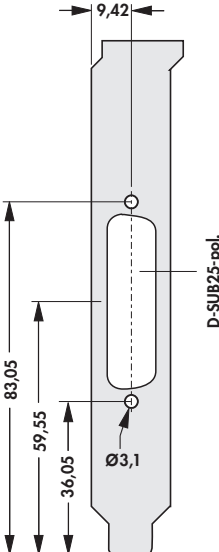
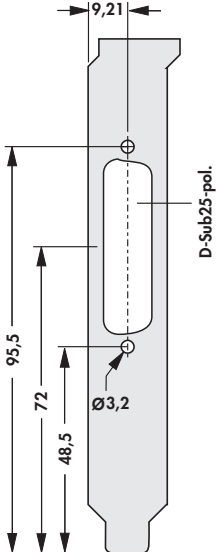
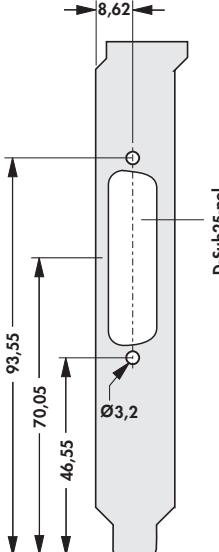
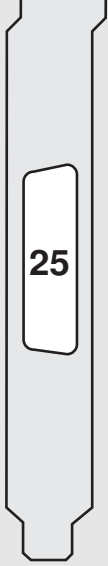
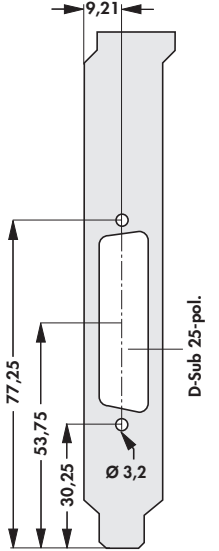
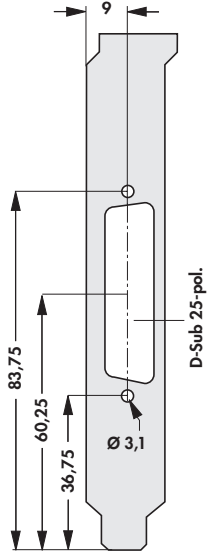
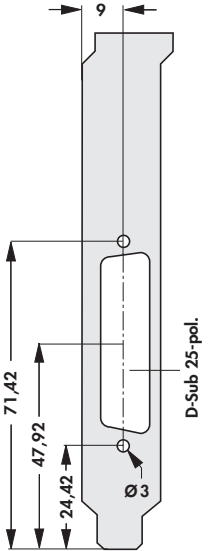
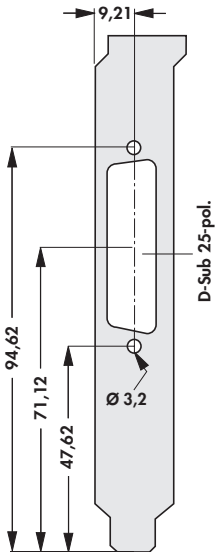
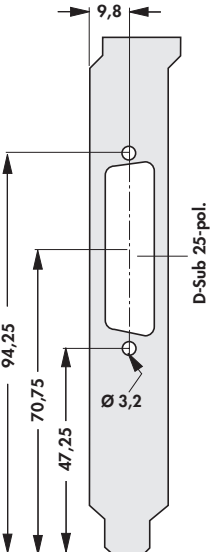
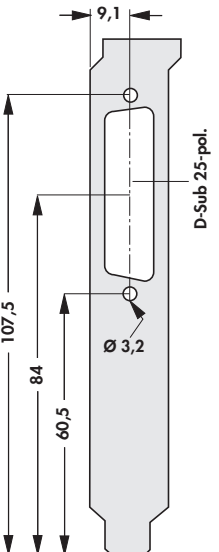
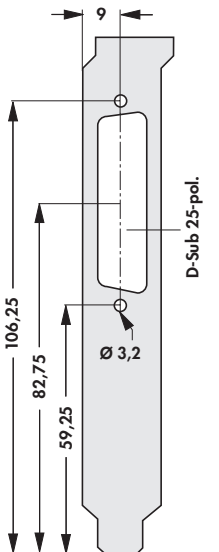
| | | | |
|--|------------------------|----------------------------|------------------------|
| | <p>KHPC 200</p> | <p>KHPC 455 ...</p> | <p>KHPC 218</p> |
| | <p>PCI 071</p> | <p>PCI 047</p> | |
| | <p>KHPC 018</p> | <p>KHPC 225</p> | <p>KHPC 069</p> |


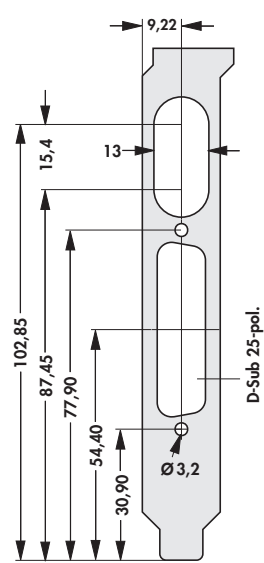

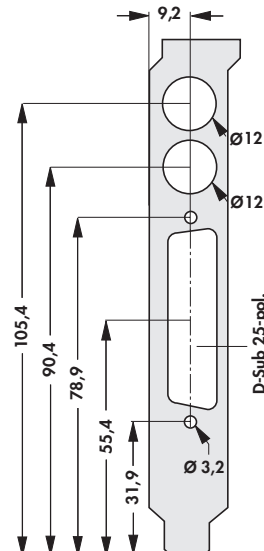
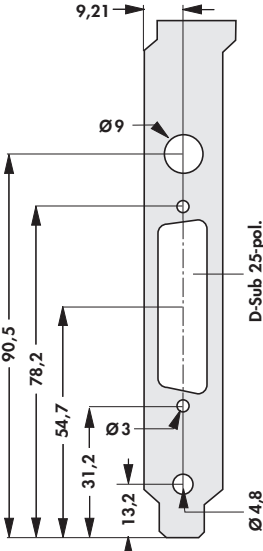
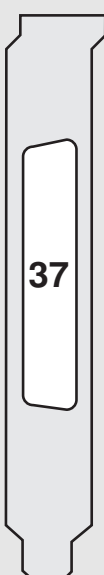
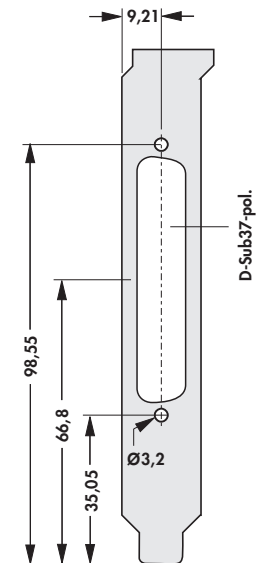
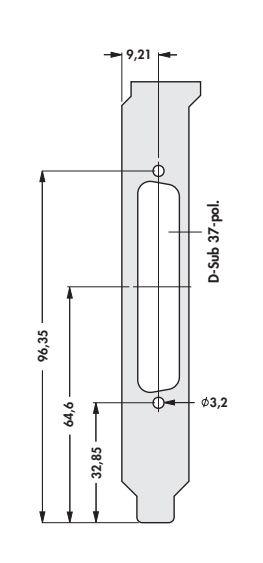
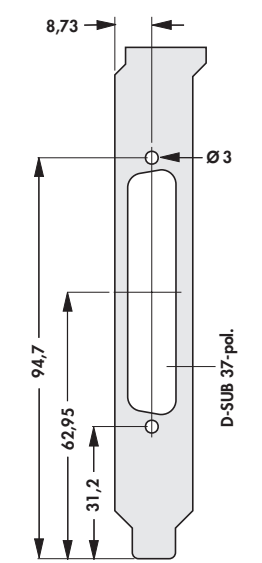
| | | | |
|------------------------|------------------------|------------------------|------------------------|
| <p>KHPC 230</p> | <p>KHPC 022</p> | <p>KHPC 229</p> | |
| | <p>KHPC 075</p> | <p>KHPC 241</p> | <p>KHPC 042</p> |
| <p>KHPC 242</p> | | | |

please indicate:

... fixing tab

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

| | | | |
|--|--|---|--|
|  <p style="text-align: center; font-size: 24pt; font-weight: bold;">25</p> | <p style="text-align: center; font-weight: bold;">PCI 016</p>  | <p style="text-align: center; font-weight: bold;">PCI 018</p>  | <p style="text-align: center; font-weight: bold;">PCI 017</p>  |
|  <p style="text-align: center; font-size: 24pt; font-weight: bold;">25</p> | <p style="text-align: center; font-weight: bold;">KHPC 028</p>  | <p style="text-align: center; font-weight: bold;">KHPC 070</p>  | <p style="text-align: center; font-weight: bold;">KHPC 243</p>  |
| <p style="text-align: center; font-weight: bold;">KHPC 026</p>  | <p style="text-align: center; font-weight: bold;">KHPC 052</p>  | <p style="text-align: center; font-weight: bold;">KHPC 054</p>  | <p style="text-align: center; font-weight: bold;">KHPC 027</p>  |

| | | | |
|---|---|--|---|
|  <p>25</p> | <p>PCI 072</p>  | | |
|  <p>25</p> | <p>KHPC 262</p>  | <p>KHPC 043</p>  | |
|  <p>37</p> | <p>PCI 020</p>  | <p>PCI 077</p>  | <p>PCI 076 O</p>  |

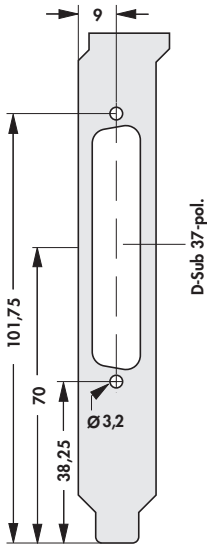
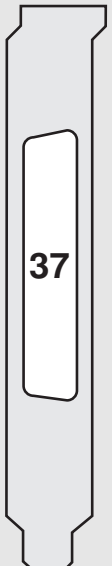
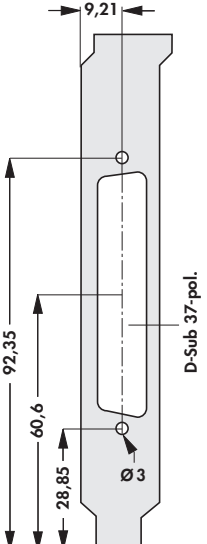
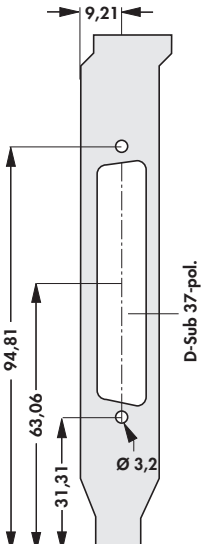
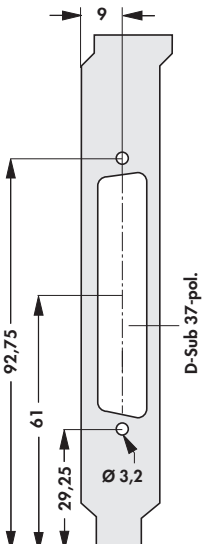
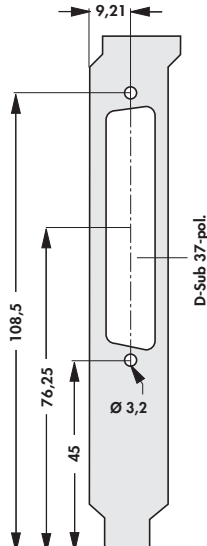
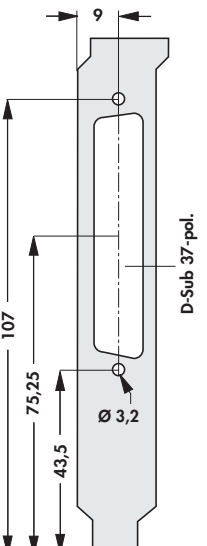
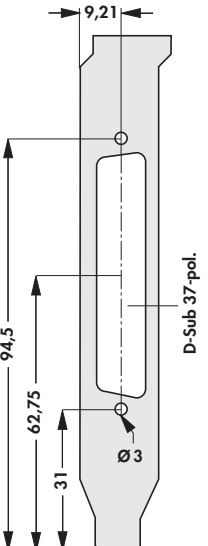
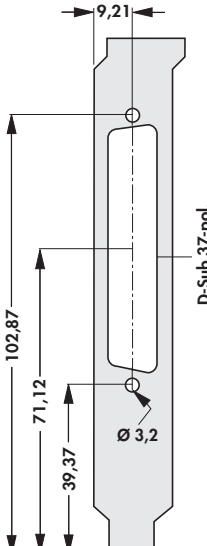
please indicate:

... fixing tab

O = bracket without fixing tab

L = bracket with fixing tab

Brackets for PC

| | | | |
|--|--|---|--|
| <p>PCI 035 L</p>  | | | |
|  | <p>KHPC 033</p>  | <p>KHPC 271</p>  | <p>KHPC 058</p>  |
| <p>KHPC 032</p>  | <p>KHPC 035</p>  | <p>KHPC 270</p>  | <p>KHPC 031</p>  |

| | | | |
|------------------------|--------------------------|--------------------------|------------------------|
| <p>KHPC 034</p> | <p>KHPC 267 O</p> | <p>KHPC 277</p> | |
| <p>37</p> | <p>KHPC 029</p> | <p>KHPC 295 O</p> | |
| <p>50</p> | <p>KHPC 036</p> | <p>KHPC 051</p> | <p>KHPC 308</p> |

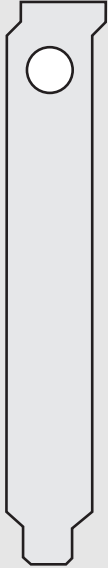
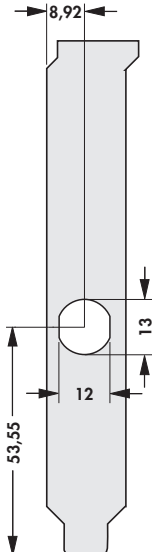
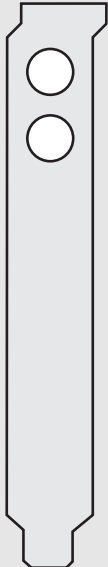
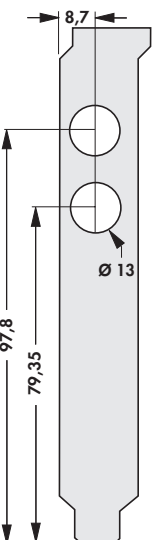
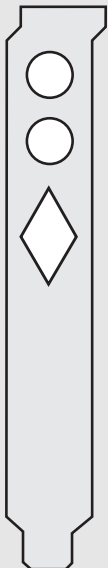
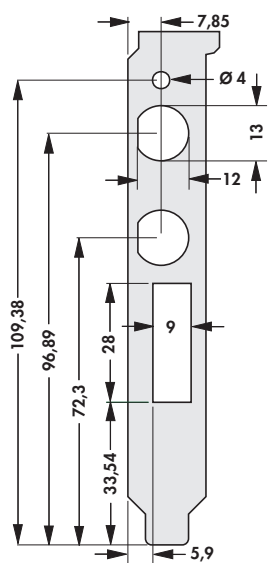
please indicate:

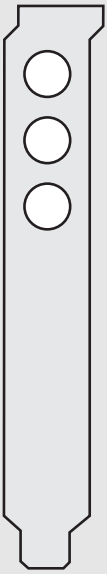
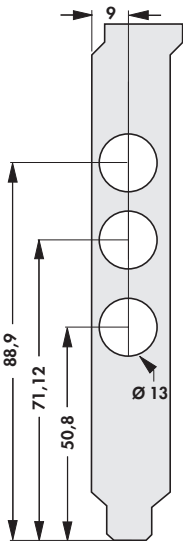
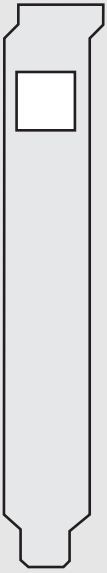
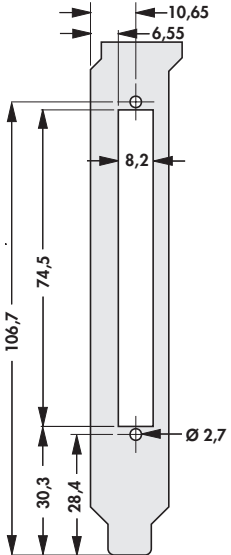
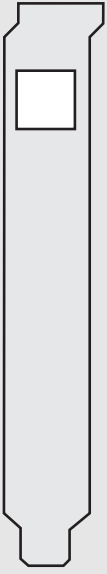
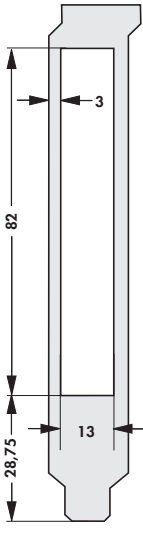
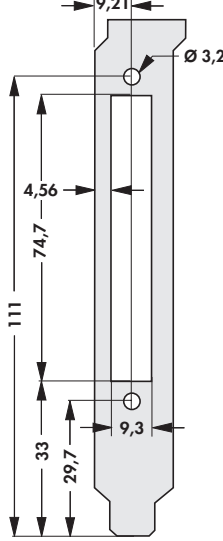
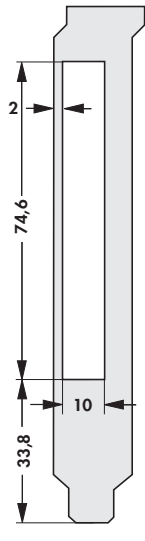
... fixing tab

O = bracket without fixing tab

L = bracket with fixing tab

Brackets for PC

| | | | |
|---|---|--|--|
|  | <p>PCI 021 O</p>  | | |
|  | <p>KHPC 325</p>  | | |
|  | <p>PCI 083 L</p>  | | |

| | | | |
|---|--|---|--|
|  | <p>KHPC 335 L</p>  | | |
|  | <p>PCI 104 O</p>  | | |
|  | <p>KHPC 085</p>  | <p>KHPC 391</p>  | <p>KHPC 390</p>  |

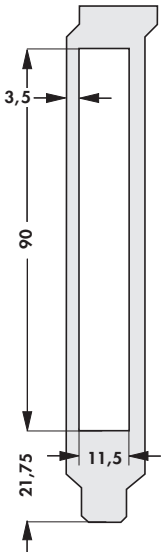
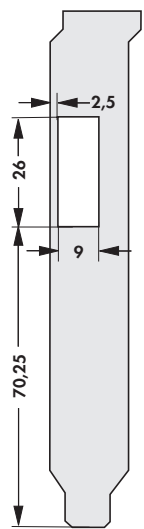
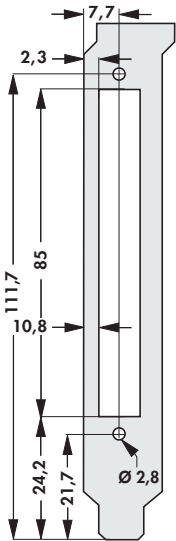

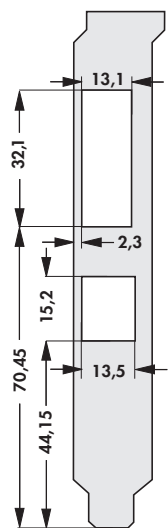
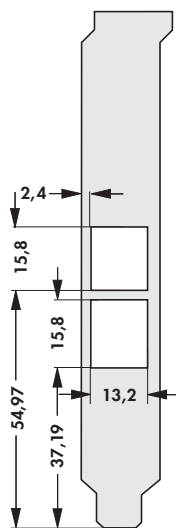

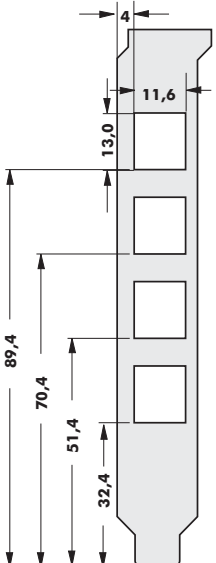
please indicate:


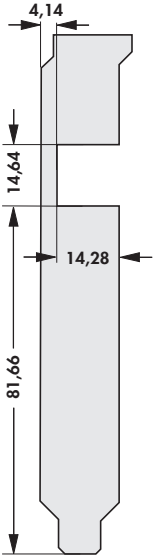
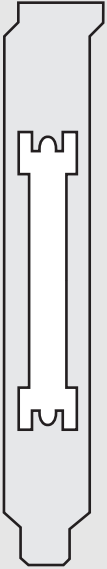
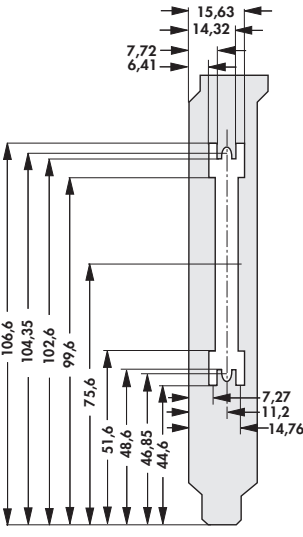
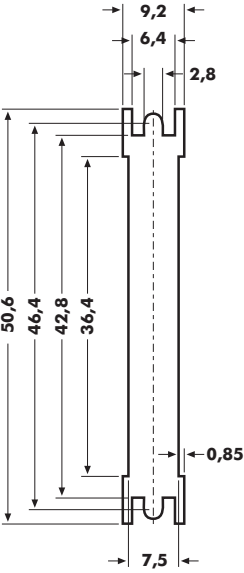
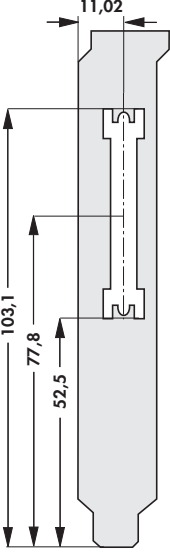
... fixing tab

O = bracket without fixing tab

L = bracket with fixing tab

Brackets for PC

| KHPC 398 | KHPC 365 L | KHPC 394 | |
|---|---|--|--|
|  |  |  | |
|  | <p>KHPC 404</p>  | <p>KHPC 407</p>  | |
|  | <p>PCI 051</p>  | | |

| | | | |
|--|---|--|---|
|  | <p>KHPC 439 O</p>  | | |
|  | <p>KHPC 469 O</p>  | <p>KHPC 447</p>  | <p>KHPC 449 O</p>  |

please indicate:

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

PCI and KHPC-DESIGN

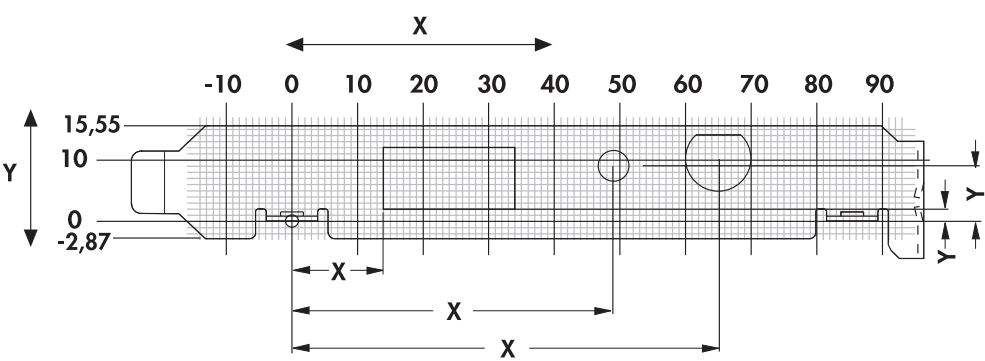
The cutouts shown on the Design sheet should be positioned on the pictured grid.

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

Please contact us with regard to this.

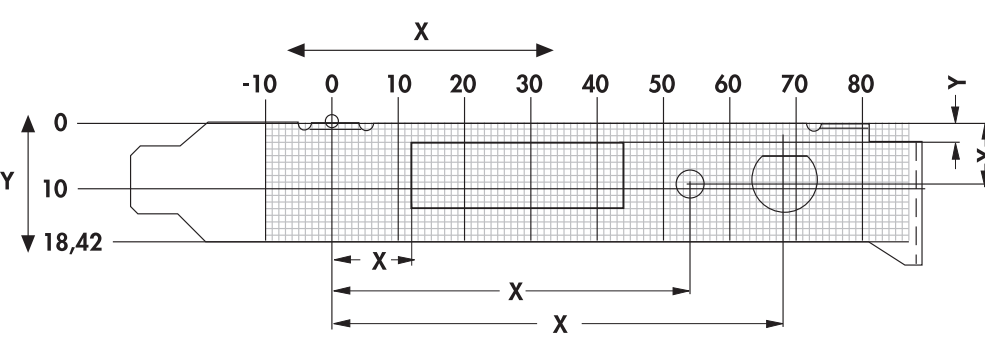
Example

PCI

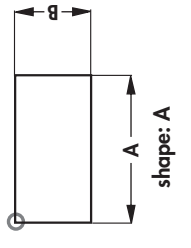
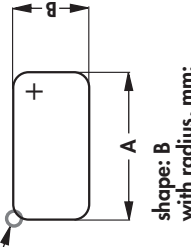
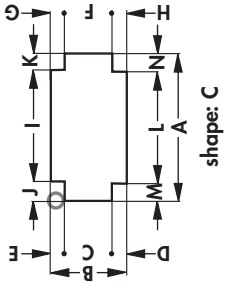
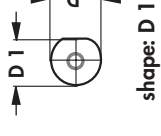
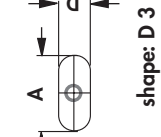
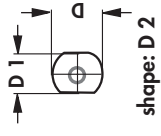
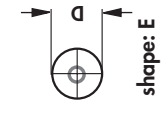
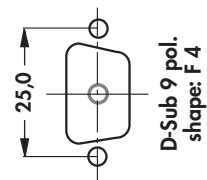
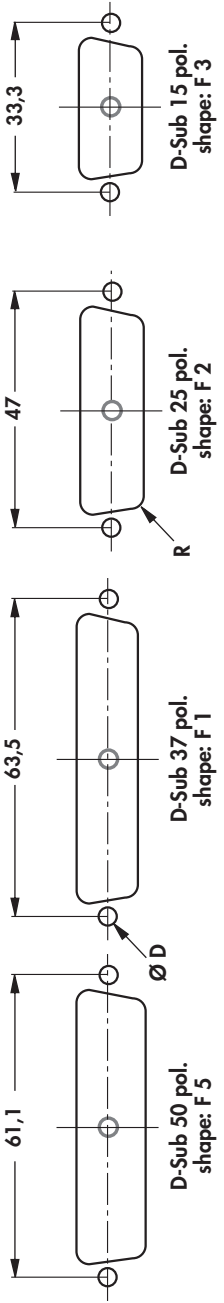


| Shape | X-dimension | Y-dimension |
|-----------------------|-------------|-------------|
| A A = 20 B = 10 | 14 | 2 |
| E D = 5 | 49 | 9 |
| D1 D = 12 D1 = 11 | 65 | 9 |

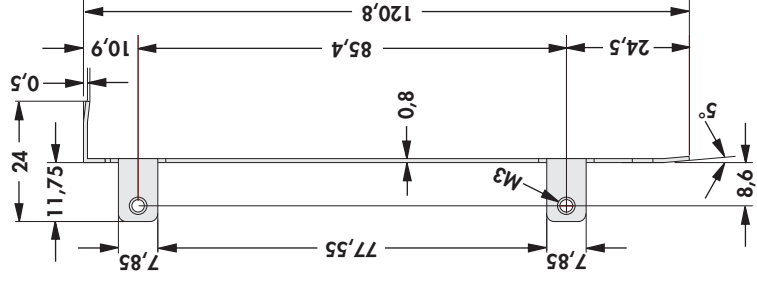
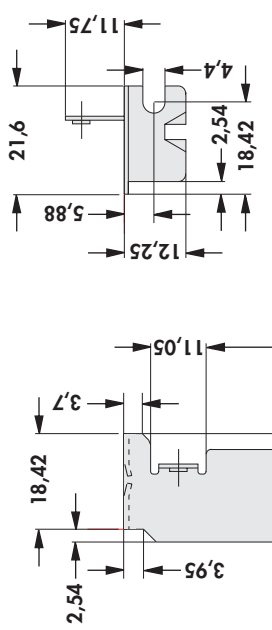
KHPC



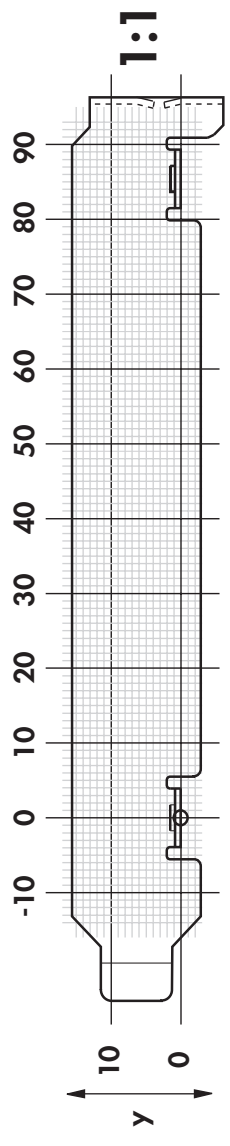
| Shape | X-dimension | Y-dimension |
|-------------------------|-------------|-------------|
| A A = 33 B = 10 | 12 | 3 |
| E D = 2 | 50 | 9 |
| D D = 9,5 D1 = 8,7 | 69 | 9 |



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



with fixing strap
 without fixing strap



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

**PCI
 DESIGN**



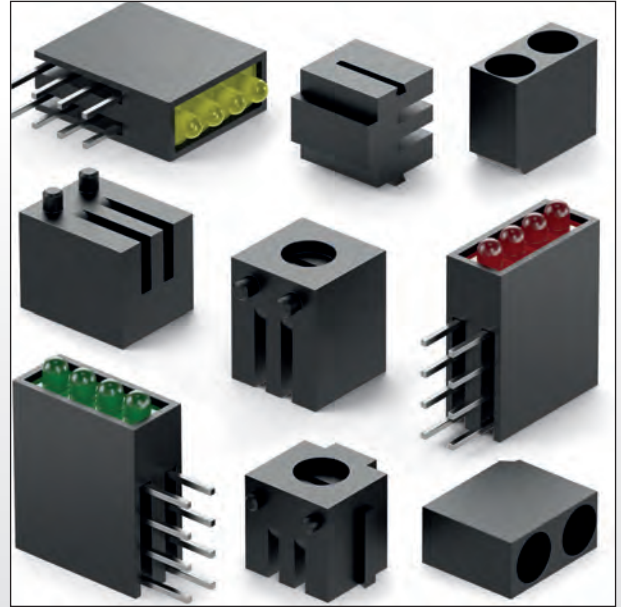
company name:

part name:

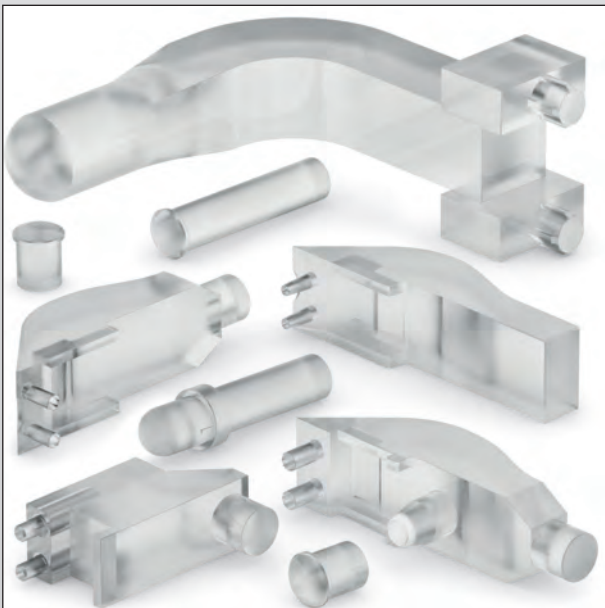
drawing number:



Mounting material
 – spacers for standard LEDs
 – class of flammability acc. to UL 94 VO



LED fastener for horizontal PCB mounting
 – single and double fasteners for a standard diameter of 3 and 5 mm
 – equipped multi-fastener
 – single fasteners and fasteners connectable in series




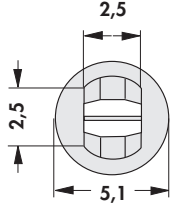
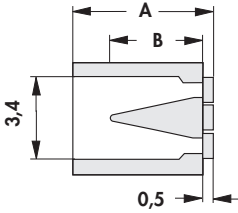
Fibre-optics for SMD-LED components
 – horizontal, fixed fibre-optics with round or rectangular lense made of transparent plastics – also for gauge displays
 – vertical, fixed fibre-optics with round or rectangular lense made of transparent plastics


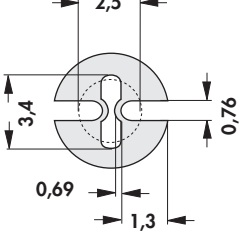
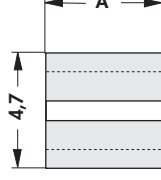


LED fastener for front panel mounting
 – clipable fastener for 5 mm LEDs
 – fastener for 3 and 5 mm LED with clamping ring

Spacers for LED

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

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

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


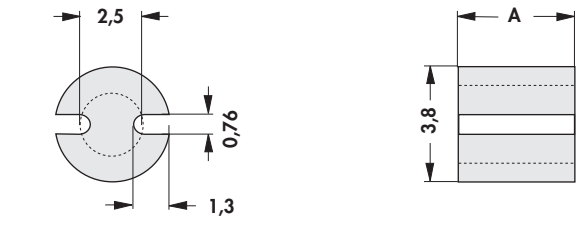
Connector-sleeves → F 19 – 20
 LED-holders for front panel assembly → L 4
 Fourfold-LED-holders → L 7
 Horizontale Lichtleiter → L 9

LED-holders for PCB assembly → L 5 – 7
 Sockets for LED → F 5 – 6
 Light pipes for SMDs, vertical → L 8 – 9


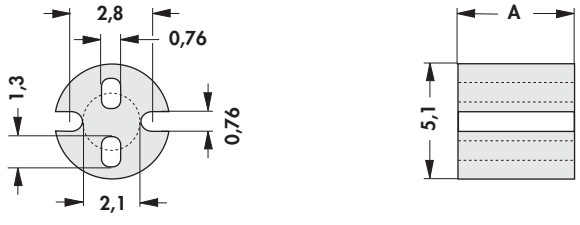
A
B
C
D
E
F
G
H
I
K
L
M
N

Spacers for LED

– for LED Ø 3 mm, thin mount


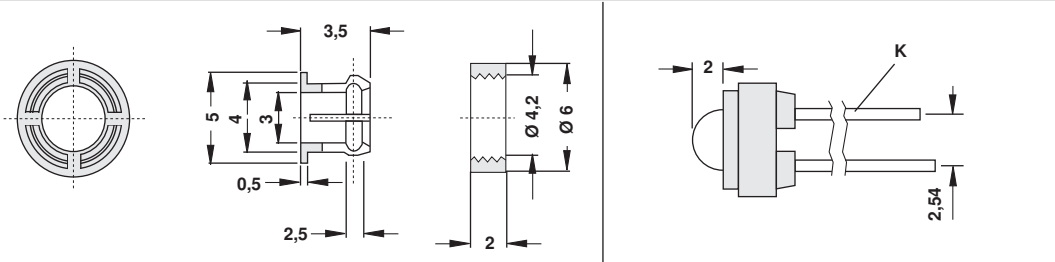
|  |  | | | | |
|---|--|------------------|-----------|----------------|-----------|
| art. no. | dim. [mm] | art. no. | dim. [mm] | art. no. | dim. [mm] |
| | A | | A | | A |
| MAH 301 | 1 | MAH 305 | 5 | MAH 308 | 8 |
| MAH 302 | 2 | MAH 306 | 6 | MAH 309 | 9 |
| MAH 303 | 3 | MAH 307 | 7 | MAH 310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

– for LED Ø 5 mm, self-retaining


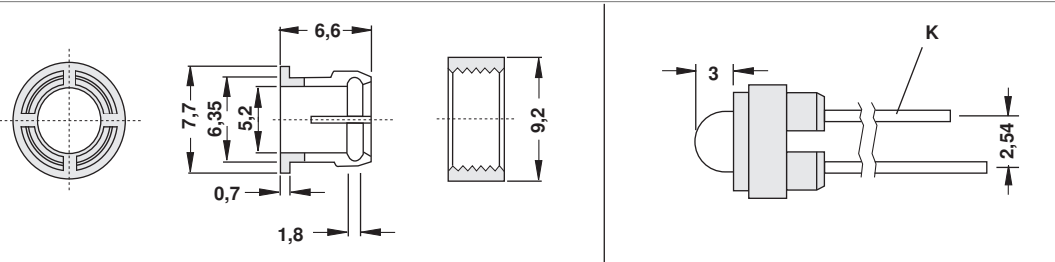
|  |  | | | | |
|--|---|------------------|-----------|----------------|-----------|
| art. no. | dim. [mm] | art. no. | dim. [mm] | art. no. | dim. [mm] |
| | A | | A | | A |
| MAH 501 | 1 | MAH 504 | 4 | MAH 508 | 8 |
| MAH 502 | 2 | MAH 505 | 5 | MAH 509 | 9 |
| MAH 503 | 3 | MAH 506 | 6 | MAH 510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

LED-holders


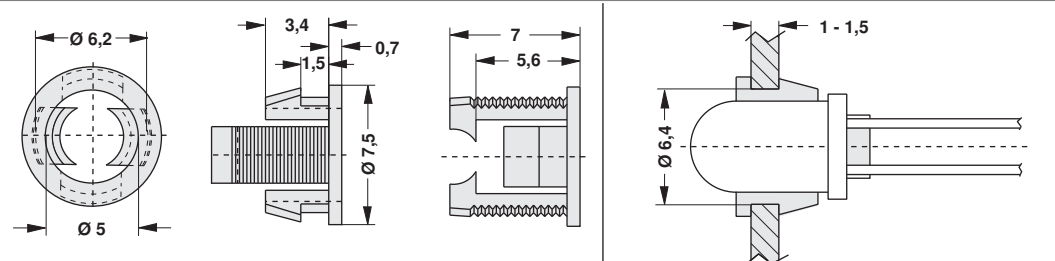
- suitable for 3 mm diodes with a collar height of 0.6 mm
- **K** = cathode

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

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

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


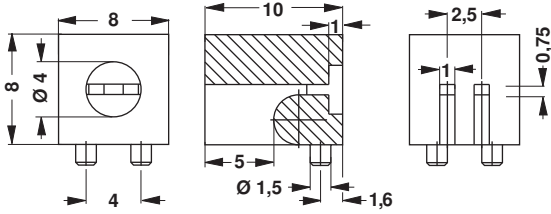
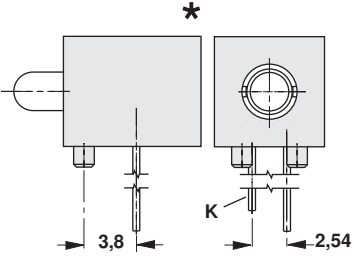

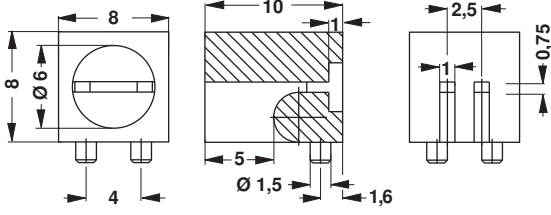
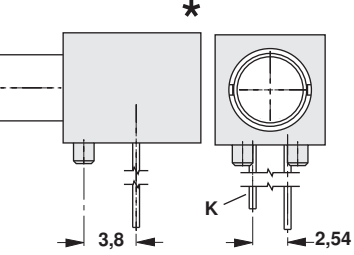

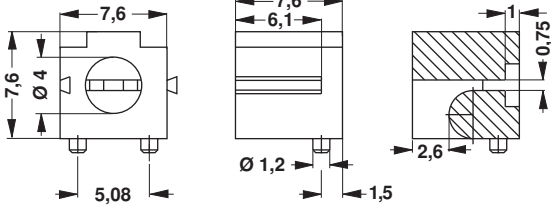
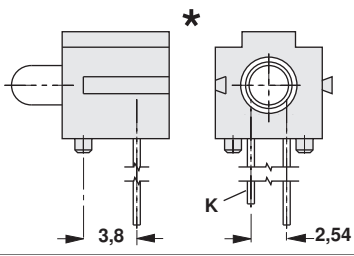

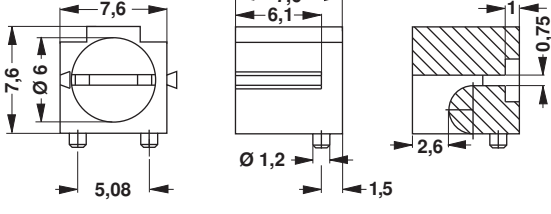
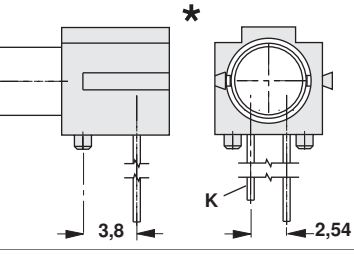
- suitable for 5 mm diodes with a collar height of 0.6 mm/1 mm
- **K** = cathode

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

LED-holders

LED-holder for LED Ø 3 mm and 5 mm

- K = cathode / * = presentation with diode

| | | |
|---|---|---|
|  |  |  |
| <p>art. no. DH 3 W</p> | <p>type for LED Ø3mm</p> | |
|  |  |  |
| <p>art. no. DH 5 W</p> | <p>type for LED Ø5mm</p> | |
|  |  |  |
| <p>art. no. DH 3 R</p> | <p>type for LED Ø3mm</p> | |
|  |  |  |
| <p>art. no. DH 5 R</p> | <p>type for LED Ø5mm</p> | |

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

L 5


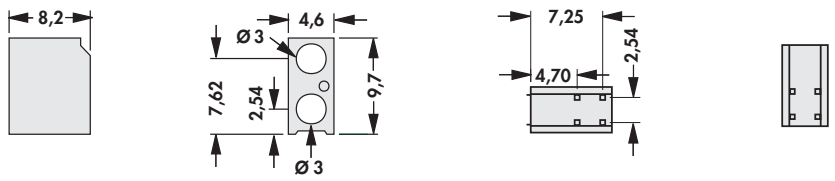
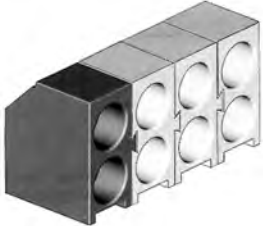
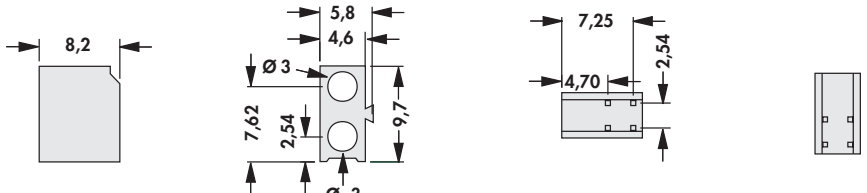
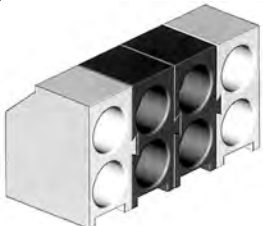
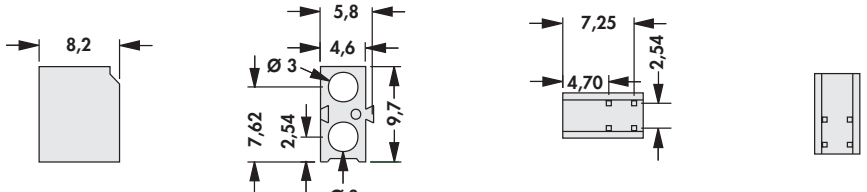

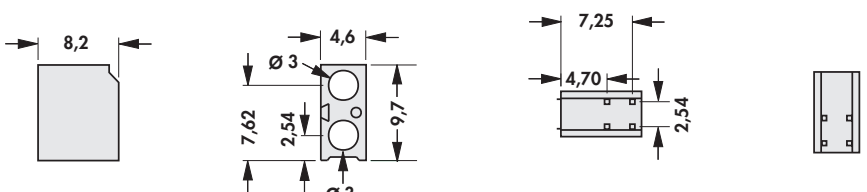
LED-holders for front panel assembly → L 4
 Spacers & mounting strips → L 2 - 3
 Connector-sleeves → F 19 - 20
 Sockets for LED → F 5 - 6

Light pipes for SMDs, vertical → L 8 - 9
 Fourfold-LED-holders → L 7
 Horizontale Lichtleiter → L 9

LED-holders

LED-holder for LED Ø 3 mm



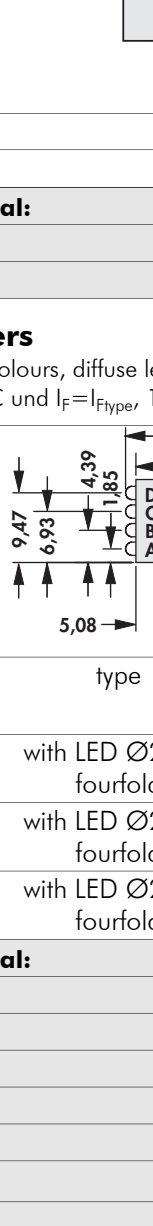
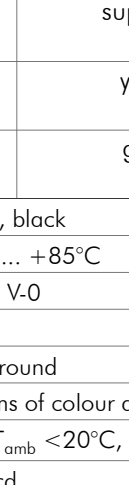
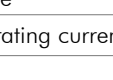
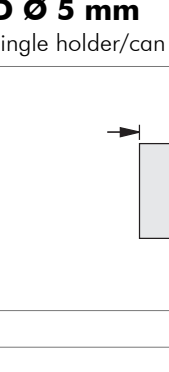
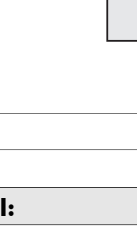
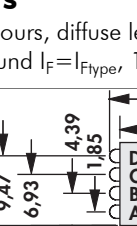
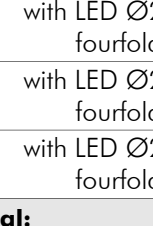

– stackable LED-holders: single holder/can be strung, left/can be strung, middle/can be strung, right

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

LED-holders

LED-holder for LED Ø 5 mm

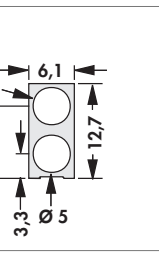
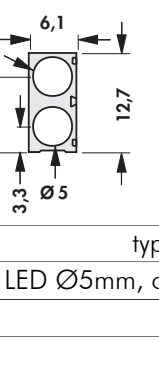
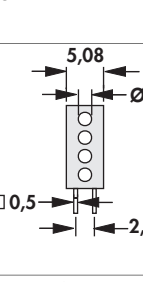

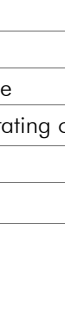
– stackable LED-holders: single holder/can be strung, left/can be strung, middle/can be strung, right

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

Fourfold-LED-holders


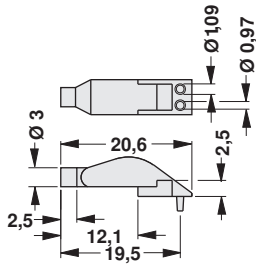
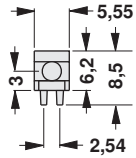
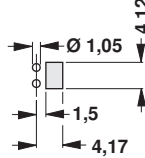

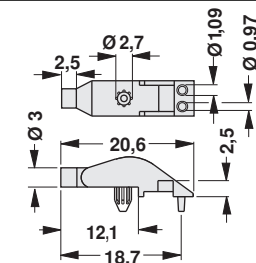
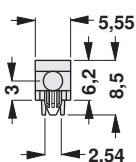
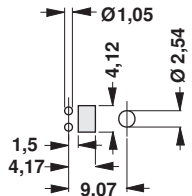

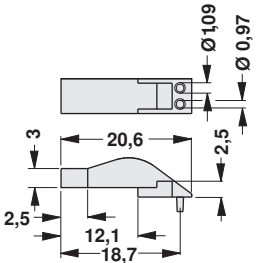
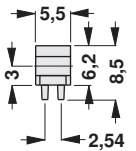
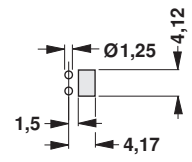

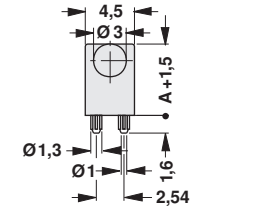
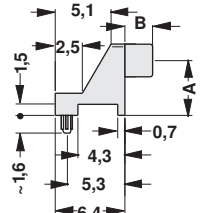
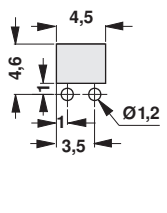
– standard case, standard colours, diffuse lens, space-saving design, round lens, rectangular lens

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

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


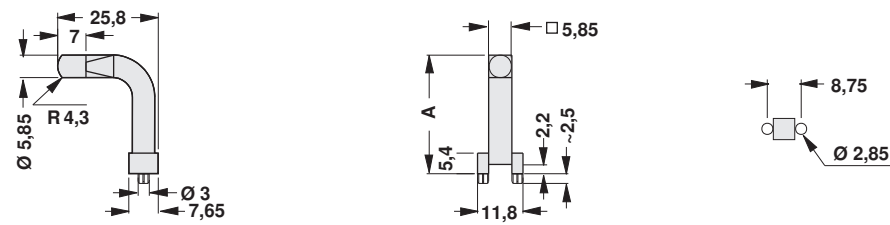
Light pipes for SMDs

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


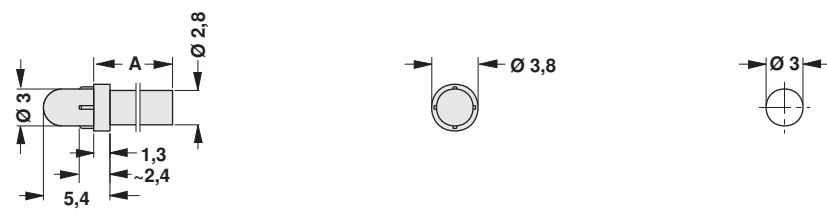
| | | | |
|---|---|--|---|
|  |  |  |  |
| art. no. | diameter of lens | way of fixation | |
| LL 30 HRS | Ø3mm | by alignment pins | |
|  |  |  |  |
| art. no. | diameter of lens | way of fixation | |
| LL 30 HRP | Ø3mm | by press-in pins | |
|  |  |  |  |
| art. no. | diameter of lens | way of fixation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


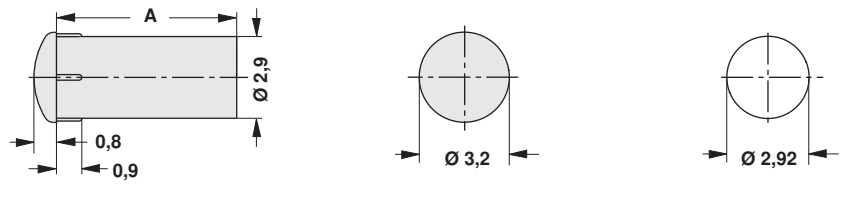
Light pipes for SMDs

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


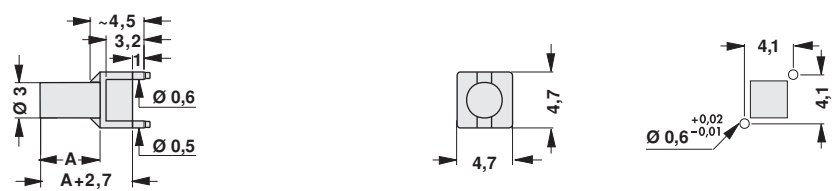
|  |  | | |
|---|--|------------------|----------------|
| art. no. | diameter of lens | way of fixation | dim. [mm] A |
| LL 60 WRB 254 | Ø6mm | by press-in pins | 25.4 |

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

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

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

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

|  |  | | |
|---|--|-------------------|----------------|
| art. no. | diameter of lens | way of fixation | dim. [mm] A |
| LL 30 VRFS 024 | Ø3mm | by alignment pins | 2.4 |
| LL 30 VRFS 050 | Ø3mm | by alignment pins | 5.0 |
| LL 30 VRFS 075 | Ø3mm | by alignment pins | 7.5 |

| | |
|----------------------------------|----------------------|
| insulating body material: | Polycarbonate, clear |
| temperature range: | -30°C... +100°C |
| class of flammability: | UL 94 V-0 |