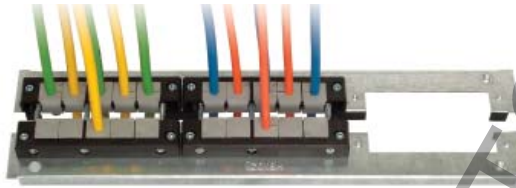


## Product group 5

### Switch cabinet accessories

#### Product description



#### At a glance ...

A reason for increasing machine failures is dust and dirt inside of switch gears, especially if the equipment is placed in a contaminated environment.

Also contributing to machine failures is dust and dirt inside the switch cabinet.

Conventional cable entry systems like foam rubber get brittle over time. Other systems fail by being very limited in the maximum diameter.

#### Benefits ...

**1. Flexible**

For mounting cable entry systems with pre-terminated and non pre-terminated cables there are several designs of base plates and flange plates available.

**2. Fast and easy assembly**

The base plates are shipped ready for assembly. Threads incorporated in the base plates provide quick and easy installation.

**3. Secure hold**

Strain relief and a tight seal is incorporated in the system.

**4. Easy to maintain**

Due to the split of the systems switch cabinets can be equipped with these system subsequently without having to disconnect the cables. Just build "around" the running system.

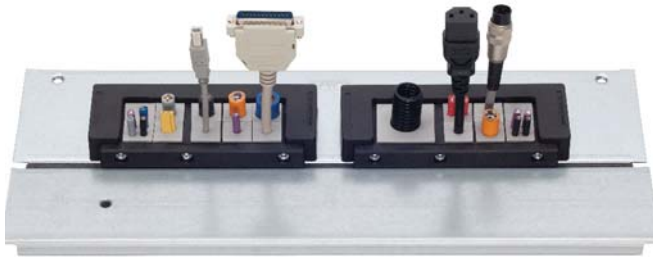


## Chapter content

<b>Base plate with slide-frame</b> KDR-ESR	Page	100 - 101
<b>Split base plates</b> KDR 2	Page	102 - 103
<b>Cable entry frame</b> KDR	Page	104 - 105
<b>Flanged plates</b> FP	Page	106 - 111
<b>Module plates</b> MP	Page	112
<b>Base plates</b> KDR 1	Page	113
<b>Blind plates</b> BPK / BPK-R / BPM / BPK-SNAP	Page	114 - 116
<b>Cable ties with hook-and-loop fastener</b> KLKB / KLB	Page	117
<b>Earthing tapes</b> MB	Page	118 - 119
<b>Split corrugated conduit and conduit clip</b> WST / SH	Page	120 - 121

# KDR - ESR

## Base plate with slide-frame



### KDR-ESR | Assembly

#### Product description

The KDR-ESR is a one-piece base plate to be assembled on cabinet bases. Slides-frames for the KEL cable entry frames are already pre-assembled. After fitting all cables into the KEL frames, they are easily and quickly inserted into the slide frames and latched. During maintenance, the KEL frames are removed without tools from the slide frames. Due to the combination KDR|ESR and KEL cable entry frames, a rating of IP 54 is achieved (with correct selection of cable inserts). Slide-frames which are no longer required, are closed with BPK-SNAP blind plates

#### Advantages and notes

- Easy assembly and removal
- During assembly, almost the whole base of the enclosure can be used for installation of cables.
- Even large connectors can be installed easily.
- Retrofitting possible without disconnecting of cables. All can be built around the cables. No production downtimes.
- No additional sheet metal work for the user
- The base plate KDR 2 is designed for Rittal enclosures TS8. Other sizes can be supplied on request.

#### Specification

Material	Base plate: Steel, zinc-plated KDR-ESR Frame: Polyamide
Flame class	UL-94 Vo, self-extinguishing
Protection class	IP 54, with gasket and correct selection of the cable inserts
Temperature Properties	- 40°C to + 90°C (static) halogen-free, silicone-free

#### Accessories

KEL 24/ KEL 16 Cable entry frames	Page 6   7
KEL - JUMBO 1	Page 34
Blind plates BPK-SNAP 16 + 24	Page 116



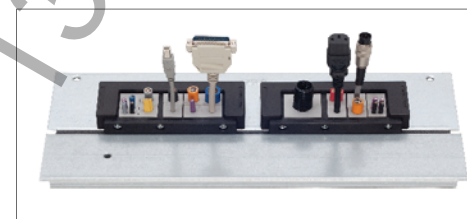
1  
The base plate is fixed in the cabinet floor. The KEL cable entry frames are fitted.



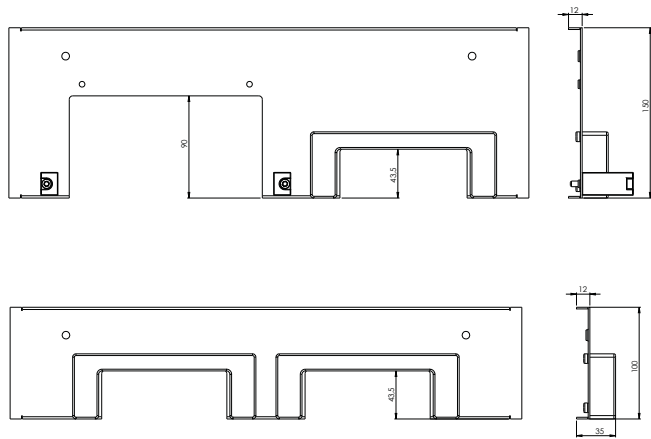
2  
The KEL cable entry frames are screwed together after fitting.



3  
Afterwards the KEL frames are pushed into the slide-frames and latched there.



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



## KDR - ESR

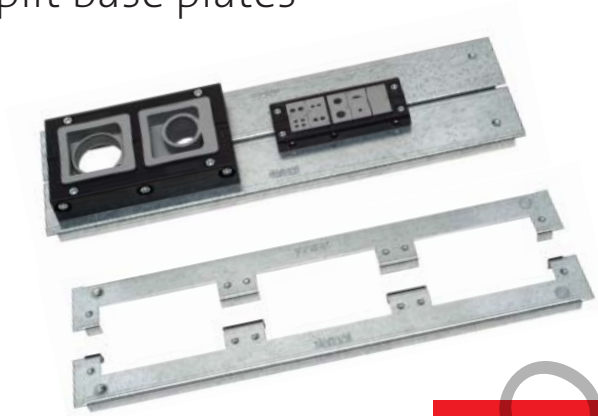
### Base plate with slide-frame

Control cabinet type	Control cabinet width	Total length base plate	Sight size of base plate opening	No. of possible cable entries				Order No.
				Jumbo 1	Jumbo 2	KEL 16   ...	Kel 24   ...	
TS8	600 mm	458 mm	436 mm	-	-	-	2	43079
	600 mm	458 mm	436 mm	-	1	-	1	43070
	600 mm	458 mm	436 mm	1	-	2	-	43071
TS8	800 mm	658 mm	636 mm	-	-	1	3	43080
	800 mm	658 mm	636 mm	1	-	-	3	43072
	800 mm	658 mm	636 mm	-	1	-	2	43073
TS8	1000 mm without division bar	858 mm	836 mm	-	-	-	5	43081
	1000 mm without division bar	858 mm	836 mm	1	-	-	4	43074
	1000 mm without division bar	858 mm	836 mm	-	1	-	3	43075
TS8	1000 mm with division bar	420 mm	398 mm	-	-	-	2	43082
	1000 mm with division bar	420 mm	398 mm	1	-	-	1	43076
	1000 mm with division bar	420 mm	398 mm	-	1	-	1	43077
TS8	1200 mm*	518 mm	496 mm	-	-	-	3	43083
	1200 mm*	518 mm	496 mm	1	-	-	2	43078
	1200 mm*	518 mm	496 mm	-	1	-	1	43084

\* in case both fields of the control cabinet are equipped, 2 complete split base plates are necessary.

# KDR 2

## Split base plates



### KDR 2 | Split base plates

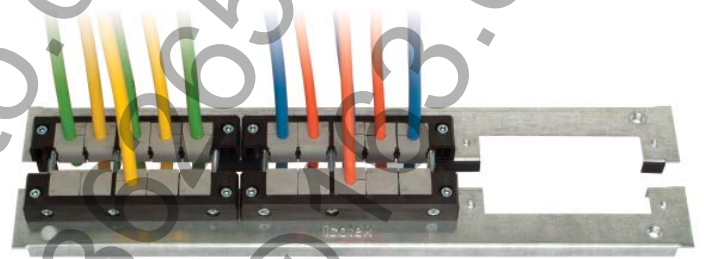
#### Product description

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

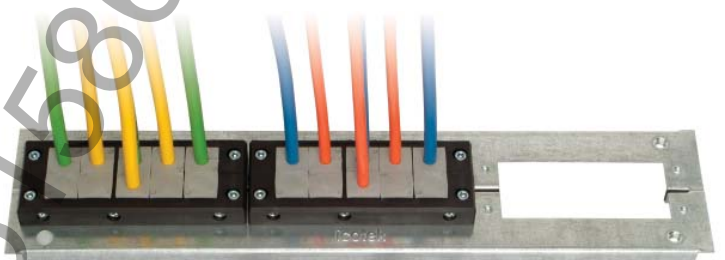
Integrated screw holes provide quick and easy installation of KEL frames.

#### Advantages and notes

- During assembly, almost the whole base of the enclosure can be used for installation of cables.
- Even large connectors can be installed easily.
- Retrofitting possible without disconnecting of cables. All can be built around the cables. No production downtimes.
- No additional sheet metal work for the user
- Cut-outs, which are no longer required, are covered with metal blind plates Type BPM.
- The base plate KDR 2 is designed for Rittal enclosures TS8. Other sizes can be supplied on request.



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



#### Specification

Material            Steel, zinc-plated

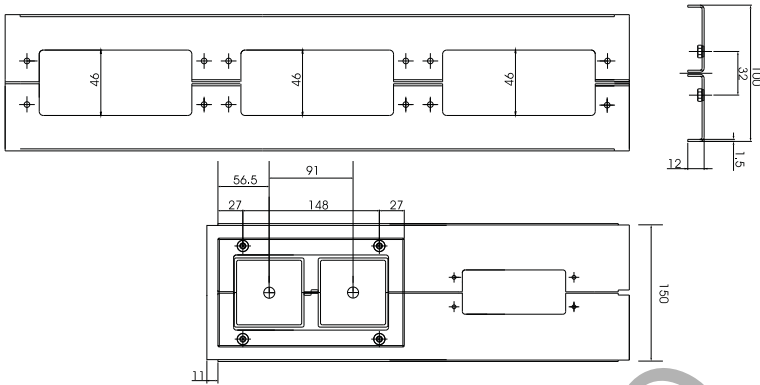
#### Accessories

KEL 24 Cable entry frames	Page 6
KEL-JUMBO Cable entry frames	Page 34
BPM Blind plates metal	Page 115

The frame-parts with inserts have to be built up before final assembly, i.e. before screwing the system together. Screwing of the cable entry frames tightens both parts of the split base plate.

# KDR 2

## Split base plates



Control cabinet type	Control cabinet width	Total length base plate	Sight size of base plate opening	No. of possible cable entries			Order No.
				Jumbo 1	Jumbo 2	Kel 24   ...	

TS 8	600 mm	458 mm	436 mm	-	-	3	42924
				1	-	2	42953
				-	1	1	42941
TS 8	800 mm	658 mm	636 mm	-	-	4	42922
				1	-	3	42954
				-	1	2	42945
TS 8	1000 mm without division bar	858 mm	836 mm	-	-	5	42923
				1	-	4	42955
				-	1	3	42952
TS 8	1000 mm with division bar	420 mm	398 mm	-	-	2	42958
				1	-	1	42957
				-	1	1	42959
TS 8	1200 mm *	518 mm	496 mm	-	-	3	42920
				1	-	2	42956
				-	1	1	42943

\* in case both fields of the control cabinet are equipped, 2 complete split base plates are necessary.

# KDR

## Cable entry frame



### KDR | Cable entry system

#### Product description

The KDR frame system is a perfect system for installation and sealing of pre-terminated cables.

The frame system is mounted into the control panel and is sealed by putting the sheet metals together. Subsequent alteration of the number of cables or of the cable diameters is very simple.

The KDR frame system is used, where multiple cables are installed, e.g. on cabinets, walls of machine tools, control panels, flexible for bottom-, cover- and side walls.

#### Function

Pre-fabricated cables and/ or hoses can be installed through the frame mounted at the bottom of the cabinet.

No extra components are necessary for installation of cables.

The inserts assembled in the cable entry frames guarantee strain relief of the cables (observe the correct selection of insert according to cable diameter).



#### Advantages

- Perfect transition of KDR frame and frame of the cabinet
- Installation of pre-terminated cables through the bottom of the control cabinet
- Suitable for any switch- and control cabinet

#### Specification

Material Aluminium

#### Accessories

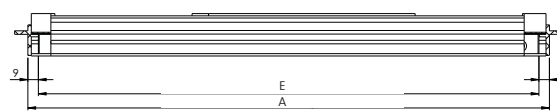
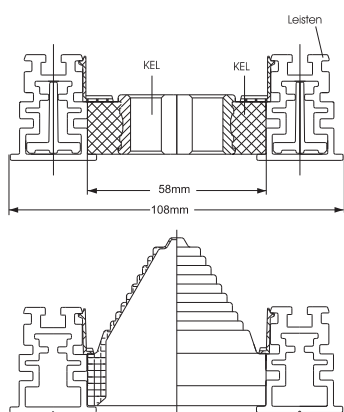
KEL Cable entry frames

Page 6 | 7

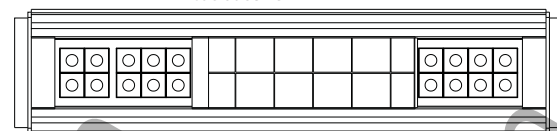


# KDR

## Cable entry frame



E = Installation length for KEL types  
A = cut-out size



Type	Order No.	Size	Length
------	-----------	------	--------

KEL - R 24   10	43240	24	147 mm
KEL - R 24   7	43247	24	147 mm
KEL - R 24   5	43245	24	147 mm
KEL - R 24   4	43244	24	147 mm
KEL - R 16   8	43168	16	120 mm
KEL - R 16   5	43165	16	120 mm
KEL - R 16   4	43164	16	120 mm
KEL - R 16   2	43162	16	120 mm
KDR	44xxx		xxx mm
KT - Uni	43100	∅ 6 -40 mm	58 mm
Cap	43150		172 mm
End piece	43160		2 pieces

### KDR ordering information

When ordering KDR cable entry frame, please inform us about:

A = cut-out size

Example: A = 999 mm equals KDR 44999

total length can be equipped as desired with any of the types see table on the left.

#### Included in delivery:

- 1x KDR - frame by length
- 2x end pieces



# FP

## Flanged plates



### Description

#### Product description

We supply complete flanged plates FP with cut-outs 112 x 36 mm for enclosures of the AE series. The cut-outs, as well as the drilling template, conform to the standard cut-outs for 24-pole industrial connectors. All flanged plates are RAL 7035 powder-coated. Please use the gaskets of the standard plates. The gaskets and screws are scope of delivery of the enclosures.

We recommend to fasten the cable entry systems with a torque of 1.5 – 2.0 Nm.

#### Advantages

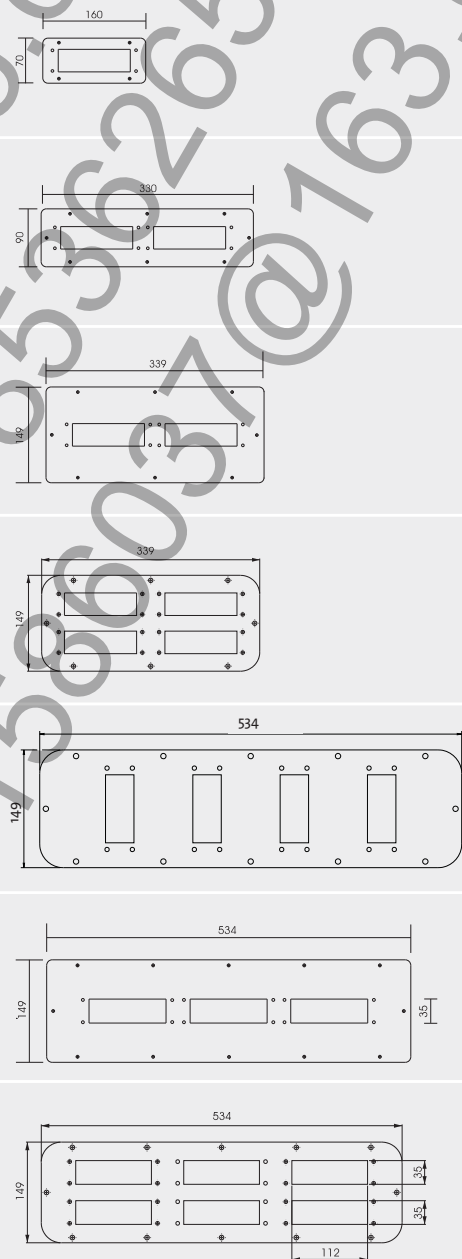
- No expensive extra sheet metal work is required
- High packing density is achieved by using KEL, KEL-DPZ or KEL-DP
- Reduce labor costs by using cable entry systems KEL, KEL-DPZ or KEL-DP compared to the assembly of conventional cable glands

#### Specification

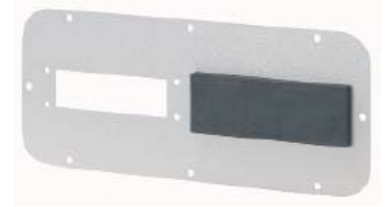
Material **Steel, powder-coated**

#### Accessories

KEL Cable entry frames	Page 6   7
KEL-SNAP Frames	Page 17
KEL-QTA Cable entry frames	Page 40
KEL-DPZ Cable entry plates	Page 46   47
KEL-DP Cable entry plates	Page 52
Blind plates	Page 114   115



# FP Flanged plates



Type	Order No. RAL 7035	Flanged plates fit for:	Size FP	Fits for (e.g. for Rittal with RAL 7032   RAL 7035)
FP - AE 160   70 mm Version with 1 cut-out	43836	KEL-DP 24 KEL-QTA 24	1	AE 1032 AE 1035
FP - AE 330   90 mm Version with 2 cut-outs	43838	KEL-DP 24 KEL-QTA 24	3	AE 1030 AE 1031 AE 1038 AE 1380
FP - AE 339   149 mm Version with 2 cut-outs	43840	KEL 24 KEL-SNAP 24 KEL-DPZ 24 KEL-DP 24 KEL-QTA 24	4	AE 1037   CS 9751.125 AE 1045   CS 9751.145 AE 1050   CS 9751.165 AE 1057   CS 9752.125 AE 1100 AE 1110   TP 6710 AE 1114   TP 6712 AE 1130   TP 6714 AE 1213   TP 6716 AE 1338 AE 1350
FP - AE 339   149 mm Version with 4 cut-outs	43846	KEL 24 KEL-DPZ 24 KEL-DP 24 KEL-QTA 24	4	AE 1039   EL 1919 AE 1054   EL 1926 AE 1055 AE 1060   IN 1076.290 AE 1073 AE 1076   TP 6711 AE 1077   TP 6713 AE 1090   TP 6715 AE 1180   TP 6717 AE 1260 AE 1280 AE 1339 AE 1360 AE 1376 AE1958
FP - AE 534   149 mm Version with 4 cut-outs KEL 16	43871	KEL 16 KEL-SNAP 16	5	
FP - AE 534   149 mm Version with 3 cut-outs	43842	KEL 24 KEL-SNAP 24 KEL-DPZ 24 KEL-DP 24 KEL-QTA 24	5	
FP - AE 534   149 mm Version with 6 cut-outs	43848	KEL 24 KEL-DPZ 24 KEL-DP 24 KEL-QTA 24	5	

# FP

## Flanged plates



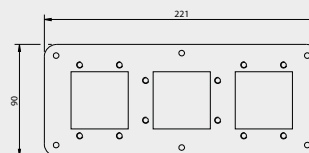
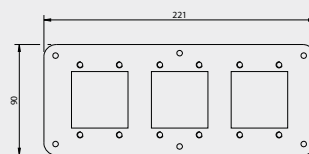
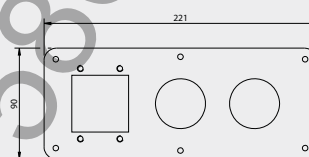
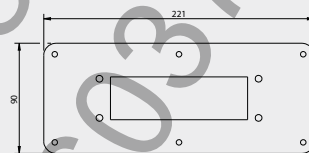
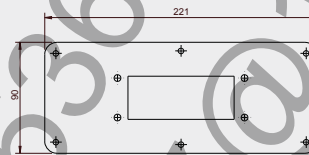
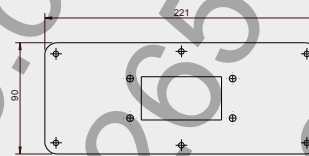
### Description

#### Plates for terminal boxes

The FP flanged plates type KL, designed to fit the Rittal KL series terminal boxes, are installed in combination with a cable entry system for either pre-terminated or standard cables. FP flanged plates are pre-cut, pre-drilled and painted for easy and quick installation of Icotek cable routing products. We recommend to fasten the cable entry systems with a torque of 1.5 – 2.0 Nm.

#### Specification

Material **Steel, powder-coated**



#### Accessories

- KEL 24/ KEL B Cable entry frames Page 6 | 9
- KEL-SNAP Frames Page 17
- KEL-QTA Cable entry frames Page 40
- KEL-DPZ Cable entry plates Page 46 | 47
- KEL-DP Cable entry plates Page 52
- Blind plates Page 114 | 115

# FP Flanged plates



Type	Order No. RAL 7035	Flanged plates fits for:	Size FP	Fits for (e.g. for Rittal with RAL 7032   RAL 7035)
------	-----------------------	-----------------------------	------------	--

FP - KL 221 x 90 mm | 10

43853

KEL 10  
KEL-SNAP 10

2

Terminal boxes Type KL

FP - KL 221 x 90 mm | 16

43855

KEL 16  
KEL-SNAP 16

2

Terminal boxes Type KL

FP - KL 221 x 90 mm | 24

43834

KEL 24  
KEL-SNAP 24  
KEL-DPZ 24  
KEL-DP 24

2

Terminal boxes Type KL

FP - KL 221 x 90 mm - A

Version with 3 cut-outs

43852

KEL-B  
KEL-SNAP B  
KEL-DPZ-B  
KEL-DPZ 50  
KEL-DP 50

2

Terminal boxes Type KL

FP - KL 221 x 90 mm - B

Version with 3 cut-outs

43854

Use with  
2x KEL-SNAP B und  
1x KEL-DPZ B

2

Terminal boxes Type KL

FP - KL 221 x 90 mm - C

Version with 3 cut-outs

43856

KEL-B  
KEL-DPZ-B

2

Terminal boxes Type KL

# FP

## Flanged plates



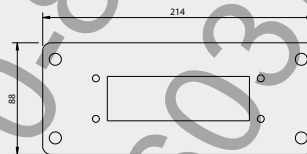
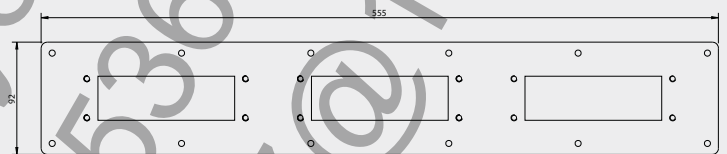
### Plates for bus enclosures

The FP flanged plates type BG, designed to fit the Rittal BG series enclosures, have 3 cut-outs that match the dimensions of the standard cut-outs for the 24-pole industrial connectors. These flanged plates are installed in combination with a cable entry system for either pre-terminated cables (KEL-DPZ or KEL-DP) or standard cables (KEL 24). We recommend to fasten the cable entry systems with a torque of 1.5 – 2.0 Nm.

### Specification

Material **Steel, powder-coated**

#### Description



### Accessories

KEL 24/ KEL B Cable entry frames	Page 6   9
KEL-SNAP Frames	Page 17
KEL-QTA Cable entry frames	Page 40
KEL-DPZ Cable entry plates	Page 46   47
KEL-DP Cable entry plates	Page 52
Blind plates	Page 114   115

FP

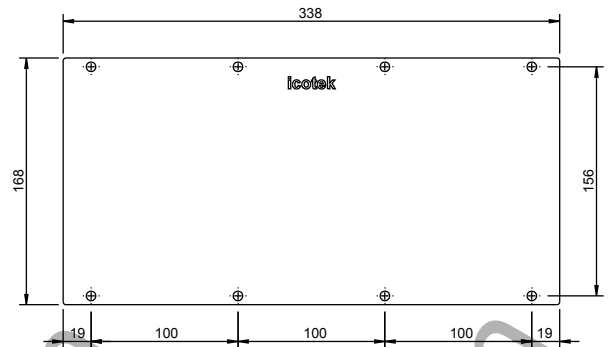
Flanged plates



Type	Order No. RAL 7035	Flanged plates fits for:	Size FP	Fits for (e.g. for Rittal with RAL 7032   RAL 7035)
FP - BG 355 x 92 mm Version with 2 cut-outs	43866	KEL 24 KEL-SNAP 24 KEL-DPZ 24 KEL-DP 24	-	BG 1558,210
FP - BG 555   92 mm Version with 3 cut-outs	43865	KEL 24 KEL-SNAP 24 KEL-DPZ 24 KEL-DP 24	6	BG 1050,900 BG 1559,510 IN 1510,280
FP - FL 21 Version with 1 cut-out	43832	KEL 24 KEL-SNAP 24 KEL-DPZ 24 KEL-DP 24	-	Fibox plates

# MP

## Module plates



### Product description

The module plates have cutouts for fixing the KEL range cable entry systems KEL 24, KEL-JUMBO, KEL-DPF, KEL-JUMBO flex and KEL-ULTRA flex. The module plates can be fixed on the following positions:

- Separation plates
- Closed bottom of the switch box
- 25 mm breadboard of the switch box
- 25 mm breadboard bars (Rittal TS System)

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

The shipment includes a suitable gasket.

### Specification

Material: Steel, zinc-plated  
 Article 43883 Aluminium  
 Dimension: 338 x 168 x 2 mm

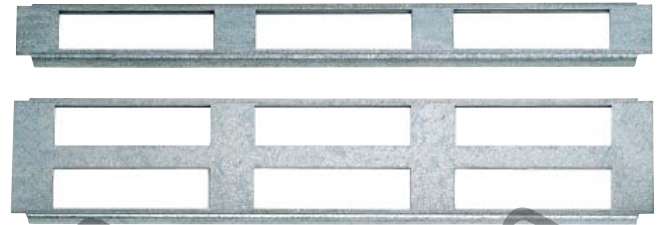
### Accessories

- KEL 24 Cable entry frames Page 6
- KEL-SNAP SNAP frames Page 17
- KEL-JUMBO Cable entry frames Page 34
- KEL-DPF Cable entry inserts Page 55
- KEL-JUMBO flex Cable entry ins. Page 56
- KEL-ULTRA flex Cable entry ins. Page 57
- Blind plates Page 114 | 115

Description	Type	Order No.	Fits for
	MP 0	43882	Module plate, blind
	MP 1	43891	3x KEL 24   x
	MP 2	43890	4x KEL 24   x
	MP 3	43886	1x KEL-JUMBO 1 1x KEL-JUMBO 2
	MP 4	43888	2x KEL-JUMBO 1
	MP 5	43887	2x KEL 24   x 1x KEL-JUMBO 1
	MP 6	43883	5x cut-out M50 for KEL-DPF or KEL-DPZ
	MP 7	43889	Cut-out 3x KEL-JUMBO flex
	MP 8	43894	Cut-out 2x KEL-ULTRA flex

# KDR 1

## Base plates



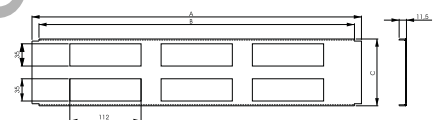
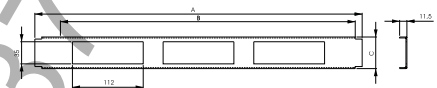
Contr. cabinet width TS 8	Total length base plate A	Sight size base plate opening	Width C	No. of possible cable entries KEL-DP 24 or KEL-QTA 24	Order No.
---------------------------	---------------------------	-------------------------------	---------	---	-----------

600 mm	458 mm	436 mm	50 mm	one-row	3	43028
			105 mm	two-row	6	43012
800 mm	658 mm	636 mm	50 mm	one-row	4	43024
			105 mm	two-row	8	43008
1.000 mm with division bar	420 mm	398 mm	50 mm	one-row	2	43018
			105 mm	two-row	4	43006
1.000 mm without division bar	858 mm	836 mm	50 mm	one-row	5	43016
			105 mm	two-row	10	43004
1.200 mm	518 mm	496 mm	50 mm	one-row	3	43020
			105 mm	two-row	6	43000

### Product description

For routing a large amount pre-terminated non assembled cables (especially with a diameter up to 34 mm), one-piece base plates Typ KDR1 can be used.

When assembling the KEL-DP by directly pushing it into the base plate, a reduction of labor costs are achieved.



### Specification

Material Steel, zinc-plated

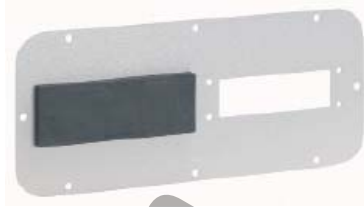
### Accessories

KEL-QTA Cable entry frames Page 40  
KEL-DP Cable entry plates Page 52



# BPK

## Blind plates, plastic



Type	Order No.	Blind plate for cut-out of KEL ...	Dimensions	PU
------	-----------	------------------------------------	------------	----

### Product description

Blind plates to close cutouts for standard 10-pole / 16-pole / 24-pole industrial connectors.

Plastic blind plates are available in two different versions:

Type BPK-R: Blind plates for SNAPPING into metal sheet plates up to a thickness of 1.5 mm

Type BPK: Blind plates for screw connection

### Advantages

- Fast mounting of the blind plates BP-R range by SNAPPING into the cutout
- Integrated circular sealing

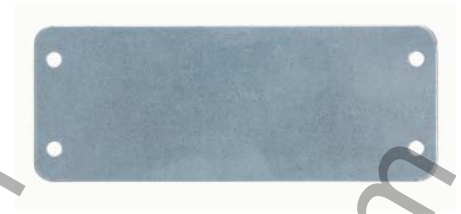
### Specification

Material	Polyamide
Flame class	BPK-R: UL-94 V0 BPK: UL-94 V2
Temperature Properties	- 30°C to + 140°C (static) halogen-free, silicone-free

BPK 10	42015	KEL 10	103 x 52 mm	10
BPK - R 16	42006	KEL 16	120 x 55 mm	10
BPK 16	42016	KEL - Quick 16	124 x 52 mm	10
BPK - R 24	42008	KEL 24	147 x 55 mm	10
BPK 24	42024	KEL - Quick 24	150 x 52 mm	10
BPK - JFX	42620	KEL-Jumbo flex	88 x 88 mm	5

# BPM

## Blind plates, metal



Type	Order No.	Blind plate for KEL cut-out	Dimensions	PU
BPM - B	42013	KEL - B KEL - Quick B	75 x 58 mm	10
BPM - 10	42014	KEL 10	99 x 58 mm	10
BPM - FG B	42012	KEL - FG B	80 x 58 mm	10
BPM - 16	42025	KEL 16 KEL - Quick 16	118 x 56 mm	10
BPM - 24	42027	KEL - 24 KEL - Quick 24	145 x 56 mm	10
BPM - 24   20	42028	KEL - 24   xx MT	147 x 102 mm	1
BPM - JUMBO 1	42030	KEL - JUMBO 1	116 x 110 mm	1
BPM - JUMBO 2	42032	KEL - JUMBO 2	200 x 116 mm	1
BPM - ULTRA	42633	KEL-ULTRA flex	???? x ????	1

### Product description

Blind plates to close cutouts for standard 10-pole / 16-pole / 24-pole industrial connectors.

Gasket is part of delivery.

### Specification

Material                      Steel, zinc-plated  
Width 2 mm

# BPK - SNAP

## Blind plates for KEL-SNAP frames



### Product description

Blind plate BPK-SNAP to close cut-outs of pre-assembled KEL-SNAP frames.

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

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

BPK-SNAP 16 and BPK-SNAP 24 to close cutouts of the KEL-SNAP frames and not used slide-frames of the KDR-ESR base plates.

### Specification

Material Polyethylene (PE)  
 Temperature - 40°C to + 80°C (static)  
 Properties silicone-free

Type	Order No.	Blind plate fits for	Dimensions l x b x h	PU
BPK - SNAP B	42003	KEL - SNAP B4	57 x 72.8 x 17 mm	10
BPK - SNAP 10	42004	KEL - SNAP 10	57 x 98.3 x 17 mm	10
BPK - SNAP 16	42007	KEL - SNAP 16	57 x 120 x 17 mm	10
BPK - SNAP 24	42017	KEL - SNAP 24	57 x 147 x 17 mm	10

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### Accessories

KEL-SNAP frames Page 17  
 KDR-ESR Base plate with slide-frame Page 100 | 101

# KLKB / KLB

## Cable ties with hook-and-loop fastener



Type	Size	Order No.	PU
------	------	-----------	----

KLKB 200 x 7 bk	200 x 7 mm	61021	100
KLKB 200 x 13 bk	200 x 13 mm	61022	100
KLKB 230 x 13 bk	230 x 13 mm	61023	100
KLKB 300 x 17 bk	300 x 17 mm	61024	100
KLB 10 bk	10 mm	61011	25 m
KLB 15 bk	15 mm	61012	25 m
KLB 20 bk	20 mm	61013	25 m
KLB 25 bk	25 mm	61014	25 m

### Product description

Cable ties with hook-and-loop fastener are a more and more common fixing mode for cables. The cable ties with hook-and-loop fastener are used instead of standard cable ties, because they can be easily closed and opened several times. They are gently to cables, especially if there are vibrations.

Cable ties with hook-and-loop fastener are available as ready-made cable ties (KLKB) in four sizes or as continuous tie on a roll (KLB) in four widths.

### Advantages

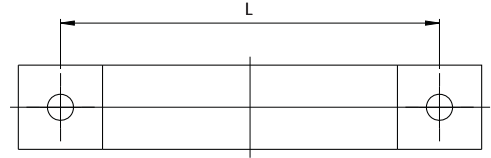
- cable ties with hoop-and-loop fastener are re-usable
- adaptable
- the cable tie material is gentle on cables, especially if there are vibrations

### Specification

Material	Polypropylene + Velour PA
Colour	black
Flame class	UL-94 V2,
Temperature	- 30°C to + 80°C

# MB

## Earthing tapes



Type	Order No.	Length L [mm]	Cross-section mm <sup>2</sup>	Hole size	PU
MB 100   6   M6	32700	100	6	M6	1
MB 150   6   M6	32701	150	6	M6	1
MB 200   6   M6	32702	200	6	M6	1
MB 300   6   M6	32703	300	6	M6	1
MB 400   6   M6	32704	400	6	M6	1
MB 500   6   M6	32705	500	6	M6	1
MB 100   10   M6	32730	100	10	M6	1
MB 100   10   M8	32731	100	10	M8	1
MB 150   10   M8	32732	150	10	M8	1
MB 200   10   M6	32733	200	10	M6	1
MB 200   10   M8	32734	200	10	M8	1
MB 300   10   M6	32735	300	10	M6	1
MB 300   10   M8	32736	300	10	M8	1
MB 400   10   M6	32737	400	10	M6	1
MB 400   10   M8	32738	400	10	M8	1
MB 500   10   M6	32739	500	10	M6	1
MB 100   16   M6	32760	100	16	M6	1
MB 100   16   M8	32761	100	16	M8	1
MB 150   16   M6	32762	150	16	M6	1
MB 150   16   M8	32763	150	16	M8	1
MB 200   16   M6	32764	200	16	M6	1

### Product description

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

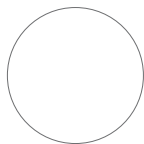
The minimum transition and connecting resistance makes them perfectly suitable for use as earthing tapes.

### Advantages

- Available in various lengths and cross-sections
- Cost-effective
- Low transition impedances

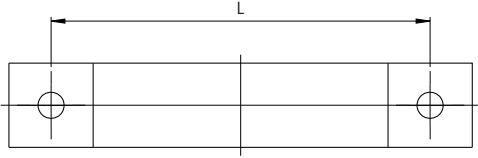
### Specification

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



# MB

## Earthing tapes



Type	Order No.	Length L [mm]	Cross-section mm <sup>2</sup>	Hole size	PU
MB 200   16   M8	32765	200	16	M8	1
MB 250   16   M8	32766	250	16	M8	1
MB 300   16   M6	32767	300	16	M6	1
MB 300   16   M8	32768	300	16	M8	1
MB 350   16   M8	32769	350	16	M8	1
MB 400   16   M8	32770	400	16	M8	1
MB 500   16   M8	32771	500	16	M8	1
MB 600   16   M8	32772	600	16	M8	1
MB 100   25   M10	32800	100	25	M10	1
MB 150   25   M10	32801	150	25	M10	1
MB 200   25   M8	32802	200	25	M8	1
MB 200   25   M10	32803	200	25	M10	1
MB 250   25   M8	32804	250	25	M8	1
MB 250   25   M10	32805	250	25	M10	1
MB 300   25   M8	32806	300	25	M8	1
MB 300   25   M10	32807	300	25	M10	1
MB 350   25   M10	32808	350	25	M10	1
MB 400   25   M8	32809	400	25	M8	1
MB 500   25   M8	32810	500	25	M8	1
MB 600   25   M8	32811	600	25	M8	1

### Product description

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

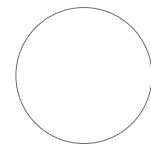
The minimum transition and connecting resistance makes them perfectly suitable for use as earthing tapes.

### Advantages

- Available in various lengths and cross-sections
- Cost-effective
- Low transition impedances

### Specification

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



# WST

## Split corrugated conduit



### Product description

The WST is split and two piece corrugated conduit. Perfect for routing standard or pre-terminated cables in harsh environments.

In conjunction with KVT-W90, a high degree of flexibility is achieved. Numerous conduit sizes can be used thanks to the wide variety of split inserts offered (see KT inserts on pages 22 - 24).

The length of the WST split corrugated conduit is individually adjustable.

### Advantages

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

### Specification

Material	Polypropylene, black
Flame class	UL-94 V2
Protection class	IP 50
Temperature	- 40°C to + 105°C
Properties	halogen-free, UV-resistant

### Accessories

SH Conduit clip

Page 121

Type	Order No.	Internal diameter	External diameter	Fits for:	Dimensions	Ring length
WST NW 10	31200	8.7 mm	13.6 mm	KT 13 KTRS 13	10 mm	50 m
WST NW 14	31210	12.5 mm	18.5 mm	KT 18	14 mm	50 m
WST NW 20	31220	19.5 mm	25.5 mm	KT 25	20 mm	50 m
WST NW 23	31230	24.2 mm	31.0 mm	KT 30	23 mm	50 m
WST NW 37	31240	31.0 mm	41.4 mm	KTMB - P	37 mm	25 m
WST NW 45	31250	42.7 mm	54.0 mm	KTMB - Q	45 mm	25 m
WST NW 70	31260	66.5 mm	79.8 mm	KTMB - S	70 mm	10 m

# SH Conduit clip



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

SH 10	31300	NW 10	18.6	20.0	23.0	10
SH 14	31310	NW 14	24.0	20.0	26.1	10
SH 20	31320	NW 20	35.0	20.0	39.6	10
SH 23	31330	NW 23	42.5	20.5	44.5	10
SH 37	31340	NW 37	52.0	20.5	52.5	10
SH 45	31350	NW 45	66.2	20.5	66.3	10

## Product description

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

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

## Specification

Material	Polyamide, black
Flame class	UL-94 V2
Temperature	- 40°C bis + 120°C
Properties	halogen-free, silicone-free

## Accessories

Corrugated conduit

Page 121



# Appendix

Technical data and comments

## Technical information



### At a glance ...

Technical data and drilling templates at a glance.

IP rating according to the DIN EN 60529 and flammability classification according to the UL 94.



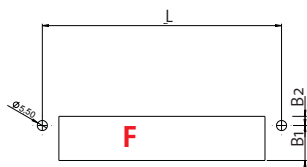
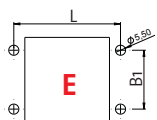
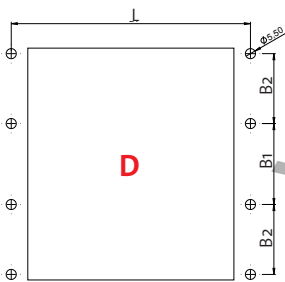
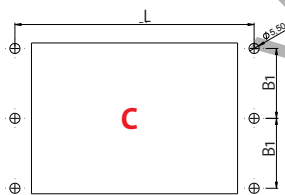
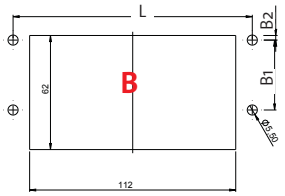
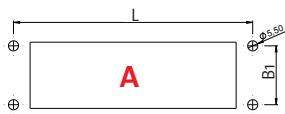
### Chapter content

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# Technical data

## Drilling templates

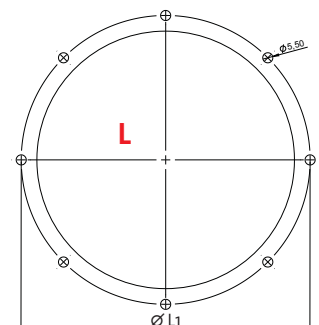
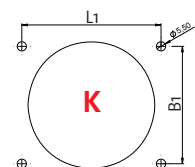
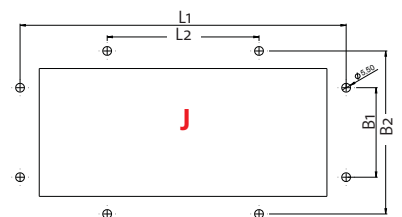
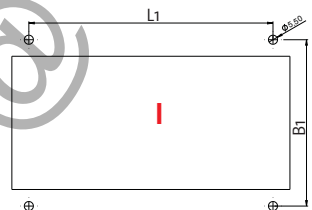
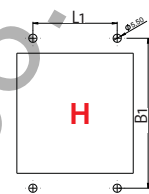
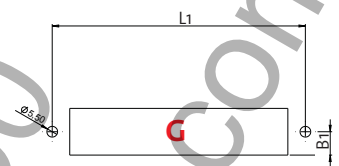


Type	Page	Drill/templ.	Dimensions [mm]			Cut-out h x l [mm]
			L	B1	B2	
KEL 24   x KEL-FG A KEL-QUICK 24 KEL-DPZ 24   x	6 14 37 46	A	130	32	-	36 x 112
KEL-SNAP 24	17	A	130	32	-	max. 46 x 112
KEL 16   x KEL-QUICK 16	7 36   37	A	103	32	-	36 x 86
KEL-SNAP 16	17	A	103	32	-	max. 46 x 86
KEL 10   x KEL-SNAP 10	8 17	A	83	32	-	36 x 65
KEL 24   x - E	11	B	130	38	5	62 x 112
KEL 24   x - MT	12	C	130	38	-	82 x 112
KEL 24   x - 2MT	13	D	130	44	38	126 x 112
KEL-B KEL-DPZ-B	9 46	E	58 72,8	32 58	-	46 x 46
KEL-SNAP B KEL-QUICK B	17 36	E	56	32	-	46 x 38
KEL-FG B	15	E	62,5	32	-	46 x 36
KEL-E   x KEL-FL   x	10 30	F	KEL-E2: 58 KEL-E3: 83 KEL-E4: 103 KEL-E5: 130	19	5	KEL-E2: 43 x 24 KEL-E3: 65 x 24 KEL-E4: 86 x 24 KEL-E5: 112 x 24

# Technical data

## Drilling templates

Type	Page	Drill. templ.	Dimensions [mm]				Cut-out h x l [mm]
			L1	L2	B1	B2	
KEL - DPZ - E	49	G	130	-	12	-	112 x 18
KEL-JUMBO 1	34	H	56,5	-	100,5	-	78 x 80,5
KEL-JUMBO 2	34	I	147,5	-	100,5	-	168 x 80,5
KEL 183	32	J	204	95	56	102	180 x 80
KEL-JUMBO flex	56	K	83	-	70	-	∅75,5
KEL-ULTRA flex	57	L	∅157	-	-	-	∅140



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# KGM

## Locknuts



Type KGM: Standard nut, plastic



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

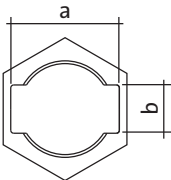


Type GMT: Split locknut

### Product description

Hexagonal nut with metric threads for attaching components together.

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



### Specification

Material PA Polyamid/ PC Polycarbonate/ brass (see table)  
 Flame class UL-94 Vo, self-extinguishing  
 Temperature -30°C to +120°C  
 Properties halogen-free, silicone-free

Thread	Type	OrderNo.	Material	Height [mm]	Wrench size	Diagonal [mm]	Cut-out a x b [mm]	PU
--------	------	----------	----------	-------------	-------------	---------------	--------------------	----

#### Type KGM: Standard nut, plastic

M20 x 1.5	KGM 20	71157	PA, grey	7.0	SW 26	28.2	-	10
M25 x 1.5	KGM 25	52274	PA, grey	7.0	SW 32	36	-	10
M25 x 1.5	KGM 25	52284	PA, black	7.0	SW 32	36	-	10
M32 x 1.5	KGM 32	52275	PA, grey	7.0	SW 41	46	-	10
M32 x 1.5	KGM 32	52285	PA, black	7.0	SW 41	46	-	10
M40 x 1.5	KGM 40	52276	PA, grey	7.0	SW 50	56	-	10
M40 x 1.5	KGM 40	52286	PA, black	7.0	SW 50	56	-	10
M50 x 1.5	KGM 50	52277	PA, grey	8.6	SW 60	66	-	10
M50 x 1.5	KGM 50	52287	PA, black	8.6	SW 60	66	-	10
M63 x 1.5	KGM 63	52278	PA, grey	8.6	SW 75	83	-	5
M63 x 1.5	KGM 63	52288	PA, black	8.6	SW 75	83	-	5
M63 x 1.5	GM 63	56152	brass	5.5	SW 70	78	-	5

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

M32 x 1.5	KGM-SUB-D9	45105	PC, grey	7.0	SW 41	46	35 x 16	10
M40 x 1.5	KGM - PB	45107	PA, grey	8.0	SW 50	55	43 x 17	10
M50 x 1.5	KGM-SUB-D25	45108	PA, grey	8.0	SW 60	66	55 x 16	10

#### Type GMT: Split locknut

M20 x 1.5	GMT 20	31110	PA, black	9.0	SW 27	29	-	10
M25 x 1.5	GMT 25	31100	PA, black	9.0	SW 32	35	-	10
M32 x 1.5	GMT 32	31120	PA, black	12.0	SW 40	44	-	10
M50 x 1.5	GMT 50	31140	PA, black	15.0	SW 63	69	-	10

### Accessories

KVT, KVT-SNAP, KVT-W90  
 QVT  
 KEL-DPZ  
 KEL-DPF

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