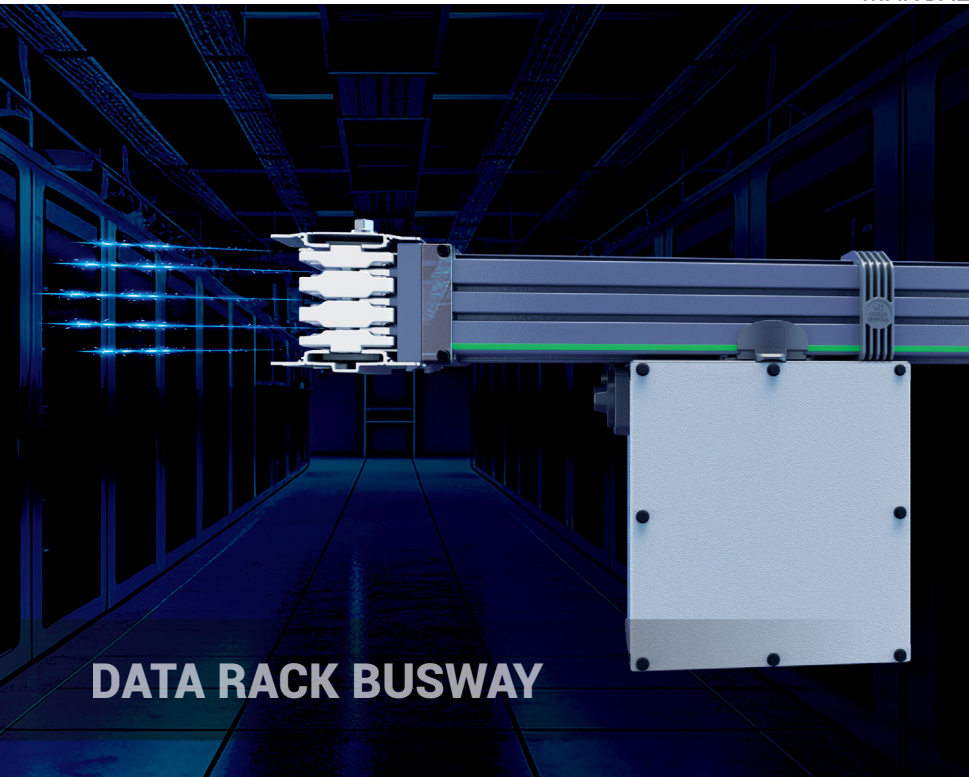




E-LINEKD-III

MANUAL



DATA RACK BUSWAY

E-LINEKD-III



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E-LINE KD-III MANUAL

►► Introduction



Dear Customer

EAE Elektrik A.S. Products are designed to provide the maximum benefit in efficiency and service. Our products are manufactured in accordance with UL standards and EAE is quality assured to ISO 9001 standards in their modern production plants in Istanbul .

The components that you have purchased are manufactured by a completely environment conscious, that is ISO 14001 certified.

These instructions should be read carefully and acted upon before taking delivery of equipment on site.

Handling, installation and operation of busway systems should be carried out only by skilled, trained and authorized personnel using all associated equipment such as rubber gloves, helmet, safety glasses or face shields and flash resistant clothing in accordance with established safety practices.

The busway system's successful operation depends on correct handling, installation, operation and maintenance. Improper installation may cause personal injury and the failure of the busway system and damage to other property.

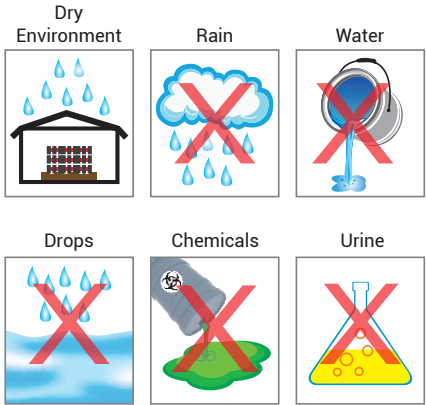


E-LINE KD-III MANUAL

►►General



**BUSWAYS SHOULD
NOT BE IN TOUCH WITH
ANY LIQUID MATERIAL**



**BUSWAYS THAT ARE NOT
ASSEMBLED COMPLETELY
HAVE NO PROTECTION
AGAINST TO WATER.**



E-LINE KD-III MANUAL

►► Unloading, Handling and Storage of Products



Unloading:

- Forklift is the most reliable and easiest method for the unloading of the products from the container or the truck arriving at the worksite.
- Utmost care is required to be exercised to ensure avoidance of any harm that can be sustained by the products during the unloading process.

Storage:

- From the packing list check the number of pallets received, the number, dimensions and the condition of the busway lengths. Advise any discrepancies immediately to the local EAE representative.
- All products should be stored in a dry environment.

Handling:

- Do not handle the materials using steel ropes or hooks. As shown in the busway should be lifted using lifting straps placed at each end of the busway length.
- Short modules may be lifted using a single strap providing that the piece is balanced.
- A wooden spacer should be used every 4.92 ft when storing the lengths placed on top of each other.
- Do not stack more than 5 modules on each other horizontally.

► Joint Area General Information

Controlling of Juncture Area:

- The final check form supplied should be completed for each busway joint installed.
- Perform a megger test after each joint, and ensure that there is no problem on the joint area.
- In order to prevent damage to the terminals and transformers during this test, remove their connections or protect them.
- After every electrical test, the system must be discharged to earth.
- After completing all electrical tests, make the terminal, MCCB and fuse connections again.
- The form filled in after each test should be submitted to the EAE representative. The product quality approval form (186) should be completed and submitted to us to validate the warranty.

E-LINE KD-III MANUAL

►► Handling & Storage



1- General guidelines are given to protect the busway straight lengths and modules and reduce the risk of personal injury and equipment damage during handling on site.

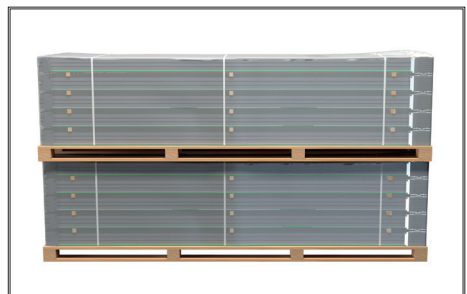
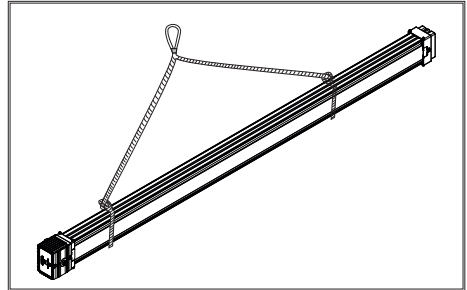
2- As soon as the container or truck arrives on site, a suitable forklift is required for easy and convenient unloading from vehicle directly to the ground level.

3- All pallets should be checked by unpacking them sufficiently to inspect them for possible transit damage and to determine that the shipment is complete and correct as per Packing List provided.

* If any of the items is missing from the Packing List or any piece is damaged during transportation, Insurance Company must be informed immediately for proper reporting with all required documents for further action.

4- All busway straight lengths and modules should be handled with care to avoid damage to internal components and the twisting of housing or its finish.

5- When the lengths and modules are required to be taken from the pallets to the erection area, those should be hoisted using metal rods or bars passed through the 2 sets of holes at each end of the housing body by ensuring the load is stable and safely secured. Then adequate sling and slinging method can be used for shifting from one place to another.

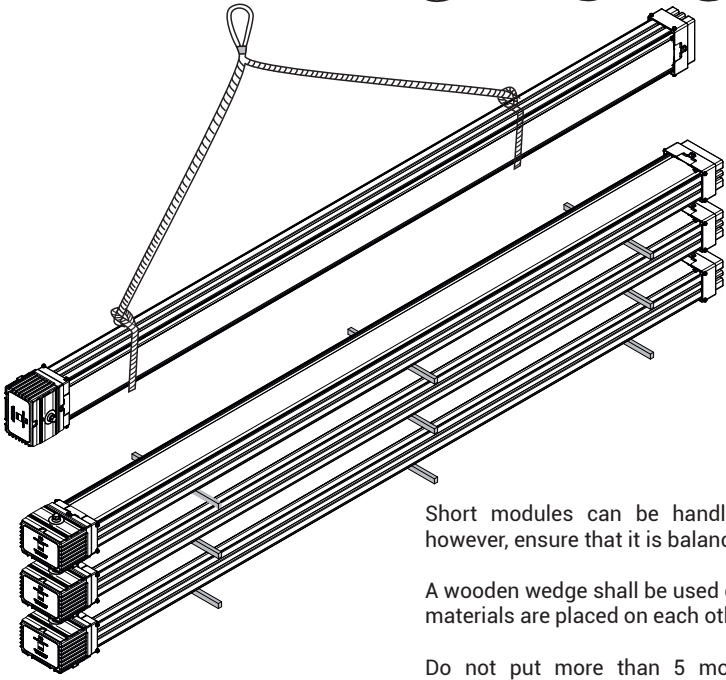
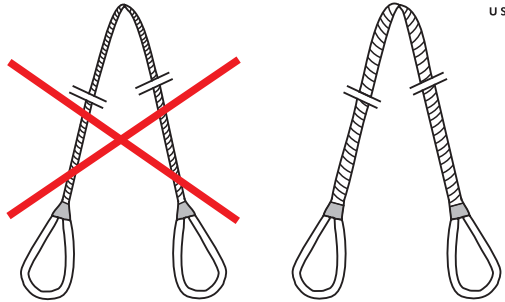


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►► Handling and Lifting



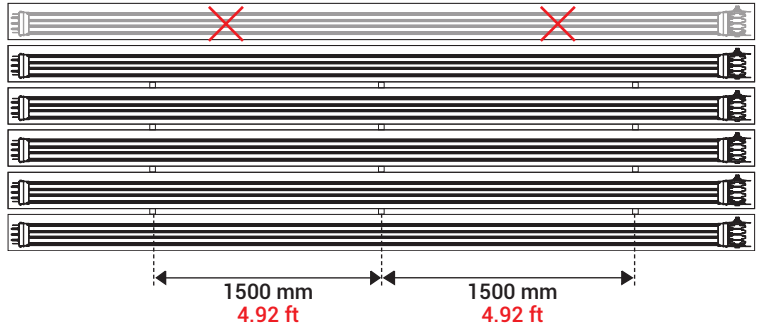
Strapping type ropes should only be used instead of round ropes to prevent the materials slipping during handling.



Short modules can be handled by a single rope, however, ensure that it is balanced.

A wooden wedge shall be used every **4.92 ft** when the materials are placed on each other while storing them.

Do not put more than 5 modules on each other horizontally.



E-LINE KD-III MANUAL

►► Handling and Hanging

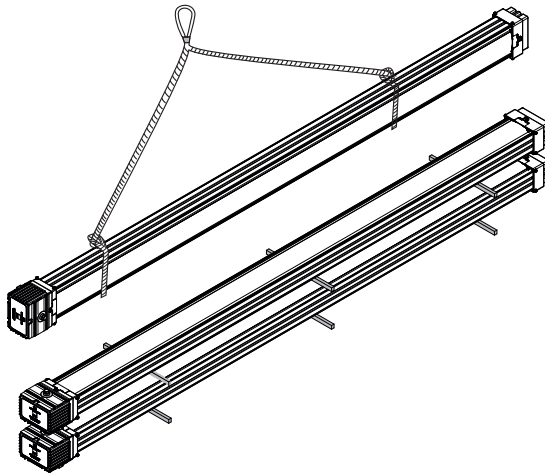


Introduction:

This installation manual includes the details of safe and quick handling and installation of busbar product. It shall be read carefully before starting the procedures on the product and relevant steps shall be followed.

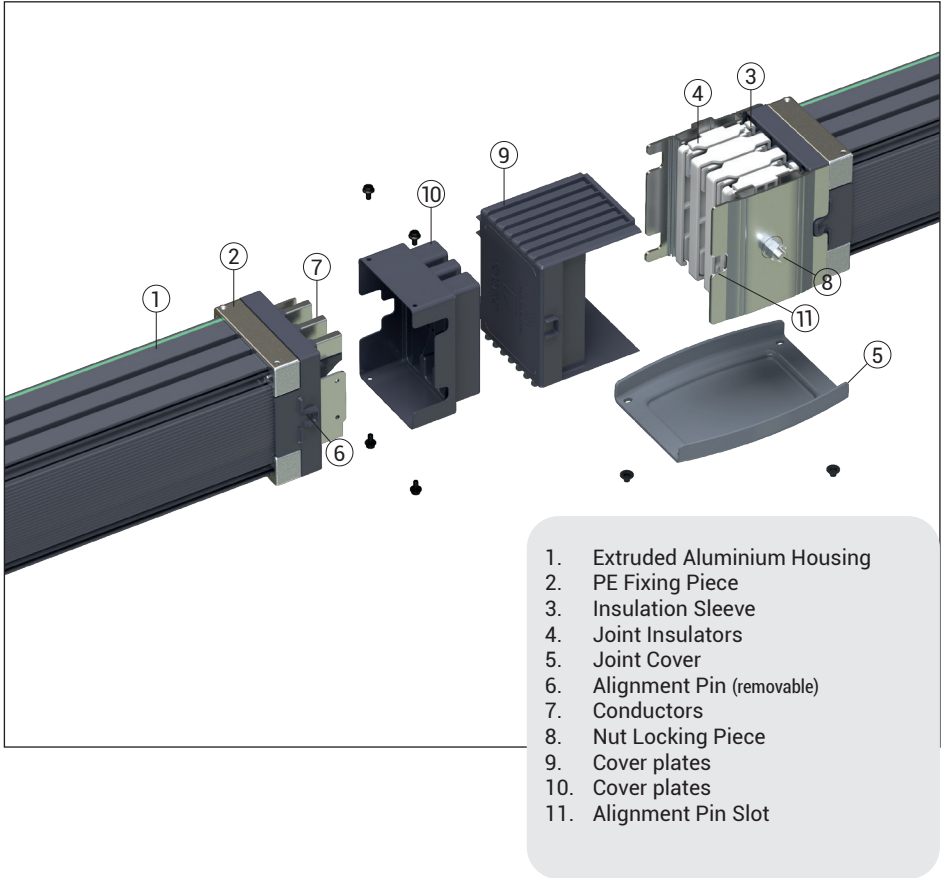
Things To Do:

1. Read the info note on the pallet; lift and handle the the product as shown below taking the pallet weight into consideration.
2. Product shall be hanged and lifted as shown below while it is handled.
3. Busbar route shall be marked before starting the installation.
4. Installation shall start from a single point (preferably panel) and shall be completed with the last module.

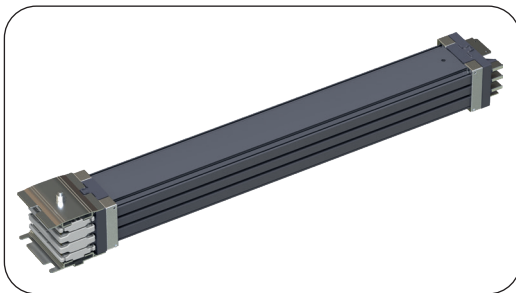


E-LINE KD-III MANUAL

►► Joint Structure



1. Extruded Aluminium Housing
2. PE Fixing Piece
3. Insulation Sleeve
4. Joint Insulators
5. Joint Cover
6. Alignment Pin (removable)
7. Conductors
8. Nut Locking Piece
9. Cover plates
10. Cover plates
11. Alignment Pin Slot



E-LINE KD-III MANUAL

►►Energizing



Before Energizing

1-All busway ratings, routings and supporting systems should be checked as per final isometric drawings.

2-All busway system should be checked visually

to be certain that they are clean and secure. Loose and/or contaminated connections increase electrical resistance which can cause overheating.

3-Any type of blower or compressed air should not be used to avoid blowing dust into busway joints, tap off boxes or circuit breakers. If there is accumulation of dust and dirt, clean it off by using a soft brush, vacuum cleaner, or clean lint free rags.

4-All joints should be correctly tightened according to the torque value given and should be marked. Then install the locking plates correctly.

5-All Tap Off boxes fed from the busway should be on "OFF" position.

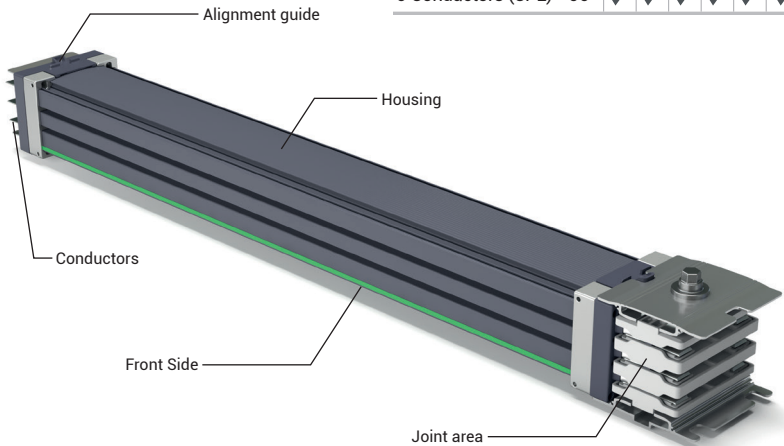
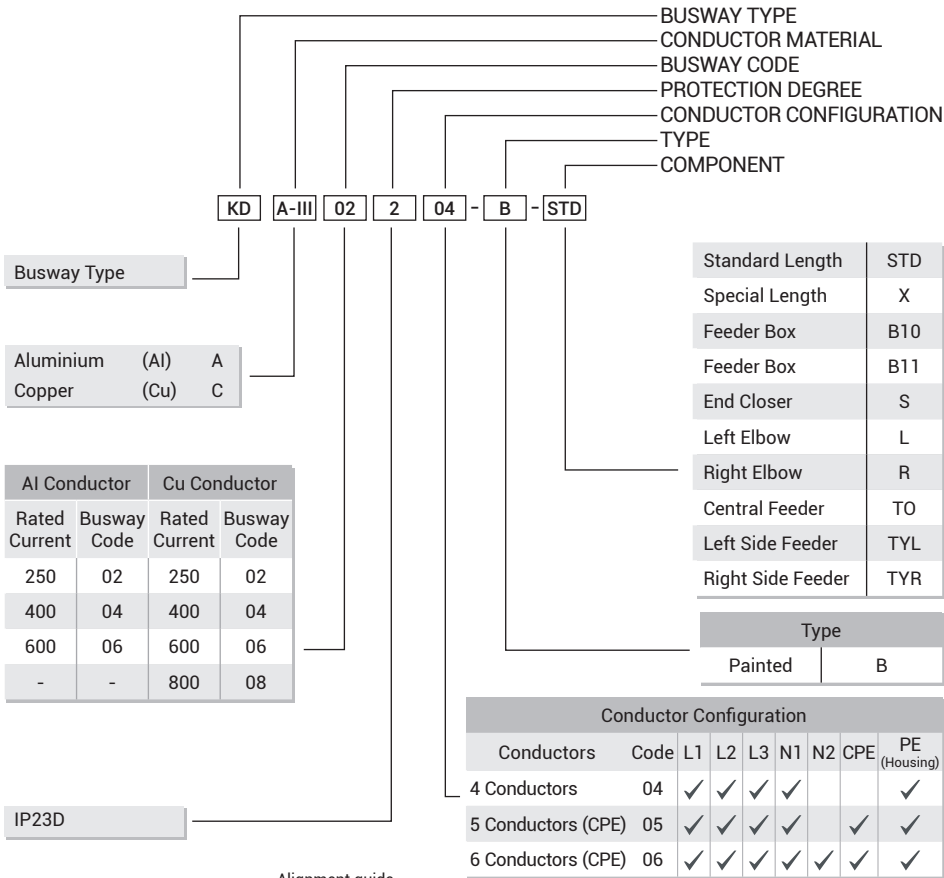
6-The busway runs should be isolated by disconnecting all connection

7-Insulation resistance test with an insulation resistance test equipment rated 1000V AC should be conducted to verify the integrity of the system. This test should be performed between phases, neutral and earth. Permanent records should be kept of resistance readings. If the insulation reading appears to be lower than 1 megaohm, then the cause should be investigated.

8-The system phase sequence should be checked in order to match the busway phases sequence before reconnecting all connections to transformers, switchboards, meters, etc.

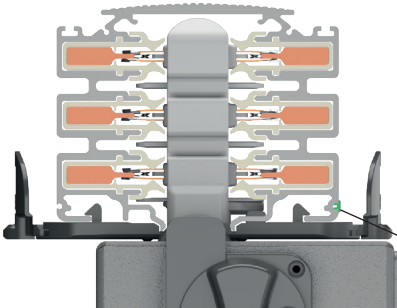
E-LINE KD-III MANUAL

►►Order Code System



E-LINE KD-III MANUAL

►► Overview

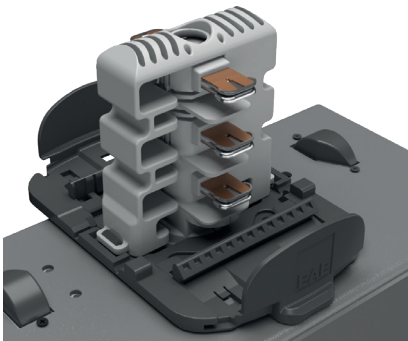


Plug-n-Play

Easy plug-in Tap-Off Boxes on any point along the busway, remove and relocate wherever necessary

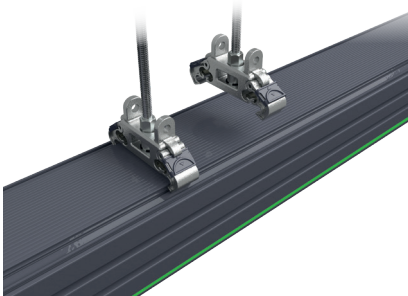


Front Side



Tap-Off Contacts

Constant contact pressure with double sided spring system and safe locking mechanism on Tap-Off Box contacts

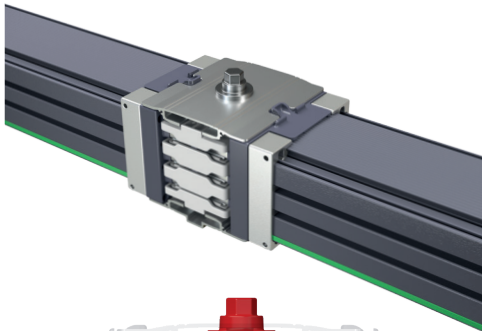


Snap-In Suspension Mechanism

Easy and fast structural mounting thanks to Snap-In Fixing Unit

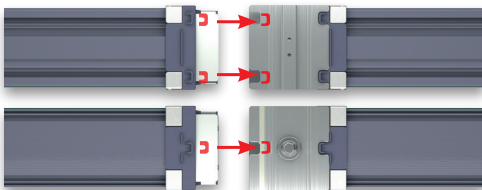
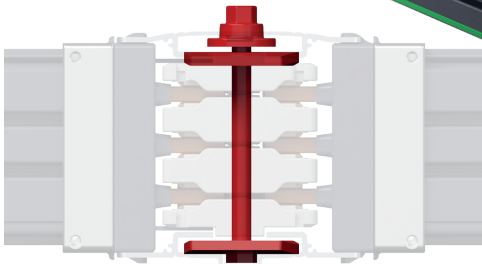
E-LINE KD-III MANUAL

►► Overview



Joint Mechanism

Safe alignment mechanism with a single bolt monoblock joint for correct installation and operation



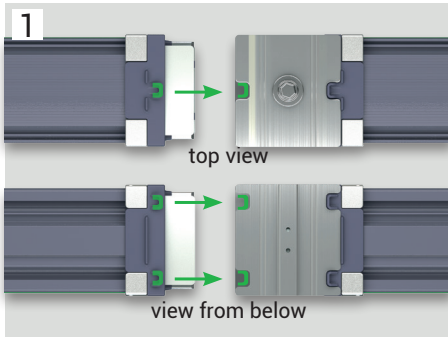
Easy and Safe Installation

Patented EAE Alignment Solution, ideal alignment of the block joint element and busway thanks to the alignment guides on the joint area

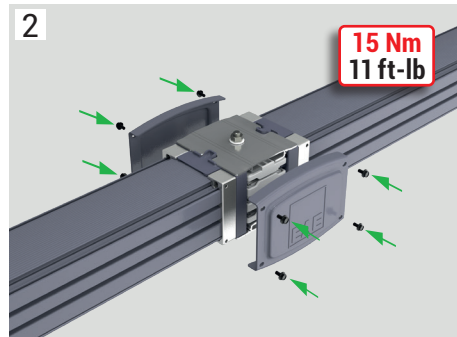


E-LINE KD-III MANUAL

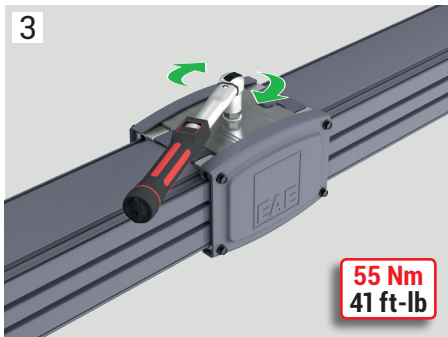
►► Joint Installation



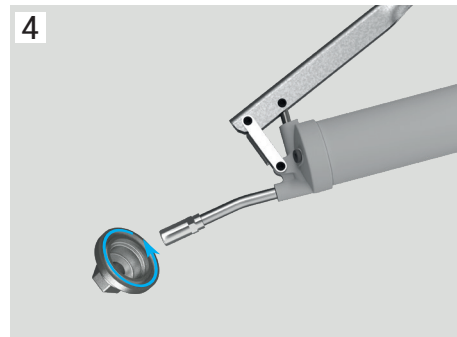
Align the busbars those with and without block joints facing each other and insert together



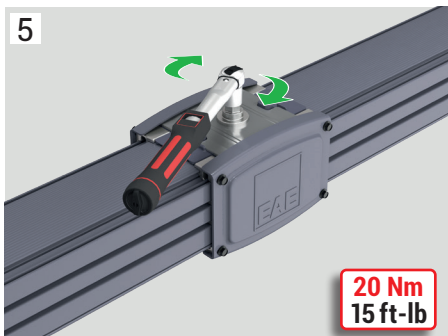
Assemble the joint cover and tighten the cover bolts



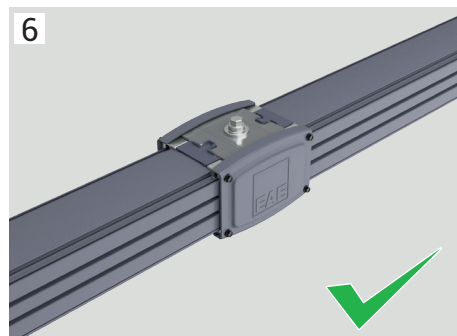
Adjust the torque wrench to 55 Nm and tighten the joint nut



The nut protection cap gaskets should be lubricated properly. Please be ensure the entire surface of gasket is lubricated.



Mount the nut locking piece on the nut

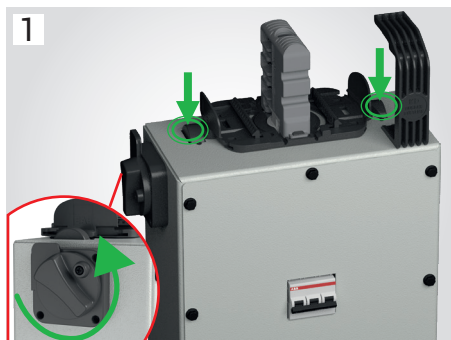


Assembly completed.

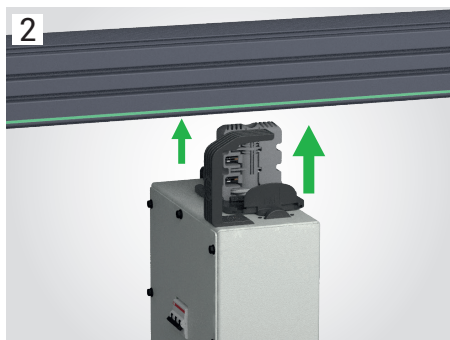
E-LINE KD-III MANUAL

►► Installation

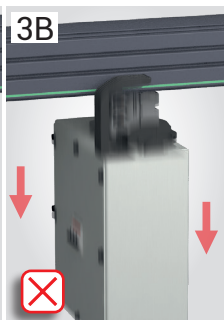
► Tap-Off Box Installation



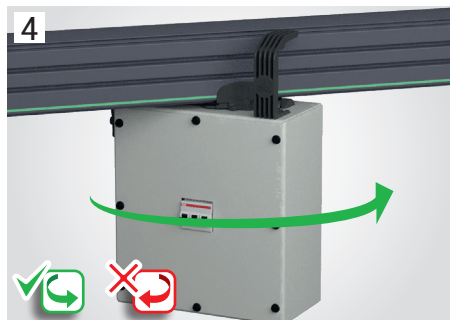
Ensure that the locking latch position is set right (as indicated), setup the installation mechanism by pressing on the claws. **If this step is not made, the box contact set may be damaged as a result of any force.**



Insert the box inside the slot of the BUSWAY by facing the mounting angle, the box label and the housing 'green' reference line on the same side. **Do not install or remove Plug-in units under load. Make sure breakers are in the off position**



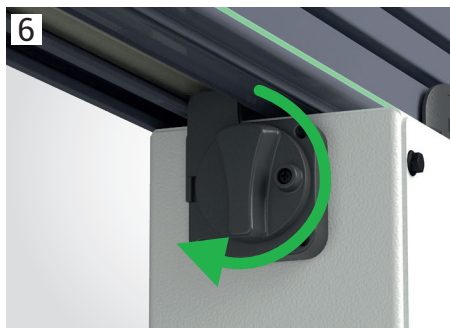
Assure that the box is inserted and locked inside the Busway slot



Engage the top off box by rotating in the direction of the arrow. **Do not rotate the box against the direction of the arrow**



Ensure that the mounting angle is correctly attached on the Busway housing



Secure the box by turning the locking latch in direction of the arrow

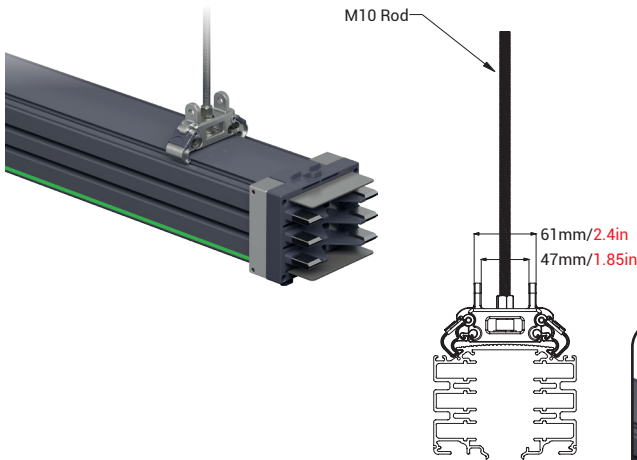
Notes: For the purpose of ensuring earth continuity, the installation of the upper mechanism onto the busway may cause minor paint imperfections on the top part of the box. These imperfections are solely cosmetic and do not affect the electrical or mechanical performance of the product.

E-LINE KD-III MANUAL

►► Fixing Elements



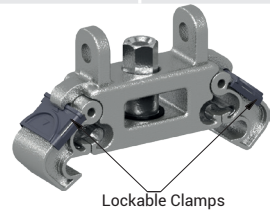
► Application I : Threaded Rod with Snap-In Fixing Unit



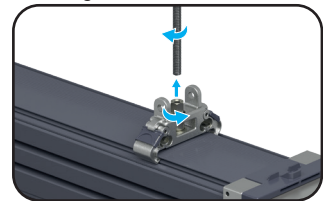
THREADED ROD SUPPORT

KD SNAP-IN

2143683

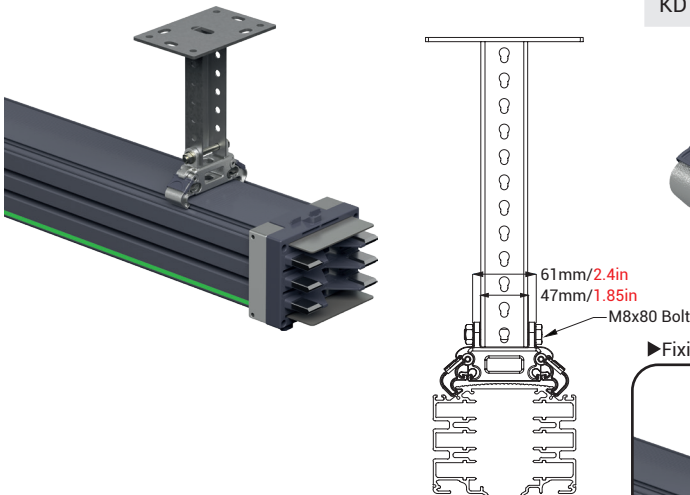


► Fixing Unit Uninstallation



* Bolt and Nuts are included.

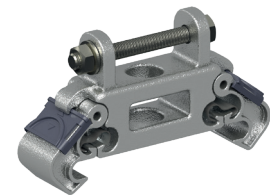
► Application II : TMP Ceiling Support with Snap-In Fixing Unit



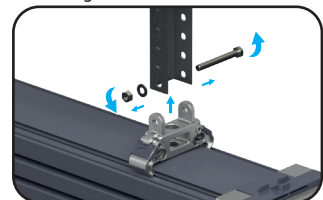
TMP CEILING SUPPORT

KD SNAP-IN

2143682



► Fixing Unit Uninstallation



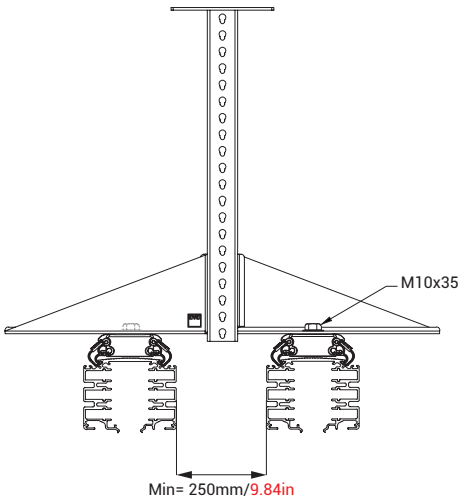
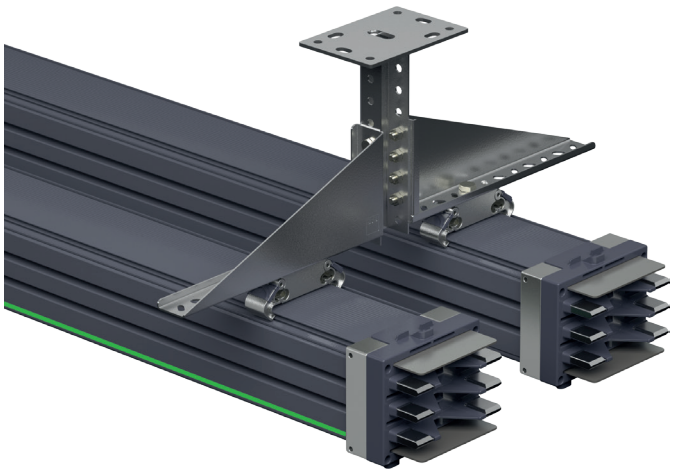
* Bolt and Nuts are included.

E-LINE KD-III MANUAL

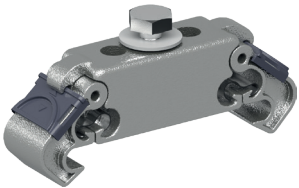
►►Fixing Elements



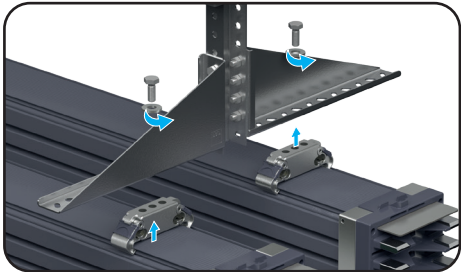
►Application III : TMP Ceiling Support and Tray Bracket with Snap-In Fixing Unit



TS TRAY SUPPORT	
KD SNAP-IN	2143684



►Fixing Unit Uninstallation



* Bolt and Nuts are included.

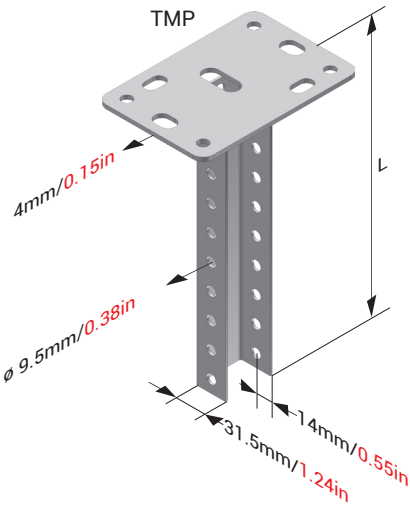
E-LINE KD-III MANUAL

►►Fixing Elements



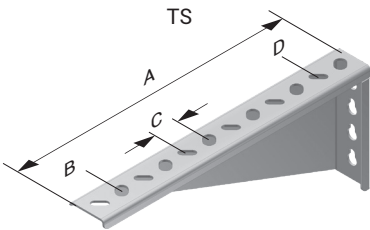
►Ceiling Mounting Fittings

Hot Dip Galvanized After Fabrication (TS EN ISO 1461)



►Tray Supports

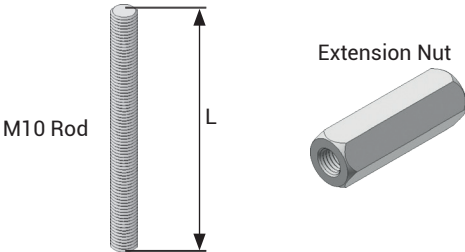
Hot Dip Galvanized After Fabrication (TS EN ISO 1461)



B		C		D	
mm	inch	mm	inch	mm	inch
11x16	0.43x0.63	25	0.98	7x16	0.28x0.63

Description	A (mm)	T (mm)	Weight (kg./pc.)	Order Code	Pack (pc.)
TS 200	205	2	0,311	3008551	10
TS 250	255	2	0,521	3008549	10
TS 300	305	2	0,607	3008547	10
TS 400	405	2	0,781	3008545	10
TS 500	505	2	0,955	3008543	10
TS 600	605	2	1,128	3005828	10

►Connection Accessories

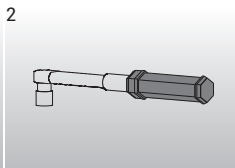


E-LINE KD-III MANUAL

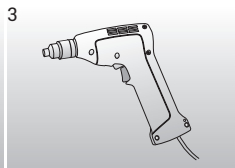
►►Equipment Used



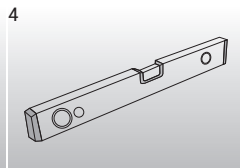
Fabric Crane Ropes



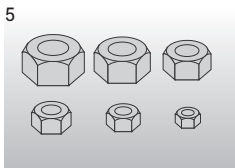
Torque Wrench



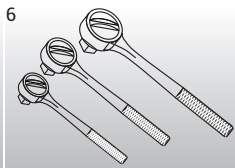
Hot Air Blower



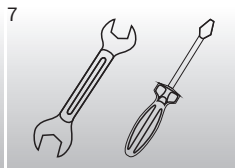
Spirit Level



Nut Set



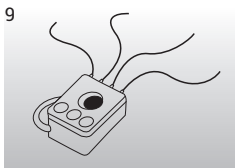
Socket Set



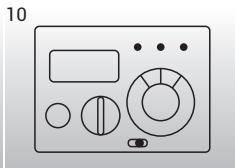
Wrench, Screwdriver



Lifting Device
(forklift truck, crane, hoist
etc.)



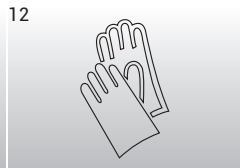
Megger Device



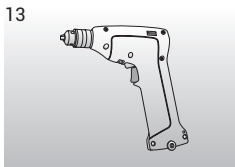
Dielectric Test Device
5 kV DC



Scaffold



Protective
Clothes,
Gloves, Goggles



Drill

E-LINE KD-III MANUAL

►►Measuring a Special Length

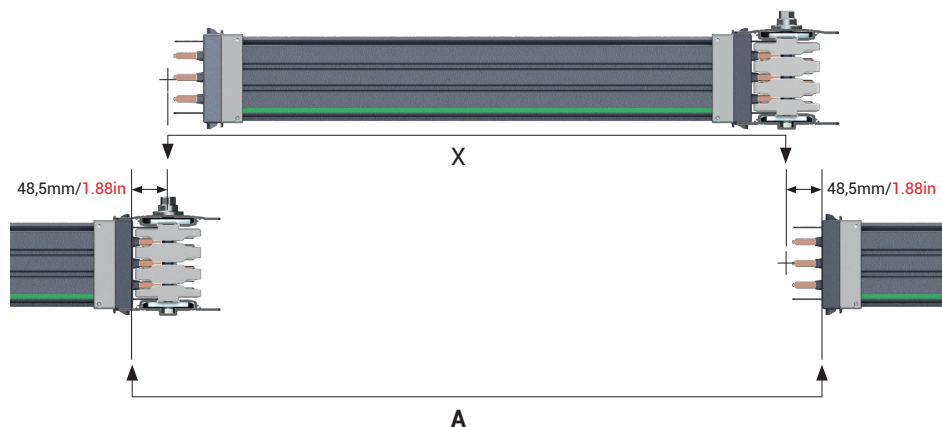


After installation of standard busway 3048 mm/**10 ft** lengths, you will be in need of special lengths which are smaller than 3048 mm/**10 ft**. The minimum length for these special elements can be 350 mm/**13.78in** Please measure the lengths of these modules as shown below.

Length A is measured between housing of 2 busways A. The special length is calculated by deducting 97 mm/**3.82in** from this measured length.

$$X = A - 97 \text{ mm} / \mathbf{3.82in} \quad X = \text{Length of Special Busway}$$

(The busway module will be manufactured as per X value.)



E-LINE KD-III MANUAL

►► Busway Installation Applications

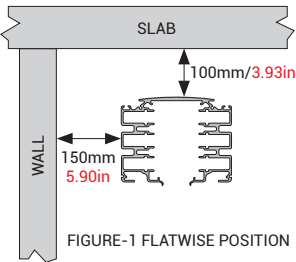


FIGURE-1 FLATWISE POSITION

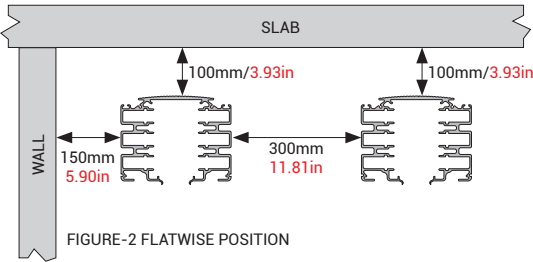


FIGURE-2 FLATWISE POSITION

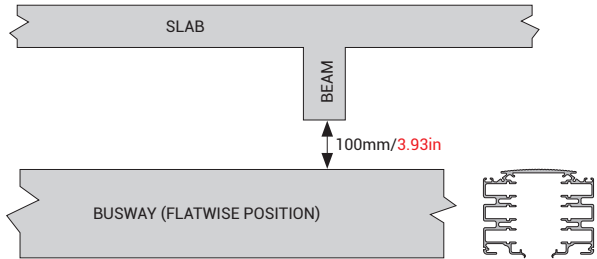


FIGURE-3 CROSSING UNDER A BEAM HORIZONTAL POSITION



CE DECLARATION OF CONFORMITY

Product Group E-Line KD Data Rack Busway

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

The objects of the declaration described below is in conformity with the relevant Union 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: Busway trunking systems

IEC 61439-6
Low-voltage switchgear and controlgear assemblies - Part 6: Busway trunking systems (busways)

CE - Directive:

2014/35/EU "The Low Voltage Directive"

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

2011/65/EU "RoHS Directive"

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E-LINE KD-III MANUAL

- EAE Electrical Site Test Report
- Junction Resistance Test Report



Customer:				Date:				/...../.....	
Project:				Order No:					
Address:				U _n : V		I _n : A			
Busway Code:		Material: AL ☐ CU ☐		Conductor Section: x mm ²					
Line:				Required Torque:		M12		83Nm	
Note: The tests have to perform only with calibrated devices.				Calibration Date:		/...../.....			
Results									
Junction :		Junction :		Junction :		Junction :		Junction :	
Phase	R (μΩ)	Phase	R (μΩ)	Phase	R (μΩ)	Phase	R (μΩ)	Phase	R (μΩ)
N - N		N - N		N - N		N - N		N - N	
L1 - L1		L1 - L1		L1 - L1		L1 - L1		L1 - L1	
L2 - L2		L2 - L2		L2 - L2		L2 - L2		L2 - L2	
L3 - L3		L3 - L3		L3 - L3		L3 - L3		L3 - L3	
PE - PE		PE - PE		PE - PE		PE - PE		PE - PE	
Torque:	 Nm	Torque:	 Nm	Torque:	 Nm	Torque:	 Nm	Torque:	 Nm
Max Value:	 μΩ	Max Value:	 μΩ	Max Value:	 μΩ	Max Value:	 μΩ	Max Value:	 μΩ
Junction :		Junction :		Junction :		Junction :		Junction :	
Phase	R (μΩ)	Phase	R (μΩ)	Phase	R (μΩ)	Phase	R (μΩ)	Phase	R (μΩ)
N - N		N - N		N - N		N - N		N - N	
L1 - L1		L1 - L1		L1 - L1		L1 - L1		L1 - L1	
L2 - L2		L2 - L2		L2 - L2		L2 - L2		L2 - L2	
L3 - L3		L3 - L3		L3 - L3		L3 - L3		L3 - L3	
PE - PE		PE - PE		PE - PE		PE - PE		PE - PE	
Torque:	 Nm	Torque:	 Nm	Torque:	 Nm	Torque:	 Nm	Torque:	 Nm
Max Value:	 μΩ	Max Value:	 μΩ	Max Value:	 μΩ	Max Value:	 μΩ	Max Value:	 μΩ
The maximum values per type and explanation to execute this test can be found in Annex A Electrical Site Tests of KD-III Manual									
Remarks									
Witnesses									
Name		Company		Date		Signature			

250A ... 800A DATA RACK BUSWAY PRODUCT OVERVIEW (E-LINE KD-III)

1- Standards & Certification:

- Busway system shall be designed and manufactured as per IEC 61439-6 standard, which requires below listed tests. Each busway rating shall have a separate type test certificate from an independent internationally accredited laboratory including below tests:
 - 10.2- Strength of material and parts, 10.2.2- Resistance to corrosion, 10.2.3- Properties of insulating materials, 10.2.3.1- Verification of thermal stability of enclosures, 10.2.3.2- Verification of resistance of insulating materials to abnormal heat and fire due to internal electric effects, 10.2.6- Mechanical impact, 10.2.7- Marking, 10.2.101- Ability to withstand mechanical loads , 10.2.101.1- Test procedure for a straight busway trunking unit, 10.2.101.2- Test procedure for a joint, 10.2.101.3- Resistance of the enclosure to crushing, 10.3- Degree of protection of assembly, 10.4- Clearances and creepage distances, 10.5- Protection against electric shock and integrity of protective circuits, 10.5.2- Effective earth continuity between the exposed conductive parts of the assembly and the protective circuit, 10.5.3- Short-circuit withstand strength of the protective circuit, 10.9- Dielectric properties, 10.9.2- Power-frequency withstand voltage, 10.9.3- Impulse withstand voltage, 10.10- Verification of temperature rise, 10.11- Short- circuit withstand strength, Annex BB Phase conductor characteristics, Annex CC Fault-loop zero-sequences impedances, Annex DD Fault-loop resistances and reactances.
- Busway system shall have CE marking.
- The manufacturer of busway system shall have ISO 9001 and ISO 14001 certification.
- Each product shall have a "Type Label" including coding system, which identifies the brand, type of the unit, number of conductors and electrical details. The same coding shall be on the related certificate and catalogue.

2- Electrical Characteristics

- Busway systems nominal insulation voltage shall be 600 V.

2.1- Housing

- Conductors shall be packed and placed into the housing.
- Housing shall be made of thermal processed, extruded aluminium, RAL7012-Electrostatic painted.

2.2- Conductors

Aluminium or Copper conductors overall isolated and tin plated.

- Aluminium conductors between 250A – 600A.
- Copper conductors between 250A – 800A.
- Busway system shall have the following number of conductors and wire configuration;
 - 6 Conductors: (6 full size conductors CPE (100% earth conductor + double neutral + housing)),
- Phase conductors and neutral conductor shall have the same cross-section and they shall be insulated.
- Aluminium conductors shall be of EC grade aluminium. Minimum conductivity shall be 34m/mm².W.
- Copper conductors shall be minimum 99,95% electrolytic copper. Minimum conductivity shall be 56m/mm².W.

2.3- Insulation

- Insulation system shall be suitable for 1.000V continuous operation. Conductor size shall be designed so that temperature rise on the conductors shall not exceed 100°C degree at nominal current, which helps to global heating problem. With this reason, insulation class shall be selected as "B class".

2.4-Joint Structure

- Electrical and mechanical connection shall be made by placing conductor joints into the joint blocks of the connected conductors and followed by tightening and fastening of the joint bolts.

2.5-Protection

- Protection degree of the housing and joints shall be IP23D.

2.6-Acessories

- Busway system shall have all necessary accessories (elbows, panel-transformer connections, etc.) Manufacturer shall supply special dimensioned units in short time, if the project conditions requires

3-Tap Off Boxes

- The Tap off boxes shall be Plug-nPlay type.
- Plug-n-Play tap off boxes shall be suitable to install or remove from BUSWAYs without switching off the power on the BUSWAY.
- Plug-n-Play tap off boxes shall be suitable to install or remove anywhere alongside the BUSWAY.
- The Tap-Off Box contacts shall be protected with a cover
- The Tap-Off contacts shall be heat cycle tested
- Contacts of plug-in tap off box shall be silver plated.
- The special locking mechanism of the Tap-Off Boxes shall ensure to carry the weight of the plug-in box and cables by the busway housing.
- While inserting the contacts of plug-in tap off box, earth contact shall make the first touch. While removing, it shall be disconnected last.
- Tap off boxes shall be manufactured of epoxy painted aluminium.
- The Tap-Off Boxes shall be equipped with a safe alignment mechanism to ensure correct installation and operation

4-Busway Fixing & Mounting System

- The busways shall be easily installed and positioned through their entire lengths with the "Snap-In Fixing Units" by inserting into the guiding slots on top of the housing.
- To ensure flexible positioning of the busways, each single busway length shall easily slide independently on the "Snap-In Fixing Units" through the guiding slots.
- To maintain the mounting security, the "Snap-In Fixing Unit" clamps shall be lockable.
- For various mounting practices the "Snap-In Fixing Units" shall be available with threaded rod, ceiling support and/or with tray brackets options

5-Installation and Commisioning

- Busway systems shall be installed as per Single-Line drawings respect to required ampere rates and manufacturer installation guide (torque values, lockers, etc.). Electrical installer shall run an insulation test after installation, according to manufacturer's test procedures. The results of the test shall be reported to the manufacturer and minimum insulation value shall be 1 Mohms.



Notes

[illegible]

PRODUCT TYPES



BUSBAR ENERGY DISTRIBUTION SYSTEMS



CABLE TRAYS



TROLLEY BUSBAR ENERGY DISTRIBUTION SYSTEMS



INDOOR SOLUTIONS



SUPPORT SYSTEMS

Please visit our website for the updated version of our catalogues.
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