

U15 | U25 | U35

INSULATED CONDUCTOR SYSTEMS



INSULATED CONDUCTOR RAILS U15, U25 AND U35

While all mobile industrial applications need power, various environments and performance ranges call for different needs. For example, crane systems, port technology, conveyor systems, Ferris wheels, elevators and roller shutters each have unique system requirements.

The lightweight U15, U25 and U35 are designed for indoor and outdoor use. Available in different materials, these versatile conductor systems can be installed hanging, sideways, vertically and can even be used in curved tracks. They are also easy to maintain due to their individual installation.

In combination with the VAHLE Multi-Carrier (VMT) or the VAHLE Support Profile (VTP), the support distances and the area of application can be extended beyond those of the U15 and U25. Additionally, various positioning systems can be integrated to meet customers' specific requirements.

The U35 conductor system with aluminum/stainless steel conductor is used for the electrification of RTG, RMG and STS cranes in salty environments (especially maritime port facilities). The cost-effective alternative to copper rails has proven its high wear resistance and durability in this harsh environment worldwide.

VAHLE has the right conductor system for every application. Our DIN VDE 0100-compliant, contact-protected systems can be combined with any number of pins.

Our insulated conductors are designed to withstand extreme temperatures. We offer heat-resistant insulated conductor systems that can be heated to prevent icing, while ensuring reliable energy transmission even under extreme heat. We also offer high-temperature versions of the U25 and U35 that are suitable for use in environments with humid, salty air.

Advantages

- Various conductor materials available
 - Customizing for custom applications
 - High level of safety thanks to IP23 protection against accidental contact (hanging arrangement)
 - UL approval for the North American market (on request)
 - Suitable for operating temperatures from -30 °C to +130 °C (U25 and U35)
 - Can be heated to prevent icing
 - Universal for hanging, lateral and vertical (upright) arrangement
 - Can be combined with data and positioning systems
-

U15

For light cranes, transport and leisure equipment, stacking equipment, transfer tables, test equipment for series production, elevator systems, roller shutters, data and signal transmission.

For continuous current up to 100 A and operating temperatures from -30 °C to +85 °C

Pages 6-20

U25

Overhead cranes (crane and trolley rides), transportation and leisure facilities, rides and tower elevators.

For continuous current up to 450 A and operating temperatures from -30 °C to +130 °C

Pages 21-36

U35

Areas of application as for U25 and for eRTG.

For continuous current up to 1150 A and operating temperatures from -30 °C to +130 °C

Pages 37-53

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GENERAL INFORMATION

Our insulated conductor systems U15, U25 and U35 are designed according to VDE 0100 to meet today's safety requirements for conductor systems. They are protected against accidental contact according to DIN VDE 0470, Part 1 (EN 60 529) (protection class IP 23 in a hanging arrangement; IP 21 in a lateral arrangement). Please note, the current collectors are only protected against contact if the carbon brushes are fully within the conductor rails.

For conductor systems located at arm's length, where under normal operation the current collectors leave the conductor rails, contact protection must be provided on site, e.g. by means of barriers or by switching off.

This, however, only applies to voltages above 25 volts AC or 60 volts DC. The adjacent image shows that the VDE finger cannot touch any live parts.



The insulating profile, into which the various conductor rail profiles are drawn, offers good insulation and maximum safety. All product series are available in a standard version (up to +55°C) and heat-resistant version (up to +85°C). A high-temperature version (up to +130°C) is available for U25 and U35. This also satisfies the "halogen-free" specification. Conductor systems can be assembled with any number of pins.

The standard length for deliveries is 6 m for U15 and U25 and 6.25 m for U35. Shorter lengths can be supplied.

The ground conductor is marked with a continuous yellow stripe on the insulating profile.

The non-exchangeability of the current collectors between ground conductors and phases is ensured.

Approvals

U15: SEV and CSA approval, U25: UL approval, U35/600AE:

UL approval.

Please ask when ordering.

Hangers

Screw or clamp brackets (bracket profile/C-rails) can be used to anchor the conductor systems on the track profile. The maximum support distance differs between conductor rails U15, U25 and U35.

Different hanger types, such as compact holders, individual hangers or hangers with creepage distance extension, can be used to meet a wide variety of requirements. An extension of the creepage distance, for ex-

ample, increases safety and helps protect against electrical flashovers in systems in difficult operating and environmental conditions, such as high humidity, electroplating and chemical plants.

Locating clamp

Locating clamps ensure that the conductor rail cannot shift. Locating clamps are mounted on both sides next to a hanger.

Connector

The rail sections are connected to one another by means of bolted joints. Every connection point is protected against contact with a cover cap. With greater temperature fluctuations and lengths of more than 100 m, expansion sections must be provided for U15 (for U25 and U35 over 150 m) (see assembly instructions).

Feeds

The feed terminal is mounted between rail sections instead of a joint. Single-core cables are to be used as supply cables.

End caps

End caps form the contact-protected end of the conductor system.

Funnels and transfer guides

Transfer guides and funnels are available for use on dead sections, turntables and switches.

Isolating sections

Isolating sections are electrical interruptions of the conductors. Operational overrunning of the current collectors with the aim of switching the voltage off or on is only permissible at low energies (control currents). Conductor dead sections are available for control purposes, feed tracks, repair sections, etc.

Curves

The insulated conductor rails can be used in horizontal and vertical curves. Depending on the type and radius, the system may be bent on site or in our factory. Note: U35 rails are not bent on site.

Current collector

Depending on the application, single or double current collectors are used. The specified continuous currents apply to current collectors in stationary operation on conductor rail profiles with copper contact surfaces. In the case of AE conductor system, current collectors from current consumers that operate continuously under load in one place or at a very low traveling speed of 10 m/min. may only be loaded with approx. 50% of their continuous current.

The length of the current collector connection cable may not exceed 3 m if the downstream overcurrent protection device is not designed to handle the capacity of the connection cable. See also DIN VDE 0100, Part 430 and DIN EN 60204. (Note: the above often occurs when there are multiple current collectors per system.)

The cross section of the supplied connecting cables (H 07 RN - F) is designed for the stated nominal currents. The reduction factors according to DIN VDE 0298 must be observed for the various installation procedures.

Safety instructions

It must be ensured that the safety distances between fixed and moving parts of the system (0.5 m) are not exceeded due to the installation of conductor system (sliding contact rails) and current collector or drive arms on site in order to prevent crushing hazards! Do not inhale carbon dust. Avoid contact with eyes and skin. Do not shake out filter bags; dispose of them as hazardous waste.

Chemical resistance

Insulation profiles in the standard version (color green) and in the heat-resistant version (color gray) are resistant to mineral oil, grease, 25% caustic soda, 50% caustic soda), concentrated hydrochloric acid; sulfuric acid up to 50%.

PLEASE NOTE

If the conductor systems are to be used in galvanizing plants, pickling plants and/or pressing plants with harsh environmental conditions or low voltages, please contact us with detailed information.

Drawings are required for conductor systems that will need curves, rail separation, dead sections, turntables or switches.

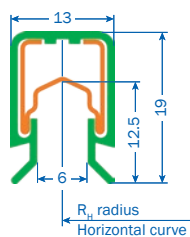
Conductor rail values (electrical)

Type	Dielectric strength according to DIN 53481	Special volume resistivity according to IEC 60093	Surface resistance according to IEC 60093	Comparative tracking index according to IEC 60112
Standard version, green	>25 kV/mm	>1 X 10 ¹⁶ ohm ¹⁶ ohm x cm	2.1 x 10 x ¹⁵ ohm	CTI > 400
Heat-resistant version, gray	>25 kV/mm	>1 x 10 ¹⁴ ohm x cm	2 x 10 x ¹⁵ ohm	CTI > 400
HT version, granite gray	>80 kV/mm	>1 x 10 ¹⁵ ohm x cm	1 x 10 x ¹³ ohm	CTI > 500

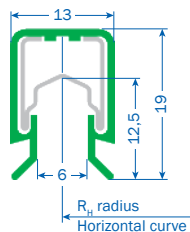
Conductor rail values (mechanical)

Type	Bending strength according to ISO 178	Tensile strength according to ISO 527	Operating temperature	Flammability
Standard version, green	74 – 85 N/mm ²	44 – 55 N/mm ²	-30 °C to +55 °C	Flame-retardant, self-extinguishing, UL 94 V0
Heat-resistant version, gray	90 – 100 N/mm ²	47 – 65 N/mm ²	-30 °C to +85 °C	Flame-retardant, self-extinguishing, UL 94 V0
HT version, granite gray	70 – 140 N/mm ²	60 – 80 N/mm ²	-30 °C to +130 °C	Flame-retardant, self-extinguishing, UL 94 V0

TECHNICAL SPECIFICATIONS: U15



U15 C



U15 E

Type keys

- U = insulated conductor rails
 15 = housing size
 25 = conductor cross-section in mm²
 C = copper conductor
 E = stainless steel conductor

Delivery length

6 m standard length,
 shorter lengths are possible

Support distance

- For straight installation and indoor
 or outdoor bends and for installation
 of horizontal bends over $R_H = 5$ m:
- 1000 mm with single current collector
 - 800 mm with double current collector
- When installing horizontal bends up to $R_H = 5$ m:
- 500 mm with single current collector
 - 400 mm with double current collector

Rail spacing

For compact and individual installation 18 mm

Curving the conductor rail

Available upon request

Heating

Available upon request

Note:

For chemical and electrical values and temperature resistance, see pages 4 and 5.

Selection of conductor system

Based on the current to be transmitted (observe the duty cycle) and the expected environmental influences.

U15/25 C Conductor system with copper conductor for main and control current

U15/25 E Conductor system with a stainless steel conductor for control lines and data transmission

Conductor system values

Type	Conductor cross section mm ²		Creepage distance of insulation mm	Max. nominal voltage V (UL)	Max. continuous current A at 35 °C	Resistance ⁽¹⁾ ohm/1000 m	Impedance ⁽¹⁾ / 1000 m at phase spacing		
	Cu	Stainless steel					18 mm	25 mm	50 mm
U15/25 C	25	-	30	690 ⁽⁶⁰⁰⁾	100	0.692	0.698	0.701	0.709
U15/25 E	-	25	30	690 ⁽⁶⁰⁰⁾	10	29.077	29.077	29.077	29.077

Versions

Version	Type	Weight kg	Order No. Phase ⁽²⁾	Order No. PE ⁽²⁾
Standard, -30 °C to +55 °C, green	U15/25 C	0.295	16213 •	16219 •
	U15/25 E	0.285	16215 •	16221 •
Heat-resistant version, -30 °C to +85 °C, gray	U15/25 C	0.295	16216 •	16222 •
	U15/25 E	0.285	16218 •	16224 •

(1) At frequency of 50 Hz and 20 °C

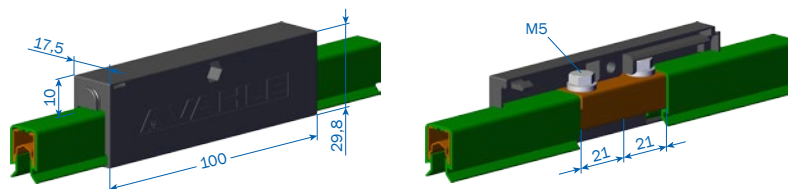
(2) The last digit of the order number indicates the individual length in meters. Please add 1, 2, ...6 to the order No. Intermediate values should be rounded up.

ACCESSORIES FOR U15

Fixed connector⁽¹⁾

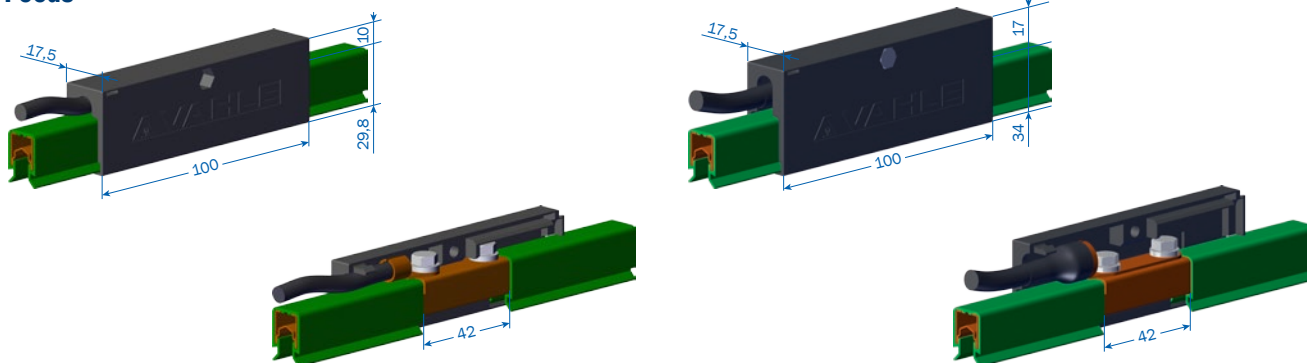
All listed fixed connectors can also be used as feed-throughs (identical design)

Use contact grease to protect against corrosion



Type	Connection max. mm ²	Weight kg	Order No.
UV 15 K 4 ⁽²⁾	2x6	0.040	160102

Feeds⁽¹⁾



Type UE 15 K 4⁽²⁾ identical in design to fixed connector UV 15 K 4⁽²⁾

Use contact grease to protect against corrosion

UE: Cable lugs and connection cable must be provided on site

UEG: A special cable lug and connection cable must be provided on site

Type	Connection max. mm ²	Weight kg	Order No.
UE 15 K 4 ⁽²⁾	2x6	0.040	160107
UEG 15 K 4 ⁽²⁾	1x25	0.060	160216

(1) Screws intended for connecting the ground conductor must not be used as connectors.

(2) Non-rusting version

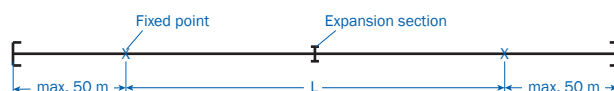
ACCESSORIES FOR U15

Expansion sections

Consisting of expansion connectors and connectors

Mounted on a 1 m long rail section

Used for system lengths of 100 m or more



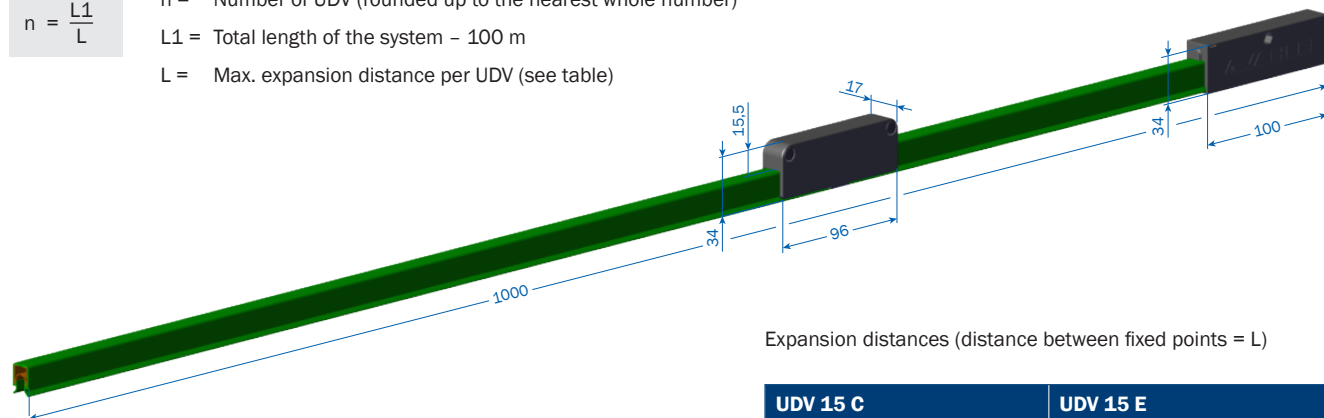
Determining the number of expansion sections

$$n = \frac{L1}{L}$$

n = Number of UDV (rounded up to the nearest whole number)

L1 = Total length of the system – 100 m

L = Max. expansion distance per UDV (see table)



Max. expansion movement = 30 mm

Expansion distances (distance between fixed points = L)

UDV 15 C		UDV 15 E	
up to Δ d	max. L	up to Δ d	max. L
20 °C	88 m	20 °C	93.5 m
30 °C	58.5 m	30 °C	62.5 m
40 °C	44 m	40 °C	46.5 m
50 °C	35 m	50 °C	37.5 m
60 °C	29 m	60 °C	31 m
70 °C	25 m	70 °C	26.5 m
80 °C	22 m	80 °C	23 m

Versions

Version	Type	Weight kg	Order No. Phase	Order No. PE
Standard, -30 °C to +55 °C, green	UDV 15/25 C K 4 ⁽¹⁾	0.430	160276	160277
	UDV 15/25 E K 4 ⁽¹⁾	0.420	160288	160289
heat-resistant version, -30 °C to +85 °C, gray	UDV 15/25 C K 4 ⁽¹⁾	0.430	160280	160281
	UDV 15/25 E K 4 ⁽¹⁾	0.420	160292	160293

(1) Non-rusting version

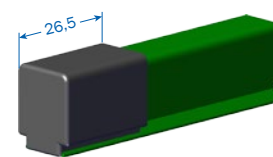
ACCESSORIES FOR U15

End cap

Including tension pin

Type M: Factory installation

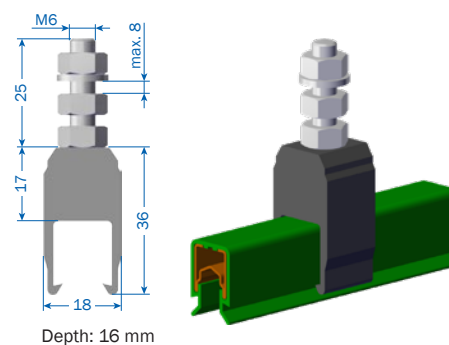
Type L: Loose delivery as single item



Type	Weight kg	Order No.
UK 15-M	0.005	161656
UK 15-L	0.005	160109

Insulated hangers⁽¹⁾

Minimum distance to center of connector or feed 150 mm

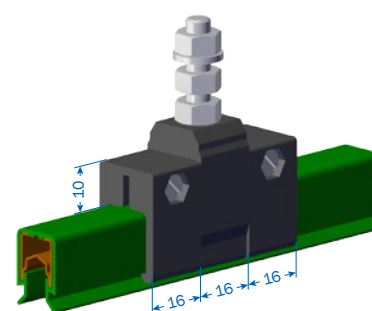


Type	Weight kg	Order No.
UA 15	0.020	160113
UA 15 K 4 ⁽²⁾	0.020	160115

Locating clamp

2 locating clamps per pin must be ordered per fixed point

Design for vertical systems available on request



Insulated hanger with 2 locating clamps (fixed point)

Type	Weight kg	Order No.
USK 15 K 4 ⁽²⁾	0.008	160106

(1) When fastening in slotted holes, use washers on both sides in accordance with DIN 9021.

(2) Non-rusting version

ACCESSORIES FOR U15

Compact holder, 2 to 7-pin⁽¹⁾

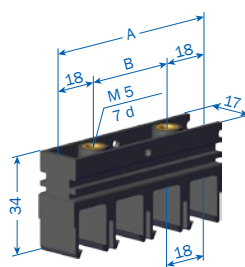
Phase spacing 18 mm

Holder KA 15 can be screwed on

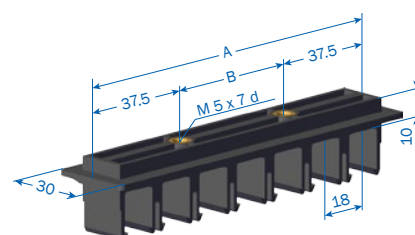
Holder KH 15 can be inserted into bracket profile

Minimum distance to connector or feed 150 mm

KA 15/2 to KA 15/6 identical in design (additional thread insert)
with KH 15/2 to KH 15/6



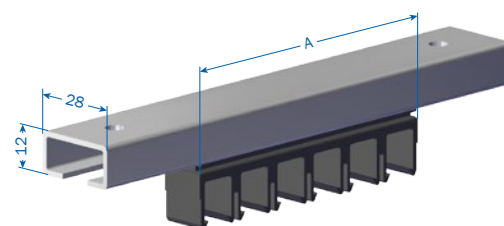
Type KA 15/4



Type KA 15/7

Compact holder, screw-on

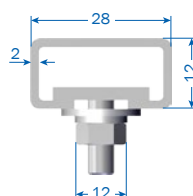
Type	A mm	B mm	Weight kg	Order No.
KA 15/2	36	–	0.015	161566
KA 15/3	54	–	0.032	161567
KA 15/4	72	36	0.028	162010
KA 15/5	90	36	0.033	161498
KA 15/6	108	72	0.032	160138
KA 15/7	137	50	0.050	160140



KH 15/4 with bracket profile

Compact holder for bracket profile

Type	A mm	Weight kg	Order No.
KH 15/2	36	0.010	161559
KH 15/3	54	0.018	161453
KH 15/4	72	0.023	161452
KH 15/5	90	0.029	161558
KH 15/6	108	0.035	160139



Bracket profile 28/12

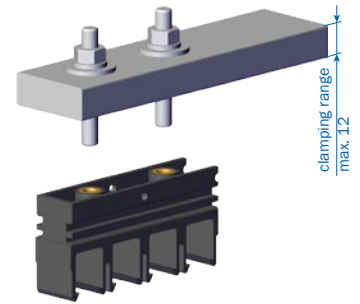
Including tension pins

Longer bracket profiles can also be supplied if required.

Type	Length mm	Number of pins	Weight kg	Order No.
HU15/200	200	6	0.246	161434
HU15/330	330	12	0.386	161435

(1) When fastening in slotted holes, use washers on both sides in accordance with DIN 9021.

ACCESSORIES FOR U15



Fastening element with fastening profile and compact holder

Fastening and installation materials

For compact holder

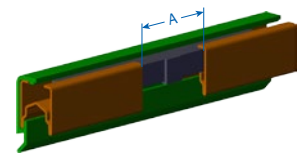
Type	Weight kg	Order No.
BE 5 K 4 ⁽¹⁾	0.007	161441

Insulated isolating sections

Type M: Factory installation

Type L: Loose delivery as single item

A hanger must be provided on both sides at a maximum distance of 200 mm from the center of the air isolating section



Conductor rails, hangers, and feeds must be ordered separately.

Two insulated isolating sections are used as protection against voltage bridging and to separate repair, control, and feed sections. For distance "A", the number and type of current collectors and the stopping distance of current consumers must be taken into account.

Type	Insulation distance A mm	Weight kg	Order No.
IT/U15- 5 M	5	0.003	160111
IT/U15-15 M	15	0.004	160240
IT/U15-30 M	30	0.006	160112
IT/U15-90 M	90	0.007	160241

Type	Insulation distance A mm	Weight kg	Order No.
IT/U15- 5 L	5	0.003	160226
IT/U15-15 L	15	0.004	160243
IT/U15-30 L	30	0.004	160227
IT/U15-90 L	90	0.007	160242

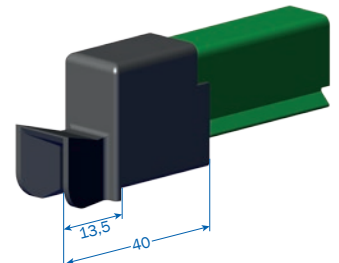
Transfer guides

Use in rail interruptions

Max. air gap between transfer guides: 6 mm

Max. lateral/vertical offset between transfer guides: ± 2 mm

$V_{\max} = 120 \text{ m/min}$



Type	Feeds	Weight kg	Order No.
US 15	none	0.004	160125
USE 15	with ⁽²⁾	0.050	160126
Available separately: SE 15 feed clamp		0.040	160859

(1) Non-rusting version

(2) Flat plug connection 6.3 mm x 0.8 mm (to be ordered separately)

ACCESSORIES FOR U15

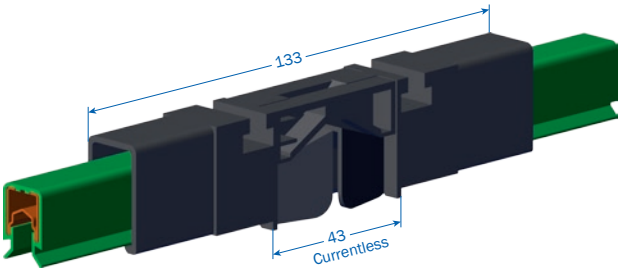
Air isolating sections

A hanger must be provided on both sides at a maximum distance of 200 mm from the center of the air isolating section (see insulated isolating sections).

Both isolating sections (LT-U15) are connected during installation by pressing them together sideways.

Flat plug connection: 6.3 mm x 0.8 mm

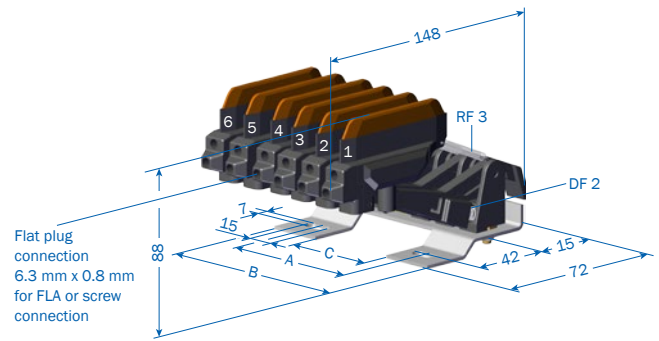
Conductor rails, hangers, and FLA connection cable must be ordered separately.



Type	Symbol	Scope of delivery	Weight kg	Order No.
LT/LT-U15		2 x LT/U15	0.052	160844
LT/LTE-U15		2 x LT/U15 1 x flat plug	0.054	160845
LTE/LTE-U15		2 x LT/U15 2 x flat plug	0.054	160846

Transfer funnel

Funnels (systems) are available on request.



COMPACT CURRENT COLLECTOR FOR U15

Compact current collector KESL 32-63

Reversing operation

Phase spacing 18 mm

Lift: ± 30 mm

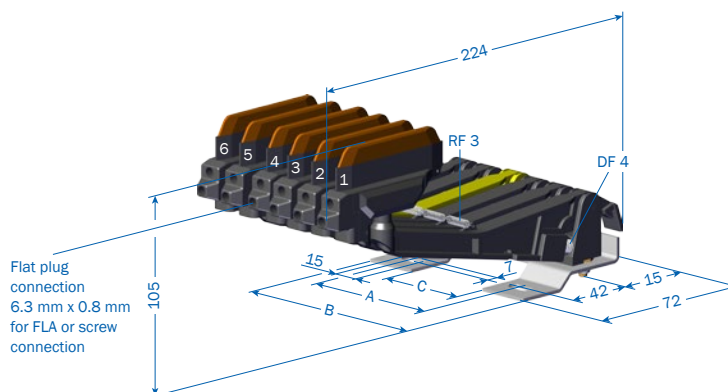
Swivel: ± 30 mm

Contact pressure Approx. 7 N per carbon brush

PE on No. 4, on 3-pin on No. 3, other configuration possible

PE moves forward when folding into the conductor system

For connection cable selection, see page 16



max. current A	Flat plug	Bolted connection
32	FLA 2.5	AEA 2.5
40	FLA 4.0	AEA 4.0
55	FLA 6.0	AEA 6.0
63	–	AEA 10.0

KESL-F (flat plug connection)

[illegible]

KESL-S (Bolted connection)

[illegible]

COMPACT CURRENT COLLECTOR FOR U15

Adapter for compact current collectors

Prefabricated current collector
including adapter plate on request

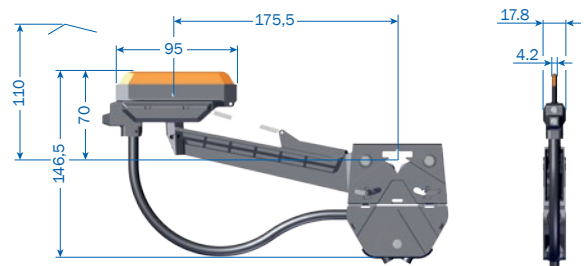


Type	Number of pins	a mm	b mm	c mm	Weight kg	Order No.
AD4 - KESR/KESL	4	79	35	54	0.270	157368
AD6 - KESR/KESL	6	115	65	80	0.310	157367
AD8 - KESR/KESL	8	151	100	120	0.410	157432

CURRENT COLLECTOR FOR U15

Current collector Single Collect 63 for funnel operation

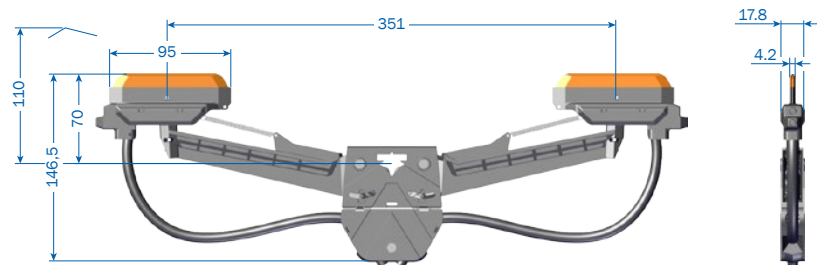
Lift: ± 40 mm
Swivel: ± 40 mm
Contact pressure approx. 9 N
Installation height 70 mm



Type	Continuous current A	Weight kg	Order No.	
			Phase, black	PE, yellow
SA_Single_Collect63PH	63	0.237	171854	-
SA_Single_Collect63PE	63	0.237	-	171855

Current collector Multi Collect 125 for funnel operation

Lift: ± 40 mm
Swivel: ± 40 mm
Contact pressure Approx. 9 N per carbon brush
Installation height 70 mm



Type	Continuous current A	Weight kg	Order No.	
			Phase, black	PE, yellow
SA_Multi_Collect125PH	125	0.362	171800	-
SA_Multi_Collect125PE	125	0.356	-	171801

Note: Single Collect and Multi Collect are supplied without connection cable as standard. This must be ordered separately (see page 16).

ACCESSORIES FOR CURRENT COLLECTOR U15

Connecting cable FLA

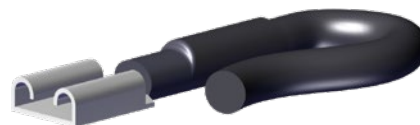
Highly flexible for current collectors with flat plug connection

(Note the assignment to the current collectors on pages 13–15)

Area of application: -15°C to 70°C

Length: 1 m (with flat plug 6.3 mm x 0.8 mm)

Longer connection cables available by request



Type	Cross section mm ²	Outer Ø mm	Weight kg	Order No.	
				Phase, black	PE, yellow
FLA 2.5	2.50	4	0.038	165049	–
FLA 2.5	2.50	4	0.038	–	165050
FLA 4	4.00	6	0.064	165051	–
FLA 4	4.00	6	0.064	–	165052
FLA 6	6.00	7	0.087	166368	–
FLA 6	6.00	7	0.087	–	166369

Connecting cable AEA

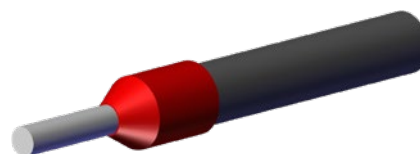
Highly flexible for current collectors with bolted connection

(Note the assignment to the current collectors on pages 13–15)

Area of application: -15°C to 70°C

Length: 1 m (with wire end ferrule)

Longer connection cables available by request

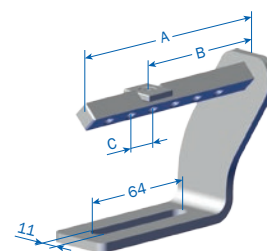


Type	Cross section mm ²	Outer Ø mm	Weight kg	Order No.	
				Phase, black	PE, yellow
AEA 2.5	2.50	4.00	0.038	143080	–
AEA 2.5	2.50	4.00	0.038	–	143079
AEA 4	4.00	5.50	0.063	143078	–
AEA 4	4.00	5.50	0.063	–	143077
AEA 6	6.00	6.00	0.085	143076	–
AEA 6	6.00	6.00	0.085	–	143075
AEA 10	10.00	8.50	0.129	143074	–
AEA 10	10.00	8.50	0.129	–	143073

Towing arm for Single Collect and Multi Collect (screw connection)

Number of pins: 6

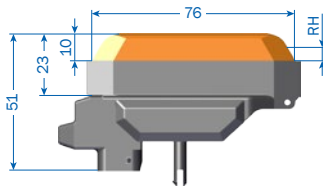
Phase spacing: 18 mm



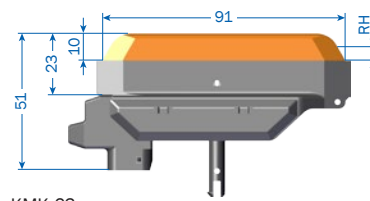
Type	A mm	B mm	C mm	Weight kg	Order No.
MN-UMA12HS-137-Z4	137	52	18	0.536	171798

SPARE PARTS FOR CURRENT COLLECTOR U15

Carbon brush



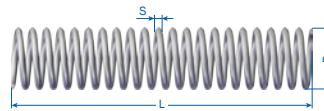
MK 55, MK 63



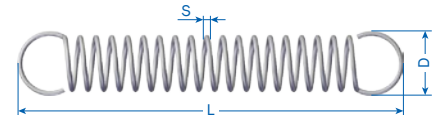
KMK 63

Dimension RH: Permissible residual height

Type	For current collector	Thickness of carbon brush mm	RH mm	Weight kg	Order No.
MK 55 F/18.38	KESR 32-55 F, KESL 32-55 F	4.20	3.50	0.044	157308
MK 63 S/18.38	KESR 32-55 S, KESL 32-63 S	4.20	3.50	0.049	157309
KMK 63	Single Collect, Multi Collect	4.20	3.50	0.063	171788



Compression spring DF4



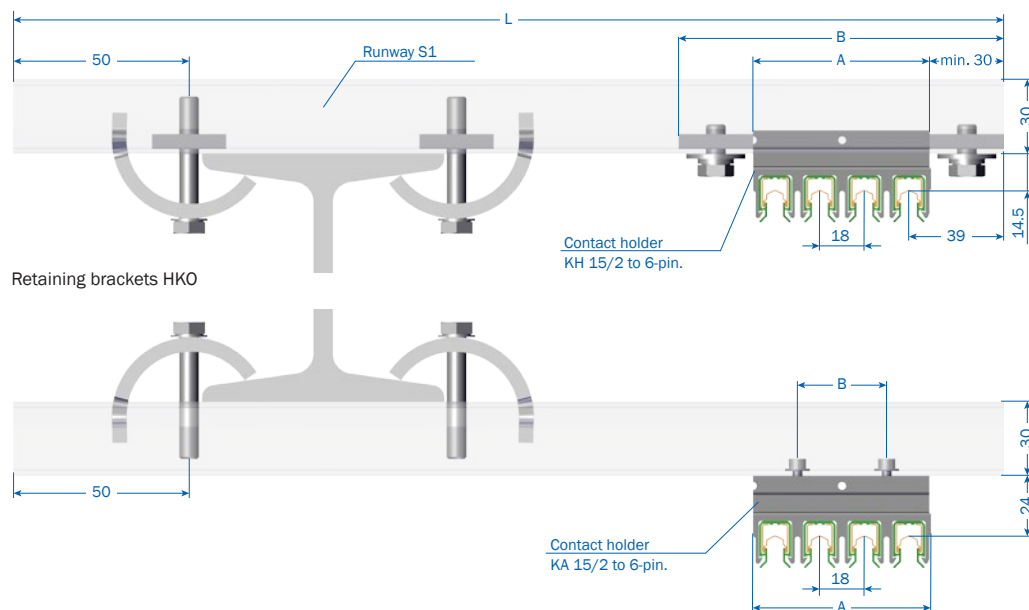
Tension spring RF 3

Springs

Type	For current collector	S mm	D mm	L mm	Order No.
DF 2	KESR 32-55	0.90	7.70	43.00	153848
DF 4	KESL 32-63	1.10	6.40	41.00	157312
RF 3	KESR 32-55, KESL 32-63, Single Collect, Multi Collect	0.40	4.40	31.00	153849

RETAINING BRACKETS FOR U15

Compact holder and screw connection must be ordered separately.



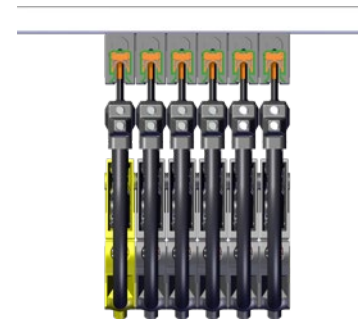
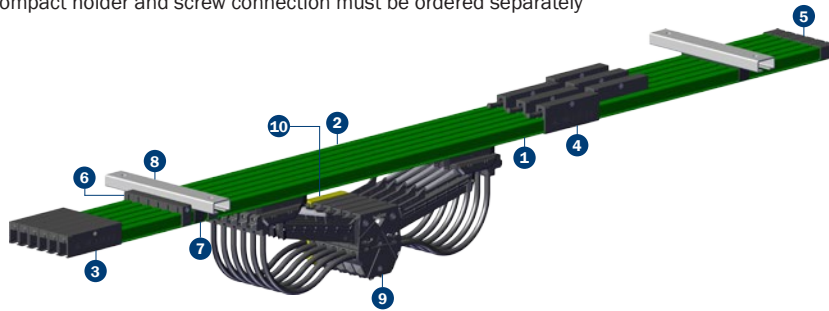
Type	Length L mm	Order No.
HKO 400	400	161605
HKO 500	500	161606
HKO 600	600	161607
HKO 700	700	161608
HKO 800	800	161609
HKO 900	900	161610
HKU 400	400	161799
HKU 500	500	161800
HKU 600	600	161801
HKU 700	700	161802
HKU 800	800	161803
HKU 900	900	161804

Type	A mm	B mm	Weight kg	Order No.
KH 15/2	36	96	0.010	161559
KH 15/3	54	114	0.018	161453
KH 15/4	72	132	0.023	161452
KH 15/5	90	150	0.029	161558
KH 15/6	108	168	0.035	160139

Type	A mm	B mm	Weight kg	Order No.
KA 15/2	36	–	0.015	161566
KA 15/3	54	–	0.032	161567
KA 15/4	72	36	0.028	162010
KA 15/5	90	36	0.033	161498
KA 15/6	108	72	0.032	160138
KA 15/7	137	50	0.050	160140

ARRANGEMENT AND ORDERING EXAMPLE FOR U15

Compact holder and screw connection must be ordered separately



The illustration is a schematic representation. The arrangement of components may differ in reality.

100 A conductor system in compact arrangement, 5-pin + PE, 123 m long

Item	Quantity	Type	Description	Order No.
①	100	U15/25 C-6	Insulated conductor rails, 6 m long, phase	162136
①	5	U15/25 C-2	Insulated conductor rails, 2 m long, phase	162132
②	20	U15/25 C-6	Insulated conductor rails, 6 m long, PE	162196
②	1	U15/25 C-2	Insulated conductor rails, 2 m long, PE	162192
③	120	UV 15K 4	Connector	160102
④	6	UEG 15 K 4	Feeds	160216
⑤	5	UDV 15/25 CK 4	Expansion sections, 1 m long, phase	160276
⑤	1	UDV 15/25 CK 4	xtInsulated conductor rails, 1 m long, PE	160277
⑥	12	UK 15 - L	End caps	160109
⑥	36	USK 15 K 4	Locating clamp	160106
⑦	125	KH 15/6	Compact holder	160139
⑧	125	HU15/200	Bracket profile, 200 mm long	161434
⑨	5	Multi Collect	Current collector, phase	171800
⑩	1	Multi Collect	Current collector, PE	171801
⑪	1	MN-UMA12HS-137-Z4	Towing arm	171798
⑫	1	MZ-KF-A-100	Contact grease	121502

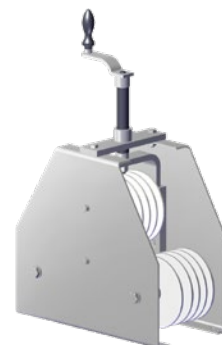
INSTALLATION ACCESSORIES FOR U15

Curve tool

Curving the U15 conductor rails vertically and horizontally

The filling rod must be ordered separately

Curve tool rental (all U-rails) is possible



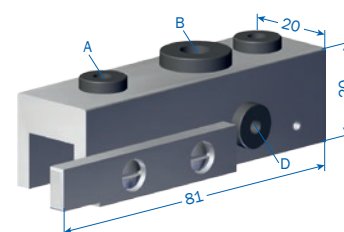
Type	Description	Weight kg	Order No.
MZ-BVU 15	Curve tool BVU 15	8.300	160147
MZ-FU 15-4000	Filling rod FU15 (4 m)	0.340	160735

Drilling template

For transfer guide, end cap, insertion funnel

Holes B and D for end cap and insertion funnel

Hole B for transfer guide US 15 and USE 15



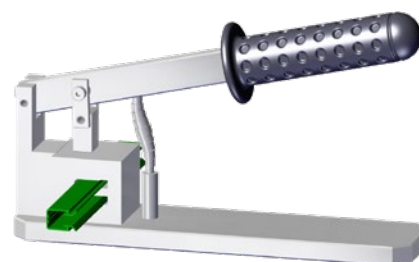
See installation instructions for U15

Type	Weight kg	Order No.
BS 15	0.100	160148

Hand punch

For punching plastic openings for US 15 to USE 15 S and LT / LT-U15

to LTE / LTE-U15



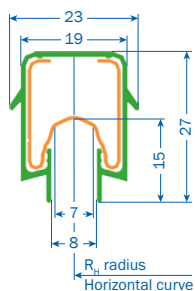
Type	Weight kg	Order No.
HST 15	3.327	160322

Contact grease

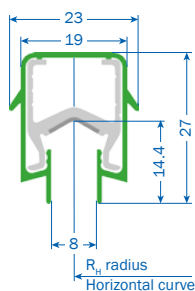
For connectors and feeds for protection against corrosion

Type	Description	Weight kg	Order No.
MZ-KF-A-100	100 ml for approx. 200 connections	0.112	121502

TECHNICAL SPECIFICATIONS U25



U25 C



U25 AE

Type keys

U	= insulated conductor rails
25	= housing size
50- 125	= conductor cross-section in mm ²
C	= copper conductor
E	= aluminum conductor, stainless steel sanding surface

Delivery length

6 m standard length,
shorter lengths are possible

Max. support distance

For straight installation and inner or outer

curves:	1500 mm
In horizontal bends $R_h \leq 10$ m:	750 mm
In horizontal bends $R_h > 10$ m:	1500 mm

Rail spacing

For individual installation: 50⁽¹⁾ – 80 mm

For compact installation: 50⁽¹⁾ mm

Curving the conductor rail

Available upon request

Heating

Available upon request

Note:

For chemical and electrical values and temperature resistance, see pages 4 and 5.

Selection of conductor system

Based on the current to be transmitted (observe the duty cycle) and the expected environmental influences.

U25 / ... C	Conductor rail with copper conductor for main and control current
U25 AE	Conductor rail with aluminum conductor and stainless steel contact surface for main and control current

Conductor system values

Type	Conductor cross section mm ²	Creepage distance of insulation mm	Max. nominal voltage V (UL)	Max. continuous current A at 35 °C	Resistance ⁽²⁾ ohm/1000 m	Impedance ⁽²⁾ / 1000 m at phase spacing	
						50 mm	80 mm
U25/50 C	50	53	1000 ⁽⁶⁰⁰⁾	200	0.351	0.378	0.388
U25/75 C	75	53	1000 ⁽⁶⁰⁰⁾	300	0.239	0.269	0.283
U25/100 C	100	53	1000 ⁽⁶⁰⁰⁾	400	0.180	0.219	0.236
U25/125 C	125	53	1000 ⁽⁶⁰⁰⁾	450	0.140	0.188	0.208
U25/90 AE ⁽³⁾	90	53	1000 ⁽⁶⁰⁰⁾	230	0.347	0.369	0.380
U25/125 AE ⁽³⁾	125	53	1000 ⁽⁶⁰⁰⁾	320	0.240	0.271	0.285

(1) With UEG feeds only in staggered arrangement (min. 300 mm)

(2) At frequency of 50 Hz and 20 °C.

(3) In the case of AE conductor system, current collectors from current consumers that operate continuously under load in one place or at a very low traveling speed of (≤ 10 m/min.) may only be loaded with approx. 50% of their continuous current.

TECHNICAL SPECIFICATIONS U25

Versions

Version	Type	Weight kg	Order No. Phase ⁽¹⁾	Order No. PE ⁽¹⁾
Standard version, -30°C to +55°C, Green	U25/50 C	0.550	17102 •	17112 •
	U25/75 C	0.772	17103 •	17113 •
	U25/100 C	1.000	17104 •	17114 •
	U25/125 C	1.260	17120 •	17121 •
	U25/90 AE	0.450	17124 •	17125 •
	U25/125 AE	0.540	17128 •	17129 •
Heat-resistant version, -30°C to +85°C, Gray	U25/50 C	0.550	17107 •	17162 •
	U25/75 C	0.772	17108 •	17164 •
	U25/100 C	1.000	17109 •	17166 •
	U25/125 C	1.260	17122 •	17168 •
	U25/90 AE	0.450	17126 •	17170 •
	U25/125 AE	0.540	17130 •	17172 •
HT version, -30°C to +130°C, granite gray	U25/50 C	0.550	17161 •	17162 •
	U25/75 C	0.772	17163 •	17164 •
	U25/100 C	1.000	17165 •	17166 •
	U25/125 C	1.260	17167 •	17168 •
	U25/90 AE	0.450	17169 •	17170 •
	U25/125 AE	0.540	17171 •	17172 •

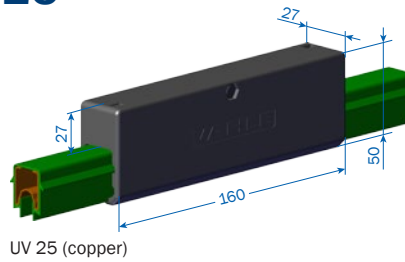
(1) The last digit of the order number indicates the individual length in meters. Please add 1, 2,... 6 to the order No. Intermediate values should be rounded up.

ACCESSORIES FOR U25

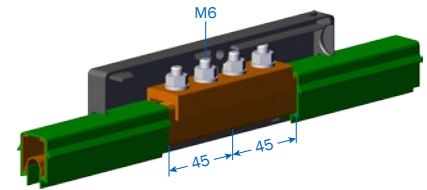
Fixed connector⁽¹⁾

All listed fixed connectors can also be used as feed-throughs (identical design)

Use contact grease to protect against corrosion



UV 25 (copper)



UV 25 (copper)

Type (for copper rail)	Connection max. mm ²	Weight kg	Order No.
UV 25	2 x 35	0.126	170595
UV 25 K 4 ⁽²⁾	2 x 35	0.126	170596

Type (for aluminum/stainless steel rail)	Connection max. mm ²	Weight kg	Order No.
UV 25 AE	2 x 35	0.150	170960
UV 25 AE K 4 ⁽²⁾	2 x 35	0.150	170961

Feeds⁽¹⁾

Type UE 25 (K 4) and UE 25 AE (K 4) identical in design with fixed connector

Cover caps UEG 25 (K 4) and UEG 25 AE (K 4) are identical in design

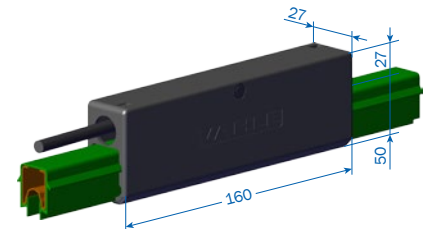
Type M: Factory installation according to installation plan

Type L: Loose delivery as single item

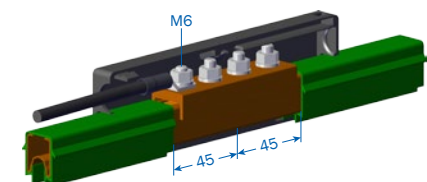
UEG: staggered arrangement for phase spacing < 80 mm (min. 300 mm)

Use contact grease to protect against corrosion

Order cable lug and connection cable separately



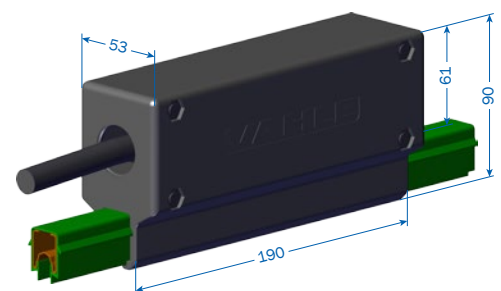
UE 25 (copper)



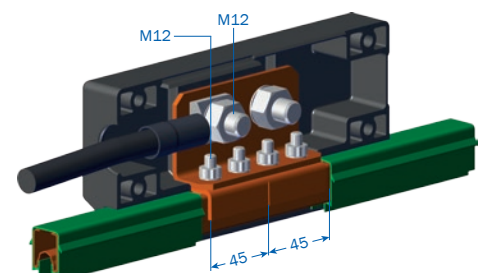
UE 25 (copper)

Type (for copper rail)	Connection max. mm ²	Weight kg	Order No.
UE 25 L	2 x 35	0.126	170599
UE 25 M	2 x 35	0.126	170394
UEG 25 L	2 x 120	0.560	170597
UEG 25-M	2 x 120	0.560	170396
UE 25 K 4 ⁽²⁾	2 x 35	0.126	170600
UE 25 K 4 ⁽²⁾ -M	2 x 35	0.126	170395
UEG 25 K 4 ⁽²⁾	2 x 120	0.560	170598
UEG 25 K 4 ⁽²⁾ -M	2 x 120	0.560	170397

Type (for aluminum/stainless steel rail)	Connection max. mm ²	Weight kg	Order No.
UE 25 AE	2 x 35	0.150	171158
UE 25 AE M	2 x 35	0.150	171217
UEG 25 AE	2 x 120	0.456	170962
UEG 25 AE-M	2 x 120	0.456	170964
UE 25 AE K 4 ⁽²⁾	2 x 35	0.150	171159
UE 25 AE K 4 ⁽²⁾ -M	2 x 35	0.150	171218
UEG 25 AE K 4 ⁽²⁾	2 x 120	0.456	170963
UEG 25 AE K 4 ⁽²⁾ -M	2 x 120	0.456	170965



UEG 25 (copper)



UEG 25 (copper)

(1) Screws intended for connecting the ground conductor must not be used as connectors.

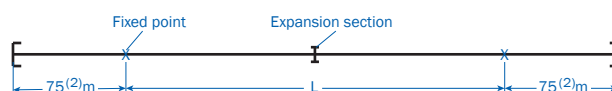
(2) Non-rusting version

ACCESSORIES FOR U25

Expansion sections

Consisting of expansion connectors and connectors mounted on a 1.5 m long rail section.

Used for system lengths of 150⁽¹⁾ m or more



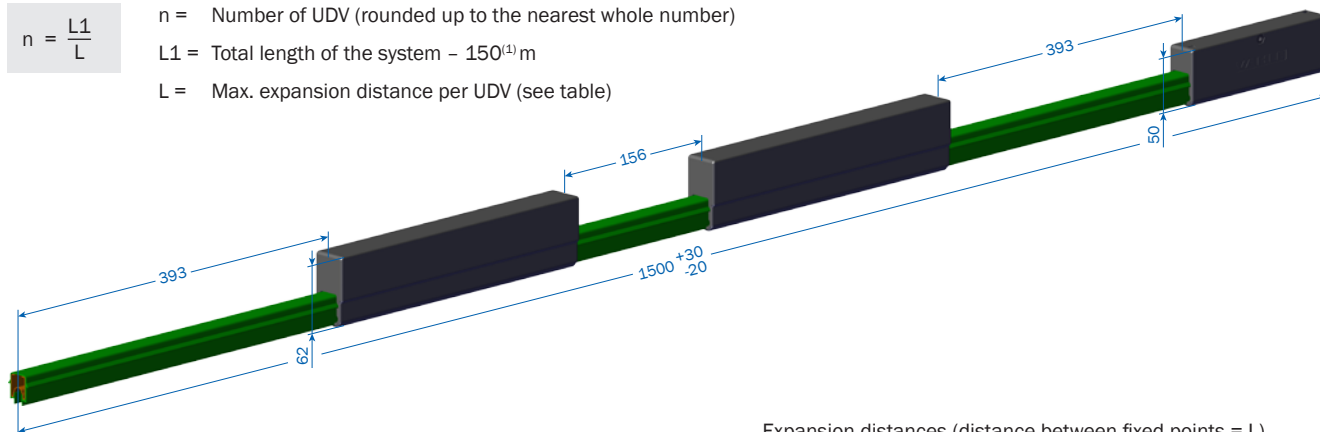
Determining the number of expansion sections

$$n = \frac{L1}{L}$$

n = Number of UDV (rounded up to the nearest whole number)

L1 = Total length of the system – 150⁽¹⁾ m

L = Max. expansion distance per UDV (see table)



Max. expansion movement = 50 mm

Expansion distances (distance between fixed points = L)

UDV 25 C		UDV 25 AE	
up to Δ d	max. L	up to Δ d	max. L
20 °C	147 m	20 °C	108.5 m
30 °C	98 m	30 °C	72 m
40 °C	73.5 m	40 °C	54 m
50 °C	58.5 m	50 °C	43 m
60 °C	49 m	60 °C	36 m
70 °C	42 m	70 °C	31 m
80 °C	36.5 m	80 °C	27 m

Versions

Version	Type	Weight kg	Order No. Phase	Order No. PE
Standard, -30 °C to +55 °C, green	UDV 25 C K 4 ⁽³⁾	2.550	171057	171058
	UDV 25 AE K 4 ⁽³⁾	1.534	171059	171060
heat-resistant version, -30 °C to +85 °C, gray	UDV 25 C K 4 ⁽³⁾	2.550	171067	171068
	UDV 25 AE K 4 ⁽³⁾	1.534	171069	171070
HT Version, -30 °C to +130 °C, granite gray	UDV 25 C K 4 ⁽³⁾	2.550	171617	171618
	UDV 25 AE K 4 ⁽³⁾	1.534	171619	171620

(1) 200 m when using the insulated hanger UAD25

(2) 100 m when using the insulated hanger UAD25

(3) Non-rusting version

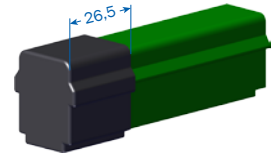
ACCESSORIES FOR U25

End cap

Including tension pin

Type M: Factory installation

Type L: Loose delivery as single item

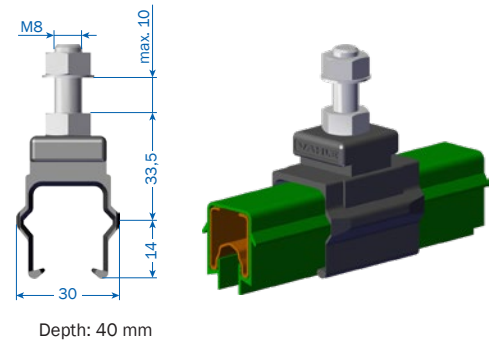


Type	Weight kg	Order No.
UK 25-M	0.005	170793
UK 25-L	0.005	170013

Insulated hangers⁽¹⁾

Minimum distance to center of connector or feed 300 mm

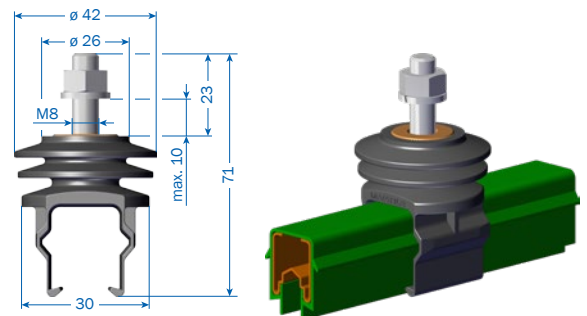
UAD: rotatable/self-aligning



Type	Weight kg	Order No.
UA 25	0.040	170761
UA 25 K 4 ⁽²⁾	0.040	170762
UAD 25 K 4 ⁽²⁾	0.045	171510

Insulated hanger with creepage distance extension⁽¹⁾⁽³⁾

Minimum distance to center of connector or feed 300 mm

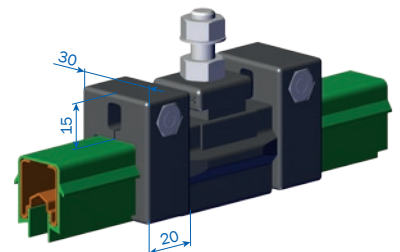


Type	Weight kg	Order No.
UIM 25	0.032	171668
UIM 25-K4 ⁽²⁾	0.032	171667

Locating clamp

2 locating clamps per pin must be ordered per fixed point

Design for vertical systems available on request



Insulated hanger with 2 locating clamps
(fixed point)

Type	Weight kg	Order No.
USK 25 K 4 ⁽²⁾	0.024	170010

(1) When fastening in slotted holes, use washers on both sides in accordance with DIN 9021.

(2) Non-rusting version

(3) For special environmental conditions (page 5)

ACCESSORIES FOR U25

Compact holder, 2 to 4-pin⁽¹⁾

Phase spacing 50 mm

Holder KA 25 can be screwed on

The KA 25/4-SKU bracket is designed for the SKU bracket

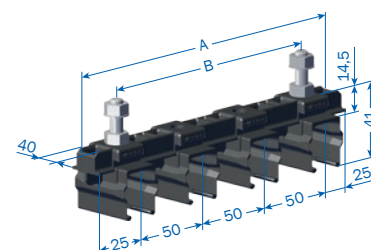
Holder KH can be inserted into bracket profile

Minimum distance to center of connector or feed 300 mm

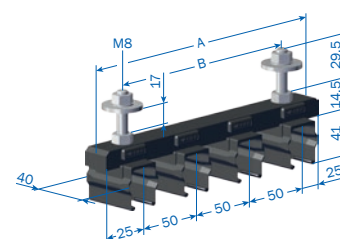
Compact holder, screw-on

Type	A mm	B mm	Weight kg	Order No.
KA 25/2	97.5	50	0.084	170838
KA 25/3	147.5	100	0.102	170839
KA 25/4	200	150	0.120	170840
KA 25/2 K 4 ⁽²⁾	97.5	50	0.084	170853
KA 25/3 K 4 ⁽²⁾	147.5	100	0.102	170854
KA 25/4 K 4 ⁽²⁾	200	150	0.120	170855

Type	A mm	B mm	Weight kg	Order No.
KA 25/4-SKU	200	150	0.151	170878
KA 25/4 K 4-SKU ⁽²⁾	200	150	0.151	171431



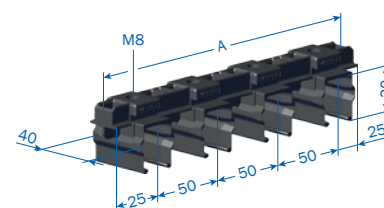
KA 25/4



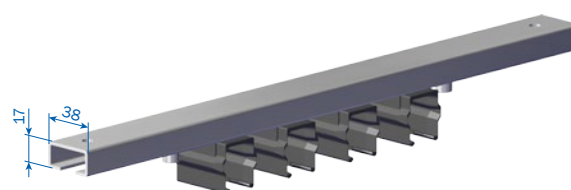
KA 25/4-SKU

Compact holder for bracket profile

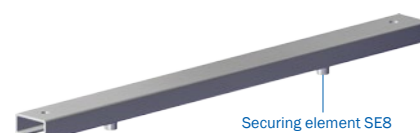
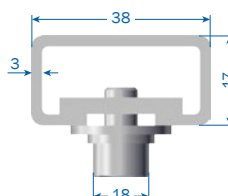
Type	A mm	Weight kg	Order No.
KH 25/2	97.5	0.034	170848
KH 25/3	147.5	0.050	170849
KH 25/4	200	0.070	170850



KH 25/4



KH 25/4 (with bracket profile)



Bracket profile 38/17

Delivery includes 2x SE 8 securing elements

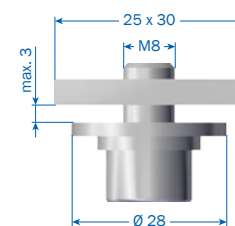
Longer bracket profiles can also be supplied if required

Type	Length mm	Number of pins	Weight kg	Order No.
HU25/400	400	4 - 5	0.830	170667
HU25/600	600	10	1.160	170668

(1) When fastening in slotted holes, use washers on both sides in accordance with DIN 9021.

(2) Non-rusting version.

ACCESSORIES FOR U25



Securing elements for compact holders KH 25/... in a half-rail

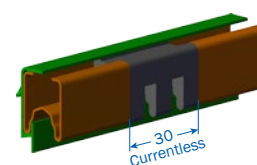
Type	Weight kg	Order No.
SE 8	0.055	170677
SE 8 K 4 ⁽¹⁾	0.055	170955

Insulated isolating sections

Type M: Factory installation

Type L: Loose delivery as single item with 2 tension pins (+) 3 x 20

A hanger must be provided on both sides at a maximum distance of 200 mm from the center of the air isolating section.



Conductor rails, hangers and feeds must be ordered separately. Two insulated isolating sections are used as protection against voltage bridging and to separate repair, control and feed sections. For distance "A", the number and type of current collectors and the stopping distance of current consumers must be taken into account.

Type	Insulation distance A mm	Weight kg	Order No.
IT/U25/30 M	30	0.009	170070
IT/U25/30 L	30	0.009	170071

Transfer guides

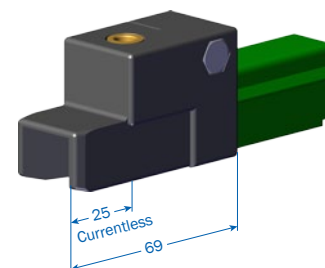
Use in rail interruptions

Max. air gap between transfer guides:

- Single Collect 63 and Multi Collect 125: 2-5 mm
- KST 100/25 - KDSTU 350/25: 5-8 mm

Max. lateral/vertical offset between transfer guides: ± 6 mm

$V_{\max} = 180 \text{ m/min}$



Type	Weight kg	Order No.
US 25 K 4 ⁽¹⁾	0.060	170329

(1) Non-rusting version

ACCESSORIES FOR U25

Transfer funnel

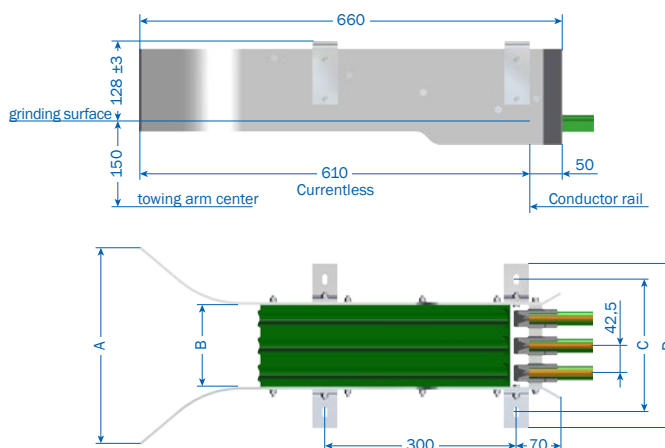
The phase spacing is 50 mm.

The following current collectors must be used:

For hanging arrangement: KSTU 140/25, KSTU 175/25,
KDSTU 280/25 or KDSTU350/25.

For lateral arrangement: KSTUR 140/25 available on request

$$V_{\max} = 100 \text{ m/min}$$

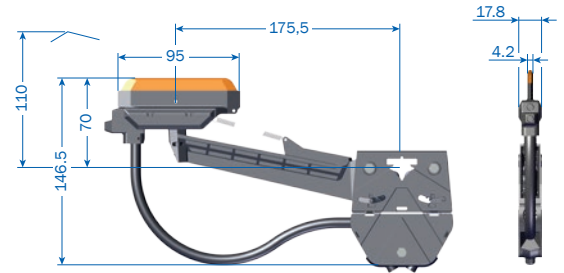


Type	Number of pins	A mm	B mm	C mm	D mm	Weight kg	Order No.
ET-EFTU25-3	3	310.5	127.5	207.5	257.5	10.802	171365
ET-EFTU25-4	4	352.5	169.5	249.5	299.5	11.518	171459

CURRENT COLLECTOR FOR U25⁽¹⁾

Current collector Single Collect 63

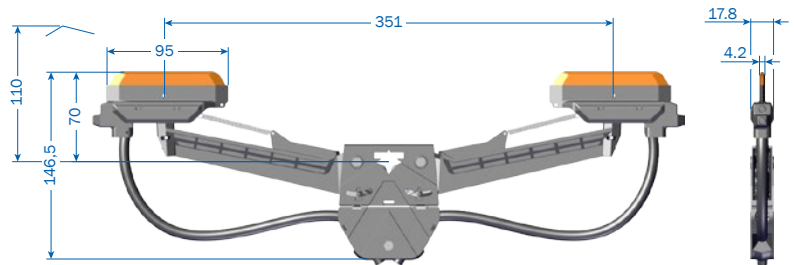
Lift:	±40 mm
Swivel:	±40 mm
Contact pressure	approx. 9 N
Installation height	70 mm



Type	Continuous current A	Weight kg	Order No.	
			Phase, black	PE, yellow
SA_Single_Collect63PH	63	0.237	171854	-
SA_Single_Collect63PE	63	0.237	-	171855

Current collector Multi Collect 125

Lift:	±40 mm
Swivel:	±40 mm
Contact pressure	Approx. 9 N per carbon brush
Installation height	70 mm



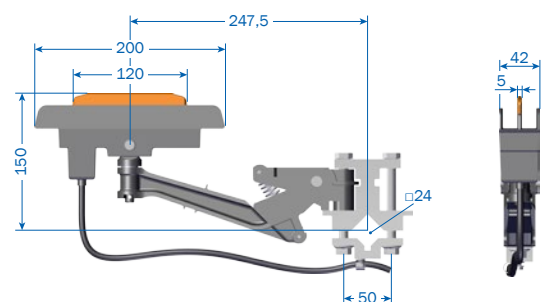
Type	Continuous current A	Weight kg	Order No.	
			Phase, black	PE, yellow
SA_Multi_Collect125PH	125	0.362	171800	-
SA_Multi_Collect125PE	125	0.356	-	171801

Single Collect and Multi Collect are supplied without connection cable as standard. This must be ordered separately (see page 31).

Current collector

With 2 m connection cable

Lift:	±45 mm
Swivel:	±60 mm
Contact pressure	approx. 30 N
Installation height	150 mm



Type	Continuous current A	Connection cable		Weight kg	Order No.	
		A mm ²	d _{max} mm		Phase, black	PE, yellow
KST 100/25	100	16.00	14.50	1.707	170319	170320
KST 100/25 HT ⁽²⁾	100	16.00	14.50	1.416	171727	171728
KST 125/25	125	25.00	16.50	1.800	171017	171018

(1) In the case of AE conductor system, current collectors from current consumers that operate continuously under load in one place or at a very low traveling speed of $v = 10$ m/min. may only be loaded with approx. 50% of their continuous current.

(2) Current collector up to max. 500 V

CURRENT COLLECTOR FOR U25⁽¹⁾

Double current collector

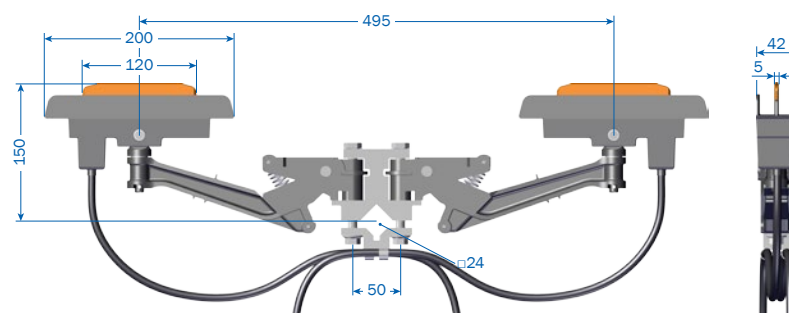
With 2 x 2 m connection cable

Lift: ± 45 mm

Swivel: ± 60 mm

Contact pressure Approx. 30 N per carbon brush

Installation height 150 mm



Type	Continuous current A	Connection cable		Weight kg	Order No.	
		A mm ²	d _{max} mm		Phase, black	PE, yellow
KDST 200/25	200	16.00	14.50	2.540	170321	170322
KDST 200/25 HT ⁽²⁾	200	16.00	14.50	2.533	171729	171730
KDST 250/25	250	25.00	16.50	3.100	171019	171020

Current collector

Use for funnel KSTU 140/25 or KSTU 175/25.⁽³⁾

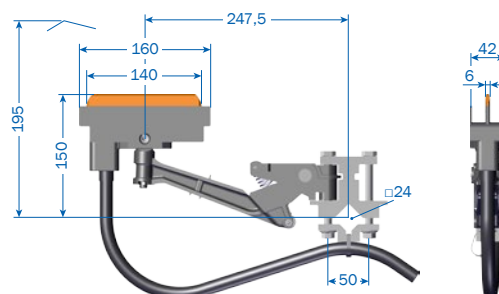
With 2 m connection cable

Lift: ± 45 mm

Swivel: ± 60 mm

Contact pressure approx. 29 N

Installation height 150 mm



Type	Continuous current A	Connection cable		Weight kg	Order No.	
		A mm ²	d _{max} mm		Phase, black	PE, yellow
KST 140/25	140	25.00	16.50	1.660	170538	170539
KST 175/25	175	35.00	18.50	1.700	171037	171038
KSTU 140/25	140	25.00	16.50	1.700	170540	170541
KSTU 175/25	175	35.00	18.50	1.800	171039	171040

Double current collector

Use for funnel KDSTU 280/25

or KDSTU350/25.⁽³⁾

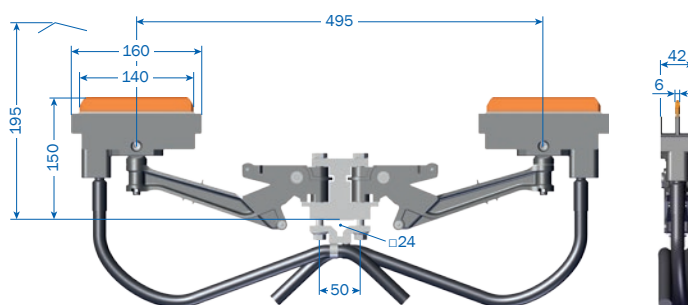
With 2 x 2 m connection cable

Lift: ± 45 mm

Swivel: ± 60 mm

Contact pressure Approx. 29 N per carbon brush

Installation height 150 mm



Type	Continuous current A	Connection cable		Weight kg	Order No.	
		A mm ²	d _{max} mm		Phase, black	PE, yellow
KDST 280/25	280	25.00	16.50	3.020	170542	170543
KDST 350/25	350	35.00	18.50	3.100	171047	171048
KDSTU 280/25	280	25.00	16.50	3.100	170544	170545
KDSTU 350/25	350	35.00	18.50	3.200	171049	171050

(1) In the case of AE conductor rail, current collectors from current consumers that operate continuously under load in one place or at a very low traveling speed of ≤ 10 m/min. may only be loaded with approx. 50% of their continuous current.

(2) Current collector up to max. 500 V

(3) Special design for acid plants available

ACCESSORIES FOR CURRENT COLLECTOR U25

Connecting cables for Multi Collect

Highly flexible for current collectors with bolted connection

Area of application: -15 °C to 70 °C

Length: 2 m (with wire end ferrule)

Shorter and longer connection cables available by request

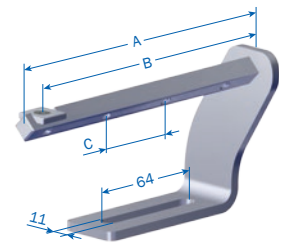


Type	Cross section mm²	Outer Ø mm	Weight kg	Order No.	
				Phase, black	PE, yellow
AL-AEA2,5PH-32-4,4-2000-A	2.50	4.00	0.074	143080/00-2	-
AL-AEA2,5PE-32-3,7-2000-D	2.50	4.00	0.070	-	143079/00-2
AL-AEA4PH-40-5,6-2000-A	4.00	5.50	0.126	143078/00-2	-
AL-AEA4PE-40-4,4-2000-D	4.00	5.50	0.114	-	143077/00-2
AL-AEA6PH-55-5,9-2000-A	6.00	6.00	0.172	143076/00-2	-
AL-AEA6PE-55-5,5-2000-D	6.00	6.00	0.152	-	143075/00-2
AL-AEA10PH-63-8,4-2000-A	10.00	9.00	0.298	143074/00-2	-
AL-AEA10PE-63-8,2-2000-D	10.00	9.00	0.256	-	143073/00-2

Towing arm for and Multi Collect (screw connection)

Number of pins: 4

Phase spacing: 50 mm

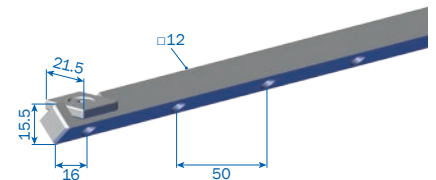


Type	A mm	B mm	C mm	Weight kg	Order No.
MN-UMA12HS-197-Z4	197	16	50	0.710	171799

Towing arm for Multi Collect (welding)

Number of pins: 6

Phase spacing: 50 mm

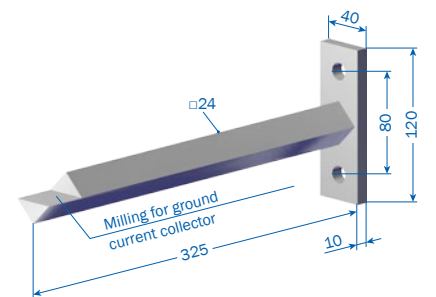


Type	Weight kg	Order No.
MN-UM12-6-50-600-PE16-Z4	0.710	171804

Towing arm for current collectors KST 100/25 to KDSTU 350/25

If the length of the towing arm exceeds 600 mm, support (provided by the customer) must be provided to prevent the towing arm from bending or twisting.

Longer lengths available by request.



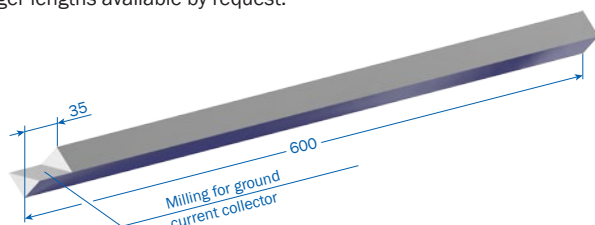
Type	Weight kg	Order No.
UMF 24	1.850	170272

ACCESSORIES FOR CURRENT COLLECTOR U25

Towing arm for current collectors KST 100/25 to KDSTU 350/25

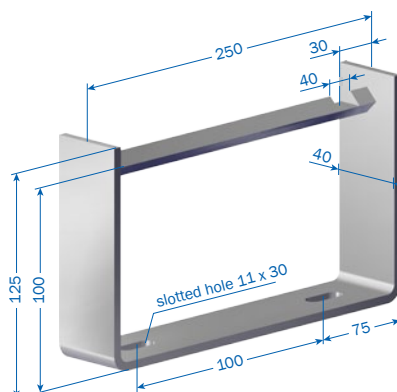
If the length of the towing arm exceeds 600 mm, support (provided by the customer) must be provided to prevent the towing arm from bending or twisting.

Longer lengths available by request.



UM24

Type	Weight kg	Order No.
UM 24	2.600	175076

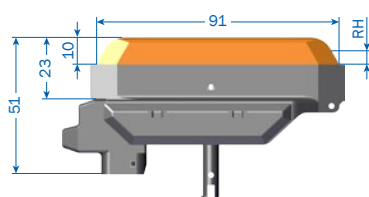


UMA24

Type	Weight kg	Order No.
UMA 24	1.919	1025864

Suitable for phase spacing max. 50 mm (3-pin + PE)

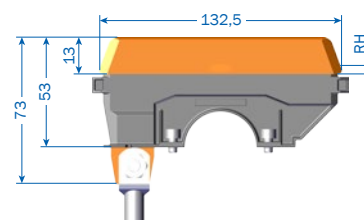
Carbon brush



KMK 63



KMK 100/25

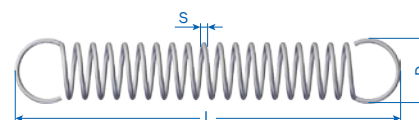


KMK 175/25

Dimension RH: Permissible residual height

Type	For current collector	Thickness of carbon brush mm	RH mm	Weight kg	Order No.
KMK 63	Single Collect, Multi Collect	4.20	5.00	0.063	171788
KMK 100/25	KST 100/25, KDST 200/25, KST 125/25, KDST 250/25	5	38.00	0.180	10005358
KMK 175/25	KST 140/25, KST 175/25, KST 150/25 HT, KSTU 140/25, KSTU 175/25, KDST 280/25, KDST 350/25, KDST 300/25 HT, KDSTU 280/25, KDSTU 350/25	6	3.00	0.188	171649

Tension springs



Type	For current collector	S mm	D mm	L mm	Order No.
RF 3	Single Collect, Multi Collect	0.40	4.40	31.00	153849
ZF 4	KSTL 15, KSTL 40, KSTL 60, KDSTL 30, KDSTL 80, KDSTL 120	1.30	11.00	29.00	153517
ZF 6	KST 100/25, KDST 200/25, KST 125/25, KDST 250/25, KST 140/25, KDST 280/25, KSTU 140/25, KDSTU 280/25, KST 175/25, KDST 350/25, KSTU 175/25, KDSTU350/25	2.25	17.30	56.50	170167

SPARE PARTS FOR THE KST 100/25 TO KDSTU350/25 SERIES

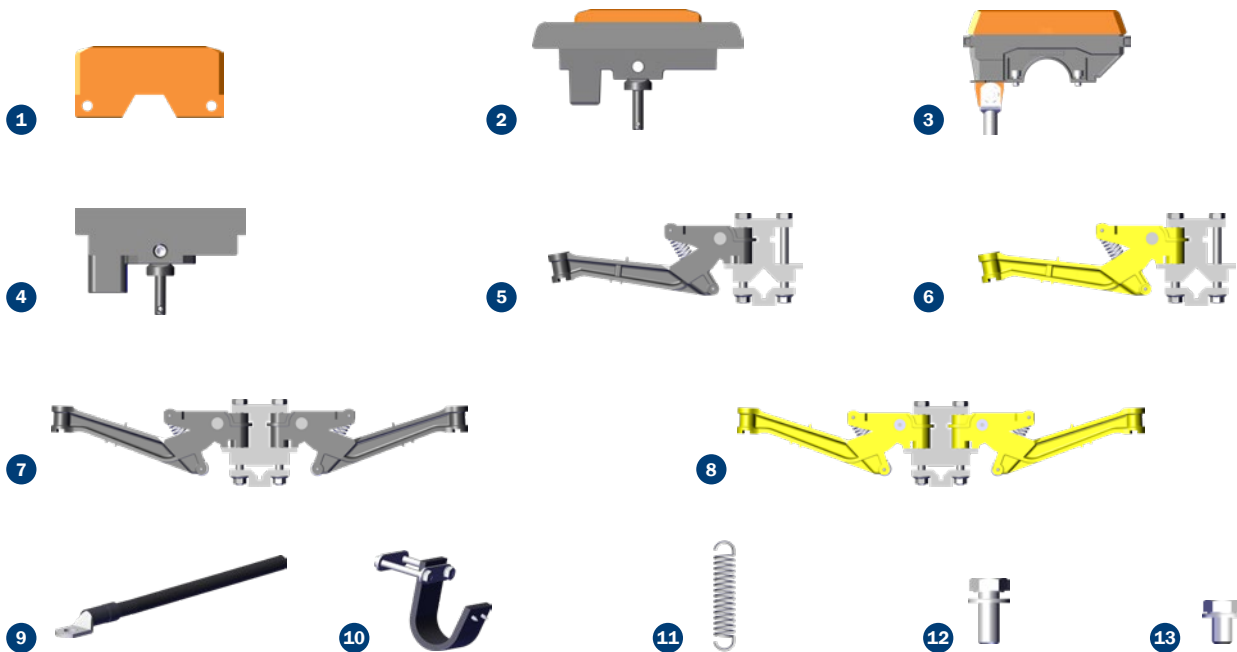
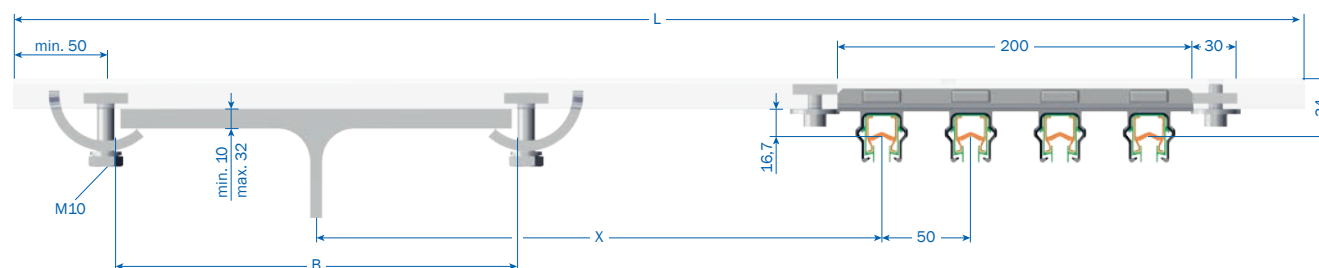


Figure	Description	Weight kg	Order No.	
			Phase, black	PE, yellow
1	Carbon brush KMK 100/25 (see page 32)	0.180	10005358	
2	Carbon brush holder for KST 100, KST 125, KDST 200, KDST 25	0.195	170338	
3	KMK 175 carbon brush (see page 32)	0.188	171649	
4	Carbon brush holder for KST 140, KDST 280, KST 175, KDST 350	0.375	170169	
4	Carbon brush holder ¹⁾ for KSTU 140, KDSTU 280, KSTU 175, KDSTU350	0.375	170406	
5	Lower part for KST 100, KST 125, KST 140, and KST 175	0.578	170340	–
6	Lower part for KST 100, KST 125, KST 140, and KST 175	–	–	170341
5	Lower part for KSTU 140, KSTU 175	0.555	170555	–
6	Lower part for KSTU 140, KSTU 175	–	–	170556
7	Lower part for KDST 200, KDST 250, KDST 280, and KDST 350	0.795	170342	–
8	Lower part for KDST 200, KDST 250, KDST 280, and KDST 350	–	–	170343
7	Lower part for KDSTU 280, KDSTU350	0.795	170557	–
8	Lower part for KDSTU 280, KDSTU350	–	–	170558
9	Connection cable RKA 16/8 mm ² , PH, 2 m long, HT	0.413	171735	–
9	Connection cable RKA 16/8 mm ² , PE, 2 m long, HT	0.432	–	171736
9	Connection cable RKA 35/8 mm ² , PH, 2 m long, HT	0.851	171737	–
9	Connection cable RKA 35/8 mm ² , PE, 2 m long, HT	0.870	–	171738
9	Connection cable RKA 16/8 mm ² , PH, 2 m long	0.568	170344	–
9	Connection cable RKA 16/8 mm ² , PE, 2 m long	0.390	–	170345
9	Connection cable RKA 25/8 mm ² , PH, 2 m long	0.756	170173	–
9	Connection cable RKA 25/8 mm ² , PE, 2 m long	0.619	–	170174
9	Connection cable RKA 35/8 mm ² , PH, 2 m long	1.103	170997	–
9	Connection cable RKA 35/8 mm ² , PE, 2 m long	0.742	–	170998
10	Rubber spring, complete, for KSTU 140, KDSTU 280, KSTU 175, KDSTU35	0.035	170412	
11	Tension spring (see page 32)		170167	
12	Connecting screw M 8 x 20 K 4 for KST 100, KST 125, KDST 200, and KDST 250	0.022	170818	
13	Connecting screw M 8 x 12 K 4 for KST 140, KST 175, KSTU 140, KSTU 175, KDST 280, KDST 350, KDSTU 280 und KDSTU350	0.010	170871	

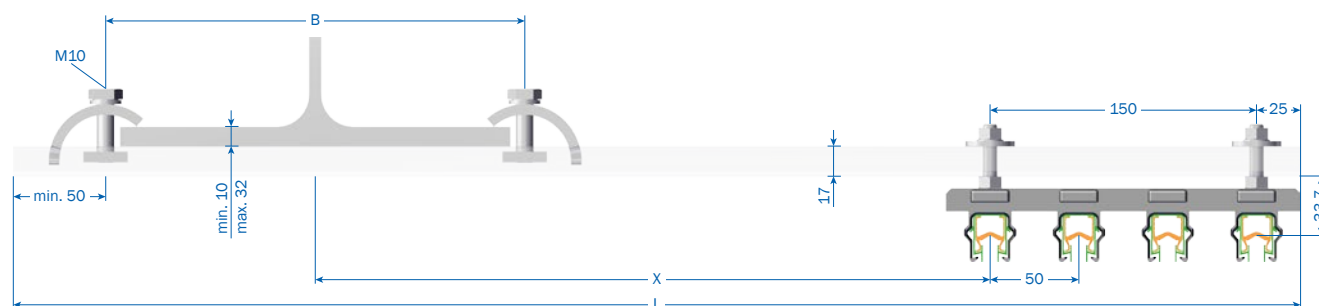
1) When ordering this carbon brush holder, the rubber spring (part no. 10) is included in delivery.

BRACKETS FOR U25

Compact holder and screw connection must be ordered separately.



Bracket SKO



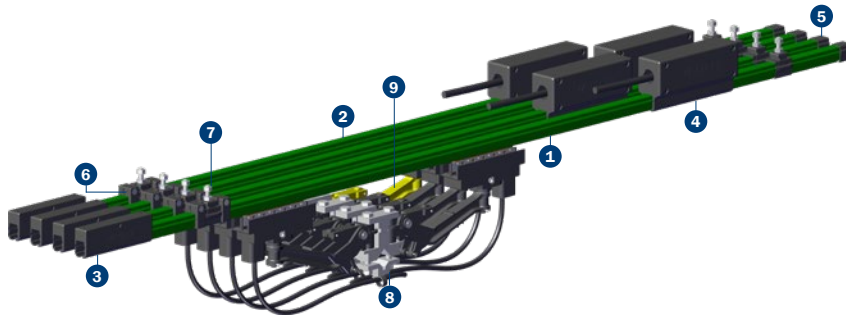
Bracket SKU

Support width B in mm	Distance X for bracket mm					SKU				
	SKO					SKU				
	L = 500	L = 600	L = 700	L = 800	L = 900	L = 500	L = 600	L = 700	L = 800	L = 900
up to 80	170-195	170-295	170-395	170-495	-	120-225	120-325	120-425	120-525	-
over 80 to 120	-	190-275	190-375	190-475	190-575	140-205	140-305	140-405	140-505	140-605
over 120 to 160	-	210-255	210-355	210-455	210-555	160-185	160-285	160-385	160-485	160-585
over 160 to 200	-	230-235	230-335	230-435	230-535	-	180-265	180-365	180-465	180-565
over 200 to 260	-	-	260-305	260-405	260-505	-	210-235	210-335	210-435	210-535

SKO Type	Order No.	SKU Type	Order No.	L mm	Weight kg
SKO 500	170094	SKU 500	170104	500	0.69
SKO 600	170095	SKU 600	170105	600	0.78
SKO 700	170096	SKU 700	170106	700	0.87
SKO 800	170097	SKU 800	170107	800	0.96
SKO 900	170098	SKU 900	170108	900	1.05

ARRANGEMENT AND ORDERING EXAMPLE FOR U25

Compact holder and screw connection must be ordered separately.



The illustration is a schematic representation. Actual components and arrangements may differ.

Conductor system 300 A, 3-pin + PE, 273 m long

Item	Quantity	Type	Description	Order No.
①	132	U25/75 C-6	Insulated conductor rails, 6 m long, phase	171036
①	3	U25/75 C-5	Insulated conductor rails, 5 m long for shorter lengths 4.5 long, phase	171035
②	44	U25/50 C-6 ⁽¹⁾	Insulated conductor rails, 6 m long, PE	171126
②	1	U25/50 C-5 ⁽¹⁾	Insulated conductor rails, 5 m long for shorter lengths 4.5 long, PE	171125
③	176	UV 25	Fixed connector	170595
④	8	UEG 25 ⁽²⁾	Feeds	170597
⑤	9	UDV 25 C K 4	Expansion sections, 1.5 m long, phase	171057
⑤	3	UDV 25 C K 4	xtInsulated conductor rails, 1.5 m long, PE	171058
⑤	8	UK 25-L	End caps	170013
⑥	32	USK 25 K 4	Locating clamp	170010
⑦	732	UA 25	Insulated hanger	170761
⑧	3	KDST 280/25	Double current collector, phase	170542
⑨	1	KDST 280/25	Double current collector, PE	170539
⑩	1	UM 24	Towing arm	175076
⑪	1	MZ-KF-A-100	Contact grease	121502

(1) Cross-section reduction in accordance with VDE 0100, Part 540

(2) If the phase spacing is < 80 mm, the feeds must be offset by at least 300 mm.

INSTALLATION ACCESSORIES FOR U25

Curve tool

Curving the U25 conductor rails vertically and horizontally

Curve tool with motor drive available

The filling rod must be ordered separately

Curve tool rental (all U-rails) is possible

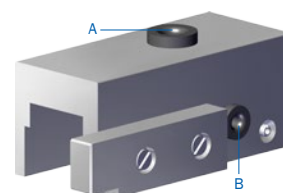


Type	Description	Weight kg	Order No.
MZ-BVU 25	Curve tool BVU 25	18.035	170445
MZ-FU25-100/125C-2	Filling rod FU25 (6 m)	0.668	170643
MZ-FU25-100/125C-3	Filling rod FU25 (6 m)	0.011	170645
MZ-FU25-50/125C-1	Filling rod FU25 (6 m)	0.438	170449
MZ-FU25-50/75C-2	Filling rod FU25 (6 m)	0.748	170644
MZ-FU25-50/75C-3	Filling rod FU25 (6 m)	0.013	170646

Drilling template

For end cap

Holes A and B for end cap



See installation instructions for U25

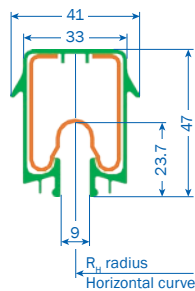
Type	Weight kg	Order No.
BS25	0.233	170207

Contact grease

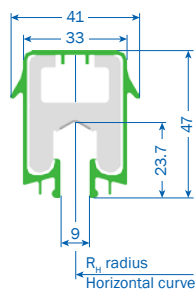
For connectors and feeds for protection against corrosion

Type	Description	Weight kg	Order No.
MZ-KF-A-100	100 ml for approx. 200 connections	0.112	121502

TECHNICAL SPECIFICATIONS, U35



U35 C



U35 AE

Type keys

U	= Insulated conductor rails
35	= Housing size
200– 600	= conductor cross-section in mm ²
C	= copper conductor
E	= Aluminum conductor, stainless steel sanding surface

Delivery length

6.25 m standard length
Shorter lengths available upon request

Support distance

For straight installation and inner or outer curves:	2500 mm
In horizontal bends $R_H \leq 15$ m:	1250 mm
In horizontal bends $R_H > 15$ m:	2500 mm

Rail spacing

- For current collectors KST 175/35, KDST 350/35, UST 200/35, UDST 400/35, USTR 200/35, UDSTR 400/35: 90⁽¹⁾ mm
- For current collectors UST 300/35, UDST 600/35, USTR 300/35, UDSTR 600/35: 130⁽²⁾ mm

Curving the conductor rail

Only factory-fitted, upon request

Heating

Available upon request

Note:

For chemical and electrical values and temperature resistance, see pages 4 and 5.

Selection of conductor system

Based on the current to be transmitted (observe the duty cycle) and the expected environmental influences.

U35 / ... C	Conductor rail with copper conductor for main and control current
U35 / ... AE	Conductor rail with aluminum conductor and stainless steel contact surface for main and control current

Conductor system values

Type	Conductor cross section mm ²	Creepage distance of insulation mm	Max. nominal voltage V (UL)	Max. continuous current A at 35 °C	Resistance ⁽³⁾ ohm/1000 m	Impedance ⁽³⁾ / 1000 m at phase spacing	
						90 mm	130 mm
U35/200 C	200	85	1000	600	0.094	0.156	0.174
U35/300 C	300	85	1000	720	0.060	0.138	0.159
U35/400 C	400	85	1000	860	0.046	0.132	0.154
U35/500 C	500	85	1000	1150	0.034	0.131	0.152
U35/230 AE ⁽⁴⁾	230	85	1000	500	0.134	0.183	0.199
U35/450 AE ⁽⁴⁾	450	85	1000	800	0.069	0.143	0.163
U35/600 AE ⁽⁴⁾	600	85	1000 ⁽⁶⁰⁰⁾	1000	0.052	0.136	0.156

(1) With UEG feeds only in staggered arrangement (min. 400 mm or 500 mm for UEG35/600AE)

(2) If the current collectors are staggered (min. 1050 mm), 90 mm is possible

(3) At frequency of 50 Hz and 20 °C

(4) In the case of AE conductor rail, current collectors from current consumers that operate continuously under load in one place or at a very low traveling speed of ≤ 10 m/min. may only be loaded with approx. 50% of their continuous current

TECHNICAL SPECIFICATIONS, U35

Versions

Version	Type	Weight kg	Order No. Phase ⁽¹⁾	Order No. PE ⁽¹⁾
Standard, -30 °C to +55 °C, Green	U35/200 C	2.400	17520•	17526•
	U35/300 C	3.400	17521•	17527•
	U35/400 C	4.300	17522•	17528•
	U35/500 C	4.860	17533•	17534•
	U35/230 AE	1.070	17541•	17542•
	U35/450 AE	1.650	17545•	17546•
	U35/600 AE	2.112	17564•	17566•
Heat-resistant version, -30 °C to +85 °C, Gray	U35/200 C	2.400	17523•	17529•
	U35/300 C	3.400	17524•	17530•
	U35/400 C	4.300	17525•	17531•
	U35/500 C	4.860	17535•	17536•
	U35/230 AE	1.070	17543•	17544•
	U35/450 AE	1.650	17547•	17548•
	U35/600 AE	2.112	17562•	17565•
HT version, -30 °C to +130 °C, granite gray	U35/200 C	2.400	17571•	17572•
	U35/300 C	3.400	17573•	17574•
	U35/400 C	4.300	17587•	17588•
	U35/500 C	4.860	17575•	17576•
	U35/230 AE	1.070	17577•	17578•
	U35/450 AE	1.650	17579•	17580•
	U35/600 AE	2.112	17585•	17586•

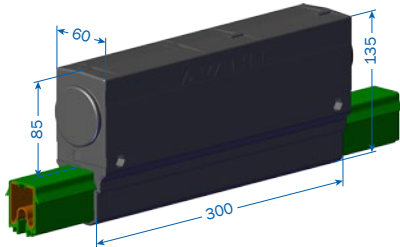
(1) The last digit of the order number indicates the individual length in meters. Please add 1, 2,... 6 to the order No. Intermediate values should be rounded up.

ACCESSORIES FOR U35

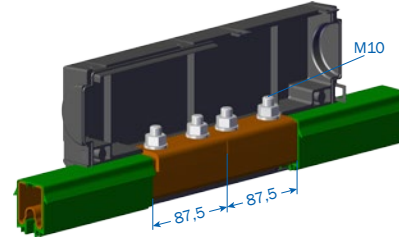
Fixed connector⁽¹⁾

Cover caps type UV35/200 C (K 4) to UV35/500 C (K 4) and UV35/230-450 AE (K 4) identical in design

Use contact grease to protect against corrosion

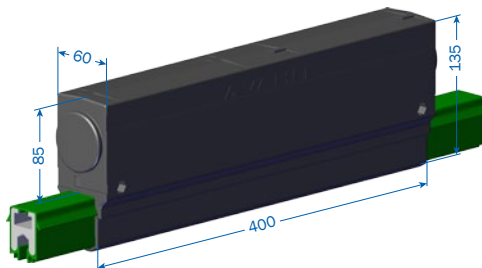


UV 35/200 C

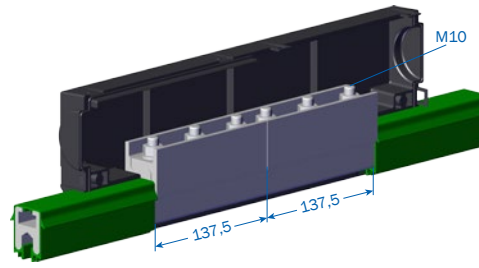


UV 35/200 C

Type (for copper rail)	Weight kg	Order No.
VM-UV35/200-C	1.070	175574
VM-UV35/300-C	1.188	175012
VM-UV35/400-C	1.328	175126
VM-UV35/500-C	1.486	175369
VM-UV35/200-C-K4 ⁽²⁾	1.070	175575
VM-UV35/300-C-K4 ⁽²⁾	1.184	175013
VM-UV35/400-C-K4 ⁽²⁾	1.324	175127
VM-UV35/500-C-K4 ⁽²⁾	1.486	175370



UV 35/600 AE



UV 35/600 AE

Type (for aluminum/stainless steel rail)	Weight kg	Order No.
VM-UV35/230-450AE-C	1.178	175987
VM-UV35/600AE-C	1.662	175619
VM-UV35/230-450AE-C-K4 ⁽²⁾	1.182	175986
VM-UV35/600AE-C-K4 ⁽²⁾	1.671	176097

(1) Screws intended for connecting the ground conductor must not be used as connectors.

(2) Non-rusting version

ACCESSORIES FOR U35

Feeds⁽¹⁾

Cover caps type UE35/200-400C (K 4), UE35/500C (K 4) and UE35/230-450AE (K 4) identical in design

Cover caps type UEG35/200-400C (K 4), UEG/500C (K 4) and UEG35/230-450AE (K 4) identical in design

Use contact grease to protect against corrosion

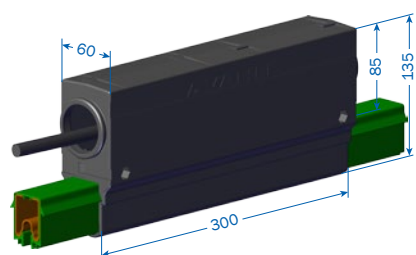
Type M: Factory installation

Type L: Loose delivery as single item

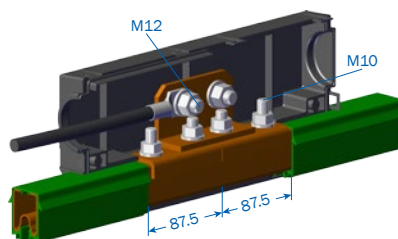
Cable lugs and connection cable must be provided on site

Cable grommet included in delivery (not shown)

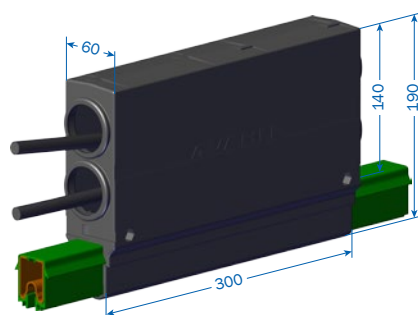
UEG: staggered arrangement for phase spacing <130 mm (min. 400 mm or 500 mm for UEG35/600AE)



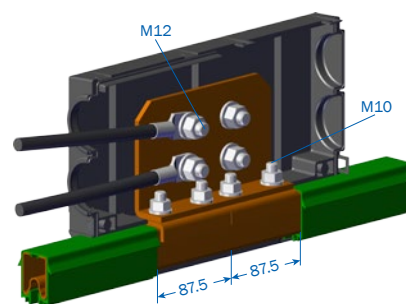
UE 35/200-400 C



UE 35/200-400 C



UEG 35/200-400 C



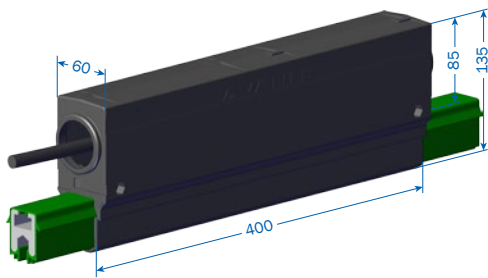
UEG 35/200-400 C

Type (for copper rail)	Connection max. mm ²	Weight kg	Order No.
UE35/200-400-L-C	2 x 150	1.514	175040
UE35/200-400-M-C	2 x 150	1.514	175548
UE35/500-L-C	2 x 150	1.434	175397
UE35/500-M-C	2 x 150	1.434	175907
UEG35/200-400-L-C	4 x 185	2.242	175105
UEG35/200-400-M-C	4 x 185	2.242	175147
UEG35/500-L-C	4 x 185	2.162	175371
UEG35/500-M-C	4 x 185	2.162	175394
UE35/200-400-K4-L-C ⁽²⁾	2 x 150	1.510	175043
UE35/200-400-K4-M-C ⁽²⁾	2 x 150	1.510	175549
UE35/500-K4-L-C ⁽²⁾	2 x 150	1.430	175398
UE35/500-K4-M-C ⁽²⁾	2 x 150	1.430	175908
UEG35/200-400-K4-L-C ⁽²⁾	4 x 185	2.238	175106
UEG35/200-400-K4-M-C ⁽²⁾	4 x 185	2.238	175324
UEG35/500-K4-L-C ⁽²⁾	4 x 185	2.158	175372
UEG35/500-K4-M-C ⁽²⁾	4 x 185	2.158	175417

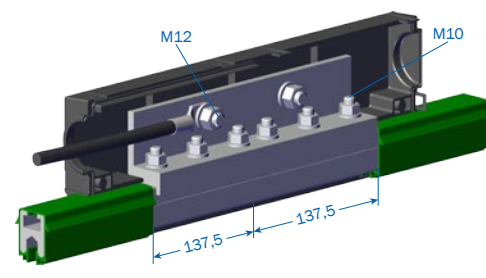
(1) Screws intended for connecting the ground conductor must not be used as connectors.

(2) Non-rusting version

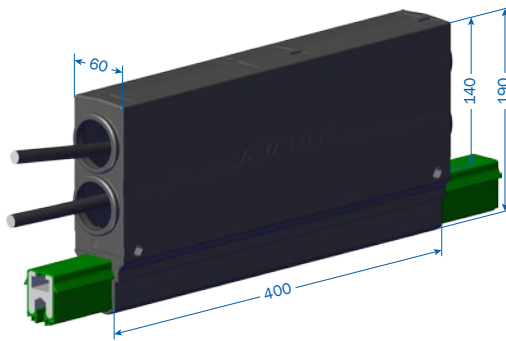
ACCESSORIES FOR U35



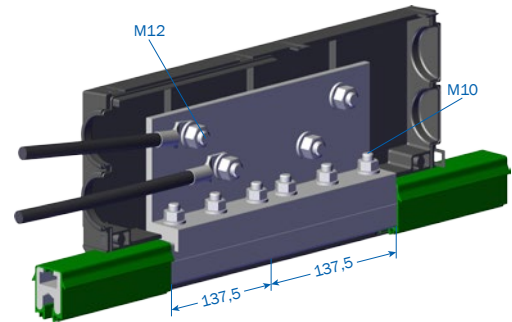
UE 35/600 AE



UE 35/600 AE



UEG 35/600 AE



UEG 35/600 AE

Type (for aluminum/stainless steel rail)	Connection max. mm ²	Weight kg	Order No.
UE35/230-450AE-L-C	2 x 150	1.077	175489
UE35/230-450AE-M-C	2 x 150	1.077	175905
UE35/600AE-L-C	2 x 150	2.012	175693
UE35/600AE-M-C	2 x 150	2.012	175707
UEG35/230-450AE-L-C	4 x 185	1.407	175487
UEG35/230-450AE-M-C	4 x 185	1.407	175521
UEG35/600AE-L-C	4 x 185	2.318	175674
UEG35/600AE-M-C	4 x 185	2.318	175675
UE35/230-450AE-K4-L-C ⁽¹⁾	2 x 150	1.073	175490
UE35/230-450AE-K4-M-C ⁽¹⁾	2 x 150	1.073	175906
UE35/600AE-K4-L-C ⁽¹⁾	2 x 150	2.012	175694
UE35/600AE-K4-M-C ⁽¹⁾	2 x 150	2.012	175708
UEG35/230-450AE-K4-L-B ⁽¹⁾	4 x 185	1.403	175488
UEG35/230-450AE-K4-M-C ⁽¹⁾	4 x 185	1.403	175522
UEG35/600AE-K4-L-C ⁽¹⁾	4 x 185	2.318	175628
UEG35/600AE-K4-M-C ⁽¹⁾	4 x 185	2.318	175676

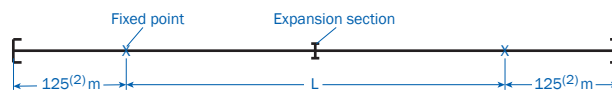
(1) Non-rusting version

ACCESSORIES FOR U35

Expansion sections

Consisting of expansion connectors and connectors mounted on a 2.5 m long rail section

Used for system lengths of 250⁽¹⁾ m or more



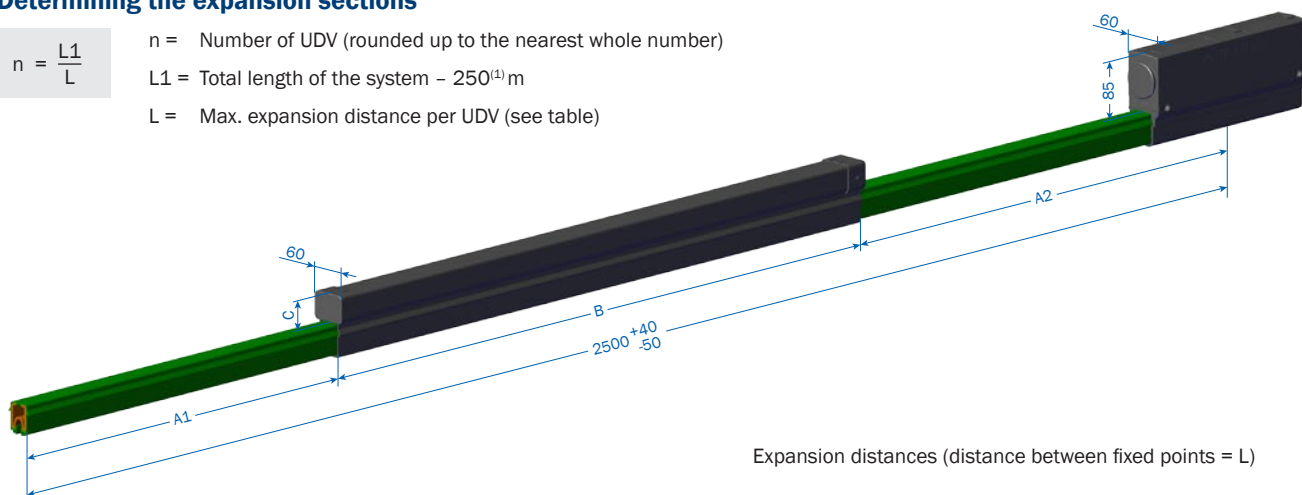
Determining the expansion sections

$$n = \frac{L1}{L}$$

n = Number of UDV (rounded up to the nearest whole number)

$L1$ = Total length of the system - 250⁽¹⁾ m

L = Max. expansion distance per UDV (see table)



Expansion distances (distance between fixed points = L)

Max. expansion movement = 90 mm

Type	A1 mm	A2 mm	B mm	C mm
UDV 35/200-400 C K 4	727.5	727.5	1045	44
UDV 35/500 CK 4	727.5	727.5	1045	44
UDV 35/230-450 AE K 4	640	255	1605	66
UDV 35/600 AE K 4	640	255	1605	66

UDV 35/200-500 C		UDV 35/230-600 AE	
up to Δd	max. L	up to Δd	max. L
30 °C	176 m	30 °C	130 m
40 °C	132 m	40 °C	97.5 m
50 °C	105.5 m	50 °C	78 m
60 °C	88 m	60 °C	65 m
70 °C	75.5 m	70 °C	55.5 m
80 °C	66 m	80 °C	48.5 m

Versions

Version	Type	Weight kg	Order No. Phase ⁽²⁾	Order No. PE ⁽²⁾
Standard, -30 °C to +55 °C, green	UDV 35/200-400 C K 4 ⁽³⁾	16.565	175527	175528
	UDV 35/500 C K 4 ⁽³⁾	18.999	175540	175541
	UDV 35 /230-450 AE K 4 ⁽³⁾	16.290	175962	175963
	UDV 35 /600 AE K 4 ⁽³⁾	16.704	175968	175969
Heat-resistant version, -30 °C to +85 °C, gray	UDV 35/200-400 C K 4 ⁽³⁾	17.196	175529	175530
	UDV 35/500 C K 4 ⁽³⁾	19.630	175542	175543
	UDV 35/230-450 AE K 4 ⁽³⁾	16.290	175964	175965
	UDV 35/600 AE K 4 ⁽³⁾	16.704	175970	175971
HT version, -30 °C to +130 °C, granite gray	UDV 35/200-400 C HT K 4 ⁽³⁾	17.196	175700	175701
	UDV 35/500 C HT K 4 ⁽³⁾	19.630	175702	175703
	UDV 35/230-450 AE HT K 4 ⁽³⁾	16.290	175966	175967
	UDV 35/600 AE HT K 4 ⁽³⁾	16.704	175972	175973

(1) 150 m when using the insulated hanger UIM35

(2) 75 m when using the hanger UIM35

(3) Non-rusting version

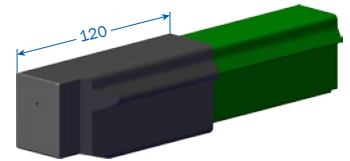
ACCESSORIES FOR U35

End cap

Including tension pin

Type M: Factory installation

Type L: Loose delivery as single item

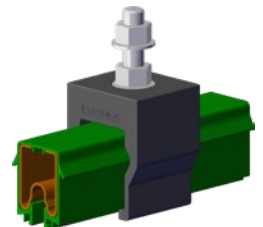
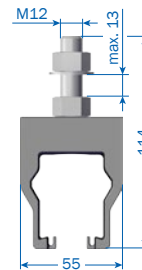


Type	Weight kg	Order No.
UK 35-M	0.089	175171
UK 35-L	0.089	175060

Insulated hangers⁽¹⁾

Rotatable/self-aligning

Minimum distance to center of connector or feed 400 mm

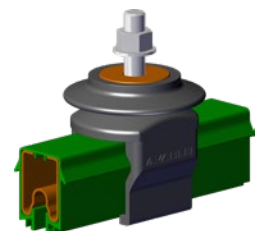
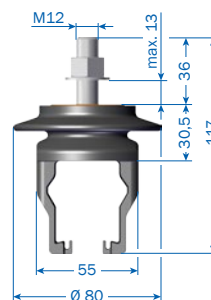


Depth: 50 mm

Type	Weight kg	Order No.
UAD 35	0.204	175667
UAD 35 K4 ⁽²⁾	0.204	175637

Insulated hangers with creepage distance extension⁽¹⁾⁽³⁾

Minimum distance to center of connector or feed 400 mm



Depth: 50 mm

Type	Weight kg	Order No.
UIM 35	0.153	175946
UIM 35 K4 ⁽²⁾	0.156	175945

(1) When fastening in slotted holes, use washers on both sides in accordance with DIN 9021.

(2) Non-rusting version

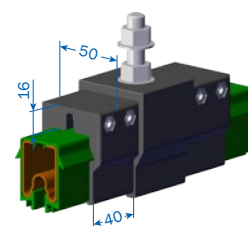
(3) For special environmental conditions (see page 5)

ACCESSORIES FOR U35

Locating clamp

Two locating clamps per pin must be ordered for each fixed point.

Design for vertical systems available on request.



Insulated hanger with 2 locating clamps
(fixed point)

Type	Weight kg	Order No.
USK 35 K 4 ⁽¹⁾	0.074	175039

Contact grease

For connectors and feeds for protection against corrosion

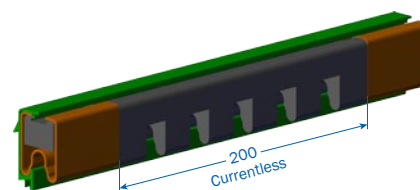
Type	Description	Weight kg	Order No.
MZ-KF-A-100	100 ml for approx. 200 connections	0.112	121502

Insulated isolating sections

Type M: Factory installation

Type L: Loose delivery as single item

A hanger must be provided on both sides at a maximum distance of 400 mm from the center of the air isolating section



Conductor rails, hangers, and feeds must be ordered separately.

Two insulated isolating sections are used as protection against voltage bridging and to separate repair, control, and feed sections. For distance "A", the number and type of current collectors and the stopping distance of current consumers must be taken into account.

Type	Insulation distance A mm	Weight kg	Order No.
IT/U35/200 M	200	0.200	175062
IT/U35/300 M	200	0.200	175063
IT/U35/400 M	200	0.200	175064
IT/U35/500 M	200	0.200	175399
IT/U35/230 AE M	200	0.200	175499
IT/U35/450 AE M	200	0.200	175500
IT/U35/600 AE M	200	0.195	176027

Type	Insulation distance A mm	Weight kg	Order No.
IT/U35/200 L	200	0.200	175101
IT/U35/300 L	200	0.200	175102
IT/U35/400 L	200	0.200	175103
IT/U35/500 L	200	0.200	175400
IT/U35/230 AE L	200	0.200	175497
IT/U35/450 AE L	200	0.200	175498
IT/U35/600 AE L	200	0.195	176028

(1) Non-rusting version

ACCESSORIES FOR U35

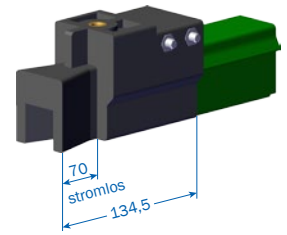
Transfer guides

Use in rail interruptions

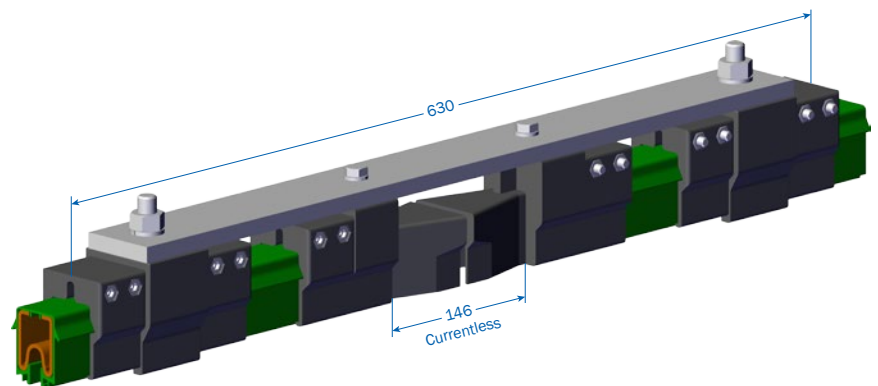
Max. air gap between transfer guides: 20 mm

Max. lateral/vertical offset between transfer guides: ± 6 mm

$V_{\max} = 180 \text{ m/min}$



Type	Weight kg	Order No.
US 35 AE K 4 ⁽¹⁾	0.253	175678
US 35 C K 4 ⁽¹⁾	0.261	175677



Air isolating sections

Type M: Factory installation

Type L: Loose delivery

Air isolating section with rail sections and four loose locating clamps

A hanger must be provided on both sides at a maximum distance of 400 mm from the center of the air isolating section (see insulated isolating sections)

Conductor rails must be ordered separately

Not for use in combination with current collectors KST 175/35 and UDST 350/35

Type	Weight kg	Order No.
LT/U35 AE-L	3.39	175629
LT/U35 C-L	3.42	175679

Type	Weight kg	Order No.
LT/U35 AE-M	3.40	175636
LT/U35 C-M	3.42	175699

(1) Non-rusting version

CURRENT COLLECTOR FOR U35⁽¹⁾

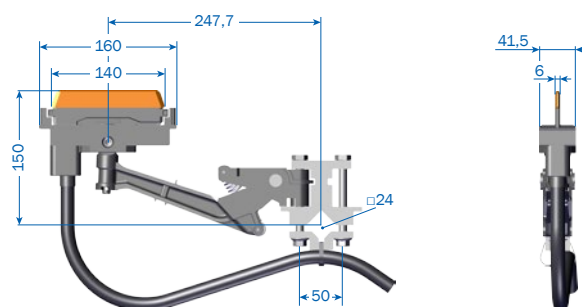
If the rail opening is arranged laterally, use current collectors from the KST, KDST, USTR or UDSTR series

For phase spacing < 130 mm, staggered arrangement of current collectors UST 300/35, UDST 600/35, USTR 200/35, UDSTR 400/35, USTR 300/35 and UDSTR 600/35 (min. 1050 mm)

Current collector

With 2 m connection cable

Lift:	±45 mm
Swivel:	±60 mm
Contact pressure	approx. 29 N
Installation height	150 mm

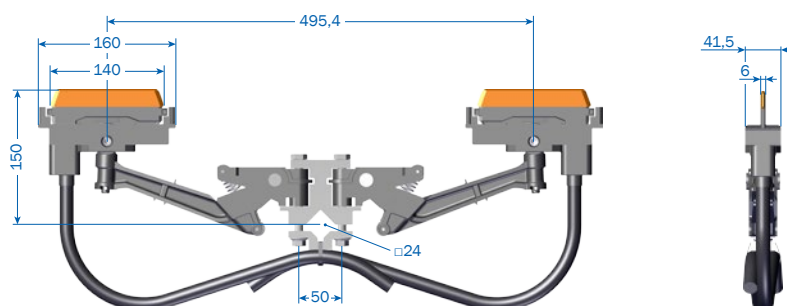


Type	Continuous current A	Connection cable		Weight kg	Order No.	
		A mm ²	d _{max} mm		Phase, black	PE, yellow
KST 175/35	175	35	18.5	2.155	176104	176105

Current collector

With 2 m connection cable

Lift:	±45 mm
Swivel:	±60 mm
Contact pressure	Approx. 29 N per carbon brush
Installation height:	150 mm

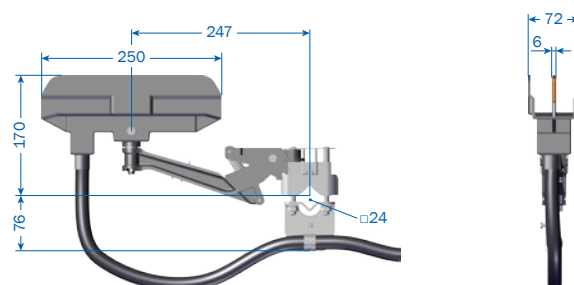


Type	Continuous current A	Connection cable		Weight kg	Order No.	
		A mm ²	d _{max} mm		Phase, black	PE, yellow
KDST 350/35	350	35	18.5	3.585	176106	176107

Current collector

With 3 m connection cable (free cable length 2.6 m)

Lift:	±50 mm
Swivel:	±50 mm
Contact pressure	approx. 30 N
Installation height:	170 mm



Type	Continuous current A	Connection cable		Weight kg	Order No.	
		A mm ²	d _{max} mm		Phase, black	PE, yellow
UST 200/35	200	50	21	4.000	175068	175069
USTR 200/35	200	50	21	4.000	175169	175170
UST 200/35 HT ⁽²⁾	200	50	21	5.461	175893	175894
USTR 200/35 HT ⁽²⁾	200	50	21	5.507	175895	175896

(1) In the case of AE conductor rail, current collectors from current consumers that operate continuously under load in one place or at a very low traveling speed of ≤ 10 m/min. may only be loaded with approx. 50% of their continuous current

(2) Current collector up to max. 500 V

CURRENT COLLECTOR FOR U35⁽¹⁾

If the rail opening is arranged laterally, use current collectors KST, KDST, USTR or UDSTR

For phase spacing < 130 mm, staggered arrangement of current collectors UST 300/35, UDST 600/35, USTR 200/35, UDSTR 400/35, USTR 300/35 and UDSTR 600/35 (min. 1050 mm)

Double current collector

With 2 x 3 m connection cable

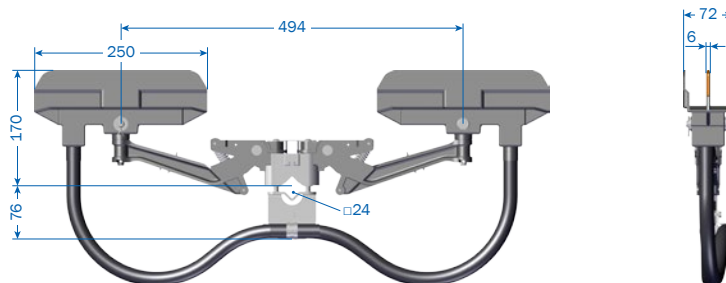
(free cable length 2.6 m)

Lift: ±50 mm

Swivel: ±50 mm

Contact pressure Approx. 30 N per carbon brush

Installation height: 170 mm



Type	Continuous current A	Connection cable		Weight kg	Order No.	
		A mm ²	d _{max} mm		Phase, black	PE, yellow
UDST 400/35	400	50	21	7.000	175072	175073
UDSTR 400/35	400	50	21	5.591	175185	175186
UDST 400/35 HT ⁽²⁾	400	50	21	10.696	175695	175696
UDSTR 400/35 HT ⁽²⁾	400	50	21	10.728	175769	175770

Current collector

With 3 m connection cable

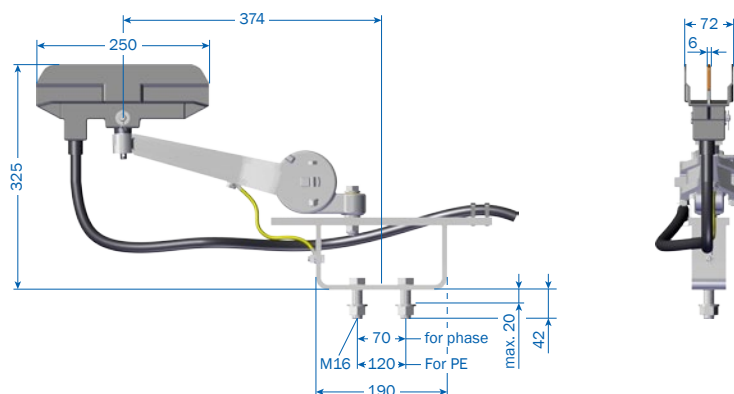
(free cable length 2.3 m)

Lift: ±70 mm

Swivel: ±80 mm

Contact pressure approx. 50–70 N

Installation height: 325 mm



Type	Continuous current A	Connection cable		Weight kg	Order No.	
		A mm ²	d _{max} mm		Phase, black	PE, yellow
UST 300/35	300	95	26	10.900	175087	175088
USTR 300/35	300	95	26	10.900	175320	175321
UST 300/35 HT ⁽²⁾	300	95	26	10.900	175897	175898
USTR 300/35 HT ⁽²⁾	300	95	26	10.900	175899	175900

(1) In the case of AE conductor rail, current collectors from current consumers that operate continuously under load in one place or at a very low traveling speed of ≤ 10 m/min. may only be loaded with approx. 50% of their continuous current

(2) Current collector up to max. 500 V

CURRENT COLLECTOR FOR U35⁽¹⁾

If the rail opening is arranged laterally, use current collectors KST, KDST, USTR, or UDSTR

For phase spacing < 130 mm, staggered arrangement of current collectors UST 300/35, UDST 600/35, USTR 200/35, UDSTR 400/35, USTR 300/35 and UDSTR 600/35 (min. 1050 mm)

Double current collector

With 2 x 3 m connection cable

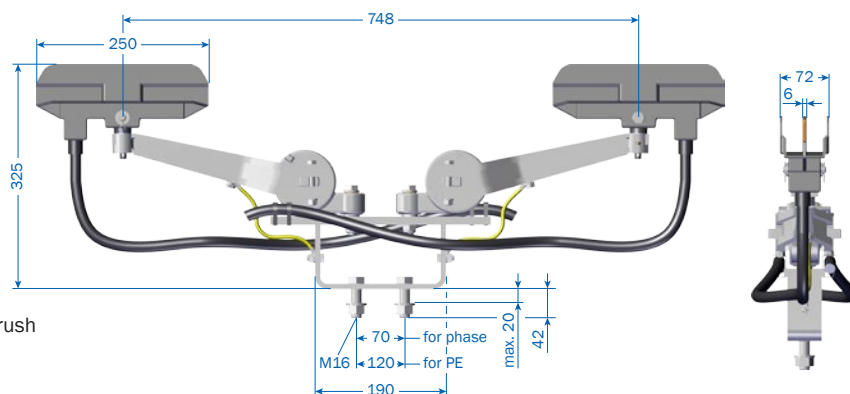
(free cable length 2.3 m)

Lift: ± 70 mm

Swivel: ± 80 mm

Contact pressure Approx. 50–70 N per carbon brush

Installation height: 325 mm



Type	Continuous current A	Connection cable		Weight kg	Order No.	
		A mm ²	d _{max} mm		Phase, black	PE, yellow
UDST 600/35	600	95	26	18.300	175089	175090
UDSTR 600/35	600	95	26	18.300	175174	175175
UDST 600/35 HT ⁽²⁾	600	95	26	18.300	175697	175698
UDSTR 600/35 HT ⁽²⁾	600	95	26	18.300	175901	175902

(1) In the case of AE conductor rail, current collectors from current consumers that operate continuously under load in one place or at a very low traveling speed of ≤ 10 m/min. may only be loaded with approx. 50% of their continuous current

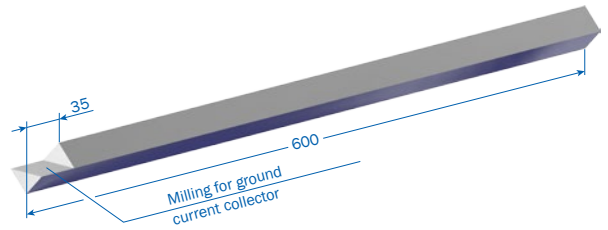
(2) Current collector up to max. 500 V

ACCESSORIES FOR CURRENT COLLECTOR U35

Towing arm (welding)

If the length of the towing arm exceeds 600 mm, support (provided by the customer) must be provided to prevent the towing arm from bending or twisting.

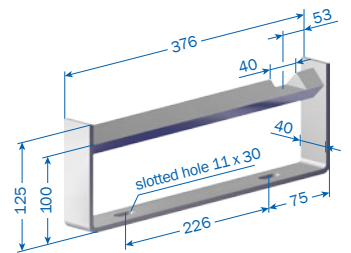
Longer lengths available by request



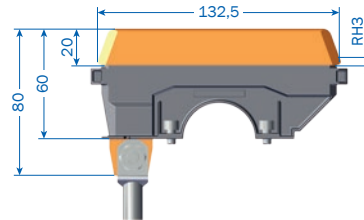
Type	Weight kg	Order No.
UM24	2.600	175076

Towing arm (screw connection)

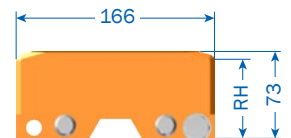
Suitable for phase spacing max. 90 mm (3-pin + PE)



Type	Weight kg	Order No.
UMA24	2.800	175125



KMK 175/30



KMU 300/35

Carbon brush

Dimension RH: Permissible residual height

Type	For current collector	RH mm	Weight kg	Order No.
KMK 175/30	KST175/35, KDST 350/35	3	0.180	171648
KMU 300/35	UST 200/35, UDST 400/35, USTR 200/35, UDST 400/35, UST 300/35, UDST 600/35, USTR 300/35, UDSTR 600/35	51	0.520	175077

SPARE PARTS FOR THE KST 175/35, KDST 350/35 SERIES

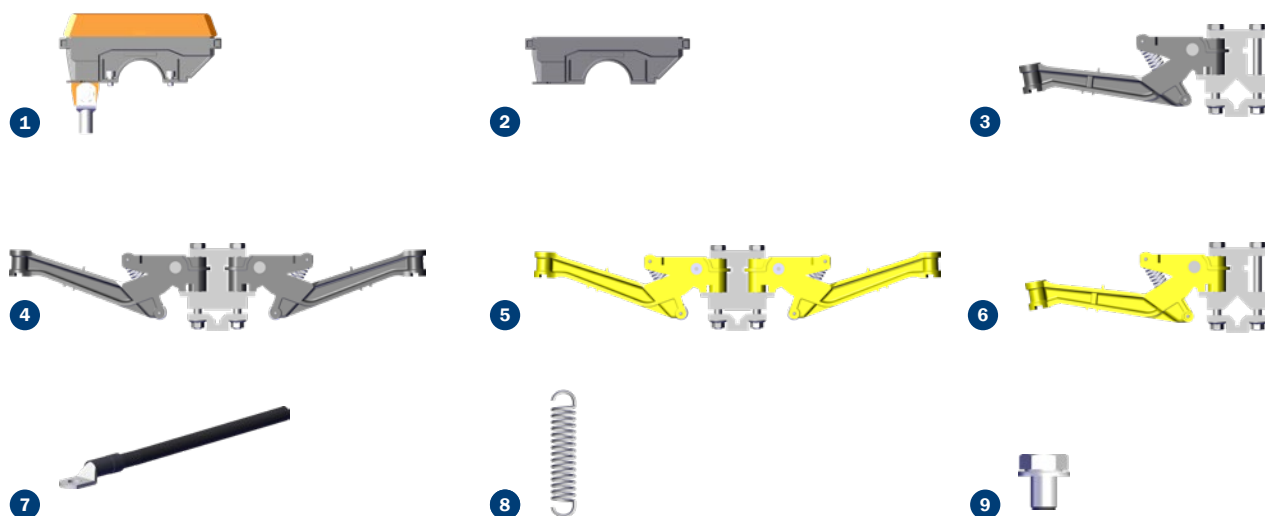


Figure	Description	Weight kg	Order No.	
			Phase, black	PE, yellow
1	KMK 175 carbon brush (see page 32)	0.188	171648	
2	Carbon brush holder for KST 175, KDST 350	0.375	130753	
3	Lower part for KST 175	0.662	170340	-
4	Lower part for KST 175	0.662	-	170341
5	Lower part for KDST 350	0.887	170342	-
6	Lower part for KDST 350	0.887	-	170343
7	Connection cable RKA 35/8 mm ² , PH, 2 m long	1.103	170997	-
7	Connection cable RKA 35/8 mm ² , PE, 2 m long	1.103	-	170998
8	Tension spring (see page 32)	0.023	170167	
9	Connecting screw M 8 x 12 K 4 for KDST 350	0.010	170871	

SPARE PARTS FOR THE UST 200/35, UDST 400/35, USTR 200/35, UDST 400/35 SERIES

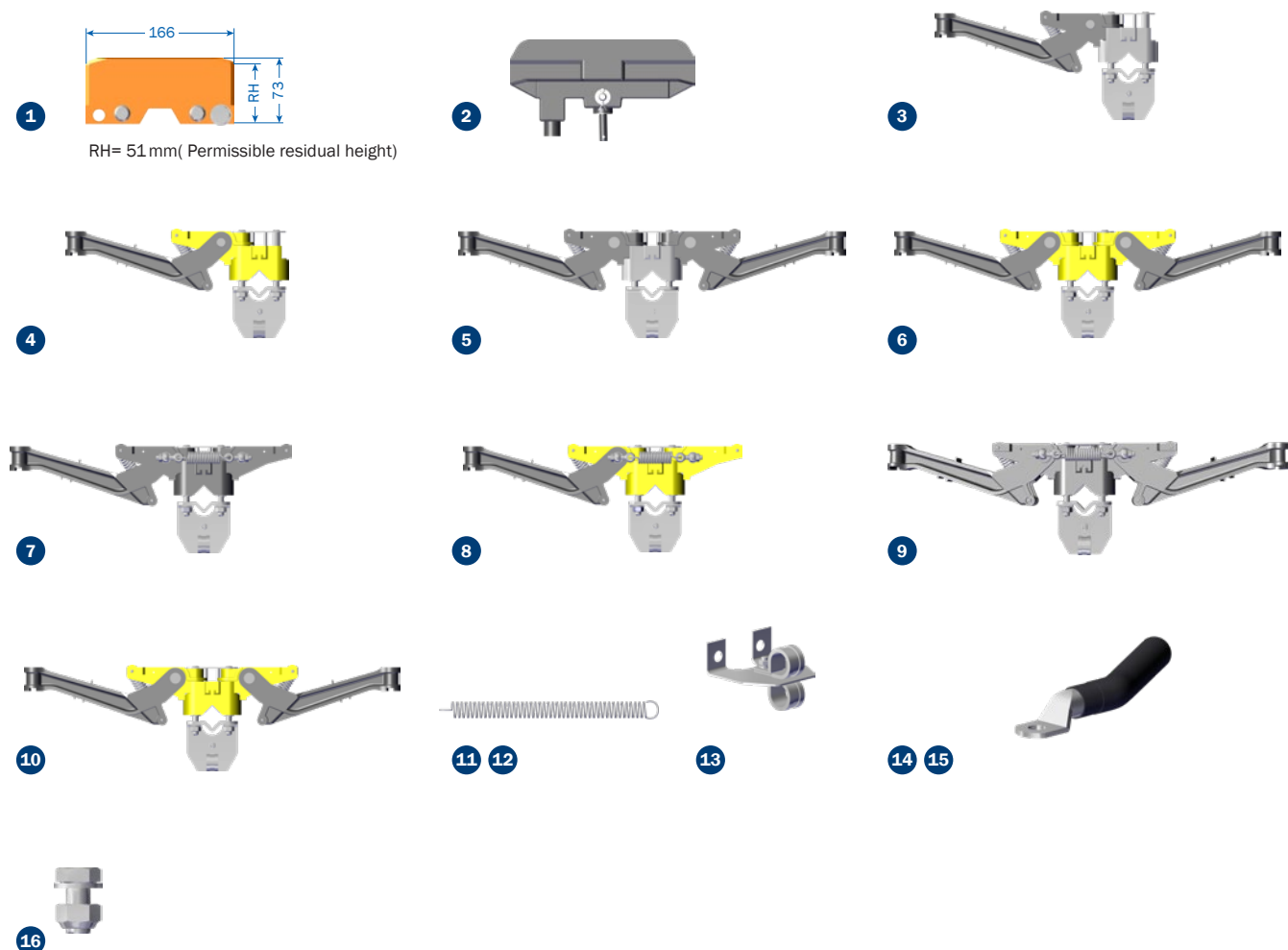


Figure	Description	Weight kg	Order No.	
			Phase, black	PE, yellow
1	Carbon brush KMU 300/35 with mounting and connection screw	0.520	175077	
2	Carbon brush holder	0.500	175078	
3	Lower part for UST 200/35	0.550	175080	–
4	Lower part for UST 200/35	0.550	–	175081
5	Lower part for UDST 400/35	0.795	175082	–
6	Lower part for UDST 400/35	0.795	–	175083
7	Lower part for USTR 200/35	0.780	175550	–
8	Lower part for USTR 200/35	0.780	–	175551
9	Lower part for UDSTR 400/35	0.940	175552	–
10	Lower part for UDSTR 400/35	0.940	–	175553
11	Lateral tension spring ZF 6 for USTR 200/35 and UDSTR 400/35	0.023	170167	
12	Tension spring ZF 7 for UST 200/35, UDST 400/35, USTR 200/35 and UDSTR 400/35	0.030	160719	
13	Cable attachment clamp	0.150	175107	–
14	Connection cable RKA 50 mm ² , 3 m long	3.850	175084	–
14	Connection cable RKA 50-HT mm ² , 3 m long	3.847	175657	–
15	Connection cable RKA 50 mm ² , 3 m long	3.850	–	175085
15	Connection cable RKA 50-HT mm ² , 3 m long	3.847	–	175658
16	Connecting screw M 12 x 25 K4	0.054	175401	

SPARE PARTS FOR THE UST 300/35, U DST 600/35, USTR 300/35 UND UDSTR 600/35 SERIES

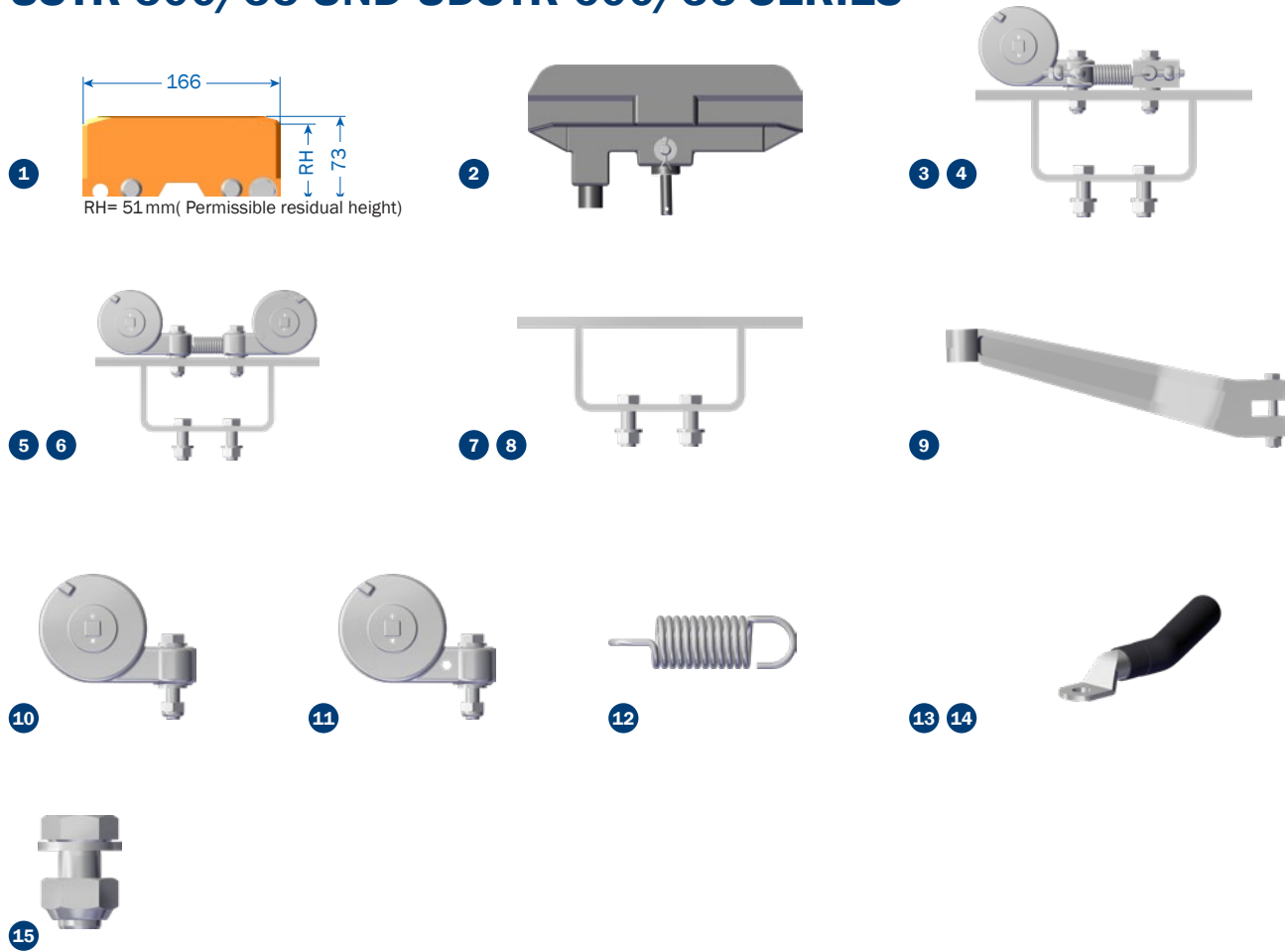
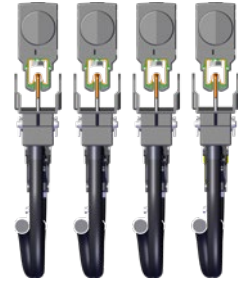
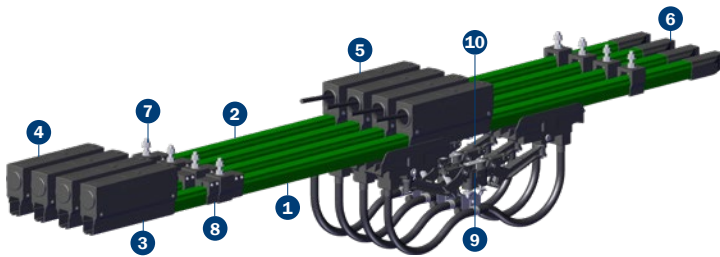


Figure	Description	Weight kg	Order No.	
			Phase, black	PE, yellow
1	Carbon brush KMU 300/35 with mounting and connection screw	0.400	175077	
2	Carbon brush holder	0.500	175078	
3	Lower part for USTR 300/35	6.380	175554	-
4	Lower part for USTR 300/35	6.380	-	175555
5	Lower part for UDSTR 600/35	8.050	175556	-
6	Lower part for UDSTR 600/35	8.050	-	175557
7	Base plate, complete	3.285	175095	-
8	Base plate, complete	3.285	-	175096
9	Lever, complete	0.847	175093	
10	Spring housing complete for UST 300/35 and U DST 600/35	2.114	175094	
11	Spring housing complete for USTR 300/35 and UDSTR 600/35	2.121	175562	
12	Lateral tension spring for USTR 300/35 and UDSTR 600/35	0.048	175558	
13	Connection cable RKA 95 mm ² , 3 m long	3.750	175149	-
13	Connection cable RKA 95-HT mm ² , 3 m long	3.750	175659	-
14	Connection cable RKA 95 mm ² , 3 m long	3.750	-	175150
14	Connection cable RKA 95-HT mm ² , 3 m long	3.750	-	175660
15	Connecting screw M 12x25 K4	0.054	175401	

ARRANGEMENT AND ORDERING EXAMPLE FOR U35



The illustration is a schematic representation. Actual components and arrangements may differ.

Conductor system 720 A, 3-pin + PE, 250 m long

	Quantity	Type	Description	Order No.
①	117	U35/300 C-6	Insulated conductor rails, 6.25 m long, phase	175216
②	39	U35/200 C-6 ⁽¹⁾	Insulated conductor rails, 6.25 m long, PE	175266
③	117	UV 35/300	Fixed connector	175012
④	39	UV 35/200	Fixed connector	175574
⑤	8	UE 35/200-400	Feeds	175040
⑥	8	UK 35-L	End caps	175060
⑦	404	UAD 35	Insulated hangers	175667
⑧	16	USK 35 K 4	Locating clamp	175039
⑨	6	UDST 400/35	Double current collector, phase	175072
⑩	1	UDST 400/35	Double current collector, PE	175073
•	2	UM 24	Towing arm	175076
•	1	MZ-KF-A-100	Contact grease	121502

(1) Cross-section reduction in accordance with VDE 0100, Part 540

QUESTIONNAIRE

Company: _____ Date: _____
 Phone: _____ Fax: _____
 Email: _____ Internet: _____

1. Number of conductor systems: _____
2. Type of crane or device to be fed: _____
3. Operating voltage: _____ volts Frequency: _____ Hz
☐ Rotating voltage ☐ Alternating voltage ☐ Direct voltage
4. Line length: _____
5. Number of phase rails: _____ N rails: _____ Control rails: _____ Ground conductors: _____
6. Installation position of the conductor system:
☐ Suspended conductor system current collector cable ☐ in the direction of travel⁽¹⁾ or ☐ downwards (only for safety conductor system)
☐ Lateral conductor system ☐ vertical conductor system (only for conductor rails)
☐ Support distance _____ m ☐ Other: _____
7. Number of cranes or devices on a conductor system: _____
☐ Indoor system ☐ Outdoor system
9. Special operating conditions (humidity, dust, chemical influences, etc.) _____
10. Ambient temperature: _____ °C min. _____ °C max.
11. Expansion joints _____ pcs. _____ max. expansion
12. Location and number of feeds⁽¹⁾: _____
13. Location and number of Isolating sections (e.g. repair sections) ⁽¹⁾: _____
14. Where should the conductor system be positioned? ⁽¹⁾: _____
15. Supply brackets: ☐ yes ☐ no Distance between center of support and center of conductor system _____
 Flange width of the carrier _____
16. Travel speed when traveling straight ahead: _____ in curves: _____ at crossings: _____
17. Power consumption of individual power consumers: _____
 (Please use the table below.)
18. Max. voltage drop from the conductor system feed to the current collectors, taking into account the start-up currents:
 3 % ☐ or _____ % relative to the nominal current.

Motor data	Crane/device 1							Crane/device 2						
	Power kW	Nominal current			Start-up current		Drive type ⁽²⁾	Power kW	Nominal current			Start-up current		Drive type ⁽²⁾
		A	cos φ _N	% ED	A	cos φ _A			A	cos φ _N	% ED	A	cos φ _A	
Lifting device														
Auxiliary lifting device														
Traveling winch														
Trolley traveling winch														

Mark motors that can be switched on simultaneously with *.

Mark motors that can be switched on simultaneously with Δ.

Further information: _____

Signature: _____

(1) Sketches required for preparing quotation

(2) Enter the drive type: K for squirrel-cage rotor, S for slip ring rotor, F for frequency-controlled motor.

We reserve the right to make technical changes due to further developments.

NOTES



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