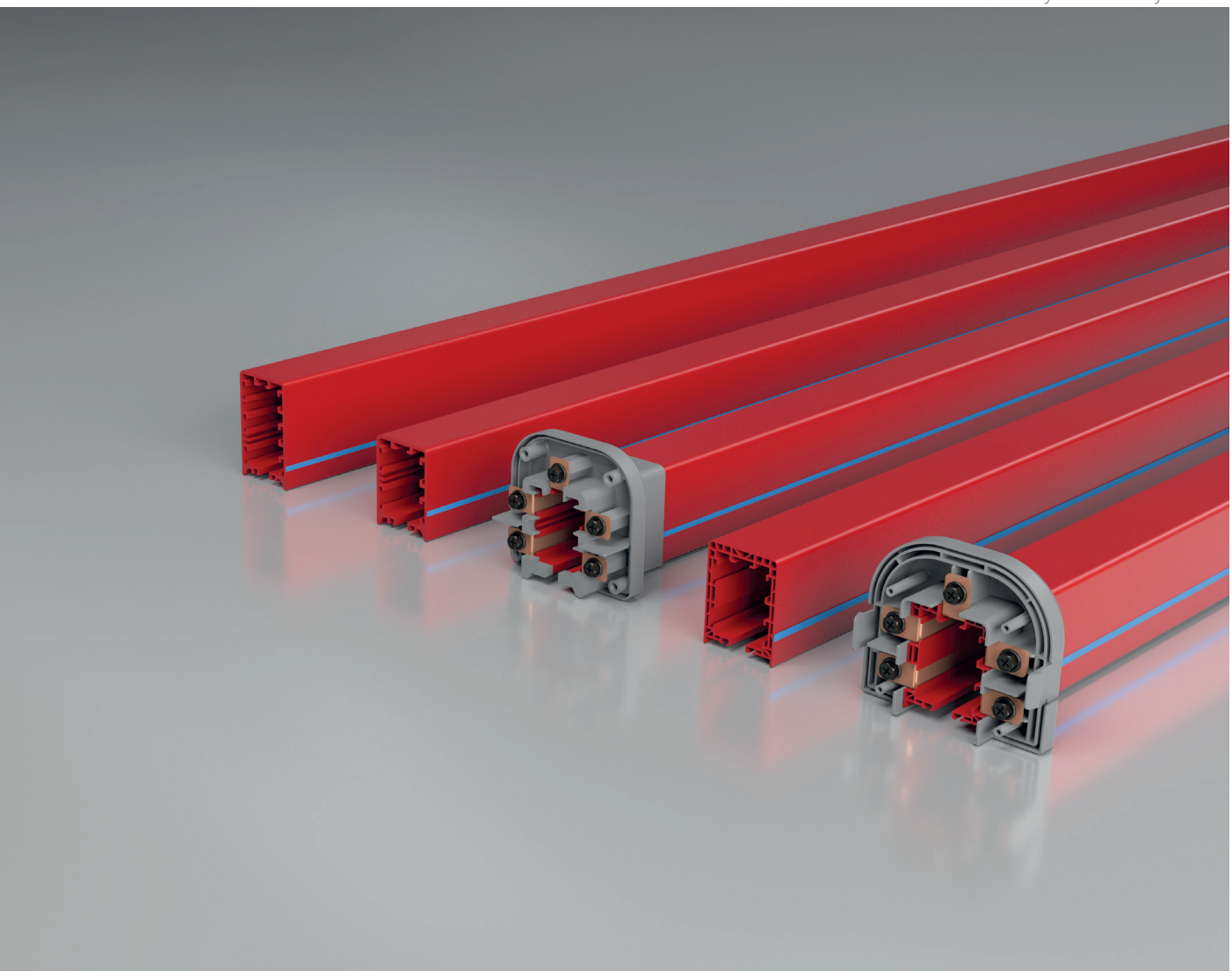
EAE
ELEKTRİK

E-LINE
TROLLEY BUSBAR

Trolley Busbar Systems



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E-LINE
TROLLEY BUSBAR

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EAE Group
in numbers;

1973
year of foundatiton

280.000m²
closed manufacturing area

5
manufacturing plants

3
R&D Centers

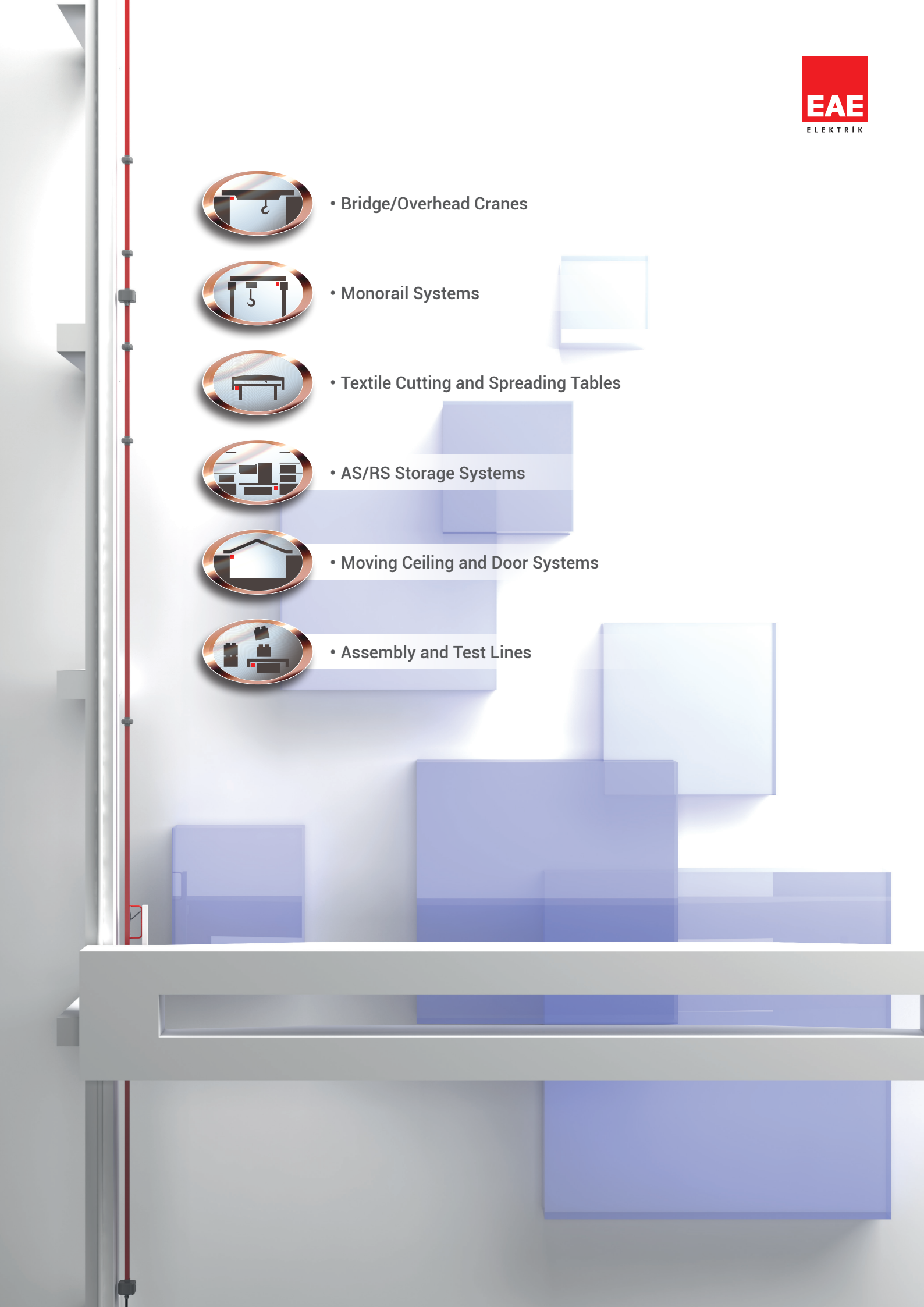
100+
countries of export

Founded in 1973, EAE Elektrik A.S. being the parent company of EAE Group is a worldwide manufacturer of electrical products.

Founded	: in 1973
Closed Manufacturing Area	: 280.000m2
Range of Products	: Busbar Power Distribution Systems Lighting Busbar Systems Cable Tray Systems Underfloor Trunking Trolley Busbar Systems
Companies	: EAE Elektrik EAE Aydınlatma EAE Elektroteknik EAE Teknoloji EAE Makina
Number of Plants	: 5

"Lean Production" and "Innovative and Customer Driven Product Development" approaches are the key values utilized in designing and manufacturing the product families in compliance with ISO 9001, ISO 14001, OHSAS 18001 and ISO 27001.

EAE Elektrik A.S. busbar products are certified by KEMA/DEKRA (Holland), KEMA - KEUR, UL classified laboratories as per IEC 61439-1/6 standards.



- Bridge/Overhead Cranes
- Monorail Systems
- Textile Cutting and Spreading Tables
- AS/RS Storage Systems
- Moving Ceiling and Door Systems
- Assembly and Test Lines

EAE
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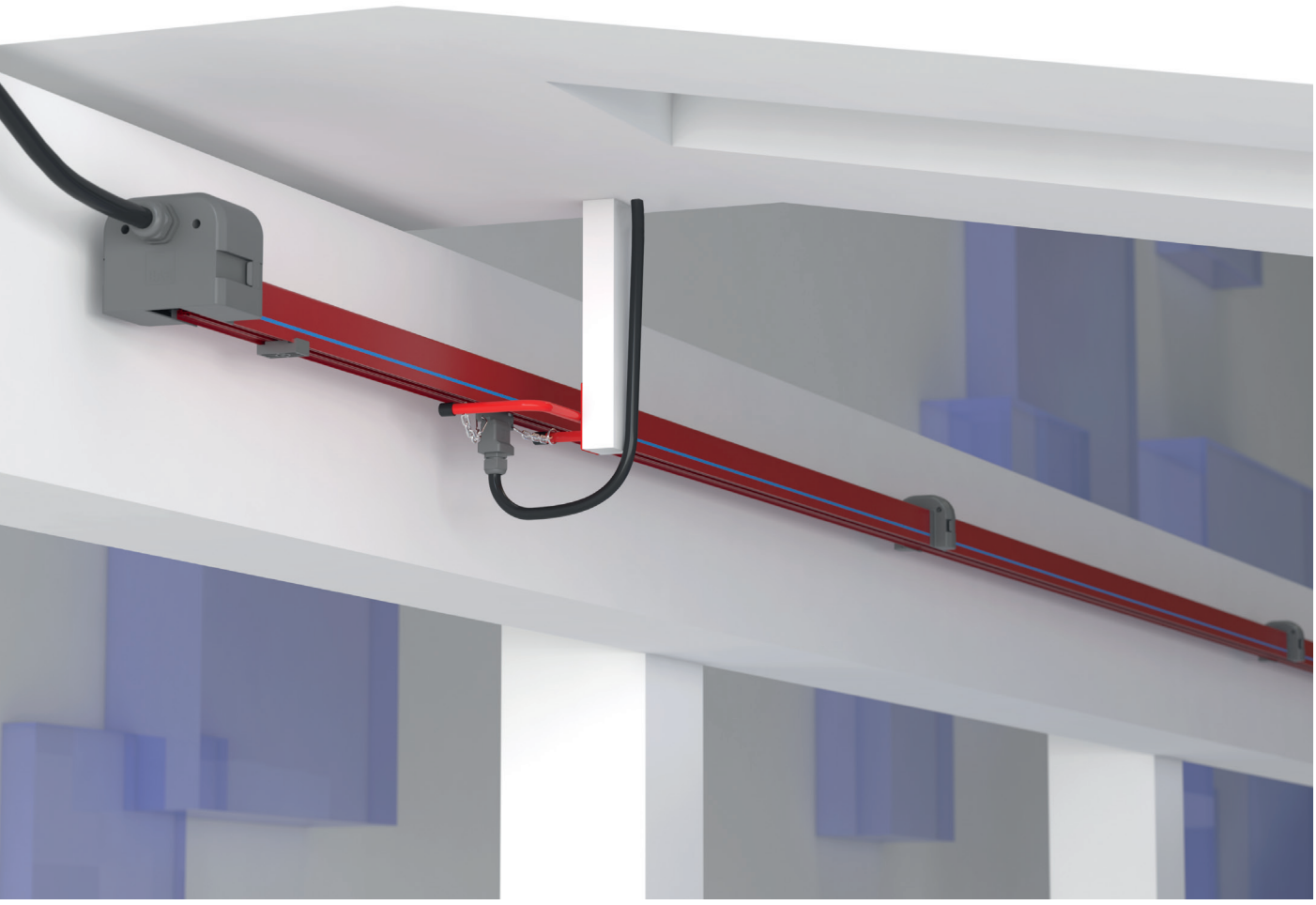
E-LINE TBX-E



E-LINE TBX-E

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▶▶ TROLLEY BUSBAR SYSTEMS

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It consists of copper conductors and current collectors in the C-PVC body. The uninterrupted energy supply and movement of the system is provided by current collectors connected to the system mechanically.

The eliminates the possibilities such as accident, malfunction in energy distribution with suspended and reel cable in conventional systems. Conductors are enclosed in C-PVC housing and personnel safety is maximized.

There is no fixed connection between the conductor housings and the conductors and between the C-PVC housing and the sliding hangers, the necessary expansion opportunity is provided, therefore the expansion element is unrequired.

Cautions:
If it is used in external environments exposed to rain, it is recommended to protect it with a cover such as a canopy.

ELINETBX-E

▶▶ ORDER CODE SYSTEM

TBX | E | 04 | 5

Trolley Busbar Model

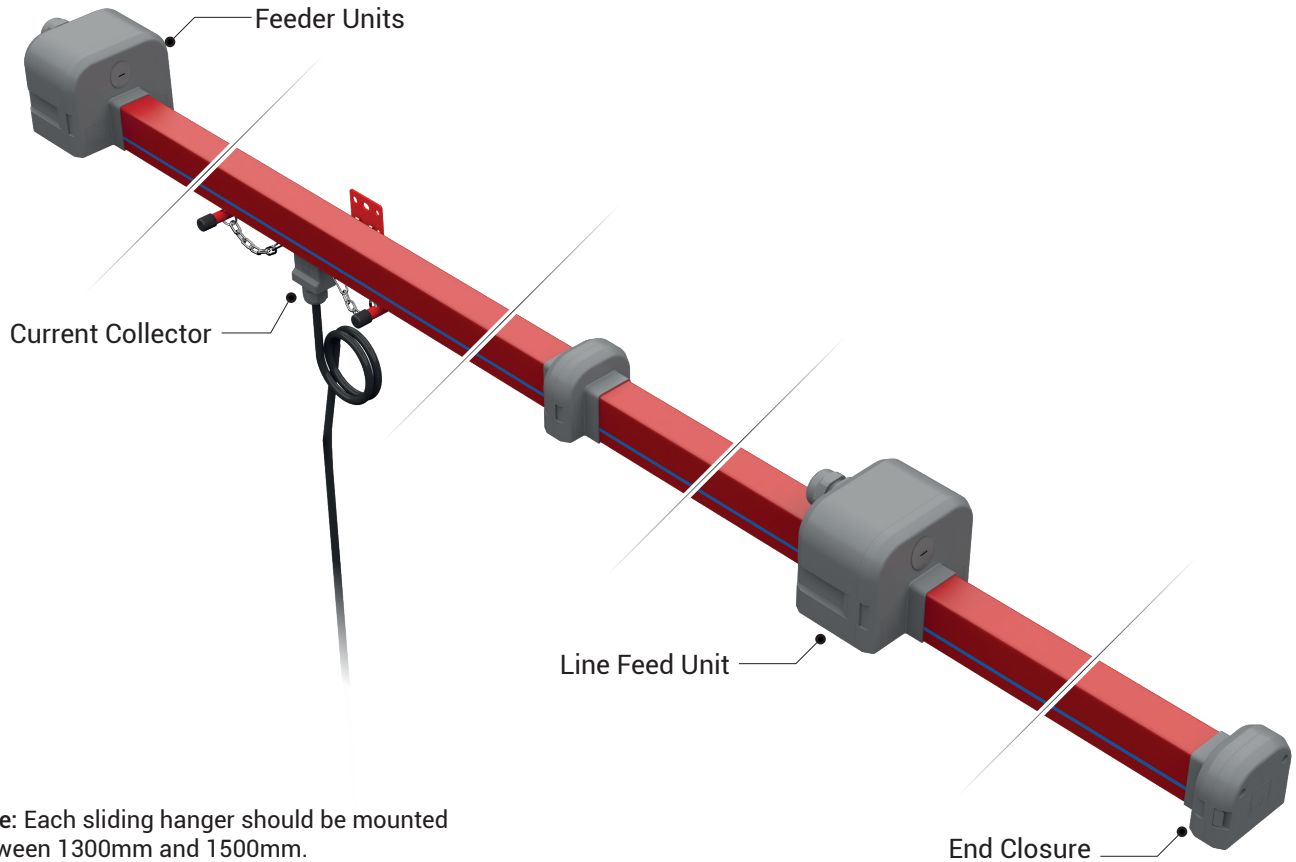
Current Ratings	
40A	04
63A	06
75A	07
105A	10
130A	13
160A	16

Number of Conductors	
4 Conductors	4
5 Conductors	5

Type	
Jointed	E
Continuous	S

▶▶ TECHNICAL FEATURES

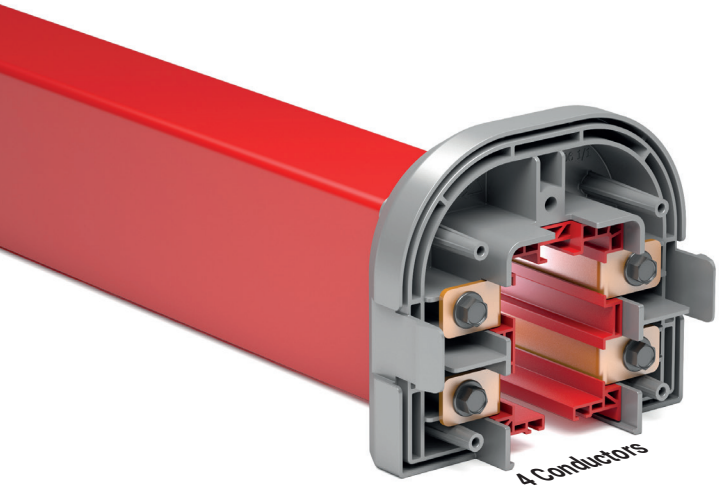
		40	63	75	105	130	160
Rated Current	(A)						
Conductor Quantities	(pcs)	4-5	4-5	4-5	4-5	4-5	4-5
Rated Voltage	(AC) (V)	690	690	690	690	690	690
Dielectric Properties	(kV/mm)	30	30	30	30	30	30
Frequency	(Hz)	50/60	50/60	50/60	50/60	50/60	50/60
Resistance (20°C)	R_{20} (mΩ/m)	1,440	1,240	1,150	0,780	0,600	0,450
Resistance (35°C)	R_{35} (mΩ/m)	1,580	1,425	1,340	0,910	0,700	0,530
Reactance	X (mΩ/m)	0,120	0,130	0,110	0,130	0,130	0,110
Impedance	Z (mΩ/m)	1,585	1,431	1,350	0,919	0,712	0,541
Standard Length	(m)	4	4	4	4	4	4

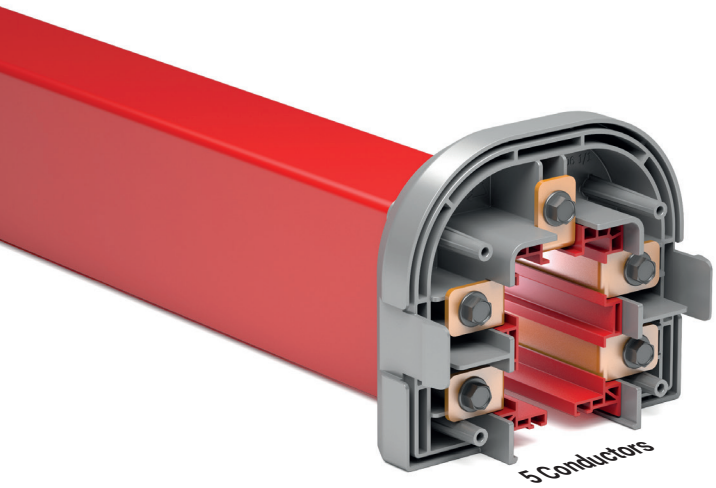


Note: Each sliding hanger should be mounted between 1300mm and 1500mm.

ELINETBX-E

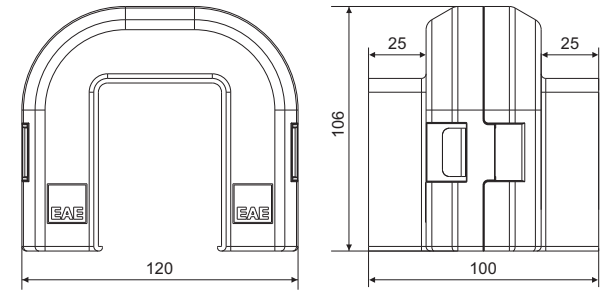
▶▶ TBX-E TROLLEY BUSBAR

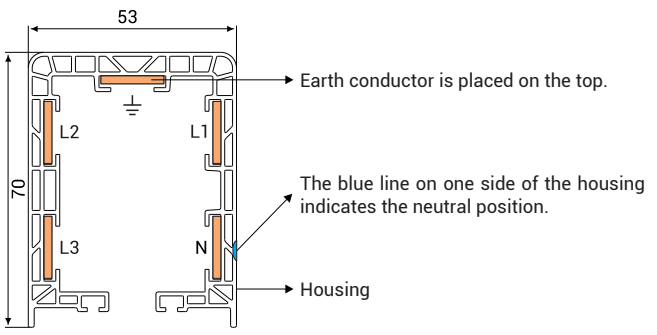




Description	Weight (gr/m)	Order Code
TBX-E Trolley Busbar Housing	820	**2061764**

The housing has a structure that can use maximum 5 conductors. There is safety system that prevents the current collector to be fixed inversely.





- **Number of Conductors:** 4 or 5 conductors
- **Colour:** Red.
- **Temperature range:** -40°C , +55°C.
- **Standard housing length:** 4 meters.
- **Protection:** Standard IP24, Gasket IP44
- **Non-Flammable Characteristics:** UL 94 V0
- Housing is made of C-PVC and plastic accessories are made of PA6 raw material.
- There is a neutral line on the housing the neutral conductor.
- There is a neutral line on the housing the neutral conductor.
- Light and durable with double layer structure, TBX provides ease of installation.

Standard 4 Meters

Model	Conductors Quantity-Current (A)	Weight (gr/m)	Conductor Cross Section (mm²)	Order Code
TBX-E 044	4P - 40A	1500	4x11,20	**3135783**
TBX-E 064	4P - 63A	1550	4x12,80	**3179772**
TBX-E 074	4P - 75A	1650	4x16,00	**3135787**
TBX-E 104	4P - 105A	1900	4x24,00	**3135791**
TBX-E 134	4P - 130A	2200	4x32,00	**3135795**
TBX-E 164	4P - 160A	2500	4x40,00	**3136708**
TBX-E 045	5P - 40A	1650	5x11,20	**3135785**
TBX-E 065	5P - 63A	1700	5x12,80	**3179773**
TBX-E 075	5P - 75A	1800	5x16,00	**3135789**
TBX-E 105	5P - 105A	2100	5x24,00	**3135793**
TBX-E 135	5P - 130A	2500	5x32,00	**3135797**
TBX-E 165	5P - 160A	2800	5x40,00	**3136710**

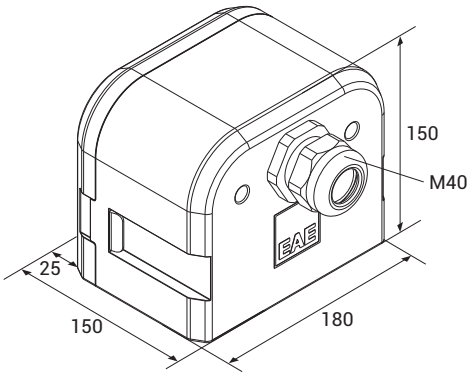
Special Length 1 or 2, 3 Meters

Model	Conductors Quantity-Current (A)	Weight (gr/m)	Conductor Cross Section (mm²)	Order Code
TBX-E 044	4P - 40A	1500	4x11,20	**3135782**
TBX-E 064	4P - 63A	1550	4x12,80	**3179776**
TBX-E 074	4P - 75A	1650	4x16,00	**3135786**
TBX-E 104	4P - 105A	1900	4x24,00	**3135790**
TBX-E 134	4P - 130A	2200	4x32,00	**3135794**
TBX-E 164	4P - 160A	2500	4x40,00	**3136707**
TBX-E 045	5P - 40A	1650	5x11,20	**3135784**
TBX-E 065	5P - 63A	1700	5x12,80	**3179777**
TBX-E 075	5P - 75A	1800	5x16,00	**3135788**
TBX-E 105	5P - 105A	2100	5x24,00	**3135792**
TBX-E 135	5P - 130A	2500	5x32,00	**3135796**
TBX-E 165	5P - 160A	2800	5x40,00	**3136709**

Joint plastics are not included in the weight values.
Total weight of the joint plastics and bolts is 0.28 Kg.

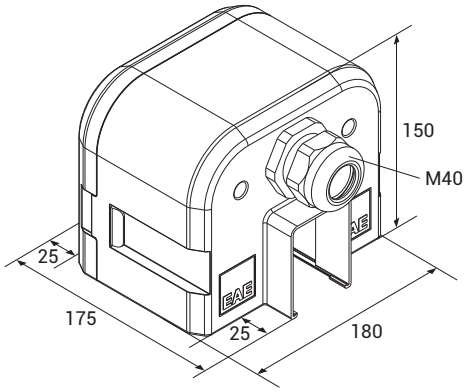
ELINETBX-E

▶▶ TBX-E FEEDER BOX



Description	Weight (gr)	Order Code
TBX Feeder Units	750	**3135798**

▶▶ TBX-E LINE FEED UNIT BOX

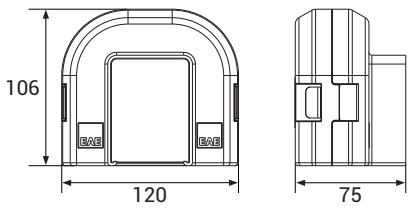


Description	Weight (gr)	Order Code
TBX Line Feed Unit	750	**3135799**

Type of the feeding element is selected by calculating the voltage drop and the location of the power supply that shall provide power to the system.

- May be used with busbars with 4 or 5 conductors
- Produced with standard M40 cable gland
- Halogen-free plastic raw material
- High impact resistance
- Design resistant against ambient conditions
- Ease of installation with snap-on design with a single screw.

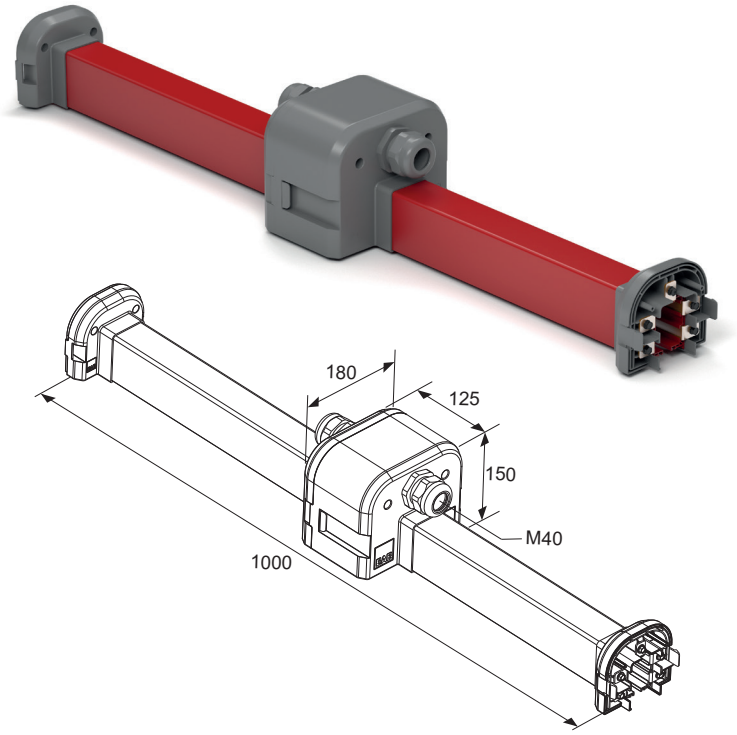
▶▶ TBX-E END CLOSURE



Description	Weight (gr)	Order Code
TBX-E End Closure	300	**3197966**

The end closure placed on the end of the busbar line prevents the exposure of the conductors, and protects the system.

▶▶ TBX-E REPAIR ZONE UNIT

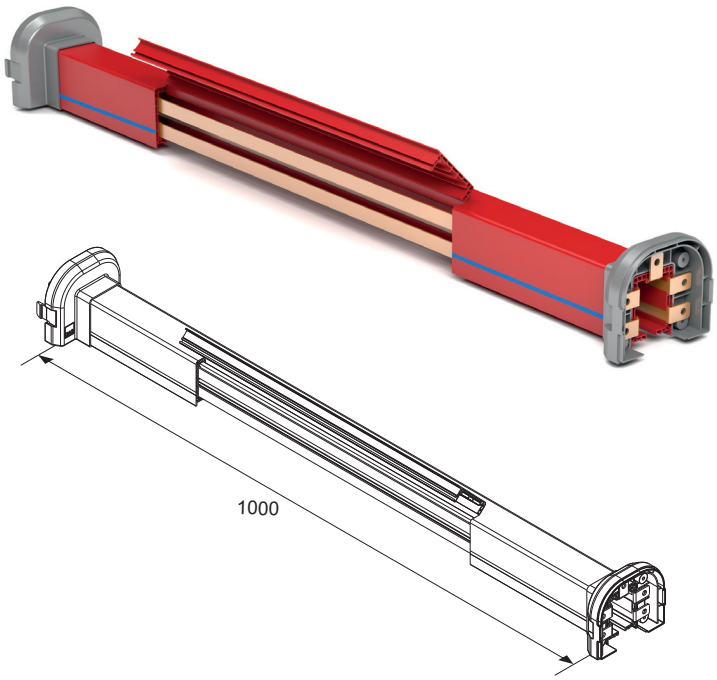


Model	Conductors Quantity-Current (A)	Weight (gr)	Conductor Cross Section (mm²)	Order Code
TBX-E 044	4P - 40A	2450	4x11,20	**3135819**
TBX-E 064	4P - 63A	2500	4x12,80	**3179782**
TBX-E 074	4P - 75A	2550	4x16,00	**3135821**
TBX-E 104	4P - 105A	2850	4x24,00	**3135823**
TBX-E 134	4P - 130A	3150	4x32,00	**3135826**
TBX-E 164	4P - 160A	3400	4x40,00	**3136711**
TBX-E 045	5P - 40A	2550	5x11,20	**3135820**
TBX-E 065	5P - 63A	2600	5x12,80	**3179783**
TBX-E 075	5P - 75A	2700	5x16,00	**3135822**
TBX-E 105	5P - 105A	3050	5x24,00	**3135824**
TBX-E 135	5P - 130A	3400	5x32,00	**3135827**
TBX-E 165	5P - 160A	3750	5x40,00	**3136712**

- Produced with standard M40 cable gland
- Halogen-free plastic raw material
- High impact resistance
- Design resistant against ambient conditions

Current supply shall be cut off when a machine working on the line shall be maintained or repaired. Repair zone module is used to create a currentless area on the busbar so that the other machines operating on the same line may continue to work.

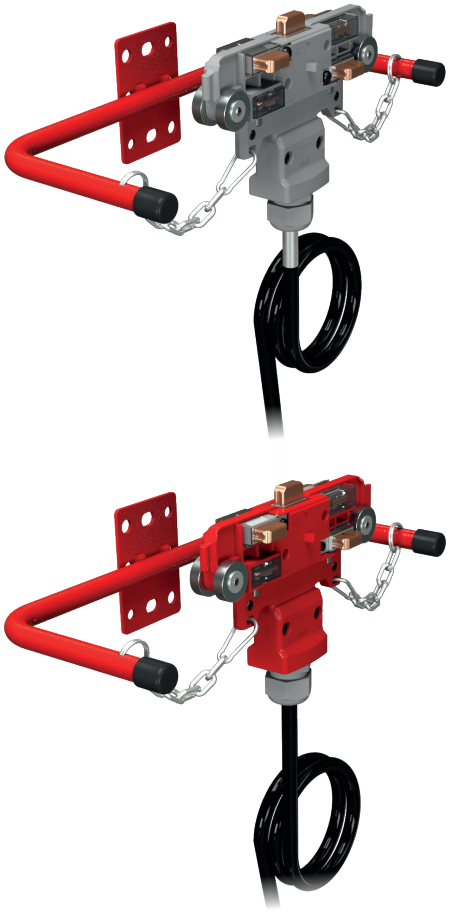
▶▶ TBX-E CURRENT COLLECTOR REPLACEMENT MODULE

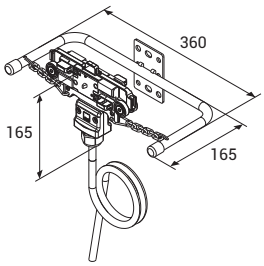


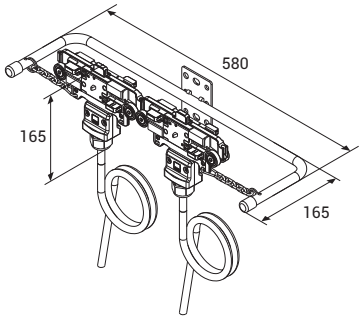
Model	Conductors Quantity-Current (A)	Weight (gr)	Conductor Cross Section (mm²)	Order Code
TBX-E 044	4P - 40A	1700	4x11,20	**3233909**
TBX-E 064	4P - 63A	1750	4x12,80	**3233910**
TBX-E 074	4P - 75A	1800	4x16,00	**3233911**
TBX-E 104	4P - 105A	2100	4x24,00	**3233912**
TBX-E 134	4P - 130A	2400	4x32,00	**3233913**
TBX-E 164	4P - 160A	2700	4x40,00	**3233914**
TBX-E 045	5P - 40A	1800	5x11,20	**3233915**
TBX-E 065	5P - 63A	1850	5x12,80	**3233916**
TBX-E 075	5P - 75A	1950	5x16,00	**3233917**
TBX-E 105	5P - 105A	2300	5x24,00	**3233918**
TBX-E 135	5P - 130A	2700	5x32,00	**3233919**
TBX-E 165	5P - 160A	3000	5x40,00	**3233920**

This unit is used to remove an existing current collector or to add extra trolleys. The unit is obtained by cutting a 50 cm section from the PVC housing.

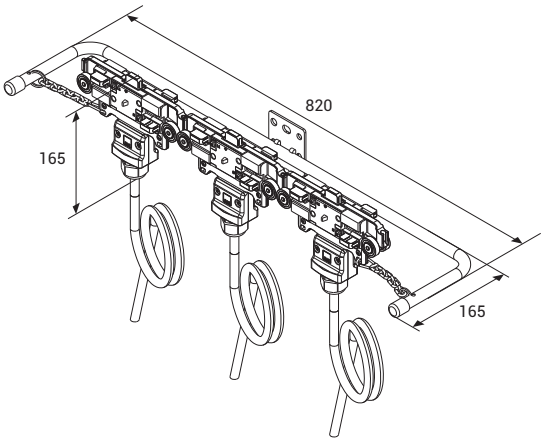
▶▶ TB5 CURRENT COLLECTORS WITH CABLE





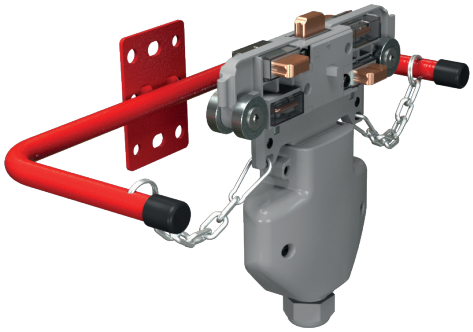


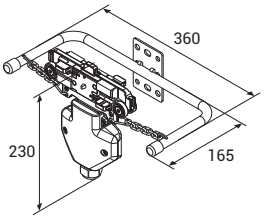
Model	Brushes Number-Current	Weight (gr)	Order Code
TB5	4P - 35A (Single)	1700	**3024385**
	4P - 70A (Double)	2950	**3024386**
	4P - 105A (Triple)	4450	**3024387**
	5P - 35A (Single)	1900	**3024376**
	5P - 70A (Double)	3250	**3024377**
	5P - 105A (Triple)	4700	**3024378**

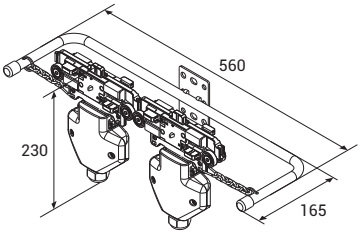


Model	Brushes Number-Current	Weight (gr)	Order Code
TB5	4P - 60A (Single)	2000	**3203193**
	5P - 60A (Single)	2200	**3203194**

▶▶ TB5 CURRENT COLLECTORS WITH CLIP

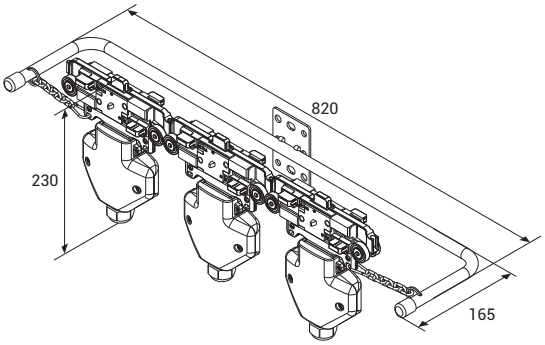






Model	Brushes Number-Current	Weight (gr)	Order Code
TB5	4P - 35A (Single)	1350	**3024388**
	4P - 70A (Double)	2050	**3024389**
	4P - 105A (Triple)	3050	**3024390**
	5P - 35A (Single)	1350	**3024379**
	5P - 70A (Double)	2250	**3024380**
	5P - 105A (Triple)	3200	**3024381**

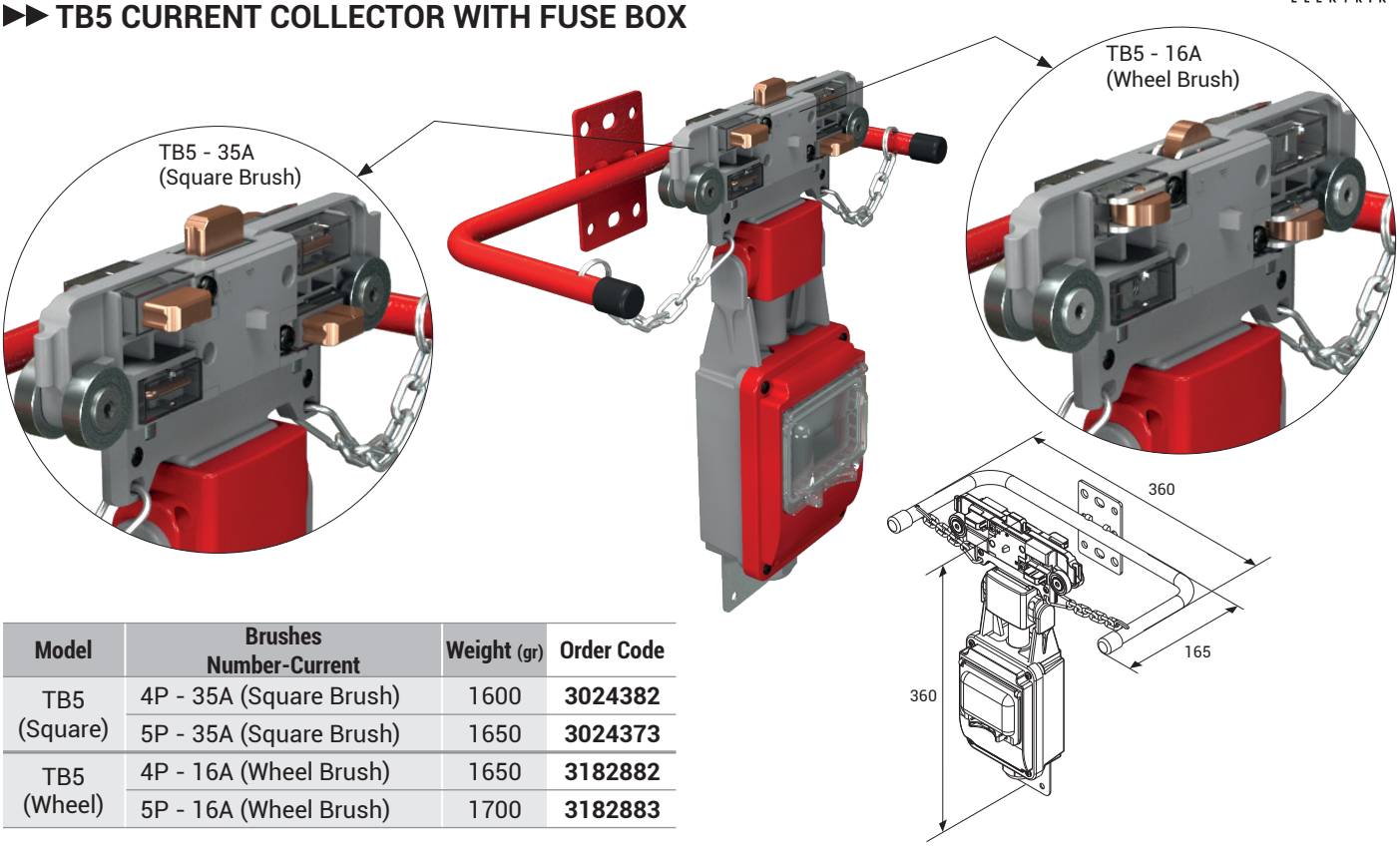
• Produced with standard M40 cable gland and 4mm² clip.



Current collector with clips allow the customers to perform cabling as they desire with the clips they include.

Current collector are the moving elements of the trolley busbar systems. Current collector brushes rub against the conductors and draw continuous current while they move through the busbar line. They adapt to shaky and vibrant conditions thanks to the moving brushes. As current collecting and transfer systems are included in the C-PVC housing, they are protected against human contact.

▶▶ TB5 CURRENT COLLECTOR WITH FUSE BOX



Model	Brushes Number-Current	Weight (gr)	Order Code
TB5 (Square)	4P - 35A (Square Brush)	1600	**3024382**
	5P - 35A (Square Brush)	1650	**3024373**
TB5 (Wheel)	4P - 16A (Wheel Brush)	1650	**3182882**
	5P - 16A (Wheel Brush)	1700	**3182883**

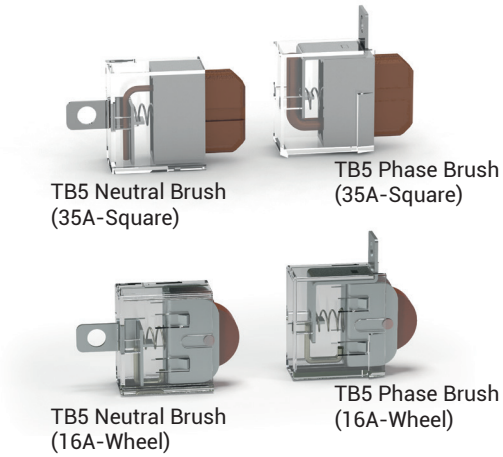
Insurance boxed with both staff and current receiving area carts current machine's safety can be raised to a higher level. In addition, when it is desired to cut the power of one of the machines on a line, the current is cut off through the fuse, other machines on the line can continue to operate.

Current collector with Wheel Brush simplify the movement of the current collectors inside the busbar by reducing the time at the installation tables when movement is provided by the personnel.

TB5 Current collector models operating speed is max. 100m/min.

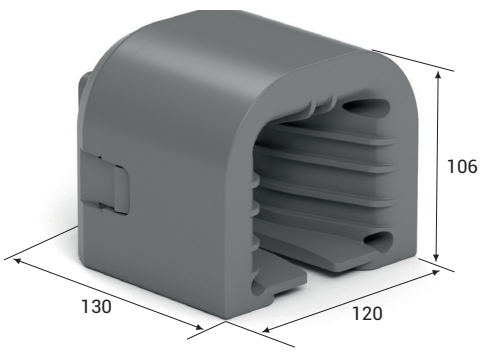
TB5 Current Collectors are produced with standard M40 cable glands.

▶▶ TB5 CURRENT COLLECTOR BRUSHES



Description	Weight (gr)	Order Code
TB5 Phase Brush (35A-Square)	40	**3024371**
TB5 Neutral Brush (35A-Square)	40	**3024372**
TB5 Phase Brush (16A-Wheel)	40	**3165078**
TB5 Neutral Brush (16A-Wheel)	40	**3165080**

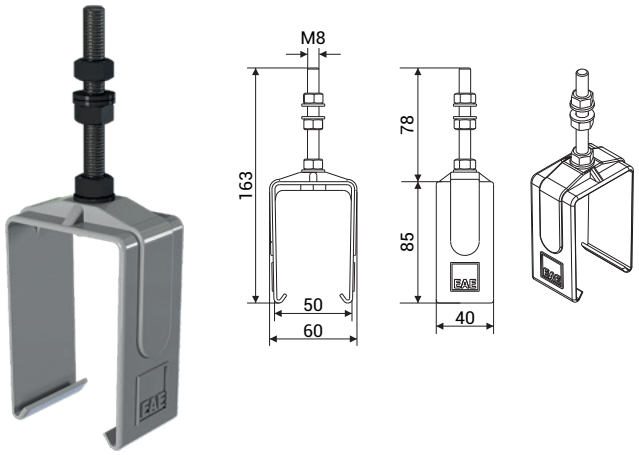
▶▶ TBX TROLLEY TRANSFER TOOL



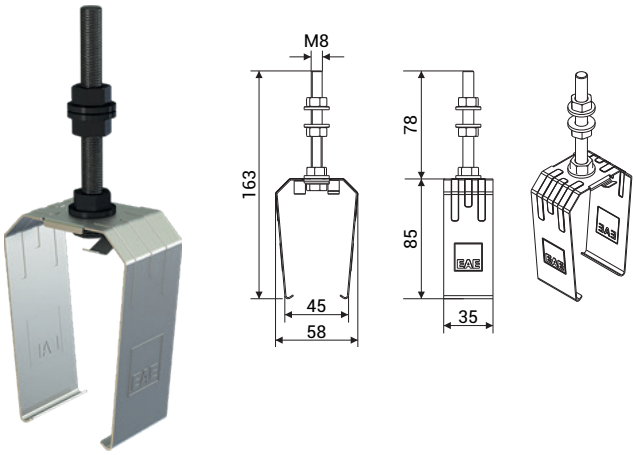
Description	Weight (gr)	Order Code
TBX Trolley Transfer Tool	250	**3179529**

ELINETBX-E

▶▶ TB5 PLASTIC SLIDING HANGER



▶▶ TB5 STEEL SLIDING HANGER

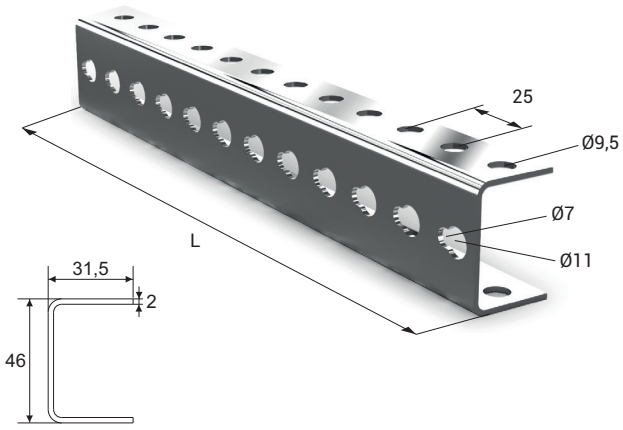


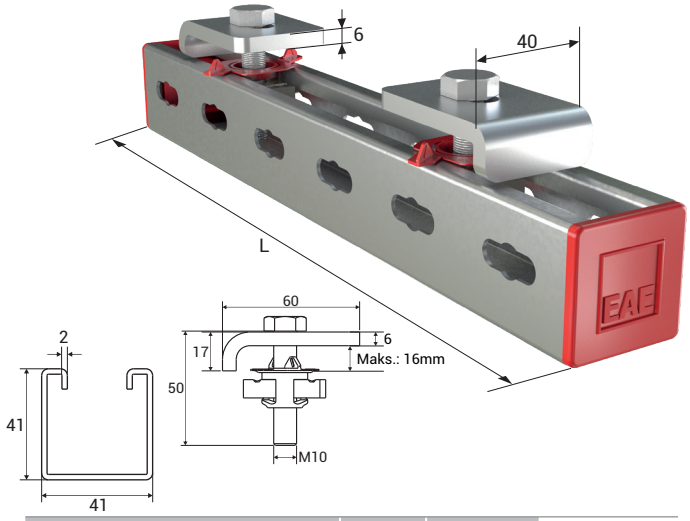
Trolley busbar should be mounted with slinding hanges and each hangers should be between 1300mm and 1500mm.

Description	Weight (gr)	Order Code
TB5 Plastic Sliding Hanger	85	**1003664**

Description	Weight (gr)	Order Code
TB5 Steel Sliding Hanger	100	**1005954**

▶▶ TB HANGER BRACKET

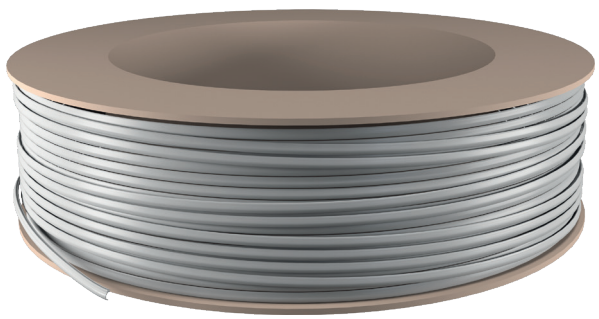


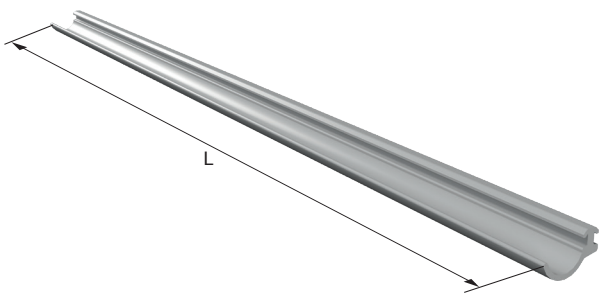


Description	L (mm)	Weight (gr)	Order Code
TB Hanger Bracket	250	350	**3025153**
URC-C/S Hanger Bracket	500	700	**3034560**
URC-A Hanger Bracket	750	1050	**3025382**

Description	L (mm)	Weight (gr)	Order Code
TB BR Hanger Bracket	300	800	**3178916**
URC-C/S BR Hanger Bracket	600	1250	**3178917**
URC-A BR Hanger Bracket	800	1550	**3178918**

▶▶ TBX GASKET





■ Continuous length is maximum 300 meters.

Description	Weight (gr/m)	Order Code
TBX Gasket Roll (m)	30	**1037761**

■ Gasket should be ordered twice the line length.

Description	L (mm)	Weight (gr)	Order Code
TBX Gasket Straight Length (Pcs.)	4000	120	**1037762**

▶▶ VOLTAGE DROP

The voltage drop in the busbar lines shall be inspected as per the busbar type selected according to the total current calculated based on the ambient temperature and operating period of the system. Maximum acceptable value for voltage drop is 3%.

For Direct Current	$\Delta U = 2.L_t.I_G.R$	ΔU =	Voltage Drop [V]
		I_G =	Total current [A]
For Mono-Phase Alternative Current	$\Delta U = 2.L_t.I_G.Z$	R =	Resistance of the busbar [Ω/m]
		Z =	Impedance of the busbar [Ω/m]
For Three-Phase Alternative Current	$\Delta U = \sqrt{3}.L_t.I_G.Z$	L_t =	Calculated Hole Length [m]

Note : Calculation of the current drawn during first start in various motor types;

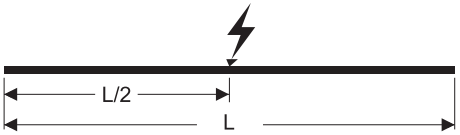
I_A= Total current drawn in the first start of the motors [A]

For the starting current;	Three-phase asynchronous drive in direct start	$I_A = I_G$ x calculated as 5 to 6
	Slip ring rotor motor	$I_A = I_G$ x calculated as 2 to 3
	Frequency converter	$I_A = I_G$ x 1,20 to1,50 calculated between.

▶▶ CALCULATION OF FEEDING POINTS

When we take L_t as the length of the line, feeding points may be selected as shown in the diagrams below to keep the L voltage drop at minimum and it may be used as the hole length for the calculation of L_t voltage drop.

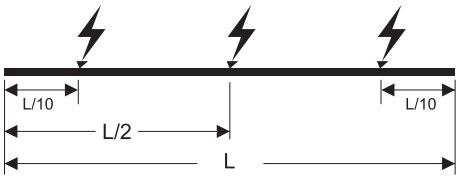
1 feeding point from the start, Lt=L



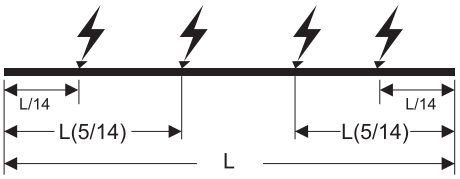
1 feeding point from the center, Lt=L/2

2 feeding points from the start points, Lt=L/4

2 feeding points, Lt=L/6



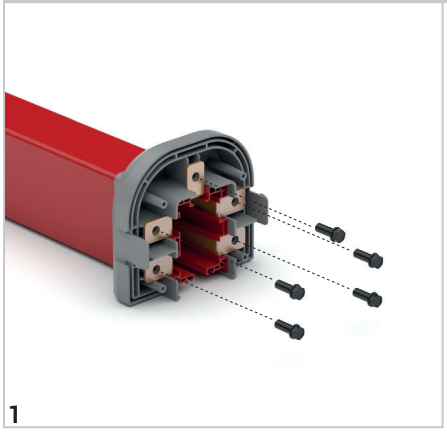
3 feeding points, Lt=L/10



4 feeding points, Lt=L/14

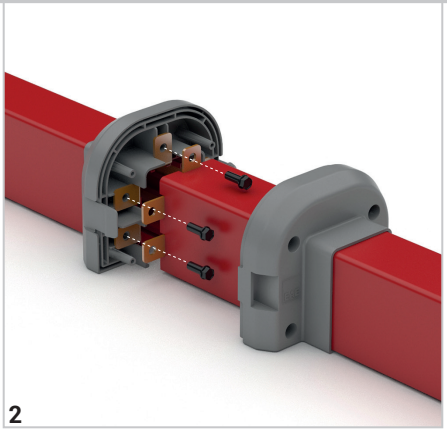
▶▶ INSTALLATION MANUAL

TBX-E - INSTALLATION OF JOINT UNIT



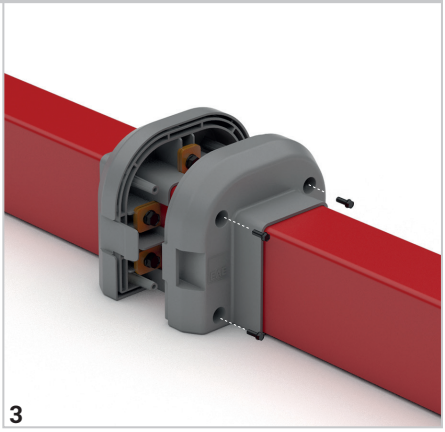
1

Remove the screws on the end of the busbar.



2

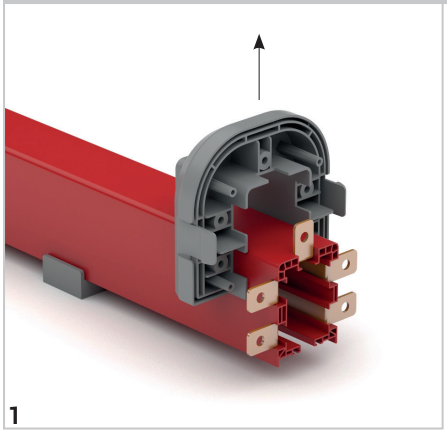
Join it with the other busbar and screw it.



3

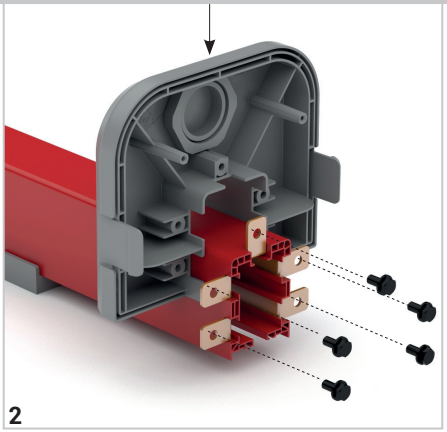
Close the joint cover and screw it.

TBX-E - FEEDER UNIT



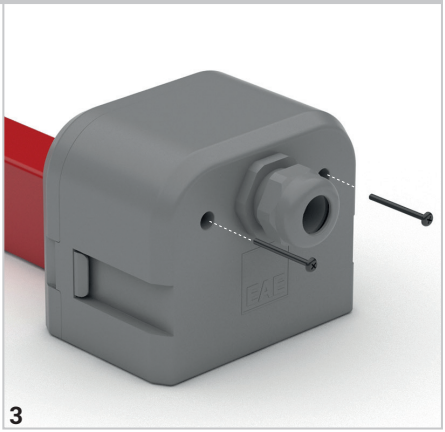
1

Joint unit cover is removed.



2

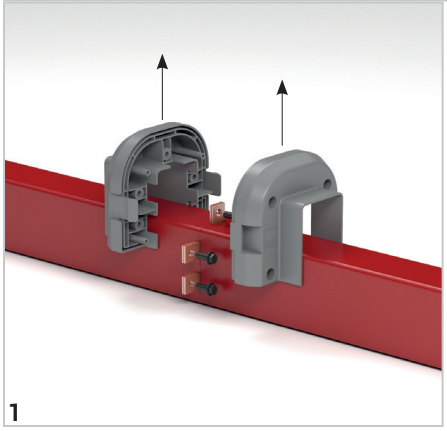
The small part of the feed box is inserted into the busbar from the top and the conductor are screwed.



3

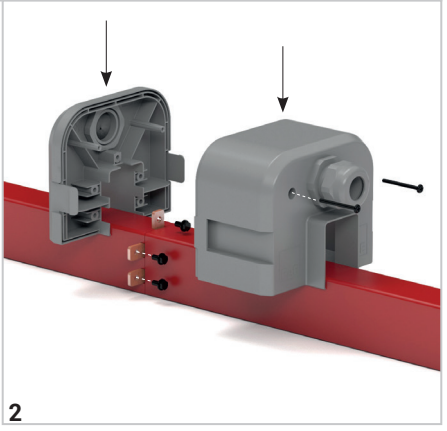
Close the module cover and screw it. It is inserted with a cable from the M40 cable gland and it is feed.

TBX-E - LINE FEED UNIT



1

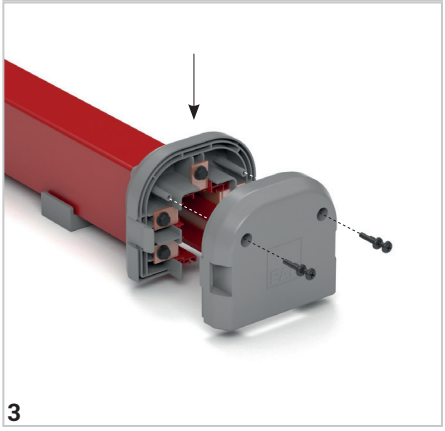
Joint unit is removed it upwards.



2

The feeder box is placed in the busbar from the top. The supply cable are connected to the conductors through the cable gland. The cover is closed and screwed.

TBX-E - END CLOSURE



3

Install the end closure to the end of the housing and screw it.

▶▶ DESIGN FORM

Member List

Serial No	Type	Pcs.

Company : .

Project : .

Project No : .

Prepared by

Name : .

Date : .

Signature : .

Please use this page after copying.

ELINETROLLEY BUSBAR

EAE ELEKTRİK

▶▶ OFFER REQUEST FORM

Date :

Project Name	:	
Company	:	
Name Surname	:	
Tel	:	
E-Mail	:	
Address	:	

General Data

Track Length	:	
Number of Cranes on Track	:	
Crane Travel Speed	:	

Environmental Data

Operating Environment	:	☐ Indoor ☐ Outdoor
Ambient Temparature	:	°C min. / °C max.
Other Operating Conditions (Humidty, Dust, Chemical Influence, etc.)	:	

Electirical Data

Operating Voltage	:	Volts ☐ AC ☐ DC
		Phases ☐ N ☐ PE
Position and Number of Feeder	:	from End / from Middle
Duty Cycle (%)	:	☐ 50% ☐ 60% ☐ 70% ☐ 80% ☐ 90% ☐ 100%

Motor Specifications		Crane - 1		Crane - 2		Crane - 3	
		Power (kW)	Current (A)	Power (kW)	Current (A)	Power (kW)	Current (A)
Hoist motors	:						
Auxiliary motor	:						
Long travel	:						
Cross travel	:						

Options

Brackets Required	:	☐ Yes		☐ No	
Repair Zone Required	:	☐ Yes	Qty	☐ No	
Collector Replacement Required:		☐ Yes	Qty	☐ No	
Descriptions	:				

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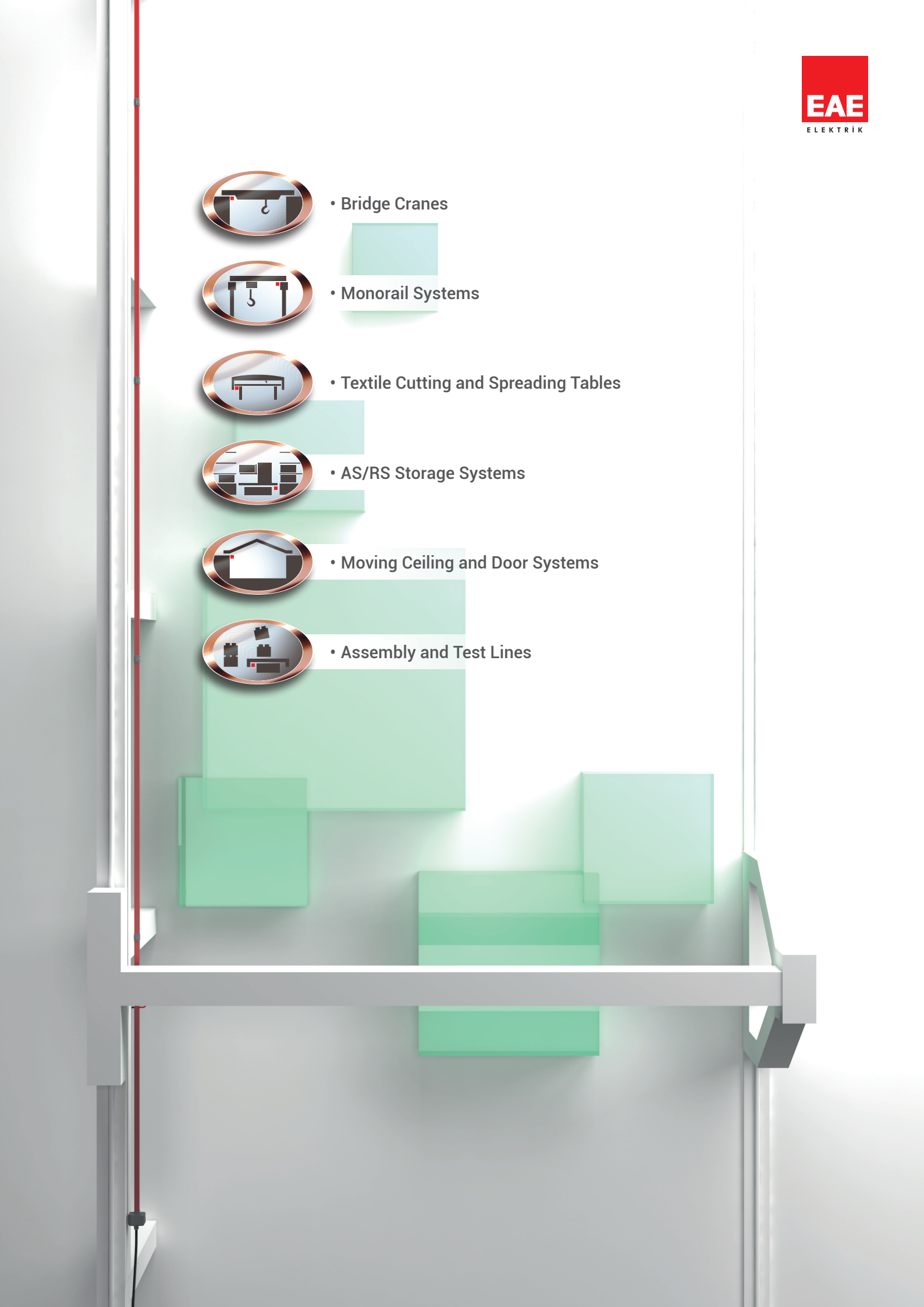
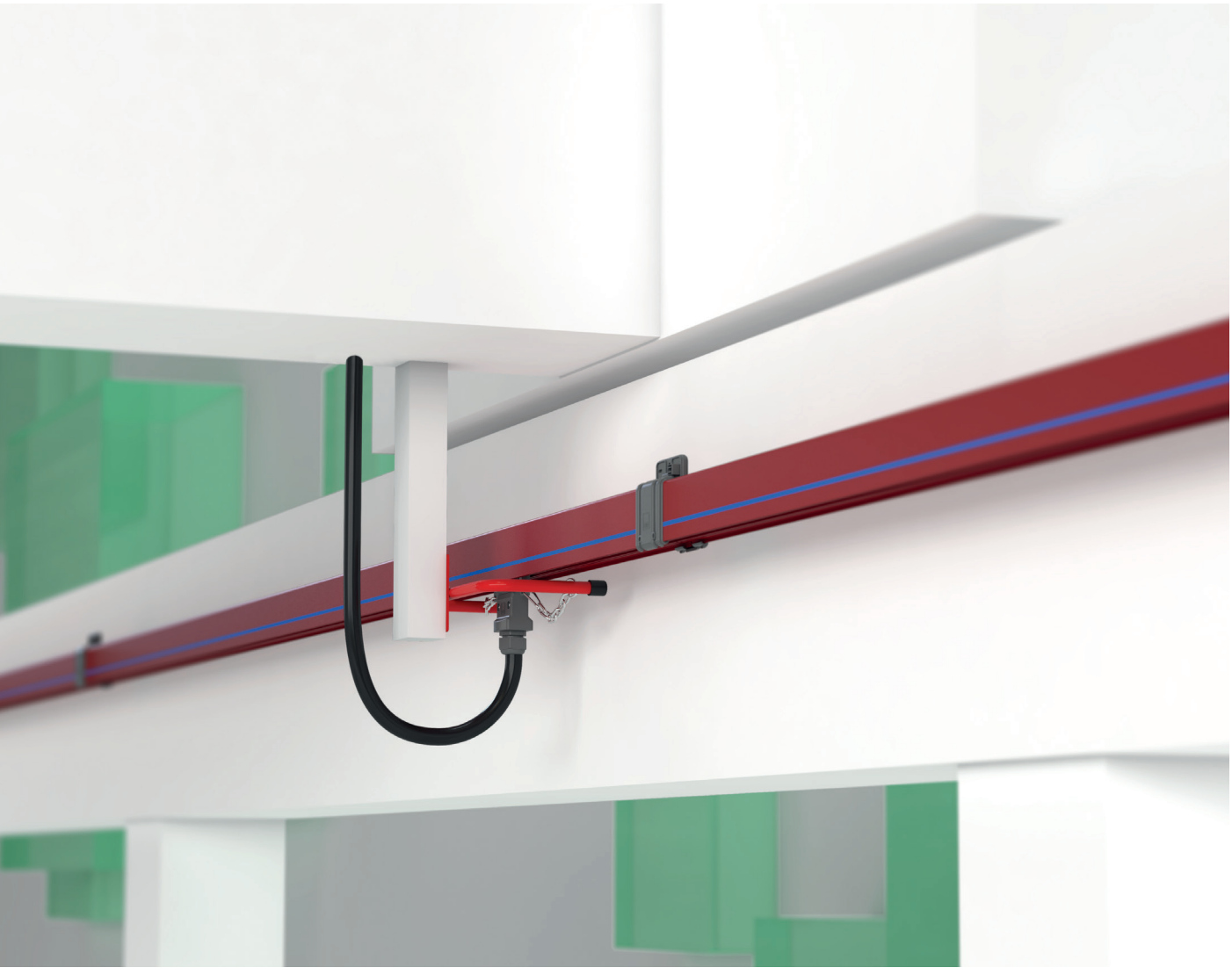


- Bridge Cranes
- Monorail Systems
- Textile Cutting and Spreading Tables
- AS/RS Storage Systems
- Moving Ceiling and Door Systems
- Assembly and Test Lines

EAE
ELEKTRİK

E-LINE TBX-S



E-LINE TBX-S

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CONTENTS

▶▶ E-LINE TBX-S

ELINETBX-S

▶▶ TROLLEY BUSBAR SYSTEMS

- Bridge Cranes
- Monorail Systems
- Textile Cutting and Spreading Tables
- AS/RS Storage Systems
- Moving Ceiling and Door Systems
- Assembly and Test Lines

It consists of copper conductors and current collectors in the C-PVC body. The uninterrupted energy supply and movement of the system is provided by current collectors connected to the system mechanically.

The eliminates the possibilities such as accident, malfunction in energy distribution with suspended and reel cable in conventional systems. Conductors are enclosed in C-PVC housing and personnel safety is maximized.

There is no fixed connection between the conductor housings and the conductors and between the C-PVC housing and the sliding hangers, the necessary expansion opportunity is provided, therefore the expansion element is unrequired.

Cautions:
If it is used in external environments exposed to rain, it is recommended to protect it with a cover such as a canopy.

ELINETBX-S

▶▶ ORDER CODE SYSTEMS

TBX | S | 06 | 5

Trolley Busbar Model

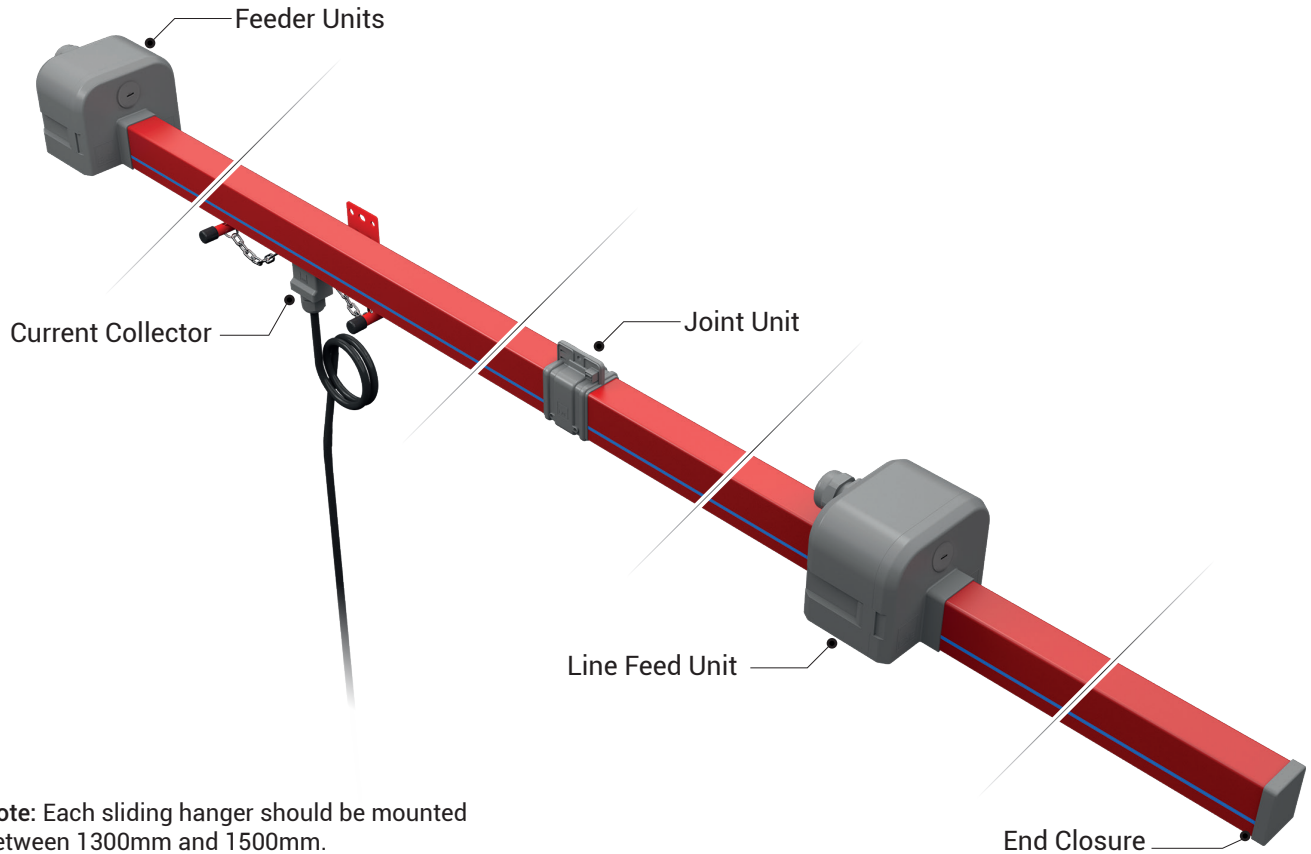
Current Ratings	
40A	04
63A	06
75A	07
105A	10
130A	13

Conductor Quantities	
4 Conductors	4
5 Conductors	5

Type	
Jointed	E
Continuous	S

▶▶ TECHNICAL FEATURES

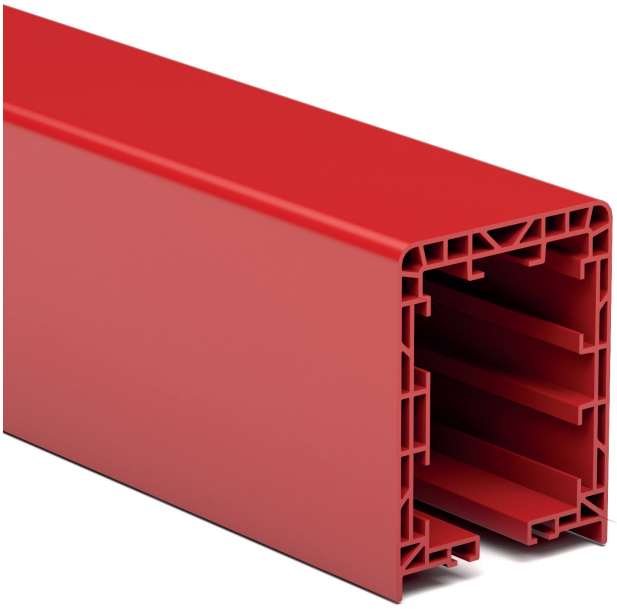
		40	63	75	105	130
Rated Current	(A)					
Conductor Quantities	(pcs)	4-5	4-5	4-5	4-5	4-5
Rated Voltage	(AC) (V)	690	690	690	690	690
Dielectric Properties	(kV/mm)	30	30	30	30	30
Frequency	(Hz)	50/60	50/60	50/60	50/60	50/60
Resistance (20°C)	R_{20} (mΩ/m)	1,300	1,018	1,280	0,800	0,570
Resistance (35°C)	R_{35} (mΩ/m)	1,420	1,176	1,460	0,920	0,660
Reactance	X (mΩ/m)	0,160	0,447	0,140	0,060	0,250
Impedance	Z (mΩ/m)	1,429	1,258	1,467	0,922	0,706
Standard Length	(m)	4	4	4	4	4



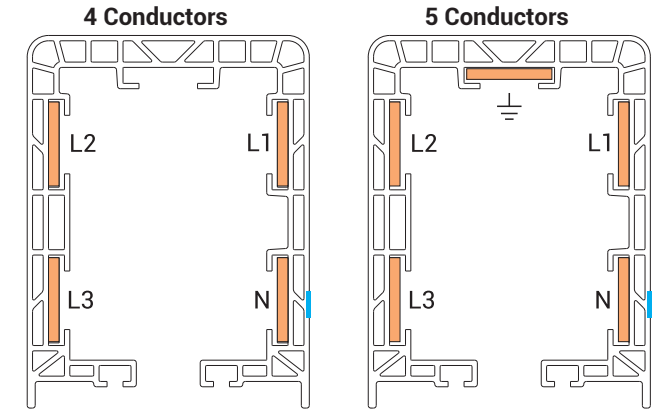
Note: Each sliding hanger should be mounted between 1300mm and 1500mm.

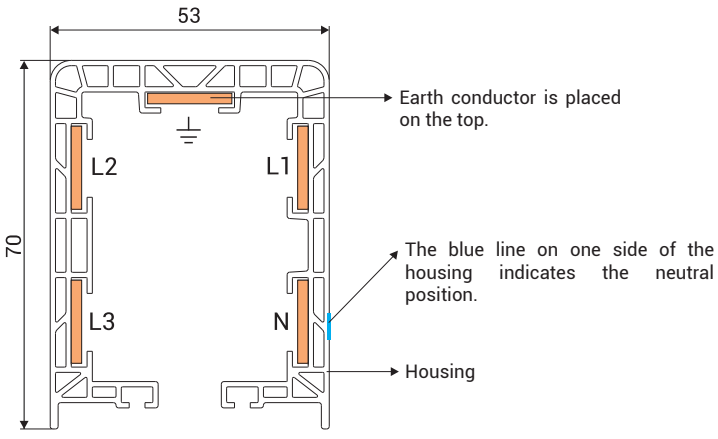
ELINETBX-S

▶▶ TBX-S TROLLEY BUSBAR



Description	Weight (gr/m)	Order Code
TBX-S Trolley Busbar Housing	820	**2067393**





The housing has a structure that can use maximum 5 conductors. There is safety system that prevents the current collector to be fixed inversely.

Continuous Copper Conductors

Electrolytic copper conductors can be applied without interruption at a maximum length of 150 m.

- **Number of Conductors:** 4 or 5 conductors
- **Colour:** Red.
- **Temperature range:** -40°C ve +55°C.
- **Standard housing length:** 4 meters.
- **Protection:** Standard IP24, Gasket, IP44.
- **Non-Flammable Characteristics:** UL 94 V0
- Housing is made of C-PVC and plastic accessories are made of PA6 raw material.
- There is a neutral line on the housing the neutral conductor.
- There is a neutral line on the housing the neutral conductor.
- Light and durable with double layer structure, TBX provides ease of installation.

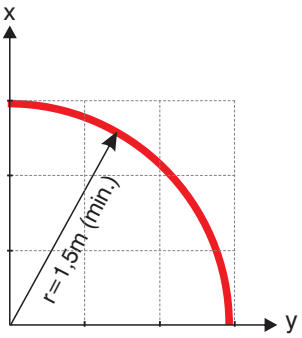
Standard 4 Meters

Model	Conductors Quantity-Current (A)	Weight (gr/m)	Conductor Cross Section (mm²)	Order Code
TBX-S 044	4P - 40A	1250	4x11,20	**3233922**
TBX-S 064	4P - 63A	1300	4x12,80	**3135807**
TBX-S 074	4P - 75A	1400	4x16,00	**3135809**
TBX-S 104	4P - 105A	1650	4x24,00	**3135811**
TBX-S 134	4P - 130A	1950	4x32,00	**3135813**
TBX-S 045	5P - 40A	1350	5x11,20	**3233923**
TBX-S 065	5P - 63A	1400	5x12,80	**3135808**
TBX-S 075	5P - 75A	1500	5x16,00	**3135810**
TBX-S 105	5P - 105A	1900	5x24,00	**3135812**
TBX-S 135	5P - 130A	2250	5x32,00	**3135814**

Joint plastics are not included in the weight values.
Total weight of the joint plastics and bolts is 100 kg.

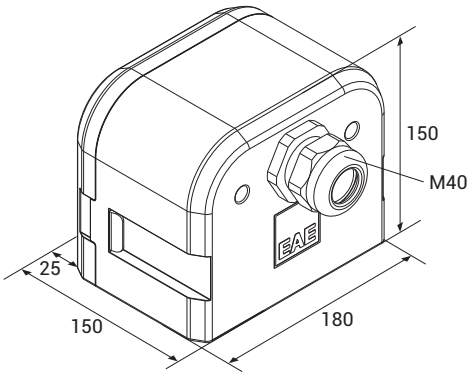
Radius Trolley Busbar

It has minimum 1.5m radius Trolley Busbar available in vertical axes. Radius Trolley Lines can be applied with maximum 4 conductors.



ELINETBX-S

▶▶ TBX FEEDER BOX

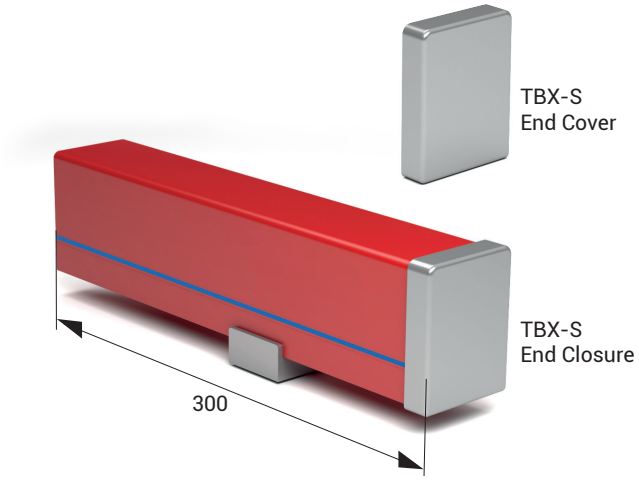


- May be used with busbars with 4 or 5 conductors
- Produced with standard M40 cable glands
- Halogen-free plastic raw material
- High impact resistance
- Design resistant against ambient conditions
- Ease of installation with snap-on design with a single screw.

Type of the feeding element is selected by calculating the voltage drop and the location of the power supply that shall provide power to the system.

Description	Weight (gr)	Order Code
TBX Feeder Units	750	**3135798**

▶▶ TBX-S END CLOSURE

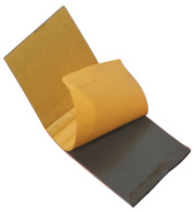


The end closure placed on the end of the busbar line prevents the exposure of the conductors, protects the system, and prevents the current collector from moving out of the housing.

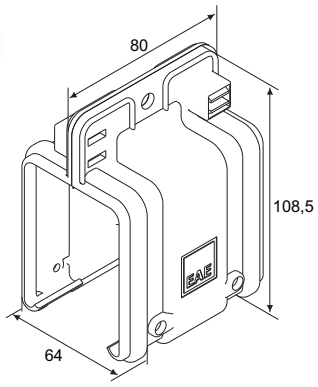
- Halogen-free plastic raw material
- High impact resistance.
- Design resistant against ambient conditions.

Description	Weight (gr)	Order Code
TBX-S End Closure	450	**3135816**
TBX-S End Cover	25	**1022212**

▶▶ TBS JOINT UNIT



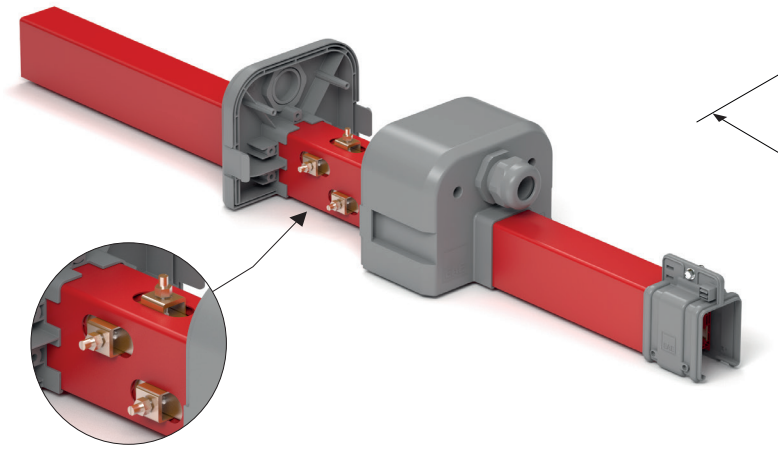
EPDM Gasket

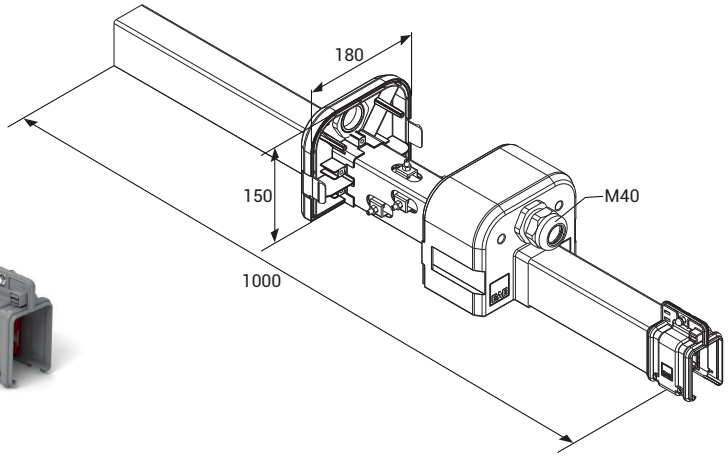


Description	Weight (gr)	Order Code
TBS Joint Unit	90	**1003663**

ELINETBX-S

▶▶ TBX-S LINE FEED UNIT - CONTINUOUS TYPE



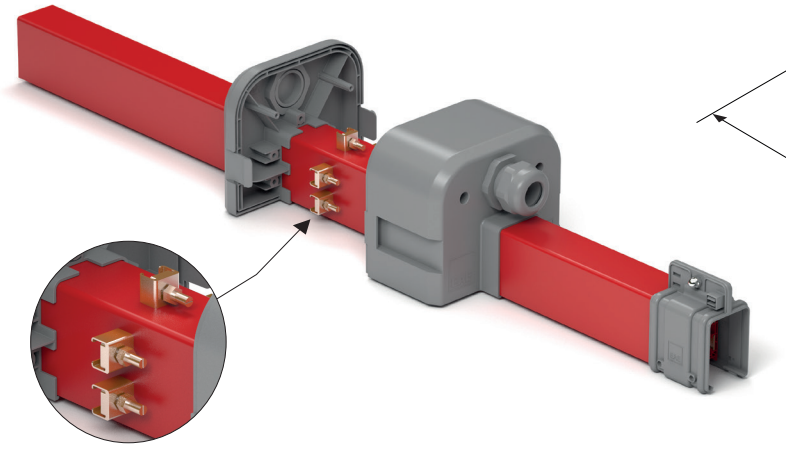


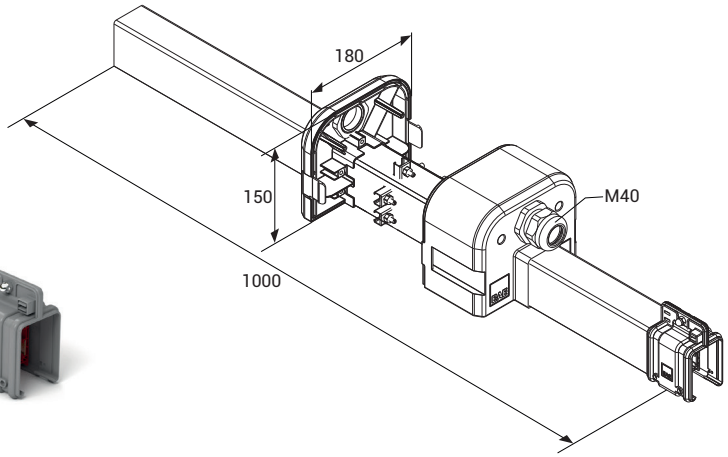
Type of the feeding element is selected by calculating the voltage drop and the location of the power supply that shall provide power to the system.

Description	Weight (gr)	Order Code
TBX-S Line Feed Unit - Continuous Type	1650	**3136706**

- May be used with busbars with 4 or 5 conductors
- Produced with standard M40 cable glands
- Halogen-free plastic raw material
- High impact resistance
- Design resistant against ambient conditions
- Ease of installation with snap-on design with a single screw.

▶▶ TBX-S LINE FEED UNIT - JOINTED TYPE



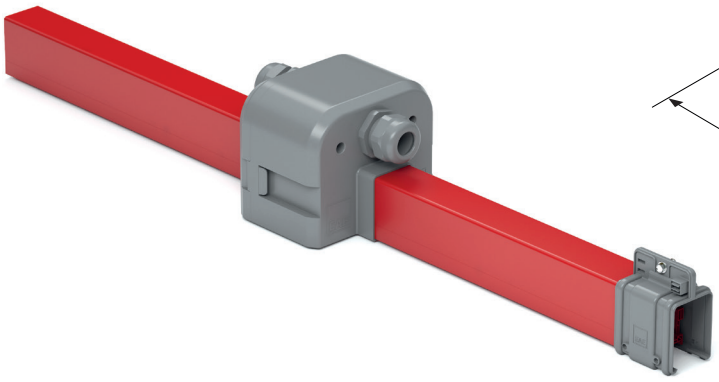


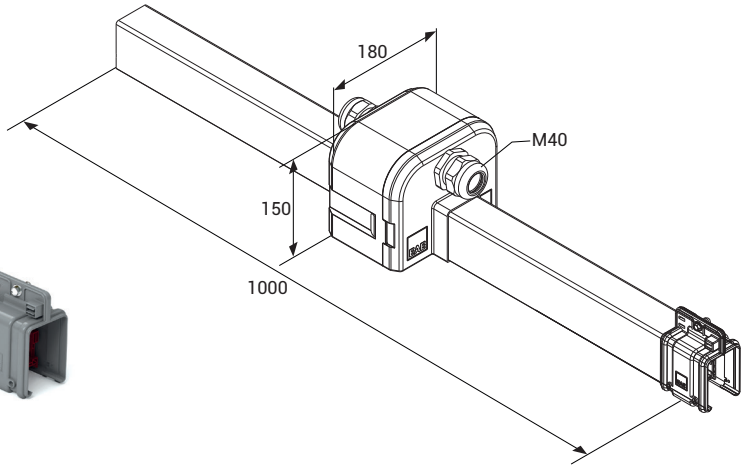
Type of the feeding element is selected by calculating the voltage drop and the location of the power supply that shall provide power to the system.

Model	Weight (gr)	Order Code
TBX-S Line Feed Unit - Jointed Type	1650	**3135818**

- May be used with busbars with 4 or 5 conductors
- Produced with standard M40 cable glands
- Halogen-free plastic raw material
- High impact resistance
- Design resistant against ambient conditions
- Ease of installation with snap-on design with a single screw.

▶▶ TBX-S REPAIR ZONE UNIT



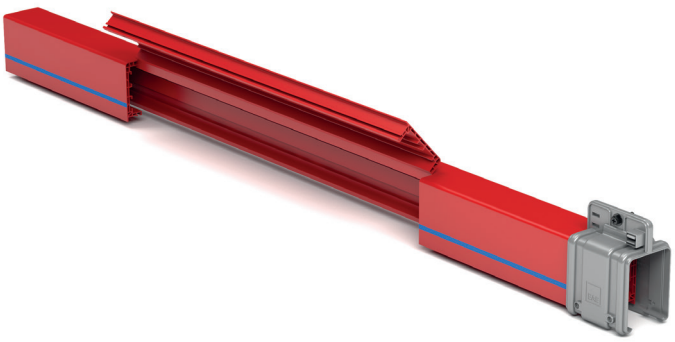


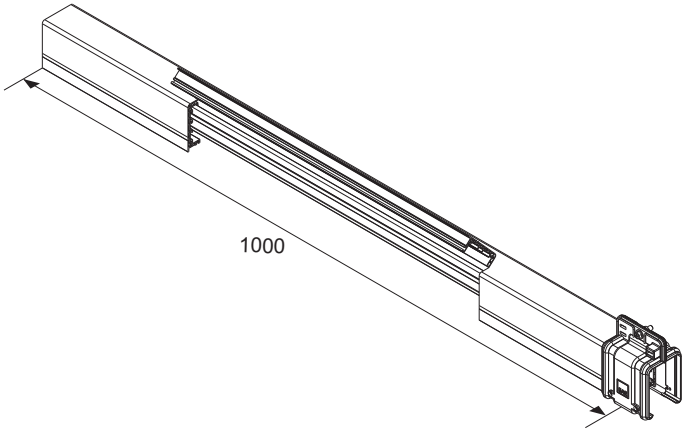
Current supply shall be cut off when a machine working on the line shall be maintained or repaired. Repair zone module is used to create a currentless area on the busbar so that the other machines operating on the same line may continue to work.

Description	Weight (gr)	Order Code
TBX-S Repair Zone Module	2050	**3135817**

- Produced with standard M40 cable glands
- Halogen-free plastic raw material
- High impact resistance
- Design resistant against ambient conditions

▶▶ TBX-S CURRENT COLLECTOR REPLACEMENT MODULE

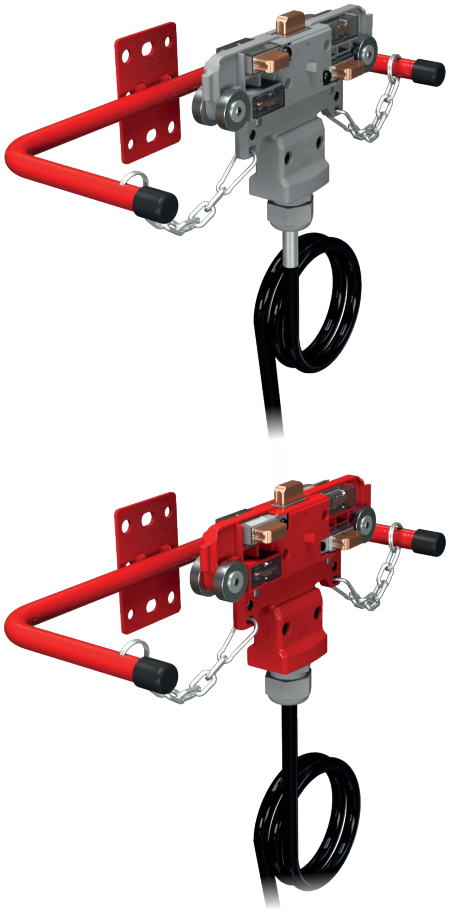


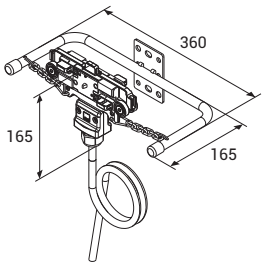


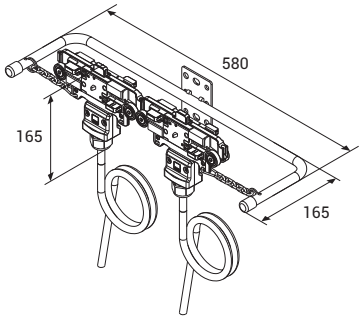
This unit is used to remove an existing current collector or to add extra trolleys. The unit is obtained by cutting a 50cm section from the PVC housing.

Model	Weight (gr)	Order Code
TBX-S Current Collector Replacement Module	1100	**3233921**

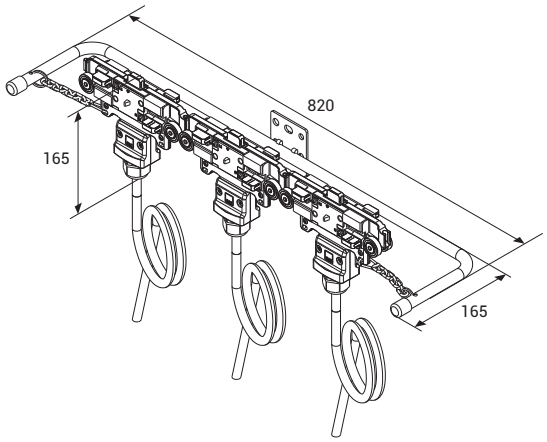
▶▶ TB5 CURRENT COLLECTORS WITH CABLE





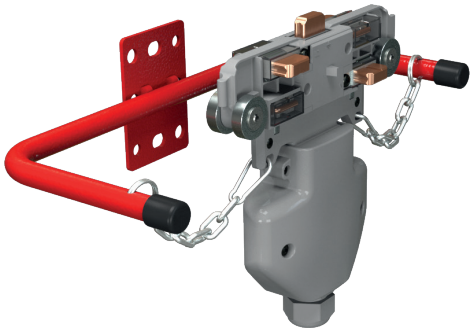


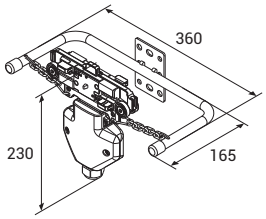
Model	Brushes Number-Current	Weight (gr)	Order Code
TB5	4P - 35A (Single)	1700	**3024385**
	4P - 70A (Double)	2950	**3024386**
	4P - 105A (Triple)	4450	**3024387**
	5P - 35A (Single)	1900	**3024376**
	5P - 70A (Double)	3250	**3024377**
	5P - 105A (Triple)	4700	**3024378**

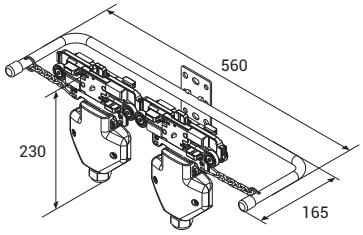


Model	Brushes Number-Current	Weight (gr)	Order Code
TB5	4P - 60A (Single)	2000	**3203193**
	5P - 60A (Single)	2200	**3203194**

▶▶ TB5 CURRENT COLLECTORS WITH CLIP

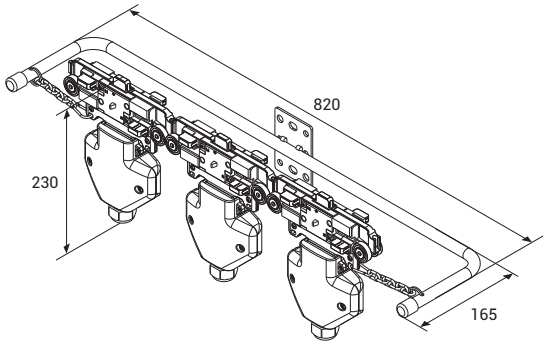






Model	Brushes Number-Current	Weight (gr)	Order Code
TB5	4P - 35A (Single)	1350	**3024388**
	4P - 70A (Double)	2050	**3024389**
	4P - 105A (Triple)	3050	**3024390**
	5P - 35A (Single)	1350	**3024379**
	5P - 70A (Double)	2250	**3024380**
	5P - 105A (Triple)	3200	**3024381**

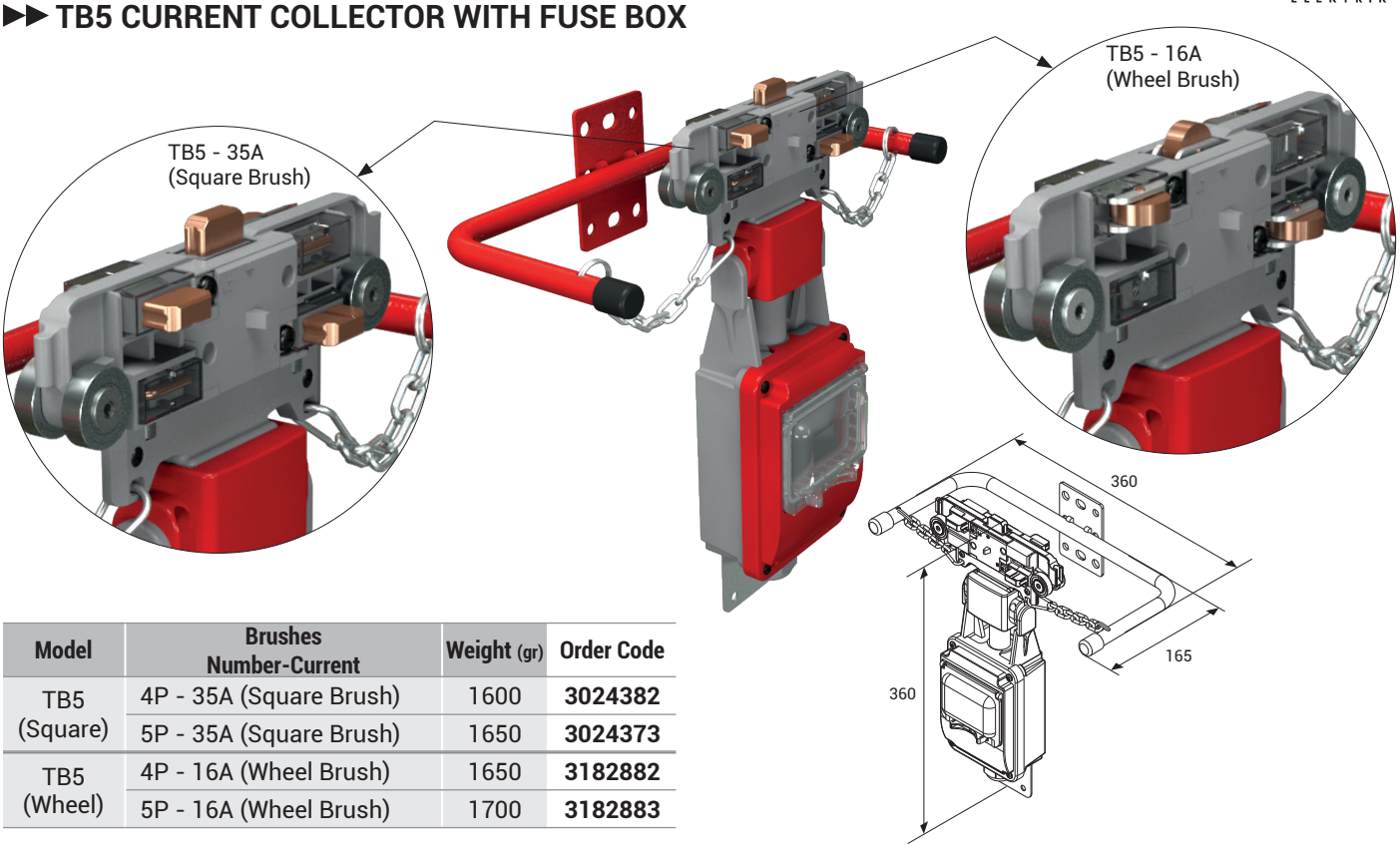
*Produced with standard M40 cable gland and 4mm² clip.



Current collector with clips allow the customers to perform cabling as they desire with the clips they include.

Current collector are the moving elements of the trolley busbar systems. Current collector brushes rub against the conductors and draw continuous current while they move through the busbar line. They adapt to shaky and vibrant conditions thanks to the moving brushes. As current collecting and transfer systems are included in the C-PVC housing, they are protected against human contact.

▶▶ TB5 CURRENT COLLECTOR WITH FUSE BOX



Model	Brushes Number-Current	Weight (gr)	Order Code
TB5 (Square)	4P - 35A (Square Brush)	1600	**3024382**
	5P - 35A (Square Brush)	1650	**3024373**
TB5 (Wheel)	4P - 16A (Wheel Brush)	1650	**3182882**
	5P - 16A (Wheel Brush)	1700	**3182883**

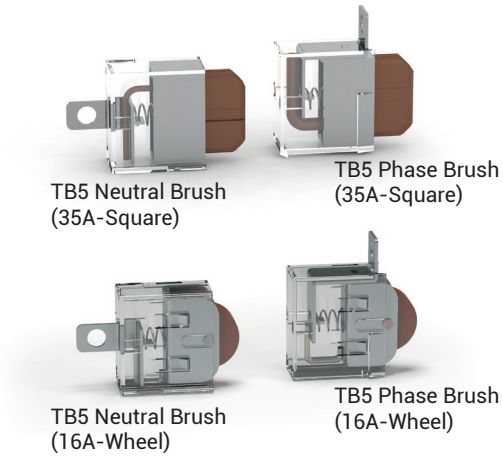
Insurance boxed with both staff and current receiving area carts current machine's safety can be raised to a higher level. In addition, when it is desired to cut the power of one of the machines on a line, the current is cut off through the fuse, other machines on the line can continue to operate.

Current collector with Wheel Brush simplify the movement of the current collectors inside the busbar by reducing the time at the installation tables when movement is provided by the personnel.

TB5 Current collector models operating speed is max. 100m/min.

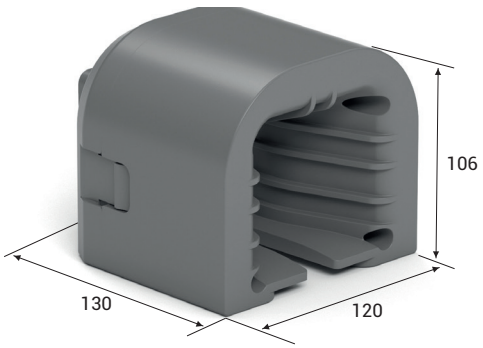
TB5 Current Collectors are produced with standard M40 cable gland.

▶▶ TB5 CURRENT COLLECTOR BRUSHES



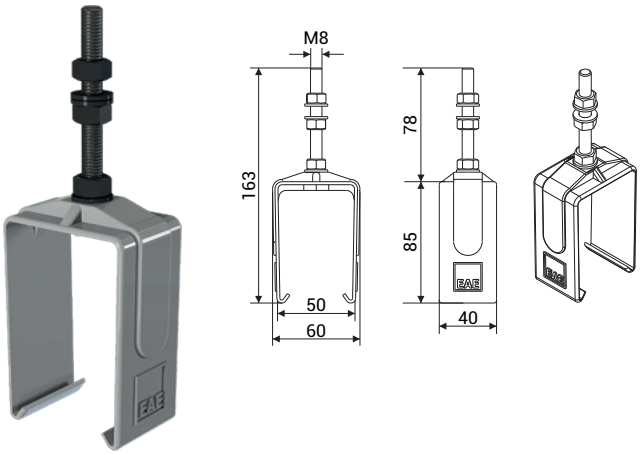
Description	Weight (gr)	Order Code
TB5 Phase Brush (35A-Square)	40	**3024371**
TB5 Neutral Brush (35A-Square)	40	**3024372**
TB5 Phase Brush (16A-Wheel)	40	**3165078**
TB5 Neutral Brush (16A-Wheel)	40	**3165080**

▶▶ TBX TROLLEY TRANSFER TOOL

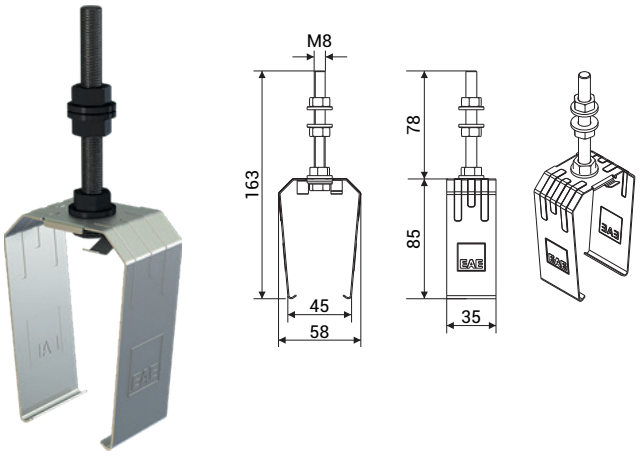


Description	Weight (gr)	Order Code
TBX Trolley Transfer Tool	250	**3179529**

▶▶ TB5 PLASTIC SLIDING HANGER



▶▶ TB5 STEEL SLIDING HANGER

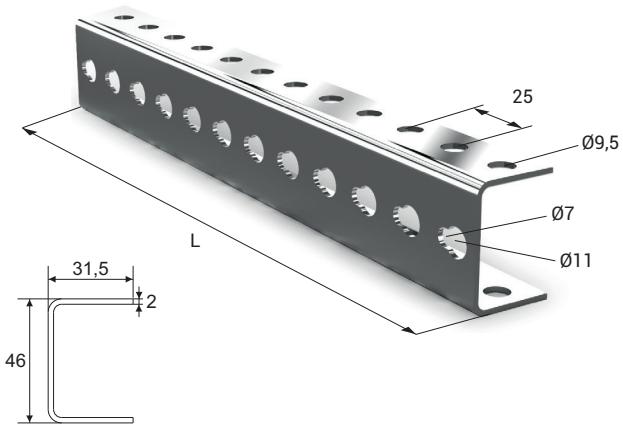


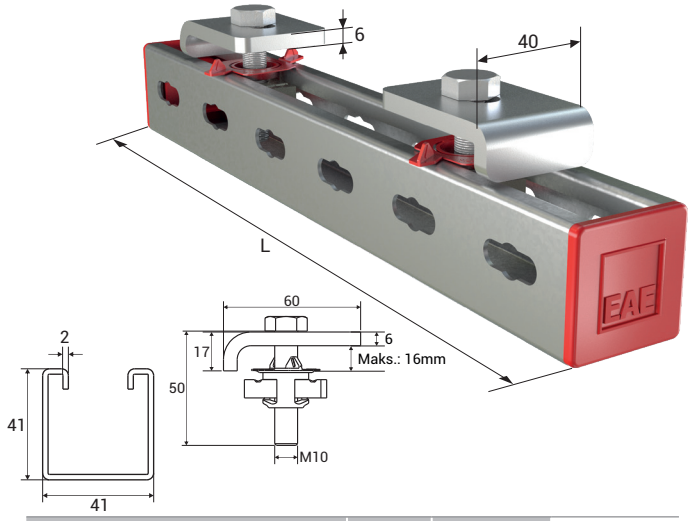
Trolley busbar should be mounted with slinding hanges and each hangers should be between 1300mm and 1500mm.

Description	Weight (gr)	Order Code
TB5 Plastic Sliding Hanger	85	**1003664**

Description	Weight (gr)	Order Code
TB5 Steel Sliding Hanger	100	**1005954**

▶▶ TB HANGER BRACKET

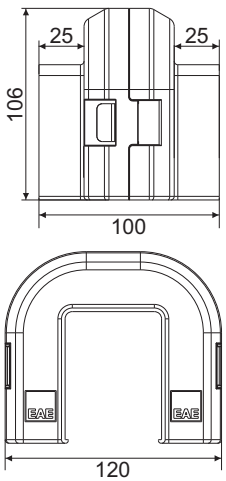




Description	L (mm)	Weight (gr)	Order Code
TB Hanger Bracket	250	350	**3025153**
URC-C/S Hanger Bracket	500	700	**3034560**
URC-A Hanger Bracket	750	1050	**3025382**

Description	L (mm)	Weight (gr)	Order Code
TB BR Hanger Bracket	300	800	**3178916**
URC-C/S BR Hanger Bracket	600	1250	**3178917**
URC-A BR Hanger Bracket	800	1550	**3178918**

▶▶ TBX EXTENSİON ELEMENT

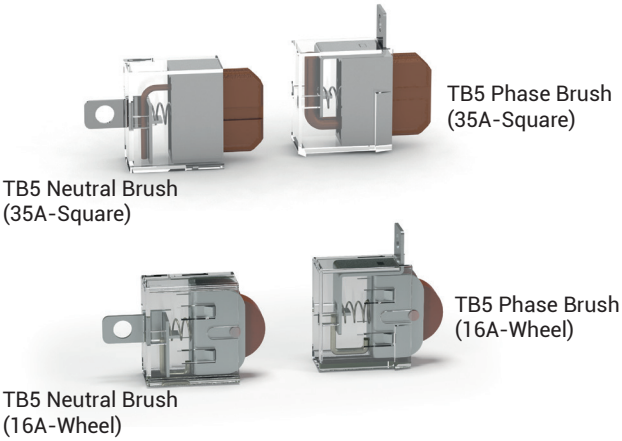


When the busbar line needs to be extended, you may remove the End Closure and install the joint unit to extend.

- Halogen-free plastic raw material
- High impact resistance.
- Design resistant against ambient conditions.

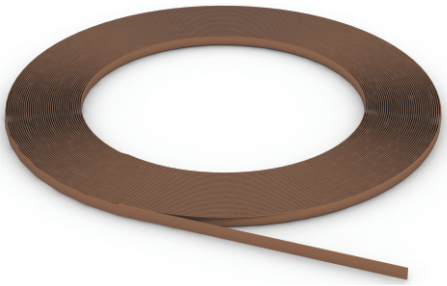
Description	Weight (gr)	Order Code
TBX Extension Element	280	**3136703**

▶▶ TB5 CURRENT COLLECTOR BRUSHES



Description	Weight (gr)	Order Code
TB5 Phase Brush (35A-Square)	40	**3024371**
TB5 Neutral Brush (35A-Square)	40	**3024372**
TB5 Phase Brush (16A-Wheel)	40	**3165078**
TB5 Neutral Brush (16A-Wheel)	40	**3165080**

▶▶ TB5 COPPER CONDUCTORS



Description (mm x mm)	Order Code
TB5 0.80x16,00 (TB5 Copper)	**1003097**
TB5 1.00x16,00 (TB5 Copper - 75A)	**1002254**
TB5 1.50x16,00 (TB5 Copper - 105A)	**1002275**
TB5 2.00x16,00 (TB5 Copper - 130A)	**1003094**

▶▶ TB CONDUCTOR CASETTE

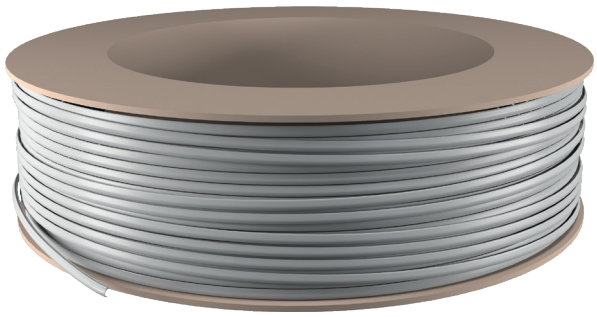
Conductor cassette shall be used to prevent damage to the conductors while the copper conductors are installed on the busbar.

Description	Weight (gr)	Order Code
TB Conductor Casette	6800	**3025151**

▶▶ TB5 CONDUCTOR MOUNTING TOOL

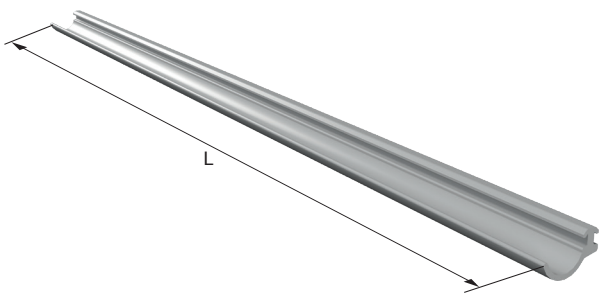
Description	Weight (gr)	Order Code
TB5 Conductor Mounting Tool	215	**3024456**

▶▶ TBX GASKET



■ Continuous length is maximum 300 meters.

Description	Weight (gr/m)	Order Code
TBX Gasket Roll (m)	30	**1037761**



■ Gasket should be ordered twice the line length.

Description	L (mm)	Weight (gr)	Order Code
TBX Gasket Straight Length (Pcs.)	4000	120	**1037762**

▶▶ VOLTAGE DROP

The voltage drop in the busbar lines shall be inspected as per the busbar type selected according to the total current calculated based on the ambient temperature and operating period of the system. Maximum acceptable value for voltage drop is 3%.

For Direct Current	$\Delta U = 2.L_t.I_G.R$	ΔU = Voltage Drop [V]
		I_G = Total current [A]
For Mono-Phase Alternative Current	$\Delta U = 2.L_t.I_G.Z$	R = Resistance of the busbar [Ω/m]
		Z = Impedance of the busbar [Ω/m]
For Three-Phase Alternative Current	$\Delta U = \sqrt{3}.L_t.I_G.Z$	L_t = Calculated Hole Length [m]

Note : Calculation of the current drawn during first start in various motor types;

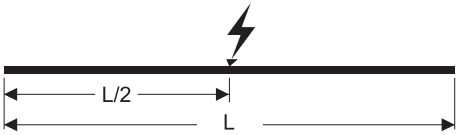
I_A= Total current drawn in the first start of the motors [A]

For the starting current;	Three-phase asynchronous drive in direct start	$I_A = I_G$ x calculated as 5 to 6
	Slip ring rotor motor	$I_A = I_G$ x calculated as 2 to 3
	Frequency converter	$I_A = I_G$ x 1,20 to1,50 calculated between.

▶▶ CALCULATION OF FEEDING POINTS

When we take L_t as the length of the line, feeding points may be selected as shown in the diagrams below to keep the L voltage drop at minimum and it may be used as the hole length for the calculation of L_t voltage drop.

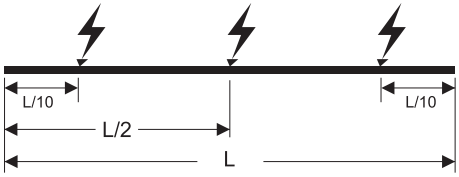
1 feeding point from the start, Lt=L



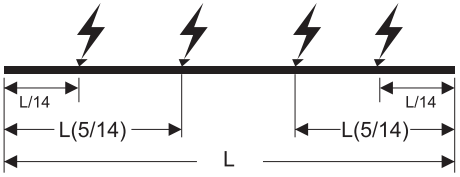
1 feeding point from the center, Lt=L/2

2 feeding points from the start points, Lt=L/4

2 feeding points, Lt=L/6



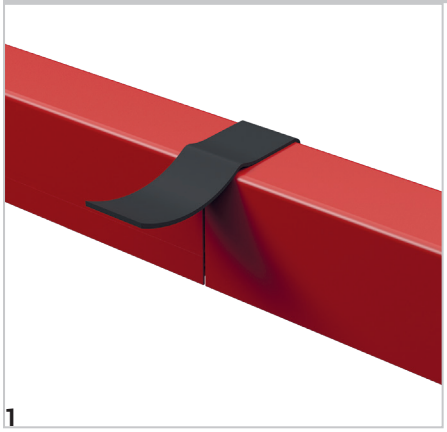
3 feeding points, Lt=L/10



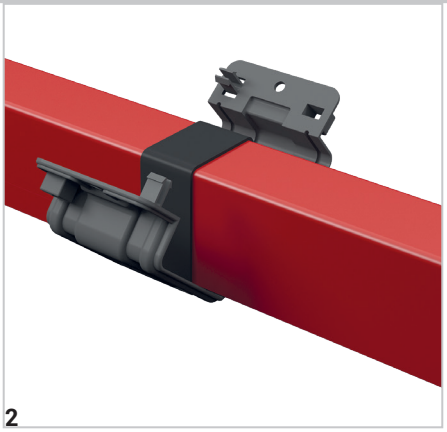
4 feeding points, Lt=L/14

▶▶ INSTALLATION MANUAL

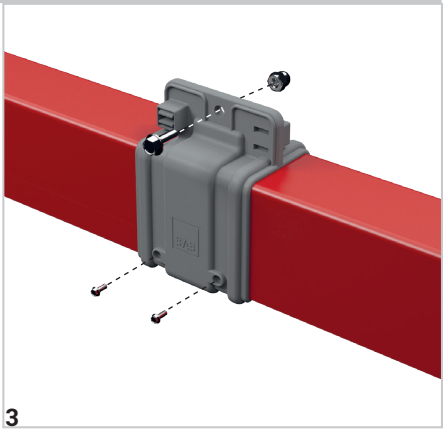
TBX-S - INSTALLATION OF JOINT UNIT



1
The joint point is covered using a self-adhesive EPDM gasket.

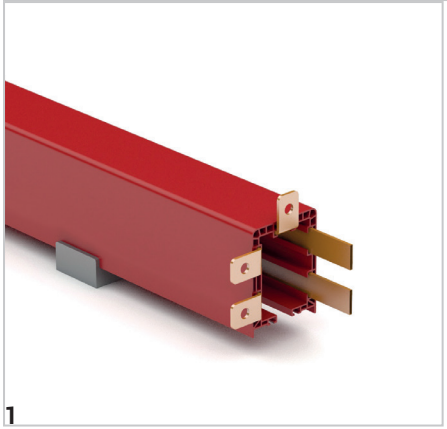


2
Engage the joint unit to the bottom of the busbar and close it.

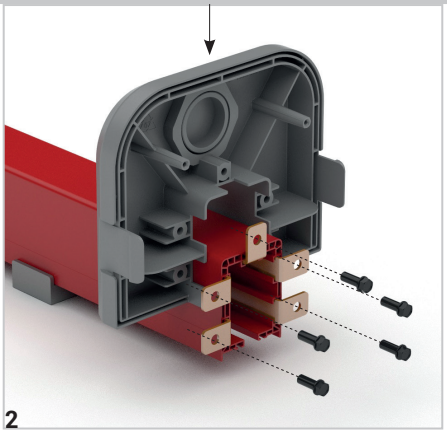


3
Secure it to the housing with screws.

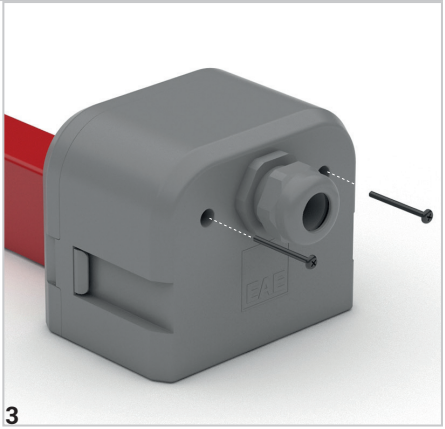
TBX-S - FEEDER UNIT



1
Conductors are bend 90° and pushed into the housing.

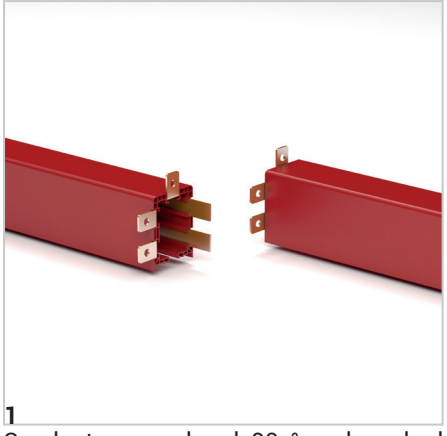


2
Housing and screw them to the feeding module.

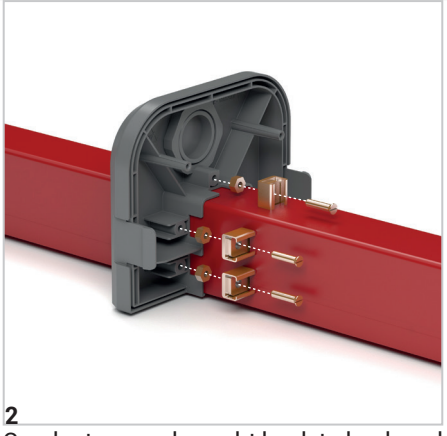


3
Close the module cover and screw it.

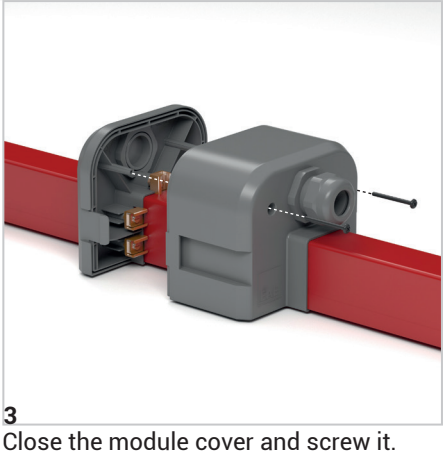
TBX-S - LINE FEED UNIT - 2 (JOINTED TYPE)



1
Conductors are bend 90 ° and pushed into the housing. The two housing are combined in such a way that the bent conductors remain in the notched area.



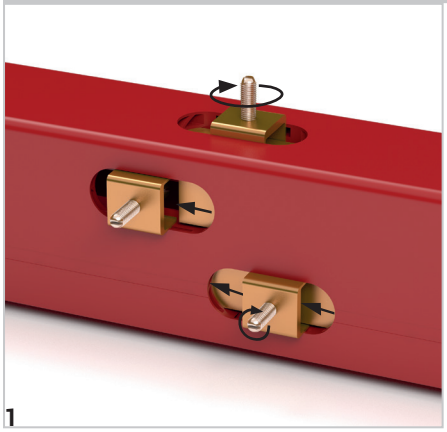
2
Conductors are brought back to back and combined with clips. Supply cables are connected to clips.



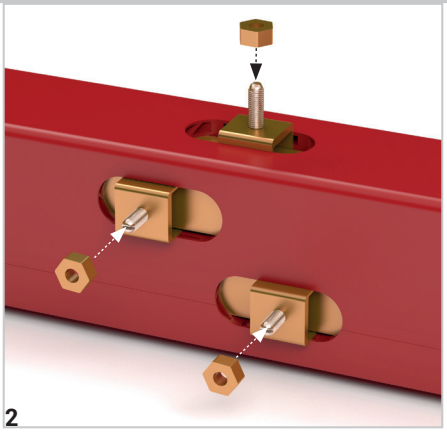
3
Close the module cover and screw it.

▶▶INSTALLATION MANUAL

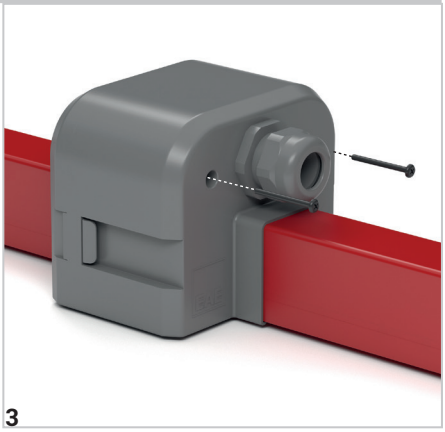
TBX-S - LINE FEED UNIT - 1 (CONTINUOUS TYPE)



1
Put the conductors through the clips and screw them.

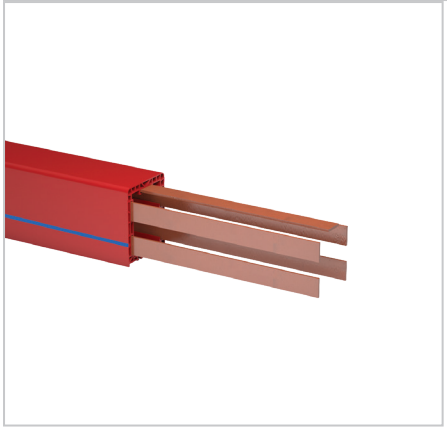


2
Connect the feeding cables to the clips with nuts.

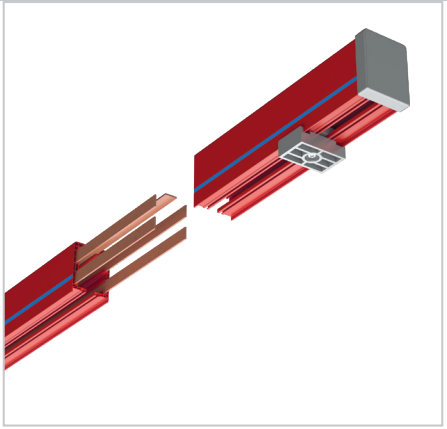


3
Close the module cover and screw it.

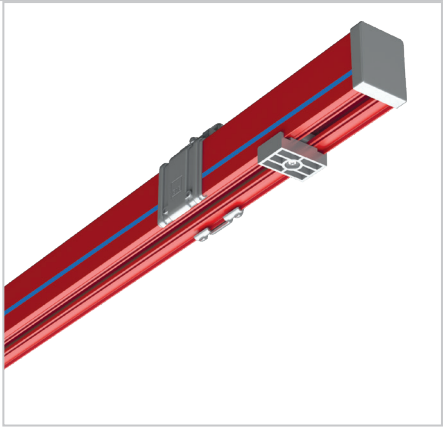
TBX-S - END CLOSURE



Cut the coppers at the end of the line by leaving a extra length of 15 cm.

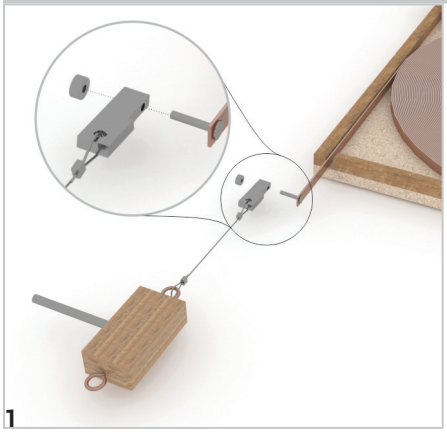


After placing the current collector to the system, place the End Closure so that it shall house the coppers.

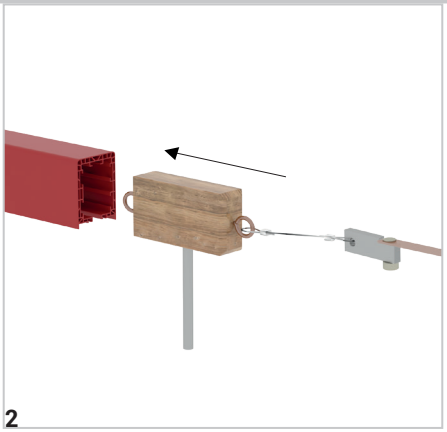


Install it on the system as you do while installing the extension.

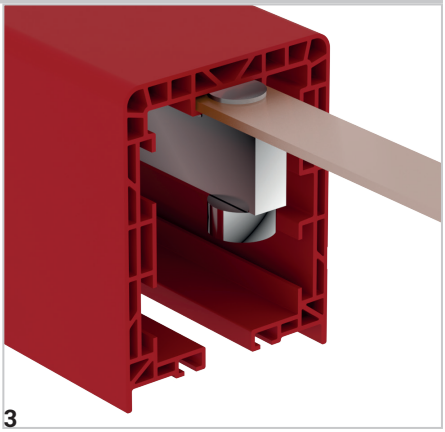
TBX-S - CONDUCTOR MOUNTING TOOL



1
Screw the conductor to the conductor mounting tool.



2
Drive the conductor mounting tool along the line.



3
Ensure that the conductor is seated.

ELINETROLLEY BUSBAR

EAE ELEKTRİK

▶▶ OFFER REQUEST FORM

Date :

Project Name	:	
Company	:	
Name Surname	:	
Tel	:	
E-Mail	:	
Address	:	

General Data

Track Length	:	
Number of Cranes on Track	:	
Crane Travel Speed	:	

Environmental Data

Operating Environment	:	☐ Indoor ☐ Outdoor
Ambient Temparature	:	°C min. / °C max.
Other Operating Conditions (Humidty, Dust, Chemical Influence, etc.)	:	

Electirical Data

Operating Voltage	:	Volts ☐ AC ☐ DC
		Phases ☐ N ☐ PE
Position and Number of Feeder	:	from End / from Middle
Duty Cycle (%)	:	☐ 50% ☐ 60% ☐ 70% ☐ 80% ☐ 90% ☐ 100%

Motor Specifications		Crane - 1		Crane - 2		Crane - 3	
		Power (kW)	Current (A)	Power (kW)	Current (A)	Power (kW)	Current (A)
Hoist motors	:						
Auxiliary motor	:						
Long travel	:						
Cross travel	:						

Options

Brackets Required	:	☐ Yes		☐ No	
Repair Zone Required	:	☐ Yes	Qty	☐ No	
Collector Replacement Required:		☐ Yes	Qty	☐ No	
Descriptions	:				

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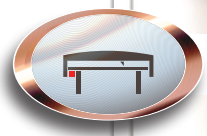
• Bridge Cranes

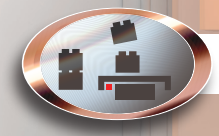
• Monorail Systems



• Textile Cutting and Spreading Tables

• AS/RS Storage Systems

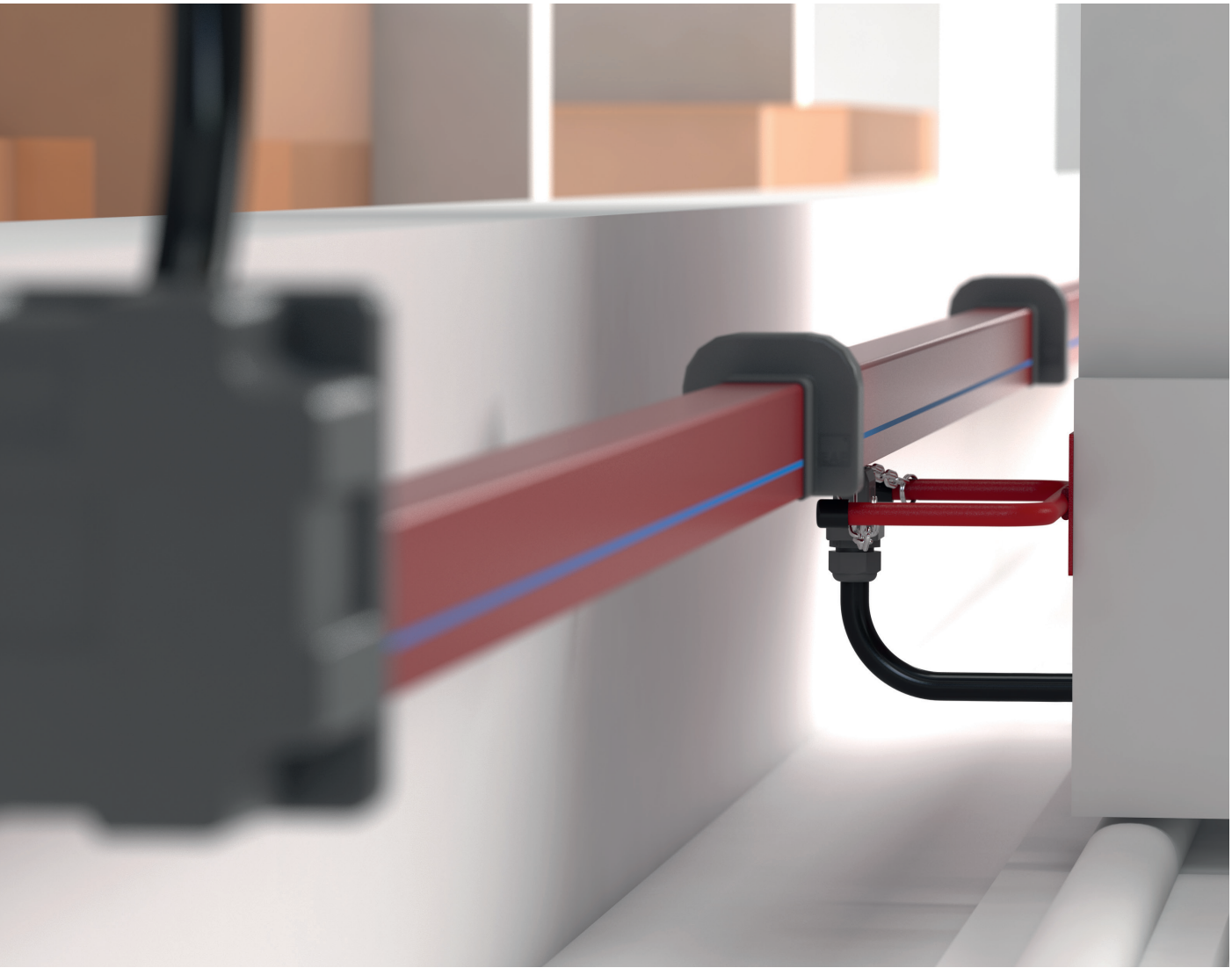
• Moving Ceiling and Door Systems



• Assembly and Test Lines

EAE
ELEKTRİK

E-LINE TBE



E-LINE TBE

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ELINETBE

▶▶ TROLLEY BUSBAR SYSTEMS

- Bridge Cranes
- Monorail Systems
- Textile Cutting and Spreading Tables
- AS/RS Storage Systems
- Moving Ceiling and Door Systems
- Assembly and Test Lines

It consists of copper conductors and current collectors in the C-PVC body. The uninterrupted energy supply and movement of the system is provided by current collectors connected to the system mechanically.

The eliminates the possibilities such as accident, malfunction in energy distribution with suspended and reel cable in conventional systems. Conductors are enclosed in C-PVC housing and personnel safety is maximized.

There is no fixed connection between the conductor housings and the conductors and between the C-PVC housing and the sliding hangers, the necessary expansion opportunity is provided, therefore the expansion element is unrequired.

Cautions:
If it is used in external environments exposed to rain, it is recommended to protect it with a cover such as a canopy.

ELINETBE

▶▶ ORDER CODE SYSTEMS

TB	E	04	5

Trolley Busbar Model

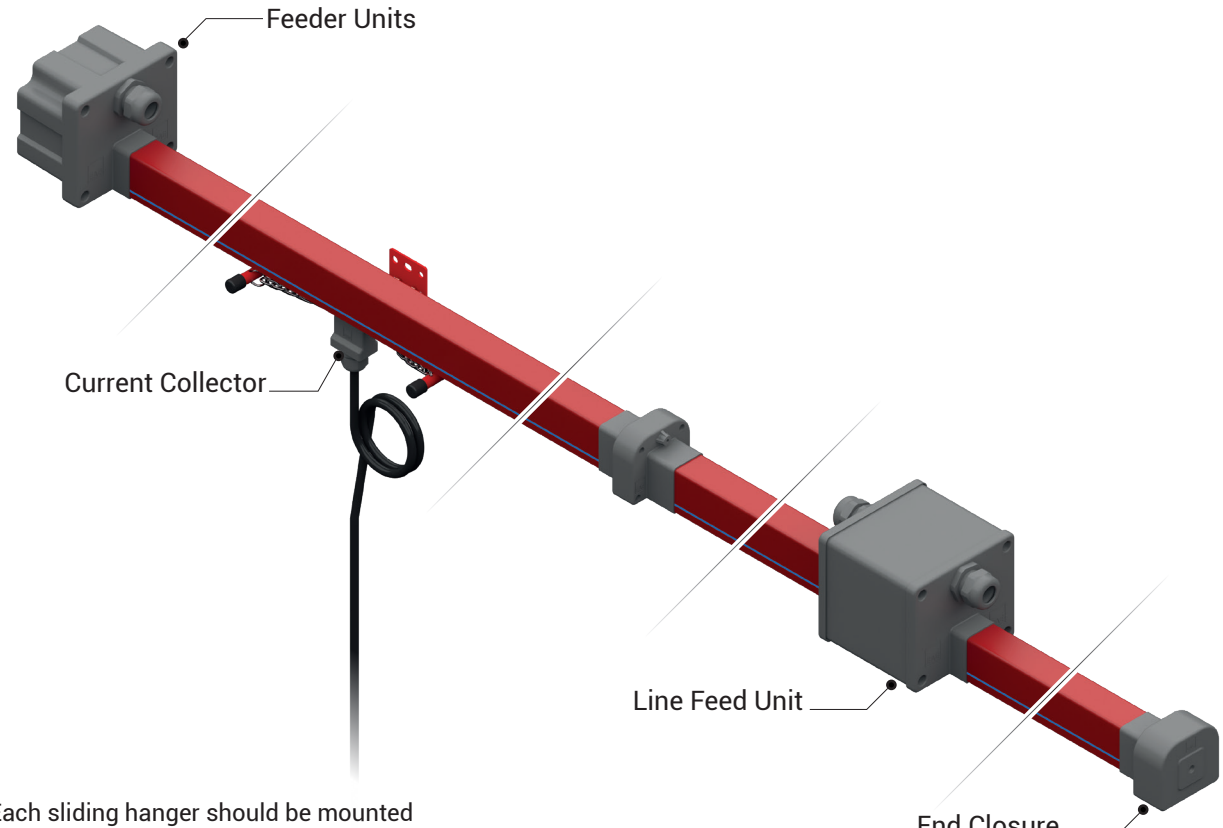
Current Ratings	
40A	04
63A	06
75A	07
105A	10
130A	13
160A	16

Conductor Quantities	
4 Conductors	4
5 Conductors	5

Type	
Jointed	E
Continuous	S

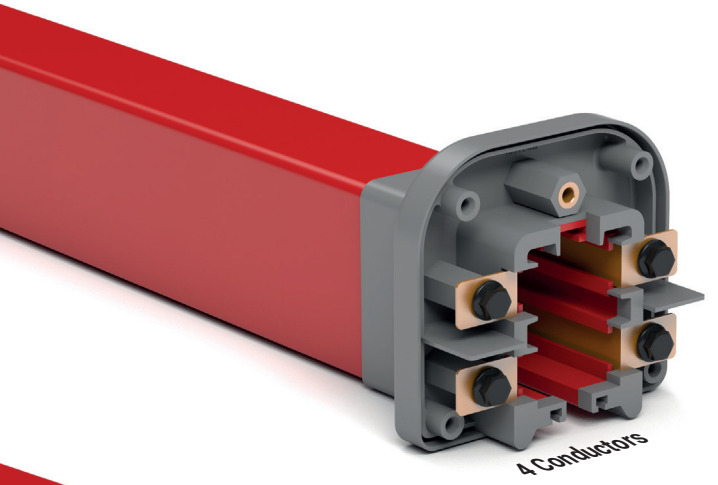
▶▶ TECHNICAL FEATURES

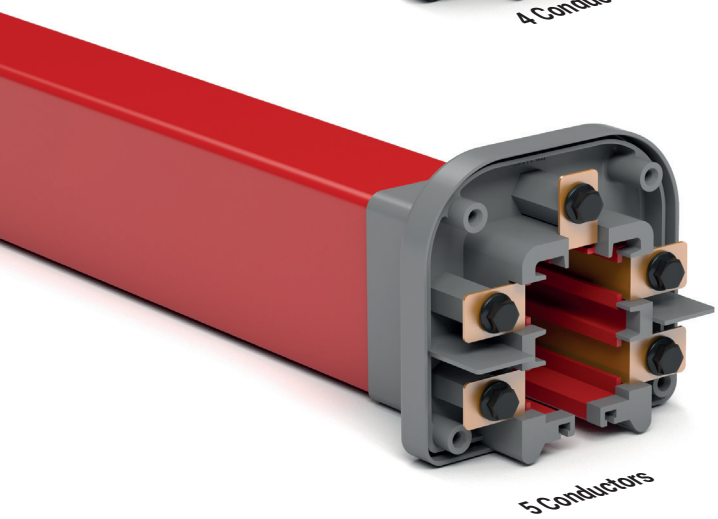
		40	63	75	105	130	160
Rated Current	(A)						
Conductor Quantities	(pcs)	4-5	4-5	4-5	4-5	4-5	4-5
Rated Voltage	(AC) (V)	690	690	690	690	690	690
Dielectric Properties	(kV/mm)	30	30	30	30	30	30
Frequency	(Hz)	50/60	50/60	50/60	50/60	50/60	50/60
Resistance (20°C)	R_{20} (mΩ/m)	1,300	1,240	1,150	0,780	0,600	0,450
Resistance (35°C)	R_{35} (mΩ/m)	1,420	1,425	1,340	0,910	0,700	0,530
Reactance	X (mΩ/m)	0,160	0,130	0,110	0,130	0,130	0,110
Impedance	Z (mΩ/m)	1,429	1,431	1,35	0,919	0,712	0,541
Standard Length	(m)	4	4	4	4	4	4



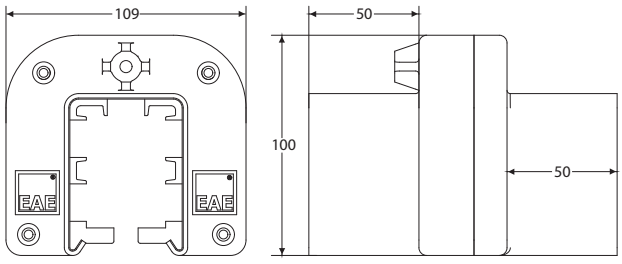
Note: Each sliding hanger should be mounted between 1300mm and 1500mm.

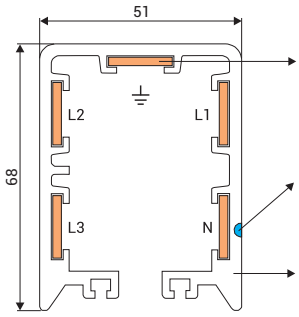
▶▶ TBE TROLLEY BUSBAR





Description	Weight (gr/m)	Order Code
TB5 Trolley Busbar	1250	**2037290**





Earth conductor is placed on the top.

The blue line on one side of the housing indicates the neutral position.

Housing

- **Number of Conductors:** 4 or 5 conductors
- **Colour:** Red.
- **Temperature range:** -40°C , +55°C.
- **Standard housing length:** 4 meters.
- **Protection:** IP24
- **Non-Flammable Characteristics:** UL 94 V0
- Housing is made of C-PVC and plastic accessories are made of PA6 raw material.
- There is a neutral line on the housing the neutral conductor.
- There is a neutral line on the housing the neutral conductor.

The housing has a structure that can use maximum 5 conductors. There is safety system that prevents the current collector to be fixed inversely.

Standard 4 Meters

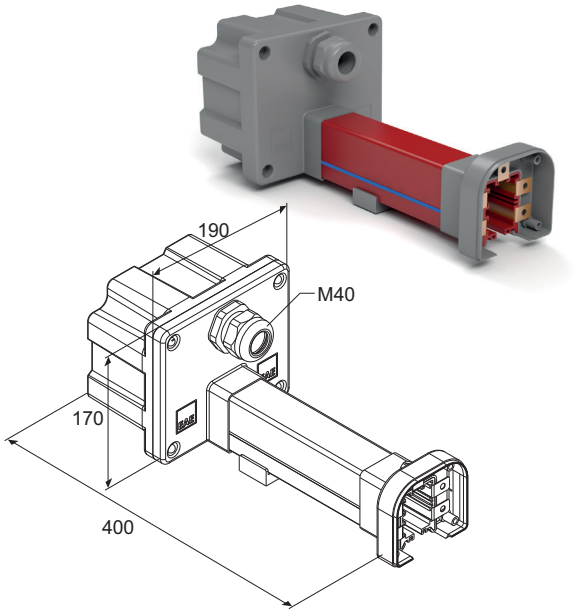
Model	Conductors Quantity-Current (A)	Weight (gr/m)	Conductor Cross Section (mm²)	Order Code
TBE 044	4P - 40A	1950	4x11,20	**3024446**
TBE 064	4P - 63A	2000	4x12,80	**3179770**
TBE 074	4P - 75A	2100	4x16,00	**3024449**
TBE 104	4P - 105A	2250	4x24,00	**3024447**
TBE 134	4P - 130A	2650	4x32,00	**3024448**
TBE 164	4P - 160A	2900	4x40,00	**3158671**
TBE 045	5P - 40A	2100	5x11,20	**3024435**
TBE 065	5P - 63A	2150	5x12,80	**3179771**
TBE 075	5P - 75A	2200	5x16,00	**3024436**
TBE 105	5P - 105A	2550	5x24,00	**3024437**
TBE 135	5P - 130A	2950	5x32,00	**3024438**
TBE 165	5P - 160A	3250	5x40,00	**3164949**

Special Length 1 or 2, 3 Meters

Model	Conductors Quantity-Current (A)	Weight (gr/m)	Conductor Cross Section (mm²)	Order Code
TBE 044	4P - 40A	1950	4x11,20	**3024473**
TBE 064	4P - 63A	2000	4x12,80	**3179774**
TBE 074	4P - 75A	2100	4x16,00	**3024475**
TBE 104	4P - 105A	2250	4x24,00	**3024477**
TBE 134	4P - 130A	2650	4x32,00	**3024479**
TBE 164	4P - 160A	2900	4x40,00	**3158668**
TBE 045	5P - 40A	2100	5x11,20	**3024474**
TBE 065	5P - 63A	2150	5x12,80	**3179775**
TBE 075	5P - 75A	2200	5x16,00	**3024476**
TBE 105	5P - 105A	2550	5x24,00	**3024478**
TBE 135	5P - 130A	2950	5x32,00	**3024480**
TBE 165	5P - 160A	3250	5x40,00	**3164946**

Joint plastics are not included in the weight values.
Total weight of the joint plastics and bolts is 0.27 Kg.

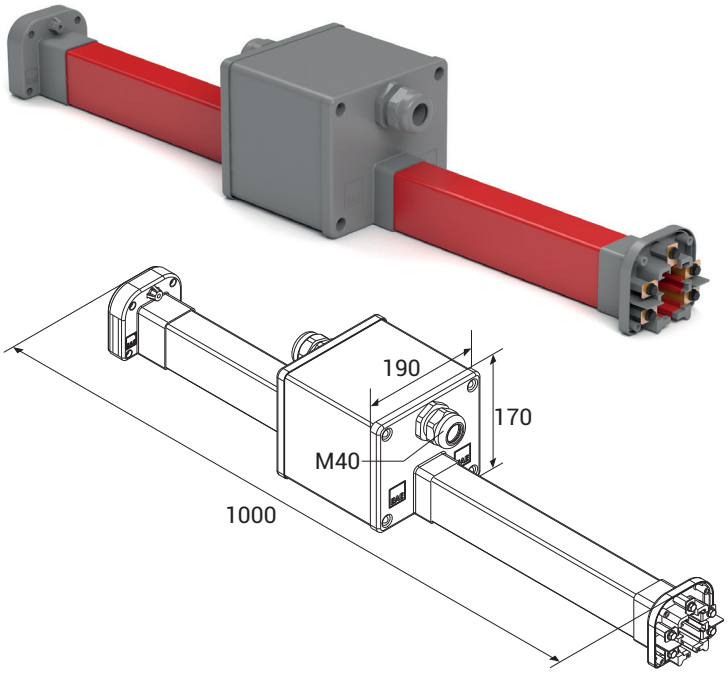
▶▶ TBE FEEDER UNITS



Model	Conductors Quantity-Current (A)	Weight (gr)	Conductor Cross Section (mm²)	Order Code
TBE 044	4P - 40A	1250	4x11,20	**3024431**
TBE 064	4P - 63A	1300	4x12,80	**3179768**
TBE 074	4P - 75A	1350	4x16,00	**3024432**
TBE 104	4P - 105A	1400	4x24,00	**3024433**
TBE 134	4P - 130A	1500	4x32,00	**3024434**
TBE 164	4P - 160A	1600	4x40,00	**3158669**
TBE 045	5P - 40A	1300	5x11,20	**3024459**
TBE 065	5P - 63A	1350	5x12,80	**3179769**
TBE 075	5P - 75A	1400	5x16,00	**3024423**
TBE 105	5P - 105A	1500	5x24,00	**3024424**
TBE 135	5P - 130A	1600	5x32,00	**3024445**
TBE 165	5P - 160A	1700	5x40,00	**3164947**

Type of the feeding element is selected by calculating the voltage drop and the location of the power supply that shall provide power to the system.

▶▶ TBE LINE FEED UNITS



Model	Conductors Quantity-Current (A)	Weight (gr)	Conductor Cross Section (mm²)	Order Code
TBE 044	4P - 40A	2750	4x11,20	**3024439**
TBE 064	4P - 63A	2800	4x12,80	**3179778**
TBE 074	4P - 75A	2900	4x16,00	**3024440**
TBE 104	4P - 105A	3200	4x24,00	**3024441**
TBE 134	4P - 130A	3450	4x32,00	**3024442**
TBE 164	4P - 160A	3750	4x40,00	**3158670**
TBE 045	5P - 40A	2850	5x11,20	**3024460**
TBE 065	5P - 63A	2900	5x12,80	**3179779**
TBE 075	5P - 75A	3000	5x16,00	**3024425**
TBE 105	5P - 105A	3350	5x24,00	**3024426**
TBE 135	5P - 130A	3750	5x32,00	**3024427**
TBE 165	5P - 160A	4100	5x40,00	**3164948**

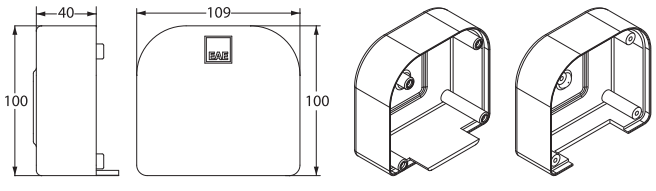
- Produced with standard M40 cable glands.
- Halogen-free plastic raw material
- High impact resistance.
- Design resistant against ambient conditions.

▶▶ TBE END CLOSURE

End Closure-1

End Closure-2

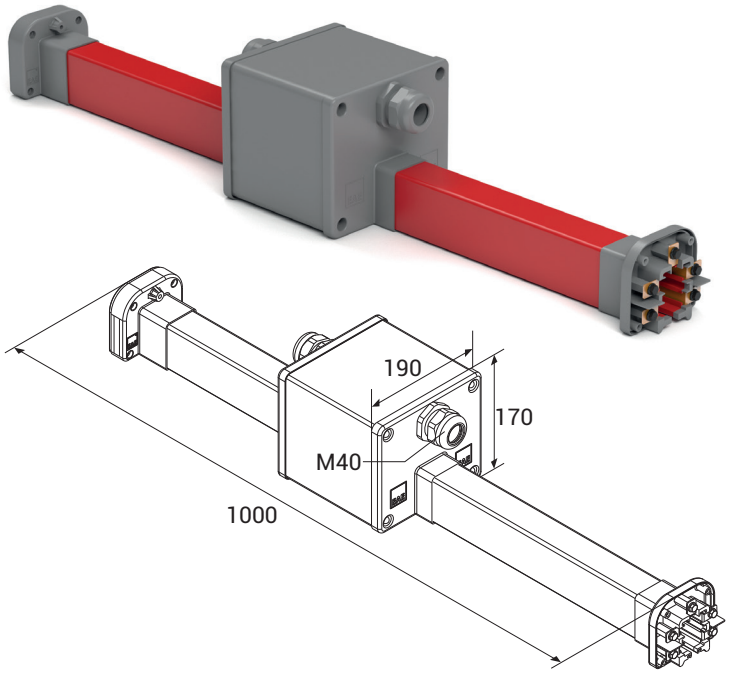
The end closure placed on the end of the busbar line prevents the exposure of the conductors, and protects the system.



End Closure-1 End Closure-2

Description	Weight (gr)	Order Code
TBE End Closure-1 (Female)	100	**3024420**
TBE End Closure-2 (Male)	100	**3241448**

▶▶ TBE REPAIR ZONE UNIT

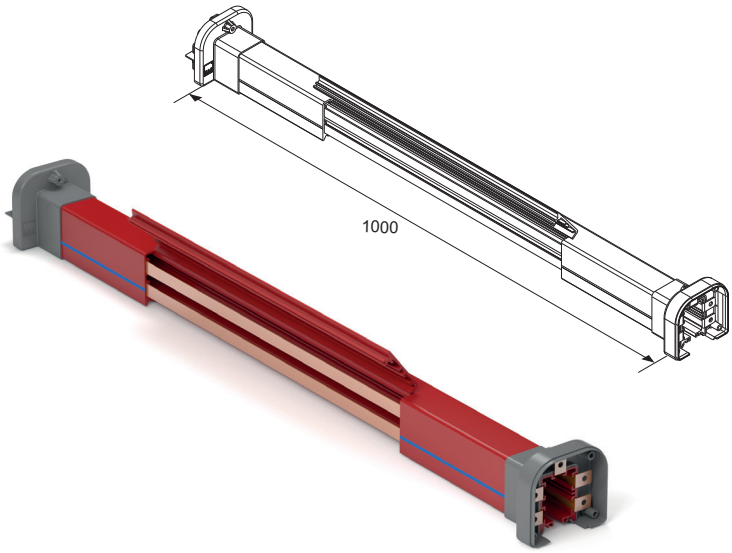


Model	Conductors Quantity-Current (A)	Weight (gr)	Conductor Cross Section (mm²)	Order Code
TBE 044	4P - 40A	3500	4x11,20	**3066688**
TBE 064	4P - 63A	3550	4x12,80	**3179780**
TBE 074	4P - 75A	3600	4x16,00	**3066689**
TBE 104	4P - 105A	3900	4x24,00	**3066690**
TBE 134	4P - 130A	4200	4x32,00	**3066691**
TBE 164	4P - 160A	4450	4x40,00	**3164950**
TBE 045	5P - 40A	3600	5x11,20	**3066692**
TBE 065	5P - 63A	3650	5x12,80	**3179781**
TBE 075	5P - 75A	3750	5x16,00	**3066693**
TBE 105	5P - 105A	4100	5x24,00	**3066694**
TBE 135	5P - 130A	4500	5x32,00	**3066695**
TBE 165	5P - 160A	4800	5x40,00	**3164952**

Current supply shall be cut off when a machine working on the line shall be maintained or repaired. Repair zone module is used to create a currentless area on the busbar so that the other machines operating on the same line may continue to work.

- Produced with standard M40 cable glands
- Halogen-free plastic raw material
- High impact resistance
- Design resistant against ambient conditions

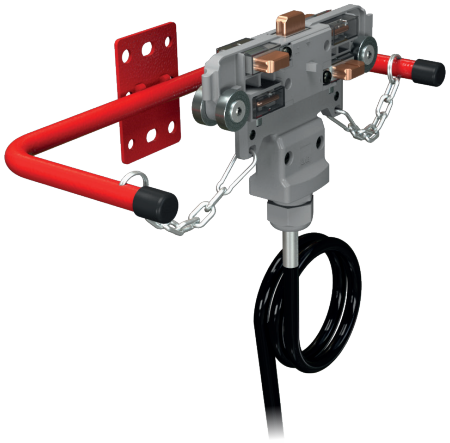
▶▶ TBE CURRENT COLLECTOR REPLACEMENT MODULE

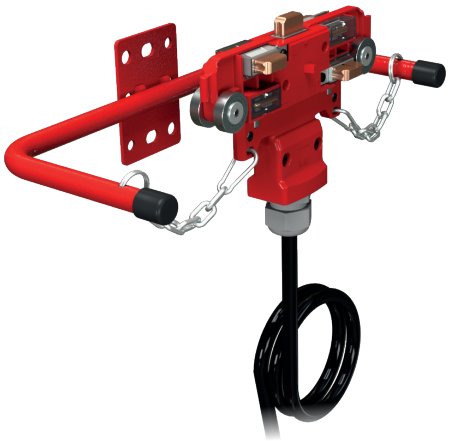


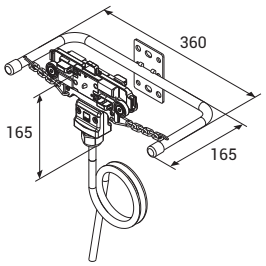
Model	Conductors Quantity-Current (A)	Weight (gr)	Conductor Cross Section (mm²)	Order Code
TBE 044	4P - 40A	2000	4x11,20	**3024558**
TBE 064	4P - 63A	2050	4x12,80	**3179784**
TBE 074	4P - 75A	2100	4x16,00	**3024897**
TBE 104	4P - 105A	2400	4x24,00	**3024898**
TBE 134	4P - 130A	2700	4x32,00	**3024899**
TBE 164	4P - 160A	3000	4x40,00	**3164951**
TBE 045	5P - 40A	2100	5x11,20	**3024421**
TBE 065	5P - 63A	2150	5x12,80	**3179785**
TBE 075	5P - 75A	2250	5x16,00	**3024428**
TBE 105	5P - 105A	2600	5x24,00	**3024429**
TBE 135	5P - 130A	3000	5x32,00	**3024430**
TBE 165	5P - 160A	3350	5x40,00	**3164953**

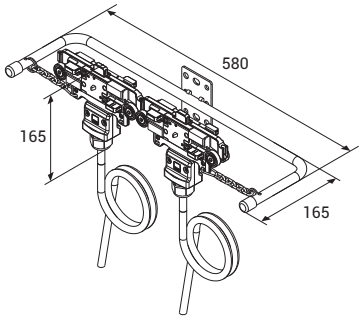
This unit is used to remove an existing current collector or to add extra trolleys. The unit is obtained by cutting a 50cm section from the PVC housing.

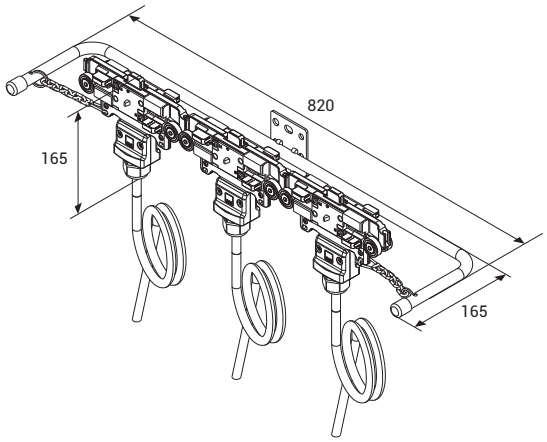
▶▶ TB5 CURRENT COLLECTORS WITH CABLE







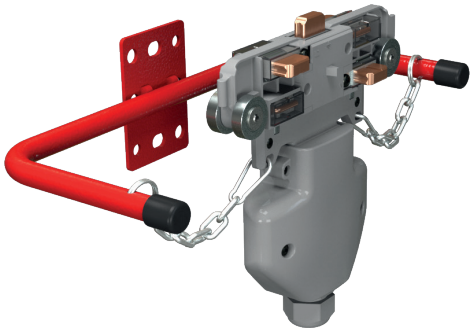


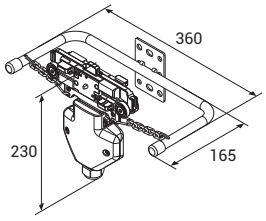


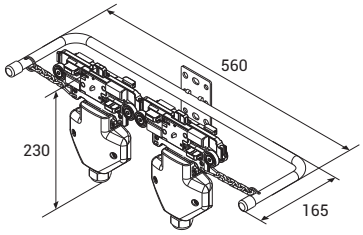
Model	Brushes Number-Current	Weight (gr)	Order Code
TB5	4P - 35A (Single)	1700	**3024385**
	4P - 70A (Double)	2950	**3024386**
	4P - 105A (Triple)	4450	**3024387**
	5P - 35A (Single)	1900	**3024376**
	5P - 70A (Double)	3250	**3024377**
	5P - 105A (Triple)	4700	**3024378**

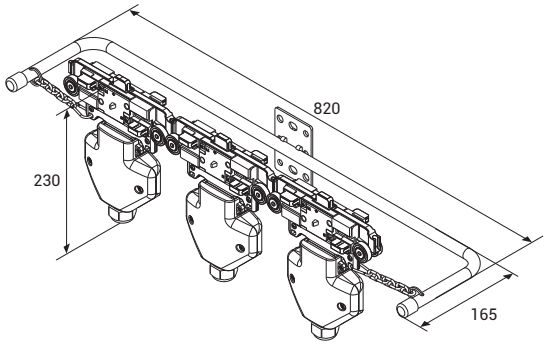
Model	Brushes Number-Current	Weight (gr)	Order Code
TB5	4P - 60A (Single)	2000	**3203193**
	5P - 60A (Single)	2200	**3203194**

▶▶ TB5 CURRENT COLLECTORS WITH CLIP









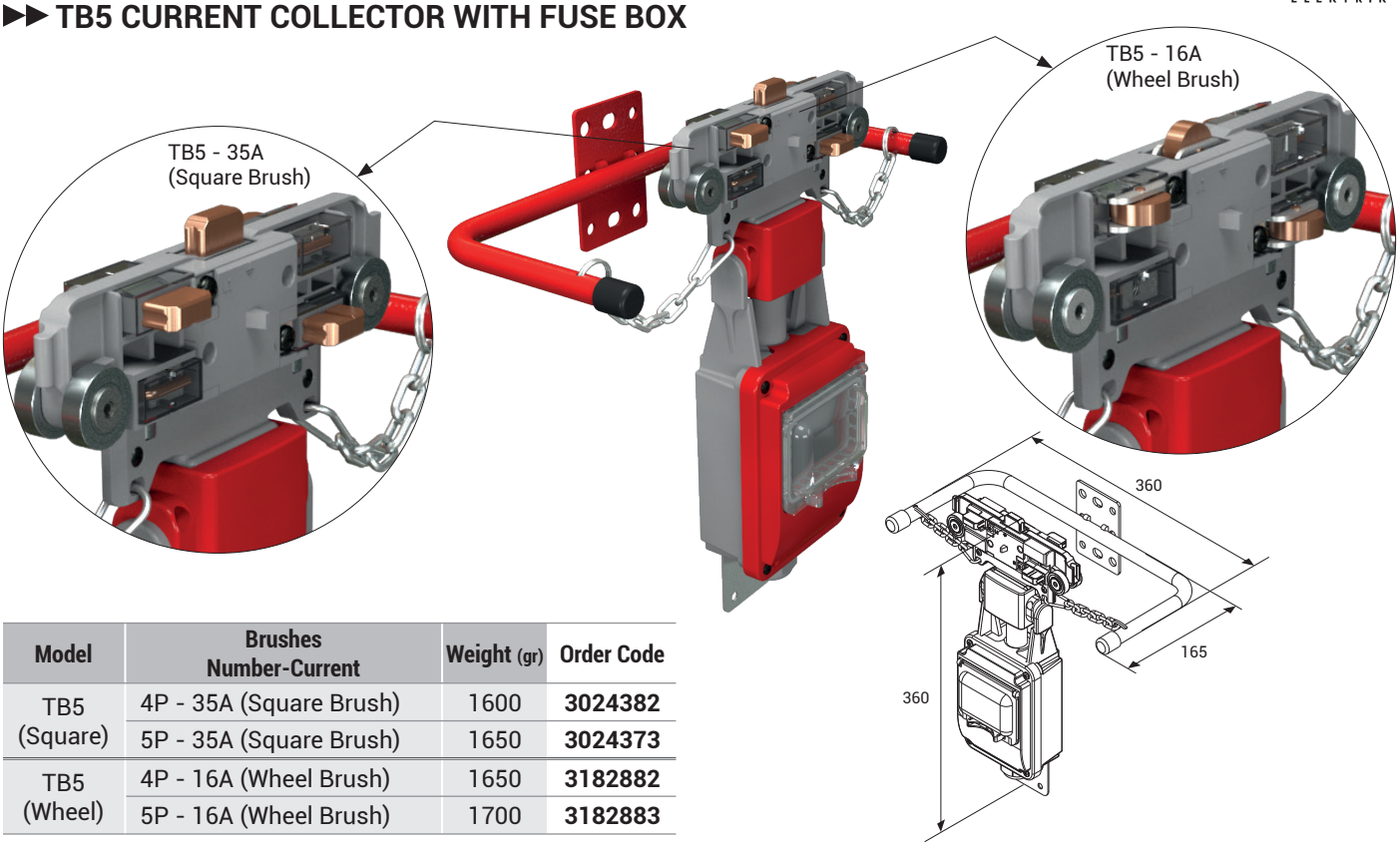
Model	Brushes Number-Current	Weight (gr)	Order Code
TB5	4P - 35A (Single)	1350	**3024388**
	4P - 70A (Double)	2050	**3024389**
	4P - 105A (Triple)	3050	**3024390**
	5P - 35A (Single)	1350	**3024379**
	5P - 70A (Double)	2250	**3024380**
	5P - 105A (Triple)	3200	**3024381**

*Produced with standard M40 cable gland and 4mm² clip.

Current collector with clips allow the customers to perform cabling as they desire with the clips they include.

Current collector are the moving elements of the trolley busbar systems. Current collector brushes rub against the conductors and draw continuous current while they move through the busbar line. They adapt to shaky and vibrant conditions thanks to the moving brushes. As current collecting and transfer systems are included in the C-PVC housing, they are protected against human contact.

▶▶ TB5 CURRENT COLLECTOR WITH FUSE BOX



Model	Brushes Number-Current	Weight (gr)	Order Code
TB5 (Square)	4P - 35A (Square Brush)	1600	**3024382**
	5P - 35A (Square Brush)	1650	**3024373**
TB5 (Wheel)	4P - 16A (Wheel Brush)	1650	**3182882**
	5P - 16A (Wheel Brush)	1700	**3182883**

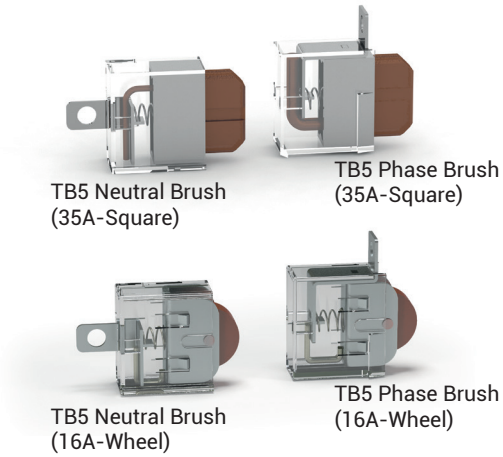
Insurance boxed with both staff and current receiving area carts current machine's safety can be raised to a higher level. In addition, when it is desired to cut the power of one of the machines on a line, the current is cut off through the fuse, other machines on the line can continue to operate.

Current collector with Wheel Brush simplify the movement of the current collectors inside the busbar by reducing the time at the installation tables when movement is provided by the personnel.

TB5 Current collector models operating speed is max. 100m/min.

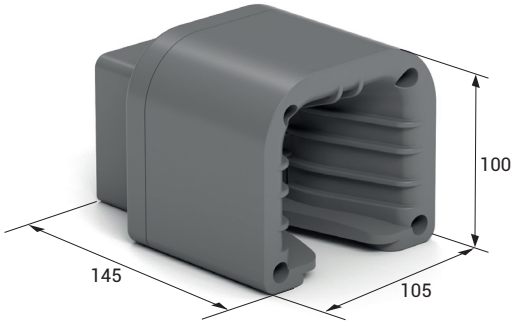
TB5 Current Collectors are produced with standard M40 cable gland.

▶▶ TB5 CURRENT COLLECTOR BRUSHES



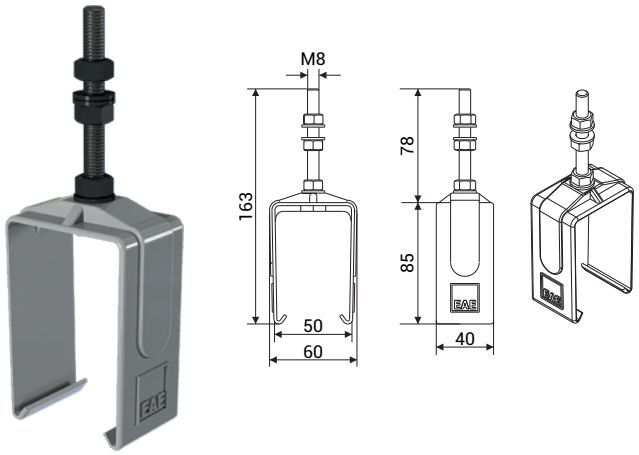
Description	Weight (gr)	Order Code
TB5 Phase Brush (35A-Square)	40	**3024371**
TB5 Neutral Brush (35A-Square)	40	**3024372**
TB5 Phase Brush (16A-Wheel)	40	**3165078**
TB5 Neutral Brush (16A-Wheel)	40	**3165080**

▶▶ TB5 TROLLEY TRANSFER TOOL

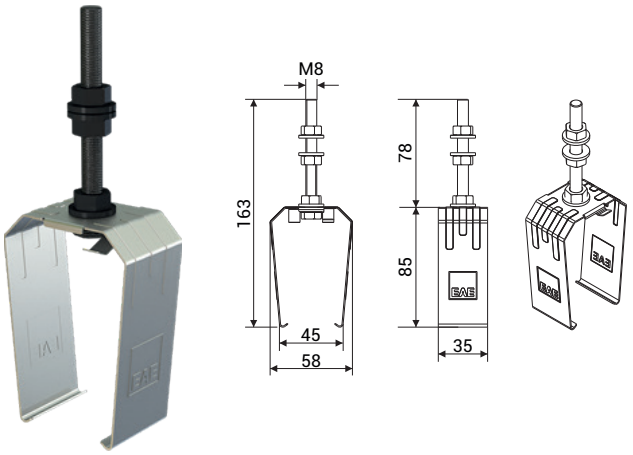


Description	Weight (gr)	Order Code
TB5 Trolley Transfer Tool	250	**3179189**

▶▶ TB5 PLASTIC SLIDING HANGER



▶▶ TB5 STEEL SLIDING HANGER

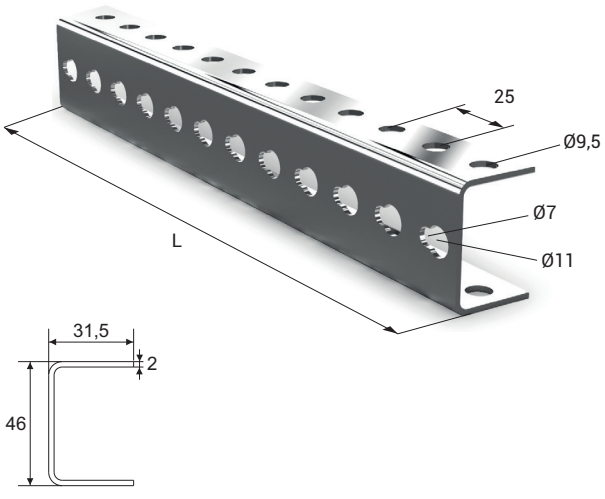


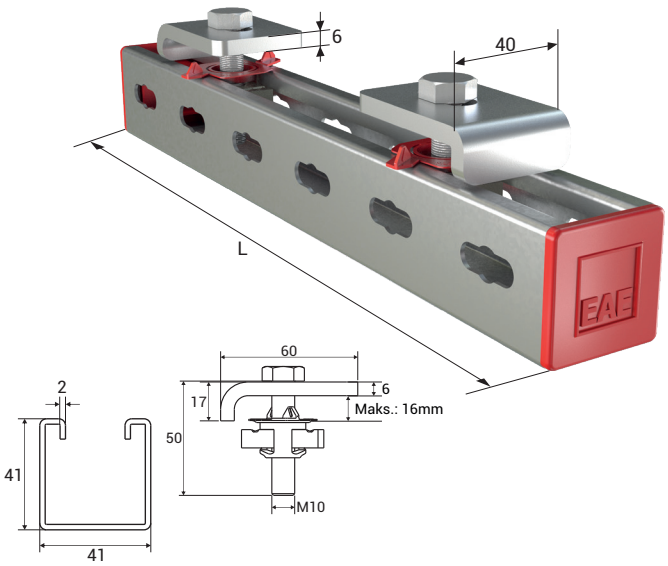
Trolley busbar should be mounted with slinding hanges and each hangers should be between 1300mm and 1500mm.

Description	Weight (gr)	Order Code
TB5 Plastic Sliding Hanger	85	**1003664**

Description	Weight (gr)	Order Code
TB5 Steel Sliding Hanger	100	**1005954**

▶▶ TB HANGER BRACKET





Description	L (mm)	Weight (gr)	Order Code
TB Hanger Bracket	250	350	**3025153**
URC-C/S Hanger Bracket	500	700	**3034560**
URC-A Hanger Bracket	750	1050	**3025382**

Description	L (mm)	Weight (gr)	Order Code
TB BR Hanger Bracket	300	800	**3178916**
URC-C/S BR Hanger Bracket	600	1250	**3178917**
URC-A BR Hanger Bracket	800	1550	**3178918**

▶▶ VOLTAGE DROP

The voltage drop in the busbar lines shall be inspected as per the busbar type selected according to the total current calculated based on the ambient temperature and operating period of the system. Maximum acceptable value for voltage drop is 3%.

For Direct Current	$\Delta U = 2.L_t.I_G.R$	ΔU =	Voltage Drop [V]
		I_G =	Total current [A]
For Mono-Phase Alternative Current	$\Delta U = 2.L_t.I_G.Z$	R =	Resistance of the busbar [Ω/m]
		Z =	Impedance of the busbar [Ω/m]
For Three-Phase Alternative Current	$\Delta U = \sqrt{3}.L_t.I_G.Z$	L_t =	Calculated Hole Length [m]

Note : Calculation of the current drawn during first start in various motor types;

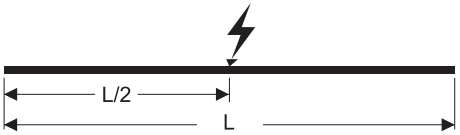
I_A= Total current drawn in the first start of the motors [A]

For the starting current;	Three-phase asynchronous drive in direct start	$I_A = I_G$ x calculated as 5 to 6
	Slip ring rotor motor	$I_A = I_G$ x calculated as 2 to 3
	Frequency converter	$I_A = I_G$ x 1,20 to1,50 calculated between.

▶▶ CALCULATION OF FEEDING POINTS

When we take L_t as the length of the line, feeding points may be selected as shown in the diagrams below to keep the L voltage drop at minimum and it may be used as the hole length for the calculation of L_t voltage drop.

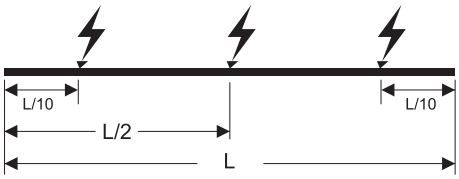
1 feeding point from the start, Lt=L



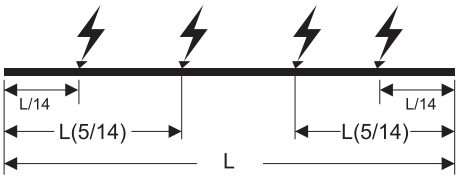
1 feeding point from the center, Lt=L/2

2 feeding points from the start points, Lt=L/4

2 feeding points, Lt=L/6



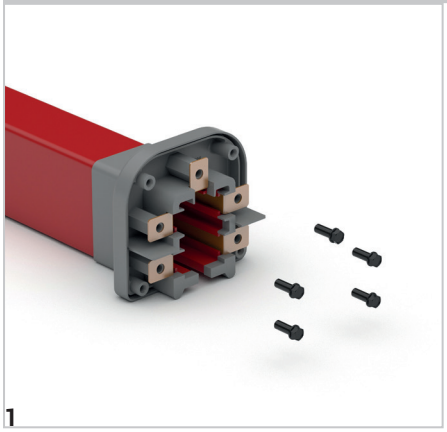
3 feeding points, Lt=L/10



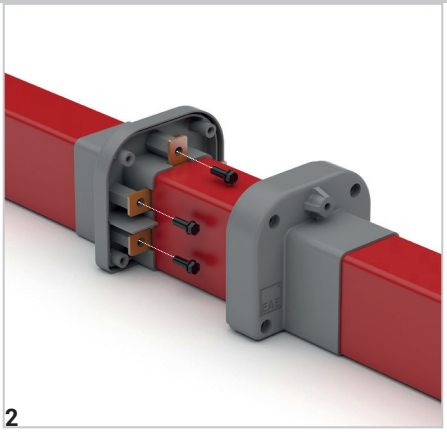
4 feeding points, Lt=L/14

▶▶ INSTALLATION MANUAL

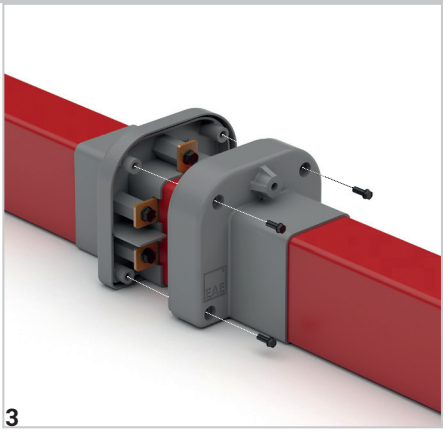
TBE - INSTALLATION OF JOINT UNIT



1
Remove the screws on the end of the busbar.

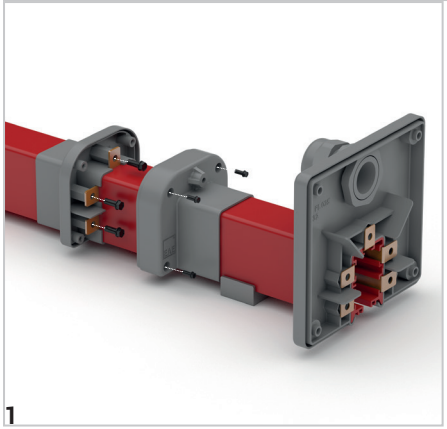


2
Join it with the other busbar and screw it.

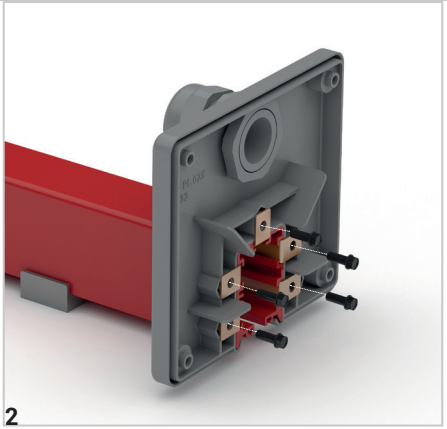


3
Close the joint cover and screw it.

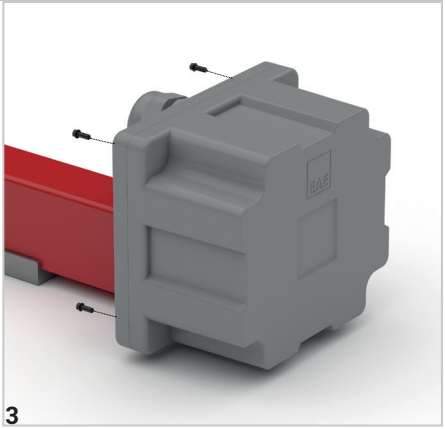
TBE - FEEDER UNIT



1
Install it on the line as you do while installing the extension.

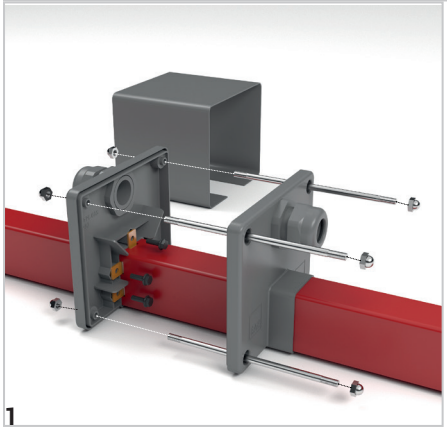


2
Put the feeding cables through the cable gland and connect them to the conductors.

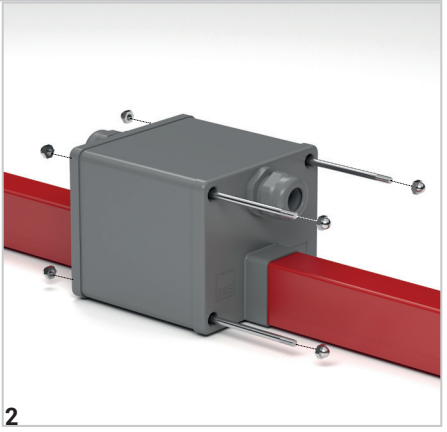


3
Place the cover part and screw it.

TBE - LINE FEED UNIT

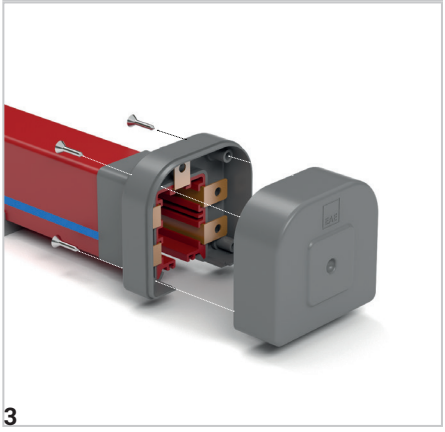


1
Open the cover by removing the screws. Put the feeding cables through the cable gland connect them.



2
Put the feeding cables through the cable gland and connect them to the conductors.

TBE - END CLOSURE



3
Install the end closure to the end of the housing and screw it.

▶▶ DESIGN FORM

Member List

Serial No	Type	Pcs.

Company : .

Project : .

Project No : .

Prepared by

Name : .

Date : .

Signature : .

Please use this page after copying.

ELINETROLLEY BUSBAR

▶▶ OFFER REQUEST FORM

Date :

Project Name	:	
Company	:	
Name Surname	:	
Tel	:	
E-Mail	:	
Address	:	

General Data

Track Length	:	
Number of Cranes on Track	:	
Crane Travel Speed	:	

Environmental Data

Operating Environment	:	☐ Indoor ☐ Outdoor
Ambient Temparature	:	°C min. / °C max.
Other Operating Conditions (Humidty, Dust, Chemical Influence, etc.)	:	

Electirical Data

Operating Voltage	:	Volts ☐ AC ☐ DC
		Phases ☐ N ☐ PE
Position and Number of Feeder	:	from End / from Middle
Duty Cycle (%)	:	☐ 50% ☐ 60% ☐ 70% ☐ 80% ☐ 90% ☐ 100%

Motor Specifications		Crane - 1		Crane - 2		Crane - 3	
		Power (kW)	Current (A)	Power (kW)	Current (A)	Power (kW)	Current (A)
Hoist motors	:						
Auxiliary motor	:						
Long travel	:						
Cross travel	:						

Options

Brackets Required	:	☐ Yes		☐ No	
Repair Zone Required	:	☐ Yes	Qty	☐ No	
Collector Replacement Required:		☐ Yes	Qty	☐ No	
Descriptions	:				

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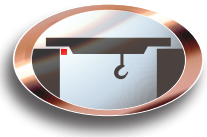
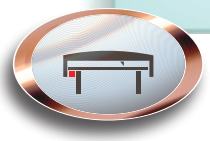
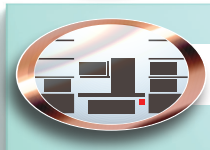


• Bridge Cranes

• Monorail Systems

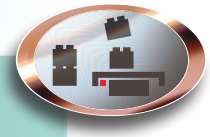


• Textile Cutting and Spreading Tables



• AS/RS Storage Systems

• Moving Ceiling and Door Systems



• Assembly and Test Lines

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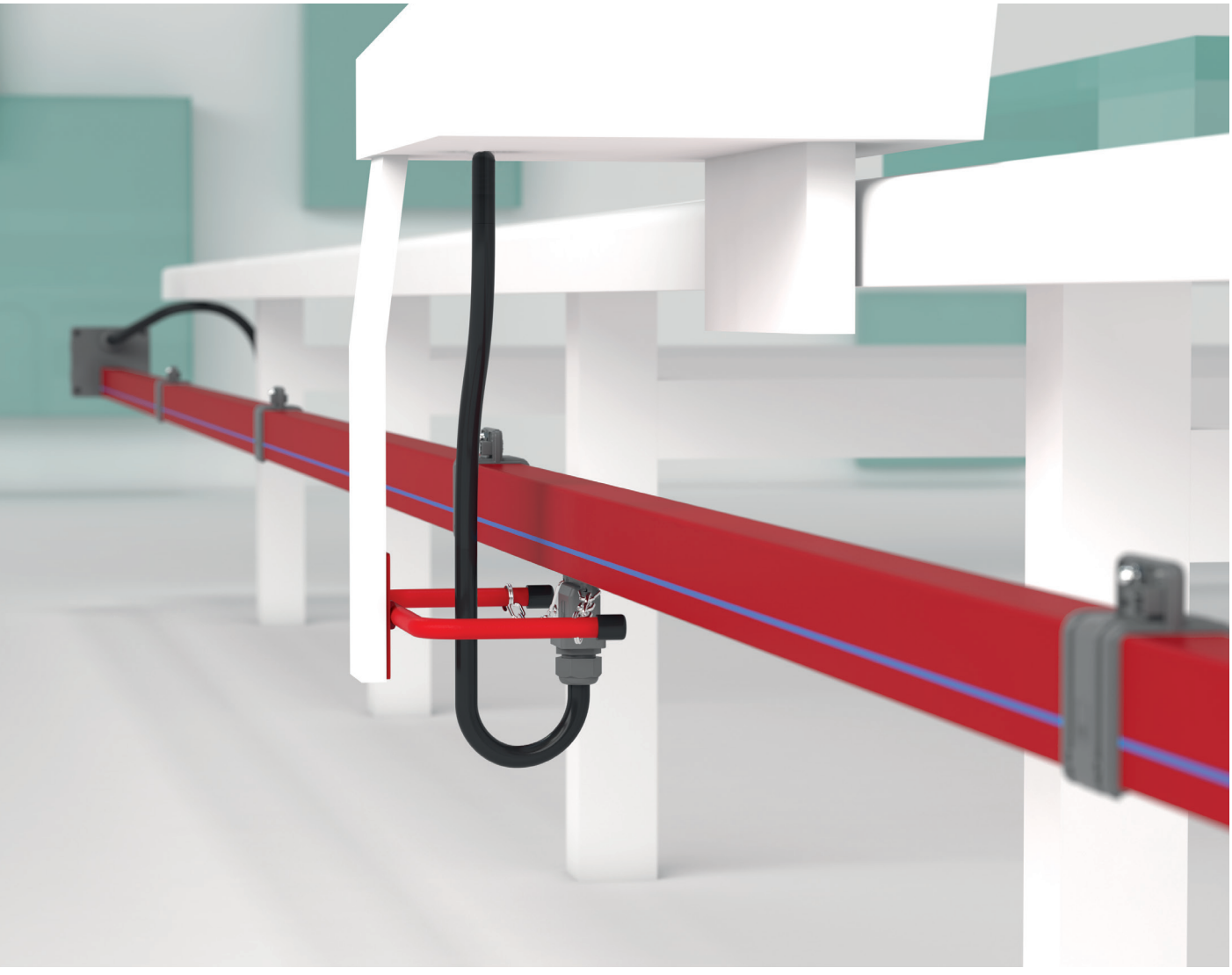
E-LINE TBS



E-LINE TBS

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▶▶ E-LINE TBS

ELINETBS

▶▶ TROLLEY BUSBAR SYSTEMS

- Bridge Cranes
- Monorail Systems
- Textile Cutting and Spreading Tables
- AS/RS Storage Systems
- Moving Ceiling and Door Systems
- Assembly and Test Lines

It consists of copper conductors and current collectors in the C-PVC body. The uninterrupted energy supply and movement of the system is provided by current collectors connected to the system mechanically.

The eliminates the possibilities such as accident, malfunction in energy distribution with suspended and reel cable in conventional systems. Conductors are enclosed in C-PVC housing and personnel safety is maximized.

There is no fixed connection between the conductor housings and the conductors and between the C-PVC housing and the sliding hangers, the necessary expansion opportunity is provided, therefore the expansion element is unrequired.

Cautions:
If it is used in external environments exposed to rain, it is recommended to protect it with a cover such as a canopy.

ELINETBS

▶▶ ORDER CODE SYSTEMS

TB S 04 5

Trolley Busbar Model

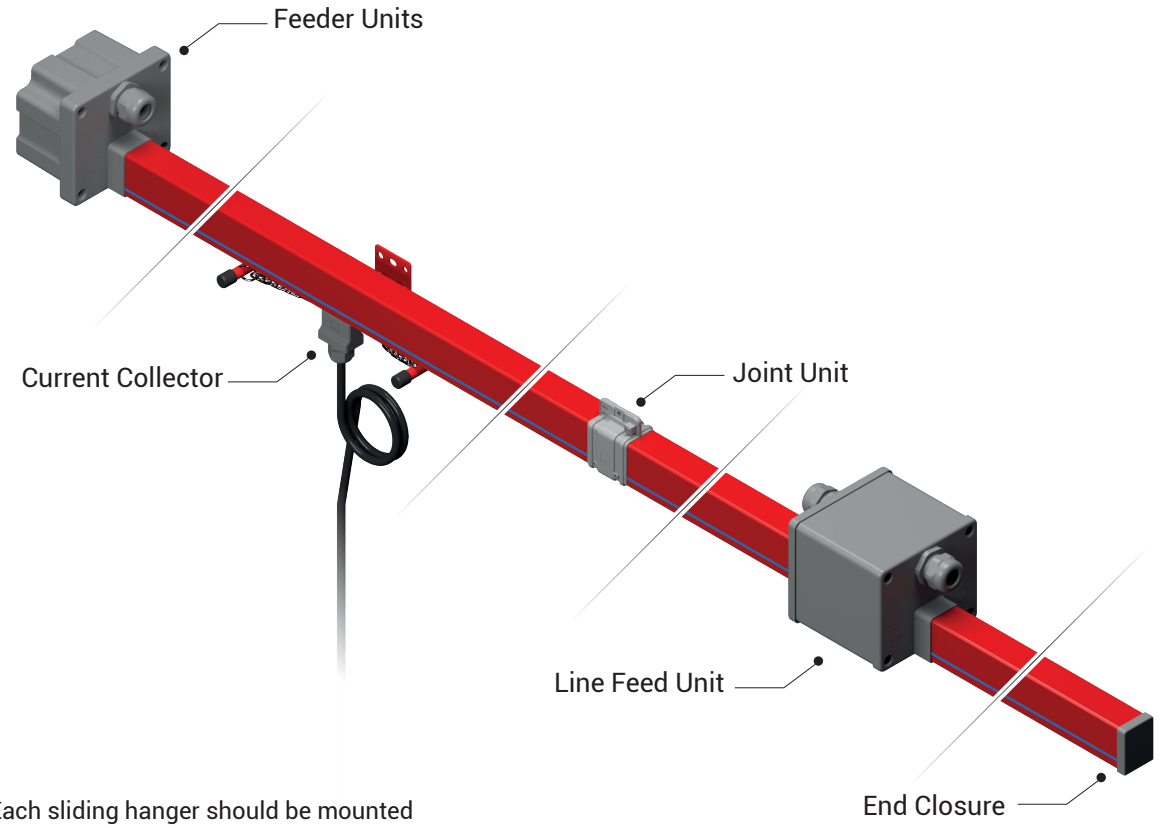
Current Ratings	
40A	04
63A	06
75A	07
105A	10
130A	13

Conductor Quantities	
4 Conductors	4
5 Conductors	5

Type	
Jointed	E
Continuous	S

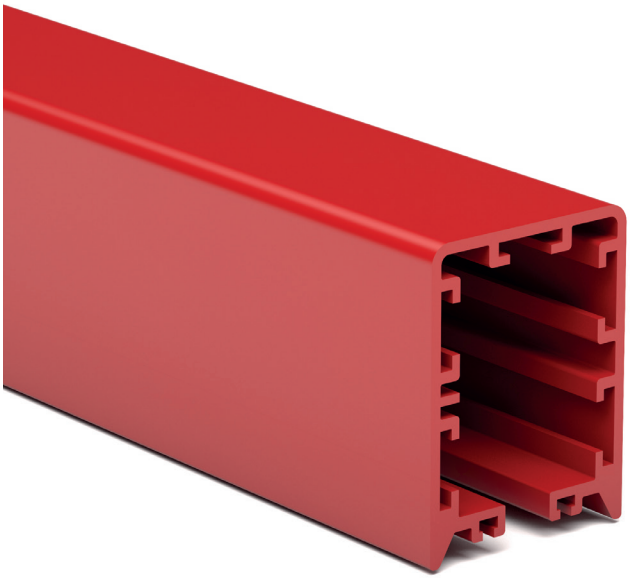
▶▶ TECHNICAL FEATURES

Rated Current	(A)	**40**	**63**	**75**	**105**	**130**
Conductor Quantities	(pcs)	4-5	4-5	4-5	4-5	4-5
Rated Voltage	(AC) (V)	690	690	690	690	690
Dielectric Properties	(kV/mm)	30	30	30	30	30
Frequency	(Hz)	50/60	50/60	50/60	50/60	50/60
Resistance (20°C)	R_{20} (mΩ/m)	1,300	1,018	1,280	0,800	0,570
Resistance (35°C)	R_{35} (mΩ/m)	1,420	1,176	1,460	0,920	0,660
Reactance	X (mΩ/m)	0,160	0,447	0,140	0,060	0,250
Impedance	Z (mΩ/m)	1,429	1,258	1,467	0,922	0,706
Standard Length	(m)	4	4	4	4	4



Note: Each sliding hanger should be mounted between 1300mm and 1500mm.

▶▶ TBS TROLLEY BUSBAR



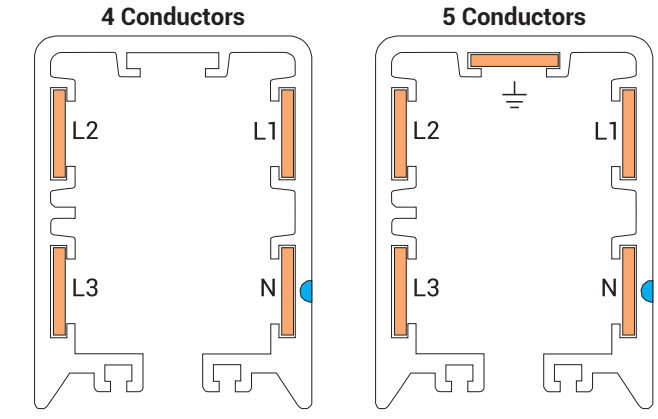
The housing has a structure that can use maximum 5 conductors. There is safety system that prevents the current collector to be fixed inversely.

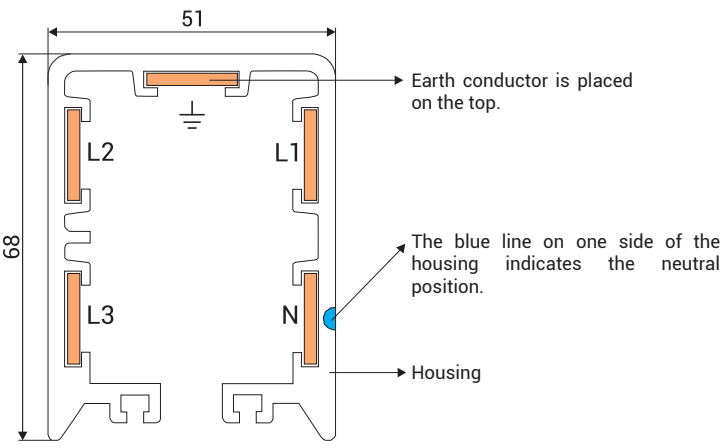
Continuous Copper Conductors

Electrolytic copper conductors can be applied without interruption at a maximum length of 150 m.

- **Number of Conductors:** 4 or 5 conductors
- **Colour:** Red.
- **Temperature range:** -40°C , +55°C.
- **Standard housing length:** 4 meters.
- **Protection:** Standard IP24, Gasket, IP44.
- **Non-Flammable Characteristics:** UL 94 V0
- Housing is made of C-PVC and plastic accessories are made of PA6 raw material.
- Conductors are protected against hand contact inside the insulating housing.
- There is a neutral line on the housing indicating the neutral conductor.

Description	Weight (gr/m)	Order Code
TB5 Trolley Busbar Housing	1250	**2037290**





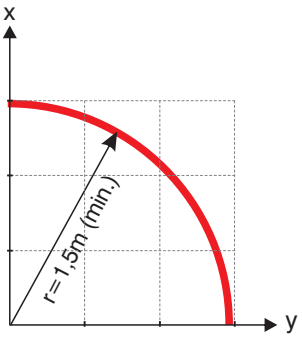
Standard 4 Meters

Model	Conductors Quantity-Current (A)	Weight (gr/m)	Conductor Cross Section (mm²)	Order Code
TBS 044	4P - 40A	1700	4x11,20	**3024465**
TBS 064	4P - 63A	1750	4x12,80	**3182880**
TBS 074	4P - 75A	1900	4x16,00	**3024466**
TBS 104	4P - 105A	2200	4x24,00	**3024467**
TBS 134	4P - 130A	2450	4x32,00	**3024468**
TBS 045	5P - 40A	1800	5x11,20	**3024461**
TBS 065	5P - 63A	1850	5x12,80	**3182877**
TBS 075	5P - 75A	2050	5x16,00	**3024462**
TBS 105	5P - 105A	2400	5x24,00	**3024463**
TBS 135	5P - 130A	2750	5x32,00	**3024464**

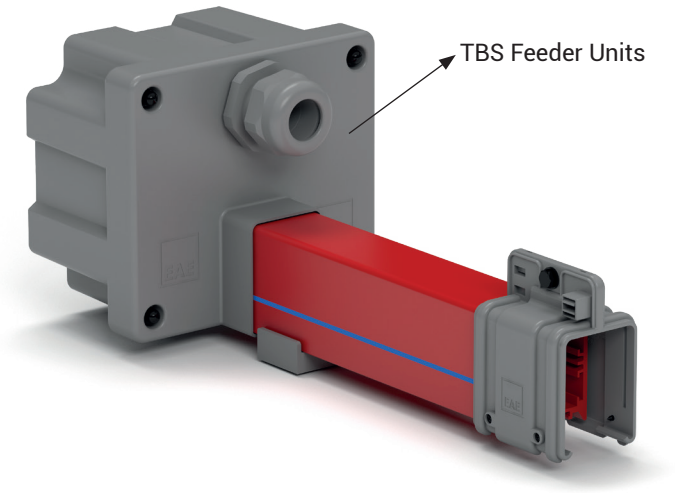
Joint plastics are not included in the weight values.
Total weight of the joint plastics and bolts is 100 gr..

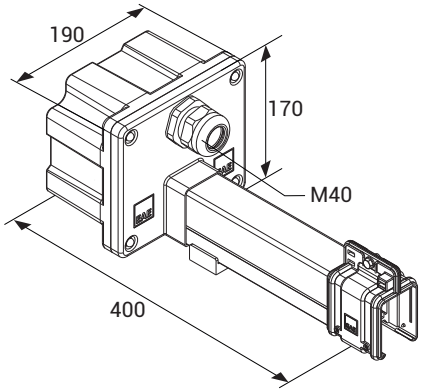
Radius Trolley Busbar

It has minimum 1.5m radius Trolley Busbar available in vertical axes. Radius Trolley Lines can be applied with maximum 4 conductors.



▶▶ TBS FEEDER BOX



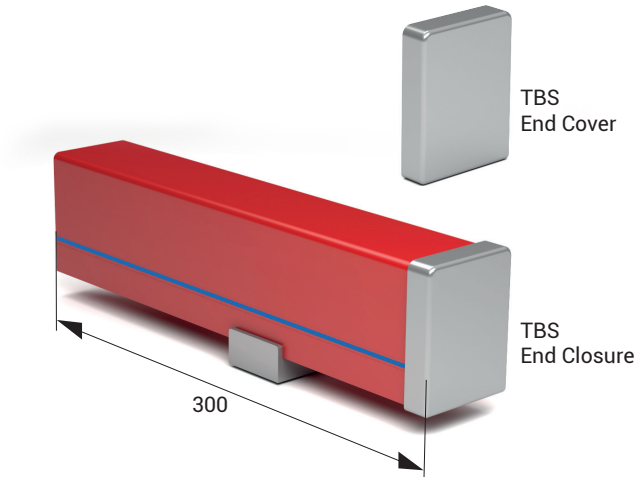


- May be used with busbars with 4 or 5 conductors
- Produced with standard M40 cable glands
- Halogen-free plastic raw material
- High impact resistance
- Design resistant against ambient conditions
- Ease of installation with snap-on design with a single screw.

Type of the feeder box is selected by calculating the voltage drop and the location of the power supply that shall provide power to the system.

Description	Weight (gr)	Order Code
TBS Feeder Units	1000	**3024457**
TBS Feeder Units	650	**3179927**

▶▶ TBS END CLOSURE

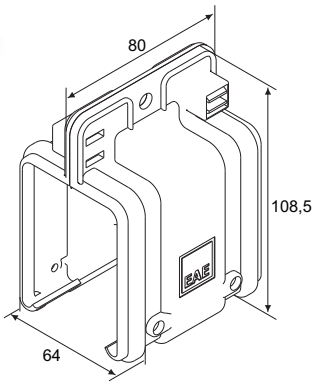


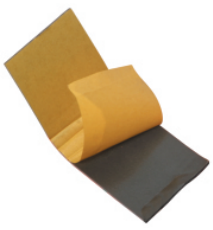
The end closure placed on the end of the busbar line prevents **the** exposure of the conductors, protects the system, and prevents the current collector from moving out of the housing.

- Halogen-free plastic raw material
- High impact resistance.
- Design resistant against ambient conditions.

Description	Weight (gr)	Order Code
TBS End Closure	450	**3024419**
TBS End Cover	25	**1003109**

▶▶ TBS JOINT UNIT

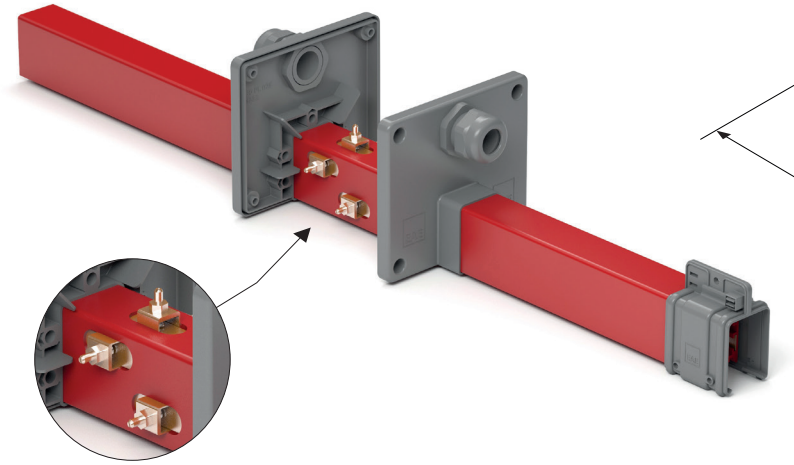


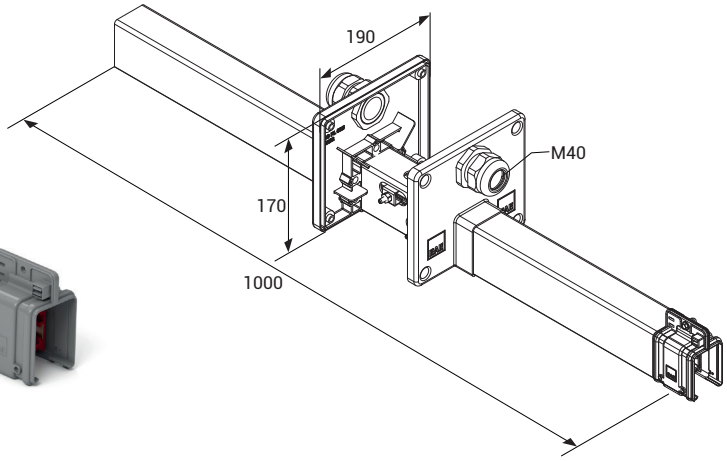


EPDM Gasket

Description	Weight (gr)	Order Code
TBS Joint Unit	90	**1003663**

▶▶ TBS LINE FEED UNITS - CONTINUOUS TYPE



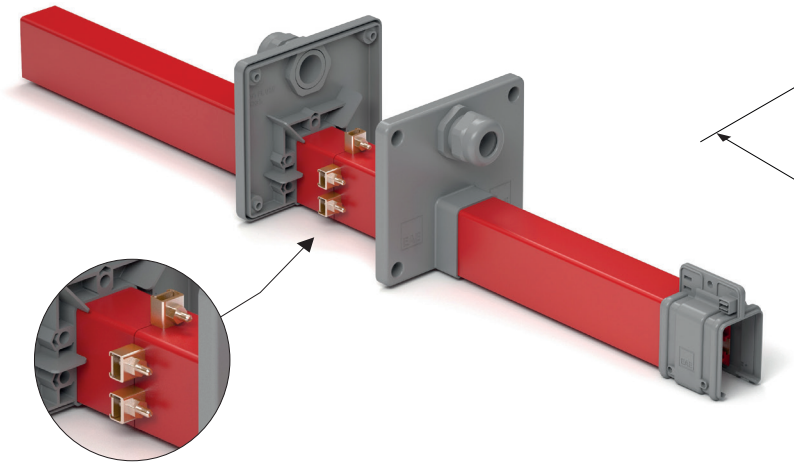


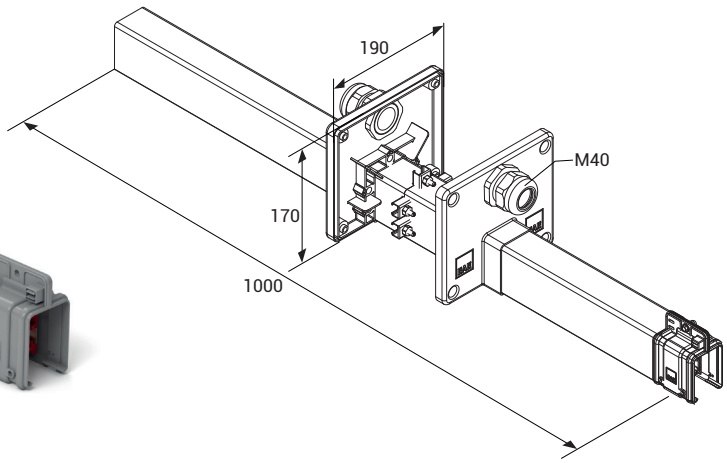
Type of the feeding element is selected by calculating the voltage drop and the location of the power supply that shall provide power to the system.

Description	Weight (gr)	Order Code
TBS Line Feed Unit - Continuous Type	2350	**3024458**

- May be used with busbars with 4 or 5 conductors
- Produced with standard M40 cable glands
- Halogen-free plastic raw material
- High impact resistance
- Design resistant against ambient conditions
- Ease of installation with snap-on design with a single screw.

▶▶ TBS LINE FEED UNITS - JOINTED TYPE



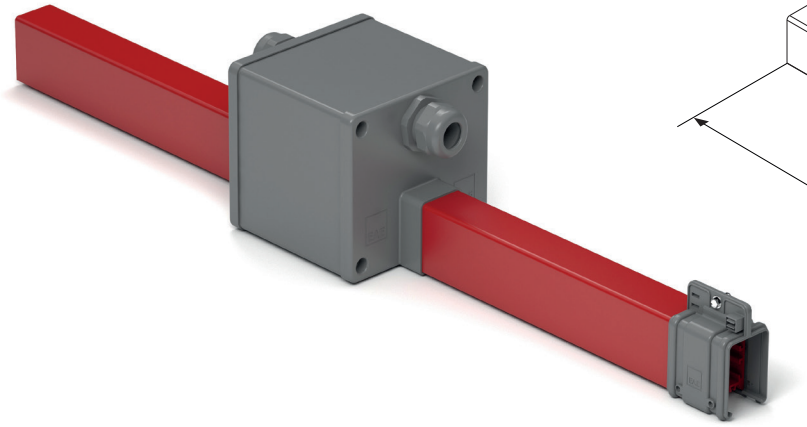


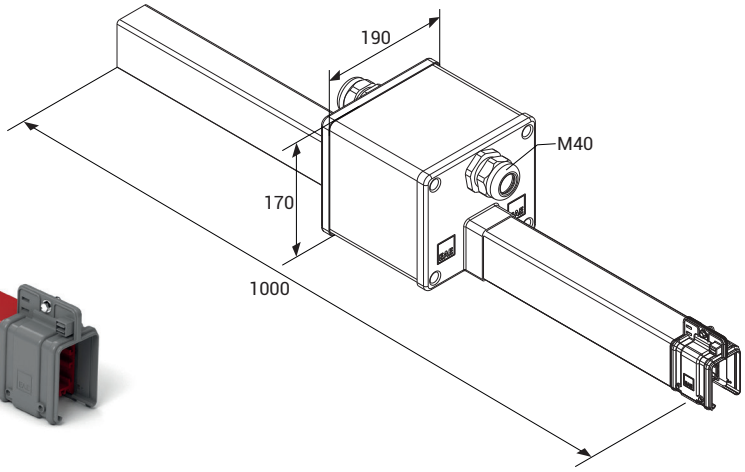
Type of the feeding element is selected by calculating the voltage drop and the location of the power supply that shall provide power to the system.

Description	Weight (gr)	Order Code
TBS Line Feed Unit - Jointed Type	2450	**3024472**

- May be used with busbars with 4 or 5 conductors
- Produced with standard M40 cable glands
- Halogen-free plastic raw material
- High impact resistance
- Design resistant against ambient conditions
- Ease of installation with snap-on design with a single screw.

▶▶ TBS REPAIR ZONE UNIT



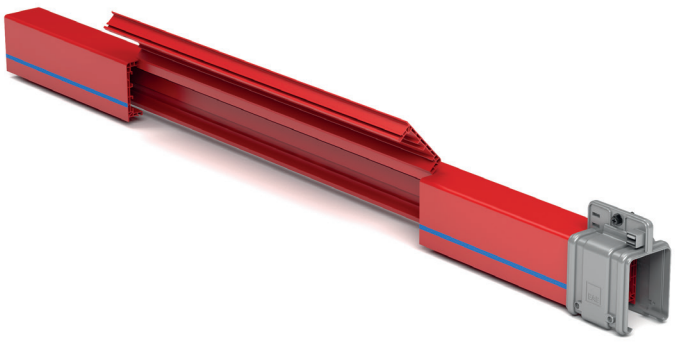


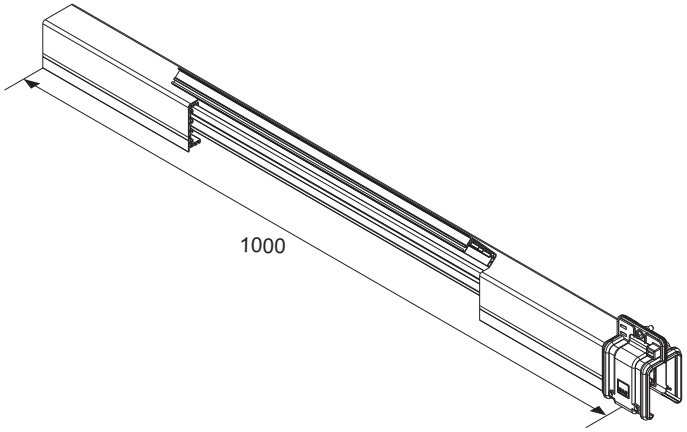
Current supply shall be cut off when a machine working on the line shall be maintained or repaired. Repair zone module is used to create a currentless area on the busbar so that the other machines operating on the same line may continue to work.

Description	Weight (gr)	Order Code
TBS Repair Zone Module	2550	**3066696**

- Produced with standard M40 cable glands.
- Halogen-free plastic raw material
- High impact resistance.
- Design resistant against ambient conditions.

▶▶ TBS CURRENT COLLECTOR REPLACEMENT MODULE

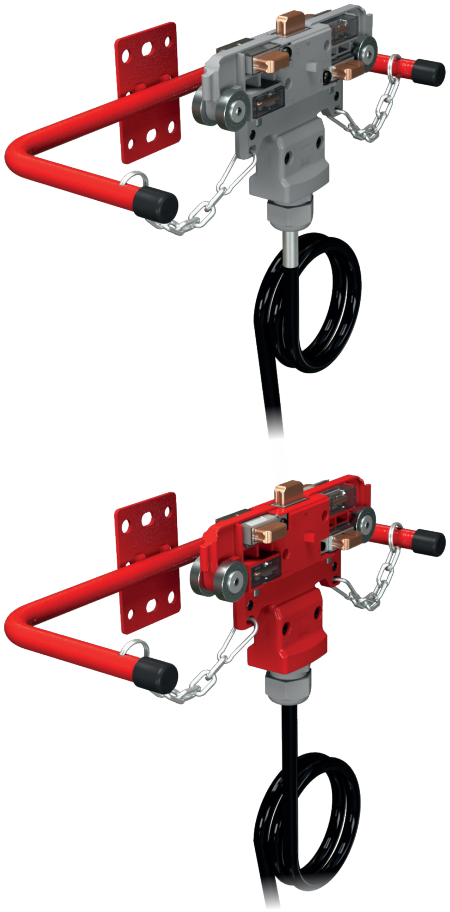


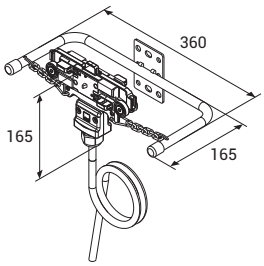


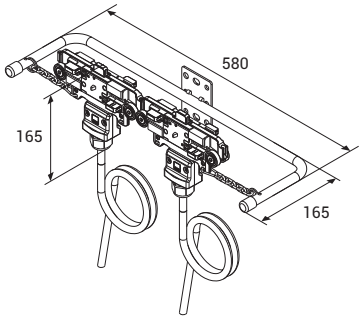
This unit is used to remove an existing current collector or to add extra trolleys. The unit is obtained by cutting a 50cm section from the PVC housing.

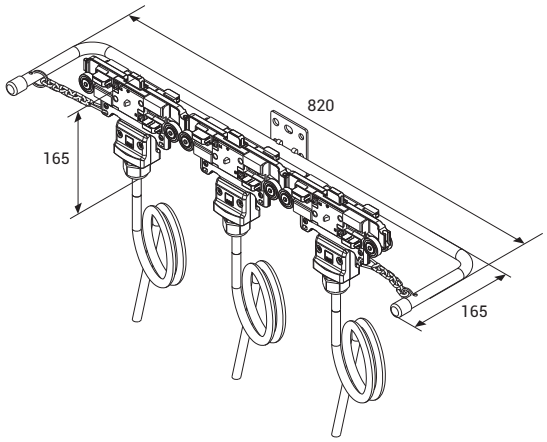
Model	Weight (gr)	Order Code
TBS Current Collector Replacement Module	1500	**3024471**

▶▶ TB5 CURRENT COLLECTORS WITH CABLE





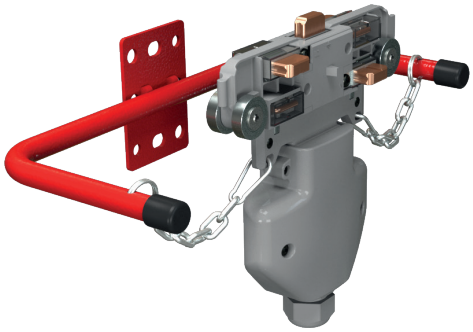


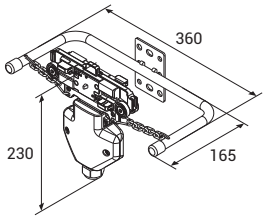


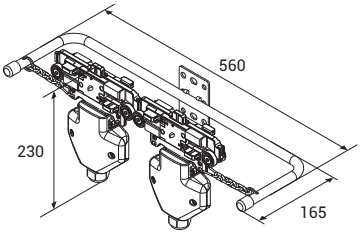
Model	Brushes Number-Current	Weight (gr)	Order Code
TB5	4P - 35A (Single)	1700	**3024385**
	4P - 70A (Double)	2950	**3024386**
	4P - 105A (Triple)	4450	**3024387**
	5P - 35A (Single)	1900	**3024376**
	5P - 70A (Double)	3250	**3024377**
	5P - 105A (Triple)	4700	**3024378**

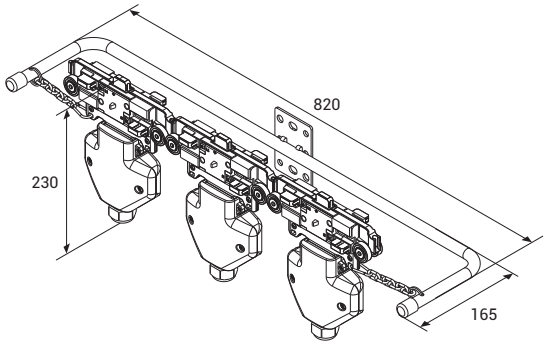
Model	Brushes Number-Current	Weight (gr)	Order Code
TB5	4P - 60A (Single)	2000	**3203193**
	5P - 60A (Single)	2200	**3203194**

▶▶ TB5 CURRENT COLLECTORS WITH CLIP









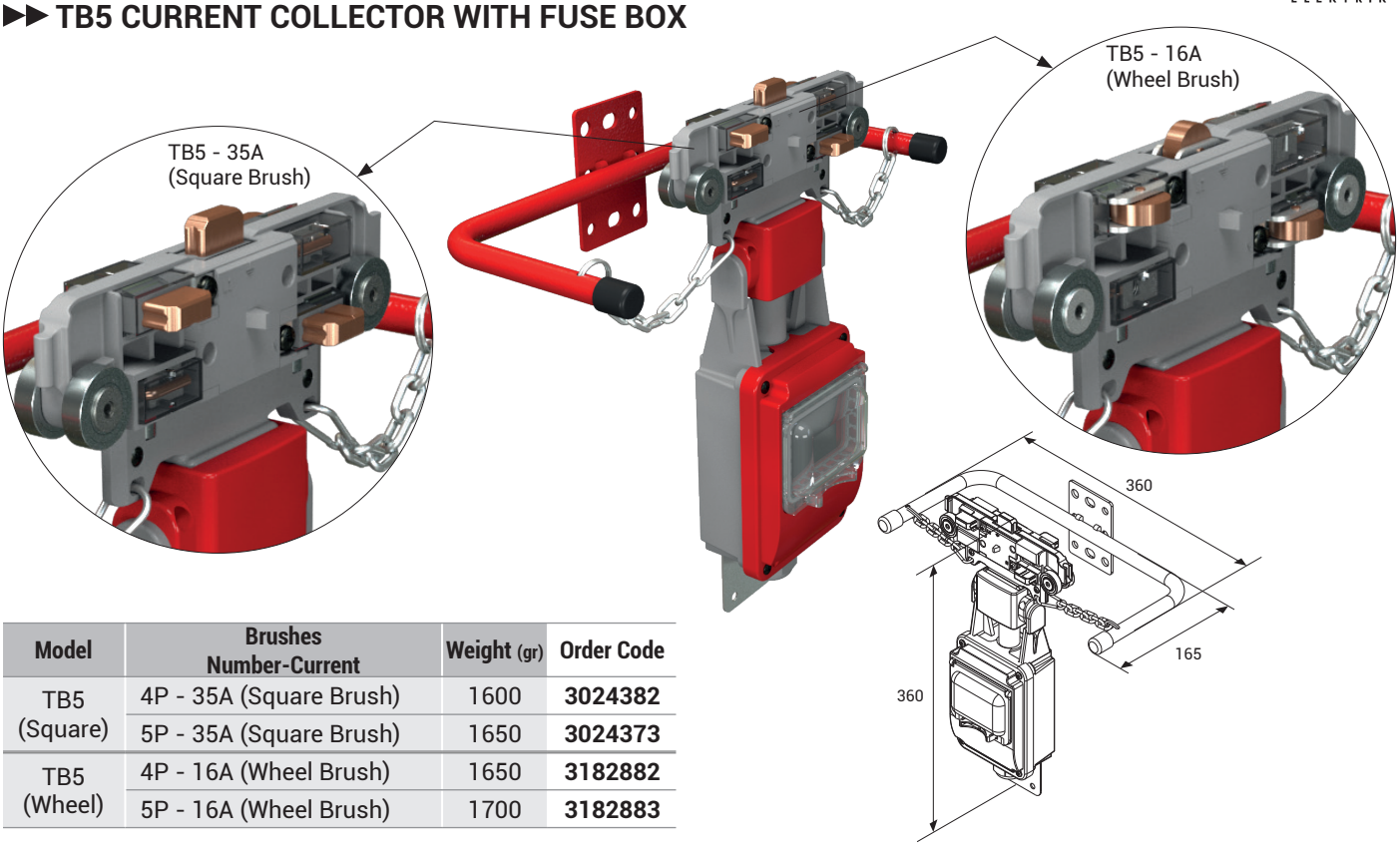
Model	Brushes Number-Current	Weight (gr)	Order Code
TB5	4P - 35A (Single)	1350	**3024388**
	4P - 70A (Double)	2050	**3024389**
	4P - 105A (Triple)	3050	**3024390**
	5P - 35A (Single)	1350	**3024379**
	5P - 70A (Double)	2250	**3024380**
	5P - 105A (Triple)	3200	**3024381**

*Produced with standard M40 cable gland and 4mm² clip.

Current collector with clips allow the customers to perform cabling as they desire with the clips they include.

Current collector are the moving elements of the trolley busbar systems. Current collector brushes rub against the conductors and draw continuous current while they move through the busbar line. They adapt to shaky and vibrant conditions thanks to the moving brushes. As current collecting and transfer systems are included in the C-PVC housing, they are protected against human contact.

▶▶ TB5 CURRENT COLLECTOR WITH FUSE BOX



Model	Brushes Number-Current	Weight (gr)	Order Code
TB5 (Square)	4P - 35A (Square Brush)	1600	**3024382**
	5P - 35A (Square Brush)	1650	**3024373**
TB5 (Wheel)	4P - 16A (Wheel Brush)	1650	**3182882**
	5P - 16A (Wheel Brush)	1700	**3182883**

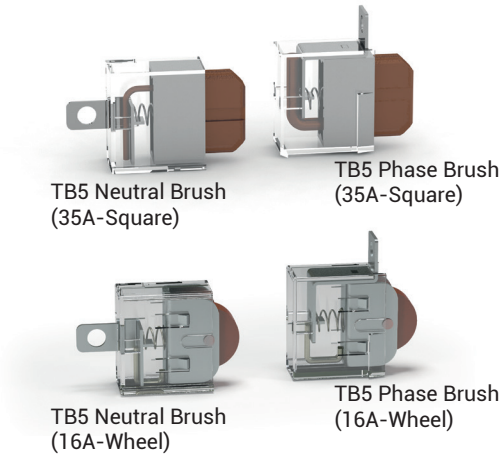
Insurance boxed with both staff and current receiving area carts current machine's safety can be raised to a higher level. In addition, when it is desired to cut the power of one of the machines on a line, the current is cut off through the fuse, other machines on the line can continue to operate.

Current collector with Wheel Brush simplify the movement of the current collectors inside the busbar by reducing the time at the installation tables when movement is provided by the personnel.

TB5 Current collector models operating speed is max. 100m/min.

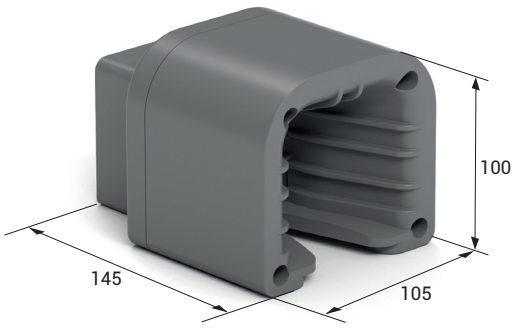
TB5 Current Collectors are produced with standard M40 cable glands.

▶▶ TB5 CURRENT COLLECTOR BRUSHES



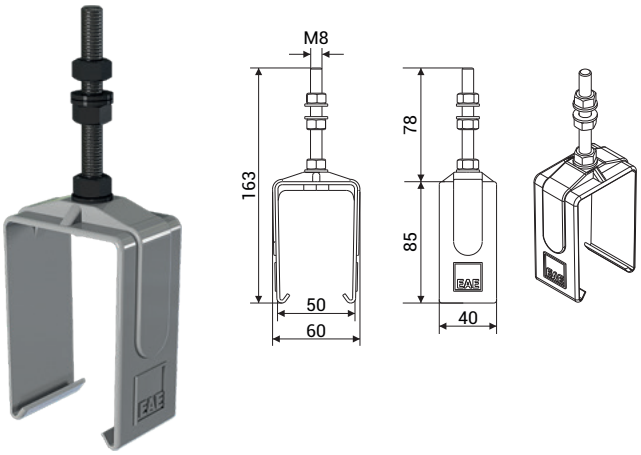
Description	Weight (gr)	Order Code
TB5 Phase Brush (35A-Square)	40	**3024371**
TB5 Neutral Brush (35A-Square)	40	**3024372**
TB5 Phase Brush (16A-Wheel)	40	**3165078**
TB5 Neutral Brush (16A-Wheel)	40	**3165080**

▶▶ TB5 TROLLEY TRANSFER TOOL

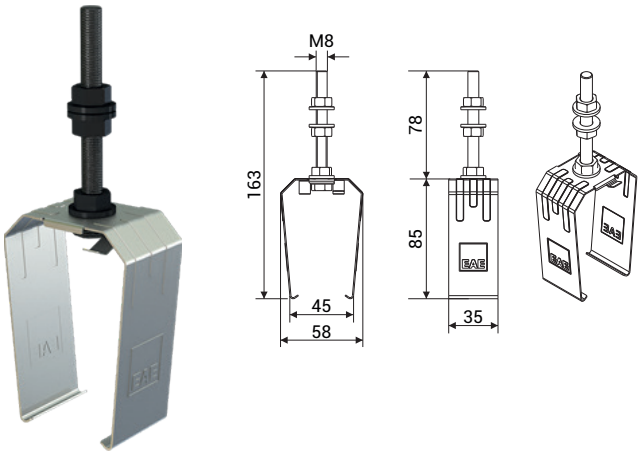


Description	Weight (gr)	Order Code
TB5 Trolley Transfer Tool	250	**3179189**

▶▶ TB5 PLASTIC SLIDING HANGER



▶▶ TB5 STEEL SLIDING HANGER

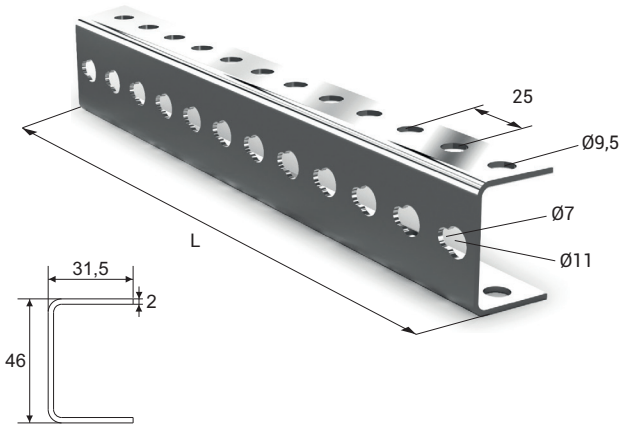


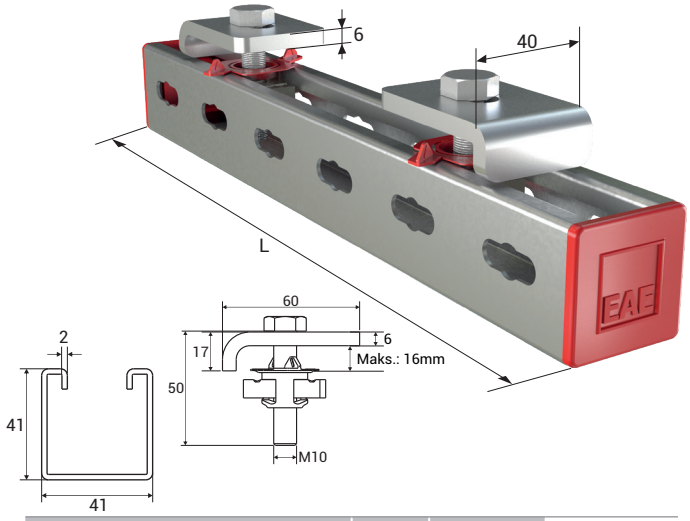
Trolley busbar should be mounted with slinding hanges and each hangers should be between 1300mm and 1500mm.

Description	Weight (gr)	Order Code
TB5 Plastic Sliding Hanger	85	**1003664**

Description	Weight (gr)	Order Code
TB5 Steel Sliding Hanger	100	**1005954**

▶▶ TB HANGER BRACKET

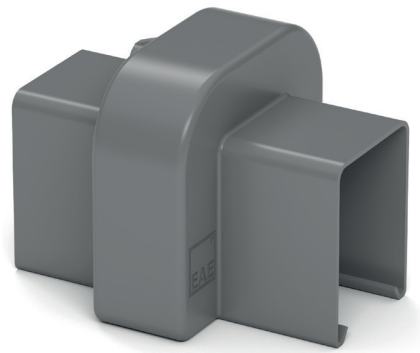




Description	L (mm)	Weight (gr)	Order Code
TB Hanger Bracket	250	350	**3025153**
URC-C/S Hanger Bracket	500	700	**3034560**
URC-A Hanger Bracket	750	1050	**3025382**

Description	L (mm)	Weight (gr)	Order Code
TB BR Hanger Bracket	300	800	**3178916**
URC-C/S BR Hanger Bracket	600	1250	**3178917**
URC-A BR Hanger Bracket	800	1550	**3178918**

▶▶ TB5 EXTENSION ELEMENT

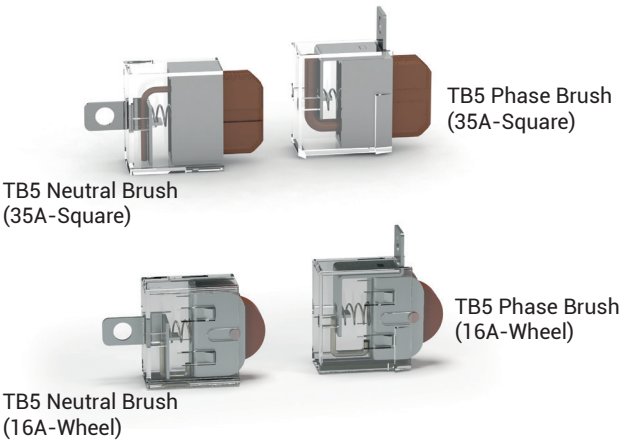


When the busbar line needs to be extended, you may remove the End Closure and install the joint unit to extend.

- May be used with busbars with 4 or 5 conductors.
- Halogen-free plastic raw material
- High impact resistance.
- Design resistant against ambient conditions.

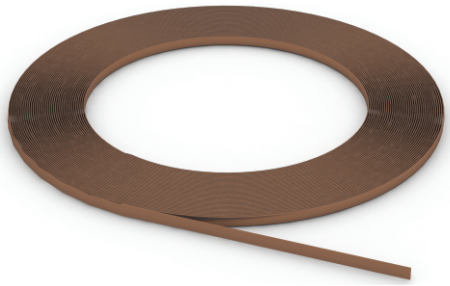
Description	Weight (gr)	Order Code
TB5 Extension Element	250	**3141724**

▶▶ TB5 CURRENT COLLECTOR BRUSHES



Description	Weight (gr)	Order Code
TB5 Phase Brush (35A-Square)	40	**3024371**
TB5 Neutral Brush (35A-Square)	40	**3024372**
TB5 Phase Brush (16A-Wheel)	40	**3165078**
TB5 Neutral Brush (16A-Wheel)	40	**3165080**

▶▶ TB5 COPPER CONDUCTORS



Description (mm x mm)	Order Code
TB5 0.80x16,00 (TB5 Copper)	**1003097**
TB5 1.00x16,00 (TB5 Copper - 75A)	**1002254**
TB5 1.50x16,00 (TB5 Copper - 105A)	**1002275**
TB5 2.00x16,00 (TB5 Copper - 130A)	**1003094**

▶▶ TB CONDUCTOR CASETTE

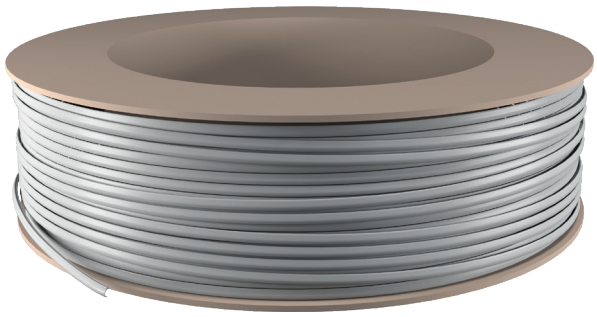
Conductor cassette shall be used to prevent damage to the conductors while the copper conductors are installed on the busbar.

Description	Weight (gr)	Order Code
TB Conductor Caset	6800	**3025151**

▶▶ TB5 CONDUCTOR MOUNTING TOOL

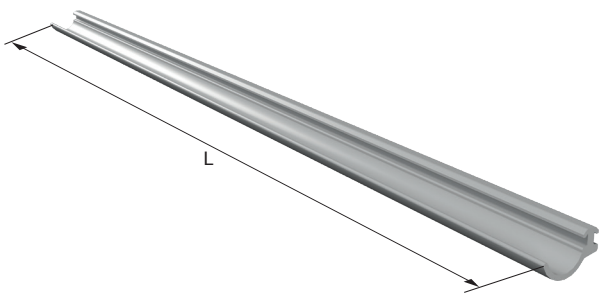
Description	Weight (gr)	Order Code
TB5 Conductor Mounting Tool	215	**3024456**

▶▶ TBS GASKET



■ Continuous length is maximum 300 meters.

Description	Weight (gr/m)	Order Code
TBS Gasket Roll (m)	30	**1037761**



■ Gasket should be ordered twice the line length.

Description	L (mm)	Weight (gr)	Order Code
TBS Gasket Straight Length (Pcs.)	4000	120	**1037762**

▶▶ VOLTAGE DROP

The voltage drop in the busbar lines shall be inspected as per the busbar type selected according to the total current calculated based on the ambient temperature and operating period of the system. Maximum acceptable value for voltage drop is 3%.

For Direct Current	$\Delta U = 2.L_t.I_G.R$	ΔU =	Voltage Drop [V]
		I_G =	Total current [A]
For Mono-Phase Alternative Current	$\Delta U = 2.L_t.I_G.Z$	R =	Resistance of the busbar [Ω/m]
		Z =	Impedance of the busbar [Ω/m]
For Three-Phase Alternative Current	$\Delta U = \sqrt{3}.L_t.I_G.Z$	L_t =	Calculated Hole Length [m]

Note : Calculation of the current drawn during first start in various motor types;

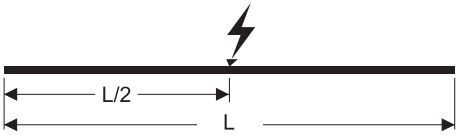
I_A= Total current drawn in the first start of the motors [A]

For the starting current;	Three-phase asynchronous drive in direct start	$I_A = I_G$ x calculated as 5 to 6
	Slip ring rotor motor	$I_A = I_G$ x calculated as 2 to 3
	Frequency converter	$I_A = I_G$ x 1,20 to1,50 calculated between.

▶▶ CALCULATION OF FEEDING POINTS

When we take L_t as the length of the line, feeding points may be selected as shown in the diagrams below to keep the L voltage drop at minimum and it may be used as the hole length for the calculation of L_t voltage drop.

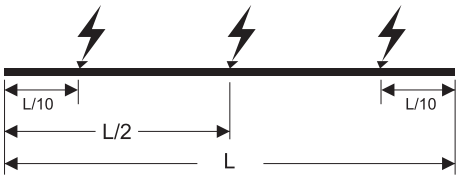
1 feeding point from the start, Lt=L



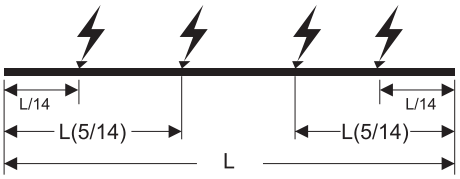
1 feeding point from the center, Lt=L/2

2 feeding points from the start points, Lt=L/4

2 feeding points, Lt=L/6



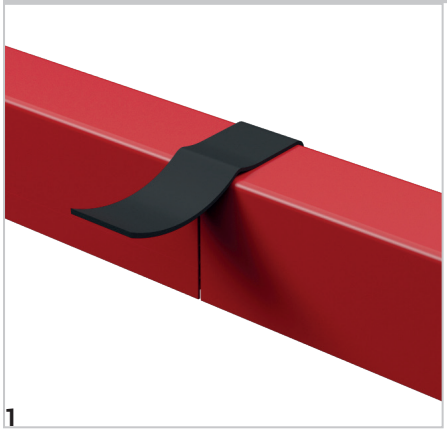
3 feeding points, Lt=L/10



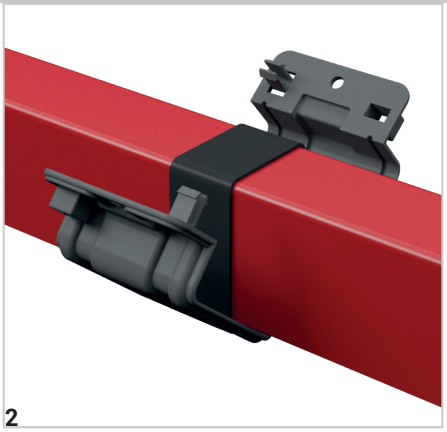
4 feeding points, Lt=L/14

▶▶ INSTALLATION MANUAL

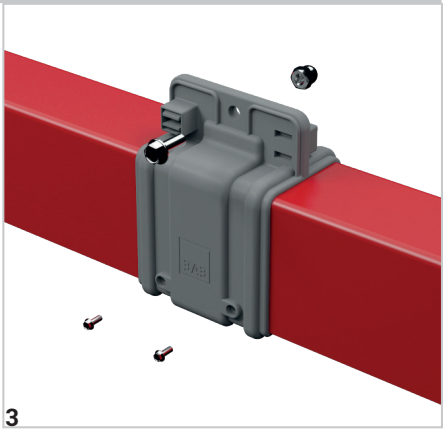
TBS - INSTALLATION OF JOINT UNIT



1
The joint point is covered using a self-adhesive EPDM gasket.

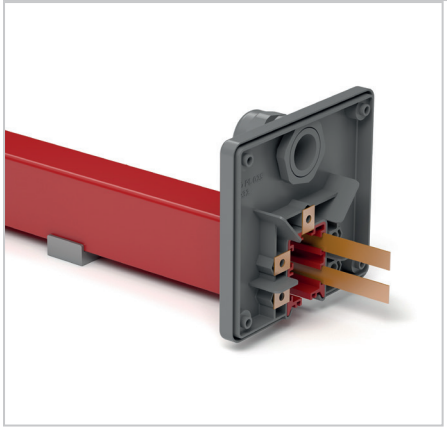


2
Engage the joint unit to the bottom of the busbar and close it.

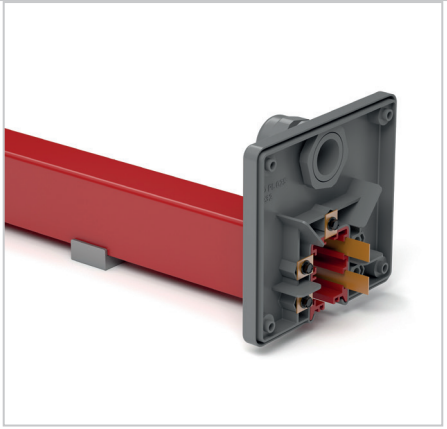


3
Close the joint cover and screw it.

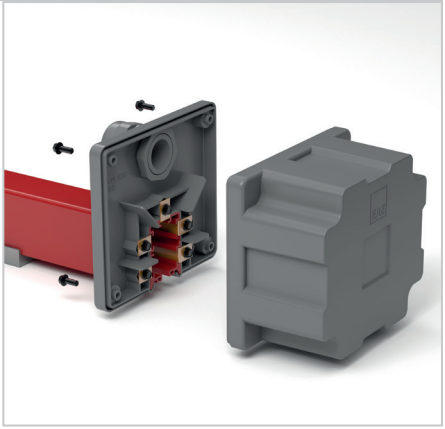
TBS - FEEDER UNIT



Conductors are bend 90° and pushed into the housing.

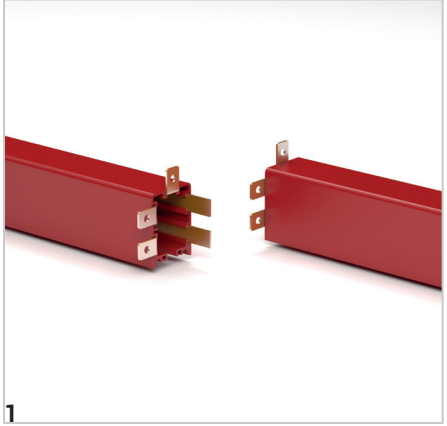


Housing and screw them to the feeding module.

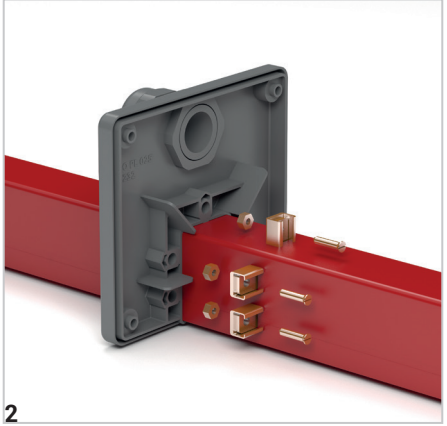


Close the module cover and screw it.

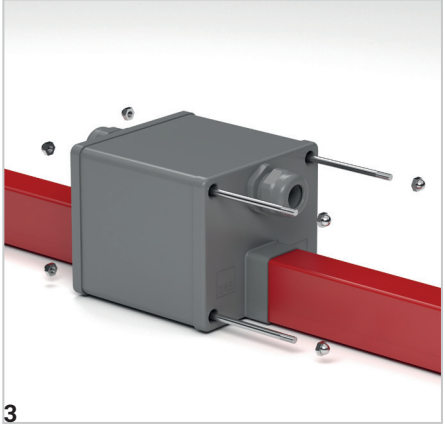
TBS - LINE FEED UNIT - 2 (JOINTED TYPE)



1
Bend conductors for 90°, and push them inside the housing.



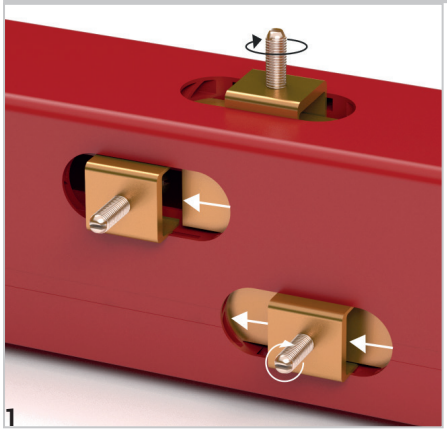
2
Put conductors back-to-back and join them with clips. Connect the feeding cables to the clips.



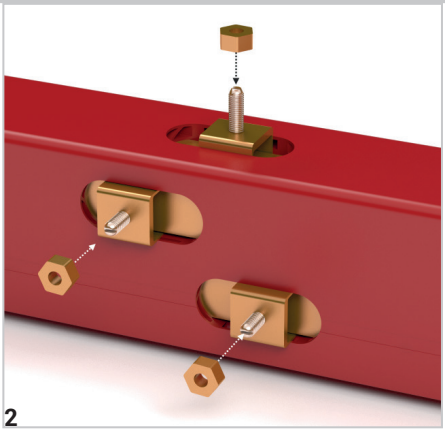
3
Close the module cover and screw it.

▶▶ INSTALLATION MANUAL

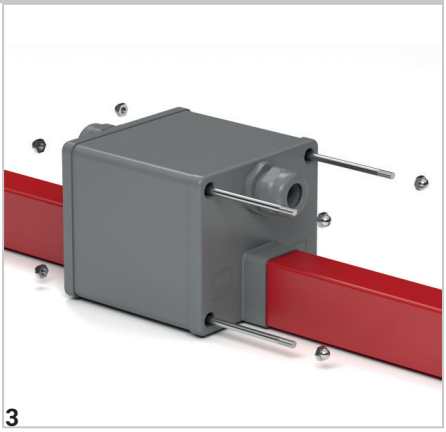
TBS - LINE FEED UNIT - 1 (CONTINUOUS TYPE)



1
Put the conductors through the clips and screw them.

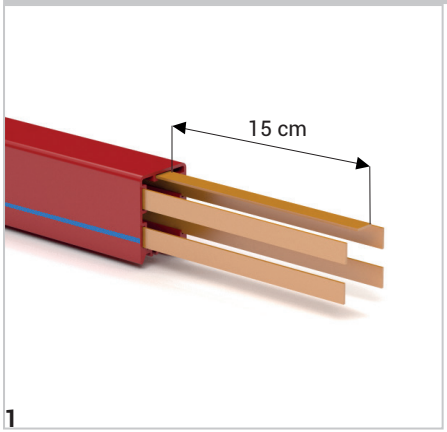


2
Connect the feeding cables to the clips with nuts.

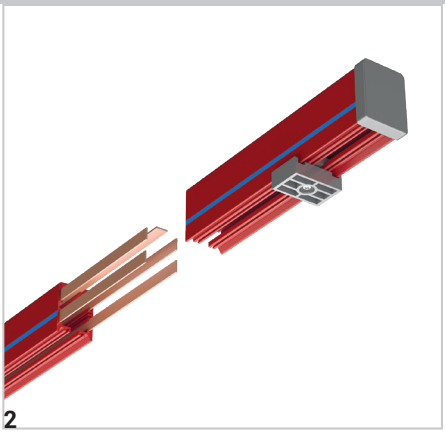


3
Close the module cover and screw it.

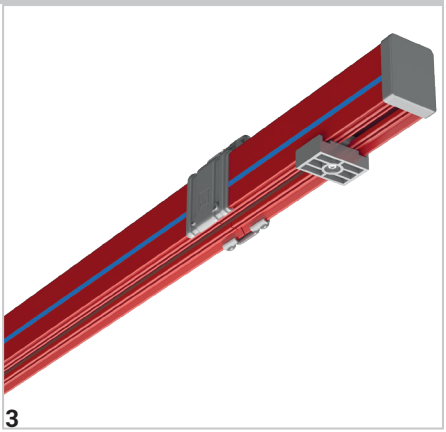
TBS - END CLOSURE



1
Cut the coppers at the end of the line by leaving a extra length of 15 cm.

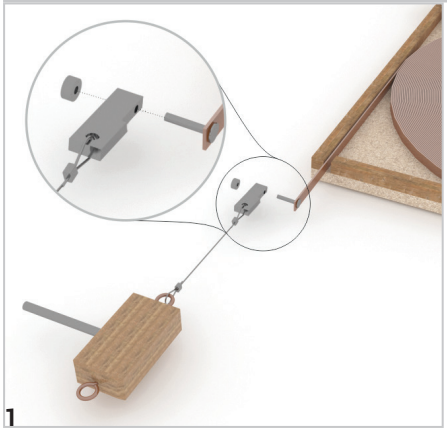


2
After placing the current collector to the system, place the End Closure so that it shall house the coppers.

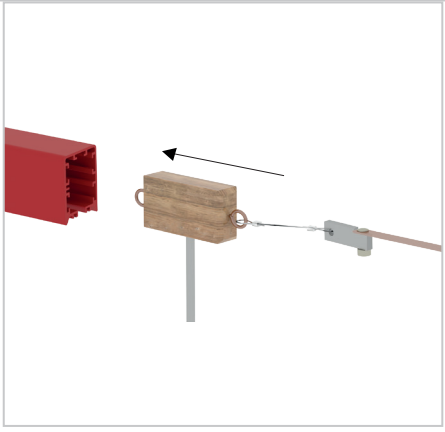


3
Install it on the system as you do while installing the extension.

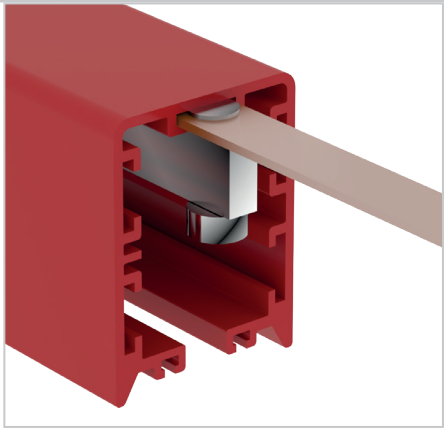
TBS - CONDUCTOR MOUNTING TOOL



1
Screw the conductor to the conductor mounting tool.



Drive the conductor mounting tool along the line.



Ensure that the conductor is seated.

ELINETROLLEY BUSBAR

▶▶ OFFER REQUEST FORM

Date :

Project Name	:	
Company	:	
Name Surname	:	
Tel	:	
E-Mail	:	
Address	:	

General Data

Track Length	:	
Number of Cranes on Track	:	
Crane Travel Speed	:	

Environmental Data

Operating Environment	:	☐ Indoor ☐ Outdoor
Ambient Temparature	:	°C min. / °C max.
Other Operating Conditions (Humidty, Dust, Chemical Influence, etc.)	:	

Electirical Data

Operating Voltage	:	Volts ☐ AC ☐ DC
		Phases ☐ N ☐ PE
Position and Number of Feeder	:	from End / from Middle
Duty Cycle (%)	:	☐ 50% ☐ 60% ☐ 70% ☐ 80% ☐ 90% ☐ 100%

Motor Specifications		Crane - 1		Crane - 2		Crane - 3	
		Power (kW)	Current (A)	Power (kW)	Current (A)	Power (kW)	Current (A)
Hoist motors	:						
Auxiliary motor	:						
Long travel	:						
Cross travel	:						

Options

Brackets Required	:	☐ Yes		☐ No	
Repair Zone Required	:	☐ Yes	Qty	☐ No	
Collector Replacement Required:		☐ Yes	Qty	☐ No	
Descriptions	:				

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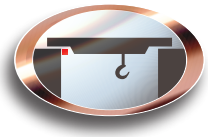
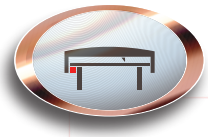


• Bridge Cranes

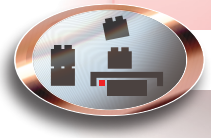
• Monorail Systems



• Textile Cutting and Spreading Tables

• AS/RS Storage Systems

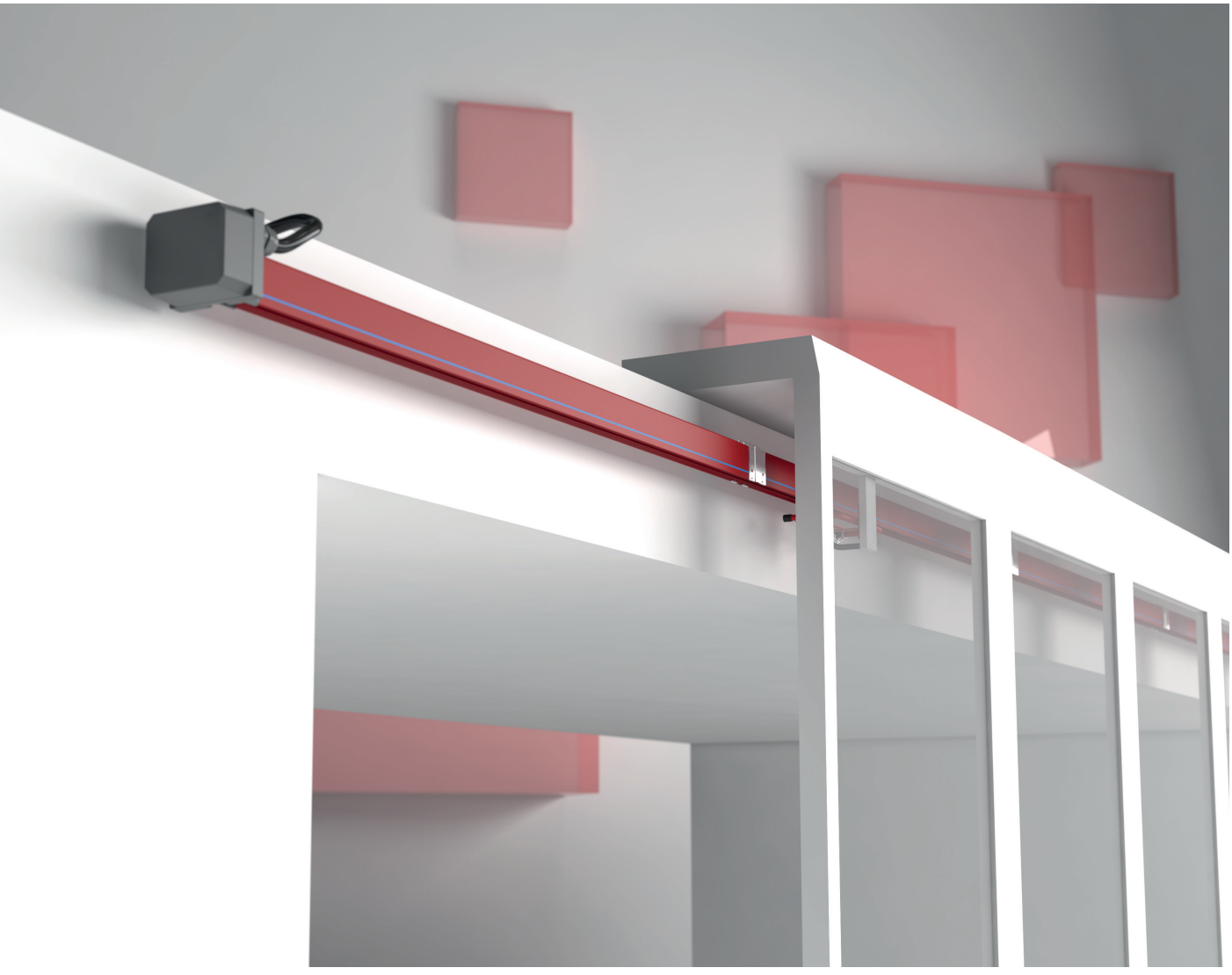
• Moving Ceiling and Door Systems



• Assembly and Test Lines

EAE
ELEKTRİK

E-LINE TB



TB

E-LINE TB

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▶▶ E-LINE TB

ELINETB

▶▶ TROLLEY BUSBAR SYSTEMS

- Bridge Cranes
- Monorail Systems
- Textile Cutting and Spreading Tables
- AS/RS Storage Systems
- Moving Ceiling and Door Systems
- Assembly and Test Lines

It consists of copper conductors and current collectors in the C-PVC body. The uninterrupted energy supply and movement of the system is provided by current collectors connected to the system mechanically.

The eliminates the possibilities such as accident, malfunction in energy distribution with suspended and reel cable in conventional systems. Conductors are enclosed in C-PVC housing and personnel safety is maximized.

There is no fixed connection between the conductor housings and the conductors and between the C-PVC housing and the sliding hangers, the necessary expansion opportunity is provided, therefore the expansion element is unrequired.

Cautions:
If it is used in external environments exposed to rain, it is recommended to protect it with a cover such as a canopy.

ELINETB

▶▶ ORDER CODE SYSTEMS

TB	10	4

Trolley Busbar Model

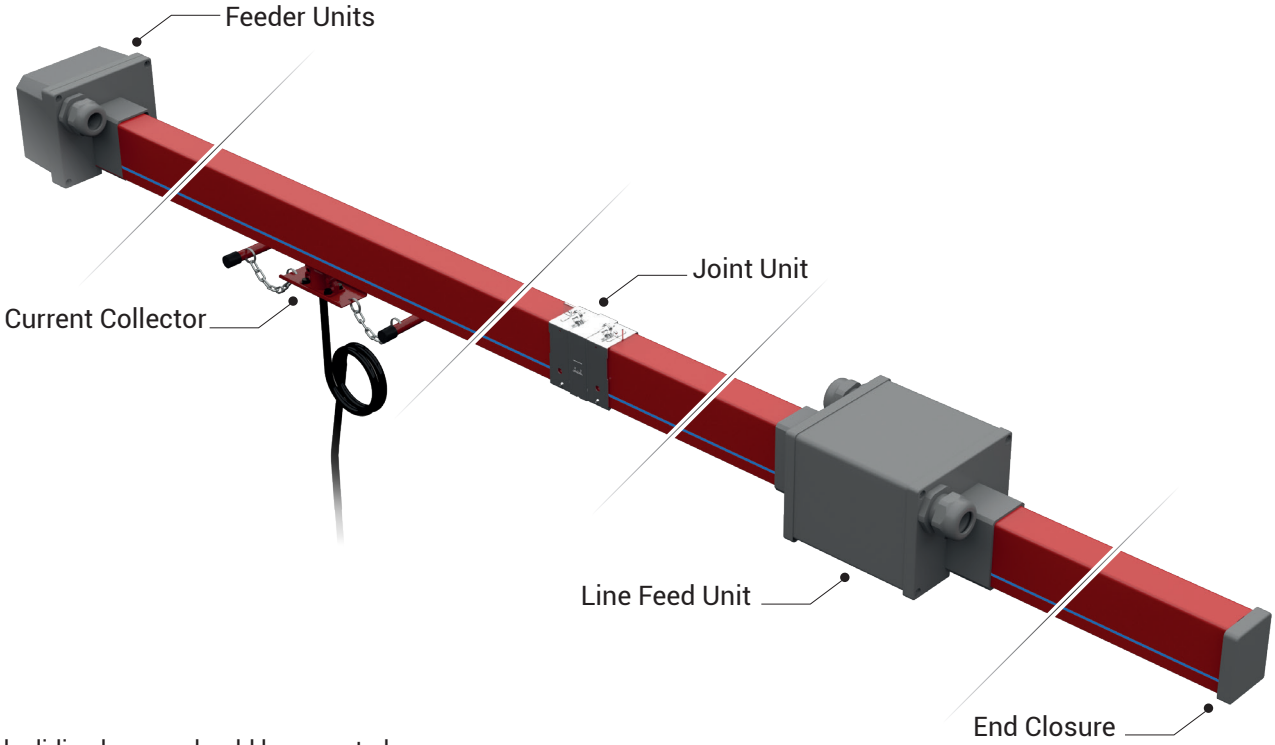
Current Ratings	
35A	03
63A	06
80A	08
100A	10
125A	12

160A	16
200A	20
250A	25

Number of Conductors	
4 Conductors	4
7 Conductors	7

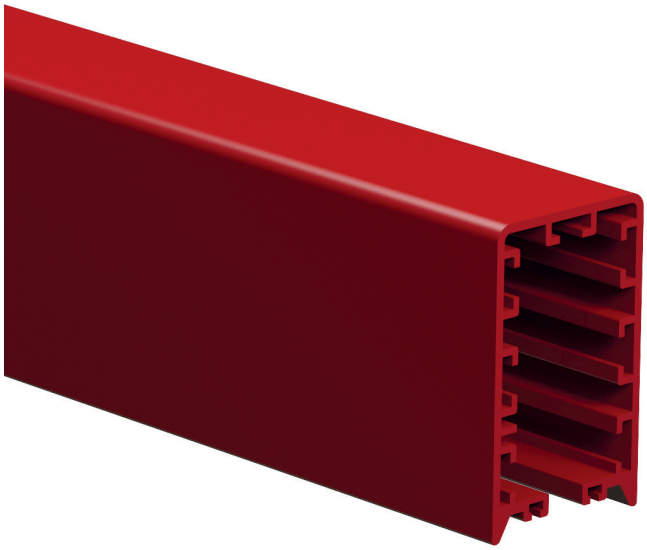
▶▶ TECHNICAL FEATURES

Rated Current	(A)	35	63	80	100	125	160	200	250
Conductor Quantities	(pcs)	4	4	4	4	4	7	7	7
Rated Voltage	(AC) (V)	690	690	690	690	690	690	690	690
Dielectric Properties	(kV/mm)	30	30	30	30	30	30	30	30
Frequency	(Hz)	50/60	50/60	50/60	50/60	50/60	50/60	50/60	50/60
Resistance (20°C)	R_{20} (mΩ/m)	1,650	1,680	1,380	0,990	0,730	0,870	0,480	0,410
Resistance (35°C)	R_{35} (mΩ/m)	1,790	1,920	1,600	1,140	0,860	1,080	0,590	0,510
Reactance	X (mΩ/m)	0,220	0,110	0,120	0,190	0,160	0,020	0,100	0,120
Impedance	Z (mΩ/m)	1,803	1,923	1,604	1,156	0,875	1,080	0,598	0,524
Standard Length	(m)	4	4	4	4	4	4	4	4



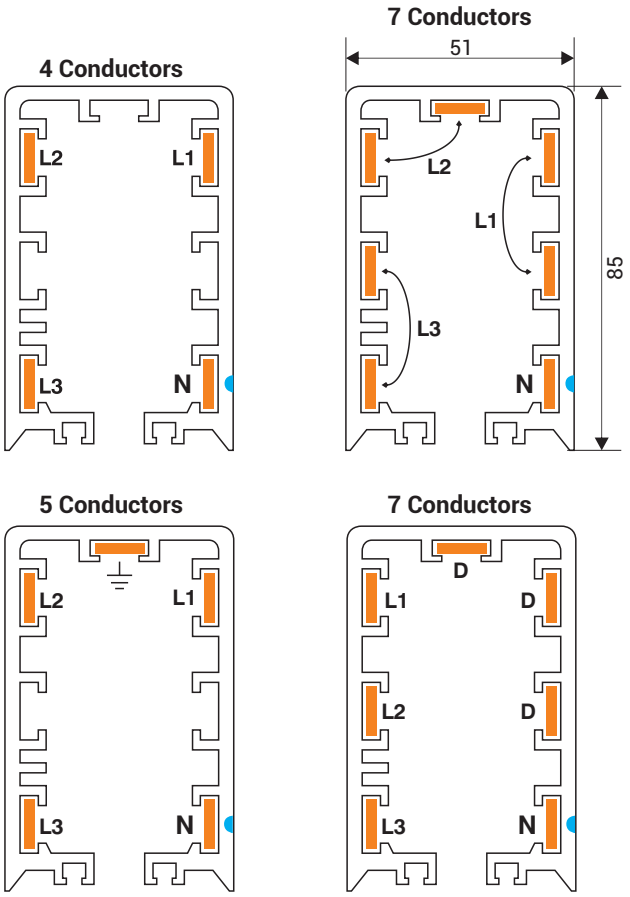
Note: Each sliding hanger should be mounted between 1300mm and 1500mm.

▶▶ TB TROLLEY BUSBAR



Description	Weight (gr/m)	Order Code
TB Trolley Busbar Housing	1550	**2037292**

Multiple current combinations with standard C-PVC housing and different usage types can be created.



The housing has a structure that can use maximum 7 conductors. There is safety system that prevents the current collector to be fixed inversely.

Continuous Copper Conductors

Electrolytic copper conductors can be applied without interruption at a maximum length of 150 m.

- **Number of Conductors:** 4, 5, 7 Conductors
- **Colour:** Red.
- **Temperature range:** -40°C ve +55°C.
- **Standard housing length:** 4 meters.
- **Protection:** Standard IP24, Gasket ile IP44.
- **Non-Flammable Characteristics:** UL 94 V0
- Housing is made of C-PVC and plastic accessories are made of PA6 raw material.
- There is a neutral line on the housing the neutral conductor.
- There is a neutral line on the housing the neutral conductor.

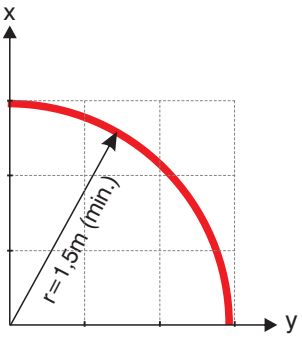
Standard 4 Meters

Model	Conductors Quantity-Current (A)	Weight (gr/m)	Conductor Cross Section (mm²)	Order Code
TB 034	4P- 35A	1900	4x9,45	**3025004**
TB 064	4P- 63A	1950	4x10,80	**3025005**
TB 084	4P- 80A	2000	4x13,50	**3025006**
TB 104	4P-100A	2250	4x19,50	**3025007**
TB 124	4P-125A	2450	4X26,00	**3025008**
TB 167	7P-160A	2400	7x13,50	**3025009**
TB 207	7P-200A	2750	7x19,50	**3025010**
TB 257	7P-250A	3150	7x26,00	**3025011**

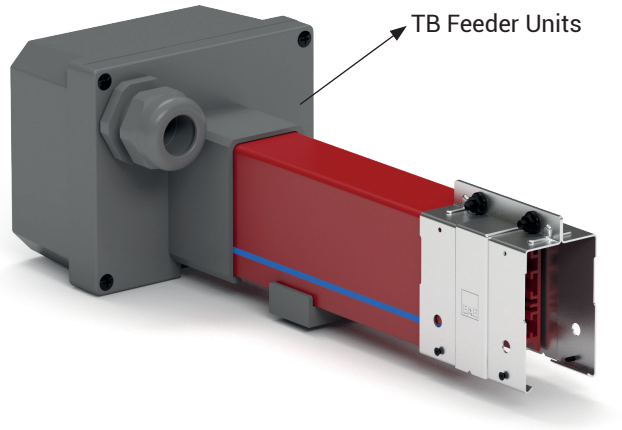
Joint plastics are not included in the weight values.
Total weight of the joint plastics and bolts is 0,28 kg.

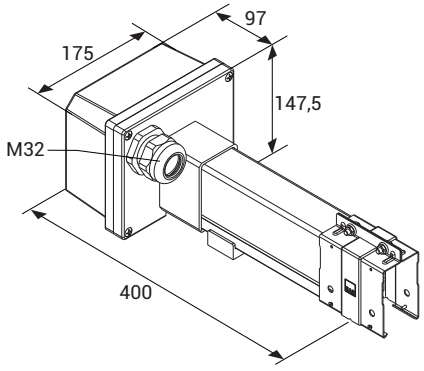
Radius Trolley Busbar

It has minimum 1.5m radius Trolley Busbar available in vertical axes. Radius Trolley Lines can be applied with maximum 4 conductors.



▶▶ TB FEEDER UNITS



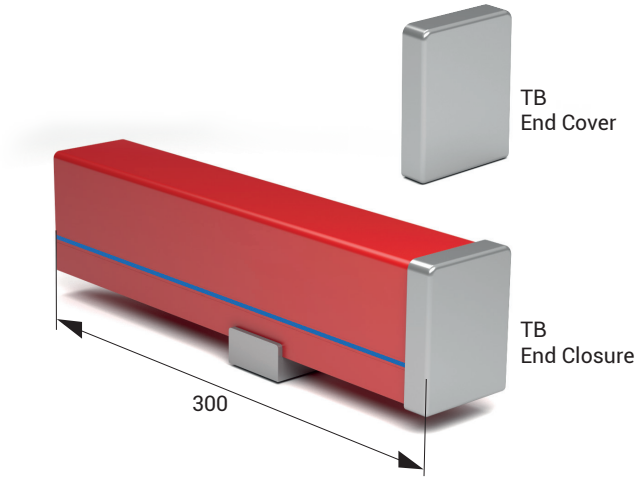


- May be used with busbars with 4 or 5 conductors.
- Produced with standard M32 cable glands.
- Halogen-free plastic raw material
- High impact resistance.
- Design resistant against ambient conditions.
- Ease of installation with snap-on design with a single screw.

Type of the feeder box is selected by calculating the voltage drop and the location of the power supply that shall provide power to the system.

Description	Weight (gr)	Order Code
TB Feeder Units	1100	**3025149**
TB Feeder Units	650	**3188028**

▶▶ TB END CLOSURE



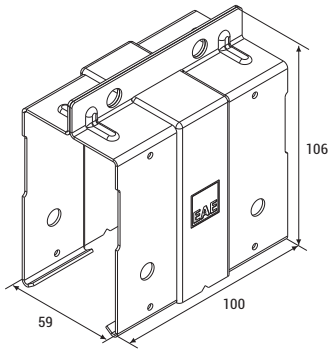
The end closure placed on the end of the busbar line prevents the exposure of the conductors, protects the system, and prevents the current collector from moving out of the housing.

- Halogen-free plastic raw material
- High impact resistance.
- Design resistant against ambient conditions.

Description	Weight (gr)	Order Code
TB End Closure	550	**3025147**
TB End Cover	20	**1001036**

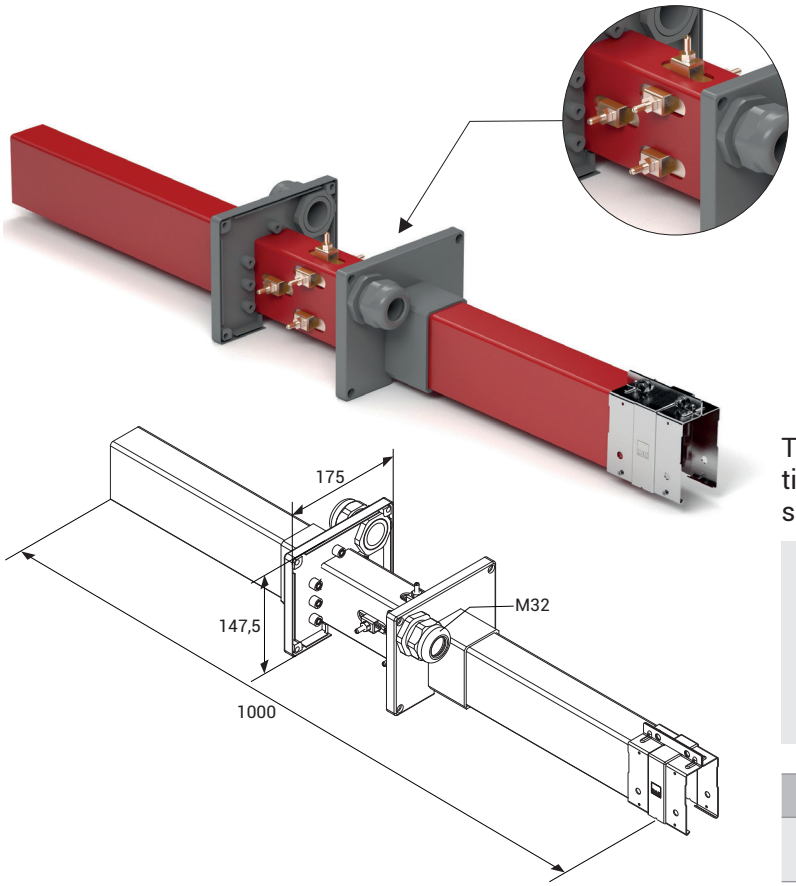
▶▶ TB JOINT UNIT

EPDM Gasket



Description	Weight (gr)	Order Code
TB Joint Unit	270	**1004256**

▶▶ TB LINE FEED UNITS - CONTINUOUS TYPE

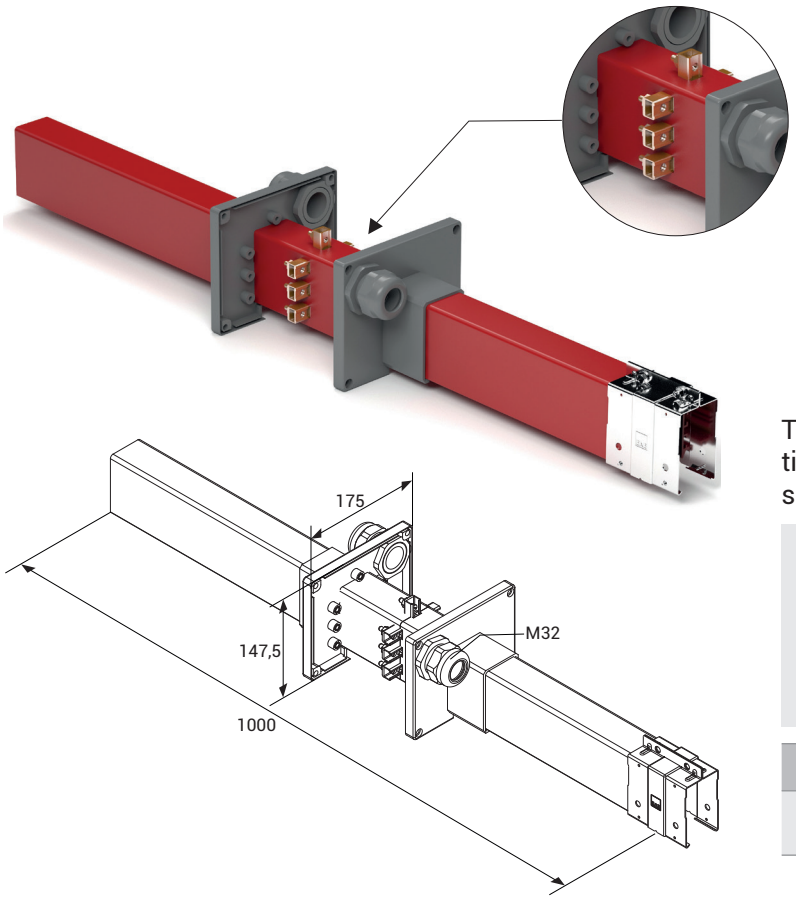


Type of the feeding element is selected by calculating the voltage drop and the location of the power supply that shall provide power to the system.

- Produced with standard M32 cable glands.
- Halogen-free plastic raw material
- High impact resistance.
- Design resistant against ambient conditions.

Description	Weight (gr)	Order Code
TB Line Feed Unit - Continuous Type	2750	**3025148**

▶▶ TB LINE FEED UNITS - JOINTED TYPE

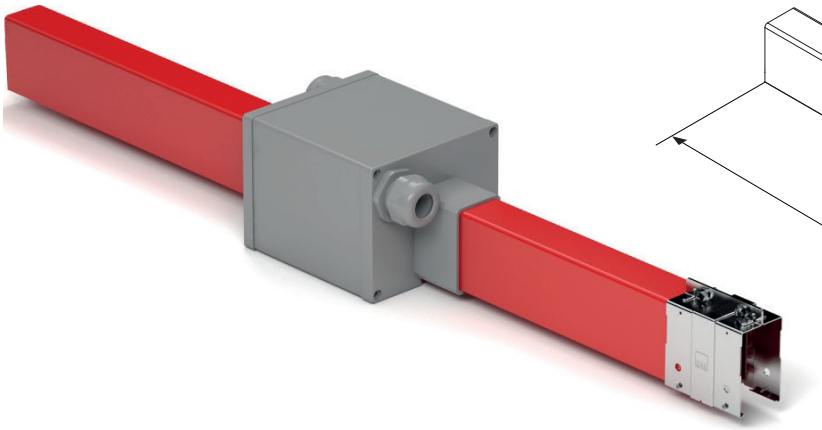


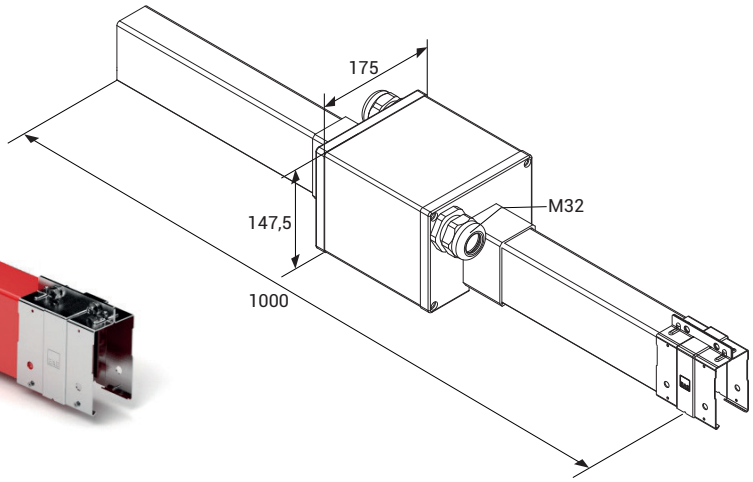
Type of the feeding element is selected by calculating the voltage drop and the location of the power supply that shall provide power to the system.

- Produced with standard M32 cable glands.
- Halogen-free plastic raw material
- High impact resistance.
- Design resistant against ambient conditions.

Description	Weight (gr)	Order Code
TB Line Feed Unit - Jointed Type	2850	**3025150**

▶▶ TB REPAIR ZONE UNIT



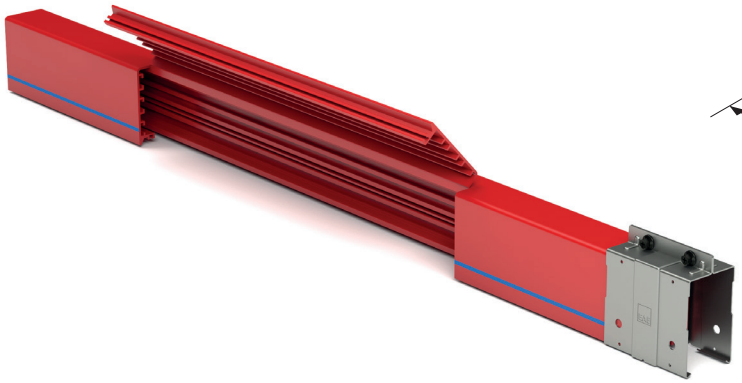


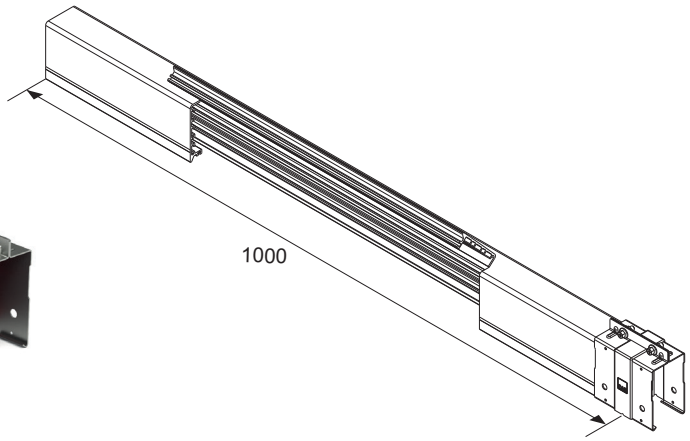
Current supply shall be cut off when a machine working on the line shall be maintained or repaired. Repair zone module is used to create a currentless area on the busbar so that the other machines operating on the same line may continue to work.

Description	Weight (gr)	Order Code
TB Repair Zone Module	2700	**3025003**

- Produced with standard M32 cable glands.
- Halogen-free plastic raw material
- High impact resistance.
- Design resistant against ambient conditions.

▶▶ TB CURRENT COLLECTOR REPLACEMENT MODULE



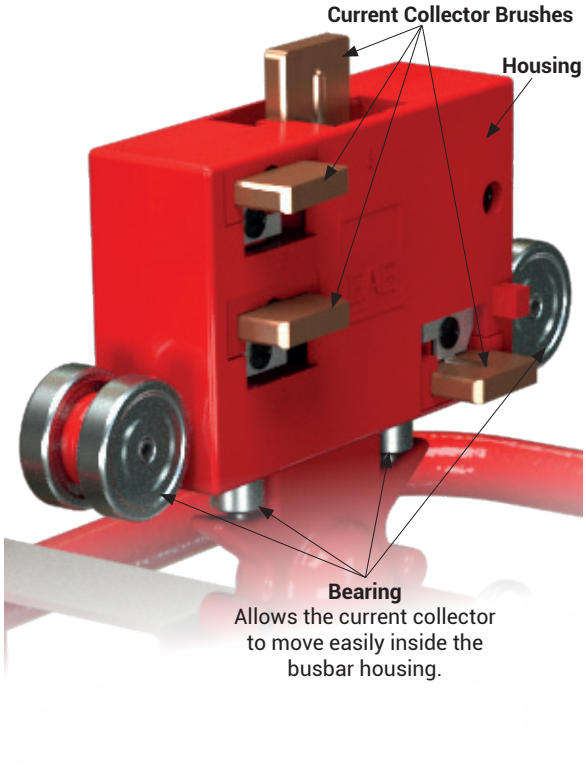


This unit is used to remove an existing current collector or to add extra trolleys. The unit is obtained by cutting a 50cm section from the PVC housing.

Description	Weight (gr)	Order Code
TB Line Feed Unit - Jointed Type	2250	**3024593**

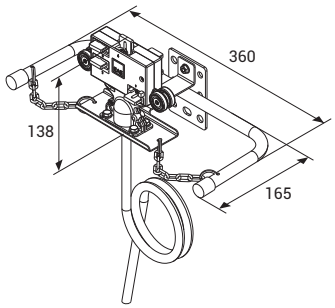
▶▶ TB CURRENT COLLECTORS WITH CABLE (4P/7P)

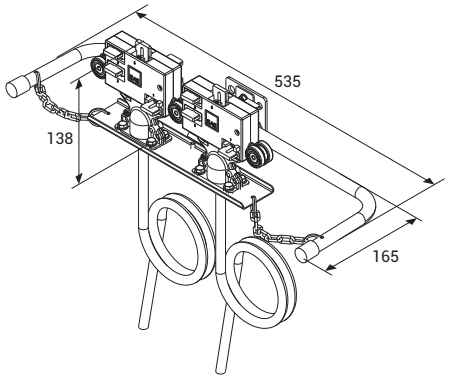
Model	Brushes Number-Current	Weight (gr)	Order Code
TB	4P - 35A (Single)	1750	**3025145**
	4P - 70A (Double)	2900	**3024947**
	4P - 105A (Triple)	3950	**3024945**
	7P - 35A/70A (Single)	2200	**3025144**
	7P - 70A/140A (Double)	3900	**3024946**
	7P - 105A/210A (Triple)	5650	**3024944**

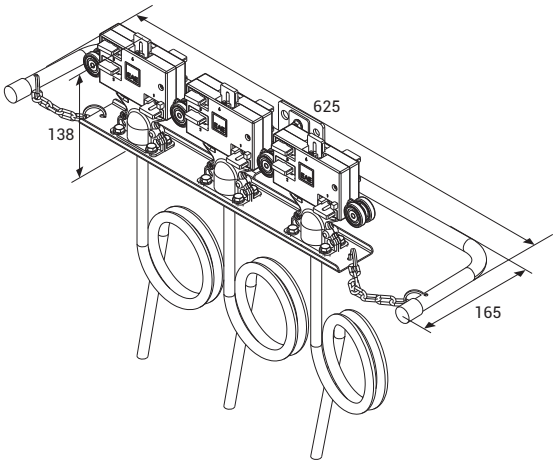


Current collector are the moving elements of the trolley busbar systems. Current collector brushes rub against the conductors and draw continuous current while they move through the busbar line. They adapt to shaky and vibrant conditions thanks to the moving brushes. As current collecting and transfer systems are included in the C-PVC housing, they are protected against human contact.

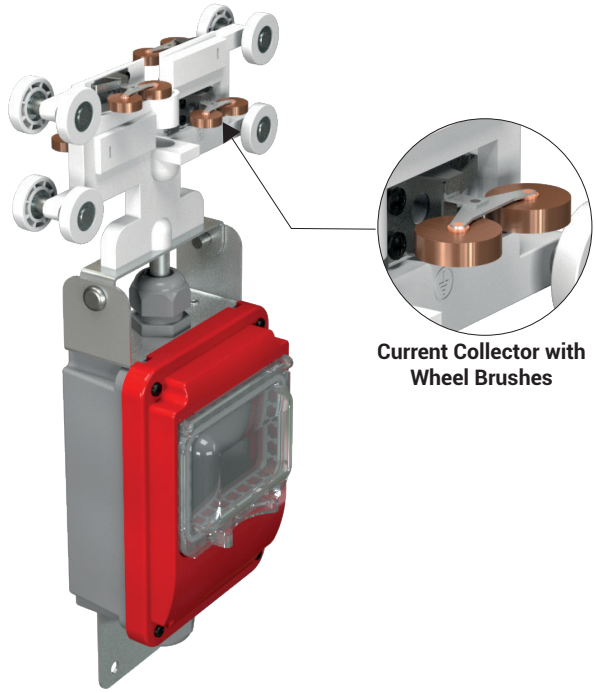
- High impact resistance.
- Design resistant against ambient conditions.
- Operating speed 100m/min.



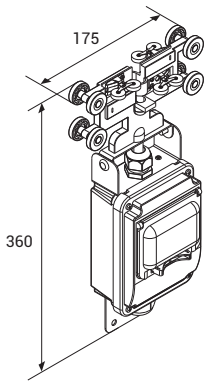




▶▶ TB CURRENT COLLECTOR WITH WHEEL BRUSHES (4P)



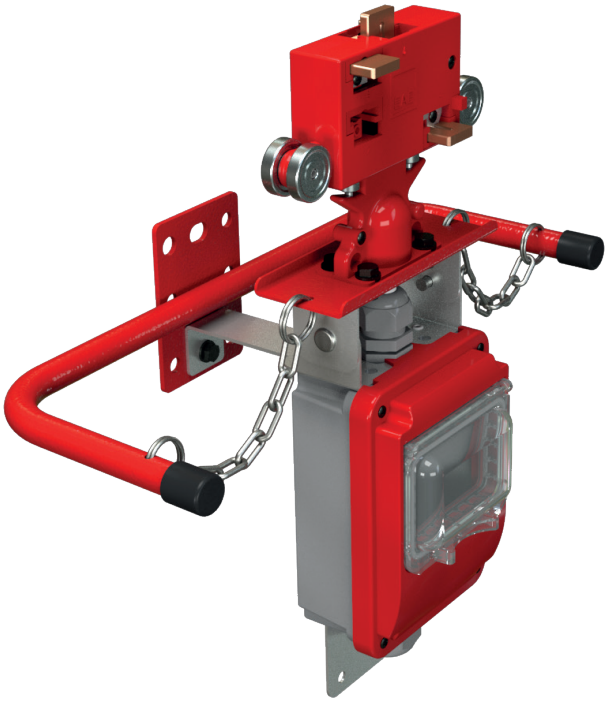
Current Collector with Wheel Brushes

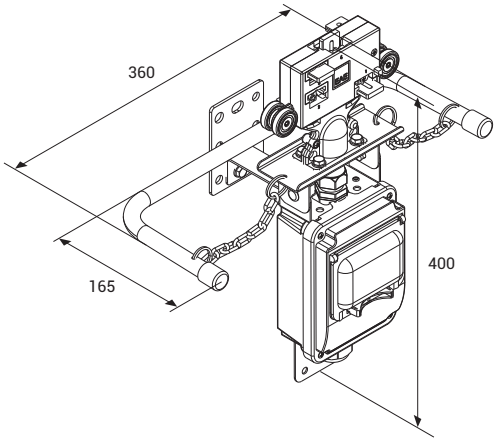


Model	Brushes Number-Current	Weight (gr)	Order Code
TB	4P - 16A	900	**3024774**

Current collector with Wheel Brush simplify the movement of the current collectors inside the busbar by reducing the time at the tables when movement is provided by the personnel.

▶▶ TB CURRENT COLLECTORS WITH FUSE BOX (5P)

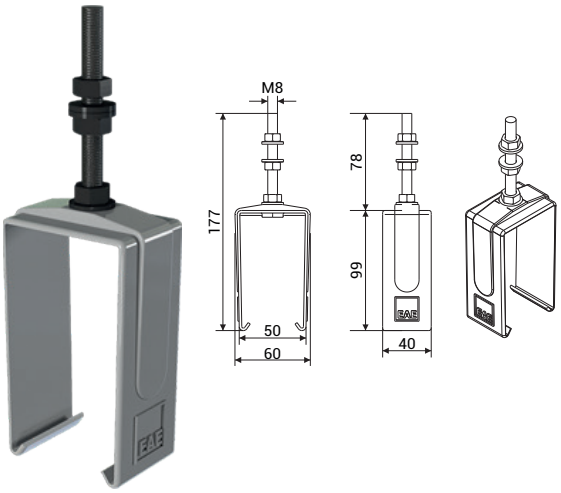




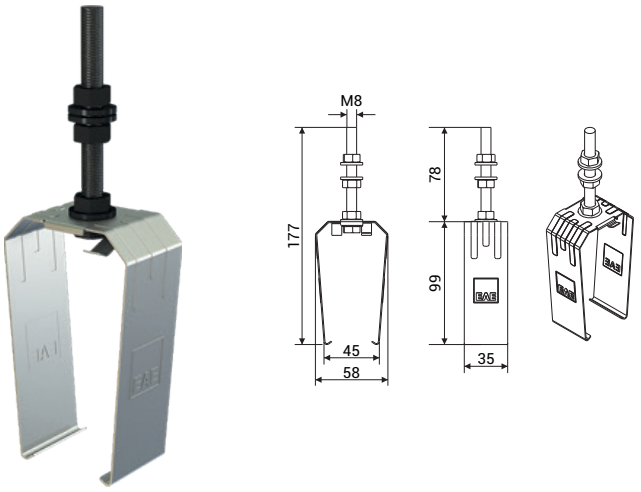
Model	Brushes Number-Current	Weight (gr)	Order Code
TB	5P - 35A	1850	**3024403**

Insurance boxed with both staff and current receiving area carts current machine's safety can be raised to a higher level. In addition, when it is desired to cut the power of one of the machines on a line, the current is cut off through the fuse, other machines on the line can continue to operate.

▶▶ TB PLASTIC SLIDING HANGER



▶▶ TB STEEL SLIDING HANGER

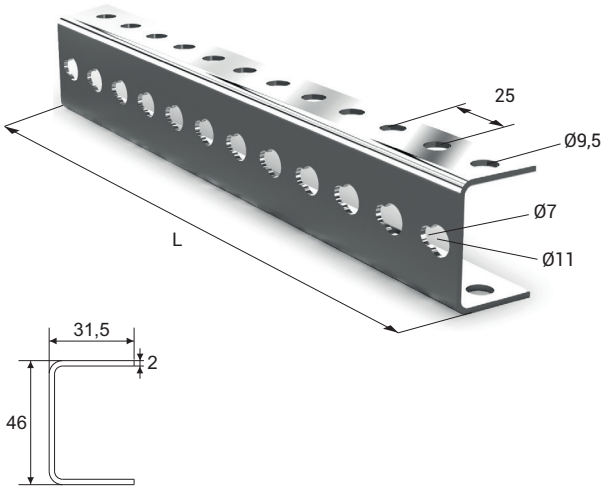


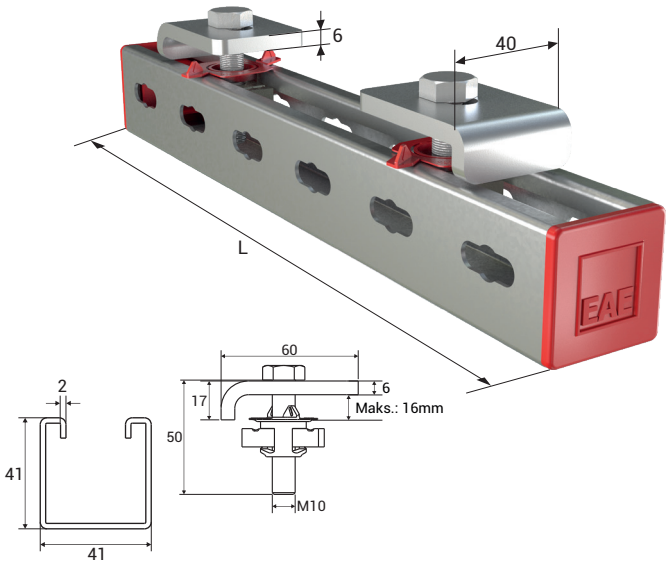
Trolley busbar should be mounted with slinding hanges and each hangers should be between 1300mm and 1500mm.

Description	Weight (gr)	Order Code
TB Plastic Sliding Hanger	90	**1004257**

Description	Weight (gr)	Order Code
TB Steel Sliding Hanger	110	**1006055**

▶▶ TB HANGER BRACKET

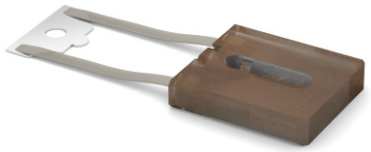




Description	L (mm)	Weight (gr)	Order Code
TB Hanger Bracket	250	350	**3025153**
URC-C/S Hanger Bracket	500	700	**3034560**
URC-A Hanger Bracket	750	1050	**3025382**

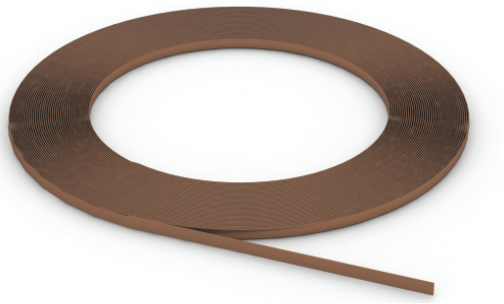
Description	L (mm)	Weight (gr)	Order Code
TB BR Hanger Bracket	300	800	**3178916**
URC-C/S BR Hanger Bracket	600	1250	**3178917**
URC-A BR Hanger Bracket	800	1550	**3178918**

▶▶ TB CURRENT COLLECTOR BRUSHES



Description	Weight (gr)	Order Code
TB Current Collector Phase Brush	20	**2011161**

▶▶ TB COPPER CONDUCTORS



Description	Order Code
TB 0,80x13,50 (TB Copper)	**1004261**
TB 1,00x13,50 (TB Copper - 80A)	**1004260**
TB 1,50x13,00 (TB Copper - 100A)	**1004258**
TB 2,00x13,00 (TB Copper - 125A)	**1004259**

▶▶ TB CONDUCTOR CASETTE

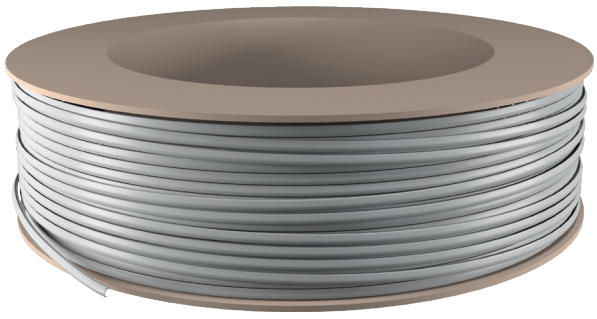
Conductor cassette shall be used to prevent damage to the conductors while the copper conductors are installed on the busbar.

Description	Weight (gr)	Order Code
TB Conductor Casette	6800	**3025151**

▶▶ TB CONDUCTOR MOUNTING TOOL

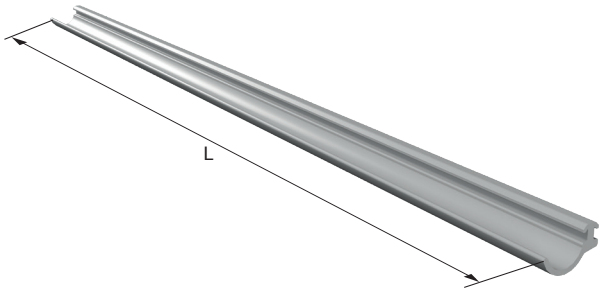
Description	Weight (gr)	Order Code
TB Conductor Mounting Tool	250	**3025143**

▶▶ TB GASKET



■ Continuous length is maximum 300 meters.

Description	Weight (gr/m)	Order Code
TB Gasket Roll (m)	30	**1037761**



■ Gasket should be ordered twice the line length.

Description	L (mm)	Weight (gr)	Order Code
TB Gasket Straight Length (Pcs.)	4000	120	**1037762**

▶▶ VOLTAGE DROP

The voltage drop in the busbar lines shall be inspected as per the busbar type selected according to the total current calculated based on the ambient temperature and operating period of the system. Maximum acceptable value for voltage drop is 3%.

For Direct Current	$\Delta U = 2.L_t.I_G.R$	ΔU =	Voltage Drop [V]
		I_G =	Total current [A]
For Mono-Phase Alternative Current	$\Delta U = 2.L_t.I_G.Z$	R =	Resistance of the busbar [Ω/m]
		Z =	Impedance of the busbar [Ω/m]
For Three-Phase Alternative Current	$\Delta U = \sqrt{3}.L_t.I_G.Z$	L_t =	Calculated Hole Length [m]

Note : Calculation of the current drawn during first start in various motor types;

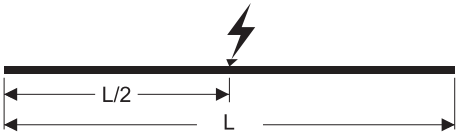
I_A= Total current drawn in the first start of the motors [A]

For the starting current;	Three-phase asynchronous drive in direct start	$I_A = I_G$ x calculated as 5 to 6
	Slip ring rotor motor	$I_A = I_G$ x calculated as 2 to 3
	Frequency converter	$I_A = I_G$ x 1,20 to1,50 calculated between.

▶▶ CALCULATION OF FEEDING POINTS

When we take L_t as the length of the line, feeding points may be selected as shown in the diagrams below to keep the L voltage drop at minimum and it may be used as the hole length for the calculation of L_t voltage drop.

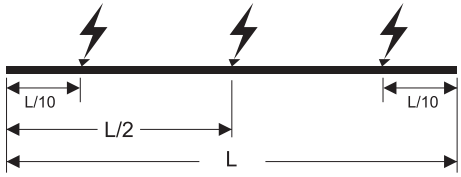
1 feeding point from the start, Lt=L



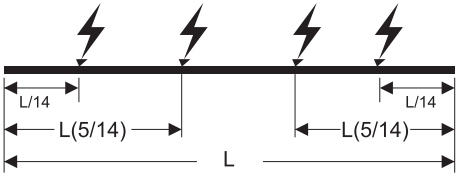
1 feeding point from the center, Lt=L/2

2 feeding points from the start points, Lt=L/4

2 feeding points, Lt=L/6



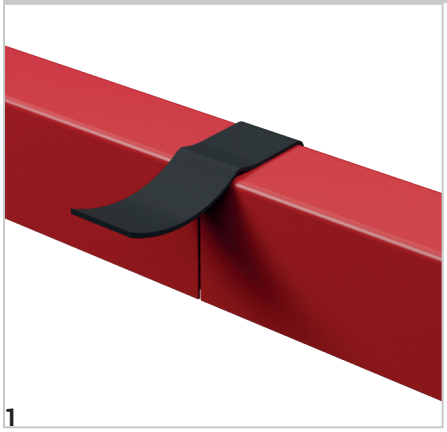
3 feeding points, Lt=L/10



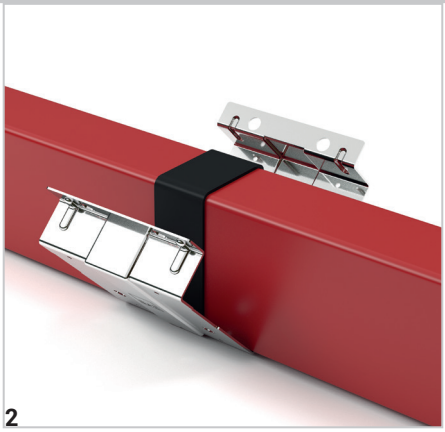
4 feeding points, Lt=L/14

▶▶ INSTALLATION MANUAL

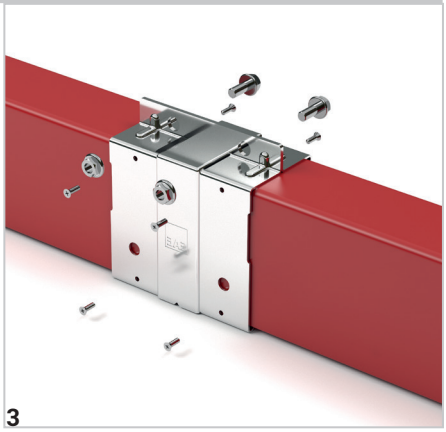
TB - INSTALLATION OF JOINT UNIT



1
The joint point is covered using a self adhesive EPDM gasket.

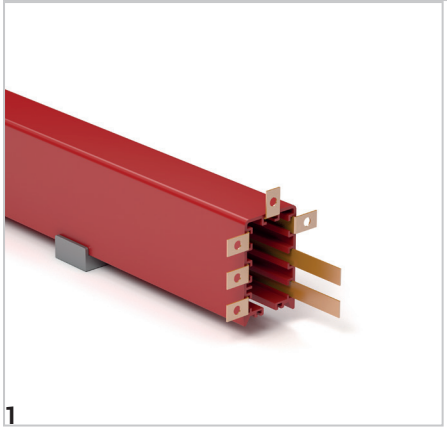


2
Engage the joint unit to the bottom of the busbar and close it.

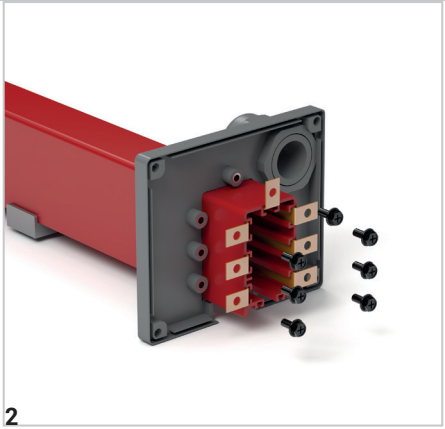


3
Secure it to the housing with screws.

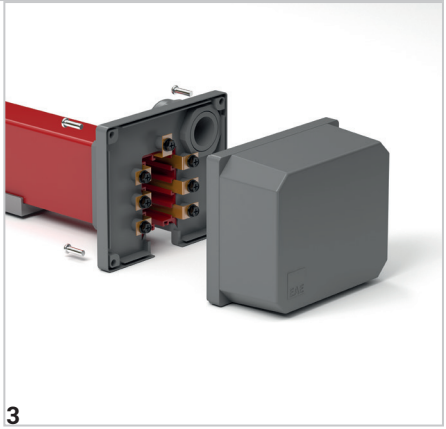
TB - FEEDER UNIT



1
Conductors are bend 90° and pushed into the housing.

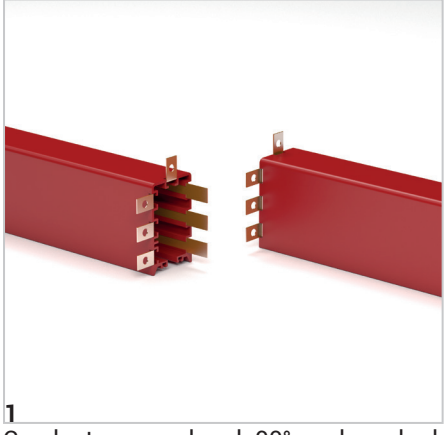


2
Screw the conductors to the feeding module. Connect the feeding cables by putting them through the cable gland.

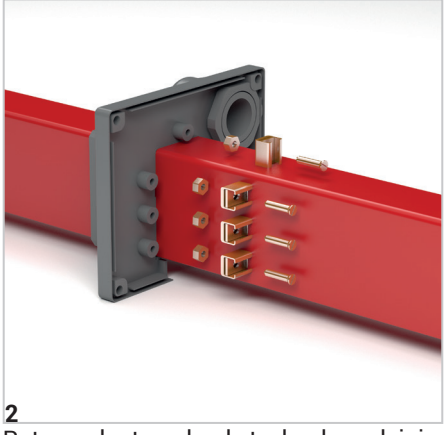


3
Close the module cover and screw it.

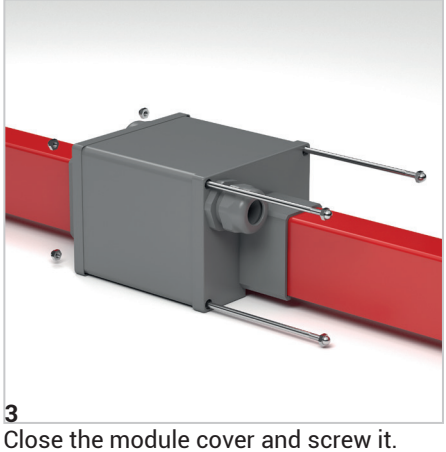
TB - LINE FEED UNIT - 2 (JOINTED TYPE)



1
Conductors are bend 90° and pushed into the housing.



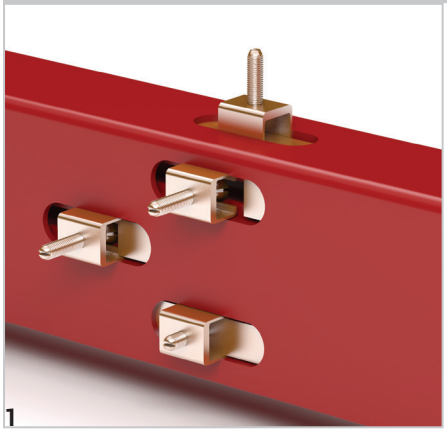
2
Put conductors back-to-back and join them with clips. Connect the feeding cables to the clips.



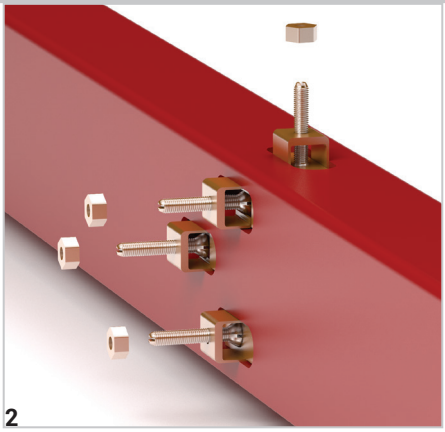
3
Close the module cover and screw it.

▶▶INSTALLATION MANUAL

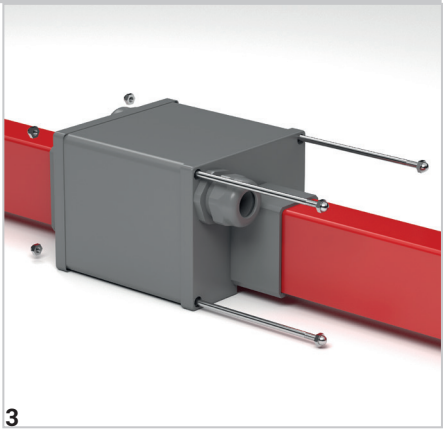
TB - LINE FEED UNIT - 1 (ContInuous Type)



1
Put the conductors through the clips and screw them.

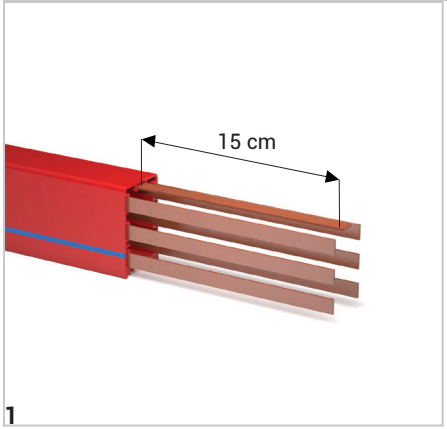


2
Connect the feeding cables to the clips with nuts.

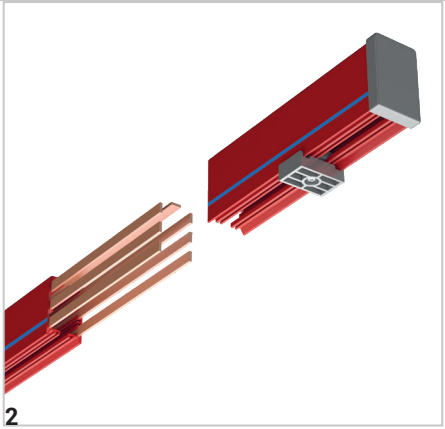


3
Close the module cover and screw it.

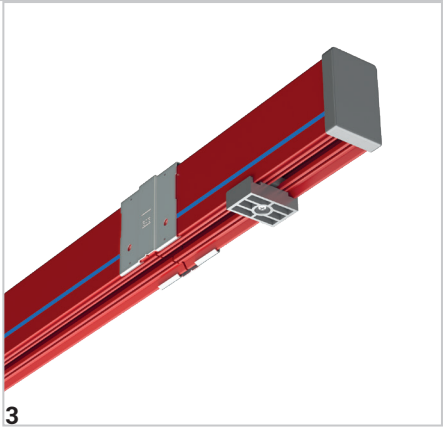
TB - END CLOSURE



1
Cut the coppers at the end of the line by leaving a extra length of 15 cm.

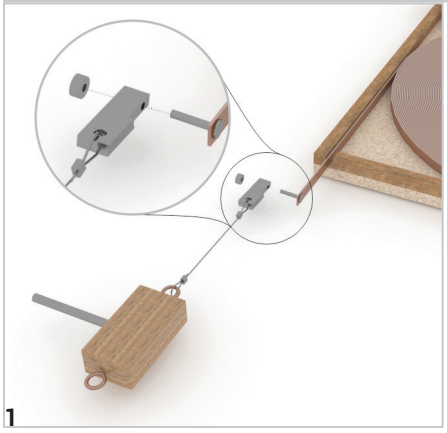


2
After placing the current collector to the system, place the End Closure so that it shall house the coppers.

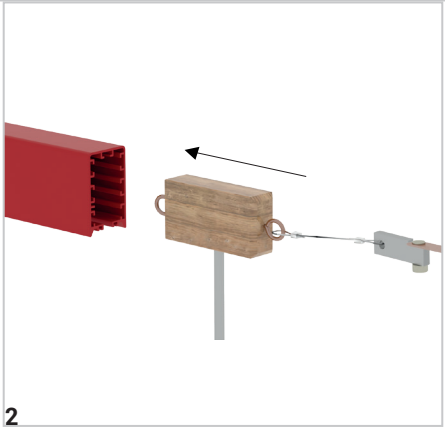


3
Install it on the system as you do while installing the extension.

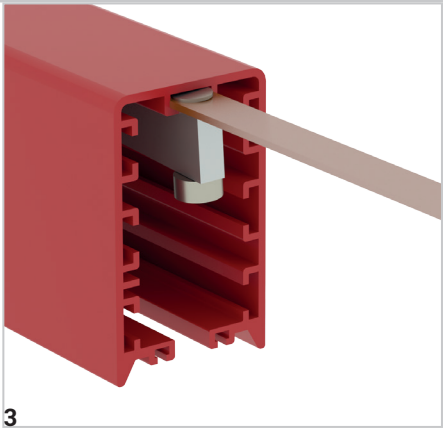
TB - CONDUCTOR MOUNTING TOOL



1
Screw the conductor to the conductor mounting tool.



2
Drive the conductor mounting tool along the line.



3
Ensure that the conductor is seated.

ELINETROLLEY BUSBAR

▶▶ OFFER REQUEST FORM

Date :

Project Name	:	
Company	:	
Name Surname	:	
Tel	:	
E-Mail	:	
Address	:	

General Data

Track Length	:	
Number of Cranes on Track	:	
Crane Travel Speed	:	

Environmental Data

Operating Environment	:	☐ Indoor ☐ Outdoor
Ambient Temparature	:	°C min. / °C max.
Other Operating Conditions (Humidty, Dust, Chemical Influence, etc.)	:	

Electirical Data

Operating Voltage	:	Volts ☐ AC ☐ DC
		Phases ☐ N ☐ PE
Position and Number of Feeder	:	from End / from Middle
Duty Cycle (%)	:	☐ 50% ☐ 60% ☐ 70% ☐ 80% ☐ 90% ☐ 100%

Motor Specifications		Crane - 1		Crane - 2		Crane - 3	
		Power (kW)	Current (A)	Power (kW)	Current (A)	Power (kW)	Current (A)
Hoist motors	:						
Auxiliary motor	:						
Long travel	:						
Cross travel	:						

Options

Brackets Required	:	☐ Yes		☐ No	
Repair Zone Required	:	☐ Yes	Qty	☐ No	
Collector Replacement Required:		☐ Yes	Qty	☐ No	
Descriptions	:				

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CE DECLARATION OF CONFORMITY

Product Group E-Line TB Trolley Busbar Systems

Manufacturer Akcaburgaz Mahallesi, 3114. Sokak,
No:10 34522 Esenyurt-Istanbul

The objects of the declaration described below is in conformity with the relevant Cable gland harmonisation legislation. This declaration of conformity is issued under the sole responsibility of the manufacturer.

Standard:

TS EN 61439-6

Low-voltage switchgear and controlgear assemblies - Part 6: Busbar trunking systems

CE - Directive:

2014/35/EU "The Low Voltage Directive"

2014/30/EU "(EMC) Electromagnetic Compatibility Directive"

2011/65/EU "RoHS Directive"

Technical Document Preparation Official:

EAE Elektrik Asansor End. Insaat San. ve Tic. A.S.
Akcaburgaz Mahallesi, 3114. Sokak, No:10 34522 Esenyurt-Istanbul

Emre GÜRLEYEN

Date

20.04.2016

Document Authorized Signatory

Elif Gamze KAYA OK
Deputy General Manager

PRODUCT TYPES

BUSBAR ENERGY DISTRIBUTION SYSTEMS

CABLE TRAYS

TROLLEY BUSBAR ENERGY DISTRIBUTION SYSTEMS

INDOOR SOLUTIONS

SUPPORT SYSTEMS

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www.eaeelectric.com

IEC 61439-6

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S.S.