

**ELSEWEDY  
ELECTRIC**

**BUSWAY**



# **BUSWAY CATALOGUE**



ELSEWEDY  
ELECTRIC

BUSWAY



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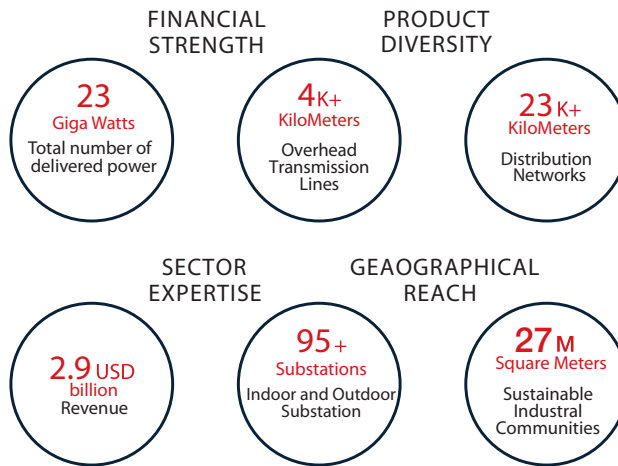
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**Brief About Elsewedy Electric:**

A global leader that has evolved from a local trader of electrical products into a giant provider of energy, infrastructure, and digital solutions; with over 17,000 employees and more than USD 3.8 billion market capitalization. We Operate in five key business sectors: Wire, Cables & Accessories, Electrical Products, Engineering & Construction, Digital Solutions, and Infrastructure Investments. With a strong presence in 19 different countries, 31 production facilities spread across African and Asian countries including Egypt, Algeria, KSA, Qatar, Indonesia, Pakistan, and Tanzania. We export a wide range of high-end products to over 110 countries worldwide. At the heart of our approach is an all-in-one integrated Engineering, Procurement & Construction (EPC) service which enables us to deliver the most complex turnkey projects on time and with the highest efficient.

A vital part of our mission is ensuring that the communities where we operate develop and flourish. We work to facilitate the global transition towards a sustainable energy future, whereby we established green energy projects and smart cities across Africa, the Middle East, and Eastern Europe. In alignment with our 2030 sustainability strategy, we aim to extend and enhance our positive impact, provide energy services to a growing customer base, and drive decarbonization, digitalization, and sustainable transition in Egypt and beyond.

Our growth has been driven by hiring talents and empowering businesses and communities where we operate. We enable customers to digitize and meet the challenges of an ever changing world. Our extensive range of digital solutions allow them to become smarter, faster, and more agile. We are committed to doing our best to serve our customers, while caring for the environment. We aim to use our knowledge of our environmental impact to better develop more sustainable business scenarios and evaluate our future policies.



**Factory Brief**

Elsewedy Electric Busway

Our factory is located in the 10th of Ramadan city- Egypt, built on 36,271 meter square with 50% covered area; projected to be one of the largest factories in MEA region with a production capacity of sandwiched non-ventilated busway from 800A to 6300A copper conductor and 800 A to 5000 A Aluminium (Bi-metal) conductor.

**36,271m<sup>2</sup>**  
Factory Total area





## Services



**Pre-sales Customer Services**  
Site take off, technical review, design check & customer data analysis, etc.



**Full Design Package (Busway software)**




**Emergency Production Teams**



**Fast Response & Delivery Time**



**24/7 After Sales Hotline (Services van)**



**After sales Customer Services**  
Site supervision, installation, testing & commissioning

## R&D and Test Lab

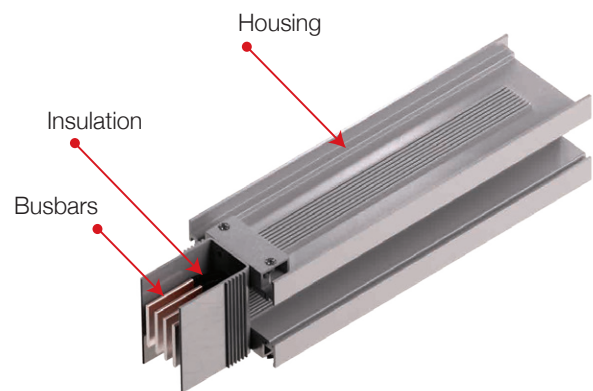
- In house R&D team
- **Elsewedy Certified Laboratory Capable of:**
  - 1- Temperature Rise Test
  - 2- Impulse Test
  - 3- Epoxy Insulation Tests
  - 4- Dielectric Test
- High Precision Electrical Measurements

## Product Overview

The busway is a prefabricated electrical distribution system consisting of dielectric insulated bus bars in a protective enclosure / housing, including straight lengths, fittings, devices, and accessories.

## Busway Advantages

- Easy Installation
- Compact Design
- Distribution of loads
- Space Saving
- Long Life
- Low Fire Load
- Flexibility
- Excellent short Circuit
- Economical and cost saving
- Low Voltage Drop
- Maintenance Free



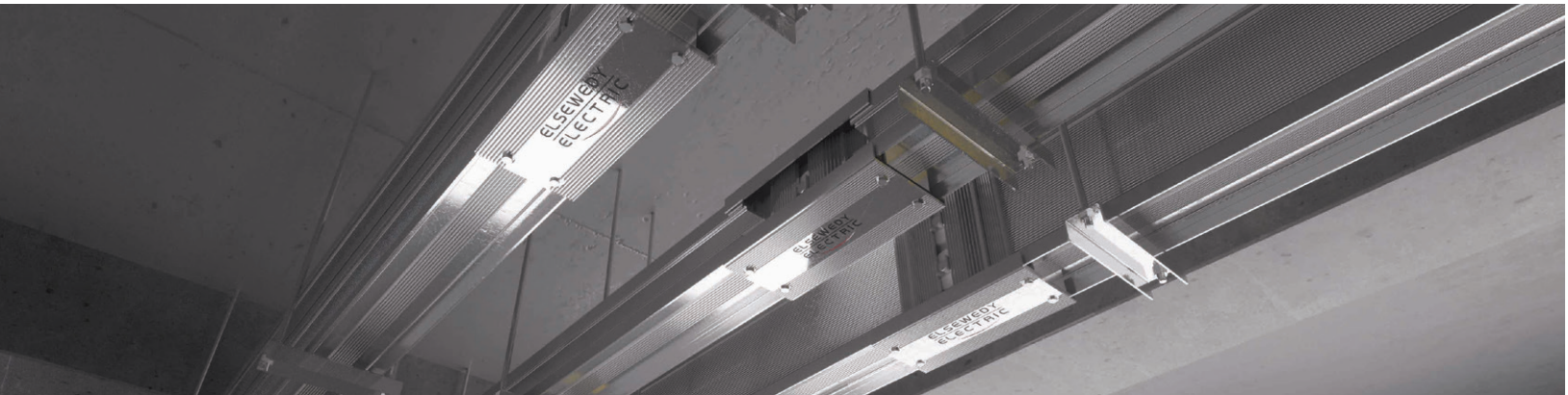
## Busway System Applications





### Why Elsewedy Electric Busway?

- First Busway Dielectric Epoxy Insulation facility in Africa (PET upon request).
- Highest caliber services team with total of 90 years of accumulated experiences.
- 24/7 Service hotline **19159**.
- In-house certified test lab.
- In-house Bars Electro-Plating (Tin/ Silver).
- Special software for design by REVIT (BIM) and AutoCAD.
- Elsewedy Electric Busway is designed as per IEC 61439-1/6.
- Certified by ASTA/UL for all our current ratings.
- Smart design for easy, fast and safe installation.
- Busway Joint with temperature monitoring allows you to monitor your busway. (Optional)
- Elsewedy tap off boxes can be equipped with many Type/ Model/ brand of breakers.



### Product Range

- Our Busway complies to IEC 61439-1&6 and is certified by ASTA/ UL.
- Available with TPN as standard configuration and TPNE with 100% or 200% neutral and 50 % or 100% earth upon request.

**POWER LINK**  
Copper

**SPINE**  
Aluminium Bi-metal

**Housing Material**

Al



**Conductor**

Cu

Al

**Current Rating (A)**

800 1000 1250 1350 1600 2000 2250 2500 3200 4000 5000 6300



**Insulation Type**

Epoxy  
PET

**Insulation Class**

B/E  
B/F

**IP**

54/ 55 & 65  
54/ 55 & 65

**Frequency**

50/ 60  
50/ 60

**Voltage**

Up to 1000 V  
Up to 1000 V

- Copper Conductor with end Tin/Silver Plating
- Aluminium Bi-metal Conductor with end Silver Plating



## Product Features

### 1- Housing:

- Powder coated extruded aluminium housing.
- Lightweight aluminium is easier to handle and install which in return saves more labor cost, installation time and serves best heat dissipation.
- High efficiency compact (sandwiched) design, totally enclosed, non-ventilated.
- Internal ground bar 50% available for both aluminium and copper bars busway. (Optional)

### 2- Conductors:

#### Copper:

- Highly Conductive, electrical Grade Copper 99,999 %
- Mill Certificate for each batch upon request.
- Tin / Silver Plating.

#### Aluminium Bi-metal:

- Highly Conductive, electrical Grade Aluminium.
- Silver Plating.

### 3- Tin/ Silver Plating:

- Tin plating is standard on all busway copper conductors at all contact points, and silver plating is available upon request.
- Silver plating system is standard on all busway aluminium (Bi-metal) conductors at all contact points.
- The plating process takes place in house.

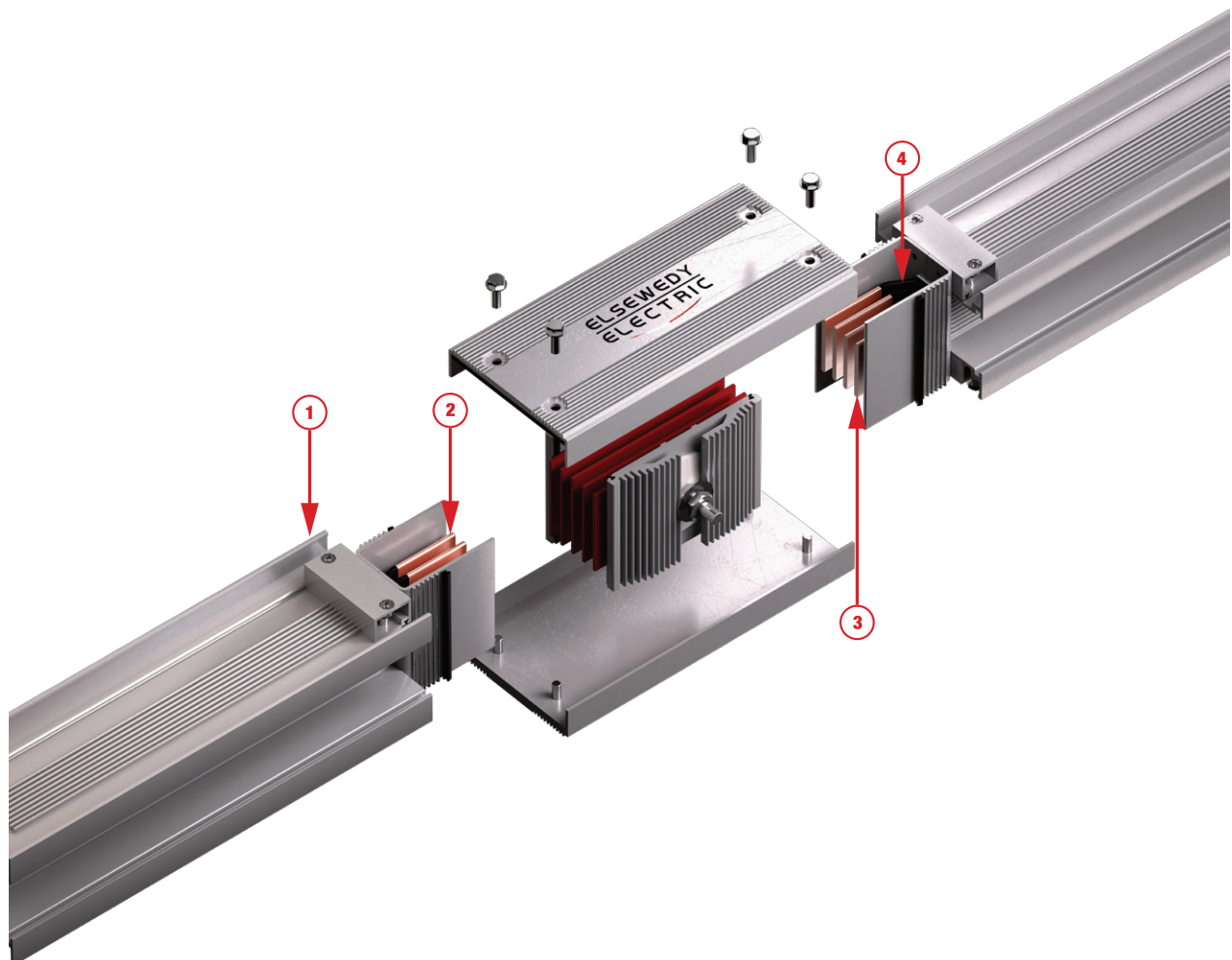
### 4- Insulations:

#### Epoxy (As standard)

- Elsewedy Electric Busway plant is the first and the largest factory in Africa that provide Epoxy insulation.
- Available in both classes: B/F.
- Most sophisticated automatic electrostatic epoxy coating plant in house ensures homogenous and reliable insulation.
- Halogen & toxic free.
- V0 flammability class.
- All products are 100% brush tested.

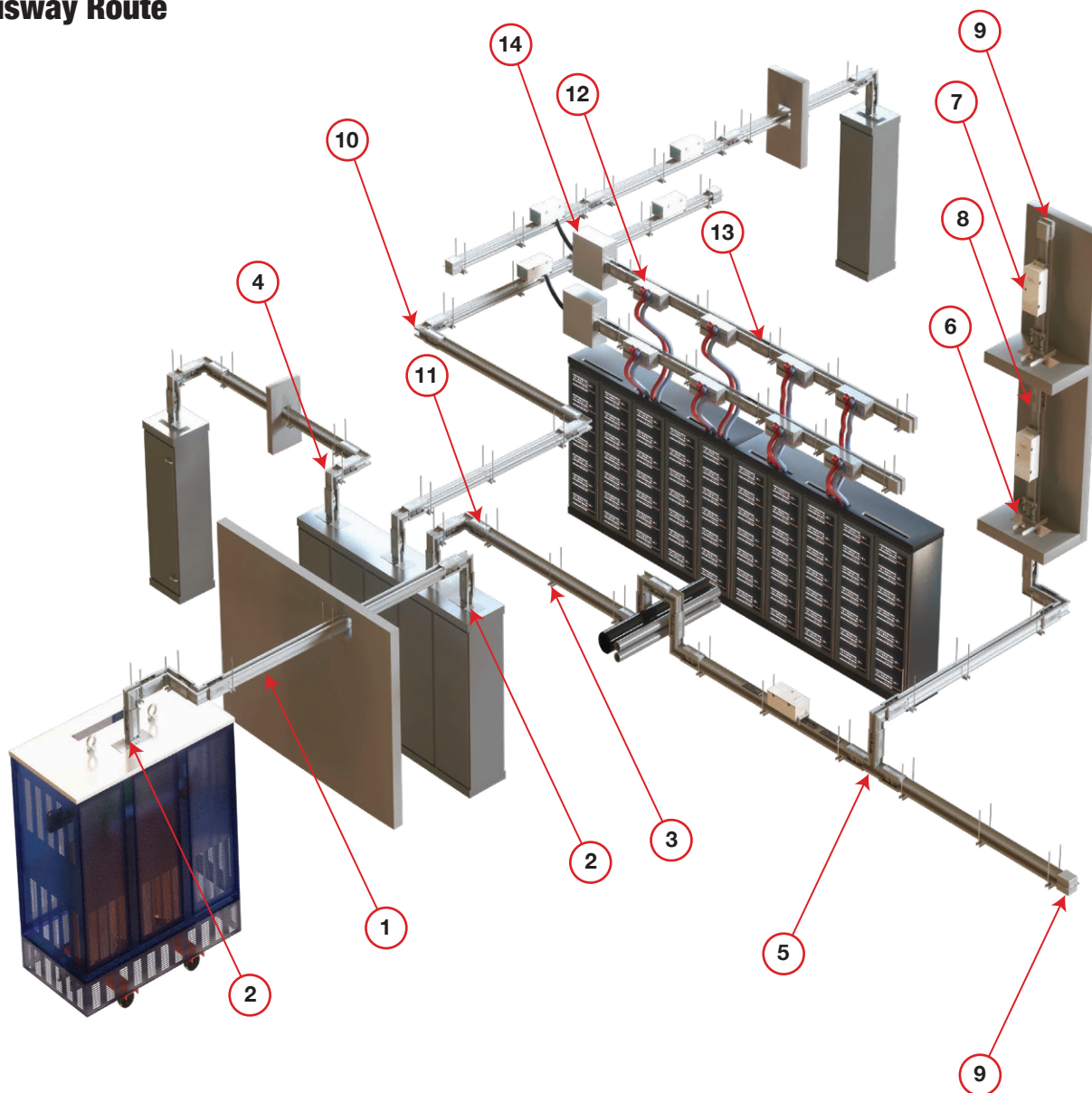
#### PET Film (Alternative)

- Available in both classes: B/F.
- Automatic modern PET cutting and pocketing machine in house ensures homogenous and reliable insulation.





**Busway Route**



- 1: FEEDER BUSWAY
- 2: FLANGE END
- 3: TRAPEZE HANGAR
- 4: EDGEWISE ELBOW
- 5: T-SECTION
- 6: SPRING HANGAR
- 7: TAP-OFF UNIT
- 8: RISER BUSWAY
- 9: END CAP
- 10: FLATWISE ELBOW
- 11: JOINT PACK
- 12: DATA CENTER TAP-OFF UNIT
- 13: PLUG-IN BUSWAY
- 14: CABLE BOX



## Elsewedy Electric Busway Numbering System

Example

ES	H	C	10	E	T	4	F	55	ST	4000	000	000	000
Elsewedy Electric	Category	Conductor	Rating	Insulation	Plating	Polarity	Type	IP	Item	A (mm)	B (mm)	C (mm)	Z (Angle)

### Category [\*]

**H**

High Power

H

### Conductor [\*]

**C**

Aluminium Bi-metal  
Copper

A  
C

### Rating [\*\*]

**10**

800A	08
1000A	10
1250A	12
1350A	13
1400A	14
1600A	16
2000A	20
2250A	22
2500A	25
3200A	32
4000A	40
5000A	50
6300A	63

### Insulation [\*]

**E**

Epoxy  
PET

E  
P

### Plating [\*]

**T**

Silver  
Tin

S  
T

### Polarity [\*]

**4**

3L	3
3L+N	4
3L+N+E	5
3L+N2+E	6
3L2+N	7
3L2+N+E	8

### Dimensions (A-B-C-Z)

A	(mm)
B	(mm)
C	(mm)
Z (Angle)	(<90° > 180°)

### Item [\*\*]

**ST**

Straight length	ST
Flange End Straight	FS
Flange End Flat Elbow	FF
Flange End Edge Elbow	FE
Flange End Dry-TR	FT
Elbow Flatwise	EF
Elbow Edgewise	EE
Z-Unit Flatwise	ZF
Z-Unit Edgewise	ZE
Offset Flatwise	OF
Offset Edgewise	OE
Expansion Joint	EJ
Phase Rotation	PR
Reducer	RE
Cable box	CB
T-Section	TS
End Cap	EC
Flexible Link	FL
Hanger Support	HS
Tap-Off Unit	TO

### Degree Of Protection [\*\*]

**54**

IP54 Plug- In	54
IP55 Feeder	55
IP65 Outdoor-Feeder	65

### Type [\*]

**F**

Feeder	F
Plug-In	P
Riser	R

**Power Link Copper Conductor**

*Run Section*

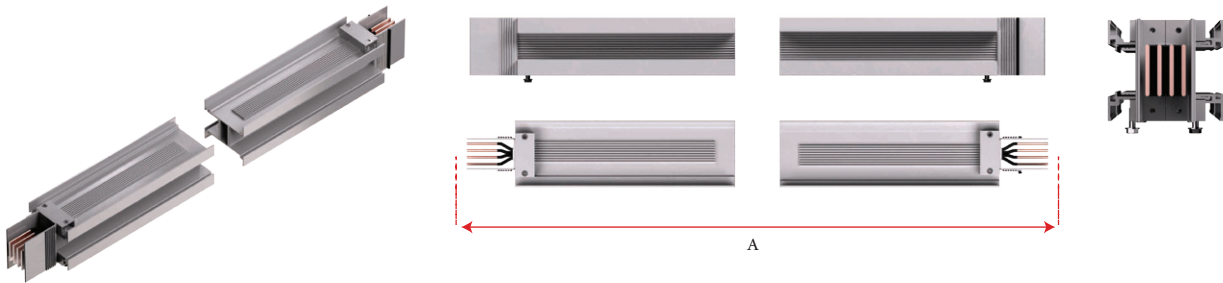
**Straight Length Feeder**

- The feeders transport the current without tap-off points.
- Available in 4 meter fixed lengths or made to measure from 400 to 4000 mm

**Power Link**

Type ( A )	Length A ( mm )	Catalogue no.
Fixed length	4000	ESHC**ET*F55ST4000
Made to measure length	400 : 4000	ESHC**ET*F55ST****

- To complete the Catalogue Number :
- Replace \* by the polarity from 3 to 8
  - Replace \*\* by rating value
  - Replace \*\*\*\* by length ( Min 400 to Max 4000 )



**Straight Length Plug-In**

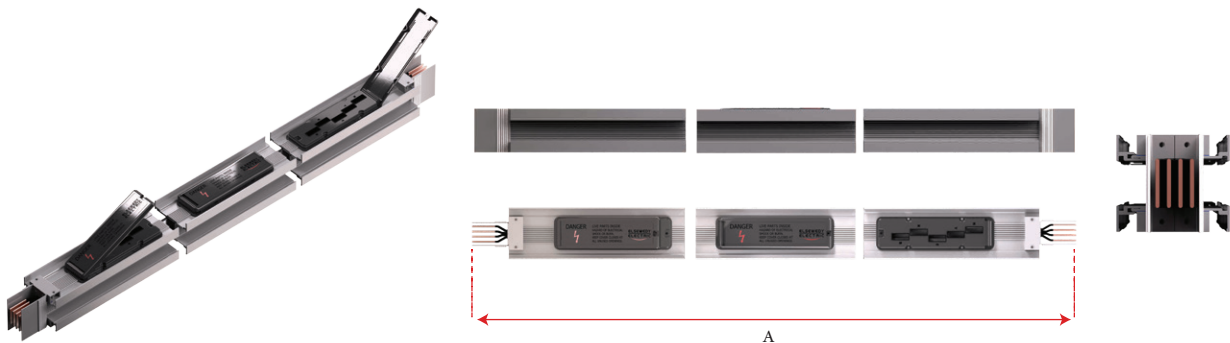
- The Plug in are for current distribution.
- Available in a 2 meter fixed length with two tap-off point or a 4 meter fixed length with 5 tap-off points.

Type	Length A ( mm )	Max No. Tap Offs Per Side	Catalogue no.
Plug-In Fixed length	4000	5	ESHC**ET*P54SR4000
	3000	3	ESHC**ET*P54SR3000
	2000	2	ESHC**ET*P54SR2000

*Plug-In made to measure length is upon request*

**Riser Tap-Offs will be on one side**

- To complete the Catalogue Number :
- Replace \* by the polarity from 3 to 8
  - Replace \*\* by rating value





### Trunking Cross Section

Rating (A)	800	1000	1250	1350	1600	2000	2250	2500	3200	4000	5000	6300
Width (H) m.m	105	120	140	150	160	185	190	220	330	380	450	620
Figure	I	I	I	I	I	I	I	I	II	II	II	III

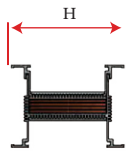


Figure (I)

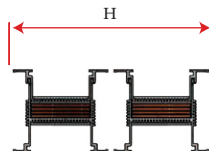


Figure (II)

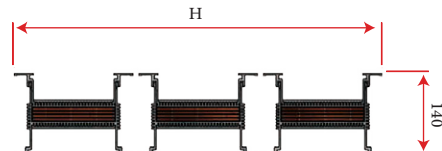
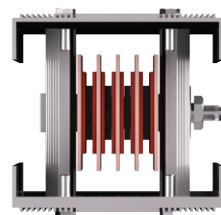


Figure (III)

### Joint Pack:

- Joint-Pack is standard on Elsewedy Electric Busway System.
- Single bolt connection makes installation faster.
- Belleville washer provides equal pressure across the complete joint contact area to assure proper electrical contact.
- Double surface contact guarantees good current continuity.
- Joint temperature monitoring (optional solution).



**Accessories**

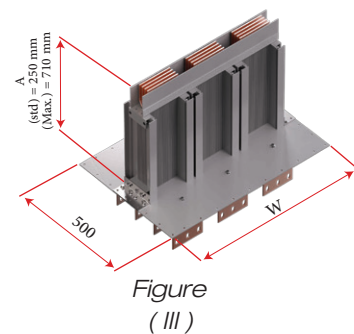
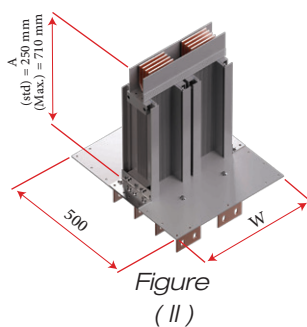
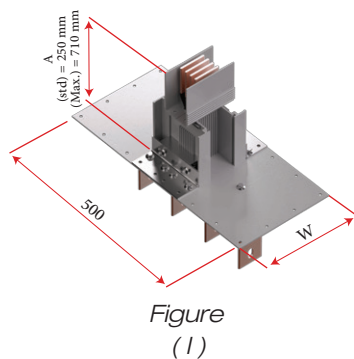
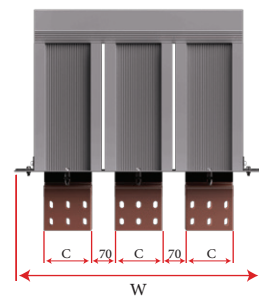
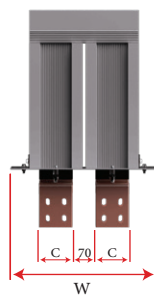
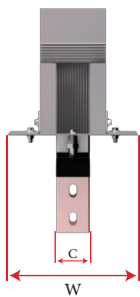
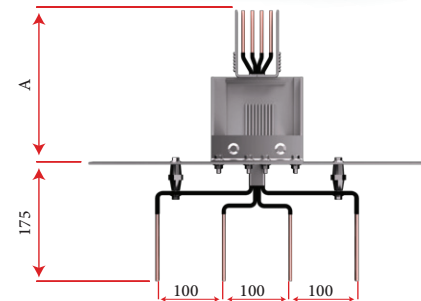
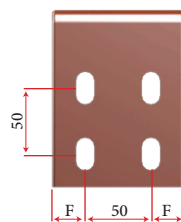
**Flange End Straight (FS)**

- Flanged-end unit allows the busway to be connected to a switchboard's bus-bar or to the terminals of an transformer, generator set, etc.

Power Link

Rating	References	Figure ( I )				Figure ( II )				Figure ( III )					
(A)		A	W	C	F	A	W	C	F	A	W	C	F		
800	ESHCO8ET*F55FSA***	All Rating 250mm standard length	215	45		All Rating 250mm standard length				All Rating 250mm standard length					
1000	ESHCO10ET*F55FSA***		230	60											
1250	ESHCO12ET*F55FSA***		250	80											
1350	ESHCO13ET*F55FSA***		260	90											
1600	ESHCO16ET*F55FSA***		270	100											
2000	ESHCO20ET*F55FSA***		295	125	37.5										
2250	ESHCO22ET*F55FSA***		300	130	40										
2500	ESHCO25ET*F55FSA***		330	160	30										
3200	ESHCO32ET*F55FSA***							440	100						
4000	ESHCO40ET*F55FSA***							490	125		37.5				
5000	ESHCO50ET*F55FSA***					560	160	30							
6300	ESHCO63ET*F55FSA***										730	140	20		
	Made to measure	≥ 250 ≤ 710				≥ 250 ≤ 710				≥ 250 ≤ 710					

To Complete the Catalogue Number:  
 - Replace \* by the polarity from 3 to 8  
 - Replace \*\*\* by (A) length value ( Min 250 to Max 710 )



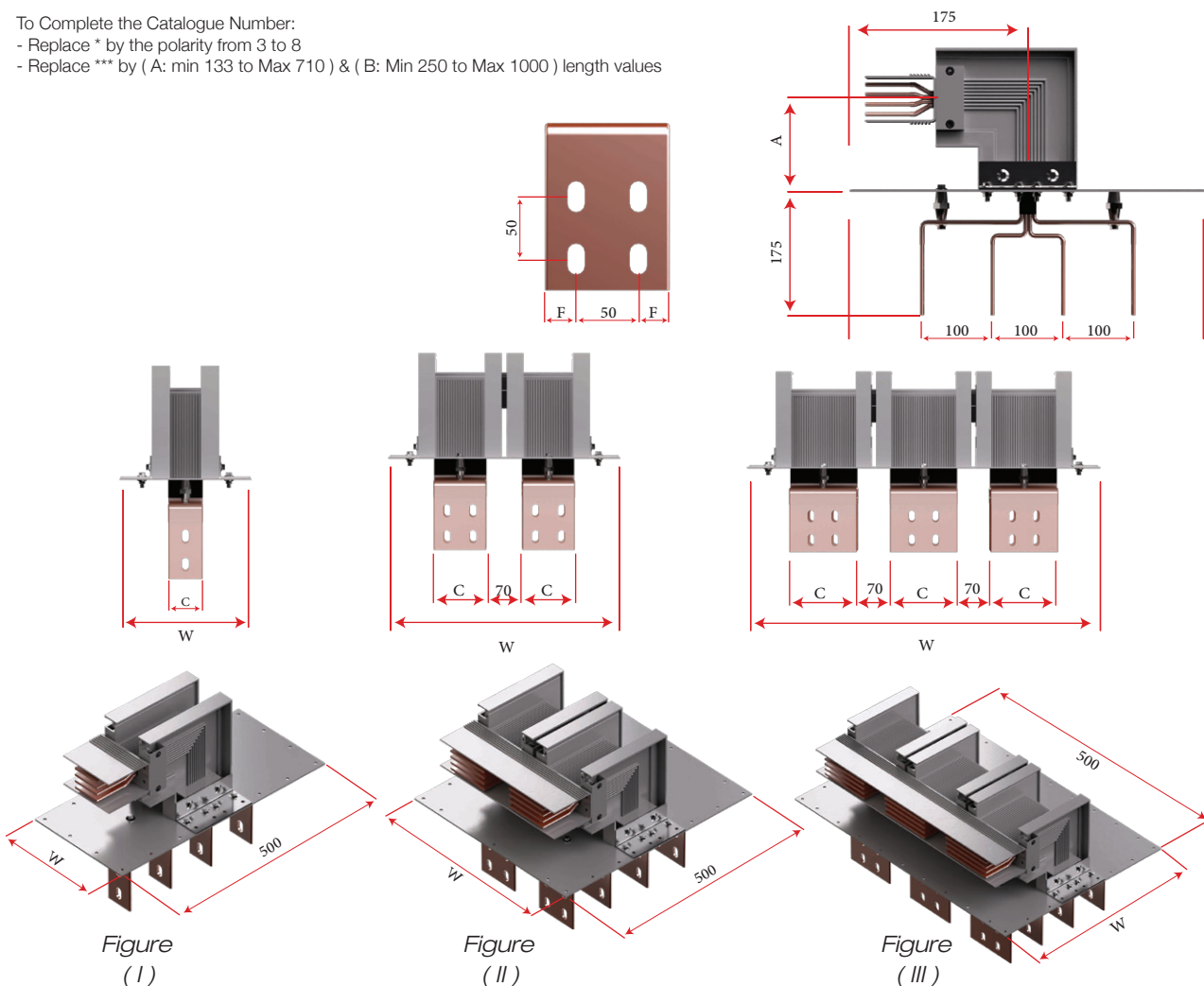


**Combination Flange End, Flat Elbow (FF)**

Rating	References	Figure (I)					Figure (II)					Figure (III)																			
(A)		A	B	W	C	F	A	B	W	C	F	A	B	W	C	F															
800	ESHC08ET*F55FFA***B***	All Rating 133mm standard length	All Rating 250mm standard length	215	45		All Rating 133mm standard length	All Rating 250mm standard length	All Rating 133mm standard length	All Rating 250mm standard length	All Rating 133mm standard length	All Rating 250mm standard length	All Rating 133mm standard length	All Rating 250mm standard length	All Rating 133mm standard length	All Rating 250mm standard length	All Rating 133mm standard length														
1000	ESHC10ET*F55FFA***B***			230	60																										
1250	ESHC12ET*F55FFA***B***			250	80																										
1350	ESHC13ET*F55FFA***B***			260	90																										
1600	ESHC16ET*F55FFA***B***			270	100																										
2000	ESHC20ET*F55FFA***B***			295	125	37.5																									
2250	ESHC22ET*F55FFA***B***			300	130	40																									
2500	ESHC25ET*F55FFA***B***			330	160	30																									
3200	ESHC32ET*F55FFA***B***																					440	100								
4000	ESHC40ET*F55FFA***B***																					490	125	37.5							
5000	ESHC50ET*F55FFA***B***								560	160	30																				
6300	ESHC63ET*F55FFA***B***																730	140	20												
Made to measure (Max.)		710	1000				710	1000				710	1000																		

**Power Link**

To Complete the Catalogue Number:  
 - Replace \* by the polarity from 3 to 8  
 - Replace \*\*\* by (A: min 133 to Max 710) & (B: Min 250 to Max 1000) length values



### Combination Flange End, Edge Elbow (FE)

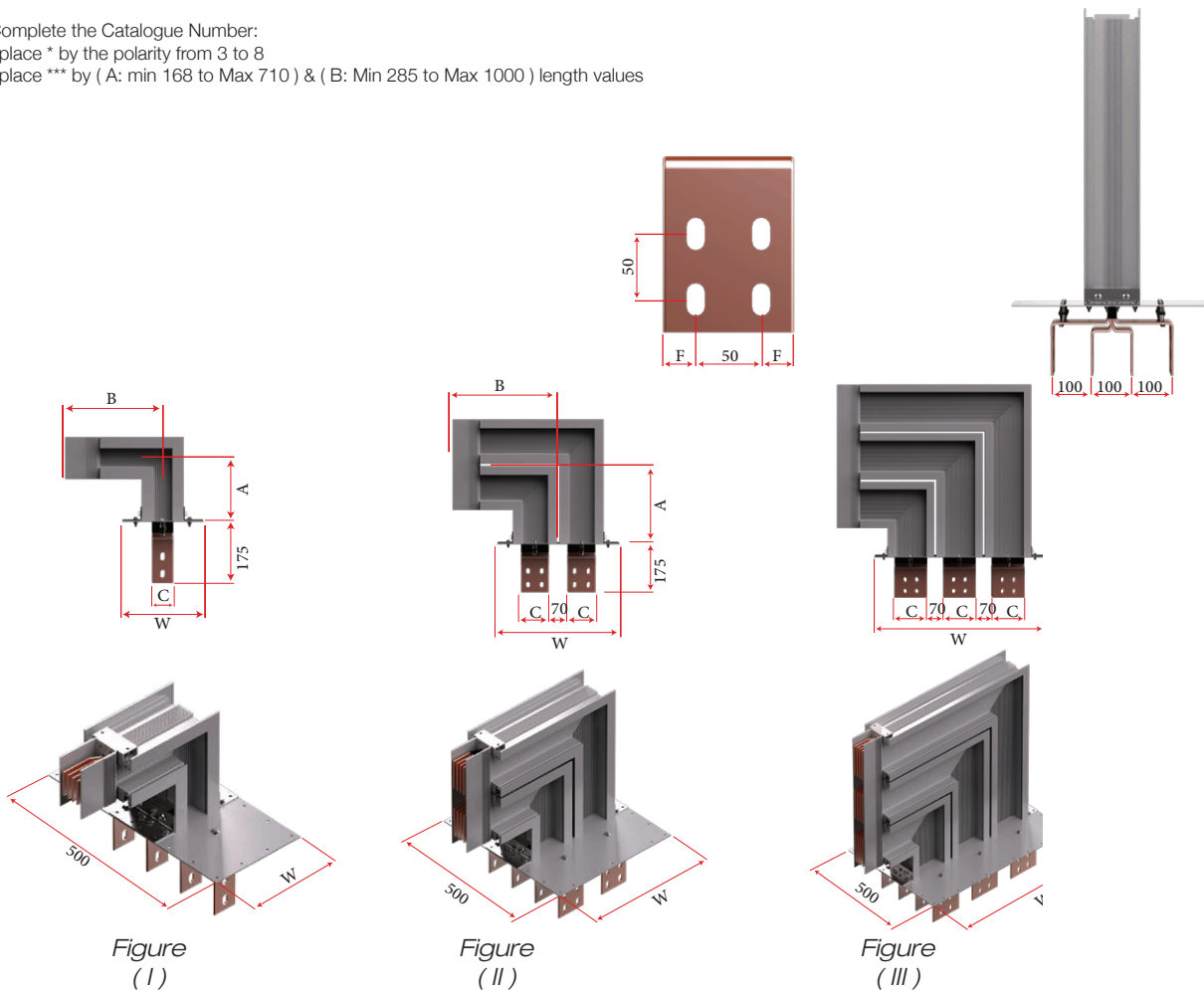
- Flanged-end unit allows the busway to be connected to a switchboard's bus-bar or to the terminals of an transformer, generator set, etc.

Power Link

Rating	References	Figure ( I )					Figure ( II )					Figure ( III )					
		A	B	W	C	F	A	B	W	C	F	A	B	W	C	F	
800	ESHC08ET*F55FEA***B***	176	293	215	45												
1000	ESHC10ET*F55FEA***B***	183	300	230	60												
1250	ESHC12ET*F55FEA***B***	193	310	250	80												
1350	ESHC13ET*F55FEA***B***	198	315	260	90												
1600	ESHC16ET*F55FEA***B***	203	320	270	100												
2000	ESHC20ET*F55FEA***B***	216	333	295	125	37.5											
2250	ESHC22ET*F55FEA***B***	218	335	300	130	40											
2500	ESHC25ET*F55FEA***B***	233	350	330	160	30											
3200	ESHC32ET*F55FEA***B***						288	405	440	100							
4000	ESHC40ET*F55FEA***B***						313	430	490	125	37.5						
5000	ESHC50ET*F55FEA***B***						348	465	560	160	30						
6300	ESHC63ET*F55FEA***B***											433	550	730	140	20	
	Made to measure A&B ( Max.)	710	1000				710	1000				710	1000				

To Complete the Catalogue Number:

- Replace \* by the polarity from 3 to 8
- Replace \*\*\* by ( A: min 168 to Max 710 ) & ( B: Min 285 to Max 1000 ) length values





## Flexible Link

Flexible connections are used to connect the transformer/ generator to the connection interface of the busbar when mechanically uncoupling the two elements is required, to prevent the transmission of vibrations. These connectors are manufactured from highly flexible tapes, braided from annealed Cu-ETP wires, and seamless contacts pressed from seamless Cu-ETP tubes.

### Braids

0,10 mm annealed Cu-ETP wires, uncoated or Tinned or silvered upon request

### Contract Areas

seamless Cu-ETP tubes, uncoated or Tinned or silvered upon request solderless pressed

\*Note: Copper Foil Available upon request

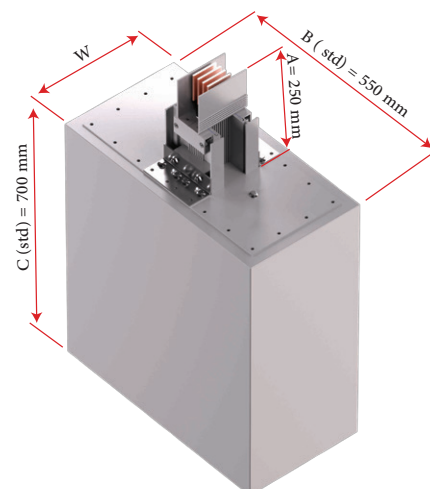


Power Link

## Cable Box

Rating	References	Figure ( I )				Figure ( II )				Figure ( III )			
(A)		A	B	C	W	A	B	C	W	A	B	C	W
800	ESHC08ET*F55CB	250	550	700	265								
1000	ESHC10ET*F55CB	250	550	700	280								
1250	ESHC12ET*F55CB	250	550	700	300								
1350	ESHC13ET*F55CB	250	550	700	310								
1600	ESHC16ET*F55CB	250	550	700	320								
2000	ESHC20ET*F55CB	250	550	700	345								
2250	ESHC22ET*F55CB	250	550	700	350								
2500	ESHC25ET*F55CB	250	550	700	380								
3200	ESHC32ET*F55CB					250	550	700	490				
4000	ESHC40ET*F55CB					250	550	700	540				
5000	ESHC50ET*F55CB					250	550	700	610				
6300	ESHC63ET*F55CB									250	550	700	780

To complete The Catalogue Number:  
- Replace \* by the polarity from 3 to 8

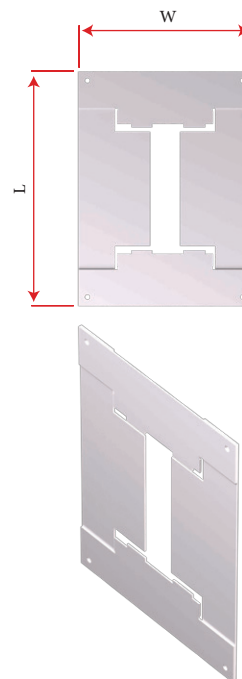


## Wall & Floor Flange

Wall and floor flange should be used in case the busway passes through a roof , wall or ceiling

Power Link

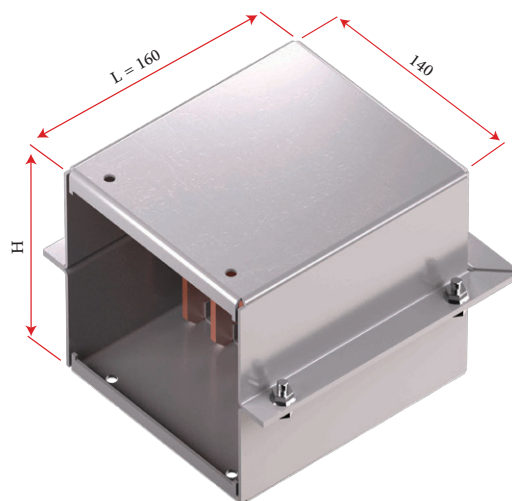
Rating	Catalogue no.		
(A)	Ref.	Width	Length
800	WF408	240	205
1000	WF410	240	220
1250	WF412	240	240
1350	WF413	240	250
1600	WF416	240	260
2000	WF420	240	285
2250	WF422	240	290
2500	WF425	240	320
3200	WF432	240	430
4000	WF440	240	480
5000	WF450	240	550
6300	WF463	240	720



## End Cap

End cap safely terminates the busway run , protects and insulates the conductor ends.  
It is fitted to the last section.

Rating (A)	800	1000	1250	1400	1600	2000	2250	2500	3200	4000	5000	6300
Width (H)	105	120	140	150	160	185	190	220	330	380	450	620
Figure	I	I	I	I	I	I	I	I	II	II	II	III



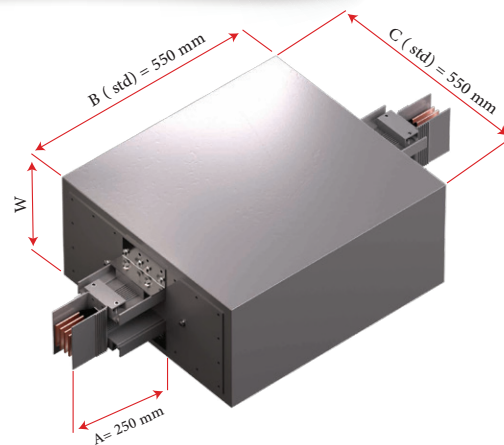


## Expansion Joint

expansion joint controls and absorbs the expansion of the busway runs and must be used on runs over 40 meters and each time the bus-bar trunking through a building expansion joint.

Rating	References	Figure (I)				Figure (II)				Figure (II)			
(A)		A	B	C	W	A	B	C	W	A	B	C	W
800	ESHC08ET*F55CB	250	700	550	265								
1000	ESHC10ET*F55CB	250	700	550	280								
1250	ESHC12ET*F55CB	250	700	550	300								
1350	ESHC13ET*F55CB	250	700	550	310								
1600	ESHC16ET*F55CB	250	700	550	320								
2000	ESHC20ET*F55CB	250	700	550	345								
2250	ESHC22ET*F55CB	250	700	550	350								
2500	ESHC25ET*F55CB	250	700	550	380								
3200	ESHC32ET*F55CB					250	700	550	490				
4000	ESHC40ET*F55CB					250	700	550	540				
5000	ESHC50ET*F55CB					250	700	550	610				
6300	ESHC63ET*F55CB									250	600	550	780

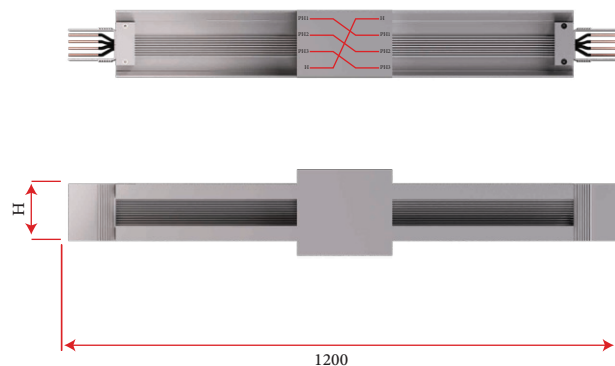
To complete the catalogue Number :  
- Replace \* by the polarity from 3 to 8



## Neutral Rotation

Neutral rotation fitting can be used when the application requires a neutral rotation in the power supply.

Rating (A)	800	1000	1250	1350	1600	2000	2250	2500	3200	4000	5000	6300
Width (H)	105	120	140	150	160	185	190	220	330	380	450	620

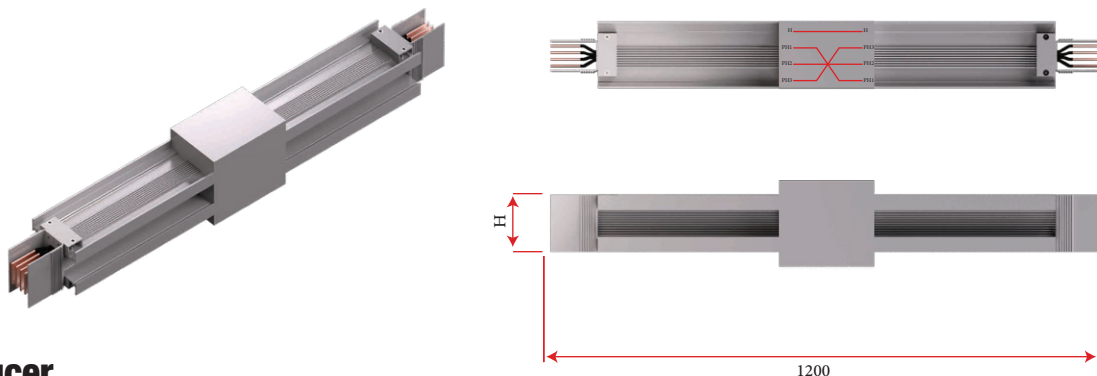


### Phase Rotation

Used when the phase order of the switchboard is different to that of the transformer .

Rating (A)	800	1000	1250	1350	1600	2000	2250	2500	3200	4000	5000	6300
Width (H)	105	120	140	150	160	185	190	220	330	380	450	620

Power Link

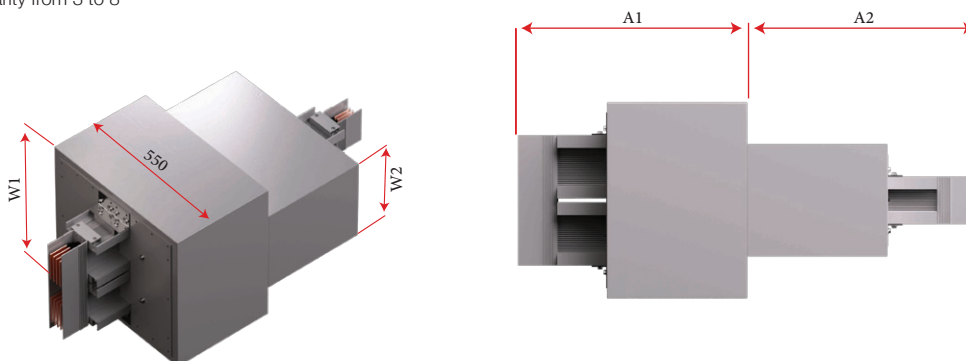


### Reducer

A reducer is used to connect a high rating busway to a lower one. An overcurrent circuit breaker can be installed upon request .

Rating (A)	References	Figure ( I )				Figure ( II )				Figure ( III )			
		A1	A2	W1	W2	A1	A2	W1	W2	A1	A2	W1	W2
800	ESHC08ET*F55RE	600	600	700	265								
1000	ESHC10ET*F55RE	600	600	700	280								
1250	ESHC12ET*F55RE	600	600	700	300								
1350	ESHC14ET*F55RE	600	600	700	310								
1600	ESHC16ET*F55RE	600	600	700	320								
2000	ESHC20ET*F55RE	600	600	700	345								
2250	ESHC22ET*F55RE	600	600	700	350								
2500	ESHC25ET*F55RE	600	600	700	380								
3200	ESHC32ET*F55RE					600	600	700	490				
4000	ESHC40ET*F55RE					600	600	700	540				
5000	ESHC50ET*F55RE					600	600	700	610				
6300	ESHC63ET*F55RE									600	600	700	780

To Complete the Catalogue Number :  
- Replace \* by the polarity from 3 to 8



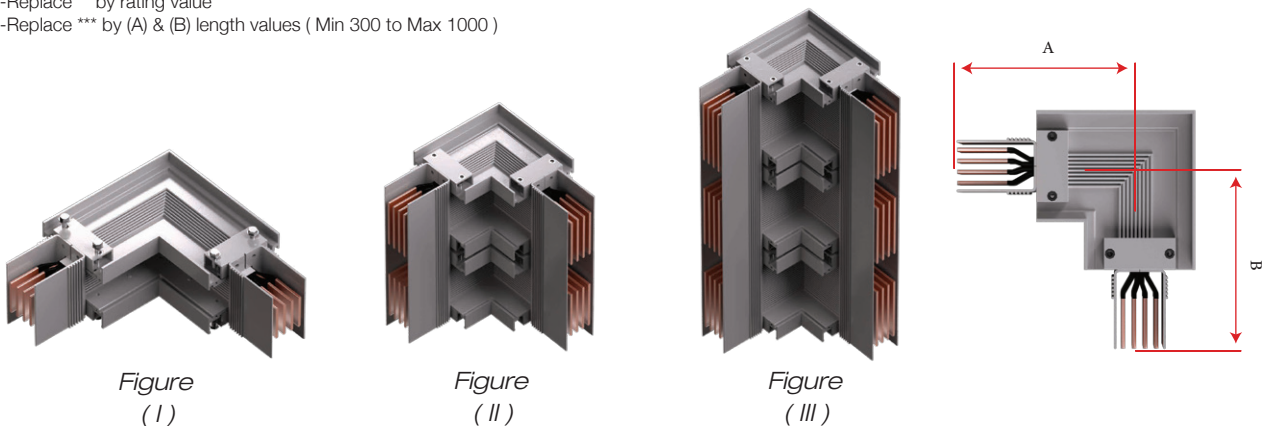


## Elbow Flatwise

Elbow sections are used for busway directional changes ( left, right, up and down )

<b>Type</b>		<b>Catalogue no.</b>	
Fixed length A= 300mm, B= 300mm Made to measure length		ESHC**ET*EF55EFA300B300 ESHC**ET*F55EFA***B***	
<b>Dimensions ( A &amp; B )</b>		<b>Dim. ( A )</b>	<b>Dim. ( B )</b>
<b>Min. Length</b>		300	300
<b>Made to measure</b>		300: 1000	300: 1000

To complete The Catalogue Number:  
 -Replace \* by the polarity from 3 to 8  
 -Replace \*\* by rating value  
 -Replace \*\*\* by (A) & (B) length values ( Min 300 to Max 1000 )

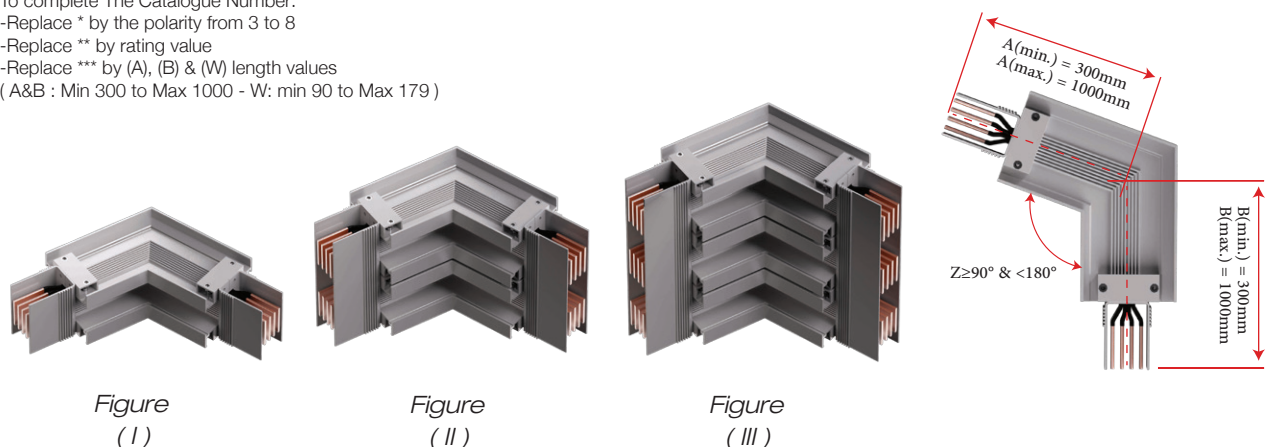


## Elbow Flatwise with Angle

Elbow sections are used for busway directional changes ( left, right, up and down ) with various angle ( 90° : 180° ).

<b>Type</b>		<b>Catalogue no.</b>		
Fixed length A= 300mm, B= 300mm Made to measure length		ESHC**ET*EF55EFA300B300W*** ESHC**ET*EF55EFA***B***W***		
<b>Dimensions ( A &amp; B )</b>		<b>Dim. ( A )</b>	<b>Dim. ( B )</b>	<b>Dim. ( Z )</b>
<b>Min. Length</b>		300	300	90 °+
<b>Made to measure</b>		300: 1000	300: 1000	Up to 179 °

To complete The Catalogue Number:  
 -Replace \* by the polarity from 3 to 8  
 -Replace \*\* by rating value  
 -Replace \*\*\* by (A), (B) & (W) length values  
 ( A&B : Min 300 to Max 1000 - W: min 90 to Max 179 )



## Elbow Edgewise

Elbow sections are used for busway directional changes ( left, right, up and down )

Rating ( A )	References	Figure ( I )		Figure ( II )		Figure ( III )	
		A	B	A	B	A	B
800	ESH08ET*F55EEA***B***	292.5	292.5				
1000	ESH10ET*F55EEA***B***	300	300				
1250	ESH12ET*F55EEA***B***	310	310				
1350	ESH13ET*F55EEA***B***	315	315				
1600	ESH16ET*F55EEA***B***	320	320				
2000	ESH20ET*F55EEA***B***	332.5	332.5				
2250	ESH22ET*F55EEA***B***	335	335				
2500	ESH25ET*F55EEA***B***	350	350				
3200	ESH32ET*F55EEA***B***			405	405		
4000	ESH40ET*F55EEA***B***			430	430		
5000	ESH50ET*F55EEA***B***			465	465		
6300	ESH63ET*F55EEA***B***					550	550

Dimensions ( A & B )

Made to measure

Dim. ( A )

min ~ 1000

Dim. ( B )

min ~ 1000

To complete The Catalogue Number:

- Replace \* by the polarity from 3 to 8

-Replace \*\*\* by (A) & (B) length values ( Min 298 to Max 1000 )

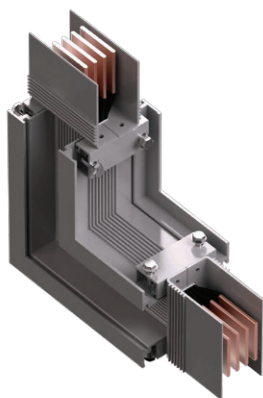


Figure ( I )

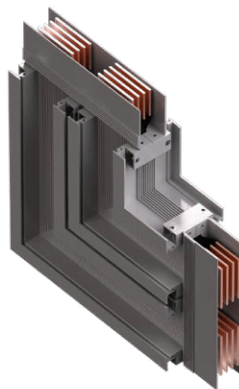


Figure ( II )

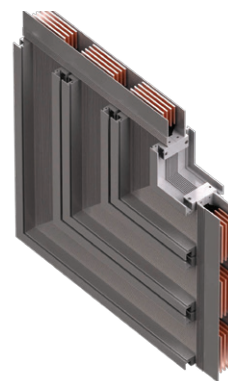
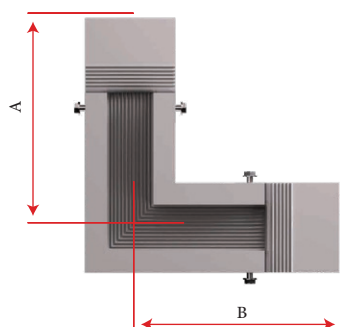


Figure ( III )

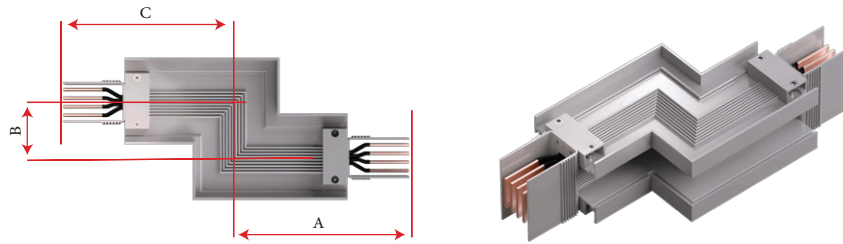


### Z-Unit Flatwise

In applications where space does not allow for two connected elbows, zed-units can be utilized to solve the problem and save space.

Type	Catalogue no.
Fixed length A= 300, B= 133, C= 300	ESHC**ET*F55ZFA300133C300
Made to measure length	ESHC**ET*F55ZFA***B***C***
Made to measure	( A=1000, B=1000, C=1000 ) Max.

To complete The Catalogue Number:  
 - Replace \* by the polarity from 3 to 8  
 - Replace \*\* by rating value  
 - Replace \*\*\* by (A), (B) & (C) length values ( Min as mentioned Max 1000 )

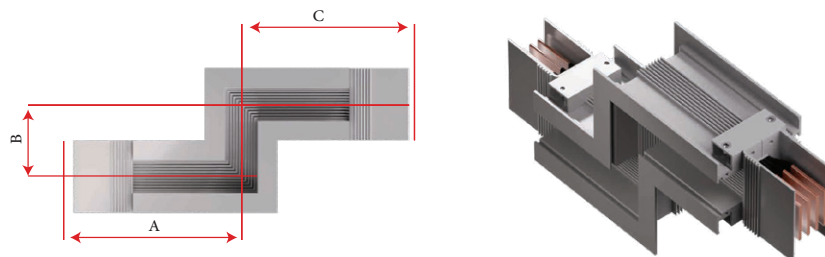


### Z-Unit Edgewise

In applications where space does not allow for two connected elbows, zed-units can be utilized to solve the problem and save space.

Rating (A)	References	Figure ( I )			Figure ( II )			Figure ( II )		
		A	B	C	A	B	C	A	B	C
800	ESHC08ET*F55ZEA***B***C***	292.5	105	292.5						
1000	ESHC10ET*F55ZEA***B***C***	300	120	300						
1250	ESHC12ET*F55ZEA***B***C***	310	140	310						
1350	ESHC13ET*F55ZEA***B***C***	315	150	315						
1600	ESHC16ET*F55ZEA***B***C***	320	160	320						
2000	ESHC20ET*F55ZEA***B***C***	332.5	185	332.5						
2250	ESHC22ET*F55ZEA***B***C***	335	190	335						
2500	ESHC25ET*F55ZEA***B***C***	350	220	350						
3200	ESHC32ET*F55ZEA***B***C***				405	330	405			
4000	ESHC40ET*F55ZEA***B***C***				430	380	430			
5000	ESHC50ET*F55ZEA***B***C***				465	450	465			
6300	ESHC63ET*F55ZEA***B***C***							550	620	550
Made to measure Dim. ( A, B & C ) Max.		1000	1000	1000	1000	1000	1000	1000	1000	1000

To complete The Catalogue Number:  
 - Replace \* by the polarity from 3 to 8  
 - Replace \*\*\* by (A), (B) & (C) length values ( Min as mentioned Max 1000 )





**T-Section**

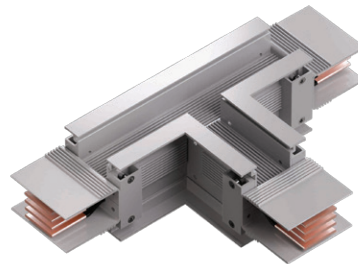
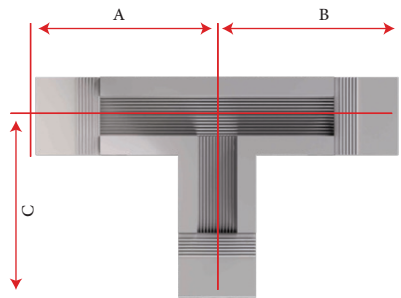
T-section are used to create two 90° branches ( left and right, up and down )

Power Link

Rating	References	Figure ( I )			Figure ( II )			Figure ( II )		
		A	B	C	A	B	C	A	B	C
( A )										
800	ESHCO8ET*F55TSA***B***C***	292.5	292.5	292.5						
1000	ESHCO10ET*F55TSA***B***C***	300	300	300						
1250	ESHCO12ET*F55TSA***B***C***	310	310	310						
1350	ESHCO13ET*F55TSA***B***C***	315	315	315						
1600	ESHCO16ET*F55TSA***B***C***	320	320	320						
2000	ESHCO20ET*F55TSA***B***C***	332.5	332.5	332.5						
2250	ESHCO22ET*F55TSA***B***C***	335	335	335						
2500	ESHCO25ET*F55TSA***B***C***	350	350	350						
3200	ESHCO32ET*F55TSA***B***C***				405	405	405			
4000	ESHCO40ET*F55TSA***B***C***				430	430	430			
5000	ESHCO50ET*F55TSA***B***C***				465	465	465			
6300	ESHCO63ET*F55TSA***B***C***							550	550	550
Made to measure Dim. ( A, B & C ) Max.		1000	1000	1000	1000	1000	1000	1000	1000	1000

To complete The Catalogue Number:

- Replace \* by the polarity from 3 to 8
- Replace \*\*\* by (A), (B) & (C) length values ( Min as mentioned to Max 1000 )



## Offset Flatwise

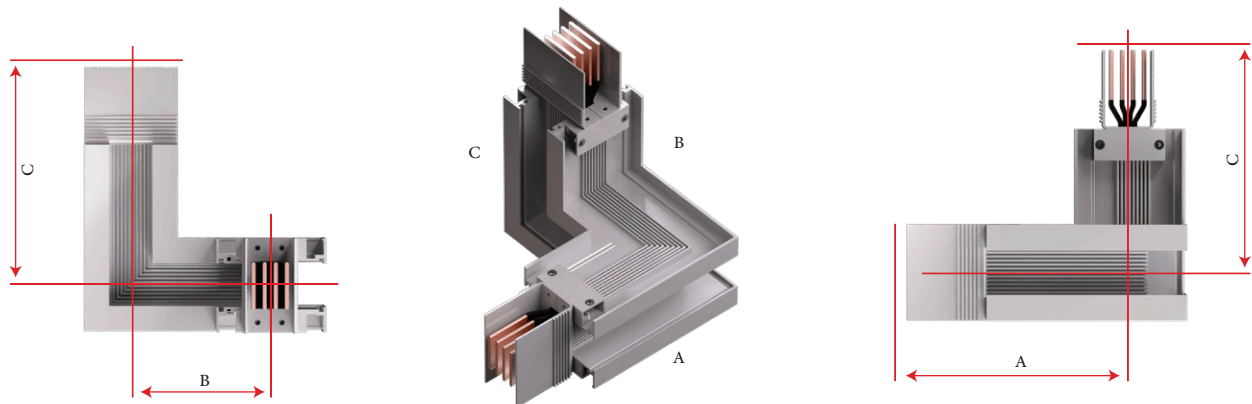
Offset section are used to change directions ( edge to flat & flat to edge )

Rating (A)	References	Figure ( I )			Figure ( II )			Figure ( II )		
		A	B	C	A	B	C	A	B	C
800	ESHC08ET*F55OFA***B***C***	300	180	292.5						
1000	ESHC10ET*F55OFA***B***C***	300	180	300						
1250	ESHC12ET*F55OFA***B***C***	300	180	310						
1350	ESHC13ET*F55OFA***B***C***	300	180	315						
1600	ESHC16ET*F55OFA***B***C***	300	180	320						
2000	ESHC20ET*F55OFA***B***C***	300	180	332.5						
2250	ESHC22ET*F55OFA***B***C***	300	180	335						
2500	ESHC25ET*F55OFA***B***C***	300	180	350						
3200	ESHC32ET*F55OFA***B***C***				300	180	405			
4000	ESHC40ET*F55OFA***B***C***				300	180	430			
5000	ESHC50ET*F55OFA***B***C***				300	180	465			
6300	ESHC63ET*F55OFA***B***C***							300	180	550
Made to measure Dim. ( A, B & C ) Max.		1000	1000	1000	1000	1000	1000	1000	1000	1000

To complete The Catalogue Number:

-Replace \* by the polarity from 3 to 8

-Replace \*\*\* by (A), (B) & (C) length values ( Min as mentioned to Max 1000 )



### Offset Edgewise

Offset section are used to change directions ( edge to flat & flat to edge )

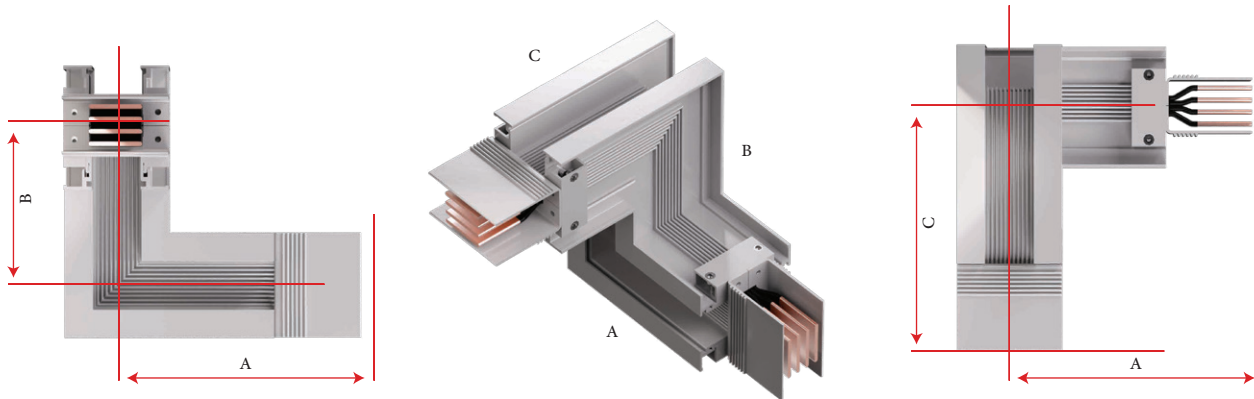
Power Link

Rating (A)	References	Figure ( I )			Figure ( II )			Figure ( II )		
		A	B	C	A	B	C	A	B	C
800	ESHC08ET*F550EA***B***C***	292.5	180	300						
1000	ESHC10ET*F550EA***B***C***	300	180	300						
1250	ESHC12ET*F550EA***B***C***	310	180	300						
1350	ESHC13ET*F550EA***B***C***	315	180	300						
1600	ESHC16ET*F550EA***B***C***	320	180	300						
2000	ESHC20ET*F550EA***B***C***	332.5	180	300						
2250	ESHC22ET*F550EA***B***C***	335	180	300						
2500	ESHC25ET*F550EA***B***C***	350	180	300						
3200	ESHC32ET*F550EA***B***C***				405	180	300			
4000	ESHC40ET*F550EA***B***C***				430	180	300			
5000	ESHC50ET*F550EA***B***C***				465	180	300			
6300	ESHC63ET*F550EA***B***C***							550	180	300
Made to measure Dim. ( A, B & C ) Max.		1000	1000	1000	1000	1000	1000	1000	1000	1000

To complete The Catalogue Number:

-Replace \* by the polarity from 3 to 8

-Replace \*\*\* by (A), (B) & (C) length values ( Min as mentioned to Max 1000 )





## Hanger Support

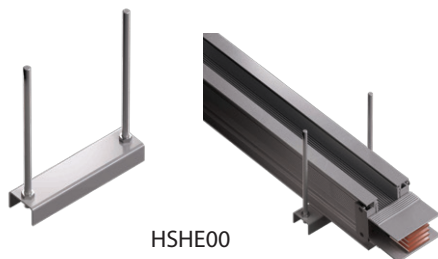
There are two types of support for installing the Busway:

- Trapeze hanger for horizontal installation.
- Spring hanger for vertical installation.

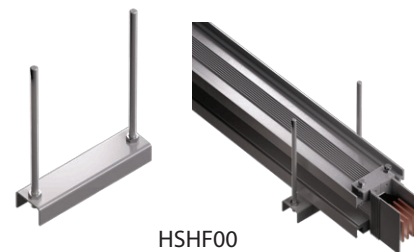
For installing the busway vertically, they ensure:

- Height and depth adjustment.
- Load sharing.
- Absorption of expansions, vibrations, etc.

Rating	Catalogue no.			
( A )	Vertical Spring	Vertical Fixed	Horizontal Flatwise	Horizontal Edgewise
800	HSVS21-50	HSVX00	HSHF-A608	HSHE00
1000	HSVS21-50	HSVX00	HSHF-A610	HSHE00
1250	HSVS21-50	HSVX00	HSHF-A612	HSHE00
1350	HSVS21-75	HSVX00	HSHF-A613	HSHE00
1600	HSVS21-75	HSVX00	HSHF-A616	HSHE00
2000	HSVS21-75	HSVX00	HSHF-A620	HSHE00
2250	(2X) HSVS21-50	HSVX00	HSHF-A622	HSHE00
2500	(2X) HSVS21-50	HSVX00	HSHF-A625	HSHE00
3200	(2X) HSVS21-75	HSVX00	HSHF-A632	HSHE00
4000	(2X) HSVS21-75	HSVX00	HSHF-A640	HSHE00
5000	(4X) HSVS21-50	HSVX00	HSHF-A650	HSHE00
6300	(4X) HSVS21-50	HSVX00	HSHF-A663	HSHE00



HSHE00



HSHF00

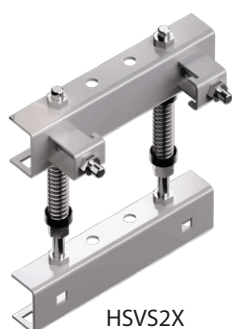
## Spring Hanger

Spring hangers are supporting vertical sectors.

They fix sections of a vertical run to the building's structure.

**This type of fixing support has the following advantages:**

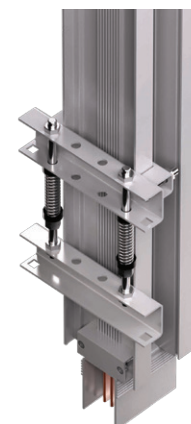
- Could be assembled to a wall bracket or to the floor, height and depth adjustment.
- Spring adjustment to ensure distribution of the load at each floor.
- Avoids the transmission of building forces to the busbar trunking.



HSVS2X



HSVX00



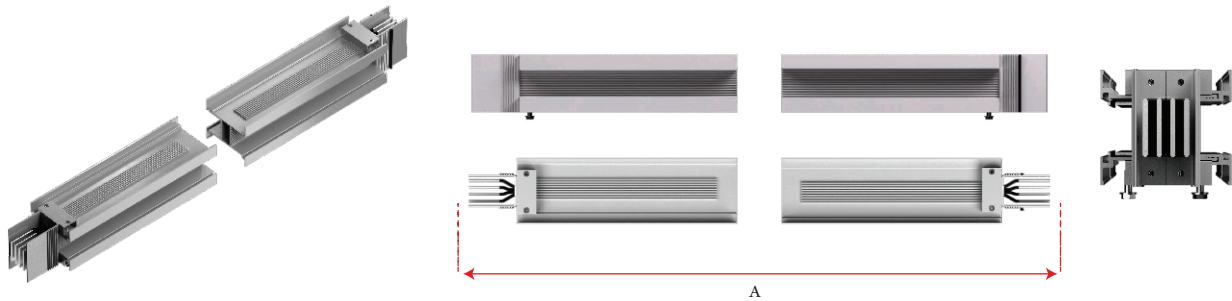
**Spine (Aluminium Bi-metal )  
Run Section**

**Straight Length Feeder**

- The feeders transport the current without tap-off points.
- Available in 4 meter fixed lengths or made to measure from 400 to 4000 mm

Type ( A )	Length A ( mm )	Catalogue no.
Fixed length	4000	ESHA**ET*F55ST4000
Made to measure length	400 : 4000	ESHA**ET*F55ST****

- To complete the Catalogue Number :
- Replace \* by the polarity from 3 to 8
  - Replace \*\* by rating value
  - Replace \*\*\*\* by length ( Min 400 to Max 4000 )



Spine

**Straight Length Plug-In**

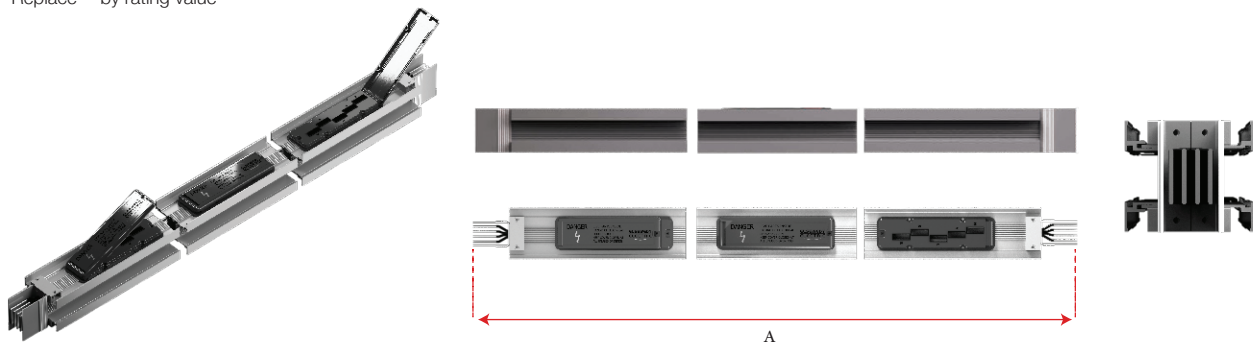
- The plug in are for current distribution.
- Available in a 2 meter fixed length with two tap-off point or a 4 meter fixed length with 5 tap-off points.

Type	Length A ( mm )	Max No. Tap Offs Per Side	Catalogue no.
Plug-In Fixed length	4000	5	ESHA**ET*P54SR4000
	3000	3	ESHA**ET*P54SR3000
	2000	2	ESHA**ET*P54SR2000

*Plug-In made to measure length is upon request*

**Riser Tap-Offs will be on one side**

- To complete the Catalogue Number :
- Replace \* by the polarity from 3 to 8
  - Replace \*\* by rating value



### Trunking Cross Section

Rating (A)	800	1000	1250	1350	1600	2000	2250	2500	3200	4000	5000
Width (H)	115	140	170	185	205	260	270	280	420	530	680
Figure	I	I	I	I	I	I	I	I	II	II	III

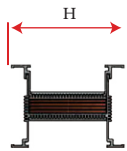


Figure (I)

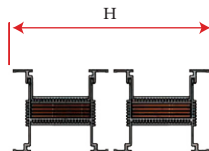


Figure (II)

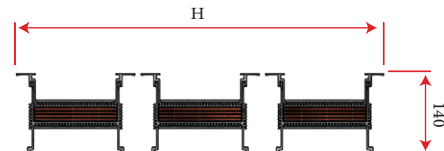
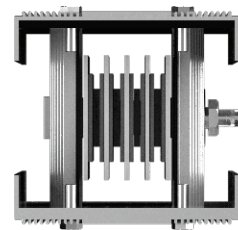


Figure (III)

Spine

### Joint Pack:

- Joint-Pack is standard on Elsewedy Electric Busway System.
- Single bolt connection makes installation faster.
- Belleville washer provides equal pressure across the complete joint contact area to assure proper electrical contact.
- Double surface contact guarantees good current continuity.
- Joint temperature monitoring (optional solution).





**Accessories  
Flange End Straight (FS)**

- Flanged-end unit allows the busway to be connected to a switchboard's bus-bar or to the terminals of an transformer, generator set, etc.

Spine

Rating	References	Figure ( I )				Figure ( II )				Figure ( III )			
( A )		A	W	C	F	A	W	C	F	A	W	C	F
800	ESHA08ET*F55FS***	All Rating 250mm standard length	225	55		All Rating 250mm standard length				All Rating 250mm standard length			
1000	ESHA10ET*F55FS***		250	80									
1250	ESHA12ET*F55FS***		280	110	30								
1400	ESHA14ET*F55FS***		295	125	37.5								
1600	ESHA16ET*F55FS***		315	145	47.5								
2000	ESHA20ET*F55FS***		370	200	25								
2250	ESHA22ET*F55FS***		380	210	30								
2500	ESHA25ET*F55FS***	390	220	35									
3200	ESHA32ET*F55FS***					530	145	47.5					
4000	ESHA40ET*F55FS***					640	200	25					
5000	ESHA50ET*F55FS***									790	160	30	
	Made to measure	$\geq 250 \leq 710$				$\geq 250 \leq 710$				$\geq 250 \leq 710$			

To Complete the Catalogue Number:  
 - Replace \* by the polarity from 3 to 8  
 - Replace \*\*\* by (A) length value ( Min 225 to Max 710 )

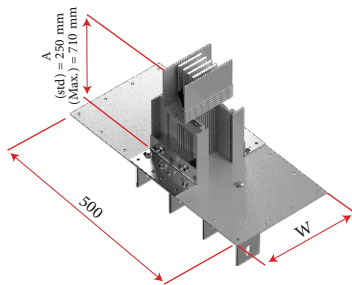
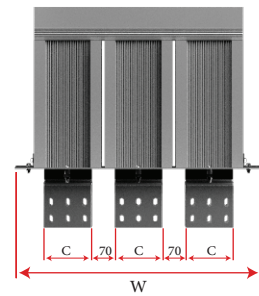
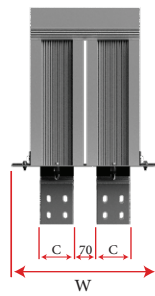
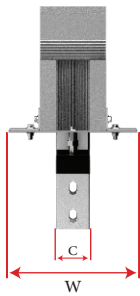
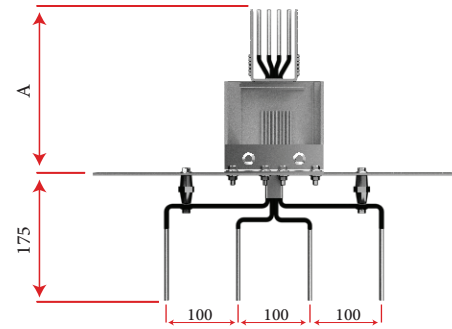
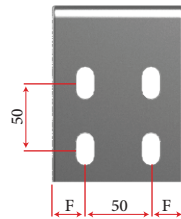


Figure ( I )

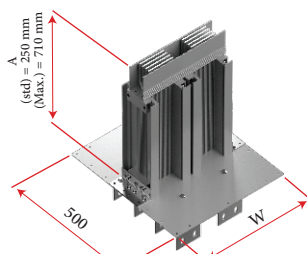


Figure ( II )

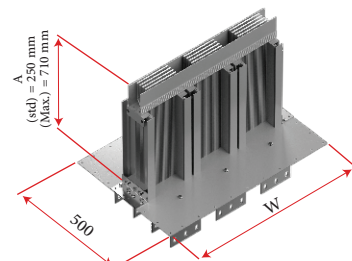


Figure ( III )

**Combination Flange End, Flat Elbow (FF)**

Rating (A)	References	Figure (I)				Figure (II)				Figure (III)							
		A	B	W	C	A	B	W	C	A	B	W	C				
800	ESHA08ET*F55FFA***B***	All Rating 133mm standard length	All Rating 250mm standard length	225	55	All Rating 133mm standard length	All Rating 250mm standard length			All Rating 133mm standard length	All Rating 250mm standard length						
1000	ESHA10ET*F55FFA***B***			250	80												
1250	ESHA12ET*F55FFA***B***			280	110												
1400	ESHA14ET*F55FFA***B***			295	125												
1600	ESHA16ET*F55FFA***B***			315	145												
2000	ESHA20ET*F55FFA***B***			370	200												
2250	ESHA22ET*F55FFA***B***			380	210												
2500	ESHA25ET*F55FFA***B***			390	220												
3200	ESHA32ET*F55FFA***B***											530	145				
4000	ESHA40ET*F55FFA***B***											640	200				
5000	ESHA50ET*F55FFA***B***										790	160					
Made to measure ( Max. )		710	1000			710	1000			710	1000						

To Complete the Catalogue Number:  
 - Replace \* by the polarity from 3 to 8  
 - Replace \*\*\* by ( A: min 133 to Max 710 ) & ( B: Min 250 to Max 1000 ) length values

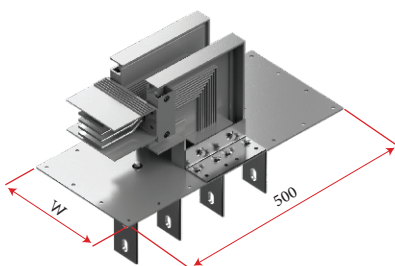
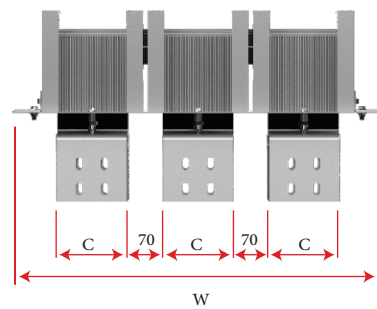
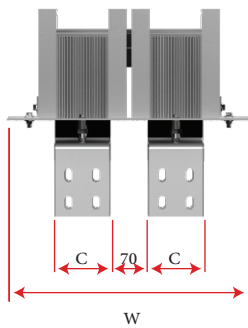
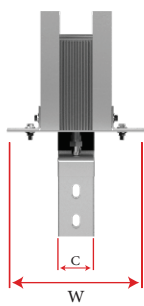
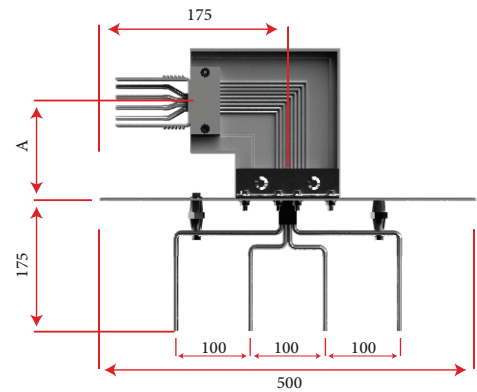
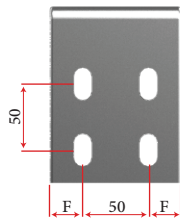


Figure (I)

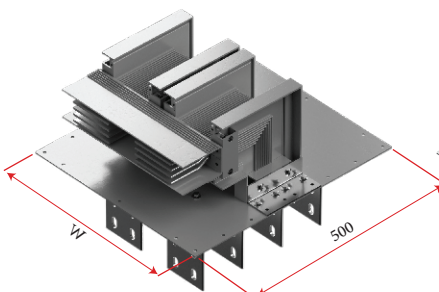


Figure (II)

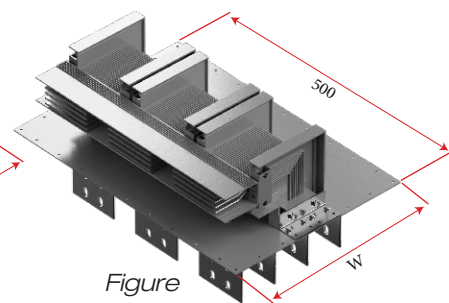


Figure (III)

**Spine**

**Combination Flange End, Edge Elbow (FE)**

Rating (A)	References	Figure ( I )				Figure ( II )				Figure ( III )			
		A	B	W	C	A	B	W	C	A	B	W	C
800	ESHA08ET*F55FEA***B***	181	298	225	55								
1000	ESHA10ET*F55FEA***B***	193	310	250	80								
1250	ESHA12ET*F55FEA***B***	208	325	280	110								
1400	ESHA14ET*F55FEA***B***	216	333	295	125								
1600	ESHA16ET*F55FEA***B***	226	343	315	145								
2000	ESHA20ET*F55FEA***B***	253	370	370	200								
2250	ESHA22ET*F55FEA***B***	258	375	380	210								
2500	ESHA25ET*F55FEA***B***	263	380	390	220								
3200	ESHA32ET*F55FEA***B***					333	450	530	145				
4000	ESHA40ET*F55FEA***B***					388	505	640	200				
5000	ESHA50ET*F55FEA***B***									463	580	790	160
	Made to measure A&B ( Max.)	710	1000			710	1000			710	1000		

To Complete the Catalogue Number:  
 - Replace \* by the polarity from 3 to 8  
 - Replace \*\*\* by ( A: min 181 to Max 710 ) & ( B: Min 298 to Max 1000 ) length values

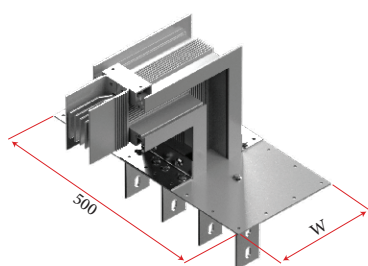
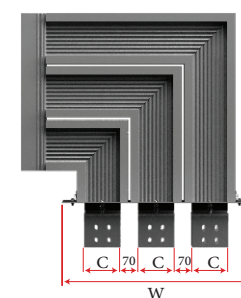
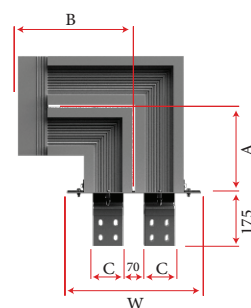
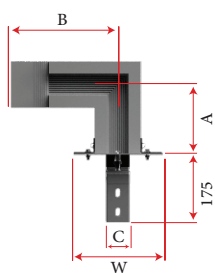
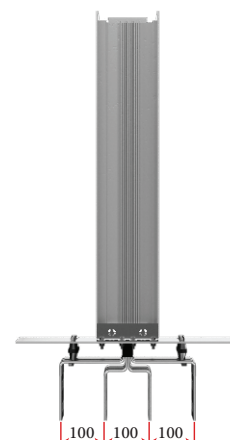
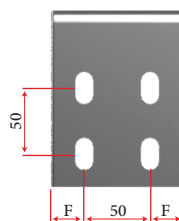


Figure ( I )

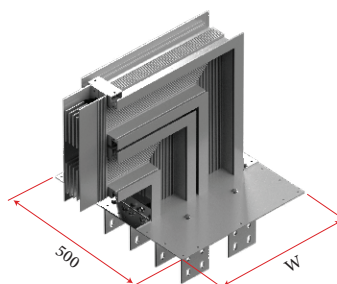


Figure ( II )

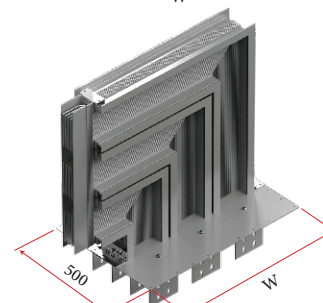


Figure ( III )



## Flexible Link

**Flexible connections** are used to connect the transformer/ generator to the connection interface of the busbar when mechanically uncoupling the two elements is required, to prevent the transmission of vibrations.

These connectors are manufactured from highly flexible tapes, braided from annealed Cu-ETP wires, and seamless contacts pressed from seamless Cu-ETP tubes.

### Braids

0,10 mm annealed Cu-ETP wires, uncoated or Tinned or silvered upon request

### Contract Areas

seamless Cu-ETP tubes, uncoated or Tinned or silvered upon request solderless pressed

\*Note: Copper Foil Available upon request

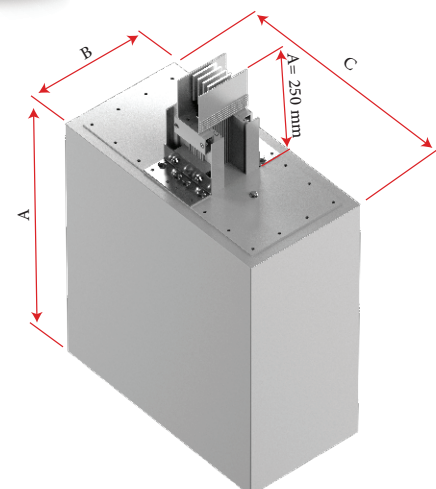


Spine

## Cable Box

Rating (A)	References	Figure ( I )			Figure ( II )		
		A	B	C	A	B	C
800	ESHA08ET*F55CB	750	275	550			
1000	ESHA10ET*F55CB	750	300	550			
1250	ESHA12ET*F55CB	750	330	550			
1350	ESHA13ET*F55CB	750	345	550			
1600	ESHA16ET*F55CB	750	365	550			
2000	ESHA20ET*F55CB	750	420	550			
2250	ESHA22ET*F55CB	750	430	550			
2500	ESHA25ET*F55CB	1000	440	550			
3200	ESHA32ET*F55CB				1000	580	550
4000	ESHA40ET*F55CB				1000	690	550
5000	ESHA50ET*F55CB				1000	840	550

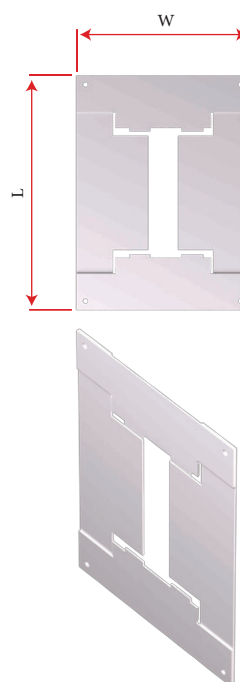
To complete The Catalogue Number:  
- Replace \* by the polarity from 3 to 8



### Wall & Floor Flange

Wall and floor flange should be used in case the busway passes through a roof , wall or ceiling

Rating	Catalogue no.		
( A )	Ref.	Width	Length
800	WF408	240	215
1000	WF410	240	240
1250	WF412	240	270
1400	WF414	240	285
1600	WF416	240	305
2000	WF420	240	360
2250	WF422	240	370
2500	WF425	240	380
3200	WF432	240	520
4000	WF440	240	630
5000	WF450	240	780

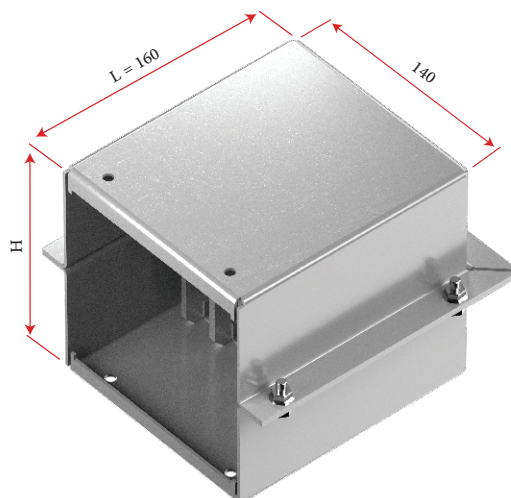


Spine

### End Cap

End cap safely terminates the busway run , protects and insulates the conductor ends. It is fitted to the last section .

Rating (A)	800	1000	1250	1400	1600	2000	2250	2500	3200	4000	5000
Width (H)	115	140	170	185	205	260	270	280	420	530	680
Figure	I	I	I	I	I	I	I	I	II	II	III

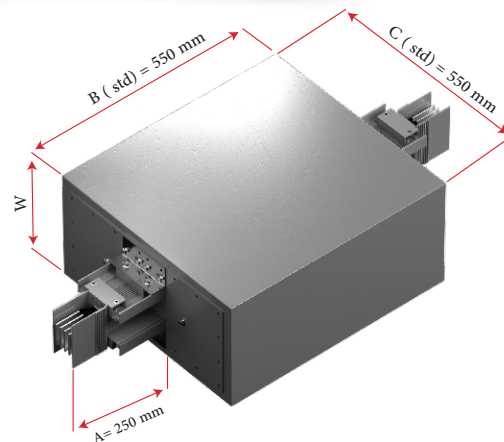


## Expansion Joint

Expansion joint controls and absorbs the expansion of the busway runs and must be used on runs over 40 meters and each time the busbar trunking through a building expansion joint.

Rating (A)	References	Figure (I)				Figure (II)			
		A	B	C	W	A	B	C	W
800	ESHCO8ET*F55CB	250	700	550	275				
1000	ESHCO10ET*F55CB	250	700	550	300				
1250	ESHCO12ET*F55CB	250	700	550	330				
1350	ESHCO13ET*F55CB	250	700	550	345				
1600	ESHCO16ET*F55CB	250	700	550	365				
2000	ESHCO20ET*F55CB	250	700	550	420				
2250	ESHCO22ET*F55CB	250	700	550	430				
2500	ESHCO25ET*F55CB	250	700	550	440				
3200	ESHCO32ET*F55CB					250	700	550	580
4000	ESHCO40ET*F55CB					250	700	550	690
5000	ESHCO50ET*F55CB					250	700	550	840

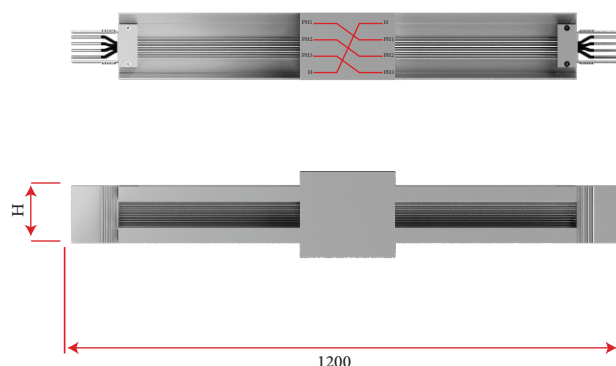
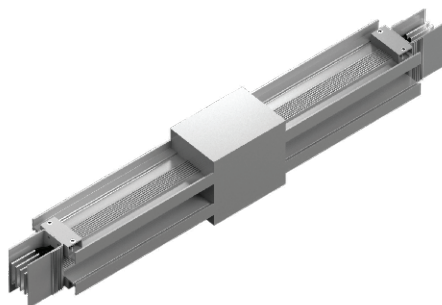
To complete the catalogue Number :  
-Replace \* by the polarity from 3 to 8



## Neutral Rotation

Neutral rotation fitting can be used when the application requires a neutral rotation in the power supply.

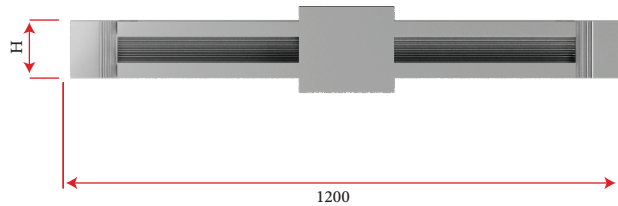
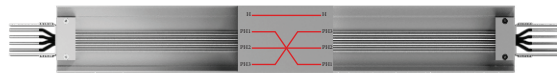
Rating (A)	800	1000	1250	1400	1600	2000	2250	2500	3200	4000	5000
Width (H)	115	140	170	185	205	260	270	280	420	530	680



### Phase Rotation

Used when the phase order of the switchboard is different to that of the transformer .

Rating (A)	800	1000	1250	1400	1600	2000	2250	2500	3200	4000	5000
Width (H)	115	140	170	185	205	260	270	280	420	530	680



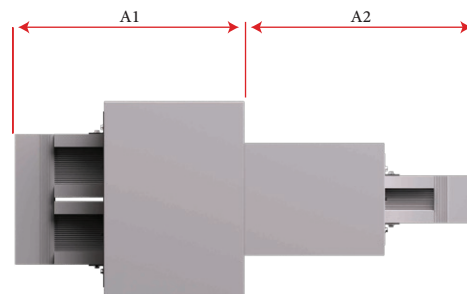
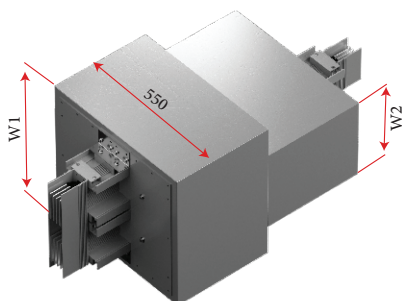
Spine

### Reducer

A reducer is used to connect a high rating busway to a lower one . An overcurrent circuit breaker can be installed upon request .

Rating (A)	References	Figure ( I )				Figure ( II )				Figure ( III )			
		A1	A2	W1	W2	A1	A2	W1	W2	A1	A2	W1	W2
800	ESHA08ET*F55RE	600	600	700	265								
1000	ESHA10ET*F55RE	600	600	700	280								
1250	ESHA12ET*F55RE	600	600	700	300								
1400	ESHA14ET*F55RE	600	600	700	310								
1600	ESHA16ET*F55RE	600	600	700	320								
2000	ESHA20ET*F55RE	600	600	700	345								
2250	ESHA22ET*F55RE	600	600	700	350								
2500	ESHA25ET*F55RE	600	600	700	380								
3200	ESHA32ET*F55RE					600	600	700	490				
4000	ESHA40ET*F55RE					600	600	700	540				
5000	ESHA50ET*F55RE									600	600	700	780

To Complete the Catalogue Number :  
-Replace \* by the polarity from 3 to 8



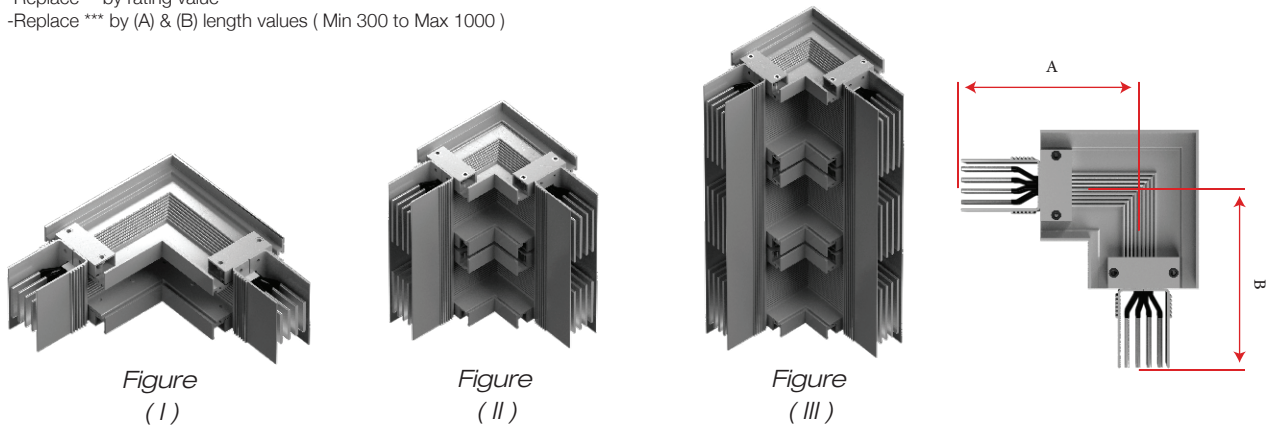


## Elbow Flatwise

Elbow sections are used for busway directional changes ( left, right, up and down )

Type	Catalogue no.	
Fixed length A= 300mm, B= 300mm Made to measure length	ESHA**ET*EF55EFA300B300 ESHA**ET*F55EFA***B***	
Dimensions ( A & B )	Dim. ( A )	Dim. ( B )
Min. Length	300	300
Made to measure	300~ 1000	300~ 1000

To complete The Catalogue Number:  
 -Replace \* by the polarity from 3 to 8  
 -Replace \*\* by rating value  
 -Replace \*\*\* by (A) & (B) length values ( Min 300 to Max 1000 )

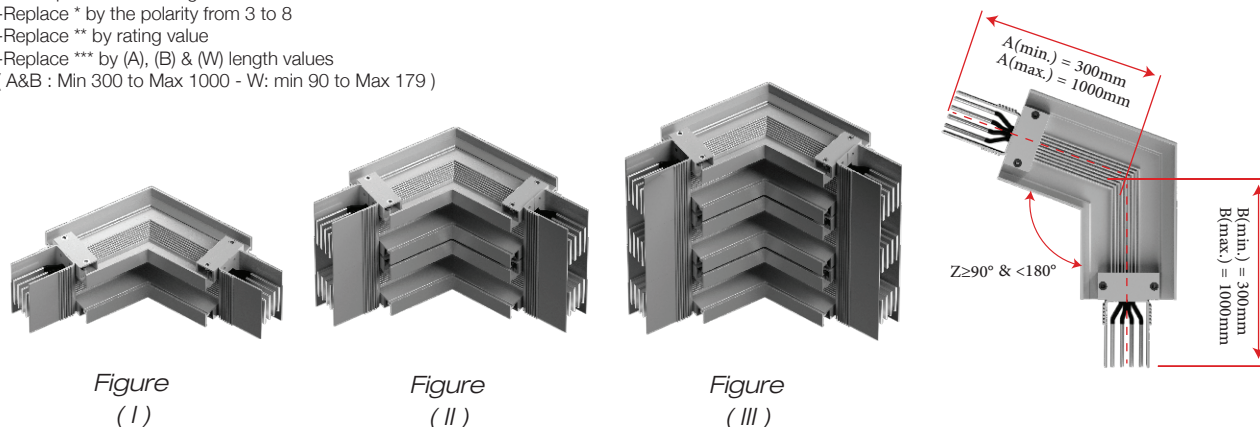


## Elbow Flatwise with Angle

Elbow sections are used for busway directional changes ( left, right, up and down ) with various angle ( 90° : 180° ).

Type	Catalogue no.		
Fixed length A= 300mm, B= 300mm Made to measure length	ESHA**ET*EF55EFA300B300W*** ESHA**ET*EF55EFA***B***W***		
Dimensions ( A & B )	Dim. ( A )	Dim. ( B )	Dim. ( Z )
Min. Length	300	300	90 °+
Made to measure	300~1000	300~1000	Up to 179 °

To complete The Catalogue Number:  
 -Replace \* by the polarity from 3 to 8  
 -Replace \*\* by rating value  
 -Replace \*\*\* by (A), (B) & (W) length values  
 ( A&B : Min 300 to Max 1000 - W: min 90 to Max 179 )



### Elbow Edgewise

Elbow sections are used for busway directional changes ( left, right, up and down )

Rating (A)	References	Figure ( I )		Figure ( II )	
		A	B	A	B
800	ESHA08ET*F55EEA***B***	298	298		
1000	ESHA10ET*F55EEA***B***	310	310		
1250	ESHA12ET*F55EEA***B***	325	325		
1400	ESHA14ET*F55EEA***B***	333	333		
1600	ESHA16ET*F55EEA***B***	343	343		
2000	ESHA20ET*F55EEA***B***	370	370		
2250	ESHA22ET*F55EEA***B***	375	375		
2500	ESHA25ET*F55EEA***B***	380	380		
3200	ESHA32ET*F55EEA***B***			450	450
4000	ESHA40ET*F55EEA***B***			505	505
5000	ESHA50ET*F55EEA***B***			580	580

<i>Dimensions ( A &amp; B )</i>	<i>Dim. ( A )</i>	<i>Dim. ( B )</i>
<i>Made to measure</i>	<i>min ~ 1000</i>	<i>min ~ 1000</i>

To complete The Catalogue Number:  
 -Replace \* by the polarity from 3 to 8  
 -Replace \*\*\* by (A) & (B) length values ( Min 298 to Max 1000 )

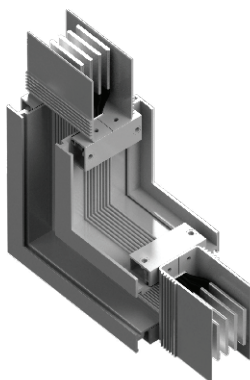


Figure ( I )

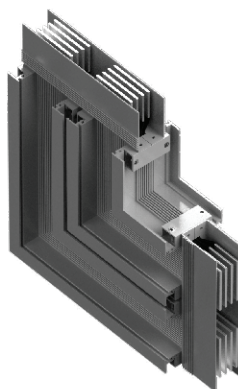


Figure ( II )

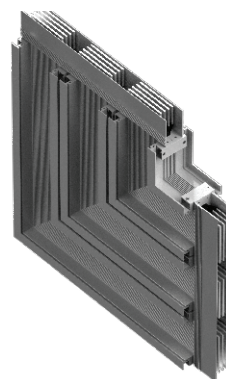
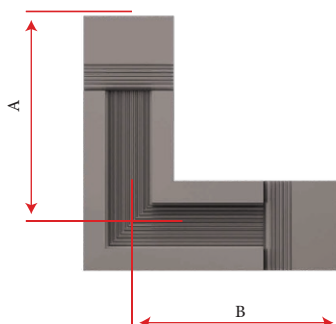


Figure ( III )



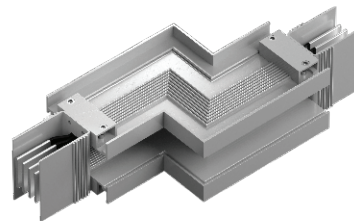
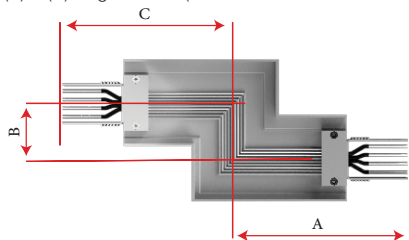
## Z-Unit Flatwise

In applications where space does not allow for two connected elbows, zed-units can be utilized to solve the problem and save space.

Type	Catalogue no.
Fixed length A= 300, B= 90, C= 300	ESHA**ET*F55ZFA300B90C300
Made to measure length	ESHA**ET*F55ZFA***B***C***
Made to measure	( A=1000, B=1000, C=1000 ) Max.

To complete The Catalogue Number:

- Replace \* by the polarity from 3 to 8
- Replace \*\* by rating value
- Replace \*\*\* by (A), (B) & (C) length values ( Min as mentioned Max 1000 )



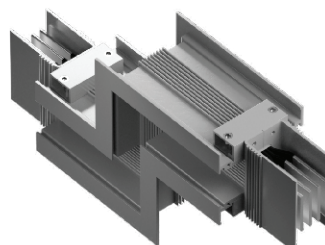
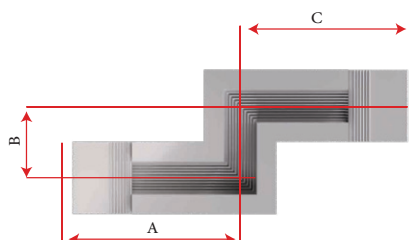
## Z-Unit Edgewise

In applications where space does not allow for two connected elbows, zed-units can be utilized to solve the problem and save space.

Rating (A)	References	Figure ( I )			Figure ( II )		
		A	B	C	A	B	C
800	ESHA08ET*F55ZEA***B***C***	298	115	298			
1000	ESHA10ET*F55ZEA***B***C***	310	140	310			
1250	ESHA12ET*F55ZEA***B***C***	325	170	325			
1400	ESHA14ET*F55ZEA***B***C***	333	185	333			
1600	ESHA16ET*F55ZEA***B***C***	343	205	343			
2000	ESHA20ET*F55ZEA***B***C***	370	260	370			
2250	ESHA22ET*F55ZEA***B***C***	375	270	375			
2500	ESHA25ET*F55ZEA***B***C***	380	280	380			
3200	ESHA32ET*F55ZEA***B***C***				450	420	450
4000	ESHA40ET*F55ZEA***B***C***				505	530	505
5000	ESHA50ET*F55ZEA***B***C***				580	680	580
Made to measure Dim. ( A, B & C ) Max.		1000	1000	1000	1000	1000	1000

To complete The Catalogue Number:

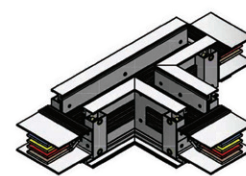
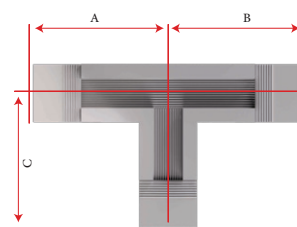
- Replace \* by the polarity from 3 to 8
- Replace \*\*\* by (A), (B) & (C) length values ( Min as mentioned Max 1000 )



### T-Section

T-section are used to create two 90° branches ( left and right, up and down )

Rating (A)	References	Figure ( I )			Figure ( II )		
		A	B	C	A	B	C
800	ESHA08ET*F55TSA***B***C***	298	298	298			
1000	ESHA10ET*F55TSA***B***C***	310	310	310			
1250	ESHA12ET*F55TSA***B***C***	325	325	325			
1400	ESHA14ET*F55TSA***B***C***	333	333	333			
1600	ESHA16ET*F55TSA***B***C***	343	343	343			
2000	ESHA20ET*F55TSA***B***C***	370	370	370			
2250	ESHA22ET*F55TSA***B***C***	375	375	375			
2500	ESHA25ET*F55TSA***B***C***	380	380	380			
3200	ESHA32ET*F55TSA***B***C***				450	450	450
4000	ESHA40ET*F55TSA***B***C***				505	505	505
5000	ESHA50ET*F55TSA***B***C***				580	580	580
Made to measure Dim. ( A, B & C ) Max.		1000	1000	1000	1000	1000	1000



T-SECTION

To complete The Catalogue Number:

- Replace \* by the polarity from 3 to 8
- Replace \*\*\* by (A), (B) & (C) length values ( Min 298 to Max 1000 )

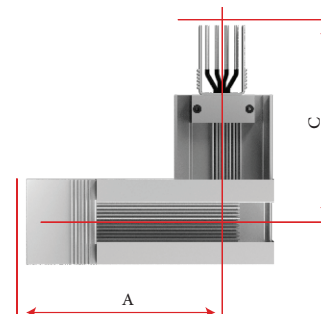
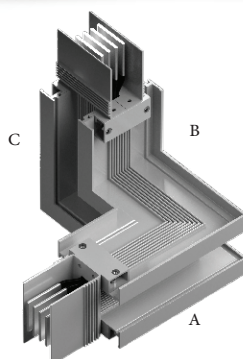
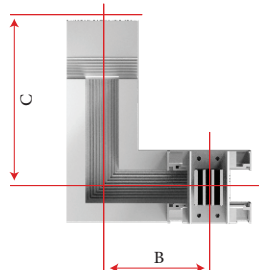
### Offset Flatwise

Offset section are used to change directions ( edge to flat & flat to edge )

Rating (A)	References	Figure ( I )			Figure ( II )			Figure ( II )		
		A	B	C	A	B	C	A	B	C
800	ESHA08ET*F55OFA300B90C300	300	177.5	298						
1000	ESHA10ET*F55OFA300B90C300	300	190	310						
1250	ESHA12ET*F55OFA300B90C300	300	205	325						
1400	ESHA14ET*F55OFA300B90C300	300	212.5	333						
1600	ESHA16ET*F55OFA300B90C300	300	222.5	343						
2000	ESHA20ET*F55OFA300B90C300	300	250	370						
2250	ESHA22ET*F55OFA300B90C300	300	255	375						
2500	ESHA25ET*F55OFA300B90C300	300	260	380						
3200	ESHA32ET*F55OFA300B90C300				300	330	450			
4000	ESHA40ET*F55OFA300B90C300				300	385	505			
5000	ESHA50ET*F55OFA300B90C300							300	460	580
Made to measure Dim. ( A, B & C ) Max.		1000	1000	1000	1000	1000	1000	1000	1000	1000

To complete The Catalogue Number:

- Replace \* by the polarity from 3 to 8
- Replace \*\*\* by (A), (B) & (C) length values ( Min as mentioned to Max 1000 )





## Offset Edgewise

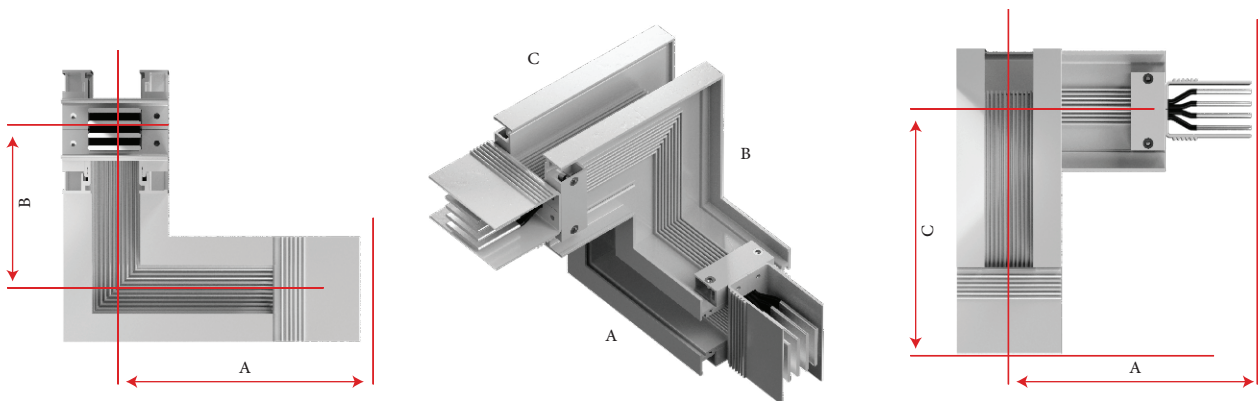
Offset section are used to change directions ( edge to flat & flat to edge )

Rating (A)	References	Figure ( I )			Figure ( II )			Figure ( II )		
		A	B	C	A	B	C	A	B	C
800	ESHA08ET*F55OEA***B***C***	298	177.5	300						
1000	ESHA10ET*F55OEA***B***C***	310	190	300						
1250	ESHA12ET*F55OEA***B***C***	325	205	300						
1400	ESHA14ET*F55OEA***B***C***	333	212.5	300						
1600	ESHA16ET*F55OEA***B***C***	343	222.5	300						
2000	ESHA20ET*F55OEA***B***C***	370	250	300						
2250	ESHA22ET*F55OEA***B***C***	375	255	300						
2500	ESHA25ET*F55OEA***B***C***	380	260	300						
3200	ESHA32ET*F55OEA***B***C***				450	330	300			
4000	ESHA40ET*F55OEA***B***C***				505	385	300			
5000	ESHA50ET*F55OEA***B***C***							580	460	300
Made to measure Dim. ( A, B & C ) Max.		1000	1000	1000	1000	1000	1000	1000	1000	1000

To complete The Catalogue Number:

- Replace \* by the polarity from 3 to 8

-Replace \*\*\* by (A), (B) & (C) length values ( Min as mentioned to Max 1000 )



## Hanger Support

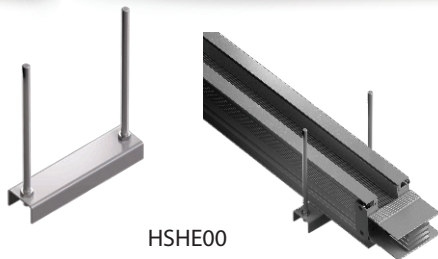
**There are two types of support for installing the Busway:**

- Trapeze hanger for horizontal installation.
- Spring hanger for vertical installation.

**For installing the busway vertically, they ensure:**

- Height and depth adjustment.
- Load sharing.
- Absorption of expansions, vibrations, etc.

Rating	Catalogue no.			
( A )	Vertical Spring	Vertical Fixed	Horizontal Flatwise	Horizontal Edgewise
800	HSVS21-50	HSVX00	HSHF-C508	HSHE00
1000	HSVS21-50	HSVX00	HSHF-C510	HSHE00
1250	HSVS21-50	HSVX00	HSHF-C512	HSHE00
1400	HSVS21-50	HSVX00	HSHF-C513	HSHE00
1600	HSVS21-75	HSVX00	HSHF-C516	HSHE00
2000	HSVS21-75	HSVX00	HSHF-C520	HSHE00
2250	HSVS21-75	HSVX00	HSHF-C522	HSHE00
2500	HSVS21-75	HSVX00	HSHF-C525	HSHE00
3200	(2X) HSVS21-75	HSVX00	HSHF-C532	HSHE00
4000	(2X) HSVS21-75	HSVX00	HSHF-C540	HSHE00
5000	(4X) HSVS21-50	HSVX00	HSHF-C550	HSHE00



HSHE00



HSHF00

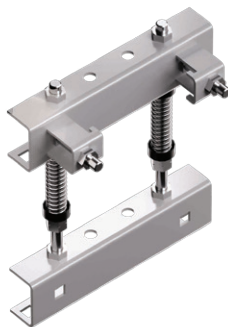
## Spring Hanger

Spring hangers are supporting vertical sectors.

They fix sections of a vertical run to the building's structure.

**This type of fixing support has the following advantages:**

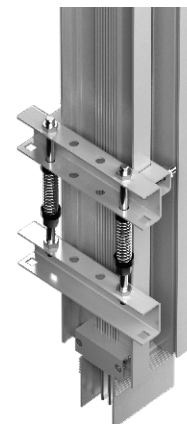
- Could be assembled to a wall bracket or to the floor, height and depth adjustment.
- Spring adjustment to ensure distribution of the load at each floor,
- Avoids the transmission of building forces to the busbar trunking.



HSVS2X



HSVX00



**Tap-Off Units  
ES PIU Coding System**

ES5	P2	3VM123	250	43	F	100	S	54
ES5	Code	Type Of Circuit Breaker	C.B Rating	Polarity	Trip Mode	S.C. Level	Operation	IP
ES5	••	•••••	••••	••	•	•••	•	••

**Code [\*\*]** P2

15 A - 100 A	P1
125 A - 160 A	P2
200 A - 250 A	P3
400 A - 630 A	P4
800 A - 1250 A	P5

**Trip Mod [\*]**

F	Fixed Adjustable	F
		A

**Type Of Circuit Breaker [\*\*\*\*\*]** 3VM123

Siemens C.B.( Standard )	*****
ABB C.B.	*****
Schneider C.B.	*****

**Short Circuit**

100	S.C Level	***
-----	-----------	-----

**Circuit Breaker Rating [\*\*\*\*]** 250

15 A UP To 1250 A	15 - 1250
-------------------	-----------

**Operation [\*]**

S	Side Handle	S
---	-------------	---

**Polarity [\*]** 43

3 Pole PIU , 3 Pole Breaker	33
4 Pole PIU , 3 Pole Breaker	43
4 Pole PIU , 4 Pole Breaker	44

**IP [\*\*]**

54	IP 54	54
	IP 55	55

Tap-Off Units

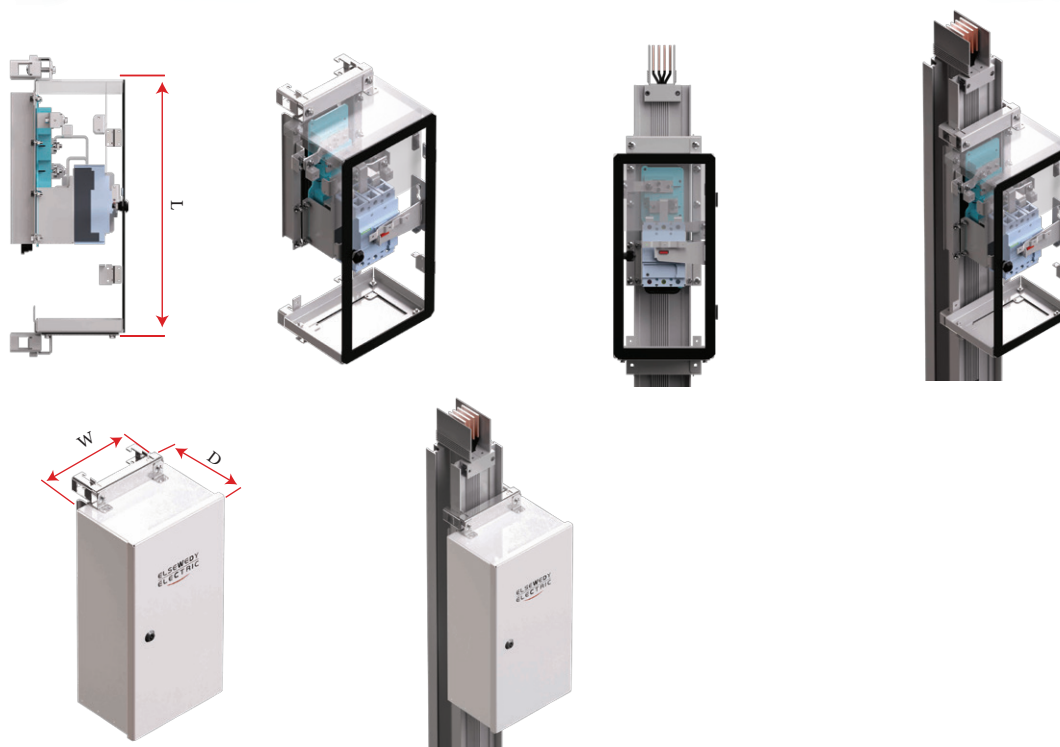
### Tap-Off Unit

- Easy and reliable installation.
- Eliminates forces against plugs during installation.
- Absolute safety solution.
- Smart design to accept many type/ model/ brand of standard breakers.
- Equipped with mechanical interlock mechanism; cannot be removed from the busway when the box is at 'on' position.
- IP54 protection.
- Plugin Contacts silver plated.

Rating (A)	Circuit Breaker Siemens Type	Reference	Interrupting Current kA(380/415V)	Dimension		
				L	W	D
100A	3VA10	ES5P13VA10310043S54	16 - 25 - 36	400	250	175
160A	3VA11	ES5P13VA11316043S54	25 - 36 - 55	400	250	175
250A	3VA12	ES5P13VA123125043S54	36 - 55	500	250	175
400A	3VA13	ES5P23VA13340043S54	36 - 55	780	350	270
630A	3VA14	ES5P33VA14363043S54	36 - 55	780	350	270

### Power Take off

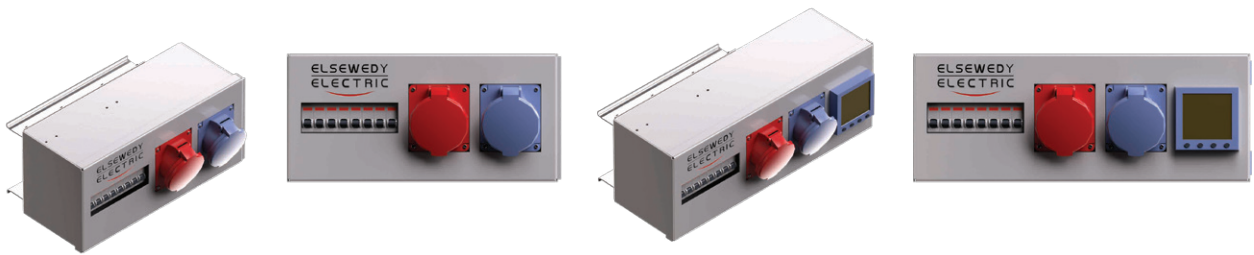
Rating	Circuit Breaker Siemens Type	Reference	Interrupting Current kA(380/415V)	Dimension		
				L	W	D
800A	3VA15	ES5P33VA15380043S54	55 - 70	810	370	350
1000A	3VA15	ES5P33VA153100043S54	55 - 70	810	370	350
1250A	3VA27	ES5P33VA153125043S54	55 - 70	810	370	350





## Data Center Custom Mode Tap-off Unit

Rating (A)	Number of modules		Catalogue no.					Accessories
	9mm	18mm	Reference	Interrupting Current kA(380/415V)	L	W	D	
32A	16	8	ES5DC3254	Up to 36	396	185	160	2 Industrial Sockets
32A	16	8	ES5DC3254	Up to 36	496	185	160	2 Industrial Sockets + Metering



## Data Center Busway Advantages

### Improving power availability

- Architecture and hardware with maximum reliability, pre-engineered and qualified
- IT room under control by final circuit monitoring
- Fast servicing

### Maximum energy efficiency

- Measure the energy consumption up to racks level to evaluate the PUE ( Power Usage Effectiveness ) in real time
- Reduce copper losses

### Maximum flexibility

- To be able to move, add and change IT equipment as its performance needs evolved
- To be able to spread the investments over time

### Maximum speed of deployment

- Standardized design and process
- Modular solution approach
- One-stop shopping

## Elsewedy Electric Busway for Data center is:

### 1- A final distribution for servers and IT equipment:

Based on prefabricated Power Link and Spine range busway systems and specific tap-off for Data centre

### 2- A flexible and monitored distribution to match the equipment renewal rate with:

- A variety of tap-off units with built-in current energy metering for low to high density
- IT environment
- Industrial sockets for easy connection with the PDU units

### 3- A system ready to a speed deployment along with a portfolio of services:

- Site Survey, full design package
- Operational service: Installation and commissioning
- Tested and warranty by Elsewedy Electric

## Smart Busway Joint

Because safety is not just an option, Elsewedy Electric provides, along its market-leading Busway solutions, cutting-edge Joint Temperature Monitoring (JTM) devices.

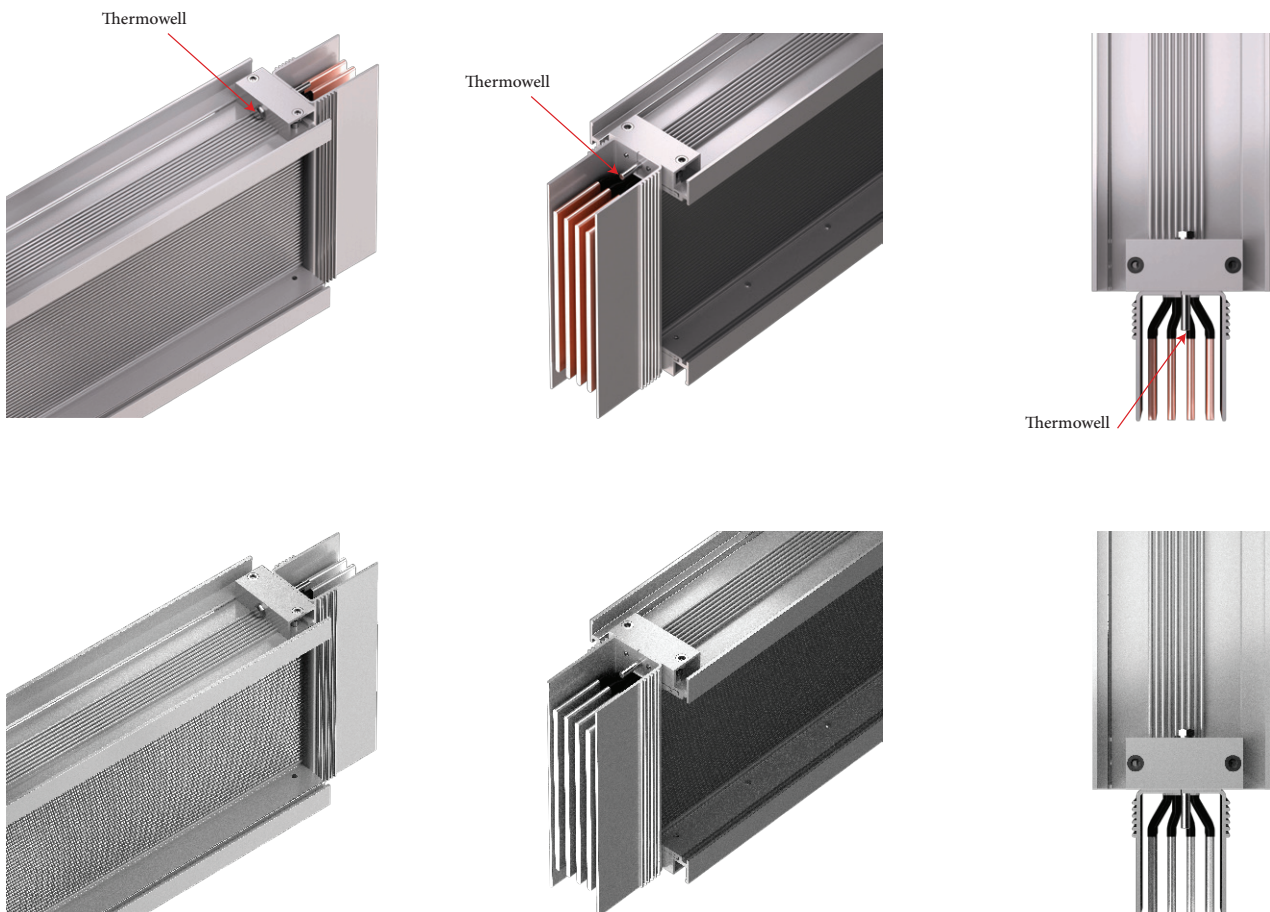
The JTM is a highly accurate wireless temperature transmitter, designed specifically to complement Elsewedy Electric's Busway.

Not only does it mitigate the risk of Busway joint overheating, but it also optimizes the Return on Investment (ROI) by cutting on the operational expenses of manual inspection.

Elsewedy Electric's JTM device is a perfect example of the power of Internet of Things (IoT) with its out-of-the-box compatibility with Elsewedy Electric's IoT and Busway solutions, employment of already existing Wifi networks, reliability in the harshest operating conditions, and minimal bandwidth requirements.

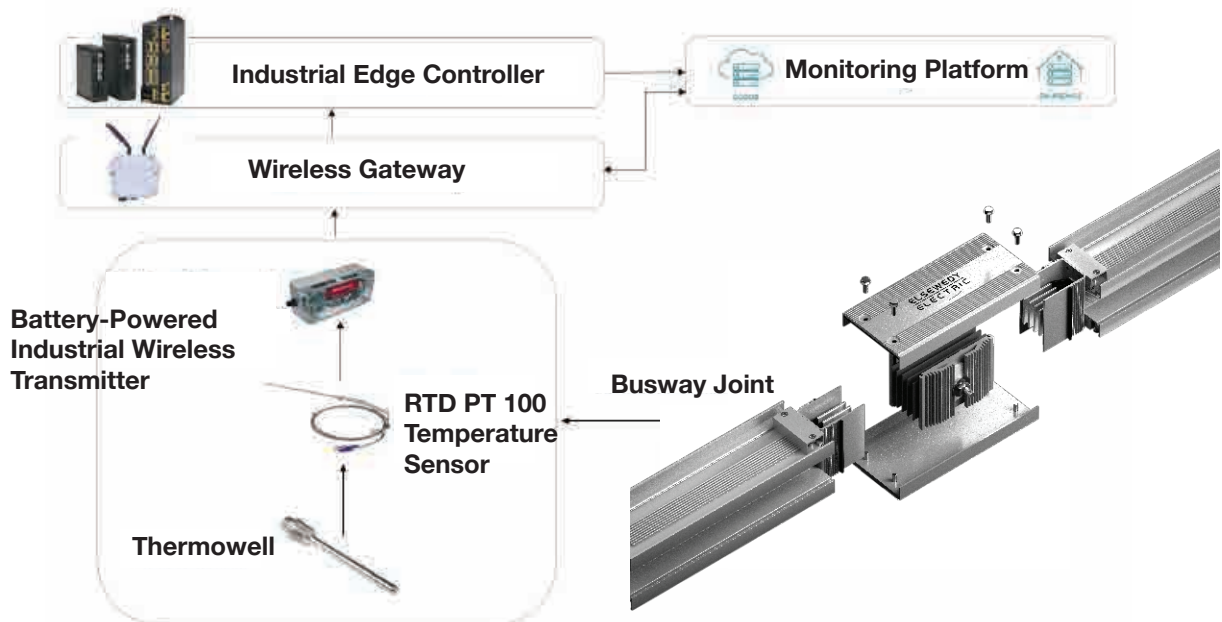
### Key Features:

- Compact Design: Optimized for Elsewedy Electric Busway Products.
- Directly monitor busbars joints.
- No need for IR CAMs, No maintenance planning
- Battery Powered: No need for trays and conduits.
- Wireless data transfer.
- Connect over regular WiFi: No need to invest in a separate network.
- Over-The-Air Updates: Seamless updates to the firmware.
- High accuracy: ADC Resolution of 15 bits.
- Supports 2,3 or 4 Wire Platinum 100 Ohm RTD.
- Designed for industrial and otherwise harsh environments.



Catalogue no.

Software Features	Battery Life Monitoring - OTA Firmware Updates
Analog-to-Digital Converter Resolution	15 bits
PT100 Connection	2, 3 or 4 Wire Connection with PG7 Gland
Wifi Connectivity	IEEE802.11 b/g/n, 2.4 GHz, +20dBm output power in 802.11b mode
Network Protocols	IPv4, TCP/UDP/HTTP/FTP
Security	WPA/WPA2
Encryption	WEP/TKIP/AES
Battery Life (with 4 AA batteries)	At least a year (3 readings per hour)
Power	4 AA Batteries
Enclosure Transmitter	IP66, UL -508, NEMA 1,2,4,4X,12,13
Enclosure Material Flammability Rating	UL94 HB
Mounting	Flanged Mount



Smart Busway Joint

**Design Guide**  
**General Technical Specifications**

POWER LINK ( CU ) HPB with Copper Conductors, Aluminium Enclosure

		Rating													
Busway Rating	$I_n$	A	800	1000	1250	1350	1600	2000	2250	2500	3200	4000	5000	6300	
Standards & Specifications			IEC 61439-1&6												
Degree of protection	IP		IP 54/ 55 & 65												
Frequency	F	Hz	50 / 60												
Ambient Temperature Min. / Max.*	T	C°	-5 / +50												
Rated insulation voltage $U_i$	$U_i$	V	1000												
Rated operational voltage $U_e$	$U_e$	V	1000												
Mechanical Impacts	IK		08												
Rated short-time current for three phase fault (1 s)	$I_{cw}$	KA	50	50	80	80	80	80	80	80	100	100	120	120	
Allowable peak current for three phase fault	$I_{pk}$	KA	105	105	170	170	170	170	170	170	225	225	290	300	
Maximum thermal load	$I^2t$		2500	2500	6400	6400	6400	6400	6400	6400	10000	10000	14400	14400	
Resistance	R	$\mu\Omega/m$	61	51	45	39	36	32	28	25	19	16	12	9	
Reactance	X		33	28	25	23	22	20	17	16	10	9	7	6	
Impedance	Z		70	57	54	52	45	38	33	29	22	19	15	12	
Voltage Drop(V/100m)	$\cos\phi$	0.80	9.49	9.96	11.02	10.5	11.62	13	12.68	12.79	11.73	12.59	11.93	11.76	
		0.9	9.59	10.05	11.11	10.54	11.62	12.98	12.69	12.75	11.88	12.68	11.98	11.68	
		1	8.44	8.82	9.73	9.1	9.96	11.07	10.89	10.81	10.51	11.07	10.38	9.8	
Figure		1	1	1	1	1	1	1	1	1	2	2	2	3	
Dimensions ( mm )	H		140	140	140	140	140	140	140	140	140	140	140	140	
	W		105	120	140	150	160	185	190	220	330	380	450	620	
Approximate Weights		Kg/m	15	18	23	25	27	33	34	41	55	66	82	109	



**Design Guide**  
**General Technical Specifications**

SPINE ( AL ) HPB with Aluminum Conductors, Aluminium Enclosure

		Rating											
Busway Ratings	In	A	800	1000	1250	1400	1600	2000	2250	2500	3200	4000	5000
Standerrds & Specifications			IEC 61439-1&6										
Degree of protection	IP		IP 54/ 55 & 65										
Frequency	F	Hz	50 / 60										
Ambient Temperature Min. / Max.*	T	C°	-5 / +50										
Rated insulation voltage Ui	Ui	V	1000										
Rated operational voltage Ue	Ue	V	1000										
Mechanical Impacts	IK		08										
Rated short-time current for threephase fault (1 s)	I <sub>cw</sub>	KA	50	50	80	80	80	80	80	80	100	100	120
Allowable peak current for three phase fault	I <sub>pk</sub>	KA	105	105	170	170	170	170	170	170	225	225	290
Maximum thermal load	I <sub>t</sub>		2500	2500	6400	6400	6400	6400	6400	6400	10000	10000	14400
Resistance	R		72	60	53	46	43	38	33	29	22	19	14
Reactance	X	μΩ/m	39	33	29	27	26	24	21	19	12	10	9
Impedance	Z		82	67	63	62	53	44	39	34	26	22	17
Voltage Drop(V/100m)	cosØ	0.80	11.2	11.72	12.92	12.83	13.84	15.49	15.17	14.96	13.72	14.66	14.35
		0.9	11.32	11.83	13.05	12.88	13.85	15.45	15.12	14.87	13.85	14.85	14.29
		1	9.96	10.38	11.46	11.14	11.9	13.14	12.84	12.54	12.17	13.14	12.11
Figure		1	1	1	1	1	1	1	1	1	2	2	3
Dimensions ( mm )	H		140	140	140	140	140	140	140	140	140	140	140
	W		115	140	170	185	205	260	270	280	420	530	680
Approximate Weights		Kg/m	13	16	20	23	25	33	34	36	51	66	82

## Voltage drop

Voltage drop is the decrease of electrical potential along the path of a current flowing in an electrical circuit. Or more simply, a “drop in voltage”. Voltage drops occur due to the internal resistance of the source, passive elements, across conductors, across contacts, and across connectors are undesirable because some of the energy supplied is dissipated.

Due to low impedance, the voltage drop of Busway system is lower compared to conventional cable system. Therefore, Busway system is a more efficient power transmission media as compared to conventional cable system.

Voltage Drop Calculation :

$$VD=K \times L \times \sqrt{3} \times I \times (R \cos \theta + X \sin \theta)$$

Where:

VD= voltage drop of the system (V)

I = Current of the system being considered (A)

L = length of the Busway being considered (m)

K = Load distribution factor ( K=1 in feeder Busway , K=0.5 in distributed load )

R = average resistance (ohms)

X = average reactance (ohms)

Power Link ( Copper )		$\mu\Omega/m, 50Hz$			Voltage Drop ( V/100m)		
CU	Ampere ( A )	R	X	Z	0.8	0.9	1
	800	61	33	70	9.49	9.59	8.44
	1000	51	28	57	9.96	10.05	8.82
	1250	45	25	54	11.02	11.11	9.73
	1350	39	23	52	10.5	10.54	9.1
	1600	36	22	45	11.62	11.62	9.96
	2000	32	20	38	13	12.98	11.07
	2250	28	17	33	12.68	12.69	10.89
	2500	25	16	29	12.79	12.75	10.81
	3200	19	10	22	11.73	11.88	10.51
	4000	16	9	19	12.59	12.68	11.07
	5000	12	7	15	11.93	11.98	10.38
	6300	9	6	12	11.76	11.68	9.8

Spine ( Aluminium Bi-metal )		$\mu\Omega/m, 50Hz$			Voltage Drop ( V/100m)		
AL	Ampere ( A )	R	X	Z	0.8	0.9	1
	800	72	39	82	11.2	11.32	9.96
	1000	60	33	67	11.72	11.83	10.38
	1250	53	29	63	12.92	13.05	11.46
	1400	46	27	62	12.83	12.88	11.14
	1600	43	26	53	13.84	13.85	11.9
	2000	38	24	44	15.49	15.45	13.14
	2250	33	21	39	15.17	15.12	12.84
	2500	29	19	34	14.96	14.87	12.54
	3200	22	12	26	13.72	13.85	12.17
	4000	19	10	22	14.66	14.85	13.14
5000	14	9	17	14.35	14.29	12.11	

## Short-circuit Current

The electrical power system in the shipping and offshore industry should be designed to serve the load with a safe and reliable manner. One of the key considerations in planning the power system is a good control against short circuit. Uncontrolled short circuit can cause service outages, which in turn will cause stoppage of the production, termination of essential facilities or vital services, or fatal accidents to personnel and possible fire risk. The electrical power system is designed to be free from the possibility of a short circuit through the design and equipment selection, careful installation and adequate care. But even with those precautions, short circuit may still occur. Some of the causes include rodents, breakage of connection, voltage spikes, degradation of insulation material, accumulation of dust, moisture and other contaminants, the inclusion of metal or conductive object and other phenomena that can-not be determined.

Short-circuit current at a given point in the system is expressed as the rms value  $I_{sc}$  in ( KA ) of its AC component.

## Definitions

A C short-circuit current:

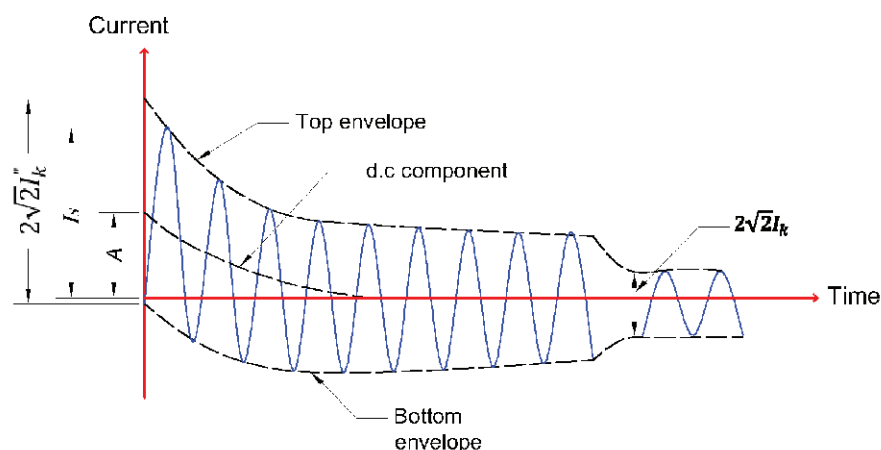
It is the effective value RMS of the symmetrical short current, it is variable with time and is known by another term (power frequency component of the short current)

$I_s$  Peak short-circuit current:

The highest instantaneous value of the current after the shorting occurs and depends on the moment of the fault

$I_k''$  Initial symmetrical short-circuit current:

It is the effective value of the current after a fault occurs in a very short time.



## Electromagnetic Stresses

Busbars are subjected to mechanical forces since each is carrying a current though the magnetic fields caused by currents in other bars. When alternating currents are flowing, the forces have a steady component, but also a vibrational component at twice the frequency of the alternating current. Under normal working conditions these forces are of little consequence.

However, if the bars are mounted on supports, each section will have a resonant frequency. If this frequency is close to twice the supply current (or any significant harmonic current), then resonant vibration of these beams may occur. This rather special and uncommon circumstance can lead to high vibrational displacements and possibly to metal fatigue or loosening of joints and connections. The problem may be avoided by choosing an appropriate spacing of the supports or cured by introducing additional intermediate supports.

## Certificates

### Elsewedy Electric Busway is certified by ASTA per IEC 61439-1&6:

Verification of Strength of materials and parts according to Cl. no: 10.2

- Resistance to corrosion- Severity test A (Clause 10.2.2)
- Properties of insulating materials (Clause 10.2.3).
- Verification of resistance of insulating materials to abnormal heat and fire due to internal electric effects (Clause 10.2.3.2).
- Lifting (Clause 10.2.5) for the highest rating in Single stack, double stack & triple stack
- Mechanical Impact (Clause 10.2.6)
- Marking (Clause 10.2.7)
- Ability to withstand mechanical loads (clause 10.2.101)

Verification of degree of protection according to Cl. no: 10.3

Verification of clearances and creepage distances according to Cl. No: 10.4

Verification of the effectiveness of the protective circuit according to Cl. no: 10.5

Verification of dielectric properties according to Cl. no:10.9

Verification of temperature rise according to Cl.no: 10.10

Verification of short circuit withstand strength according to Cl.no:10.11

Resistance to flame-propagation Cl. no: 10.101

Fire resistance in building penetrations Cl. no 10.102

Verification of phase conductor characteristics according to Annexure BB, CC & DD





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