



Solutions for conducted and field-bound disturbances

EMC cable entry systems

The EMC cable gland

alternative



▲ Space saving icotek solution:
EMC cable entry frame
EMC-KEL-U 24|10

◀ normal EMC cable glands

The new EMC-KEL

The cable entry frames EMC-KEL-U and EMC-KEL-E are based on the icotek products KEL-U and KEL-E. Due to a conductive surface, faults in the cable shields on the control cabinet can be easily dissipated. Field bound disturbances are derived by the metallisation. Between the EMC-KEL and the metal wall a conductive flat gasket (included) is mounted. The flange surface on the metal wall must be free of paint!

The cable grommets type EMC-KT are made of a very conductive elastomer. Thus, faults are dissipated from the cable shield directly via the grommet, the frame and the flat gasket. This ensures full-area protection against field-bound interference!

Advantages & Benefits

- Both conducted and field-bound disturbances can be reliably diverted
- Very attractive and scratch-resistant surface
- Contacting the cable shield over 360°
- Grommets made entirely from conductive elastomer
- High cable density
- Very good dissipation values
- Very good shielding effect with regard to EMC tightness

Specifications EMC-KEL

Material frame	Polyamide, highly conductive coating
Material grommet	Elastomer, conductive Colour: black
Flame class	according to UL 94 HB
Temperature	-30°C to +80°C
Properties	Halogen free, silicone free
Cut-out	46 x 112 mm / 46 x 86 mm 24 x 112 mm / 24 x 65 mm
Frame depth	17 mm

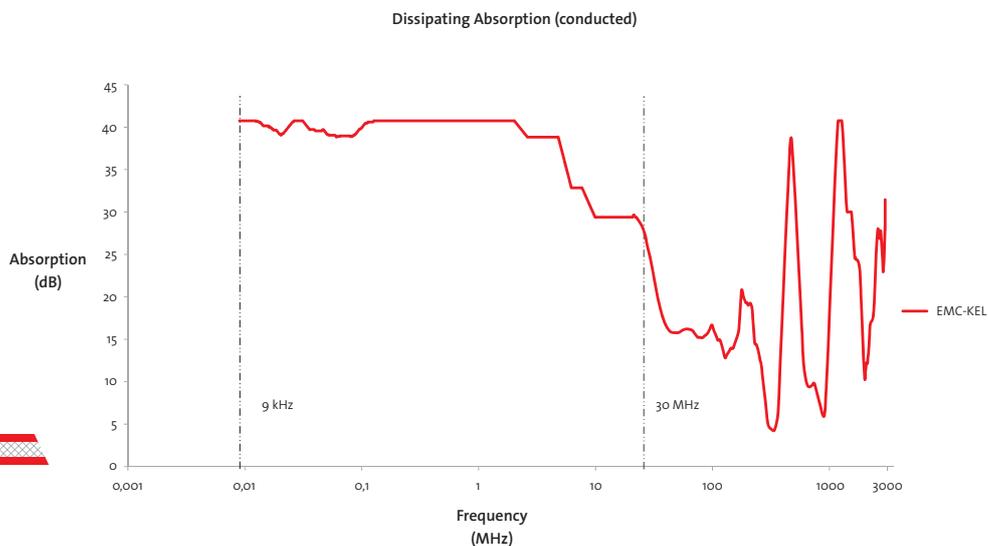
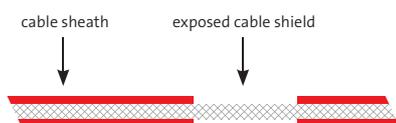
Types



Conducted and field-bound disturbances

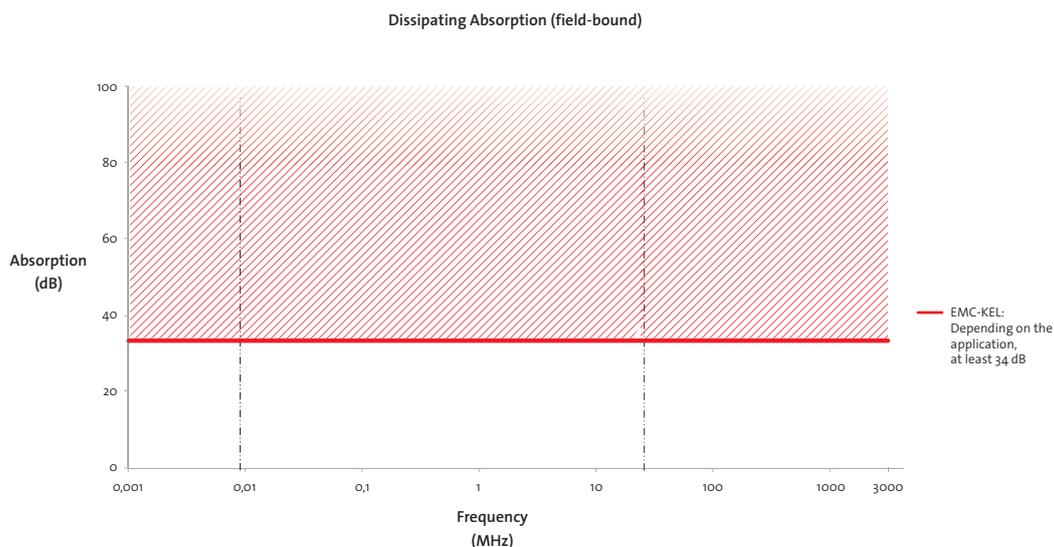
Conducted disturbances

The EMC-KEL shows during cable-bound disruptions stable attenuation values up to 40 dB in the frequency ranges from 9 kHz to 30 MHz.



Field-bound disturbances

Regarding the field-bound disturbances and depending on the application, in the relevant frequency ranges up to 3 GHz constant measurements of at least 34 dB have been achieved. Below the attenuation range, the curve falls only at extreme high frequencies above 3 GHz.



Products to combine

Cable entry frames KEL-ER / KEL-U

Split cable entry system for routing cables with connectors providing an IP54 / IP65 / IP66 up to NEMA type 4x rating. Routing, sealing and providing strain relief for cable diameters from 1 to 35 mm.



EMC brackets KEL-EMV-PF/PFM

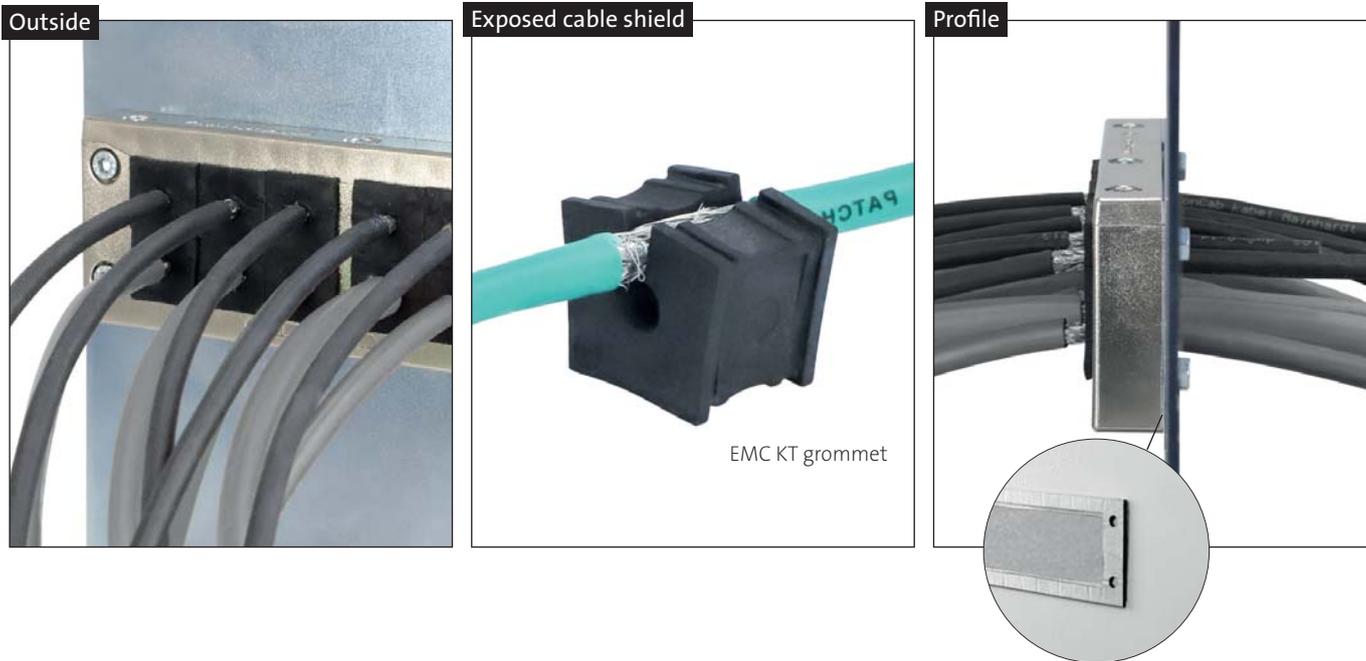
The EMC bracket combined with the matching PFS|SKL EMC shield clamp is perfect in conjunction with the KEL cable entry frame for alleviating interferences due to shields. The EMC clamp is assembled inside the control panel.



Primary assembly possibility:

Conducted and field-bound disturbances

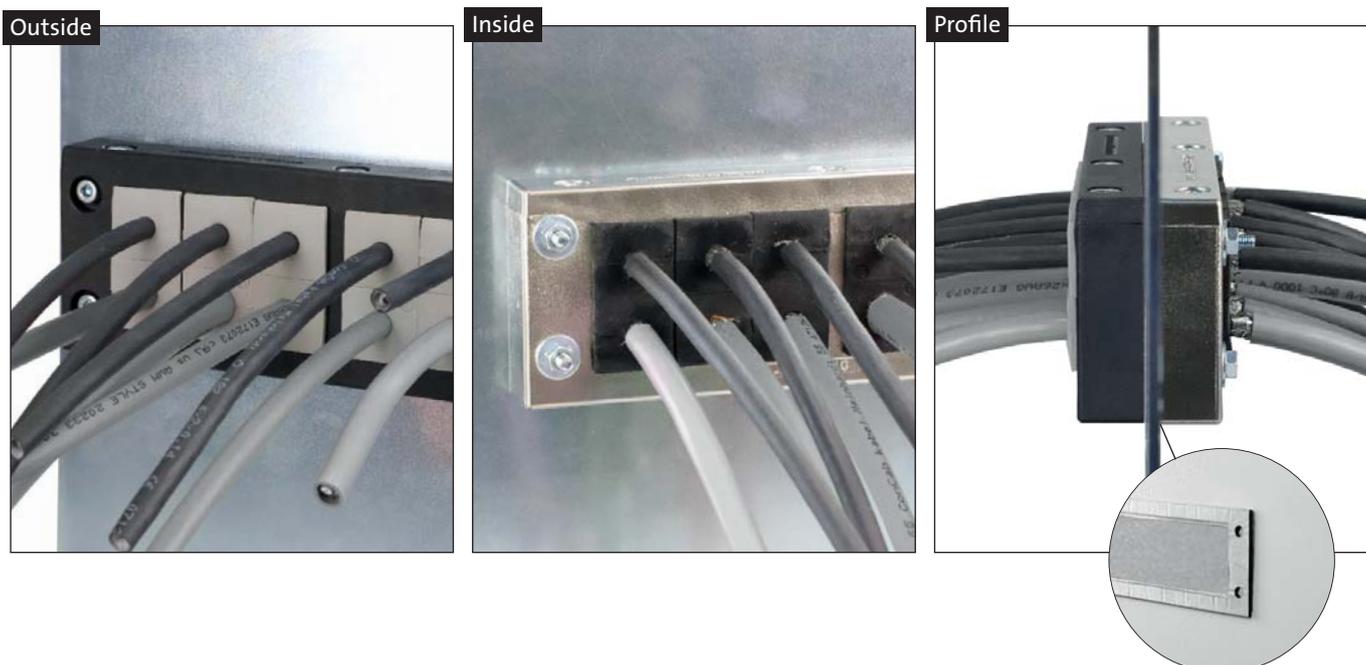
The EMC cable entry frame (EMC-KEL) is screwed to the outside of the housing. The cable shield is exposed in the area of the cable grommets.



Primary assembly possibility:

Conducted and field-bound disturbances with strain relief and IP66

A cable entry frame (e.g., KEL-ER or KEL-U) is bolted to the outside of the housing. Inside the housing, the EMC cable entry frame (EMC-KEL) is mounted and the cable shield is exposed in the area of the cable grommets.



Alternate assembly possibility:

Conducted disturbances with single strain relief

The EMC cable entry frame (EMC-KEL) is screwed to the outside of the housing.

The cable shield is exposed in the area of the cable grommets. It's possible to use different grommets (KT & EMC-KT).

Outside



Different grommets



Alternate assembly possibility:

Field-bound disturbances with strain relief

The EMC cable entry frame (EMC-KEL) is screwed to the outside of the housing. The cable shield is not exposed in the area of the cable grommets.

Outside



Not exposed cable shield



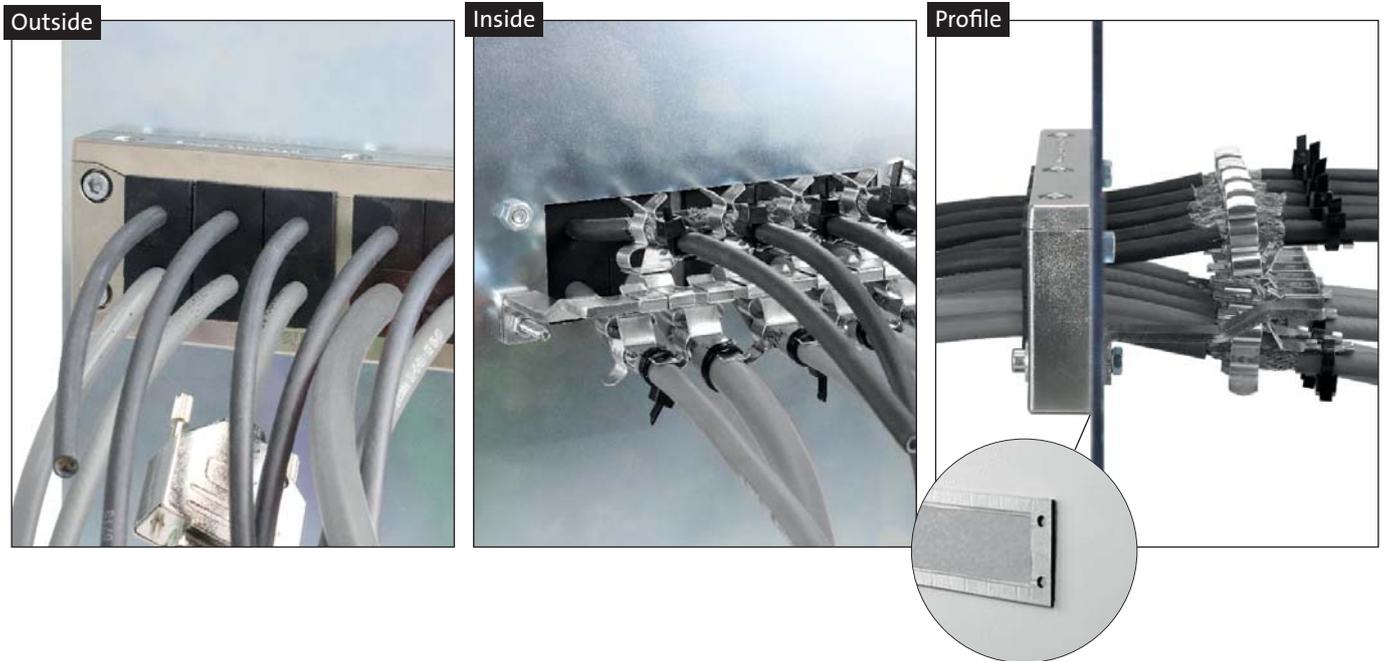
Profile



Alternate assembly possibility:

Conducted and field-bound disturbances with strain relief

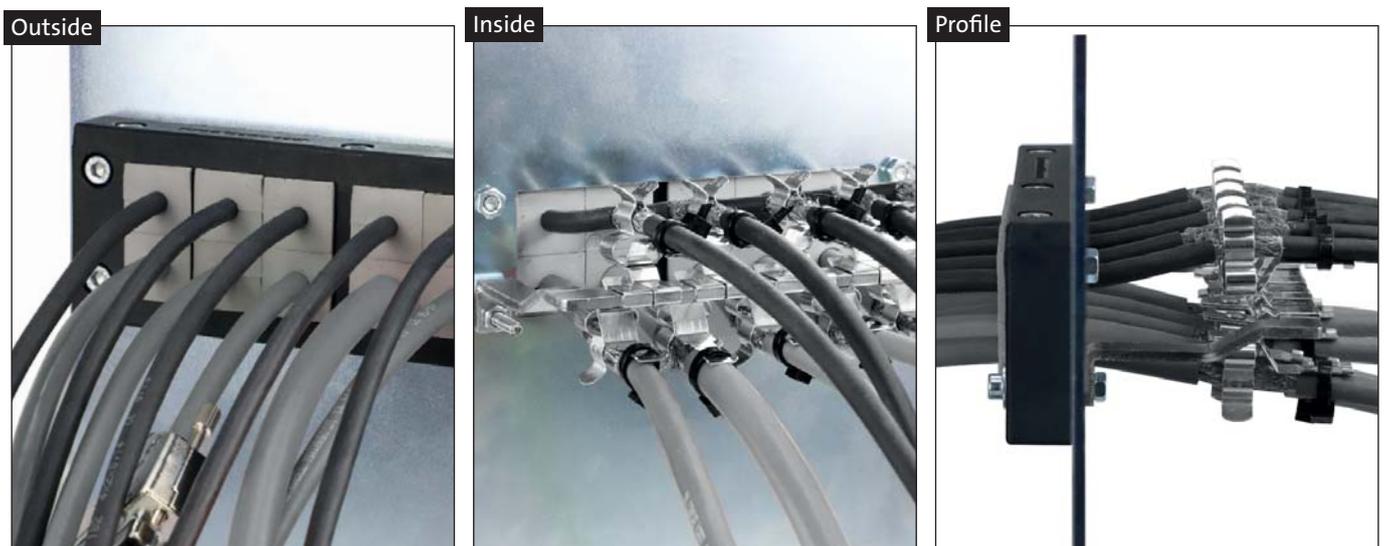
The EMC cable entry frame (EMC-KEL) is screwed to the outside of the housing.
Inside the housing, the EMC bracket KEL-EMC-PFM is mounted and the exposed cable shield is placed.



Alternate assembly possibility:

Conducted disturbances with strain relief and IP66

A cable entry frame (e.g., KEL-ER or KEL-U) is bolted to the outside of the housing.
Inside the housing, the EMC bracket KEL-EMC-PFM is mounted and the exposed cable shield is placed.



Product details



Type	Order no.	Cut-out	Grommets KT small large	PU
EMC-KEL-U 24 10	99400	36 × 112 mm	10 -	1
EMC-KEL-U 24 4	99401	36 × 112 mm	2 2	1
EMC-KEL-U 16 8	99402	36 × 86 mm	8 -	1
EMC-KEL-E3	99420	24 × 65 mm	3 -	1
EMC-KEL-E5	99422	24 × 112 mm	5 -	1



Type	Order no.	Length	PU
KEL-EMC-PF B4	39150	68 mm	1
KEL-EMC-PF 10	39160	93 mm	1
KEL-EMC-PF 16	39170	113 mm	1
KEL-EMC-PF 24	39180	140 mm	1
KEL-EMC-PF 183	39190	200 mm	1
KEL-EMC-PFM 10	39184	93 mm	1
KEL-EMC-PFM 16	39183	113 mm	1
KEL-EMC-PFM 24	39181	140 mm	1

Description	Type	Order no.	Clamping range	PU	
	EMC-BTK	99473	-	5	
	EMC-KT 3	99460	3 - 4 mm	5	
	EMC-KT 4	99461	4 - 5 mm	5	
	EMC-KT 5	99462	5 - 6 mm	5	
	EMC-KT 6	99463	6 - 7 mm	5	
	EMC-KT 7	99464	7 - 8 mm	5	
	EMC-KT 8	99465	8 - 9 mm	5	
	EMC-KT 9	99466	9 - 10 mm	5	
	EMC-KT 10	99467	10 - 11 mm	5	
	EMC-KT 11	99468	11 - 12 mm	5	
	EMC-KT 12	99469	12 - 13 mm	5	
	EMC-KT 13	99470	13 - 14 mm	5	
	EMC-KT 14	99471	14 - 15 mm	5	
	EMC-KT 15	99472	15 - 16 mm	5	
		EMC-BTG	99495	-	5
		EMC-KT 16	99475	16 - 17 mm	5
EMC-KT 17		99476	17 - 18 mm	5	
EMC-KT 18		99477	18 - 19 mm	5	
EMC-KT 19		99478	19 - 20 mm	5	
EMC-KT 20		99479	20 - 21 mm	5	
EMC-KT 21		99480	21 - 22 mm	5	
EMC-KT 22		99481	22 - 23 mm	5	
EMC-KT 23		99482	23 - 24 mm	5	
EMC-KT 24		99483	24 - 25 mm	5	

Multi shield clamps

for conducted disturbances

with a huge clamping range



Mounted on 35 mm DIN-rails

SFZ-M|MSKL, SF|MSKL



Type	Order no.	Clamping range	Dimensions [mm]	Mounting type	PU
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

Mounted for bus bar

PFSZ-M|MSKL



Type	Order no.	Clamping range	Dimensions [mm]	Mounting type	PU
PFSZ-M MSKL 3-12 with strain relief	37630	3 - 12 mm	38 × 15 × 28.7	10x3 mm bus bar	10
PFSZ-M MSKL 8-18 with strain relief	37632	8 - 18 mm	38 × 20 × 34.9	10x3 mm bus bar	10

Screw assembly

LFZ-M|MSKL, LF|MSKL



Type	Order no.	Clamping range	Dimensions [mm]	Mounting type	PU
LFZ-M MSKL 3-12 with strain relief	37612	3 - 12 mm	46.3 × 15.1 × 26	Screw, Fixing hole 4.3 mm	10
LFZ-M MSKL 8-18 with strain relief	37614	8 - 18 mm	46.3 × 20 × 32	Screw, Fixing hole 4.3 mm	10
LF MSKL 3-12	37608	3 - 12 mm	24 × 15.1 × 26	Screw, Fixing hole 4.3 mm	10
LF MSKL 8-18	37610	8 - 18 mm	24 × 20 × 32	Screw, Fixing hole 4.3 mm	10

Pluggable assembly

PFKZ-A-M|MSKL, PFKZ-B-M|MSKL



Type	Order no.	Clamping range	Dimensions [mm]	Mounting type	PU
PFKZ-A-M MSKL 3-12 with strain relief	37640	3 - 12 mm	38 × 15 × 28.8	Sheet edges, thickness 1.5 - 2 mm	10
PFKZ-B-M MSKL 3-12 with strain relief	37650	3 - 12 mm	38 × 15 × 28.7	Sheet edges, thickness 1.5 - 2 mm	10
PFKZ-A-M MSKL 8-18 with strain relief	37642	8 - 18 mm	38 × 20 × 35	Sheet edges, thickness 1.5 - 2 mm	10
PFKZ-B-M MSKL 8-18 with strain relief	37652	8 - 18 mm	38 × 20 × 34.9	Sheet edges, thickness 1.5 - 2 mm	10