

North America

icotek[®]
smart cable management.



Product Catalog 30

Cable Management Systems

A company of the icotek group

smart cable management.

Ideas move the world – this has been our motto under which we have been developing innovative cable management systems since 1995. From our headquarters in Eschach, Baden-Württemberg, we produce our smart cable management solutions and distribute them in more than 60 countries. We are a strong and reliable partner for the industry together with our subsidiaries in Europe and North America as well as our global representatives. Globally leading companies from various sectors rely on our know-how and our innovative strength. Numerous patents and certifications are both an incentive and aspiration for us.

Table of Contents



1
**Split Cable Entry Systems
 & Cable Glands**
 for Cables with Connectors
 Page 4 - 61



6
Enclosure Accessories
 Gland Plates, Flanged
 Plates & Accessories
 Page 144 - 171



2
Cable Entry Plates
 for Cables without Connectors
 Page 62 - 81



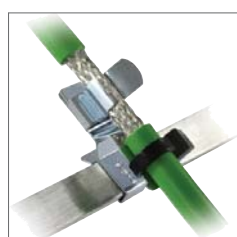
7
ATEX Cable Entry Systems
 for Potentially Explosive
 Atmospheres
 Page 172 - 189



3
**Strain Relief
 & Cable Management**
 Page 82 - 93



8
icotek TOOLS
 Punch Drivers, Knockout
 Punches & Useful Tools
 Page 190 - 195



4
EMC Cable Shield Grounding
 Shield Clamps
 & Grounding Components
 Page 94 - 135



9
Cable Entry Systems
 with IFPS Fire Penetration
 Seals Acc. to EN 45545-3
 Page 196 - 197



5
CONFiX
 Cable Conduit Systems
 Page 136 - 143



i
Appendix
 Technical Data
 Page 198 - 210

1

2

3

4

5

6

7

8

9

i

1 Split Cable Entry Systems for Cables with Connectors



KEL - Split Cable Entry Frames for the KT Grommet System, Page 8 - 37

The patented cable entry system enables the user to enter, seal and provide strain relief for cables with and without connectors as well as for hoses and conduits.

The key feature of icotek's patented system is the split frame and slit grommets which provide quick, convenient and cost effective routing of pre-terminated and multi-conductor cables, hoses or conduits. The split frame and

slit grommets alleviate the need to cut and rewire pre-terminated cables. Therefore, cable warranties are unaffected. Cables, pipes and conduits with various diameters can be routed due to large variety of slit grommets. When assembled correctly, the slit grommets are held tightly within the frame. Correctly sizing the grommet to the cable diameter ensures a high degree of protection (up to IP65 / NEMA type 4X) and provides strain relief.

Product Range





KVT - Split Cable Glands

for the KT Grommet System, Page 38 - 42

By using split cable glands by icotek cables with or without connectors or complete cable harnesses with diameters from 1 to 35 mm can be quickly routed into enclosures, cabinets or machines and be sealed with IP54 / NEMA type 12 rated ingress protection.

The split system of the KVT cable glands enables quick and easy assembly which is great for retrofitting and maintenance. The cable is placed into the slit grommet which is set into one of the gland halves. Depending on the size of the cable gland one, two or four separate grommets can be installed. The two gland halves can be easily snapped together without the need of tools. The routed lines are securely sealed and held inside the grommets. To mount the cable glands either snap it into the round metric standard cut-out (sizes available from M20 to M80) or screw it with a hexagonal locknut. The mounting method is dependent on the model type.

Product Range



1 Split Cable Entry Systems for Cables with Connectors



IP54



ECOLAB certified

RoHS compliant

Made in Germany



+284°F
-40°F

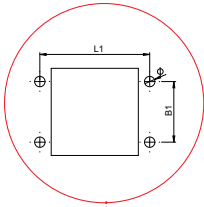


QUICK - Cable Entry Frames & Cable Glands for the QT Grommet System, Page 50 - 55

The QUICK systems by icotek are the perfect solution for quick and cost-effective routing of cables with and without connectors.

With QT slit grommets cables, hoses or conduits with diameters 1 - 15 mm can be easily routed. When installed correctly the QUICK systems achieve an IP54 rated protection.

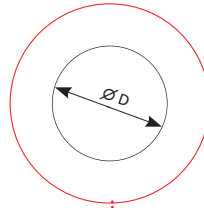
In addition to the consistent divisibility the QUICK systems are characterized by its tool-free assembly possibilities such as snap-in with the KEL-SNAP frame (KEL-QUICK), direct plug-in into the wall cut-out (QVT-CLICK/KEL-QTA) or mounting via locknuts (QVT).



KEL-QUICK and KEL-QTA cut-outs according to industrial standard dimensions



Warranty on pre-terminated cables remains

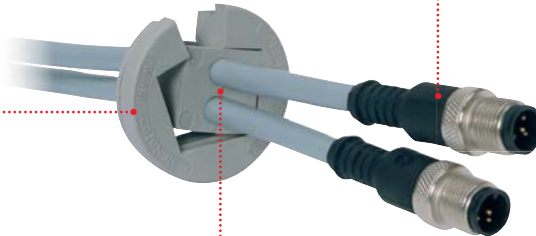
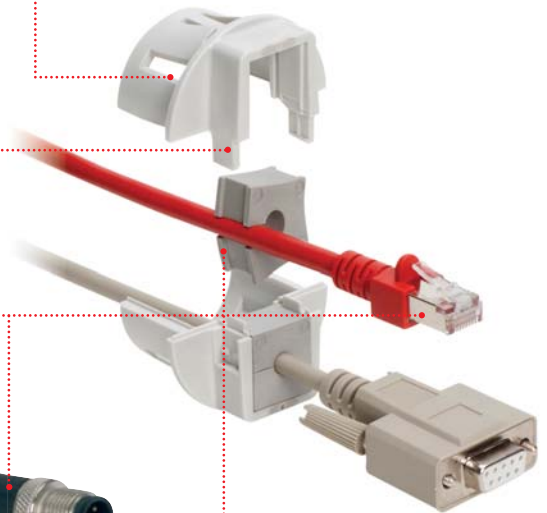


QVT and KEL-QTA round for metric cut-outs M16 - M50

NEW



Split system



Fast and easy assembly



High cable density, wide variety

Product Range



KEL-QUICK



KEL-QTA



KEL-QTE



QVT





















QVT-CLICK

Product Group 1

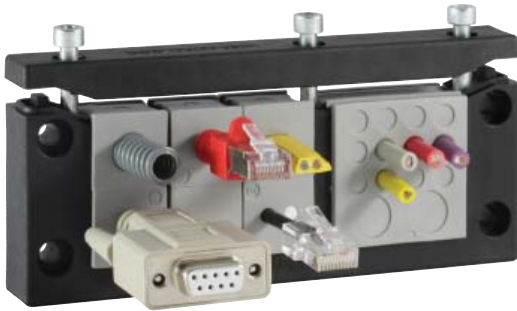
Split Cable Entry Systems for Cables with Connectors

Chapter Content

	<p>Split cable entry frames NEMA types 4X / 12 for cable diameters up to 35 mm</p> <p>KEL-ER 24 / KEL-ER 16 / KEL-ER 10 / KEL-ER-B / KEL-ER-E KEL-U 24 / KEL-U 16 / KEL-U 10 / KEL-U-B / KEL-E</p> <p style="text-align: right;">8 - 17</p>		<p>Service box for cable grommets for service calls and retrofitting</p> <p>KT ServiceBox</p> <p style="text-align: right;">43</p>
	<p>Centrally split cable entry frames NEMA type 12 for cable diameters up to 35 mm</p> <p>KEL 24 / KEL 16 / KEL 10 / KEL-B</p> <p style="text-align: right;">18 - 21</p>		<p>Grommets and plugs NEMA types 4X / 12 for cables w/o connectors, cable diameter range 1 - 35 mm, für KEL-U / KEL-ER / KEL-FG / KEL / KVT</p> <p>KT small / KT large / KT-DPF / KTMB / DT / ST</p> <p style="text-align: right;">44 - 49</p>
	<p>Extended split cable entry frames NEMA type 12 for cable diameters up to 35 mm</p> <p>KEL 24-E / KEL 24-MT / KEL 24-2MT KEL 16-E / KEL 16-MT / KEL 16-2MT</p> <p style="text-align: right;">22 - 27</p>		<p>QUICK Split cable entry frames for cable diameters up to 15 mm</p> <p>KEL-QUICK 24 / KEL-QUICK 16 / KEL-QUICK-B</p> <p style="text-align: right;">50 - 51</p>
	<p>Split flange enclosure for cable diameters up to 35 mm</p> <p>KEL-FG-A / KEL-FG-B / KEL-FG-E</p> <p style="text-align: right;">28 - 30</p>		<p>QUICK Split cable glands M16 - M50, for cable diameters up to 15 mm</p> <p>QVT</p> <p style="text-align: right;">52</p>
	<p>Snap mounting frames NEMA type 12 for installation of KEL-U / KEL frames</p> <p>KEL-SNAP 24 / KEL-SNAP 16 / KEL-SNAP 10 / KEL-SNAP-B / KEL-SNAP 24-E / KEL-SNAP 24-MT</p> <p style="text-align: right;">31</p>		<p>QUICK Split cable glands M25 - M40, pluggable, for cable diameters up to 15 mm</p> <p>QVT-CLICK</p> <p style="text-align: right;">53</p>
	<p>Split cable entry frames for flat cables & round cables up to 16 mm in diameter</p> <p>KEL-FL / FT</p> <p style="text-align: right;">32 - 33</p>		<p>QUICK Split cable entry plates pluggable, for cable diameters up to 15 mm</p> <p>KEL-QTA 24 / KEL-QTA 10 / KEL-QTA-B / KEL-QTA round / KEL-QTE</p> <p style="text-align: right;">54 - 55</p>
	<p>Split cable entry frames NEMA type 12 for cable diameters up to 75 mm</p> <p>KEL 183 / KEL 183-E / KTMB 183</p> <p style="text-align: right;">34 - 35</p>		<p>QUICK Grommets for cables w/o connectors, cable diameter range 3 - 15 mm</p> <p>QT</p> <p style="text-align: right;">56 - 57</p>
	<p>Split cable entry frames NEMA type 12 for cable diameters up to 65 mm</p> <p>KEL-JUMBO / KTF</p> <p style="text-align: right;">36 - 37</p>		<p>Brush frames for cable entry</p> <p>KEL-BES / KEL-BES-S</p> <p style="text-align: right;">58 - 59</p>
	<p>Split cable glands NEMA type 12 M20 - M80, for cable diameters up to 35 mm</p> <p>KVT / KVT 80 / KVT-SNAP / KVT-W90</p> <p style="text-align: right;">38 - 42</p>		<p>Typical applications icotek cable entry systems for cables with connectors</p> <p style="text-align: right;">60 - 61</p>

KEL-U 24

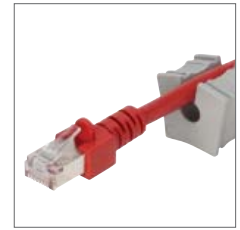
Cable Entry Frames



Also available with stainless steel screws (V2A).



Also available with threaded bushings.



Slit KT grommets

1

IP54

Description	Type	Order No.	Grommets small large	PU
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Product Description

Split cable entry system for routing pre-terminated cables providing an IP54 / IP65 / up to NEMA type 4X rating. Routing, sealing and providing strain relief for cable diameters from 1 to 35 mm. The new cable entry system is easy to install. Cable grommets are placed into compartments in the frame and are securely fixed to the frame during assembly. The KEL-U 24 frame matches exactly the cut-out dimensions for 24-pin standard industrial connectors. Either a cut-out of 36 mm or 46 mm in height can be chosen depending on the cables being routed. A flat rubber gasket is included in the shipment.

Advantages & Benefits

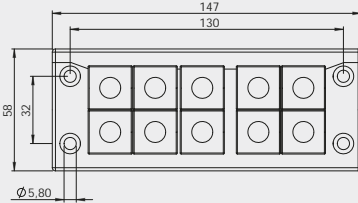
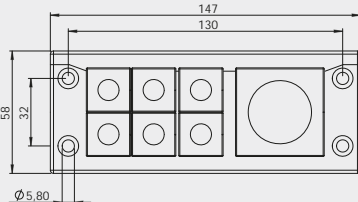
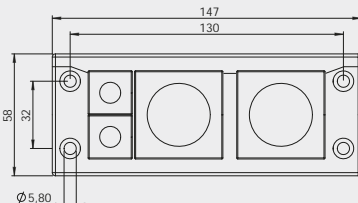
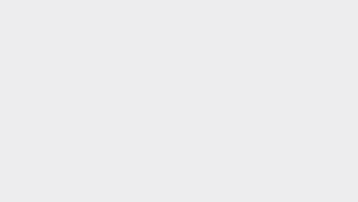
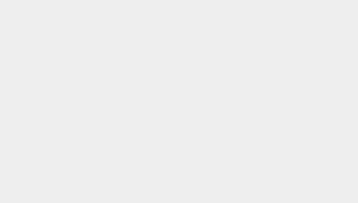
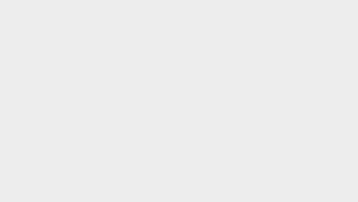
- Fast and easy assembly
- Warranty on pre-terminated cables remains
- Retrofits, repairs and maintenance can be done much more easily and quickly
- High cable density, wide variety of grommets
- Strain relief according to EN 62444
- High stability, vibration resistant

Specifications

Material	Polyamide (PA)
Flame class	UL94-V0
IP Rating	IP54, with gasket and correct selection of cable grommets (certified acc. to EN 60529)
NEMA type rating	NEMA type 12 (acc. to UL 50E)
Temperature	- 40°C to + 140°C (static) - 40°F to + 284°F (static)
Properties	Halogen-free, silicone-free
Cut-out dimensions	36 x 112 mm / page 200 - 201
Frame depth	17 mm

Accessories

Cable grommets	44 - 48
KEL-SNAP Mounting frames	31
KEL-EMC Grounding mounts	126 - 128
KDR Gland plates	146 - 153
FP Flange plates	160 - 165
MP Module plates	156 - 157
ST Plugs	49

	KEL-U 24 10	54241	10 -	10
	KEL-U 24 10 with V2A screws	54241.200	10 -	10
	KEL-U 24 7	54247	6 1	10
	KEL-U 24 7 with V2A screws	54247.200	6 1	10
	KEL-U 24 4	54244	2 2	10
	KEL-U 24 4 with V2A screws	54244.200	2 2	10

KEL-ER 24 Cable Entry Frames



V2A anti-corrosive
Also available with stainless steel screws (V2A).



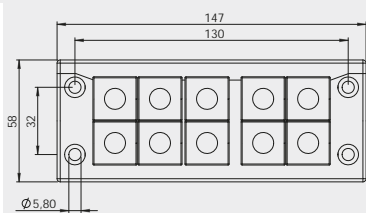
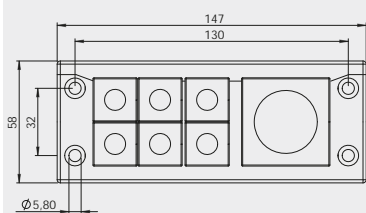
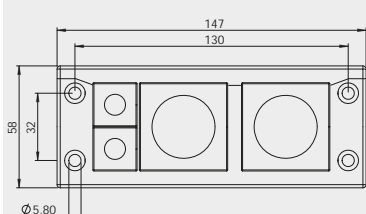
Also available with threaded bushings.



Slit KT grommets



Type	Order No.	Grommets small large	PU	Description
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KEL-ER 24 10	48241	10 -	10	
KEL-ER 24 10 with V2A screws	48241.200	10 -	10	
KEL-ER 24 7	48247	6 1	10	
KEL-ER 24 7 with V2A screws	48247.200	6 1	10	
KEL-ER 24 4	48244	2 2	10	
KEL-ER 24 4 with V2A screws	48244.200	2 2	10	

Product Description

Split cable entry system for routing and sealing cables with connectors, providing an IP65 / up to NEMA type 4X rating and strain relief for cable diameters from 1 to 16 mm (KT 1 - 15) and 16 to 35 mm (KT 16 - 34).

The new cable entry system is easy to install. Cable grommets are placed in compartments in the frame and are securely fixed to the frame during assembly. The KEL-ER 24 frame matches exactly the cut-out dimensions for 24-pin standard industrial connectors. A flat rubber gasket is included in the shipment.

Advantages & Benefits

- Warranty on pre-terminated cables remains
- Retrofits, repairs and maintenance can be done much more easily and quickly
- High cable density, wide variety of grommets
- Strain relief according to EN 62444
- High stability, vibration resistant

Specifications

Material	Polyamide (PA)
Flame class	UL94-Vo
IP rating	IP65, with gasket and correct selection of single grommets (certified acc. to EN 60529)
NEMA type rating	NEMA type 4X (acc. to UL 50E)
Temperature	- 40°C to + 140°C (static) - 40°F to + 284°F (static)
Properties	Halogen-free, silicone-free
Cut-out dimensions	36/46 × 112 mm / Page 200 - 201
Frame depth	17 mm

Accessories

KT Cable grommets	44 - 46
KEL-EMC Grounding mounts	126 - 128
ST Plugs	49

KEL-U 16

Cable Entry Frames



Slit KT grommets



V2A anti-corrosive

Also available with stainless steel screws (V2A).



Also available with threaded bushings.



Description	Type	Order No.	Grommets small large	PU
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Product Description

Split cable entry system for routing cables with connectors, providing an IP54 / up to NEMA type 12 rating. Routing, sealing and providing strain relief for cable diameters from 1 to 35 mm. The new cable entry system is easy to install. Cable grommets are placed into compartments in the frame and are securely fixed to the frame during assembly. The KEL-U 16 frame matches exactly the cut-out dimensions for 16-pin standard industrial connectors. Either a cut-out of 36 mm or 46 mm in height can be chosen depending on the cables being routed. A flat rubber gasket is included in the shipment.

Advantages & Benefits

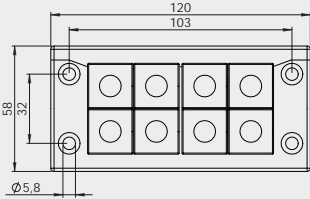
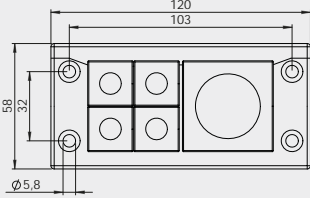
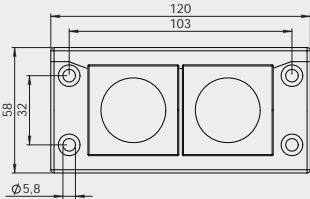
- Fast and easy assembly
- Warranty on pre-terminated cables remains
- Retrofits, repairs and maintenance can be done much more easily and quickly
- High cable density, wide variety of grommets
- Strain relief according to EN 62444
- High stability, vibration resistant

Specifications

Material	Polyamide (PA)
Flame class	UL94-Vo
IP rating	IP54, with gasket and correct selection of cable grommets (certified acc. to EN 60529)
NEMA type rating	NEMA type 12 (acc. to UL 50E)
Temperature	- 40°C to + 140°C (static) - 40°F to + 284°F (static)
Properties	Halogen-free, silicone-free
Cut-out dimensions	36/46 × 86 mm / Page 200 - 201
Frame depth	17 mm

Accessories

Cable grommets	44 - 48
KEL-SNAP Mounting frames	31
KEL-EMC Grounding mounts	126 - 128
KDR Gland plates	146 - 153
FP Flange plates	160 - 165
ST Plugs	49

	KEL-U 16 8	54168	8 -	10
	KEL-U 16 8 with V2A screws	54168.200	8 -	10
	KEL-U 16 5	54165	4 1	10
	KEL-U 16 5 with V2A screws	54165.200	4 1	10
	KEL-U 16 2	54162	- 2	10
	KEL-U 16 2 with V2A screws	54162.200	- 2	10

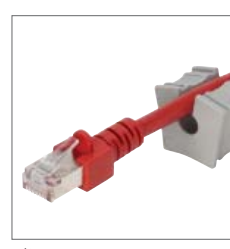
KEL-ER 16 Cable Entry Frames



V2A anti-corrosive
Also available with stainless steel screws (V2A).



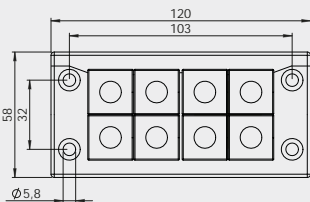
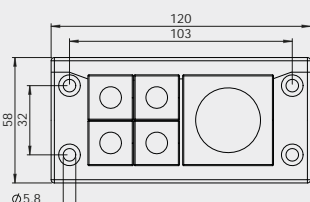
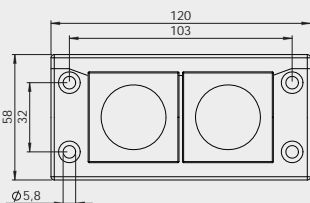
Also available with threaded bushings.



Slit KT grommets



Type	Order No.	Grommets small large	PU	Description
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KEL-ER 16 8	48168	8 -	10	
KEL-ER 16 8 with V2A screws	48168.200	8 -	10	
KEL-ER 16 5	48165	4 1	10	
KEL-ER 16 5 with V2A screws	48165.200	4 1	10	
KEL-ER 16 2	48162	- 2	10	
KEL-ER 16 2 with V2A screws	48162.200	- 2	10	

Product Description

Split cable entry system for routing and sealing cables with connectors, providing an IP65 / up to NEMA type 4X rating and strain relief for cable diameters from 1 to 16 mm (KT 1 - 15) and 16 to 35 mm (KT 16 - 34).

The new cable entry system is easy to install. Cable grommets are placed into compartments in the frame and are securely fixed to the frame during assembly. The KEL-ER 16 frame matches exactly the cut-out dimensions for 16-pin standard industrial connectors. A flat rubber gasket is included in the shipment.

Advantages & Benefits

- Warranty on pre-terminated cables remains
- Retrofits, repairs and maintenance can be done much more easily and quickly
- High cable density, wide variety of grommets
- Strain relief according to EN 62444
- High stability, vibration resistant

Specifications

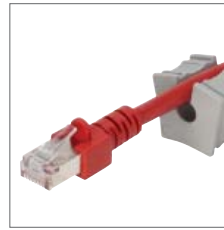
Material	Polyamide (PA)
Flame class	UL94-Vo
IP rating	IP65, with gasket and correct selection of single grommets (certified acc. to EN 60529)
NEMA type rating	NEMA type 4X (acc. to UL 50E)
Temperature	- 40°C to + 140°C (static) - 40°F to + 284°F (static)
Properties	Halogen-free, silicone-free
Cut-out dimensions	36/46 × 86 mm / Page 200 - 201
Frame depth	17 mm

Accessories

KT Cable grommets	44 - 46
KEL-EMC Grounding mounts	126 - 128
ST Plugs	49

KEL-U 10

Cable Entry Frames



Slit KT grommets



Also available with stainless steel screws (V2A).



Also available with threaded bushings.

1

IP54

Product Description

Split cable entry system for routing cables with connectors, providing an IP54 / up to NEMA type 12 rating. Routing, sealing and providing strain relief for cable diameters from 1 to 35 mm. The new cable entry system is easy to install. Cable grommets are placed into compartments in the frame and are securely fixed to the frame during assembly. The KEL-U 10 frame matches exactly the cut-out dimensions for 10-pin standard industrial connectors. Either a cut-out of 36 mm or 46 mm in height can be chosen depending on the cables being routed. A flat rubber gasket is included in the shipment.

Advantages & Benefits

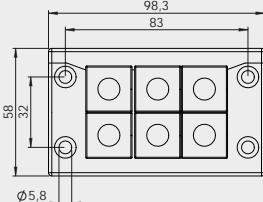
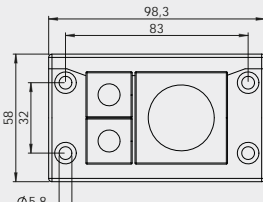
- Fast and easy assembly
- Warranty on pre-terminated cables remains
- Retrofits, repairs and maintenance can be done much more easily and quickly
- High cable density, wide variety of grommets
- Strain relief according to EN 62444
- High stability, vibration resistant

Specifications

Material	Polyamide (PA)
Flame class	UL94-V0
IP rating	IP54, with gasket and correct selection of cable grommets (certified acc. to EN 60529)
NEMA type rating	NEMA type 12 (acc. to UL 50E)
Temperature	- 40°C to + 140°C (static) - 40°F to + 284°F (static)
Properties	Halogen-free, silicone-free
Cut-out dimensions	36/46 × 65 mm / Page 200 - 201
Frame depth	17 mm

Accessories

Cable grommets	44 - 48
KEL-SNAP Mounting frames	31
KEL-EMC Grounding mounts	126 - 128
ST Plugs	49

Description	Type	Order No.	Grommets small large	PU
	KEL-U 10 6	54216	6 -	10
	KEL-U 10 6 with V2A screws	54216.200	6 -	10
	KEL-U 10 3	54212	2 1	10
	KEL-U 10 3 with V2A screws	54212.200	2 1	10

KEL-ER 10 Cable Entry Frames



V2A anti-corrosive
Also available with stainless steel screws (V2A).



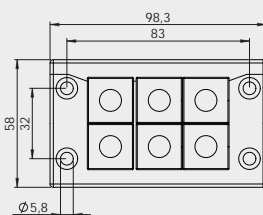
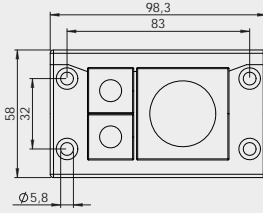
Also available with threaded bushings.



Slit KT grommets



Type	Order No.	Grommets small large	PU	Description
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KEL-ER 10 6	48216	6 -	10	
KEL-ER 10 6 with V2A screws	48216.200	6 -	10	
KEL-ER 10 3	48212	2 1	10	
KEL-ER 10 3 with V2A screws	48212.200	2 1	10	

Product Description

Split cable entry system for routing and sealing cables with connectors, providing an IP65 / up to NEMA type 4X rating and strain relief for cable diameters from 1 to 16 mm (KT 1 - 15) and 16 to 35 mm (KT 16 - 34).

The new cable entry system is easy to install. Cable grommets are placed into compartments in the frame and are securely fixed to the frame during assembly. The KEL-ER 10 frame matches exactly the cut-out dimensions for 10-pin standard industrial connectors. A flat rubber gasket is included in the shipment.

Advantages & Benefits

- Warranty on pre-terminated cables remains
- Retrofits, repairs and maintenance can be done much more easily and quickly
- High cable density, wide variety of grommets
- Strain relief according to EN 62444
- High stability, vibration resistant

Specifications

Material	Polyamide (PA)
Flame class	UL94-Vo
IP rating	IP65, with gasket and correct selection of single grommets (certified acc. to EN 60529)
NEMA type rating	NEMA type 4X (acc. to UL 50E)
Temperature	- 40°C to + 140°C (static) - 40°F to + 284°F (static)
Properties	Halogen-free, silicone-free
Cut-out dimensions	36 / 46 × 65 mm / Page 200 - 201
Frame depth	17 mm

Accessories

KT Cable grommets	44 - 46
KEL-EMC Grounding mounts	126 - 128
ST Plugs	49

KEL-U-B

Cable Entry Frames



Slit KT grommets



V2A anti-corrosive

Also available with stainless steel screws (V2A).



Also available with threaded bushings.

1

Description	Type	Order No.	Grommets small large	PU
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Product Description

Split cable entry system for routing cables with connectors, providing an IP54 / up to NEMA type 12 rating. Routing, sealing and providing strain relief for cable diameters from 1 to 35 mm.

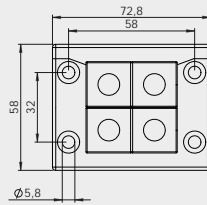
The new cable entry system is easy to install. Cable grommets are placed into compartments in the frame and are securely fixed to the frame during assembly. The KEL-U-B frame matches exactly the cut-out dimensions of 46 × 46 mm measuring instruments. A flat rubber gasket is included in the shipment.

Advantages & Benefits

- Fast and easy assembly
- Warranty on pre-terminated cables remains
- Retrofits, repairs and maintenance can be done much more easily and quickly
- High cable density, wide variety of grommets
- Strain relief according to EN 62444
- High stability, vibration resistant

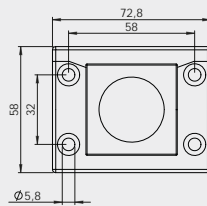
Specifications

Material	Polyamide (PA)
Flame class	UL94-Vo
IP rating	IP54, with gasket and correct selection of cable grommets (certified acc. to EN 60529)
NEMA type rating	NEMA type 12 (acc. to UL 50E)
Temperature	- 40°C to + 140°C (static) - 40°F to + 284°F (static)
Properties	Halogen-free, silicone-free
Cut-out dimensions	46 × 46 mm / Page 200 - 201
Frame depth	17 mm



KEL-U-B4	54204	4 -	10
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KEL-U-B4 with V2A screws	54204.200	4 -	10
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KEL-U-B1	54206	- 1	10
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KEL-U-B1 with V2A screws	54206.200	- 1	10
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Accessories

Cable grommets	44 - 48
KEL-SNAP Mounting frames	31
KEL-EMC Grounding mounts	126 - 128
FP Flange plates	160 - 165
ST Plugs	49

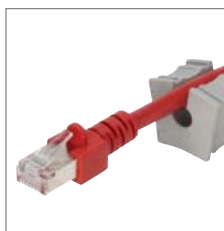
KEL-ER-B Cable Entry Frames



V2A anti-corrosive
Also available with stainless steel screws (V2A).



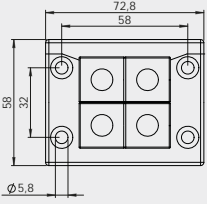
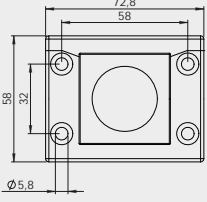
Also available with threaded bushings.



Slit KT grommets



Type	Order No.	Grommets small large	PU	Description
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KEL-ER-B4	48204	4 -	10	
KEL-ER-B4 with V2A screws	48204.200	4 -	10	
KEL-ER-B1	48206	- 1	10	
KEL-ER-B1 with V2A screws	48206.200	- 1	10	

Product Description

Split cable entry system for routing and sealing cables with connectors, providing an IP65 / up to NEMA type 4X rating and strain relief for cable diameters from 1 to 16 mm (KT 1 - 15) and 16 to 35 mm (KT 16 - 34).

The new cable entry system is easy to install. Cable grommets are placed into compartments in the frame and are securely fixed to the frame during assembly. The KEL-ER-B frame matches exactly the cut-out dimensions of 46 × 46 mm measuring instruments. A flat rubber gasket is included in the shipment.

Advantages & Benefits

- Warranty on pre-terminated cables remains
- Retrofits, repairs and maintenance can be done much more easily and quickly
- Small cut-out, high cable density
- Strain relief according to EN 62444
- High stability, vibration resistant

Specifications

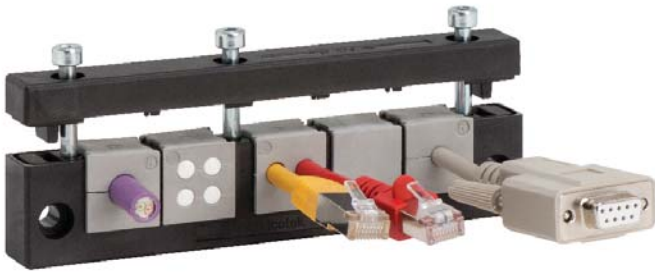
Material	Polyamide (PA)
Flame class	UL94-Vo
IP rating	IP65, with gasket and correct selection of single grommets (certified acc. to EN 60529)
NEMA type rating	NEMA type 4X (acc. to UL 50E)
Temperature	- 40°C to + 140°C (static) - 40°F to + 284°F (static)
#Properties	Halogen-free, silicone-free
Cut-out dimensions	46 × 46 mm / Page 200 - 201
Frame depth	17 mm

Accessories

KT Cable grommets	44 - 46
KEL-EMC Grounding mounts	126 - 128

KEL-E

Compact Cable Entry Frames



Slit KT grommets



V2A anti-corrosive
Also available with stainless steel screws (V2A).



Also available with threaded bushings.



Description	Type	Order No.	Cut-out [mm]	Grommets small large	PU
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Product Description

Split cable entry system for routing cables with connectors, providing an IP54 / up to NEMA type 12 rating. Routing, sealing and providing strain relief for cable diameters from 1 to 17 mm. The KEL-E version is particularly suited for flat connectors. The small frame is ideal for applications with limited space.

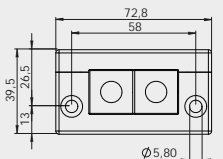
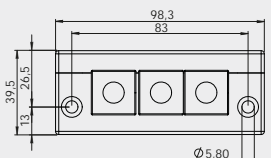
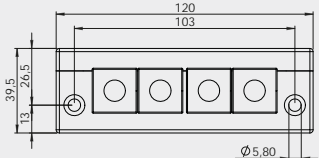
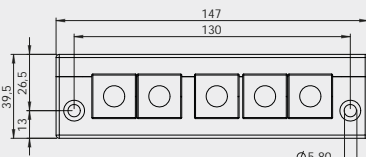
A flat rubber gasket is included in the shipment.

Advantages & Benefits

- Warranty on pre-terminated cables remains
- Retrofits, repairs and maintenance can be done much more easily and quickly
- Space saving shape
- Optimal for D-Sub connectors
- Strain relief according to EN 62444
- High stability, vibration resistant

Specifications

Material	Polyamide (PA)
Flame class	UL94-Vo
IP rating	IP54, with gasket and correct selection of cable grommets (certified acc. to EN 60529)
NEMA type rating	NEMA type 12 (acc. to UL 50E)
Temperature	- 40°C to + 140°C (static) - 40°F to + 284°F (static)
Properties	Halogen-free, silicone-free
Frame depth	17 mm

	KEL-E2	42249	43 × 24	2 -	10
	KEL-E2 with V2A screws	42249.200	43 × 24	2 -	10
	KEL-E3	42258	65 × 24	3 -	10
	KEL-E3 with V2A screws	42258.200	65 × 24	3 -	10
	KEL-E4	42259	86 × 24	4 -	10
	KEL-E4 with V2A screws	42259.200	86 × 24	4 -	10
	KEL-E5	42250	112 × 24	5 -	10
	KEL-E5 with V2A screws	42250.200	112 × 24	5 -	10

Accessories

Cable grommets	44 - 47
KEL-EMC Grounding mounts	126 - 128
ST Plugs	49

KEL-ER-E

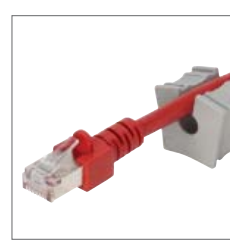
Compact Cable Entry Frames



V2A anti-corrosive
Also available with stainless steel screws (V2A).



Also available with threaded bushings.

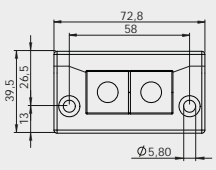
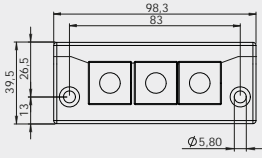
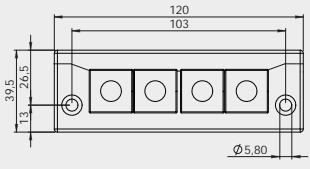
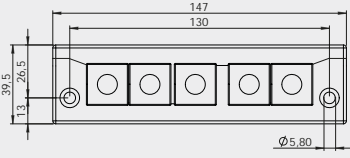


Slit KT grommets



IP65

Type	Order No.	Cut-out [mm]	Grommets small large	PU	Description
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KEL-ER-E2	48249	43 × 24	2 -	10	
KEL-ER-E2 with V2A screws	48249.200	43 × 24	2 -	10	
KEL-ER-E3	48258	65 × 24	3 -	10	
KEL-ER-E3 with V2A screws	48258.200	65 × 24	3 -	10	
KEL-ER-E4	48259	86 × 24	4 -	10	
KEL-ER-E4 with V2A screws	48259.200	86 × 24	4 -	10	
KEL-ER-E5	48250	112 × 24	5 -	10	
KEL-ER-E5 with V2A screws	48250.200	112 × 24	5 -	10	

Product Description

Split cable entry system for routing and sealing cables with connectors, providing an IP65 / up to NEMA type 12 rating and strain relief for cable diameters from 1 to 16 mm (KT 1 - 15). It is particularly suited for flat connectors. The small frame is ideal for applications with limited space.

The new cable entry system is easy to install. Cable grommets are placed into compartments in the frame and are securely fixed to the frame during assembly. A flat rubber gasket is included in the shipment.

Advantages & Benefits

- Warranty on pre-terminated cables remains
- Retrofits, repairs and maintenance can be done much more easily and quickly
- Strain relief according to EN 62444
- Space saving shape
- Optimal for D-Sub connectors
- High stability, vibration resistant

Specifications

Material	Polyamide (PA)
Flame class	UL94-Vo
IP rating	IP65, with gasket and correct selection of single grommets (certified acc. to EN 60529)
NEMA type rating	NEMA type 12 (acc. to UL 50E)
Temperature	- 40°C to + 140°C (static) - 40°F to + 284°F (static)
Properties	Halogen-free, silicone-free
Frame depth	17 mm

Accessories

KT Cable grommets	44
KEL-EMC Grounding mounts	126 - 128
ST Plugs	49

KEL 24

Cable Entry Frames



Slit KT grommets



V2A anti-corrosive

Also available with stainless steel screws (V2A).



Also available with threaded bushings.

1



Description	Type	Order No.	Grommets small large	PU
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Product Description

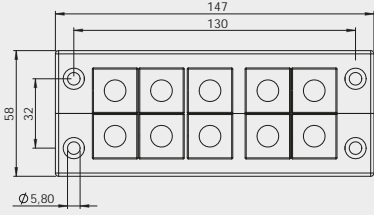
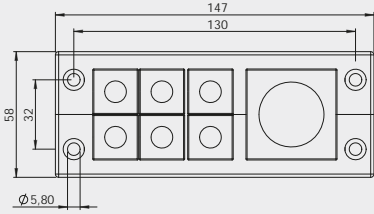
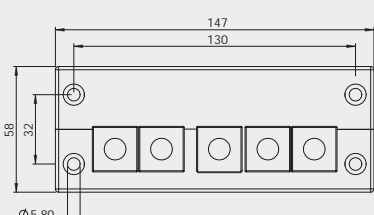
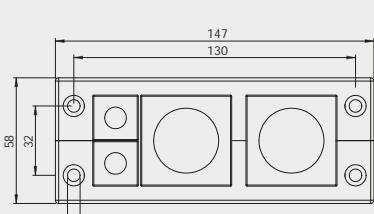
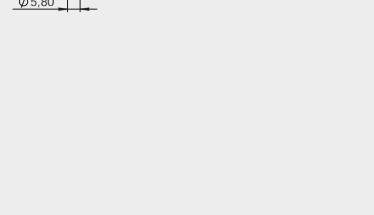
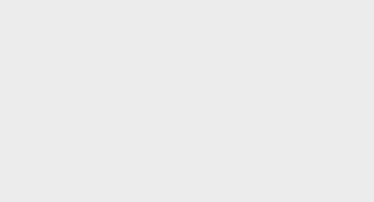
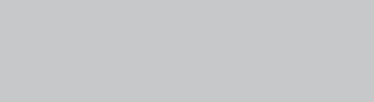
Centrally split cable entry system for routing cables with connectors, providing an IP54 / up to NEMA type 12 rating. The slit grommet matching the cable diameter is placed around the cable and inserted into the cable entry frame. Either a cut-out of 36 mm or 46 mm in height can be chosen depending on the cables being routed. The split cable entry frame KEL 24 matches exactly the cut-out dimensions of 24-pin standard industrial connectors. A flat rubber gasket is included in the shipment.

Advantages & Benefits

- Warranty on pre-terminated cables remains
- Retrofits, repairs and maintenance can be done much more easily and quickly
- High cable density, wide variety of grommets
- Strain relief according to EN 62444
- High stability, vibration resistant

Specifications

Material	Polyamide (PA)
Flame class	UL94-Vo
IP rating	IP54, with gasket and correct selection of cable grommets (certified acc. to EN 60529)
NEMA type rating	NEMA type 12 (acc. to UL 50E)
Temperature	- 40°C to + 140°C (static) - 40°F to + 284°F (static)
Properties	Halogen-free, silicone-free
Cut-out dimensions	36/46 × 112 mm / Page 200 - 201
Frame depth	17 mm

	KEL 24 10	42241	10 -	10
	KEL 24 10 with V2A screws	42241.200	10 -	10
	KEL 24 7	42247	6 1	10
	KEL 24 7 with V2A screws	42247.200	6 1	10
	KEL 24 5	42248	5 -	10
	KEL 24 5 with V2A screws	42248.200	5 -	10
	KEL 24 4	42244	2 2	10
	KEL 24 4 with V2A screws	42244.200	2 2	10

Accessories

Cable grommets	44 - 48
KEL-SNAP Mounting frames	31
KEL-EMC Grounding mounts	126 - 128
KDR Gland plates	146 - 153
FP Flange plates	160 - 165
MP Module plates	156 - 157
ST Plugs	49

KEL 16 Cable Entry Frames



Slit KT grommets



V2A
anti-corrosive

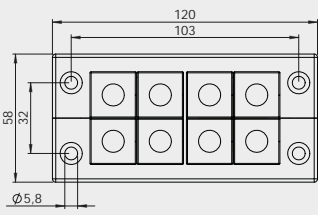
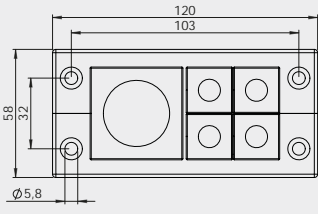
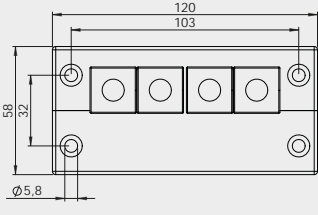
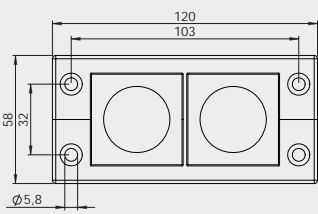
Also available with stainless steel screws (V2A).



Also available with threaded bushings.



Type	Order No.	Grommets small large	PU	Description
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KEL 16 8	42168	8 -	10	
KEL 16 8 with V2A screws	42168.200	8 -	10	
KEL 16 5	42165	4 1	10	
KEL 16 5 with V2A screws	42165.200	4 1	10	
KEL 16 4	42164	4 -	10	
KEL 16 4 with V2A screws	42164.200	4 -	10	
KEL 16 2	42162	- 2	10	
KEL 16 2 with V2A screws	42162.200	- 2	10	

Product Description

Centrally split cable entry system for routing cables with connectors, providing an IP54 / up to NEMA type 12 rating. The slit grommet matching the cable diameter is placed around the cable and inserted into the cable entry frame. Either a cut-out of 36 mm or 46 mm in height can be chosen depending on the cables being routed. The split cable entry frame KEL 16 matches exactly the cut-out dimensions of 16-pin standard industrial connectors. A flat rubber gasket is included in the shipment.

Advantages & Benefits

- Warranty on pre-terminated cables remains
- Retrofits, repairs and maintenance can be done much more easily and quickly
- High cable density, wide variety of grommets
- Strain relief according to EN 62444
- High stability, vibration resistant

Specifications

Material	Polyamide (PA)
Flame class	UL94-Vo
IP rating	IP54, with gasket and correct selection of cable grommets (certified acc. to EN 60529)
NEMA type rating	NEMA type 12 (acc. to UL 50E)
Temperature	- 40°C to + 140°C (static) - 40°F to + 284°F (static)
Properties	Halogen-free, silicone-free
Cut-out dimensions	36/46 × 86 mm / Page 200 - 201
Frame depth	17 mm

Accessories

Cable grommets	44 - 48
KEL-SNAP Mounting frames	31
KEL-EMC Grounding mounts	126 - 128
KDR Gland plates	146 - 153
FP Flange plates	160 - 165
ST Plugs	49

KEL 10

Cable Entry Frames



Slit KT grommets



V2A anti-corrosive

Also available with stainless steel screws (V2A).



Also available with threaded bushings.

1



Description	Type	Order No.	Grommets small large	PU
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Product Description

Centrally split cable entry system for routing cables with connectors, providing an IP54 / up to NEMA type 12 rating. The slit grommet matching the cable diameter is placed around the cable and inserted into the cable entry frame. Either a cut-out of 36 mm or 46 mm in height can be chosen depending on the cables being routed. The split cable entry frame KEL 10 matches exactly the cut-out dimensions of 10-pin standard industrial connectors. A flat rubber gasket is included in the shipment.

Advantages & Benefits

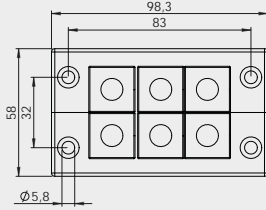
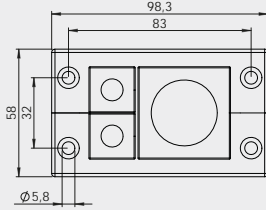
- Warranty on pre-terminated cables remains
- Retrofits, repairs and maintenance can be done much more easily and quickly
- High cable density, wide variety of grommets
- Strain relief according to EN 62444
- High stability, vibration resistant

Specifications

Material	Polyamide (PA)
Flame class	UL94-Vo
IP rating	IP54, with gasket and correct selection of cable grommets (certified acc. to EN 60529)
NEMA type rating	NEMA type 12 (acc. to UL 50E)
Temperature	- 40°C to + 140°C (static) - 40°F to + 284°F (static)
Properties	Halogen-free, silicone-free
Cut-out dimensions	36/46 × 65 mm / Page 200 - 201
Frame depth	17 mm

Accessories

Cable grommets	44 - 48
KEL-SNAP Mounting frames	31
KEL-EMC Grounding mounts	126 - 128
ST Plugs	49

	KEL 10 6	42216	6 -	10
	KEL 10 6 with V2A screws	42216.200	6 -	10
	KEL 10 3	42212	2 1	10
	KEL 10 3 with V2A screws	42212.200	2 1	10

KEL-B Cable Entry Frames



Slit KT grommets



V2A
anti-corrosive

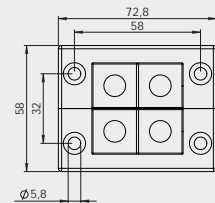
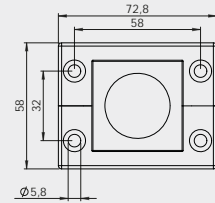
Also available with stainless steel screws (V2A).



Also available with threaded bushings.



Type	Order No.	Grommets small large	PU	Description
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KEL-B4	42204	4 -	10	
KEL-B4 with V2A screws	42204.200	4 -	10	
KEL-B1	42206	- 1	10	
KEL-B1 with V2A screws	42206.200	- 1	10	

Product Description

Centrally split cable entry system for routing cables with connectors, providing an IP54 / up to NEMA type 12 rating. The slit grommet matching the cable diameter is placed around the cable and inserted into the cable entry frame. Either a cut-out of 36 mm or 46 mm in height can be chosen depending on the cables being routed. The split cable entry frame KEL-B matches exactly the cut-out dimensions of 46 × 46 mm measuring instruments. A flat rubber gasket is included in the shipment.

Advantages & Benefits

- Warranty on pre-terminated cables remains
- Retrofits, repairs and maintenance can be done much more easily and quickly
- Space saving shape
- Small cut-out, high cable density
- Strain relief according to EN 62444
- High stability, vibration resistant

Specifications

Material	Polyamide (PA)
Flame class	UL94-V0
IP rating	IP54, with gasket and correct selection of cable grommets (certified acc. to EN 60529)
NEMA type rating	NEMA type 12 (acc. to UL 50E)
Temperature	- 40°C to + 140°C (static) - 40°F to + 284°F (static)
Properties	Halogen-free, silicone-free
Cut-out dimensions	46 × 46 mm / Page 200 - 201
Frame depth	17 mm

Accessories

Cable grommets	44 - 48
KEL-SNAP Mounting frames	31
KEL-EMC Grounding mounts	126 - 128
FP Flange plates	160 - 165
ST Plugs	49

KEL 24-E

Extended Cable Entry Frames



V2A anti-corrosive
Also available with stainless steel screws (V2A).



Also available with threaded steel bushings.

1

IP54

Description	Type	Order No.	Grommets small large	PU
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Product Description

The cable entry frame KEL 24-E offers a larger frame size for routing a greater amount of cables, pipes or conduits.

The KEL24-E series are KEL 24 frames extended with an additional middle frame for routing additional cables. Thus allowing a quick, easy and cost effective routing solution for up to 60 cables.

A flat rubber gasket is included in the shipment.

Advantages & Benefits

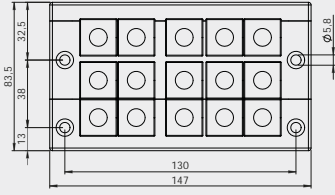
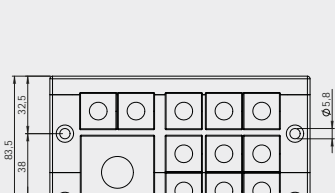

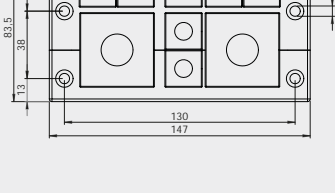
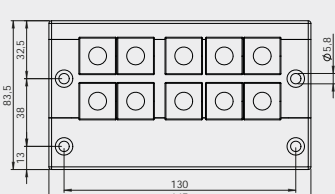
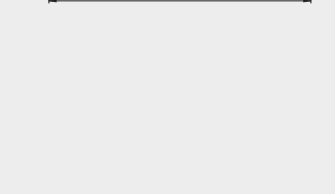
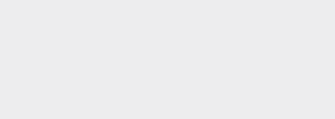
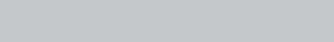
- Warranty on pre-terminated cables remains
- Retrofits, repairs and maintenance can be done much more easily and quickly
- High cable density
- Strain relief according to EN 62444
- High stability, vibration resistant

Specifications

Material	Polyamide (PA)
Flame class	UL94-Vo
IP Rating	IP54, with gasket and correct selection of cable grommets (certified acc. to EN 60529)
Temperature	- 40°C to + 140°C (static) - 40°F to + 284°F (static)
Properties	Halogen-free, silicone-free
Cut-out dimensions	66 × 112 mm / Page 200 - 201
Frame depth	17 mm

Accessories

KEL-SNAP Mounting frames	31
Cable grommets	44 - 48
KEL-EMC Grounding mounts	126 - 128
ST Plugs	49

	KEL 24 15-E	42209	15 -	1
	KEL 24 15-E with V2A screws	42209.200	15 -	1
	KEL 24 12-E	42208	11 1	1
	KEL 24 12-E with V2A screws	42208.200	11 1	1
	KEL 24 9-E	42207	7 2	1
	KEL 24 9-E with V2A screws	42207.200	7 2	1
	KEL 24 10-E	49056	10 -	1
	KEL 24 10-E with V2A screws	49056.200	10 -	1

KEL 24-MT

Extended Cable Entry Frames



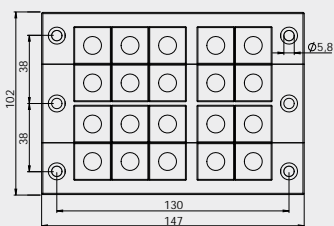
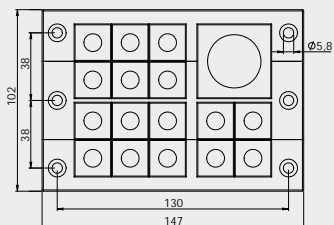
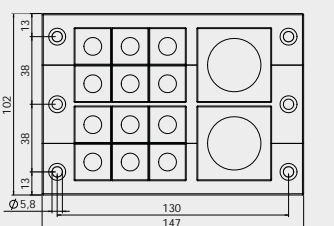
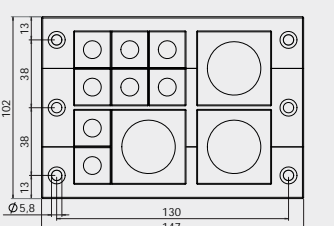
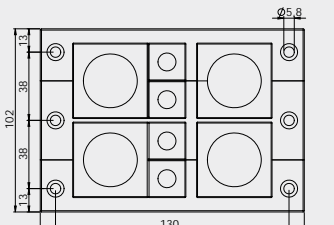
V2A anti-corrosive
Also available with stainless steel screws (V2A).



Also available with threaded bushings.



Type	Order No.	Grommets small large	PU	Description
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KEL 24 20-MT	42232	20 -	1	
KEL 24 20-MT with V2A screws	42232.200	20 -	1	
KEL 24 17-MT	42224	16 1	1	
KEL 24 17-MT with V2A screws	42224.200	16 1	1	
KEL 24 14-MT	42225	12 2	1	
KEL 24 14-MT with V2A screws	42225.200	12 2	1	
KEL 24 11-MT	42222	8 3	1	
KEL 24 11-MT with V2A screws	42222.200	8 3	1	
KEL 24 8-MT	42221	4 4	1	
KEL 24 8-MT with V2A screws	42221.200	4 4	1	

Product Description

The cable entry frame KEL 24-MT provides additional cable routing possibilities.

The KEL 24-MT series are KEL frames extended with an additional middle frame for routing additional cables. Thus allowing the quick, easy and cost effective routing solution for up to 80 cables.

A flat rubber gasket is included in the shipment.

Advantages & Benefits

- Warranty on pre-terminated cables remains
- Retrofits, repairs and maintenance can be done much more easily and quickly
- High cable density
- Strain relief according to EN 62444
- High stability, vibration resistant

Specifications

Material	Polyamide (PA)
Flame class	UL94-V0
IP Rating	IP54, with gasket and correct selection of the cable grommets (certified acc. to EN 60529)
Temperature	- 40°C to + 140°C (static) - 40°F to + 284°F (static)
Properties	Halogen-free, silicone-free
Cut-out dimensions	82 × 112 mm / Page 200 - 201
Frame depth	17 mm

Accessories

KEL-SNAP Mounting frames	31
Cable grommets	44 - 48
KEL-EMC Grounding mounts	126 - 128
ST Plugs	49

KEL 24-2MT

Extended Cable Entry Frames



V2A anti-corrosive
Also available with stainless steel screws (V2A).



Also available with threaded steel bushings.

1

Description	Type	Order No.	Grommets small large	PU
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Product Description

The KEL 24-2MT is our largest frame providing the ability to route and seal up to 120 cables.

The cable entry frames KEL 24-2MT series are KEL frames extended with two additional middle frames for routing additional cables. Thus allowing the quick, easy and cost effective routing solution for up to 120 cables. A flat rubber gasket is included in the shipment.

Advantages & Benefits

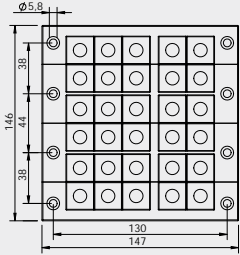
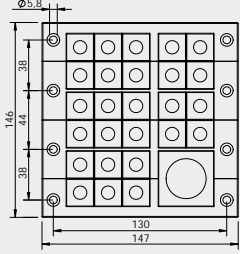
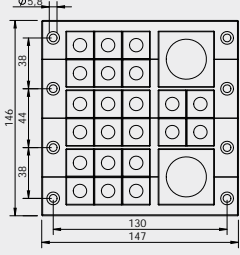
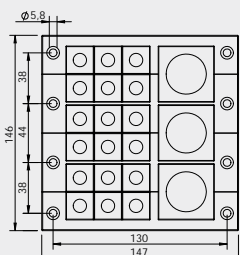
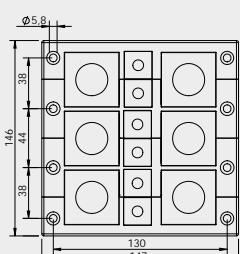

- Warranty on pre-terminated cables remains
- Retrofits, repairs and maintenance can be done much more easily and quickly
- High cable density
- Strain relief according to EN 62444
- High stability, vibration resistant

Specifications

Material	Polyamide (PA)
Flame class	UL94-Vo
IP Rating	IP54, with gasket and correct selection of the cable grommets (certified acc. to EN 60529)
Temperature	- 40°C to + 140°C (static) - 40°F to + 284°F (static)
Properties	Halogen-free, silicone-free
Cut-out dimensions	126 × 112 mm / Page 200 - 201
Frame depth	17 mm

Accessories

Cable grommets	44 - 48
KEL-EMC Grounding mounts	126 - 128
ST Plugs	49

	KEL 24 30-2 MT	42234	30 -	1
	KEL 24 30-2 MT with V2A screws	42234.200	30 -	1
	KEL 24 27-2 MT	42233	26 1	1
	KEL 24 27-2 MT with V2A screws	42233.200	26 1	1
	KEL 24 24-2 MT	42227	22 2	1
	KEL 24 24-2 MT with V2A screws	42227.200	22 2	1
	KEL 24 21-2 MT	42226	18 3	1
	KEL 24 21-2 MT with V2A screws	42226.200	18 3	1
	KEL 24 12-2 MT	42223	6 6	1
	KEL 24 12-2 MT with V2A screws	42223.200	6 6	1

KEL 16-E

Extended Cable Entry Frames



V2A anti-corrosive

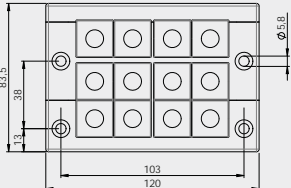
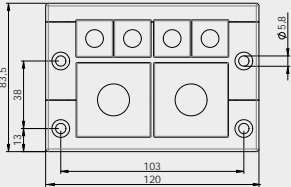
Also available with stainless steel screws (V2A).



Also available with threaded bushings.



Type	Order No.	Grommets small large	PU	Description
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KEL 16 12-E	42141	12 -	1	
KEL 16 12-E with V2A screws	42141.200	12 -	1	
KEL 16 6-E	42140	4 2	1	
KEL 16 6-E with V2A screws	42140.200	4 2	1	

Product Description

The cable entry frame KEL 16-E offers a larger frame size for routing a greater amount of cables, pipes or conduits.

The KEL16-E series are KEL 16 frames extended with an additional middle frame for routing additional cables. Thus allowing a quick, easy and cost effective routing solution for up to 48 cables. A flat rubber gasket is included in the shipment.

Advantages & Benefits

- Warranty on pre-terminated cables remains
- Retrofits, repairs and maintenance can be done much more easily and quickly
- High cable density
- Strain relief according to EN 62444
- High stability, vibration resistant

Specifications

Material	Polyamide (PA)
Flame class	UL94-Vo
IP Rating	IP54, with gasket and correct selection of cable grommets (certified acc. to EN 60529)
Temperature	- 40°C to + 140°C (static) - 40°F to + 284°F (static)
Properties	Halogen-free, silicone-free
Cut-out dimensions	66 × 86 mm
Frame depth	17 mm

Accessories

Cable grommets	44 - 48
KEL-EMC Grounding mounts	126 - 128
ST Plugs	49

KEL 16-MT

Extended Cable Entry Frames



V2A anti-corrosive
Also available with stainless steel screws (V2A).



Also available with threaded bushings.

1

Product Description

The cable entry frame KEL 16-MT provides additional cable routing possibilities.

The KEL 16-MT series are KEL 16 frames extended with an additional middle frame for routing additional cables. Thus allowing the quick, easy and cost effective routing solution for up to 64 cables. A flat rubber gasket is included in the shipment.

Advantages & Benefits

- Warranty on pre-terminated cables remains
- Retrofits, repairs and maintenance can be done much more easily and quickly
- High cable density
- Strain relief according to EN 62444
- High stability, vibration resistant

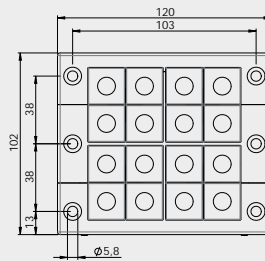
Specifications

Material	Polyamide (PA)
Flame class	UL94-Vo
IP Rating	IP54, with gasket and correct selection of the grommets (certified acc. to EN 60529)
Temperature	- 40°C to + 140°C (static) - 40°F to + 284°F (static)
Properties	Halogen-free, silicone-free
Cut-out dimensions	82 × 86 mm
Frame depth	17 mm

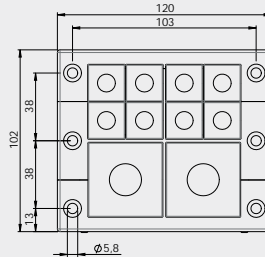
Accessories

Cable grommets	44 - 48
KEL-EMC Grounding mounts	126 - 128
ST Plugs	49

Description	Type	Order No.	Grommets small large	PU
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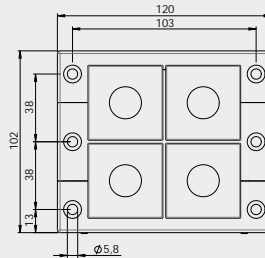
KEL 16 16-MT	42145	16 -	1
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KEL 16 16-MT with V2A screws	42145.200	16 -	1
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KEL 16 10-MT	42144	8 2	1
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KEL 16 10-MT with V2A screws	42144.200	8 2	1
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KEL 16 4-MT	42143	- 4	1
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KEL 16 4-MT with V2A screws	42143.200	- 4	1
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KEL 16-2MT

Extended Cable Entry Frames



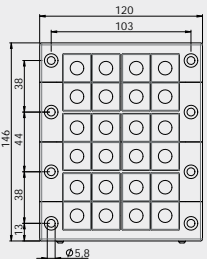
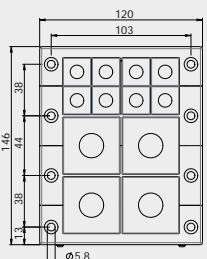
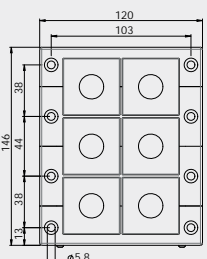
V2A anti-corrosive
Also available with stainless steel screws (V2A).



Also available with threaded bushings.



Type	Order No.	Grommets small large	PU	Description
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KEL 16 24-2 MT	42149	24 -	1	
KEL 16 24-2 MT with V2A screws	42149.200	24 -	1	
KEL 16 12-2 MT	42148	8 4	1	
KEL 16 12-2 MT with V2A screws	42148.200	8 4	1	
KEL 16 6-2 MT	42147	- 6	1	
KEL 16 6-2 MT with V2A screws	42147.200	- 6	1	

Product Description

The KEL 16-2MT is our largest frame providing the ability to route and seal up to 96 cables.

The cable entry frames KEL 16-2MT series are KEL 16 frames extended with two additional middle frames for routing additional cables. Thus allowing the quick, easy and cost effective routing solution for up to 96 cables. A flat rubber gasket is included in the shipment.

Advantages & Benefits

- Warranty on pre-terminated cables remains
- Retrofits, repairs and maintenance can be done much more easily and quickly
- High cable density
- Strain relief according to EN 62444
- High stability, vibration resistant

Specifications

Material	Polyamide (PA)
Flame class	UL94-Vo
IP Rating	IP54, with gasket and correct selection of the cable grommets (certified acc. to EN 60529)
Temperature	- 40°C to + 140°C (static) - 40°F to + 284°F (static)
Properties	Halogen-free, silicone-free
Cut-out dimensions	126 × 86 mm
Frame depth	17 mm

Accessories

Cable grommets	44 - 48
KEL-EMC Grounding mounts	126 - 128
ST Plugs	49



KEL-FG-A

Flange Enclosures for Cable Entry



Slit KT grommets

1

Description	Type	Order No.	Grommets		PU
			small	large	

Product Description

The cable entry frames KEL-FG-A are suited for installation, sealing and strain relief of cables with connectors and conduits at an angle of 90° to the panel, enclosure or machine wall. The KEL-FG-A frame matches exactly the cut-out dimensions for 24-pin standard industrial connectors. A flat rubber gasket is included in the shipment.

Advantages & Benefits

- Installation at an angle of 90° to the wall
- Mechanical protection of cable directly at the place of entry
- Protection against water spray and drips
- Warranty on pre-terminated cables remains
- Strain relief according to EN 62444
- High stability, vibration resistant

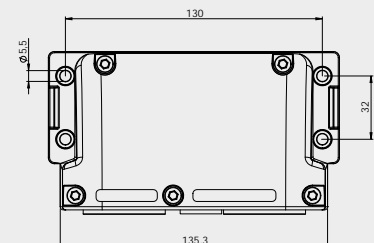
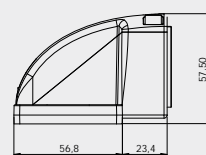
Specifications

Material	Polyamide (PA)
Flame class	UL94-V0
IP Rating	IP54, with gasket and correct selection of the cable grommets
Temperature	- 40°C to + 140°C (static) - 40°F to + 284°F (static)
Properties	Halogen-free, silicone-free
Cut-out dimensions	36 × 112 mm, Page 200 - 201

	KEL-FG-A10	42320	10 -	1
	KEL-FG-A10 with V2A screws	42320.200	10 -	1
	KEL-FG-A7	42322	6 1	1
	KEL-FG-A7 with V2A screws	42322.200	6 1	1
	KEL-FG-A4	42324	2 2	1
	KEL-FG-A4 with V2A screws	42324.200	2 2	1

Accessories

Cable grommets	44 - 48
KEL-SNAP Mounting frames	31
KEL-EMC Grounding mounts	126 - 128
ST Plugs	49





KEL-FG-B

Flange Enclosures for Cable Entry



V2A anti-corrosive
Also available with stainless steel screws (V2A).



Slit KT grommets



Type	Order No.	Grommets small large	PU	Description
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KEL-FG-B4	42330	4 -	1	
KEL-FG-B4 with V2A screws	42330.200	4 -	1	
KEL-FG-B1	42332	- 1	1	
KEL-FG-B1 with V2A screws	42332.200	- 1	1	

Product Description

The cable entry frames KEL-FG-B are suited for installation, sealing and strain relief of cables with connectors and conduits at an angle of 90° to the panel, enclosure or machine wall. A flat rubber gasket is included in the shipment.

Advantages & Benefits

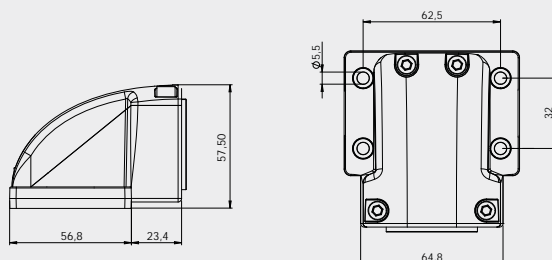
- Installation at an angle of 90° to the wall
- Mechanical protection of cable directly at the place of entry
- Protection against water spray and drips
- Warranty on pre-terminated cables remains
- Space saving shape
- Strain relief according to EN 62444
- High stability, vibration resistant

Specifications

Material	Polyamide (PA)
Flame class	UL94-Vo
IP Rating	IP54, with gasket and correct selection of the cable grommets
Temperature	- 40°C to + 140°C (static) - 40°F to + 284°F (static)
Properties	Halogen-free, silicone-free
Cut-out dimensions	46 × 36 mm, Page 200 - 201

Accessories

Cable grommets	44 - 48
KEL-EMC Grounding mounts	126 - 128
ST Plugs	49





KEL-FG-E

Flange Enclosures for Cable Entry



Slit KT grommets

1

Description	Type	Order No.	Grommets		PU
			small	large	

Product Description

The cable entry frames KEL-FG-E are suited for installation, sealing and strain relief of cables with connectors and conduits at an angle of 90° to the panel, enclosure or machine wall.

The KEL-FG-E version is particularly suited for flat connectors. The small frame is ideal for applications with limited space. A flat rubber gasket is included in the shipment.

Advantages & Benefits

- Installation at an angle of 90° to the wall
- Mechanical protection of cable directly at the place of entry
- Protection against water spray and drips
- Warranty on pre-terminated cables remains
- Space saving shape
- Optimal for D-Sub connectors
- Strain relief according to EN 62444
- High stability, vibration resistant

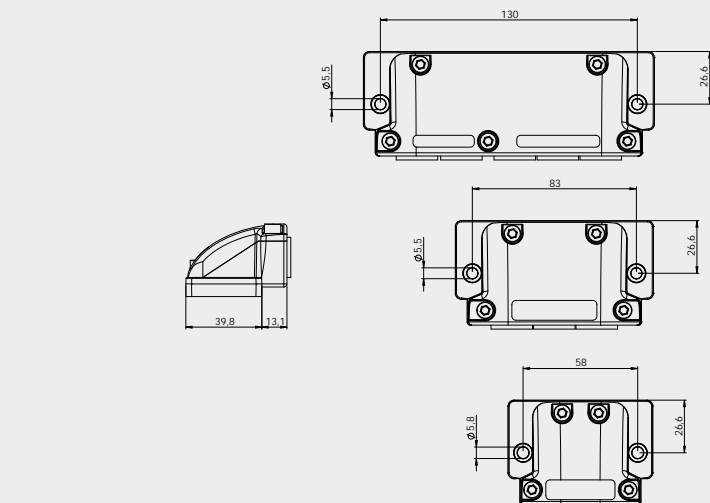
Specifications

Material	Polyamide (PA)
Flame class	UL94-Vo
IP Rating	IP54, with gasket and correct selection of the cable grommets
Temperature	- 40°C to + 140°C (static) - 40°F to + 284°F (static)
Properties	Halogen-free, silicone-free
Cut-out dimensions	E2: 43 × 24 mm E3: 65 × 24 mm E5: 112 × 24 mm

Accessories

Cable grommets	44 - 48
KEL-EMC Grounding mounts	126 - 128
ST Plugs	49

	KEL-FG-E2	42333	2 -	5
	KEL-FG-E2 with V2A screws	42333.200	2 -	5
	KEL-FG-E3	42334	3 -	5
	KEL-FG-E3 with V2A screws	42334.200	3 -	5
	KEL-FG-E5	42336	5 -	5
	KEL-FG-E5 with V2A screws	42336.200	5 -	5



KEL-FL

Cable Entry Frames for Flat Cables



1



Product Description

The KEL-FL range enables simple, fast and flexible cable routing and sealing of flat wires, e.g. in elevator construction.

Innovative construction of the grommets compensates for manufacturing inconsistencies in flat cables. Split KT grommets can be utilized to additionally route round cables with connectors. A flat rubber gasket is included in the shipment.

Advantages & Benefits

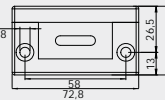
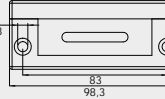
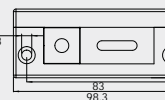
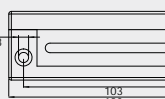
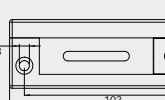

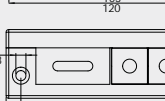
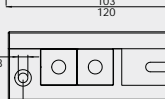
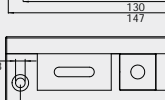



- Routing of flat cables in combination with pre-terminated round cables by using a single KEL-FL cable entry frame
- Space saving shape

Specifications

Material	Polyamide (PA)
Flame class	UL94-Vo
IP Rating	IP54, with gasket and correct selection of the cable grommets
Temperature	- 40°C to + 140°C (static) - 40°F to + 284°F (static)
Properties	Halogen-free, silicone-free
Mounting template	See Page 200 - 201
Frame depth	17 mm

Accessories

KT Cable grommets, small	44 - 45
KTMB/KT-DPF Cable grommets, small	47
FT Cable grommets, flat	33
KEL-EMC Grounding mounts	126 - 128
ST Plugs	49

Description	Type	Order No.	Cut-out [mm]	Grommets KT FT	PU
	KEL-FL A	46100	43 × 24	0× KT 1× FT-1	10
	KEL-FL B	46105	65 × 24	0× KT 1× FT-2	10
	KEL-FL C	46110	65 × 24	1× KT 1× FT-1	10
	KEL-FL D	46115	86 × 24	0× KT 1× FT-3	10
	KEL-FL E	46120	86 × 24	1× KT 1× FT-2	10
	KEL-FL F	46125	86 × 24	0× KT 2× FT-1	10
	KEL-FL G	46130	86 × 24	2× KT 1× FT-1	10
	KEL-FL H	46135	112 × 24	2× KT 1× FT-2	10
	KEL-FL I	46140	112 × 24	1× KT 2× FT-1	10
	KEL-FL J	46145	112 × 24	3× KT 1× FT-1	10
	KEL-FL K	46150	112 × 24	1× FT-1 1× FT-2	10
	KEL-FL L	46155	112 × 24	1× FT-4	10



FT Grommets for Flat Cables



Type	Order No. gray	Clamping range	PU	Description
------	-------------------	----------------	----	-------------

FT-1 o	46201	Blank grommet	5	
FT-1 A	46210	Width: 19 - 23 mm Thickness: 5.5 - 6 mm	5	
FT-1 B	46211	Width: 28 - 33 mm Thickness: 5.5 - 6 mm	5	
FT-1 C	46212	Width: 24 - 30 mm Thickness: 8.5 - 9 mm	5	
FT-1 E	46214	Width: 19 - 24 mm Thickness: 6.5 - 7 mm	5	
FT-1 F	46215	Width: 28 - 33 mm Thickness: 9 - 9.5 mm	5	
FT-2 o	46202	Blank grommet	5	
FT-2 A	46250	Width: 32.5 - 38 mm Thickness: 5 - 5.5 mm	5	
FT-2 B	46251	Width: 45 - 50.5 mm Thickness: 6 - 6.5 mm	5	
FT-2 C	46252	Width: 47 - 52 mm Thickness: 9.5 - 10 mm	5	
FT-2 F	46255	Width: 38 - 43 mm Thickness: 12.5 - 13 mm	5	
FT-2 G	46256	Width: 49 - 54 mm Thickness: 5 - 6 mm	5	
FT-3 o	46203	Blank grommet	5	
FT-3 A	46300	Width: 72 - 77 mm Thickness: 5 - 5.5 mm	5	
FT-4 o	46204	Blank grommet	5	
FT-4 A	46330	Width: 85 - 99 mm Thickness: 4.2 - 5.2 mm	5	

Product Description

FT grommets are used to route flat cables, e.g. in elevator construction. Suitable for cable entry frames KEL-FL.

Innovative construction of the grommets compensates for manufacturing inconsistencies in flat cables.

Advantages & Benefits

- Routing of flat cables with various dimensions

Specifications

Material	Elastomer
Flame class	UL94-Vo
IP Rating	IP54
Temperature	- 40°C to + 90°C (static) - 40°F to + 194°F (static)
Properties	Halogen-free, silicone-free

Compatible with

KEL-FL Cable entry frames 32

KEL 183 | KEL 183-E

Cable Entry Frames for Supply Cables



1

IP54

Product Description

The split cable entry frame KEL 183 enables the user to route cables and tubes with a diameter of up to 75 mm (depending on the frame type) and to seal them in accordance with IP54 / up to NEMA type 12.

For cables up to 35 mm the cable grommets KT can be used. With these split cable grommets, pre-terminated cables can be routed.

For cables up to 75 mm we have created the grommets KTMB for KEL 183. Those are not split and have a defined area for pushing the cable through.

A flat rubber gasket is included in the shipment.

Advantages & Benefits

- Installation of cables up to 75 mm
- Grommets allow rigid cables to be properly positioned and oriented during the installation process.
- Retrofits, repairs and maintenance can be done much more easily and quickly

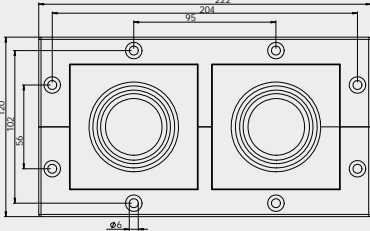
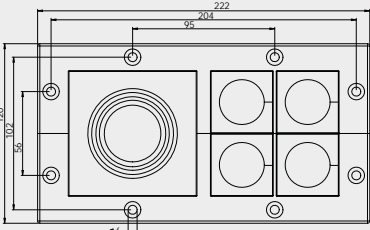
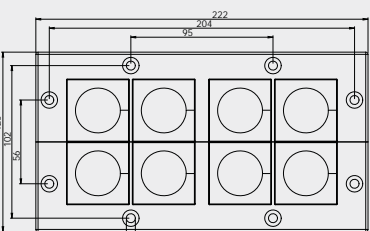
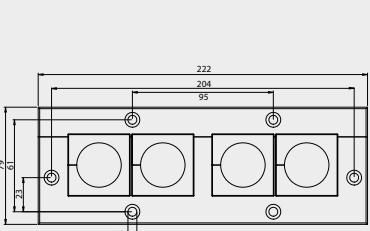
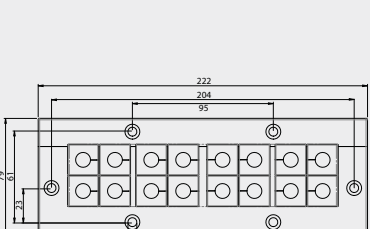

Specifications

Material	Polyamide (PA)
Flame class	UL94-V0
IP rating	IP54 with gasket and correct selection of the cables
NEMA type rating	NEMA type 12 (acc. to UL 50E)
Temperature	- 40°C to + 140°C (static) - 40°F to + 284°F (static)
Properties	Halogen-free, silicone-free
Cut-out dimensions	See page 200 - 201
Frame depth	17 mm

Accessories

KTMB 183 Cable grommets	35
Cable grommets	44 - 48
KEL-EMC Grounding mounts	126 - 128
ST Plugs	49

Description	Type	Order No.	Grommets KT KT 183 KT large	PU
-------------	------	-----------	----------------------------------	----

	KEL 183 2	47200	2 -	1
	KEL 183 2 with V2A screws	47200.200	2 -	1
	KEL 183 5	47220	1 4	1
	KEL 183 5 with V2A screws	47220.200	1 4	1
	KEL 183 8	47240	- 8	1
	KEL 183 8 with V2A screws	47240.200	- 8	1
	KEL 183-E4	47250	- 4	1
	KEL 183-E4 with V2A screws	47250.200	- 4	1
	KEL 183-E16	47255	16 KT small	1
	KEL 183-E16 with V2A screws	47255.200	16 KT small	1

KTMB 183

Grommets for KEL 183



Type	Order No. gray	Clamping range	PU
KTMB-O	41410	Blank grommet	1
KTMB-P	41415	34 - 44 mm	1
KTMB-Q	41420	44 - 54 mm	1
KTMB-R	41425	54 - 64 mm	1
KTMB-S	41430	64 - 75 mm	1

Product Description

The grommets KTMB-P to KTMB-S are suitable for cable diameters up to 75 mm. These grommets can be used with the KEL 183 cable entry frames.

These multi-range grommets are not split and have a defined area for pushing the cable through.

The blank grommet KTMB-O can accept cable sizes within a specified range. The membrane of the KTMB-O can be pierced or cut (cable diameter minus 10 mm) for cables up to 55mm in diameter.

Specifications

Material	Elastomer
Flame class	UL94-Vo
IP rating	IP54
NEMA type rating	NEMA type 12 (acc. to UL 50E)
Temperature	- 40°C to + 90°C (static) - 40°F to + 194°F (static)
Properties	Halogen-free, silicone-free

Compatible with

KEL 183 Cable entry frames 34

KEL-JUMBO

Cable Entry Frames for Supply Cables



V2A anti-corrosive
Also available with stainless steel screws (V2A).

1

Description	Type	Order No.	Dimension length width height	PU
-------------	------	-----------	--------------------------------------	----

Product Description

The KEL-JUMBO cable entry system for installation of cables and conduits with a diameter of up to 65 mm, especially suited for supply cables.

The innovative grommet design with the flex-membrane provides flexing and adjustment of the position for larger and more rigid cables.

We recommend round cut-outs, which can be made using standard punching tools.

Suggested cut-out: cable diameter +15 - 20%. A flat rubber gasket is included in the shipment.

Advantages & Benefits

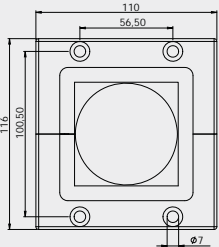
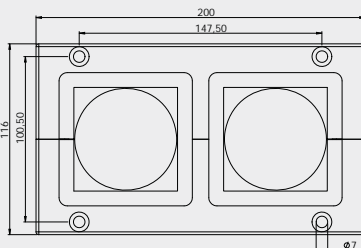
- Installation of cables up to 65 mm
- KTF grommets allow flexing and adjustment of the cable position
- Retrofitting and maintenance can be carried out easily and quickly
- Strain relief according to EN 62444

Specifications

Material	Polyamide (PA)
Flame class	UL94-Vo
IP rating	IP54
NEMA type rating	NEMA type 12 (acc. to UL 50E)
Temperature	- 40°C to + 140°C (static) - 40°F to + 284°F (static)
Properties	Halogen-free, silicone-free
Cut-out dimensions	Round, cable diameter +15%
Frame depth	35 mm

Accessories

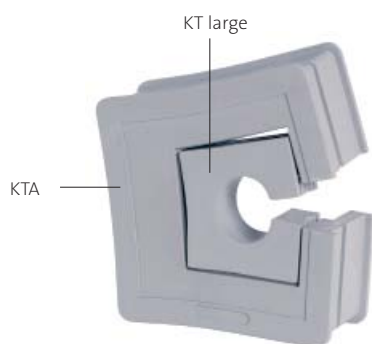
KTF Cable grommets	37
KDR-ESR Gland plates	146 - 149
KDR2 Split Gland plates	150 - 151
MP Module plates	156 - 157

	KEL-JUMBO 1	42360	110 × 116 × 35	1
	KEL-JUMBO 1 with V2A screws	42360.200	110 × 116 × 35	1
	KEL-JUMBO 2	42350	200 × 116 × 35	1
	KEL-JUMBO 2 with V2A screws	42350.200	200 × 116 × 35	1



KTF

Grommets for KEL-JUMBO



Type	Order No. gray	Clamping range	PU
KTF 00	42371	Blank grommet	1
KTA	42370	Adapter grommet for KT large	1
KTF 34	42376	33 - 36 mm	1
KTF 38	42379	37 - 40 mm	1
KTF 42	42382	41 - 44 mm	1
KTF 46	42385	45 - 48 mm	1
KTF 50	42388	48 - 52 mm	1
KTF 54	42391	53 - 56 mm	1
KTF 58	42394	56 - 60 mm	1
KTF 62	42397	61 - 65 mm	1

Product Description

The grommets KTF are suitable for cable diameters up to 65 mm.

Suitable for KEL-JUMBO cable entry frames.

Cables with a comparatively smaller diameter can be utilized with KEL-JUMBO frames by using an adapter grommet.

Specifications

Material	Elastomer
Flame class	UL94-Vo
IP rating	IP54
NEMA type rating	NEMA type 12 (acc. to UL 50E)
Temperature	- 40°C to + 90°C (static) - 40°F to + 194°F (static)
Properties	Halogen-free, silicone-free

Compatible with

KEL-JUMBO Cable entry frames 36

Accessories

KT Cable grommets, large 46

KVT

Split Cable Glands



IP54



1

Product Description

KVT is a circular split frame for quick and easy installation and sealing of cables with connectors or complete cable harnesses.

Polyamide locknuts as well as a sealing ring are included in the shipment.

For routing D-Sub, DVI or PROFIBUS connectors in combination with the split cable glands KVT, special locknuts with cut-outs are required.

Locknuts

Locknuts with special cut-outs are available separately. The cut-out dimensions are listed on pages 170 - 171.



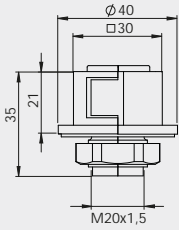
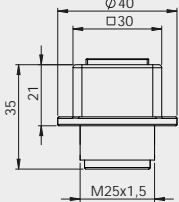
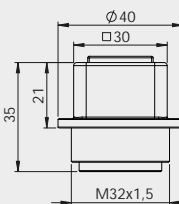
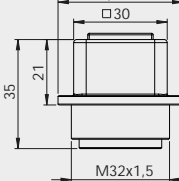
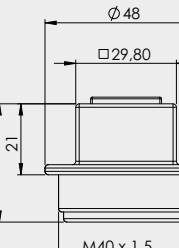
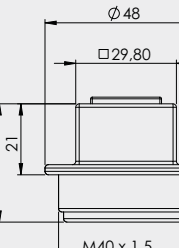
KGM-SUB-D9 fits D-Sub 9 connectors
(Required wall cut-out: \varnothing 36 mm, PU: 10)
 Order No. 45105 Order No. 45106

KGM-PB fits DVI and PROFIBUS connectors
(Required wall cut-out: \varnothing 42 mm, PU: 10)
 Order No. 45107 Order No. 45109

KGM-SUB-D25 fits SUB-D25 connectors
(Required wall cut-out: \varnothing 50 mm, PU:10)
 Order No. 45108 Order No. 45110

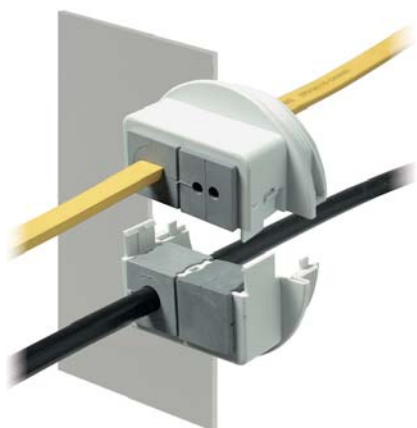


Type GMT: Split locknut, p. 167

Description	Type	Order No.	Grommets small large	Thread Thread length	PU
	KVT 20**	<input type="checkbox"/> 45034 <input type="checkbox"/> 45024	1 -	M20 x 1.5 Length: 14 mm	10
	KVT 25***	<input type="checkbox"/> 45035 <input type="checkbox"/> 45025	1 -	M25 x 1.5 Length: 14 mm	10
	KVT 32	<input type="checkbox"/> 45036 <input type="checkbox"/> 45026	1 -	M32 x 1.5 Length: 14 mm	10
	KVT 32 + KGM-SUB-D9	<input type="checkbox"/> 45037 <input type="checkbox"/> 45027	1 -	M32 x 1.5 Length: 14 mm	10
	KVT 40	<input type="checkbox"/> 45203 <input type="checkbox"/> 45028	1 -	M40 x 1.5 Length: 14 mm	10
	KVT 40 + KGM-PB	<input type="checkbox"/> 45205 <input type="checkbox"/> 45029	1 -	M40 x 1.5 Length: 14 mm	10

* Only valid for gray product types

** Max. cable diameter of 11 mm | *** Max. cable diameter of 15 mm



KVT

Split Cable Glands

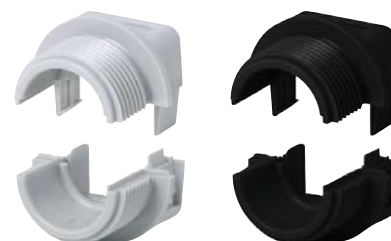


Type	Order No.	Grommets small large	Thread Thread length	PU	Description
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KVT 50 2	<input type="checkbox"/> 45204 <input type="checkbox"/> 45030	2 -	M50 x 1.5 Length: 14 mm	5	
KVT 50 2 + KGM-SUB-D25	<input type="checkbox"/> 45206 <input type="checkbox"/> 45031	2 -	M50 x 1.5 Length: 14 mm	5	
KVT 63 1	<input type="checkbox"/> 45212 <input type="checkbox"/> 45112	- 1	M63 x 1.5 Length: 14 mm	5	
KVT 63 4	<input type="checkbox"/> 45215 <input type="checkbox"/> 45115	4 -	M63 x 1.5 Length: 14 mm	5	

Advantages & Benefits

- Insertion of pre-terminated cables
- Warranty on pre-terminated cables remains
- Retrofits, repairs and maintenance can be done much more easily and quickly
- High cable density, wide variety of grommets
- Suitable for metric cut-outs
- Locknut is included



Specifications

Material	Polycarbonate (PC)
Color	<input type="checkbox"/> gray (similar RAL 7035) <input checked="" type="checkbox"/> black
Flame class	UL94-Vo
IP rating	IP54, with gasket and correct selection of the cable grommets (certified acc. to EN 60529)
NEMA type rating	NEMA type 12 (acc. to UL 50E)
Temperature	- 30°C to + 100°C (static) - 22°F to + 212°F (static)
Properties	Halogen-free, silicone-free
Cut-out dimension	Metric sizes

Accessories

Cable grommets	44 - 48
KVT-EMC Brackets	129
Locknuts	170 -171
ST Plugs	49

* Only valid for gray product types

KVT 80

Split Cable Glands



IP54

1

Description	Type	Order No.	Grommets KT small large	PU
-------------	------	-----------	------------------------------	----

Product Description

The KVT 80 split cable glands are designed for routing and sealing cables with connectors. By assembling the two frame halves with the screws provided, the grommets provide sufficient pressure on the routed cables to obtain a high degree of strain relief. The KVT 80 can be fitted to a wall thickness from 1.5 mm to 10 mm. A flat rubber gasket is included in the shipment.

Advantages & Benefits

- Insertion of pre-terminated cables
- Warranty on pre-terminated cables remains
- Retrofits, repairs and maintenance can be done quickly
- High cable density, wide variety of grommets
- Fast and easy assembly from the front side
- Strain relief according to EN 62444

Notes

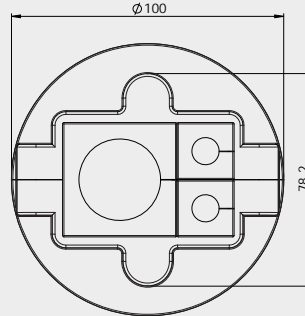
When mounting the KVT 80 on sheet metal, we recommend the following torque values:
 1.5 mm sheet = 1 Nm | 2 - 10 mm sheet = 1.5 Nm

Specifications

Material	Polycarbonate (PC)
Color	<input type="checkbox"/> gray (similar RAL 7035) <input type="checkbox"/> black
Flame class	UL94-Vo
IP rating	IP54, with gasket and correct selection of the cable grommets (certified acc. to EN 60529)
NEMA type rating	NEMA type 12 (acc. to UL 50E)
Temperature	- 30°C to + 100°C (static) - 22°F to + 212°F (static)
Properties	Halogen-free, silicone-free
Cut-out dimension	80 mm in diameter

Accessories

Cable grommets	44 - 48
ST Plugs	49

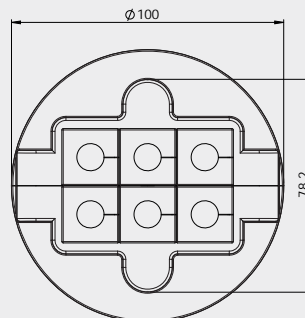


KVT 80|3

- 45236
- 45239

2|1

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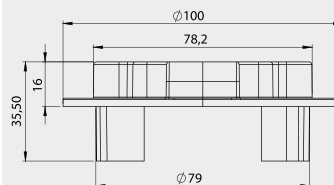


KVT 80|6

- 45237
- 45238

6|-

1



*Only valid for gray product types



KVT-SNAP

Pluggable Split Cable Glands



1

Type	Order No.	Grommets small large	Thread Thread length	PU	Description
KVT-SNAP 32	45130	1 -	M32 x 1.5 Length: 11 mm	10	
KVT-SNAP 40	45134	1 -	M40 x 1.5 Length: 11 mm	10	
KVT-SNAP 63 4	45152	4 -	M63 x 1.5 Length: 11 mm	5	
KVT-SNAP 63 1	45154	- 1	M63 x 1.5 Length: 11 mm	5	
KGM 32	<input type="checkbox"/> 52275 <input checked="" type="checkbox"/> 52285	PA	M32 x 1.5	10	
KGM 40	<input type="checkbox"/> 52276 <input checked="" type="checkbox"/> 52286	PA	M40 x 1.5	10	
KGM 63	<input type="checkbox"/> 52278 <input checked="" type="checkbox"/> 52288	PA	M63 x 1.5	5	

Product Description

KVT is a circular split frame for quick and easy installation of cables with connectors or complete cable harnesses.

By using the model KVT-SNAP, cables can be routed through thick walls (> 5 mm) e.g. into cast junction boxes without the use of tools.

A sealing ring is included in the shipment.

Assembly

- The snap ring is screwed into metric thread or tapped into the cut-out (it can also be fastened with a locknut)
- Once the snap ring is affixed to the housing the equipped KVT is simply pushed into it. Fast and easy installation!

Specifications

Material	Polycarbonate (PC)
Color	gray (similar RAL 7035)
Flame class	UL94-Vo
IP Rating	<input checked="" type="checkbox"/> IP54, with gasket and correct selection of the cable grommets (certified acc. to EN 60529)
Temperature	- 30°C to + 100°C (static) - 22°F to + 212°F (static)
Properties	Halogen-free, silicone-free
Cut-out dimension	Metric cut-outs

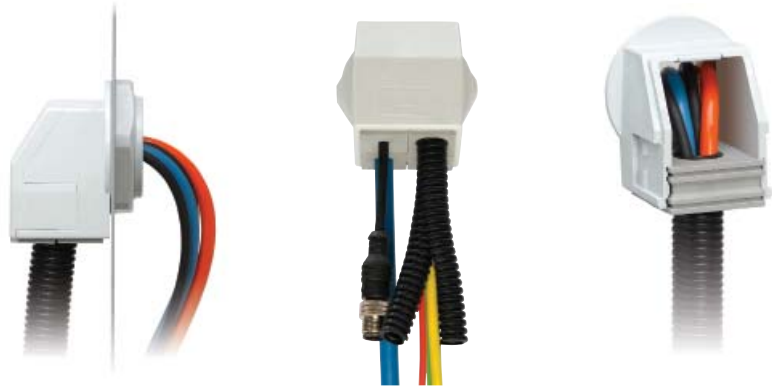
Accessories

Cable grommets	44 - 48
KVT-EMC Brackets	129
KGM Locknuts	170 -171
ST Plugs	49

* Only valid for gray product types

KVT-W90

Split Cable Glands



1

Description	Type	Order No. with locknut	Grommets small large	Thread Thread length	PU
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Product Description

The split KVT-W90 cable glands are used to insert and seal pre-terminated cables and conduits at a 90° angle.

In particular, the KVT 50-W90 is perfectly suited to hold corrugated or smooth hoses. A large number of cable entry grommets is available to the user.

Polyamide locknuts as well as a sealing ring are included in the shipment. Split locknuts can be ordered separately.

Advantages & Benefits

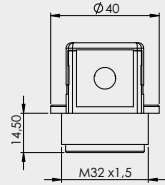
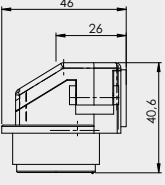
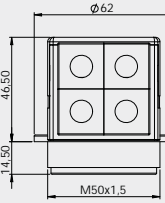
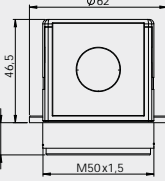
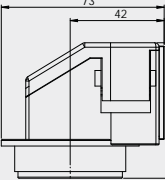
- Installation at an angle of 90° to the enclosure
- Insertion of pre-terminated cables and conduits
- Warranty on pre-terminated cables remains
- Suitable for metric cut-outs

Specifications

Material	Polycarbonate (PC)
Color	<input type="checkbox"/> gray (similar RAL 7035) <input checked="" type="checkbox"/> black
Flame class	UL94-V0
IP Rating	IP54, with gasket and correct selection of the cable grommets (certified acc. to EN 60529)
Temperature	- 30°C to + 100°C (static) - 22°F to + 212°F (static)
Properties	Halogen-free, silicone-free
Cut-out dimension	Metric cut-outs

Accessories

Cable grommets	44 - 48
KVT-EMC Brackets	129
KGM Locknuts	170 - 171
ST Plugs	49

	KVT 32-W90	<input type="checkbox"/> 45404 <input checked="" type="checkbox"/> 45406	1 -	M32 x 1.5 Length: 11.5 mm	10
	GMT 32	<input checked="" type="checkbox"/> 31120	-	M32 x 1.5	10
	KVT 50 4-W90	<input type="checkbox"/> 45424 <input checked="" type="checkbox"/> 45426	4 -	M50 x 1.5 Length: 11.5 mm	5
	KVT 50 1-W90	<input type="checkbox"/> 45414 <input checked="" type="checkbox"/> 45416	- 1	M50 x 1.5 Length: 11.5 mm	5
	GMT 50	<input checked="" type="checkbox"/> 31140	-	M50 x 1.5	10

*Only valid for gray product types

KT ServiceBox

Service Box for Cable Grommets



KT ServiceBox for Cable Grommets



Product Description

Convenient - everything available right away!

The KT ServiceBox is perfect for installations and service calls. It ensures your KT grommets are readily available.

Order No. 88001

Content*

Cable grommets, small:

- 110 KT for cables 1 - 17 mm
- 10 BTK blank grommets
- 10 KTMB multi-range grommets
- 2 KT-DPF multi-range grommets
- 8 KT-ASI for ASI-Bus cables

Cable grommets, large:

- 25 KT for cables 16 - 35 mm
- 4 BTG blank grommets / ATG adapter grommets
- 3 KTMB multi-range grommets
- 2 DT multi-membrane grommets
- 2 KT-DPF multi-range grommets

Accessories:

- 2 KEL-U cable entry frames
- 1 KVT split cable gland
- 1 KZL strain relief plate

- 1 Cable template

* Subject to alterations

KMS Cable Template



The correct size of the KT grommets can easily be determined by using the cable template (material: stainless steel V2A).

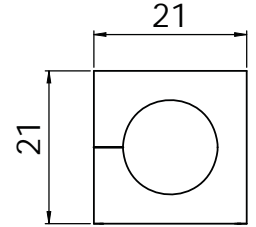
- Determining the diameter of the cable using the cable template
- Selecting the KT grommets according to the data on the cable template

Cable templates can also be ordered separately. **Order-No. 39800**



KT

Grommets, small, single



1

Product Description

Cable grommets KT small are used with the following cable entry frames:

KEL-U/KEL-ER/KEL-FG/KEL (8 - 36) | KVT (38 - 42)

The model range KT small is designed for cable diameters from 1 to 17 mm.

Assembly Note

When installing the grommets, the flat side should be facing the middle of the frame. This allows the flat sides of adjacent grommets to match up and provide a secure seal.

Specifications KT gray

Material	Elastomer
Flame class	UL94-Vo
IP rating	KT round, single: up to IP65 (in combination with KEL-ER frame) KT special/blank: IP54
NEMA type rating	up to NEMA type 4X (acc. to UL 50E)
Temperature	- 40°C to + 90°C (static) - 40°F to + 194°F (static)
Properties	Halogen-free, silicone-free

Specifications KT black

Material	Elastomer
Flame class	UL94-HB
IP rating	KT round, single: up to IP65 (in combination with KEL-ER frame) KT special/blank: IP54
NEMA type rating	up to NEMA type 4X (acc. to UL 50E)
Temperature	- 30°C to + 90°C (static) - 40°F to + 194°F (static)
Properties	Higher chemical resistance

Accessories

ST Plugs 49

Description	Type	Order No gray	Order No black	Clamping range	PU
BTK		41251	41351	Blank grommet	10
KT 1	NEW	39941	39943	1 - 2 mm	10
KT 2		39934	41302	2 - 3 mm	10
KT 3		41203	41303	3 - 4 mm	10
KT 4		41204	41304	4 - 5 mm	10
KT 5		41205	41305	5 - 6 mm	10
KT 6		41206	41306	6 - 7 mm	10
KT 7		41207	41307	7 - 8 mm	10
KT 8		41208	41308	8 - 9 mm	10
KT 9		41209	41309	9 - 10 mm	10
KT 10		41210	41310	10 - 11 mm	10
KT 11		41211	41311	11 - 12 mm	10
KT 12		41212	41312	12 - 13 mm	10
KT 13		41213	41313	13 - 14 mm	10
KT 14		41214	41314	14 - 15 mm	10
KT 15		41215	41315	15 - 16 mm	10
KTs 16		39901	39912	16 mm	10
KTs 17		39900	39913	17 mm	10
KT oval		39930	-	approx. 8 × 4 mm	10
KT S1		39931	-		10
KT tele		39929	-	Telephone cable	10
KT tele1		41257	-	Data cable RJ12	10
KT tele2		41258	-	Data cable RJ10 / RJ45	10

*Only valid for gray product types






KT

Grommets, small, multi



1

Type	Order No gray	Order No black	Clamping range	PU	Description
KT 2 1 NEW	39942	39944	2× Ø 1 mm	10	 KT 2 x
KT 2 2	39935	39936	2× Ø 2 mm	10	
KT 2 3	39939	39940	2× Ø 3 mm	10	
KT 2 4	39906	39907	2× Ø 4 mm	10	
KT 2 5	41200	39904	2× Ø 5 mm	10	
KT 2 6	41201	39905	2× Ø 6 mm	10	
KT 2 7	41202	39916	2× Ø 7 mm	10	
KT 2 8	39917	39918	2× Ø 8 mm	10	
KT 4 2	39937	39938	4× Ø 2 mm	10	 KT 4 x
KT 4 3	39914	39915	4× Ø 3 mm	10	
KT 4 4	39909	39911	4× Ø 4 mm	10	
KT 4 5	39908	39910	4× Ø 5 mm	10	
KT 4 6	39932	39933	4× Ø 6 mm	10	
KT ASI	39902	39903	1 ASI-cable	10	
KT-ASI2 rl	39922	39924	2 ASI-cables	10	
KT-ASI2 ll	39921	39923	2 ASI-cables	10	 KT ASI2 ll

Product Description

Cable grommets KT small are used with the following cable entry frames:

KEL-U/KEL-ER/KEL (8 - 34) | KVT (38 - 42)

The model range KT small is designed for cable diameters from 1 to 17 mm.

Assembly Note

When installing the grommets, the flat side should be facing the middle of the frame. This allows the flat sides of adjacent grommets to match up and provide a secure seal.

Specifications KT gray

Material	Elastomer
Flame class	UL94-Vo
IP rating	KT round, multi: IP54 KT special, multi: IP54
NEMA type rating	NEMA type 12 (acc. to UL 50E)
Temperature	- 40°C to + 90°C (static) - 40°F to + 194°F (static)
Properties	Halogen-free, silicone-free

Specifications KT black

Material	Elastomer
Flame class	UL94-HB
IP rating	KT round, multi: IP54 KT special, multi: IP54
NEMA type rating	NEMA type 12 (acc. to UL 50E)
Temperature	- 30°C to + 90°C (static) - 40°F to + 194°F (static)
Properties	Higher chemical resistance

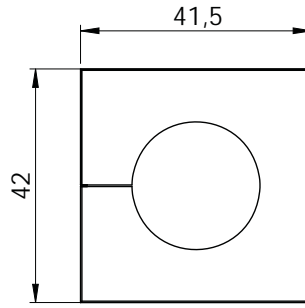
Accessories

ST Plugs 49

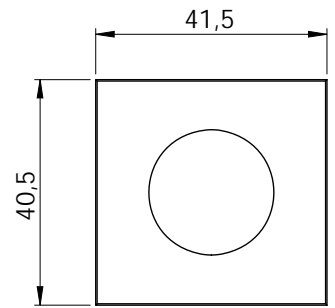
*Only valid for gray product types

KT

Grommets, large



KT / KT-DPF large



KTMB large

1

Product Description

Cable grommets KT large accept a wide range of cable diameters from 16 to 35 mm. They are used with the following cable entry frames:

KEL-U/KEL-ER/KEL-FG/KEL (8 - 36) | KVT (38 - 42)

ATG adapter grommets provide the possibility to hold a small KT grommet to reduce the clamping range down to 1 mm.

Specifications KT gray

Material	Elastomer
Flame class	UL94-Vo
IP rating	KT round, single: up to IP65 (in combination with KEL-ER frame) ATG/BTG: IP54
NEMA type rating	up to NEMA type 4X (acc. to UL 50E)
Temperature	- 40°C to + 90°C (static) - 40°F to + 194°F (static)
Properties	Halogen-free, silicone-free

Specifications KT black

Material	Elastomer
Flame class	UL94-HB
IP rating	KT round, single: up to IP65 (in combination with KEL-ER frame) ATG/BTG: IP54
NEMA type rating	up to NEMA type 4X (acc. to UL 50E)
Temperature	- 30°C to + 90°C (static) - 40°F to + 194°F (static)
Properties	Higher chemical resistance

Description	Type	Order No. gray	Order No. black	Clamping range	PU
-------------	------	----------------	-----------------	----------------	----

ATG		ATG	<input type="checkbox"/> 41253 <input checked="" type="checkbox"/> 41353	Adapter grommet	10
BTG		BTG	<input type="checkbox"/> 41252 <input checked="" type="checkbox"/> 41352	Blank grommet or 5 - 20 mm	10
KT round		KT 16	<input type="checkbox"/> 41216 <input checked="" type="checkbox"/> 41316	16 - 17 mm	10
		KT 17	<input type="checkbox"/> 41217 <input checked="" type="checkbox"/> 41317	17 - 18 mm	10
		KT 18	<input type="checkbox"/> 41218 <input checked="" type="checkbox"/> 41318	18 - 19 mm	10
		KT 19	<input type="checkbox"/> 41219 <input checked="" type="checkbox"/> 41319	19 - 20 mm	10
		KT 20	<input type="checkbox"/> 41220 <input checked="" type="checkbox"/> 41320	20 - 21 mm	10
		KT 21	<input type="checkbox"/> 41221 <input checked="" type="checkbox"/> 41321	21 - 22 mm	10
		KT 22	<input type="checkbox"/> 41222 <input checked="" type="checkbox"/> 41322	22 - 23 mm	10
		KT 23	<input type="checkbox"/> 41223 <input checked="" type="checkbox"/> 41323	23 - 24 mm	10
		KT 24	<input type="checkbox"/> 41224 <input checked="" type="checkbox"/> 41324	24 - 25 mm	10
		KT 25	<input type="checkbox"/> 41225 <input checked="" type="checkbox"/> 41325	25 - 26 mm	10
		KT 26	<input type="checkbox"/> 41226 <input checked="" type="checkbox"/> 41326	26 - 27 mm	10
		KT 27	<input type="checkbox"/> 41227 <input checked="" type="checkbox"/> 41327	27 - 28 mm	10
		KT 28	<input type="checkbox"/> 41228 <input checked="" type="checkbox"/> 41328	28 - 29 mm	10
		KT 29	<input type="checkbox"/> 41229 <input checked="" type="checkbox"/> 41329	29 - 30 mm	10
		KT 30	<input type="checkbox"/> 41230 <input checked="" type="checkbox"/> 41330	30 - 31 mm	10
		KT 31	<input type="checkbox"/> 41231 <input checked="" type="checkbox"/> 41331	31 - 32 mm	10
		KT 32	<input type="checkbox"/> 41232 <input checked="" type="checkbox"/> 41332	32 - 33 mm	10
		KT 33	<input type="checkbox"/> 41233 <input checked="" type="checkbox"/> 41333	33 - 34 mm	10
		KT 34	<input type="checkbox"/> 41234 <input checked="" type="checkbox"/> 41334	34 - 35 mm	10

NEW

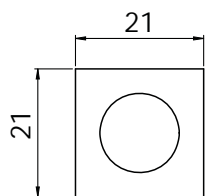
NEW

*Only valid for gray product types



KT-DPF | KTMB

Grommets, Multi-Range



KT-DPF / KTMB small



KT-DPF-B



Product Description

The KT-DPF / KTMB grommets accept a wide range of cable diameters. A great benefit when the exact cable diameter is not known in advance. The KTMB grommets are not split and therefore only usable for cables without connectors. Cutting of KT-DPF grommets: Cable diameter less 20%.

Specifications gray

Material	Elastomer
Flame class	UL94-Vo
IP rating	IP54
NEMA type rating	NEMA type 12 (acc. to UL 50E)
Temperature	- 40°C to + 90°C (static) - 40°F to + 194°F (static)
Properties	Halogen-free, silicone-free

Specifications black

Material	Elastomer
Flame class	UL94-HB
IP rating	IP54
NEMA type rating	NEMA type 12 (acc. to UL 50E)
Temperature	- 30°C to + 90°C (static) - 40°F to + 194°F (static)
Properties	Higher chemical resistance

KMS Cable Template

The correct size of the KT grommets can easily be determined by using the stainless steel cable template.

- Determining the diameter of the cable
- Selecting the KT grommets according to the data on the cable template

Order No. 39800



Type	Order No.	Size KT	Clamping range	PU	Description
KT-DPF-A	41260 (gray) 41360 (black)	KT small	3 - 12 mm	10	 KT-DPF-A
KT-DPF-B	41261 (gray) 41361 (black)	KT large	4 - 18 mm	10	 KT-DPF-C
KT-DPF-C	41262 (gray) 41362 (black)	KT large	14 - 26 mm	10	
KTMB-A	41432	KT small	2.5 - 6.5 mm	10	
KTMB-B	41434	KT small	4 - 7.5 mm	10	
KTMB-C	41436	KT small	6.5 - 10 mm	10	 Cross section KTMB
KTMB-D	41438	KT small	9.5 - 13 mm	10	
KTMB-E	41440	KT small	13 - 16 mm	10	
KTMB-G	41460	KT large	13 - 18 mm	10	 KTMB-I
KTMB-H	41465	KT large	18 - 23 mm	10	
KTMB-I	41470	KT large	23 - 28 mm	10	 KTMB-K
KTMB-J	41475	KT large	28 - 33 mm	10	
KTMB-K	41480	KT large	2x 13 - 18 mm	10	

*Only valid for gray product types

DT

Membrane Cable Grommets



1

Product Description

The DT cable grommets are designed for cables without preassembled connectors. A large number of cables can be routed utilizing minimal space.

DT grommets are designed to fit in KT large grommet spaces of the following products:

KEL-U/KEL (8 - 34) | KVT (38 - 42)

The DT grommets are also perfectly suitable for the assembly of subsequently terminated cable harnesses.

Advantages & Benefits

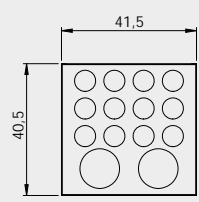
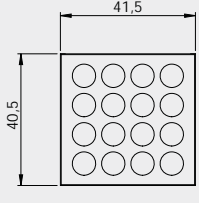
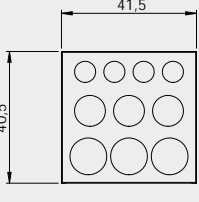
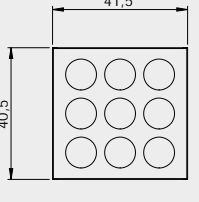
- Combination of routing pre-terminated cables and cables without connectors with one cable entry frame
- Enables subassembly of cable harnesses
- High cable density

Specifications

Material	Elastomer
Flame class	UL94-Vo
IP rating	IP54
NEMA type rating	NEMA type 12 (acc. to UL 50E)
Temperature	- 40°C to + 90°C (static) - 40°F to + 194°F (static)
Properties	Halogen-free, silicone-free

Accessories


ST-B Plugs 78

Description	Type	Order No.	Number of cables	PU
	DT 1	41500	12× max. 6.5 mm 2× max. 12.2 mm	10
	DT 2	41510	16× max. 7.1 mm	10
	DT 3	41520	4× max. 6.5 mm 3× max. 9.5 mm 3× max. 11.3 mm	10
	DT 4	41530	9× max. 9.5 mm	10

ST

Plugs for Cable Grommets



Type	Order No.	Diameter D	Length L	PU	Description
ST 1	42900	1 mm	25 mm	25	
ST 2	42909	2 mm	25 mm	25	
ST 3	42901	3 mm	25 mm	25	
ST 4	42908	4 mm	25 mm	25	
ST 5	42906	5 mm	25 mm	25	
ST 6	42903	6 mm	25 mm	25	
ST 7	42905	7 mm	25 mm	25	
ST 8	42899	8 mm	20 mm	25	
ST 9	42897	9 mm	20 mm	25	
ST 10	42895	10 mm	20 mm	25	
ST 11	42893	11 mm	20 mm	25	
ST 12	42891	12 mm	20 mm	25	
ST 13	42889	13 mm	20 mm	25	
ST 14	42887	14 mm	20 mm	25	
ST 15	42885	15 mm	20 mm	25	
ST 16	42883	16 mm	20 mm	25	
ST 17	42881	17 mm	20 mm	25	
ST ASI	42877	-	25 mm	25	
Plug for KEL threaded bushings	99142	10 mm	4 mm	100	

Product Description

Plugs are used to close either KT or QT grommets which are not equipped with cables. IP ratings of the grommets remain.

Perfect for applications where cables have been removed or might be routed at a later stage.

Advantages & Benefits

- Sealing unused cable grommets

Specifications

Material	Polyamide (PA), white
Flame class	UL94-Vo
IP rating	IP rating of grommets remains
NEMA type rating	NEMA type 12 (acc. to UL 50E)
Temperature	- 40°C to + 120°C - 40°F to + 248°F
Properties	Halogen-free, silicone-free

Compatible with

KT Cable grommets	44 - 46
QT Cable grommets	56 - 57



Plug for KEL threaded bushings



KEL-QUICK

Cable Entry Frames for Quick Assembly*



Cover lid is simply snapped onto the frame.



Tool-free mounting with KEL-SNAP frame.



Slit QT grommets

1

Fig. shows new version



Description	Type	Order No.	Cut-out [mm]	Grommets	PU
-------------	------	-----------	--------------	----------	----

Product Description

The KEL-QUICK range is a compact system to route and seal pre-terminated cables as well as conduits or pneumatic hoses utilising split QT grommets. After populating the entry frame with QT grommets and cables, the cover lid is snapped onto the frame without using tools. The KEL-QUICK frames match exactly the cut-out dimensions for 24-, 16- and 10-pin standard industrial connectors. The KEL-QUICK-B matches cut-out dimensions of 36x46 mm. KEL-QUICK frames can either be screw mounted or simply snapped into the KEL-SNAP frame. A flat rubber gasket is included in the shipment.

Advantages & Benefits

- Fast and easy assembly and when used with the KEL-SNAP frame, mounting without tools possible
- Warranty on pre-terminated cables remains
- Retrofits, repairs and maintenance can be done much more easily and quickly
- High cable density, wide variety of grommets

Specifications

Material	Polyamide (PA)
Flame class	UL94-V0
IP Rating	IP54, with gasket and correct selection of the cable grommets
Temperature	- 40°C to + 140°C (static) - 40°F to + 284°F (static)
Properties	Halogen-free, silicone-free
Mounting template	See Page 200 - 201
Frame depth	17 mm

Accessories

QT Cable grommets	56 - 57
KEL-SNAP Mounting frames	31
KEL-EMC Grounding mounts	126 - 128
KDR Gland plates	146 - 155
FP Flange plates	160 - 165
MP Module plates	156 - 157
ST Plugs	49

	KEL-QUICK 24 10	42410	36 × 112	10 QT	10
	KEL-QUICK 16 8	42418	36 × 86	8 QT	10
	KEL-QUICK 10 6	42420	36 × 65	6 QT	10
	KEL-QUICK-B4	42434	36 × 46	4 QT	10

* New generation available from November 2017

IP54

HL3
EN 45545-2UV
ISO 4892-2AECOLAB
certifiedRoHS
compliantMade in
Germany

CAD

KEL-QUICK-E*

Cable Entry Frames for Quick Assembly



Cover lid is simply snapped onto the frame.



Slit QT grommets



IP54

1

Description

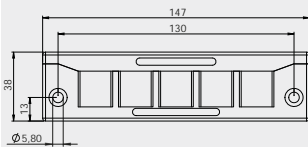
Type

Order No.

Cut-out
[mm]

Grommets

PU



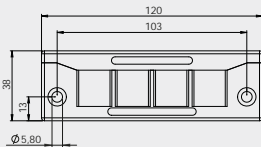
KEL-QUICK-E5

42424

24 × 112

5 QT

10



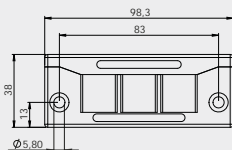
KEL-QUICK-E4

42423

24 × 86

4 QT

10



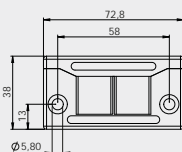
KEL-QUICK-E3

42422

24 × 65

3 QT

10



KEL-QUICK-E2

42421

24 × 43

2 QT

10

Product Description

The KEL-QUICK-E range is a compact single row system to route and seal pre-terminated cables as well as conduits or pneumatic hoses utilizing split QT grommets. The KEL-QUICK-E version is particularly suited for flat connectors. The small frame is ideal for applications with limited space.

After populating the entry frame with QT grommets and cables, the cover lid is snapped onto the frame without using tools. A flat rubber gasket is included in the shipment.

Advantages & Benefits

- Fast and easy assembly by locking the frame without tools
- Warranty on pre-terminated cables remains
- Retrofits, repairs and maintenance can be done much more easily and quickly
- High cable density, wide variety of grommets

Specifications

Material	Polyamide (PA)
Flame class	UL94-Vo
IP Rating	IP54, with gasket and correct selection of the cable grommets
Temperature	- 40°C to + 140°C (static) - 40°F to + 284°F (static)
Properties	Halogen-free, silicone-free
Mounting template	See Page 200 - 201
Frame depth	17 mm

Accessories

QT Cable grommets	56 - 57
KEL-EMC Grounding mounts	126 - 128
ST Plugs	49

*Available from November 2017

QVT

Split Cable Glands



1

Description	Type	Order No.	Cable Grommets	Thread Thread length	PU
	QVT 16*	45692	1 x QT	M16 x 1.5 Length: 13 mm	10
	QVT 20	45695	1 x QT	M20 x 1.5 Length: 13 mm	10
	QVT 25	45702	1 x QT	M25 x 1.5 Length: 13 mm	10
	QVT 32	45711	1 x QT	M32 x 1.5 Length: 13 mm	10
	QVT 40 2	45715	2 x QT	M40 x 1.5 Length: 13 mm	10
	QVT 50 4	45722	4 x QT	M50 x 1.5 Length: 13 mm	10

* Max. cable diameter of 10 mm

Product Description

QVT is a circular split frame for quick and easy installation of pre-terminated cables or complete cable harnesses. Because of its extremely compact design, the QVT range is especially suitable for small machines, devices and instruments.

Polyamide locknuts as well as a sealing ring are included in the shipment.

Advantages & Benefits

- Compact design
- Routing of pre-terminated cables
- Warranty on pre-terminated cables remains
- Retrofits, repairs and maintenance can be done much more easily and quickly
- Suitable for metric hole sizes
- Locknut is included

Specifications

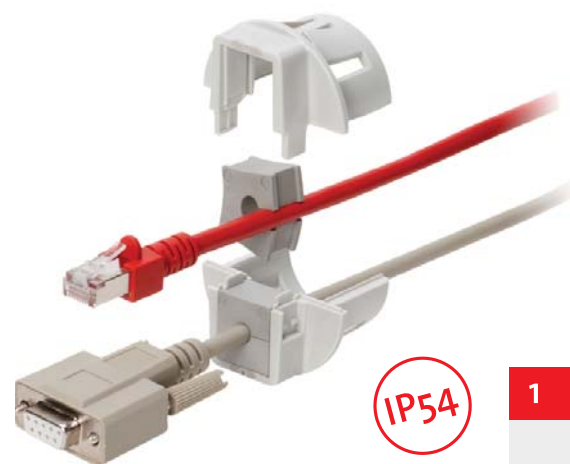
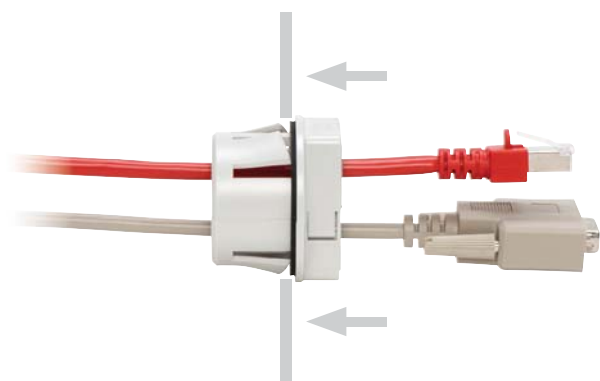
Material	Polycarbonate (PC)
Color	gray (similar RAL 7035)
Flame class	UL94-Vo
IP Rating	IP54, with gasket and correct selection of the cable grommets
Temperature	- 30°C to + 100°C (static) - 22°F to + 212°F (static)
Properties	Halogen-free, silicone-free
Cut-out dimension	Metric sizes

Accessories

QT Cable grommets	56 - 57
KVT-EMC Brackets	129
KGM Locknuts	170 - 171
ST Plugs	49

QVT-CLICK

Pluggable Split Cable Glands



Type	Order No.	Cable Grommets	Cut-out* diameter	PU	Description
------	-----------	----------------	-------------------	----	-------------

QVT-CLICK 25	45730	1 × QT	25.5 mm	10	
QVT-CLICK 32	45732	1 × QT	32.5 mm	10	
QVT-CLICK 40 2	45734	2 × QT	40.5 mm	10	
QVT-CLICK Tool	61435	Mounting tool		1	

*Please consider any paint layers or powder coatings!

Product Description

QVT-CLICK is a circular split frame for quick and easy installation of pre-terminated cables or complete cable harnesses. The QVT-CLICK can be assembled without tools from the front side of the enclosure wall. Because of its extremely compact design, the QVT-CLICK range is especially suitable for small machines, devices and instruments. A sealing ring is included in the shipment.

The QVT-CLICK Tool for quick and easy mounting.
Order No. 61435 (PU: 1)



Advantages & Benefits

- Fast and easy mounting from the front side
- Compact design
- Routing of pre-terminated cables
- Retrofits, repairs and maintenance can be done much more easily and quickly
- Warranty on pre-terminated cables remains
- Fast and easy assembly
- For wall thickness 1.5 - 2.5 mm

Specifications

Material	Polycarbonate (PC)
Color	gray (similar RAL 7035)
Flame class	UL94-Vo
IP Rating	IP54, with gasket and correct selection of the cable grommets
Temperature	- 30°C to + 100°C (static) - 22°F to + 212°F (static)
Properties	Halogen-free, silicone-free

Accessories

QT Cable grommets	56 - 57
QVT-CLICK Tool	Order No. 61435
ST Plugs	49

KEL-QTA

Split Cable Entry Plates



1

Product Description

The KEL-QTA easily routes pre-terminated cables, multi-conductors, hoses or conduits without using any tools for assembly.

Advantages & Benefits

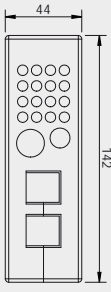
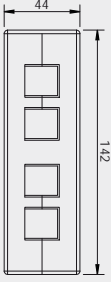
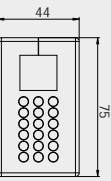
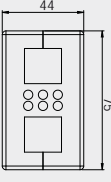
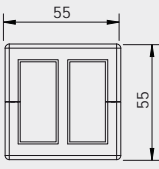
- Quick assembly without tools
- High cable density by using multi-position grommets
- Simple assembly and disassembly in case of change or service
- Routing of cables with and without connectors in a high density
- Suitable for standard industrial connector cut-outs

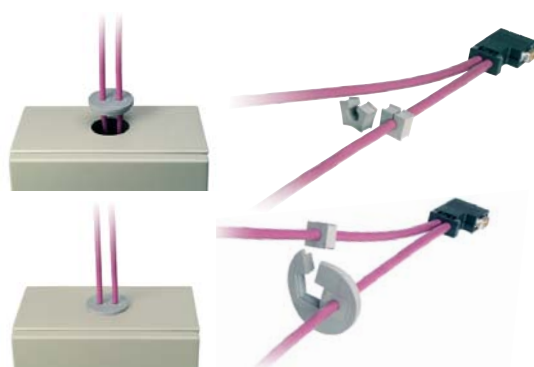
Specifications

Material	Elastomer
Flame class	UL94-Vo
IP Rating	IP54, with correct selection of the cable grommets QT
Temperature	- 40°C to + 90°C (static) - 40°F to + 194°F (static)
Properties	Halogen-free, silicone-free
Frame depth	17 mm
Type A:	For wall thickness 1.5 - 2.5 mm
Type B:	For wall thickness 2.8 - 4 mm

Accessories

QT Cable grommets	56 - 57
ST-B Plugs	78
FP Flange plates	160 - 165

Description	Type	Order No. Type A	Order No. Type B	Cut-out [mm]	Cables	PU
	KEL-QTA 24 2 - DP 18	43642	43643	112 × 36	pre-terminated 2× 3 - 15 mm without connector 16× max. 7 mm 1× max. 12 mm 1× max. 16 mm	10
	KEL-QTA 24 4	43644	43645	112 × 36	pre-terminated 4× 3 - 15 mm	10
	KEL-QTA 10 1 - DP 18	43655	43658	65 × 36	pre-terminated 1× 3 - 15 mm without connector 18× max. 5 mm	10
	KEL-QTA 10 2 - DP 6	43656	43659	65 × 36	pre-terminated 2× 3 - 15 mm without connector 6× max. 5 mm	10
	KEL-QTA-B4	43660	-	46 × 46	pre-terminated 4× 3 - 15 mm	



KEL-QTA | KEL-QTE Split Cable Entry Plates



Type	Order No.	Order No.	Cut-out [mm]	Cables		PU	Description
	Type A	Type B		pre-terminated	non-pre-term.		

KEL-QTA 32	43632	43636	∅ 32	1x 3 - 15 mm	-	10	
KEL-QTA 50	43622	43626	∅ 50	2x 3 - 15 mm	-	10	
KEL-QTE 20 2.5	43412	-	∅ 20	1x 2.6 - 3.2 mm	1x max. 5.2 mm	10	
KEL-QTE 20 3	43413	-	∅ 20	1x 3.1 - 3.8 mm	1x max. 5.2 mm	10	
KEL-QTE 20 4	43414	-	∅ 20	1x 3.8 - 4.8 mm	1x max. 5.2 mm	10	
KEL-QTE 20 5	43415	-	∅ 20	1x 4.7 - 5.6 mm	1x max. 5.2 mm	10	

Product Description

The KEL-QTA easily routes pre-terminated cables, multi-conductors, hoses or conduits without using any tools for assembly.

Advantages & Benefits

- Fast and easy assembly without tools
- Increased cable density by using multi-position grommets
- Simple assembly and disassembly in case of change or service
- Routing of cables with and without connectors in a high density

Specifications

Material	Elastomer
Flame class	UL94-Vo
IP Rating (QTA)	IP54, with correct selection of the cable grommets (QT single)
Temperature	- 40°C to + 90°C (static) - 40°F to + 194°F (static)
Properties	Halogen-free, silicone-free
Cut-out dimension	Metric sizes
Type A:	For wall thickness 1.5 - 2.5 mm
Type B:	For wall thickness 2.8 - 4 mm

Accessories

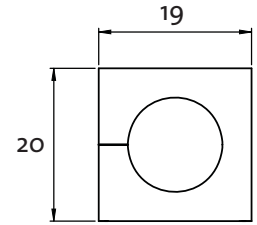
QT Cable grommets	56 - 57
ST Plugs	49

QT

Grommets, single



IP54



1

Product Description

The QT range supports cable diameters from 1 to 15 mm. They are used with the following cable entry frames:

KEL-QUICK (50 - 51) | QVT/QVT-CLICK (52 - 53) |
KEL-QTA/KEL-QTE (54 - 55)

Assembly Note



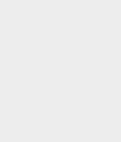
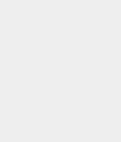




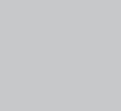
When installing the grommets, the flat side should be facing the middle of the frame. This allows the flat sides of adjacent grommets to match up and provide a secure seal.

Specifications

Material	Elastomer
Flame class	UL94-Vo
IP Rating	IP54
Temperature	- 40°C to + 90°C (static) - 40°F to + 194°F (static)
Properties	Halogen-free, silicone-free

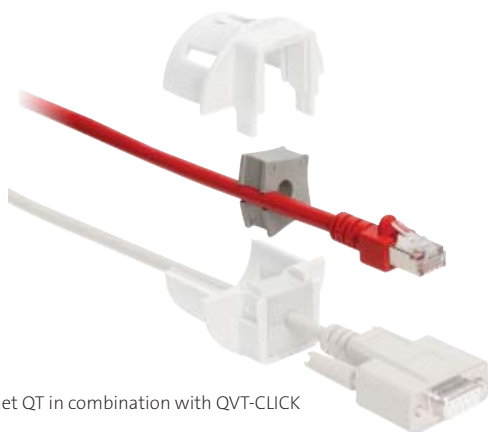
Accessories

ST Plugs 49

Type	Order No. gray	Clamping range	PU	Description
QTB	42540	Blank grommet	10	 QTB
QT 1	NEW 42501	1 - 2 mm	10	 QT
QT 2	NEW 42502	2 - 3 mm	10	
QT 3	42503	3 - 4 mm	10	 QT
QT 4	42504	4 - 5 mm	10	
QT 5	42505	5 - 6 mm	10	 QT
QT 6	42506	6 - 7 mm	10	
QT 7	42507	7 - 8 mm	10	 QT
QT 8	42508	8 - 9 mm	10	
QT 9	42509	9 - 10 mm	10	 QT-ASI
QT 10	42510	10 - 11 mm	10	
QT 11	42511	11 - 12 mm	10	 QT
QT 12	42512	12 - 13 mm	10	
QT 13	42513	13 - 14 mm	10	 QT tele
QT 14	42514	14 - 15 mm	10	
QT-ASI 1	42573	1× ASI-cable	10	 QT tele
QT-ASI 2	42574	2× ASI-cable	10	
QT tele	42575	Telephone cable	10	





QT Grommets, multi



Grommet QT in combination with QVT-CLICK

Type	Order No. gray	Clamping range	PU	Description
------	-------------------	----------------	----	-------------

QT 2 3	42566	2× Ø 3 mm	10	 QT 2 x
QT 2 4	42568	2× Ø 4 mm	10	
QT 2 5	42570	2× Ø 5 mm	10	
QT 2 5.5	42571	2× Ø 5.5 mm	10	
QT 2 6	42572	2× Ø 6 mm	10	
QT 2 6.5	42576	2× Ø 6.5 mm	10	
QT 2 7	42578	2× Ø 7 mm	10	
QT 4 3	42580	4× Ø 3 mm	10	 QT 4 x
QT 4 4	42582	4× Ø 4 mm	10	
QT 4 4.5	42583	4× Ø 4.5 mm	10	
QT 4 5	42584	4× Ø 5 mm	10	
QT 4 5.5	42585	4× Ø 5.5 mm	10	
QT 4 6	42586	4× Ø 6 mm	10	

Product Description

The QT range supports cable diameters from 1 to 15 mm. They are used with the following cable entry frames:

KEL-QUICK (50 - 51) | QVT/QVT-CLICK (52 - 53) |
KEL-QTA/KEL-QTE (54 - 55)

Assembly Note

When installing the grommets, the flat side should be facing the middle of the frame. This allows the flat sides of adjacent grommets to match up and provide a secure seal.

Specifications

Material	Elastomer
Flame class	UL94-Vo
IP Rating	IP54
Temperature	- 40°C to + 90°C (static) - 40°F to + 194°F (static)
Properties	Halogen-free, silicone-free

Accessories

ST Plugs 49

KEL-BES

Brush Plate for Cable Pass-Through



Suitable for control panel construction ...



... as well as for energy and building technology

1

Description	Type	Order No.	Cut-out	PU
-------------	------	-----------	---------	----

Product Description

Cable entry frames KEL-BES for routing cables into server racks, control panels and electrical enclosures. KEL-BES is also an ideal solution for entry and exit of cables that are routed inside raised floors, e.g. in computer centers. The brush plates can either be mounted via screws or via expanding rivets.

The KEL-BES frames match exactly the cut-out dimensions for 10-, 16- or 24-pin standard industrial connectors.

Advantages & Benefits

- Fast and easy assembly (optional without screws)
- Versatile utilization
- Allows reduced airflow while filtering out dust, hair and larger particulate matter
- Visual screening
- Protects cables against wear due to sharp edges of the cut-out

Specifications

Material	Frame, rectangular: Polyamide (PA) (Flame class UL94-V0) Brushes: Polyamide (PA) Brush profile: carbon steel, zinc plated
Temperature	- 20°C to + 90°C - 4°F to + 194°F
Properties	Halogen-free, silicone-free
Frame depth	10 mm

Accessories

KEL-EMC-PF Cable collectors 127

	KEL-BES 24	51515	36 x 112 mm	10
	KEL-BES 16	51510	36 x 86 mm	10
	KEL-BES 10	51505	36 x 65 mm	10
	NEW Expanding rivets	99153	For wall thickness 1-4 mm	100

KEL-BES-S

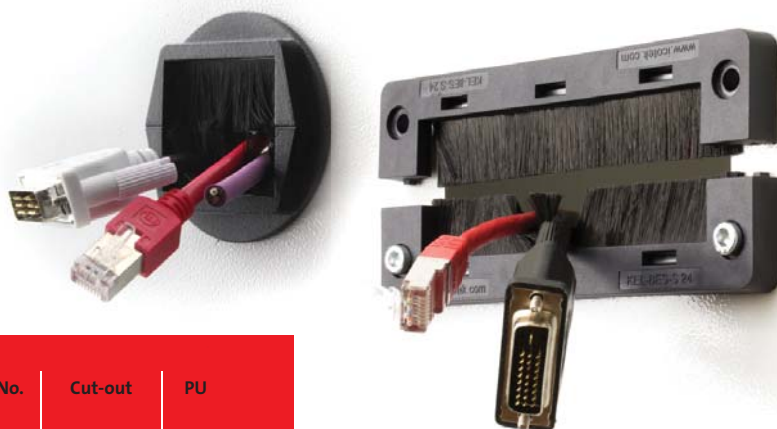
Split Brush Plate for Cable Pass-Through



Screw mounting or mounting via expanding rivets possible.



Round version with M50 thread for locknut or snap-in mounting.



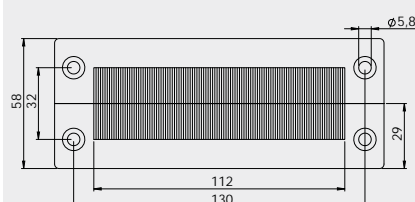
Description

Type

Order No.

Cut-out

PU

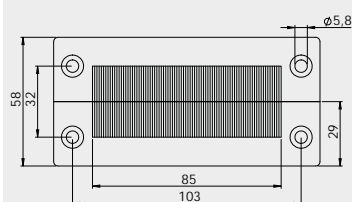


KEL-BES-S 24

51522

36 x 112 mm

10

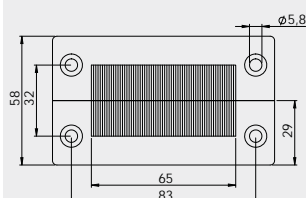


KEL-BES-S 16

51521

36 x 86 mm

10

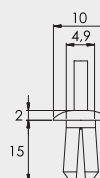


KEL-BES-S 10

51520

36 x 65 mm

10

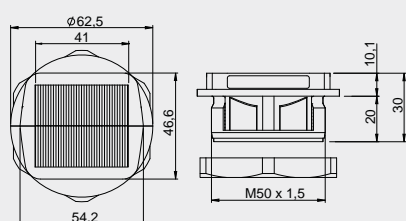


Expanding
rivets

99153

For wall
thickness
1-4 mm

100



KEL-BES-S 50

51540

M50 x 1.5
Snap-in
function
for wall
thickness
1 - 2.5 mm

10

KEL-BES-S 32

51538

M32 x 1.5
Snap-in
function
for wall
thickness
1 - 2.5 mm

10

*Available from November 2017

Product Description

Split brush plates KEL-BES-S for routing cables into server racks, control panels and electrical enclosures. The brush plates can either be mounted via screws or via expanding rivets. Due to the split frame the KEL-BES-S can also be subsequently installed around the routed cables. The KEL-BES-S frames match exactly the cut-out dimensions for 10-, 16- or 24-pin standard industrial connectors.

For round metric cut-outs M50 icotek offers the split KEL-BES-S 50. It can be either directly snapped into the cut-out or screwed with a locknut.

Advantages & Benefits

- Fast and easy assembly (optional without screws)
- Subsequent assembly possible
- Versatile utilization
- Allows reduced airflow while filtering out dust, hair and larger particulate matter
- Visual screening
- Protects cables against wear due to sharp edges of the cut-out

Specifications

Material	Frame, rectangular: Polyamide (PA) Frame, round: Polycarbonate (PC) (Flame class UL94-Vo) Brushes: Polyamide (PA) Brush profile: carbon steel, zinc plated
Temperature	- 20°C to + 90°C - 4°F to + 194°F
Properties	Halogen-free, silicone-free
Frame depth	10 mm

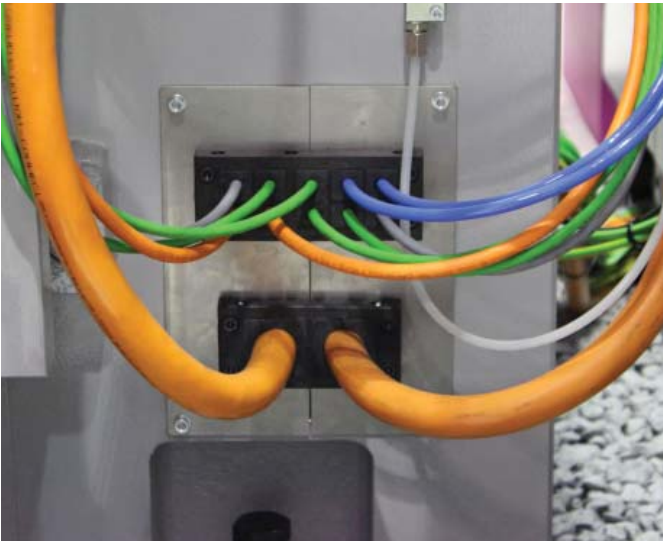
Accessories

KEL-EMC-PF Cable collectors 127

Typical Applications

Cable Entry Systems for Pre-terminated Cables

1



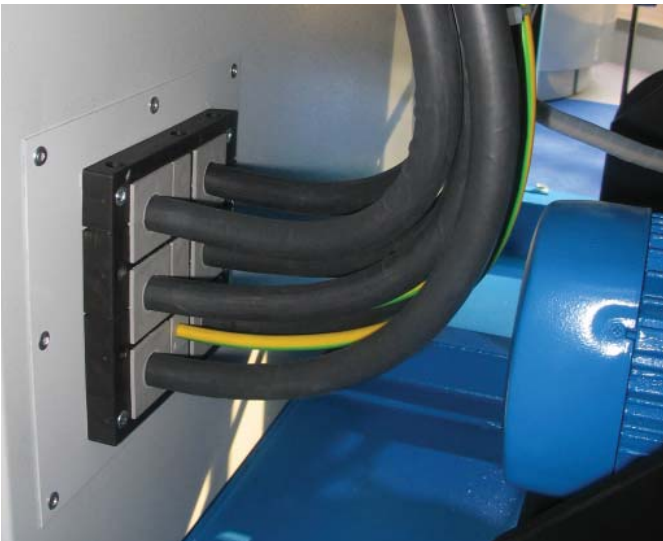
KEL-U 24|10 - Page 8 / **KEL-U 16|2** - Page 10

Routing of 12 cables with various diameters (some of them assembled with connectors) into the body of a grinding machine.



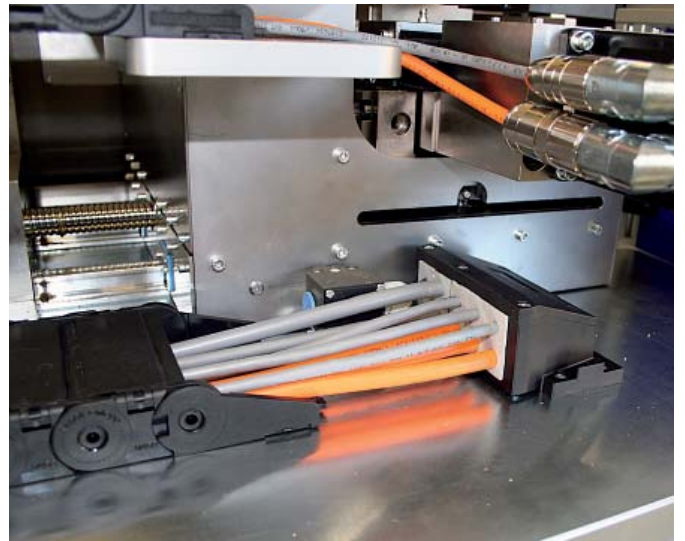
KEL 16|8 - Page 10

Routing of several pre-terminated lines into the electrical enclosure of a tension measuring machine.



KEL 24|12-2MT - Page 24

Routing of 6 large cables up to 35 mm with one cable entry frame.



KEL-FG A10 - Page 28

Used in combination with cable carriers to provide strain relief and compact, high density cable entry into control enclosures.



KEL-JUMBO 2 - Page 36 / **KEL 24|x** - Page 18
 Routing of conduits and large cables between vehicle body and chassis



KVT 50-W90 - Page 42
 Low profile 90 degree routing of a terminated cable from a control panel into the machine



KEL-QUICK-B4 - Page 50
 Routing of cables with connectors into a control panel / IPC



KEL-QUICK 24|10 - Page 50 / **KEL-SNAP 24** - Page 31
 Routing of corrugated conduits into an external enclosure of a construction machine. Tool-free mounting/unmounting with snap frame

2 Cable Entry Plates for Cables without Connectors



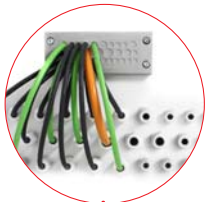
For routing cables without connectors icotek offers a wide range of products with a lot of advantages and benefits in comparison to conventional cable glands.

The compact, slim and innovative design of the membrane-based cable entry plates offer a professional appearance and high ingress protection ratings up to IP68 / NEMA type 4X.

Due to high cable densities especially suitable for applications where a lot of cables have to be entered through a small space.

For routing rigid large diameter cables icotek offers highly flexible conical cable entry grommets with high protection ratings.

2



High cable density



Fast and easy, partially tool-free assembly

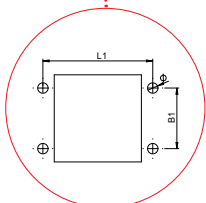


High flexibility when routing rigid cables

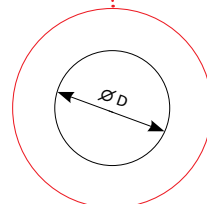
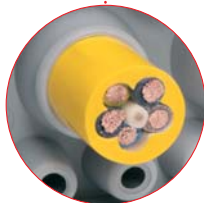


IP64 to IP68 rated protection, double cable sealing on front and back side (KEL-DPU / KEL-DPZ)

Compact, space-saving design

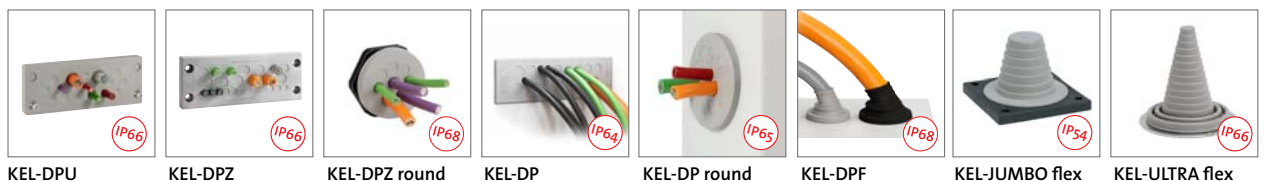


Many cut-outs acc. to industrial standard dimensions



For metric cut-outs M25 - M85 (KEL-DPZ round / KEL-DP round / KEL-DPF)

Product Range



KEL-DPU

KEL-DPZ

KEL-DPZ round

KEL-DP

KEL-DP round

KEL-DPF











KEL-JUMBO flex

KEL-ULTRA flex

Product Group 2

Cable Entry Plates for Cables without Connectors

Chapter Content

	<p>Cable entry plates NEMA type 4X screw/snap-in mounting, high strain relief</p> <p>KEL-DPU 24</p> <p style="text-align: right;">64 - 65</p>		<p>Plugs for membranes</p> <p>ST-B</p> <p style="text-align: right;">78</p>
	<p>Cable entry plates NEMA type 12 screw mounting</p> <p>KEL-DPZ 24 / KEL-DPZ-B / KEL-DPZ-E / KEL-DPZ-KL</p> <p style="text-align: right;">66 - 70</p>		<p>Cable entry grommets NEMA type 4X M25 - M85, for cable diameters up to 70 mm</p> <p>KEL-DPF</p> <p style="text-align: right;">79</p>
	<p>Typical applications icotek cable entry systems for cables without connectors</p> <p style="text-align: right;">71</p>		<p>Cable entry grommets NEMA type 12 screw mounting, for cable diameters up to 68 mm</p> <p>KEL-JUMBO flex</p> <p style="text-align: right;">80</p>
	<p>Cable entry plates, round NEMA type 4X with thread and locknut M32 - M63</p> <p>KEL-DPZ round</p> <p style="text-align: right;">72 - 73</p>		<p>Cable entry grommets NEMA type 12 screw mounting, for cable diameters up to 115 mm</p> <p>KEL-ULTRA flex</p> <p style="text-align: right;">81</p>
	<p>Cable entry plates NEMA type 12 plug-in mounting</p> <p>KEL-DP 24 / KEL-DP-E</p> <p style="text-align: right;">74 - 75</p>		
	<p>Cable entry plates, round NEMA type 12 plug-in mounting, M25 - M50</p> <p>KEL-DP round</p> <p style="text-align: right;">76 - 77</p>		

KEL-DPU 24

Heavy-Duty Cable Entry Plates with High Strain Relief



Also available in black.



Also available with threaded bushings.



Tool-free assembly possible due to snap-in function

2

Product Description

KEL-DPU entry plates are designed to route and seal cables without connectors (from 3.2 mm to 20.5 mm in diameter) in limited space with IP65 / IP66 / up to NEMA type 4X ratings.

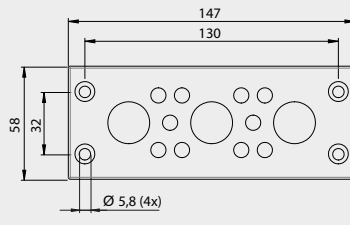
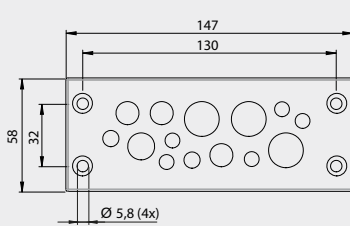
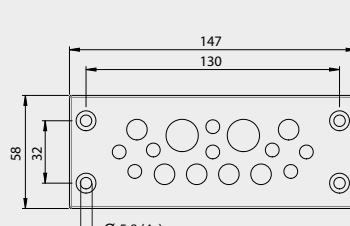
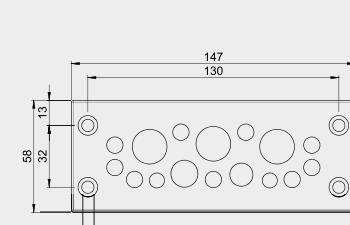
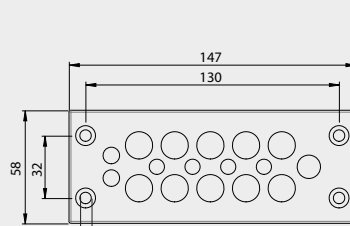
The KEL-DPU is particularly characterized by its solid robust frame and the increased strain relief of the routed cables.

The KEL-DPU 24 matches exactly the cut-out dimensions of 24-pin standard industrial connectors. For optional screw assembly just pierce the membranes on the integrated screw holes with the screw itself.

The assembly of the KEL-DPU with cables or pneumatic hoses can be done quick and easy. Simply make a small hole in the thin membrane and push the cables through.

ST-B Plugs can be used for sealing pierced membranes if cables have been removed.



Description	Type	Order No.	Number of cables	PU
	KEL-DPU 24 13	<input type="checkbox"/> 43940 <input checked="" type="checkbox"/> 50940	10× 3.2 - 6.3 mm 3× 16 - 20.5 mm	10
	KEL-DPU 24 14	<input type="checkbox"/> 43944 <input checked="" type="checkbox"/> 50944	5× 3.2 - 6.3 mm 2× 4 - 7.5 mm 3× 5.5 - 10.5 mm 1× 8 - 12.5 mm 3× 12 - 16.2 mm	10
	KEL-DPU 24 16	<input type="checkbox"/> 43936 <input checked="" type="checkbox"/> 50936	8× 3.2 - 5.5 mm 6× 5 - 8.5 mm 2× 9.5 - 14.5 mm	10
	KEL-DPU 24 16-1	<input type="checkbox"/> 43932 <input checked="" type="checkbox"/> 50932	2× 3.2 - 6.3 mm 9× 4 - 7.5 mm 1× 5.5 - 10.5 mm 1× 8 - 12.5 mm 3× 12 - 16.2 mm	10
	KEL-DPU 24 17	<input type="checkbox"/> 43934 <input checked="" type="checkbox"/> 50934	4× 3.2 - 6.3 mm 2× 4 - 7.5 mm 1× 5.5 - 10.5 mm 10× 8 - 12.5 mm	10

* Only valid for gray product types



KEL-DPU 24

Heavy-Duty Cable Entry Plates with High Strain Relief



Membrane on front



Conical shape on back provides additional sealing and strain relief



Resistant against industrial detergents (ECOLAB certified)



Type	Order No.	Number of cables	PU	Description
------	-----------	------------------	----	-------------

KEL-DPU 24 20	<input type="checkbox"/> 43938 <input type="checkbox"/> 50938	12× 3.2 - 5.5 mm 8× 5 - 10.5 mm	10	
KEL-DPU 24 21	<input type="checkbox"/> 43930 <input type="checkbox"/> 50930	1× 3.2 - 6.3 mm 14× 4 - 7.5 mm 4× 5.5 - 10.5 mm 2× 8 - 12.5 mm	10	
KEL-DPU 24 32	<input type="checkbox"/> 43942 <input type="checkbox"/> 50942	32× 3.2 - 6.3 mm	10	

Advantages & Benefits

- Snap or screw mounting possible
- High strength & stability
- High strain relief
- Fast and easy assembly
- High cable density
- Dual cable sealing with IP65/IP66/up to NEMA type 4X
- Hygienic design - free of dirt-collecting recesses

Specifications

Material	Frame: Polypropylene (PP)
	Sealing plate: Elastomer
Colour	<input type="checkbox"/> gray (similar RAL 7035) <input type="checkbox"/> black
Flame class	UL94-Vo
IP rating	IP65/IP66 (certified acc. to EN 60529)
NEMA type rating	NEMA type 4X (acc. to UL 50E)
Temperature	- 40°C to + 90°C (static) - 40°F to + 194°F (static)
Properties	Halogen-free, silicone-free
Cut-out dimensions	36 × 112 mm / page 200 - 201
Plate depth	14 mm
For wall thickness	1.5 - 2 mm (snap-in mounting)

Accessories

ST-B Plugs	78
KEL-EMC-PF Grounding mounts	127
FP Flanged plates	160 - 165

* Only valid for gray product types

KEL-DPZ 24

Cable Entry Plates



Also available in black.



Also available with threaded bushings.



Membrane on front



Product Description

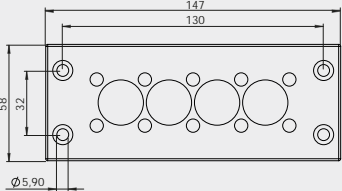
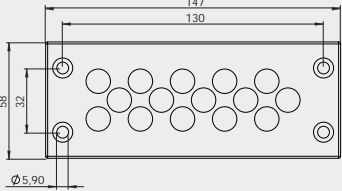
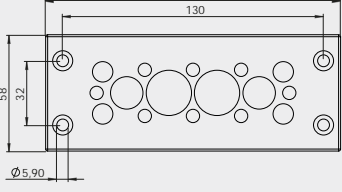
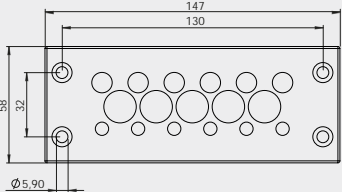
KEL-DPZ entry plates are designed to route and seal up to 121 cables without connectors or fiber optics (from 1.5 mm to 22 mm in diameter) in limited space.

The KEL-DPZ products are a cost and time saving alternative to traditional cable glands.

The assembly of the KEL-DPZ 24 with cables or pneumatic hoses can be done quick and easy. Simply make a small hole in the thin membrane, push the cables through. The KEL-DPZ 24 provides strain relief and protection up to IP66 / NEMA type 12.

The size DPZ 24 matches exactly the cut-out dimensions of 24-pin standard industrial connectors.

ST-B Plugs can be used for sealing pierced membranes if cables have been removed.

Description	Type	Order No.	Number of cables	PU
		<input type="checkbox"/> 43700 <input type="checkbox"/> 50700	10× 3.2 - 6.5 mm 4× 16 - 22 mm	10
		<input type="checkbox"/> 43720 <input type="checkbox"/> 50720	15× 7.2 - 12 mm	10
		<input type="checkbox"/> 43725 <input type="checkbox"/> 50725	8× 3.2 - 6.5 mm 4× 5 - 9.7 mm 2× 9 - 16.2 mm 2× 16 - 22 mm	10
		<input type="checkbox"/> 43705 <input type="checkbox"/> 50705	6× 3.2 - 6.5 mm 6× 5 - 10.2 mm 5× 9 - 16.2 mm	10

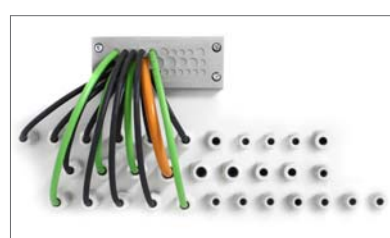
* Only valid for gray product types



KEL-DPZ 24 Cable Entry Plates



Conical shape on back provides additional sealing and strain relief



High cable density



Type	Order No.	Number of cables	PU	Description
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KEL-DPZ 24 25	<input type="checkbox"/> 43710 <input checked="" type="checkbox"/> 50710	12x 3.2 - 6.5 mm 7x 4.8 - 9.7 mm 6x 7.5 - 12 mm	10	
KEL-DPZ 24 32	<input type="checkbox"/> 43730 <input checked="" type="checkbox"/> 50730	21x 3.2 - 6.5 mm 8x 5 - 10.2 mm 3x 7.5 - 12 mm	10	
KEL-DPZ 24 42	<input type="checkbox"/> 43715 <input checked="" type="checkbox"/> 50715	42x 3.2 - 6.5 mm	10	
KEL-DPZ 24 121	<input type="checkbox"/> 43735 <input checked="" type="checkbox"/> 50735	119x 1.5 - 2.6 mm 2x 2.5 - 5 mm	10	

Advantages & Benefits

- Fast and easy assembly
- High cable density
- Dual sealing acc. to IP65/IP66/NEMA type 12
- Automatic sealing and strain relief for the cable
- Hygienic design

Specifications

Material	Frame: Polyamide (PA) Sealing plate: Elastomer
Color	<input type="checkbox"/> gray (similar RAL 7035) <input checked="" type="checkbox"/> black
Flame class	UL94-Vo
IP rating	IP65/IP66 (certified acc. to EN 60529)
NEMA type rating	NEMA type 12 (acc. to UL 50E)
Temperature	- 40°C to + 90°C (static) - 40°F to + 194°F (static)
Properties	Halogen-free, silicone-free
Cut-out dimensions	36 x 112 mm / page 200 - 201
Plate depth	14 mm

Accessories

ST-B Plugs	78
KEL-EMC-PF Grounding mounts	127
FP Flanged plates	160 - 165

* Only valid for gray product types.

KEL-DPZ-B

Cable Entry Plates



Also available in black.



Also available with threaded bushings.



Membrane on front bushings.

Description	Type	Order No.	Number of cables	PU
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Product Description

The KEL-DPZ-B entry plates are designed for routing cables without connectors.

The assembly of the KEL-DPZ-B with cables or pneumatic hoses can be done quick and easy. Simply make a small hole in the thin membrane and push the cables through. The KEL-DPZ-B provides strain relief and protection IP66 / NEMA type 12.

With an area of only 46 × 46 mm, up to 25 cables can be easily routed and sealed.

ST-B Plugs can be used for sealing pierced membranes if cables have been removed.

Advantages & Benefits

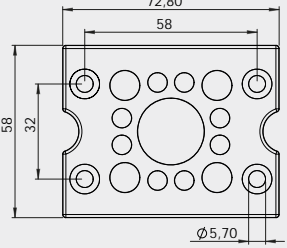
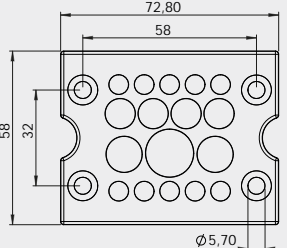
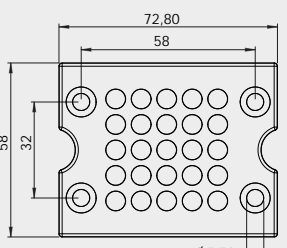
- Space saving shape
- Dual sealing of cables acc. to IP66/NEMA type 12
- High cable density
- Fast and easy assembly
- Hygienic design

Specifications

Material	Frame: Polyamide (PA) Sealing plate: Elastomer
Color	□ gray (similar RAL 7035) ■ black
Flame class	UL94-Vo
IP rating	IP66 (certified acc. to EN 60529)
NEMA type rating	NEMA type 12 (acc. to UL 50E)
Temperature	- 40°C to + 90°C (static) - 40°F to + 194°F (static)
Properties	Halogen-free, silicone-free
Cut-out dimensions	46 × 46 mm/ page 200 - 201
Plate depth	10 mm

Accessories

ST-B Plugs	78
FP Flanged plates	160 - 165

	KEL-DPZ-B 13	□ 43794 ■ 50794	8× 3.2 - 6.5 mm 4× 5 - 10.2 mm 1× 16 - 22 mm	10
	KEL-DPZ-B 17	□ 43796 ■ 50796	10× 3.2 - 6.5 mm 4× 5 - 10.2 mm 2× 7.5 - 12 mm 1× 9 - 16.2 mm	10
	KEL-DPZ-B 25	□ 43798 ■ 50798	25× 3.2 - 6.5 mm	10

* Only valid for gray product types



KEL-DPZ-E Cable Entry Plates



Conical shape on back provides additional sealing and strain relief



Also available in black.



Description	Type	Order No.	Number of cables	PU
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	KEL-DPZ-E 112 7	<input type="checkbox"/> 43780 <input checked="" type="checkbox"/> 50780	7x 7.5 - 12 mm	10
	KEL-DPZ-E 112 21	<input type="checkbox"/> 43790 <input checked="" type="checkbox"/> 50790	21x 3.2 - 6.5 mm	10

Product Description

KEL-DPZ-E is designed for routing cables without connectors in very small space.

The assembly of the KEL-DPZ-E with cables or pneumatic hoses can be done quick and easy. Simply make a small hole in the thin membrane, push the cables through. The KEL-DPZ-E provides strain relief and protection IP66 / NEMA type 12.

With an area of only 18 × 112 mm, up to 21 cables can be easily routed and sealed.

ST-B Plugs can be used for sealing pierced membranes if cables have been removed.

Advantages & Benefits

- Space saving shape
- Dual sealing of cables acc. to IP66/NEMA type 12
- High cable density
- Fast and easy assembly
- Hygienic design

Specifications

Material	Frame: Polyamide (PA) Sealing plate: Elastomer
Color	<input type="checkbox"/> gray (similar RAL 7035) <input checked="" type="checkbox"/> black
Flame class	UL94-Vo
IP rating	IP66 (certified acc. to EN 60529)
NEMA type rating	NEMA type 12 (acc. to UL 50E)
Temperature	- 40°C to + 90°C (static) - 40°F to + 194°F (static)
Properties	Halogen-free, silicone-free
Cut-out dimensions	18 × 112 mm / page 200 - 201
Plate depth	14 mm

Accessories

ST-B Plugs	78
KEL-EMC-PF Grounding mounts	127

* Only valid for gray product types

KEL-DPZ-KL

Cable Entry Plates



Also available in black.



Membrane on front



Conical shape on back provides additional sealing and strain relief

IP65

Description	Type	Order No.	Number of cables	PU
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Product Description

The cable entry plate KEL-DPZ-KL is designed for routing up to 72 cables without connectors. The assembly of the KEL-DPZ-KL with cables or pneumatic hoses can be done quick and easy. Simply make a small hole in the thin membrane, push the cables through. The KEL-DPZ-KL provides strain relief and protection IP65 / NEMA type 12.

ST-B Plugs can be used for sealing pierced membranes if cables have been removed.

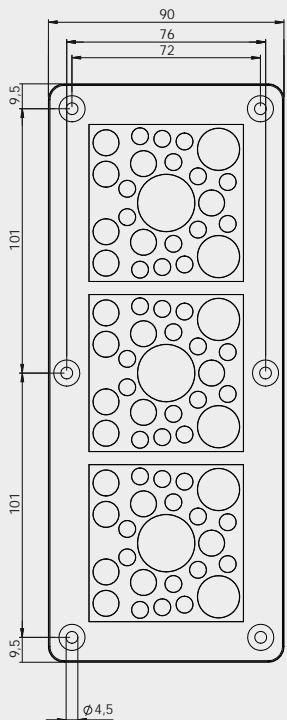
The KEL-DPZ-KL matches on junction boxes KL by Rittal.

Advantages & Benefits

- Space saving shape
- Dual sealing of cables acc. to IP65/NEMA type 12
- High cable density
- Fast and easy assembly
- Hygienic design

Specifications

Material	Frame: Stainless steel V2A, molded with elastomer Sealing plate: Elastomer Screws: Stainless steel V2A
Color	<input type="checkbox"/> gray (similar RAL 7035) <input checked="" type="checkbox"/> black
Flame class	UL94-Vo
IP rating	IP65 (certified acc. to EN 60529)
NEMA type rating	NEMA type 12 (acc. to UL 50E)
Temperature	- 40°C to + 90°C (static) - 40°F to + 194°F (static)
Properties	Halogen-free, silicone-free
Cut-out dimensions	192 × 62 mm
Plate depth	4 mm

	KEL-DPZ-KL72	<input type="checkbox"/> 43675.001 <input checked="" type="checkbox"/> 43675.101	42x 3.2 - 6.5 mm 21x 5 - 10.2 mm 6x 9 - 16.2 mm 3x 16 - 22 mm	1

* Only valid for gray product types

Accessories

ST-B Plugs 78

Typical Applications

Cable Entry Plates for Cables without Connectors



KEL-DPZ 24|x - Page 66 - 68

Routing of numerous cables with varying cable diameter sizes into a machine control enclosure. IP65 sealing is achieved. Additional membranes are available for future routing.



KEL-DPZ 24|25 - Page 67

Routing of a large number of cables into the enclosure of a checkweigher. High cable density in a small space.



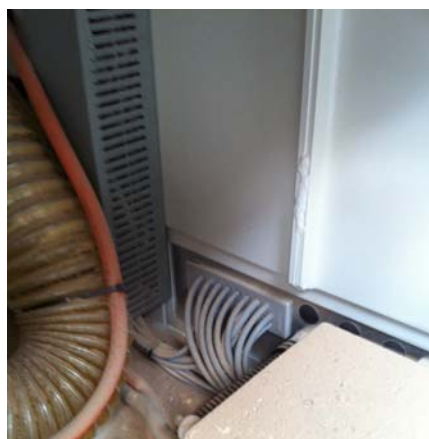
KEL-DPZ-B25 - Page 68

Entering of cable bundle in a small space with high IP66 rating.



KEL-DPZ-B25 - Page 68 / **KEL 24|7** - Page 18

Combination of split and push-through-systems for the routing of cables into an integrated enclosure. Additional grommets and membranes are available for future routing.



KEL-DP 24|50 - Page 74

Entering a large number of cables without connectors through a small space.



KEL-DP 50|16 - Page 77

Routing of cables, conduits and pipes with a single cable entry plate.

KEL-DPZ round Cable Entry Plates



Also available in black.



Membrane on front



Conical shape on back provides additional sealing and strain relief

Type	Order No.	Number of cables	Thread metric	External diameter	Mounting height	PU
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Product Description

KEL-DPZ entry plates are designed to route and seal cables without connectors or fiber optics (from 1.5 mm to 22 mm in diameter) in limited space.

The assembly of the KEL-DPZ round with cables or pneumatic hoses can be done quick and easy. Simply make a small hole in the thin membrane, push the cables through. The KEL-DPZ round provides strain relief and protection IP66 / IP67 / IP68 / NEMA type 4X.

The round versions of the KEL-DPZ series have a thread to fit in metric cut-outs from M32 to M63. Thus cut-outs for metric cable glands can be used.

ST-B Plugs can be used for sealing pierced membranes if cables have been removed.

KEL-DPZ 32 4	<input type="checkbox"/> 43732 <input type="checkbox"/> 50732	3× 3.2 - 6.5 mm 1× 7.2 - 12.5 mm	M32 × 1.5	44 mm	8 mm	10
KEL-DPZ 32 4-2	<input type="checkbox"/> 43733 <input type="checkbox"/> 50733	4× 5 - 9.5 mm	M32 × 1.5	44 mm	8 mm	10
KEL-DPZ 32 7	<input type="checkbox"/> 43734 <input type="checkbox"/> 50734	7× 3.2 - 6.5 mm	M32 × 1.5	44 mm	8 mm	10
KEL-DPZ 40 8	<input type="checkbox"/> 43741 <input type="checkbox"/> 50741	4× 3.2 - 6.5 mm 4× 5 - 10.2 mm	M40 × 1.5	52 mm	8 mm	10
KEL-DPZ 50 8	<input type="checkbox"/> 43750 <input type="checkbox"/> 50750	5× 5 - 10.2 mm 3× 7.2 - 12.5 mm	M50 × 1.5	62 mm	8 mm	10
KEL-DPZ 50 10	<input type="checkbox"/> 43751 <input type="checkbox"/> 50751	7× 3.2 - 6.5 mm 2× 5 - 10.2 mm 1× 16 - 22.2 mm	M50 × 1.5	62 mm	8 mm	10
KEL-DPZ 50 12	<input type="checkbox"/> 43752 <input type="checkbox"/> 50752	4× 3.2 - 6.5 mm 8× 5 - 10.2 mm	M50 × 1.5	62 mm	8 mm	10

* Only valid for gray product types



KEL-DPZ round Cable Entry Plates



Type	Order No.	Number of cables	Thread metric	External diameter	Mounting height	PU
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KEL-DPZ 50 19	<input type="checkbox"/> 43758 <input checked="" type="checkbox"/> 50758	19x 3.2 - 6.5 mm	M50 x 1.5	62 mm	8 mm	10
KEL-DPZ 50 78	<input type="checkbox"/> 43756 <input checked="" type="checkbox"/> 50756	76x 1.5 - 2.6 mm 2x 2.5 - 5 mm	M50 x 1.5	62 mm	8 mm	10
KEL-DPZ 63 9	<input type="checkbox"/> 43760 <input checked="" type="checkbox"/> 50760	1x 3.2 - 6.5 mm 3x 5 - 10.2 mm 4x 9 - 16.2 mm 1x 16 - 22.2 mm	M63 x 1.5	75 mm	8 mm	10
KEL-DPZ 63 13	<input type="checkbox"/> 43761 <input checked="" type="checkbox"/> 50761	4x 3.2 - 6.5 mm 4x 5 - 10.2 mm 5x 9 - 16.2 mm	M63 x 1.5	75 mm	8 mm	10
KEL-DPZ 63 14	<input type="checkbox"/> 43762 <input checked="" type="checkbox"/> 50762	14x 5 - 10.2 mm	M63 x 1.5	75 mm	8 mm	10
KEL-DPZ 63 35	<input type="checkbox"/> 43763 <input checked="" type="checkbox"/> 50763	35x 3.2 - 6.5 mm	M63 x 1.5	75 mm	8 mm	10

Advantages & Benefits

- Quick and easy tool-free assembly
- High cable density
- Automatic sealing and strain relief for the cable
- Suitable for metric cut-outs
- Polyamide locknuts are included in the shipment
- Dual sealing of cables acc. to IP66 / IP67 / IP68 / up to NEMA type 4X
- Hygienic design - free of dirt-collecting recesses

Specifications

Material	Thread frame: Polyamide (PA)
Color	Sealing plate: Elastomer <input type="checkbox"/> gray (similar RAL 7035) <input checked="" type="checkbox"/> black
Flame class	UL94-Vo
IP rating	IP66/IP67/IP68 (certified acc. to EN 60529)
NEMA type rating	NEMA type 4X (acc. to UL 50E)
Temperature	- 40°C to + 90°C (static) - 40°F to + 194°F (static)
Properties	Halogen-free, silicone-free
Cut-out dim.	Metric sizes
Thread length	14 mm
Plate depth	8 mm

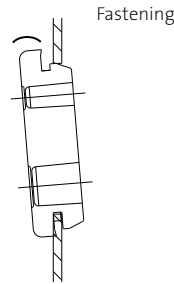
Accessories

ST-B Plugs	78
FP Flanged plates	160 - 165
MP Module plates	156 - 157

* Only valid for gray product types

KEL-DP 24

Cable Entry Plates



Also available in black.



Product Description

KEL-DP entry plates are designed for routing cables without connectors. The KEL-DP products are a cost saving alternative to traditional cable glands. Ideal for high volume applications where conventional cable glands would normally be used. Simply make a small hole in the thin membrane and push the cables through. The KEL-DP 24 provides protection IP64 / NEMA Type 12.

A special rib ensures a centered fit in the cut-outs. ST-B Plugs can be used for sealing pierced membranes if cables have been removed.

Advantages & Benefits

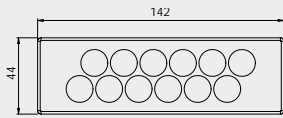
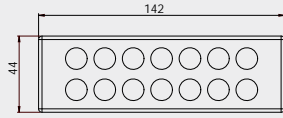
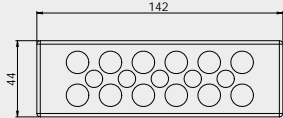
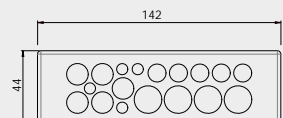
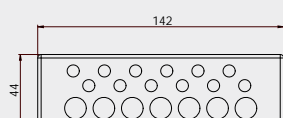
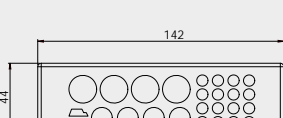
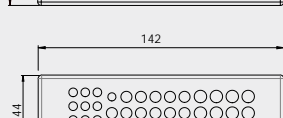
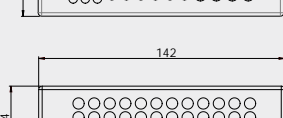
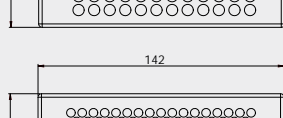
- Fast and easy assembly, no tools required
- Very good strain relief on the cable bundle
- High cable density
- Cost-effective
- Hygienic design – free of dirt-collecting recesses
- For wall thickness 1.5 - 4 mm

Specifications

Material	Elastomer
Color	<input type="checkbox"/> gray (similar RAL 7035) <input checked="" type="checkbox"/> black
Flame class	UL94-Vo
IP rating	IP64 (certified acc. to EN 60529)
NEMA type rating	NEMA type 12 (acc. to UL 50E)
Temperature	- 40°C to + 90°C (static) - 40°F to + 194°F (static)
Properties	Halogen-free, silicone-free
Cut-out dimensions	36 × 112 mm
Plate depth	5 mm
Type A:	For wall thickness 1.5 - 2.5 mm
Type B:	For wall thickness 2.8 - 4 mm

Accessories

ST-B Plugs	78
FP Flanged plates	160 - 165

Description	Type	Order No. Type A	Order No. Type B	Number of cables	PU
	KEL-DP 24 12	<input type="checkbox"/> 43508 <input checked="" type="checkbox"/> 50508		12× max. 15 mm	10
	KEL-DP 24 14	<input type="checkbox"/> 43512 <input checked="" type="checkbox"/> 50512	<input type="checkbox"/> 43522 <input checked="" type="checkbox"/> 50522	14× max. 12.1 mm	10
	KEL-DP 24 17	<input type="checkbox"/> 43514 <input checked="" type="checkbox"/> 50514	<input type="checkbox"/> 43523 <input checked="" type="checkbox"/> 50523	5× max. 10.5 mm 12× max. 12.6 mm	10
	KEL-DP 24 18	<input type="checkbox"/> 43515 <input checked="" type="checkbox"/> 50515	<input type="checkbox"/> 43528 <input checked="" type="checkbox"/> 50528	4× max. 6.5 mm 5× max. 10.5 mm 5× max. 12.6 mm 4× max. 16.1 mm	10
	KEL-DP 24 19	<input type="checkbox"/> 43516 <input checked="" type="checkbox"/> 50516	<input type="checkbox"/> 43524 <input checked="" type="checkbox"/> 50524	12× max. 6.5 mm 7× max. 12.1 mm	10
	KEL-DP 24 26	<input type="checkbox"/> 43518 <input checked="" type="checkbox"/> 50518	<input type="checkbox"/> 43525 <input checked="" type="checkbox"/> 50525	16× max. 6.5 mm 4× max. 12.1 mm 4× max. 16.1 mm 2× ASI-cables	10
	KEL-DP 24 42	<input type="checkbox"/> 43511 <input checked="" type="checkbox"/> 50511	<input type="checkbox"/> 43521 <input checked="" type="checkbox"/> 50521	12× max. 7.2 mm 17× max. 6.4 mm 12× max. 5 mm 1× max. 4.7 mm	10
	KEL-DP 24 48	<input type="checkbox"/> 43519 <input checked="" type="checkbox"/> 50519	<input type="checkbox"/> 43526 <input checked="" type="checkbox"/> 50526	48× max. 6.5 mm	10
	KEL-DP 24 50	<input type="checkbox"/> 43520 <input checked="" type="checkbox"/> 50520	<input type="checkbox"/> 43527 <input checked="" type="checkbox"/> 50527	33× max. 5.3 mm 9× max. 6.4 mm 8× max. 8.3 mm	10

* Only valid for gray product types



KEL-DP-E

Cable Entry Plates



Also available in black.



Type	Order No.	Cut-out [mm]	Number of cables	PU	Description
KEL-DP-E 46 7	<input type="checkbox"/> 43585 <input checked="" type="checkbox"/> 50585	46 x 18	5x max. 8.3 mm 2x max. 6.5 mm	10	
KEL-DP-E 46 9	<input type="checkbox"/> 43587 <input checked="" type="checkbox"/> 50587	46 x 18	8x max. 6.5 mm 1x max. 12.1 mm	10	
KEL-DP-E 86 13	<input type="checkbox"/> 43581 <input checked="" type="checkbox"/> 50581	85 x 16	11x max. 8.3 mm 2x max. 6.5 mm	10	
KEL-DP-E 86 17	<input type="checkbox"/> 43583 <input checked="" type="checkbox"/> 50583	85 x 16	16x max. 6.5 mm 1x max. 12.1 mm	10	
KEL-DP-E 112 16	<input type="checkbox"/> 43576 <input checked="" type="checkbox"/> 50576	112 x 18	4x max. 6.5 mm 11x max. 8.3 mm 1x max. 12.1 mm	10	
KEL-DP-E 112 21	<input type="checkbox"/> 43578 <input checked="" type="checkbox"/> 50578	112 x 18	16x max. 6.5 mm 4x max. 8.3 mm 1x max. 12.1 mm	10	
KEL-DP-S 69 8	<input type="checkbox"/> 43591 <input checked="" type="checkbox"/> 50591	69 x 10 Edge radii Rz	8x max. 7.5 mm	10	

* Only valid for gray product types

Product Description

KEL-DP-E entry plates are designed for routing cables without connectors. The KEL-DP products are a cost saving alternative to traditional cable glands. Ideal for high volume applications where conventional cable glands would normally be used. Simply make a small hole in the thin membrane and push the cables through. The KEL-DP-E provides protection IP64 / NEMA Type 12.

ST-B Plugs can be used for sealing pierced membranes if cables have been removed.

A special rib ensures a centered fit in the cut-outs.

Advantages & Benefits

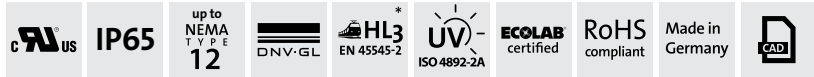
- Fast and easy assembly, no tools required
- High cable density
- Very good strain relief on the cable bundle
- Cost-effective
- Hygienic design – free of dirt-collecting recesses
- For wall thickness 1.5 - 2.5 mm

Specifications

Material	Elastomer
Color	<input type="checkbox"/> gray (similar RAL 7035) <input checked="" type="checkbox"/> black
Flame class	UL94-Vo
IP rating	IP64 (certified acc. to EN 60529)
NEMA type rating	NEMA type 12 (acc. to UL 50E)
Temperature	- 40°C to + 90°C (static) - 40°F to + 194°F (static)
Properties	Halogen-free, silicone-free
Plate depth	5 mm

Accessories

ST-B Plugs 78



KEL-DP round Cable Entry Plates



IP65



Also available in black.



Membrane on front



Special fixing ribs ensure a centered fit.

Type	Order No. Type A	Order No. Type B	Number of cables	Cut-out	External diameter DA	PU
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Product Description

KEL-DP entry plates are designed for routing cables without connectors.

The KEL-DP products are a cost saving alternative to traditional cable glands. Ideal for high volume applications where conventional cable glands would normally be used. Simply make a small hole in the thin membrane and push the cables through. The KEL-DP round provides protection IP65 / NEMA Type 12.

ST-B Plugs can be used for sealing pierced membranes if cables have been removed.

A special rib ensures a centered fit in the cut-outs.

Advantages & Benefits

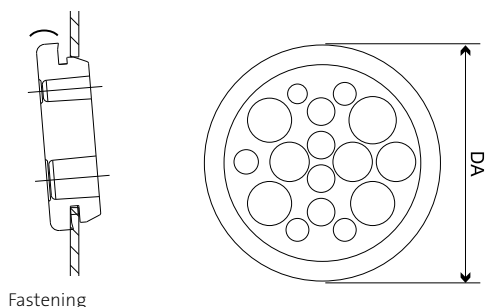
- Fast and easy assembly, no tools required
- High cable density
- Very good strain relief on the cable bundle
- Cost-effective
- For wall thickness 1.5 - 4 mm
- Hygienic design - free of dirt-collecting recesses

KEL-DP 25 4	<input type="checkbox"/> 43533 <input checked="" type="checkbox"/> 50533	-	4× max. 8 mm	ø 25 mm	32 mm	10
KEL-DP 25 6	<input type="checkbox"/> 43531 <input checked="" type="checkbox"/> 50531	-	4× max. 5.2 mm 2× max. 9.4 mm	ø 25 mm	32 mm	10
KEL-DP 32 10	<input type="checkbox"/> 43532 <input checked="" type="checkbox"/> 50532	<input type="checkbox"/> 43560 <input checked="" type="checkbox"/> 50560	6× max. 5.2 mm 2× max. 6.4 mm 2× max. 9.4 mm	ø 32 mm	38 mm	10
KEL-DP 40 9	<input type="checkbox"/> 43536	<input type="checkbox"/> 43561	8× max. 9.5 mm 1× max. 11.3 mm	ø 40 mm	50 mm	10
KEL-DP 40 16	<input type="checkbox"/> 43537	<input type="checkbox"/> 43563	2× max. 5.3 mm 10× max. 6.3 mm 2× max. 9.5 mm 2× max. 11.3 mm	ø 40 mm	50 mm	10
KEL-DP 40 17	<input type="checkbox"/> 43538	<input type="checkbox"/> 43565	1× max. 4 mm 16× max. 7.2 mm	ø 40 mm	50 mm	10

* Only valid for gray product types



KEL-DP round Cable Entry Plates



Fastening



Type	Order No. Type A	Order No. Type B	Number of cables	Cut-out	External diameter DA	PU
------	------------------	------------------	------------------	---------	----------------------	----

KEL-DP 50 9	43554 50554	43568 50568	5× max. 7 mm 4× max. 18 mm	∅ 50 mm	60 mm	10
KEL-DP 50 11	43555 50555	43569 50569	7× max. 7.2 mm 3× max. 11.2 mm 1× max. 22.5 mm	∅ 50 mm	60 mm	10
KEL-DP 50 12	43551 50551	43562 50562	10× max. 9.2 mm 2× max. 11.2 mm	∅ 50 mm	60 mm	10
KEL-DP 50 16	43550 50550	43564 50564	4× max. 5.3 mm 5× max. 6.3 mm 3× max. 9.5 mm 4× max. 11.3 mm	∅ 50 mm	60 mm	10
KEL-DP 50 18	43553 50553	43567 50567	2× max. 4 mm 2× max. 6 mm 4× max. 7.2 mm 5× max. 9.4 mm 5× max. 12 mm	∅ 50 mm	60 mm	10
KEL-DP 50 20	43552 50552	43566 50566	16× max. 6.3 mm 4× max. 9.3 mm	∅ 50 mm	60 mm	10
KEL-DP 50 35	43556 50556	43570 50570	35× max. 5.2 mm	∅ 50 mm	60 mm	10

* Only valid for gray product types

Specifications

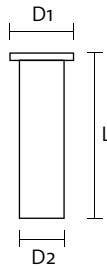
Material	Elastomer
Color	<input type="checkbox"/> gray (similar RAL 7035) <input checked="" type="checkbox"/> black
Flame class	UL94-Vo
IP rating	IP65 (certified acc. to EN 60529)
NEMA type rating	NEMA type 12 (acc. to UL 50E)
Temperature	- 40°C to + 90°C (static) - 40°F to + 194°F (static)
Properties	Halogen-free, silicone-free
Cut-out dimensions	Metric sizes
Plate depth	5 mm
Type A:	For wall thickness 1.5 - 2.5 mm
Type B:	For wall thickness 2.8 - 4 mm

Accessories

ST-B Plugs	78
FP Flange plates	160 - 165

ST-B

Plugs for Membranes



2

Product Description

Plugs ST-B are used to seal already pierced membranes in various cable entry plates (KEL-DPU / KEL-DPZ / KEL-DP / KEL-QTA-DP) and DT grommets.

Perfect for applications where cables have been removed.

The IP rating of the cable entry plate remains.

Advantages & Benefits

- Sealing of pierced cable entry membranes which are no longer in use

Specifications

Material Polyamide (PA), white
Flame class UL94-Vo
Temperature - 40°C to + 120°C
 - 40°F to + 248°F
Properties Halogen-free, silicone-free

Compatible with

KEL-DPU Cable entry plates 64 - 65
 KEL-DPZ Cable entry plates 66 - 73
 KEL-DP Cable entry plates 74 - 77
 DT Cable entry grommets 48
 KEL-QTA-DP Cable entry plates 54

Type	Order No.	Diameter D1	Diameter D2	Length L	PU
ST-B 6	42806	8 mm	6 mm	16 mm	25
ST-B 10	42810	12 mm	10 mm	16 mm	25
ST-B 12	42812	15 mm	12 mm	16 mm	25
ST-B 16	42816	19 mm	16 mm	16 mm	25
ST-B 22	42822	25 mm	22 mm	21 mm	25
Assortment ST-B Plugs	42801	5x ST-B 6 5x ST-B 10 2x ST-B 12 1x ST-B 16 1x ST-B 22			



KEL-DPF

Cable Entry Grommets



IP68

Type	Order No.	Thread metric	External diameter	Clamping range	PU
------	-----------	---------------	-------------------	----------------	----

KEL-DPF 25 3-12	<input type="checkbox"/> 42652 <input checked="" type="checkbox"/> 50652	M25 × 1.5	39 mm	3 - 12 mm	5
KEL-DPF 32 6-18	<input type="checkbox"/> 42653 <input checked="" type="checkbox"/> 50653	M32 × 1.5	46 mm	6 - 18 mm	5
KEL-DPF 40 12-27	<input type="checkbox"/> 42654 <input checked="" type="checkbox"/> 50654	M40 × 1.5	54 mm	12 - 27 mm	5
KEL-DPF 50 22-36	<input type="checkbox"/> 42655 <input checked="" type="checkbox"/> 50655	M50 × 1.5	64 mm	22 - 36 mm	5
KEL-DPF 63 27-50	<input type="checkbox"/> 42656 <input checked="" type="checkbox"/> 50656	M63 × 1.5	77 mm	27 - 50 mm	5
KEL-DPF 75 39-60	<input type="checkbox"/> 42657 <input checked="" type="checkbox"/> 50657	M75 × 1.5	89 mm	39 - 60 mm	1
KEL-DPF 85 48-70	<input type="checkbox"/> 42658 <input checked="" type="checkbox"/> 50658	M85 × 2	99 mm	48 - 70 mm	1

Product Description

The KEL-DPF was developed particularly for routing large or unknown sizes of cables into an enclosure or machine (max. cable diameter 70 mm). Due to the flexibility and unique pyramid shape, cable entry and flexible positioning is much easier compared to using conventional cable glands. Also perfect for bundling or restraining large cables.

Cutting of DPF grommets:
Cable diameter less 25%. The corresponding diameters are marked on the grommet.

It is recommended that additional strain relief be provided for cables as part of the installation.

Advantages & Benefits

- Quick and tool-free assembly
- It is possible to install rigid cables at angles
- Suitable for metric cut-outs
- Polyamide locknuts are included in the shipment

Specifications

Material	Thread frame: Polyamide (PA) Pyramid: Elastomer
Color	<input type="checkbox"/> gray (similar RAL 7035) <input checked="" type="checkbox"/> black
Flame class	UL94-Vo
IP rating	IP66/IP68 (certified acc. to EN 60529)
NEMA type rating	NEMA type 4X (acc. to UL 50E)
Temperature	- 40°C to + 90°C (static) - 40°F to + 194°F (static)
Properties	Halogen-free, silicone-free
Thread length	14 mm
Cut-out dimensions	Metric sizes

Accessories

FP Flanged plates	160 - 165
MP Module plates	156 - 157

Wrenches

for M75/M85 plastic locknut

For mounting the new KEL-DPF sizes we offer suitable wrenches with widths M75 and M85 for plastic locknuts. Material: aluminum

M75: Order No. 61436 | M85: Order No. 61437 | PU: 1



* Only valid for gray product types

KEL-JUMBO flex

Cable Entry Grommets



2

Product Description

The KEL-JUMBO flex is a flexible cable entry grommet for cables without connectors with a diameter range from 27 - 68 mm.

They are ideal for the routing supply cables into the electronic enclosures.

Cutting of KEL-JUMBO flex grommets:
Cable diameter less 25%. The corresponding diameters are marked on the grommet.

It is recommended that additional strain relief be provided for cables as part of the installation.

Advantages & Benefits

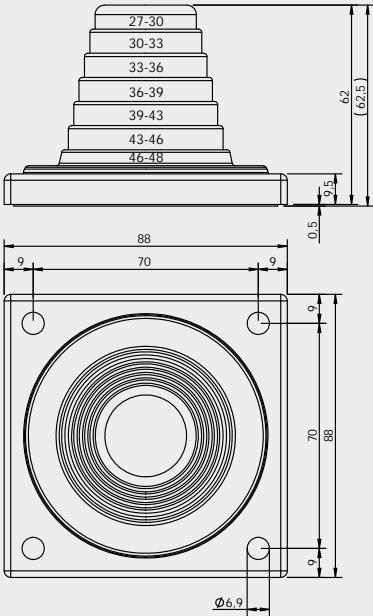
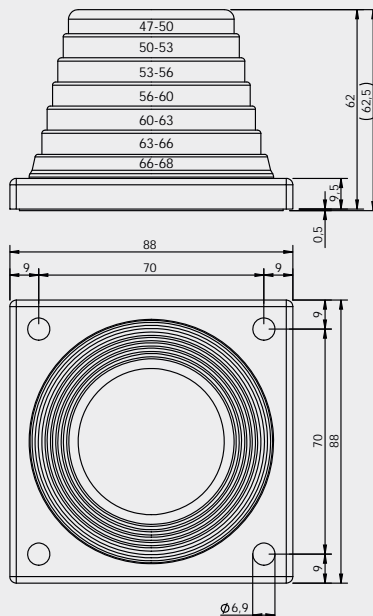
- Quick assembly
- Grommets allow dynamic and flexible movement of rigid cables
- Compact installation area (88 × 88 mm)

Specifications

Material	Frame: Polyamide (PA) Pyramid: Elastomer
Flame class	UL94-Vo
IP rating	IP54
NEMA type rating	NEMA type 12 (acc. to UL 50E)
Temperature	- 40°C to + 90°C (static) - 40°F to + 194°F (static)
Properties	Halogen-free, silicone-free
Cut-out dimensions	Round, \varnothing -cable +20%

Accessories

MP Module plates	156 - 157
BP Blank plates	166 - 167

Description	Type	Order No.	Clamping range	PU
	KEL-JUMBO flex 27-48	42614	27 - 48 mm	1
	KEL-JUMBO flex 47-68	42616	47 - 68 mm	1



KEL-ULTRA flex

Cable Entry Grommets



Type	Order No.	Sealing range	PU
------	-----------	---------------	----

KEL-ULTRA flex 1 incl. Fixing screws	42630	25 - max. 90 mm cable diameter	1
KEL-ULTRA flex 2 incl. Fixing screws	42631	75 - max. 115 mm cable diameter	1

Product Description

The KEL-ULTRA flex is designed as a cable entry grommet for any large cable or conduit that is difficult to manage. The KEL-ULTRA flex comes in two sizes and is ideal for routing and sealing cables and conduits with a diameter from 25 to 115 mm. Due to the high flexibility of the elastomer pyramid, inserting large, thick cables with KEL-ULTRA flex is easier than using standard cable glands.

After inserting the cable or conduit, the KEL-ULTRA flex is quickly and easily mounted with the metal ring and screws. This ring enables a circular fixing and sealing of the grommet at the enclosure wall. The ring is supplied with each KEL-ULTRA flex. Cutting of grommets: Cable diameter less 25%. It is recommended that additional strain relief be provided for cables as part of the installation.

Advantages & Benefits

- Quick assembly
- Grommets allow for easy orientation and seal of rigid cables.
- IP66 / up to NEMA type 12 rating

Specifications

Material	Pyramid: Elastomer Fixing metal ring: Steel, zinc-plated Blank plate: Steel, zinc-plated
Flame class	UL94-V0
IP rating	IP66, when fastened with 8 screws (certified acc. to EN 60529)
NEMA type rating	NEMA type 12 (acc. to UL 50E)
Temperature	- 40°C to + 90°C (static) - 40°F to + 194°F (static)
Properties	Halogen-free, silicone-free
Cut-out dimension	Round, Ø-cable +30%, max. Ø 140 mm

Accessories

MP Module plates	156 - 157
BPM Blank plates	167

3 Strain Relief & Cable Management



By using icotek strain relief systems the user can quickly assemble, organize and provide strain relief for cables according to EN 62444.

The strain relief plates are available in several sizes. The cable density can be greatly increased by using spacers for multilayer mounting.

The systems can be used for organizing and securing cables in machines, control panels, enclosures and dynamic cable carriers. Due to the wide variety of mounting requirements, options range from DIN rail snap-mount, C-rail to screw mount.

Securing the cables is done quickly and inexpensively with standard cable ties. The shape of the strain relief securely holds cable tie and cable.

3

High cable density, multilayer mounting possible

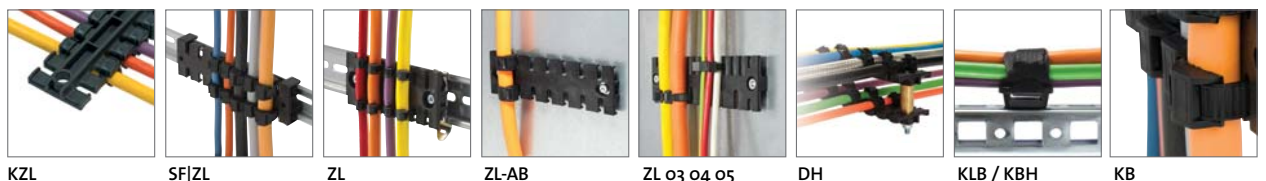
Fast and easy, partially tool-free mounting

Wide mounting type variety: DIN rail / C-rail snap mount, screw mount

Available in various sizes

Secure hold of the cable ties and cables, strain relief acc. to EN 62444

Product Range



KZL

SFZL

ZL

ZL-AB

ZL 03 04 05

DH

KLB / KBH

KB

Product Group 3

Strain Relief & Cable Management

Chapter Content

	Strain relief plates for screw mount ZL	84		Spacers for multilayer mounting of strain relief plates DH	89
	Strain relief plates for screw mount, with bushings ZL-AB / ZL-MS	85		Cable ties KB black / KB natural	90 - 91
	Strain relief plates for screw mount, for various cable diameters ZL 03 04 05	86		Hook-and-loop cable ties re-usable KLKB / KLB	92
	Strain relief plates for 35 mm DIN rail / C-rail snap mount KZL	87		Holder for hook-and-loop cable ties various mounting types KBH	93
	Strain relief plates for 35 mm DIN rail snap mount SF ZL	88			

ZL

Strain Relief Plates for Screw Assembly



3

Product Description

The strain relief plate ZL is used for static or dynamic applications for organizing and securing cables on machines, control panels or cable carriers.

The design of the strain relief unit provides secure strain relief according to EN 62444. Mount of the cables or pneumatic tubing is easily done using cable ties.

For multilayer installation please use DH spacers, see Page 89.

Advantages & Benefits

- Strain relief according to EN 62444
- Easy assembly
- Cost-effective
- High cable density
- Wide variety of mounting options

Specifications

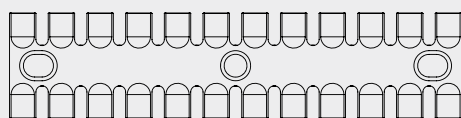
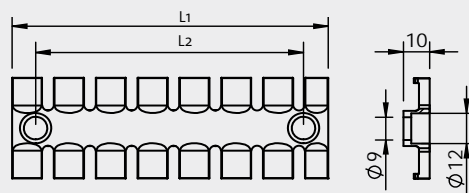
Material **Polyamide (PA)**
 Flame class **UL94-Vo**
 Temperature **- 40°C to + 140°C (static)**
- 40°F to + 284°F (static)
 Properties **Halogen-free, silicone-free**

Accessories

DH Spacers 89
 KB Cable ties 90 - 91
 ZL|SB-EMC Shield plates 133

Type	Order No.	Length L1	Length L2	No. of teeth	PU
------	-----------	-----------	-----------	--------------	----

ZL 39	32222	38.5 mm	19.5 mm	3	10
ZL 60	32224	59.5 mm	43.5 mm	4	10
ZL 70	32226	69.1 mm	43.5 mm	5	10
ZL 87	32228	86.5 mm	68 mm	6	10
ZL 103	32230	102.5 mm	84 mm	7	10
ZL 121	32232	121 mm	102.5 mm	8	10
ZL 140	32234	139.5 mm	121 mm	9	10
ZL 180	32236	180 mm	157 mm	12	10



ZL 180

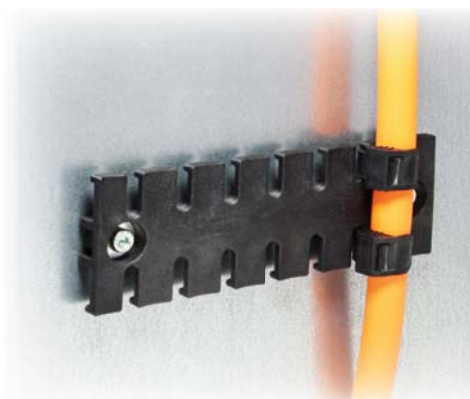
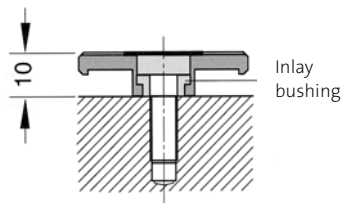


ZL-AB

Strain Relief Plates for Screw Assembly



Inlay bushings also available in brass.



Type	Order No.			Length L1	Length L2	No. of teeth	PU
	for M4 screws	for M5 screws	for M6 screws				
ZL 39 AB	32270	32280 32360	32290	38.5 mm	19.5 mm	3	10
ZL 60 AB	32271	32281 32361	32291	59.5 mm	43.5 mm	4	10
ZL 70 AB	32272	32282 32362	32292	69.1 mm	43.5 mm	5	10
ZL 87 AB	32273	32283 32363	32293	86.5 mm	68 mm	6	10
ZL 103 AB	32275	32284 32364	32294	102.5 mm	84 mm	7	10
ZL 121 AB	32277	32285 32365	32295	121 mm	102.5 mm	8	10
ZL 140 AB	32274	32286 32366	32296	139.5 mm	121 mm	9	10
ZL 180 AB	32276	32287 32367	32297	180 mm	157 mm	12	10

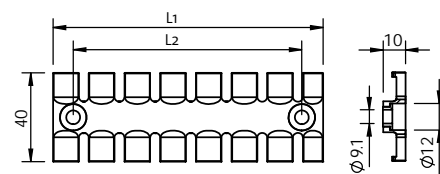
Product Description

The strain relief plate ZL-AB is used for static or dynamic applications for organizing and securing cables on machines, control panels or cable carriers.

By using aluminum / brass nuts for the screw holes, a better fit of the strain relief plate is achieved, even in high vibration environments.

Advantages & Benefits

- Strain relief according to EN 62444
- Easy assembly
- Cost-effective
- High cable density
- Wide variety of mounting options



Specifications

Material	ZL: Polyamide (PA) Bushing: <ul style="list-style-type: none"> Aluminum Brass (BR)
Flame class	UL94-Vo
Temperature	- 40°C to + 140°C (static) - 40°F to + 284°F (static)
Properties	Halogen-free, silicone-free

Accessories

- KB Cable ties 90 - 91
- ZL|SB-EMC Shield plates 133

ZL 03 | 04 | 05

Strain Relief Plates for Screw Assembly



Type	Order No.	Length L1	Length L2	No. of teeth	PU
------	-----------	-----------	-----------	--------------	----

ZL 03	32112	63.4 mm	42 mm	4 7	10
ZL 04	32114	95 mm	74.5 mm	6 11	10
ZL 05	32116	119 mm	108 mm	7 13	10

Product Description

Strain relief plates ZL feature different comb widths. Thus providing a multi-purpose product for various cable sizes.

The design of the strain relief unit provides secure strain relief according to EN 62444. Mount of the cables or pneumatic tubing is easily done using cable ties.

Advantages & Benefits

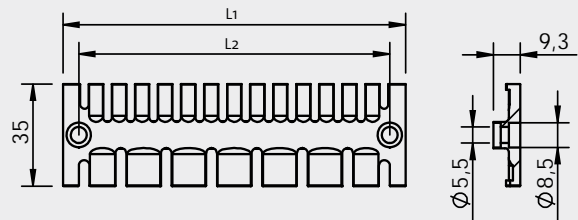
- Strain relief according to EN 62444
- Easy assembly
- Cost-effective
- High cable density
- Wide variety of mounting options

Specifications

Material	Polyamide (PA)
Flame class	UL94-Vo
Temperature	- 40°C to + 140°C (static) - 40°F to + 284°F (static)
Properties	Halogen-free, silicone-free

Accessories

DH Spacers	89
KB Cable ties	90 - 91





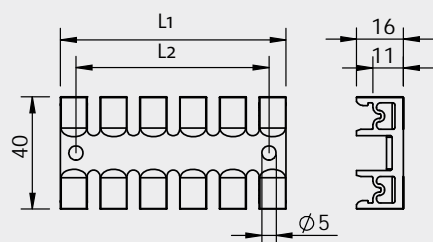
KZL

Strain Relief Plates for Mounting Rails



Type	Order No.	Length L1	Length L2	No. of teeth	PU
------	-----------	-----------	-----------	--------------	----

KZL 11	32250	11.5 mm	-	1	10
KZL 39	32260	38.5 mm	28.3 mm	3	10
KZL 80	32262	79.5 mm	68 mm	6	10
KZL 140	32264	139.5 mm	128.1 mm	9	10



Product Description

The strain relief plate KZL is used for static or dynamic applications for organizing and securing cables on machines, control panels or cable carriers.

The design of the strain relief unit provides secure strain relief according to EN 62444. Mount of the cables or pneumatic tubing is easily done using cable ties.

KZL Strain relief plates can be mounted on 30 mm DIN rails (C-rails) and 35 mm DIN rails.

Advantages & Benefits

- Strain relief according to EN 62444
- Easy assembly
- Cost-effective
- High cable density
- Wide variety of mounting options

Specifications

Material	Polyamide (PA)
Flame class	UL94-Vo
Temperature	- 40°C to + 140°C (static) - 40°F to + 284°F (static)
Properties	Halogen-free, silicone-free

Accessories

KB Cable ties 90 - 91

3

SF|ZL

Strain Relief Plates for 35 mm DIN Rail



Type	Order No.	Length L1	Length L2	No. of teeth	PU
------	-----------	-----------	-----------	--------------	----

SF ZL 39	32351	38.5 mm	19.5 mm	3	10
SF ZL 60	32352	59.5 mm	43.5 mm	4	10
SF ZL 70	32353	69.1 mm	43.5 mm	5	10
SF ZL 87	32354	86.5 mm	68 mm	6	10
SF ZL 103	32355	102.5 mm	84 mm	7	10
SF ZL 121	32356	121 mm	102.5 mm	8	10
SF ZL 140	32357	139.5 mm	121 mm	9	10
SF ZL 180	32358	180 mm	157 mm	12	10

Product Description

The strain relief plate SF|ZL is used for assembly on 35 mm DIN rails. It can be used for strain relief of cables and conduits.

3 The SF|ZL range is based upon the strain relief plate ZL, which is mounted on snap feet for 35 mm DIN rails.

Advantages & Benefits

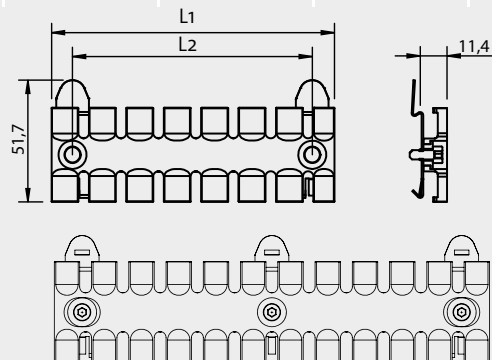
- Strain relief according to EN 62444
- Easy assembly
- Cost-effective
- High cable density
- Wide variety of mounting options

Specifications

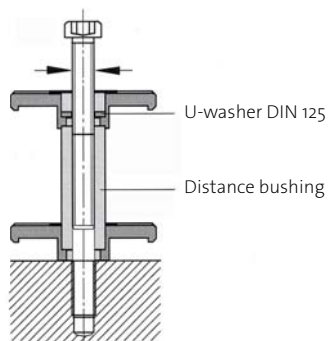
Material ZL: Polyamide (PA)
 SF-foot: Spring steel
 Flame class UL94-Vo
 Temperature - 40°C to + 140°C (static)
 - 40°F to + 284°F (static)
 Properties Halogen-free, silicone-free

Accessories

KB Cable ties 90 - 91
 ZL|SB-EMC Shield plates 133



DH Spacers



Type	Order No.	Fits with	Length	Diameter		PU
				inner	outer	
DH 30	32251	ZL 03 04 05	30 mm	5.2 mm	7 mm	10
DH 32	32252	ZL	32 mm	6.2 mm	12 mm	10

Product Description

Due to DH Spacers strain relief plates can be mounted in multi-layers to achieve an increase of the cable density.

Advantages & Benefits

- Increase of cable density

Specifications

Material **Aluminum**

Compatible with

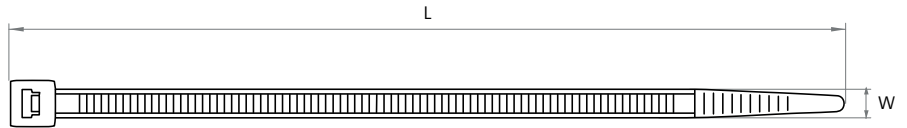
- ZL Strain relief plates 84
- ZL 03|04|05 Strain relief plates 86

KB black

Cable Ties



KBW 9



Product Description

Cable ties are proven utilities for economical bundling and fixing of cables, looms, tubes, conduits and many other components, e.g. for achieving strain relief.

Use highly flexible and strong power cable ties KB 28 for special requirements.

Specifications KB 28

- Material: Polyamide 12 (PA), black
- Flame class: UL94-V2
- Temperature: - 40°C to + 100°C
- 40°F to + 212°F
- Properties: Oil- and mould-resistant, highly flexible

Specifications KB black

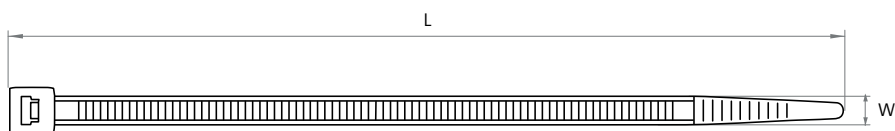
- Material: Polyamide 6.6 (PA), black
- Flame class: UL94-V2
- Temperature: - 40°C to + 100°C
- 40°F to + 212°F
- Properties: UV-resistant, particularly suitable for outdoor use

Type	Order No.	Length L	Width W	Bundling range	Tensile strength	PU	
KB 28	61225	178 mm	9 mm	28 mm	350 N	100	
KB 20 bk	61215	98 mm	2.5 mm	20 mm	60 N	100	
KB 25 bk	61220	140 mm	3.6 mm	25 mm	130 N	100	
KB 30 bk	61230	160 mm	4.5 mm	30 mm	180 N	100	
KB 45 bk	61235	178 mm	4.8 mm	45 mm	220 N	100	
KB 55 bk	61240	200 mm	4.8 mm	50 mm	220 N	100	
KB 75 bk	61245	290 mm	4.8 mm	75 mm	220 N	100	
KB 100 bk	61250	360 mm	4.8 mm	100 mm	220 N	100	
KBW 9	61300	Processing tool for cable ties					1

3



KBW 9



KB natural Cable Ties



Type	Order No.	Length L	Width W	Bundling range	Tensile strength	PU
------	-----------	-------------	------------	-------------------	---------------------	----

KB 15 nc	6115	75 mm	2.2 mm	15 mm	60 N	100	
KB 20 nc	6120	98 mm	2.5 mm	20 mm	60 N	100	
KB 22 nc	6125	135 mm	2.6 mm	22 mm	80 N	100	
KB 25 nc	6130	140 mm	3.6 mm	25 mm	130 N	100	
KB 30 nc	6135	160 mm	4.5 mm	30 mm	180 N	100	
KB 45 nc	6140	178 mm	4.8 mm	45 mm	220 N	100	
KB 50 nc	6145	200 mm	2.6 mm	50 mm	80 N	100	
KB 55 nc	6150	200 mm	4.8 mm	50 mm	220 N	100	
KB 75 nc	6155	290 mm	4.8 mm	75 mm	220 N	100	
KB 100 nc	6160	360 mm	4.8 mm	100 mm	220 N	100	
KBW 9	61300	Processing tool for cable ties					1

Product Description

Cable ties are proven utilities for economical bundling and fixing of cables, looms, tubes, conduits and many other components, e.g. for achieving strain relief.

Specifications

Material	Polyamide 6.6 (PA), natural
Flame class	UL94-V2
Temperature	- 40°C to + 100°C - 40°F to + 212°F
Properties	Oil- and mould-resistant

3

KLKB / KLB

Hook-and-Loop Cable Ties

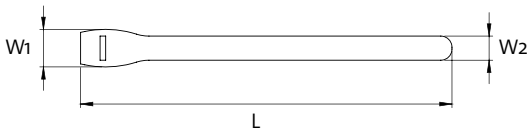


3

Product Description

Cable ties with hook-and-loop fasteners are a more and more common fixing mode for cables. They are used instead of standard cable ties, because they can be easily closed and opened several times. The soft material is gentle on cables, especially where vibrations are present.

Hook-and-loop cable ties are available individually (KLKB) in four different sizes or as a continuous tape roll (KLB) in four different sizes.



Advantages

- Reusable
- Adaptable
- The cable tie material is gentle on cables, especially if there are vibrations

Specifications

Material Polypropylene + Velours PA
 Color black
 Flame class UL94-V2
 Temperature - 30°C to + 80°C
 - 22°F to + 176°F

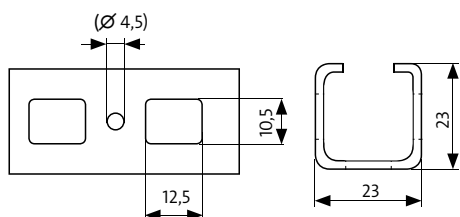
Accessories

KBH Holder for hook-and-loop fastener 93

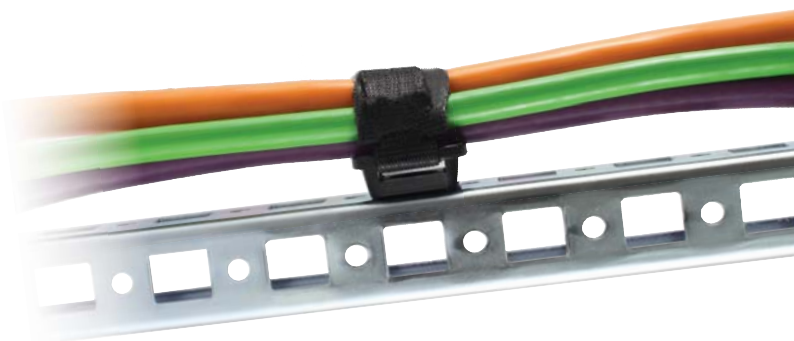
Type	Size [mm]			Order No.	PU
	L	W1	W2		
KLKB 200 × 7 bk	200	13	7	61021	100
NEW KLKB 200 × 7 bk on reel (750 pcs.)	200	13	7	61025	1
KLKB 200 × 13 bk	200	20	13	61022	100
NEW KLKB 200 × 13 bk on reel (750 pcs.)	200	20	13	61026	1
KLKB 230 × 13 bk	230	20	13	61023	100
NEW KLKB 230 × 13 bk on reel (650 pcs.)	230	20	13	61027	1
KLKB 300 × 17 bk	300	25	17	61024	100
NEW KLKB 300 × 17 bk on reel (500 pcs.)	300	25	17	61028	1
KLB 10 bk			10	61011	25 m
KLB 15 bk			15	61012	25 m
KLB 20 bk			20	61013	25 m
KLB 25 bk			25	61014	25 m

KBH

Holder for Hook-and-Loop Fastener



23 × 23 mm mounting rail



Description	Type	Order No.	fits KLKB KLB	Compatible with	PU
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Holder for hook-and-loop fastener, screwable

	KBH-S	■ 61019	KLKB 200 × 7 KLKB 200 × 13 KLB 10	23 × 23 mm mounting rail	100
	KBH-SB	■ 61002	KLKB 200 × 7	universal	100

Holder for hook-and-loop fastener, pluggable

	KBH-R	■ 61018	KLKB 200 × 7 KLKB 200 × 13 KLB 10	23 × 23 mm mounting rail	100
	KBH-RBA nc	□ 61003	KLKB 200 × 7	drill-hole Ø 6 mm	100
	KBH-RBB	■ 61004	KLKB 200 × 7	drill-hole Ø 6.5 mm	100

* Only KBH-S / KBH-R

Product Description

These holders can be used in combination with hook-and-loop cable ties KLKB and hook-and-loop tape KLB.

A large variety of holders provides unique and numerous mounting possibilities.

Advantages

- Assembly within seconds
- Secure hold
- Flexible usage

Specifications KBH-S / KBH-R

Material	Polyamide (PA)
Color	■ black
Flame class	UL94-V0
Temperature	- 40°C to + 110°C - 40°F to + 230°F
Properties	Halogen-free, silicone-free

Specifications KBH-SB / KBH-RBA

Material	Polyamide (PA)
Color	■ black (KBH-SB) □ nc (KBH-RBA)
Flame class	UL94-V2
Temperature	- 40°C to + 85°C (short-term to 110°C) - 40°F to + 185°F (short-term to 230°F)

Specifications KBH-RBB

Material	Polyamide (PA)
Color	■ black
Temperature	- 40°C to + 120°C - 40°F to + 248°F

Compatible with

KLKB / KLB Cable ties with hook-and-loop fastener 92

4

EMC Cable Shield Grounding Shield Clamps & Grounding Components

RoHS compliant Made in Germany

For process measurement and control equipment an increasingly higher level of protection against failure is required. Grounding of the cable shields is very important.

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%.

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

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.

icotek products provide a great solution for low resistance grounding. The SKL shield clamps offer a large contact area to the cable shield (see figure A).

MSKL type with large clamping range

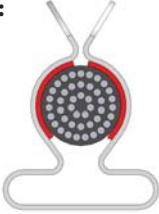
Available in various sizes

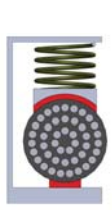
High cable density possible

**Wide variety in mounting types:
DIN rail / C-rail snap mount,
screw mount, ...**

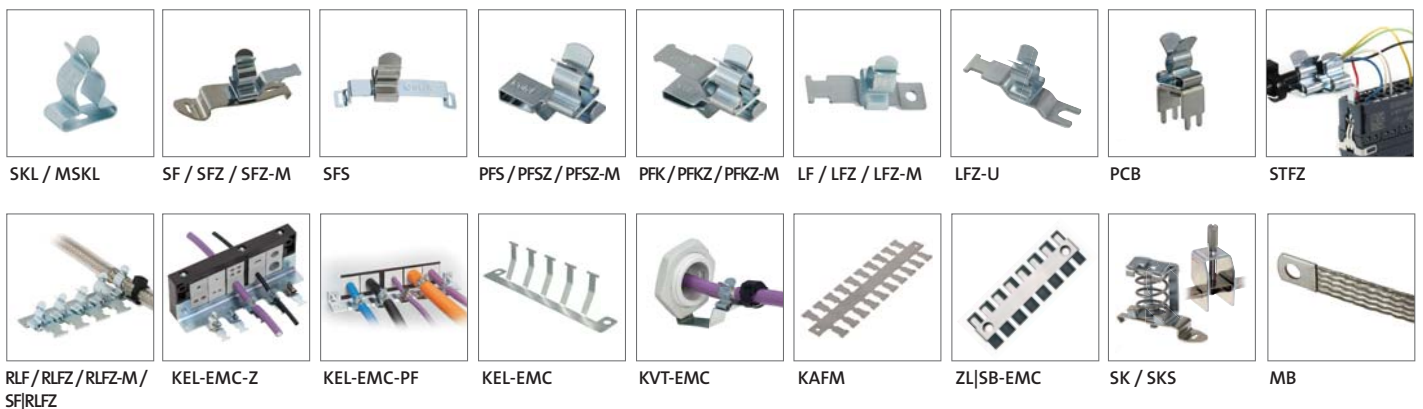
**Large contact area to the cable shield.
Shield and cable strands won't be squeezed**

Secure hold for cable ties and cables, strain relief acc. to EN 62444

A: 

B: 


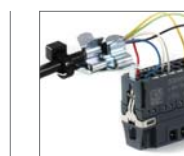








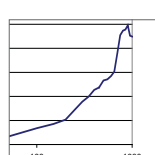


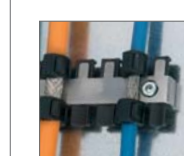



Product Range



Product Group 4

EMC Cable Shield Grounding

Chapter Content

 <p>Shield clamps with large clamping range various mounting types</p> <p>MSKL</p> <p>NEW</p>	<p>96 - 97</p>	 <p>Shield clamps for decentralized bus modules</p> <p>STFZ SKL / STFZ2 SKL / STFZ-U SKL / STFZ-SP SKL / STFZ2-SP SKL</p>	<p>117 - 119</p>
 <p>Shield clamps, single</p> <p>SKL</p>	<p>98</p>	 <p>EMC Shield clamp assemblies RLFZ-M / RLFZ - clamp assembly with strain relief SF RLFZ - clamp assembly for DIN-rails RLF - clamp assembly</p> <p>NEW</p>	<p>120 - 123</p>
 <p>Shield clamps for 35 mm DIN rail snap mount</p> <p>SFZ SKL / SF SKL / SFS SKL</p>	<p>99 - 101</p>	 <p>Variety of supports Customized supports</p>	<p>124 - 125</p>
 <p>Shield clamps for 10 x 3 mm bus bar snap mount</p> <p>PFSZ SKL / PFS SKL PFSZ2 SKL / PFS2 SKL</p>	<p>102 - 105</p>	 <p>EMC grounding mounts as accessories for cable entry components</p> <p>KEL-EMC-Z / KEL-EMC-PF / KEL-EMC / KVT-EMC</p> <p>NEW</p>	<p>126 - 129</p>
 <p>Shield clamps for screw mount</p> <p>LFZ SKL / LFZ-U SKL / LF SKL</p>	<p>106 - 108</p>	 <p>Shield brackets various mounting types</p> <p>SK / SKS</p>	<p>130 - 131</p>
 <p>EMC Test results</p>	<p>109</p>	 <p>EMC strain relief plates various mounting types</p> <p>KAFM</p>	<p>132</p>
 <p>Shield clamps pluggable on sheet metal</p> <p>PFKZ SKL / PFK SKL PFKZ2 SKL / PFK2 SKL</p>	<p>110 - 113</p>	 <p>Shield plates as accessories for ZL strain relief plates</p> <p>ZL SB-EMC</p>	<p>133</p>
 <p>Assortment of SKL shield clamps</p> <p>EMC ServiceBox multi EMC ServiceBox</p> <p>NEW</p>	<p>114 - 115</p>	 <p>Ground straps</p> <p>MB</p>	<p>134 - 135</p>
 <p>Shield clamps for printed circuit boards</p> <p>PCB SKL</p>	<p>116</p>		

MSKL

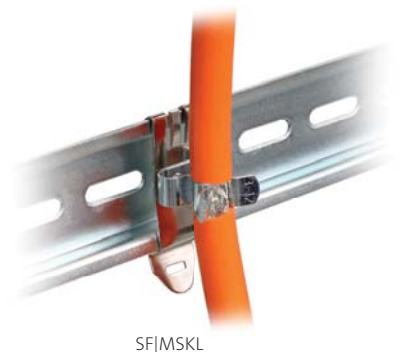
EMC Shield Clamps with Large Clamping Range



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



LFZ-M|MSKL



SF|MSKL

Type	Order No.	Clamping range [mm]	Dimensions L x W x H [mm]	Mounting type	PU
------	-----------	---------------------	---------------------------	---------------	----

Product Description

The shield clamps MSKL are easy to use and effective in grounding 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).

4

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.



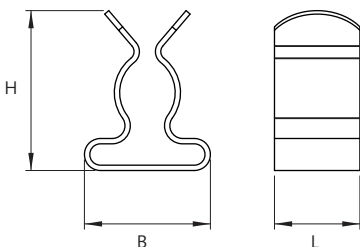
MSKL for screw mounting (M4):

MSKL, single, for riveting:					
MSKL 3-12	37600	3 - 12 mm	8 x 15.1 x 20.5	Rivet, Fixing hole 3.2 mm	50
MSKL 8-18	37602	8 - 18 mm	8 x 20 x 27	Rivet, Fixing hole 3.2 mm	50
LFZ-M MSKL 3-12 with strain relief	37612	3 - 12 mm	46.3 x 15.1 x 26	Screw, Fixing hole 4.2 mm	10
LFZ-M MSKL 8-18 with strain relief	37614	8 - 18 mm	46.3 x 20 x 32	Screw, Fixing hole 4.2 mm	10
LF MSKL 3-12	37608	3 - 12 mm	24 x 15.1 x 26	Screw, Fixing hole 4.2 mm	10
LF MSKL 8-18	37610	8 - 18 mm	24 x 20 x 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 x 15.1 x 26	35 mm DIN rail shape H	10
SFZ-M MSKL 8-18 with strain relief	37622	8 - 18 mm	60.5 x 20 x 32	35 mm DIN rail shape H	10
SF MSKL 3-12	37616	3 - 12 mm	50.5 x 15.1 x 26	35 mm DIN rail shape H	10
SF MSKL 8-18	37618	8 - 18 mm	50.5 x 20 x 32	35 mm DIN rail shape H	10



MSKL

EMC Shield Clamps
with Large Clamping Range

PFSZ-M|MSKL



PFKZ-M|MSKL



Type	Order No.	Clamping range [mm]	Dimensions L x W x H [mm]	Mounting type	PU
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NEW



PFSZ-M|MSKL

MSKL for snap mounting on 10 x 3 mm bus bars:

PFSZ-M MSKL 3-12 with strain relief	37630	3 - 12 mm	38 x 15.1 x 28.7	10 x 3 mm bus bar	50
PFSZ-M MSKL 8-18 with strain relief	37632	8 - 18 mm	38 x 20 x 34.9	10 x 3 mm bus bar	50
Bus bar 10 x 3 mm	36100		1000 x 10 x 3*		1

NEW



PFKZ-M|MSKL

MSKL for plugging on sheet metal edges:

PFKZ-A-M MSKL 3-12 with strain relief	37640	3 - 12 mm	38 x 15.1 x 28.8	sheet edges, thickness 1.5 - 2 mm	50
PFKZ-A-M MSKL 8-18 with strain relief	37642	8 - 18 mm	38 x 20 x 35	sheet edges, thickness 1.5 - 2 mm	50
PFKZ-B-M MSKL 3-12 with strain relief	37650	3 - 12 mm	38 x 15.1 x 28.8	sheet edges, thickness 2 - 3 mm	50
PFKZ-B-M MSKL 8-18 with strain relief	37652	8 - 18 mm	38 x 20 x 35	sheet edges, thickness 2 - 3 mm	50

* Other lengths available on request

PFSZ-M|MSKL

PFSZ-M|MSKL shield clamps can be easily attached by snapping them onto 10 x 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

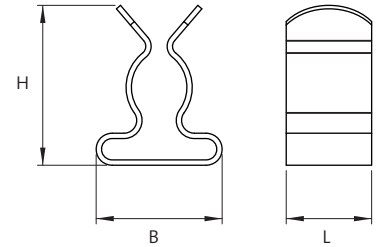
MSKL-clamp	Spring steel, zinc plated
LF/LFZ-M-foot	Sheet steel, galvanically zinc plated
SF/SFZ-M/PFSZ-M/ PFKZ-M-foot	Spring steel

Accessories

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

SKL

Single EMC Shield Clamps



Product Description

SKL shield clamps are easy to use and effective in grounding 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

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



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 grounding 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 grounding 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

KB Cable ties 90 - 91

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 grounding 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



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 maximizes space utilization. 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

PFSZ|SKL

EMC Shield Clamps for Bus Bar



Product Description

Comparable with the PFS|SKL range, the PFSZ|SKL shield clamps are easy to use and effective in grounding single cable shields. They are used for mounting on 10 x 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.

4

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, max. current: 140 Amps

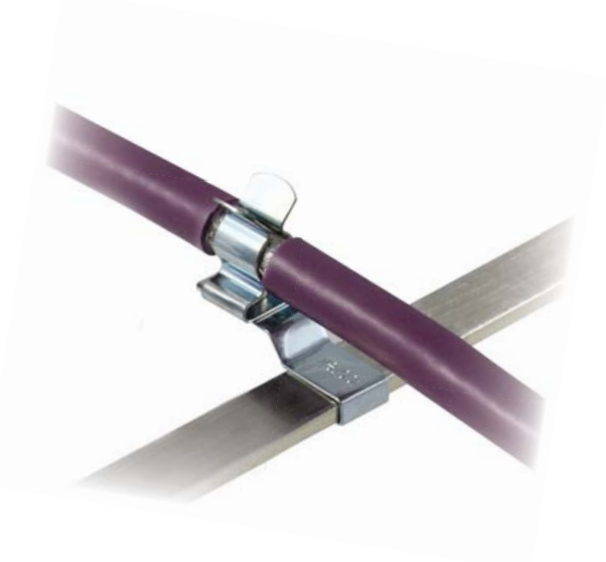
Accessories

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

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 x 3 mm	36100	10 x 3 x 1000 mm*	1

* Other lengths available on request

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 x 3 mm	36100	10 x 3 x 1000 mm*	1

* Other lengths available on request

Product Description

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

The PFS|SKL is mounted by snapping on a 10 x 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, max. current: 140 Amps

Accessories

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

PFSZ2|SKL

EMC Double Shield Clamps for Bus Bar



Product Description

Comparable with the PFS2|SKL range, the PFSZ2|SKL shield clamps are easy to use and effective in grounding 2 single cables. 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.

4

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, max. current: 140 Amps

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

PFS2|SKL

EMC Double Shield Clamps for Bus Bar



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 grounding single cable shields.

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, max. current: 140 Amps

Accessories

MF Supports for bus bars 169

LFZ|SKL

EMC Shield Clamps for Screw Assembly



Product Description

LFZ|SKL shield clamps are easy to use and effective in grounding 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.

4

Advantages & Benefits

- Integrated strain relief
- 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

Specifications

Material
 SKL-clamp Spring steel, zinc plated
 LFZ-foot Carbon steel, galvanically zinc plated
 Fixing hole 4.2 mm for screw M4

Accessories

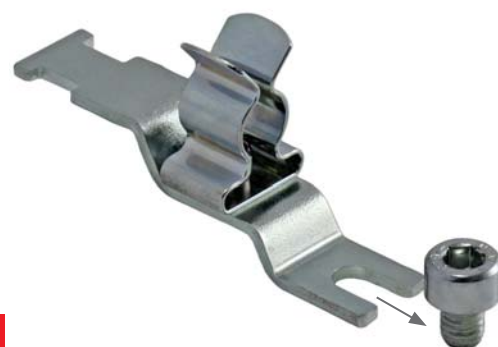
KB Cable ties 90 - 91

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



LFZ-U|SKL

EMC Shield Clamps for Screw Assembly



Type	Order No.	Shield diameter	Fixing hole	PU
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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 ground potential.

LFZ-U|SKL shield clamps are easy to use and effective in grounding 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
- Fast and 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
LFZ-foot	Carbon steel, galvanically zinc plated
	Fixing hole 4.2 mm / 5.2 mm for screw M4 / M5

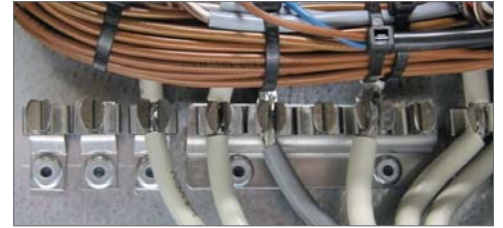
Accessories

KB Cable ties 90 - 91

4

LF|SKL

EMC Shield Clamps for Screw Assembly



Product Description

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

Shield clamps are easily attached to mounting plates via screw.

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**
 LF-foot **Carbon 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

EMC Test Results



Leakage and Impedance

All icotek shield clamps have been tested utilizing 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.

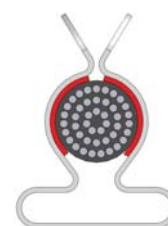


Figure A: SKL-line

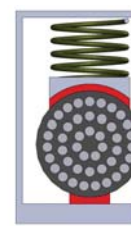
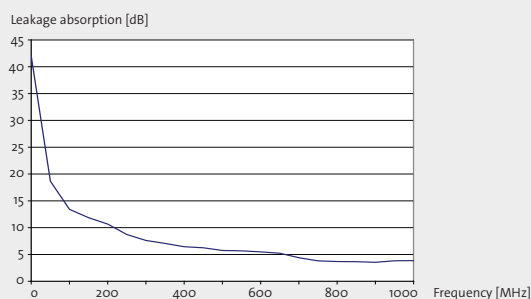
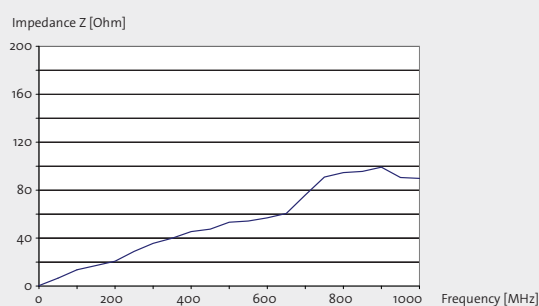
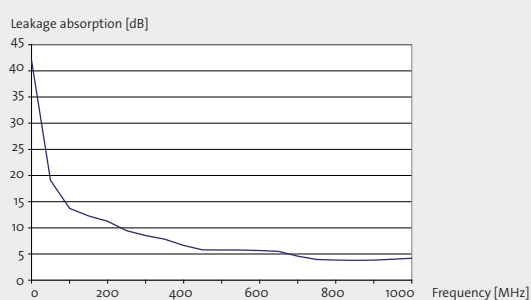
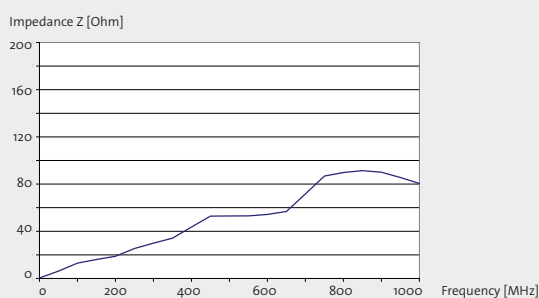


Figure B: Conventional systems

LF|SKL 8-11



SF|SKL 6-8



PFKZ|SKL

Pluggable EMC Shield Clamps



Product Description

Comparable with the PFK|SKL range, the PFKZ|SKL shield clamps are easy to use and effective in grounding 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

KB 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

PFK|SKL

Pluggable EMC Shield Clamps



Secure grip on metal sheets due to mounting claws



Type	Order No.	Shield diameter	PU
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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 grounding 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

PFKZ2|SKL

Pluggable EMC Double Shield Clamps



Secure grip on metal sheets due to mounting claws

Product Description

Comparable with the PFKZ|SKL range, the PFKZ2|SKL shield clamps are easy to use and effective in grounding 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

KB 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:						
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
Sheet thickness 2 - 3 mm:						
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

PFK2|SKL

Pluggable EMC Double Shield Clamps



Type A	Order No. Type A	Type B	Order No. Type B	Shield diameter Pos. 1	Shield diameter Pos. 2	PU
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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 grounding 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

EMC ServiceBox *multi*

Service Box with Assorted MSKL Shield Clamps



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. 880o6

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 SKL 22		2 × SKL
SKL for decentralized 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 × SKL
Typ PFKZ-B SKL 3-6 mm		3 × SKL
Typ PFKZ-B SKL 6-8 mm		3 × SKL
EMC - Accessories:		
RLFZ - Clamp assembly	5 × SKL	1 piece



EMC ServiceBox

Service Box with Assorted 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 decentralized bus modules:

STFZ SKL - sizes: 3 - 6 mm	1 × SKL
STFZ2 SKL 23	1 × SKL

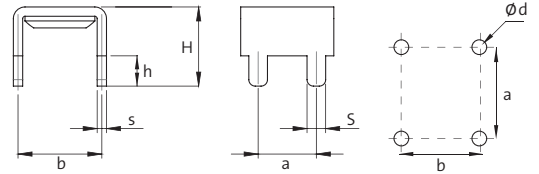
SKL for Siemens module ET 200 SP:

STFZ-SP SKL - sizes: 3-6 mm	1 × SKL
STFZ2-SP SKL 23	1 × SKL



PCB|SKL

EMC Shield Clamps for Printed Circuit Boards



Product Description

PCB|SKL shield clamps are easy to use and effective in grounding 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



STFZ-SP|SKL



STFZ-U|SKL



STFZ|SKL

Application Terminal Clamps

STFZ|SKL

- Bosch Rexroth
IP2o 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 BL2o 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 grounding 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

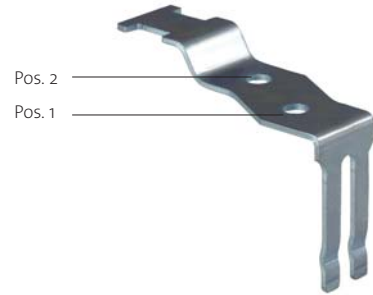
STFZ I/O Insert Tool for quick and easy mounting of STFZ terminal clamps.

Order No. 61430



STFZ | STFZ2

EMC Terminal Clamps, Single and Double
for Various Brands



Product Description

The STFZ|SKL EMC terminal clamp provides strain relief, cable guidance and grounding for decentralized 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

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

Specifications

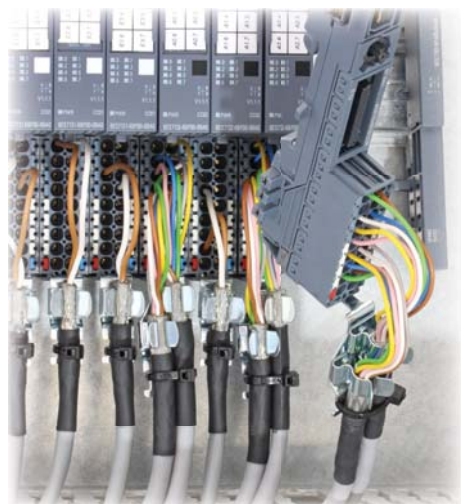
Material

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

Accessories

KB 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



STFZ-U | STFZ-SP | STFZ2-SP

EMC Terminal Clamps, Single and Double for Siemens & Beckhoff Modules



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 grounding for decentralized 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

4

Advantages & Benefits

- Grounding 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

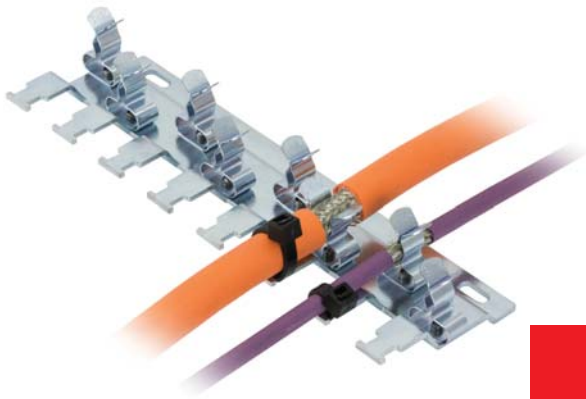
Accessories

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



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 grounding 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 grounding
- 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

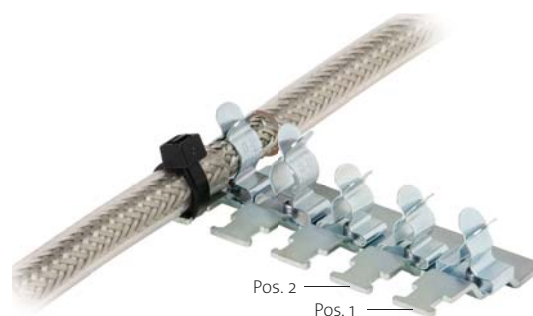
Accessories

- 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

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 grounding and strain relief of up to 12 cables in a small space.

The combination of EMC shield grounding 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 grounding
- Online design tool for EMC Clamp assembly

Specifications

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

Accessories

KB Cable ties 90 - 91

SF|RLFZ

EMC Clamp Assembly for 35 mm DIN Rail



Type	Order No. (unfitted)	Number of shield clamps	Length	Width	PU
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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 assembly
- Separate strain relief and EMC shield grounding
- Simple and tool-free mounting, easy assembly

Specifications

Material

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

RLFZ-foot **Carbon steel, galvanically zinc plated**

Accessories

KB Cable ties 90 - 91

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

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, but 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

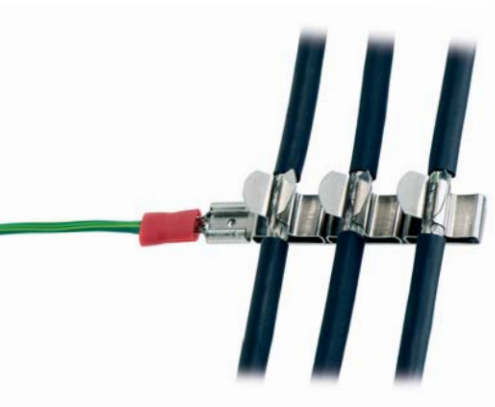
- Designed for high density applications
- Possibility to configure custom specific EMC clamp assembly
- Online design tool for EMC Clamp assembly

Specifications

Material
 SKL-clamp Spring steel, zinc plated
 RLF-foot Stainless steel

EMC

Customized Solutions



Product Description

In addition to 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 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.

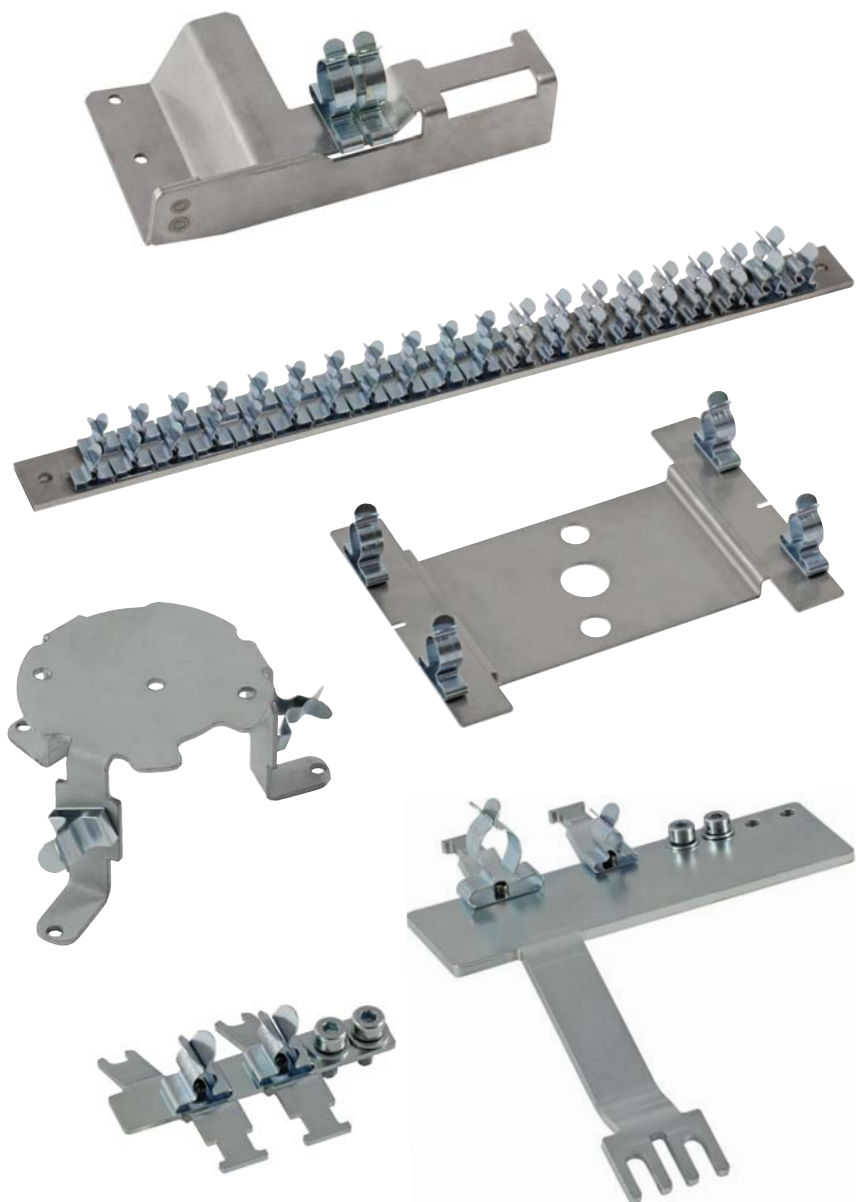


Advantages & Benefits

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

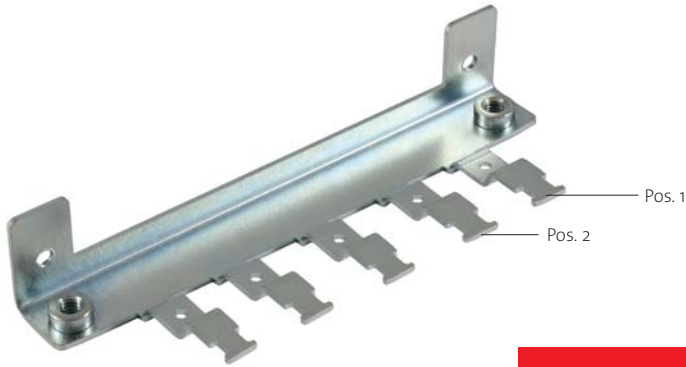
Specifications

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



KEL-EMC-Z

Grounding Mount with Strain Relief



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

Product Description

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

Cables pass through the KEL cable entry 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 (acc. 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.

4

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)
- Combined routing and fastening with the KEL cable entry system
- Available without SKL shield clamps if only additional strain relief is required
- Mounting hole for ground strap or PE connection

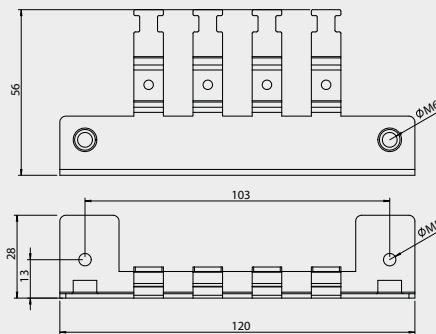
Specifications

Material **Carbon steel, zinc plated**

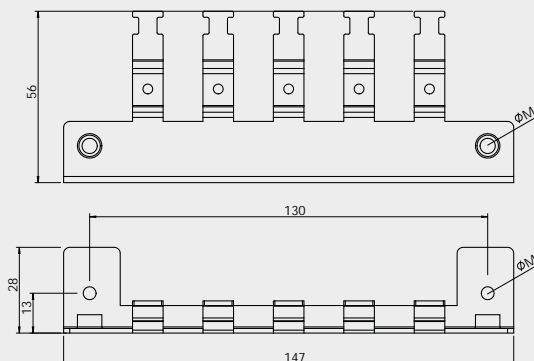
Compatible with

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

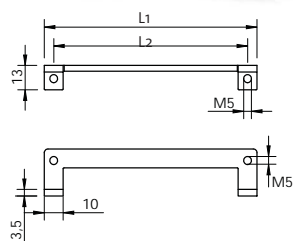
KEL-EMC-Z 16|4



KEL-EMC-Z 24|5



NEW KEL-EMC-PFM



KEL-EMC-PF

Grounding Mount, Bracket Version

NEW KEL-EMC-PF 183



Type	Fits with	Order No.	Length L1	Length L2	PU
KEL-EMC-PF B4	KEL-(ER-)E2 KEL-QUICK-E2 KEL(-U)B KEL-QUICK-B KEL-ER-B	39150	68 mm	58 mm	1
KEL-EMC-PF 10	KEL-(ER-)E3 KEL-QUICK-E3 KEL(-U)10 x KEL-QUICK 10 x KEL-ER 10 x	39160	93 mm	83 mm	1
KEL-EMC-PF 16	KEL-(ER-)E4 KEL-QUICK-E4 KEL(-U)16 x KEL-QUICK 16 x KEL-ER 16 x	39170	113 mm	103 mm	1
KEL-EMC-PF 24	KEL-(ER-)E5 KEL-QUICK-E5 KEL(-U)24 x KEL-QUICK 24 x KEL-ER 24 x KEL-DPZ 24 x KEL-DPZ-E	39180	140 mm	130 mm	1
NEW KEL-EMC-PF 183	KEL 183 KEL 183-E	39190	200 mm	95 / 190 mm	1
NEW KEL-EMC-PFM 10	KEL(-U)10 x KEL-QUICK 10 x KEL-ER 10 x	39184	93 mm	83 mm	1
NEW KEL-EMC-PFM 16	KEL(-U)16 x KEL-QUICK 16 x KEL-ER 16 x	39183	113 mm	103 mm	1
NEW KEL-EMC-PFM 24	KEL(-U)24 x KEL-QUICK 24 x KEL-ER 24 x 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 bracket is assembled inside the control panel. For this process the same fixing screws for the assembly of the KEL frame on the control 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 Carbon 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

4

KEL-EMC

Grounding Mount



Type	Order No.	No. of teeth	Fastening	Fits with	PU
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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

KEL-EMC-B	36520	2	long side	KEL-E2 KEL(-U)-B x KEL-ER-B x KEL-QUICK-B2 B4	5
KEL-EMC 10	36522	3	long side	KEL-E3 KEL(-U) 10 x KEL-ER 10 x	5
KEL-EMC 16 4	36524	4	long side	KEL-E4 KEL(-U) 16 x KEL-ER 16 x KEL-QUICK 16	5
KEL-EMC 24 5	36526	5	long side	KEL-E5 KEL(-U) 24 x KEL-ER 24 x KEL-QUICK 24	5
KEL-EMC F	39110	3	narrow side	KEL(-U)-B x KEL-ER-B x KEL(-U) 10 x KEL-ER 10 x KEL(-U) 16 x KEL-ER 16 x KEL(-U) 24 x KEL-ER 24 x	5

KVT-EMC

EMC Bracket for Cable Glands



Type	Order No.	Shield diameter	PU
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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 grounding and strain relief. The connection to the ground potential is possible via the enclosure wall or a grounding 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 ground strap

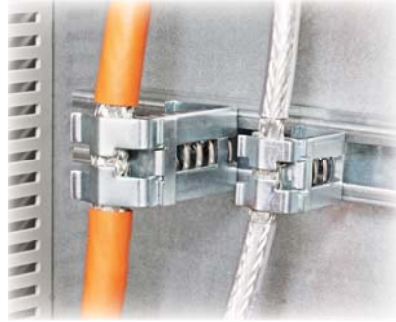
Specifications

Material Carbon steel, zinc plated

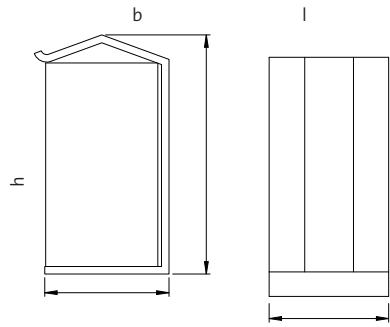
Compatible with

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

SK EMC Shield Brackets



Dimensions SK bracket (without mounting foot):



Description	Type	Order No.	Shield diameter	Dimensions l x b x h [mm]	PU
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Product Description

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

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 x 3 mm bus bars
- Various sizes and possibilities for mounting



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

Specifications

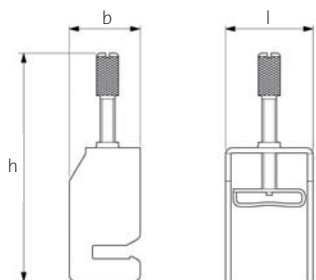
Material
SK-bracket Carbon steel, galvanically zinc plated
SF-foot Spring steel

Accessories

Bus bar 10 x 3 131

Description	Type	Order No.	Shield diameter	Dimensions l x b x h [mm]	PU	For direct mounting (M4-screw included):
	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	
For 35 mm DIN-rail shape H:						
	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	
For 10 x 3 mm bus bar:						
	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	
For DIN-rail shape C (width of mouth: 16 mm):						
	SC SK 3-8	36696	3 - 8 mm	18 x 14 x 26	10	
	SC SK 4-13.5	36700	4 - 13.5 mm	20 x 20 x 31	10	
	SC SK 10-20	36704	10 - 20 mm	26 x 24 x 40	10	
	SC SK 15-32	36708	15 - 32 mm	32 x 36 x 64	10	

SKS EMC Shield Brackets



Type	Order No.	Shield diameter	Dimensions l x b x h [mm]	PU	Description
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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 grounded.

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
SKS-bracket Carbon steel, galvanically zinc plated

Accessories

MF Supports for bus bars 169

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



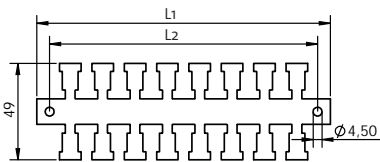
Type DH: Mounted on bushing for flexible fixation on bottom sheet

Product Description

The EMC strain relief plate KAFM is practical for grounding 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.

4



Specifications

Material **Stainless steel**

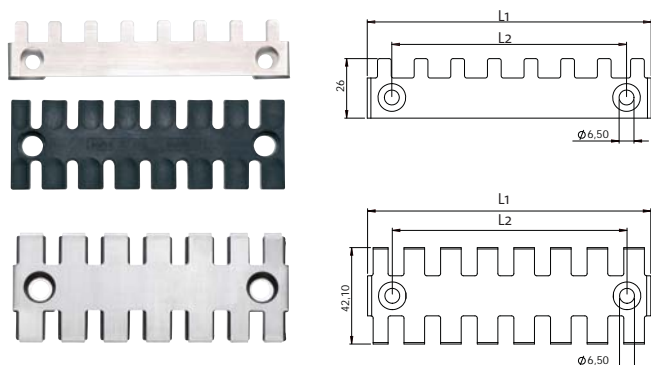
Accessories

KB Cable ties 90 - 91

Type	Order No.	Order No.	Order No.	Order No.	Order No.	Length L1	Length L2	No. of teeth
	Type SF	Type SK	Type SC	Type DH	loose rail			
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						

ZL|SB-EMC

Shield Plates for ZL Strain Relief Plates



Type	Model	Order No.	Fits with	Length		PU
				L1	L2	
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 grounding in addition to strain relief.

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

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

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

MB

Ground Straps



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 ground straps.

Ground straps are available with M6 or M8 connections and in some sizes with both connection sizes combined.

Type	Order No.	Length L [mm]	Cross-section mm ²	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

MB Ground Straps



Connecting end pads (copper)



Type	Order No.	Length L [mm]	Cross-section mm ²	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

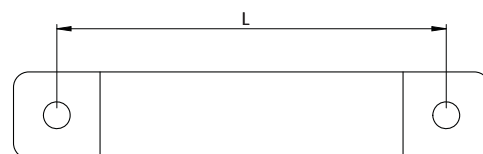
- Available in a variety of lengths and cross-sections
- Cost-effective in comparison to PE conductors
- Low impedances

Specifications

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

Current Load

Cross-section:	Current load:
6 mm ²	40-50 A
10 mm ²	75-105 A
16 mm ²	100-150 A
25 mm ²	145-195 A
35 mm ²	170-235 A



5

CONFiX Cable Conduit System



CONFiX FWS

CONFiX SH

CONFiX WST

The 90° angled conduit fitting CONFiX FWS is perfect for installation of parallel corrugated cable protection conduits, e.g. in machines, control panels or other electronic enclosures. The liftable cover is tightly fixed by a hinge to the mounting box. Therefore, the system is very easy to handle.

Corrugated conduits CONFiX WS for cable routing are used where cables have to be protected from mechanical damage or certain weather conditions.

In addition, icotek offers split corrugated conduits CONFiX WST for routing pre-terminated cables and corresponding conduit clips CONFiX SH.

CONFiX FWS Assembly

Installation of CONFiX FWS is quite easy:

1. Use top screw(s) to mount the FWS
2. Insert conduit
3. Secure and complete installation with two side screws



Fix



Insert



Lock

Advantages & Benefits ...

1. Fast and Easy Assembly

The liftable cover of the bulkhead fitting CONFiX FWS is tightly fixed by a hinge to the mounting box. The system is therefore very easy to mount.

2. Easy to Maintain

The split version of the corrugated conduits CONFiX WST offers the possibility of routing standard or pre-terminated cables in harsh environments.

3. Flexible

The corrugated conduits CONFiX WS can be used for various applications, depending on the material. UV resistant polyamide conduits for high mechanical requirements (indoor and outdoor use), polypropylene conduits with high resistance against acids / alkalis.

Product Group 5

CONFiX Cable Conduit System

Chapter Content



Bulkhead fittings, split | IP54
for conduit screw connections /
direct conduit pickup

CONFiX FWS

138 - 139



Corrugated conduits
NW 7.5 - NW 50

CONFiX WS

140 - 141



Corrugated conduits, split
for cables with connectors
NW 10 - NW 70

CONFiX WST

142



Conduit clips
for split corrugated conduits CONFiX WST

CONFiX SH

143

CONFIX FWS-A

Bulkhead Fittings for Conduit Screw Connections



Metric internal thread for conduit screw connections

Product Description

The 90° angled conduit fitting CONFIX FWS is for installation of parallel corrugated cable protection conduits, e.g. in machines, control panels or other electronic enclosures.

The liftable cover is tightly fixed by a hinge. Therefore, the system is fast and easy to install.

CONFIX FWS is offered in the following versions:

CONFIX FWS-A with metric internal thread M16 to M50

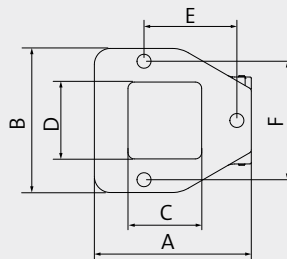
CONFIX FWS-B with a grooved conduit clip for types with sizes NW 13, 17, 23, 29, 37 and 50.

The available colors are gray (RAL 7011) and black (RAL 9005).

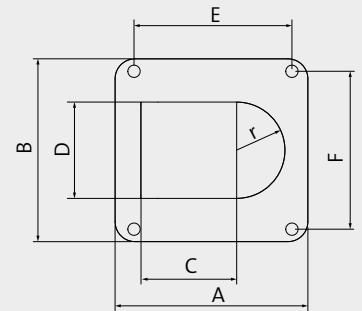
Accessories

CONFIX WS conduits 140 - 141

Type	Internal Thread	Hole Ø [mm]	Size (A × B) [mm]	Cut-out (C × D) [mm]	Drill. Templ. (E × F) [mm]	Order No.	PU
CONFIX FWS-A16	M16 × 1.5	3 × 4.3	49 × 45	22 × 22.6	29 × 37	■ 31380 ■ 31381	10
CONFIX FWS-A20	M20 × 1.5	3 × 4.3	49 × 45	22 × 22.6	29 × 37	■ 31383 ■ 31384	10
CONFIX FWS-A25	M25 × 1.5	3 × 6.6	67 × 63	37 × 28	41.5 × 51.5	■ 31386 ■ 31387	10
CONFIX FWS-A32	M32 × 1.5	4 × 6.6	85.5 × 76	41.9 × 40 r = 20	64.5 × 64.5	■ 31389 ■ 31390	10
CONFIX FWS-A40	M40 × 1.5	4 × 6.6	97 × 92	48.3 × 48.4 r = 24.2	79.5 × 79.5	■ 31392 ■ 31393	5
CONFIX FWS-A50	M50 × 1.5	4 × 6.6	111.5 × 100.5	53 × 60.5 r = 30.25	87.5 × 87.5	■ 31395 ■ 31396	5



Size / Drilling template FWS-A 16 to 25



Size / Drilling template FWS-A 32 to 50



Grooved conduit clip



Fixed cover due to hinges

CONFIX FWS-B

Bulkhead Fittings for Direct Conduit Pickup



Type	Dimension*	Hole Ø [mm]	Size (A × B) [mm]	Cut-out (C × D) [mm]	Drill. Templ. (E × F) [mm]	Order No.	PU
CONFIX FWS-B 11	NW 13	3 × 4.3	49 × 45	22 × 22.6	29 × 37	■ 31410 ■ 31411	10
CONFIX FWS-B 16	NW 17	3 × 4.3	49 × 45	22 × 22.6	29 × 37	■ 31413 ■ 31414	10
CONFIX FWS-B 21	NW 23	3 × 6.6	67 × 63	37 × 28	41.5 × 51.5	■ 31416 ■ 31417	10
CONFIX FWS-B 29	NW 29	4 × 6.6	85.5 × 76	41.9 × 40 r = 20	64.5 × 64.5	■ 31419 ■ 31420	10
CONFIX FWS-B 36	NW 37	4 × 6.6	97 × 92	48.3 × 48.4 r = 24.2	79.5 × 79.5	■ 31422 ■ 31423	5
CONFIX FWS-B 48	NW 50	4 × 6.6	111.5 × 100.5	53 × 60.5 r = 30.25	87.5 × 87.5	■ 31425 ■ 31426	5

Advantages & Benefits

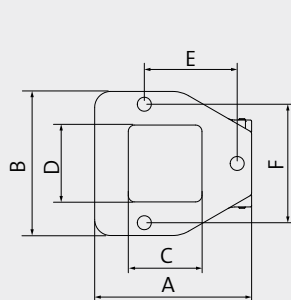
- Hinged cover
- Fast and easy installation
- Functional design
- Protection class IP54

Specifications

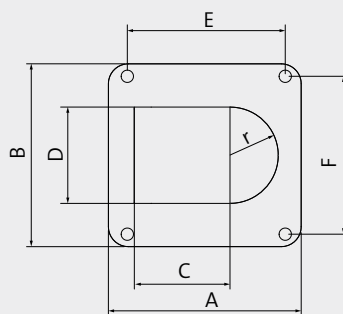
Material	Polycarbonate (PC)
Color	■ black (RAL 9005) ■ gray (RAL 7011)
IP rating	IP54
Flame class	UL94-Vo, self-extinguishing
Temperature	-30°C to +100°C (static) -22°F to +212°F (static)
Properties	Halogen free, silicone free

Accessories

CONFIX WS conduits 140 - 141



Size / Drilling template
FWS-B 11 to 21



Size / Drilling template
FWS-B 29 to 48

* For parallel corrugated cable protection conduit with dimension (NW)

CONFIX WS

Corrugated Conduits



Compatible with CONFIX FWS-B

Product Description

Parallel corrugated conduits for cable routing are used where cables have to be protected from mechanical damage or certain weather conditions.

icotek provides conduits in sizes NW 7.5, 8.5, 10, 13, 17, 23, 29, 37, and 50. Conduits from size NW 13 can be mounted with CONFIX FWS bulkhead fittings.

Parallel corrugated conduits are available in 3 different versions:

- **CONFIX WS-PA:** Polyamide conduit for high mechanical requirements (e.g. engine compartments, car bodies, construction machines, ship building, rail transportation technology, electronic enclosures).
→ Suitable for ground installation
- **CONFIX WS-PAL (light):** Polyamide conduit for high mechanical requirements
→ Suitable for suspended installation
- **CONFIX WS-PP:** Polypropylene conduit for use in engine compartments, car bodies and for static installation at machinery and plant engineering.
→ Advantages: Cost-effective, flame class UL94-V2, temperature resistant, resistant to chemicals

Type	External Ø	Internal Ø	Compatible with:	Order No.	PU (Length)
CONFIX WS-G-PA-NW 7.5	Ø 10 mm	Ø 6.7 mm	-	■ 31550	50 m
CONFIX WS-B-PA-NW 7.5	Ø 10 mm	Ø 6.7 mm	-	■ 31570	50 m
CONFIX WS-G-PA-NW 8.5	Ø 11.7 mm	Ø 8.4 mm	-	■ 31552	50 m
CONFIX WS-B-PA-NW 8.5	Ø 11.7 mm	Ø 8.4 mm	-	■ 31572	50 m
CONFIX WS-G-PA-NW 10	Ø 13 mm	Ø 9.9 mm	-	■ 31554	50 m
CONFIX WS-B-PA-NW 10	Ø 13 mm	Ø 9.9 mm	-	■ 31574	50 m
CONFIX WS-G-PA-NW 13	Ø 15.8 mm	Ø 12.7 mm	CONFIX FWS-B 11	■ 31556	50 m
CONFIX WS-B-PA-NW 13	Ø 15.8 mm	Ø 12.7 mm	CONFIX FWS-B 11	■ 31576	50 m
CONFIX WS-G-PA-NW 17	Ø 21.2 mm	Ø 16.6 mm	CONFIX FWS-B 16	■ 31558	50 m
CONFIX WS-B-PA-NW 17	Ø 21.2 mm	Ø 16.6 mm	CONFIX FWS-B 16	■ 31578	50 m
CONFIX WS-G-PA-NW 23	Ø 28.3 mm	Ø 23.2 mm	CONFIX FWS-B 21	■ 31560	50 m
CONFIX WS-B-PA-NW 23	Ø 28.3 mm	Ø 23.2 mm	CONFIX FWS-B 21	■ 31580	50 m
CONFIX WS-G-PA-NW 29	Ø 34.5 mm	Ø 29 mm	CONFIX FWS-B 29	■ 31562	25 m
CONFIX WS-B-PA-NW 29	Ø 34.5 mm	Ø 29 mm	CONFIX FWS-B 29	■ 31582	25 m
CONFIX WS-G-PA-NW 37	Ø 42.4 mm	Ø 36 mm	CONFIX FWS-B 36	■ 31564	25 m
CONFIX WS-B-PA-NW 37	Ø 42.4 mm	Ø 36 mm	CONFIX FWS-B 36	■ 31584	25 m
CONFIX WS-G-PA-NW 50	Ø 54 mm	Ø 47.7 mm	CONFIX FWS-B 48	■ 31566	25 m
CONFIX WS-B-PA-NW 50	Ø 54 mm	Ø 47.7 mm	CONFIX FWS-B 48	■ 31586	25 m

CONFIX WS

Corrugated Conduits



Type	External Ø	Internal Ø	Compatible with:	Order No.	PU (Length)
CONFIX WS-B-PAL-NW 7,5	Ø 10 mm	Ø 6.7 mm	-	■ 31590	50 m
CONFIX WS-B-PAL-NW 8,5	Ø 11.5 mm	Ø 8.5 mm	-	■ 31592	50 m
CONFIX WS-B-PAL-NW 10	Ø 13.2 mm	Ø 10.1 mm	-	■ 31594	50 m
CONFIX WS-B-PAL-NW 13	Ø 16 mm	Ø 13 mm	CONFIX FWS-B 11	■ 31596	50 m
CONFIX WS-B-PAL-NW 17	Ø 21.2 mm	Ø 17.1 mm	CONFIX FWS-B 16	■ 31598	50 m
CONFIX WS-B-PAL-NW 23	Ø 28.4 mm	Ø 23.5 mm	CONFIX FWS-B 21	■ 31600	50 m
CONFIX WS-B-PAL-NW 29	Ø 34.5 mm	Ø 29.4 mm	CONFIX FWS-B 29	■ 31602	25 m
CONFIX WS-B-PAL-NW 37	Ø 42.2 mm	Ø 36.7 mm	CONFIX FWS-B 36	■ 31604	25 m
CONFIX WS-B-PAL-NW 50	Ø 54 mm	Ø 48.1 mm	CONFIX FWS-B48	■ 31606	25 m
CONFIX WS-B-PP-NW 7,5	Ø 9.9 mm	Ø 6.9 mm	-	■ 31610	50 m
CONFIX WS-B-PP-NW 8,5	Ø 11.6 mm	Ø 8.5 mm	-	■ 31612	50 m
CONFIX WS-B-PP-NW 10	Ø 12.7 mm	Ø 10.1 mm	-	■ 31614	50 m
CONFIX WS-B-PP-NW 13	Ø 15.8 mm	Ø 12.9 mm	CONFIX FWS-B 11	■ 31616	50 m
CONFIX WS-B-PP-NW 17	Ø 21 mm	Ø 16.8 mm	CONFIX FWS-B 16	■ 31618	50 m
CONFIX WS-B-PP-NW 23	Ø 28 mm	Ø 23.7 mm	CONFIX FWS-B 21	■ 31620	50 m
CONFIX WS-B-PP-NW 29	Ø 33.9 mm	Ø 29.3 mm	CONFIX FWS-B 29	■ 31622	25 m
CONFIX WS-B-PP-NW 37	Ø 42 mm	Ø 36.7 mm	CONFIX FWS-B 36	■ 31624	25 m
CONFIX WS-B-PP-NW 50	Ø 53.6 mm	Ø 47.8 mm	CONFIX FWS-B 48	■ 31626	25 m

* For parallel corrugated cable protection conduit with dimension (NW)

Specifications WS-PA

Material Polyamide (PA)
 Color ■ black
 ■ gray
 Flame class UL94-HB
 Temperature -40°C to +120°C
 -40°F to +248°F
 Properties Halogen free, UV resistant, according to ISO 8580

Specifications WS-PAL

Material Polyamide (PA)
 Color ■ black
 Flame class UL94-HB
 Temperature -40°C to +120°C
 -40°F to +248°F
 Properties Halogen free, UV resistant according to ISO 8580

Specifications WS-PP

Material Polypropylene (PP)
 Color ■ black
 Flame class UL94-V2, self-extinguishing
 Temperature -40°C to +135°C
 -40°F to +275°F
 Properties Halogen free, high resistance against acids / alkalis

Compatible with

CONFIX FWS Bulkhead fitting 138 - 139

CONFIX WST

Split Corrugated Conduits



Individual lengths are possible!

Product Description

The CONFIX WST is a two piece corrugated conduit. Perfect for routing cables with or without connectors in rough environments.

In conjunction with e.g. KVT-W90, a high degree of flexibility is achieved. Numerous conduit sizes can be used thanks to the wide variety of split grommets offered (see KT grommets on pages 44 - 46).

The length of the CONFIX WST split corrugated conduit can be customized to your application. All conduits are available by the meter (0.5 m steps).

Advantages & Benefits

- Containing pre-terminated cables, warranty of cable remains
- Retrofitting and maintenance carried out easily and quickly

Specifications

Material	Polypropylene, black
Flame class	UL94-HB
Temperature	-40°C to +105°C -40°F to +221°F
Properties	UV resistant

Compatible with

CONFIX SH Conduit clip	143
Cable entry systems for pre-terminated cables	8 - 59
Cable entry systems for standard cables	62 - 81

Type	Order No.	Internal diameter	External diameter	Compatible grommets	Dimensions	Ring length*
CONFIX WST NW 10	31200	8.7 mm	13.6 mm	KT 13	10 mm	50 m*
CONFIX WST NW 14	31210	12.5 mm	18.5 mm	KT 18	14 mm	50 m*
CONFIX WST NW 20	31220	19.5 mm	25.5 mm	KT 25	20 mm	50 m*
CONFIX WST NW 23	31230	24.2 mm	31 mm	KT 30	23 mm	50 m*
CONFIX WST NW 37	31240	31 mm	41.4 mm	KTMB-P	37 mm	25 m*
CONFIX WST NW 45	31250	42.7 mm	54 mm	KTMB-Q	45 mm	25 m*
CONFIX WST NW 70	31260	66.5 mm	79.8 mm	KTMB-S	70 mm	10 m*

* All conduits are also available by the meter (0.5 m steps).



CONFiX SH

Conduit Clips for WST



Type	Order No.	Suitable conduit	Fixing hole	Width [mm]	Height [mm]	PU
------	-----------	------------------	-------------	------------	-------------	----

CONFiX SH 10	31300	NW 10	M3	18.5	21	10
CONFiX SH 14	31310	NW 14	M3	24	25.5	10
CONFiX SH 20	31320	NW 20	M5	35	36	10
CONFiX SH 23	31330	NW 23	M5	42	43.5	10
CONFiX SH 37	31340	NW 37	M6	55	56.5	10
CONFiX SH 45	31350	NW 45	M6	67	68	10
CONFiX SH 70	31360	NW 70	M6	100	101	10

Product Description

CONFiX SH Conduit clips are a one-piece clamping system to provide secure mounting points for corrugated conduit systems.

The clips are secured to their mounting position through a central mounting point with a hexagonal counter-bore.

Specifications

Material Polyamide (PA), black
 Flame class UL94-V2
 Temperature - 40°C to + 140°C
 Properties Halogen free, silicone free

Compatible with

CONFiX WST
 Split corrugated conduit 142

6

Enclosure Accessories

Gland Plates, Flange Plates & Accessories

IP54



+284°F
-40°F



KDR - Enclosure Gland Plates

for Dust-Proof Cable Routing

Electronic enclosures which are used in industrial manufacturing processes have to be reliably protected against dirt and dust ingress. The conductivity of dust and dirt accumulations can otherwise lead to short circuits and their thermal insulation properties can cause overheating of single components. Machine downtime and, at worst, electric shock or fire accidents may be the result.

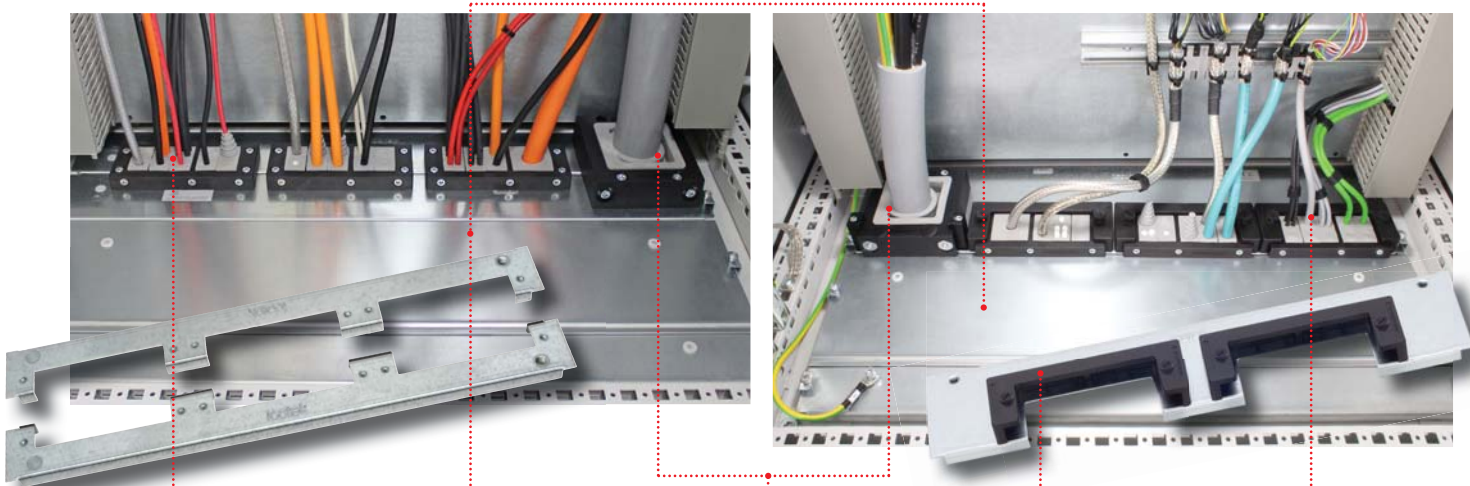
The base of an enclosure can be a weak point when cables and wires are not adequately sealed, and thus the protection of the enclosure cannot be maintained. Components for ventilation and air-conditioning generate an air flow which sucks the dust into the enclosure and spreads it. The icotek gland plates KDR-ESR and KDR 2 provide the perfect solution for such problems.

KDR 2

for centrally split KEL cable entry frames

KDR-ESR

for U-shaped split KEL-U cable entry frames



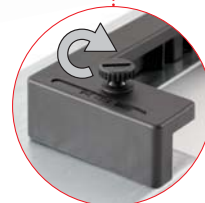
Routing of pre-terminated cables of up to 35 mm in diameter (KEL 24)



During assembly, almost the complete base of the enclosure can be used for installation of cables



Routing of supply lines with diameters up to 65 mm (KEL-JUMBO)



Fast and tool-free mounting of KEL-U cable entry frames



Routing of pre-terminated cables of up to 35 mm in diameter (KEL-U 24 / KEL-U 16)

Other Enclosure Accessories

Perfect for Retrofitting
Without Disconnecting
the Lines!



Brush frames



Module plates



Flange plates



Blank plates



Mounting rail supports













Locknuts

Product Group 6

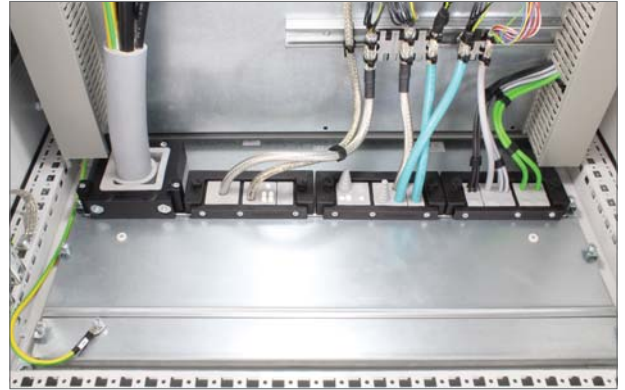
Electronic Enclosure Accessories

Chapter Content

 <p>NEW IP54</p>	<p>Enclosure gland plates IP54 with slide frames for cable entry frames</p> <p>KDR-ESR-TS8 / KDR-ESR-HG2</p> <p style="text-align: right;">146 - 149</p>		<p>Flange plates for enclosures for cable entry components</p> <p>FP-AE / FP-KL / FP-BG</p> <p style="text-align: right;">160 - 165</p>
 <p>IP54</p>	<p>Enclosure gland plates IP54 split, for cable entry frames</p> <p>KDR 2</p> <p style="text-align: right;">150 - 151</p>	 <p>IP65</p>	<p>Blank plates IP54 - IP65</p> <p>BPK / BPK-RF / BPM / BPK-SNAP</p> <p style="text-align: right;">166 - 168</p>
	<p>Enclosure gland plates with brush grommets</p> <p>KDR-BES</p> <p style="text-align: right;">152 - 153</p>		<p>Supports for DIN rails and bus bars</p> <p>MF</p> <p style="text-align: right;">169</p>
 <p>NEW</p>	<p>Universal brush strip for enclosures</p> <p>KDR-BES-U</p> <p style="text-align: right;">154 - 155</p>		<p>Hexagonal Locknuts M16 - M85</p> <p>KGM / GM / GMT</p> <p style="text-align: right;">170 - 171</p>
	<p>Module plates for cable entry components</p> <p>MP</p> <p style="text-align: right;">156 - 157</p>		
 <p>IP54</p>	<p>Enclosure gland plates IP54 for MP module plates</p> <p>KDR-BMP</p> <p style="text-align: right;">158 - 159</p>		

KDR-ESR-TS8

Enclosure Gland Plate with Slide Frames for Rittal TS 8



KDR-ESR Assembly

Product Description

The KDR-ESR-TS8 is a one-piece plate to be assembled on enclosure bases. Slide frames for the KEL cable entry frames are already preassembled.

After installing all cables into the KEL frames, they are easily and quickly inserted into the slide frames and fixed. During maintenance, the KEL frames are removed without tools from the slide frames. Due to the combination KDR-ESR-TS8 and KEL cable entry frames, a rating of IP54 is achieved (with correct selection of cable grommets). Slide frames which are no longer required, are closed with BPK-SNAP blank plates.

Advantages & Benefits

- Easy assembly and removal
- During assembly, almost the complete base of the enclosure can be used for installation of cables
- Even large connectors can be installed easily
- The gland plate KDR-ESR-TS8 is designed for Rittal enclosures TS 8. Other sizes can be supplied on request
- No additional sheet metal work required
- Retrofitting possible without disconnecting cables. Everything can be built around the cables

Specifications

Material	Gland plate: Carbon steel, zinc-plated KDR-ESR Frame: Polyamide (PA)
Flame class	UL94-Vo, self-extinguishing
IP rating	IP54, with gasket and correct selection of the cable grommets
Temperature Properties	- 40°C to + 90°C (static) Halogen free, silicone free

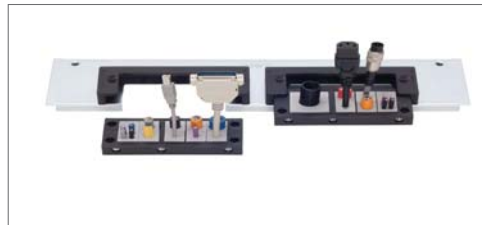
Compatible with

KEL(-U) 16 / 24 Cable entry frames	8 - 19
KEL-QUICK 16 / 24 Cable entry frames	50
KEL-JUMBO Cable entry frames	36
BPK-SNAP 16 / 24 Blank plates	168

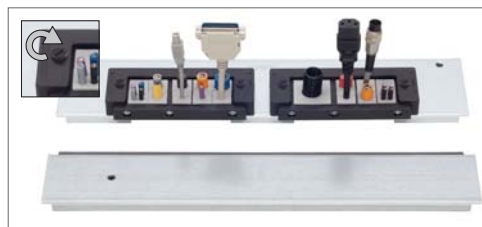
KDR-ESR Assembly



1
The gland plate is fixed in the enclosure base. The KEL cable entry frames are fitted.



2
The KEL cable entry frames are screwed together after fitting.



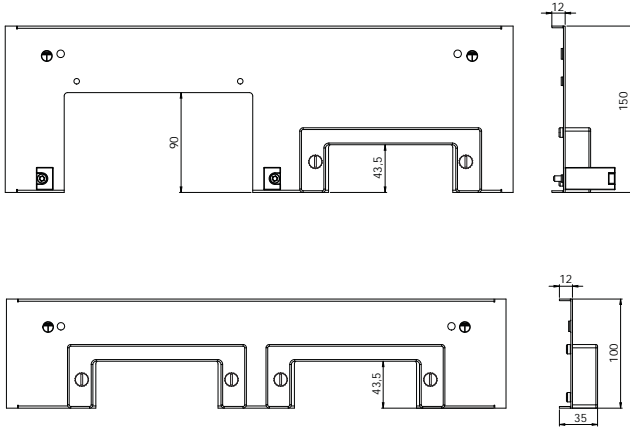
3
Afterwards the KEL frames are pushed into the Slide frames and fixed with the knurled screws.



4
Finally, the middle gland plate which is part of the standard enclosure, moves together with the KDR-ESR plates.

KDR-ESR-TS8

Enclosure Gland Plate with Slide Frames for Rittal TS 8



Sealing tape
Order No. 42999 (L: 1 m)
Order No. 42999.1000 (L: 10 m)

Type	Enclosure width	Total length gland plate	Sight size of base plate opening	No. of possible cable entries				Order No.
				JUMBO 1	JUMBO 2	KEL(-U) 16 ...	KEL(-U) 24 ...	
KDR-ESR-TS8-600	600 mm	458 mm	435 mm	-	-	-	2	43079
KDR-ESR-TS8-600	600 mm	458 mm	435 mm	-	1	-	1	43070
KDR-ESR-TS8-600	600 mm	458 mm	435 mm	1	-	2	-	43071
KDR-ESR-TS8-800	800 mm	658 mm	635 mm	-	-	1	3	43080
KDR-ESR-TS8-800	800 mm	658 mm	635 mm	1	-	-	3	43072
KDR-ESR-TS8-800	800 mm	658 mm	635 mm	-	1	-	2	43073
KDR-ESR-TS8-1000	1000 mm without division bar	858 mm	835 mm	-	-	-	5	43081
KDR-ESR-TS8-1000	1000 mm without division bar	858 mm	835 mm	1	-	-	4	43074
KDR-ESR-TS8-1000	1000 mm without division bar	858 mm	835 mm	-	1	-	3	43075
KDR-ESR-TS8-1000	1000 mm* with division bar	420 mm	398 mm	-	-	-	2	43082
KDR-ESR-TS8-1000	1000 mm* with division bar	420 mm	398 mm	1	-	-	1	43076
KDR-ESR-TS8-1000	1000 mm* with division bar	420 mm	398 mm	-	1	-	1	43077
KDR-ESR-TS8-1200	1200 mm*	518 mm	495 mm	-	-	-	3	43083
KDR-ESR-TS8-1200	1200 mm*	518 mm	495 mm	1	-	-	2	43078
KDR-ESR-TS8-1200	1200 mm*	518 mm	495 mm	-	1	-	1	43084

* in case both fields of the enclosure are equipped, 2 complete gland plates are necessary.

KDR-ESR-HG2

Enclosure Gland Plate with Slide Frames for Hoffman PROLINE G2



Product Description

The KDR-ESR-HG2 is a one-piece plate to be assembled on enclosure bases. Slide frames for the KEL cable entry frames are already preassembled.

After installing all cables into the KEL frames, they are easily and quickly inserted into the slide frames and fixed. During maintenance, the KEL frames are removed without tools from the slide frames. Due to the combination KDR-ESR-HG2 and KEL cable entry frames, a rating of IP54 is achieved (with correct selection of cable grommets). Slide frames which are no longer required, are closed with BPK-SNAP blank plates.

Advantages & Benefits

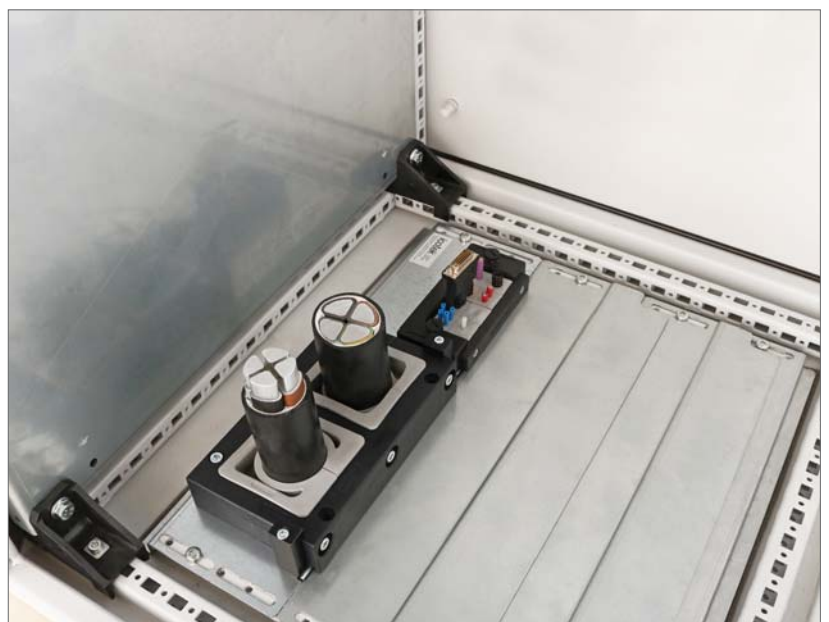
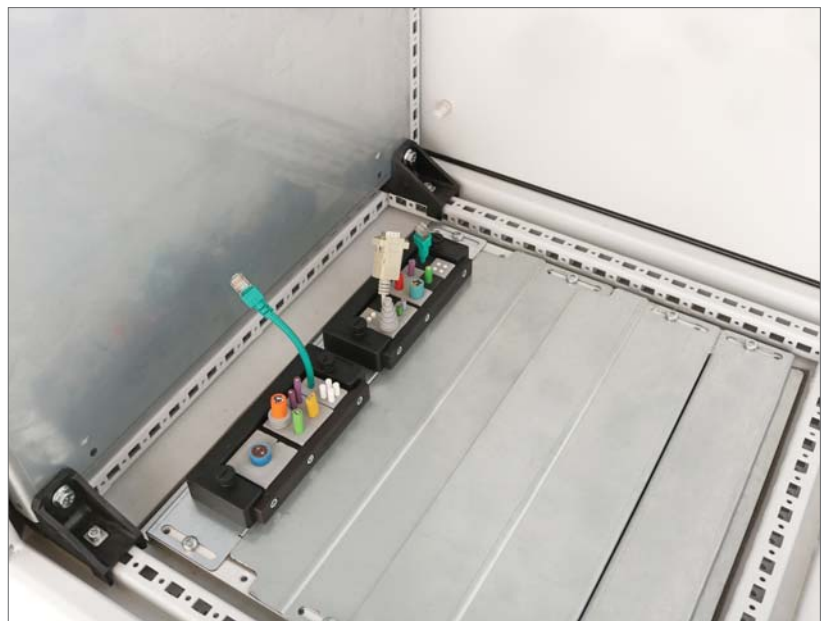
- Easy assembly and removal
- During assembly, almost the complete base of the enclosure can be used for installation of cables
- Even large connectors can be installed easily
- The gland plate KDR-ESR-HG2 is designed for Hoffman enclosures PROLINE G2. Other sizes can be supplied on request
- No additional sheet metal work required
- Retrofitting possible without disconnecting cables. Everything can be built around the cables

Specifications

Material	Gland plate: Carbon steel, zinc-plated KDR-ESR Frame: Polyamide (PA)
Flame class	UL94-Vo, self-extinguishing
IP rating	IP54, with gasket and correct selection of the cable grommets
Temperature Properties	- 40°C to + 90°C (static) Halogen free, silicone free

Compatible with

KEL(-U) 16 / 24 Cable entry frames	8 - 19
KEL-QUICK 16 / 24 Cable entry frames	50
KEL-JUMBO Cable entry frames	36
BPK-SNAP 16 / 24 Blank plates	168



IP54

HL3
EN 45545-2

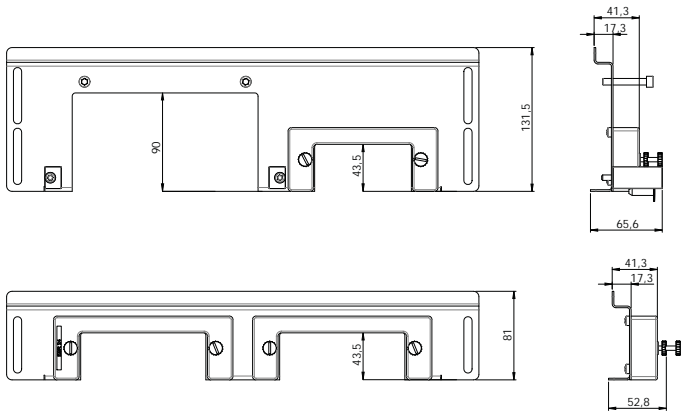
RoHS
compliant

Made in
Germany



KDR-ESR-HG2

Enclosure Gland Plate with Slide Frames
for Hoffman PROLINE G2



Sealing tape
Order No. 42999 (L: 1 m)
Order No. 42999.1000 (L: 10 m)

Type	Enclosure width	Total length gland plate	Sight size of base plate opening	No. of possible cable entries			Order No.
				JUMBO 2	KEL(-U)16 ...	KEL(-U)24 ...	
KDR-ESR-HG2-600	600 mm / 1200 mm*	432 mm	368 mm	1	1	-	43250
KDR-ESR-HG2-600	600 mm / 1200 mm*	432 mm	368 mm	-	-	2	43251
KDR-ESR-HG2-800	800 mm	632 mm	568 mm	1	-	2	43252
KDR-ESR-HG2-800	800 mm	632 mm	568 mm	-	-	3	43253
KDR-ESR-HG2-1000	1000 mm	832 mm	768 mm	1	-	3	43254
KDR-ESR-HG2-1000	1000 mm	832 mm	768 mm	-	-	4	43255

* in case both fields of the enclosure are equipped, 2 complete gland plates are necessary.

KDR 2

Split Enclosure Gland plates



KDR 2 Assembly

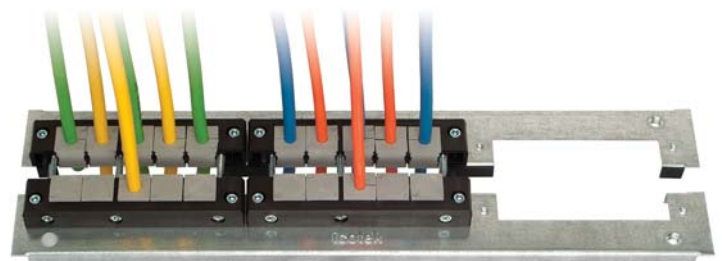
Product Description

Split, 2-part gland plates KDR 2 with pre-cut holes for KEL and KEL-JUMBO cable entry systems.

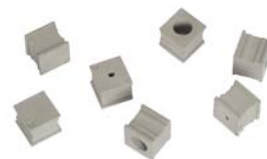
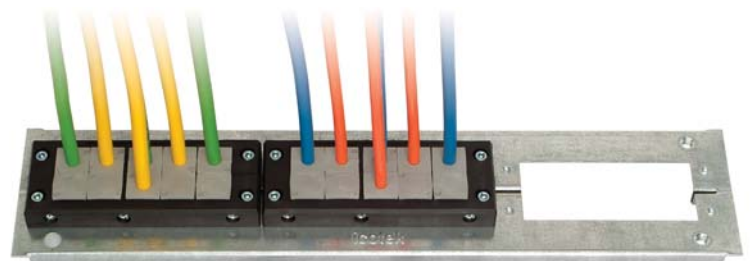
Integrated screw holes provide quick and easy installation of KEL frames.

Advantages & Benefits

- During assembly, almost the complete base of the enclosure can be used for installation of cables
- Even large connectors can be installed easily
- The gland plate KDR 2 is designed for Rittal enclosures TS 8. Other sizes can be supplied on request
- Retrofitting is possible without disconnecting of cables. All can be installed around the cables.
- No additional sheet metal work required
- Cut-outs, which are no longer required, are covered with metal blank plates Type BPM



When the cable entry frames are assembled, the KDR gland plates move together for a tight, secure hold of the cable entry systems.



The frame parts with grommets have to be built up before final assembly, i.e. before screwing the system together.

Screwing of the cable entry frames tightens both parts of the split gland plate.

Specifications

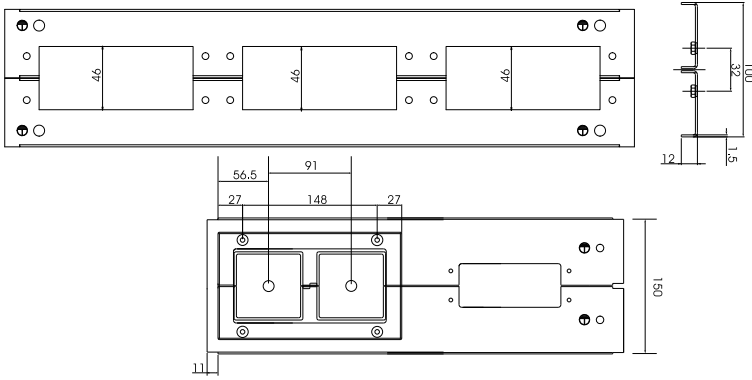
Material Carbon steel, zinc-plated

Compatible with

KEL 24 Cable entry frames	18
KEL-JUMBO Cable entry frames	36
BPM Blank plates metal	167

KDR 2

Split Enclosure Gland Plates



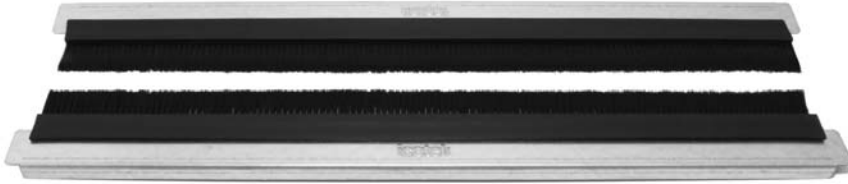
Sealing tape
 Order No. 42999 (L: 1 m)
 Order No. 42999.1000 (L: 10 m)

Enclosure type	Enclosure width	Total length gland plate	Sight size of base plate opening	No. of possible cable entries			Order No.
				JUMBO 1	JUMBO 2	KEL 24 ...	
TS 8	600 mm	458 mm	435 mm	-	-	3	42924
				1	-	2	42953
				-	1	1	42941
TS 8	800 mm	658 mm	635 mm	-	-	4	42922
				1	-	3	42954
				-	1	2	42945
TS 8	1000 mm without division bar	858 mm	835 mm	-	-	5	42923
				1	-	4	42955
				-	1	3	42952
TS 8	1000 mm* with division bar	420 mm	398 mm	-	-	2	42958
				1	-	1	42957
				-	1	1	42959
TS 8	1200 mm*	518 mm	495 mm	-	-	3	42920
				1	-	2	42956
				-	1	1	42943

* in case both fields of the control panel are equipped, 2 complete split gland plates are necessary.

KDR-BES

Enclosure Gland Plate with Brush Grommets



For standard cut-outs:
KEL-BES - see page 57

KDR-BES Assembly

Product Description

The new 2-piece enclosure gland plates KDR-BES are supplied with preassembled brush grommets.

The gland plates are installed with standard Rittal clips.

Depending on the maximum cable diameter to be routed, the 2 halves of the brush gland plate are aligned further or closer to each other.

The gland plates KDR-BES are perfect for protection of the enclosure interiors against rough dirt.

Advantages & Benefits

- During assembly, almost the complete base of the enclosure can be used for installation of cables.
- Retrofitting possible without disconnecting cables. Everything can be built around the cables.
- The gland plates KDR-BES are designed for Rittal enclosures TS 8. Other sizes can be supplied on request.

Specifications

Material	Gland plate: Sheet steel, zinc-plated Brush grommets: Polyamide (PA)
Temperature Properties	- 20°C to + 90°C (static) Halogen free, silicone free

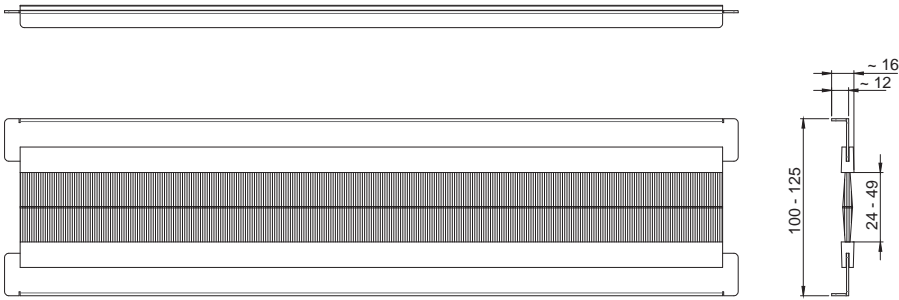
Accessories

ZL Strain relief plates 84 - 88



KDR-BES

Enclosure Gland Plate with Brush Grommets



Type	Enclosure type	Enclosure width	Total length gland plate	Sight size of base plate opening	Order No.
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KDR-BES-TS 8-600	TS 8	600 mm	458 mm	435 mm	58000
KDR-BES-TS 8-800	TS 8	800 mm	658 mm	635 mm	58006
KDR-BES-TS 8-1000	TS 8	1000 mm without division bar	858 mm	835 mm	58012
KDR-BES-TS 8-1200	TS 8	1200 mm*	518 mm	495 mm	58018

* in case both fields of the enclosure are equipped, 2 complete gland plates are necessary.

KDR-BES-U

Universal Brush Strip for Enclosures



Edge protection trim (100m)
Order No. 99152

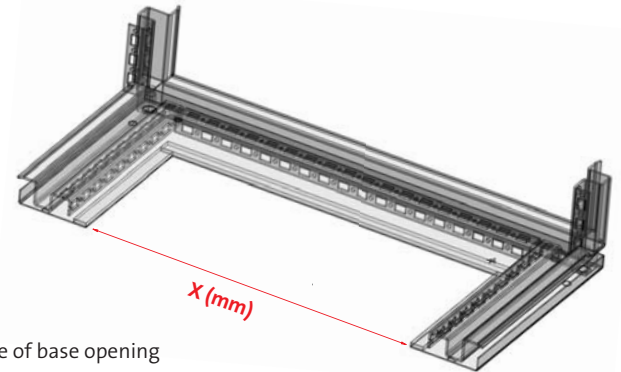
Brush Strips in Your Required Length (up to 1.500 mm)

Product Description

Cable pass-through brush strip for enclosure bases or individual cut-outs on cabinets, enclosures, panels, server racks or machine walls.

Due to the innovative and universal clamp strip the brush can also be assembled in a 90° angle, e.g. on bent sheet metal. Suitable for wall thickness 1.5 - 2 mm. Brush may be removed from the profile at any time and remounted using other mounting options.

The KDR-BES-U brush strip is adaptable to almost any enclosure or cabinet type on the market. The standard gland plates included in the enclosure delivery can be used for assembly. They do not have to be changed!



X (mm) = sight size of base opening

Order numbers (ex.):

X = **999** mm --> Order No. 58210.**0999**
(X max. = 1500 mm)

Scope of delivery:

1x KDR-BES-U (clamp strip + brush)

Advantages & Benefits

- Fast, simple and tool-free mounting
- Original enclosure gland plates can be used
- Three mounting types possible
- Brush may be remounted at any time using other mounting options
- Available in any custom length up to 1.500 mm

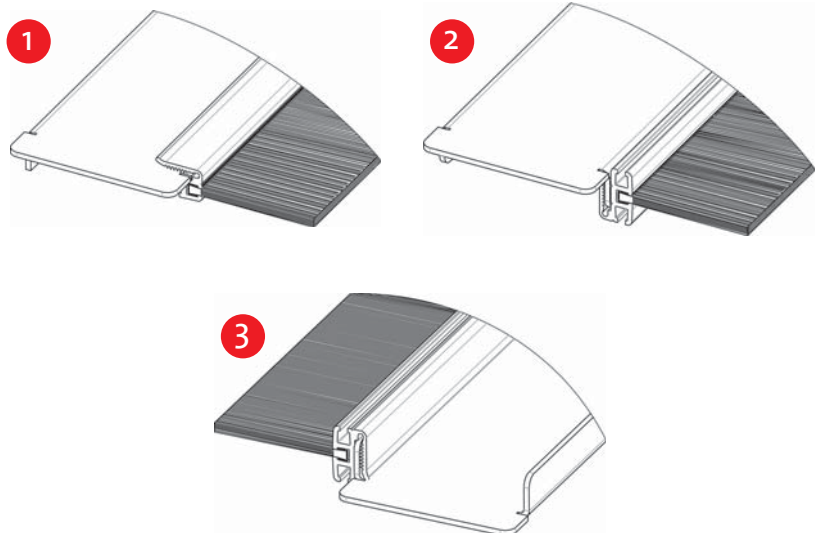
Specifications

Material clamp strip	Aluminum
Material backing strips	Metal, galvanized
Material bristles	Polyamide (PA)
For sheet thickness	1.5 - 2 mm
Temperature	-20°C to +90°C
Properties	Halogen free, silicone free

Accessories

ZL Strain relief plates 84 - 88

KDR-BES-U Mounting Options





KDR-BES-U

Brush Strip for Gland Plates
Rittal TS 8 & Hoffman PROLINE G2

Type	Enclosure type	Enclosure width	Brush strip length	Order no.	PU
------	----------------	-----------------	--------------------	-----------	----

KDR-BES-U for Rittal TS 8 Enclosures

KDR-BES-U-TS8-600	Rittal TS 8	600 mm	435 mm	58210.0435	1
KDR-BES-U-TS8-800	Rittal TS 8	800 mm	635 mm	58210.0635	1
KDR-BES-U-TS8-1000	Rittal TS 8	1000 mm* with division bar	397 mm	58210.0397	1
KDR-BES-U-TS8-1000	Rittal TS 8	1000 mm without division bar	835 mm	58210.0835	1
KDR-BES-U-TS8-1200	Rittal TS 8	1200 mm* with division bar	495 mm	58210.0495	1

KDR-BES-U for Hoffman PROLINE G2 Enclosures

KDR-BES-U-HG2-600	Hoffman PROLINE G2	600 mm / 1200 mm*	362 mm	58210.0362	1
KDR-BES-U-HG2-800	Hoffman PROLINE G2	800 mm	562 mm	58210.0562	1
KDR-BES-U-HG2-1000	Hoffman PROLINE G2	1000 mm	762 mm	58210.0762	1

Edge protection trim	universal	Clamping range 1-2 mm		99152	100 m
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* in case both fields of the enclosure are equipped, 2 complete gland plates are necessary.

MP

Module Plates



MP Applications

Product Description

The module plates have cut-outs for fixing the KEL range cable entry systems KEL 24, KEL-U 24, KEL-QUICK 24, KEL-JUMBO, KEL-DPF, KEL-JUMBO flex and KEL-ULTRA flex.

The module plates can be fixed on:

- Separation walls by Rittal
- Closed enclosure bases and roofs (various manufacturers)
- Bases of Lohmeier enclosures
- Bases of Rittal enclosures via KDR-BMP gland plates

The module blank plate without cut-outs (Order No. 43882) is designed for closing unused cut-outs. This module plate can even be used for self-made cut-outs.

Module plates are supplied with a gasket.



Cable routing via module plates in the base of a Rittal TS 8 enclosure. Mounting with icotek gland plate KDR BMP.



Cable routing through the divider panel of a Rittal TS 8 baying enclosure system via module plates.



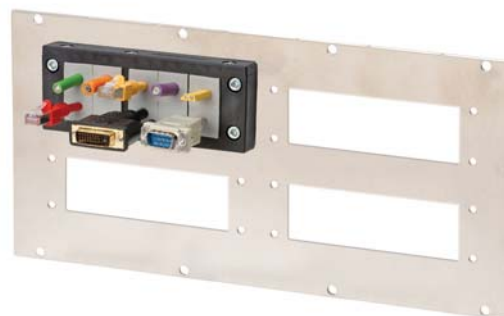
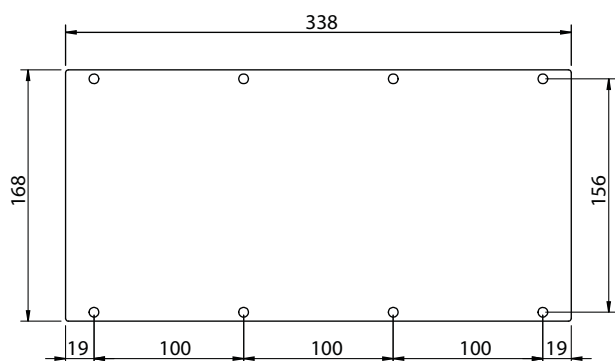
Routing of several cables with and without connectors through a closed enclosure roof via module plates. Cut-out size 314 x 144 mm.



Routing of a rigid supply line through a closed enclosure roof via module plates. Cut-out size 314 x 144 mm.

MP

Module Plates



Description	Type	Order No.	Compatible with
-------------	------	-----------	-----------------

	MP 0	43882	Module plate, blank
	MP 1	43891	3x KEL(-U/-QUICK) 24 x
	MP 2	43890	4x KEL(-U/-QUICK) 24 x
	MP 3	43886	1x KEL-JUMBO 1 1x KEL-JUMBO 2
	MP 4	43888	2x KEL-JUMBO 1
	MP 5	43887	2x KEL(-U/-QUICK) 24 x 1x KEL-JUMBO 1
	MP 6	43883	5x cut-out M50 for KEL-DPF or KEL-DPZ
	MP 7	43889	Cut-out 3x KEL-JUMBO flex
	MP 8	43894	Cut-out 2x KEL-ULTRA flex

Specifications

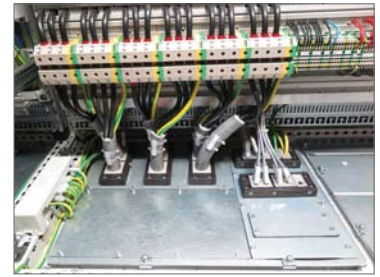
Material Carbon steel, zinc-plated
Aluminum (Order No. 43883)
Dimension 338 x 168 x 2 mm

Compatible with

- KEL 24 Cable entry frames 18
- KEL-U 24 Cable entry frames 8
- KEL-QUICK 24 Cable entry frames 50
- KEL-SNAP snap frames 31
- KEL-JUMBO Cable entry frames 36
- KEL-DPF Cable entry grommets 79
- KEL-JUMBO flex Cable entry ins. 80
- KEL-ULTRA flex Cable entry ins. 81
- Blank plates 166 - 168

KDR-BMP

Enclosure Gland Plates for Module Plates



Description

Product Description

The KDR-BMP gland plates are ideally suited for Rittal TS enclosures and can be used instead of the 3 piece standard gland plates. Rittal standard mounting clips are used for fixing the plate.

On KDR-BMP gland plates, our MP Module Plates MP0-MP8 can be easily mounted and used for installation of cable entry components.

Advantages & Benefits

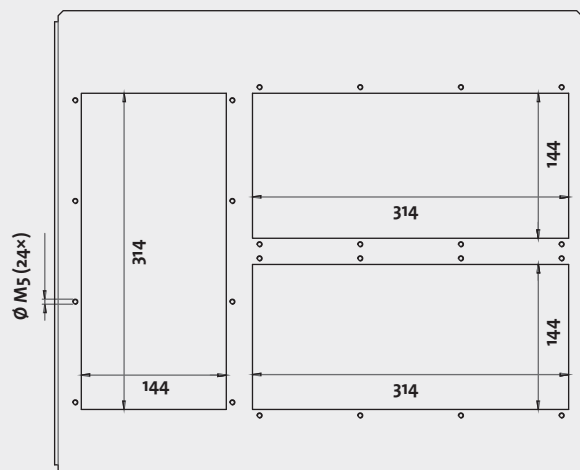
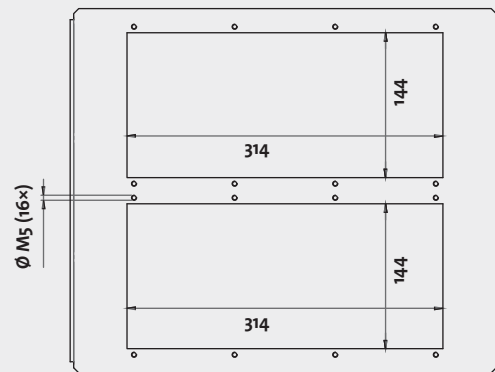
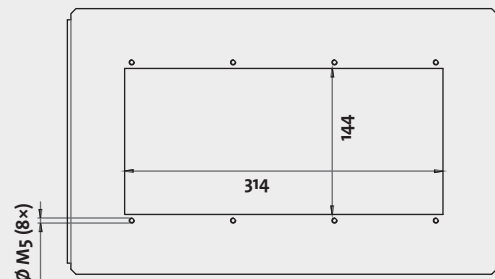
- Very simple mounting
- No sheet metal work required

Specifications

Material **Sheet steel, zinc-plated**
 IP rating **IP54, with gasket and correct selection of cable entry devices**

Compatible with

MP Module plates 156 - 157



KDR-BMP

Enclosure Gland Plates for Module Plates



Type	Enclosure type	Enclosure width	Enclosure depth	No. of cut-outs for module plates	Order No.
KDR-BMP 600/400	TS 8	600 mm	400 mm	1	43300
KDR-BMP 600/500		600 mm	500 mm	2	43302
KDR-BMP 600/600		600 mm	600 mm	2	43304
KDR-BMP 800/400	TS 8	800 mm	400 mm	1	43306
KDR-BMP 800/500		800 mm	500 mm	3	43308
KDR-BMP 800/600		800 mm	600 mm	3	43310
KDR-BMP 1000/400	TS 8	1000 mm with division bar	400 mm	1	43312
KDR-BMP 1000/500		1000 mm with division bar	500 mm	2	43314
KDR-BMP 1000/600		1000 mm with division bar	600 mm	2	43316
KDR-BMP 1200/400	TS 8	1200 mm with division bar	400 mm	1	43318
KDR-BMP 1200/500		1200 mm with division bar	500 mm	2 × 3	43320
KDR-BMP 1200/600 for left section		1200 mm with division bar	600 mm	3	43322
KDR-BMP 1200/600 for right section		1200 mm with division bar	600 mm	3	43324

* in case both fields of the enclosure are equipped, 2 complete gland plates are necessary.

FP-AE

Flange Plates for Compact Enclosures



Description

Product Description

We supply complete flange plates FP with 112 × 36 mm cut-outs for compact enclosures of the AE series. The cut-outs, as well as the drilling template, conform to the standard cut-outs for 24-pole industrial connectors.

All flange plates are RAL 7035 powder-coated. Please use the gaskets of the standard plates. Enclosures are supplied with gaskets and screws.

We recommend fastening the cable entry systems with a torque of 1.5 - 2.0 Nm.

Advantages & Benefits

- No expensive extra sheet metal work is required
- High cable density is achieved by using KEL, KEL-U, KEL-QUICK, KEL-DPU, KEL-DPZ or KEL-DP
- Reduce labor costs by using cable entry systems compared to the assembly of conventional cable glands

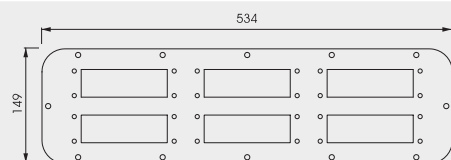
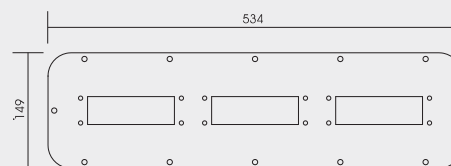
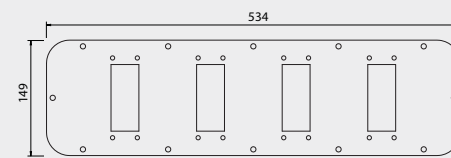
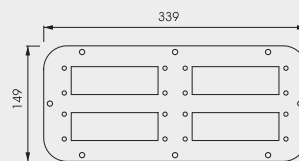
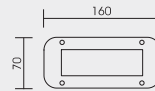
Specifications

Material **Carbon steel, powder coated**

Compatible with

KEL Cable entry frames	18 - 19
KEL-U Cable entry frames	8 - 10
KEL-QUICK Cable entry frames	50
KEL-SNAP Mounting frames	31
KEL-QTA 24 Cable entry frames	54 - 55
KEL-DPU 24 Cable entry plates	64 - 65
KEL-DPZ 24 Cable entry plates	66 - 67
KEL-DP 24 Cable entry plates	74
KEL-BES	58
KEL-BES-S	59
Blank plates	166 - 168

Description



FP-AE

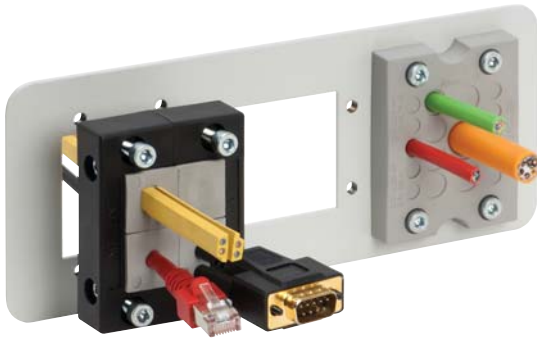
Flange Plates for Compact Enclosures



Type	Order No. RAL 7035	Compatible with: (Product Group 1)	Compatible with: (Product Group 2)	Size FP	Compatible with (e.g. for Rittal)
FP-AE 160 70 with 1 cut-out 36 x 112 mm	43836	KEL-QTA 24	KEL-DP 24	1	AE 1032 AE 1035
FP-AE-24 330 90 with 2 cut-outs 36 x 112 mm	43838	KEL 24 KEL-U 24 KEL-QUICK 24 KEL-QTA 24 KEL-BES 24 KEL-BES-S 24	KEL-DPZ 24 KEL-DPU 24 KEL-DP 24	3	AE 1030 AE 1031 AE 1038 AE 1380
FP-AE-16 330 90 with 2 cut-outs 36 x 86 mm	43861	KEL 16 KEL-U 16 KEL-QUICK 16 KEL-BES 16 KEL-BES-S 16		3	
FP-AE 339 149 with 2 cut-outs 36 x 112 mm	43840	KEL 24 KEL-U 24 KEL-QUICK 24 KEL-SNAP 24 KEL-QTA 24 KEL-BES 24 KEL-BES-S 24	KEL-DPZ 24 KEL-DPU 24 KEL-DP 24	4	AE 1037 CS 9751.125 AE 1045 CS 9751.145 AE 1050 CS 9751.165 AE 1057 CS 9752.125 AE 1100 AE 1110 TP 6710 AE 1114 TP 6712 AE 1130 TP 6714 AE 1213 TP 6716 AE 1338 AE 1350
FP-AE 339 149 with 4 cut-outs 36 x 112 mm	43846	KEL 24 KEL-U 24 KEL-QUICK 24 KEL-QTA 24 KEL-BES 24 KEL-BES-S 24	KEL-DPZ 24 KEL-DPU 24 KEL-DP 24	4	
FP-AE 534 149 with 4 cut-outs 36 x 86 mm	43871	KEL 16 KEL-U 16 KEL-QUICK 16 KEL-SNAP 16 KEL-BES 16 KEL-BES-S 16		5	AE 1039 EL 1919 AE 1054 EL 1926 AE 1055 AE 1058 IN 1076.290 AE 1060 AE 1073 TP 6711 AE 1076 TP 6713 AE 1077 TP 6715 AE 1090 TP 6717 AE 1180 AE 1260 AE 1280 AE 1339 AE 1360 AE 1376 AE 1958
FP-AE 534 149 with 3 cut-outs 36 x 112 mm	43842	KEL 24 KEL-U 24 KEL-QUICK 24 KEL-SNAP 24 KEL-QTA 24 KEL-BES 24 KEL-BES-S 24	KEL-DPZ 24 KEL-DPU 24 KEL-DP 24	5	
FP-AE 534 149 with 6 cut-outs 36 x 112 mm	43848	KEL 24 KEL-U 24 KEL-QUICK 24 KEL-QTA 24 KEL-BES 24 KEL-BES-S 24	KEL-DPZ 24 KEL-DPU 24 KEL-DP 24	5	

FP-KL

Flange Plates for Junction Boxes



Cable entry plate for Rittal KL:
KEL-DPZ-KL - see page 70

Description

Product Description

The FP flange plates type KL, designed to fit the Rittal KL series junction boxes, are installed in combination with a cable entry system for either pre-terminated or standard cables. FP flange plates are pre-cut, pre-drilled and painted for easy and quick installation of icotek cable routing products.

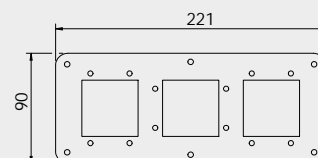
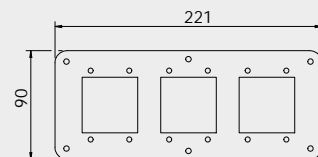
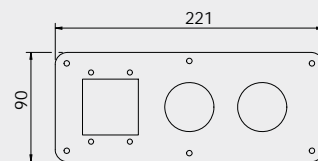
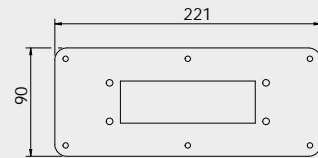
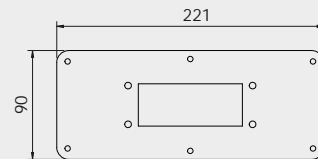
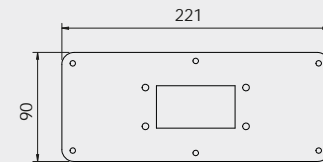
We recommend fastening the cable entry systems with a torque of 1.5 - 2.0 Nm.

Specifications

Material **Carbon steel, powder coated**

Compatible with

KEL Cable entry frames	18 - 21
KEL-U Cable entry frames	8 - 14
KEL-QUICK Cable entry frames	50
KEL-SNAP Mounting frames	31
KEL-QTA 24 Cable entry frames	54
KEL-DPU 24 Cable entry plates	64 - 65
KEL-DPZ Cable entry plates	66 - 73
KEL-DP 24 Cable entry plates	74
KEL-DPF Cable entry grommets	79
KEL-BES	58
KEL-BES-S	59
Blank plates	166 - 168



FP-KL

Flange Plates for Junction Boxes



Type	Order No. RAL 7035	Flange plates compatible with	Size FP	Compatible with (e.g. for Rittal)
FP-KL 221x90 10 with 1 cut-out 36 x 65 mm	43853	KEL 10 KEL-U 10 KEL-QUICK 10 KEL-SNAP 10 KEL-BES 10 KEL-BES-S 10	2	Junction boxes Type KL
FP-KL 221x90 16 with 1 cut-out 36 x 86 mm	43855	KEL 16 KEL-U 16 KEL-QUICK 16 KEL-SNAP 16 KEL-BES 16 KEL-BES-S 16	2	Junction boxes Type KL
FP-KL 221x90 24 with 1 cut-out 36 x 112 mm	43834	KEL 24 KEL-U 24 KEL-QUICK 24 KEL-SNAP 24 KEL-QTA 24 KEL-DPZ 24 KEL-DPU 24 KEL-DP 24 KEL-BES 24 KEL-BES-S 24	2	Junction boxes Type KL
FP-KL 221x90 A with 3 cut-outs	43852	KEL-B KEL-U-B KEL-QUICK-B KEL-SNAP-B KEL-DPZ-B KEL-DPZ 40 KEL-DPF 40	2	Junction boxes Type KL
FP-KL 221x90 B with 3 cut-outs 46 x 46 mm	43854	Use with 2x KEL-SNAP-B and 1x KEL-DPZ-B	2	Junction boxes Type KL
FP-KL 221x90 C with 3 cut-outs 46 x 46 mm	43856	KEL-B KEL-U-B KEL-QUICK-B KEL-DPZ-B	2	Junction boxes Type KL

FP-BG

Flange Plates for Bus Enclosures



Description

Product Description

The FP flange plates type BG, designed to fit the Rittal BG series enclosures, have up to 3 cut-outs that match the dimensions of the standard cut-outs for the 24-pole industrial connectors. These flange plates are installed in combination with a cable entry system for either pre-terminated cables (KEL 24, KEL-U 24 or KEL-QUICK 24) or standard cables (KEL-DPZ 24, KEL-DPU 24 or KEL-DP 24).

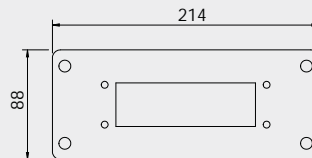
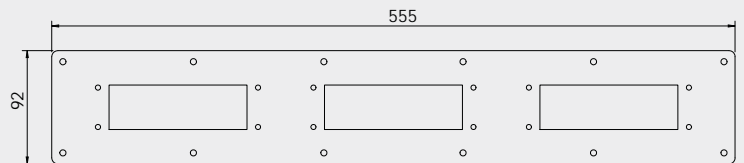
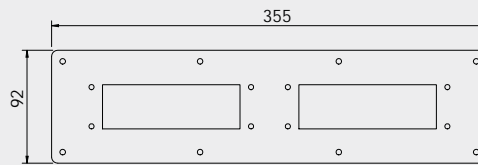
We recommend fastening the cable entry systems with a torque of 1.5 - 2.0 Nm.

Specifications

Material **Carbon steel, powder coated**

Compatible with

KEL 24 Cable entry frames	18
KEL-U 24 Cable entry frames	8
KEL-QUICK 24 Cable entry frames	50
KEL-SNAP Mounting frames	31
KEL-QTA 24 Cable entry frames	54 - 55
KEL-DPU 24 Cable entry plates	64 - 65
KEL-DPZ 24 Cable entry plates	66 - 67
KEL-DP 24 Cable entry plates	74
Blank plates	166 - 168



FP-BG

Flange Plates for Bus Enclosures



Type	Order No. RAL 7035	Flange plates compatible with	Size FP.	Compatible with (e.g. for Rittal)
FP-BG 355x92 with 2 cut-outs 36 x 112 mm	43866	KEL 24 KEL-U 24 KEL-QUICK 24 KEL-SNAP 24 KEL-QTA 24 KEL-DPZ 24 KEL-DPU 24 KEL-DP 24 KEL-BES 24 KEL-BES-S 24	-	BG 1558.510
FP-BG 555x92 with 3 cut-outs 36 x 112 mm	43865	KEL 24 KEL-U 24 KEL-QUICK 24 KEL-SNAP 24 KEL-QTA 24 KEL-DPZ 24 KEL-DPU 24 KEL-DP 24 KEL-BES 24 KEL-BES-S 24	6	BG 1050.900 BG 1559.510 IN 1510.280
FP-FL 21 with 1 cut-out 36 x 112 mm	43832	KEL 24 KEL-U 24 KEL-QUICK 24 KEL-SNAP 24 KEL-QTA 24 KEL-DPZ 24 KEL-DPU 24 KEL-DP 24 KEL-BES 24 KEL-BES-S 24	-	Fibox plates

BPK

Plastic Blank Plates



BPK-RF: Snap function, tool-free assembly



BPK: screwable

Product Description

BPK Blank plates seal cut-outs for standard 10-pole / 16-pole / 24-pole industrial connectors with IP rating up to IP64.

Plastic blank plates are available in two different versions:

- Type BPK: Blank plates for screw connection
- Type BPK-RF A: Blank plates for snapping into metal sheet plates up to a thickness from 1.5 to 3 mm

Advantages & Benefits

- Fast mounting of the blank plates BPK-RF range by snapping into the cut-out
- Integrated circular sealing (up to IP64)

Specifications

Material	Polypropylene (PP) Circular sealing: Elastomer
Flame class	UL94-V0
IP rating	BPK: IP64 BPK-RF A: IP54
Temperature Properties	- 30°C to + 140°C (static) Halogen free, silicone free

Compatible with

FP Flange plates 160 - 165

Type	Order No.	Blank plate for KEL cut-out	Dimensions	PU
BPK Blank plates for screw connection:				
BPK-B	42010	KEL-B KEL-U-B KEL-ER-B KEL-QUICK-B	76 × 53 mm	10
BPK 10	42015	KEL 10 KEL-U 10 KEL-ER 10 KEL-QUICK 10	101 × 53 mm	10
BPK 16	42016	KEL 16 KEL-U 16 KEL-ER 16 KEL-QUICK 16	121 × 53 mm	10
BPK 24	42024	KEL 24 KEL-U 24 KEL-ER 24 KEL-QUICK 24 KEL-FG-A	148 × 53 mm	10
BPK Blank plates for snapping into cut-outs:				
BPK-B-RF A	42010.002	KEL-B KEL-U-B KEL-QUICK-B	76 × 53 mm	10
BPK 10-RF A	42015.002	KEL 10 KEL-U 10 KEL-QUICK 10	101 × 53 mm	10
BPK 16-RF A	42016.002	KEL 16 KEL-U 16 KEL-QUICK 16	121 × 53 mm	10
BPK 24-RF A	42024.002	KEL 24 KEL-U 24 KEL-QUICK 24 KEL-FG-A	148 × 53 mm	10
BPK-JFX	42620	KEL-JUMBO flex	88 × 88 mm	5

BPM

Metal Blank Plates



Type	Order No.	Blank plate for KEL cut-out	Dimensions	PU
BPM-E2 NEW	42048	KEL-E2 KEL-ER-E2 KEL-FG-E2 KEL-QUICK-E2	73 × 39.5 mm	10
BPM-E3 NEW	42049	KEL-E3 KEL-ER-E3 KEL-FG-E3 KEL-QUICK-E3	98 × 39.5 mm	10
BPM-E4 NEW	42050	KEL-E4 KEL-ER-E4 KEL-QUICK-E4	120 × 39.5 mm	10
BPM-E5 NEW	42051	KEL-E5 KEL-ER-E5 KEL-FG-E5 KEL-QUICK-E5	147 × 39.5 mm	10
BPM-B	42013	KEL-B KEL-U-B KEL-ER-B KEL-QUICK-B	75 × 58 mm	10
BPM 6 BPM 6 V2A	42011 41991	standard 6-pin industrial connectors	90 × 52 mm	10
BPM 10 BPM 10 V2A	42014 41992	KEL 10 KEL-U 10 KEL-ER 10 KEL-QUICK 10	99 × 58 mm	10
BPM-FG-B	42012	KEL-FG-B	80 × 58 mm	10
BPM 16 BPM 16 V2A	42025 41994	KEL 16 KEL-U 16 KEL-ER 16 KEL-QUICK 16	118 × 56 mm	10
BPM 16-E	42023	KEL 16-E	120 × 87 mm	10
BPM 16-MT	42026	KEL 16-MT	120 × 102 mm	10
BPM 16-2MT	42031	KEL 16-2MT	120 × 146 mm	10
BPM 24 BPM 24 V2A	42027 41995	KEL 24 KEL-U 24 KEL-ER 24 KEL-QUICK 24	145 × 56 mm	10
BPM 24-E	42029	KEL 24-E	143 × 83 mm	10
BPM 24-MT	42028	KEL 24-MT	147 × 102 mm	1
BPM-JUMBO flex	42033	KEL-JUMBO flex	88 × 88 mm	1
BPM-JUMBO 1	42030	KEL-JUMBO 1	116 × 110 mm	1
BPM-JUMBO 2	42032	KEL-JUMBO 2	200 × 116 mm	1
BPM-ULTRA	42633	KEL-ULTRA flex	∅ 168 mm Width: 1.5 mm	1

Product Description

Blank plates to close cut-outs for standard 6-pole / 10-pole / 16-pole / 24-pole industrial connectors.

Blank plates are supplied with a gasket.

Specifications

Material	Carbon steel, zinc-plated Width 2 mm
IP rating	IP65

Compatible with

KDR 2 Split gland plates	150 - 151
FP Flange plates	160 - 165
MP Module plates	156 - 157

BPK-SNAP

Blank Plates for KEL-SNAP Frames



Product Description

Blank plate BPK-SNAP to close cut-outs of preassembled KEL-SNAP frames.

A snap frame can be closed, i.e. during transport to avoid entry of dust, as long as a KEL frame is not mounted.

The BPK-SNAP blank plate is simply snapped on the KEL frame. There is no tool needed to remove it.

BPK-SNAP 16 and BPK-SNAP 24 for closing cut-outs of the KEL-SNAP mounting frames and unused Slide frames of the KDR-ESR gland plates.

Specifications

Material	Polyethylene (PE)
Flame class	UL94-HB
IP rating	IP54
Temperature	- 40°C to + 80°C (static)
Properties	Silicone free

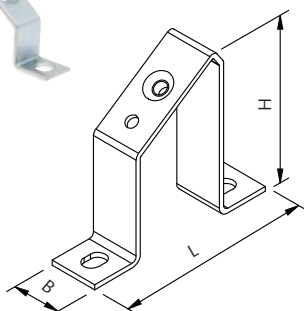
Compatible with

KEL-SNAP Mounting frames	31
KDR-ESR Gland plate with Slide frames	146 - 149

Type	Order No.	Blank plate compatible with	Dimensions l x b x h	PU
BPK-SNAP-B	42003	KEL-SNAP-B4	58 x 72.8 x 17 mm	10
BPK-SNAP 10	42004	KEL-SNAP 10	58 x 98.3 x 17 mm	10
BPK-SNAP 16	42007	KEL-SNAP 16	58 x 120 x 17 mm	10
BPK-SNAP 24	42017	KEL-SNAP 24	58 x 147 x 17 mm	10

MF

Supports for DIN Rails and Bus Bars



Description	Type	Version	Order No. without Clip	Order No. with Clip	Dimension [L × B × H]	PU
-------------	------	---------	---------------------------	------------------------	--------------------------	----

Type A		MF-A49	Type A	36056	36058	80 × 20 × 49 mm	10
		MF-A68	Type A	36064	36066	80 × 20 × 68 mm	10
		MF-A88	Type A	36072	36074	80 × 20 × 88 mm	10
Type B		MF-B20	Type B	36000	36002	80 × 20 × 20 mm	10
		MF-B30	Type B	36008	36010	80 × 20 × 30 mm	10
		MF-B50	Type B	36016	36018	80 × 20 × 50 mm	10
Type C		MF-B90	Type B	36024	36026	80 × 20 × 90 mm	10
		MF-C40	Type C	36032	36034	40 × 18 × 40 mm	10
Type D		MF-C53	Type C	36040	36042	40 × 18 × 53 mm	10
		MF-D49	Type D	36048	36050	120 × 20 × 49 mm	10
		Bus bar 10 × 3 mm	-	36100	-	10 × 3 × 1000 mm*	1

* Other lengths available on request

Product Description

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

A mounting clip is used for fastening the bus bar to the supports. The support has M6 female screw threads to affix the mounting clip of the DIN rail with a M6 screw.

Mounting clip
Order No. 36150

Advantages & Benefits

- Wide variety of supports with different sizes and designs
- Simple assembly of TS35 DIN rails and 10 × 3 mm bus bars
- Support type D provides possibility to affix 2 TS35 DIN rails

Specifications

Material Carbon steel, galvanically zinc-plated

Accessories

Bus bar Order No. 36100
Mounting clip Order No. 36150

KGM | GMT

Locknuts



Type KGM: Standard nut, plastic

Product Description

Hexagonal locknut with metric threads for attaching components together.

For routing SUB-D, DVI or PROFIBUS connectors in combination with the split cable glands KVT / QVT, special locknuts with cut-outs are required:

KGM-SUB-D9 fits D-Sub 9 connectors
(Required wall cut-out: Ø 36 mm)

KGM-PB fits DVI and PROFIBUS connectors
(Required wall cut-out: Ø 42 mm)

KGM-SUB-D25 fits SUB-D25 connectors
(Required wall cut-out: Ø 50 mm)

Split hexagonal locknuts GMT for use in combination with split cable glands KVT/QVT whenever pre-terminated cables are routed inside cable protection conduits through a machine or enclosure wall. Suitable for split corrugated conduits CONFIX WST.



Wrenches for M75/M85 Plastic Locknuts

For mounting the new KEL-DPF sizes we offer suitable wrenches with widths for M75 and M85 plastic locknuts. Material: aluminum

M75: Order No.61436 | M85: Order No. 61437 | PU: 1

Thread	Type	Order No.	Material	Height [mm]	Wrench size	Diagonal [mm]	Cut-out a×b[mm]	PU
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Type KGM: Standard nut, plastic

M16 × 1.5	KGM 16	<input type="checkbox"/> 52272	PA	4.3	SW 22.8	28.2	-	10
M20 × 1.5	KGM 20	<input type="checkbox"/> 52273 <input checked="" type="checkbox"/> 52283	PA	7	SW 26	28.2	-	10
M25 × 1.5	KGM 25	<input type="checkbox"/> 52274 <input checked="" type="checkbox"/> 52284	PA	7	SW 32	36	-	10
M32 × 1.5	KGM 32	<input type="checkbox"/> 52275 <input checked="" type="checkbox"/> 52285	PA	7	SW 41	46	-	10
M40 × 1.5	KGM 40	<input type="checkbox"/> 52276 <input checked="" type="checkbox"/> 52286	PA	7	SW 50	56	-	10
M50 × 1.5	KGM 50	<input type="checkbox"/> 52277 <input checked="" type="checkbox"/> 52287	PA	8.5	SW 60	66	-	10
M63 × 1.5	KGM 63	<input type="checkbox"/> 52278 <input checked="" type="checkbox"/> 52288	PA	8.5	SW 75	83	-	5
M75 × 1.5	KGM 75	<input checked="" type="checkbox"/> 52289	PA	8.5	SW 85	93.1	-	5
M85 × 2	KGM 85	<input checked="" type="checkbox"/> 52290	PA	10	SW 100	109.5	-	5

KGM | GMT

Locknuts



Type KGM: SUB-D9, PB, SUB-D25



Type GMT: Split locknut



Thread	Type	Order No.	Material	Height [mm]	Wrench size	Diagonal [mm]	Cut-out a×b[mm]	PU
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Type KGM: PB, SUB-D9, SUB-D25

M32 × 1.5	KGM-SUB-D9	45105	PC	7	SW 41	46	35 × 16	10
		45106						
M40 × 1.5	KGM-PB	45107	PC	8	SW 50	55	43 × 17	10
		45109						
M50 × 1.5	KGM-SUB-D25	45108	PC	8	SW 60	66	55 × 16	10
		45110						

Type GMT: Split locknut

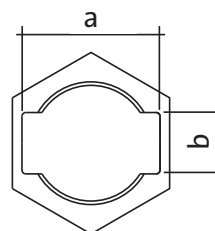
M20 × 1.5	GMT 20	31110	PA	9	SW 27	29	-	10
M25 × 1.5	GMT 25	31100	PA	9	SW 32	35	-	10
M32 × 1.5	GMT 32	31120	PA	12	SW 40	44	-	10
M50 × 1.5	GMT 50	31140	PA	15	SW 63	69	-	10

Specifications

Material	Polyamide (PA) / Polycarbonate (PC)
Color	<input type="checkbox"/> gray (similar RAL 7035) <input checked="" type="checkbox"/> black
Flame class	UL94-Vo, self-extinguishing
Temperature	- 30°C to + 120°C
Properties	Halogen free, silicone free

Compatible with

KVT, KVT-SNAP, KVT-W90	
Split cable glands	38 - 42
QVT Split cable glands	52
KEL-DPZ Cable entry plates	72 - 73
KEL-DPF Cable entry grommets	79



7

ATEX Cable Entry Systems

for Potentially Explosive Atmospheres



KEL-U / KEL-ER



KEL-DPZ



KEL-DPF

Directive 2014/34/EU (ATEX)

ATEX stands for „ATmosphères EXplosives“ and is the short name for the European Directive 2014/34/EU, regulating the market launch of explosion protected electrical and non-electrical devices, components and protection systems. It has been in effect since July 1, 2003 and it applies to all new equipment and protective devices. The directive is aimed at manufacturers and importers in the 27 member states of the EU as well as the 4 EFTA member states and Turkey.

The ATEX directive applies to all electrical and non-electrical equipment and protective systems intended for use in potentially explosive atmospheres.

Also the directive includes controlling, monitoring or regulating equipment which may be located outside of explosive atmospheres, but ensures the safe operation of devices and safety systems inside.

The ATEX directive applies to all explosive industrial atmospheres, including mining. The directive describes basic safety and health requirements for equipment and components intended for use in potentially explosive atmospheres. It describes procedures to demonstrate conformity with the directive. Depending on the risk area in which the product is used, (conformity assessment procedures) requirements and procedures for assessing fulfillment are different.

Since 2003, every new Ex device must be certified according to the EU Directive, labeled with the CE marking and the special marks for prevention of explosions. icotek has certified a wide variety of products.

All devices, components and protective systems intended for use in potentially explosive atmospheres, have to comply with the European Directive 2014/34/EU.

Important notice!

Only intended for fixed installation of cables!

The cable entry is only suitable for fixed installation of cables where strain and torsional loading on the cable is not possible.

The ATEX Directive 94/9 EC Regulates:

- Product approval
- Conformity procedure (consisting of EC type examination, quality control and EC declaration of conformity)
- CE marking of conformity for equipment and protective systems

For use in potentially explosive atmospheres, icotek offers a wide range of cable entry systems for zones G (gas) and D (dust) in equipment group II, category 2 + 3, certified to the ATEX directive.


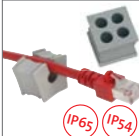








The icotek cable entry systems comply with the EU Directive 2014/34/EU (ATEX) for equipment and protective systems intended for use in potentially explosive atmospheres of zones 1, 2, 21 and 22.



Product Group 7

Cable Entry Systems for Potentially Explosive Atmospheres

Chapter Content

	<p>ATEX cable entry frames NEMA types 4X / 12 for cable diameters up to 35 mm</p> <p>KEL-ER 24 / KEL-ER 16 / KEL-ER 10 / KEL-ER-B / KEL-ER-E KEL-U 24 / KEL-U 16 / KEL-U 10 / KEL-U-B / KEL-E</p> <p style="text-align: right;">174 - 177</p>		<p>Grommets and plugs NEMA types 4X / 12 cable diameter range 2 - 75 mm</p> <p>KT small / KT large / KT-DPF / KTMB / KTMB 183 / DT / FT / ST</p> <p style="text-align: right;">183 - 184</p>
	<p>ATEX cable entry frames NEMA type 12 for cable diameters up to 35 mm</p> <p>KEL 24 / KEL 16 / KEL 10 / KEL-B</p> <p style="text-align: right;">178</p>		<p>ATEX Cable entry plates NEMA type 4X screw/snap-in mounting</p> <p>KEL-DPU 24</p> <p style="text-align: right;">185</p>
	<p>Extended ATEX cable entry frames NEMA type 12 for cable diameters up to 35 mm</p> <p>KEL 24-E / KEL 24-MT / KEL 24-2MT KEL 16-E / KEL 16-MT / KEL 16-2MT</p> <p style="text-align: right;">179 - 180</p>		<p>ATEX Cable entry plates NEMA type 12 screw mounting</p> <p>KEL-DPZ-KL / KEL-DPZ 24 / KEL-DPZ-B / KEL-DPZ-E</p> <p style="text-align: right;">186 - 187</p>
	<p>ATEX cable entry frames for flat cables & round cables up to 16 mm in diameter</p> <p>KEL-FL</p> <p style="text-align: right;">181</p>		<p>ATEX Cable entry plates, round NEMA type 4X M32 - M63</p> <p>KEL-DPZ round</p> <p style="text-align: right;">188</p>
	<p>ATEX cable entry frames NEMA type 12 for cable diameters up to 75 mm</p> <p>KEL 183 / KEL 183-E</p> <p style="text-align: right;">182</p>		<p>ATEX Cable entry grommets NEMA type 4X M25 - M75, for cable diameters up to 60 mm</p> <p>KEL-DPF</p> <p style="text-align: right;">189</p>



KEL-U ATEX

Cable Entry Frames



IP54



V2A anti-corrosive
Also available with stainless steel screws (V2A).



Also available with threaded steel screws (V2A).

Product Description

Split cable entry system for routing cables with connectors providing an IP54 / up to NEMA type 12 rating. Routing and sealing for cable diameters from 1 to 35 mm. The new cable entry system is easy to install. Cable grommets are placed into compartments in the frame and are securely fixed to the frame during assembly. The KEL-U frames match exactly the cut-out dimensions for 24-, 16- and 10-pin standard industrial connectors. The KEL-U-B matches cut-out dimensions of 46x46 mm measuring instruments. A flat rubber gasket is included in the shipment.

Advantages & Benefits

- Fast and easy assembly
- Warranty on pre-terminated cables remains
- Retrofits, repairs and maintenance can be done much more easily and quickly
- High cable density, wide variety of grommets
- High stability, vibration resistant

Specifications

Material	Polyamide (PA)
Flame class	UL94-Vo, self-extinguishing
IP rating	IP54, with gasket and correct selection of cable grommets (certified acc. to EN 60529)
NEMA type rating	NEMA type 12 (acc. to UL 50E)
Temperature	- 30°C to + 70°C (static) - 22°F to + 194°F (static)
Equipment group	II
Category	2G, 3G, 2D, 3D
Zone	1 + 21, 2+22
Test standard	EN 60079-0
Properties	Halogen-free, silicone-free
Frame depth	17 mm

Accessories

Cable grommets 44 - 48

Type	Order No.	Cut-out	Grommets small large	PU
KEL-U 24 10 ATEX	49455	36 × 112 mm	10 -	10
KEL-U 24 10 ATEX with V2A screws	49455.200	36 × 112 mm	10 -	10
KEL-U 24 7 ATEX	49456	36 × 112 mm	6 1	10
KEL-U 24 7 ATEX with V2A screws	49456.200	36 × 112 mm	6 1	10
KEL-U 24 4 ATEX	49457	36 × 112 mm	2 2	10
KEL-U 24 4 ATEX with V2A screws	49457.200	36 × 112 mm	2 2	10
KEL-U 16 8 ATEX	49458	36 × 86 mm	8 -	10
KEL-U 16 8 ATEX with V2A screws	49458.200	36 × 86 mm	8 -	10
KEL-U 16 5 ATEX	49459	36 × 86 mm	4 1	10
KEL-U 16 5 ATEX with V2A screws	49459.200	36 × 86 mm	4 1	10
KEL-U 16 2 ATEX	49460	36 × 86 mm	- 2	10
KEL-U 16 2 ATEX with V2A screws	49460.200	36 × 86 mm	- 2	10
KEL-U 10 6 ATEX	49461	36 × 65 mm	6 -	10
KEL-U 10 6 ATEX with V2A screws	49461.200	36 × 65 mm	6 -	10
KEL-U 10 3 ATEX	49462	36 × 65 mm	2 1	10
KEL-U 10 3 ATEX with V2A screws	49462.200	36 × 65 mm	2 1	10
KEL-U-B4 ATEX	49463	46 × 46 mm	4 -	10
KEL-U-B4 ATEX with V2A screws	49463.200	46 × 46 mm	4 -	10
KEL-U-B1 ATEX	49464	46 × 46 mm	- 1	10
KEL-U-B1 ATEX with V2A screws	49464.200	46 × 46 mm	- 1	10



KEL-ER ATEX Cable Entry Frames



V2A anti-corrosive
Also available with stainless steel screws (V2A).



Also available with threaded bushings.



Type	Order No.	Cut-out	Grommets small large	PU
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KEL-ER 24 10 ATEX	49228	36 × 112 mm	10 -	10
KEL-ER 24 10 ATEX with V2A screws	49228.200	36 × 112 mm	10 -	10
KEL-ER 24 7 ATEX	49230	36 × 112 mm	6 1	10
KEL-ER 24 7 ATEX with V2A screws	49230.200	36 × 112 mm	6 1	10
KEL-ER 24 4 ATEX	49229	36 × 112 mm	2 2	10
KEL-ER 24 4 ATEX with V2A screws	49229.200	36 × 112 mm	2 2	10
KEL-ER 16 8 ATEX	49223	36 × 86 mm	8 -	10
KEL-ER 16 8 ATEX with V2A screws	49223.200	36 × 86 mm	8 -	10
KEL-ER 16 5 ATEX	49222	36 × 86 mm	4 1	10
KEL-ER 16 5 ATEX with V2A screws	49222.200	36 × 86 mm	4 1	10
KEL-ER 16 2 ATEX	49221	36 × 86 mm	- 2	10
KEL-ER 16 2 ATEX with V2A screws	49221.200	36 × 86 mm	- 2	10
KEL-ER 10 6 ATEX	49227	36 × 65 mm	6 -	10
KEL-ER 10 6 ATEX with V2A screws	49227.200	36 × 65 mm	6 -	10
KEL-ER 10 3 ATEX	49226	36 × 65 mm	2 1	10
KEL-ER 10 3 ATEX with V2A screws	49226.200	36 × 65 mm	2 1	10
KEL-ER-B4 ATEX	49224	46 × 46 mm	4 -	10
KEL-ER-B4 ATEX with V2A screws	49224.200	46 × 46 mm	4 -	10
KEL-ER-B1 ATEX	49225	46 × 46 mm	- 1	10
KEL-ER-B1 ATEX with V2A screws	49225.200	46 × 46 mm	- 1	10

Product Description

Split cable entry system for routing and sealing cables with connectors, providing an IP65 / up to NEMA type 4X rating and strain relief for cable diameters from 1 to 16 mm (KT 1 - 15) and 16 to 35 mm (KT 16 - 34). The new cable entry system is easy to install. Cable grommets are placed into compartments in the frame and are securely fixed to the frame during assembly. The KEL-ER frames match exactly the cut-out dimensions for 24-, 16- and 10-pin standard industrial connectors. The KEL-ER-B matches cut-out dimensions of 46×46 mm measuring instruments. A flat rubber gasket is included in the shipment.

Advantages & Benefits

- Warranty of pre-terminated cables remains
- Retrofits, repairs and maintenance can be done much more easily and quickly
- High cable density, wide variety of grommets
- Vibration resistant

Specifications

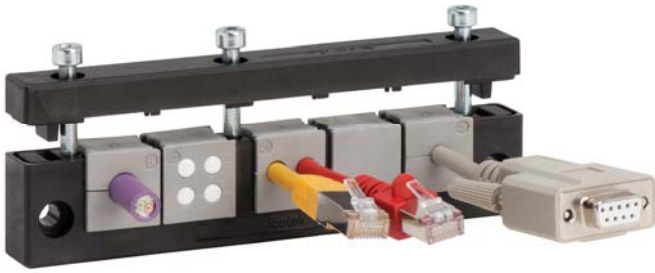
Material	Polyamide (PA)
Flame class	UL94-Vo
IP rating	IP65, with gasket and correct selection of single grommets (certified acc. to EN 60529)
NEMA type rating	NEMA type 4X (acc. to UL 50E)
Temperature	- 30°C to + 70°C (static) - 22°F to + 158°F (static)
Equipment group	II
Category	2G, 3G, 2D, 3D
Zone	1 + 21, 2+22
Test standard	EN 60079-0
Properties	Halogen-free, silicone-free
Frame depth	17 mm

Accessories

KT Cable grommets 44 - 46

KEL-E ATEX

Cable Entry Frames



V2A anti-corrosive
Also available with stainless steel screws (V2A).



Also available with threaded bushings.



Product Description

Split cable entry system for routing cables with connectors, providing an IP54 / up to NEMA type 12 rating. Routing, sealing and providing strain relief for cable diameters from 1 to 17 mm. The KEL-E version is particularly suited for flat connectors. The small frame is ideal for applications with limited space. A flat rubber gasket is included in the shipment.

Advantages & Benefits

- Warranty on pre-terminated cables remains
- Retrofitting and maintenance can be carried out easily and quickly
- Space saving shape
- Perfect for D-Sub connectors
- Vibration resistant

Specifications

Material	Polyamide (PA)
Flame class	UL94-Vo
IP rating	IP54, with gasket and correct selection of cable grommets (certified acc. to EN 60529)
NEMA type rating	NEMA type 12 (acc. to UL 50E)
Temperature	- 30°C to + 70°C (static) - 22°F to + 158°F (static)
Equipment group	II
Category	2G, 3G, 2D, 3D
Zone	1 + 21, 2+22
Test standard	EN 60079-0
Properties	Halogen-free, silicone-free
Frame depth	17 mm

Accessories

Cable grommets 44 - 47

Type	Order No.	Cut-out	Grommets small large	PU
KEL-E2 ATEX	49150	43 × 24 mm	2 -	10
KEL-E2 ATEX with V2A screws	49150.200	43 × 24 mm	2 -	10
KEL-E3 ATEX	49152	65 × 24 mm	3 -	10
KEL-E3 ATEX with V2A screws	49152.200	65 × 24 mm	3 -	10
KEL-E4 ATEX	49154	86 × 24 mm	4 -	10
KEL-E4 ATEX with V2A screws	49154.200	86 × 24 mm	4 -	10
KEL-E5 ATEX	49156	112 × 24 mm	5 -	10
KEL-E5 ATEX with V2A screws	49156.200	112 × 24 mm	5 -	10



KEL-ER-E ATEX Cable Entry Frames



V2A anti-corrosive
Also available with stainless steel screws (V2A).



Also available with threaded bushings.



Type	Order No.	Cut-out	Grommets small large	PU
KEL-ER-E2 ATEX	49470	43 × 24	2 -	10
KEL-ER-E2 ATEX with V2A screws	49470.200	43 × 24	2 -	10
KEL-ER-E3 ATEX	49471	65 × 24	3 -	10
KEL-ER-E3 ATEX with V2A screws	49471.200	65 × 24	3 -	10
KEL-ER-E4 ATEX	49472	86 × 24	4 -	10
KEL-ER-E4 ATEX with V2A screws	49472.200	86 × 24	4 -	10
KEL-ER-E5 ATEX	49473	112 × 24	5 -	10
KEL-ER-E5 ATEX with V2A screws	49473.200	112 × 24	5 -	10

Product Description

Split cable entry system for routing and sealing cables with connectors, providing an IP65 / up to NEMA type 12 rating for cable diameters from 1 to 16 mm (KT 1 - 15). It is particularly suited for flat connectors. The small frame is ideal for applications with limited space.

The new cable entry system is easy to install. Cable grommets are placed into compartments in the frame and are securely fixed to the frame during assembly. A flat rubber gasket is included in the shipment.

Advantages & Benefits

- Warranty on pre-terminated cables remains
- Retrofits, repairs and maintenance can be done much more easily and quickly
- Space saving shape
- Optimal for D-Sub connectors
- Vibration resistant

Specifications

Material	Polyamide (PA)
Flame class	UL94-Vo
IP rating	IP65, with gasket and correct selection of single grommets (certified acc. to EN 60529)
NEMA type rating	NEMA type 12 (acc. to UL 50E)
Temperature	- 30°C to + 70°C (static) - 22°F to + 158°F (static)
Equipment group	II
Category	2G, 3G, 2D, 3D
Zone	1 + 21, 2+22
Test standard	EN 60079-0
Properties	Halogen-free, silicone-free
Frame depth	17 mm

Accessories

KT Cable grommets	44
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KEL ATEX

Cable Entry Frames



IP54



V2A anti-corrosive
Also available with stainless steel screws (V2A).



Also available with threaded steel bushings.

Product Description

Centrally split cable entry system for routing cables with connectors, providing an IP54 / up to NEMA type 12 rating. The slitted grommet matching the cable diameter is placed around the cable and inserted into the cable entry frame. Either a cut-out of 36 mm or 46 mm in height can be chosen depending on the cables being routed. The split cable entry frames KEL match exactly the cut-out dimensions of 24-/16-/10-pin standard industrial connectors. The KEL-B matches exactly the cut-out dimensions of 46x46 mm measuring instruments. A flat rubber gasket is included in the shipment.

Advantages & Benefits

- Warranty of pre-terminated cables remains
- Retrofits, repairs and maintenance can be done much more easily and quickly
- High cable density, wide variety of grommets
- Vibration resistant

Specifications

Material	Polyamide (PA)
Flame class	UL94-V0
IP rating	IP54, with gasket and correct selection of cable grommets (certified acc. to EN 60529)
NEMA type rating	NEMA type 12 (acc. to UL 50E)
Temperature	- 30°C to + 70°C (static) - 22°F to + 158°F (static)
Equipment group	II
Category	2G, 3G, 2D, 3D
Zone	1 + 21, 2+22
Test standard	EN 60079-0
Properties	Halogen-free, silicone-free
Frame depth	17 mm

Accessories

Cable grommets	44 - 48
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Type	Order No.	Cut-out	Grommets small large	PU
KEL 24 10 ATEX	49109	36 × 112 mm	10 -	10
KEL 24 10 ATEX with V2A screws	49109.200	36 × 112 mm	10 -	10
KEL 24 7 ATEX	49111	36 × 112 mm	6 1	10
KEL 24 7 ATEX with V2A screws	49111.200	36 × 112 mm	6 1	10
KEL 24 5 ATEX	49112	36 × 112 mm	5 -	10
KEL 24 5 ATEX with V2A screws	49112.200	36 × 112 mm	5 -	10
KEL 24 4 ATEX	49110	36 × 112 mm	2 2	10
KEL 24 4 ATEX with V2A screws	49110.200	36 × 112 mm	2 2	10
KEL 16 8 ATEX	49104	36 × 86 mm	8 -	10
KEL 16 8 ATEX with V2A screws	49104.200	36 × 86 mm	8 -	10
KEL 16 5 ATEX	49103	36 × 86 mm	4 1	10
KEL 16 5 ATEX with V2A screws	49103.200	36 × 86 mm	4 1	10
KEL 16 4 ATEX	49102	36 × 86 mm	4 -	10
KEL 16 4 ATEX with V2A screws	49102.200	36 × 86 mm	4 -	10
KEL 16 2 ATEX	49101	36 × 86 mm	- 2	10
KEL 16 2 ATEX with V2A screws	49101.200	36 × 86 mm	- 2	10
KEL 10 6 ATEX	49108	36 × 65 mm	6 -	10
KEL 10 6 ATEX with V2A screws	49108.200	36 × 65 mm	6 -	10
KEL 10 3 ATEX	49107	36 × 65 mm	2 1	10
KEL 10 3 ATEX with V2A screws	49107.200	36 × 65 mm	2 1	10
KEL-B4 ATEX	49105	46 × 46 mm	4 -	10
KEL-B4 ATEX with V2A screws	49105.200	46 × 46 mm	4 -	10
KEL-B1 ATEX	49106	46 × 46 mm	- 1	10
KEL-B1 ATEX with V2A screws	49106.200	46 × 46 mm	- 1	10



KEL 24-E/-MT/-2MT ATEX Cable Entry Frames



V2A anti-corrosive
Also available with stainless steel screws (V2A).



Also available with threaded bushings.



IP54

Type	Order No.	Cut-out	Grommets small large	PU
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KEL 24 15-E	49158	66 × 112 mm	15 -	1
KEL 24 15-E with V2A screws	49158.200	66 × 112 mm	15 -	1
KEL 24 12-E	49160	66 × 112 mm	11 1	1
KEL 24 12-E with V2A screws	49160.200	66 × 112 mm	11 1	1
KEL 24 9-E	49162	66 × 112 mm	7 2	1
KEL 24 9-E with V2A screws	49162.200	66 × 112 mm	7 2	1
KEL 24 10-E	49164	66 × 112 mm	10 -	1
KEL 24 10-E with V2A screws	49164.200	66 × 112 mm	10 -	1
KEL 24 20-MT	49166	82 × 112 mm	20 -	1
KEL 24 20-MT with V2A screws	49166.200	82 × 112 mm	20 -	1
KEL 24 17-MT	49168	82 × 112 mm	16 1	1
KEL 24 17-MT with V2A screws	49168.200	82 × 112 mm	16 1	1
KEL 24 14-MT	49170	82 × 112 mm	12 2	1
KEL 24 14-MT with V2A screws	49170.200	82 × 112 mm	12 2	1
KEL 24 11-MT	49172	82 × 112 mm	8 3	1
KEL 24 11-MT with V2A screws	49172.200	82 × 112 mm	8 3	1
KEL 24 8-MT	49174	82 × 112 mm	4 4	1
KEL 24 8-MT with V2A screws	49174.200	82 × 112 mm	4 4	1
KEL 24 30-2 MT	49176	126 × 112 mm	30 -	1
KEL 24 30-2 MT with V2A screws	49176.200	126 × 112 mm	30 -	1
KEL 24 27-2 MT	49178	126 × 112 mm	26 1	1
KEL 24 27-2 MT with V2A screws	49178.200	126 × 112 mm	26 1	1
KEL 24 24-2 MT	49180	126 × 112 mm	22 2	1
KEL 24 24-2 MT with V2A screws	49180.200	126 × 112 mm	22 2	1
KEL 24 21-2 MT	49182	126 × 112 mm	18 3	1
KEL 24 21-2 MT with V2A screws	49182.200	126 × 112 mm	18 3	1
KEL 24 12-2 MT	49184	126 × 112 mm	6 6	1
KEL 24 12-2 MT with V2A screws	49184.200	126 × 112 mm	6 6	1

Product Description

The cable entry frames KEL 24-E/-MT/-2MT series are KEL frames extended with one or two additional middle frames for routing additional cables.

Thus allowing the fast, easy and cost effective routing solution for up to 120 cables in hazardous areas.

A flat rubber gasket is included in the shipment.

Advantages & Benefits

- Warranty on pre-terminated cables remains
- Retrofitting and maintenance can be carried out easily and quickly
- High cable density
- Vibration resistant

Specifications

Material	Polyamide (PA)
Flame class	UL94-V0
IP rating	IP54, with gasket and correct selection of cable grommets
Temperature	- 30°C to + 70°C (static) - 22°F to + 158°F (static)
Equipment group	II
Category	2G, 3G, 2D, 3D
Zone	1 + 21, 2+22
Test standard	EN 60079-0
Properties	Halogen-free, silicone-free
Frame depth	17 mm

Accessories

Cable grommets 44 - 48

KEL 16-E/-MT/-2MT ATEX Cable Entry Frames



V2A anti-corrosive
Also available with stainless steel screws (V2A).



Also available with threaded bushings.

Product Description

The cable entry frames KEL 16-E/-MT/-2MT series are KEL frames extended with one or two additional middle frames for routing additional cables.

Thus allowing the fast, easy and cost effective routing solution for up to 96 cables in hazardous areas.

A flat rubber gasket is included in the shipment.

Advantages & Benefits

- Warranty on pre-terminated cables remains
- Retrofitting and maintenance can be carried out easily and quickly
- High cable density
- Vibration resistant

Specifications

Material	Polyamide (PA)
Flame class	UL94-Vo
IP rating	IP54, with gasket and correct selection of cable grommets
Temperature	- 30°C to + 70°C (static) - 22°F to + 158°F (static)
Equipment group	II
Category	2G, 3G, 2D, 3D
Zone	1 + 21, 2+22
Test standard	EN 60079-0
Properties	Halogen-free, silicone-free
Frame depth	17 mm

Accessories

Cable grommets	44 - 48
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Type	Order No.	Cut-out	Grommets small large	PU
KEL 16 12-E ATEX	49538	66 × 86 mm	12 -	1
KEL 16 12-E ATEX with V2A screws	49538.200	66 × 86 mm	12 -	1
KEL 16 6-E ATEX	49539	66 × 86 mm	4 2	1
KEL 16 6-E ATEX with V2A screws	49539.200	66 × 86 mm	4 2	1
KEL 16 16-MT ATEX	49540	82 × 86 mm	16 -	1
KEL 16 16-MT ATEX with V2A screws	49540.200	82 × 86 mm	16 -	1
KEL 16 10-MT ATEX	49541	82 × 86 mm	8 2	1
KEL 16 10-MT ATEX with V2A screws	49541.200	82 × 86 mm	8 2	1
KEL 16 4-MT ATEX	49542	82 × 86 mm	- 4	1
KEL 16 4-MT ATEX with V2A screws	49542.200	82 × 86 mm	- 4	1
KEL 16 24-2 MT ATEX	49543	126 × 86 mm	24 -	1
KEL 16 24-2 MT ATEX with V2A screws	49543.200	126 × 86 mm	24 -	1
KEL 16 12-2 MT ATEX	49544	126 × 86 mm	8 4	1
KEL 16 12-2 MT ATEX with V2A screws	49544.200	126 × 86 mm	8 4	1
KEL 16 6-2 MT ATEX	49545	126 × 86 mm	- 6	1
KEL 16 6-2 MT ATEX with V2A screws	49545.200	126 × 86 mm	- 6	1



KEL-FL ATEX

Cable Entry Frames for Flat Cables



Type	Order No.	Cut-out	Grommets KT FT	PU
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KEL-FL A ATEX	49479	43 × 24 mm	0× KT 1× FT-1	10
KEL-FL B ATEX	49480	65 × 24 mm	0× KT 1× FT-2	10
KEL-FL C ATEX	49481	65 × 24 mm	1× KT 1× FT-1	10
KEL-FL D ATEX	49482	86 × 24 mm	0× KT 1× FT-3	10
KEL-FL E ATEX	49483	86 × 24 mm	1× KT 1× FT-2	10
KEL-FL F ATEX	49484	86 × 24 mm	0× KT 2× FT-1	10
KEL-FL G ATEX	49485	86 × 24 mm	2× KT 1× FT-1	10
KEL-FL H ATEX	49486	112 × 24 mm	2× KT 1× FT-2	10
KEL-FL I ATEX	49487	112 × 24 mm	1× KT 2× FT-1	10
KEL-FL J ATEX	49488	112 × 24 mm	3× KT 1× FT-1	10
KEL-FL K ATEX	49489	112 × 24 mm	1× FT-1 1× FT-2	10
KEL-FL L ATEX	49490	112 × 24 mm	1× FT-4	10

Product Description

The KEL-FL range enables simple, fast and flexible cable routing and sealing of flat wires, e.g. in elevator construction.

Innovative construction of the grommets compensates for manufacturing inconsistencies in flat cables. Split KT grommets can be utilized to additionally route round cables with connectors. A flat rubber gasket is included in the shipment.

Advantages & Benefits

- Routing of flat cables in combination with pre-terminated round cables by using a single KEL-FL cable entry frame
- Space saving shape

Specifications

Material	Polyamide (PA)
Flame class	UL94-Vo
IP rating	IP54, with gasket and correct selection of cable grommets
Temperature	- 30°C to + 70°C (static) - 22°F to + 158°F (static)
Equipment group	II
Category	2G, 3G, 2D, 3D
Zone	1 + 21, 2+22
Test standard	EN 60079-0
Properties	Halogen-free, silicone-free
Frame depth	17 mm

Accessories

Cable grommets, small	44 - 47
FT Cable grommets, flat	33

KEL 183 | KEL 183-E ATEX Cable Entry Frames



KEL 183



KEL 183-E

Product Description

The split cable entry frame KEL 183 enables the user to route cables and tubes with a diameter of up to 75 mm (depending on the frame type) and to seal them in accordance with IP54 / up to NEMA type 12.

For cables up to 35 mm the cable grommets KT can be used. With these split cable grommets, pre-terminated cables can be routed. For cables up to 75 mm we have created the grommets KTMB for KEL 183. Those are not split and have a defined area for pushing the cable through. A flat rubber gasket is included in the shipment.

Advantages & Benefits

- Installation of cables up to 75 mm
- Grommets allow rigid cables to be properly positioned and oriented during the installation process.
- Retrofits, repairs and maintenance can be done much more easily and quickly

Specifications

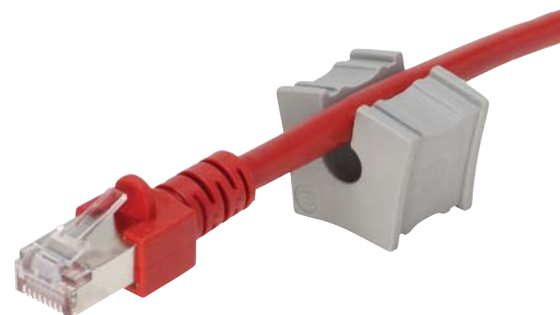
Material	Polyamide (PA)
Flame class	UL94-Vo
IP rating	IP54, with gasket and correct selection of cable grommets
NEMA type rating	NEMA type 12 (acc. to UL 50E)
Temperature	- 30°C to + 70°C (static) - 22°F to + 158°F (static)
Equipment group	II
Category	2G, 3G, 2D, 3D
Zone	1 + 21, 2+22
Test standard	EN 60079-0
Properties	Halogen-free, silicone-free
Frame depth	17 mm

Accessories

KTMB 183 Cable grommets	35
Cable grommets	44 - 48

Type	Order No.	Cut-out	Grommets KT 183 KT large	PU
KEL 183 2 ATEX	49496	180 × 80 mm	2 -	1
KEL 183 2 ATEX with V2A screws	49496.200	180 × 80 mm	2 -	1
KEL 183 5 ATEX	49497	180 × 80 mm	1 4	1
KEL 183 5 ATEX with V2A screws	49497.200	180 × 80 mm	1 4	1
KEL 183 8 ATEX	49498	180 × 80 mm	- 8	1
KEL 183 8 ATEX with V2A screws	49498.200	180 × 80 mm	- 8	1
KEL 183-E4 ATEX	49499	180 × 42 mm	- 4	1
KEL 183-E4 ATEX with V2A screws	49499.200	180 × 42 mm	- 4	1
KEL 183-E16 ATEX	49500	180 × 42 mm	16 KT small	1
KEL 183-E16 ATEX with V2A screws	49500.200	180 × 42 mm	16 KT small	1

KT ATEX Cable Grommets



Type	Page	Clamping range	Description
------	------	----------------	-------------

BTK	44	Blind grommet	
KT 1 - KT 15	44	1 - 16 mm	
KTs 16 - KTs 17	44	16 - 17 mm	
KT S1	44		
KT oval	44	approx. 8 × 4 mm	
KT tele	44	Telephone cable	
KT tele1	44	Data cable RJ12	
KT tele2	44	Data cable RJ10 / RJ45	
KT 2 2 - KT 2 8	45	2× Ø 2 mm - 2× Ø 8 mm	
KT 4 2 - KT 4 6	45	4× Ø 2 mm - 4× Ø 6 mm	
KT-ASI	45	1 ASI-cable	
KT-ASI2 r	45	2 ASI-cables	
KT-ASI2 ll	45	2 ASI-cables	
ATG	46	Adapter grommet	
BTG	46	Blind grommet	
KT 16 - KT 34	46	16 - 35 mm	

Product Description

Cable grommets KT are used with the following ATEX cable entry frames:

KEL-U ATEX/KEL-ER ATEX/KEL ATEX (174 - 182)

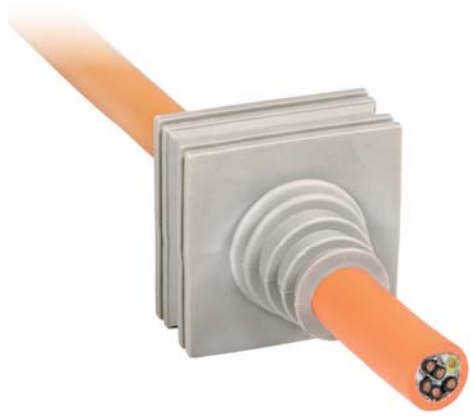
The model range KT is designed for cable diameters from 1 to 35 mm.

Specifications

Material	Elastomer
Flame class	UL94-V0
Temperature	- 30°C to + 70°C (static) - 22°F to + 158°F (static)
Equipment group	II
Category	2G, 3G, 2D, 3D
Zone	1 + 21, 2+22
Test standard	EN 60079-0
Properties	Halogen-free, silicone-free

KT-DPF | KTMB | DT ATEX

Cable Grommets, Multi-Range



Product Description

The KTMB / KT-DPF grommets accept a wide range of cable diameters. A great benefit when the exact cable diameter is not known in advance. The KTMB grommets are not split and therefore only usable for cables without connectors. Cutting of KT-DPF grommets: Cable diameter less 20%.

The DT cable grommets are designed for cables without connectors. A large number of cables can be routed utilizing minimal space. DT grommets are designed to fit in KT large grommet spaces

Advantages & Benefits

- Combination of routing cables with and without connectors with one cable entry frame
- Enables sub-assembly of cable harnesses
- High cable density (DT)
- Grommets allow dynamic and flexible movement of rigid cables

Specifications

Material	Elastomer
Flame class	UL94-Vo
Temperature	- 30°C to + 70°C (static) - 22°F to + 158°F (static)
Equipment group	II
Category	2G, 3G, 2D, 3D
Zone	1 + 21, 2+22
Test standard	EN 60079-0
Properties	Halogen-free, silicone-free

Description	Type	Page	Clamping range
-------------	------	------	----------------

	KT-DPF-A	47	3 - 12 mm
	KT-DPF-B	47	4 - 18 mm
	KT-DPF-C	47	14 - 26 mm
	KTMB-A	47	2.5 - 6.5 mm
	KTMB-B	47	4 - 7.5 mm
	KTMB-C	47	6.5 - 10 mm
	KTMB-D	47	9.5 - 13 mm
	KTMB-E	47	13 - 16 mm
	KTMB-G	47	13 - 18 mm
	KTMB-H	47	18 - 23 mm
	KTMB-I	47	23 - 28 mm
	KTMB-J	47	28 - 33 mm
	KTMB-K	47	2x 13 - 18 mm
		KTMB-O (KEL 183)	33
KTMB-P (KEL 183)		33	34 - 44 mm
KTMB-Q (KEL 183)		33	44 - 54 mm
KTMB-R (KEL 183)		33	54 - 64 mm
KTMB-S (KEL 183)		33	64 - 75 mm
	DT 1	48	12x max. 6.5 mm 2x max. 12.2 mm
	DT 2	48	16x max. 7.1 mm
	DT 3	48	4x max. 6.5 mm 3x max. 9.5 mm 3x max. 11.3 mm
	DT 4	48	9x max. 9.5 mm
	FT-1 x - FT-4 x (KEL-FT)	31	Flat cables



KEL-DPU ATEX Cable Entry Plates



Membrane on front



Conical shape on back provides additional sealing



Tool-free assembly possible due to snap-in function



Type	Order No.	Cut-out	Number of cables	PU
KEL-DPU 24 13 ATEX	□ 49513 ■ 49521	36 × 112 mm	10× 3.2 - 6.3 mm 3× 16 - 20.5 mm	10
KEL-DPU 24 14 ATEX	□ 49514 ■ 49522	36 × 112 mm	5× 3.2 - 6.3 mm 2× 4 - 7.5 mm 3× 5.5 - 10.5 mm 1× 8 - 12.5 mm 3× 12 - 16.2 mm	10
KEL-DPU 24 16 ATEX	□ 49516 ■ 49524	36 × 112 mm	8× 3.2 - 5.5 mm 6× 5 - 8.5 mm 2× 9.5 - 14.5 mm	10
KEL-DPU 24 16-1 ATEX	□ 49515 ■ 49523	36 × 112 mm	2× 3.2 - 6.3 mm 9× 4 - 7.5 mm 1× 5.5 - 10.5 mm 1× 8 - 12.5 mm 3× 12 - 16.2 mm	10
KEL-DPU 24 17 ATEX	□ 49517 ■ 49525	36 × 112 mm	4× 3.2 - 6.3 mm 2× 4 - 7.5 mm 1× 5.5 - 10.5 mm 10× 8 - 12.5 mm	10
KEL-DPU 24 20 ATEX	□ 49518 ■ 49526	36 × 112 mm	12× 3.2 - 5.5 mm 8× 5 - 10.5 mm	10
KEL-DPU 24 21 ATEX	□ 49519 ■ 49527	36 × 112 mm	1× 3.2 - 6.3 mm 14× 4 - 7.5 mm 4× 5.5 - 10.5 mm 2× 8 - 12.5 mm	10
KEL-DPU 24 32 ATEX	□ 49520 ■ 49528	36 × 112 mm	32× 3.2 - 6.3 mm	10

* Only valid for gray product types

Product Description

KEL-DPU entry plates are designed to route and seal cables without connectors (from 3.2 mm to 20.5 mm in diameter) in limited space with IP65 / IP66 / up to NEMA type 4X ratings. The KEL-DPU is particularly characterized by its robust frame.

The KEL-DPU 24 matches exactly the cut-out dimensions of 24-pin standard industrial connectors. For optional screw assembly just pierce the membranes on the screw holes with the screw itself. The assembly of the KEL-DPU with cables or pneumatic hoses can be done quick and easy. Simply make a small hole in the thin membrane and push the cables through.

Advantages & Benefits

- Snap or screw mounting possible
- Very high stability
- Fast and easy assembly
- High cable density
- Dual cable sealing with IP65/IP66/up to NEMA type 4X
- Hygienic design - free of dirt-collecting recesses

Specifications

Material	Frame: Polypropylene (PP) Sealing plate: Elastomer
Color	□ gray (similar RAL 7035) ■ black
Flame class	UL94-Vo, self-extinguishing
IP rating	IP65/IP66 (certified acc. to EN 60529)
NEMA type rating	NEMA type 4X (acc. to UL 50E)
Temperature	- 30°C to + 70°C (static) - 22°F to + 158°F (static)
Equipment group	II
Category	2G, 3G, 2D, 3D
Zone	1 + 21, 2+22
Test standard	EN 60079-0
Properties	Halogen-free, silicone-free

KEL-DPZ-KL ATEX

Cable Entry Plates



IP65



Membrane on front



Conical shape on back provides additional sealing.

Product Description

The cable entry plate KEL-DPZ-KL is designed for routing up to 72 cables without connectors.

The assembly of the KEL-DPZ-KL with cables or pneumatic hoses can be done quick and easy. Simply make a small hole in the thin membrane, push the cables through. The KEL-DPZ-KL provides strain relief and protection IP65 / NEMA type 12.

The KEL-DPZ-KL matches on junction boxes KL by Rittal.

Advantages & Benefits

- Space saving shape
- Dual sealing of cables according to IP65/NEMA type 12
- High cable density
- Fast and easy assembly
- Hygienic design

Specifications

Material	Support: Stainless steel V2A, molded with elastomer Sealing plate: Elastomer Screws: Stainless steel V2A
Color	<input type="checkbox"/> gray (similar RAL 7035) <input checked="" type="checkbox"/> black
Flame class	UL94-Vo
IP rating	IP65 (certified acc. to EN 60529)
NEMA type rating	NEMA type 12 (acc. to UL 50E)
Temperature	- 30°C to + 70°C (static) - 22°F to + 158°F (static)
Equipment group	II
Category	2G, 3G, 2D, 3D
Zone	1 + 21, 2+22
Test standard	EN 60079-0
Properties	Halogen-free, silicone-free

Type	Order No.	Cut-out	Number of cables	PU
KEL-DPZ-KL 72 ATEX	<input type="checkbox"/> 49556.001 <input checked="" type="checkbox"/> 49556.101	192 x 62 mm	42x 3.2 - 6.5 mm 21x 5 - 10.2 mm 6x 9 - 16.2 mm 3x 16 - 22 mm	1

* Only valid for gray product types



KEL-DPZ ATEX Cable Entry Plates



Membrane on front



Conical shape on back provides additional sealing.



Type	Order No.	Cut-out	Number of cables	PU
KEL-DPZ 24 14 ATEX	□ 49201 ■ 49211	36 × 112 mm	10× 3.2 - 6.5 mm 4× 16 - 22 mm	10
KEL-DPZ 24 15 ATEX	□ 49205 ■ 49215	36 × 112 mm	15× 7.2 - 12 mm	10
KEL-DPZ 24 16 ATEX	□ 49206 ■ 49216	36 × 112 mm	8× 3.2 - 6.5 mm 4× 5 - 9.7 mm 2× 9 - 16.2 mm 2× 16 - 22 mm	10
KEL-DPZ 24 17 ATEX	□ 49202 ■ 49212	36 × 112 mm	6× 3.2 - 6.5 mm 6× 5 - 10.2 mm 5× 9 - 16.2 mm	10
KEL-DPZ 24 25 ATEX	□ 49203 ■ 49213	36 × 112 mm	12× 3.2 - 6.5 mm 7× 4.8 - 9.7 mm 6× 7.5 - 12 mm	10
KEL-DPZ 24 32 ATEX	□ 49207 ■ 49217	36 × 112 mm	21× 3.2 - 6.5 mm 8× 5 - 10.2 mm 3× 7.5 - 12 mm	10
KEL-DPZ 24 42 ATEX	□ 49204 ■ 49214	36 × 112 mm	42× 3.2 - 6.5 mm	10
KEL-DPZ 24 121 ATEX	□ 49208 ■ 49218	36 × 112 mm	119× 1.5 - 2.6 mm 2× 2.5 - 5 mm	10
KEL-DPZ-B 13 ATEX	□ 49311 ■ 49317	46 × 46 mm	8× 3.2 - 6.5 mm 4× 5 - 10.2 mm 1× 16 - 22 mm	10
KEL-DPZ-B 17 ATEX	□ 49312 ■ 49318	46 × 46 mm	10× 3.2 - 6.5 mm 4× 5 - 10.2 mm 2× 7.5 - 12 mm 1× 9 - 16.2 mm	10
KEL-DPZ-B 25 ATEX	□ 49313 ■ 49319	36 × 112 mm	25× 3.2 - 6.5 mm	10
KEL-DPZ-E 112 7 ATEX	□ 49301 ■ 49306	18 × 112 mm	7× 7.5 - 12 mm	10
KEL-DPZ-E 112 21 ATEX	□ 49302 ■ 49307	18 × 112 mm	21× 3.2 - 6.5 mm	10

*Only valid for gray product types

Product Description

KEL-DPZ 24, KEL-DPZ-B and KEL-DPZ-E cable entry plates are designed to route and seal cables without connectors (from 1.5 mm to 22 mm in diameter) in limited space.

The assembly of the KEL-DPZ with cables or pneumatic hoses can be done quick and easy. Simply make a small hole in the thin membrane, push the cables through and it's immediately sealed (IP65 / IP66).

Advantages & Benefits

- Fast and easy assembly
- High cable density
- Dual sealing of cables according to IP65 / IP66
- Space saving shapes

Specifications

Material	Frame: Polyamide (PA) Sealing plate: Elastomer
Color	□ gray (similar RAL 7035) ■ black
Flame class	UL94-Vo
IP rating	IP65/IP66 (certified acc. to EN 60529)
NEMA type rating	NEMA type 12 (acc. to UL 50E)
Temperature	- 30°C to + 70°C (static) - 22°F to + 158°F (static)
Equipment group	II
Category	2G, 3G, 2D, 3D
Zone	1 + 21, 2+22
Test standard	EN 60079-0
Properties	Halogen-free, silicone-free

KEL-DPZ round ATEX Cable Entry Plates



Membrane on front



Conical shape on back provides additional sealing

Product Description

KEL-DPZ round entry plates are designed to route and seal cables without connectors (from 1.5 mm to 22 mm in diameter) in limited space. The assembly of the KEL-DPZ with cables or pneumatic hoses can be done quick and easy. Simply make a small hole in the thin membrane, push the cables through and it's immediately sealed with IP68.

The round versions of the KEL-DPZ series have a thread to fit in metric cut-outs from M32 to M63. Thus cut-outs for metric cable glands can be used.

Advantages & Benefits

- Fast and easy assembly
- High cable density
- Dual sealing of cables according to IP68
- Suitable for metric cut-outs
- Polyamide locknuts are included in the shipment

Specifications

Material	Thread frame: Polyamide (PA) Sealing plate: Elastomer
Color	<input type="checkbox"/> gray (similar RAL 7035) <input type="checkbox"/> black
Flame class	UL94-Vo
IP rating	IP66/IP67/IP68 (certified acc. to EN 60529)
NEMA type rating	NEMA type 4X (acc. to UL 50E)
Temperature	- 30°C to + 70°C (static) - 22°F to + 158°F (static)
Equipment group	II
Category	2G, 3G, 2D, 3D
Zone	1 + 21, 2+22
Test standard	EN 60079-0
Properties	Halogen-free, silicone-free
Thread length	14 mm
Plate depth	8 mm

Type	Order No.	Number of cables	Thread metric	External diameter	PU
KEL-DPZ 32 4 ATEX	<input type="checkbox"/> 49420 <input type="checkbox"/> 49440	3× 3.2 - 6.5 mm 1× 7.2 - 12.5 mm	M32 × 1.5	44 mm	10
KEL-DPZ 32 4-2 ATEX	<input type="checkbox"/> 49421 <input type="checkbox"/> 49441	4× 5 - 9.5 mm	M32 × 1.5	44 mm	10
KEL-DPZ 32 7 ATEX	<input type="checkbox"/> 49422 <input type="checkbox"/> 49442	7× 3.2 - 6.5 mm	M32 × 1.5	44 mm	10
KEL-DPZ 40 8 ATEX	<input type="checkbox"/> 49423 <input type="checkbox"/> 49443	4× 3.2 - 6.5 mm 4× 5 - 10.2 mm	M40 × 1.5	52 mm	10
KEL-DPZ 50 8 ATEX	<input type="checkbox"/> 49424 <input type="checkbox"/> 49444	5× 5 - 10.2 mm 3× 7.2 - 12.5 mm	M50 × 1.5	62 mm	10
KEL-DPZ 50 10 ATEX	<input type="checkbox"/> 49425 <input type="checkbox"/> 49445	7× 3.2 - 6.5 mm 2× 5 - 10.2 mm 1× 16 - 22.2 mm	M50 × 1.5	62 mm	10
KEL-DPZ 50 12 ATEX	<input type="checkbox"/> 49426 <input type="checkbox"/> 49446	4× 3.2 - 6.5 mm 8× 5 - 10.2 mm	M50 × 1.5	62 mm	10
KEL-DPZ 50 19 ATEX	<input type="checkbox"/> 49428 <input type="checkbox"/> 49448	19× 3.2 - 6.5 mm	M50 × 1.5	62 mm	10
KEL-DPZ 50 78 ATEX	<input type="checkbox"/> 49427 <input type="checkbox"/> 49447	76× 1.5 - 2.6 mm 2× 2.5 - 5 mm	M50 × 1.5	62 mm	10
KEL-DPZ 63 9 ATEX	<input type="checkbox"/> 49429 <input type="checkbox"/> 49449	1× 3.2 - 6.5 mm 3× 5 - 10.2 mm 4× 9 - 16.2 mm 1× 16 - 22.2 mm	M63 × 1.5	75 mm	10
KEL-DPZ 63 13 ATEX	<input type="checkbox"/> 49430 <input type="checkbox"/> 49450	4× 3.2 - 6.5 mm 4× 5 - 10.2 mm 5× 9 - 16.2 mm	M63 × 1.5	75 mm	10
KEL-DPZ 63 14 ATEX	<input type="checkbox"/> 49432 <input type="checkbox"/> 49452	14× 5 - 10.2 mm	M63 × 1.5	75 mm	10
KEL-DPZ 63 35 ATEX	<input type="checkbox"/> 49431 <input type="checkbox"/> 49451	35× 3.2 - 6.5 mm	M63 × 1.5	75 mm	10

*Only valid for gray product types



KEL-DPF ATEX Cable Entry Grommets



Type	Order No.	Thread metric	Clamping range	External dimension	PU
KEL-DPF 25 3-12 ATEX	<input type="checkbox"/> 49401 <input checked="" type="checkbox"/> 49410	M25 × 1.5	3 - 12 mm	39 mm	5
KEL-DPF 32 6-18 ATEX	<input type="checkbox"/> 49402 <input checked="" type="checkbox"/> 49411	M32 × 1.5	6 - 18 mm	46 mm	5
KEL-DPF 40 12-27 ATEX	<input type="checkbox"/> 49403 <input checked="" type="checkbox"/> 49412	M40 × 1.5	12 - 27 mm	54 mm	5
KEL-DPF 50 22-36 ATEX	<input type="checkbox"/> 49404 <input checked="" type="checkbox"/> 49413	M50 × 1.5	22 - 36 mm	64 mm	5
KEL-DPF 63 27-50 ATEX	<input type="checkbox"/> 49405 <input checked="" type="checkbox"/> 49414	M63 × 1.5	27 - 50 mm	77 mm	5
KEL-DPF 75 39-60 ATEX	<input type="checkbox"/> 49534 <input checked="" type="checkbox"/> 49535	M75 × 1.5	39 - 60 mm	89 mm	1

Product Description

The KEL-DPF was developed particularly for routing large or unknown sizes of cables into an enclosure or machine (max. cable diameter 70 mm). Due to the flexibility and unique pyramid shape, cable entry and flexible positioning is much easier compared to using conventional cable glands. Also perfect for bundling or restraining large cables.

Cutting of DPF grommets:

Cable diameter less 25%. The corresponding diameters are marked on the grommet

It is recommended that additional strain relief be provided for cables as part of the installation.

Advantages & Benefits

- Fast and easy assembly
- It is possible to install rigid cables at angles
- Suitable for metric cut-outs
- Polyamide locknuts are included in the shipment

Specifications

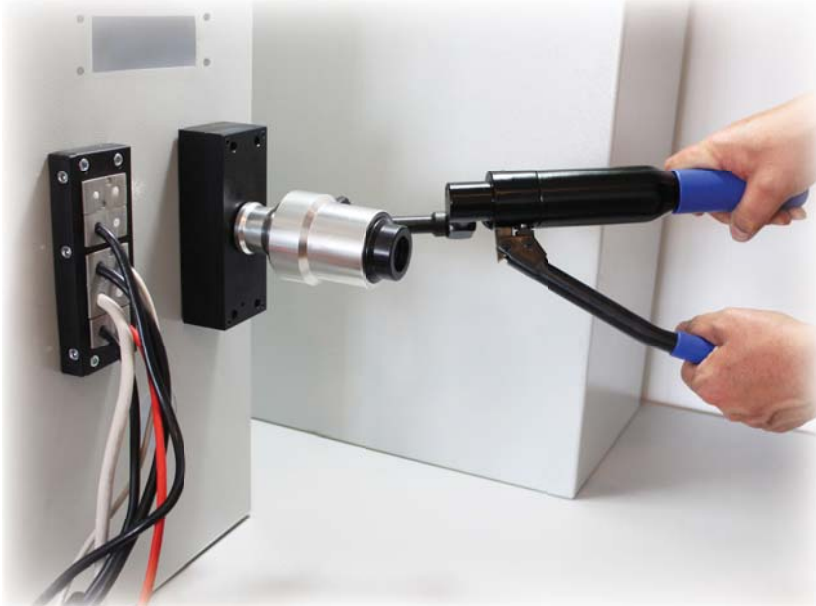
Material	Thread frame: Polyamide (PA) Pyramid: Elastomer
Color	<input type="checkbox"/> gray (similar RAL 7035) <input checked="" type="checkbox"/> black
Flame class	UL94-Vo
IP rating	IP66/IP67/IP68 (certified acc. to EN 60529)
NEMA type rating	NEMA type 4X (acc. to UL 50E)
Temperature	- 30°C to + 70°C (static) - 22°F to + 158°F (static)
Equipment group	II
Category	2G, 3G, 2D, 3D
Zone	1 + 21, 2+22
Test standard	EN 60079-0
Properties	Halogen-free, silicone-free
Thread length	14 mm

*Only valid for gray product types



icotek TOOLS

Punch Drivers, Knockout Punches & Useful Tools



icotek now offers a small-sized hand hydraulic punch driver without a hose which allows quick and easy punching of rectangular, square or round holes. When you have to punch several holes, this hand hydraulic punch driver is much faster than manual wrench-style punches.

icotek also offers round knockout punches for cut-outs PG16, M16, M20, M25, M32, M40, M50, M63, M75 and M85. This self-centering knockout punches split slugs into 3 pieces for easy slug removal. For installation of pushbuttons and round switches icotek offers a 22.5 mm punch with integrated twist protection notch.

Among the round punches icotek also offers rectangular and square punches and dies, for cut-out sizes of 10-, 16-, and 24-multi-pin industrial connectors as well as for most icotek cable entry systems.

Advantages & Benefits ...

1. Maximum Flexibility

Due to its high hydraulic force the compact, lightweight hand hydraulic punch driver makes it easy to punch holes into stainless V2A steel, mild steel, aluminum or plastics. The cylinder of the punch driver rotates 360° on 3 axles. Therefore, maximum flexibility even in hard-to-reach places is provided.

2. Multi-Fold Slug Splitting

The special cutting geometry of the round punches reduces the cutting pressure and therefore the required effort. The punch splits slugs into several pieces for easy slug removal (type related).

3. Perfect for icotek Cable Entry Components

The metric round, rectangular & square knockout punches can be used for industrial standard cut-outs of heavy multi-pin connectors and many icotek cable entry components.



Product Group 8

icotek TOOLS

Chapter Content



Punch driver sets
Hand hydraulic punch driver
& round knockout die set, metric

192



Round punches
for cut-outs PG 16, M16 - M85

194



Rectangular & square punches
for cut-outs of heavy multi-pin industrial
connectors and many icotek cable entry
components

193



Helpful tools
Tools for assembly & cable management

195

Punch Driver Sets

Hand Hydraulic Punch Driver & Metric Punches



Product Description

The compact, lightweight hand hydraulic punch driver makes it easy to punch holes into stainless V2A steel, mild steel, aluminum or plastics with a max. sheet thickness of 3 mm (V2A: 2 mm), due to its high hydraulic force. The cylinder of the punch driver rotates 360° on 3 axles, so maximum flexibility even in hard-to-reach places is provided.

The punch driver can be used with all icotek punches and also with punches of other manufacturers.

Advantages & Benefits

- Maximum flexibility due to 360° head rotation
- High hydraulic force (60 kN, 8700 psi) for easy punching
- Compact, lightweight aluminum design (4.4 lb)
- Fast and easy operation
- Punch driver also suitable for punches by other manufacturers

Specifications

Material **Aluminum**
 Punching force **60 kN**
 Operating pressure **8700 psi**

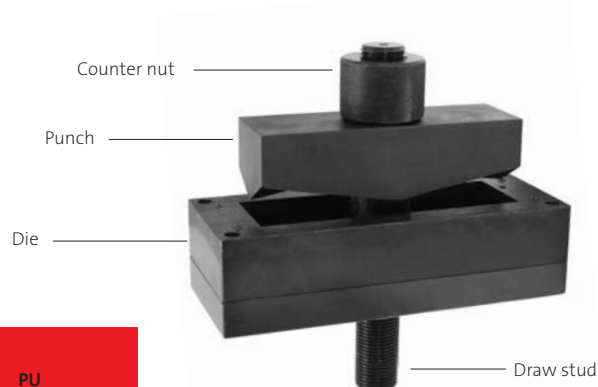
Accessories

Round punches 194
 Rectangular & square punches 193

Type	Scope of delivery	Order No.	PU
Punch driver set BASIC	1 hand hydraulic punch driver (weight: 4.4 lb) 1 draw stud Ø 3/8" UNF to Ø 3/4" UNF, L: 110 mm 1 draw stud Ø 3/4" UNF, L: 130 mm 1 spacer 1 tube lubricant 1 HSS co pilot drill (multi step drill) 1 robust plastic storage case	80000	1
Punch driver set PRO 16-32	1 hand hydraulic punch driver (weight: 4.4 lb) 1 draw stud Ø 9.5 mm 3/8" UNF to Ø 19 mm (3/4" UNF), L: 110 mm 1 draw stud Ø 19 mm (3/4" UNF), L: 130 mm 1 spacer 1 tube lubricant 1 HSS co pilot drill (multi step drill) 1 each knockout punch M16 M20 M25 M32 1 robust plastic storage case	80005	1
Punch driver set PRO 16-63	1 hand hydraulic punch driver (weight: 4.4 lb) 1 draw stud Ø 9.5 mm (3/8" UNF) to Ø 19 mm (3/4" UNF), L: 110 mm 1 draw stud Ø 19 mm (3/4" UNF), L: 130 mm 1 spacer 1 tube lubricant 1 HSS co pilot drill (multi step drill) 1 each knockout punch M16 M20 M25 M32 M40 M50 M63 1 robust plastic storage case	80006	1

Rectangular & Square Punches

Sized for Heavy Multi-Pin Industrial Connectors & icotek Cable Entry Systems



Type	Cut-out size	Max. sheet thickness	For cut-out of connector	Order No.	PU
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Punch 22x45	22 x 45 mm	2.5 mm		80059	1
NEW Punch 92x92	92 x 92 mm	2.5 mm		80060	1
NEW Punch 66x112	66 x 112 mm	2.5 mm		80061	1
Punch E2	24 x 43 mm	2.5 mm		80055	1
Punch E3	24 x 65mm	2.5 mm		80056	1
Punch E4	24 x 86mm	2.5 mm		80057	1
Punch E5	24 x 112mm	2.5 mm		80058	1
Punch B	46 x 46 mm	3 mm		80050	1
Punch B for stainless steel V2A	46 x 46 mm	2 mm		80150	1
Punch 10	36 x 65 mm	3 mm	10-pin	80051	1
Punch 10 for stainless steel V2A	36 x 65 mm	2 mm	10-pin	80151	1
Punch 16	36 x 86 mm	3 mm	16-pin	80052	1
Punch 16 for stainless steel V2A	36 x 86 mm	2 mm	16-pin	80152	1
Punch 24	36 x 112 mm	3 mm	24-pin	80053	1
Punch 24 for stainless steel V2A	36 x 112 mm	2 mm	24-pin	80153	1
Punch 24-XL	46 x 112 mm	3 mm	24-pin	80054	1
Punch 24-XL for stainless steel V2A	46 x 112 mm	2 mm	24-pin	80154	1

Product Description

Rectangular and square punches and dies make it easy to punch holes into stainless steel (V2A versions), mild steel, aluminum or plastics with a max. sheet thickness of 3 mm (V2A: max. 2 mm). Available for cut-outs sizes of 10-, 16-, and 24-multi-pin heavy industrial connectors and also for numerous special cut-outs. Therefore, the punches are suitable for most icotek cable entry systems. Center punches are integrated in the die for exact drilling of mounting holes.

The punches are for hydraulic operation only.

Advantages & Benefits

- Center punches for exact drilling of mounting holes
- Robust plastic storage case
- Suitable for hand hydraulic punch driver by icotek and other manufacturers

Specifications

Material **Steel, hardened and burnished**

Scope of Delivery

Punch, die and draw stud, robust plastic storage case

Compatible with

Hydraulic punch driver 192

Round Punches

for Cut-outs PG 16, M16 - M85



Multi-fold slug splitting



NEW Punch set M16 - M63
Order No. 80007

Product Description

Self-centering knockout punches for stainless steel (V2A versions), mild steel, aluminum and plastic walls with max. sheet thickness of 3 mm (V2A: max. 2 mm). Punches available for cut-outs PG 16, M16, M20, M25, M32, M40, M50, M63, M75 and M85. Cut-outs for icotek split cable glands and round cable entry plates can be punched.

The special cutting geometry of the punch reduces the cutting pressure and therefore the required effort. The punch splits slugs into several pieces (type related)* for easy slug removal. For installation of round switches icotek offers a PG 16 punch with an integrated 3 mm twist protection notch.

The punches are designed for manual and hydraulic operation.

Advantages & Benefits

- Multiple splitting punches for easier slug removal / for easy punching
- Suitable with hand hydraulic punch driver by icotek or other manufacturers

Specifications

Material **Steel, hardened and burnished**

Scope of Delivery

Punch and die (without draw stud)

Compatible with

Hydraulic punch driver 192

Type	Cut-out diameter	Max. sheet thickness	Thread UNF Ø	Order No.	PU
Punch M16	16.2 mm	2 mm	3/8"	80020	1
Punch M16** for stainless steel V2A	16.2 mm	2 mm	3/8"	80120	1
Punch M20	20.4 mm	2 mm	3/8"	80021	1
Punch M20** for stainless steel V2A	20.4 mm	2 mm	3/8"	80121	1
Punch M25	25.4 mm	2 mm	3/8"	80022	1
Punch M25** for stainless steel V2A	25.4 mm	2 mm	3/8"	80122	1
Punch M32	32.5 mm	3 mm	3/4"	80023	1
Punch M32 for stainless steel V2A	32.5 mm	2 mm	3/4"	80123	1
Punch M40	40.5 mm	3 mm	3/4"	80024	1
Punch M40 for stainless steel V2A	40.5 mm	2 mm	3/4"	80124	1
Punch M50	50.5 mm	3 mm	3/4"	80025	1
Punch M50 for stainless steel V2A	50.5 mm	2 mm	3/4"	80125	1
Punch M63	63.5 mm	3 mm	3/4"	80026	1
Punch M63 for stainless steel V2A	63.5 mm	2 mm	3/4"	80126	1
Punch M75	75.5 mm	2 mm	19 mm	80029	1
Punch M85	86 mm	2 mm	19 mm	80030	1
Punch PG 16	22.5 mm	3 mm	9.5 mm	80027	1
Punch PG 16 with twist protection notch	22.5 mm + 3 mm detent	3 mm	9.5 mm	80028	1
Punch PG 16 with twist protection notch, for stainless steel V2A	22.5 mm + 3 mm detent	2 mm	9.5 mm	80128	1
Draw stud	with adapter 11.1 x 19.0 mm for V2A punches M16 - M25			80210	1

**Draw stud (Order No. 80210) is required.

*Except punches M75/M85

Useful Tools for Assembly & Cable Management

KMS Cable Template



The correct size of the KT grommets can easily be determined by using the cable template

- Determining the diameter of the cable using the cable template
- Selecting the KT grommets according to the data on the cable template

Order No. 39800 | PU: 1



Wrenches M75/M85 for Plastic Locknuts M75/M85

For mounting the new KEL-DPF sizes we offer suitable wrenches with widths for M75 and M85 plastic locknuts. Material: aluminum

M75: Order No. 61436 | M85: Order No. 61437 | PU: 1

KBW 9 Cable Tie Pliers



A hand-operated tool for tightening and trimming cable ties. To operate, insert the free end of the installed cable tie into the gun and squeeze handles to tension the tie. To trim off excess tie, press cutting lever.

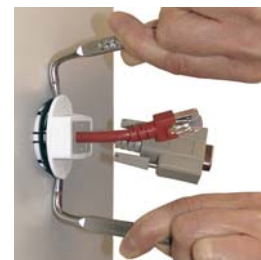
Order No. 61300 | PU: 1

QVT-CLICK Tool Mounting Tool



The QVT-CLICK Tool for quick and easy mounting of split cable glands QVT-CLICK (see page 53)

Order No. 61435 | PU: 2



STFZ I/O Insert Tool Mounting Tool



STFZ I/O Insert Tool for quick and easy mounting of STFZ terminal clamps (EMC shield clamps for peripheral modules, see page 115).

Order No. 61430 | PU: 1



9

Cable Entry Systems

with IFPS Fire Penetration Seals Acc. to EN 45545-3



Fire Resistance of Fire Barriers

The European railroad standard for fire safety EN 45545-3 regulates the fire resistance of fire barriers. The requirements and measures defined in this part of the standard aim to protect passengers and staff in trains against onboard fire incidents.

Fire barriers can have different standards:

The lowest standard „E“

Barrier against flames, preventing fissure formation. "E45", for example, means that the specimen can withstand the test for 45 minutes.

The highest standard „EI“

Barrier against flames, preventing fissure formation and thermal insulation, which means that the temperature on the side facing away from the fire must not exceed 392° F (180° K above room temperature). "EI30", for example, means that the specimen can withstand the test for 30 minutes.

Based on the standards EN 45545-3 and EN 1363-1 icotek cable entry systems have been tested on "E" and "EI" in vertical alignment using mounted IFPS fire penetration seals. All tested products have been successfully certified using only one layer of fire penetration seals.

icotek cable entry systems meet the classifications E45 and EI30!*

Fire penetration seals facing the fire side:



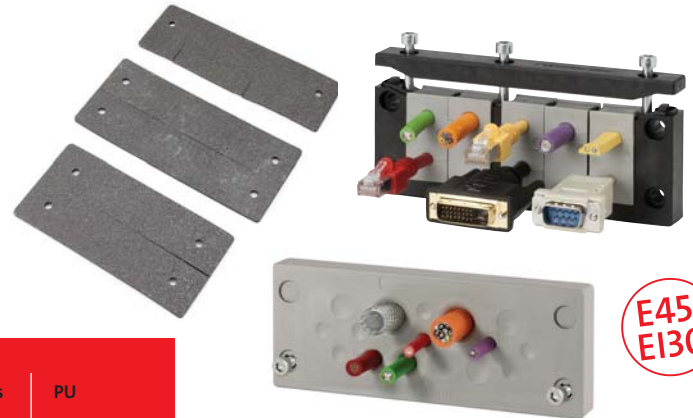
*E45 and EI30 when mounted on 18 mm fire protection panel, E30 on 3 mm sheet steel plate.



Cable Entry Systems with IFPS Fire Penetration Seals According to EN 45545-3



Also available: IFPS fire penetration seal stripe,
900 x 17 x 2.7 mm, self-adhesive
Order No. 99303



Type	Order No.	Cut-out	Grommets KT small large	IP Ingress protection	PU
KEL-U 24 4-BS	99300.001	36 × 112 mm	2 2	IP54	5
KEL-U 24 7-BS	99300.002	36 × 112 mm	6 1	IP54	5
KEL-U 24 10-BS	99300.003	36 × 112 mm	10 -	IP54	5
KEL-ER 24 4-BS	99300.004	36 × 112 mm	2 2	IP65	5
KEL-ER 24 7-BS	99300.005	36 × 112 mm	6 1	IP65	5
KEL-ER 24 10-BS	99300.006	36 × 112 mm	10 -	IP65	5
KEL-U 16 2-BS	99301.001	36 × 86 mm	- 2	IP54	5
KEL-U 16 5-BS	99301.002	36 × 86 mm	4 1	IP54	5
KEL-U 16 8-BS	99301.003	36 × 86 mm	8 -	IP54	5
KEL-ER 16 2-BS	99301.004	36 × 86 mm	- 2	IP65	5
KEL-ER 16 5-BS	99301.005	36 × 86 mm	4 1	IP65	5
KEL-ER 16 8-BS	99301.006	36 × 86 mm	8 -	IP65	5
KEL-E5-BS	99302.001	24 × 112 mm	5 -	IP54	5
KEL-ER-E5-BS	99302.002	24 × 112 mm	5 -	IP65	5
KEL-DPU 24 13-BS gy	99300.010	36 × 112 mm	-	IP65 / IP66	5
KEL-DPU 24 14-BS gy	99300.011	36 × 112 mm	-	IP65 / IP66	5
KEL-DPU 24 16-BS gy	99300.012	36 × 112 mm	-	IP65 / IP66	5
KEL-DPU 24 16-1-BS gy	99300.013	36 × 112 mm	-	IP65 / IP66	5
KEL-DPU 24 17-BS gy	99300.014	36 × 112 mm	-	IP65 / IP66	5
KEL-DPU 24 20-BS gy	99300.015	36 × 112 mm	-	IP65 / IP66	5
KEL-DPU 24 21-BS gy	99300.016	36 × 112 mm	-	IP65 / IP66	5
KEL-DPU 24 32-BS gy	99300.017	36 × 112 mm	-	IP65 / IP66	5
KEL-DPZ 24 14-BS gy	99300.018	36 × 112 mm	-	IP65 / IP66	5
KEL-DPZ 24 15-BS gy	99300.019	36 × 112 mm	-	IP65 / IP66	5
KEL-DPZ 24 16-BS gy	99300.020	36 × 112 mm	-	IP65 / IP66	5
KEL-DPZ 24 17-BS gy	99300.021	36 × 112 mm	-	IP65 / IP66	5
KEL-DPZ 24 25-BS gy	99300.022	36 × 112 mm	-	IP65 / IP66	5
KEL-DPZ 24 32-BS gy	99300.023	36 × 112 mm	-	IP65 / IP66	5
KEL-DPZ 24 42-BS gy	99300.024	36 × 112 mm	-	IP65 / IP66	5

Product Description

icotek cable entry frames and plates with fire penetration seals, approved for use in railroad technology (meeting the standards EN 45545-2, EN 45545-3 and EN 1363-1).

The intumescent (foaming) IFPS fire penetration seals which are mounted at the backside of the cable entry components consist of expandable graphite and increase their volume by a multiple in case of a fire.

This creates a barrier which prevents a penetration of flames and high heat from one room into another for the longest possible period.

Advantages & Benefits

- Approved for use in railroad technology (EN 45545-2, EN 45545-3 and EN 1363-1)
- Easy assembly
- High cable density
- Only one fire penetration seal per cable entry component required
- Large product variety
- Ingress protection up to NEMA 4X / IP66
- High classifications E45 / E130

Specifications

Cable entry comp. See standard products (p. 8 - 67)
Fire penetration seal Intumescent (foaming)
Material Graphite (C)

Scope of Delivery

Each 1 cable entry frame / plate
+ suitable fire penetration seal.

Suitable grommets are not included in the shipment and have to be ordered separately.

Appendix

Technical Data and Comments

At a Glance ...

Technical data and drilling templates at a glance.

IP rating according to IEC/EN 60529 and flammability classification according to UL94.

Reference list, abbreviations and certificates.



Appendix

Technical Data and Comments

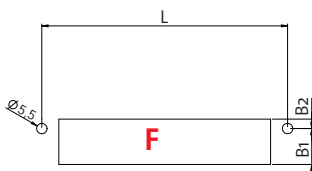
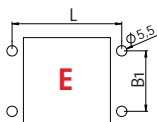
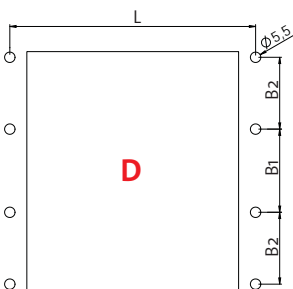
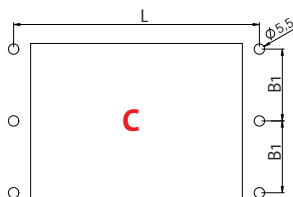
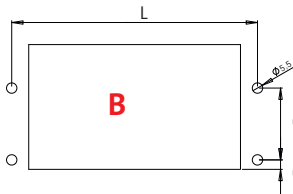
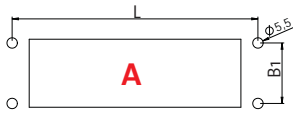
Chapter Content

Technical Data	
Drilling Templates and Cut-outs	200 - 201
Appendix	
Certificates	202 - 203
Appendix	
Flammability Classification According to UL94	204
Appendix	
IP Sealing Rates According to IEC/EN 60529	205
Appendix	
General Reference Notes	206
Appendix	
Reference List	207 - 210
Appendix	
Abbreviations	210



Technical Data

Drilling Templates



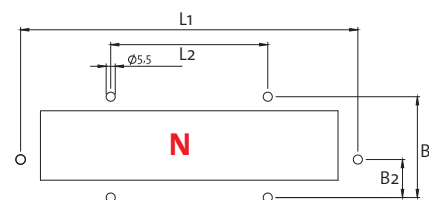
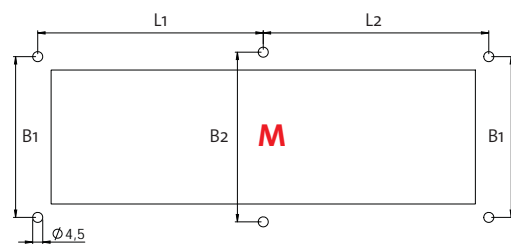
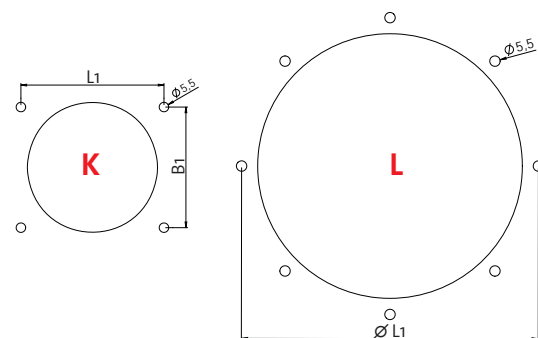
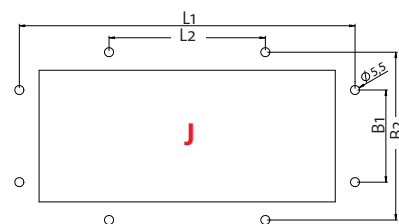
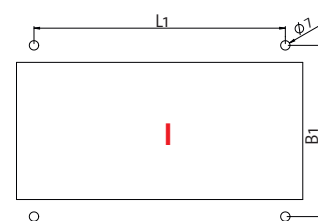
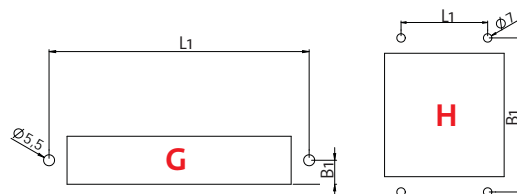
Type	Page	Cut-out type	Drilling template [mm]			Cut-out h x l [mm]
			L	B1	B2	
KEL(-U/-ER) 24 x KEL-FG A KEL-QUICK 24 10 KEL-BES(-S) 24 KEL-DPZ 24 x KEL-DPU 24 x	8 - 9 28 50 58 66 - 67 64 - 65	A	130	32	-	112 x 36
KEL-SNAP 24	37	A	130	32	-	max. 112 x 46
KEL(-U/-ER) 16 x KEL-QUICK 16 8 KEL-BES(-S) 16	10 - 11 50 - 51 58	A	103	32	-	86 x 36
KEL-SNAP 16	36	A	103	32	-	max. 86 x 46
KEL(-U/-ER) 10 x KEL-QUICK 10 6 KEL-SNAP 10 KEL-BES(-S) 10	12 - 13 50 36 58	A	83	32	-	65 x 36
KEL 24 x-E KEL 16 x-E	22 25	B	130 103	38	5	112 x 66 86 x 66
KEL 24 x-MT KEL 16 x-MT	23 26	C	130 103	38	-	112 x 82 86 x 82
KEL 24 x-2MT KEL 16 x-2MT	24 27	D	130 103	44	38	112 x 126 86 x 126
KEL(-U/-ER)-B KEL-DPZ-B	14 - 15 68	E	58	32	-	46 x 46
KEL-SNAP-B	36	E	56	32	-	38 x 46
KEL-FG B KEL-QUICK-B4	29 51	E	62.5 58	32	-	36 x 46
KEL(-ER)-E x KEL-QUICK-E KEL-FL x	16 - 17 30	F	E2: 58 E3: 83 E4: 103 E5: 130	19	5	E2: 43 x 24 E3: 65 x 24 E4: 86 x 24 E5: 112 x 24



Technical Data

Drilling Templates

Type	Page	Cut-out type	Drilling template [mm]				Cut-out h x l [mm]
			L1	L2	B1	B2	
KEL-DPZ-E	67	G	130	-	9	-	112 x 18
KEL-JUMBO 1	34	H	56.5	-	100.5	-	78 x 80.5
KEL-JUMBO 2	34	I	147.5	-	100.5	-	168 x 80.5
KEL 183	32	J	204	95	56	102	180 x 80
KEL 183-E	32	N	204	95	61	23	180 x 42
KEL-JUMBO flex	78	K	70	-	70	-	∅ 75.5
KEL-ULTRA flex	79	L	∅ 157	-	-	-	∅ 140
KEL-DPZ-KL	68	M	101	101	72	76	190 x 60



Appendix

Certificates








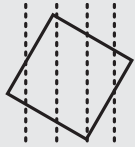

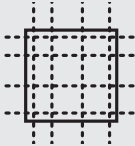

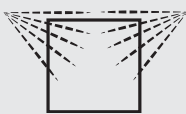

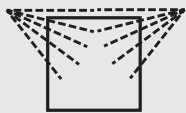
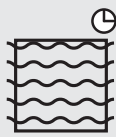
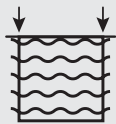
Product	IP54	IP64	IP65	IP66	IP67	IP68	NEMA TYPE 12	NEMA TYPE 4X	UL US	DNV-GL	HL3 EN 45545-2	UV ISO 4892-2A	ECOLAB certified	ATEX	RoHS compliant	Flame class UL94		Halogen free
	IP rating						NEMA type		UL/UR	GL	EN45545-2	UV	ECOLAB	ATEX	RoHS	HB	Vo	Silicone free
	IP54	IP64	IP65	IP66	IP67	IP68	12	4X			HL3							
Product group 1:																		
KEL 24/16/10/-B	■						■		■	■	■	■	■	■	■		■	■
KEL 24-E/-MT/-2MT	■								■	■	■	■	■	■	■		■	■
KEL 16-E/-MT/-2MT	■									■	■	■	■	■	■		■	■
KEL-ER 24/16/10/-B			■					■	■	■	■	■	■	■	■		■	■
KEL-U 24/16/10/-B	■						■		■	■	■	■	■	■	■		■	■
KEL-E	■						■		■	■	■	■	■	■	■		■	■
KEL-ER-E			■				■		■	■	■	■	■	■	■		■	■
KEL-FG-A / -B	■									■	■	■	■	■	■		■	■
KEL-FG-E	■									■	■	■	■	■	■		■	■
KEL-SNAP	■						■		■	■	■	■	■	■	■		■	■
KVT gy	■						■		■	■	■	■	■	■	■		■	■
KVT bk	■						■		■	■	■	■	■	■	■		■	■
KVT 80 gy	■						■		■	■	■	■	■	■	■		■	■
KVT 80 bk	■						■		■	■	■	■	■	■	■		■	■
KVT-SNAP	■								■	■	■	■	■	■	■		■	■
KVT-W90 gy	■								■	■	■	■	■	■	■		■	■
KVT-W90 bk	■								■	■	■	■	■	■	■		■	■
KT small gy, single	■		■				■	■	■	■	■	■	■	■	■		■	■
KT small bk, single	■		■									■	■	■	■	■	■	
KT small gy, multi	■						■		■	■	■	■	■	■	■		■	■
KT small bk, multi	■											■	■	■	■	■	■	
KT large gy	■		■				■	■	■	■	■	■	■	■	■		■	■
KT large bk	■		■									■	■	■	■	■	■	
KTMB small/ large	■						■		■	■	■	■	■	■	■		■	■
KT-DPF small gy	■						■		■	■	■	■	■	■	■		■	■
KT-DPF small bk	■											■	■	■	■	■	■	
KT-DPF large gy	■						■		■	■	■	■	■	■	■		■	■
KT-DPF large bk	■											■	■	■	■	■	■	
DT	■						■		■	■	■	■	■	■	■		■	■
ST							■		■	■	■	■	■	■	■		■	■
KEL-FL	■								■	■	■	■	■	■	■		■	■
FT	■								■	■	■	■	■	■	■		■	■
KEL 183	■						■		■	■	■	■	■	■	■		■	■
KEL 183-E	■									■	■	■	■	■	■		■	■
KTMB 183	■						■		■	■	■	■	■	■	■		■	■
KEL-JUMBO 1 & 2	■						■		■	■	■	■	■	■	■		■	■
KTF	■						■		■	■	■	■	■	■	■		■	■
KEL-QUICK 24/16/10/-B/-E	■								■	■	■	■	■	■	■		■	■
QVT	■									■	■	■	■	■	■		■	■
QVT-CLICK	■									■	■	■	■	■	■		■	■
KEL-QTA 24/10/-B/round	■								■	■	■	■	■	■	■		■	■
KEL-QTE	■								■	■	■	■	■	■	■		■	■
QT	■								■	■	■	■	■	■	■		■	■
KEL-BES(-S) 24/16/10/round															■		■	■

Appendix Certificates

Product	IP rating						NEMA type		UL/UR	GL	EN45545-2	UV	ECOLAB	ATEX	RoHS	Flame class UL94		Halogen free
	IP54	IP64	IP65	IP66	IP67	IP68	12	4X			HL3					HB	Vo	Silicone free
Product Group 2:																		
KEL-DPU 24 gy			■	■				■	■		■	■	■	■	■		■	■
KEL-DPU 24 bk			■	■				■	■		■	■	■	■	■		■	■
KEL-DPZ 24 gy			■	■				■	■	■	■	■	■	■	■		■	■
KEL-DPZ 24 bk			■	■				■	■	■	■	■	■	■	■		■	■
KEL-DPZ-B gy				■				■	■	■	■	■	■	■	■		■	■
KEL-DPZ-B bk				■				■	■	■	■	■	■	■	■		■	■
KEL-DPZ-E gy				■				■	■	■	■	■	■	■	■		■	■
KEL-DPZ-E bk				■				■	■	■	■	■	■	■	■		■	■
KEL-DPZ-KL gy			■					■	■	■	■	■	■	■	■		■	■
KEL-DPZ-KL bk			■					■	■	■	■	■	■	■	■		■	■
KEL-DPZ round gy				■	■	■		■	■	■	■	■	■	■	■		■	■
KEL-DPZ round bk				■	■	■		■	■	■	■	■	■	■	■		■	■
KEL-DP 24 gy		■						■	■	■	■	■	■	■	■		■	■
KEL-DP 24 bk		■						■	■	■	■	■	■	■	■		■	■
KEL-DP-E gy		■						■	■	■	■	■	■	■	■		■	■
KEL-DP-E bk		■						■	■	■	■	■	■	■	■		■	■
KEL-DP round gy			■					■	■	■	■	■	■	■	■		■	■
KEL-DP round bk			■					■	■	■	■	■	■	■	■		■	■
ST-B								■	■					■			■	■
KEL-DPF gy				■		■		■	■	■	■	■	■	■	■		■	■
KEL-DPF bk				■		■		■	■	■	■	■	■	■	■		■	■
KEL-JUMBO flex	■							■	■	■	■	■	■	■	■		■	■
KEL-ULTRA flex				■				■	■	■	■	■	■	■	■		■	■
Product Group 3:																		
KZL										■	■	■	■	■	■		■	■
SF ZL										■	■	■	■	■	■		■	■
ZL										■	■	■	■	■	■		■	■
ZL-AB										■	■	■	■	■	■		■	■
ZL o3 o4 o5										■	■	■	■	■	■		■	■
Product Group 5:																		
CONFIX FWS-A/-B gy	■													■			■	■
CONFIX FWS-A/-B bk	■													■			■	■
Product Group 6:																		
KDR-ESR	■									■				■			■	■
KDR ₂ / KDR-BMP / MP	■													■			■	■
BPK		■						■	■					■			■	■
BPK-RF	■							■	■					■			■	■
BPM			■											■			■	■
BPK-SNAP	■													■	■		■	■
KGM									■					■			■	■
KBH-S/KBH-R										■	■						■	■



Appendix

Sealing Rates According to IEC/EN 60529					
1st digit	Solid particle protection...		2nd digit	Liquid ingress protection...	
0		no protection	0		no protection
1		against any surface of the body > 50 mm	1		against dripping water (vertically falling drops)
2		against any surface of the body > 12.5 mm	2		against dripping water when tilted at 15°
3		against objects > 2.5 mm (tools)	3		against spraying water at any angle up to 60°
4		against objects > 1 mm (most wires)	4		against splashing water from any direction
5		Dust protected	5		against water jets from any direction
6		Dust tight	6		against powerful water jets from any direction by a nozzle
			7		Suitable for temporary immersion in water up to 1 m depth
			8		Suitable for continuous immersion in water*

*specified by the manufacturer

Appendix

Flammability Classification According to UL94



Flame Class UL94-HB

Applying the horizontal burning test the material burns slowly. For parts with a thickness up to 3 mm the burning speed must not be faster than 3 inches/min and for parts with a thickness over 3 mm the burning speed must not be faster than 1.5 inches/mm.

Materials which burn faster are not UL certified.

Flame Class UL94-V2

Applying the vertical burning test, the material must normally extinguish itself after 25 seconds or less, but max. after 30 seconds. The material may drop and cotton wool placed under the probe may inflame. The material must not glow longer than 60 seconds.

Flame Class UL94-V1

Applying the vertical burning test, the material must normally extinguish itself after 25 seconds or less, but max. after 30 seconds. The material may drop and cotton wool placed under the probe may inflame. The material must not glow longer than 30 seconds.

Flame Class UL94-V0

Applying the vertical burning test, the material must normally extinguish itself after 5 seconds or less, but max. after 10 seconds. The material may drop down, but cotton wool placed under the probe must not inflame. The material must not glow longer than 30 seconds.

Appendix

General Reference Notes



We provide all the information on chemical and physical properties of our products and technical advice to the best of our knowledge.

Please do your own examinations and tests to determine the practical suitability of the products for the usage intended.

Application, use and installation of the products is the customer's responsibility. Legal and regulatory provisions and any rights to third parties have to be observed.

Moreover our general terms and conditions, which can be requested from us, apply.

This catalog was prepared with the greatest care. All technical data and information have been reviewed before printing. Due to continuous improvement and development of our production program we reserve, modify products from this catalog or to take out products from our product range. Therefore, technical information and products which are included in this catalog may differ – without prior notice.

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Appendix

Reference List 1|4

Order No.	Page	Order No.	Page	Order No.	Page	Order No.	Page	Order No.	Page	Order No.	Page	Order No.	Page	Order No.	Page
31100	171	31604	141	32367	85	36072	169	36436	132	36780.2	113	36784.43	113	36789.21	104
31110	171	31606	141	32700	134	36074	169	36438	132	36780.21	113	36785.01	112	36789.22	104
31120	171	31610	141	32701	134	36100	102	36440	132	36780.22	113	36785.02	112	36789.23	104
31140	171	31612	141	32702	134	36150	169	36442	132	36780.23	113	36785.03	112	36789.24	104
31200	142	31614	141	32703	134	36200	98	36444	132	36780.24	113	36785.04	112	36789.3	104
31210	142	31616	141	32704	134	36202	98	36446	132	36780.3	113	36785.1	112	36789.31	104
31220	142	31618	141	32705	134	36204	98	36448	132	36780.31	113	36785.11	112	36789.32	104
31230	142	31620	141	32706	134	36205	98	36450	132	36780.32	113	36785.12	112	36789.33	104
31240	142	31622	141	32730	134	36206	98	36452	132	36780.33	113	36785.13	112	36789.34	104
31250	142	31624	141	32731	134	36207	98	36454	132	36780.34	113	36785.14	112	36789.4	104
31260	142	31626	141	32732	134	36208	98	36458	132	36780.4	113	36785.2	112	36789.41	104
31300	143	32112	86	32733	134	36209	98	36459	132	36780.41	113	36785.21	112	36789.42	104
31310	143	32114	86	32734	134	36213	98	36460	132	36780.42	113	36785.22	112	36789.43	104
31320	143	32116	86	32735	134	36221	100	36462	132	36780.43	113	36785.23	112	36810	101
31330	143	32222	84	32736	134	36222	130	36464	132	36781.01	112	36785.24	112	36815	101
31340	143	32224	84	32737	134	36224	130	36465	132	36781.02	112	36785.3	112	36820	101
31350	143	32226	84	32738	134	36226	130	36466	132	36781.03	112	36785.31	112	36850	99
31360	143	32228	84	32739	134	36228	130	36467	132	36781.04	112	36785.32	112	36855	99
31380	138	32230	84	32741	134	36229	101	36470	132	36781.1	112	36785.33	112	36860	99
31381	138	32232	84	32742	134	36230	100	36471	132	36781.11	112	36785.34	112	36865	99
31383	138	32234	84	32743	134	36231	130	36472	132	36781.12	112	36785.4	112	36870	99
31384	138	32236	84	32760	134	36232	130	36482	132	36781.13	112	36785.41	112	36875	99
31386	138	32250	87	32761	134	36234	130	36484	132	36781.14	112	36785.42	112	36880	99
31387	138	32251	89	32762	134	36235	130	36486	132	36781.2	112	36785.43	112	36886.1	107
31389	138	32252	89	32763	134	36236	130	36488	132	36781.21	112	36786.1	103	36886.2	107
31390	138	32260	87	32764	134	36237	130	36490	132	36781.22	112	36786.2	103	36886.3	107
31392	138	32262	87	32765	134	36238	130	36500	130	36781.23	112	36786.3	103	36886.4	107
31393	138	32264	87	32766	135	36243	100	36502	130	36781.24	112	36786.4	103	36887.1	107
31395	138	32270	85	32767	135	36244	100	36504	130	36781.3	112	36786.5	103	36887.2	107
31396	138	32271	85	32768	135	36245	100	36506	130	36781.31	112	36786.6	103	36887.3	107
31410	139	32272	85	32769	135	36246	100	36520	128	36781.32	112	36787.1	102	36887.4	107
31411	139	32273	85	32770	135	36247	100	36522	128	36781.33	112	36787.2	102	36910	106
31413	139	32274	85	32771	135	36248	100	36524	128	36781.34	112	36787.3	102	36915	106
31414	139	32275	85	32772	135	36249	100	36525	126	36781.4	112	36787.4	102	36920	106
31416	139	32276	85	32773	135	36250	100	36526	128	36781.41	112	36788.01	105	36925	106
31417	139	32277	85	32774	135	36251	108	36527	126	36781.42	112	36788.02	105	36930	106
31419	139	32280	85	32775	135	36252	100	36530	128	36781.43	112	36788.03	105	36935	106
31420	139	32281	85	32800	135	36253	108	36540	128	36782.1	111	36788.04	105	36940	106
31422	139	32282	85	32801	135	36255	108	36550	128	36782.2	111	36788.1	105	36952	123
31423	139	32283	85	32802	135	36256	108	36562	128	36782.3	111	36788.11	105	36953	123
31425	139	32284	85	32803	135	36257	108	36650.1	116	36782.4	111	36788.12	105	36954	123
31426	139	32285	85	32804	135	36258	108	36650.2	116	36783.1	110	36788.13	105	36955	123
31550	140	32286	85	32805	135	36259	108	36650.3	116	36783.2	110	36788.14	105	36958	123
31552	140	32287	85	32806	135	36282	131	36656.1	116	36783.3	110	36788.2	105	36962	123
31554	140	32290	85	32807	135	36283	131	36656.2	116	36783.4	110	36788.21	105	36963	123
31556	140	32291	85	32808	135	36284	131	36656.3	116	36784.01	113	36788.22	105	36965	123
31558	140	32292	85	32809	135	36285	131	36696	130	36784.02	113	36788.23	105	36984	123
31560	140	32293	85	32810	135	36286	131	36700	130	36784.03	113	36788.24	105	36985	123
31562	140	32294	85	32811	135	36287	131	36704	130	36784.04	113	36788.3	105	37150	133
31564	140	32295	85	36000	169	36322	133	36708	130	36784.1	113	36788.31	105	37152	133
31566	140	32296	85	36002	169	36324	133	36778.1	111	36784.11	113	36788.32	105	37154	133
31570	140	32297	85	36008	169	36326	133	36778.2	111	36784.12	113	36788.33	105	37156	133
31572	140	32351	88	36010	169	36328	133	36778.3	111	36784.13	113	36788.34	105	37158	133
31574	140	32352	88	36016	169	36330	133	36778.4	111	36784.14	113	36788.4	105	37159	133
31576	140	32353	88	36018	169	36332	133	36779.1	110	36784.2	113	36788.41	105	37180.1	129
31578	140	32354	88	36024	169	36400	132	36779.2	110	36784.21	113	36788.42	105	37180.2	129
31580	140	32355	88	36026	169	36412	132	36779.3	110	36784.22	113	36788.43	105	37180.3	129
31582	140	32356	88	36032	169	36414	132	36779.4	110	36784.23	113	36789.01	104	37180.4	129
31584	140	32357	88	36034	169	36416	132	36780.01	113	36784.24	113	36789.02	104	37181.1	129
31586	140	32358	88	36040	169	36418	132	36780.02	113	36784.3	113	36789.03	104	37181.2	129
31590	141	32360	85	36042	169	36422	132	36780.03	113	36784.31	113	36789.04	104	37181.3	129
31592	141	32361	85	36048	169	36424	132	36780.04	113	36784.32	113	36789.1	104	37181.4	129
31594	141	32362	85	36050	169	36426	132	36780.1	113	36784.33	113	36789.11	104	37505.01	118
31596	141	32363	85	36056	169	36428	132	36780.11	113	36784.34	113	36789.12	104	37505.02	118
31598	141	32364	85	36058	169	36430	132	36780.12	113	36784.4	113	36789.13	104	37505.03	118
31600	141	32365	85	36064	169	36432	132	36780.13	113	36784.41	113	36789.14	104	37505.1	118
31602	141	32366	85	36066	169	36434	132	36780.14	113	36784.42	113	36789.2	104	37505.11	118



Appendix

Reference List 2|4

Order No.	Page	Order No.	Page	Order No.	Page	Order No.	Page	Order No.	Page	Order No.	Page	Order No.	Page	Order No.	Page
37505.12	118	39170	127	41228	46	41475	47	42204.200	21	42382	35	42893	49	43520	74
37505.13	118	39180	127	41229	46	41480	47	42206	21	42385	35	42895	49	43521	74
37505.2	118	39190	127	41230	46	41500	48	42206.200	21	42388	35	42897	49	43522	74
37505.21	118	39800	43	41231	46	41510	48	42207	22	42391	35	42899	49	43523	74
37505.22	118	39900	44	41232	46	41520	48	42207.200	22	42394	35	42901	49	43524	74
37505.23	118	39901	44	41233	46	41530	48	42208	22	42397	35	42903	49	43525	74
37505.3	118	39902	45	41234	46	41991	167	42208.200	22	42410	50	42905	49	43526	74
37505.31	118	39903	45	41251	44	41992	167	42209	22	42414	51	42906	49	43527	74
37505.32	118	39904	45	41252	46	41994	167	42209.200	22	42415	50	42908	49	43528	74
37505.33	118	39905	45	41253	46	41995	167	42212	20	42418	50	42909	49	43531	76
37507.01	119	39906	45	41257	44	42003	168	42212.200	20	42430	51	42920	151	43532	76
37507.02	119	39907	45	41258	44	42004	168	42216	20	42434	51	42922	151	43533	76
37507.03	119	39908	45	41260	47	42007	168	42216.200	20	42503	56	42923	151	43536	76
37507.1	119	39909	45	41261	47	42010	166	42221	23	42504	56	42924	151	43537	76
37507.11	119	39910	45	41262	47	42010.002	166	42221.200	23	42505	56	42941	151	43538	76
37507.12	119	39911	45	41302	44	42011	167	42222	23	42506	56	42943	151	43550	77
37507.13	119	39912	44	41303	44	42012	167	42222.200	23	42507	56	42945	151	43551	77
37507.2	119	39913	44	41304	44	42013	167	42223	24	42508	56	42952	151	43552	77
37507.21	119	39914	45	41305	44	42014	167	42223.200	24	42509	56	42953	151	43553	77
37507.22	119	39915	45	41306	44	42015	166	42224	23	42510	56	42954	151	43554	77
37507.23	119	39916	45	41307	44	42015.002	166	42224.200	23	42511	56	42955	151	43555	77
37507.3	119	39917	45	41308	44	42016	166	42225	23	42512	56	42956	151	43556	77
37507.31	119	39918	45	41309	44	42016.002	166	42225.200	23	42513	56	42957	151	43560	76
37507.32	119	39921	45	41310	44	42017	168	42226	24	42514	56	42958	151	43561	76
37507.33	119	39922	45	41311	44	42023	167	42226.200	24	42540	57	42959	151	43562	77
37510.1	118	39923	45	41312	44	42024	166	42227	24	42566	57	42999	117	43563	76
37510.2	118	39924	45	41313	44	42024.002	166	42227.200	24	42568	57	42999.1000	147	43564	77
37510.3	118	39929	44	41314	44	42025	167	42232	23	42570	57	43070	117	43565	76
37512.1	119	39930	44	41315	44	42026	167	42232.200	23	42571	57	43071	117	43566	77
37512.2	119	39931	44	41316	46	42027	167	42233	24	42572	57	43072	117	43567	77
37512.3	119	39932	45	41317	46	42028	167	42233.200	24	42573	56	43073	117	43568	77
37514.1	119	39933	45	41318	46	42029	167	42234	24	42574	56	43074	117	43569	77
37514.2	119	39934	44	41319	46	42030	167	42234.200	24	42575	56	43075	117	43570	77
37514.3	119	39935	45	41320	46	42031	167	42241	18	42576	57	43076	117	43576	75
37600	96	39936	45	41321	46	42032	167	42241.200	18	42578	57	43077	117	43578	75
37602	96	39937	45	41322	46	42033	167	42244	18	42580	57	43078	117	43581	75
37608	96	39938	45	41323	46	42038	31	42244.200	18	42582	57	43079	117	43583	75
37610	96	39939	45	41324	46	42039	31	42247	18	42583	57	43080	117	43585	75
37612	96	39940	45	41325	46	42040	31	42247.200	18	42584	57	43081	117	43587	75
37614	96	41200	45	41326	46	42042	31	42248	18	42585	57	43082	117	43591	75
37616	96	41201	45	41327	46	42044	31	42248.200	18	42586	57	43083	117	43622	55
37618	96	41202	45	41328	46	42046	31	42249	16	42614	80	43084	117	43626	55
37620	96	41203	44	41329	46	42140	25	42249.200	16	42616	80	43300	159	43632	55
37622	96	41204	44	41330	46	42140.200	25	42250	16	42620	166	43302	159	43636	55
38005	121	41205	44	41331	46	42141	25	42250.200	16	42630	81	43304	159	43642	54
38010	121	41206	44	41332	46	42141.200	25	42258	16	42631	81	43306	159	43643	54
38015	121	41207	44	41333	46	42143	26	42258.200	16	42633	167	43308	159	43644	54
38020	121	41208	44	41334	46	42143.200	26	42259	16	42652	79	43310	159	43645	54
38025	121	41209	44	41351	44	42144	26	42259.200	16	42653	79	43312	159	43655	54
38030	121	41210	44	41352	46	42144.200	26	42320	28	42654	79	43314	159	43656	54
38035	121	41211	44	41353	46	42145	26	42320.200	28	42655	79	43316	159	43658	54
38040	121	41212	44	41360	47	42145.200	26	42322	28	42656	79	43318	159	43659	54
38045	121	41213	44	41361	47	42147	27	42322.200	28	42657	79	43320	159	43660	54
38050	121	41214	44	41362	47	42147.200	27	42324	28	42658	79	43322	159	43675.001	70
38105	122	41215	44	41410	35	42148	27	42324.200	28	42801	78	43324	159	43675.101	70
38110	122	41216	46	41415	35	42148.200	27	42330	29	42806	78	43412	55	43700	66
38115	122	41217	46	41420	35	42149	27	42330.200	29	42810	78	43413	55	43705	66
38120	122	41218	46	41425	35	42149.200	27	42332	29	42812	78	43414	55	43710	67
38125	122	41219	46	41430	35	42162	19	42332.200	29	42816	78	43415	55	43715	67
38130	122	41220	46	41432	47	42162.200	19	42350	34	42822	78	43508	74	43720	66
38135	122	41221	46	41434	47	42164	19	42350.200	34	42877	49	43511	74	43725	66
38140	122	41222	46	41436	47	42164.200	19	42360	34	42881	49	43512	74	43730	67
38145	122	41223	46	41438	47	42165	19	42360.200	34	42883	49	43514	74	43732	72
38150	122	41224	46	41440	47	42165.200	19	42370	35	42885	49	43515	74	43733	72
39110	128	41225	46	41460	47	42168	19	42371	35	42887	49	43516	74	43734	72
39150	127	41226	46	41465	47	42168.200	19	42376	35	42889	49	43518	74	43735	67
39160	127	41227	46	41470	47	42204	21	42379	35	42891	49	43519	74	43741	58

Appendix

Reference List 3|4

Order No.	Page	Order No.	Page	Order No.	Page	Order No.	Page	Order No.	Page	Order No.	Page	Order No.	Page
43741	72	45112	39	47255	32	49156.200	176	49306	189	49471.200	177	50508	74
43750	72	45115	39	47255.200	32	49158	179	49307	189	49472	177	50511	74
43751	72	45130	41	48162	11	49158.200	179	49311	189	49472.200	177	50512	74
43752	72	45134	41	48162.200	11	49160	179	49312	189	49473	177	50514	74
43756	73	45152	41	48165	11	49160.200	179	49313	189	49473.200	177	50515	74
43758	73	45154	41	48165.200	11	49162	179	49317	189	49479	181	50516	74
43760	73	45203	38	48168	11	49162.200	179	49318	189	49480	181	50518	74
43761	73	45204	39	48168.200	11	49164	179	49319	189	49481	181	50519	74
43762	73	45205	38	48204	15	49164.200	179	49401	191	49482	181	50520	74
43763	73	45206	39	48204.200	15	49166	179	49402	191	49483	181	50521	74
43780	69	45212	39	48206	15	49166.200	179	49403	191	49484	181	50522	74
43790	69	45215	39	48206.200	15	49168	179	49404	191	49485	181	50523	74
43794	68	45236	40	48212	13	49168.200	179	49405	191	49486	181	50524	74
43796	68	45237	40	48212.200	13	49170	179	49410	191	49487	181	50525	74
43798	68	45238	40	48216	13	49170.200	179	49411	191	49488	181	50526	74
43832	165	45239	40	48216.200	13	49172	179	49412	191	49489	181	50527	74
43834	163	45404	42	48241	9	49172.200	179	49413	191	49490	181	50528	74
43836	161	45406	42	48241.200	9	49174	179	49414	191	49496	182	50531	76
43838	161	45414	42	48244	9	49174.200	179	49420	190	49496.200	182	50532	76
43840	161	45416	42	48244.200	9	49176	179	49421	190	49497	182	50533	76
43842	161	45424	42	48247	9	49176.200	179	49422	190	49497.200	182	50550	77
43846	161	45426	42	48247.200	9	49178	179	49423	190	49498	182	50551	77
43848	161	45692	52	48249	17	49178.200	179	49424	190	49498.200	182	50552	77
43852	163	45695	52	48249.200	17	49180	179	49425	190	49499	182	50553	77
43853	163	45702	52	48250	17	49180.200	179	49426	190	49499.200	182	50554	77
43854	163	45711	52	48250.200	17	49182	179	49427	190	49500	182	50555	77
43855	163	45715	52	48258	17	49182.200	179	49428	190	49500.200	182	50556	77
43856	163	45722	52	48258.200	17	49184	179	49429	190	49506	183	50560	76
43861	161	45730	53	48259	17	49184.200	179	49430	190	49506.200	183	50562	77
43865	165	45732	53	48259.200	17	49201	189	49431	190	49507	183	50564	77
43866	165	45734	53	49056	22	49202	189	49432	190	49507.200	183	50566	77
43871	161	46100	30	49056.200	22	49203	189	49440	190	49513	187	50567	77
43882	157	46105	30	49101	178	49204	189	49441	190	49514	187	50568	77
43883	157	46110	30	49101.200	178	49205	189	49442	190	49515	187	50569	77
43886	157	46115	30	49102	178	49206	189	49443	190	49516	187	50570	77
43887	157	46120	30	49102.200	178	49207	189	49444	190	49517	187	50576	75
43888	157	46125	30	49103	178	49208	189	49445	190	49518	187	50578	75
43889	157	46130	30	49103.200	178	49211	189	49446	190	49519	187	50581	75
43890	157	46135	30	49104	178	49212	189	49447	190	49520	187	50583	75
43891	157	46140	30	49104.200	178	49213	189	49448	190	49521	187	50585	75
43894	157	46145	30	49105	178	49214	189	49449	190	49522	187	50587	75
43930	65	46150	30	49105.200	178	49215	189	49450	190	49523	187	50591	75
43932	64	46155	30	49106	178	49216	189	49451	190	49524	187	50652	79
43934	64	46201	31	49106.200	178	49217	189	49452	190	49525	187	50653	79
43936	64	46202	31	49107	178	49218	189	49455	174	49526	187	50654	79
43938	65	46203	31	49107.200	178	49221	175	49455.200	174	49527	187	50655	79
43940	64	46204	31	49108	178	49221.200	175	49456	174	49528	187	50656	79
43942	65	46210	31	49108.200	178	49222	175	49456.200	174	49534	191	50657	79
43944	64	46211	31	49109	178	49222.200	175	49457	174	49535	191	50658	79
45024	38	46212	31	49109.200	178	49223	175	49457.200	174	49538	180	50700	66
45025	38	46214	31	49110	178	49223.200	175	49458	174	49538.200	180	50705	66
45026	38	46215	31	49110.200	178	49224	175	49458.200	174	49539	180	50710	67
45027	38	46250	31	49111	178	49224.200	175	49459	174	49539.200	180	50715	67
45028	38	46251	31	49111.200	178	49225	175	49459.200	174	49540	180	50720	66
45029	38	46252	31	49112	178	49225.200	175	49460	174	49540.200	180	50725	66
45030	39	46255	31	49112.200	178	49226	175	49460.200	174	49541	180	50730	67
45031	39	46256	31	49120	184	49226.200	175	49461	174	49541.200	180	50732	72
45034	38	46300	31	49121	184	49227	175	49461.200	174	49542	180	50733	72
45035	38	46330	31	49122	184	49227.200	175	49462	174	49542.200	180	50734	72
45036	38	47200	32	49123	184	49228	175	49462.200	174	49543	180	50735	67
45037	38	47200.200	32	49150	176	49228.200	175	49463	174	49543.200	180	50741	72
45105	171	47220	32	49150.200	176	49229	175	49463.200	174	49544	180	50750	72
45106	171	47220.200	32	49152	176	49229.200	175	49464	174	49544.200	180	50751	72
45107	171	47240	32	49152.200	176	49230	175	49464.200	174	49545	180	50752	72
45108	171	47240.200	32	49154	176	49230.200	175	49470	177	49545.200	180	50756	73
45109	171	47250	32	49154.200	176	49301	189	49470.200	177	49556.001	188	50758	73
45110	171	47250.200	32	49156	176	49302	189	49471	177	49556.101	188	50760	73



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