# 4 EMC cable shield earthing

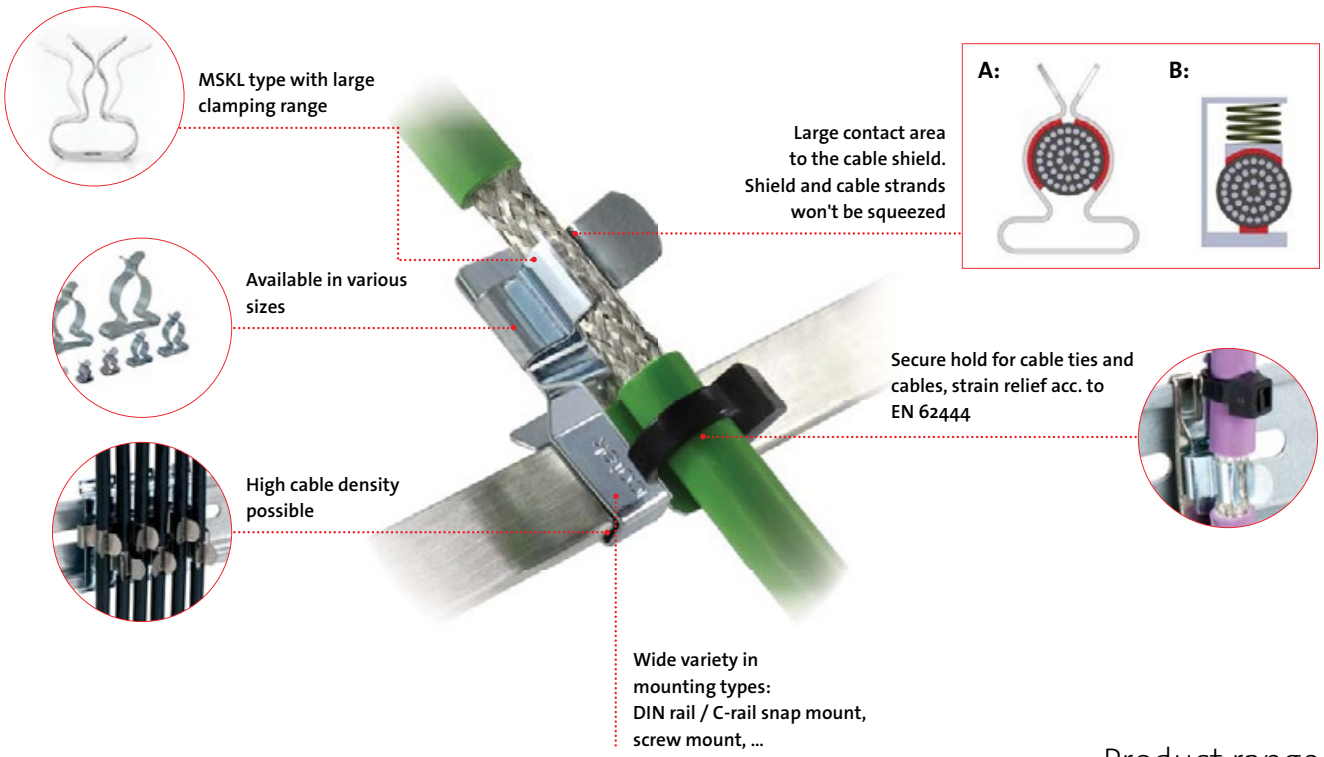
## Shield clamps & earthing components

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For process measurement and control equipment an increasingly higher level of protection against failure is required. Earthing of the cable shields is very important. The area where the cable shield is connected to the enclosure earth is a critical point. It is very important that the connection has a low resistance.

icotek EMC products therefore provide a good solution. The SKL shield clamps offer a large contact area to the cable shield (see figure A). In comparison to conventional shield brackets (see figure B) an up to 50% higher contact area can be achieved when using the SKL line. The specified clamping range can be exceeded up to 10%.

In high frequency fields, the SKL shield clamps provide low resistance. Effective range up to 1,000 MHz below 120 Ohms and 10 kHz to 100 MHz significant below 20 Ohms.




## Product range


SKL / MSKL | SF / SFZ / SFZ-M | SFS | PFS / PFSZ / PFSZ-M | PFK / PFKZ / PFKZ-M | LF / LFZ / LFZ-M | LFZ-U | PCB | STFZ


RLF / RLFZ / RLFZ-M / SF|RLFZ | KEL-EMC-Z | KEL-EMC-PF | KEL-EMC | KVT-EMC | KAFM | ZL|SB-EMC | SK / SKS | MB

# Product group 4

EMC cable shield earthing

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PFSZ2|SKL / PFS2|SKL

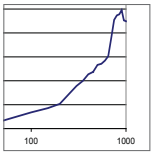
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# MSKL

## EMC Shield clamps with large clamping range



**MSKL 3-12**
Cable shielding for diameters 3 - 12 mm with only one clamp size.



LFZ-M|MSKL



SF|MSKL

## Product description

The shield clamps MSKL are easy to use and effective in earthing single cable shields.

Due to its special design the clamping ranges of the MSKL are very large while the dimensions are comparatively small. (Example: MSKL 3-12, assembled with a 12 mm cable shield: width 26.25 mm).

### MSKL, single

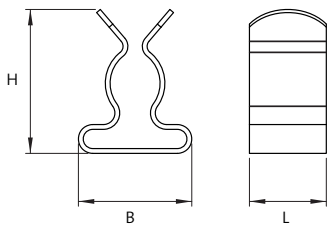
Single shield clamps can be individually attached via rivets.

### LFZ-M|MSKL & LF|MSKL

LFZ-M|MSKL and LF|MSKL shield clamps can be attached on sheet metal (e.g. mounting plates) using M4 screws. The type LFZ-M|MSKL allows cables to be secured with a cable tie. Strain relief in accordance with EN 62444 is achieved.

### SFZ-M|MSKL & SF|MSKL

SFZ-M|MSKL and SF|MSKL shield clamps can be easily attached by snapping them onto 35 mm DIN rails. The type SFZ-M|MSKL allows cables to be secured with a cable tie. Strain relief in accordance with EN 62444 is achieved.




| Type | Order No. | Clamping range [mm] | Dimensions L × W × H [mm] | Mounting type | PU |
|---|---|---|---|---|---|
| **MSKL, single, for riveting:** | | | | | |
| **MSKL 3-12** | 37600 | 3 - 12 mm | 8 × 15.1 × 20.5 | Rivet, Fixing hole 3.2 mm | 50 |
| **MSKL 8-18** | 37602 | 8 - 18 mm | 8 × 20 × 27 | Rivet, Fixing hole 3.2 mm | 50 |
| **MSKL for screw mounting (M4):** | | | | | |
| **LFZ-M\|MSKL 3-12** with strain relief | 37612 | 3 - 12 mm | 46.3 × 15.1 × 26 | Screw, Fixing hole 4.2 mm | 10 |
| **LFZ-M\|MSKL 8-18** with strain relief | 37614 | 8 - 18 mm | 46.3 × 20 × 32 | Screw, Fixing hole 4.2 mm | 10 |
| **LF\|MSKL 3-12** | 37608 | 3 - 12 mm | 24 × 15.1 × 26 | Screw, Fixing hole 4.2 mm | 10 |
| **LF\|MSKL 8-18** | 37610 | 8 - 18 mm | 24 × 20 × 32 | Screw, Fixing hole 4.2 mm | 10 |
| **MSKL for snap mounting on 35 mm DIN rail shape H:** | | | | | |
| **SFZ-M\|MSKL 3-12** with strain relief | 37620 | 3 - 12 mm | 60.5 × 15.1 × 26 | 35 mm DIN rail shape H | 10 |
| **SFZ-M\|MSKL 8-18** with strain relief | 37622 | 8 - 18 mm | 60.5 × 20 × 32 | 35 mm DIN rail shape H | 10 |
| **SF\|MSKL 3-12** | 37616 | 3 - 12 mm | 50.5 × 15.1 × 26 | 35 mm DIN rail shape H | 10 |
| **SF\|MSKL 8-18** | 37618 | 8 - 18 mm | 50.5 × 20 × 32 | 35 mm DIN rail shape H | 10 |



LFZ-M|MSKL



LF|MSKL



SFZ-M|MSKL



SF|MSKL

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# MSKL

## EMC Shield clamps with large clamping range



PFSZ-M|MSKL



PFKZ-M|MSKL



| Type | Order No. | Clamping range [mm] | Dimensions L × W × H [mm] | Mounting type | PU |
|---|---|---|---|---|---|
| NEW<br>**MSKL for snap mounting on 10 × 3 mm bus bars:** | | | | | |
| **PFSZ-M\|MSKL 3-12**<br>with strain relief | 37630 | 3 - 12 mm | 38 × 15.1 × 28.7 | 10 × 3 mm bus bar | 50 |
| **PFSZ-M\|MSKL 8-18**<br>with strain relief | 37632 | 8 - 18 mm | 38 × 20 × 34.9 | 10 × 3 mm bus bar | 50 |
| **Bus bar 10 × 3 mm** | 36100 | | 1000 × 10 × 3* | | 1 |
| NEW<br>**MSKL for plugging on sheet metal edges:** | | | | | |
| **PFKZ-A-M\|MSKL 3-12**<br>with strain relief | 37640 | 3 - 12 mm | 38 × 15.1 × 28.8 | sheet edges, thickness 1.5 - 2 mm | 50 |
| **PFKZ-A-M\|MSKL 8-18**<br>with strain relief | 37642 | 8 - 18 mm | 38 × 20 × 35 | sheet edges, thickness 1.5 - 2 mm | 50 |
| **PFKZ-B-M\|MSKL 3-12**<br>with strain relief | 37650 | 3 - 12 mm | 38 × 15.1 × 28.8 | sheet edges, thickness 2 - 3 mm | 50 |
| **PFKZ-B-M\|MSKL 8-18**<br>with strain relief | 37652 | 8 - 18 mm | 38 × 20 × 35 | sheet edges, thickness 2 - 3 mm | 50 |



PFSZ-M|MSKL



PFKZ-M|MSKL

* Other lengths available on request

### PFSZ-M|MSKL

PFSZ-M|MSKL shield clamps can be easily attached by snapping them onto 10 × 3 mm bus bars. The design allows cables to be secured with a cable tie. Strain relief in accordance with EN 62444 is achieved.

### PFKZ-M|MSKL

PFKZ-M|MSKL shield clamps are used where a screw connection is either not possible or wanted. The PFKZ-M|MSKL is simply clamped on the sheet. The claws provide a secure grip, even in case of vibrations. The design allows cables to be secured with a cable tie. Strain relief in accordance with EN 62444 is achieved.

## Advantages & benefits

- Large clamping areas, therefore less product sizes needed to cover a large cable diameter range
- Space-saving design, even when fully assembled
- Large contact area
- Simple mounting, easy assembly
- Partially with integrated strain relief
- The spring design requires no adjustments and will permanently maintain contact to the cable shield
- Shock and vibration resistant, maintenance free

## Specifications

**Material**

| | |
|---|---|
| MSKL-clamp | **Spring steel, zinc plated** |
| LF/LFZ-M-foot | **Sheet steel, galvanically zinc plated** |
| SF/SFZ-M/PFSZ-M/ PFKZ-M-foot | **Spring steel** |

## Accessories


| | |
|---|---|
| Cable ties | 90 - 91 |
| KEL-EMC-PF Bracket | 127 |
| MF Supports for bus bars | 169 |

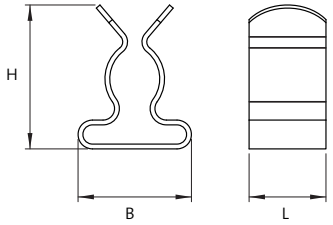
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# SKL

## EMC Shield clamps, single






| Type | Order No. | Clamping range [mm] | Dimensions L × B × H [mm] | Fixing hole | PU |
|---|---|---|---|---|---|
| SKL 1.5-3 | 36200 | 1.5 - 3 mm | 8 × 11.8 × 13 | 3.1 mm | 50 |
| SKL 3-6 | 36202 | 3 - 6 mm | 8 × 11.8 × 13.6 | 3.1 mm | 50 |
| SKL 6-8 | 36204 | 6 - 8 mm | 8 × 11.8 × 15 | 3.1 mm | 50 |
| SKL 8-11 | 36205 | 8 - 11 mm | 8 × 14 × 20 | 3.1 mm | 50 |
| SKL 11-17 | 36206 | 11 - 17 mm | 8 × 21 × 27.5 | 3.1 mm | 50 |
| SKL 17-22 | 36207 | 17 - 22 mm | 8 × 26.5 × 34.5 | 3.1 mm | 50 |
| SKL 22-30 | 36208 | 22 - 30 mm | 8 × 35 × 39.5 | 3.1 mm | 50 |
| SKL 30-37 | 36209 | 30 - 37 mm | 11 × 48.3 × 54.7 | 3.1 mm | 5 |
| SKL 38-48 | 36213 | 38 - 48 mm | 13 × 55 × 67 | 2 × 4.1 mm Hole spacing: 9.2 mm | 5 |
| MSKL 3-12 | 37600 | 3 - 12 mm | 8 × 15.1 × 20.5 | 3.2 mm | 50 |
| MSKL 8-18 | 37602 | 8 - 18 mm | 8 × 20 × 27 | 3.2 mm | 50 |

## Product description

SKL shield clamps are easy to use and effective in earthing single cable shields.

Shield clamps can be easily attached via rivet.

## Advantages & benefits

- Large contact area
- Easy assembly
- The spring design requires no adjustments and will permanently maintain contact to the cable shield
- Shock and vibration resistant, maintenance free
- Designed for high density applications

## Specifications

**Material**

SKL-clamp **Spring steel, zinc plated**

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# SFZ|SKL

## EMC Shield clamps for 35 mm DIN rail






| Type | Order No. | Shield diameter | PU |
|---|---|---|---|
| SFZ\|SKL 1.5-3 | 36850 | 1.5 - 3 mm | 10 |
| SFZ\|SKL 3-6 | 36855 | 3 - 6 mm | 10 |
| SFZ\|SKL 6-8 | 36860 | 6 - 8 mm | 10 |
| SFZ\|SKL 8-11 | 36865 | 8 - 11 mm | 10 |
| SFZ\|SKL 11-17 | 36870 | 11 - 17 mm | 10 |
| SFZ\|SKL 17-22 | 36875 | 17 - 22 mm | 10 |
| SFZ\|SKL 22-30 | 36880 | 22 - 30 mm | 10 |
| SFZ-M\|MSKL 3-12 | 37620 | 3 - 12 mm | 10 |
| SFZ-M\|MSKL 8-18 | 37622 | 8 - 18 mm | 10 |

## Product description

The shield clamps SFZ|SKL are easy to use and effective in earthing single cable shields in combination with strain relief.

Cables are secured with a cable tie. Strain relief in accordance with EN 62444 is achieved.

For assembly on 35 mm DIN rails.

## Advantages & benefits

- Simple and tool-free mounting, easy assembly
- Shock and vibration resistant, maintenance free
- Strain relief of the cable and earthing in a single device
- Large contact area
- The spring design requires no adjustments and will permanently maintain contact to the cable shield

## Specifications

**Material**

| | |
|---|---|
| SKL-clamp | **Spring steel, zinc plated** |
| SF- / SFZ-foot | **Spring steel** |

## Accessories

| | |
|---|---|
| Cable ties | 90 - 91 |

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# SF|SKL

## EMC Shield clamps for 35 mm DIN rail



SF|SKL



SF|SKL 38-48



## Product description

The shield clamps SF|SKL are easy to use and effective in earthing single cable shields.

For assembly on 35 mm DIN rails.

## Advantages & benefits

- Large contact area
- Simple and tool-free mounting, easy assembly
- The spring design requires no adjustments and will permanently maintain contact to the cable shield
- Designed for high density applications
- Shock and vibration resistant, maintenance free

## Specifications

**Material**

| | |
|---|---|
| SKL-clamp | **Spring steel, zinc plated** |
| SF-foot | **Spring steel** |



| Type | Order No. | Shield diameter | PU |
|---|---|---|---|
| SF\|SKL 1.5-3 | 36243 | 1.5 - 3 mm | 10 |
| SF\|SKL 3-6 | 36244 | 3 - 6 mm | 10 |
| SF\|SKL 6-8 | 36245 | 6 - 8 mm | 10 |
| SF\|SKL 8-11 | 36246 | 8 - 11 mm | 10 |
| SF\|SKL 11-17 | 36247 | 11 - 17 mm | 10 |
| SF\|SKL 17-22 | 36248 | 17 - 22 mm | 10 |
| SF\|SKL 22-30 | 36249 | 22 - 30 mm | 10 |
| SF\|SKL 30-37 | 36250 | 30 - 37 mm | 10 |
| SF\|SKL 38-48 | 36252 | 38 - 48 mm | 10 |
| SF\|MSKL 3-12 | 37616 | 3 - 12 mm | 10 |
| SF\|MSKL 8-18 | 37618 | 8 - 18 mm | 10 |
| SF single M4 | 36230 | Snap foot, single with screw thread M4 | 10 |
| SF single M5 | 36221 | Snap foot, single with screw thread M5 | 10 |

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# SFS|SKL

## EMC Shield clamps for 35 mm DIN rail






| Type | Order No. | Shield diameter | PU |
|---|---|---|---|
| SFS\|SKL 1.5-3 | 36810 | 1.5 - 3 mm | 10 |
| SFS\|SKL 3-6 | 36815 | 3 - 6 mm | 10 |
| SFS\|SKL 6-8 | 36820 | 6 - 8 mm | 10 |
| SFS single | 36229 | Snap foot single | 10 |

## Product description

Comparable with type SF|SKL, the SFS|SKL shield clamps are easily mounted on 35 mm DIN-rails.

The staggered arrangement of SFS|SKL maximises space utilisation. Suitable for applications that require EMC shielding close to connection points or controller inputs.

## Advantages & benefits

- Designed for high density applications
- Simple and tool-free mounting, easy assembly
- The spring design requires no adjustments and will permanently maintain contact to the cable shield
- Large contact area
- Shock and vibration resistant, maintenance free

## Specifications

**Material**

| | |
|---|---|
| SKL-clamp | **Spring steel, zinc plated** |
| SFS-foot | **Spring steel** |



SFS single

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# PFSZ|SKL

## EMC Shield clamps for bus bar





| Type | Order No. | Shield diameter | PU |
|---|---|---|---|
| PFSZ\|SKL 1.5-3 | 36787.1 | 1.5 - 3 mm | 10 |
| PFSZ\|SKL 3-6 | 36787.2 | 3 - 6 mm | 10 |
| PFSZ\|SKL 6-8 | 36787.3 | 6 - 8 mm | 10 |
| PFSZ\|SKL 8-11 | 36787.4 | 8 - 11 mm | 10 |
| PFSZ-M\|MSKL 3-12 NEW | 37630 | 3 - 12 mm | 10 |
| PFSZ-M\|MSKL 8-18 NEW | 37632 | 8 - 18 mm | 10 |
| Bus bar 10 × 3 mm | 36100 | 10 × 3 × 1000 mm* | 1 |

* Other lengths available on request

## Product description

Comparable with the PFS|SKL range, the PFSZ|SKL shield clamps are easy to use and effective in earthing single cable shields. They are used for mounting on 10 × 3 mm bus bars.

The PFSZ range provides the possibility to fix the cable with a cable tie. Strain relief in accordance with EN 62444 is achieved.

## Advantages & benefits

- Integrated strain relief
- Large contact area
- Simple and tool – free mounting, easy assembly
- The spring design requires no adjustments and will permanently maintain contact to the cable shield
- Shock and vibration resistant, maintenance free

## Specifications

**Material**

| | |
|---|---|
| SKL-clamp | **Spring steel, zinc plated** |
| PFSZ-foot | **Spring steel** |
| Bus bar | **Cu, tin plated, current load 140 A** |

## Accessories

| | |
|---|---|
| Cable ties | 90 - 91 |
| KEL-EMC-PF Bracket | 127 |
| MF Supports for bus bars | 169 |

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# PFS|SKL

## EMC Shield clamps for bus bar



| Type | Order No. | Shield diameter | PU |
|---|---|---|---|
| PFS\|SKL 1.5-3 | 36786.1 | 1.5 - 3 mm | 10 |
| PFS\|SKL 3-6 | 36786.2 | 3 - 6 mm | 10 |
| PFS\|SKL 6-8 | 36786.3 | 6 - 8 mm | 10 |
| PFS\|SKL 8-11 | 36786.4 | 8 - 11 mm | 10 |
| PFS\|SKL 11-17 | 36786.5 | 11 - 17 mm | 10 |
| PFS\|SKL 17-22 | 36786.6 | 17 - 22 mm | 10 |
| Bus bar 10 × 3 mm | 36100 | 10 × 3 × 1000 mm* | 1 |

* Other lengths available on request

## Product description

PFS|SKL shield clamps are easy to use and effective in earthing single cable shields.

The PFS|SKL is mounted by snapping on a 10 × 3 mm bus bar.

## Advantages & benefits

- Large contact area
- Simple and tool-free mounting, easy assembly
- The spring design requires no adjustments and will permanently maintain contact to the cable shield
- Shock and vibration resistant, maintenance free
- Designed for high density applications

## Specifications

**Material**

| | |
|---|---|
| SKL-clamp | **Spring steel, zinc plated** |
| PFS-foot | **Spring steel** |
| Bus bar | **Cu, tin plated, current load 140 A** |

## Accessories


| | |
|---|---|
| KEL-EMC-PF Bracket | 127 |
| MF Supports for bus bars | 169 |

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# PFSZ2|SKL

## EMC Shield clamps for bus bar, double



## Product description

Comparable with the PFS2|SKL range, the PFSZ2|SKL shield clamps are easy to use and effective in earthing single cable shields. They are used for mounting on 10 × 3 mm bus bars.

The PFSZ2 range provides possibility to fix the cables with cable ties. Strain relief in accordance with EN 62444 is achieved.

## Advantages & benefits

- Integrated strain relief
- Large contact area
- Simple and tool-free mounting, easy assembly
- The spring design requires no adjustments and will permanently maintain contact to the cable shield
- Shock and vibration resistant, maintenance free

## Specifications

**Material**

| | |
|---|---|
| SKL-clamp | **Spring steel, zinc plated** |
| PFSZ2-foot | **Spring steel** |
| Bus bar | **Cu, tin plated, current load 140 A** |

## Accessories

| | |
|---|---|
| Cable ties | 90 - 91 |
| MF Supports for bus bars | 169 |

| Type | Shield diameter Pos. 1 | Shield diameter Pos. 2 | Order No. | PU |
|---|---|---|---|---|
| PFSZ2\|SKL 01 | blank | 1.5 - 3 mm | 36789.01 | 10 |
| PFSZ2\|SKL 02 | blank | 3 - 6 mm | 36789.02 | 10 |
| PFSZ2\|SKL 03 | blank | 6 - 8 mm | 36789.03 | 10 |
| PFSZ2\|SKL 04 | blank | 8 - 11 mm | 36789.04 | 10 |
| PFSZ2\|SKL 10 | 1.5 - 3 mm | blank | 36789.10 | 10 |
| PFSZ2\|SKL 11 | 1.5 - 3 mm | 1.5 - 3 mm | 36789.11 | 10 |
| PFSZ2\|SKL 12 | 1.5 - 3 mm | 3 - 6 mm | 36789.12 | 10 |
| PFSZ2\|SKL 13 | 1.5 - 3 mm | 6 - 8 mm | 36789.13 | 10 |
| PFSZ2\|SKL 14 | 1.5 - 3 mm | 8 - 11 mm | 36789.14 | 10 |
| PFSZ2\|SKL 20 | 3 - 6 mm | blank | 36789.20 | 10 |
| PFSZ2\|SKL 21 | 3 - 6 mm | 1.5 - 3 mm | 36789.21 | 10 |
| PFSZ2\|SKL 22 | 3 - 6 mm | 3 - 6 mm | 36789.22 | 10 |
| PFSZ2\|SKL 23 | 3 - 6 mm | 6 - 8 mm | 36789.23 | 10 |
| PFSZ2\|SKL 24 | 3 - 6 mm | 8 - 11 mm | 36789.24 | 10 |
| PFSZ2\|SKL 30 | 6 - 8 mm | blank | 36789.30 | 10 |
| PFSZ2\|SKL 31 | 6 - 8 mm | 1.5 - 3 mm | 36789.31 | 10 |
| PFSZ2\|SKL 32 | 6 - 8 mm | 3 - 6 mm | 36789.32 | 10 |
| PFSZ2\|SKL 33 | 6 - 8 mm | 6 - 8 mm | 36789.33 | 10 |
| PFSZ2\|SKL 34 | 6 - 8 mm | 8 - 11 mm | 36789.34 | 10 |
| PFSZ2\|SKL 40 | 8 - 11 mm | blank | 36789.40 | 10 |
| PFSZ2\|SKL 41 | 8 - 11 mm | 1.5 - 3 mm | 36789.41 | 10 |
| PFSZ2\|SKL 42 | 8 - 11 mm | 3 - 6 mm | 36789.42 | 10 |
| PFSZ2\|SKL 43 | 8 - 11 mm | 6 - 8 mm | 36789.43 | 10 |
| Bus bar 10 × 3 mm | | 10 × 3 × 1000 mm* | 36100 | 1 |

* Other lengths available on request

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# PFS2|SKL

## EMC Shield clamps for bus bar, double



PFS2-foot



| Type | Shield diameter Pos. 1 | Shield diameter Pos. 2 | Order No. | PU |
|---|---|---|---|---|
| PFS2\|SKL 01 | blank | 1.5 - 3 mm | 36788.01 | 10 |
| PFS2\|SKL 02 | blank | 3 - 6 mm | 36788.02 | 10 |
| PFS2\|SKL 03 | blank | 6 - 8 mm | 36788.03 | 10 |
| PFS2\|SKL 04 | blank | 8 - 11 mm | 36788.04 | 10 |
| PFS2\|SKL 10 | 1.5 - 3 mm | blank | 36788.10 | 10 |
| PFS2\|SKL 11 | 1.5 - 3 mm | 1.5 - 3 mm | 36788.11 | 10 |
| PFS2\|SKL 12 | 1.5 - 3 mm | 3 - 6 mm | 36788.12 | 10 |
| PFS2\|SKL 13 | 1.5 - 3 mm | 6 - 8 mm | 36788.13 | 10 |
| PFS2\|SKL 14 | 1.5 - 3 mm | 8 - 11 mm | 36788.14 | 10 |
| PFS2\|SKL 20 | 3 - 6 mm | blank | 36788.20 | 10 |
| PFS2\|SKL 21 | 3 - 6 mm | 1.5 - 3 mm | 36788.21 | 10 |
| PFS2\|SKL 22 | 3 - 6 mm | 3 - 6 mm | 36788.22 | 10 |
| PFS2\|SKL 23 | 3 - 6 mm | 6 - 8 mm | 36788.23 | 10 |
| PFS2\|SKL 24 | 3 - 6 mm | 8 - 11 mm | 36788.24 | 10 |
| PFS2\|SKL 30 | 6 - 8 mm | blank | 36788.30 | 10 |
| PFS2\|SKL 31 | 6 - 8 mm | 1.5 - 3 mm | 36788.31 | 10 |
| PFS2\|SKL 32 | 6 - 8 mm | 3 - 6 mm | 36788.32 | 10 |
| PFS2\|SKL 33 | 6 - 8 mm | 6 - 8 mm | 36788.33 | 10 |
| PFS2\|SKL 34 | 6 - 8 mm | 8 - 11 mm | 36788.34 | 10 |
| PFS2\|SKL 40 | 8 - 11 mm | blank | 36788.40 | 10 |
| PFS2\|SKL 41 | 8 - 11 mm | 1.5 - 3 mm | 36788.41 | 10 |
| PFS2\|SKL 42 | 8 - 11 mm | 3 - 6 mm | 36788.42 | 10 |
| PFS2\|SKL 43 | 8 - 11 mm | 6 - 8 mm | 36788.43 | 10 |
| Bus bar 10 × 3 mm | | 10 × 3 × 1000 mm* | 36100 | 1 |

* Other lengths available on request

## Product description

PFS2|SKL shield clamps are easy to use and effective in earthing 2 single cables.

The PFS2|SKL is mounted by snapping on a 10 × 3 mm bus bar.

## Advantages & benefits

- Large contact area
- Simple and tool-free mounting, easy assembly
- The spring design requires no adjustments and will permanently maintain contact to the cable shield
- Shock and vibration resistant, maintenance free
- Designed for high density applications

## Specifications

**Material**

| | |
|---|---|
| SKL-clamp | **Spring steel, zinc plated** |
| PFS2-foot | **Spring steel** |
| Bus bar | **Cu, tin plated, current load 140 A** |

## Accessories

MF Supports for bus bars 169

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# LFZ|SKL

## EMC Shield clamps for screw assembly





## Product description

LFZ|SKL shield clamps are easy to use and effective in earthing single cable shields.

Cables are secured with a cable tie. Strain relief in accordance with EN 62444 is achieved.

LFZ|SKL shield clamps are easily attached to mounting plates via screw.

## Advantages & benefits

- Integrated strain relief
- Large contact area
- Simple assembly
- The spring design requires no adjustments and will permanently maintain contact to the cable shield
- Shock and vibration resistant, maintenance free

## Specifications

**Material**

| | |
|---|---|
| SKL-clamp | **Spring steel, zinc plated** |
| LFZ-foot | **Sheet steel, galvanically zinc plated** |
| | **Fixing hole 4.2 mm for screw M4** |

## Accessories

Cable ties 90 - 91

| Type | Order No. | Shield diameter | Fixing hole | PU |
|---|---|---|---|---|
| LFZ\|SKL 1.5-3 | 36910 | 1.5 - 3 mm | 4.2 mm | 10 |
| LFZ\|SKL 3-6 | 36915 | 3 - 6 mm | 4.2 mm | 10 |
| LFZ\|SKL 6-8 | 36920 | 6 - 8 mm | 4.2 mm | 10 |
| LFZ\|SKL 8-11 | 36925 | 8 - 11 mm | 4.2 mm | 10 |
| LFZ\|SKL 11-17 | 36930 | 11 - 17 mm | 4.2 mm | 10 |
| LFZ\|SKL 17-22 | 36935 | 17 - 22 mm | 4.2 mm | 10 |
| LFZ\|SKL 22-30 | 36940 | 22 - 30 mm | 4.2 mm | 10 |
| LFZ-M\|MSKL 3-12 | 37612 | 3 - 12 mm | 4.2 mm | 10 |
| LFZ-M\|MSKL 8-18 | 37614 | 8 - 18 mm | 4.2 mm | 10 |

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# LFZ-U|SKL

## EMC Shield clamps for screw assembly



| Type | Order No. | Shield diameter | Fixing hole | PU |
|---|---|---|---|---|
| **LFZ-U\|SKL for M4 screws:** | | | | |
| LFZ-U4\|SKL 1.5-3 | 36886.1 | 1.5 - 3 mm | 4.2 mm | 10 |
| LFZ-U4\|SKL 3-6 | 36886.2 | 3 - 6 mm | 4.2 mm | 10 |
| LFZ-U4\|SKL 6-8 | 36886.3 | 6 - 8 mm | 4.2 mm | 10 |
| LFZ-U4\|SKL 8-11 | 36886.4 | 8 - 11 mm | 4.2 mm | 10 |
| **LFZ-U\|SKL for M5 screws:** | | | | |
| LFZ-U5\|SKL 1.5-3 | 36887.1 | 1.5 - 3 mm | 5.2 mm | 10 |
| LFZ-U5\|SKL 3-6 | 36887.2 | 3 - 6 mm | 5.2 mm | 10 |
| LFZ-U5\|SKL 6-8 | 36887.3 | 6 - 8 mm | 5.2 mm | 10 |
| LFZ-U5\|SKL 8-11 | 36887.4 | 8 - 11 mm | 5.2 mm | 10 |

## Product description

LFZ-U|SKL shield clamps are used, where the shield of single cables must be connected to the earth potential.

LFZ-U|SKL shield clamps are easy to use and effective in earthing single cable shields. Cables are secured with a cable tie. Strain relief in accordance with EN 62444 is achieved.

Shield clamps are easily attached to mounting plates via screw. The shield clamp LFZ-U|SKL is available for M4 or M5 screws. During assembly it is sufficient to loosen the existing screw slightly to be able to slide the clamp underneath before re-tightening the screw.

## Advantages & benefits

- Integrated strain relief
- Large contact area
- Simple and quick assembly
- The spring design requires no adjustments and will permanently maintain contact to the cable shield
- Shock and vibration resistant, maintenance free

## Specifications

**Material**

| | |
|---|---|
| SKL-clamp | **Spring steel, zinc plated** |
| LFZ-foot | **Sheet steel, galvanically zinc plated** |
| | **Fixing hole 4.2 mm / 5.2 mm** |
| | **for screw M4 / M5** |

## Accessories

Cable ties 90 - 91

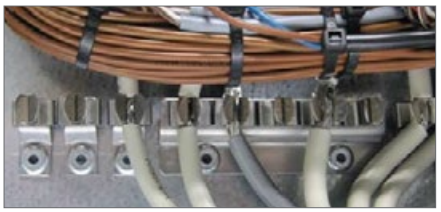
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# LF|SKL

## EMC Shield clamps for screw assembly





## Product description

LF|SKL shield clamps are easy to use and effective in earthing single cable shields.

Shield clamps are easily attached to mounting plates via screw.

## Advantages & benefits

- Large contact area
- Simple assembly
- The spring design requires no adjustments and will permanently maintain contact to the cable shield
- Shock and vibration resistant, maintenance free
- Designed for high density applications

## Specifications

**Material**

| | |
|---|---|
| SKL-clamp | **Spring steel, zinc plated** |
| LF-foot | **Sheet steel, galvanically zinc plated** |
| | **Fixing hole 4.2 mm for screw M4** |

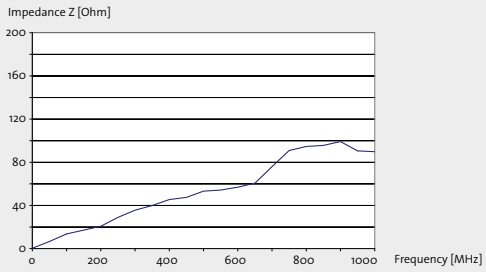
| Type | Order No. | Shield diameter | Fixing hole | PU |
|---|---|---|---|---|
| LF\|SKL 1.5-3 | 36251 | 1.5 - 3 mm | 4.2 mm | 10 |
| LF\|SKL 3-6 | 36253 | 3 - 6 mm | 4.2 mm | 10 |
| LF\|SKL 6-8 | 36255 | 6 - 8 mm | 4.2 mm | 10 |
| LF\|SKL 8-11 | 36256 | 8 - 11 mm | 4.2 mm | 10 |
| LF\|SKL 11-17 | 36257 | 11 - 17 mm | 4.2 mm | 10 |
| LF\|SKL 17-22 | 36258 | 17 - 22 mm | 4.2 mm | 10 |
| LF\|SKL 22-30 | 36259 | 22 - 30 mm | 4.2 mm | 10 |
| LF\|MSKL 3-12 | 37608 | 3 - 12 mm | 4.2 mm | 10 |
| LF\|MSKL 8-18 | 37610 | 8 - 18 mm | 4.2 mm | 10 |

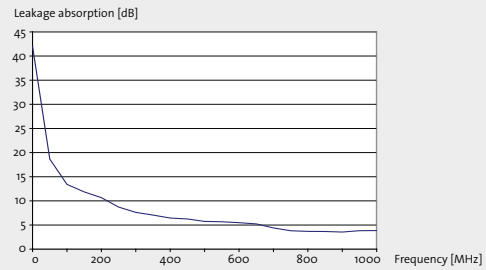
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# EMC
## Test results

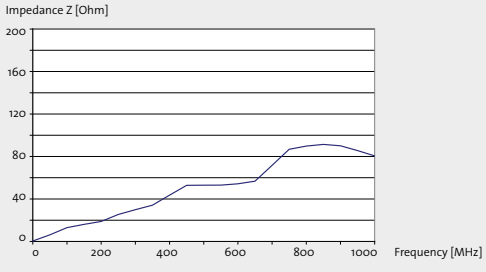


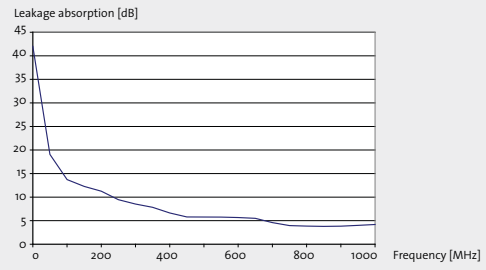
**LF|SKL 8-11**




**SF|SKL 6-8**




## Leakage and Impedance

All icotek shield clamps have been tested utilising various frequency ranges and in all tests there was minimal leakage resistance.

icotek EMC shield clamps are proven to absorb electromagnetic interferences.

Electrical impedance values:
- from 10 kHz to 100 MHz under 20 Ohm
- up to 1.000 MHz under 120 Ohm

The unique design of icotek shield clamps effectively reduce high frequency interferences.

## Contact area

The SKL shield clamps offer a large contact area to the cable shield (see figure A).

In comparison to conventional shield clamps, an up to 50% higher contact area is achieved when using the SKL product line.



Figure A: SKL-line



Figure B: Conventional systems

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# PFKZ|SKL

## EMC Shield clamps, pluggable





## Product description

Comparable with the PFK|SKL range, the PFKZ|SKL shield clamps are easy to use and effective in earthing single cable shields. The PFKZ range provides possibility to affix the cable with a cable tie. Strain relief in accordance with EN 62444 is achieved.

PFKZ|SKL clamps are used where a screw connection is either not possible or wanted. The PFKZ|SKL is simply clamped on the sheet. The claws provide a secure grip, even in case of vibrations.

## Advantages & benefits

- Integrated strain relief
- Large contact area
- Simple and tool-free mounting, easy assembly
- The spring design requires no adjustments and will permanently maintain contact to the cable shield
- Shock and vibration resistant, maintenance free

## Specifications

**Material**

| | |
|---|---|
| SKL-clamp | **Spring steel, zinc plated** |
| PFKZ-foot | **Spring steel** |

| | |
|---|---|
| Type A: | **For wall/sheet thickness 1.5 - 2 mm** |
| Type B: | **For wall/sheet thickness 2 - 3 mm** |

## Accessories

Cable ties 90 - 91

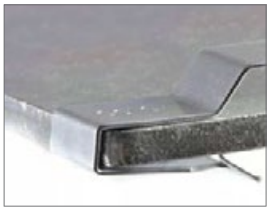
| Type | Order No. | Shield diameter | PU |
|---|---|---|---|
| **PFKZ\|SKL - Type A** (for wall/sheet thickness 1.5 - 2 mm) | | | |
| PFKZ-A\|SKL 1.5-3 | 36779.1 | 1.5 - 3 mm | 10 |
| PFKZ-A\|SKL 3-6 | 36779.2 | 3 - 6 mm | 10 |
| PFKZ-A\|SKL 6-8 | 36779.3 | 6 - 8 mm | 10 |
| PFKZ-A\|SKL 8-11 | 36779.4 | 8 - 11 mm | 10 |
| PFKZ-A-M\|MSKL 3-12 NEW | 37640 | 3 - 12 mm | 10 |
| PFKZ-A-M\|MSKL 8-18 NEW | 37642 | 8 - 18 mm | 10 |
| **PFKZ\|SKL - Type B** (for wall/sheet thickness 2 - 3 mm) | | | |
| PFKZ-B\|SKL 1.5-3 | 36783.1 | 1.5 - 3 mm | 10 |
| PFKZ-B\|SKL 3-6 | 36783.2 | 3 - 6 mm | 10 |
| PFKZ-B\|SKL 6-8 | 36783.3 | 6 - 8 mm | 10 |
| PFKZ-B\|SKL 8-11 | 36783.4 | 8 - 11 mm | 10 |
| PFKZ-B-M\|MSKL 3-12 NEW | 37650 | 3 - 12 mm | 10 |
| PFKZ-B-M\|MSKL 8-18 NEW | 37652 | 8 - 18 mm | 10 |

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# PFK|SKL

## EMC Shield clamps, pluggable



Secure grip on metal sheets due to mounting claws



| Type | Order No. | Shield diameter | PU |
|---|---|---|---|
| **PFK\|SKL - Type A (for wall/sheet thickness 1.5 - 2 mm)** | | | |
| PFK-A\|SKL 1.5-3 | 36778.1 | 1.5 - 3 mm | 10 |
| PFK-A\|SKL 3-6 | 36778.2 | 3 - 6 mm | 10 |
| PFK-A\|SKL 6-8 | 36778.3 | 6 - 8 mm | 10 |
| PFK-A\|SKL 8-11 | 36778.4 | 8 - 11 mm | 10 |
| **PFK\|SKL - Type B (for wall/sheet thickness 2 - 3 mm)** | | | |
| PFK-B\|SKL 1.5-3 | 36782.1 | 1.5 - 3 mm | 10 |
| PFK-B\|SKL 3-6 | 36782.2 | 3 - 6 mm | 10 |
| PFK-B\|SKL 6-8 | 36782.3 | 6 - 8 mm | 10 |
| PFK-B\|SKL 8-11 | 36782.4 | 8 - 11 mm | 10 |

## Product description

PFK|SKL shield clamps are easy to use and effective in earthing single cable shields.

PFK|SKL clamps are used where a screw connection is either not possible or wanted. The PFK|SKL is simply clamped on the sheet. The claws provide a secure grip, even in case of vibrations.

## Advantages & benefits

- Large contact area
- Simple and tool-free mounting, easy assembly
- Shock and vibration resistant, maintenance free
- The spring design requires no adjustments and will permanently maintain contact to the cable shield

## Specifications

**Material**

| | |
|---|---|
| SKL-clamp | **Spring steel, zinc plated** |
| PFK-foot | **Spring steel** |

| | |
|---|---|
| Type A: | **For wall/sheet thickness 1.5 - 2 mm** |
| Type B: | **For wall/sheet thickness 2 - 3 mm** |

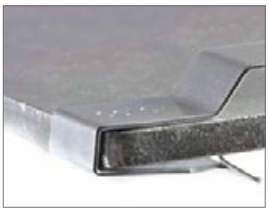
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# PFKZ2|SKL

## EMC Shield clamps, pluggable, double





Secure grip on metal sheets due to mounting claws

## Product description

Comparable with the PFK2|SKL range, the PFKZ2|SKL shield clamps are easy to use and effective in earthing 2 single cable shields. The PFKZ range provides the possibility to affix the cable with a cable tie. Strain relief in accordance with EN 62444 is achieved.

PFKZ2|SKL clamps are used where a screw connection is either not possible or wanted. The PFKZ2|SKL is simply clamped on the sheet. The claws provide a secure grip, even in case of vibrations.

## Advantages & benefits

- Integrated strain relief
- Large contact area
- Simple and tool-free mounting, easy assembly
- The spring design requires no adjustments and will permanently maintain contact to the cable shield
- Shock and vibration resistant, maintenance free
- Designed for high density applications

## Specifications

**Material**

| | |
|---|---|
| SKL-clamp | **Spring steel, zinc plated** |
| PFKZ2-foot | **Spring steel** |

| | |
|---|---|
| Type A: | **For wall/sheet thickness 1.5 - 2 mm** |
| Type B: | **For wall/sheet thickness 2 - 3 mm** |

## Accessories

| | |
|---|---|
| Cable ties | 90 - 91 |

| Type A | Order No. Type A | Type B | Order No. Type B | Shield diameter Pos. 1 | Shield diameter Pos. 2 | PU |
|---|---|---|---|---|---|---|
| **Sheet thickness 1.5 - 2 mm:** | | **Sheet thickness 2 - 3 mm:** | | | | |
| **PFKZ2-A\|SKL 01** | 36781.01 | **PFKZ2-B\|SKL 01** | 36785.01 | **blank** | **1.5 - 3 mm** | **10** |
| **PFKZ2-A\|SKL 02** | 36781.02 | **PFKZ2-B\|SKL 02** | 36785.02 | **blank** | **3 - 6 mm** | **10** |
| **PFKZ2-A\|SKL 03** | 36781.03 | **PFKZ2-B\|SKL 03** | 36785.03 | **blank** | **6 - 8 mm** | **10** |
| **PFKZ2-A\|SKL 04** | 36781.04 | **PFKZ2-B\|SKL 04** | 36785.04 | **blank** | **8 - 11 mm** | **10** |
| **PFKZ2-A\|SKL 10** | 36781.10 | **PFKZ2-B\|SKL 10** | 36785.10 | **1.5 - 3 mm** | **blank** | **10** |
| **PFKZ2-A\|SKL 11** | 36781.11 | **PFKZ2-B\|SKL 11** | 36785.11 | **1.5 - 3 mm** | **1.5 - 3 mm** | **10** |
| **PFKZ2-A\|SKL 12** | 36781.12 | **PFKZ2-B\|SKL 12** | 36785.12 | **1.5 - 3 mm** | **3 - 6 mm** | **10** |
| **PFKZ2-A\|SKL 13** | 36781.13 | **PFKZ2-B\|SKL 13** | 36785.13 | **1.5 - 3 mm** | **6 - 8 mm** | **10** |
| **PFKZ2-A\|SKL 14** | 36781.14 | **PFKZ2-B\|SKL 14** | 36785.14 | **1.5 - 3 mm** | **8 - 11 mm** | **10** |
| **PFKZ2-A\|SKL 20** | 36781.20 | **PFKZ2-B\|SKL 20** | 36785.20 | **3 - 6 mm** | **blank** | **10** |
| **PFKZ2-A\|SKL 21** | 36781.21 | **PFKZ2-B\|SKL 21** | 36785.21 | **3 - 6 mm** | **1.5 - 3 mm** | **10** |
| **PFKZ2-A\|SKL 22** | 36781.22 | **PFKZ2-B\|SKL 22** | 36785.22 | **3 - 6 mm** | **3 - 6 mm** | **10** |
| **PFKZ2-A\|SKL 23** | 36781.23 | **PFKZ2-B\|SKL 23** | 36785.23 | **3 - 6 mm** | **6 - 8 mm** | **10** |
| **PFKZ2-A\|SKL 24** | 36781.24 | **PFKZ2-B\|SKL 24** | 36785.24 | **3 - 6 mm** | **8 - 11 mm** | **10** |
| **PFKZ2-A\|SKL 30** | 36781.30 | **PFKZ2-B\|SKL 30** | 36785.30 | **6 - 8 mm** | **blank** | **10** |
| **PFKZ2-A\|SKL 31** | 36781.31 | **PFKZ2-B\|SKL 31** | 36785.31 | **6 - 8 mm** | **1.5 - 3 mm** | **10** |
| **PFKZ2-A\|SKL 32** | 36781.32 | **PFKZ2-B\|SKL 32** | 36785.32 | **6 - 8 mm** | **3 - 6 mm** | **10** |
| **PFKZ2-A\|SKL 33** | 36781.33 | **PFKZ2-B\|SKL 33** | 36785.33 | **6 - 8 mm** | **6 - 8 mm** | **10** |
| **PFKZ2-A\|SKL 34** | 36781.34 | **PFKZ2-B\|SKL 34** | 36785.34 | **6 - 8 mm** | **8 - 11 mm** | **10** |
| **PFKZ2-A\|SKL 40** | 36781.40 | **PFKZ2-B\|SKL 40** | 36785.40 | **8 - 11 mm** | **blank** | **10** |
| **PFKZ2-A\|SKL 41** | 36781.41 | **PFKZ2-B\|SKL 41** | 36785.41 | **8 - 11 mm** | **1.5 - 3 mm** | **10** |
| **PFKZ2-A\|SKL 42** | 36781.42 | **PFKZ2-B\|SKL 42** | 36785.42 | **8 - 11 mm** | **3 - 6 mm** | **10** |
| **PFKZ2-A\|SKL 43** | 36781.43 | **PFKZ2-B\|SKL 43** | 36785.43 | **8 - 11 mm** | **6 - 8 mm** | **10** |

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# PFK2|SKL

## EMC Shield clamps, pluggable, double






| Type A | Order No. Type A | Type B | Order No. Type B | Shield diameter Pos. 1 | Shield diameter Pos. 2 | PU |
|---|---|---|---|---|---|---|
| **Sheet thickness 1.5 - 2 mm:** | | **Sheet thickness 2 - 3 mm:** | | | | |
| PFK2-A\|SKL 01 | 36780.01 | PFK2-B\|SKL 01 | 36784.01 | blank | 1.5 - 3 mm | 10 |
| PFK2-A\|SKL 02 | 36780.02 | PFK2-B\|SKL 02 | 36784.02 | blank | 3 - 6 mm | 10 |
| PFK2-A\|SKL 03 | 36780.03 | PFK2-B\|SKL 03 | 36784.03 | blank | 6 - 8 mm | 10 |
| PFK2-A\|SKL 04 | 36780.04 | PFK2-B\|SKL 04 | 36784.04 | blank | 8 - 11 mm | 10 |
| PFK2-A\|SKL 10 | 36780.10 | PFK2-B\|SKL 10 | 36784.10 | 1.5 - 3 mm | blank | 10 |
| PFK2-A\|SKL 11 | 36780.11 | PFK2-B\|SKL 11 | 36784.11 | 1.5 - 3 mm | 1.5 - 3 mm | 10 |
| PFK2-A\|SKL 12 | 36780.12 | PFK2-B\|SKL 12 | 36784.12 | 1.5 - 3 mm | 3 - 6 mm | 10 |
| PFK2-A\|SKL 13 | 36780.13 | PFK2-B\|SKL 13 | 36784.13 | 1.5 - 3 mm | 6 - 8 mm | 10 |
| PFK2-A\|SKL 14 | 36780.14 | PFK2-B\|SKL 14 | 36784.14 | 1.5 - 3 mm | 8 - 11 mm | 10 |
| PFK2-A\|SKL 20 | 36780.20 | PFK2-B\|SKL 20 | 36784.20 | 3 - 6 mm | blank | 10 |
| PFK2-A\|SKL 21 | 36780.21 | PFK2-B\|SKL 21 | 36784.21 | 3 - 6 mm | 1.5 - 3 mm | 10 |
| PFK2-A\|SKL 22 | 36780.22 | PFK2-B\|SKL 22 | 36784.22 | 3 - 6 mm | 3 - 6 mm | 10 |
| PFK2-A\|SKL 23 | 36780.23 | PFK2-B\|SKL 23 | 36784.23 | 3 - 6 mm | 6 - 8 mm | 10 |
| PFK2-A\|SKL 24 | 36780.24 | PFK2-B\|SKL 24 | 36784.24 | 3 - 6 mm | 8 - 11 mm | 10 |
| PFK2-A\|SKL 30 | 36780.30 | PFK2-B\|SKL 30 | 36784.30 | 6 - 8 mm | blank | 10 |
| PFK2-A\|SKL 31 | 36780.31 | PFK2-B\|SKL 31 | 36784.31 | 6 - 8 mm | 1.5 - 3 mm | 10 |
| PFK2-A\|SKL 32 | 36780.32 | PFK2-B\|SKL 32 | 36784.32 | 6 - 8 mm | 3 - 6 mm | 10 |
| PFK2-A\|SKL 33 | 36780.33 | PFK2-B\|SKL 33 | 36784.33 | 6 - 8 mm | 6 - 8 mm | 10 |
| PFK2-A\|SKL 34 | 36780.34 | PFK2-B\|SKL 34 | 36784.34 | 6 - 8 mm | 8 - 11 mm | 10 |
| PFK2-A\|SKL 40 | 36780.40 | PFK2-B\|SKL 40 | 36784.40 | 8 - 11 mm | blank | 10 |
| PFK2-A\|SKL 41 | 36780.41 | PFK2-B\|SKL 41 | 36784.41 | 8 - 11 mm | 1.5 - 3 mm | 10 |
| PFK2-A\|SKL 42 | 36780.42 | PFK2-B\|SKL 42 | 36784.42 | 8 - 11 mm | 3 - 6 mm | 10 |
| PFK2-A\|SKL 43 | 36780.43 | PFK2-B\|SKL 43 | 36784.43 | 8 - 11 mm | 6 - 8 mm | 10 |

## Product description

PFK2|SKL shield clamps are easy to use and effective in earthing 2 single cable shields.

PFK2|SKL clamps are used where a screw connection is either not possible or wanted. The PFK2|SKL is simply clamped on the sheet. The claws provide a secure grip, even in case of vibrations.

## Advantages & benefits

- Large contact area
- Simple and tool-free mounting, easy assembly
- Shock and vibration resistant, maintenance free
- The spring design requires no adjustments and will permanently maintain contact to the cable shield
- Designed for high density applications

## Specifications

**Material**

| | |
|---|---|
| SKL-clamp | **Spring steel, zinc plated** |
| PFK2-foot | **Spring steel** |

| | |
|---|---|
| Type A: | **For wall/sheet thickness 1.5 - 2 mm** |
| Type B: | **For wall/sheet thickness 2 - 3 mm** |

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# EMC ServiceBox *multi*

## Service box with asssorted MSKL shield clamp




**90% of all cable shields are contacted**



## Product description

**The suitable EMC clamp is always readily available!**

The EMC ServiceBox multi is very universal, especially when the cable diameter is unknown in advance. With the new ServiceBox multi you always have the right size on hand.

The EMC ServiceBox multi is perfect for installations and service calls. Retrofitting and maintenance can be carried out easily and quickly.

**Order No. 88006**

## Content

| | |
|---|---|
| **MSKL / SKL for TS35 DIN rails:** | |
| Type SFZ-M\|MSKL - sizes: 8 - 18 mm | **10 × MSKL** |
| Type SFZ-M\|MSKL - sizes: 3 - 12 mm | **20 × MSKL** |
| Type SFZ\|SKL - sizes: 1.5 - 3 mm | **10 × SKL** |
| **MSKL / SKL for assembly via screws:** | |
| Type LFZ-M\|MSKL - sizes: 8 - 18 mm | **10 × MSKL** |
| Type LFZ-M\|MSKL - sizes: 3 - 12 mm | **20 × MSKL** |
| Type LFZ\|SKL - sizes: 1.5 - 3 mm | **10 × SKL** |
| **MSKL for 10 × 3 mm bus bar:** | |
| Type PFSZ-M\|MSKL - sizes: 3 - 12 mm | **10 × MSKL** |
| **MSKL / SKL for clipping on metal sheets:** | |
| Type PFKZ-B-M\|MSKL - sizes: 1.5 - 8 mm | **10 × MSKL** |
| Type PFKZ-B\|SKL 22 | **2 × SKL** |
| **SKL for decentralised bus modules:** | |
| Type STFZ\|SKL - sizes: 3 - 8 mm | **6 × SKL** |
| **SKL for clipping on metal sheets** | |
| Typ PFKZ-B\|SKL 1,5-3 mm | **3 x SKL** |
| Typ PFKZ-B\|SKL 3-6 mm | **3 x SKL** |
| Typ PFKZ-B\|SKL 6-8 mm | **3 x SKL** |
| **EMC - Accessories:** | |
| RLFZ - Clamp assembly 5× SKL | **1 piece** |

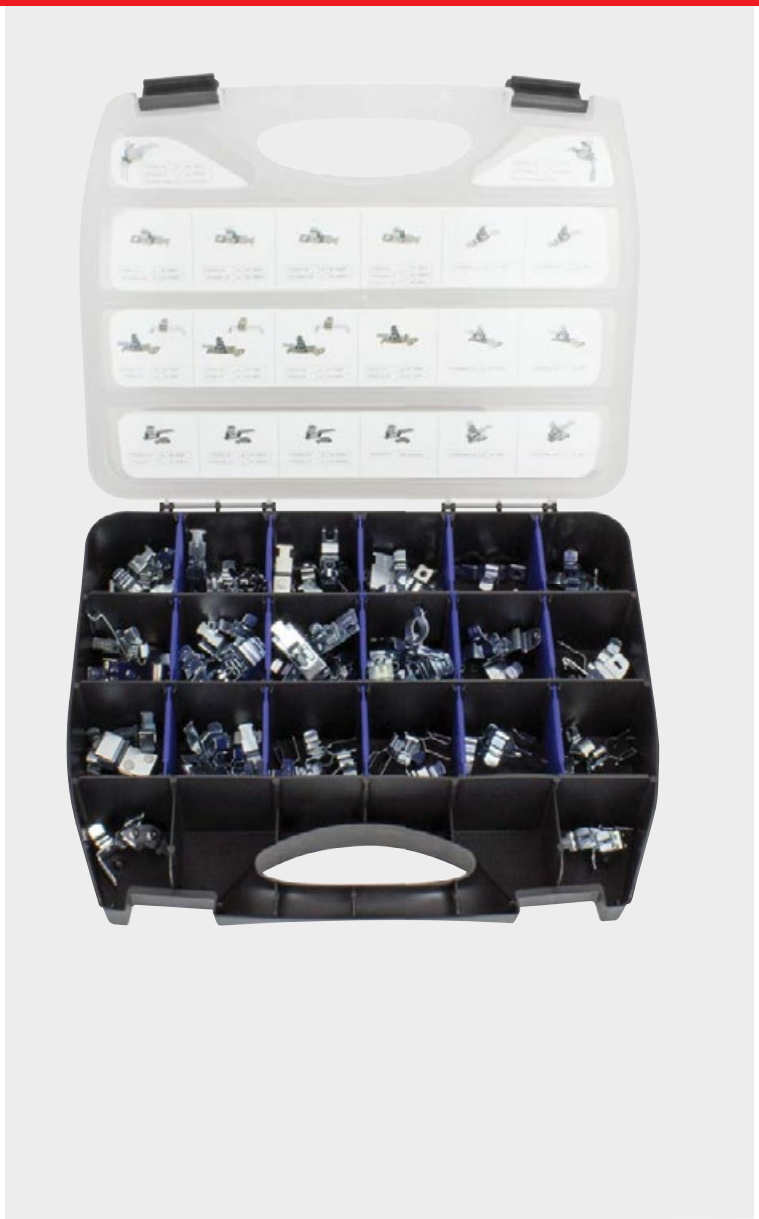
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# EMC ServiceBox

## Service box with asssorted SKL shield clamps




**Exact gradations of the shield clamps**



## Product description

**The suitable EMC clamp is always readily available!**

The EMC ServiceBox is perfect for installations and service calls. Retrofitting and maintenance can be carried out easily and quickly

**Order No. 88002**

## Content

| | |
|---|---|
| **SKL for TS35 DIN rails:** | |
| Type SFZ\|SKL - sizes: 1.5 - 16 mm | **15 × SKL** |
| Type SFS\|SKL - sizes: 1.5 - 8 mm | **6 × SKL** |
| SFZ-M\|MSKL - sizes: 3-18 mm | **4 × SKL** |
| **SKL for assembly via screws:** | |
| Type LFZ\|SKL - sizes: 1.5 - 16 mm | **21 × SKL** |
| Type LFZ-U4\|SKL - sizes: 1.5-11 mm | **8 × SKL** |
| Type LFZ-M\|MSKL - sizes: 3-18 mm | **4 × SKL** |
| **SKL for 10 × 3 bus bar:** | |
| Type PFSZ2\|SKL 11 | **1 × SKL** |
| Type PFSZ2\|SKL 22 | **1 × SKL** |
| Type PFSZ2\|SKL 33 | **1 × SKL** |
| **SKL for clipping on metal sheets:** | |
| Type PFSZ\|SKL - sizes: 1.5 - 11 mm | **15 × SKL** |
| Type PFSZ-M\|MSKL - sizes: 3-18 mm | **4 × SKL** |
| **SKL for decentralised bus modules:** | |
| STFZ\|SKL - sizes: 3 - 6 mm | **1 × SKL** |
| STFZ2\|SKL 23 | **1 × SKL** |
| **SKL for Siemens module ET 200 SP:** | |
| STFZ-SP\|SKL - sizes: 3-6 mm | **1 × SKL** |
| STFZ2-SP\|SKL 23 | **1 × SKL** |

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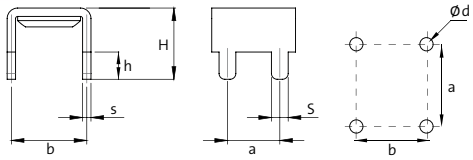
# PCB|SKL

## EMC Shield clamps for printed circuit boards










## Product description

PCB|SKL shield clamps are easy to use and effective in earthing single cable shields.

PCB|SKL consist of SKL clamps, fixed on a soldering foot that enables assembly on printed circuit boards. There are various designs to choose from.

## Advantages & benefits

- The spring design requires no adjustments and will permanently maintain contact to the cable shield
- Large contact area

## Specifications

**Material**

| | |
|---|---|
| SKL-clamp | **Spring steel, zinc plated** |
| PCB-foot | **Brass, tin plated** |

| Type | Order No. | Height H [mm] | Width s [mm] | Pin h [mm] | Pin S [mm] | Grid a x b [mm] | Drill-hole d [mm] | PU |
|---|---|---|---|---|---|---|---|---|
| **PCB-4-V-6,8\|SKL 1.5-3** (Clamping range 1.5 - 3 mm) | 36650.1 | 6.8 | 0.8 | 2.6 | 1.6 | 7.2 x 5 | Ø 1.8 | 10 |
| **PCB-4-V-6,8\|SKL 3-6** (Clamping range 3 - 6 mm) | 36650.2 | 6.8 | 0.8 | 2.6 | 1.6 | 7.2 x 5 | Ø 1.8 | 10 |
| **PCB-4-V-6,8\|SKL 6-8** (Clamping range 6 - 8 mm) | 36650.3 | 6.8 | 0.8 | 2.6 | 1.6 | 7.2 x 5 | Ø 1.8 | 10 |
| **PCB-4-V-12,5\|SKL 1.5-3** (Clamping range 1.5 - 3 mm) | 36656.1 | 12.5 | 1 | 4 | 1.6 | 10.1 x 5 | Ø 1.8 | 10 |
| **PCB-4-V-12,5\|SKL 3-6** (Clamping range 3 - 6 mm) | 36656.2 | 12.5 | 1 | 4 | 1.6 | 10.1 x 5 | Ø 1.8 | 10 |
| **PCB-4-V-12,5\|SKL 6-8** (Clamping range 6 - 8 mm) | 36656.3 | 12.5 | 1 | 4 | 1.6 | 10.1 x 5 | Ø 1.8 | 10 |

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# STFZ|SKL

## EMC Terminal clamp for peripheral modules



STFZ-SP|SKL



STFZ-U|SKL



STFZ|SKL



## Application terminal clamp

### STFZ|SKL

- Bosch Rexroth
  IP20 Inline Module
- PHOENIX CONTACT
  All terminals of the INLINE range.
  The terminals 1.4 and 2.4 must not be used for signal I/O.
- Pilz
  All PSSu-Modules with shield terminals 13 and 23
- Siemens
  All terminals of the ET200s range.
  Terminals 4 and 8 must not be used for signal I/O.
- TURCK
  For terminals of the BL20 I/O system.
- VIPA SLIO
  All terminals of the SLIO range. Terminals 4+8 must not be used for signal I/O.
- WAGO
  All terminals of the WAGO I/O Systems 750.
  Terminals 4 and 8 must not be used for signal I/O.
- Rockwell Automation / Allen-Bradley
  Series 1734

  Further manufacturers upon request.

### STFZ-U|SKL

- BECKHOFF
  EL 3122, ES 3122, ES 9100, ES 9410, KL 1114, KS 2134

### STFZ-SP|SKL

- Siemens
  SIMATIC ET 200SP

## Product description

The EMC terminal clamps STFZ|SKL combine the functions strain relief, cable guidance and earthing of signal cables. Available in two versions for 1 or 2 lines.

The STFZ2|SKL is used for analogue I/O modules using two actuators / sensors.

The STFZ EMC terminal clamp is compatible to bus modules listed on the left side.

For the SIMATIC ET 200SP module by Siemens icotek has developed a special terminal clamp STFZ-SP for 1 or 2 lines.

## Product description

STFZ I/O Insert Tool for quick and easy mounting of STFZ terminal clamps.

**Order No. 61430**



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# STFZ | STFZ2

## EMC Terminal clamp, single and double for various brands






## Product description

The STFZ|SKL EMC terminal clamp provides strain relief, cable guidance and earthing for decentralised bus modules (see compatibility table page 113).

The STFZ2|SKL is used for analogue I/O modules using two actuators / sensors.

The EMC shield clamps as listed below are available to mount:
SKL 1.5-3 | SKL 3-6 | SKL 6-8

## Advantages & benefits

- Earthing of signal cables close to the terminal
- Strain relief and cable management directly on the bus module

## Specifications

**Material**

| | |
|---|---|
| SKL-clamp | **Spring steel, zinc plated** |
| STFZ-foot | **Spring steel** |

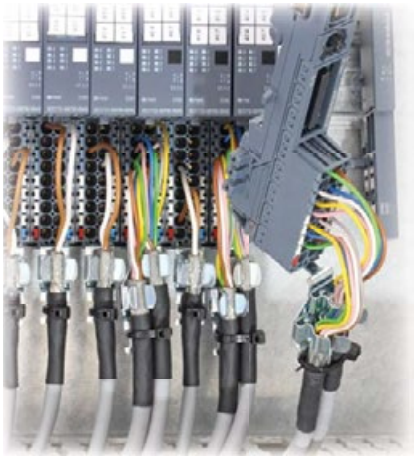
## Accessories

| | |
|---|---|
| Cable ties | 90 - 91 |
| STFZ I/O Insert Tool | 117 |

| Type | Shield diameter Pos. 1 | Shield diameter Pos. 2 | Order No. | PU |
|---|---|---|---|---|
| **STFZ\|SKL with one shield clamp:** | | | | |
| STFZ\|SKL 1.5-3 | 1.5 - 3 mm | - | 37510.1 | 10 |
| STFZ\|SKL 3-6 | 3 - 6 mm | - | 37510.2 | 10 |
| STFZ\|SKL 6-8 | 6 - 8 mm | - | 37510.3 | 10 |
| **STFZ2\|SKL with two shield clamps:** | | | | |
| STFZ2\|01 | blank | 1.5 - 3 mm | 37505.01 | 10 |
| STFZ2\|02 | blank | 3 - 6 mm | 37505.02 | 10 |
| STFZ2\|03 | blank | 6 - 8 mm | 37505.03 | 10 |
| STFZ2\|10 | 1.5 - 3 mm | blank | 37505.10 | 10 |
| STFZ2\|11 | 1.5 - 3 mm | 1.5 - 3 mm | 37505.11 | 10 |
| STFZ2\|12 | 1.5 - 3 mm | 3 - 6 mm | 37505.12 | 10 |
| STFZ2\|13 | 1.5 - 3 mm | 6 - 8 mm | 37505.13 | 10 |
| STFZ2\|20 | 3 - 6 mm | blank | 37505.20 | 10 |
| STFZ2\|21 | 3 - 6 mm | 1.5 - 3 mm | 37505.21 | 10 |
| STFZ2\|22 | 3 - 6 mm | 3 - 6 mm | 37505.22 | 10 |
| STFZ2\|23 | 3 - 6 mm | 6 - 8 mm | 37505.23 | 10 |
| STFZ2\|30 | 6 - 8 mm | blank | 37505.30 | 10 |
| STFZ2\|31 | 6 - 8 mm | 1.5 - 3 mm | 37505.31 | 10 |
| STFZ2\|32 | 6 - 8 mm | 3 - 6 mm | 37505.32 | 10 |
| STFZ2\|33 | 6 - 8 mm | 6 - 8 mm | 37505.33 | 10 |

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# STFZ-U | STFZ-SP | STFZ2-SP

## EMC Terminal clamp, single and double for Siemens & Beckhoff modules





STFZ-SP|SKL



| Type | Shield diameter Pos. 1 | Shield diameter Pos. 2 | Order No. | PU |
|---|---|---|---|---|
| **STFZ-SP\|SKL / STFZ-U\|SKL with one shield clamp:** | | | | |
| STFZ-SP\|SKL 1.5-3 | 1.5 - 3 mm | - | 37512.1 | 10 |
| STFZ-U\|SKL 1.5-3 | 1.5 - 3 mm | - | 37514.1 | 10 |
| STFZ-SP\|SKL 3-6 | 3 - 6 mm | - | 37512.2 | 10 |
| STFZ-U\|SKL 3-6 | 3 - 6 mm | - | 37514.2 | 10 |
| STFZ-SP\|SKL 6-8 | 6 - 8 mm | - | 37512.3 | 10 |
| STFZ-U\|SKL 6-8 | 6 - 8 mm | - | 37514.3 | 10 |
| **STFZ2-SP\|SKL with two shield clamps:** | | | | |
| STFZ2-SP\|01 | blank | 1.5 - 3 mm | 37507.01 | 10 |
| STFZ2-SP\|02 | blank | 3 - 6 mm | 37507.02 | 10 |
| STFZ2-SP\|03 | blank | 6 - 8 mm | 37507.03 | 10 |
| STFZ2-SP\|10 | 1.5 - 3 mm | blank | 37507.10 | 10 |
| STFZ2-SP\|11 | 1.5 - 3 mm | 1.5 - 3 mm | 37507.11 | 10 |
| STFZ2-SP\|12 | 1.5 - 3 mm | 3 - 6 mm | 37507.12 | 10 |
| STFZ2-SP\|13 | 1.5 - 3 mm | 6 - 8 mm | 37507.13 | 10 |
| STFZ2-SP\|20 | 3 - 6 mm | blank | 37507.20 | 10 |
| STFZ2-SP\|21 | 3 - 6 mm | 1.5 - 3 mm | 37507.21 | 10 |
| STFZ2-SP\|22 | 3 - 6 mm | 3 - 6 mm | 37507.22 | 10 |
| STFZ2-SP\|23 | 3 - 6 mm | 6 - 8 mm | 37507.23 | 10 |
| STFZ2-SP\|30 | 6 - 8 mm | blank | 37507.30 | 10 |
| STFZ2-SP\|31 | 6 - 8 mm | 1.5 - 3 mm | 37507.31 | 10 |
| STFZ2-SP\|32 | 6 - 8 mm | 3 - 6 mm | 37507.32 | 10 |
| STFZ2-SP\|33 | 6 - 8 mm | 6 - 8 mm | 37507.33 | 10 |

## Product description

The STFZ-SP|SKL EMC terminal clamp provides strain relief, cable guidance and earthing for decentralised bus modules SIMATIC ET 200SP by Siemens. STFZ2-SP|SKL is a version for analogue I/O modules using two actuators / sensors. STFZ-U terminal clamps for various Beckhoff modules (see page 113).

The EMC shield clamps as listed below are available to mount:
SKL 1.5-3 | SKL 3-6 | SKL 6-8

## Advantages & benefits

- Earthing of signal cables close to the terminal
- Strain relief and cable management directly on the bus module

## Specifications

**Material**

| | |
|---|---|
| SKL-clamp | **Spring steel, zinc plated** |
| STFZ-SP-foot | **Spring steel** |

## Accessories


| | |
|---|---|
| Cable ties | 90 - 91 |
| STFZ I/O Insert Tool | 117 |



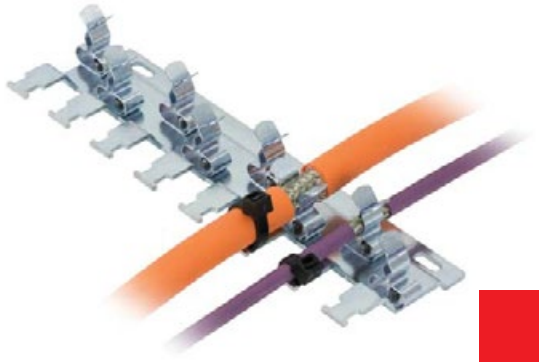
STFZ-U|SKL

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# RLFZ-M

## EMC Clamp assembly with strain relief and a large clamping range



## Product description

The RLFZ-M range is a further development of the EMC clamp assembly which enables earthing and strain relief of up to 12 cable shields from 3-12 mm using only one shield clamp size.

There are 10 different carriers available which can be easily user configured with up to 12 MSKL 3-12 shield clamps.

## Advantages & benefits

- Easy storage due to large clamping range 3-12 mm
- Designed for high density applications
- Possibility to configure custom specific EMC clamp assemblies
- Separate strain relief and EMC shield earthing
- Online design tool for EMC Clamp assembly on www.icotek.com

## Specifications

**Material**

MSKL-clamp **Spring steel, zinc plated**
RLFZ-M-foot **Sheet steel, galvanically zinc plated**

## Accessories

Cable ties 90 - 91

| Type | Order No. | Number of shield clamps | Length | Width | PU |
|---|---|---|---|---|---|
| RLFZ-M (x3) | 38070.002 | 3× MSKL 3-12 | 52 mm | 54.1 mm | 1 |
| RLFZ-M (x4) | 38071.002 | 4× MSKL 3-12 | 73 mm | 54.1 mm | 1 |
| RLFZ-M (x5) | 38072.002 | 5× MSKL 3-12 | 94 mm | 54.1 mm | 1 |
| RLFZ-M (x6) | 38073.002 | 6× MSKL 3-12 | 115 mm | 54.1 mm | 1 |
| RLFZ-M (x7) | 38074.002 | 7× MSKL 3-12 | 136 mm | 54.1 mm | 1 |
| RLFZ-M (x8) | 38075.002 | 8× MSKL 3-12 | 157 mm | 54.1 mm | 1 |
| RLFZ-M (x9) | 38076.002 | 9× MSKL 3-12 | 178 mm | 54.1 mm | 1 |
| RLFZ-M (x10) | 38077.002 | 10× MSKL 3-12 | 199 mm | 54.1 mm | 1 |
| RLFZ-M (x11) | 38078.002 | 11× MSKL 3-12 | 220 mm | 54.1 mm | 1 |
| RLFZ-M (x12) | 38079.002 | 12× MSKL 3-12 | 241 mm | 54.1 mm | 1 |

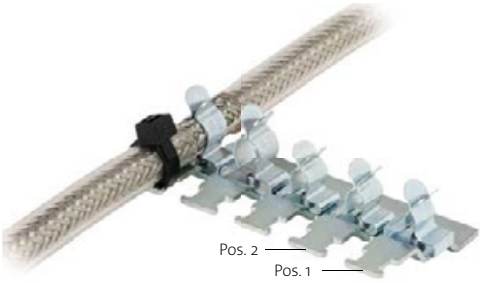
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# RLFZ

## EMC Clamp assembly with strain relief






| Type | Order No. (unfitted) | Number of shield clamps | Length | Width | PU |
|---|---|---|---|---|---|
| RLFZ (x3) | 38005 | 3× SKL | 41.2 mm | 44.4 mm | 1 |
| RLFZ (x4) | 38010 | 4× SKL | 56.8 mm | 44.4 mm | 1 |
| RLFZ (x5) | 38015 | 5× SKL | 72.4 mm | 44.4 mm | 1 |
| RLFZ (x6) | 38020 | 6× SKL | 88 mm | 44.4 mm | 1 |
| RLFZ (x7) | 38025 | 7× SKL | 103.6 mm | 44.4 mm | 1 |
| RLFZ (x8) | 38030 | 8× SKL | 119.2 mm | 44.4 mm | 1 |
| RLFZ (x9) | 38035 | 9× SKL | 134.8 mm | 44.4 mm | 1 |
| RLFZ (x10) | 38040 | 10× SKL | 150.4 mm | 44.4 mm | 1 |
| RLFZ (x11) | 38045 | 11× SKL | 166 mm | 44.4 mm | 1 |
| RLFZ (x12) | 38050 | 12× SKL | 181.6 mm | 44.4 mm | 1 |

## Product description

The RLFZ range enables earthing and strain relief of up to 12 cables in a small space.

The combination of EMC shield earthing and strain relief is the key feature of this system.

There are 10 different carriers available which can be user configured with up to 12 SKL shield clamps.

The EMC shield clamps as listed below are available to mount:
SKL 1.5-3 | SKL 3-6 | SKL 6-8 | SKL 8-11

## Advantages & benefits

- Designed for high density applications
- Possibility to configure custom specific EMC clamp assemblies
- Separate strain relief and EMC shield earthing
- Online design tool for EMC Clamp assembly

## Specifications

**Material**

| | |
|---|---|
| SKL-clamp | **Spring steel, zinc plated** |
| RLFZ-foot | **Sheet steel, galvanically zinc plated** |

## Accessories

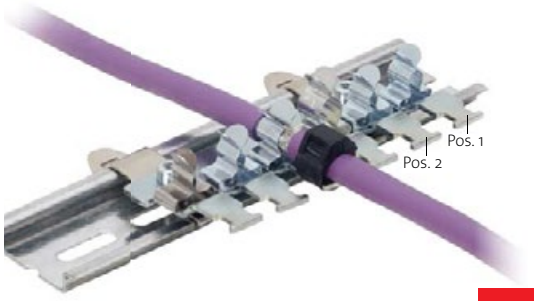
| | |
|---|---|
| Cable ties | 90 - 91 |

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# SF|RLFZ

## EMC Clamp assembly for 35 mm DIN rail




## Product description

The SF|RLFZ range is based upon the RLFZ clamp assembly, which is mounted on snap feet for 35 mm DIN rails shape H.

There are 10 different carriers available, which can be user configured with up to 12 SKL shield clamps.

The EMC shield clamps as listed below are available to mount:
SKL 1.5-3 | SKL 3-6 | SKL 6-8 | SKL 8-11

## Advantages & benefits

- Designed for high density applications
- Possibility to configure custom specific EMC clamp assemblies
- Separate strain relief and EMC shield earthing
- Simple and tool-free mounting, easy assembly

## Specifications

**Material**
SKL-clamp **Spring steel, zinc plated**
RLFZ-foot **Sheet steel, galvanically zinc plated**

## Accessories

Cable ties 90 - 91

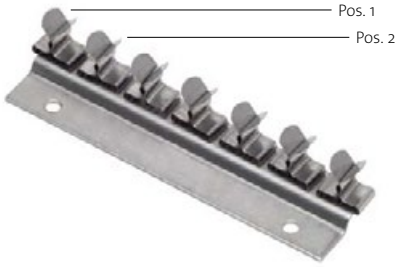
| Type | Order No. (unfitted) | Number of shield clamps | Length | Width | PU |
|---|---|---|---|---|---|
| SF\|RLFZ (x3) | 38105 | 3× SKL | 41.2 mm | 70.7 mm | 1 |
| SF\|RLFZ (x4) | 38110 | 4× SKL | 56.8 mm | 70.7 mm | 1 |
| SF\|RLFZ (x5) | 38115 | 5× SKL | 72.4 mm | 70.7 mm | 1 |
| SF\|RLFZ (x6) | 38120 | 6× SKL | 88 mm | 70.7 mm | 1 |
| SF\|RLFZ (x7) | 38125 | 7× SKL | 103.6 mm | 70.7 mm | 1 |
| SF\|RLFZ (x8) | 38130 | 8× SKL | 119.2 mm | 70.7 mm | 1 |
| SF\|RLFZ (x9) | 38135 | 9× SKL | 134.8 mm | 70.7 mm | 1 |
| SF\|RLFZ (x10) | 38140 | 10× SKL | 150.4 mm | 70.7 mm | 1 |
| SF\|RLFZ (x11) | 38145 | 11× SKL | 166 mm | 70.7 mm | 1 |
| SF\|RLFZ (x12) | 38150 | 12× SKL | 181.6 mm | 70.7 mm | 1 |

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# RLF

## EMC Clamp assembly




| Type | Order No. (unfitted) | Number of shield clamps | Length | Width | PU |
|---|---|---|---|---|---|
| RLF (x3) | 36965 | 3× SKL | 46.2 mm | 24 mm | 1 |
| RLF (x4) | 36984 | 4× SKL | 60.8 mm | 24 mm | 1 |
| RLF (x5) | 36958 | 5× SKL | 72.4 mm | 24 mm | 1 |
| RLF (x6) | 36952 | 6× SKL | 88 mm | 24 mm | 1 |
| RLF (x7) | 36963 | 7× SKL | 103.6 mm | 24 mm | 1 |
| RLF (x8) | 36953 | 8× SKL | 119.2 mm | 24 mm | 1 |
| RLF (x9) | 36985 | 9× SKL | 140.8 mm | 24 mm | 1 |
| RLF (x10) | 36954 | 10× SKL | 150.4 mm | 24 mm | 1 |
| RLF (x11) | 36955 | 11× SKL | 166 mm | 24 mm | 1 |
| RLF (x12) | 36962 | 12× SKL | 181.6 mm | 24 mm | 1 |

## Product description

Comparable with the RLFZ clamp assembly, just without strain relief.

There are 10 different carriers available which can be user configured with up to 12 SKL shield clamps.

The EMC shield clamps as listed below are available to mount:
SKL 1.5-3 | SKL 3-6 | SKL 6-8 | SKL 8-11

## Advantages & benefits

- Designed for high densityapplications
- Possibility to configure custom specific EMC clamp assemblies
- Online design tool for EMC Clamp assembly

## Specifications

**Material**

| | |
|---|---|
| SKL-clamp | **Spring steel, zinc plated** |
| RLF-foot | **Stainless steel** |

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# EMC

## Customised solutions



## Product description

In addition to our standard product offering we offer customised solutions for your application – even for small quantities!

A wide range of standard clamp assemblies are already available (see pages 116 - 118).

If a standard EMC clamp assembly is not practicable in your case, a custom designed carrier for shield clamps can be supplied.

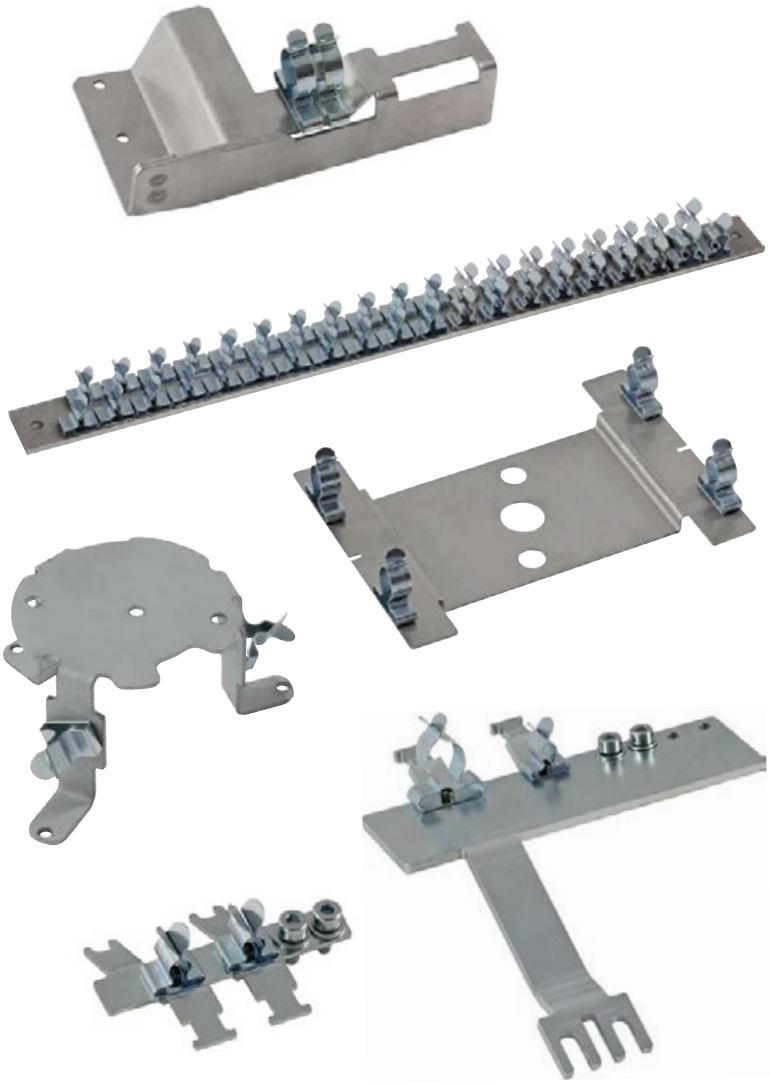
We look forward to sharing our ideas and custom EMC solutions with you.



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# EMC

## Customised solutions



## Advantages & benefits

- Supply of custom designed carriers for SKL shield clamps
- Cost-effective even for small quantities
- Available for a wide range of cable diameters

## Specifications

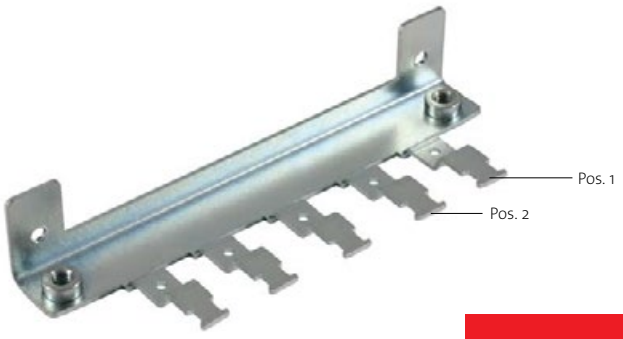
| | |
|---|---|
| **Material** | |
| Carrier | **According to specification** |
| SKL-clamp | **Spring steel, zinc-plated** |

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# KEL-EMC-Z

## Cable assembly with strain relief






| Type | Order No. | No. of teeth | Fastening | Fits with | PU |
|---|---|---|---|---|---|
| KEL-EMC-Z 16\|4 | 36525 | 4 | long side | KEL-(ER-)E4<br>KEL 16\|x<br>KEL-U 16\|x<br>KEL-ER 16\|x<br>KEL-QUICK 16 | 1 |
| KEL-EMC-Z 24\|5 | 36527 | 5 | long side | KEL-(ER-)E5<br>KEL 24\|x<br>KEL-U 24\|x<br>KEL-ER 24\|x<br>KEL-QUICK 24 | 1 |

## Product description

Cable entry, EMC shield earthing and strain relief – all in one location!

Cables pass through the KEL cable entry frame and lead directly to the EMC clamps and strain relief.

Simply insert the cable shield into the shield clamp and secure the cable jacket to the strain relief. Two separate functions (according to regulations) carried out quickly and easily!

Custom configurations are available for shield clamps up to 16 mm in diameter with minimal order quantities and lead time.

## Advantages & benefits

- Large surface contact between cable shield and housing, especially on conductive coated surfaces
- Sealing by outer cable jacket – EMC earthing by cable shield (in acc. with regulations)
- Easily combines cable routing, EMC and strain relief due to the use of the same mounting holes
- Available without SKL shield clamps if only additional strain relief is required
- Mounting hole for earthing tape or PE connection

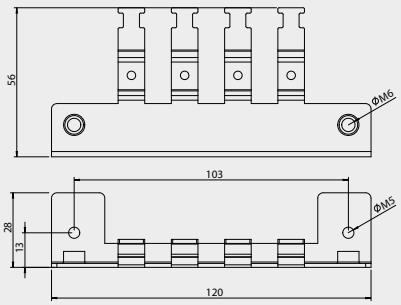
## Specifications

Material **Sheet steel, zinc plated**

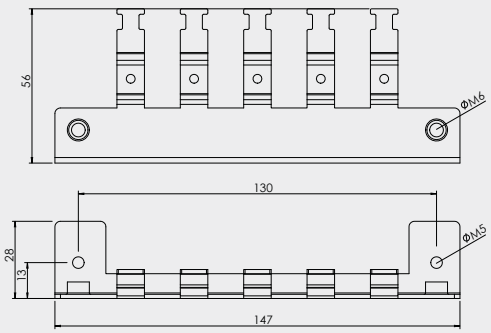
## Compatible with

| | |
|---|---|
| KEL-U Cable entry frames | 8 - 14 |
| KEL-ER Cable entry frames | 9 - 17 |
| KEL Cable entry frames | 16 - 27 |
| KEL-QUICK Cable entry frames | 50 - 51 |

**KEL-EMC-Z 16|4**




**KEL-EMC-Z 24|5**



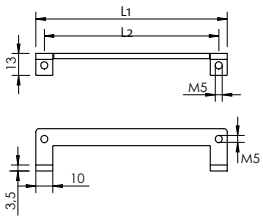
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NEW KEL-EMC-PFM










# KEL-EMC-PF

## Cable assembly, bracket version

NEW KEL-EMC-PF 1



| Type | Fits with | Order No. | Length L1 | Length L2 | PU |
|---|---|---|---|---|---|
| KEL-EMC-PF B4 | KEL-(ER-)E2<br>KEL-QUICK-E2<br>KEL-(U-)B<br>KEL-QUICK-B<br>KEL-ER-B | 39150 | 68 mm | 58 mm | 1 |
| KEL-EMC-PF 10 | KEL-(ER-)E3<br>KEL-QUICK-E3<br>KEL(-U) 10\|x<br>KEL-QUICK 10\|x<br>KEL-ER 10\|x | 39160 | 93 mm | 83 mm | 1 |
| KEL-EMC-PF 16 | KEL-(ER-)E4<br>KEL-QUICK-E4<br>KEL(-U) 16\|x<br>KEL-QUICK 16\|x<br>KEL-ER 16\|x | 39170 | 113 mm | 103 mm | 1 |
| KEL-EMC-PF 24 | KEL-(ER-)E5<br>KEL-QUICK-E5<br>KEL(-U) 24\|x<br>KEL-QUICK 24\|x<br>KEL-ER 24\|x<br>KEL-DPZ 24\|x<br>KEL-DPZ-E | 39180 | 140 mm | 130 mm | 1 |
| NEW<br>KEL-EMC-PF 183 | KEL 183<br>KEL 183-E | 39190 | 200 mm | 95 / 190 mm | 1 |
| NEW<br>KEL-EMC-PFM 10 | KEL(-U) 10\|x<br>KEL-QUICK 10\|x<br>KEL-ER 10\|x | 39184 | 93 mm | 83 mm | 1 |
| NEW<br>KEL-EMC-PFM 16 | KEL(-U) 16\|x<br>KEL-QUICK 16\|x<br>KEL-ER 16\|x | 39183 | 113 mm | 103 mm | 1 |
| NEW<br>KEL-EMC-PFM 24 | KEL(-U) 24\|x<br>KEL-QUICK 24\|x<br>KEL-ER 24\|x<br>KEL-DPZ 24\|x | 39181 | 140 mm | 130 mm | 1 |

## Product description

The EMC bracket combined with the matching PFS|SKL EMC shield clamp is perfect in conjunction with the KEL cable entry frame for alleviating interferences due to shields.

The EMC clamp is assembled inside the control panel. For this process the fixing screws for the assembly of the KEL frame on the panel are used. A female screw thread M5 is already integrated in the KEL-EMC-PF bracket.

Depending on the cable diameter, the corresponding PFS|SKL EMC shield clamp can be snapped onto the EMC bracket.

## Advantages & benefits

- Supports a wide range of cable and wire sizes
- Large surface contact of the cable shield
- Permanent spring pressure on the cable shield
- Fast and easy assembly

## Specifications

Material **Sheet steel, galvanically zinc plated**

## Compatible with

| | |
|---|---|
| KEL-U Cable entry frames | 8 - 14 |
| KEL-ER Cable entry frames | 9 - 17 |
| KEL Cable entry frames | 16 - 27 |
| KEL 183 Cable entry frames | 34 |
| KEL-QUICK Cable entry frames | 50 - 51 |
| KEL-BES Brush frames | 58 |
| KEL-DPU Cable entry plates | 64 - 65 |
| KEL-DPZ Cable entry plates | 66 - 70 |
| PFSZ\|SKL / PFSZ-M\|MSKL Shield clamps | 102 |
| PFS\|SKL Shield clamps | 103 |

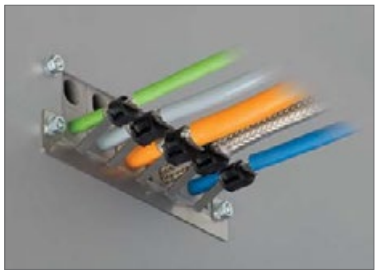
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# KEL-EMC

## Cable assembly







## Product description

Installation of pre-terminated cables without shield interruption.

## Advantages & benefits

- Direct, easy and quick contact to the enclosure
- Space saving, usable for up to 10 cables with the two row model
- Replacement for EMC cable glands, even for pre-terminated cables
- Low resistance shield contact

## Specifications

Material **Stainless steel**

## Compatible with

| | |
|---|---|
| KEL-U Cable entry frames | 8 - 14 |
| KEL-ER Cable entry frames | 9 - 17 |
| KEL Cable entry frames | 16 - 27 |
| KEL-QUICK Cable entry frames | 50 - 51 |
| KEL-BES Brush frames | 58 |

| Type | Order No. | No. of teeth | Fastening | Fits with | PU |
|---|---|---|---|---|---|
| KEL-EMC-B | 36520 | 2 | long side | KEL-E2<br>KEL(-U)-B\|x<br>KEL-ER-B\|x<br>KEL-QUICK-B2 \| B4 | 5 |
| KEL-EMC 10 | 36522 | 3 | long side | KEL-E3<br>KEL(-U) 10\|x<br>KEL-ER 10\|x | 5 |
| KEL-EMC 16\|4 | 36524 | 4 | long side | KEL-E4<br>KEL(-U) 16\|x<br>KEL-ER 16\|x<br>KEL-QUICK 16 | 5 |
| KEL-EMC 24\|5 | 36526 | 5 | long side | KEL-E5<br>KEL(-U) 24\|x<br>KEL-ER 24\|x<br>KEL-QUICK 24 | 5 |
| KEL-EMC F | 39110 | 3 | narrow side | KEL(-U)-B\|x<br>KEL-ER-B\|x<br>KEL(-U) 10\|x<br>KEL-ER 10\|x<br>KEL(-U) 16\|x<br>KEL-ER 16\|x<br>KEL(-U) 24\|x<br>KEL-ER 24\|x | 5 |

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# KVT-EMC

## EMC bracket for cable glands







| Type | Order No. | Shield diameter | PU |
|---|---|---|---|
| KVT-EMC-25\|SKL 1.5-3 | 37180.1 | 1.5 - 3 mm | 5 |
| KVT-EMC-25\|SKL 3-6 | 37180.2 | 3 - 6 mm | 5 |
| KVT-EMC-25\|SKL 6-8 | 37180.3 | 6 - 8 mm | 5 |
| KVT-EMC-25\|SKL 8-11 | 37180.4 | 8 - 11 mm | 5 |
| KVT-EMC-32\|SKL 1.5-3 | 37181.1 | 1.5 - 3 mm | 5 |
| KVT-EMC-32\|SKL 3-6 | 37181.2 | 3 - 6 mm | 5 |
| KVT-EMC-32\|SKL 6-8 | 37181.3 | 6 - 8 mm | 5 |
| KVT-EMC-32\|SKL 8-11 | 37181.4 | 8 - 11 mm | 5 |

## Product description

The KVT-EMC brackets in combination with the split cable glands KVT and QVT combine routing, EMC shield earthing and strain relief. The connection to the earth potential is possible via the enclosure wall or an earthing tape.

Cables pass through the split cable glands and lead directly into the EMC clamps.

Separate functions (according to regulations) carried out quickly and easily!

## Advantages & benefits

- Simple and tool free assembly
- Large contact area
- Subsequent assembly possible
- Additional M5 hole for earthing tape

## Specifications

Material **Sheet steel, zinc plated**

## Compatible with

KVT Split cable glands 38 - 42
QVT Split cable glands 52

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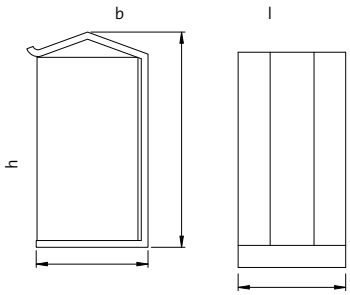
# SK

## EMC Shield brackets





Dimensions SK bracket (without mounting foot):




## Product description

SK shield brackets can be used where the shield of single cables has to be earthed.

SK shield brackets can be assembled on a mounting plate with screws, with SC-feet in DIN-rails shape C or with SF-feet on 35 mm DIN-rails shape H.

## Advantages & benefits

- Simple assembly on TS35 DIN rails and 10 × 3 mm bus bars
- Various sizes and possibilities for mounting



SC foot single for C-rail (PU: 10) **Order No. 36220**

## Specifications

**Material**

SK-bracket **Sheet steel, galvanically zinc plated**
SF-foot **Spring steel**

## Accessories

Bus bar 10 × 3 131

| Description | Type | Order No. | Shield diameter | Dimensions l × b × h [mm] | PU |
|---|---|---|---|---|---|
| | **For direct mounting (M4-screw included):** | | | | |
|  | SK 3-8 | 36222 | 3 - 8 mm | 18 × 14 × 26 | 10 |
| | SK 4-13.5 | 36224 | 4 - 13.5 mm | 20 × 20 × 31 | 10 |
| | SK 10-20 | 36226 | 10 - 20 mm | 26 × 24 × 40 | 10 |
| | SK 15-32 | 36228 | 15 - 32 mm | 32 × 35 × 64 | 10 |
| | **For 35 mm DIN-rail shape H:** | | | | |
|  | SF\|SK 3-8 | 36500 | 3 - 8 mm | 18 × 14 × 26 | 10 |
| | SF\|SK 4-13.5 | 36502 | 4 - 13.5 mm | 20 × 20 × 31 | 10 |
| | SF\|SK 10-20 | 36504 | 10 - 20 mm | 26 × 24 × 40 | 10 |
| | SF\|SK 15-32 | 36506 | 15 - 32 mm | 32 × 35 × 64 | 10 |
| | **For 10 × 3 mm bus bar:** | | | | |
|  | SS\|SK 3-8 | 36235 | 3 - 8 mm | 18 × 14 × 26 | 10 |
| | SS\|SK 4-13.5 | 36236 | 4 - 13.5 mm | 20 × 20 × 31 | 10 |
| | SS\|SK 10-20 | 36237 | 10 - 20 mm | 26 × 24 × 40 | 10 |
| | SS\|SK 15-32 | 36238 | 15 - 32 mm | 32 × 36 × 64 | 10 |
| | **For DIN-rail shape C (width of mouth: 16 mm):** | | | | |
|  | SC\|SK 3-8 | 36696 | 3 - 8 mm | 18 × 14 × 26 | 10 |
| | SC\|SK 4-13.5 | 36700 | 4 - 13.5 mm | 20 × 20 × 31 | 10 |
| | SC\|SK 10-20 | 36704 | 10 - 20 mm | 26 × 24 × 40 | 10 |
| | SC\|SK 15-32 | 36708 | 15 - 32 mm | 32 × 36 × 64 | 10 |

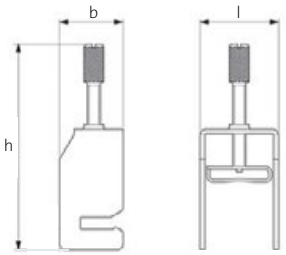
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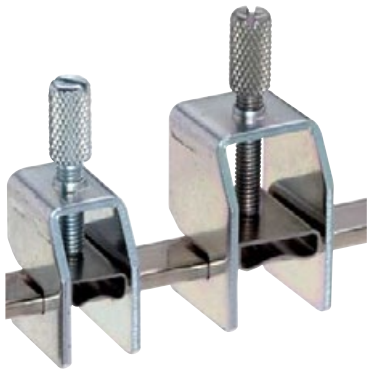
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# SKS

## EMC Shield brackets





| Type | Order No. | Shield diameter | Dimensions l × b × h [mm] | PU | Description |
|---|---|---|---|---|---|
| SKS 2-5 | 36282 | 2 - 5 mm | 9 × 19.5 × 47 | 10 | |
| SKS 3-8 | 36283 | 3 - 8 mm | 12 × 19.5 × 49 | 10 | |
| SKS 3-14 | 36284 | 3 - 14 mm | 17.5 × 19.5 × 60 | 10 | |
| SKS 3-20 | 36285 | 3 - 20 mm | 24.5 × 19.5 × 75 | 10 | |
| SKS 5-28 | 36286 | 5 - 28 mm | 31 × 20 × 93 | 10 | |
| SKS 20-35 | 36287 | 20 - 35 mm | 41 × 20 × 107 | 10 | |
| Bus bar 10 × 3 mm | 36100 | | 1000 × 10 × 3* | 1 | |

* Other lengths available on request

## Product description

SKS shield brackets can be used where the shield of single cables has to be earthed.

SKS shield brackets can be assembled on 10 × 3 mm bus bars.

## Advantages & benefits

- One SKS shield bracket supports a wide range of cables
- Simple assembly on 10 × 3 mm bus bars

## Specifications

| | |
|---|---|
| **Material** | **Sheet steel, galvanically** |
| SKS-bracket | **zinc plated** |

## Accessories

MF Supports for bus bars 169

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# KAFM-EMC

## EMC Strain relief plates





Type SF: Mounted on snap foot for DIN-rail shape H



Type SC: Mounted on screw-foot for DIN-rail shape C



Type SK: Mounted on screw-foot for DIN-rail shape H

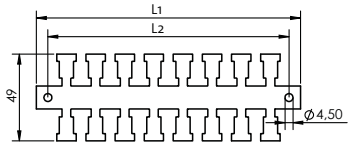


Type DH: Mounted on bushing for flexible fixation on bottom sheet

## Product description

The EMC strain relief plate KAFM is practical for earthing interferences on the cable shield.

The cable assembly can be assembled on a mounting plate with screws, with SC-feet on DIN-rails shape C or with SF-feet on 35 mm DIN-rails shape H.




## Specifications

Material **Stainless steel**

## Accessories

Cable ties 90 - 91

| Type | Order No. Type SF | Order No. Type SK | Order No. Type SC | Order No. Type DH | Order No. loose rail | Length L1 | Length L2 | No. of teeth |
|---|---|---|---|---|---|---|---|---|
| KAFM 2 | 36442 | 36432 | 36412 | 36482 | 36422 | 50.5 | 37.5 | 2 |
| KAFM 4 | 36444 | 36434 | 36414 | 36484 | 36424 | 83.5 | 70.5 | 4 |
| KAFM 6 | 36446 | 36436 | 36416 | 36486 | 36426 | 116.5 | 103.5 | 6 |
| KAFM 8 | 36448 | 36438 | 36418 | 36488 | 36428 | 149.5 | 136.5 | 8 |
| KAFM 10 | 36450 | 36440 | 36400 | 36490 | 36430 | 182.5 | 169.5 | 10 |
| KAFM 16 | 36452 | 36470 | 36465 | 36460 | 36530 | 281.5 | 268.5 | 16 |
| KAFM 29 | 36454 | 36471 | 36466 | 36462 | 36540 | 494.5 | 481.5 | 29 |
| KAFM 59 | 36458 | 36472 | 36467 | 36464 | 36550 | 990 | 978 | 59 |
| KAFM 59 zinc plated | 36459 | - | - | - | 36562 | 990 | 978 | 59 |

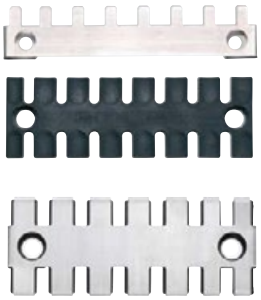
| | | |
|---|---|---|
| SF | 36230 | Snap foot loose, for 35 mm DIN-rail shape H |
| SK | 36232 | Screw-foot loose, for 35 mm DIN-rail shape H |
| SC | 36231 | Screw-foot loose, for 30 mm DIN-rail shape C (width of mouth: 16 mm) |
| Bushing | 36234 | Distance bushing 8 mm high |
| Screw | 99017 | M4 × 16 DIN 912 |

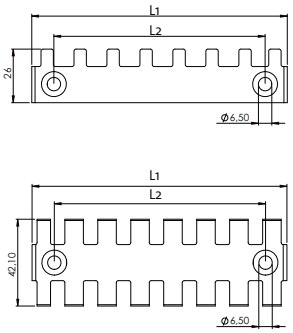
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# ZL|SB-EMC

## Shield plate for ZL strain relief plates








| Type | Model | Order No. | Fits with | Length L1 | Length L2 | PU |
|---|---|---|---|---|---|---|
| ZL 39\|SB-EMC-1 | single-row | 36322 | ZL 39 | 42 mm | 19.5 mm | 10 |
| ZL 39\|SB-EMC-2 | double-row | 37150 | ZL 39 | 42 mm | 19.5 mm | 10 |
| ZL 60\|SB-EMC-1 | single-row | 36328 | ZL 60 | 64 mm | 43.5 mm | 10 |
| ZL 60\|SB-EMC-2 | double-row | 37152 | ZL 60 | 64 mm | 43.5 mm | 10 |
| ZL 87\|SB-EMC-1 | single-row | 36324 | ZL 87 | 90 mm | 68 mm | 10 |
| ZL 87\|SB-EMC-2 | double-row | 37154 | ZL 87 | 90 mm | 68 mm | 10 |
| ZL 103\|SB-EMC-1 | single-row | 36332 | ZL 103 | 106 mm | 84 mm | 10 |
| ZL 103\|SB-EMC-2 | double-row | 37156 | ZL 103 | 106 mm | 84 mm | 10 |
| ZL 121\|SB-EMC-1 | single-row | 36330 | ZL 121 | 124 mm | 102.5 mm | 10 |
| ZL 121\|SB-EMC-2 | double-row | 37158 | ZL 121 | 124 mm | 102.5 mm | 10 |
| ZL 140\|SB-EMC-1 | single-row | 36326 | ZL 140 | 142 mm | 121 mm | 10 |
| ZL 140\|SB-EMC-2 | double-row | 37159 | ZL 140 | 142 mm | 121 mm | 10 |

## Product description

The shield plates ZL|SB-EMC provide shield earthing in addition to strain relief.

Affix the corresponding shield plates to ZL strain relief plates. The shield plate contacts the cable shield with the earth potential.

The result is a secure low resistance connection between cable shield and earth.

ZL strain relief plates offered separately.

## Specifications

Material
Shield plate **Stainless steel**

## Compatible with

SF|ZL Strain relief plates 88
ZL Strain relief plates 86
ZL-AB Strain relief plates 85

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# MB

## Earthing tapes



## Product description

Manufactured with highly flexible E-Cu stranded wires with connecting end pads made of tinned copper strips.

The minimum transition and connecting resistance makes them perfectly suitable for use as earthing tapes.

Earthing Tapes are available with M6 or M8 connections and in some sizes with both connection sizes combined.

| Type | Order No. | Length L [mm] | Cross-section mm² | Hole size | PU |
|---|---|---|---|---|---|
| MB 100\|6\|M6 | 32700 | 100 | 6 | M6 | 1 |
| MB 150\|6\|M6 | 32701 | 150 | 6 | M6 | 1 |
| MB 200\|6\|M6 | 32702 | 200 | 6 | M6 | 1 |
| MB 250\|6\|M6 | 32706 | 250 | 6 | M6 | 1 |
| MB 300\|6\|M6 | 32703 | 300 | 6 | M6 | 1 |
| MB 400\|6\|M6 | 32704 | 400 | 6 | M6 | 1 |
| MB 500\|6\|M6 | 32705 | 500 | 6 | M6 | 1 |
| MB 100\|10\|M6 | 32730 | 100 | 10 | M6 | 1 |
| MB 100\|10\|M8 | 32731 | 100 | 10 | M8 | 1 |
| MB 150\|10\|M8 | 32732 | 150 | 10 | M8 | 1 |
| MB 200\|10\|M6 | 32733 | 200 | 10 | M6 | 1 |
| MB 200\|10\|M8 | 32734 | 200 | 10 | M8 | 1 |
| MB 200\|10\|M6+M8 | 32741 | 200 | 10 | M6 + M8 | 1 |
| MB 250\|10\|M6+M8 | 32742 | 250 | 10 | M6 + M8 | 1 |
| MB 300\|10\|M6 | 32735 | 300 | 10 | M6 | 1 |
| MB 300\|10\|M8 | 32736 | 300 | 10 | M8 | 1 |
| MB 300\|10\|M6+M8 | 32743 | 300 | 10 | M6 + M8 | 1 |
| MB 400\|10\|M6 | 32737 | 400 | 10 | M6 | 1 |
| MB 400\|10\|M8 | 32738 | 400 | 10 | M8 | 1 |
| MB 500\|10\|M6 | 32739 | 500 | 10 | M6 | 1 |
| MB 100\|16\|M6 | 32760 | 100 | 16 | M6 | 1 |
| MB 100\|16\|M8 | 32761 | 100 | 16 | M8 | 1 |
| MB 150\|16\|M6 | 32762 | 150 | 16 | M6 | 1 |
| MB 150\|16\|M8 | 32763 | 150 | 16 | M8 | 1 |
| MB 200\|16\|M6 | 32764 | 200 | 16 | M6 | 1 |
| MB 200\|16\|M8 | 32765 | 200 | 16 | M8 | 1 |

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# MB
## Earthing tapes



Connecting end pads (copper)




| Type | Order No. | Length L [mm] | Cross-section mm² | Hole size | PU |
|---|---|---|---|---|---|
| MB 200\|16\|M6+M8 | 32773 | 200 | 16 | M6 + M8 | 1 |
| MB 250\|16\|M8 | 32766 | 250 | 16 | M8 | 1 |
| MB 250\|16\|M6+M8 | 32774 | 250 | 16 | M6 + M8 | 1 |
| MB 300\|16\|M6 | 32767 | 300 | 16 | M6 | 1 |
| MB 300\|16\|M8 | 32768 | 300 | 16 | M8 | 1 |
| MB 300\|16\|M6+M8 | 32775 | 300 | 16 | M6 + M8 | 1 |
| MB 350\|16\|M8 | 32769 | 350 | 16 | M8 | 1 |
| MB 400\|16\|M8 | 32770 | 400 | 16 | M8 | 1 |
| MB 500\|16\|M8 | 32771 | 500 | 16 | M8 | 1 |
| MB 600\|16\|M8 | 32772 | 600 | 16 | M8 | 1 |
| MB 100\|25\|M10 | 32800 | 100 | 25 | M10 | 1 |
| MB 150\|25\|M10 | 32801 | 150 | 25 | M10 | 1 |
| MB 200\|25\|M8 | 32802 | 200 | 25 | M8 | 1 |
| MB 200\|25\|M10 | 32803 | 200 | 25 | M10 | 1 |
| MB 250\|25\|M8 | 32804 | 250 | 25 | M8 | 1 |
| MB 250\|25\|M10 | 32805 | 250 | 25 | M10 | 1 |
| MB 300\|25\|M8 | 32806 | 300 | 25 | M8 | 1 |
| MB 300\|25\|M10 | 32807 | 300 | 25 | M10 | 1 |
| MB 350\|25\|M10 | 32808 | 350 | 25 | M10 | 1 |
| MB 400\|25\|M8 | 32809 | 400 | 25 | M8 | 1 |
| MB 500\|25\|M8 | 32810 | 500 | 25 | M8 | 1 |
| MB 600\|25\|M8 | 32811 | 600 | 25 | M8 | 1 |

## Advantages & benefits

- Available in a variety of lengths and cross-sections
- Cost-effective in comparison to PE conductors
- Low impedances

## Specifications

Material **Cu-ETP with connecting end pads**
**Pads made of tinned copper strips**

## Current load

| Cross-section: | Current load: |
|---|---|
| 6 mm² | 40-50 A |
| 10 mm² | 75-105 A |
| 16 mm² | 100-150 A |
| 25 mm² | 145-195 A |
| 35 mm² | 170-235 A |

