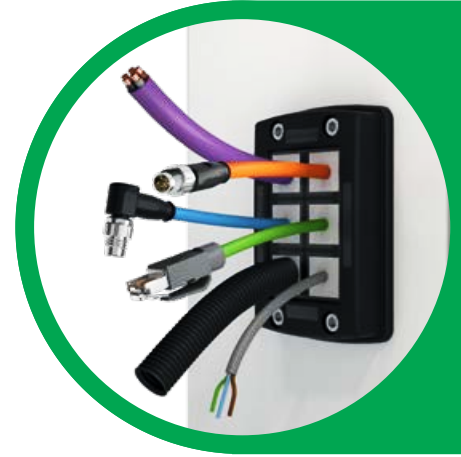


CONTA-CABLE

KDS Cable entries
KES Cable entries
SAB|SSAB|SABK Shielding solutions



Catalogue 8

 **CONTA CLIP**

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CONTA-CLIP – Thinking ahead with connection technology

CONTA-CLIP was founded in 1978. We operate globally as an owner-operated medium-sized company.

Users of electrical and electronic connection systems trust our reliable products and our many years of industrial and global market expertise.

Our company is now one of the most important manufacturers in the field.

For over 40 years, our components and solutions have been used in process and industrial automation applications, including: railway technology, materials handling, building automation, air conditioning, mechanical and facility engineering, measurement and control technology, control panel construction, shipbuilding, transformer construction and environmental technology.

Over the years, we have evolved into an innovator that sets the tone with new ideas and creative impulses.

Our employees come from a wide variety of industries and are true connectivity specialists. They understand the specific problems, requirements and challenges of our customers. This results in communication among equals.

The profits then flow into the development of new products and into modern, efficient manufacturing processes.

High quality standards throughout all departments are our top priority.

Our top-class products are supported by this interplay between top-class men and machinery. We have also designed our range of services to align with customer needs.

Our products are divided into six categories: CONTA-CONNECT for terminal blocks and accessories, CONTA-CABLE cable management systems, CONTA-ELECTRONICS for electrical and electronic switchgear cabinet components, CONTA-LABEL for marking systems, CONTA-BOX for housings, and CONTA-CON for PCB terminal blocks and connectors.

We design customer-specific solutions for electronics, provide completely assembled housings and assemblies as needed, assemble terminal blocks for series production, and quickly handle component labelling tasks.

We greet these challenges with passion and enthusiasm, because we see each customer as our partner.

CONTA-CLIP customer representatives are always ready to offer their support to the customer, because service and helpfulness are rooted deeply in our corporate philosophy.

Advantage online: the CONTA-CLIP Online Catalogue

No matter where you are, as long as you're online you can access our digital catalogue to look at our services and quickly identify suitable solutions for your requirements.

Fast results Use the full-text search, enter an order number or use the convenient "step-by-step" feature search function.

Project planning at a glance: After you've selected the products, all the master data for the materials (sales data, technical data, drawings, connection diagrams, classifications and approvals) are made available as a data sheet or export file.

Detailed inquiries about components can be sent via the shopping cart directly to our headquarters. Upon request, you will receive an e-mailed copy of your inquiry.

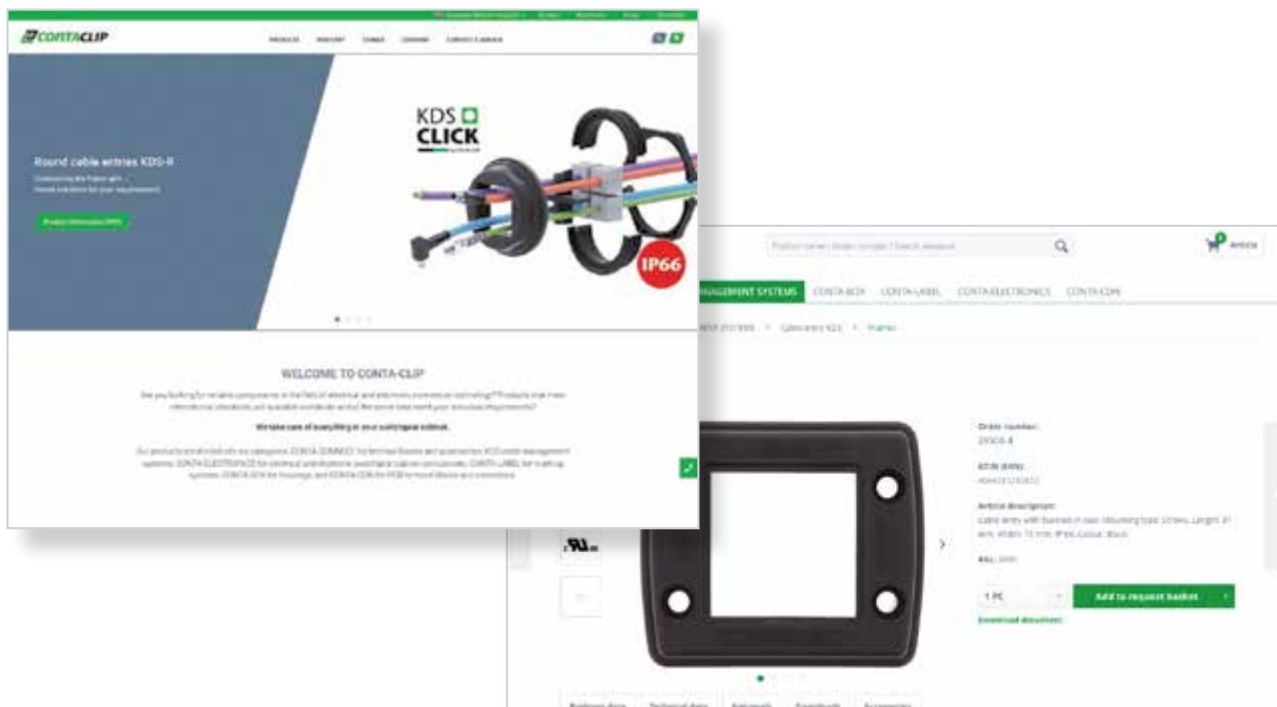
Application films: Complex functions be explained easily and clearly with sounds and images.

Printed catalogue: Would you like an offline overview? Please ask for our free printed catalogues.

Industry-specific: You will find the solutions that are relevant for your industry, according to your expertise.

Newsletter: Do you want to stay up to date? Subscribe to our newsletter! Simply register, confirm our authentication e-mail, and you'll be regularly informed about all CONTA-CLIP news.

Discover how the world of CONTA-CLIP and our website can deliver added value for you and your projects!



Globally available for you

Are you working abroad? No problem. Our worldwide sales and distribution partners help us to be globally networked and provide on-time reliable deliveries. Simply scan the QR code shown and you'll learn on our website about the sales partner responsible for your country.



Our locations in Africa

Algeria
Morocco
South Africa

Our locations in Asia

Bahrain
China
Hong Kong
India
Israel
Jordan
Malaysia
Oman
Pakistan
Qatar
Saudi Arabia
Singapore
South Korea
Taiwan
Turkey
United Arab Emirates

Our locations in Oceania

Australia
New Zealand

Our locations in Europe

Austria
Belarus
Belgium
Bulgaria
Croatia
Czech Republic
Denmark
Finland
France
Germany
Great Britain
Greece
Hungary
Iceland
Ireland
Italy
Latvia
Netherlands
Norway

Poland
Portugal
Romania
Russia
Serbia
Slovakia
Slovenia
Spain
Sweden
Switzerland
Ukraine

Our locations in North America

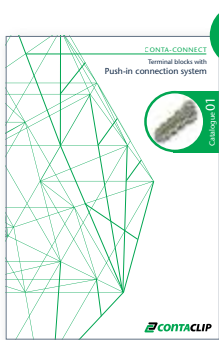
Canada
Mexico
United States

Our locations in South America

Bolivia
Brazil
Chile
Columbia
Ecuador

A complete line of products to meet your demands

The CONTA-CLIP Catalogues



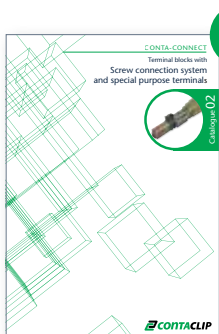
01 CONTA-CONNECT

Terminal blocks with push-in connection system

Our wide range of innovative PRK and FRK terminal blocks with the Push-in connection system include feed-through terminals, PE terminals, disconnect terminals, fused terminals, multi-level terminals, installation terminals and initiator terminals, for conductor cross-sections from 0.2 mm² to 25 mm².



Cat. no. 98070.2



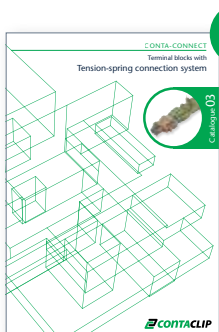
02 CONTA-CONNECT

Terminal blocks with screw connection system and special purpose terminals

Everything for classic wiring with screw connection system, also for high currents: SRK feed-through and PE terminals, RK high-temperature variants, TK transformer terminals, HSK high-power stud terminals and the SVB series screw distributor blocks.



Cat. no. 98071.2



03 CONTA-CONNECT

Terminal blocks with tension-spring connection system

Our versatile line of terminals with tension spring connections for conductor cross-sections from 0.2 mm² to 16 mm² includes: the ZRK/ZSL series of feed-through and PE terminals, the double-level ZRKD/ZSLD, the ZIKD three-level terminal blocks, motor-connection terminals, (blade-) disconnect terminals, fused terminals, direct-mount terminals, and initiator/actuator terminals for transmitting positioning, encoder and alert signals.



Cat. no. 98072.2



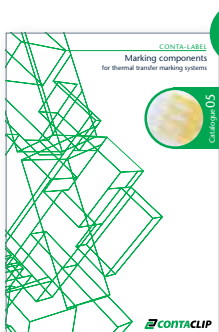
04 CONTA-CONNECT

Installation materials and other accessories for terminal blocks

Our installation products include cabling ducts, assembly tools, cable glands with metric or PG threads, DIN rails, rail holders, rail cutters and punching tools. The terminal block accessories include different versions of end stops, wire-end ferrules, and connectors.



Cat. no. 98073.2



05 CONTA-LABEL

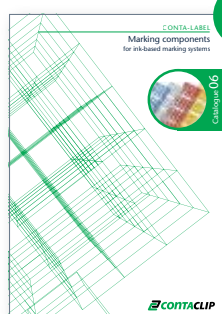
Marking components for thermal-transfer marking systems

CONTA-CLIP provides the TTPCard thermal-transfer printer and a large selection of PC, PVC and PVCF markers or labels in card format: for professional, permanent labelling of terminals, devices, conductors, cables, facilities and switchgear cabinets.



Cat. no. 98074.2

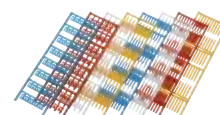
Our catalogues are available in many languages!



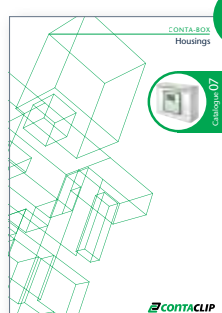
06 CONTA-LABEL

Marking components for ink-based marking systems

The CONTA-LABEL products provide polyamide markers for labelling conductors, cables, devices and facilities with ink print. These markers are available in many shapes and colours: in the classic MC Maxi-Card format for self-printing with the EMS plotter system EMS or other ink-jet systems, or ready-to-use customized printed in the PMC Pocket-Maxi-Card format.



Cat. no. 98075.2



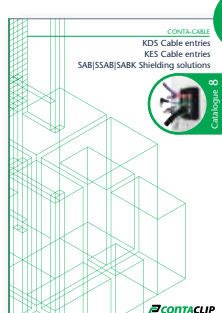
07 CONTA-BOX

Housings

Our wide variety of housings made of polystyrene, polycarbonate, polyester, ABS and aluminium deliver solutions for protecting electronic circuits, integrated devices and terminal blocks. On request, the housings can be custom-processed and assembled with our CONTA-CONNECT, CONTA-ELECTRONICS and CONTA-CON product lines.



Cat. no. 98076.2



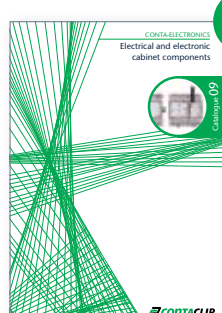
08 CONTA-CABLE

KDS cable entries, KES cable entries, SAB|SSAB|SABK shielding solutions

The KDS and KES cable entries enable a tool-free, IP66-sealed feed-through for unassembled and assembled cables and hoses. The feed-through openings can be adapted at any time to meet your requirements. The SAB shield-connection clips can be used to provide a reliable shield contact with conductor diameters from 3 mm to 35 mm.



Cat. no. 98077.2



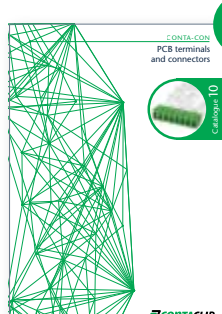
09 CONTA-ELECTRONICS

Electrical and electronic cabinet components

Our CONTA-ELECTRONICS products provide active and passive components for the transfer and conversion of analogue and digital signals at the coupling level. This product line includes power supplies, multi-function timing relays, coupling relays, digital switching modules, interface modules, opto-couplers, signal converters, GSM communication modules and much more.



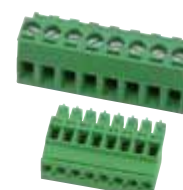
Cat. no. 98078.2



10 CONTA-CON

PCB terminals and connectors

This catalogue presents our wide variety of CONTA-CON PCB terminal blocks and connector systems. The modular components can be configured for any required number of poles. They are available in the wire connection types: wire protection, eccentric, clamping yoke, and (for demanding operating conditions) with tension-spring or Push-in wire terminations. This product range is supplemented by the modular feed-through terminals of the SDK series.



Cat. no. 98079.2

Cable management systems

KDS cable entries

The **KDS** cable entry system has a modular design consisting of frames, frame inlays and seals. This enables quick and easy dimensioning of feed-through openings for pre-assembled cables – without the use of tools. The system reliably ensures an IP66 seal. Since the diameter, shape (round or with corners) and number of frame openings can be adapted at any time without any costly dismantling of the frame, switchgear cabinets or machine housings can be uniformly prepared for different purposes using KDS. This results in significantly less costs and warehousing overhead.

Our wide range of **KDS** seals currently includes more than 130 variants and is constantly being expanded.

KES cable entries

The **KES** cable entries enable unassembled cables or pneumatic hoses to be quickly inserted into switchgear cabinets or housings without using tools. The **KES** entry plates feature a dimensionally stable, elastomer-encapsulated polyamide frame. In order to insert the required number of cables, the surface membrane is first pierced with a screwdriver. Then, the unassembled cables are easily pushed through. Tapered inlet grommets on the back of the plate provide IP66 sealing and reliable strain relief. With up to 32 cables per plate, the **KES** achieves a significantly higher packaging density than conventional entry systems.

The **KES-E** cable entry system enables you to insert many cables (without plugs) with diameters ranging from 1.0 mm to 16.1 mm into a very confined space. No tools are needed to insert the cable entry into the opening provided. For inserting the cables, the appropriate membrane is pierced and the cables are simply installed through it. The material TPE guarantees that IP54 protection is maintained.



Get started
now with
CONTA-CLIP!

SAB|SSAB|SABK shielding solutions

The **SAB** shield-connection clips provides an easy tool-free contact for the cable shield. It is a modular system for mounting on DIN rails, busbars or direct mounting. The system includes shield-connection brackets for cable diameters from 1.5 mm to 18 mm, clamp mounting feet for all attachment types, busbar holders and shield-connection clips with screw or spring contacts. The stripped cable is easily pushed into the **SABK** shield-connection clips. The spring force in the clip then ensures that the shield has a consistently good contact. The large-area shield contact ensures low-impedance discharge resistances, even at high frequencies. The **SAB/SSAB** shield-connection clips cover a clamping range for cable diameters from 3 mm to 35 mm. Busbar supports and end stops for mounting to the bars also supplement this product line.



KDSClick Modular cable entry system

The **KDS-SR** screw frames are available in 4 different sizes. The inlays make a wide variety of combinations possible.

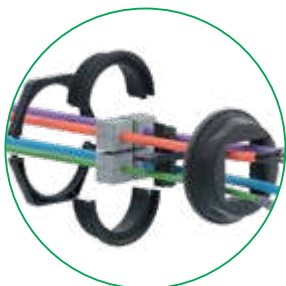
Page 10



KDS-FP Flange plates

The **KDS-FP** flange plates are available in 2 different sizes. The inlays make a wide variety of combinations possible.

Page 16



KDS-R Round cable entries

Thanks to six different thread and locking adapters and two external frame sizes, the metric break-through sizes M20 to M32 and M40 to M63 can be equipped with the modular **KSR-R** system. Assembly is carried out from the outside inwards.

Page 24



KDS-KV Separable cable glands

The **KDS-KV** separable cable glands are designed for metric break-outs of 20 to 63 mm diameter.

Page 32



KDS-FB Cable entry system for flat cables

The **KDS-FB** cable entry system for flat cables provides you with outstanding versatility and saves you time while managing cables, especially for industrial trucks, crane systems and elevator applications.

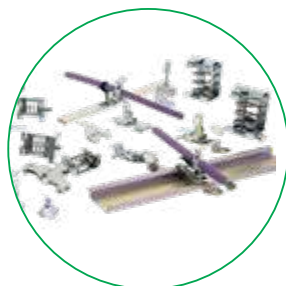
Page 38



KES Cable entries

The cable entry systems **KES**, **KES-E** and **KES-E-R** are suitable when feeding in unassembled cables or pneumatic and hydraulic hoses.

Page 54



SAB Shielding solutions

Our shield-connection clip products provide a modular system for direct installations or DIN-rail mounting.

Page 78

KDSClick Modular cable entry system

A revolutionary cable entry system:

Fast. Safe. Turning cables inside out! The **KDSClick** cable entry system is a cable management solution for switchgear cabinets, housings and machines that features secure seals and strain relief for pre-assembled and non-assembled cables – with or without connectors. **KDSClick** saves you time and provides you with maximum versatility.

IP66

It's easy.
It's quick.
It's **KDSClick**.



The basic components of the modular system

Frames. Inlays. Seals. The modular design – 3 basic components – provides more versatility, variability and variety.

1. Frame

Made from a single mould, the one-piece frame is quick and easy to assemble. It is made of sturdy, glass-fibre reinforced plastic. The foamed seal guarantees an optimal seal with IP66 protection, even on painted or rough surfaces.



2. Inlays

The click-in inlays enable needs-based dimensioning of the frame opening, corresponding to the seal being used. An audible "click" confirms a correct installation. So you can variably configure cable entries to match various requirements (for cables, lines, tubing, pneumatic and hydraulic lines).



3. Seals

The conical shape of the seal makes it easy to press in. This also reliably seals the gaps and ensures static strain relief in accordance with DIN EN 62444. The seals are installed by pressing them from the inside outwards into the openings of the previously installed inlays. Their wave-cut profile makes them easy to install and ensures a perfect fit around the cables. There are currently over 130 different seals that can be used for sealing cables of various diameters and sizes.



Your advantages: More versatility and safety

The seals can be removed by pressing from the outside inwards. Changes, retrofits, servicing or the readjustment of the cable lengths can be made at any time without dismantling the frame. Unwanted manipulations from the outside can be prevented by using an optional inner locking frame.

KDSClick Modular cable entry system

Supported by:



on the basis of a decision
by the German Bundestag

An overview of your advantages

Attaching the frame

The one-piece frame can be easily and quickly attached to the wall.



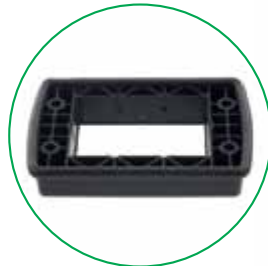
Quick inside-outwards assembly for easier servicing work

The frame does not need to be disassembled if your requirements change or if you're carrying out service work.



Captive seal

The foamed-in frame gasket eliminates the risk of incorrect assembly (forgotten gasket) and speeds up the assembly process.



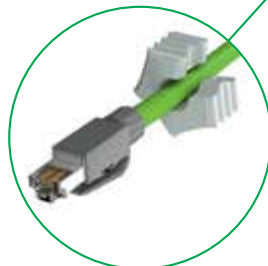
Smart separation of the seals

The wave-cut profile makes them easy to install and ensures a perfect fit around the cables.



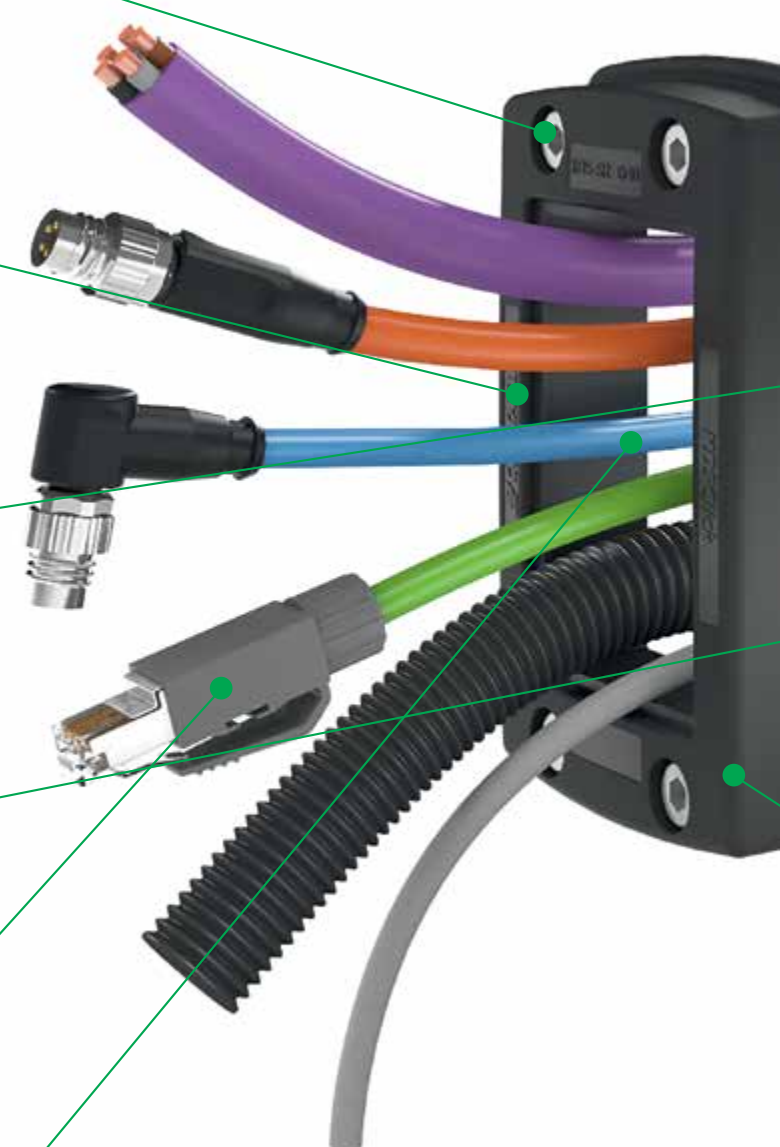
No loss of guarantee: assembled cables

No need to disassemble and reconnect connectors, so manufacturer's warranty is not voided.



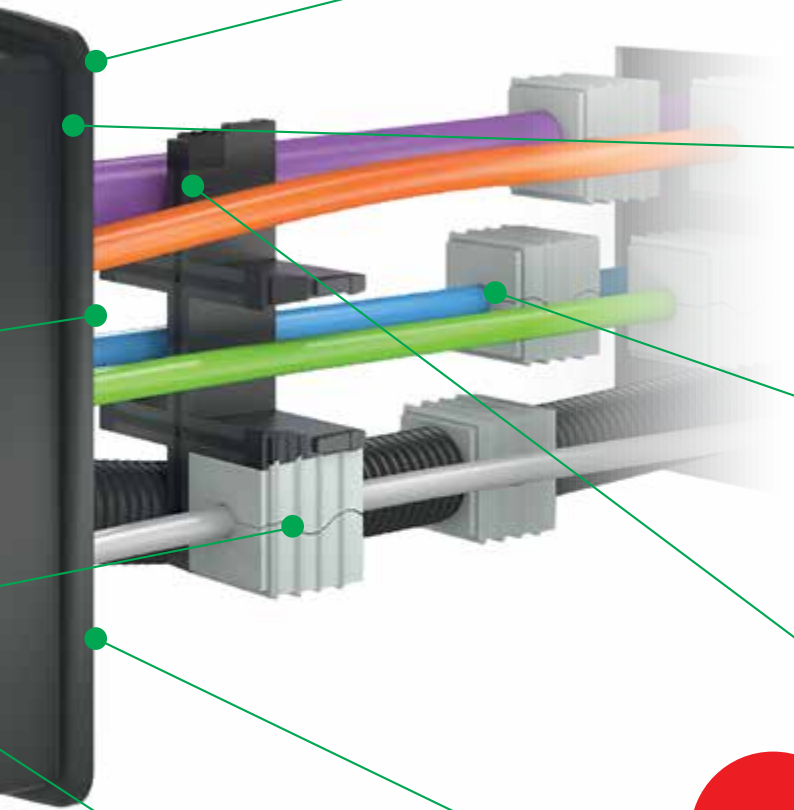
Versatile, high-density assemblies are possible

1-way, 2-way, and 4-way seals provide you with excellent versatility for cable management.



KDS CLICK

by CONTA-CLIP



Outstanding versatility with optimized warehousing

The frames, inlays and seals can be combined in many ways – ensuring you many versatile configuration options.



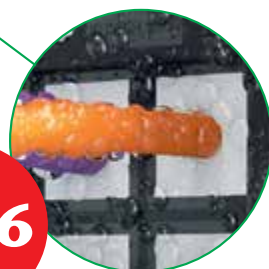
Safe and quick installation with feedback

An audible "click" confirms that the inlay and frame have been properly installed.



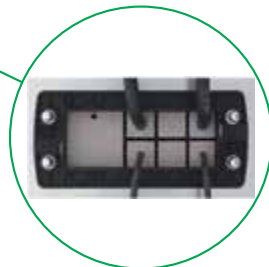
Integrated strain relief

The absolute tightness of the seals ensures a static strain relief mechanism for the cables in accordance with DIN EN 62444.



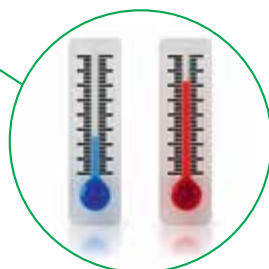
Outstanding IP66 seal

Multi-resistant, tapered seals feature inner and outer sealing gills.



Inner locking frame

The optional locking frame ensures that the seals cannot be pushed out without using tools.



Can be used from -40 °C to +120 °C

Materials contain no halogen or silicone, suitable for many different applications.

	IP66	NEMA TYPE 12	NEMA TYPE 4x
ECOLAB certified	RoHS compliant	Made in Germany	

KDSClick Modular cable entry system

Frames and inlays	KDS-SR 1-4	KDS-SR 6/10	KDS-SR 8/16	KDS-SR 10/24
				
Diagram	Page 32	Page 32	Page 32	Page 32
Type	KDS-SR 1-4 BK	KDS-SR 6/10 BK	KDS-SR 8/16 BK	KDS-SR 10/24 BK
Cat. no. Qty.	28506.4 1	28500.4 1	28502.4 1	28504.4 1
Description	Screw frame	Screw frame	Screw frame	Screw frame
Type / Set	KDS-Set 1-4 BK	KDS-Set 6/10 BK	KDS-Set 8/16 BK	KDS-Set 10/24 BK
Cat. no. Qty.	28602.4 1	28603.4 1	28604.4 1	28605.4 1
Description	Set consists of: 1 x KDS-SR 1-4 BK, 1 x KDS-Inlay 4 BK	Set consists of: 1 x KDS-SR 6/10 BK, 1 x KDS-Inlay 2 BK, 1 x KDS-Inlay 6 BK	Set consists of: 1 x KDS-SR 8/16 BK, 1 x KDS-Inlay 1 BK, 2 x KDS-Inlay 4 BK	Set consists of: 1 x KDS-Inlay 4 BK, 1 x KDS-Inlay 6 BK
Accessories				
Inlay	KDS-Inlay 1 BK	KDS-Inlay 1 BK	KDS-Inlay 1 BK	KDS-Inlay 1 BK
Cat. no. Qty.	28516.4 5	28516.4 5	28516.4 5	28516.4 5
Description	For separating vertically	For separating vertically	For separating vertically	For separating vertically
Inlay		KDS-Inlay 2 BK		KDS-Inlay 2 BK
Cat. no. Qty.		28517.4 5		28517.4 5
Description		T-shape		T-shape for large small
Inlay	KDS-Inlay 4 BK		KDS-Inlay 4 BK	KDS-Inlay 4 BK
Cat. no. Qty.	28518.4 5		28518.4 5	28518.4 5
Description	for 4-way splits		for 4-way splits	for 4-way splits
Inlay		KDS-Inlay 6 BK		KDS-Inlay 6 BK
Cat. no. Qty.		28519.4 5		28519.4 5
Description		for 6-way splits		for 6-way splits
Inner locking frame (optional)	KDS-IVR 1-4 BK	KDS-IVR 6/10 BK	KDS-IVR 8/16 BK	KDS-IVR 10/24 BK
Cat. no. Qty.	28507.4 10	28501.4 10	28503.4 10	28505.4 10
Sheet-metal hole punch	BL KDS-SR 1-4	BL KDS-SR 6/10	BL KDS-SR 8/16	BL KDS-SR 10/24
Cat. no. Qty.	Page 76	Page 76	Page 76	Page 77
Description	For sheet steel up to 2 mm; also for marking drilling hole points	For sheet steel up to 2 mm; also for marking drilling hole points	For sheet steel up to 2 mm; also for marking drilling hole points	For sheet steel up to 2 mm; also for marking drilling hole points
Actuating tool	KDS BW 1	KDS BW 1	KDS BW 1	KDS BW 1
Cat. no. Qty.	Page 70	Page 70	Page 70	Page 70
Seals small	KDS-DE	KDS-DE	KDS-DE	KDS-DE
Cat. no. Qty.	Pages 48/49 10	Pages 48/49 10	Pages 48/49 10	Pages 48/49 10
large	KDS-DEG	KDS-DEG	KDS-DEG	KDS-DEG
Cat. no. Qty.	Pages 48/49 10	Pages 48/49 10	Pages 48/49 10	Pages 48/49 10
KDS-DES	KDS-DES	KDS-DES	KDS-DES	KDS-DES
Cat. no. Qty.	Pages 50/51 10	Pages 50/51 10	Pages 50/51 10	Pages 50/51 10

	IP66	NEMA TYPE 12	NEMA TYPE 4x
	RoHS compliant	Made in Germany	



Features

- Material: polyamide PA 6.6, glass-fibre reinforced | TPE
- Colour: black
- Flammability: UL 94 V-0
- Temperature range: -40 °C to +120 °C
- Halogen-free, silicone-free
- Protection: IP66

KDSClick Combination options

Combination options with KDS-SR 1-4



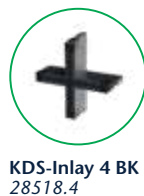
Combination options with KDS-SR 6/10



Combination options with KDS-SR 8/16



Combination options with KDS-SR 10/24



KDS-FP Flange plates

Versatility for cable management: The **KDS-FP** flange plate provides manufacturers of machines with a very cost-effective, convenient feed-through solution. It can be used to adapt housings and switchgear cabinets to fit your updated requirements at any time, and can also considerably simplify your warehousing. You no longer have to stock switchgear cabinets or distributors with different configurations of assembled cable and cable outlets.

Instead, you can uniformly prepare your products with the flange plate and then adapt them at any time to your specific cabling or tubing requirements. Your advantage is that you save money by requiring fewer variants.

IP66



Your advantages

- Lower costs with increased variability due to standardized opening dimensions
- No loss of guarantee when using assembled cables
- Versatile, high-density assemblies are possible
- Outstanding IP66 seal
- Integrated strain relief
- Outstanding versatility with optimized warehousing
- Can be used from -40 °C to +120 °C

The basic components of the modular system

Flange plate. Inlays. Seals. The modular design – 3 basic components – provides more versatility, variability and variety.

1. Flange plate

The flange plate is available in the versions **KDS-FP 2x10/24** (up to 20 feed-through openings) or the **KDS-FP 3x10/24** (for up to 20 or 30 openings). Uniform housing break-outs of 131 mm x 110 mm or 131 mm x 161 mm are used for installation. By screwing the flange plate on the outside of the cabinet, the break-out is completely sealed according to IP66. On the continuous closed plates, there are two or three cover segments with pre-determined breaking points; these can be pushed out (without tools) which then opens up a 110 mm x 40 mm feed-through opening. The click-in KDSClick frame inlays can be used to subdivide this opening in up to ten appropriately sized frame openings.



2. Inlays

The click-in inlays enable needs-based dimensioning of the frame opening, corresponding to the seal being used. An audible "click" confirms a correct installation. So you can variably configure cable entries to match various requirements (for cables, lines, tubing, pneumatic and hydraulic lines).



3. Seals

The conical shape of the seal makes it easy to press in. This also reliably seals the gaps and ensures static strain relief in accordance with DIN EN 62444. The seals are installed by pressing them from the inside outwards into the openings of the previously installed inlays. Their wave-cut profile makes them easy to install and ensures a perfect fit around the cables. There are currently over 130 different seals that can be used for sealing cables of various diameters and sizes.



KDS-FP Flange plates

An overview of your advantages

Flange plate is easy to install

The one-piece flange plate can be easily and quickly attached to the wall.



Captive seal

The foamed-in frame gasket eliminates the risk of incorrect assembly (forgotten gasket) and speeds up the assembly process.



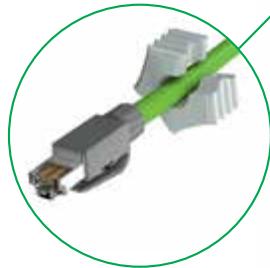
Variability

Can be extended to max. 30 openings, without the use of tools or further machining.



No loss of guarantee: assembled cables

No need to disassemble and reconnect connectors, so manufacturer's warranty is not voided.



Versatile, high-density assemblies are possible

1-way, 2-way, and 4-way seals provide you with excellent versatility for cable management.



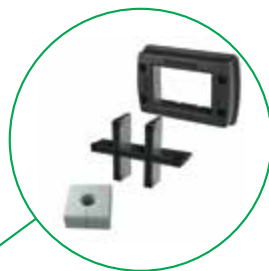
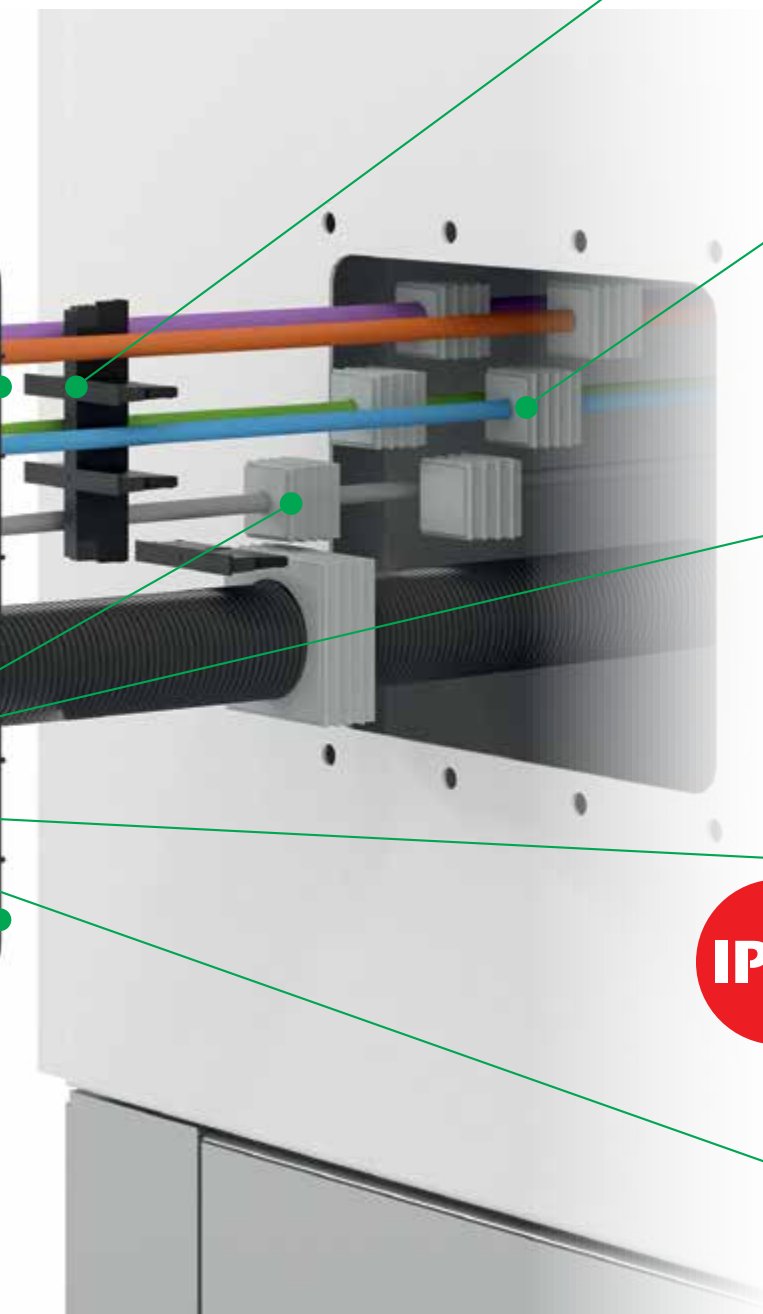
Accessories

Locking mechanism can be installed without tools; this provides additional strain relief in direction of cabinet interior



KDS CLICK

by CONTA-CLIP



Outstanding versatility with optimized warehousing

The flange plates, inlays and seals can be combined in many ways – ensuring you many versatile configuration options.



Safe and quick installation with feedback

An audible "click" confirms that the inlay and frame have been properly installed.



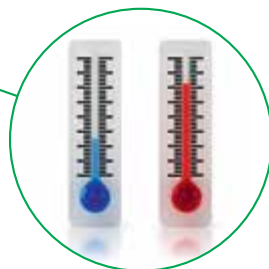
Integrated strain relief

The absolute tightness of the seals ensures a static strain relief mechanism for the cables in accordance with DIN EN 62444.



Outstanding IP66 seal

Multi-resistant, tapered seals feature inner and outer sealing gills.



Can be used from -40 °C to +120 °C

Materials contain no halogen or silicone; suitable for many different applications.

	IP66	NEMA TYPE 12	NEMA TYPE 4x
ECOLAB certified	RoHS compliant	Made in Germany	

KDS-FP Flange plates

Flange plates and accessories



KDS-FP 2x10/24



	IP66	NEMA TYPE 12	NEMA TYPE 4x
ECOLAB certified	RoHS compliant	Made in Germany	

Diagram	Page 23	
Type	KDS-FP 2x10/24 BK	
Cat. no.	Qty.	28660.4 1
Description	Flange plate	
Accessories		
Inlay	KDS-Inlay 1 BK	
Cat. no.	Qty.	28516.4 5
Description	For separating vertically	
Inlay	KDS-Inlay 2 BK	
Cat. no.	Qty.	28517.4 5
Description	T-shape for large small	
Inlay	KDS-Inlay 4 BK	
Cat. no.	Qty.	28518.4 5
Description	for 4-way splits	
Inlay	KDS-Inlay 6 BK	
Cat. no.	Qty.	28519.4 5
Description	for 6-way splits	
Inner lock	KDS-FP-IVR OG	
Cat. no.	Qty.	28664.3 20
Inner cover UL	KDS-FP-AD/UL YE	
Cat. no.	Qty.	28665.8 10
Actuating tool	KDS BW 1	
Cat. no.	Qty.	Page 70

Flange plates and accessories



KDS-FP 3x10/24 BK



Diagram	Page 23	
Type	KDS-FP 3x10/24 BK	
Cat. no.	Qty.	28661.4 1
Description	Flange plate	
Accessories		
Inlay	KDS-Inlay 1 BK	
Cat. no.	Qty.	28516.4 5
Description	For separating vertically	
Inlay	KDS-Inlay 2 BK	
Cat. no.	Qty.	28517.4 5
Description	T-shape for large small	
Inlay	KDS-Inlay 4 BK	
Cat. no.	Qty.	28518.4 5
Description	for 4-way splits	
Inlay	KDS-Inlay 6 BK	
Cat. no.	Qty.	28519.4 5
Description	for 6-way splits	
Inner lock	KDS-FP-IVR OG	
Cat. no.	Qty.	28664.3 20
Inner cover UL	KDS-FP-AD/UL YE	
Cat. no.	Qty.	28665.8 10
Actuating tool	KDS BW 1	
Cat. no.	Qty.	Page 70

KDS-FP Combination options

Combination option 1



KDS-Inlay 4 BK
28518.4



KDS-Inlay 1 BK
28516.4



KDS-Inlay 6 BK
28519.4

Combination option 2



KDS-Inlay 1 BK
28516.4

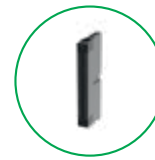


KDS-Inlay 6 BK
28519.4

Combination option 3



KDS-Inlay 1 BK
28516.4



KDS-Inlay 1 BK
28516.4



KDS-Inlay 6 BK
28519.4

Combination option 4



KDS-Inlay 1 BK
28516.4



KDS-Inlay 2 BK
28517.4

Each of the two or three 10-frame openings can be configured with the appropriate inlays to match a wide variety of individual customer requirements.



Features

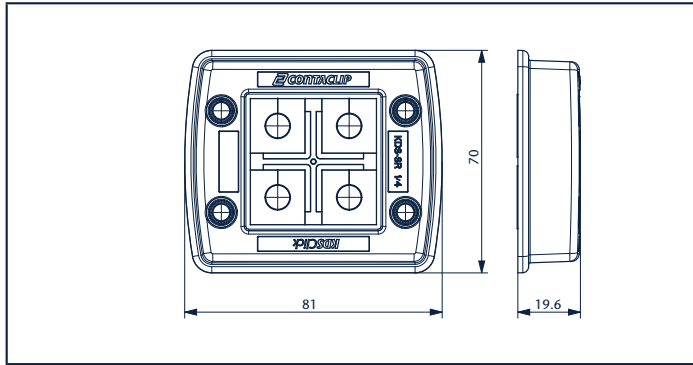
- Material: polyamide PA 6.6, glass-fibre reinforced | TPE
- Colour: black
- Flammability: UL 94 V-0
- Temperature range: -40 °C to +120 °C
- Halogen-free, silicone-free
- Protection: IP66

KDSClick

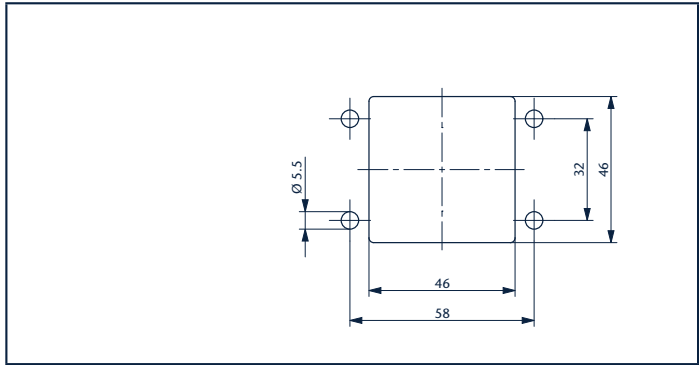
Dimensional drawings / Mounting cut-outs for the modular cable entry system

KDS-SR 1-4

Dimensional diagram



Mounting cut-out

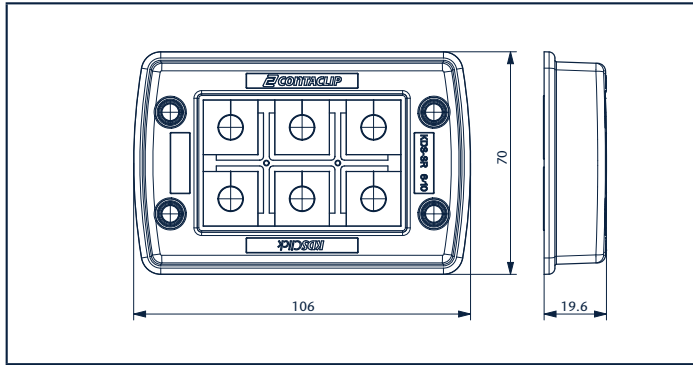


Torque for the frame's mounting screw: 3 Nm

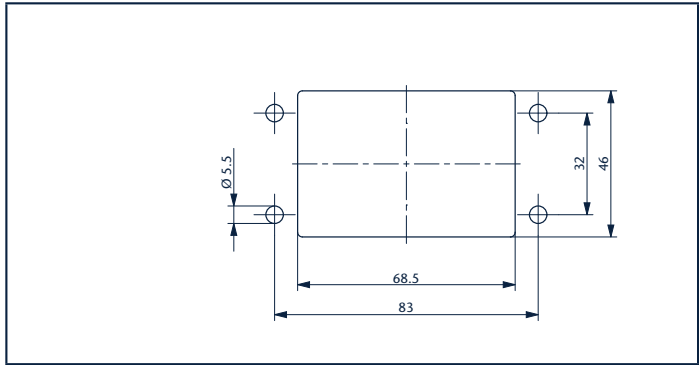
Screw for usage: ISO 4762 / DIN 912

KDS-SR 6/10

Dimensional diagram



Mounting cut-out

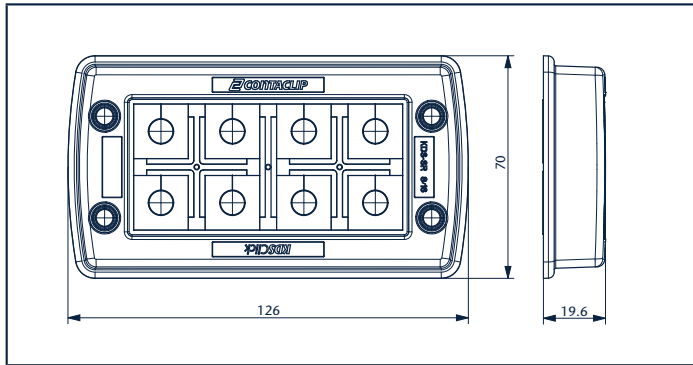


Torque for the frame's mounting screw: 3 Nm

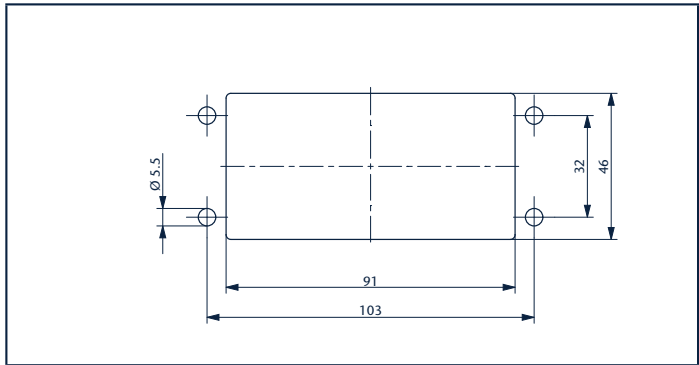
Screw for usage: ISO 4762 / DIN 912

KDS-SR 8/16

Dimensional diagram



Mounting cut-out

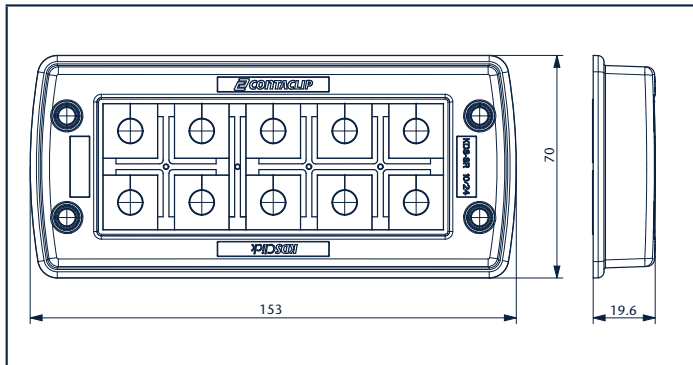


Torque for the frame's mounting screw: 3 Nm

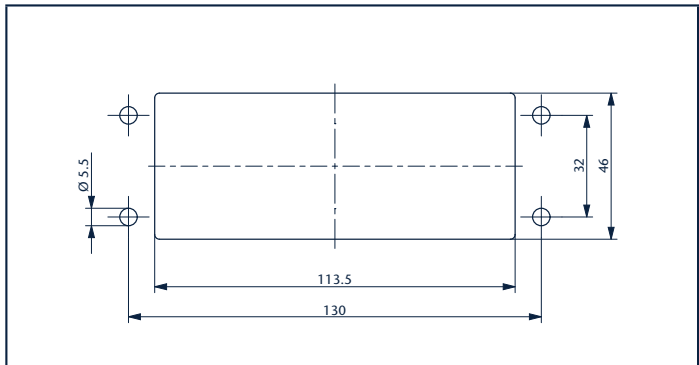
Screw for usage: ISO 4762 / DIN 912

KDS-SR 10/24

Dimensional diagram



Mounting cut-out

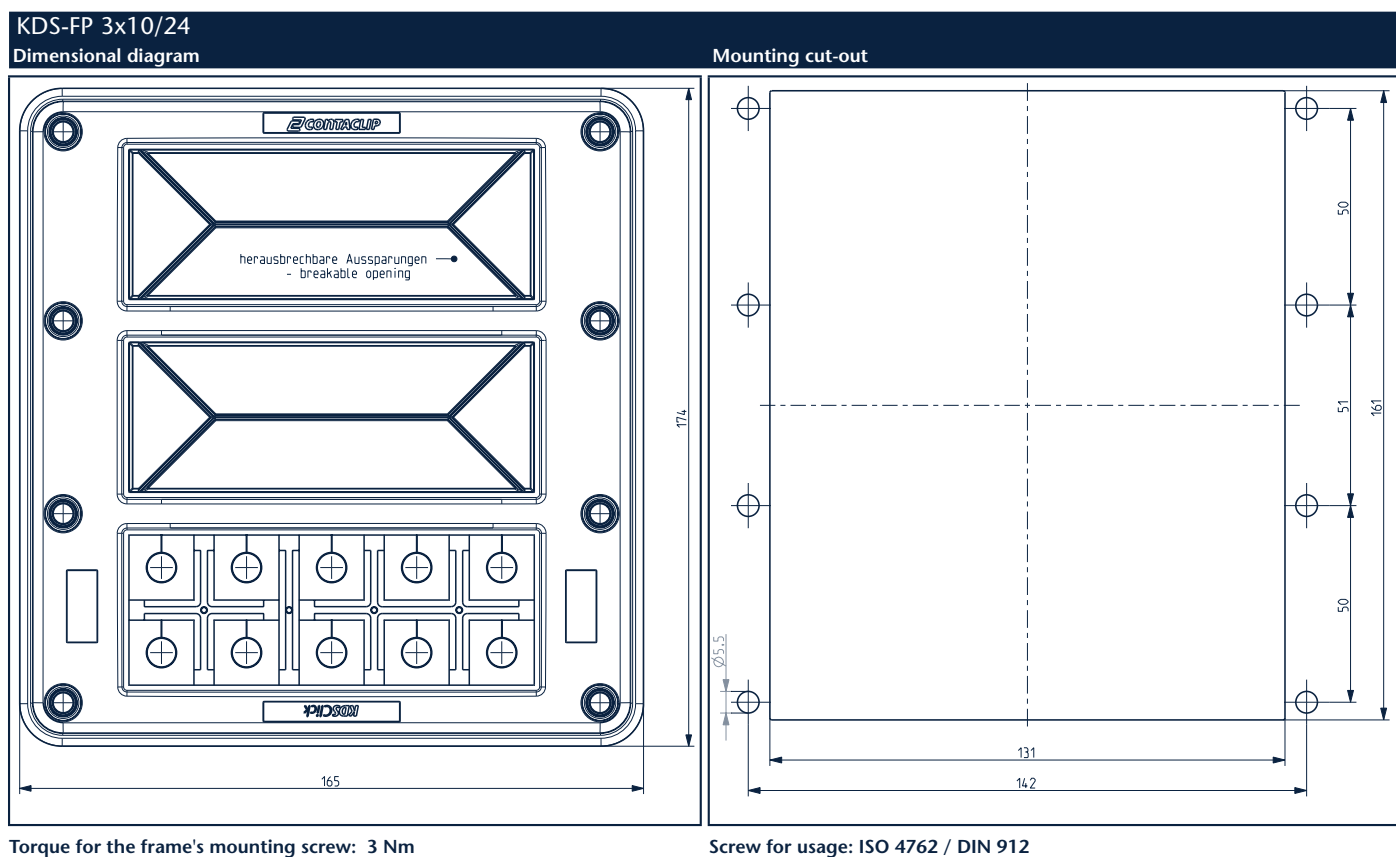
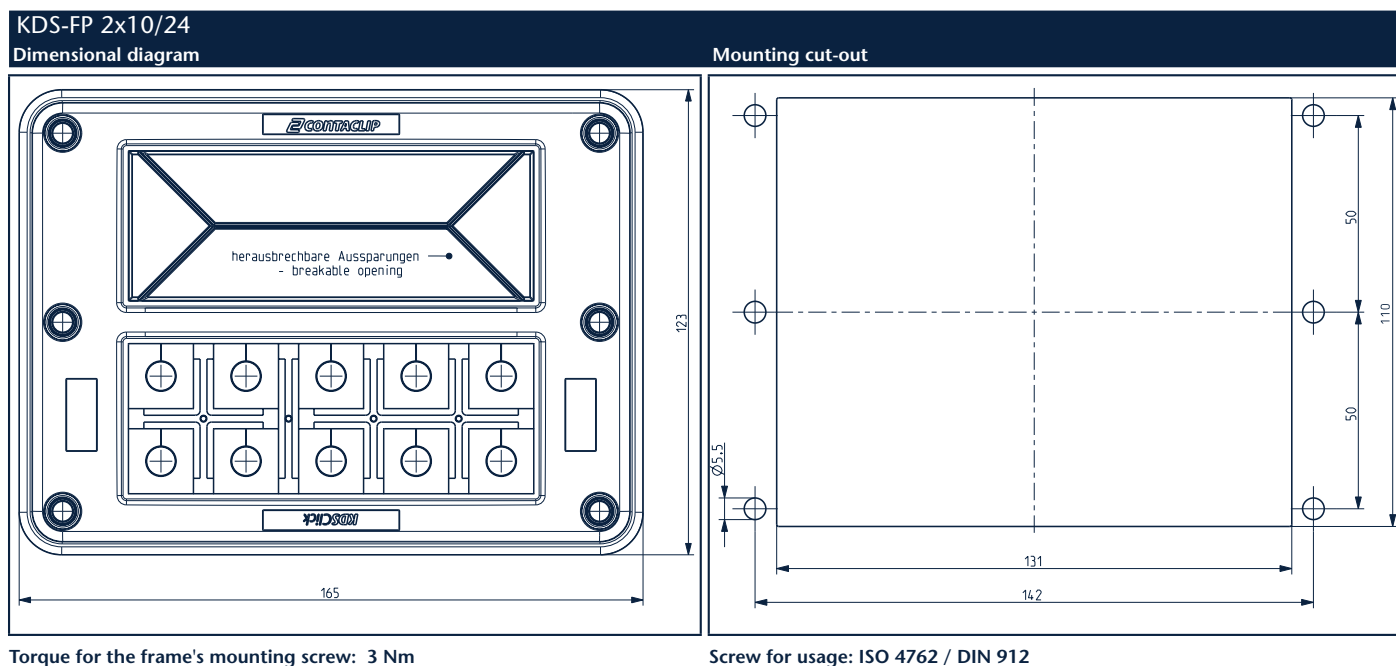


Torque for the frame's mounting screw: 3 Nm

Screw for usage: ISO 4762 / DIN 912

KDS-FP

Dimensional drawings / Mounting cut-outs for the flange plate



KDS-R

Round cable entries

Overcoming the frame split: Round solutions for your requirements. The round **KDS-R** cable entries for metric break-outs from M20 to M63 are designed for cables with and without plugs. In case of maintenance or retrofitting with assembled cable harnesses, cables with diameters from 2 mm to 35 mm can be quickly and safely inserted into the switchgear cabinets or housings and sealed according to IP66. The modular system ensures quick and easy assembly in three steps. A reliable seal and absolute secure fit is also provided by the slitted, tapered seals with a wave-cut profile, which, after the cables are routed through the cable entry, are placed around the cables and then pressed into the round cable entry.

After that, the separable thread and locking adapter on the switchgear cabinet exterior is easily screwed together with the round frame. The separable locknuts that are mounted on the interior of the locking elements ensure safe and secure attachment. This system can be used with a wall thickness up to 6 mm.



Your advantages

- Assembled cables can be guided through
- Guarantee retained for assembled cables
- Retrofitting and servicing can be done quickly and easily
- High-density assemblies
- Can be installed on standard metric break-outs
- Protection: IP66

The basic components of the modular system

1. Round cable entries

The round cable entry **KDS-R** ensures quick and secure assembly of hoses and electrical cables in switchboxes and switchgear cabinets. The seals (TPE) integrated into the cable entry also ensure an outstanding seal in accordance with IP66 on painted and rough surfaces.



2. Inlays

The click-in inlays enable needs-based dimensioning of the frame opening, corresponding to the seal being used. So you can variably configure cable entries to match various requirements (for cables, lines, tubing, pneumatic and hydraulic lines).



3. Thread and locking adapter

The two-piece thread and locking adapter **KDS-RGA** for versatile installation is screwed together with the round cable entry. It locks with a form fit with the cable entry and therefore ensures that the seals and inlays are mechanically secured. The threads located on the switchgear cabinet or housing interior are available respectively in six common diameters for metric break-outs from M20–M32 and M40–M63.



4. Separable locknuts

The individual parts of the locknut **KDS-GM** can be snapped together quickly and easily via the dovetail guide and then can be mounted on the round cable entry.



5. Seals

The tapered shape of the seal **KDS-DE / KDS-DEG** enables user-friendly pressing-in of the seal, reliable sealing of the gaps and ensures a static strain relief in accordance with DIN EN 62444. To attach them, the seals are pressed from the inside out into the openings of the cable entries. Their wave-cut profile makes them easy to install and ensures a perfect fit around the cables. There are currently over 130 different seals that can be used for sealing cables of various diameters and sizes.



KDS-R Round cable entries

An overview of your advantages

Mounting

The round cable entry is installed without tools.



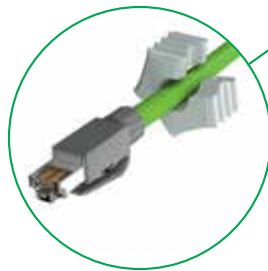
Variability

Up to 16 cables can be fed through thanks to the compatibility of the KDS-R 40-63 with the KDS inlay 4.



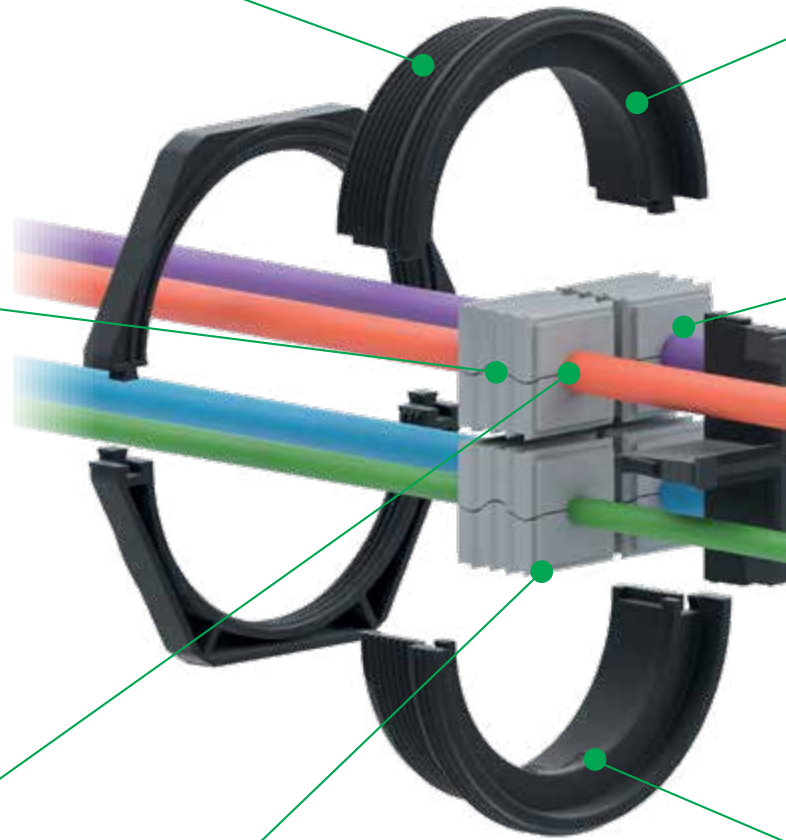
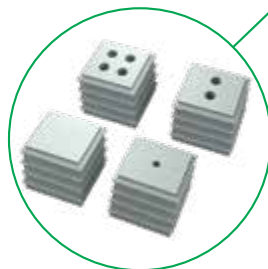
No loss of guarantee: assembled cables

No need to disassemble and re-connect connectors, so the manufacturer's warranty is not voided.



Versatile, high-density assemblies are possible

1-way, 2-way, and 4-way seals provide you with excellent versatility for cable management.





Two round cable entries for six metric break-through sizes

Thanks to six different thread and locking adapters and two external frame sizes, the metric break-through sizes M20 to M32 and M40 to M63 can be fitted to the **KSR-R** system. Assembly is carried out from the outside inwards.



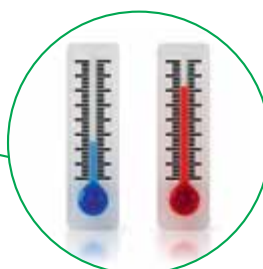
Outstanding IP66 seal

Multi-resistant, tapered seals feature inner and outer sealing gills.



Integrated strain relief

The absolute tightness of the seals ensures a static strain relief mechanism for the cables in accordance with DIN EN 62444.



Can be used from -40 °C to +120 °C

Materials contain no halogen or silicone; suitable for many different applications.



Facility availability

Maintenance work is possible during operation due to the separation of the thread adapter and the locknut.

IP66	RoHS compliant	Made in Germany	CAD
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KDS-R

Round cable entries

Round cable entries	KDS-R 20-32	KDS-RGA M20/25/32	KDS-GM 20/25/32
			
Description	Round cable entry	Thread and locking adapter	Separable locknut
Type / colour	KDS-R 20-32 BK	KDS-RGA M20 BK	KDS-GM M20 BK
<i>Cat. no.</i>	28770.4	28771.4	28616.4
Qty.	10	5	10
Type / colour		KDS-RGA M25 BK	KDS-GM M25 BK
<i>Cat. no.</i>		28772.4	28617.4
Qty.		5	10
Type / colour		KDS-RGA M32 BK	KDS-GM M32 BK
<i>Cat. no.</i>		28773.4	28618.4
Qty.		5	10
Cable diameter			
KDS-DE	1 – 13 mm	1 – 13 mm	1 – 13 mm
KDS-DEG			
Accessories			
Thread adapters	KDS-RGA M20 BK		
<i>Cat. no.</i>	28771.4		
Qty.	5		
Thread adapters	KDS-RGA M25 BK		
<i>Cat. no.</i>	28772.4		
Qty.	5		
Thread adapters	KDS-RGA M32 BK		
<i>Cat. no.</i>	28773.4		
Qty.	5		
Locknut		KDS-GM M20 BK	
<i>Cat. no.</i>		28616.4	
Qty.		10	
Locknut		KDS-GM M25 BK	
<i>Cat. no.</i>		28617.4	
Qty.		10	
Locknut		KDS-GM M32 BK	
<i>Cat. no.</i>		28618.4	
Qty.		10	
Inlay			
<i>Cat. no.</i>			
Qty.			
Inlay			
<i>Cat. no.</i>			
Qty.			
Inlay			
<i>Cat. no.</i>			
Qty.			

IP66	RoHS compliant	Made in Germany	
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Round cable entries		KDS-R 40-63 BK	KDS-RGA M40/50/63	KDS-GM 40/50/63
				
Description		Round cable entry	Thread and locking adapter	Separable locknut
Type / colour		KDS-R 40-63 BK	KDS-RGA M40 BK	KDS-GM M40 BK
<i>Cat. no.</i>	Qty.	28774.4	28775.4	28619.4
Type / colour			KDS-RGA M50 BK	KDS-GM M50 BK
<i>Cat. no.</i>	Qty.		28776.4	28620.4
Type / colour			KDS-RGA M63 BK	KDS-GM M63 BK
<i>Cat. no.</i>	Qty.		28777.4	28621.4
Cable diameter				
KDS-DE		1 – 13 mm	1 – 13 mm	1 – 13 mm
KDS-DEG		14 – 35 mm	14 – 35 mm	14 – 35 mm
Accessories				
Thread adapters		KDS-RGA M40 BK		
<i>Cat. no.</i>	Qty.	28775.4		
Thread adapters		KDS-RGA M50 BK		
<i>Cat. no.</i>	Qty.	28776.4		
Thread adapters		KDS-RGA M63 BK		
<i>Cat. no.</i>	Qty.	28777.4		
Locknut			KDS-GM M40 BK	
<i>Cat. no.</i>	Qty.		28619.4	10
Locknut			KDS-GM M50 BK	
<i>Cat. no.</i>	Qty.		28620.4	10
Locknut			KDS-GM M63 BK	
<i>Cat. no.</i>	Qty.		28621.4	10
Inlay		KDS-Inlay 1 BK		
<i>Cat. no.</i>	Qty.	28516.4		
Inlay		KDS-Inlay 2 BK		
<i>Cat. no.</i>	Qty.	2817.4		
Inlay		KDS-Inlay 4 BK		
<i>Cat. no.</i>	Qty.	28518.4		



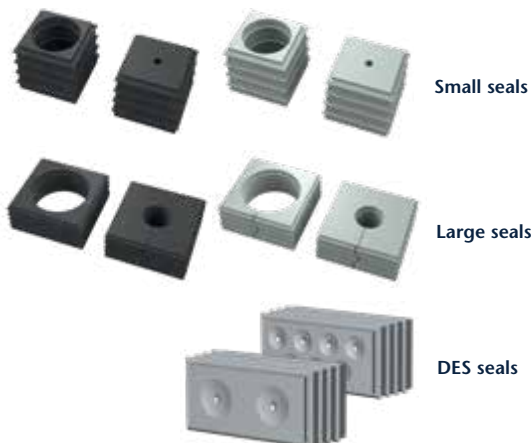
Features

- Material: polyamide PA 6.6, glass-fibre reinforced | TPE
- Colour: black
- Flammability: UL 94 V-0
- Temperature range: -40 °C to +120 °C
- Halogen-free, silicone-free
- Protection: IP66

Compatibility matrix for round cable entry systems KDS-R

Seals			
grey small		black small	
Type	Cat. no.	Type	Cat. no.
KDS-DE/B GR	28561.6	KDS-DE/B BK	28520.4
KDS-DE 1.5-2 GR	28562.6	KDS-DE 1.5-2 BK	28521.4
KDS-DE 2-3 GR	28563.6	KDS-DE 2-3 BK	28522.4
KDS-DE 3-4 GR	28564.6	KDS-DE 3-4 BK	28523.4
KDS-DE 4-5 GR	28565.6	KDS-DE 4-5 BK	28524.4
KDS-DE 5-6 GR	28566.6	KDS-DE 5-6 BK	28525.4
KDS-DE 6-7 GR	28567.6	KDS-DE 6-7 BK	28526.4
KDS-DE 7-8 GR	28568.6	KDS-DE 7-8 BK	28527.4
KDS-DE 8-9 GR	28569.6	KDS-DE 8-9 BK	28528.4
KDS-DE 9-10 GR	28570.6	KDS-DE 9-10 BK	28529.4
KDS-DE 10-11 GR	28571.6	KDS-DE 10-11 BK	28530.4
KDS-DE 11-12 GR	28572.6	KDS-DE 11-12 BK	28531.4
KDS-DE 12-13 GR	28573.6	KDS-DE 12-13 BK	28532.4
KDS-DE 13-14 GR	28574.6	KDS-DE 13-14 BK	28533.4
KDS-DE 14-15 GR	28609.6	KDS-DE 14-15 BK	28608.4
KDS-DE 15-16 GR	28671.6	KDS-DE 15-16 BK	28670.4
KDS-DE 2 x 4-5 GR	28595.6	KDS-DE 2 x 4-5 BK	28555.4
KDS-DE 2 x 5-6 GR	28596.6	KDS-DE 2 x 5-6 BK	28556.4
KDS-DE 2 x 6.5 GR	28607.6	KDS-DE 2 x 6.5 BK	28682.4
KDS-DE 4 x 2-3 GR	28597.6	KDS-DE 4 x 2-3 BK	28557.4
KDS-DE 4 x 3-4 GR	28598.6	KDS-DE 4 x 3-4 BK	28558.4
KDS-DE 4 x 4.5 GR	28606.6	KDS-DE 4 x 4.5 BK	28681.4
KDS-DE 4 x 5 GR	28673.6	KDS-DE 4 x 5 BK	28672.4
KDS-DE/1 x ASI GR	28599.6	KDS-DE/1 x ASI BK	28559.4
KDS-DE/2 x ASI GR	28600.6	KDS-DE/2 x ASI BK	28560.4
		KDS-DE/K 2-1 BK	28553.4

grey large		black large	
Type	Cat. no.	Type	Cat. no.
KDS-DEG/B GR	28575.6	KDS-DEG/B BK	28534.4
KDS-DEG 14-15 GR	28576.6	KDS-DEG 14-15 BK	28535.4
KDS-DEG 15-16 GR	28577.6	KDS-DEG 15-16 BK	28536.4
KDS-DEG 16-17 GR	28578.6	KDS-DEG 16-17 BK	28537.4
KDS-DEG 17-18 GR	28579.6	KDS-DEG 17-18 BK	28538.4
KDS-DEG 18-19 GR	28580.6	KDS-DEG 18-19 BK	28539.4
KDS-DEG 19-20 GR	28581.6	KDS-DEG 19-20 BK	28540.4
KDS-DEG 20-21 GR	28582.6	KDS-DEG 20-21 BK	28541.4
KDS-DEG 21-22 GR	28583.6	KDS-DEG 21-22 BK	28542.4
KDS-DEG 22-23 GR	28584.6	KDS-DEG 22-23 BK	28543.4
KDS-DEG 23-24 GR	28585.6	KDS-DEG 23-24 BK	28544.4
KDS-DEG 24-25 GR	28586.6	KDS-DEG 24-25 BK	28545.4
KDS-DEG 25-26 GR	28587.6	KDS-DEG 25-26 BK	28546.4
KDS-DEG 26-27 GR	28588.6	KDS-DEG 26-27 BK	28547.4
KDS-DEG 27-28 GR	28589.6	KDS-DEG 27-28 BK	28548.4
KDS-DEG 28-29 GR	28590.6	KDS-DEG 28-29 BK	28549.4
KDS-DEG 29-30 GR	28591.6	KDS-DEG 29-30 BK	28550.4
KDS-DEG 30-31 GR	28592.6	KDS-DEG 30-31 BK	28551.4
KDS-DEG 31-32 GR	28593.6	KDS-DEG 31-32 BK	28552.4
KDS-DEG 32-33 GR	28594.6	KDS-DEG 32-33 BK	28601.4



KDS-DES	
Type	Cat. no.
KDS-DES 2X10.5 GR	28800.6
KDS-DES 3X9.5 GR	28801.6
KDS-DES 3X8.5 GR	28802.6
KDS-DES 4X7.5 GR	28803.6
KDS-DES 7X6.5 GR	28804.6
KDS-DES 8X5.5 GR	28805.6
KDS-DES 8X4.5 GR	28806.6
KDS-DE-FB1/A GR	28713.6
KDS-DE-FB1/B GR	28714.6
KDS-DE-FB1/C GR	28715.6
KDS-DE-FB1/D GR	28716.6
KDS-DE-FB1/E GR	28717.6
KDS-DE-FB1/F GR	28718.6

KDS-KV Separable cable glands

All-round "cornered" solutions for your requirements! For metric break-outs from M20 to M63, CONTA-CLIP provides the **KDS-KV** separable cable glands for cables with or without attached plugs. In case of maintenance or retrofitting with assembled cable harnesses, cables with diameters from 2 mm to 35 mm can be quickly and safely inserted into the switchgear cabinets or housings and sealed according to IP66. This separable system ensures quick and simple installation. The slitted seal has a wave-cut profile that ensures a reliable seal and a totally secure attachment.

The seal is first placed around the cable and then inserted in one of the two halves of the cable gland. After inserting the seals, the two halves of the cable gland are simply snapped together. A locknut (which can also be separated) on the inside of the cabinet ensures a safe and secure attachment.



Your advantages

- Assembled cables can be guided through
- Guarantee retained for assembled cables
- Retrofitting and servicing can be done quickly and easily
- High-density assemblies
- Can be installed on standard metric break-outs
- Includes a separable hexagon nut

The basic components of the modular system

1. Split cable glands

Consisting of two half-shells, the cable gland is quick and easy to install. It is made of dimensionally stable, glass-fibre reinforced plastic. The integrated seal guarantees an optimal seal with IP66 protection, even on painted or rough surfaces.



2. Separable locknuts

The individual parts of the locknut can be snapped together quickly and easily via the dovetail guide and then mounted with the gland.



3. Seals

The conical shape of the seal makes it easy to press in. This also reliably seals the gaps and ensures static strain relief in accordance with DIN EN 62444. The seals are installed by pressing them from the inside outwards into the openings of the previously installed inlays. Their wave-cut profile makes them easy to install and ensures a perfect fit around the cables. There are currently over 130 different seals that can be used for sealing cables of various diameters and sizes.



KDS-KV Separable cable glands

An overview of your advantages

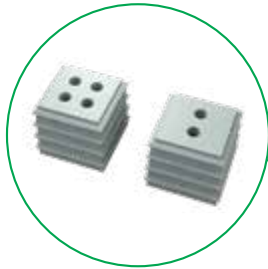
Mounting

No tools are required to mount the cable gland.



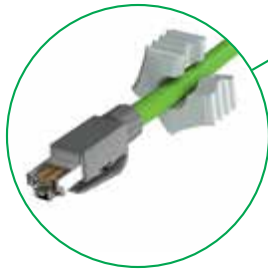
Variability

Up to 4 cables can be fed through using just one cable gland.



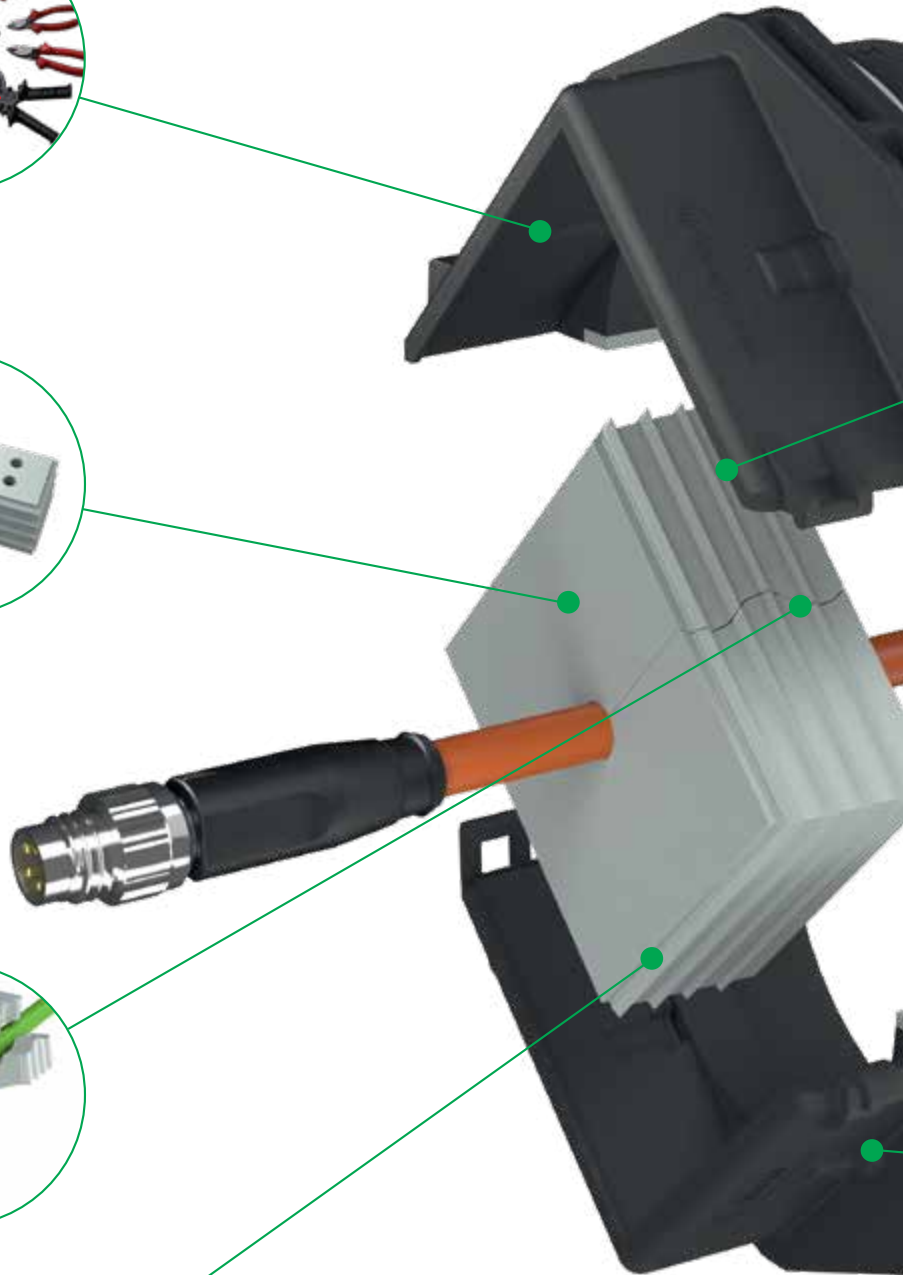
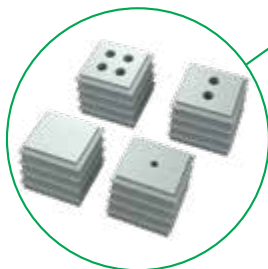
No loss of guarantee: assembled cables

No need to disassemble and re-connect connectors, so the manufacturer's warranty is not voided.



Versatile, high-density assemblies are possible

1-way, 2-way, and 4-way seals provide you with excellent versatility for cable management.





Outstanding seal

Multi-resistant, tapered seals feature inner and outer sealing gills.

Integrated strain relief

The absolute tightness of the seals ensures a static strain relief mechanism for the cables in accordance with DIN EN 62444.

Facility availability

Since the cable gland and the lock-nut are separable, servicing can be carried out during operations.

Can be used from -40 °C to +120 °C

Materials contain no halogen or silicone; suitable for many different applications.

KDS-KV Separable cable glands

Separable cable glands	KDS-KV M20	KDS-KV M25	KDS-KV M32
			
Diagram			
Type	KDS-KV M20 BK	KDS-KV M25 BK	KDS-KV M32 BK
<i>Cat. no.</i>	28610.4	28611.4	28612.4
<i>Qty.</i>	10	10	10
Description	Separable cable gland, including separable locknut	Separable cable gland, including separable locknut	Separable cable gland, including separable locknut
Cable diameter, mm			
KDS-DE	1 – 13 mm	1 – 14 mm	1 – 14 mm
Accessories			
Locknut	KDS-GM 20 BK	KDS-GM 25 BK	KDS-GM 32 BK
<i>Cat. no.</i>	28616.4	28617.4	28618.4
<i>Qty.</i>	10	10	10
Description	Separable locknut	Separable locknut	Separable locknut
Seals			
small	KDS-DE	KDS-DE	KDS-DE
<i>Cat. no.</i>	Pages 48 – 51	Pages 48 – 51	Pages 48 – 51
Tightening torque of lock nut, in Nm	4	4	4
Combinations			

Separable cable glands		KDS-KV M40	KDS-KV M50	KDS-KV M63
				
Diagram				
Type		KDS-KV M40 BK	KDS-KV M50 BK	KDS-KV M63 BK
Cat. no.	Qty.	28613.4	28614.4	28615.4
Description		Separable cable gland, including separable locknut	Separable cable gland, including separable locknut	Separable cable gland, including separable locknut
Cable diameter, mm		14 – 33 mm	14 – 33 mm	14 – 33 mm
Accessories				
Locknut		KDS-GM 40 BK	KDS-GM 50 BK	KDS-GM 63 BK
Cat. no.	Qty.	28619.4	28620.4	28621.4
Description		Separable locknut	Separable locknut	Separable locknut
Seals				
small		KDS-DEG	KDS-DEG	KDS-DEG
Cat. no.	Qty.	Pages 48 – 51	Pages 48 – 51	Pages 48 – 51
Tightening torque of lock nut, in Nm		7	7	7
Combinations				



Features

- Material: polyamide PA 6.6, glass-fibre reinforced | TPE
- Colour: black
- Flammability: UL 94 V-0
- Temperature range: -40 °C to +120 °C
- Halogen-free, silicone-free
- Protection: IP66

KDS-FB

Cable entry system for flat cables

Supported by:



on the basis of a decision by the German Bundestag

Fast. Safe. Turning cables inside out! The **KDS-FB** cable entry system for flat cables provides you with outstanding versatility and saves you time while managing cables, especially for industrial trucks, crane systems and elevator applications. The "fish skin" on the seal

mechanically surrounds the inserted flat cable; this ensures outstanding tolerance compensation and IP66 protection.

Attaching the frame

Made from a single mould, the one-piece frame is quick and easy to assemble. It is made of sturdy, glass-fibre reinforced plastic.



Quickly assembled from the inside out

The frame does not need to be disassembled if your requirements change or if you're carrying out service work.



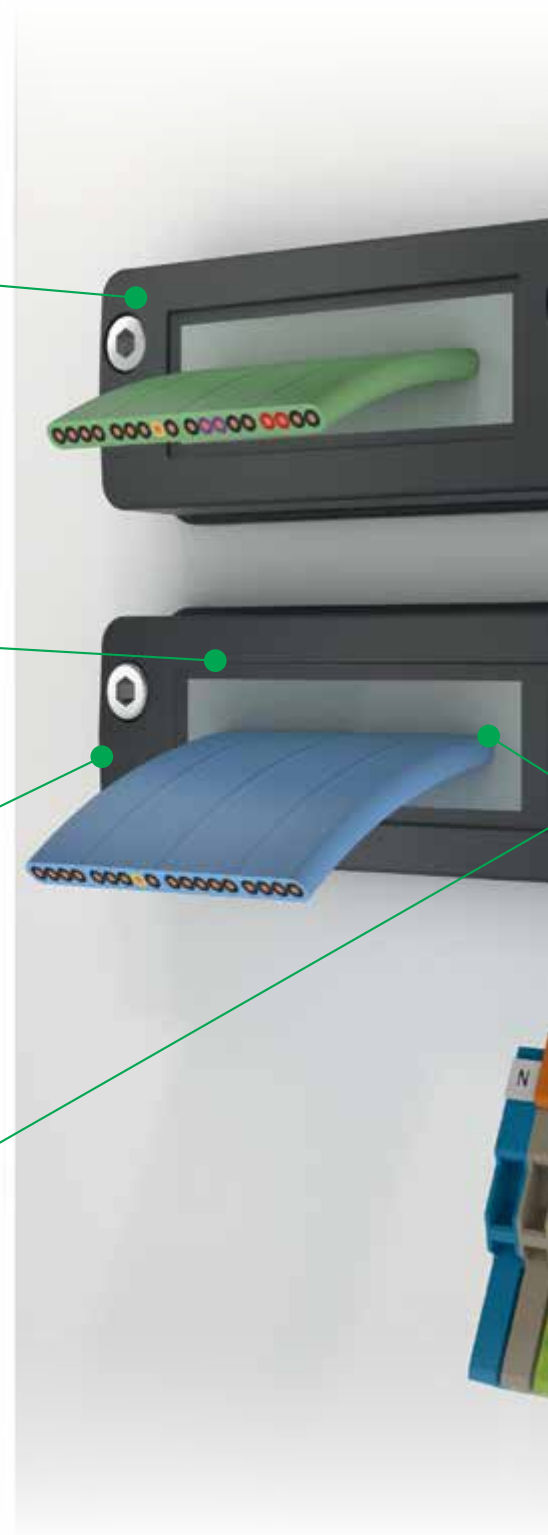
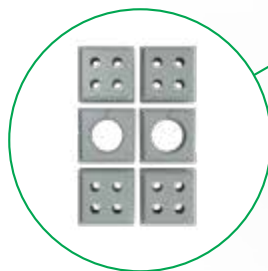
Captive seal

The moulded-in frame gasket eliminates the risk of incorrect assembly (forgotten seal) and speeds up the assembly process.



Seals

The seals' conical shape enables them to be easily pressed in so they can seal gaps. To attach them, the seals are pressed from the inside out into the openings. There are currently over 130 different seals that can be used for sealing cables of various diameters and sizes.



IP66

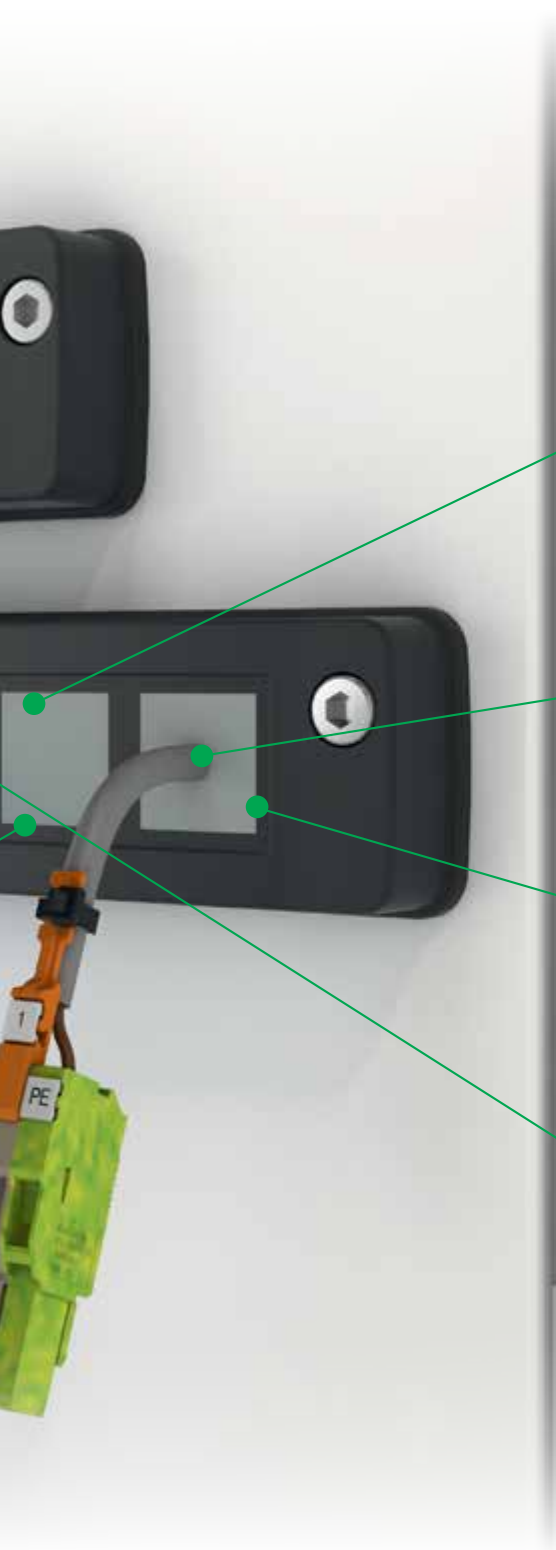
RoHS
compliant

Made in
Germany



Your advantages

30% less time required for new installations because of the one-piece frame. Modifications, retrofits, service work or the readjustment of cable lengths can be made at any time without disassembling the frame, since the seals are released from the outside inwards by simply pressing in.



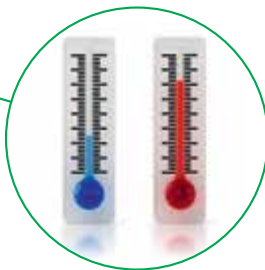
Versatile, high-density assemblies are possible

1-way, 2-way, and 4-way seals provide you with excellent versatility for cable management.



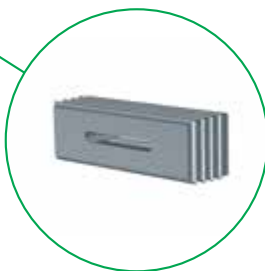
Outstanding IP66 seal

Multi-resistant, tapered seals feature inner and outer sealing gills.



Can be used from -40 °C to +120 °C

Materials contain no halogen or silicone, suitable for many different applications.



Fish skin

The "fish skin" mechanically surrounds the inserted flat cable; this ensures outstanding tolerance compensation and IP66 protection.

KDS-FB

Cable entry system for flat cables

Frame	KDS-SR-FB1/A	KDS-SR-FB2/A	KDS-SR-FB2/B
			

Diagram	Page 42	Page 42	Page 42
Type / colour	KDS-SR-FB1/A BK	KDS-SR-FB2/A BK	KDS-SR-FB2/B BK
Cat. no.	28700.4	28701.4	28702.4
Qty.	10	10	10
Seals (refer to pages 48 – 49, or pages 44 – 45)			
KDS-DE ...			1 x
KDS-DE-FB1	1 x		1 x
KDS-DE-FB2		1 x	
KDS-DE-FB3			
KDS-DE-FB4			
Accessories			
Actuating tool (refer to page 70)	KDS BW 1	KDS BW 1	KDS BW 1
Cat. no.	28622.0	28622.0	28622.0
Qty.	1	1	1
Sheet-metal hole punch (refer to page 76)	BL-VA KDS-FB1	BL-VA KDS-FB2	BL-VA KDS-FB2
Cat. no.	28729.0	28741.0	28741.0
Qty.	1	1	1

Frame	KDS-SR-FB4/A	KDS-SR-FB4/B	KDS-SR-FB4/C
			

Diagram	Page 43	Page 43	Page 43
Type / colour	KDS-SR-FB4/A BK	KDS-SR-FB4/B BK	KDS-SR-FB4/C BK
Cat. no.	28707.4	28708.4	28709.4
Qty.	10	10	10
Seals (refer to pages 48 – 49, or pages 44 – 45)			
KDS-DE ...		2 x	1 x
KDS-DE-FB1			2 x
KDS-DE-FB2		1 x	
KDS-DE-FB3			
KDS-DE-FB4	1 x		
Accessories			
Actuating tool (refer to page 70)	KDS BW 1	KDS BW 1	KDS BW 1
Cat. no.	28622.0	28622.0	28622.0
Qty.	1	1	1
Sheet-metal hole punch (refer to page 76)	BL-VA KDS-FB4	BL-VA KDS-FB4	BL-VA KDS-FB4
Cat. no.	28743.0	28743.0	28743.0
Qty.	1	1	1



Features

- Material: polyamide PA 6.6, glass-fibre reinforced | TPE
- Colour: black
- Flammability: UL 94 V-0
- Temperature range: -40 °C to +120 °C
- Halogen-free, silicone-free
- Protection: IP66

KDS-SR-FB3/A	KDS-SR-FB3/B	KDS-SR-FB3/C	KDS-SR-FB3/D
			
Page 43	Page 43	Page 43	Page 43
KDS-SR-FB3/A BK 28703.4	KDS-SR-FB3/B BK 28704.4	KDS-SR-FB3/C BK 28705.4	KDS-SR-FB3/D BK 28706.4
10	10	10	10
	1 x		2 x
	1 x	2 x	1 x
1 x			
KDS BW 1 28622.0	KDS BW 1 28622.0	KDS BW 1 28622.0	KDS BW 1 28622.0
1	1	1	1
BL-VA KDS-FB3 28742.0	BL-VA KDS-FB3 28742.0	BL-VA KDS-FB3 28742.0	BL-VA KDS-FB3 28742.0
1	1	1	1

KDS-SR-FB4/D	KDS-SR-FB4/E	KDS-SR-FB4/F
		
Page 43	Page 43	Page 43
KDS-SR-FB4/D BK 28710.4	KDS-SR-FB4/E BK 28711.4	KDS-SR-FB4/F BK 28712.4
10	10	10
3 x		5 x
1 x	1 x	
	1 x	
KDS BW 1 28622.0	KDS BW 1 28622.0	KDS BW 1 28622.0
1	1	1
BL-VA KDS-FB4 28743.0	BL-VA KDS-FB4 28743.0	BL-VA KDS-FB4 28743.0
1	1	1

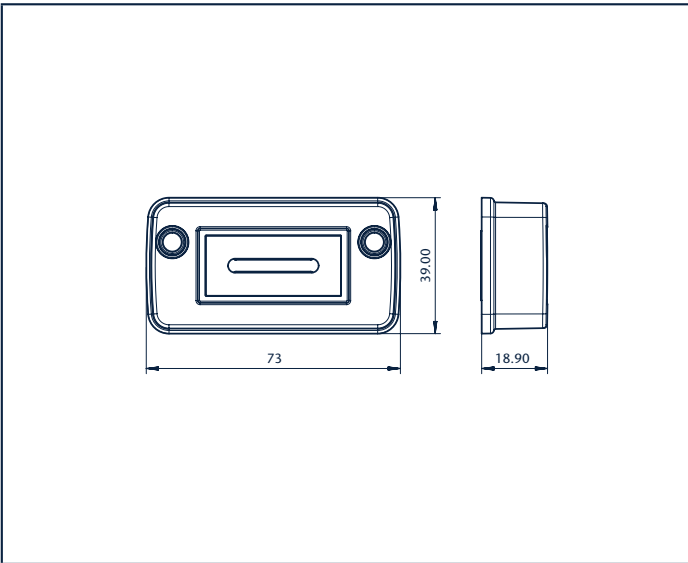
IP66	RoHS compliant	Made in Germany	
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KDS-FB

Dimensional drawing / Mounting cut-out

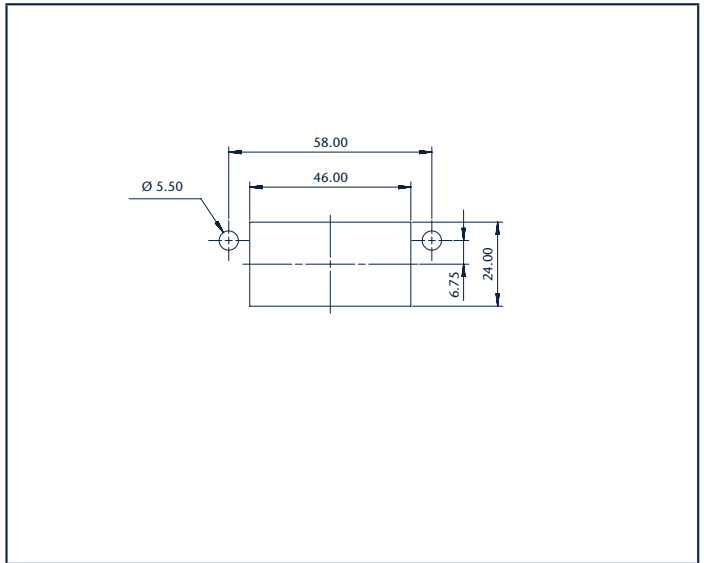
KDS-SR-FB1

Dimensional diagram



Torque for the frame's mounting screw: 3 Nm

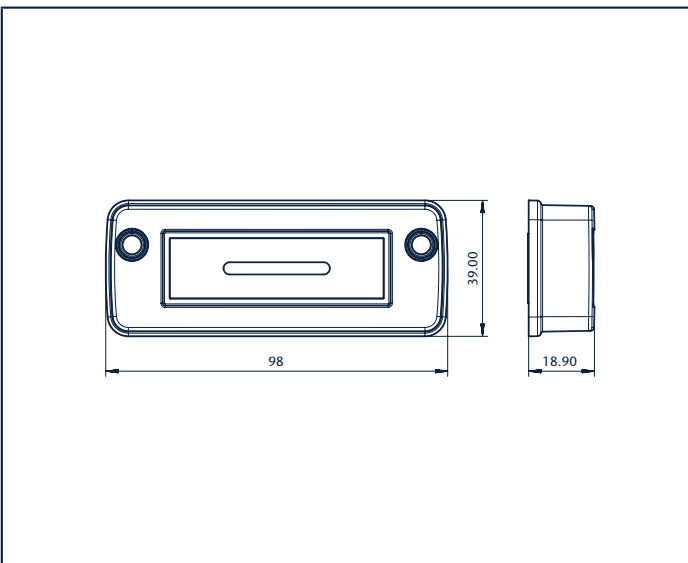
Mounting cut-out



Screw for usage: ISO 4762 / DIN 912

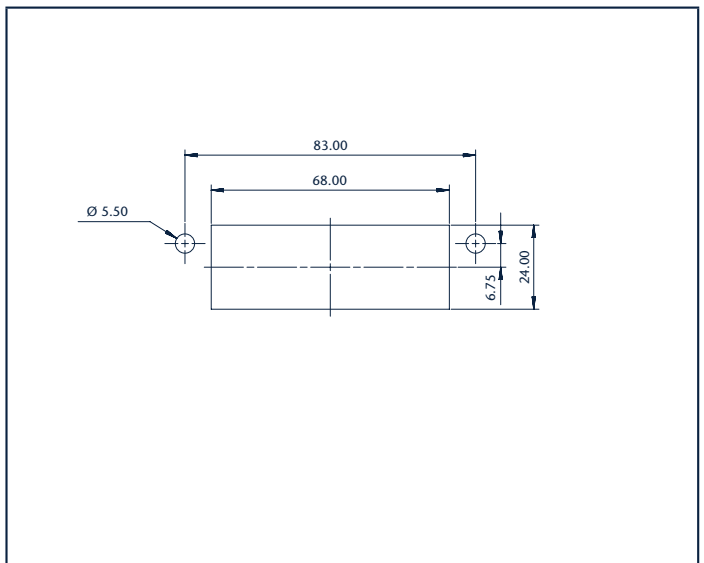
KDS-SR-FB2

Dimensional diagram



Torque for the frame's mounting screw: 3 Nm

Mounting cut-out

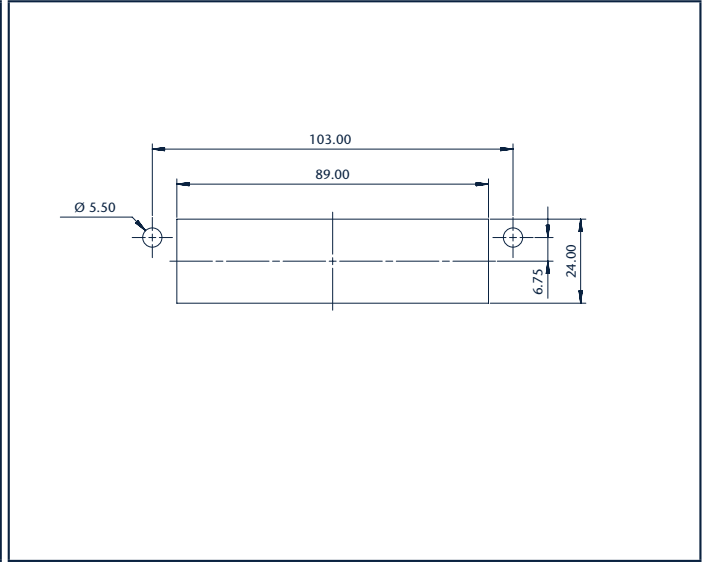
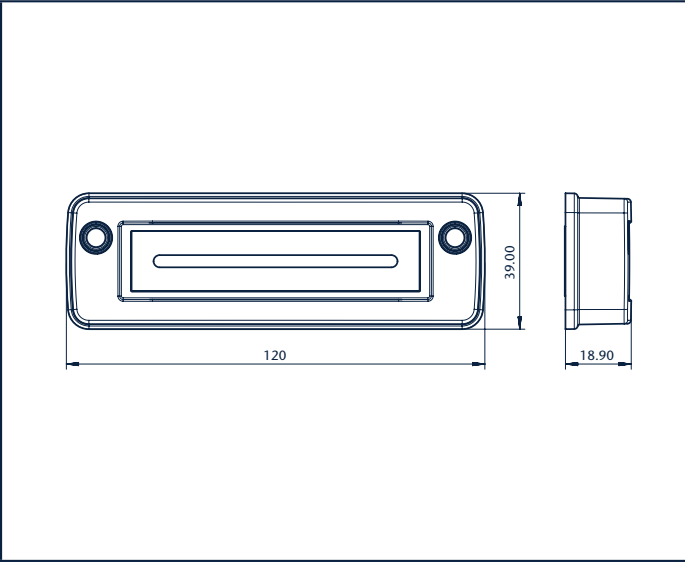


Screw for usage: ISO 4762 / DIN 912

KDS-SR-FB3

Dimensional diagram

Mounting cut-out



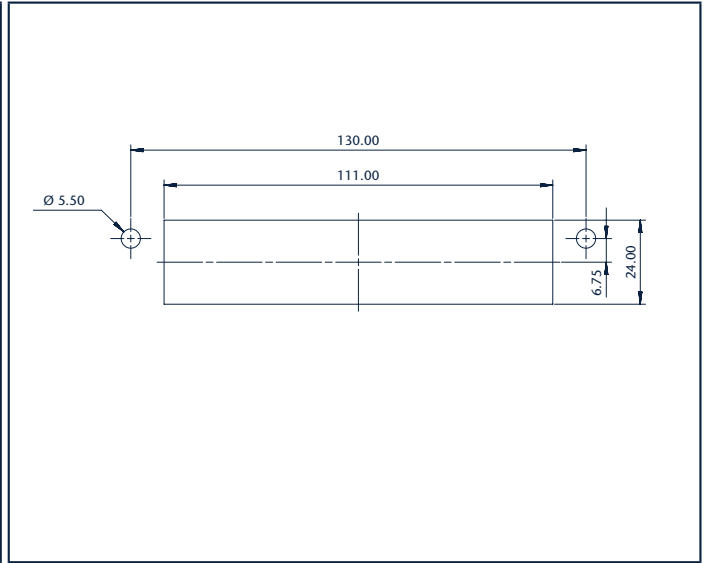
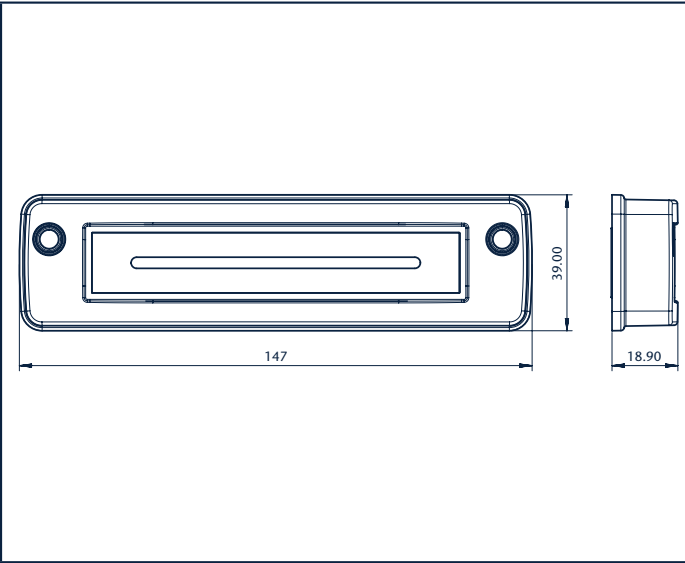
Torque for the frame's mounting screw: 3 Nm

Screw for usage: ISO 4762 / DIN 912

KDS-SR-FB4

Dimensional diagram





Mounting cut-out











Torque for the frame's mounting screw: 3 Nm

Screw for usage: ISO 4762 / DIN 912

Seals for KDS-FB

Seals		KDS-DE-FB1/A	KDS-DE-FB1/B	KDS-DE-FB1/C	
					
Type / colour		KDS-DE-FB1/A GR	KDS-DE-FB1/B GR	KDS-DE-FB1/C GR	
Cat. no.	Qty.	28713.6	5	28714.6	5
Sealing area			Width: 19–23 mm Thickness: 5.5–6 mm	Width: 28–33 mm Thickness: 5.5–6 mm	

Seals		KDS-DE-FB2/B	KDS-DE-FB2/C	KDS-DE-FB2/D	
					
Type / colour		KDS-DE-FB2/B GR	KDS-DE-FB2/C GR	KDS-DE-FB2/D GR	
Cat. no.	Qty.	28720.6	5	28721.6	5
Sealing area		Width: 32.5–38 mm Thickness: 5–5.5 mm	Width: 45–50.5 mm Thickness: 6–6.5 mm	Width: 47–52 mm Thickness: 9.5–10 mm	

Seals		KDS-DE-FB3/C	KDS-DE-FB4/A	KDS-DE-FB4/B	
					
Type / colour		KDS-DE-FB3/C GR	KDS-DE-FB4/A GR	KDS-DE-FB4/B GR	
Cat. no.	Qty.	28739.6	5	28727.6	5
Sealing area		Width: 64–69 mm Thickness: 11–12 mm		Width: 85–90 mm Thickness: 4.2–5.2 mm	

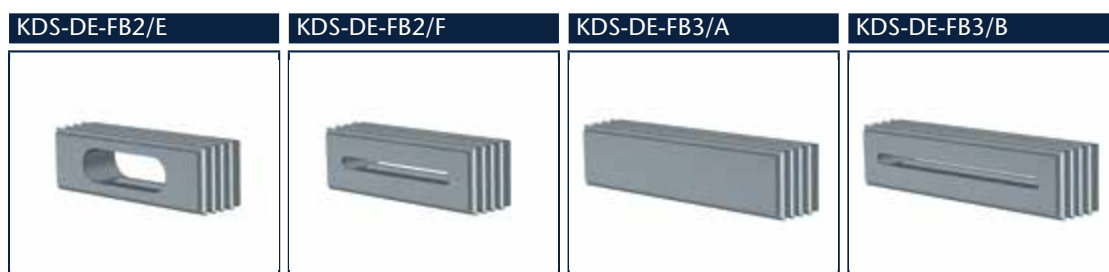


Features

- Material: TPE
- Flammability: UL 94 V-0
- Temperature range: -40 °C to +90 °C (static)
- Halogen-free, silicone-free
- Protection: IP66



KDS-DE-FB1/D GR	KDS-DE-FB1/E GR	KDS-DE-FB1/F GR	KDS-DE-FB2/A GR
28716.6 5 Width: 24 – 30 mm Thickness: 8.5 – 9 mm	28717.6 5 Width: 19 – 24 mm Thickness: 6.5 – 7 mm	28718.6 5 Width: 28 – 33 mm Thickness: 9 – 9.5 mm	28719.6 5



























KDS-DE-FB2/E GR	KDS-DE-FB2/F GR	KDS-DE-FB3/A GR	KDS-DE-FB3/B GR
28723.6 5 Width: 38 – 43 mm Thickness: 12.5 – 13 mm	28724.6 5 Width: 49 – 54 mm Thickness: 5 – 6 mm	28725.6 5	28726.6 5 Width: 72 – 77 mm Thickness: 5 – 5.5 mm

KDS-DE-FB4/C



KDS-DE-FB4/C GR
28740.6 5 Width: 94 – 99 mm Thickness: 4.2 – 5.2 mm

IP66	RoHS compliant	Made in Germany	
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Cat. no.	KDS-SR-FB1/A BK 28700.4	KDS-SR-FB2/A BK 28701.4	KDS-SR-FB2/B BK 28702.4	KDS-SR-FB3/A BK 28703.4	KDS-SR-FB3/B BK 28704.4	KDS-SR-FB3/C BK 28705.4
						
 KDS-DE-FB1/A GR 28713.6	•		•		•	
 KDS-DE-FB1/B GR 28714.6	•		•			•
 KDS-DE-FB1/C GR 28715.6	•		•			•
 KDS-DE-FB1/D GR 28716.6	•		•			•
 KDS-DE-FB1/E GR 28717.6	•		•			•
 KDS-DE-FB1/F GR 28718.6	•		•			•
 KDS-DE-FB2/A GR 28719.6		•			•	
 KDS-DE-FB2/B GR 28720.6		•			•	
 KDS-DE-FB2/C GR 28721.6		•			•	
 KDS-DE-FB2/D GR 28722.4		•			•	
 KDS-DE-FB2/E GR 28723.6		•			•	
 KDS-DE-FB2/F GR 28724.6		•			•	
 KDS-DE-FB3/A GR 28725.6				•		
 KDS-DE-FB3/B GR 28726.6				•		
 KDS-DE-FB3/C GR 28739.6				•		
 KDS-DE-FB4/A GR 28727.6						
 KDS-DE-FB4/B GR 28728.6						
 KDS-DE-FB4/C GR 28740.6						

* An overview of all seals with the external dimensions 20 x 20 can be found on pages 48 – 49.

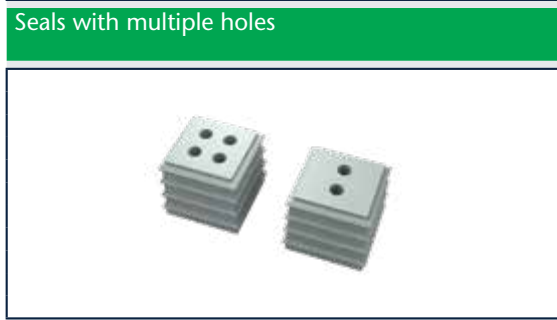
Sealing elements KDS systems



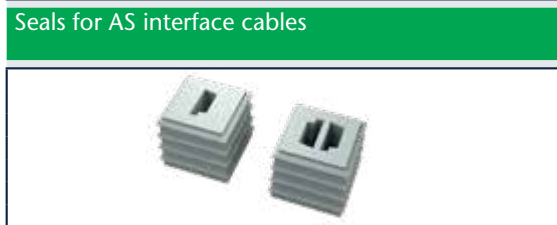
Seals		grey small		
Type	Cat. no.	Qty.	Max. Ø	
KDS-DE/B GR	28561.6	10	Blind	
KDS-DE 1.5 GR	28694.6	10	1.5 mm	
KDS-DE 1.5-2 GR	28562.6	10	2 mm	
KDS-DE 2 GR	28696.6	10	2 mm	
KDS-DE 2-3 GR	28563.6	10	3 mm	
KDS-DE 3 GR	28698.6	10	3 mm	
KDS-DE 3-4 GR	28564.6	10	4 mm	
KDS-DE 4-5 GR	28565.6	10	5 mm	
KDS-DE 5-6 GR	28566.6	10	6 mm	
KDS-DE 6-7 GR	28567.6	10	7 mm	
KDS-DE 7-8 GR	28568.6	10	8 mm	
KDS-DE 8-9 GR	28569.6	10	9 mm	
KDS-DE 9-10 GR	28570.6	10	10 mm	
KDS-DE 10-11 GR	28571.6	10	11 mm	
KDS-DE 11-12 GR	28572.6	10	12 mm	
KDS-DE 12-13 GR	28573.6	10	13 mm	
KDS-DE 13-14 GR	28574.6	10	14 mm	
KDS-DE 14-15 GR	28609.6	10	15 mm	
KDS-DE 15-16 GR	28671.6	10	16 mm	



Seals		grey large		
KDS-DEG/B GR	28575.6	10	Blind	
KDS-DEG 14-15 GR	28576.6	10	15 mm	
KDS-DEG 15-16 GR	28577.6	10	16 mm	
KDS-DEG 16-17 GR	28578.6	10	17 mm	
KDS-DEG 17-18 GR	28579.6	10	18 mm	
KDS-DEG 18-19 GR	28580.6	10	19 mm	
KDS-DEG 19-20 GR	28581.6	10	20 mm	
KDS-DEG 20-21 GR	28582.6	10	21 mm	
KDS-DEG 21-22 GR	28583.6	10	22 mm	
KDS-DEG 22-23 GR	28584.6	10	23 mm	
KDS-DEG 23-24 GR	28585.6	10	24 mm	
KDS-DEG 24-25 GR	28586.6	10	25 mm	
KDS-DEG 25-26 GR	28587.6	10	26 mm	
KDS-DEG 26-27 GR	28588.6	10	27 mm	
KDS-DEG 27-28 GR	28589.6	10	28 mm	
KDS-DEG 28-29 GR	28590.6	10	29 mm	
KDS-DEG 29-30 GR	28591.6	10	30 mm	
KDS-DEG 30-31 GR	28592.6	10	31 mm	
KDS-DEG 31-32 GR	28593.6	10	32 mm	
KDS-DEG 32-33 GR	28594.6	10	33 mm	
KDS-DEG 33-34 GR	28731.6	10	34 mm	
KDS-DEG 34-35 GR	28733.6	10	35 mm	



Seals with multiple holes		grey		
KDS-DE 2x4-5 GR	28595.6	10	5 mm	
KDS-DE 2x5-6 GR	28596.6	10	6 mm	
KDS-DE 2x6.5 GR	28607.6	10	6.5 mm	
KDS-DE 2x7 GR	28690.6	10	7 mm	
KDS-DE 2x8 GR	28692.6	10	8 mm	
KDS-DE 3x5-6 GR	28688.6	10	6 mm	
KDS-DE 4x2-3 GR	28597.6	10	3 mm	
KDS-DE 4x3-4 GR	28598.6	10	4 mm	
KDS-DE 4x5 GR	28673.6	10	5 mm	
KDS-DE 4x4.5 GR	28606.6	10	4.5 mm	
KDS-DE 4x6 GR	28762.6	10	6 mm	



Seals for AS interface cables		grey		
KDS-DE/1xASI GR	28599.6	10		
KDS-DE/2xASI GR	28600.6	10		

	IP66	NEMA TYPE 12	NEMA TYPE 4x
	RoHS compliant	Made in Germany	

Features

- Material: TPE
- Flammability: UL 94 V-0
- Temperature range: -40 °C to +90 °C (static)
- Halogen-free, silicone-free
- Protection: IP66

Seals



black small				
Type	Cat. no.	Qty.	Max. Ø	
KDS-DE/B BK	28520.4	10	Blind	
KDS-DE 1.5 BK	28693.4	10	1.5 mm	
KDS-DE 1.5-2 BK	28521.4	10	2 mm	
KDS-DE 2 BK	28695.4	10	2 mm	
KDS-DE 2-3 BK	28522.4	10	3 mm	
KDS-DE 3 BK	28697.4	10	3 mm	
KDS-DE 3-4 BK	28523.4	10	4 mm	
KDS-DE 4-5 BK	28524.4	10	5 mm	
KDS-DE 5-6 BK	28525.4	10	6 mm	
KDS-DE 6-7 BK	28526.4	10	7 mm	
KDS-DE 7-8 BK	28527.4	10	8 mm	
KDS-DE 8-9 BK	28528.4	10	9 mm	
KDS-DE 9-10 BK	28529.4	10	10 mm	
KDS-DE 10-11 BK	28530.4	10	11 mm	
KDS-DE 11-12 BK	28531.4	10	12 mm	
KDS-DE 12-13 BK	28532.4	10	13 mm	
KDS-DE 13-14 BK	28533.4	10	14 mm	
KDS-DE 14-15 BK	28608.4	10	15 mm	
KDS-DE 15-16 BK	28670.4	10	16 mm	

Seals



black large				
KDS-DEG/B BK	28534.4	10	Blind	
KDS-DEG 14-15 BK	28535.4	10	15 mm	
KDS-DEG 15-16 BK	28536.4	10	16 mm	
KDS-DEG 16-17 BK	28537.4	10	17 mm	
KDS-DEG 17-18 BK	28538.4	10	18 mm	
KDS-DEG 18-19 BK	28539.4	10	19 mm	
KDS-DEG 19-20 BK	28540.4	10	20 mm	
KDS-DEG 20-21 BK	28541.4	10	21 mm	
KDS-DEG 21-22 BK	28542.4	10	22 mm	
KDS-DEG 22-23 BK	28543.4	10	23 mm	
KDS-DEG 23-24 BK	28544.4	10	24 mm	
KDS-DEG 24-25 BK	28545.4	10	25 mm	
KDS-DEG 25-26 BK	28546.4	10	26 mm	
KDS-DEG 26-27 BK	28547.4	10	27 mm	
KDS-DEG 27-28 BK	28548.4	10	28 mm	
KDS-DEG 28-29 BK	28549.4	10	29 mm	
KDS-DEG 29-30 BK	28550.4	10	30 mm	
KDS-DEG 30-31 BK	28551.4	10	31 mm	
KDS-DEG 31-32 BK	28552.4	10	32 mm	
KDS-DEG 32-33 BK	28601.4	10	33 mm	
KDS-DEG 33-34 BK	28730.4	10	34 mm	
KDS-DEG 34-35 BK	28732.4	10	35 mm	

Seals with multiple holes



black				
KDS-DE 2x4-5 BK	28555.4	10	5 mm	
KDS-DE 2x5-6 BK	28556.4	10	6 mm	
KDS-DE 2x6.5 BK	28682.4	10	6.5 mm	
KDS-DE 2x7 BK	28689.4	10	7 mm	
KDS-DE 2x8 BK	28691.4	10	8 mm	
KDS-DE 3x5-6 BK	28687.4	10	6 mm	
KDS-DE 4x2-3 BK	28557.4	10	3 mm	
KDS-DE 4x3-4 BK	28558.4	10	4 mm	
KDS-DE 4x4.5 BK	28681.4	10	4.5 mm	
KDS-DE 4x5 BK	28672.4	10	5 mm	
KDS-DE 4x6 BK	28763.4	10	6 mm	

Seals for AS interface cables



black				
KDS-DE/1xASI BK	28559.4	10		
KDS-DE/2xASI BK	28560.4	10		

Cone-shaped seals



black				
KDS-DE/K 2-11 BK	28553.4	10	11 mm	
KDS-DEG/K 7-24 BK	28554.4	10	24 mm	

	IP66	NEMA TYPE 12	NEMA TYPE 4x
	RoHS compliant	Made in Germany	

Features

- Material: TPE
- Flammability: UL94 HB
- Temperature range: -40 °C to +120 °C (static)
- Halogen-free, silicone-free
- High chemical resistance
- UV-stabilized
- Protection: IP66

KDS-DES seals

The **KDS-DES** seals enable you to install non-assembled cables. The corresponding membrane must be pierced (center point is marked) to insert the cables. The cables can then be guided through the seal. Thanks to their design based on the proven **KES system**, the **KDS-DES** seals ensure an IP54-tight seal. Despite the high-density assembly (up to eight cables), the **KDS-DES** seals are compatible with almost all **KDS** solutions (refer to the overview on pages 52 – 53).

The seals' conical shape enables them to be easily pressed in so they can seal gaps. For the assembly, they are pressed into the selected **KDS** system from the inside outwards.



Features

- Material: TPE
- Flammability: UL 94 V-0
- Temperature range: -40 °C to +90 °C (static)
- Halogen-free, silicone-free
- Protection class: IP54

Seals	KDS-DES 2X10.5	KDS-DES 3X9.5	KDS-DES 3X8.5	KDS-DES 4X7.5
Diagram				
Type	KDS-DES 2X10.5 GR ●	KDS-DES 3X9.5 GR ●	KDS-DES 3X8.5 GR ●	KDS-DES 4X7.5 GR ●
Cat. no.	28800.6	28801.6	28802.6	28803.6
Qty.	5	5	5	5
Size (L x W x H), mm	42.69 x 21.1 x 17.7	42.69 x 21.1 x 17.7	42.69 x 21.1 x 17.7	42.69 x 21.1 x 17.7
Connection data				
Number of cables x cable diameter (mm)	2 x 10.5	3 x 9.5	3 x 8.5	4 x 7.5

Seals	KDS-DES 7X6.5	KDS-DES 8X5.5	KDS-DES 8X4.5	
Diagram				
Type	KDS-DES 7X6.5 GR ●	KDS-DES 8X5.5 GR ●	KDS-DES 8X4.5 GR ●	
Cat. no.	28804.6	28805.6	28806.6	
Qty.	5	5	5	
Size (L x W x H), mm	42.69 x 21.1 x 17.7	42.69 x 21.1 x 17.7	42.69 x 21.1 x 17.7	
Connection data				
Number of cables x cable diameter (mm)	7 x 6.5	8 x 5.5	8 x 4.5	

The KDS-DES is compatible with the following frames:

Type	Cat. no.
KDS-SR-FB1/A BK	28700.4
KDS-SR-FB2/B BK	28702.4
KDS-SR-FB3/C BK	28705.4
KDS-SR-FB3/D BK	28706.4
KDS-SR-FB4/B BK	28708.4
KDS-SR-FB4/E BK	28711.4
KDS-SR 1-4 BK*	28506.4
KDS-SR 6/10 BK*	28500.4
KDS-SR 8/16 BK*	28502.4
KDS-SR 10/24 BK*	28504.4
KDS-FP 2x10/24 BK*	28660.4
KDS-FP 3x10/24 BK*	28661.4
KDS-KV M40 BK	28613.4
KDS-KV M50 BK	28614.4
KDS-KV M63 BK	28615.4
KDS-R 40-63 BK**	28774.4

* Combined with the KDS-Inlay 1 or KDS-Inlay 2

** Only in combination with KDS-RGA M63

IP54	RoHS compliant	Made in Germany	
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KDSClick

Combination options for the modular KDSClick system

Frame



4-piece frame
KDS-SR 1-4 BK
28506.4



6-piece frame
KDS-SR 6/10 BK
28500.4



8-piece frame
KDS-SR 8/16 BK
28502.4



10-piece frame
KDS-SR 10/24 BK
28504.4

Many combinations for your individual requirements

4-piece frame KDS-SR 1-4

1-piece inlay

2-piece inlay

4-piece inlay



6-piece frame KDS-SR 6/10

1-piece inlay

2-piece inlay

4-piece inlay

6-piece inlay



Inlays



KDS-Inlay 1 BK
28516.4



KDS-Inlay 2 BK
28517.4



KDS-Inlay 2 BK
28517.4



KDS-Inlay 4 BK
28518.4



KDS-Inlay 6 BK
28519.4

8-piece frame KDS-SR 8/16



10-piece frame KDS-SR 10/24



KES Cable entries

When feeding in non-assembled cables, lines and pneumatic hoses (without connected plugs), CONTA-CLIP has a wide range of products that offer alternatives to cable glands or single-membrane feed-throughs.

The **KES** cable entries are very flat; they enable space-saving professional cable entries with a very tight seal.

Due to its high assembly density, the **KES** system is well suited for applications where the installations must be carried out in confined spaces.



Your advantages

- Can be screwed/snapped on
- Very high stability (core: PA 6.6 GF)
- Outstanding strain relief (cone grommet)
- Very simple assembly
(with marked centring point)
- High-density assemblies
- double seal/tightness: IP66
- Hygienic design: no dirt-prone niches
- Large assortment (48 varieties)
- UL-listed plastic materials
- UL 94 V-0

KES Cable entries

Two components

The **KES** system consists of two components. The inner core, made of polyamide PA 6.6 GF, is crucial for the stability and strain relief; it is over-moulded in the sealing areas with TPE to ensure an IP66 protective seal.



Many cables in a confined space

Many cables (with various diameters from 3.2 to 20.5 mm) can be inserted in a confined space and double sealed (IP66) thanks to the special construction of the conical grommets. There are three ways that the **KES** system can be installed: screw fastening from outside, screw fastening with threaded bushes and locking hooks from the inside, or snap-in fastening from the outside. The corresponding membrane must be pierced (center point is marked) to insert the cables.



UL 94 V-0 classification

The **KES** is designed for use in mounting cut-outs of 24-pin heavy-duty connectors. All variants are available in grey and black. The materials used comply with the UL 94 V-0 classification.



	IP66	NEMA TYPE 12	NEMA TYPE 4x
	RoHS compliant	Made in Germany	

KES Cable entries

An overview of your advantages

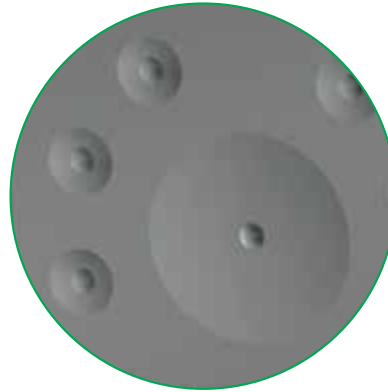
High-density assemblies

In contrast to the classic cable gland, the **KES** allows many cables, hoses and lines to be installed in a space-saving manner, even in cramped installation conditions.



Very precise

The piercing points are clearly marked so that cables and hoses can be centred precisely.



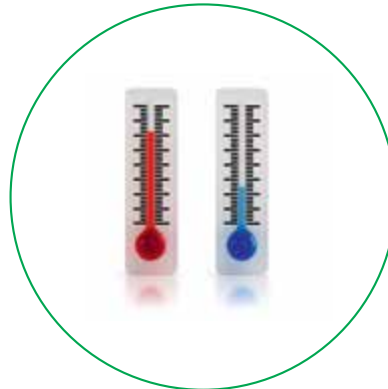
Integrated strain relief

The special shape of the multi-layered membrane cone grommet ensures an optimal strain relief mechanism for the cables, working towards in accordance with DIN EN 62444.



Can be used from -40 °C to +90 °C

Materials contain no halogen or silicone; suitable for many different applications.



KES variety

You can choose one of three attachment options to fit your requirements.

1. Screw-on mount



The **KES** (without threaded bush) is screwed from the outside onto the housing wall.

2. Screw-on mount with threaded bushes and latching clips



Using the latching clips, the **KES-GB** latches onto the outside of the housing wall. It is then screwed on from the inside, through the housing wall, using the integrated threaded bushes.

3. Latched (snap-on) mount using latching hooks



The **KES-R** is latched from outside to the housing wall using the latching clips.

KES Cable entries

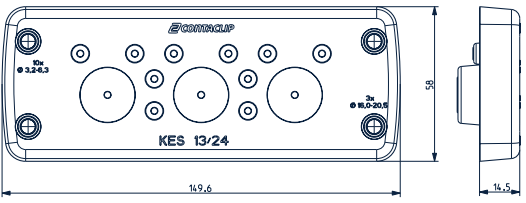
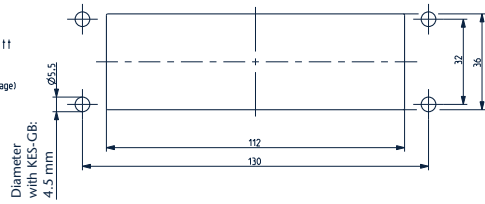
Cable entries		KES 13/24	KES 14/24	KES 16/24
				
Diagram		Page 60	Page 60	Page 60
Mounting type Screw-on mount				
				
Type / colour		KES 13/24 GR ●	KES 14/24 GR ●	KES 16/24 GR ●
<i>Cat. no.</i>	Qty.	28630.6 10	28631.6 10	28632.6 10
Type / colour		KES 13/24 BK ●	KES 14/24 BK ●	KES 16/24 BK ●
<i>Cat. no.</i>	Qty.	28630.4 10	28631.4 10	28632.4 10
Mounting type Screw fastening with pressed-in threaded bush and snap-in latching clips.				
				
Type / colour		KES-GB 13/24 GR ●	KES-GB 14/24 GR ●	KES-GB 16/24 GR ●
<i>Cat. no.</i>	Qty.	28640.6 10	28641.6 10	28642.6 10
Type / colour		KES-GB 13/24 BK ●	KES-GB 14/24 BK ●	KES-GB 16/24 BK ●
<i>Cat. no.</i>	Qty.	28640.4 10	28641.4 10	28642.4 10
Mounting type Tool-free latch-on mount				
				
Type / colour		KES-R 13/24 GR ●	KES-R 14/24 GR ●	KES-R 16/24 GR ●
<i>Cat. no.</i>	Qty.	28650.6 10	28651.6 10	28652.6 10
Type / colour		KES-R 13/24 BK ●	KES-R 14/24 BK ●	KES-R 16/24 BK ●
<i>Cat. no.</i>	Qty.	28650.4 10	28651.4 10	28652.4 10
Connection data				
Number of cables x cable diameter (mm)		10 x 3.2 – 6.3 3 x 16 – 20.5	5 x 3.2 – 6.3 2 x 4 – 7.5 3 x 5.5 – 10.5 1 x 8 – 12.5 3 x 12 – 16.2	8 x 3.2 – 5.5 6 x 5 – 8.5 2 x 9.5 – 14.5
Features				
Material of frame / sealing plate		PA 6.6 GF / elastomer	PA 6.6 GF / elastomer	PA 6.6 GF / elastomer
Temperature range		-40 °C to +90 °C	-40 °C to +90 °C	-40 °C to +90 °C
Protection		IP66	IP66	IP66
Flammability class		UL 94 V-0	UL 94 V-0	UL 94 V-0
Sheet-metal hole punch		Sheet-metal hole punch	Sheet-metal hole punch	Sheet-metal hole punch
<i>Cat. no.</i>		Page 76	Page 76	Page 76

	IP66	NEMA TYPE 12	NEMA TYPE 4x
ECOLAB certified	RoHS compliant	Made in Germany	

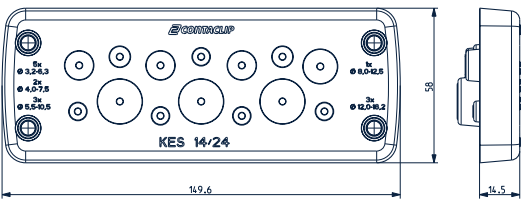
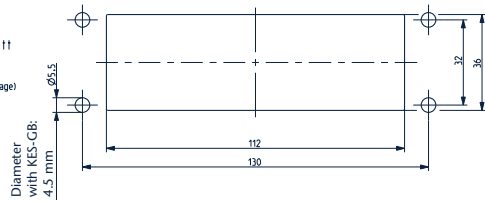
KES 16-1/24		KES 17/24		KES 20/24		KES 21/24		KES 32/24	
									
Page 60		Page 61		Page 61		Page 61		Page 61	
KES 16-1/24 GR ●		KES 17/24 GR ●		KES 20/24 GR ●		KES 21/24 GR ●		KES 32/24 GR ●	
28633.6	10	28634.6	10	28635.6	10	28636.6	10	28637.6	10
KES 16-1/24 BK ●		KES 17/24 BK ●		KES 20/24 BK ●		KES 21/24 BK ●		KES 32/24 BK ●	
28633.4	10	28634.4	10	28635.4	10	28636.4	10	28637.4	10
KES-GB 16-1/24 GR ●		KES-GB 17/24 GR ●		KES-GB 20/24 GR ●		KES-GB 21/24 GR ●		KES-GB 32/24 GR ●	
28643.6	10	28644.6	10	28645.6	10	28646.6	10	28647.6	10
KES-GB 16-1/24 BK ●		KES-GB 17/24 BK ●		KES-GB 20/24 BK ●		KES-GB 21/24 BK ●		KES-GB 32/24 BK ●	
28643.4	10	28644.4	10	28645.4	10	28646.4	10	28647.4	10
KES-R 16-1/24 GR ●		KES-R 17/24 GR ●		KES-R 20/24 GR ●		KES-R 21/24 GR ●		KES-R 32/24 GR ●	
28653.6	10	28654.6	10	28655.6	10	28656.6	10	28657.6	10
KES-R 16-1/24 BK ●		KES-R 17/24 BK ●		KES-R 20/24 BK ●		KES-R 21/24 BK ●		KES-R 32/24 BK ●	
28653.4	10	28654.4	10	28655.4	10	28656.4	10	28657.4	10
2 x 3.2 – 6.3		4 x 3.2 – 6.3		12 x 3.2 – 6.3		1 x 3.2 – 6.3		32 x 3.2 – 6.3	
9 x 4 – 7.5		2 x 4 – 7.5		8 x 5.5 – 10.5		14 x 4 – 7.5			
1 x 5.5 – 10.5		1 x 5.5 – 10.5				4 x 5.5 – 10.5			
1 x 8 – 12.5		10 x 8 – 12.5				2 x 8 – 12.5			
3 x 12 – 16.2									
PA 6.6 GF / elastomer		PA 6.6 GF / elastomer		PA 6.6 GF / elastomer		PA 6.6 GF / elastomer		PA 6.6 GF / elastomer	
-40 °C to +90 °C		-40 °C to +90 °C		-40 °C to +90 °C		-40 °C to +90 °C		-40 °C to +90 °C	
IP66		IP66		IP66		IP66		IP66	
UL 94 V-0		UL 94 V-0		UL 94 V-0		UL 94 V-0		UL 94 V-0	
Sheet-metal hole punch		Sheet-metal hole punch		Sheet-metal hole punch		Sheet-metal hole punch		Sheet-metal hole punch	
Page 76		Page 76		Page 76		Page 76		Page 76	

KES

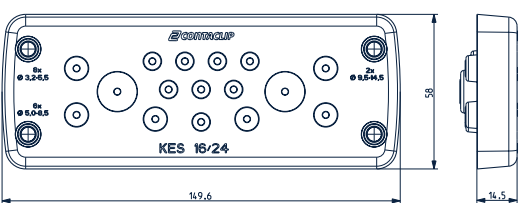
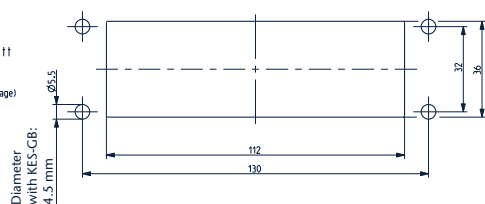
Dimensional drawing / Mounting cut-out for cable entries

KES 13/24 Dimensional diagram	Mounting cut-out
 <p>KES 13/24 10x Ø3.2 - 6.3mm 3x Ø16 - 20.5mm</p>	 <p>Montageausschnitt für Wandstärken 1,5-2mm (bei Schnapphaken-Montage)</p> <p>Diameter with KES-CB: 4,5 mm</p>

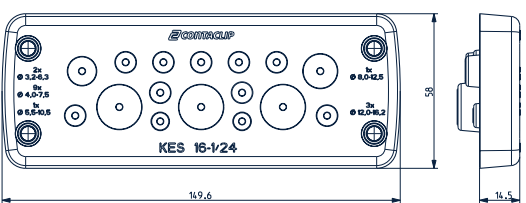
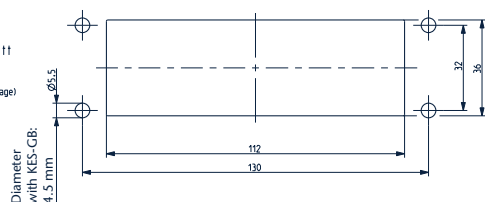
Torque for the frame's mounting screw: 2.5 – 3 Nm

KES 14/24 Dimensional diagram	Mounting cut-out
 <p>KES 14/24 5x Ø3.2 - 6.3mm 2x Ø4.0 - 7.5mm 3x Ø5.5 - 10.5mm 1x Ø8.0 - 12.5mm 3x Ø12 - 16.2mm</p>	 <p>Montageausschnitt für Wandstärken 1,5-2mm (bei Schnapphaken-Montage)</p> <p>Diameter with KES-CB: 4,5 mm</p>

Torque for the frame's mounting screw: 2.5 – 3 Nm

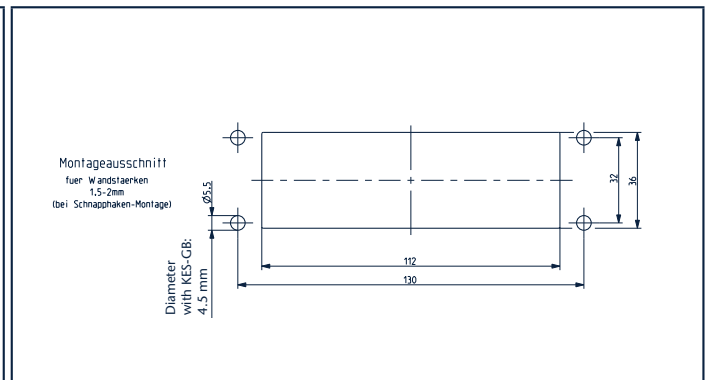
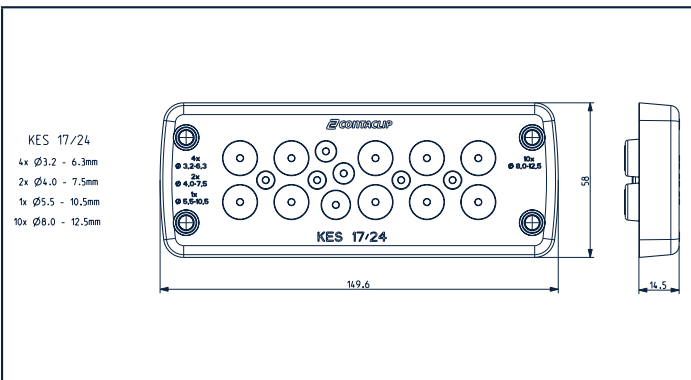
KES 16/24 Dimensional diagram	Mounting cut-out
 <p>KES 16/24 8x Ø3.2 - 5.5mm 6x Ø5.0 - 8.5mm 2x Ø9.5 - 14.5mm</p>	 <p>Montageausschnitt für Wandstärken 1,5-2mm (bei Schnapphaken-Montage)</p> <p>Diameter with KES-CB: 4,5 mm</p>

Torque for the frame's mounting screw: 2.5 – 3 Nm

KES 16-1/24 Dimensional diagram	Mounting cut-out
 <p>KES 16-1/24 2x Ø3.2 - 6.3mm 9x Ø4.0 - 7.5mm 1x Ø5.5 - 10.5mm 1x Ø8.0 - 12.5mm 3x Ø12 - 16.2mm</p>	 <p>Montageausschnitt für Wandstärken 1,5-2mm (bei Schnapphaken-Montage)</p> <p>Diameter with KES-CB: 4,5 mm</p>

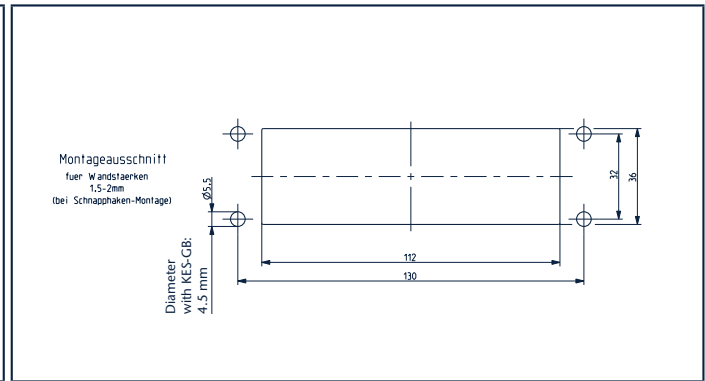
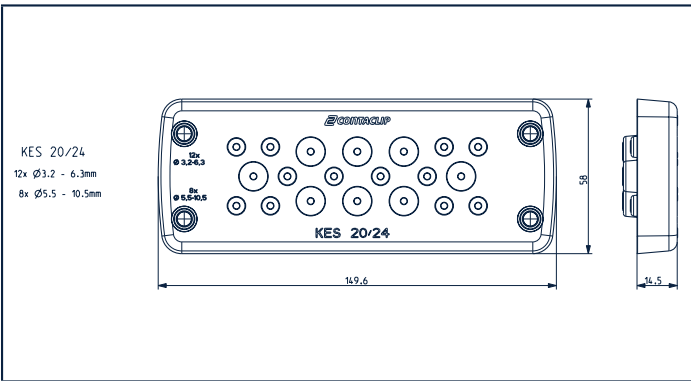
Torque for the frame's mounting screw: 2.5 – 3 Nm

KES 17/24
Dimensional diagram **Mounting cut-out**



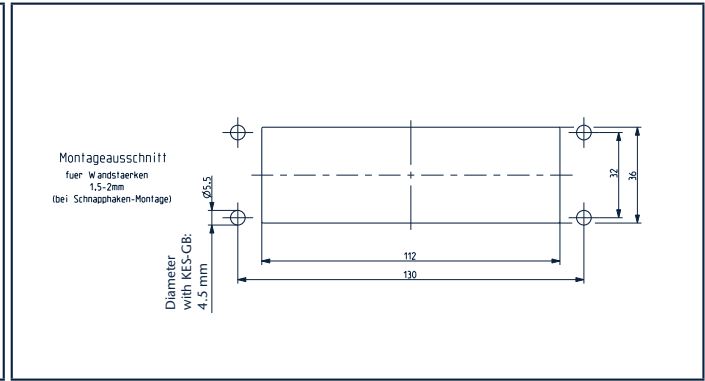
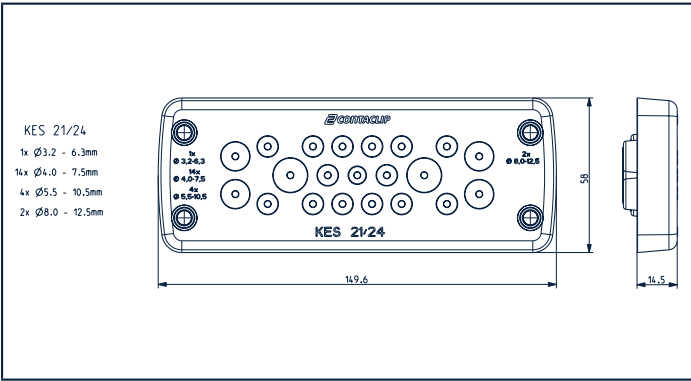
Torque for the frame's mounting screw: 2.5 – 3 Nm

KES 20/24
Dimensional diagram **Mounting cut-out**



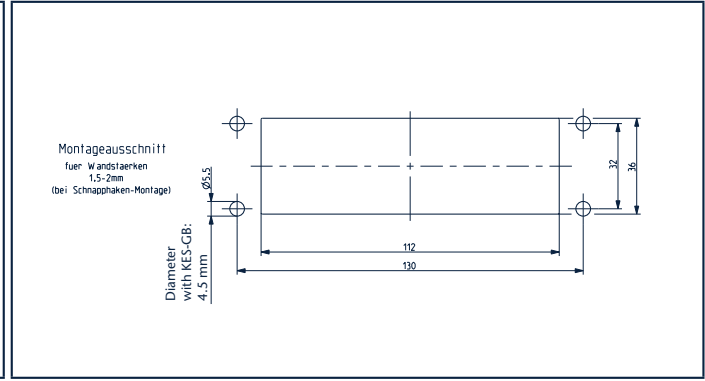
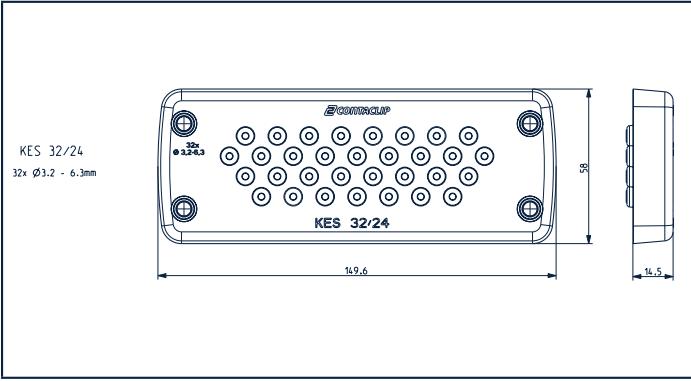
Torque for the frame's mounting screw: 2.5 – 3 Nm

KES 21/24
Dimensional diagram **Mounting cut-out**



Torque for the frame's mounting screw: 2.5 – 3 Nm

KES 32/24
Dimensional diagram **Mounting cut-out**



Torque for the frame's mounting screw: 2.5 – 3 Nm

KES-E Cable entries

Many cables in a confined space: The **KES-E** cable entry system enables you to insert many cables (without plugs) with diameters ranging from 1.0 mm to 16.1 mm into a very confined space. The cable entry is inserted without tools into the intended opening (variant "A" for wall thickness from 1.5 to 2.5 mm, and variant "B" for wall thickness from 2.5 to 4.0 mm).

In order to insert the cables, the corresponding membrane (with marked centring point) must be pierced; the cables are then simply guided through. The material TPE guarantees that IP54 protection is maintained.



Your advantages

- Tool-free installation
- Outstanding stability
- Simple assembly (with marked centre point)
- High-density assemblies
- Hygienic design
- For walls of various thickness



Features

- Material: TPE
- Flammability: UL 94 V-0
- Temperature range: -40 °C to +90 °C (static)
- Halogen-free, silicone-free
- Wall thickness A: 1.5–2.5 mm, and B: 2.5–4.0 mm
- Protection class: IP54

KES-E variety



KES-E 12/24



KES-E 14/24



KES-E 17/24



KES-E 18/24



KES-E 19/24



KES-E 26/24



KES-E 42/24



KES-E 48/24



KES-E 50/24




IP54




RoHS
compliant




Made in
Germany



KES-E Cable entries

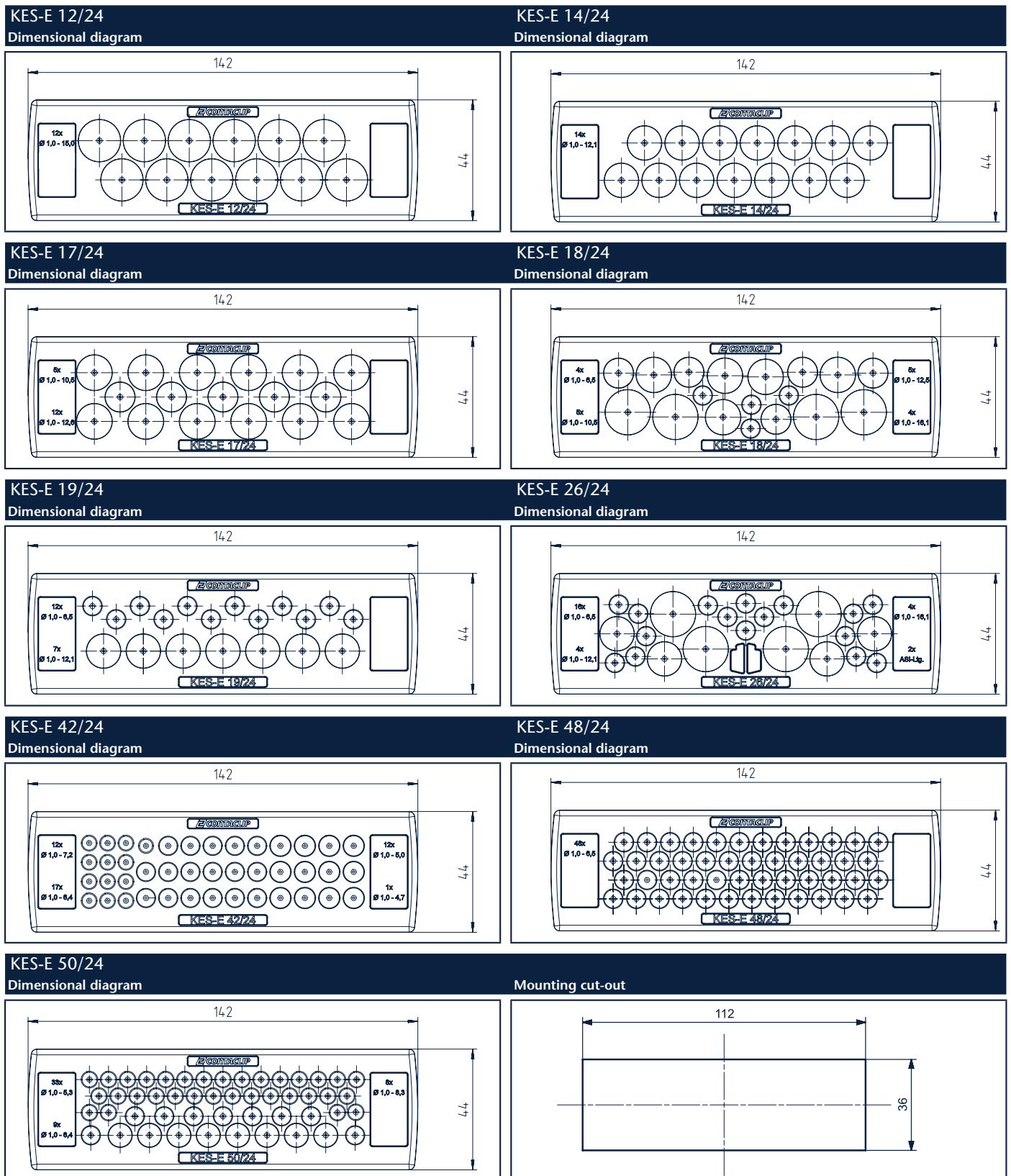
Cable entries		KES-E 12/24	KES-E 14/24	KES-E 17/24
				
Type		KES-E 12/24 A GR ●	KES-E 14/24 A GR ●	KES-E 17/24 A GR ●
<i>Cat. no.</i>	Qty.	28810.6 10	28811.6 10	28812.6 10
For wall thickness		1.5–2.5	1.5–2.5	1.5–2.5
Type		KES-E 12/24 B GR ●	KES-E 14/24 B GR ●	KES-E 17/24 B GR ●
<i>Cat. no.</i>	Qty.	28840.6 10	28841.6 10	28842.6 10
For wall thickness		2.5–4.0	2.5–4.0	2.5–4.0
Connection data				
Number of cables x cable diameter (mm)		12 x 1.0–15.0	14 x 1.0–12.1	5 x 1.0–10.5 12 x 1.0–12.6
Features				
Protection		IP54	IP54	IP54

Cable entries		KES-E 18/24	KES-E 19/24	KES-E 26/24
				
Type		KES-E 18/24 A GR ●	KES-E 19/24 A GR ●	KES-E 26/24 A GR ●
<i>Cat. no.</i>	Qty.	28813.6 10	28814.6 10	28815.6 10
For wall thickness		1.5–2.5	1.5–2.5	1.5–2.5
Type		KES-E 18/24 B GR ●	KES-E 19/24 B GR ●	KES-E 26/24 B GR ●
<i>Cat. no.</i>	Qty.	28843.6 10	28844.6 10	28845.6 10
For wall thickness		2.5–4.0	2.5–4.0	2.5–4.0
Connection data				
Number of cables x cable diameter (mm)		4 x 1.0–6.5 5 x 1.0–10.5 5 x 1.0–12.5 4 x 1.0–16.1	12 x 1.0–6.5 7 x 1.0–12.1	16 x 1.0–6.5 4 x 1.0–12.1 4 x 1.0–16.1 2 x ASI
Features				
Protection		IP54	IP54	IP54

Cable entries		KES-E 42/24	KES-E 48/24	KES-E 50/24
				
Type		KES-E 42/24 A GR ●	KES-E 48/24 A GR ●	KES-E 50/24 A GR ●
<i>Cat. no.</i>	Qty.	28816.6 10	28817.6 10	28818.6 10
For wall thickness		1.5–2.5	1.5–2.5	1.5–2.5
Type		KES-E 42/24 B GR ●	KES-E 48/24 B GR ●	KES-E 50/24 B GR ●
<i>Cat. no.</i>	Qty.	28846.6 10	28847.6 10	28848.6 10
For wall thickness		2.5–4.0	2.5–4.0	2.5–4.0
Connection data				
Number of cables x cable diameter (mm)		12 x 1.0–7.2 17 x 1.0–6.4 12 x 1.0–5.0 1 x 1.0–4.7	48 x 1.0–6.5	33 x 1.0–5.3 9 x 1.0–6.4 8 x 1.0–8.3
Features				
Protection		IP54	IP54	IP54

KES-E

Dimensional drawing / Mounting cut-out for cable entries



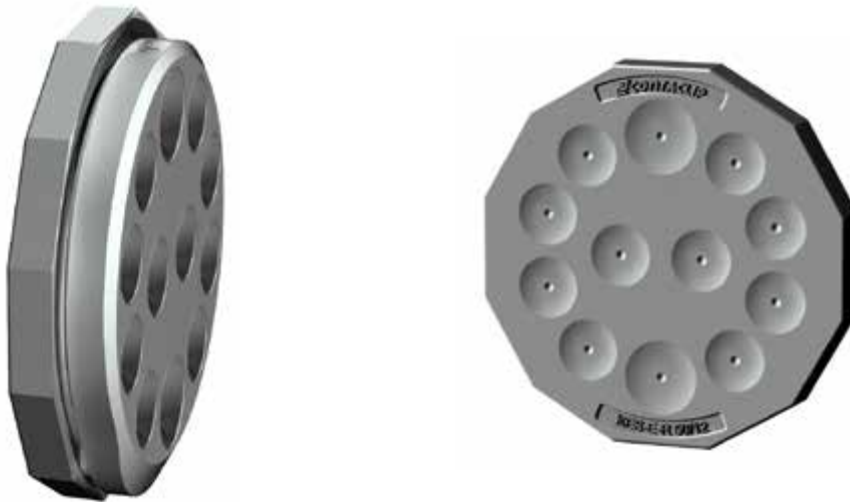
<p>IP54</p>	<p>RoHS compliant</p>	<p>Made in Germany</p>	
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KES-E-R

Round cable entries

Many cables in a confined space: The **KES-E-R** cable entry system enables you to insert many cables (without plugs) with diameters ranging from 1.0 mm to 22.5 mm into a very confined space. The cable entry is inserted without tools into the intended opening (variant "A" for wall thickness from 1.5 to 2.5 mm, and variant "B" for wall thickness from 2.5 to 4.0 mm).

In order to insert the cables, the corresponding membrane (with marked centring point) must be pierced; the cables are then simply guided through. The material TPE guarantees that IP54 protection is maintained.



Your advantages

- Tool-free installation
- Outstanding stability
- Simple assembly (with marked centre point)
- High-density assemblies
- Hygienic design
- For walls of various thickness



Features

- Material: TPE
- Flammability: UL 94 V-0
- Temperature range: -40 °C to +90 °C (static)
- Halogen-free, silicone-free
- Wall thickness A: 1.5 – 2.5 mm, and B: 2.5 – 4.0 mm
- Protection class: IP54

KES-E-R variety



KES-E-R 50/9



KES-E-R 50/11



KES-E-R 50/12



KES-E-R 50/16



KES-E-R 50/18



KES-E-R 50/20



KES-E-R 50/35

IP54




RoHS
compliant




Made in
Germany




KES-E-R

Round cable entries

Round cable entries		KES-E-R 50/9	KES-E-R 50/11	KES-E-R 50/12
				
Type		KES-E-R 50/9 A GR ●	KES-E-R 50/11 A GR ●	KES-E-R 50/12 A GR ●
<i>Cat. no.</i>	Qty.	28829.6 10	28830.6 10	28831.6 10
For wall thickness		1.5–2.5	1.5–2.5	1.5–2.5
Type		KES-E-R 50/9 B GR ●	KES-E-R 50/11 B GR ●	KES-E-R 50/12 B GR ●
<i>Cat. no.</i>	Qty.	28859.6 10	28860.6 10	28861.6 10
For wall thickness		2.5–4.0	2.5–4.0	2.5–4.0
Connection data				
Number of cables x cable diameter (mm)		5 x 1.0–7.0 4 x 1.0–18.0	7x1.0–7.2 3 x 1.0–11.2 1 x 1.0–22.5	10 x 1.0–9.2 2 x 1.0–11.2
Features				
Protection		IP54	IP54	IP54

Round cable entries		KES-E-R 50/16	KES-E-R 50/18	KES-E-R 50/20
				
Type		KES-E-R 50/16 A GR ●	KES-E-R 50/18 A GR ●	KES-E-R 50/20 A GR ●
<i>Cat. no.</i>	Qty.	28832.6 10	28833.6 10	28834.6 10
For wall thickness		1.5–2.5	1.5–2.5	1.5–2.5
Type		KES-E-R 50/16 B GR ●	KES-E-R 50/18 B GR ●	KES-E-R 50/20 B GR ●
<i>Cat. no.</i>	Qty.	28862.6 10	28863.6 10	28864.6 10
For wall thickness		2.5–4.0	2.5–4.0	2.5–4.0
Connection data				
Number of cables x cable diameter (mm)		4 x 1.0–5.3 5 x 1.0–6.3 3 x 1.0–9.5 4 x 1.0–11.3	2 x 1.0–4.0 2 x 1.0–6.0 4 x 1.0–7.2 5 x 1.0–9.4 5 x 1.0–12.0	16 x 1.0–6.3 4 x 1.0–9.3
Features				
Protection		IP54	IP54	IP54

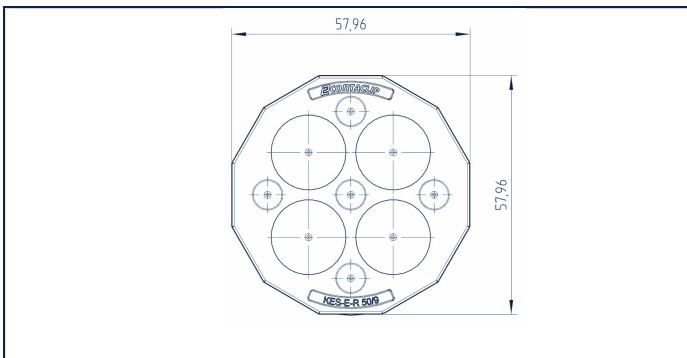
Round cable entries		KES-E-R 50/35		
				
Type		KES-E-R 50/35 A GR ●		
<i>Cat. no.</i>	Qty.	28835.6 10		
For wall thickness		1.5–2.5		
Type		KES-E-R 50/35 B GR ●		
<i>Cat. no.</i>	Qty.	28865.6 10		
For wall thickness		2.5–4.0		
Connection data				
Number of cables x cable diameter (mm)		35 x 1.0–5.2		
Features				
Protection		IP54		

KES-E-R

Dimensional drawing / Mounting cut-out for cable entries

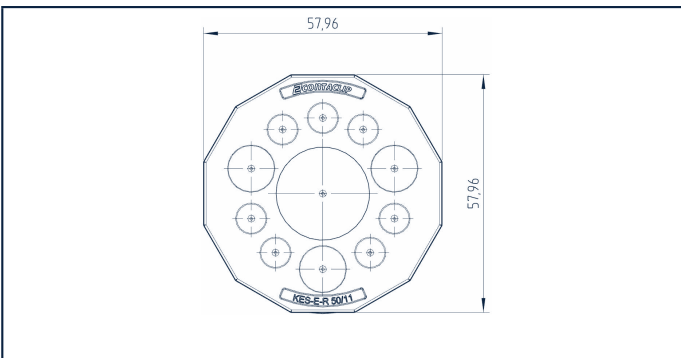
KES-E-R 50/9

Dimensional diagram



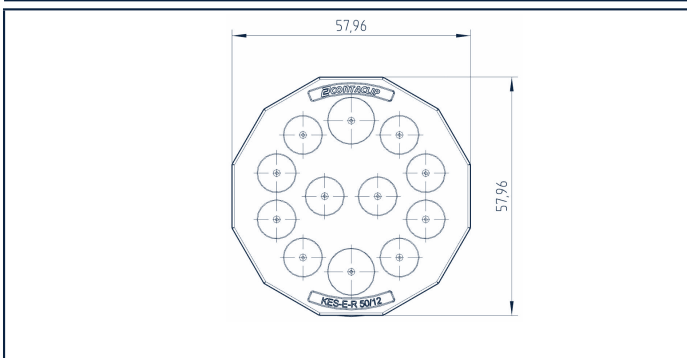
KES-E-R 50/11

Dimensional diagram



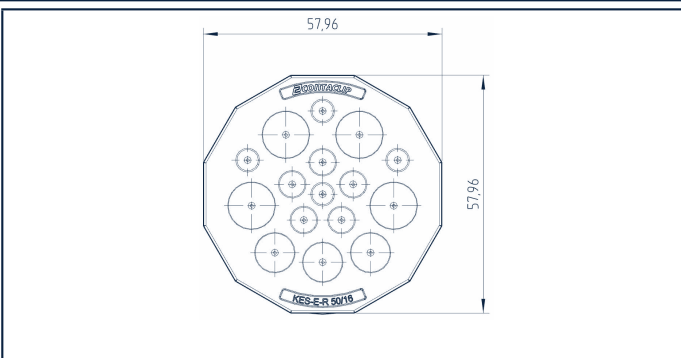
KES-E-R 50/12

Dimensional diagram



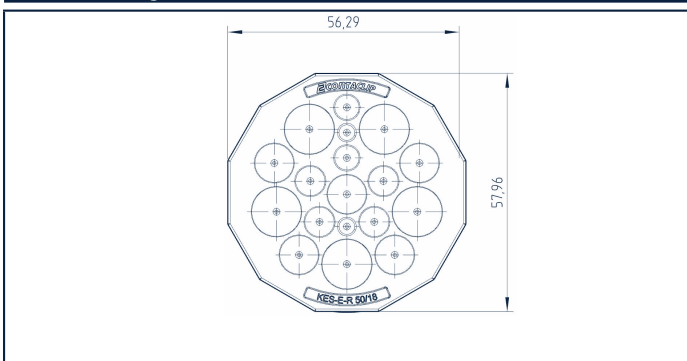
KES-E-R 50/16

Dimensional diagram



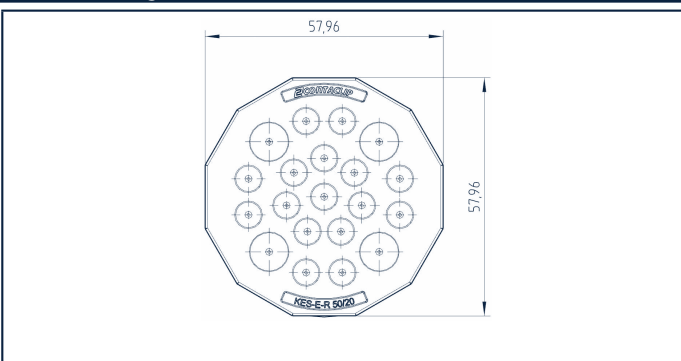
KES-E-R 50/18

Dimensional diagram



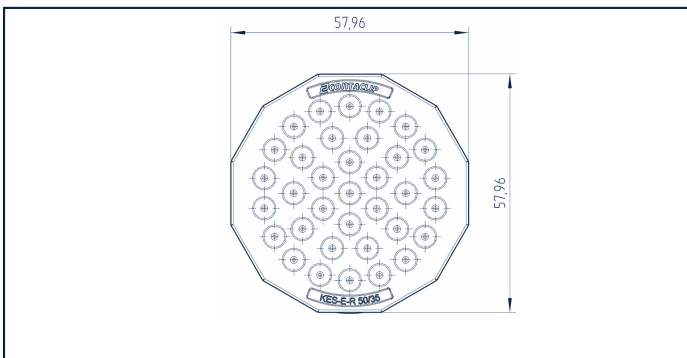
KES-E-R 50/20

Dimensional diagram

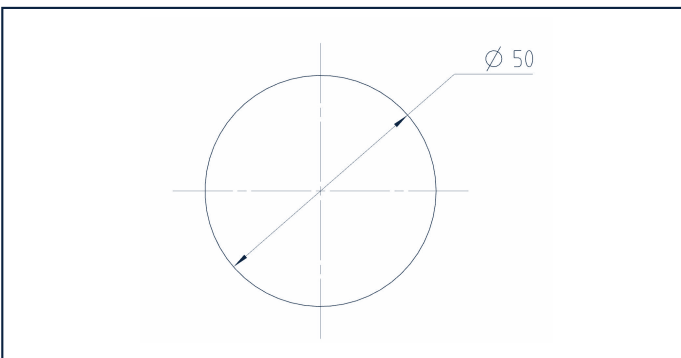


KES-E-R 50/35

Dimensional diagram



Mounting cut-out



IP54

RoHS
compliant

Made in
Germany



KDS BW 1 actuating tool

Using the **KDS BW1** actuating tool, the seals can be conveniently mounted in and dismantled from the frame.

The ergonomic grip and the special shape enable simple and precise installations, especially for cabling applications in confined spaces.



Actuating tool		KDS BW 1	
Type		KDS BW 1	
Cat. no.	Qty.	28622.0	1
Description		Actuating tool	
Material		PA 6.6	
Colour		varies	

KDSClick assortment box



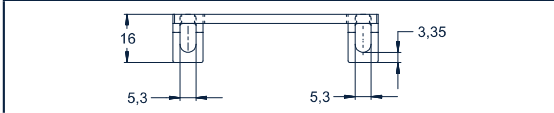







The **KDSClick assortment box** is perfect for installation/maintenance work as well as innovative developments. The large selection of seals and inlays makes it easy to configure all the KDSClick systems to meet your needs.

KDSClick assortment box		KDSClick assortment box	
Type		KDSClick assortment box	
Cat. no.	Qty.	28764.0	1
Included in delivery		20 small dummy elements KDS-DE/B	
		220 small seals KDS-DE 2-14 mm	
		100 small multiple seals KDS-DE 4-6.5 mm	
		5 large dummy elements KDS-DEG/B	
		20 large seals KDS-DEG 14-21 mm	
		7 universal cone seals KDS-DE/K 2- 24 mm	
		37 x inlays 1 to inlay 6	
		1 actuating tool KDS BW 1	
		1 plastic mini-calliper gauge	
		1 plastic switchgear cabinet key	

KDS-EMV-SAB shield-connection rails

The **KDS-EMV-SAB** shield-connection rails, when used together with our different shield-connection clips, enable cables to be shielded in a quick, practical and uncomplicated process. The cables can be routed through the CONTA-CLIP cable entry systems into housing or switchgear cabinets.

The **KDS-EMV-SAB** shield-connection rails are fastened on the inside of the switchgear cabinet using screws, which are required for mounting the **KDS/KES** system. The appropriate shield clip (depending on the cable diameter) can then be snapped onto the shield-connection rail. The shield-connection clips/brackets are optionally available with a built-in strain relief function.

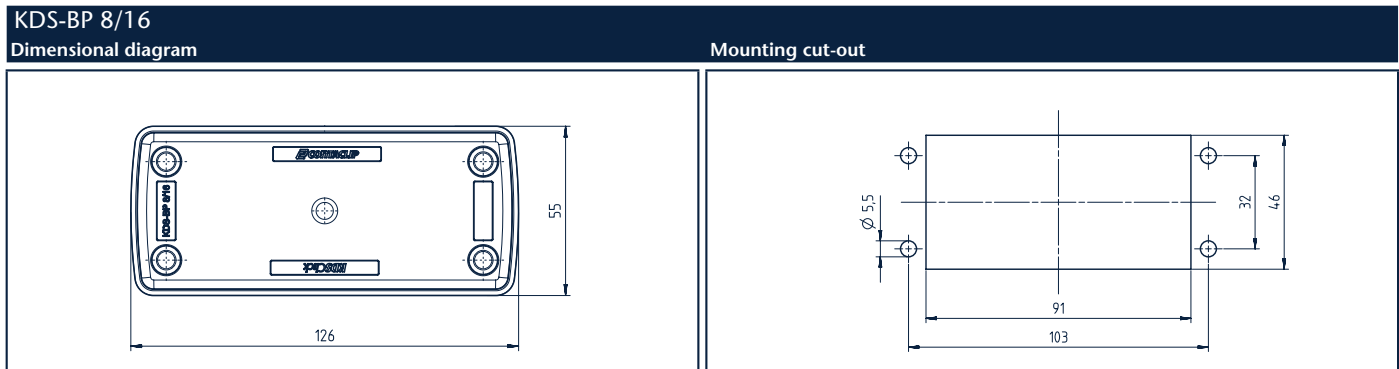
Shield-connection rails	KDS-EMV-SAB 1-4	KDS-EMV-SAB 6/10
		
Diagram		
Type	KDS-EMV-SAB 1-4	KDS-EMV-SAB 6/10
Cat. no.	28623.0	28624.0
Qty.	1	1
Suitable for	KDS-SR 1-4 BK	KDS-SR 6/10 BK
Shield-connection rails	KDS-EMV-SAB 8/16	KDS-EMV-SAB 10/24
		
Diagram		
Type	KDS-EMV-SAB 8/16	KDS-EMV-SAB 10/24
Cat. no.	28625.0	28626.0
Qty.	1	1
Suitable for	KDS-SR 8/16 BK	KDS-SR 10/24 BK KES.../24 KES-GB.../24
Shield-connection rails	KDS-FP-EMV-SAB 10/24	
		
Diagram		
Type	KDS-FP-EMV-SAB 10/24	
Cat. no.	28627.0	
Qty.	1	
Suitable for	KDS-FP 2X10/24 BK KDS-FP 3X10/24 BK	

KDS-BP blanking plates

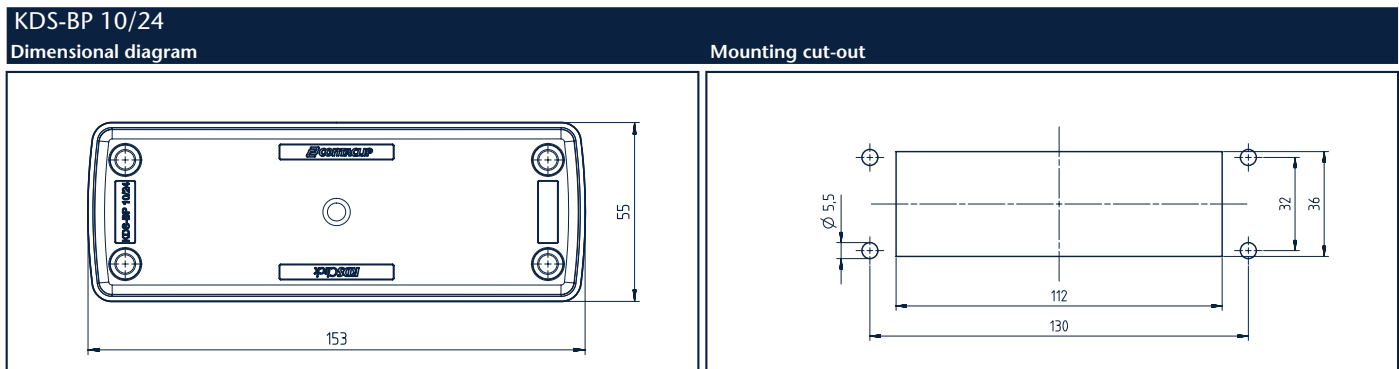
Blanking plates		KDS-BP 8/16	KDS-BP 10/24
<p>The KDS-BP blanking plates provide a simple method for securely closing existing wall cut-outs for the KDS or KES systems. They are made of glass-fibre reinforced PA 6.6 material which enables excellent impact resistance. An injected, all-round seal made of TPE ensures a reliable IP66 protective seal.</p>			
Type / colour		KDS-BP 8/16 BK	KDS-BP 10/24 BK
Cat. no.	Qty.	28508.4 10	28509.4 10
Description		Blanking plate	Blanking plate
Dimensions, mm			
Length x Width:		126 x 55	153 x 55
Installation height		11.5	11.5
Dimensions for mounting cut-out (mm)			
KDS Click		91 x 46	113.5 x 46
Standard break-outs		86 x 36	112 x 36
Accessories			
Sheet-metal hole punch		BL-VA KDS-SR 8/16	BL-VA KDS-SR 10/24
Cat. no.	Qty.	28685.0 1	28677.0 1



KDS-BP Dimensional drawing / Mounting cut-out for cable entries



Torque for the frame's mounting screws: 3 Nm



Torque for the frame's mounting screws: 3 Nm



Features

- Material: polyamide PA 6.6, glass-fibre reinforced | TPE
- Colour: black
- Flammability: UL 94 V-0
- Temperature range: -40 °C to +120 °C
- Halogen-free, silicone-free
- Protection: IP66

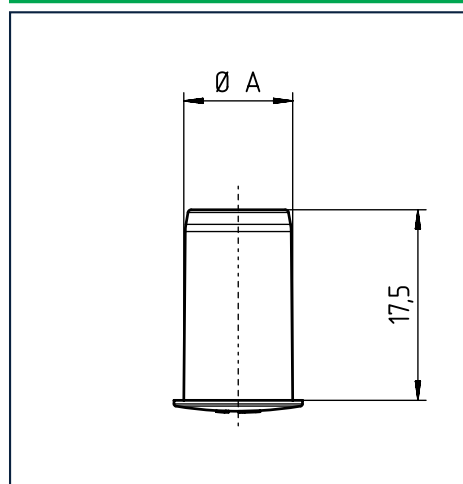
KDS/KES-VS seal plugs for all KDS and KES systems

Seal plugs, screw frame	Type	Cat. no.	Qty.	Diameter (Ø A), mm	Head diameter, mm
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The **KDS/KES-VS** seal plugs allow you to reseal unused holes in **KDS** seals or in already pierced **KES** cable entries. The geometry of the head prevents splashed water or dust from penetrating from the outside. Thus, protection class IP66 is ensured.

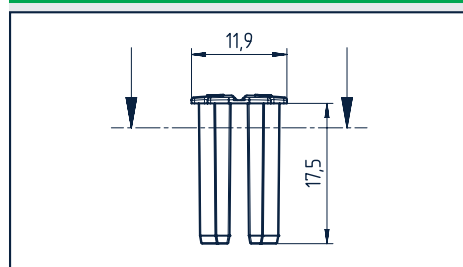
KDS-VS-SR BK	28779.4	100			

Seal plugs					
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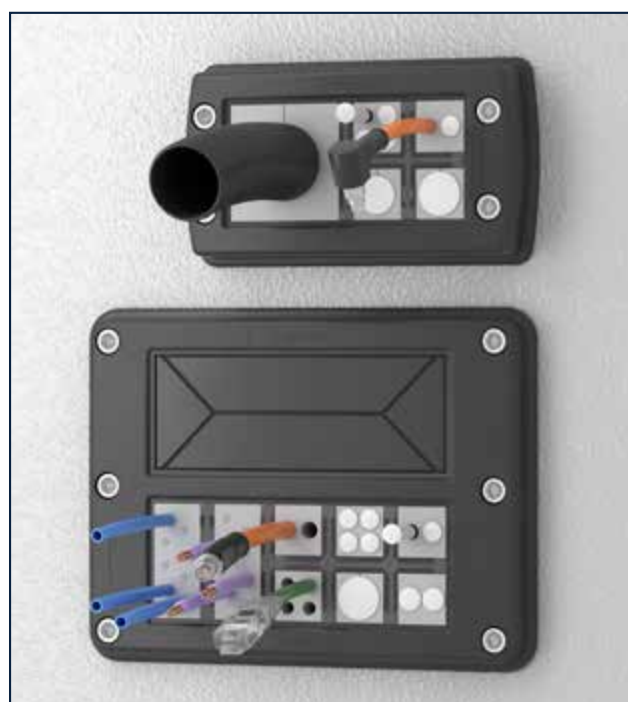


KDS/KES-VS 2 WH	28781.7	25	2	5
KDS/KES-VS 3 WH	28782.7	25	3	6
KDS/KES-VS 4 WH	28783.7	25	4	7
KDS/KES-VS 5 WH	28784.7	25	5	8
KDS/KES-VS 6 WH	28785.7	25	6	9
KDS/KES-VS 7 WH	28786.7	25	7	10
KDS/KES-VS 8 WH	28787.7	25	8	11
KDS/KES-VS 9 WH	28788.7	25	9	12
KDS/KES-VS 10 WH	28789.7	25	10	13
KDS/KES-VS 11 WH	28790.7	25	11	14
KDS/KES-VS 12 WH	28791.7	25	12	15
KDS/KES-VS 13 WH	28792.7	25	13	16
KDS/KES-VS 14 WH	28793.7	25	14	17
KDS/KES-VS 15 WH	28794.7	25	15	18
KDS/KES-VS 16 WH	28795.7	25	16	19
KDS/KES-VS 17 WH	28796.7	25	17	20
KDS/KES-VS 22 WH	28797.7	25	22	25

Seal plugs AS interface cables					
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KDS-VS ASI/2 WH	28798.7	25	ASI	



Features

- Material: polyamide PA 6.6 (KDS-VS-SR: TPE)
- Colour: white (KDS-VS-SR: black)
- Flammability: UL 94 V-0
- Temperature range: -40 °C to +120 °C
- Halogen-free, silicone-free
- Protection: IP66

Punching tool

The hydraulic hand pump, when used together with our hole punches, is perfectly suited for quickly producing precise chip-free break-outs.

Rectangular punches are available for all **KDSClick** cable entry systems and for the **KES** cable entry system. The built-in punch-hole marking tip can be used to punch-mark the drill points clearly for screw-on attachments.

Sheet-metal hole punches are available in circular format for the sizes M20, M25, M32, M40, M50 and M63.

The hydraulic hand pump is also compatible with the hole punches from other popular manufacturers.



Hydraulic hand pump

Hydraulic hand pump

The hydraulic hand pump can be used to punch out openings for various cable feed-through and cable entry systems. The cylinder can be swivelled along 3 axes and rotated 360°, so that the break-outs can also be punched in inconvenient places.



Your advantages

- Easy-to-use format without a tube
- Cylinder can rotate 360° and swivel along 3 axes
- Lightweight aluminium version (weight: 2 kg)
- Can also be used for inconvenient hard-to-reach locations



Features

Punching functionality for max. material thickness

- Round holes 82.0 mm, Steel 3 mm, VA 2 mm
- Square holes 68.0 x 68.0 mm, Steel 3 mm, VA 2 mm
- Rectangular holes 36.0 x 112.0 mm, Steel 3 mm, VA 2 mm

Hydraulic pump



Type	Hydraulic hand pump for sheet-metal hole punch	
Cat. no.	28679.0	Qty. 1
Included in delivery	1 hydraulic hand pump 1 hydraulic screw 19.0 x 130 mm 1 hydraulic screw 19.0 / 9.5 mm 1 spacer bushing 1 tube of anti-wear paste 1 HSS co-boring drill Multi-step drill, steps: 8-10-11.5-12.5 (M12) -14.5-17.5-21 mm 1 transport box	

BL sheet-metal hole punch

The punching tool for cable entry systems **KDSClick**, **KDS-FP**, **KDS-FB**, **KDS-R/KDS-KV** and for the cable entry system **KES**. Using the sheet-metal punches, your desired break-outs can be made in a few minutes without any chips or splintering. The built-in punch-hole marking tip can be used to punch-mark the drill points clearly for screw-on attachments. These sheet-metal punches are compatible with all common hydraulic pumps.

Assortment case



Punch, die, pulling axle and locknut in plastic case

Sets of sheet-metal hole punches		BL SET RECTANGLE Hyd.	BL SET M16-M63 Hyd.	BL-VA SET RECTANGLE Hyd.
Type		BL SET RECTANGLE Hyd.	BL SET M16-M63 Hyd.	BL-VA SET RECTANGLE Hyd.
Cat. no.	Qty.	28761.0 1	28766.0 1	28760.0 1
Included in delivery		Hydraulic pump + 4 x BL KDS-SR	Hydraulic pump + 7 x BL M16-M63	Hydraulic pump + 4 x BL-VA KDS-SR

Sheet-metal hole punch		BL KDS-SR 1-4	BL KDS-SR 6/10	BL KDS-SR 8/16
Type		BL KDS-SR 1-4	BL KDS-SR 6/10	BL KDS-SR 8/16
Cat. no.	Qty.	28674.0 1	28675.0 1	28676.0 1
Maximum wall thickness		2.0 mm, for S 235 sheet metal	2.0 mm, for S 235 sheet metal	2.0 mm, for S 235 sheet metal
Dimensions of break-out hole		46 x 46 mm	68.5 x 46 mm	91 x 46 mm
Included in delivery		Punch, die, pulling axle, locknut, plastic case	Punch, die, pulling axle, locknut, plastic case	Punch, die, pulling axle, locknut, plastic case

Sheet-metal hole punch		BL-VA KDS-SR 1-4	BL-VA KDS-SR 6/10	BL-VA KDS-SR 8/16
Type		BL-VA KDS-SR 1-4	BL-VA KDS-SR 6/10	BL-VA KDS-SR 8/16
Cat. no.	Qty.	28683.0 1	28684.0 1	28685.0 1
Maximum wall thickness		2.0 mm, with stainless steel sheet	2.0 mm, with stainless steel sheet	2.0 mm, with stainless steel sheet
Dimensions of break-out hole		46 x 46 mm	68.5 x 46 mm	91 x 46 mm
Included in delivery		Punch, die, pulling axle, locknut, plastic case	Punch, die, pulling axle, locknut, plastic case	Punch, die, pulling axle, locknut, plastic case

Sheet-metal hole punch		BL KES	BL KDS-FP2	BL KDS-KV M20
Type		BL KES	BL KDS-FP2	BL KDS-KV M20
Cat. no.	Qty.	28744.0 1	28745.0 1	28746.0 1
Maximum wall thickness		2.0 mm, for S 235 sheet metal	2.0 mm, for S 235 sheet metal	2.0 mm, for S 235 sheet metal
Dimensions of break-out hole		112 x 36 mm	110 x 131 mm	20.4 mm
Included in delivery		Punch, die, pulling axle, locknut, plastic case	Punch, die, pulling axle, locknut, plastic case	Punch, die

Sheet-metal hole punch		BL-VA KES	BL-VA KDS-FP2	BL-VA KDS-KV M20
Type		BL-VA KES	BL-VA KDS-FP2	BL-VA KDS-KV M20
Cat. no.	Qty.	28752.0 1	28753.0 1	28754.0 1
Maximum wall thickness		2.0 mm, with stainless steel sheet	2.0 mm, with stainless steel sheet	2.0 mm, with stainless steel sheet
Dimensions of break-out hole		112 x 36 mm	110 x 131 mm	20.4 mm
Included in delivery		Punch, die, pulling axle, locknut, plastic case	Punch, die, pulling axle, locknut, plastic case	Punch, die

BL KDS-KV sheet-metal hole punch



Hole punch for round cut-outs

BL KDS sheet-metal hole punch



Hole punch for rectangular cut-outs

BL-VA SET M16-M63 Hyd.				
BL-VA SET M16-M63 Hyd.				
28765.0	1			
Hydraulic pump + 7 x B-VAL M16-M63				

BL KDS-SR 10/24	BL KDS-FB1	BL KDS-FB2	BL KDS-FB3	BL KDS-FB4
BL KDS-SR 10/24	BL KDS-FB1	BL KDS-FB2	BL KDS-FB3	BL KDS-FB4
28677.0	28734.0	28735.0	28736.0	28737.0
2.0 mm, for S 235 sheet metal 113.5 x 46 mm	2.0 mm, for S 235 sheet metal 46 x 24 mm	2.0 mm, for S 235 sheet metal 68 x 24 mm	2.0 mm, for S 235 sheet metal 89 x 24 mm	2.0 mm, for S 235 sheet metal 111 x 24 mm
Punch, die, pulling axle, lock-nut, plastic case	Punch, die, pulling axle, lock-nut, plastic case	Punch, die, pulling axle, lock-nut, plastic case	Punch, die, pulling axle, lock-nut, plastic case	Punch, die, pulling axle, lock-nut, plastic case

BL-VA KDS-SR 10/24	BL-VA KDS-FB1	BL-VA KDS-FB2	BL-VA KDS-FB3	BL-VA KDS-FB4
BL-VA KDS-SR 10/24	BL-VA KDS-FB1	BL-VA KDS-FB2	BL-VA KDS-FB3	BL-VA KDS-FB4
28686.0	28729.0	28741.0	28742.0	28743.0
2.0 mm, with stainless steel sheet 113.5 x 46 mm	2.0, with stainless steel sheet 46 x 24 mm	2.0, with stainless steel sheet 68 x 24 mm	2.0, with stainless steel sheet 89 x 24 mm	2.0 mm, with stainless steel sheet 111 x 24 mm
Punch, die, pulling axle, lock-nut, plastic case	Punch, die, pulling axle, lock-nut, plastic case	Punch, die, pulling axle, lock-nut, plastic case	Punch, die, pulling axle, lock-nut, plastic case	Punch, die, pulling axle, lock-nut, plastic case

BL KDS-KV M25	BL KDS-KV M32	BL KDS-KV M40	BL KDS-KV M50	BL KDS-KV M63
BL KDS-KV M25	BL KDS-KV M32	BL KDS-KV M40	BL KDS-KV M50	BL KDS-KV M63
28747.0	28748.0	28749.0	28750.0	28751.0
2.0 mm, for S 235 sheet metal 25.4 mm	2.0 mm, for S 235 sheet metal 32.5 mm	2.0 mm, for S 235 sheet metal 40.5 mm	2.0 mm, for S 235 sheet metal 50.5 mm	2.0 mm, for S 235 sheet metal 63.5 mm
Punch, die	Punch, die	Punch, die	Punch, die	Punch, die

BL-VA KDS-KV M25	BL-VA KDS-KV M32	BL-VA KDS-KV M40	BL-VA KDS-KV M50	BL-VA KDS-KV M63
BL-VA KDS-KV M25	BL-VA KDS-KV M32	BL-VA KDS-KV M40	BL-VA KDS-KV M50	BL-VA KDS-KV M63
28755.0	28756.0	28757.0	28758.0	28759.0
2.0 mm, with stainless steel sheet 25.4 mm	2.0, with stainless steel sheet 32.5 mm	2.0, with stainless steel sheet 40.5 mm	2.0, with stainless steel sheet 50.5 mm	2.0 mm, with stainless steel sheet 63.5 mm
Punch, die	Punch, die	Punch, die	Punch, die	Punch, die

Shield-connection clip

In the field of industrial process engineering, a high degree of interference immunity is required of electrical equipment. This is a critical factor affecting the availability of industrial measurement and control systems.

When constructing low-interference systems, both the cable shielding and the shielded ground are very important. The juncture where the cable shielding connects to the housing ground is a critical point. The connection should be low-ohm and should also feature minimal inductive resistance.

You should be certain that this connection can be established in a practical, simple and quick manner. CONTA-CLIP's **SAB/SSAB** shielding systems are one of the most comprehensive product portfolios on the market. They offer a perfect solution for any application.



Overview of installation types

Direct mounting



SAB.../D
Page 87



SABKM.../D
Page 86

C-rail mounting



SAB.../GWP
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Busbar mounting



SABKM.../SSCH/Z
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SABKMD.../SSCH/Z
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SAB
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SSAB
Page 90

DIN rail mounting



SAB.../F
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SAB.../MF
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SABKM.../MF/35/Z
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SABK Shield-connection bracket

The stripped cable is easily pushed into the **SABK** shield-connection clips. The spring force in the clip then ensures that the shield has a consistently good contact.

The large contact areas ensure excellent dissipation of interference current.

The **SABK** can be used with the mounting feet for various mounting platforms (e.g. on DIN rail, busbar, or for direct installation).





The **SABK** for the proper shield diameter is mounted by simply clipping it on (no tools required).



Your advantages

- The spring exerts continuous contact force on the cable shield
- High conductivity
- Very good dissipation of high-frequency interference current
- No tools are required: all sizes can be clipped onto the various mounting feet

Shield-connection bracket		SABK 3	SABK 6	SABK 8
				
Type		SABK 3	SABK 6	SABK 8
Cat. no.	Qty.	17970.0	17971.0	17972.0
Cable diameter Ø		1.5 – 3 mm	3 – 6 mm	6 – 8 mm
Material		Steel	Steel	Steel

Shield-connection bracket		SABK 11	SABK 16	SABK 30
				
Type	Qty.	SABK 11	SABK 16	SABK 30
Cat. no.		17973.0	17974.0	17997.0
Cable diameter Ø		8 – 11 mm	11 – 16 mm	17 – 30 mm
Material		Steel	Steel	Steel

SABKM

Shield-connection clip Multi

The **SABKM Multi** shield-connection clip differs from conventional shielding clips because of its two specially shaped legs.

These legs produce force on both sides so that a very large cable clamping range is attained. The stripped cable is easily pushed into the **SABK**. The spring force in the clip then ensures that the shield has a consistently good contact.

The large contact surfaces ensure that any interference current is reliably dissipated.

The **SABKM** can be used with mounting feet for various mounting systems (e.g. on DIN rail, busbar, or for direct installation).

The **SABKM** for the proper shield diameter is mounted by simply clipping it on (no tools required).



Your advantages

- Fewer individual parts because of the large contact/clamping range
- Consistently good contact force due to spring action
- High conductivity
- Very good dissipation of high-frequency interference current
- No tools are required: all sizes can be clipped onto the various mounting feet

Shield-connection bracket		SABKM 12	SABKM 18
			
Type		SABKM 12	SABKM 18
Cat. no.	Qty.	17975.0	25
Cable diameter Ø		3 – 12 mm	7 – 18 mm
Material		Steel	Steel

MF-SABK/D

Mounting foot for direct mounting

The mounting foot for the **MF-SABK/D** shield-connection clip serves as a universal carrier for the **SABK/SABKM** with clamping diameters from 1.5 mm to 18 mm. It can be installed directly (e.g. screwed directly onto a mounting plate). The suitable **SABK** can then be snapped in and the cable shield can be pressed in and the cable shield can be pressed in.



Your advantages

- Direct mounting using M4 screw
- Universal holder for SABK/SABKM, with cable clamping range from 1.5 to 18 mm
- Variable assembly options leads to less product types
- Less parts in your warehouse
- Very compact construction
- Cable tie can be used for strain relief

Installation of the SABKM shield-connection bracket on the MF-SABK/D mounting foot



1. Screw on the mounting foot






2. Snap on your SABK



3. Press in the cable shield



4. Apply strain relief with cable ties

Mounting foot		MF/D M4/Z	MF/D M4
			
Mounting type		Direct mounting	Direct mounting
Description		With strain relief	Without strain relief
Type		MF/D M4/Z	MF/D M4
Cat. no.	Qty.	17977.0	27217.0
Material		10	25
		Steel	Steel

RMF/D/Z M4

Row-mounted foot for direct mounting

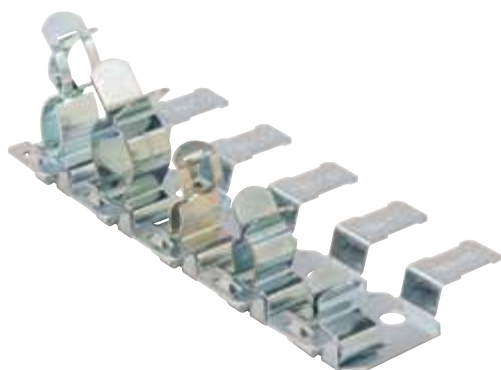
The **RMF/D/Z M4** row-mounted foot for direct mounting serves as a universal carrier for up to 12 shield-connection clips with clamping diameters from 1.5 mm to 18 mm. The row-mounted foot can be shortened to the desired length by breaking it at one of its breakage points. Either screws or rivets can be used to secure it in position.





Your advantages

- Up to 12 cable shields can be attached to a single row-mounted foot.
- Space-saving installation on the mounting plate
- Universal holders for SABK/SABKM, with variable cable clamping ranges from 1.5 to 18 mm
- Breakage points permit versatile customization for your required number of cables.
- Less parts in your warehouse
- Very compact construction
- Cable tie can be used for strain relief

Installation of the SABKM shield-connection bracket on the MF-SABK/D mounting foot



Shield-connection bracket		Row-mounted foot	
			
Mounting type		Direct mounting	
Description		With strain relief	
Type		RMF/D M4/Z	
Cat. no.	Qty.	17986.0	10
Material		Steel	

MF-SABK/SSCH

Mounting foot for busbar mounting

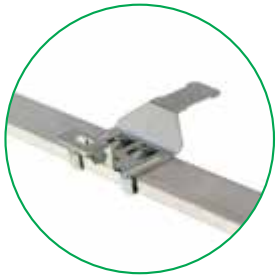
The **MF-SABK/SSCH** mounting foot for busbar mounting serves as a universal carrier for shield-connection clips with cable diameters from 1.5 mm to 18 mm. Simply snap the mounting foot onto the 10 x 3 mm busbar. Then snap in the corresponding shield-connection clip and press in the cable shield.



Your advantages

- Tool-free mounting onto busbars 10 x 3 mm
- For shield-connection brackets with a 1.5 – 18 mm clamping range
- Variable assembly options leads to less product types
- Less parts in your warehouse
- Very compact construction
- Cable tie can be used for strain relief

Installation of the SABKM shield-connection bracket on the MF-SABK/SSCH mounting foot



1. Screw on the mounting foot






2. Snap on your SABK



3. Press in the cable shield



4. Apply strain relief with cable ties

Mounting foot		MF-SABK/SSCH/Z	MF-SABK/SSCH
			
Mounting type		Busbar mounting	Busbar mounting
Description		With strain relief	Without strain relief
Type		MF-SABK/SSCH/Z	MF-SABK/SSCH
Cat. no.	Qty.	17979.0	27218.0
Material		Steel	Steel

MF-SABK/35

Mounting foot for DIN rail mounting

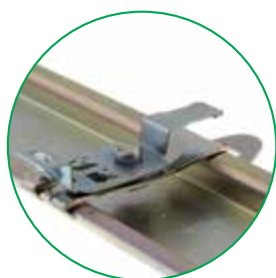
The **MF-SABK/35/Z** mounting foot for **TS 35** DIN rails serves as a universal carrier for shield-connection clips with clamping diameters from 1.5 mm to 18 mm. Simply snap the mounting foot on the DIN rail. The properly sized shield-connection clip is then snapped on and the cable shield is pushed into the shield-connection clip. The variant with a strain relief clip provides cable ties to relieve the strain.



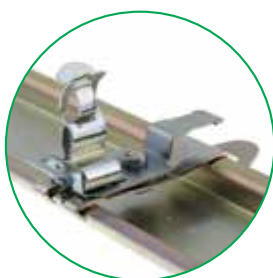
Your advantages

- Tool-free mounting on TS 35 DIN rail
- Universal holder for SABK/SABKM, with cable clamping range from 1.5 to 18 mm
- Variable assembly options leads to less product types
- Less parts in your warehouse
- Cable tie can be used for strain relief

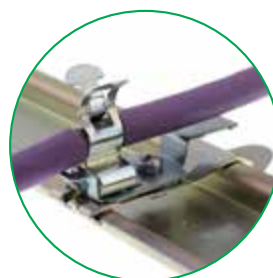
Installation of the SABKM shield-connection bracket on the MF-SABK/35 mounting foot



1. Screw on the mounting foot




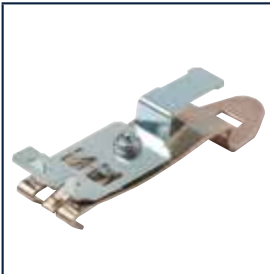

2. Snap on your SABK



3. Press in the cable shield



4. Apply strain relief with cable ties

Mounting foot		MF-SABK/35/Z	MF-SABK/35
			
Mounting type		Mounting on the DIN rail	Mounting on the DIN rail
Description		With strain relief	Without strain relief
Type		MF-SABK/35/Z	MF-SABK/35
Cat. no.	Qty.	17978.0	27261.0
Material		Steel	Steel

Multi SABKM.../D

Shield-connection clip for direct mounting




The **SABKM.../D** shield-connection clip can be installed directly (e.g. screwed directly onto a mounting plate). The cable shield must only be pressed into the **SABKM** in order to establish a reliable contact.

The strain relief clip can be used with a cable tie to relieve strain at the cable sheath.



Your advantages

- Direct mounting using M4 screw
- Very compact construction
- Reduced product types when the Multi shield-connection bracket is used
- Cable tie can be used for strain relief

Shield-connection bracket	SABKM.../D	SABKM.../D/Z
		
Mounting type	Direct mounting	Direct mounting
Description	Without strain relief	With strain relief
Type	SABKM 12/D M4	SABKM 12/D M4/Z
<i>Cat. no.</i>	27246.0	17984.0
Qty.	10	10
Cable diameter Ø	3 – 12 mm	3 – 12 mm
Drill hole diameter Ø	4.2 mm	4.2 mm
Material	Steel	Steel
Type	SABKM 18/D M4	SABKM 18/D M4/Z
<i>Cat. no.</i>	27247.0	17985.0
Qty.	10	10
Cable diameter Ø	7 – 18 mm	7 – 18 mm
Drill hole diameter Ø	4.2 mm	4.2 mm
Material	Steel	Steel
Type	SABKM 30/D M4	SABKM 30/D M4/Z
<i>Cat. no.</i>	27248.0	27220.0
Qty.	10	10
Cable diameter Ø	17 – 30 mm	17 – 30 mm
Drill hole diameter Ø	4.2 mm	4.2 mm
Material	Steel	Steel
Type	SABKM 35/D M4	
<i>Cat. no.</i>	27256.0	
Qty.	5	
Cable diameter Ø	16 – 35 mm	
Drill hole diameter Ø	4.2 mm	
Material	Steel	
Type	SABKM 65/D M4	
<i>Cat. no.</i>	27257.0	
Qty.	5	
Cable diameter Ø	35 – 65 mm	
Drill hole diameter Ø	4.2 mm	
Material	Steel	

SAB.../D

Shield-connection clip for direct mounting

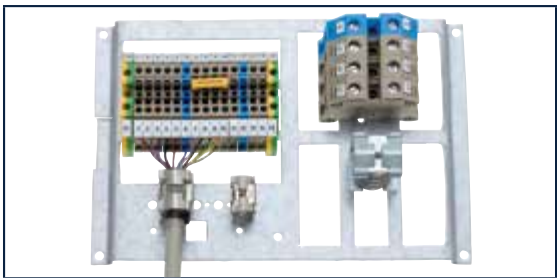

The **SAB.../D** shield-connection clip can be used for direct mounting installations. The force on the cable comes from a spring-pressure piece. This regulated pressure ensures a constant optimal contact. The **SAB.../D** can be installed with an M4 screw (included in delivery) directly to the mounting plate.

The **SAB 8/D M5** shield-connection clip comes with a special feature; it is equipped with a self-cutting M5 SW3 metal screw. As a result, less time is required to mount the clip on the mounting plate, since you only need to drill one 4.2-mm hole through the plate. The hole threads will then be cut into the plate by the screw.



Your advantages

- Quick snap-on or mounting of the shield-connection clip
- Different cable cross-sections can be accommodated by the elastic nature of the spring
- Easy to work with

Shield-connection clip	SAB.../D
	
Mounting type	Direct mounting
Type	SAB 8/D
<i>Cat. no.</i>	<i>1549.0</i>
Qty.	10
Cable diameter Ø	3 – 8 mm
Screw	M 4
Material	Steel
Type	SAB 8/D/M5
<i>Cat. no.</i>	<i>1526.0</i>
Qty.	10
Cable diameter Ø	3 – 8 mm
Screw	M 4
Material	Steel
Type	SAB 13.5/D
<i>Cat. no.</i>	<i>1550.0</i>
Qty.	10
Cable diameter Ø	4 – 13.5 mm
Screw	M 4
Material	Steel
Type	SAB 20/D
<i>Cat. no.</i>	<i>1551.0</i>
Qty.	10
Cable diameter Ø	10 – 20 mm
Screw	M 4
Material	Steel
Type	SAB 32/D
<i>Cat. no.</i>	<i>17361.0</i>
Qty.	10
Cable diameter Ø	15 – 32 mm
Screw	M 4
Material	Steel

SABKM.../SSCH M4

Multi shield-connection clip on mounting foot for mounting to busbars

The Multi shield-connection clip on the mounting foot **SABKM.../SSCH M4** can be snapped onto a 10x3mm busbar without any tools. The cable shield must only be pressed into the Multi shield-connection clip in order to establish a reliable contact.

The strain relief clip can be used with a cable tie to relieve strain.



Your advantages

- Tool-free mounting onto busbars 10 x 3 mm
- Extremely compact construction
- Cable tie can be used for strain relief

Shield-connection bracket	SABKM.../SSCH	SABKM.../SSCH/Z	SABKMD.../SSCH	SABKMD.../SSCH/Z
Mounting type	Busbar mounting	Busbar mounting	Busbar mounting	Busbar mounting
Description	Without strain relief	With strain relief	Without strain relief	With strain relief
Type	SABKM 12/SSCH	SABKM 12/SSCH/Z	SABKMD 1.5-3/SSCH	SABKMD 1.5-3/SSCH/Z
Cat. no.	27224.0	17982.0	27250.0	27259.0
Qty.	10	10	10	10
Cable diameter Ø	3 – 12 mm	3 – 12 mm	1.5 – 3 mm	1.5 – 3 mm
Material	Steel	Steel	Steel	Steel
Type	SABKM 18/SSCH	SABKM 18/SSCH/Z	SABKMD 3-6/SSCH	SABKMD 3-6/SSCH/Z
Cat. no.	27225.0	17983.0	27251.0	27260.0
Qty.	10	10	10	10
Cable diameter Ø	7 – 18 mm	7 – 18 mm	3 – 6 mm	3 – 6 mm
Material	Steel	Steel	Steel	Steel
Type	SABKM 30/SSCH	SABKM 30/SSCH/Z	SABKMD 6-8/SSCH	SABKMD 6-8/SSCH/Z
Cat. no.	27226.0	27228.0	27252.0	27254.0
Qty.	10	10	10	10
Cable diameter Ø	17 – 30 mm	17 – 30 mm	6 – 8 mm	6 – 8 mm
Material	Steel	Steel	Steel	Steel
Type			SABKMD 3-12/SSCH	SABKMD 3-12/SSCH/Z
Cat. no.			27253.0	27255.0
Qty.			10	10
Cable diameter Ø			3 – 12 mm	3 – 12 mm
Material			Steel	Steel

SAB



Shield-connection clip for busbar mounting

The SAB shield-connection clips enable busbar mounting. After connecting the wiring, the shield-connection clip is mounted by simply swivelling in the **SAB** clip onto the busbar. The force on the cable comes from a spring-pressure piece. This regulated pressure ensures a constant optimal contact. This makes the **SAB** shield-connection clip very convenient to wire. Depending on the length of the terminal blocks, two or more **SH/SAB** busbar supports should be used. These mechanically connect the front busbar with the DIN rail (support).



Your advantages

- Quick snap-on or mounting of the shield-connection clip
- Different cable cross-sections can be accommodated by the elastic nature of the spring
- Easy to work with

Shield-connection clip	SAB
	
Mounting type	Busbar mounting
Type	SAB 8
<i>Cat. no.</i>	<i>1527.0</i>
Qty.	10
Cable diameter Ø	3 – 8 mm
Material	Steel
Type	SAB 13.5
<i>Cat. no.</i>	<i>1528.0</i>
Qty.	10
Cable diameter Ø	4 – 13.5 mm
Material	Steel
Type	SAB 20
<i>Cat. no.</i>	<i>1529.0</i>
Qty.	10
Cable diameter Ø	10 – 20 mm
Material	Steel
Type	SAB 32
<i>Cat. no.</i>	<i>17360.0</i>
Qty.	10
Cable diameter Ø	15 – 32 mm
Material	Steel

SSAB

Shield-connection clip for busbar mounting

The **SSAB** shield-connection clips enable busbar mounting. After wiring the terminal block, the shield-connection clip is mounted by simply swivelling in and tightening the knurled thumb screw. This makes the **SSAB** screw-shield-connection clip very convenient to wire. Depending on the length of the terminal blocks, two or more **SH/SAB** busbar supports should be used. These mechanically connect the front busbar with the DIN rail (support). The **SH1** busbar holders are used where a shield-connection system must be mounted directly onto a panel rather than a DIN rail. The 10x3mm busbars can be easily and quickly snapped on to these supports. In both cases, the contact with the earth or ground potential can be established with a **ZB** clamping yoke.



Your advantages

- Screw-on clip for simple retrofitting
- Knurled thumb screw, so no tools required
- Easy to work with
- Large shield surface
- Secure contact

Shield-connection clip for busbar mounting

SSAB



Mounting type	Busbar mounting
Type	SSAB 5
<i>Cat. no.</i>	<i>3694.0</i>
Qty.	10
Cable diameter Ø	2 – 5 mm
Torque	0.4 Nm
Material	Steel
Type	SSAB 8
<i>Cat. no.</i>	<i>3695.0</i>
Qty.	10
Cable diameter Ø	3 – 8 mm
Torque	0.6 Nm
Material	Steel
Type	SSAB 14
<i>Cat. no.</i>	<i>3696.0</i>
Qty.	10
Cable diameter Ø	3 – 14 mm
Torque	0.8 Nm
Material	Steel
Type	SSAB 20
<i>Cat. no.</i>	<i>3697.0</i>
Qty.	10
Cable diameter Ø	3 – 20 mm
Torque	0.8 Nm
Material	Steel
Type	SSAB 28
<i>Cat. no.</i>	<i>3698.0</i>
Qty.	10
Cable diameter Ø	5 – 28 mm
Torque	0.8 Nm
Material	Steel
Type	SSAB 35
<i>Cat. no.</i>	<i>3699.0</i>
Qty.	10
Cable diameter Ø	20 – 35 mm
Torque	1.8 Nm
Material	Steel

SAB.../GWP

Shield-connection clip for C-rail

The **SAB.../GWP** shield-connection clips enable mounting to a C-rail. The **SAB.../GWP** is attached to the threaded plate with an Allen (hex socket) screw. The force on the cable comes from a spring-pressure piece. This regulated pressure ensures a constant optimal contact with the DIN rail.



Your advantages

- Shield-connection clip is quickly mounted
- Different cable cross-sections can be accommodated by the elastic nature of the spring
- Easy to work with

Shield-connection clip for C-rail

SAB.../GWP



Mounting type	C-rail mounting
Type	SAB 8/GWP
Cat. no.	17356.0
Qty.	10
Cable diameter Ø	3 – 8 mm
Material	Steel
Type	SAB 13.5/GWP
Cat. no.	17357.0
Qty.	10
Cable diameter Ø	4 – 13.5 mm
Material	Steel
Type	SAB 20/GWP
Cat. no.	17358.0
Qty.	10
Cable diameter Ø	10 – 20 mm
Material	Steel
Type	SAB 32/GWP
Cat. no.	17359.0
Qty.	10
Cable diameter Ø	15 – 32 mm
Material	Steel

SABKM.../MF/35


Shield-connection clip for DIN rail mounting

The Multi **SABKM.../MF/35** shield-connection clip on mounting foot can be snapped onto a **TS 35** DIN rail without using any tools. The cable shield must only be pressed into the Multi shield-connection clip in order to establish a reliable contact. The strain relief clip can be used with a cable tie to relieve strain.



Your advantages

- Simple tool-free installation
- Spring force provides consistently good contact to the cable shield
- Very good dissipation of high-frequency interference current
- Cable tie can be used for strain relief

Shield-connection bracket	SABK .../MF/35	SABK .../MF/35/Z
		
Mounting type	Mounting on the DIN rail	Mounting on the DIN rail
Description	Without strain relief	With strain relief
Type	SABK 3/MF/35	SABK 3/MF/35/Z
<i>Cat. no.</i>	27229.0	27240.0
Qty.	10	10
Cable diameter Ø	1.5 – 3 mm	1.5 – 3 mm
Type	SABK 6/MF/35	SABK 6/MF/35/Z
<i>Cat. no.</i>	27230.0	27241.0
Qty.	10	10
Cable diameter Ø	3 – 6 mm	3 – 6 mm
Type	SABK 8/MF/35	SABK 8/MF/35/Z
<i>Cat. no.</i>	27231.0	27242.0
Qty.	10	10
Cable diameter Ø	6 – 8 mm	6 – 8 mm
Type	SABK 11/MF/35	SABK 11/MF/35/Z
<i>Cat. no.</i>	27232.0	27243.0
Qty.	10	10
Cable diameter Ø	8 – 11 mm	8 – 11 mm
Type	SABK 16/MF/35	SABK 16/MF/35/Z
<i>Cat. no.</i>	27233.0	27244.0
Qty.	10	10
Cable diameter Ø	11 – 16 mm	11 – 16 mm
Type	SABK 30/MF/35	SABK 30/MF/35/Z
<i>Cat. no.</i>	27234.0	27245.0
Qty.	10	10
Cable diameter Ø	17 – 30 mm	17 – 30 mm
Type	SABKM 12/MF/35	SABKM 12/MF/35/Z
<i>Cat. no.</i>	27237.0	17980.0
Qty.	10	10
Cable diameter Ø	3 – 12 mm	3 – 12 mm
Type	SABKM 18/MF/35	SABKM 18/MF/35/Z
<i>Cat. no.</i>	27238.0	17981.0
Qty.	10	10
Cable diameter Ø	7 – 18 mm	7 – 18 mm
Type	SABKM 35/MF/35	
<i>Cat. no.</i>	27239.0	
Qty.	5	
Cable diameter Ø	16 – 35 mm	
Type	SABKM 65/MF/35	
<i>Cat. no.</i>	27258.0	
Qty.	5	
Cable diameter Ø	35 – 65 mm	

SAB.../F





Shield-connection clip for DIN rail mounting

The **SAB.../F** shield-connection clips enable mounting to the DIN rail. The force exerted on the cable is regulated by a spring-loaded thrust piece. This ensures optimum contact at all times. The **SAB.../F** can be mounted directly to the **TS 35** DIN rail using the clamping foot and a mounting screw.



Your advantages

- Shield-connection clip is quickly mounted
- Different cable cross-sections can be accommodated by the elastic nature of the spring
- Easy to work with

Shield-connection clip	SAB 8/F	SAB 13.5/F	SAB 20/F
			
Mounting type	Mounting on the DIN rail	Mounting on the DIN rail	Mounting on the DIN rail
Type	SAB 8/F	SAB 13.5/F	SAB 20/F
Cat. no.	1571.0	1572.0	1573.0
Qty.	10	10	10
Cable diameter Ø	3 – 8 mm	4 – 13.5 mm	10 – 20 mm
Size (L x W x H), mm	18.5 x 13 x 26.5	22 x 19.5 x 32.5	27 x 13 x 26.5
Material	Steel	Steel	Steel

SAB.../MF


Shield-connection clip for DIN rail mounting

The **SAB.../MF/35** shield-connection clips enable mounting to the DIN rail. The **SAB.../MF/35** is snapped on directly via the internal-spring **MF/35** mounting foot without using any tools. The force exerted on the cable is regulated by a spring-loaded thrust piece. This ensures that optimal contact is maintained with the DIN rail at all times.



Your advantages

- Simple tool-free installation
- Different cable cross-sections can be accommodated by the elastic nature of the spring
- Easy to work with
- /S version can be rotated and fixed in position using the fastening screw

Shield-connection clip	SAB.../MF/35	SAB.../MF/35/S
		
Mounting type	Mounting on the DIN rail	Mounting on the DIN rail
Type	SAB 8/MF/35	SAB 8/MF/35/S
<i>Cat. no.</i>	17038.0	17340.0
Qty.	10	10
Cable diameter Ø	3 – 8 mm	3 – 8 mm
Size (L x W x H), mm	18.5 x 13 x 26.5	18.5 x 13 x 26.5
Material	Steel	Steel
Type	SAB 13.5/MF/35	SAB 13.5/MF/3/S5
<i>Cat. no.</i>	17039.0	17341.0
Qty.	10	10
Cable diameter Ø	4 – 13.5 mm	4 – 13.5 mm
Size (L x W x H), mm	22 x 19.5 x 32.5	22 x 19.5 x 32.5
Material	Steel	Steel
Type	SAB 20/MF/35	SAB 20/MF/35/S
<i>Cat. no.</i>	17040.0	17342.0
Qty.	10	10
Cable diameter Ø	10 – 20 mm	10 – 20 mm
Size (L x W x H), mm	27 x 24.5 x 40.5	27 x 24.5 x 40.5
Material	Steel	Steel
Type	SAB 32/MF/35	SAB 32/MF/35/S
<i>Cat. no.</i>	17363.0	17343.0
Qty.	10	10
Cable diameter Ø	15 – 32 mm	15 – 32 mm
Size (L x W x H), mm	53.2 x 33 x 71.5	53.2 x 33 x 71.5
Material	Steel	Steel

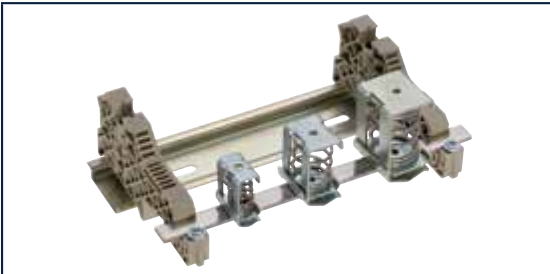



Busbar holder

Busbar holders are used for mounting all shield-connection clips with 10x3mm busbars. These can be mounted quickly and flexibly according to your requirements. The **SH1** busbar holders are used where a shield-connection system must be mounted directly onto a panel rather than a DIN rail. The 10x3mm busbars can be easily and quickly snapped on to these supports.

The **SH/SAB** busbar holders mechanically connect the preceding busbar with the DIN rail. Thus, the shield-connection clip can easily be extended directly to the terminal strip.

The **ES 35/K/ST** end support with its integrated receptacles enables you to easily mount 10x3mm busbars directly above a **TS 35** DIN rail.

Depending on the length, two or more holders can be used. In both cases, the contact with the earth or ground potential can be established with a **ZB** clamping yoke.

Busbar holder			SH 1	SH SAB	ES 35/K/ST
					
Type/colour			SH 1 BG	SH SAB BG	ES 35/K/ST BG
<i>Cat. no.</i>		Qty.	2318.2	1530.2	2828.0
Size (L x W x H), mm			24 x 24 x 23.7	50 x 9.5 x 98	50 x 9.5 x 44
Material of cap/holder			PA 6.6 V-2	PA 6.6 V-2	PA 6.6 V-2
Accessories					
Mounting screw BS			BS M 4x8		
<i>Cat. no.</i>		Qty.	2262.0		
Busbar	Ssch	Copper	Ssch 10 x 3 CU	Ssch 10 x 3 CU	Ssch 10 x 3 CU
<i>Cat. no.</i>		Qty.	2129.0	2129.0	2129.0
Busbar	Ssch	Brass	Ssch 10 x 3 Ms	Ssch 10 x 3 Ms	Ssch 10 x 3 Ms
<i>Cat. no.</i>		Qty.	2128.0	2128.0	2128.0

Types and catalogue numbers, alphabetic

Type	Cat. no.	Page	Type	Cat. no.	Page	Type	Cat. no.	Page
B			KDS-DE 2x4-5 BK	28555.4	49	KDS-DEG 20-21 BK	28541.4	49
BL KDS-KV M20	28746.0	76	KDS-DE 2x4-5 GR	28595.6	48	KDS-DEG 20-21 GR	28582.6	48
BL KDS-KV M25	28747.0	77	KDS-DE 2x5-6 BK	28556.4	49	KDS-DEG 21-22 BK	28542.4	49
BL KDS-KV M32	28748.0	77	KDS-DE 2x5-6 GR	28596.6	48	KDS-DEG 21-22 GR	28583.6	48
BL KDS-KV M40	28749.0	77	KDS-DE 2x6.5 BK	28682.4	49	KDS-DEG 22-23 BK	28543.4	49
BL KDS-KV M50	28750.0	77	KDS-DE 2x6.5 GR	28607.6	48	KDS-DEG 22-23 GR	28584.6	48
BL KDS-KV M63	28751.0	77	KDS-DE 2x7 BK	28689.4	49	KDS-DEG 23-24 BK	28544.4	49
BL KDS-FB1	28734.0	77	KDS-DE 2x7 GR	28690.6	48	KDS-DEG 23-24 GR	28585.6	48
BL KDS-FB2	28735.0	77	KDS-DE 2x8 BK	28691.4	49	KDS-DEG 24-25 BK	28545.4	49
BL KDS-FB3	28736.0	77	KDS-DE 2x8 GR	28692.6	48	KDS-DEG 24-25 GR	28586.6	48
BL KDS-FB4	28737.0	77	KDS-DE 3-4 BK	28523.4	49	KDS-DEG 25-26 BK	28546.4	49
BL KDS-FP2	28745.0	76	KDS-DE 3-4 GR	28564.6	48	KDS-DEG 25-26 GR	28587.6	48
BL KDS-SR 1-4	28674.0	76	KDS-DE 3x5-6 BK	28687.4	49	KDS-DEG 26-27 BK	28547.4	49
BL KDS-SR 10/24	28677.0	77	KDS-DE 3x5-6 GR	28688.6	48	KDS-DEG 26-27 GR	28588.6	48
BL KDS-SR 6/10	28675.0	76	KDS-DE 4-5 BK	28524.4	49	KDS-DEG 27-28 BK	28548.4	49
BL KDS-SR 8/16	28676.0	76	KDS-DE 4-5 GR	28565.6	48	KDS-DEG 27-28 GR	28589.6	48
BL KES	28744.0	76	KDS-DE 4x2-3 BK	28557.4	49	KDS-DEG 28-29 BK	28549.4	49
BL SET M16-M63 Hyd.	28766.0	76	KDS-DE 4x2-3 GR	28597.6	48	KDS-DEG 28-29 GR	28590.6	48
BL SET RECTANGLE Hyd.	28761.0	76	KDS-DE 4x3-4 BK	28558.4	49	KDS-DEG 29-30 BK	28550.4	49
BL-VA KDS-KV M20	28754.0	76	KDS-DE 4x3-4 GR	28598.6	48	KDS-DEG 29-30 GR	28591.6	48
BL-VA KDS-KV M25	28754.0	77	KDS-DE 4x5 BK	28672.4	49	KDS-DEG 30-31 BK	28551.4	49
BL-VA KDS-KV M32	28756.0	77	KDS-DE 4x5 GR	28673.6	48	KDS-DEG 30-31 GR	28592.6	48
BL-VA KDS-KV M40	28757.0	77	KDS-DE 4x4.5 BK	28681.4	49	KDS-DEG 31-32 BK	28552.4	49
BL-VA KDS-KV M50	28758.0	77	KDS-DE 4x4.5 GR	28606.6	48	KDS-DEG 31-32 GR	28593.6	48
BL-VA KDS-KV M63	28759.0	77	KDS-DE 4x6 BK	28763.4	49	KDS-DEG 32-33 BK	28601.4	49
BL-VA KDS-FB1	28729.0	77	KDS-DE 4x6 GR	28762.6	48	KDS-DEG 32-33 GR	28594.6	48
BL-VA KDS-FB2	28741.0	77	KDS-DE 5-6 BK	28525.4	49	KDS-DEG/B BK	28534.4	49
BL-VA KDS-FB3	28742.0	77	KDS-DE 5-6 GR	28566.6	48	KDS-DEG/B GR	28575.6	48
BL-VA KDS-FB4	28743.0	77	KDS-DE 6-7 BK	28526.4	49	KDS-DEG/K 7-24 BK	28554.4	49
BL-VA KDS-FP2	28753.0	76	KDS-DE 6-7 GR	28567.6	48	KDS-DES 2X10.5 GR	28800.6	51
BL-VA KDS-SR 1-4	28683.0	76	KDS-DE 7-8 BK	28527.4	49	KDS-DES 3X8.5 GR	28802.6	51
BL-VA KDS-SR 10/24	28686.0	77	KDS-DE 7-8 GR	28568.6	48	KDS-DES 3X9.5 GR	28801.6	51
BL-VA KDS-SR 6/10	28684.0	76	KDS-DE 8-9 BK	28528.4	49	KDS-DES 4X7.5 GR	28803.6	51
BL-VA KDS-SR 8/16	28685.0	76	KDS-DE 8-9 GR	28569.6	48	KDS-DES 7X6.5 GR	28804.6	51
BL-VA KES	28752.0	76	KDS-DE 9-10 BK	28529.4	49	KDS-DES 8X4.5 GR	28806.6	51
BL-VA SET M16-M63 Hyd.	28765.0	77	KDS-DE 9-10 GR	28570.6	48	KDS-DES 8X5.5 GR	28805.6	51
BL-VA SET RECTANGLE Hyd.	28760.0	76	KDS-DE-FB1/A GR	28713.6	44	KDS-EMV-SAB 1-4	28623.0	71
			KDS-DE-FB1/B GR	28714.6	44	KDS-EMV-SAB 10/24	28626.0	71
			KDS-DE-FB1/C GR	28715.6	45	KDS-EMV-SAB 6/10	28624.0	71
			KDS-DE-FB1/D GR	28716.6	45	KDS-EMV-SAB 8/16	28625.0	71
			KDS-DE-FB1/E GR	28717.6	44	KDS-FP 2x10/24 BK	28660.4	20
			KDS-DE-FB1/F GR	28718.6	44	KDS-FP 3x10/24 BK	28661.4	20
			KDS-DE-FB2/A GR	28719.6	44	KDS-FP-AD/UL YE	28665.8	20
			KDS-DE-FB2/B GR	28720.6	44	KDS-FP-EMV-SAB 10/24	28627.0	71
			KDS-DE-FB2/C GR	28721.6	44	KDS-FP-IVR OG	28664.3	20
			KDS-DE-FB2/D GR	28722.6	44	KDS-GM 20 BK	28616.4	36
			KDS-DE-FB2/E GR	28723.6	45	KDS-GM 25 BK	28617.4	36
			KDS-DE-FB2/F GR	28724.6	45	KDS-GM 32 BK	28618.4	36
			KDS-DE-FB3/A GR	28725.6	45	KDS-GM 40 BK	28619.4	37
			KDS-DE-FB3/B GR	28726.6	45	KDS-GM 50 BK	28620.4	37
			KDS-DE-FB4/A GR	28727.6	44	KDS-GM 63 BK	28621.4	37
			KDS-DE-FB4/B GR	28728.6	45	KDS-GM M20 BK	28616.4	28
			KDS-DE/1XASI BK	28559.4	49	KDS-GM M25 BK	28617.4	28
			KDS-DE/1XASI GR	28599.6	48	KDS-GM M32 BK	28618.4	28
			KDS-DE/2xASI BK	28560.4	49	KDS-GM M40 BK	28619.4	29
			KDS-DE/2xASI GR	28600.6	48	KDS-GM M50 BK	28620.4	29
			KDS-DE/B BK	28520.4	49	KDS-GM M63 BK	28621.4	29
			KDS-DE/B GR	28561.6	48	KDS-R 20-32 BK	28770.4	28
			KDS-DE/K 2-11 BK	28553.4	49	KDS-R 40-63 BK	28774.4	29
			KDS-DEG 14-15 BK	28535.4	49	KDS-RGA M20 BK	28771.4	28
			KDS-DEG 14-15 GR	28576.6	48	KDS-RGA M25 BK	28772.4	28
			KDS-DEG 15-16 BK	28536.4	49	KDS-RGA M32 BK	28773.4	28
			KDS-DEG 15-16 GR	28577.6	48	KDS-RGA M40 BK	28775.4	29
			KDS-DEG 16-17 BK	28537.4	49	KDS-RGA M50 BK	28776.4	29
			KDS-DEG 16-17 GR	28578.6	48	KDS-RGA M63 BK	28777.4	29
			KDS-DEG 17-18 BK	28538.4	49	KDS-Inlay 1 BK	28516.4	14
			KDS-DEG 17-18 GR	28579.6	48	KDS-Inlay 2 BK	28517.4	14
			KDS-DEG 18-19 BK	28539.4	49	KDS-Inlay 4 BK	28518.4	14
			KDS-DEG 18-19 GR	28580.6	48	KDS-Inlay 6 BK	28519.4	14
			KDS-DEG 19-20 BK	28540.4	49	KDS-IVR 1-4 BK	28507.4	14
			KDS-DEG 19-20 GR	28581.6	48	KDS-IVR 10/24 BK	28505.4	14

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KDS-IVR 6/10 BK	28501.4	14	KES-E 26/24 B GR	28845.6	64	SAB 20/MF/35	17040.0	94
KDS-IVR 8/16 BK	28503.4	14	KES-E 42/24 A GR	28816.6	64	SAB 20/MF/35/S	17342.0	94
KDS-KV M20 BK	28610.4	36	KES-E 42/24 B GR	28846.6	64	SAB 32	17360.0	89
KDS-KV M25 BK	28611.4	36	KES-E 48/24 A GR	28817.6	64	SAB 32/D	17361.0	87
KDS-KV M32 BK	28612.4	36	KES-E 48/24 B GR	28847.6	64	SAB 32/GWP	17359.0	91
KDS-KV M40 BK	28613.4	37	KES-E 50/24 A GR	28818.6	64	SAB 32/MF/35	17363.0	94
KDS-KV M50 BK	28614.4	37	KES-E 50/24 B GR	28848.6	64	SAB 32/MF/35/S	17343.0	94
KDS-KV M63 BK	28615.4	37	KES-E-R 50/11 A GR	28830.6	68	SAB 8	1527.0	89
KDS-Set 1-4 BK	28602.4	14	KES-E-R 50/11 B GR	28860.6	68	SAB 8/D	1549.0	87
KDS-Set 10/24 BK	28605.4	14	KES-E-R 50/12 A GR	28831.6	68	SAB 8/D/M5	1526.0	87
KDS-Set 6/10 BK	28603.4	14	KES-E-R 50/12 B GR	28861.6	68	SAB 8/F	1571.0	93
KDS-Set 8/16 BK	28604.4	14	KES-E-R 50/16 A GR	28832.6	68	SAB 8/GWP	17356.0	91
KDS-SR 1-4 BK	28506.4	14	KES-E-R 50/16 B GR	28862.6	68	SAB 8/MF/35	17038.0	94
KDS-SR 10/24 BK	28504.4	14	KES-E-R 50/18 A GR	28833.6	68	SAB 8/MF/35/S	17340.0	94
KDS-SR 6/10 BK	28500.4	14	KES-E-R 50/18 B GR	28863.6	68	SABK 11	17973.0	80
KDS-SR 8/16 BK	28502.4	14	KES-E-R 50/20 A GR	28834.6	68	SABK 11/MF/35	27232.0	92
KDS-SR-FB1/A BK	28700.4	40	KES-E-R 50/20 B GR	28864.6	68	SABK 11/MF/35/Z	27243.0	92
KDS-SR-FB2/A BK	28701.4	40	KES-E-R 50/35 A GR	28835.6	68	SABK 16	17974.0	80
KDS-SR-FB2/B BK	28702.4	40	KES-E-R 50/35 B GR	28865.6	68	SABK 16/MF/35	27233.0	92
KDS-SR-FB3/A BK	28703.4	41	KES-E-R 50/9 A GR	28829.6	68	SABK 16/MF/35/Z	27244.0	92
KDS-SR-FB3/B BK	28704.4	41	KES-E-R 50/9 B GR	28859.6	68	SABK 3	17970.0	80
KDS-SR-FB3/C BK	28705.4	41	KES-GB 13/24 GR	28640.6	58	SABK 3/MF/35	27229.0	92
KDS-SR-FB3/D BK	28706.4	41	KES-GB 14/24 BK	28641.4	58	SABK 3/MF/35/Z	27240.0	92
KDS-SR-FB4/A BK	28707.4	40	KES-GB 14/24 GR	28641.6	58	SABK 30	17997.0	80
KDS-SR-FB4/B BK	28708.4	40	KES-GB 16-1/24 BK	28643.4	59	SABK 30/MF/35	27234.0	92
KDS-SR-FB4/C BK	28709.4	40	KES-GB 16-1/24 GR	28643.6	59	SABK 30/MF/35/Z	27245.0	92
KDS-SR-FB4/D BK	28710.4	41	KES-GB 16/24 BK	28642.4	58	SABK 35/MF/35	27236.0	92
KDS-SR-FB4/E BK	28711.4	41	KES-GB 16/24 GR	28642.6	58	SABK 6	17971.0	80
KDS-SR-FB4/F BK	28712.4	41	KES-GB 17/24 BK	28644.4	59	SABK 6/MF/35	27230.0	92
KDS-VS ASI/2 WH	28798.7	73	KES-GB 17/24 GR	28644.6	59	SABK 6/MF/35/Z	27241.0	92
KDS-VS-SR BK	28779.4	73	KES-GB 20/24 BK	28645.4	59	SABK 8	17972.0	80
KDS-VS 10 WH	28789.7	73	KES-GB 20/24 GR	28645.6	59	SABK 8/MF/35	27231.0	92
KDS-VS 11 WH	28790.7	73	KES-GB 21/24 BK	28646.4	59	SABK 8/MF/35/Z	27242.0	92
KDS-VS 12 WH	28791.7	73	KES-GB 21/24 GR	28646.6	59	SABKM 12	17975.0	81
KDS-VS 13 WH	28792.7	73	KES-GB 32/24 BK	28647.4	59	SABKM 12/D M4	27246.0	86
KDS-VS 14 WH	28793.7	73	KES-GB 32/24 GR	28647.6	59	SABKM 12/D M4/Z	17984.0	86
KDS-VS 15 WH	28794.7	73	KES-R 13/24 BK	28650.4	58	SABKM 12/MF/35	27237.0	92
KDS-VS 16 WH	28795.7	73	KES-R 13/24 GR	28650.6	58	SABKM 12/MF/35/Z	17980.0	92
KDS-VS 17 WH	28796.7	73	KES-R 14/24 BK	28651.4	58	SABKM 12/SSCH	27224.0	88
KDS-VS 2 WH	28781.7	73	KES-R 14/24 GR	28651.6	58	SABKM 12/SSCH/Z	17982.0	88
KDS-VS 22 WH	28797.7	73	KES-R 16-1/24 BK	28653.4	59	SABKM 18	17976.0	81
KDS-VS 3 WH	28782.7	73	KES-R 16-1/24 GR	28653.6	59	SABKM 18/D M4	27247.0	86
KDS-VS 4 WH	28783.7	73	KES-R 16/24 BK	28652.4	58	SABKM 18/D M4/Z	17985.0	86
KDS-VS 5 WH	28784.7	73	KES-R 16/24 GR	28652.6	58	SABKM 18/MF/35	27238.0	92
KDS-VS 6 WH	28785.7	73	KES-R 17/24 BK	28654.4	59	SABKM 18/MF/35/Z	17981.0	92
KDS-VS 7 WH	28786.7	73	KES-R 17/24 GR	28654.6	59	SABKM 18/SSCH	27225.0	88
KDS-VS 8 WH	28787.7	73	KES-R 20/24 BK	28655.4	59	SABKM 18/SSCH/Z	17983.0	88
KDS-VS 9 WH	28788.7	73	KES-R 20/24 GR	28655.6	59	SABKM 30/D M4	27248.0	86
KES 13/24 BK	28630.4	58	KES-R 21/24 BK	28656.4	59	SABKM 30/D M4/Z	27220.0	86
KES 13/24 GR	28630.6	58	KES-R 21/24 GR	28656.6	59	SABKM 30/SSCH	27226.0	88
KES 14/24 BK	28631.4	58	KES-R 32/24 BK	28657.4	59	SABKM 30/SSCH/Z	27228.0	88
KES 14/24 GR	28631.6	58	KES-R 32/24 GR	28657.6	59	SABKM 35/D M4	27256.0	86
KES 16-1/24 BK	28633.4	59				SABKM 35/MF/35	27239.0	92
KES 16-1/24 GR	28633.6	59	M			SABKM 65/D M4	27257.0	86
KES 16/24 BK	28632.4	58	MF-SABK/35	17261.0	85	SABKM 65/MF/35	27258.0	92
KES 16/24 GR	28632.6	58	MF-SABK/35/Z	17978.0	85	SABKMD 1.5-3/SSCH	27250.0	88
KES 17/24 BK	28634.4	59	MF-SABK/SSCH	27218.0	84	SABKMD 1.5-3/SSCH/Z	27259.0	88
KES 17/24 GR	28634.6	59	MF-SABK/SSCH/Z	17979.0	84	SABKMD 3-12/SSCH	27253.0	88
KES 20/24 BK	28635.4	59	MF/D M4	27217.0	82	SABKMD 3-12/SSCH/Z	27255.0	88
KES 20/24 GR	28635.6	59	MF/D M4/Z	17977.0	82	SABKMD 3-6/SSCH	27251.0	88
KES 21/24 BK	28636.4	59				SABKMD 3-6/SSCH/Z	27260.0	88
KES 21/24 GR	28636.6	59	R			SABKMD 6-8/SSCH	27252.0	88
KES 32/24 BK	28637.4	59	RMF/D M4/Z	17986.0	83	SABKMD 6-8/SSCH/Z	27254.0	88
KES 32/24 GR	28637.6	59				SH 1 BG	2318.2	95
KES-E 12/24 A GR	28810.6	64	S			SH SAB BG	1530.2	95
KES-E 12/24 B GR	28840.6	64	SAB 13.5	1528.0	89	SSAB 14	3696.0	90
KES-E 14/24 A GR	28811.6	64	SAB 13.5/D	1550.0	87	SSAB 20	3697.0	90
KES-E 14/24 B GR	28841.6	64	SAB 13.5/F	1572.0	93	SSAB 28	3698.0	90
KES-E 17/24 A GR	28812.6	64	SAB 13.5/GWP	17357.0	91	SSAB 35	3699.0	90
KES-E 17/24 B GR	28842.6	64	SAB 13.5/MF/35	17039.0	94	SSAB 5	3694.0	90
KES-E 18/24 A GR	28813.6	64	SAB 13.5/MF/35/S	17341.0	94	SSAB 8	3695.0	90
KES-E 18/24 B GR	28843.6	64	SAB 20	1529.0	89			
KES-E 19/24 A GR	28814.6	64	SAB 20/D	1551.0	87			
KES-E 19/24 B GR	28844.6	64	SAB 20/F	1573.0	93			
KES-E 26/24 A GR	28815.6	64	SAB 20/GWP	17358.0	91			

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1528.0	SAB 13.5	89	27234.0	SABK 30/MF/35	92	28551.4	KDS-DEG 30-31 BK	49
1529.0	SAB 20	89	27237.0	SABKM 12/MF/35	92	28552.4	KDS-DEG 31-32 BK	49
1530.2	SH SAB BG	95	27238.0	SABKM 18/MF/35	92	28553.4	KDS-DE/K 2-11 BK	49
1549.0	SAB 8/D	87	27239.0	SABKM 35/MF/35	92	28554.4	KDS-DEG/K 7-24 BK	49
1550.0	SAB 13.5/D	87	27240.0	SABK 3/MF/35/Z	92	28555.4	KDS-DE 2x4-5 BK	49
1551.0	SAB 20/D	87	27241.0	SABK 6/MF/35/Z	92	28556.4	KDS-DE 2x5-6 BK	49
1571.0	SAB 8/F	93	27242.0	SABK 8/MF/35/Z	92	28557.4	KDS-DE 4x2-3 BK	49
1572.0	SAB 13.5/F	93	27243.0	SABK 11/MF/35/Z	92	28558.4	KDS-DE 4x3-4 BK	49
1573.0	SAB 20/F	93	27244.0	SABK 16/MF/35/Z	92	28559.4	KDS-DE/1XASI BK	49
2			27245.0	SABK 30/MF/35/Z	92	28560.4	KDS-DE/2xASI BK	49
2318.2	SH 1 BG	95	27246.0	SABKM 12/D M4	86	28561.6	KDS-DE/B GR	48
2828.0	ES 35/K/ST BG	95	27247.0	SABKM 18/D M4	86	28562.6	KDS-DE 1.5-2 GR	48
3			27248.0	SABKM 30/D M4	86	28563.6	KDS-DE 2-3 GR	48
3694.0	SSAB 5	90	27250.0	SABKMD 1.5-3/SSCH	88	28564.6	KDS-DE 3-4 GR	48
3695.0	SSAB 8	90	27251.0	SABKMD 3-6/SSCH	88	28565.6	KDS-DE 4-5 GR	48
3696.0	SSAB 14	90	27252.0	SABKMD 6-8/SSCH	88	28566.6	KDS-DE 5-6 GR	48
3697.0	SSAB 20	90	27253.0	SABKMD 3-12/SSCH	88	28567.6	KDS-DE 6-7 GR	48
3698.0	SSAB 28	90	27254.0	SABKMD 6-8/SSCH/Z	88	28568.6	KDS-DE 7-8 GR	48
3699.0	SSAB 35	90	27255.0	SABKMD 3-12/SSCH/Z	88	28569.6	KDS-DE 8-9 GR	48
17			27256.0	SABKM 35/D M4	86	28570.6	KDS-DE 9-10 GR	48
17038.0	SAB 8/MF/35	94	27257.0	SABKM 65/D M4	86	28571.6	KDS-DE 10-11 GR	48
17039.0	SAB 13.5/MF/35	94	27258.0	SABKM 65/MF/35	92	28572.6	KDS-DE 11-12 GR	48
17040.0	SAB 20/MF/35	94	27259.0	SABKMD 1.5-3/SSCH/Z	88	28573.6	KDS-DE 12-13 GR	48
17261.0	MF-SABK/35	85	27260.0	SABKMD 3-6/SSCH/Z	88	28574.6	KDS-DE 13-14 GR	48
17340.0	SAB 8/MF/35/S	94	28			28575.6	KDS-DEG/B GR	48
17341.0	SAB 13.5/MF/35/S	94	28500.4	KDS-SR 6/10 BK	14	28576.6	KDS-DEG 14-15 GR	48
17342.0	SAB 20/MF/35/S	94	28501.4	KDS-IVR 6/10 BK	14	28577.6	KDS-DEG 15-16 GR	48
17343.0	SAB 32/MF/35/S	94	28502.4	KDS-SR 8/16 BK	14	28578.6	KDS-DEG 16-17 GR	48
17356.0	SAB 8/GWP	91	28503.4	KDS-IVR 8/16 BK	14	28579.6	KDS-DEG 17-18 GR	48
17357.0	SAB 13.5/GWP	91	28504.4	KDS-SR 10/24 BK	14	28580.6	KDS-DEG 18-19 GR	48
17358.0	SAB 20/GWP	91	28505.4	KDS-IVR 10/24 BK	14	28581.6	KDS-DEG 19-20 GR	48
17359.0	SAB 32/GWP	91	28506.4	KDS-SR 1-4 BK	14	28582.6	KDS-DEG 20-21 GR	48
17360.0	SAB 32	89	28507.4	KDS-IVR 1-4 BK	14	28583.6	KDS-DEG 21-22 GR	48
17361.0	SAB 32/D	87	28507.4	KDS-IVR 1-4 BK	14	28584.6	KDS-DEG 22-23 GR	48
17363.0	SAB 32/MF/35	94	28508.4	KDS-BP 8/16 BK	72	28585.6	KDS-DEG 23-24 GR	48
17970.0	SABK 3	80	28509.4	KDS-BP 10/24 BK	72	28586.6	KDS-DEG 24-25 GR	48
17971.0	SABK 6	80	28516.4	KDS-Inlay 1 BK	14	28587.6	KDS-DEG 25-26 GR	48
17972.0	SABK 8	80	28517.4	KDS-Inlay 2 BK	14	28588.6	KDS-DEG 26-27 GR	48
17973.0	SABK 11	80	28518.4	KDS-Inlay 4 BK	14	28589.6	KDS-DEG 27-28 GR	48
17974.0	SABK 16	80	28519.4	KDS-Inlay 6 BK	14	28590.6	KDS-DEG 28-29 GR	48
17975.0	SABKM 12	81	28520.4	KDS-DE/B BK	49	28591.6	KDS-DEG 29-30 GR	48
17976.0	SABKM 18	81	28521.4	KDS-DE 1.5-2 BK	49	28592.6	KDS-DEG 30-31 GR	48
17977.0	MF/D M4/Z	82	28522.4	KDS-DE 2-3 BK	49	28593.6	KDS-DEG 31-32 GR	48
17978.0	MF-SABK/35/Z	85	28523.4	KDS-DE 3-4 BK	49	28594.6	KDS-DEG 32-33 GR	48
17979.0	MF-SABK/SSCH/Z	84	28524.4	KDS-DE 4-5 BK	49	28595.6	KDS-DE 2x4-5 GR	48
17980.0	SABKM 12/MF/35/Z	92	28525.4	KDS-DE 5-6 BK	49	28596.6	KDS-DE 2x5-6 GR	48
17981.0	SABKM 18/MF/35/Z	92	28526.4	KDS-DE 6-7 BK	49	28597.6	KDS-DE 4x2-3 GR	48
17982.0	SABKM 12/SSCH/Z	88	28527.4	KDS-DE 7-8 BK	49	28598.6	KDS-DE 4x3-4 GR	48
17983.0	SABKM 18/SSCH/Z	88	28528.4	KDS-DE 8-9 BK	49	28599.6	KDS-DE/1XASI GR	48
17984.0	SABKM 12/D M4/Z	86	28529.4	KDS-DE 9-10 BK	49	28600.6	KDS-DE/2xASI GR	48
17985.0	SABKM 18/D M4/Z	86	28530.4	KDS-DE 10-11 BK	49	28601.4	KDS-DEG 32-33 BK	49
17986.0	RMF/D M4/Z	83	28531.4	KDS-DE 11-12 BK	49	28602.4	KDS-Set 1-4 BK	14
17997.0	SABK 30	80	28532.4	KDS-DE 12-13 BK	49	28603.4	KDS-Set 6/10 BK	14
27			28533.4	KDS-DE 13-14 BK	49	28604.4	KDS-Set 8/16 BK	14
27217.0	MF/D M4	82	28534.4	KDS-DEG/B BK	49	28605.4	KDS-Set 10/24 BK	14
27218.0	MF-SABK/SSCH	84	28535.4	KDS-DEG 14-15 BK	49	28606.6	KDS-DE 4x4.5 GR	48
27220.0	SABKM 30/D M4/Z	86	28536.4	KDS-DEG 15-16 BK	49	28607.6	KDS-DE 2x6.5 GR	48
27224.0	SABKM 12/SSCH	88	28537.4	KDS-DEG 16-17 BK	49	28608.4	KDS-DE 14-15 BK	49
27225.0	SABKM 18/SSCH	88	28538.4	KDS-DEG 17-18 BK	49	28609.6	KDS-DE 14-15 GR	48
27226.0	SABKM 22/SSCH	88	28539.4	KDS-DEG 18-19 BK	49	28610.4	KDS-KV M20 BK	36
27228.0	SABKM 30/SSCH/Z	88	28540.4	KDS-DEG 19-20 BK	49	28611.4	KDS-KV M25 BK	36
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27230.0	SABK 6/MF/35	92	28542.4	KDS-DEG 21-22 BK	49	28613.4	KDS-KV M40 BK	37
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28633.6	KES 16-1/24 GR	59	28705.4	KDS-SR-FB3/C BK	41	28791.7	KDS-VS 12 WH	73
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28634.6	KES 17/24 GR	59	28707.4	KDS-SR-FB4/A BK	40	28793.7	KDS-VS 14 WH	73
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28643.4	KES-GB 16-1/24 BK	59	28720.6	KDS-DE-FB2/B GR	44	28810.6	KES-E 12/24 A GR	64
28643.6	KES-GB 16-1/24 GR	59	28721.6	KDS-DE-FB2/C GR	44	28811.6	KES-E 14/24 A GR	64
28644.4	KES-GB 17/24 BK	59	28722.6	KDS-DE-FB2/D GR	44	28812.6	KES-E 17/24 A GR	64
28644.6	KES-GB 17/24 GR	59	28723.6	KDS-DE-FB2/E GR	44	28813.6	KES-E 18/24 A GR	64
28645.4	KES-GB 20/24 BK	59	28724.6	KDS-DE-FB2/F GR	44	28814.6	KES-E 19/24 A GR	64
28645.6	KES-GB 20/24 GR	59	28725.6	KDS-DE-FB3/A GR	44	28815.6	KES-E 26/24 A GR	64
28646.4	KES-GB 21/24 BK	59	28726.6	KDS-DE-FB3/B GR	44	28816.6	KES-E 42/24 A GR	64
28646.6	KES-GB 21/24 GR	59	28727.6	KDS-DE-FB4/A GR	44	28817.6	KES-E 48/24 A GR	64
28647.4	KES-GB 32/24 BK	59	28728.6	KDS-DE-FB4/B GR	44	28818.6	KES-E 50/24 A GR	64
28647.6	KES-GB 32/24 GR	59	28729.0	BL-VA KDS-FB1	77	28829.6	KES-E R 50/9 A GR	68
28650.4	KES-R 13/24 BK	58	28734.0	BL KDS-FB1	77	28830.6	KES-E R 50/11 A GR	68
28650.6	KES-R 13/24 GR	58	28735.0	BL KDS-FB2	77	28831.6	KES-E R 50/12 A GR	68
28651.4	KES-R 14/24 BK	58	28736.0	BL KDS-FB3	77	28832.6	KES-E R 50/16 A GR	68
28651.6	KES-R 14/24 GR	58	28737.0	BL KDS-FB4	77	28833.6	KES-E R 50/18 A GR	68
28652.4	KES-R 16/24 BK	58	28741.0	BL-VA KDS-FB2	77	28834.6	KES-E R 50/20 A GR	68
28652.6	KES-R 16/24 GR	58	28742.0	BL-VA KDS-FB3	77	28835.6	KES-E R 50/35 A GR	68
28653.4	KES-R 16-1/24 BK	59	28743.0	BL-VA KDS-FB4	77	28840.6	KES-E 12/24 B GR	64
28653.6	KES-R 16-1/24 GR	59	28744.0	BL KES	76	28841.6	KES-E 14/24 B GR	64
28654.4	KES-R 17/24 BK	59	28745.0	BL KDS-FP2	76	28842.6	KES-E 17/24 B GR	64
28654.6	KES-R 17/24 GR	59	28746.0	BL KDS-KV M20	76	28843.6	KES-E 18/24 B GR	64
28655.4	KES-R 20/24 BK	59	28747.0	BL KDS-KV M25	77	28844.6	KES-E 19/24 B GR	64
28655.6	KES-R 20/24 GR	59	28748.0	BL KDS-KV M32	77	28845.6	KES-E 26/24 B GR	64
28656.4	KES-R 21/24 BK	59	28749.0	BL KDS-KV M40	77	28846.6	KES-E 42/24 B GR	64
28656.6	KES-R 21/24 GR	59	28750.0	BL KDS-KV M50	77	28847.6	KES-E 48/24 B GR	64
28657.4	KES-R 32/24 BK	59	28751.0	BL KDS-KV M63	77	28848.6	KES-E 50/24 B GR	64
28657.6	KES-R 32/24 GR	59	28752.0	BL-VA KES	76	28859.6	KES-E R 50/9 B GR	68
28660.4	KDS-FP 2x10/24 BK	20	28753.0	BL-VA KDS-FP2	76	28860.6	KES-E R 50/11 B GR	68
28661.4	KDS-FP 3x10/24 BK	20	28754.0	BL-VA KDS-KV M20	76	28861.6	KES-E R 50/12 B GR	68
28664.3	KDS-FP-IVR OG	20	28755.0	BL-VA KDS-KV M25	77	28862.6	KES-E R 50/16 B GR	68
28665.8	KDS-FP-AD/UL YE	20	28756.0	BL-VA KDS-KV M32	77	28863.6	KES-E R 50/18 B GR	68
28670.4	KDS-DE 15-16 BK	49	28757.0	BL-VA KDS-KV M40	77	28864.6	KES-E R 50/20 B GR	68
28671.6	KDS-DE 15-16 GR	48	28758.0	BL-VA KDS-KV M50	77	28865.6	KES-E R 50/35 B GR	68
28672.4	KDS-DE 4x5 BK	49	28759.0	BL-VA KDS-KV M63	77			
28673.6	KDS-DE 4x5 GR	48	28760.0	BL-VA SET RECTANGLE Hyd.	76			
28674.0	BL KDS-SR 1-4	76	28761.0	BL SET RECTANGLE Hyd.	76			
28675.0	BL KDS-SR 6/10	76	28762.6	KDS-DE 4x6 GR	48			
28676.0	BL KDS-SR 8/16	76	28763.4	KDS-DE 4x6 BK	49			
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