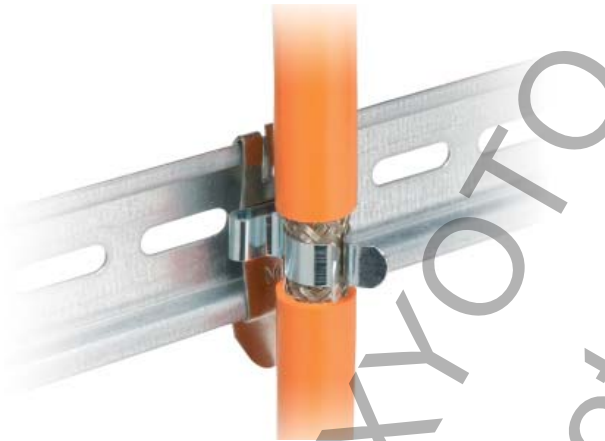# Product group 4

EMC Innovations

At a glance ...

For process measurement and control equipment an increasingly higher level of protection against failure is required.

The shielding and the earthing of the shields is very important.

The area where the cable shield is connected to the enclosure earth/ ground is a critical point. It is very important that the connection has a low resistance.

Benefits ...

1. Flexible
Because of the many different types of DIN rails and screw type assemblies, Icotek offers numerous mounting options.

2. Fast and tool free assembly
Strip the cable shield - press in - ready.

3. Secure hold
Properly sized and used in conjunction with cable ties, provides strain relief in accordance with VDE.
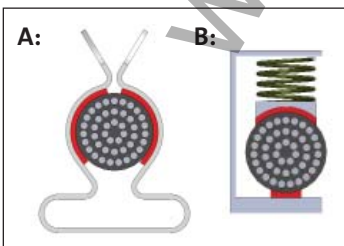
4. Large contact area
The SKL shield clamps offer a large contact area to the cable shield (see picture A). In comparison to conventional shield clamps we can achieve a up to 50% higher contact area when using the SKL line. The specified clamping range can be exceeded up to 10%.

5. Greatly reduces high frequency interferences
In large 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.

Details can be supplied on request.

A: B:

4

Product group 4

EMC Innovations

Chapter content

4

SFZ | SKL
EMC Shield clamps

Product description

The shield clamps SFZ/SKL range are used for shielding single cables in combination with strain relief. Simple to use and effective shielding of cables.

Cables are secured with a cable tie. Strain relief in accordance with VDE standards is achieved.

For assembly on 35 mm DIN rails.

Advantages

- Simple and tool-free assembly
- Vibration-proof, maintenance free
- Strain relief of the cable with shielding in a single device
- Optimal contact of the cable shielding
- Permanent and continous spring pressure on the cable shield, adjustment of spring load not necessary

Specification

Material
SKL 1.5-3 / SKL 3-6   **Stainless steel zinc-plated**
from SKL 6-8   **Spring steel zinc-plated**
SF- / SFZ-foot   **Spring steel**

Accessories

Type	Order No.	Shield diameter	PU
SFZ	SKL 1.5 - 3	36850	1.5 - 3.0 mm	10
SFZ	SKL 3 - 6	36855	3.0 - 6.0 mm	10
SFZ	SKL 6 - 8	36860	6.0 - 8.0 mm	10
SFZ	SKL 9 - 11	36865	9.0 - 11 mm	10
SFZ	SKL 12 - 16	36870	12 - 16 mm	10
SFZ	SKL 17 - 22	36875	17 - 22 mm	10
SFZ	SKL 23 - 29	36880	23 - 29 mm	10

Type	Order No.	Shield diameter	PU
SF	SKL 1.5 - 3	36243	1.5 - 3.0 mm	10
SF	SKL 3 - 6	36244	3.0 - 6.0 mm	10
SF	SKL 6 - 8	36245	6.0 - 8.0 mm	10
SF	SKL 9 - 11	36246	9.0 - 11 mm	10
SF	SKL 12 - 16	36247	12 - 16 mm	10
SF	SKL 17 - 22	36248	17 - 22 mm	10
SF	SKL 23 - 29	36249	23 - 29 mm	10
SF single	36230	SNAP-foot single	10

Product description

The shield clamps SKL range are used for shielding single cables.

Simple to use and effective shielding of cables.

For assembly on 35 mm DIN rails.

Advantages

- Optimal contact of the cable shield
- Simple and tool-free assembly
- Permanent and continous spring pressure on the cable shield - adjustment of the pressure is not necessary
- Space saving by an optimized arrangement
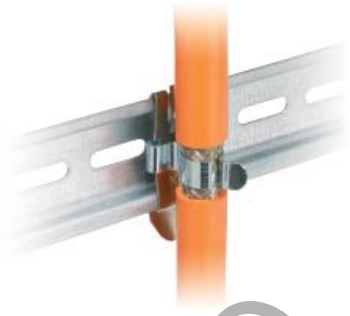- Vibration-proof, maintenance free

Specification

Material
SKL 1.5-3 / SKL 3-6   **Stainless steel zinc-plated**
from SKL 6-8   **Spring steel zinc-plated**
SF-foot   **Spring steel**

Accessories

4

SFS | SKL
EMC Shield clamps

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 provides optimal space utilization. Suitable for applications when there is a need for mounting cables in close proximity.

Advantages

- High packing density
- Simple and tool-free assembly
- Permanent and continous pressure on the cable shield - adjustment of the spring pressure is not necessary
- Optimal contact of the cable shielding
- Vibration-proof, maintenance free

Specification

Material

SKL 1.5-3 / SKL 3-6	**Stainless steel zinc-plated**
from SKL 6-8	**Spring steel zinc-plated**
SFS-foot	**Spring steel**

Accessories

Type	Order No.	Shield diameter	PU
SFS | SKL 1.5 - 3	36810	1.5 - 3.0 mm	10
SFS | SKL 3 - 6	36815	3.0 - 6.0 mm	10
SFS | SKL 6 - 8	36820	6.0 - 8.0 mm	10
SFS single	36229	SNAP-foot single	10

4

EMC | Service box for SKL - EMC shield clamps

Product description

Always the suitable EMC clamp readily available.

The service box 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:
Typ SF | SKL - sizes: 1.5 - 29 mm		**7 x SKL**
Typ SFZ | SKL - sizes: 1.5 - 11 mm		**11 x SKL**
Typ SFS | SKL - sizes: 1.5 - 8 mm		**6 x SKL**

SKL for assembly on subplates:
Typ LF | SKL - sizes: 1.5 - 29 mm		**11 x SKL**
Typ LFZ | SKL - sizes: 1.5 - 29 mm		**15 x SKL**

SKL for 10 x 3 busbar:
Typ PF | SKL - sizes: 1.5 - 29 mm		**12 x SKL**
Typ PFZ | SKL - sizes: 1.5 - 11 mm		**4 x SKL**

EMC - Accessories:
RLFZ - clamp assembly 5x SKL		**1 piece**
KAFM 4 - Cable collector		**1 piece**
ZL 60 | SB - Shield plate for strain relief plates		**1 piece**

4

LFZ | SKL
EMC Shield clamps

Product description

SKL shield clamps can be used for shielding single cables. The shield clamps enable an easy to use and reliable shielding of cables.

Cables are secured with a cable tie. Strain relief in accordance with VDE standards is achieved.

Shield clamps are easily attached to mounting plates via screw.

Advantages

- Integrated strain relief
- Optimal contact of the cable shielding
- Simple and tool-free assembly
- Permanent and continous pressure on the cable shield - no adjustment of the spring load required
- Vibration-proof, maintenance free

Specification

Material

SKL 1.5-3 / SKL 3-6	**Stainless steel zinc-plated**
from SKL 6-8	**Spring steel zinc-plated**
LFZ-foot	**Steel, galvanically zinc-plated**
	Fixing hole 4.1 mm for screw M4

Accessories

Cable ties	Page 67
EMC - Servicebox	Page 73
Stripping tool	Page 97

Type	Order No.	Shield diameter	Fixing hole	PU
LFZ	SKL 1.5 - 3	36910	1.5 - 3.0 mm	4.1 mm	10
LFZ	SKL 3 - 6	36915	3.0 - 6.0 mm	4.1 mm	10
LFZ	SKL 6 - 8	36920	6.0 - 8.0 mm	4.1 mm	10
LFZ	SKL 9 - 11	36925	9.0 - 11 mm	4.1 mm	10
LFZ	SKL 12 - 16	36930	12 - 16 mm	4.1 mm	10
LFZ	SKL 17 - 22	36935	17 - 22 mm	4.1 mm	10
LFZ	SKL 23 - 29	36940	23 - 29 mm	4.1 mm	10

4
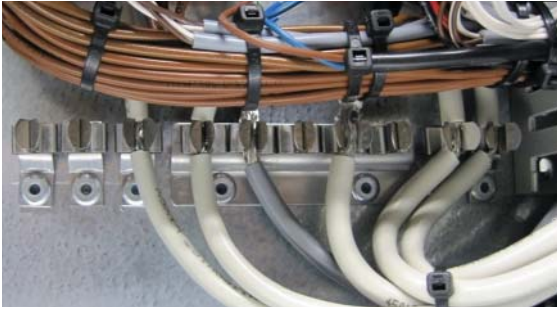
Type	Order No.	Shield diameter	Fixing hole	PU
LF	SKL 1.5 - 3	36251	1.5 - 3.0 mm	4.1 mm	10
LF	SKL 3 - 6	36253	3.0 - 6.0 mm	4.1 mm	10
LF	SKL 6 - 8	36255	6.0 - 8.0 mm	4.1 mm	10
LF	SKL 9 - 11	36256	9.0 - 11 mm	4.1 mm	10
LF	SKL 12 - 16	36257	12 - 16 mm	4.1 mm	10
LF	SKL 17 - 22	36258	17 - 22 mm	4.1 mm	10
LF	SKL 23 - 29	36259	23 - 29 mm	4.1 mm	10

Product description

SKL shield clamps can be used for shielding single cables . The shield clamps enable an easy to use and a reliable shielding of cables.

Shield clamps are easily attached to mounting plates via screw.

Advantages

- Optimal contact of the cable shielding
- Simple and tool-free assembly
- Permanent and continous spring load on the cable shield - no adjustment of the spring load required
- Vibration-proof, maintenance free
- High packing density because of an optimized arrangement

Specification

Material

SKL 1.5-3 / SKL 3-6	Stainless steel zinc-plated
from SKL 6-8LF-	Spring steel zinc-plated
foot	Steel, galvanically zinc-plated
	Fixing hole 4.1 mm for screw M4

Accessories

EMC - Servicebox   Page 73
Stripping tool   Page 97

PFZ | SKL
EMC Shield clamps

Product description

Comparable with the PF|SKL range, the shield clamps can be used for shielding single cables. They are used for mounting on 10x3 mm bus bars.
The PFZ range provides possibility to fix the cable with a cable tie. Strain relief in accordance with VDE standards is achieved.

Advantages

- Integrated strain relief
- Optimal contact of the cable shield
- Simple and tool-free assembly
- Permanent, continous pressure on the cable shield, adjustment of the spring load not necessary
- Vibration-proof, maintenance free

Specification

Material

SKL 1.5-3 / SKL 3-6	**Stainless steel zinc-plated**
from SKL 6-8	**Spring steel zinc-plated**
PFZ-foot	**Spring steel**
Busbar	**Cu, tin-plated**
	Current load 140 A

Accessories

Type	Order No.	Shield diameter	PU
PFZ | SKL 1.5 - 3	36750	1.5 - 3.0 mm	10
PFZ | SKL 3 - 6	36755	3.0 - 6.0 mm	10
PFZ | SKL 6 - 8	36760	6.0 - 8.0 mm	10
PFZ | SKL 9 - 11	36765	9.0 - 11 mm	10
Busbar 10 x 3 mm	36100	10 x 3 x 1,000 mm	1

EMC Shield clamps for bus bar
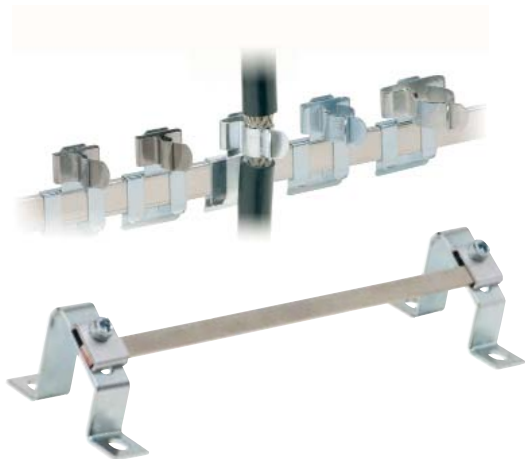
Type	Order No.	Shield diameter	PU
PF | SKL 1.5 - 3	36273	1.5 - 3.0 mm	10
PF | SKL 3 - 6	36274	3.0 - 6.0 mm	10
PF | SKL 6 - 8	36275	6.0 - 8.0 mm	10
PF | SKL 9 - 11	36276	9.0 - 11 mm	10
PF | SKL 12 - 16	36277	12 - 16 mm	10
PF | SKL 17 - 22	36278	17 - 22 mm	10
PF | SKL 23 - 29	36279	23 - 29 mm	10
Busbar 10 x 3 mm	36100	10 x 3 x 1,000 mm	1

Product description

SKL shield clamps can be used for shielding single cables. The shield clamps enable an easy to use and a reliable shielding of cables.

The PF/SKL is mounted by SNAPping on a 10x3 mm bus bar.

Advantages

- Optimal contact of the cable shielding
- Simple and tool-free assembly
- Permanent and continous spring load on the cable shield - no adjustment of the spring load required
- Vibration-proof, maintenance free
- High packing density because of an optimized arrangement

Specification

Material

SKL 1.5-3 / SKL 3-6	**Stainless steel zinc-plated**
from SKL 6-8	**Spring steel zinc-plated**
PF-foot	**Spring steel**
Busbar	**Cu, tin-plated**
	Current load 140 A

Accessories

4

PFS | SCL
EMC Shield clamps

Product description

The new range of shield clamps PFS|SCL are designed for a quick and easy mounting by snapping onto 10x3 mm busbars. The very slim shape is ideal for applications with limited space.

Advantages

- Extremely slim shape
- Optimal contact of the cable shielding
- Simple and tool-free assembly
- Permanent and continous spring load on the cable shield - no adjustment of the spring load required
- Cost effective solution

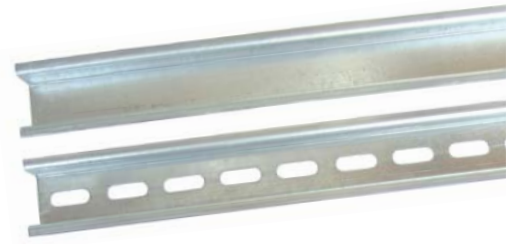## Specification

Material   Spring steel, zinc-plated

Accessories

Type	Order No.	Shield diameter	PU
PFS | SCL 1.5 - 3	36611	1.5 - 3.0 mm	10
PFS | SCL 3 - 6	36612	3.0 - 6.0 mm	10

4

Type	Perforation	Order No.	Size in mm	Description	PU
DIN rail 35 x 7.5 mm	non perforated	36103	35 x 7.5 x 2.000*		40 m
DIN rail 35 x 7.5 mm	18 x 5.2 mm	36101	35 x 7.5 x 2.000*		40 m
DIN rail 35 x 7.5 mm	25 x 5.2 mm	36107	35 x 7.5 x 2.000*		40 m
DIN rail 35 x 7.5 mm	18 x 6.3 mm	36102	35 x 7.5 x 2.000*		40 m
DIN rail 35 x 15 mm	non perforated	36105	35 x 15 x 2.000*		20 m
DIN rail 35 x 15 mm	18 x 5.2 mm	36106	35 x 15 x 2.000*		20 m
DIN rail 35 x 15 mm	25 x 5.2 mm	36108	35 x 15 x 2.000*		20 m
DIN rail 35 x 15 mm	18 x 6.3 mm	36104	35 x 15 x 2.000*		20 m
Busbar 10 x 3 mm	-	36100	10 x 3 x 1.000*		1 m

Product description

DIN-rail shape H, zinc-plated perforated or non perforated fits icotek EMC shield clamps SF | SKL, SFS | SKL und SFZ | SKL.
Busbar 10x3 mm, copper tin-plated, fits icotek EMC shield clamps PF | SKL and PFZ | SKL.
For mounting DIN-rails and busbars various supports are available, see page 80.

* Other length available on request

Specification

Material
DIN rail   **Sheet metal, sendzimir plated**
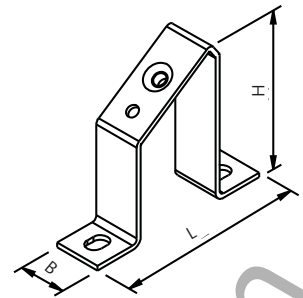Bus bar   **Cu, tin-plated**
                 Current load 140 A

Accessories

KZL Strain relief plates   Page 60
EMC Shield clamps   Page 70 pp
MF Supports for DIN rails   Page 80
and bus bars

MF

Supports for DIN rails and busbars

Product description

There are 4 models of supports for mounting bus bars 10 x 3 mm or 35 mm DIN rail. Various supports are available to provide solutions for many different conditions.

Mounting clip (Order-No. 35150) is used for fastening busbars to supports.
The support has a M6 female screw thread to fix the mouning clip or the DIN rail with a M6 screw.

Advantages

- Wide variety of supports with different sizes and design
- Simple assembly of TS-35 DIN rails and 10 x 3 mm bus bars
- Support type D provides possibility to fix 2 TS335 DIN rails

Specification

Material **Steel, galvanically zinc-plated**

Accessories

Bus bar Page 79
Mounting clip Order No. 36150

| Description		Type	Version	Order No. without Clip	Order No. with Clip	Dimension [L x B x H]	PU
Type A		MF - A49	Type A	36056	36058	80 x 20 x 49 mm	10
		MF - A68	Type A	36064	36066	80 x 20 x 68 mm	10
		MF - A88	Type A	36072	36074	80 x 20 x 88 mm	10
Type B		MF - B20	Type B	36000	36002	80 x 20 x 20 mm	10
		MF - B30	Type B	36008	36010	80 x 20 x 30 mm	10
		MF - B50	Type B	36016	36018	80 x 20 x 50 mm	10
Type C		MF - B90	Type B	36024	36026	80 x 20 x 90 mm	10
		MF - C40	Type C	36032	36034	40 x 18 x 40 mm	10
Type D		MF - C53	Type C	36040	36042	40 x 18 x 53 mm	10
		MF - D49	Type D	36048	36050	120 x 20 x 49 mm	10

Clamp assembly and design tool

EMC | shield clamp design tool

By using the EMC shield design tool (located at www.icotek.de) you can create an EMC shield clamp configuration specifically for your application.
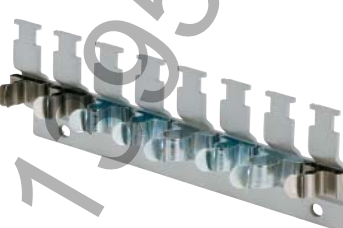The following drawings are exaples for configurations with 7 and 8 shield clamps.
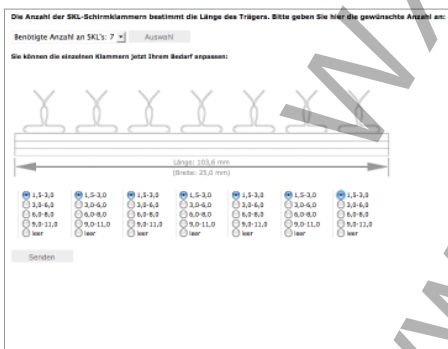
Example 1:

Clamp assembly 7-piece
with SKL 1.5 - 3 mm
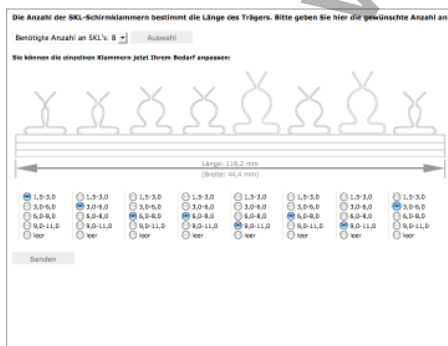
Example 2:

Clamp assembly 8-piece with strain relief and different SKL shield clamps

Product description

The design tool enables numerous configurations to be utilized on a single carrier which reduces labor time and material costs.

For this purpose use the EMC shield clamp design tool located at

You can quickly configure your own "standard" EMC shield clamp.

We are willing to give you additional information regarding the extensive possibilities of this application.
Our experienced and knowledgeable staff is available to assist you with a solution for your particular application.

Advantages
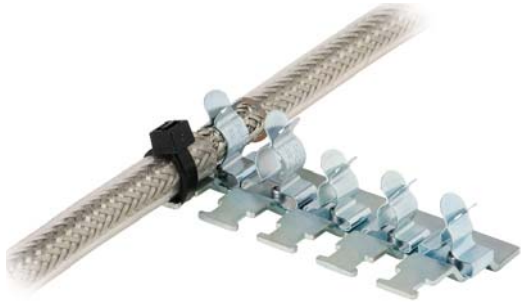
- User designed carrier configuration with SKL shield clamps
- Cost effective even for small quantities
- Design online at www.icotek.de

Specification

Material

Clamp assembly	**Stainless steel**
SKL 1.5-3 / SKL 3-6	**Stainless steel zinc-plated**
from SKL 6-8	**Spring steel zinc-plated**

4

RLFZ

EMC Clamp assembly with strain relief

Product description

The RLFZ range is a further development of the EMC clamp assembly.
The combination of EMC shielding and strain relief is the key feature of this system. Thus the specification according the VDE standard is achieved.

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

The EMC shielding clamps as listed below are available to mount:
- SKL 1.5 - 3 | SKL 3 - 6 | SKL 6 - 8 | SKL 9 - 11

Advantages

- High packing density due to optimized arrangement
- Possibility to configure custom specific EMC clamp assembly
- Separate strain relief and EMC-shielding
- Online design tool for EMC Clamp assembly

Specification

Material
SKL 1.5-3 / SKL 3-6   **Stainless steel zinc-plated**
from SKL 6-8   **Spring steel zinc-plated**
RLFZ-foot   **Steel, galvanically zinc-plated**

Accessories

Cable ties   Page 67
Stripping tool   Page 97

Type	Order No. (unfitted)	Number of shield clamps	Length	Width	PU
RLFZ (x3)	38005	3x SKL	41.2 mm	44.4 mm	1
RLFZ (x4)	38010	4x SKL	56.8 mm	44.4 mm	1
RLFZ (x5)	38015	5x SKL	72.4 mm	44.4 mm	1
RLFZ (x6)	38020	6x SKL	88.0 mm	44.4 mm	1
RLFZ (x7)	38025	7x SKL	103.6 mm	44.4 mm	1
RLFZ (x8)	38030	8x SKL	119.2 mm	44.4 mm	1
RLFZ (x9)	38035	9x SKL	134.8 mm	44.4 mm	1
RLFZ (x10)	38040	10x SKL	150.4 mm	44.4 mm	1
RLFZ (x11)	38045	11x SKL	166.0 mm	44.4 mm	1
RLFZ (x12)	38050	12x SKL	181.6 mm	44.4 mm	1

4

EMC Clamp assembly with strain relief

Type	Order No. (unfitted)	Number of shield clamps	Length	Width	PU
SF | RLFZ (x3)	38105	3× SKL	41.2 mm	44.4 mm	1
SF | RLFZ (x4)	38110	4× SKL	56.8 mm	44.4 mm	1
SF | RLFZ (x5)	38115	5× SKL	72.4 mm	44.4 mm	1
SF | RLFZ (x6)	38120	6× SKL	88.0 mm	44.4 mm	1
SF | RLFZ (x7)	38125	7× SKL	103.6 mm	44.4 mm	1
SF | RLFZ (x8)	38130	8× SKL	119.2 mm	44.4 mm	1
SF | RLFZ (x9)	38135	9× SKL	134.8 mm	44.4 mm	1
SF | RLFZ (x10)	38140	10× SKL	150.4 mm	44.4 mm	1
SF | RLFZ (x11)	38145	11× SKL	166.0 mm	44.4 mm	1
SF | RLFZ (x12)	38150	12× SKL	181.6 mm	44.4 mm	1

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 shielding clamps.

The EMC shielding clamps as listed below are available to mount:
■ SKL 1.5 - 3 | SKL 3 - 6 | SKL 6 - 8 | SKL 9 - 11

Advantages

■ High packing density due to optimized arrangement
■ Possibility to configure custom specific EMC clamp assembly
■ Separate strain relief and EMC-shielding
■ Simple and tool-free assembly

Specification

Material

SKL 1.5-3 / SKL 3-6	**Stainless steel zinc-plated**
from SKL 6-8	**Spring steel zinc-plated**
RLFZ-foot	**Steel, galvanically zinc-plated**

Accessories

RLF

EMC Clamp assembly

Product description

Comparable with the RLFZ-range of EMC clamp assembly, just without strain relief.

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

The EMC shielding clamps as listed below are available to mount
- SKL 1.5 - 3 | SKL 3 - 6 | SKL 6 - 8 | SKL 9 - 11

Advantages

- High packing density due to optimized arrangement
- Possibility to configure custom specific EMC clamp assembly
- Online design tool for EMC Clamp assembly

Specification

Material

SKL 1.5-3 / SKL 3-6	**Stainless steel zinc-plated**
from SKL 6-8	**Spring steel zinc-plated**
RLF-foot	**Stainless steel**

Accessories

Stripping tool   Page 97

Type	Order No. (unfitted)	Number of shield clamps	Length	Width	PU
RLF (x3)	36965	3x SKL	46.1 mm	25.0 mm	1
RLF (x4)	36984	4x SKL	61.0 mm	25.0 mm	1
RLF (x5)	36958	5x SKL	72.4 mm	25.0 mm	1
RLF (x6)	36952	6x SKL	88.0 mm	25.0 mm	1
RLF (x7)	36963	7x SKL	103.6 mm	25.0 mm	1
RLF (x8)	36953	8x SKL	119.2 mm	25.0 mm	1
RLF (x9)	36985	9x SKL	141.0 mm	25.0 mm	1
RLF (x10)	36954	10x SKL	150.4 mm	25.0 mm	1
RLF (x11)	36955	11x SKL	166.0 mm	25.0 mm	1
RLF (x12)	36962	12x SKL	180.0 mm	25.0 mm	1

4

Application STFZ | SKL terminal clamp

- **Bosch Rexroth**
  IP20 Inline Module

- **Beckhoff Automation**
  All EtherCAT terminals and KS/KL terminals. The terminals 4 and 8 must not be used for signal I/O.

- **PHOENIX CONTACT**
  All terminals of the INLINE range. The terminals 1.4 and 2.4 must not be used for signal I/O.

- **Pilz GmbH**
  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.

  Further manufacturers upon request.

Product description

The EMC terminal clamps STFZ|SKL combines the functions strain relief, cable guidance and shielding of signal cables. Available in two version for 1 or 2 lines.
The STFZ2 is used for analog I/O modules using two actuators / sensors.

The STFZ|SKL EMC terminal clamp is compatible to following bus modules:

Product description

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

Order No. 61430

4

STFZ | SKL
EMC - Terminal clamp, single

Product description

The STFZ | SKL EMC terminal clamp provides strain relief , cable guidance, and shielding for decentralized bus-modules (see compatibility table page 85).

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

Advantages

- Shielding of signal cables close to the terminal
- Strain relief and cable management direct on the bus module
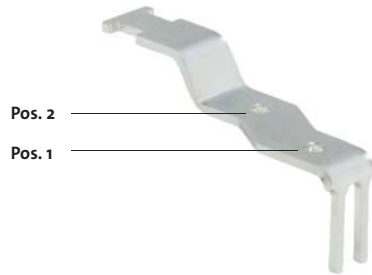
Specification

Material
SKL 1.5-3 / SKL 3-6	**Stainless steel zinc-plated**
from SKL 6-8	**Spring steel, zinc-plated**
STFZ-foot	**Spring steel**

Accessories

Type	Shield diameter	Order No.	PU
STFZ | SKL 1.5 - 3.0	1.5 - 3.0 mm	37510.1	10
STFZ | SKL 3 - 6	3 - 6 mm	37510.2	10
STFZ | SKL 6 - 8	6 - 8 mm	37510.3	10
STFZ	EMC - terminal clamp single	37510	10

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EMC - Terminal clamp, double

Pos. 2 ——————

Pos. 1 ——————

Type	Shield diameter Pos 1	Shield diameter Pos 2	Order No.	PU
STFZ2	Terminal clamp loose		37505	10
STFZ2 | 01	blank	1.5 - 3 mm	37505.01	10
STFZ2 | 2	blank	3 - 6 mm	37505.02	10
STFZ2 | 03	blank	6 - 8 mm	37505.03	10
STFZ2 | 10	1.5 - 3 mm	none	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	none	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	none	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

Product description

The STFZ EMC terminal clamp provides strain relief, cable guidance and shielding for decentralized bus-modules (see compatibility table page 85).
Version for analog I/O modules using two actuators / sensors.

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

Advantages

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

Specification

Material

SKL 1.5-3 / SKL 3-6	**Stainless steel zinc-plated**
from SKL 6-8	**Spring steel, zinc-plated**
STFZ-foot	**Spring steel**

Accessories

Cable ties	Page 67
Stripping tool	Page 97

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EMC
Customized solutions

Product description

Aside from our standard product offering, we offer customized solutions for your application - even for small quantities!

A wide range of standard clamp assemblies are already available (see pages 82 - 84).

If a standard EMC clamp assembly is not practible, a custom designed carrier for shield clamps can be supplied.

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

Advantages

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

Specification

Material

Carrier	**According to specification**
SKL 1.5-3 / SKL 3-6	**Stainless steel zinc-plated**
from SKL 6-8	**Spring steel zinc-plated**

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Leakage and Impedence

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

Therefore, icotek EMC clamps are proven to absorb EMC disturbances.

Electrical impedence values:
- from 10 kHz to 100 MHz under 20 Ohm
- up to 1,000 MHz under 120 Ohm

The unique design of icotek's shield clamps effectively reduce high frequency interferences.
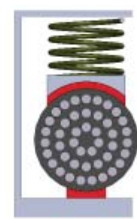
Contact area

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

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

LF | SKL 9 - 11

Impedence Z [Ohm]

Leakage absorption [dB]

SF | SKL 6 - 8

Impedence Z [Ohm]

Leakage absorption [dB]

pict. A: SKL-line

pict. B: Conventional systems
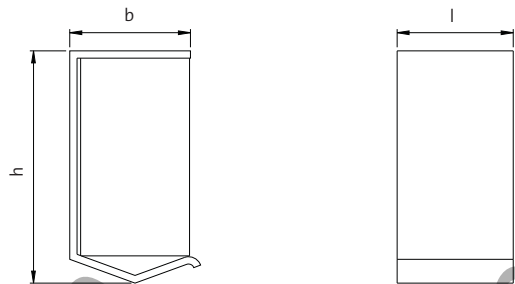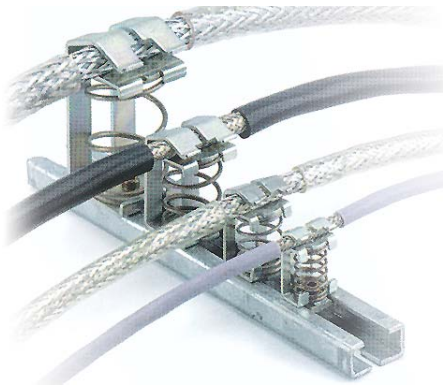
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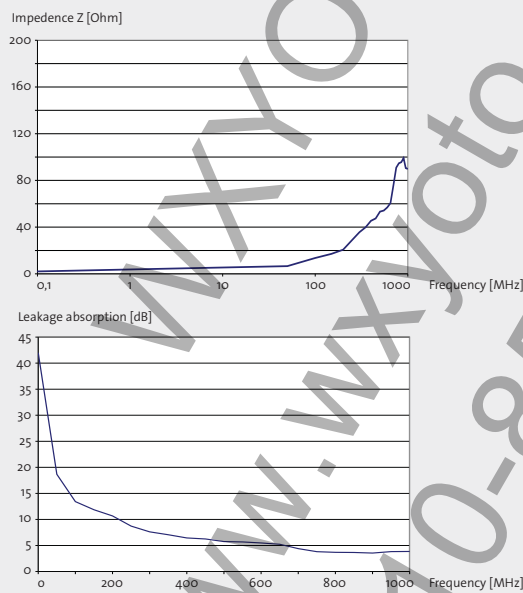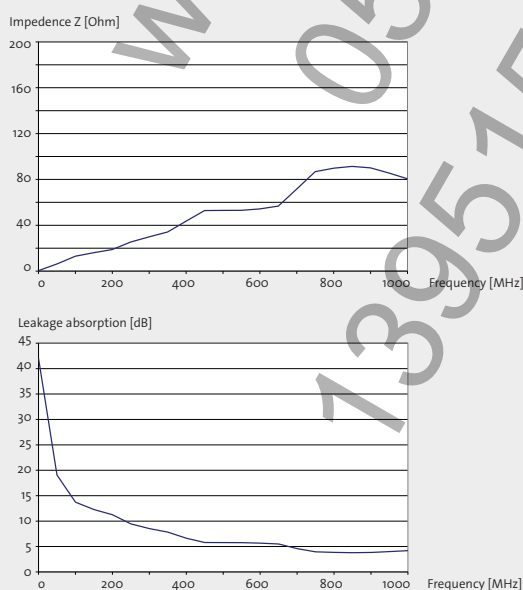
SK
EMC Shield clamps

Product description

Shield clamps can be used where the shield of single cables has to be grounded.

Shield clamps 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

- Simple assembly onto TS-35 DIN rails and 10 x 3 mm busbars
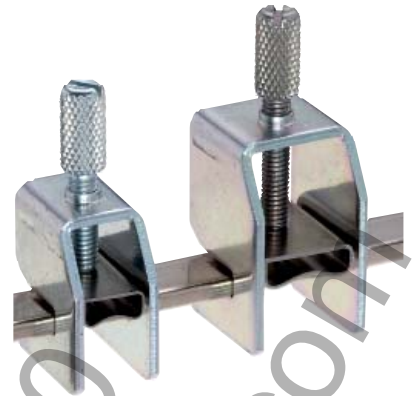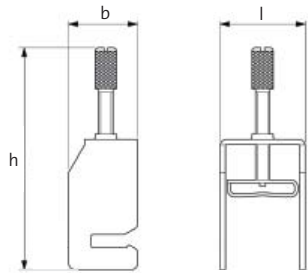- Various sizes and possibillities for fixing

Specification

Material
SK-clamp   **Steel, galvanically zinc-plated**
SF-foot   **Spring steel**

Accessories

Description	Type	Order No.	Shield diameter	Dimensions l x b x h [mm]	PU
	SF | SK 3 - 8	36500	3 - 8 mm	18 x 14 x 26	10
	SF | SK 4 - 13.5	36502	4 - 13.5 mm	20 x 20 x 31	10
	SF | SK 10 - 20	36504	10 - 20 mm	26 x 24 x 40	10
	SF | SK 15 - 32	36506	15 - 32 mm	32 x 35 x 64	10
	SK 3 - 8	36222	3 - 8 mm	18 x 14 x 26	10
	SK 4 - 13.5	36224	4 - 13.5 mm	20 x 20 x 31	10
	SK 10 - 20	36226	10 - 20 mm	26 x 24 x 40	10
	SK 15 - 32	36228	15 - 32 mm	32 x 35 x 64	10
	SS | SK 3 - 8	36235	3 - 8 mm	18 x 14 x 26	10
	SS | SK 4 - 13.5	36236	4 - 13.5 mm	20 x 20 x 31	10
	SS | SK 10 - 20	36237	10 - 20 mm	26 x 24 x 40	10
	SS | SK 15 - 32	36238	15 - 32 mm	32 x 36 x 64	10
	SC single	36231	SC foot single	for C-rail	10

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

Product description

Shield clamps can be used where the shield of single cables has to be grounded.

Shield clamps can be assembled on 10 x 3 mm busbars.

Advantages

- One SKS shield clamp supports a wide range of cables
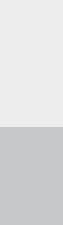- Simple assembly on 10 x 3 mm busbars

Specification

Material
SKS-clamp   **Steel, galvanically zinc-plated**

Accessories

Busbar 10x3   Page 79
Stripping tool   Page 97

KEL - EMC - Z
Cable assembly with strain relief

Product description

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

Cables pass through the KEL frame and insert directly to the EMC and strain relief.
Simply insert the cable shield into the shield clamp and secure the cable jacket to the strain relief. Two separate functions acc. to regulations - carried out quickly and easiliy!

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

Advantages

- Large surface contact between cable shield and housing/cabinet, especially with conductive coating on treated surfaces
- Sealing by outer cable jacket - EMC shielding by cable shield (in acc. with regulations)
- Combined routing and fastening with the KEL Cable entry system
- Available without SKL shield clamps if only additional strain relief desired
- Connection of earthing tape M6

Specification

Material	**Steel, zinc-plated**

Accessories

KEL Cable entry frames	Page 6	15
KEL-Quick Cable entry frames	Page 36	37
Cable ties	Page 67
Stripping tool	Page 97

Type	Order No.	No. of teeth	Fastening	Fits for:	PU
KEL - EMC - Z 16 | 4	36525	4	long side	KEL - E4 KEL 16 | x KEL - Quick 16	1
KEL - EMC - Z 24 | 5	36527	5	long side	KEL - E5 KEL 24 | x KEL - Quick 24	1

KEL - EMC - PF
Bracket version
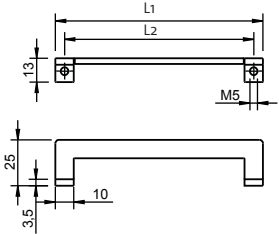
Type	Fits for	Order No.	Length L1	Length L2	PU
KEL - EMC - PF B4	KEL - E2 KEL - B	39150	68.0 mm	58.0 mm	1
KEL - EMC - PF 10	KEL - E3 KEL 10 | x	39160	93.0 mm	83.0 mm	1
KEL - EMC - PF 16	KEL - E4 KEL 16 | x	39170	113.0 mm	103.0 mm	1
KEL - EMC - PF 24	KEL - E5 KEL 24 | x	39180	140.0 mm	130.0 mm	1

Product description

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

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

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

Advantages

- Very high flexibility in terms of cable diameter
- Large-surface contact of the cable shield
- Permanent spring pressure on the cable shield
- Simple assembly

Specification

Material   **Steel, galvanically zinc-plated**

Accessories

4

KEL - EMC
Cable assembly

Product description

Installation of pre-terminated cables without shield interruption.

Advantages

- Direct, easy and quick contact to the enclosure
- Space-saving, up to 10 cables with two-row model
- Replacement for EMC cable glands, even for pre-terminated cables
- Low-resistance shield contact
- Seal via cable jacket - not via shield - higher protection as a result

Specification

Material   **Stainless steel**

Accessories

Type	Order No.	No. of teeth	Fastening	Fits for	PU
KEL - EMC B	36520	2	long side	KEL - E2 KEL - B | x KEL - Quick B2 | B4	5
KEL - EMC 10	36522	3	long side	KEL - E3 KEL 10 | x	5
KEL - EMC 16 | 4	36524	4	long side	KEL - E4 KEL 16 | x KEL - Quick 16	5
KEL - EMC 24 | 5	36526	5	long side	KEL - E5 KEL 24 | x KEL - Quick 24	5
KEL - EMC F	39110	3	narrow side	KEL - B | x KEL 10 | x KEL 16 | x KEL 24 | x	5

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 9 - 11	37180.4	9 - 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 9 - 11	37181.4	9 - 11 mm	5

Product description

The KVT-EMC brackets in combination with the split cable glands KVT and QVT combines routing, EMC shielding and strain relief. The connection to earth/ground is possible over the cabinets' wall or earthing tape.

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

Separte functions according to regulations - carried out quickly and easily!

Advantages

- Simple and tool free assembly
- Optimal contact of the cable shielding
- Later assembly possible
- Additional M5 hole for earthing tape

Specification

Material   **Steel, zinc-plated**

Accessories

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KAFM - EMC
Cable assembly

Type SF: Mounted on SNAP-foot DIN-rail shape H

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

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

Type DH: Mounted on bushing for flexible fixation on bottomsheet

Product description

The cable assembly is practical for earthing interferences on the cable shielding.

The cable assembly 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.

Specification

Material	**Stainless steel**

Accessories
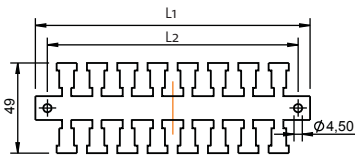
Type	Order No. Type SF	Order No. Type SK	Order No. Type SC	Order No. Type DH	Order No. loose rail	Length L1	Length L2	No. of teeth
KAFM 2	36442	36432	36412	36482	36422	50.5	37.5	2
KAFM 4	36444	36434	36414	36484	36424	83.5	70.5	4
KAFM 6	36446	36436	36416	36486	36426	116.5	103.5	6
KAFM 8	36448	36438	36418	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	990.0	978.0	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**
Bushing	36234	**Distance bushing 8 mm high**
Screw	99017	**M4 x 16 DIN 912**
Washer	42100	**Washer ø 4.3 mm DIN 125**
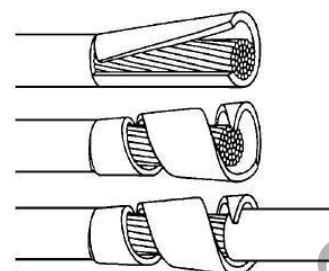
Stripping tools

Type A: Order No. 61400   Stripping tool for LV cables

- Flexible due to exchangeable hooks for covering a wide diameter range
- Easy to adjust, to use for lengthwise, circular and coil shaped cut
- Cable diameter 4.5 - 40 mm
- Thickness of the Isolation up to 4.5 mm
- Spare blades available with integrated storage compartment in the handle
- The blade returns into home position automatically, thus the danger of breaking the blade is reduced
- Good handling because of an optimized ergonimic shape
- Weight: 116 g

Product description

Professional heavy duty tool for removing cable jacket to expose cable shield material.

Because of the design of the tools hook, cables with diameters up to 40 mm can be removed with only one tool. It is very easy to handle and enables stripping heavy cable jackets under difficult conditions.

By turning the body of the tool the blade can be fixed in one of 3 different positions. Thus circular cuts lengthwise can be made to the cable.

Type B: Order No. 61410   Stripping tool for signal, telephone and data cables

- Precise setting for the different insulations is easily made by means of the 9-position setting wheel
- Diameter range 2.5 - 11 mm
- Thickness of Isolation up to 1.0 mm
- Spare blades available
- Weight: 28 g

Product description

High precision tool for dismantling signal-, telephone-, AV- and data cables.

For removal of the most multi wire cables and fiber optics up to a diameter to 11 mm.

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