PIONEER CABLES LTD

PIONEER BAR

Advance Power Transmission Technology

BUSWAY SYSTEM:

"A prefabricated electric distribution system consisting of pre-tested bus bars in a protective enclosure, including straight length, fittings, and accessories"

PIONEER CABLES LTD

ABOUT US:

Pioneer Cables Ltd is the first Cable Manufacturer to introduce Busway System in Pakistan by the name of Pioneer Bar. We Established in the market by bringing in the best quality product with reasonable price in the shortest possible lead time. We provide complete solution from designing till execution and further after sales services.

PRODUCT:

Pioneer Bar is one of the finest quality product manufactured and verified according to IEC-61439-6 and certified by many renowned standard verification authorities of IEC around the world which includes ASTA, KEMA, CCC, CQC, and UL.

SERVICES:

Our Team of Experts includes highly trained & specialized Design Engineers, Site Supervisors, Installers, Project Managers & Project Heads. We ensure project completion, from designing stage till execution in the shortest possible lead time to serve the customer in best possible manner. Our Dedicated installation team have vast experience of completing the project well before time, they are aligned with the support team for any after sales support if required.

TABLE OF CONTENT

Introduction

Pioneer Busway series is widely accepatable and installed in this modern electrical industry for reliable distribution. It has been recognized in recent year due to rapid economic growth and its demands. Ease of Busway with details are as follow:-

(1) Low voltage drop & impedance
(2) Flexibility in power distribution & expansion
(3) Easy installation & maintenance
(4) Less space required & compact design
(5) More rigid & stronger enclosure
(6) Higher short curcuit withstand strength
(7) Longer life span

Pioneer Busway series has been developed to cater the high demands of busway industry market with the following advantages/ features of LV busway:-

(1) Unique Pioneer Busway series construction of compact type design with combined galvanized steel and Aluminum heat sink channel
(2) Perfect balancing joint system
(3) Easy installation
(4) Realiable insulation with good thermal conductivity
(5) Easy & safer plug-in process for power distribution
(6) Higher operating temperature & short circuit withstand strength
(7) Production & process strictly under stringent quality control
(8) On-time delivery
(9) Prompt response after sales & services

For MV Pioneer Busway series has developed 3 categories of its kind, which are:-

(1) NSPB – Non-Segregated Phase Busway
(2) SPB – Segregated Phase Busway
(3) IPB – Isolated Phase Busway

Pioneer Corporate Goals

(1) Explore and strengthen our presence in business accompanying electrical infrastructure distribution & services
(2) Continous improvement for manufacturing efficiency and productibility
(3) Enhance competencies through manpower development and training

Principal Business Activities

(1) Design and manufature of Medium Voltage & Low Voltage Pioneer Busway Series system
(2) Provide high efficiency and reliable electrical distribution
(3) Provide fast response after sales and services
(4) Operation & maintenance services
(5) Retrofitting and upgrading services

LV Pioneer Busway Technical Features

Pioneer Busway Construction

Pioneer Busway has an unique housing construction based on compact type design, combining 1.6mm thickness of galvanized steel (at both sides) with epoxy powder coating and Aluminium heat sink channel (at top & bottom sides), in order to provide the following advantages:-

(1) Better heat dissipating (from the Aluminium heat sink channel)
(2) Grounding system (supported by the Aluminium heat sink channel with Aluminium joint cover)
(3) Higher mechanical withstand strength (achieved by galvanized steel)
(4) Corrosion free (achieved by epoxy coating & Aluminium heat sink channel)

The busway design & construction are based on IEC61439-6, standard and other equivalent Standards.

The construction also provides minimum ingress of protection (IP) of Ip54 and maximum up to IP68 based on IEC61529, with also flame propagation protection (based on IEC61332-3) as a basic feature for every busway risers. It also can be designed for fire rated based on IEC60331 & BS6387 Standards upon request.

Perfect Balancing Joint System

Pioneer Busway incorporated the bridge type joint with feature of balancing the current capacity at each of the joint sections (for double & triple stack Pioneer Busway).

This type of joint which based on single bolt design, featuring an insulated bolt with maintenance free nut (MF nut / double headed nut) & Belleville washer will ease the installation work & easy maintenance

The MF nut is designed such a way that it will shear off automatically at a torque of 160~180 Nm during tightening.

Besides, this balancing joint system is also designed for higher surface contact area on the conductors with a perfect grip by the Belleville washer which provides low resistance & temperature. It is also easy to detach & install during maintenance without removing any adjacent busway feeders.

Reliable Insulation

Pioneer Busway has a superior insulation for its entire conductor made from high grade material insulation of Class F 155 deg C.

The insulation process is unique by insulating the conductor through an extrusion machine.

This process will automatically eliminate any air gap formed between the insulation and conductor. This type of insulation has been tested based on IEC 61439-6.

The advantages of the insulation are as follows:-

(1) Good thermal conductivity
(2) Withstand thermal heat shock
(3) Water & chemical resistant
(4) Withstand electrical glitches & spikes
(5) Withstand mechanical strength against impact
(6) Able to expand & contract during peak & off-peak operations
(7) Non-toxic & environmental friendly

(incorporation with Green Technology design)

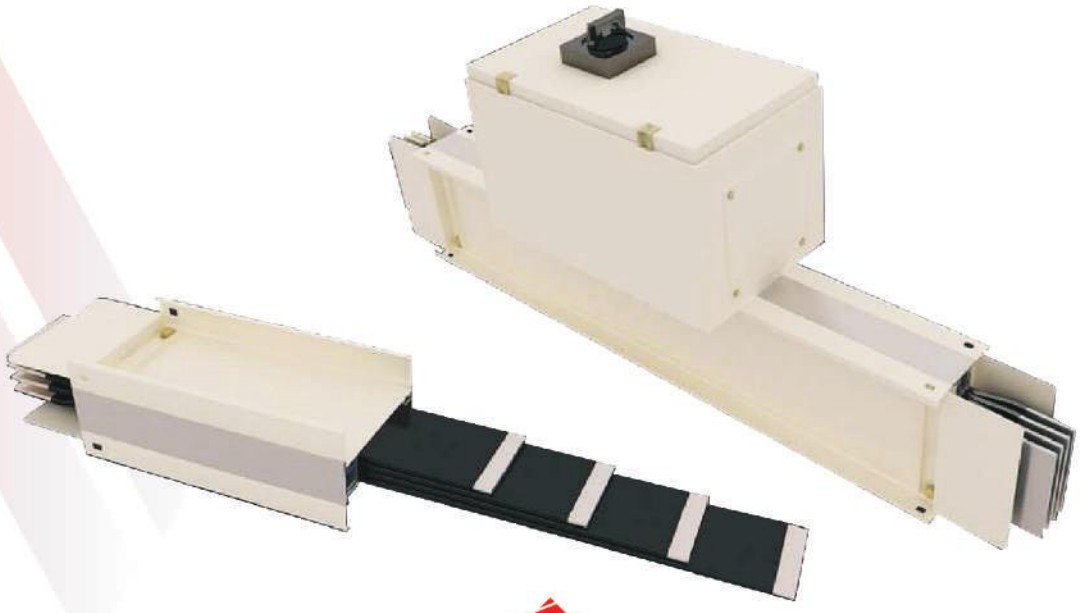
Plug In & Tap Off Power Distribution

Pioneer Busway provides wide range of power distribution up to 1600Amp, with built in circuit breakers (MCCB).

There are 2 types of power distribution on Pioneer Busway, detail as follow:-

a) Plug in Types – breaker rated up to 400A
b) Tap Off type (Bolted Type) – breaker rated above 400A and up to 1600Amp.

There is an interlocking system of the plug in unit for safety purpose; to prevent any removal of the unit upon the unit is in operation. Furthermore, the copper clips of the plug-in unit are equipped with spring clamps to provide proper attachment / fixing into the plug in opening's conductors. Besides, the copper clips are also protected by an insulation block Class C 200 deg C to prevent any flashover.



Quality & Testing

All Pioneer Busway feeders will be tested during internal factory test and verified by qualified QC personnel, before any shipment or delivery to site.

The factory test consists of 2 major tests – insulation resistance & withstands voltage. It will be documented and presented to the project owner based on each shipment / delivery.

Pioneer Busway is also tested and verified by third party authorities such as ASTA, UL, etc based on IEC 61439-6 standard.

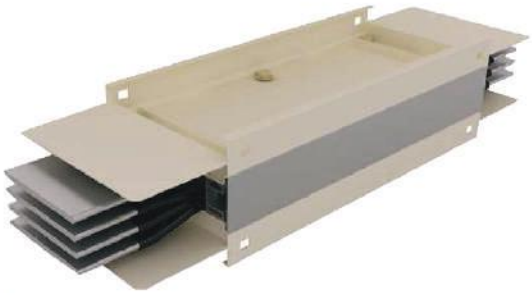
Standard Specification

- Type of busway construction : Compact design
- Standard : IEC61439-6 & other equivalent
- System configuration : 1P2W, 1P3W, 3P3W, 3P3W + E, 3P4W,3P4W+E 3P5W (200% N), 3P5W+E(200%N)
- Ingress of protection (IP) rating : IP54 to IP68
- Rates AC voltage : Up to 1000V
- Rated DC voltage : Up to 1000V
- Frequency : 50Hz / 60Hz
- Current rating : Up to 6300A
- Conductor : Copper & Aluminium
- Services temperature : Up to 50 deg C (full load operation without de- rating)
- Short circuit capacity : up to 150kA
- Plug in type distribution : Up to 400A
- Tap off type distribution : 500A to 1600A

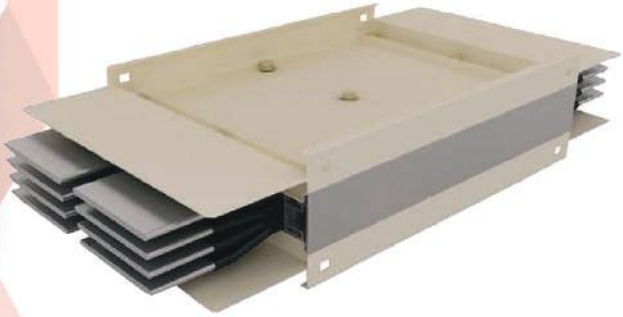
Busway Stacking

Pioneer Busway provides single stack system up to 2500A Copper
And 2000A Aluminium, double stack system up to
6300A Copper and Aluminium

Single Stack

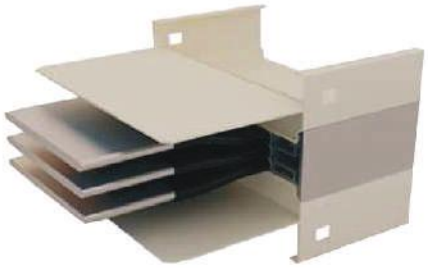


Double Stack

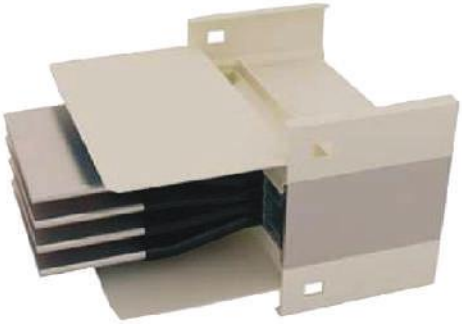


Triple Stack

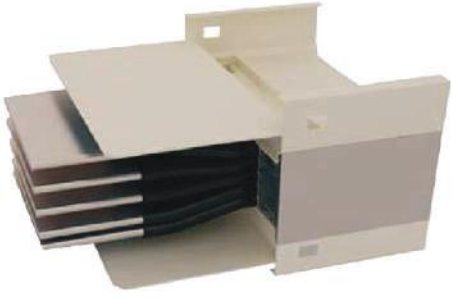
3P3W



3P4W

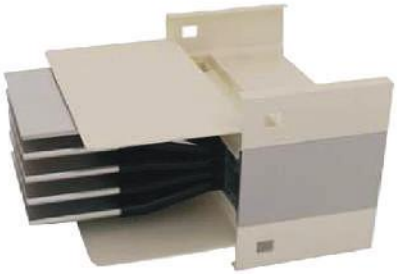


3P5W (200%N)

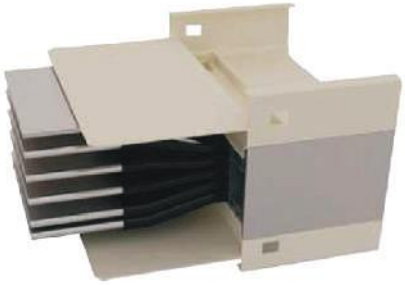


3P3W + E

3P4W +E



3P5W + E (200%N)



Busbar Configuration

Pioneer Busway provides 3P3W, 3P4W, and 3P5W (200%N) compacity assembled with Aluminium heat sink channel. Additional 50% earth busbar can be applied as extra requirement

Housing Integral Earth / Internal Earth Busbar

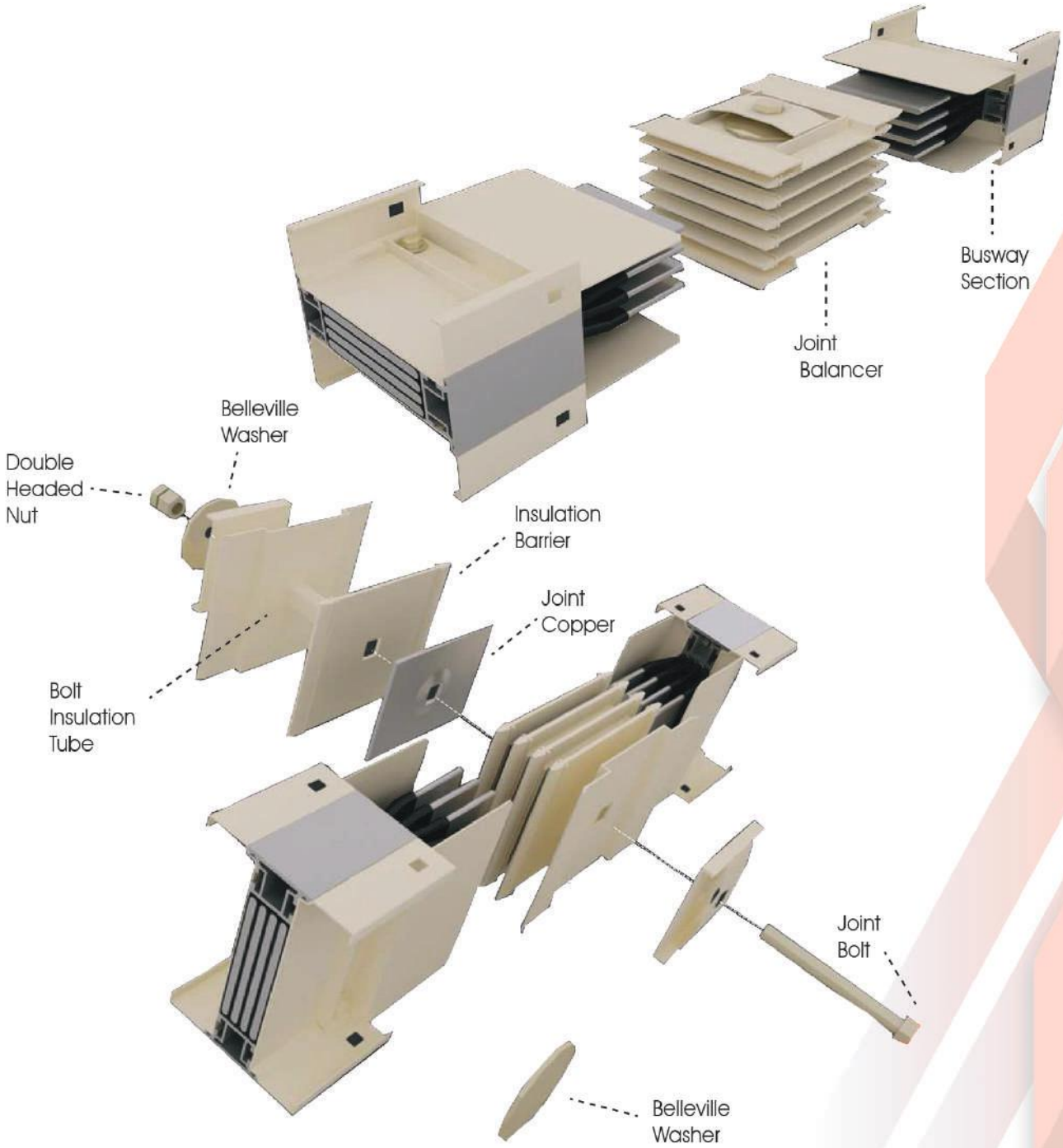
Pioneer Busway housing is an integral earth. For extra requirement, Pioneer Busway also offers internal earth busbar with 50% rated of the capacity of the phase busbar as shown below:

Busway Size And Weight

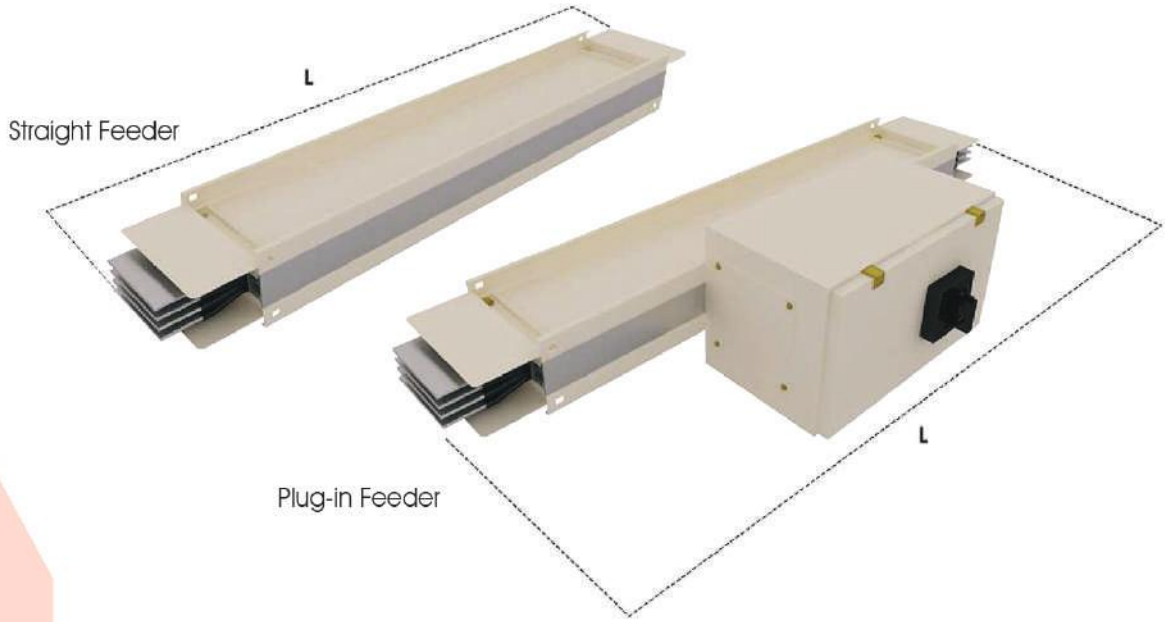
Item	Ampere (A)	Copper size (mm)	Busway Width W (mm)	Busway Height H (mm)	Busway Weight (kg/m)			
					3P3W	3P3W+E	3P4W	3P4W+E
1	400A	1 X 6 x 30	125	95	16	18	19	20
2	630A	1 X 6 x 40	125	105	18	20	21	23
3	800A	1 X 6 x 50	125	115	21	23	24	27
4	1000A	1 X 6 x 75	125	140	26	29	31	34
5	1250A	1 X 6 x 80	125	145	27	30	32	35
6	1500A	1 X 6 x 100	125	165	31	35	38	41
7	1600A	1 X 6 x 125	125	190	36	41	44	50
8	2000A	1 X 6 x 150	125	215	42	49	52	59
9	2500A	1 X 6 x 200	125	265	53	60	67	73
10	3200A	2 X 6 x 125	125	335	64	73	80	90
11	4000A	2 X 6 x 150	125	385	75	88	95	109
12	5000A	2 X 6 x 200	125	485	92	107	117	133
13	5500A	3 X 6 x 150	125	555	109	128	138	160
14	6300A	3 X 6 x 160	125	585	126	144	160	179

Item	Ampere (A)	Aluminium Size (mm)	Busway Width W (mm)	Busway Height H (mm)	Busway Weight (kg/m)			
					3P3W	3P3W+E	3P4W	3P4W+E
1	400A	1 X 6 x 40	125	105	15	15	15	16
2	630A	1 X 6 x 50	125	115	16	16	16	17
3	800A	1 X 6 x 75	125	140	18	19	20	20
4	1000A	1 X 6 x 100	125	165	21	22	22	23
5	1250A	1 X 6 x 125	125	190	23	24	25	26
6	1600A	1 X 6 x 150	125	215	27	28	29	30
7	2000A	1 X 6 x 200	125	265	33	35	36	38
8	2500A	2 X 6 x 125	125	335	38	40	42	44
9	3200A	2 X 6 x 150	125	385	45	48	50	52
10	4000A	2 X 6 x 200	125	485	58	61	64	68
11	5000A	3 X 6 x 200	125	705	83	88	92	97
12	6300A	3 X 6 x 230	125	795	87	93	98	104

Joint Details



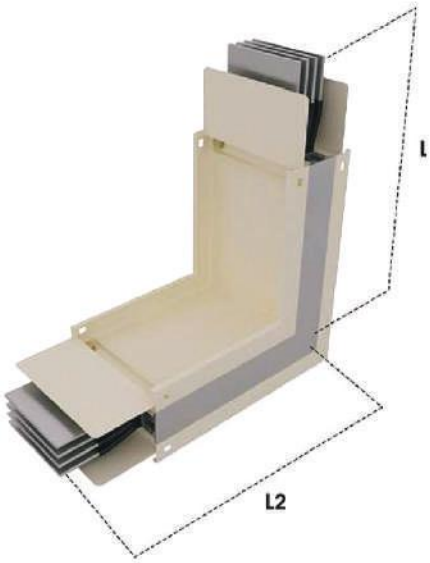
Straight Feeder & Plug-In Feeder Busway



Item	Ampere (A)	Copper size (mm)	Feeder Busway		Plug-in Busway	
			Minimum L (mm)	Maximum L (mm)	Minimum L (mm)	Maximum L (mm)
1	400A	1 X 6 x 30	450	3000	1000	3000
2	630A	1 X 6 x 40	450	3000	1000	3000
3	800A	1 X 6 x 50	450	3000	1000	3000
4	1000A	1 X 6 x 75	450	3000	1000	3000
5	1250A	1 X 6 x 80	450	3000	1000	3000
6	1500A	1 X 6 x 100	450	3000	1000	3000
7	1600A	1 X 6 x 125	450	3000	1000	3000
8	2000A	1 X 6 x 150	450	3000	1000	3000
9	2500A	1 X 6 x 200	450	3000	1000	3000
10	3200A	2 X 6 x 125	450	3000	1000	3000
11	4000A	2 X 6 x 150	450	3000	1000	3000
12	5000A	2 X 6 x 200	450	3000	1000	3000
13	5500A	3 X 6 x 150	450	3000	1000	3000
14	6300A	3 X 6 x 160	450	3000	1000	3000

Item	Ampere (A)	Aluminium Size (mm)	Feeder Busway		Plug-in Busway	
			Minimum L (mm)	Maximum L (mm)	Minimum L (mm)	Maximum L (mm)
1	400A	1 X 6 x 40	450	3000	1000	3000
2	630A	1 X 6 x 50	450	3000	1000	3000
3	800A	1 X 6 x 75	450	3000	1000	3000
4	1000A	1 X 6 x 100	450	3000	1000	3000
5	1250A	1 X 6 x 125	450	3000	1000	3000
6	1600A	1 X 6 x 150	450	3000	1000	3000
7	2000A	1 X 6 x 200	450	3000	1000	3000
8	2500A	2 X 6 x 125	450	3000	1000	3000
9	3200A	2 X 6 x 150	450	3000	1000	3000
10	4000A	2 X 6 x 200	450	3000	1000	3000
11	5000A	3 X 6 x 200	450	3000	1000	3000
12	6300A	3 X 6 x 230	450	3000	1000	3000

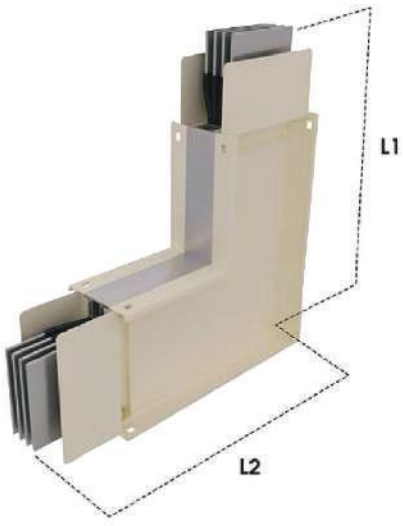
Horizontal Elbow



Item	Ampere (A)	Copper size (mm)	Horizantal Elbow L1 (mm) x L2
1	400A	1 X 6 x 30	400 x 400
2	630A	1 X 6 x 40	400 x 400
3	800A	1 X 6 x 50	400 x 400
4	1000A	1 X 6 x 75	400 x 400
5	1250A	1 X 6 x 80	400 x 400
6	1500A	1 X 6 x 100	400 x 400
7	1600A	1 X 6 x 125	400 x 400
8	2000A	1 X 6 x 150	400 x 400
9	2500A	1 X 6 x 200	400 x 400
10	3200A	2 X 6 x 125	400 x 400
11	4000A	2 X 6 x 150	400 x 400
12	5000A	2 X 6 x 200	400 x 400
13	5500A	3 X 6 x 150	400 x 400
14	6300A	3 X 6 x 160	400 x 400

Item	Ampere (A)	Aluminium Size (mm)	Horizantal Elbow L1 (mm) x L2
1	400A	1 X 6 x 40	400 x 400
2	630A	1 X 6 x 50	400 x 400
3	800A	1 X 6 x 75	400 x 400
4	1000A	1 X 6 x 100	400 x 400
5	1250A	1 X 6 x 125	400 x 400
6	1600A	1 X 6 x 150	400 x 400
7	2000A	1 X 6 x 200	400 x 400
8	2500A	2 X 6 x 125	400 x 400
9	3200A	2 X 6 x 150	400 x 400
10	4000A	2 X 6 x 200	400 x 400
11	5000A	3 X 6 x 200	400 x 400
12	6300A	3 X 6 x 230	400 x 400

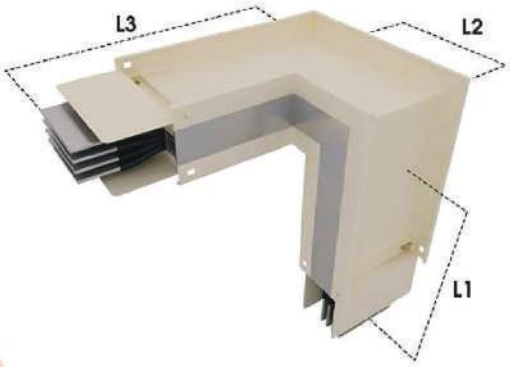
Vertical Elbow



Item	Ampere (A)	Copper size (mm)	Vertical Elbow L1 (mm) x L2 (mm)
1	400A	1 X 6 x 30	300 x 300
2	630A	1 X 6 x 40	300 x 300
3	800A	1 X 6 x 50	300 x 300
4	1000A	1 X 6 x 75	325 x 325
5	1250A	1 X 6 x 80	325 x 325
6	1500A	1 X 6 x 100	325 x 325
7	1600A	1 X 6 x 125	350 x 350
8	2000A	1 X 6 x 150	350 x 350
9	2500A	1 X 6 x 200	375 x 375
10	3200A	2 X 6 x 125	425 x 425
11	4000A	2 X 6 x 150	450 x 450
12	5000A	2 X 6 x 200	500 x 500
13	5500A	3 X 6 x 150	550 x 550
14	6300A	3 X 6 x 160	600 x 600

Item	Ampere (A)	Aluminium Size (mm)	Vertical Elbow L1 (mm) x L2 (mm)
1	400A	1 X 6 x 40	300 x 300
2	630A	1 X 6 x 50	300 x 300
3	800A	1 X 6 x 75	325 x 325
4	1000A	1 X 6 x 100	325 x 325
5	1250A	1 X 6 x 125	350 x 350
6	1600A	1 X 6 x 150	350 x 350
7	2000A	1 X 6 x 200	375 x 375
8	2500A	2 X 6 x 125	425 x 425
9	3200A	2 X 6 x 150	450 x 450
10	4000A	2 X 6 x 200	500 x 500
11	5000A	3 X 6 x 200	600 x 600
12	6300A	3 X 6 x 230	700 x 700

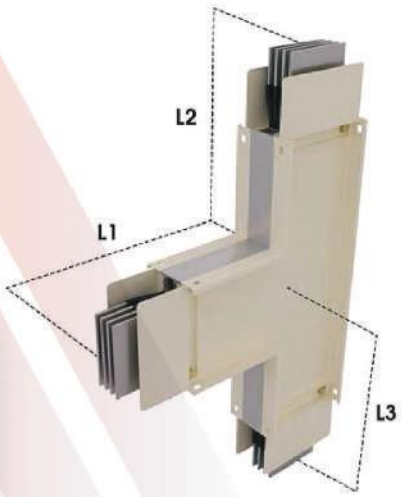
Combination Elbow



Item	Ampere (A)	Copper size (mm)	Combination Elbow L1 (mm) x L2
1	400A	1 X 6 x 30	400 x 250 x 300
2	630A	1 X 6 x 40	400 x 250 x 300
3	800A	1 X 6 x 50	400 x 250 x 300
4	1000A	1 X 6 x 75	400 x 250 x 325
5	1250A	1 X 6 x 80	400 x 250 x 325
6	1500A	1 X 6 x 100	400 x 250 x 325
7	1600A	1 X 6 x 125	400 x 300 x 350
8	2000A	1 X 6 x 150	400 x 300 x 350
9	2500A	1 X 6 x 200	400 x 300 x 375
10	3200A	2 X 6 x 125	400 x 350 x 425
11	4000A	2 X 6 x 150	400 x 400 x 450
12	5000A	2 X 6 x 200	400 x 450 x 550
13	5500A	3 X 6 x 150	400 x 450 x 550
14	6300A	3 X 6 x 160	400 x 500 x 600

Item	Ampere (A)	Aluminium Size (mm)	Combination Elbow L1 (mm) x L2
1	400A	1 X 6 x 40	400 x 250 x 300
2	630A	1 X 6 x 50	400 x 250 x 300
3	800A	1 X 6 x 75	400 x 250 x 325
4	1000A	1 X 6 x 100	400 x 250 x 325
5	1250A	1 X 6 x 125	400 x 300 x 350
6	1600A	1 X 6 x 150	400 x 300 x 350
7	2000A	1 X 6 x 200	400 x 300 x 375
8	2500A	2 X 6 x 125	400 x 350 x 425
9	3200A	2 X 6 x 150	400 x 400 x 450
10	4000A	2 X 6 x 200	400 x 450 x 550
11	5000A	3 X 6 x 200	400 x 500 x 600
12	6300A	3 X 6 x 230	400 x 600 x 650

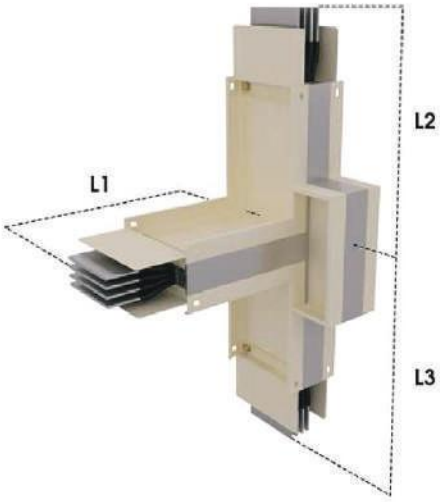
Vertical Tee



Item	Ampere (A)	Copper size (mm)	Vertical Tee L1 (mm) x L2
1	400A	1 X 6 x 30	300 x 300 x 300
2	630A	1 X 6 x 40	300 x 300 x 300
3	800A	1 X 6 x 50	300 x 300 x 300
4	1000A	1 X 6 x 75	325 x 325 x 325
5	1250A	1 X 6 x 80	325 x 325 x 325
6	1500A	1 X 6 x 100	325 x 325 x 325
7	1600A	1 X 6 x 125	350 x 350 x 350
8	2000A	1 X 6 x 150	350 x 350 x 350
9	2500A	1 X 6 x 200	375 x 375 x 375
10	3200A	2 X 6 x 125	425 x 425 x 425
11	4000A	2 X 6 x 150	450 x 450 x 450
12	5000A	2 X 6 x 200	550 x 550 x 550
13	5500A	3 X 6 x 150	550 x 550 x 550
14	6300A	3 X 6 x 160	600 x 600 x 600

Item	Ampere (A)	Aluminium Size (mm)	Vertical Tee L1 (mm) x L2
1	400A	1 X 6 x 40	300 x 300 x 300
2	630A	1 X 6 x 50	300 x 300 x 300
3	800A	1 X 6 x 75	325 x 325 x 325
4	1000A	1 X 6 x 100	325 x 325 x 325
5	1250A	1 X 6 x 125	350 x 350 x 350
6	1600A	1 X 6 x 150	350 x 350 x 350
7	2000A	1 X 6 x 200	375 x 375 x 375
8	2500A	2 X 6 x 125	425 x 425 x 425
9	3200A	2 X 6 x 150	450 x 450 x 450
10	4000A	2 X 6 x 200	550 x 550 x 550
11	5000A	3 X 6 x 200	600 x 600 x 600
12	6300A	3 X 6 x 230	700 x 700 x 700

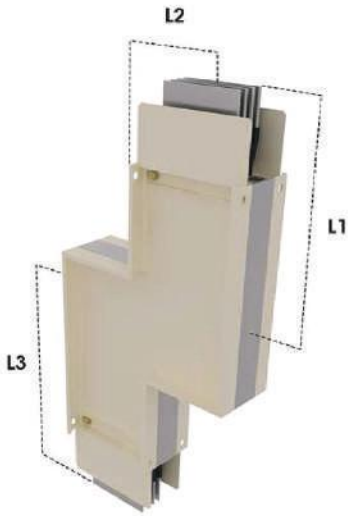
Horizontal Tee



Item	Ampere (A)	Copper size (mm)	Horizontal Tee L1 (mm) x L2 (mm) x L3 (mm)
1	400A	1 X 6 x 30	400 x 400 x 400
2	630A	1 X 6 x 40	400 x 400 x 400
3	800A	1 X 6 x 50	400 x 400 x 400
4	1000A	1 X 6 x 75	400 x 400 x 400
5	1250A	1 X 6 x 80	400 x 400 x 400
6	1500A	1 X 6 x 100	400 x 400 x 400
7	1600A	1 X 6 x 125	400 x 400 x 400
8	2000A	1 X 6 x 150	400 x 400 x 400
9	2500A	1 X 6 x 200	400 x 400 x 400
10	3200A	2 X 6 x 125	500 x 500 x 500
11	4000A	2 X 6 x 150	500 x 500 x 500
12	5000A	2 X 6 x 200	500 x 500 x 500
13	5500A	3 X 6 x 150	500 x 500 x 500
14	6300A	3 X 6 x 160	500 x 500 x 500

Item	Ampere (A)	Aluminium Size (mm)	Combination Elbow L1 (mm) x L2
1	400A	1 X 6 x 40	400 x 400 x 400
2	630A	1 X 6 x 50	400 x 400 x 400
3	800A	1 X 6 x 75	400 x 400 x 400
4	1000A	1 X 6 x 100	400 x 400 x 400
5	1250A	1 X 6 x 125	400 x 400 x 400
6	1600A	1 X 6 x 150	400 x 400 x 400
7	2000A	1 X 6 x 200	400 x 400 x 400
8	2500A	2 X 6 x 125	500 x 500 x 500
9	3200A	2 X 6 x 150	500 x 500 x 500
10	4000A	2 X 6 x 200	500 x 500 x 500
11	5000A	3 X 6 x 200	500 x 500 x 500
12	6300A	3 X 6 x 230	500 x 500 x 500

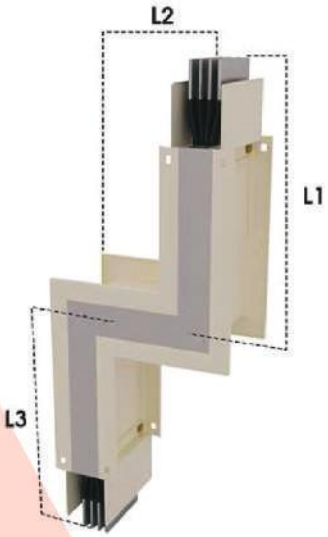
Vertical Offset



Item	Ampere (A)	Copper size (mm)	Vertical Offset L1 (mm) x L2 (mm) x L3 (mm)
1	400A	1 X 6 x 30	300 x 250 x 300
2	630A	1 X 6 x 40	300 x 250 x 300
3	800A	1 X 6 x 50	300 x 250 x 300
4	1000A	1 X 6 x 75	325 x 250 x 325
5	1250A	1 X 6 x 80	325 x 250 x 325
6	1500A	1 X 6 x 100	325 x 250 x 325
7	1600A	1 X 6 x 125	350 x 250 x 350
8	2000A	1 X 6 x 150	350 x 250 x 350
9	2500A	1 X 6 x 200	375 x 250 x 375
10	3200A	2 X 6 x 125	425 x 250 x 425
11	4000A	2 X 6 x 150	450 x 250 x 450
12	5000A	2 X 6 x 200	450 x 250 x 500
13	5500A	3 X 6 x 150	550 x 250 x 550
14	6300A	3 X 6 x 160	600 x 250 x 600

Item	Ampere (A)	Aluminium Size (mm)	Vertical Offset L1 (mm) x L2 (mm) x L3 (mm)
1	400A	1 X 6 x 40	300 x 250 x 300
2	630A	1 X 6 x 50	300 x 250 x 300
3	800A	1 X 6 x 75	325 x 250 x 325
4	1000A	1 X 6 x 100	325 x 250 x 325
5	1250A	1 X 6 x 125	350 x 250 x 350
6	1600A	1 X 6 x 150	350 x 250 x 350
7	2000A	1 X 6 x 200	375 x 250 x 375
8	2500A	2 X 6 x 125	425 x 250 x 425
9	3200A	2 X 6 x 150	450 x 250 x 450
10	4000A	2 X 6 x 200	500 x 250 x 500
11	5000A	3 X 6 x 200	600 x 250 x 600
12	6300A	3 X 6 x 230	700 x 250 x 700

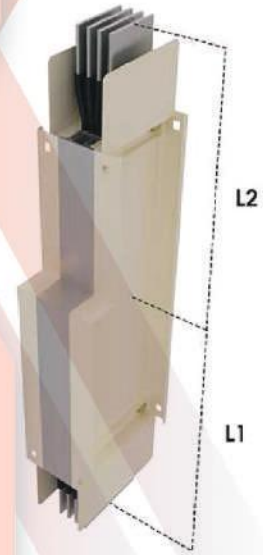
Horizontal Offset



Item	Ampere (A)	Copper size (mm)	Horizontal Offset L1 (mm) x L2 (mm) x L3 (mm)
1	400A	1 X 6 x 30	400 x 250 x 400
2	630A	1 X 6 x 40	400 x 250 x 400
3	800A	1 X 6 x 50	400 x 250 x 400
4	1000A	1 X 6 x 75	400 x 250 x 400
5	1250A	1 X 6 x 80	400 x 250 x 400
6	1500A	1 X 6 x 100	400 x 250 x 400
7	1600A	1 X 6 x 125	400 x 250 x 400
8	2000A	1 X 6 x 150	400 x 250 x 400
9	2500A	1 X 6 x 200	400 x 250 x 400
10	3200A	2 X 6 x 125	400 x 250 x 400
11	4000A	2 X 6 x 150	400 x 250 x 400
12	5000A	2 X 6 x 200	400 x 250 x 400
13	5500A	3 X 6 x 150	400 x 250 x 400
14	6300A	3 X 6 x 160	400 x 250 x 400

Item	Ampere (A)	Aluminium Size (mm)	Combination Elbow L1 (mm) x L2 (mm) x L3 (mm)
1	400A	1 X 6 x 40	400 x 250 x 400
2	630A	1 X 6 x 50	400 x 250 x 400
3	800A	1 X 6 x 75	400 x 250 x 400
4	1000A	1 X 6 x 100	400 x 250 x 400
5	1250A	1 X 6 x 125	400 x 250 x 400
6	1600A	1 X 6 x 150	400 x 250 x 400
7	2000A	1 X 6 x 200	400 x 250 x 400
8	2500A	2 X 6 x 125	400 x 250 x 400
9	3200A	2 X 6 x 150	400 x 250 x 400
10	4000A	2 X 6 x 200	400 x 250 x 400
11	5000A	3 X 6 x 200	400 x 250 x 400
12	6300A	3 X 6 x 230	400 x 250 x 400

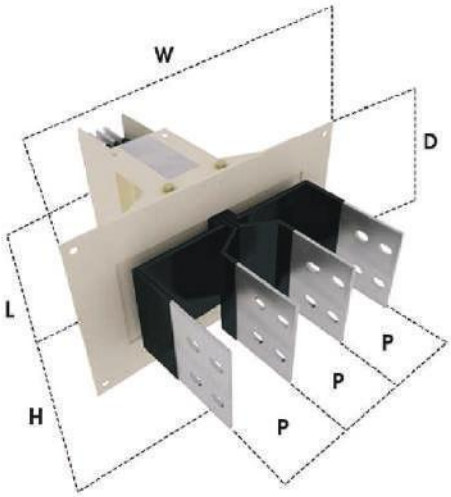
Reducer



Item	Ampere (A)	Copper size (mm)	Reducer	
			L1 (mm)	L2 (mm)
1	400A	1 X 6 x 30	500	500
2	630A	1 X 6 x 40	500	500
3	800A	1 X 6 x 50	500	500
4	1000A	1 X 6 x 75	500	500
5	1250A	1 X 6 x 80	500	500
6	1500A	1 X 6 x 100	500	500
7	1600A	1 X 6 x 125	500	500
8	2000A	1 X 6 x 150	500	500
9	2500A	1 X 6 x 200	500	500
10	3200A	2 X 6 x 125	600	600
11	4000A	2 X 6 x 150	600	600
12	5000A	2 X 6 x 200	600	600
13	5500A	3 X 6 x 150	600	600
14	6300A	3 X 6 x 160	600	600

Item	Ampere (A)	Aluminium Size (mm)	Reducer	
			L1 (mm)	L2 (mm)
1	400A	1 X 6 x 40	500	500
2	630A	1 X 6 x 50	500	500
3	800A	1 X 6 x 75	500	500
4	1000A	1 X 6 x 100	500	500
5	1250A	1 X 6 x 125	500	500
6	1600A	1 X 6 x 150	500	500
7	2000A	1 X 6 x 200	500	500
8	2500A	2 X 6 x 125	600	600
9	3200A	2 X 6 x 150	600	600
10	4000A	2 X 6 x 200	600	600
11	5000A	3 X 6 x 200	600	600
12	6300A	3 X 6 x 230	600	600

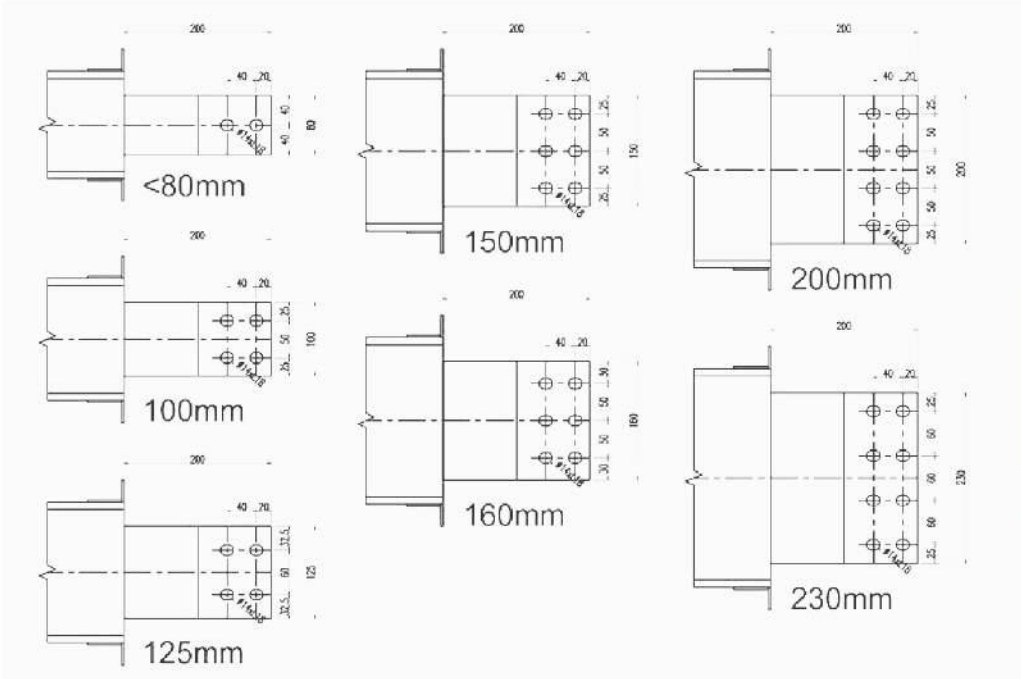
Flange End



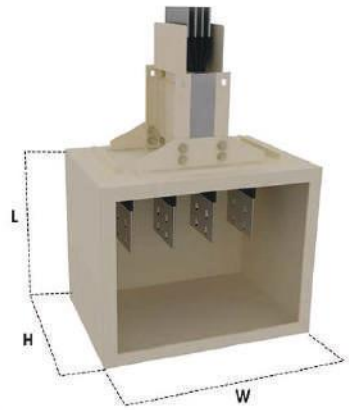
Item	Ampere (A)	Copper size (mm)	Flange End				
			L1 (mm)	P (mm)	W (mm)	D (mm)	H (mm)
1	400A	1 x 6 x 30	350	100	450	155	200
2	630A	1 x 6 x 40	350	100	450	165	200
3	800A	1 x 6 x 50	350	100	450	175	200
4	1000A	1 x 6 x 75	350	100	450	200	200
5	1250A	1 x 6 x 80	350	100	450	205	200
6	1500A	1 x 6 x 100	350	100	450	225	200
7	1600A	1 x 6 x 125	350	100	450	250	200
8	2000A	1 x 6 x 150	350	100	450	275	200
9	2500A	1 x 6 x 200	350	100	450	325	200
10	3200A	2 x 6 x 125	350	130	540	395	200
11	4000A	2 x 6 x 150	350	130	540	445	200
12	5000A	2 x 6 x 200	350	130	540	545	200
13	5500A	3 x 6 x 150	350	130	540	615	200
14	6300A	3 x 6 x 160	350	130	540	645	200

Item	Ampere (A)	Aluminium size (mm)	Flange End				
			L1 (mm)	P (mm)	W (mm)	D (mm)	H (mm)
1	400A	1 x 6 x 40	350	100	450	165	200
2	630A	1 x 6 x 50	350	100	450	175	200
3	800A	1 x 6 x 75	350	100	450	200	200
4	1000A	1 x 6 x 100	350	100	450	225	200
5	1250A	1 x 6 x 125	350	100	450	250	200
6	1600A	1 x 6 x 150	350	100	450	275	200
7	2000A	1 x 6 x 200	350	100	450	325	200
8	2500A	2 x 6 x 125	350	130	540	395	200
9	3200A	2 x 6 x 150	350	130	540	445	200
10	4000A	2 x 6 x 200	350	130	540	545	200
11	5000A	3 x 6 x 200	350	130	540	765	200
12	6300A	3 x 6 x 230	350	130	540	855	200

Flange End Connection



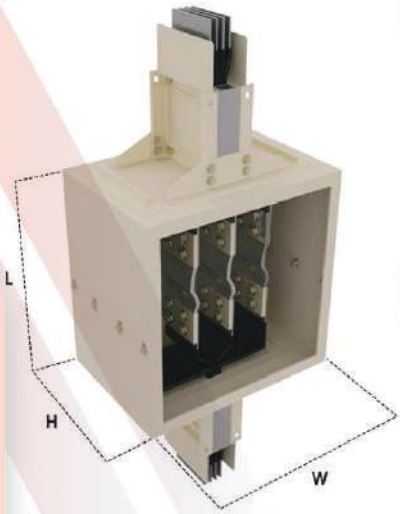
Flanged End Box



Item	Ampere (A)	Copper size (mm)	Flange End Box		
			W (mm)	H (mm)	L (mm)
1	400A	1 X 6 x 30	500	195	500
2	630A	1 X 6 x 40	500	205	500
3	800A	1 X 6 x 50	500	215	500
4	1000A	1 X 6 x 75	500	240	500
5	1250A	1 X 6 x 80	500	245	500
6	1500A	1 X 6 x 100	500	265	500
7	1600A	1 X 6 x 125	500	290	500
8	2000A	1 X 6 x 150	500	315	500
9	2500A	1 X 6 x 200	500	365	500
10	3200A	2 X 6 x 125	590	435	500
11	4000A	2 X 6 x 150	590	485	500
12	5000A	2 X 6 x 200	590	585	500
13	5500A	3 X 6 x 150	590	655	500
14	6300A	3 X 6 x 160	590	685	500

Item	Ampere (A)	Aluminium size (mm)	Flange End Box		
			W (mm)	H (mm)	L (mm)
1	400A	1 X 6 x 40	500	205	500
2	630A	1 X 6 x 50	500	215	500
3	800A	1 X 6 x 75	500	240	500
4	1000A	1 X 6 x 100	500	265	500
5	1250A	1 X 6 x 125	500	290	500
6	1600A	1 X 6 x 150	500	315	500
7	2000A	1 X 6 x 200	500	365	500
8	2500A	2 X 6 x 125	590	435	500
9	3200A	2 X 6 x 150	590	485	500
10	4000A	2 X 6 x 200	590	585	500
11	5000A	3 X 6 x 200	590	805	500
12	6300A	3 X 6 x 230	590	895	500

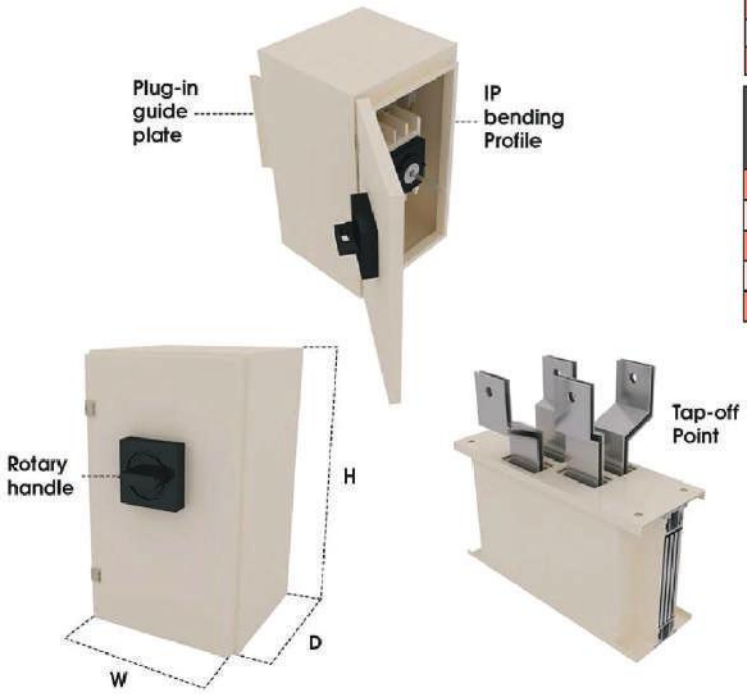
Expansion Box



Item	Ampere (A)	Copper size (mm)	Expansion Box		
			L (mm)	W (mm)	H (mm)
1	400A	1 x 6 x 30	570	500	195
2	630A	1 x 6 x 40	570	500	205
3	800A	1 x 6 x 50	570	500	215
4	1000A	1 x 6 x 75	570	500	240
5	1250A	1 x 6 x 80	570	500	245
6	1500A	1 x 6 x 100	570	500	265
7	1600A	1 x 6 x 125	570	500	290
8	2000A	1 x 6 x 150	570	500	315
9	2500A	1 x 6 x 200	570	500	365
10	3200A	2 x 6 x 125	570	590	435
11	4000A	2 x 6 x 150	570	590	485
12	5000A	2 x 6 x 200	570	590	585
13	5500A	3 x 6 x 150	570	590	655
14	6300A	3 x 6 x 160	570	590	685

Item	Ampere (A)	Aluminium size (mm)	Expansion Box		
			L1 (mm)	W (mm)	H (mm)
1	400A	1 x 6 x 40	570	500	205
2	630A	1 x 6 x 50	570	500	215
3	800A	1 x 6 x 75	570	500	240
4	1000A	1 x 6 x 100	570	500	265
5	1250A	1 x 6 x 125	570	500	290
6	1600A	1 x 6 x 150	570	500	315
7	2000A	1 x 6 x 200	570	500	365
8	2500A	2 x 6 x 125	570	590	435
9	3200A	2 x 6 x 150	570	590	485
10	4000A	2 x 6 x 200	570	590	585
11	5000A	3 x 6 x 200	570	590	805
12	6300A	3 x 6 x 230	570	590	895

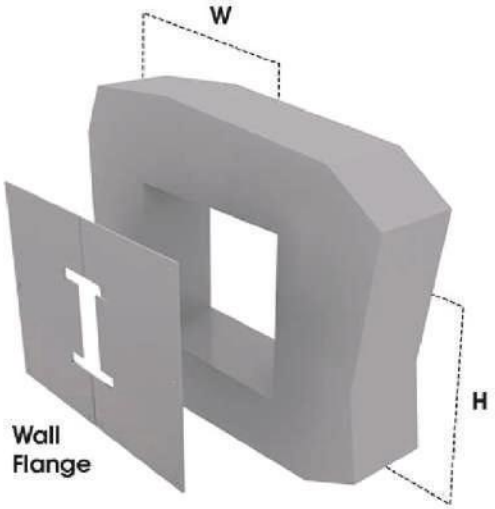
Plug-In Box & Tap-Off Box



Item	Ampere (A)	Plug in Box		
		W (mm)	D (mm)	H (mm)
1	16A - 125A	250	220	420
2	150A - 250A	250	220	450
3	300A - 400A	350	320	600

Item	Ampere (A)	Top Off Box		
		W (mm)	D (mm)	H (mm)
1	630A	350	250	900
2	800A	450	300	950
3	1000A	450	320	1050
4	1250A	450	320	1050
5	1600A	500	320	1200

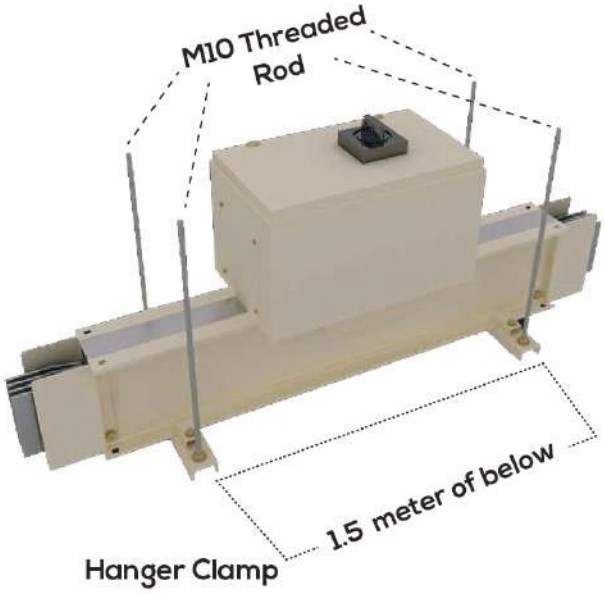
Wall Flange



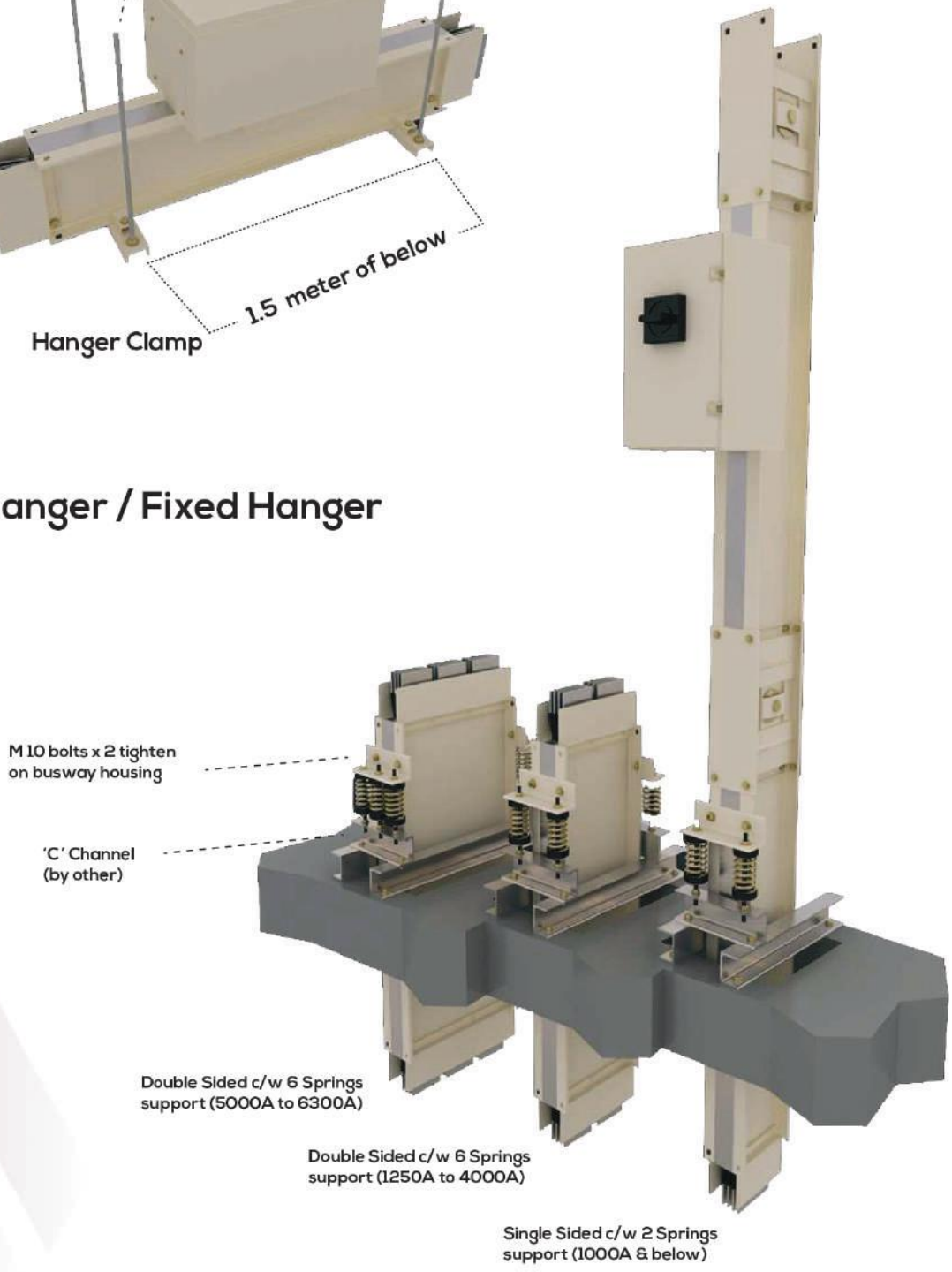
Item	Ampere (A)	Copper Size (mm)	Wall Flange	
			W (mm)	H (mm)
1	400A	1 x 6 x 30	200	195
2	630A	1 x 6 x 40	200	205
3	800A	1 x 6 x 50	200	215
4	1000A	1 x 6 x 75	200	240
5	1250A	1 x 6 x 80	200	245
6	1500A	1 x 6 x 100	200	265
7	1600A	1 x 6 x 125	200	290
8	2000A	1 x 6 x 150	200	315
9	2500A	1 x 6 x 200	200	365
10	3200A	2 x 6 x 125	200	435
11	4000A	2 x 6 x 150	200	485
12	5000A	2 x 6 x 200	200	585
13	5500A	3 x 6 x 150	200	655
14	6300A	3 x 6 x 160	200	685

Item	Ampere (A)	Aluminium size (mm)	Wall Flange	
			W (mm)	H (mm)
1	400A	1 x 6 x 40	200	205
2	630A	1 x 6 x 50	200	215
3	800A	1 x 6 x 75	200	240
4	1000A	1 x 6 x 100	200	265
5	1250A	1 x 6 x 125	200	290
6	1600A	1 x 6 x 150	200	315
7	2000A	1 x 6 x 200	200	365
8	2500A	2 x 6 x 125	200	435
9	3200A	2 x 6 x 150	200	485
10	4000A	2 x 6 x 200	200	585
11	5000A	3 x 6 x 200	200	805
12	6300A	3 x 6 x 230	200	895

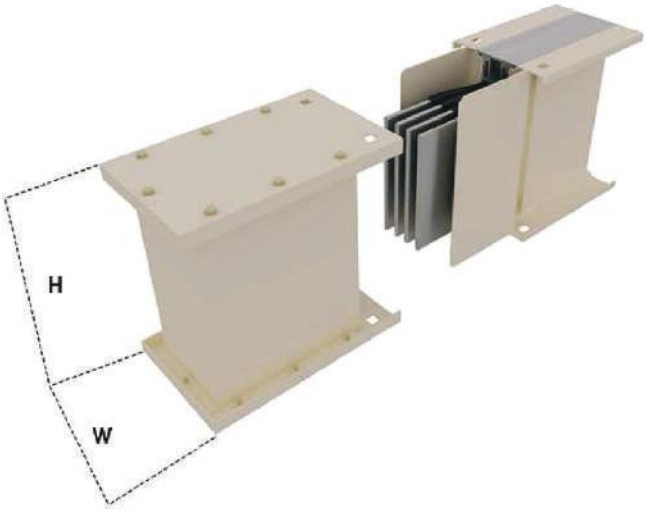
Horizontal Hanger



Spring Hanger / Fixed Hanger



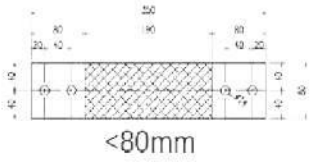
End Closure

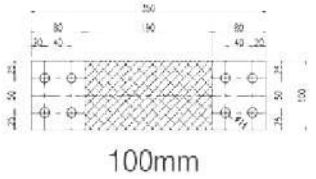


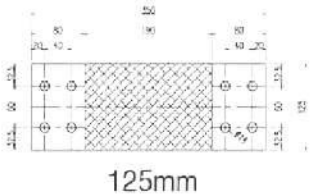
Item	Ampere (A)	Copper Size	End Closure	
			(W)	(H)
1	400A	1 x 6 x 30	130	100
2	630A	1 x 6 x 40	130	110
3	800A	1 x 6 x 50	130	120
4	1000A	1 x 6 x 75	130	145
5	1250A	1 x 6 x 80	130	150
6	1500A	1 x 6 x 100	130	170
7	1600A	1 x 6 x 125	130	195
8	2000A	1 x 6 x 150	130	220
9	2500A	1 x 6 x 200	130	270
10	3200A	2 x 6 x 125	130	340
11	4000A	2 x 6 x 150	130	390
12	5000A	2 x 6 x 200	130	490
13	5500A	3 x 6 x 150	130	560
14	6300A	3 x 6 x 160	130	590

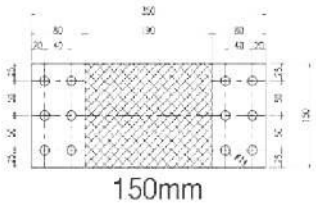
Item	Ampere (A)	Aluminium size	End Closure	
			(W)	(H)
1	400A	1 x 6 x 40	130	110
2	630A	1 x 6 x 50	130	120
3	800A	1 x 6 x 75	130	145
4	1000A	1 x 6 x 100	130	170
5	1250A	1 x 6 x 125	130	195
6	1600A	1 x 6 x 150	130	220
7	2000A	1 x 6 x 200	130	270
8	2500A	2 x 6 x 125	130	340
9	3200A	2 x 6 x 150	130	390
10	4000A	2 x 6 x 200	130	490
11	5000A	3 x 6 x 200	130	710
12	6300A	3 x 6 x 230	130	800

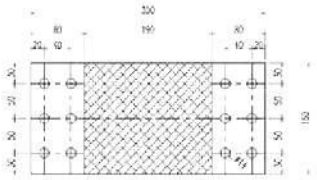
Flexible Conductor

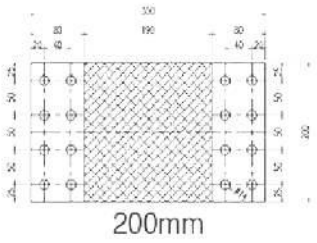


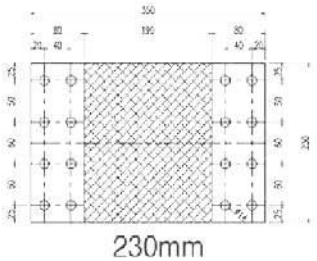












Item	Ampere (A)	Copper Size (W)
1	400A	1 x 30
2	630A	1 x 40
3	800A	1 x 50
4	1000A	1 x 75
5	1250A	1 x 80
6	1500A	1 x 100
7	1600A	1 x 125
8	2000A	1 x 150
9	2500A	1 x 200
10	3200A	2 x 125
11	4000A	2 x 150
12	5000A	2 x 200
13	5500A	3 x 150
14	6300A	3 x 160

Item	Ampere (A)	Aluminium Size (W)
1	400A	1 x 40
2	630A	1 x 50
3	800A	1 x 75
4	1000A	1 x 100
5	1250A	1 x 125
6	1600A	1 x 150
7	2000A	1 x 200
8	2500A	2 x 125
9	3200A	2 x 150
10	4000A	2 x 200
11	5000A	3 x 200
12	6300A	3 x 230

Electrical Charateristics
Copper Conductor

Frequency 50Hz

Rated Current	No of Bar	Busbar Size	Impedance (10*ohm/m)			Line to Line Voltage Drop V_d /100M)			
(AMP)	Phase	(mm)	R	X	Z	1.00	0.90	0.85	0.80
400	1	6 x 30	10.39	4.49	11.32	7.20	7.83	7.75	7.62
630	1	6 x 40	9.42	3.88	10.18	10.27	11.09	10.96	10.76
800	1	6 x 50	8.24	2.79	8.70	11.42	11.96	11.74	11.46
1000	1	6 x 75	5.37	2.22	5.81	9.30	10.05	9.93	9.75
1250	1	6 x 80	4.62	2.03	5.05	10.00	10.92	10.82	10.64
1500	1	6 x 100	4.03	1.85	4.43	10.46	11.52	11.43	11.26
1600	1	6 x 125	3.22	1.26	3.46	8.93	9.55	9.42	19.23
2000	1	6 x 150	2.69	0.77	2.79	9.30	9.54	9.31	9.04
2500	1	6 x 200	1.99	0.73	2.12	8.64	9.14	9.00	8.80
3200	2	6 x 125	1.61	0.63	1.73	8.93	9.55	9.42	9.23
4000	2	6 x 150	1.34	0.39	1.40	9.30	9.54	9.31	9.04
5000	2	6 x 200	1.00	0.36	1.06	8.64	9.14	8.80	8.29
5500	3	6 x 150	0.90	0.26	0.93	8.53	8.74	8.29	7.72
6300	3	6 x 160	0.67	0.21	0.70	7.31	7.58	7.42	7.22

Frequency 60Hz

Rated Current	No of Bar	Busbar Size	Impedance (10*ohm/m)			Line to Line Voltage Drop V_d /100M)			
(AMP)	Phase	(mm)	R	X	Z	1.00	0.90	0.85	0.80
400	1	6 x 30	10.58	7.15	12.77	7.33	8.76	8.84	8.84
630	1	6 x 40	9.28	5.16	10.62	10.13	11.57	11.58	11.48
800	1	6 x 50	7.74	3.39	8.45	10.72	11.7	11.59	11.39
1000	1	6 x 75	5.64	2.60	6.21	9.77	10.75	10.67	10.51
1250	1	6 x 80	4.97	2.21	5.44	10.76	11.77	11.67	11.48
1500	1	6 x 100	4.25	1.97	4.69	11.04	12.17	12.08	11.91
1600	1	6 x 125	3.4	1.59	3.76	9.43	10.41	10.34	10.19
2000	1	6 x 150	2.83	1.30	3.12	9.82	10.80	10.72	10.55
2500	1	6 x 200	2.11	1.05	2.35	9.12	10.18	10.14	10.02
3200	2	6 x 125	1.70	0.80	1.88	9.43	10.41	10.34	10.19
4000	2	6 x 150	1.42	0.65	1.56	9.82	10.8	10.72	10.55
5000	2	6 x 200	1.05	0.52	1.18	9.12	10.18	10.02	9.62
5500	3	6 x 150	0.94	0.45	1.05	9	9.97	9.77	9.36
6300	3	6 x 160	0.63	0.35	0.72	6.87	7.85	7.86	7.79

Aluminium Conductor

Frequency 50Hz

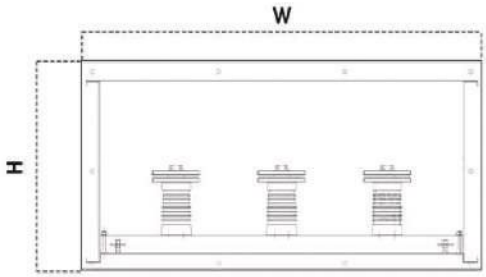
Rated Current	No of Bar	Busbar Size	Impedance (10*ohm/m)			Line to Line Voltage Drop V_d /100M)			
(AMP)	Phase	(mm)	R	X	Z	1.00	0.90	0.85	0.80
400	1	6 x 40	13.97	3.48	14.40	9.68	0.76	9.50	9.19
630	1	6 x 50	11.21	2.61	11.51	11.65	11.67	11.33	10.95
800	1	6 x 75	8.95	1.83	9.13	12.40	12.26	11.87	11.44
1000	1	6 x 100	5.97	1.43	6.13	10.33	10.38	10.08	9.75
1250	1	6 x 125	4.31	1.34	4.51	9.32	9.65	9.45	9.20
1600	1	6 x 150	3.25	1.06	3.42	9.01	9.39	9.20	8.97
2000	1	6 x 200	2.72	0.83	2.84	9.41	9.72	9.51	9.25
2500	2	6 x 125	2.15	0.67	2.26	9.32	9.66	9.45	9.20
3200	2	6 x 150	1.63	0.53	1.71	9.01	9.39	9.20	8.97
4000	2	6 x 200	1.36	0.42	1.42	9.41	9.72	9.51	9.25
5000	3	6 x 200	1.08	0.35	1.14	9.38	9.78	9.59	9.34
6300	3	6 x 230	0.91	0.28	0.95	9.88	10.21	9.59	9.71

Frequency 60Hz

Rated Current	No of Bar	Busbar Size	Impedance (10*ohm/m)			Line to Line Voltage Drop V_d /100M)			
(AMP)	Phase	(mm)	R	X	Z	1.00	0.90	0.85	0.80
400	1	6 x 40	17.08	4.26	17.60	11.83	11.93	11.61	11.23
630	1	6 x 50	13.70	3.19	14.07	14.24	14.26	13.85	13.38
800	1	6 x 75	10.93	2.24	11.16	15.15	14.99	14.51	13.98
1000	1	6 x 100	7.29	2.14	7.60	12.63	12.98	12.69	12.33
1250	1	6 x 125	5.26	1.74	5.54	11.40	11.90	11.67	11.38
1600	1	6 x 150	4.12	1.49	4.38	11.42	12.08	11.88	11.61
2000	1	6 x 200	3.32	1.13	3.51	11.50	12.05	11.83	11.55
2500	2	6 x 125	2.63	0.67	2.77	11.40	11.90	11.67	11.38
3200	2	6 x 150	2.06	0.75	2.19	11.42	12.08	11.88	11.61
4000	2	6 x 200	1.66	0.57	1.75	11.50	12.05	11.83	11.55
5000	3	6 x 200	1.37	0.50	1.46	11.89	12.58	12.38	12.10
6300	3	6 x 230	1.11	0.38	1.17	12.07	12.66	12.43	12.12

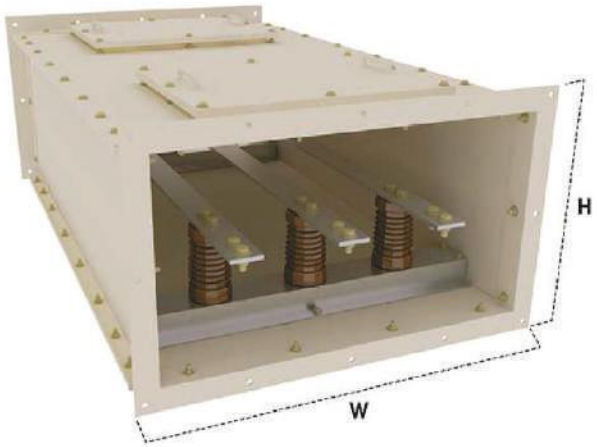
MV Pioneer Busway Technical Specification

Type of busway construction	:	NSPB
Standard	:	IEC62271 & other equivalent standards
System configuration	:	3P3W & 3P3W+E
Ingress of protection (IP) rating	:	IP54 to IP68
Rated AC voltage	:	From 1kV to 36kV
Frequency	:	50Hz / 60Hz
Current rating	:	Up to 6500A
Conductor	:	Copper
Service temperature	:	Up to 50°C (full load operation without de-rating)
Short circuit capacity	:	50kA



Item	Ampere (A)	3.6/7.2kV		12kV	
		W (mm)	H (mm)	W (mm)	H (mm)
1	630A	590	450	770	550
2	800A	590	450	770	550
3	1000A	665	450	845	550
4	1250A	710	450	890	550
5	1600A	770	450	950	550
6	2000A	710	450	890	550
7	2500A	810	450	950	550
8	3150A	1060	450	1150	550
9	4000A	1310	450	1400	550

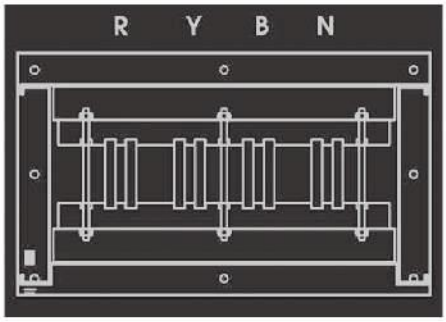
Item	Ampere (A)	24kV		36kV	
		W (mm)	H (mm)	W (mm)	H (mm)
1	630A	1110	690	1610	920
2	800A	1110	690	1610	920
3	1000A	1185	690	1685	920
4	1250A	1230	690	1730	920
5	1600A	1290	690	1790	920
6	2000A	1230	690	1730	920
7	2500A	1290	690	1790	920
8	3150A	1440	690	1940	920
9	4000A	1590	690	2090	920

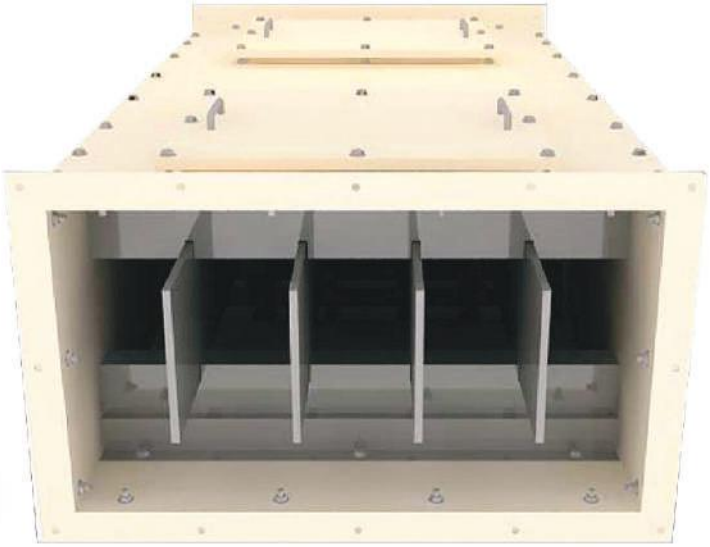


NSPB LV Type Pioneer Busway Technical Specification

Type of busway construction	: NSPB / AIR INSULATED
Standard	: IEC61439-6 & IEC62271
System configuration	: 3P3W, 3P3W+E, 3P4W & 3P4W+E
Ingress of protection (IP) rating	: IP 54 to IP68
Rated AC voltage	: Up to 3.6kV
Frequency	: 50 / 60Hz
Current Rating	: Up to 6500A
Conductor	: Copper
Service temperature	: Up to 50°C
Short circuit capacity	: 80kA

Item	Ampere (A)	W		H
		3W	4W	W (mm)
1	630A	500	600	290
2	800A	500	600	290
3	1000A	500	600	315
4	1250A	500	600	330
5	1600A	500	600	350
6	2000A	500	600	330
7	2500A	500	600	350
8	3150A	500	600	400
9	4000A	500	600	450

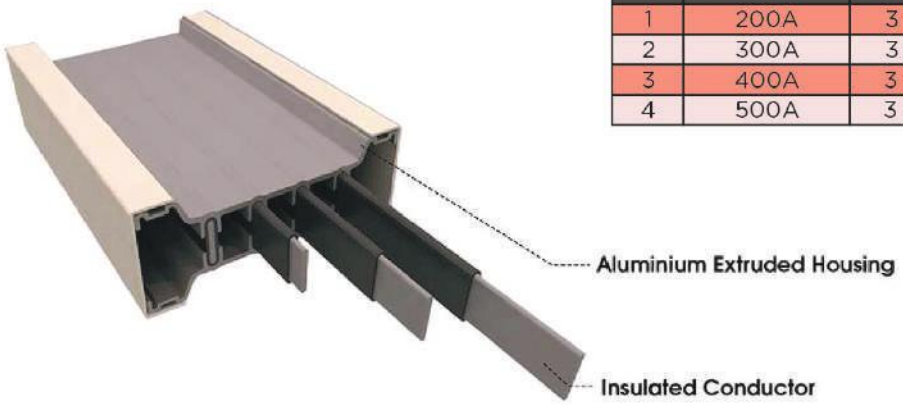




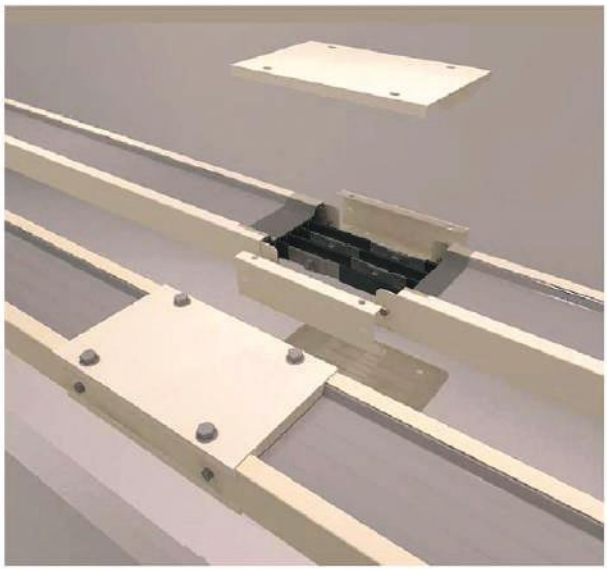
Mini Pioneer Busway

Rating from 200A to 500A installs with minimum hardware and offer more advantages of power distribution by giving an alternative solution compare to traditional expensive cable and conduit installation. The lightweight aluminium housing design acts as an integral earth and heat sink, delivers impressive features and benefits many types of industrial construction implementations.

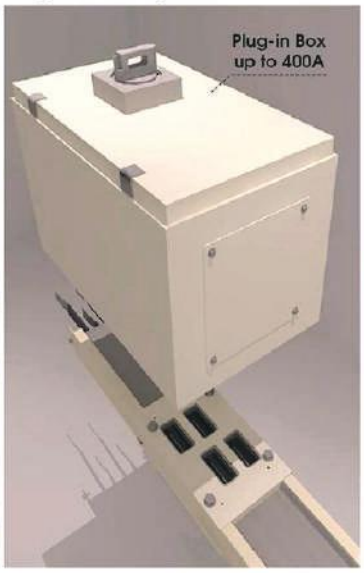
Item	Ampere (A)	Copper Size(mm)	W (mm)	H (mm)
1	200A	3 x 25	150	60
2	300A	3 x 25	150	60
3	400A	3 x 30	150	65
4	500A	3 x 40	150	75



Joint Connection Details

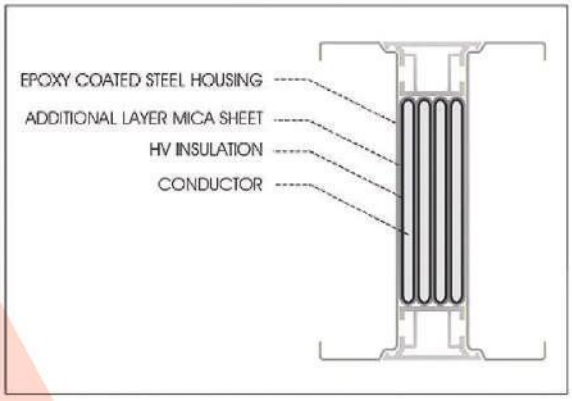


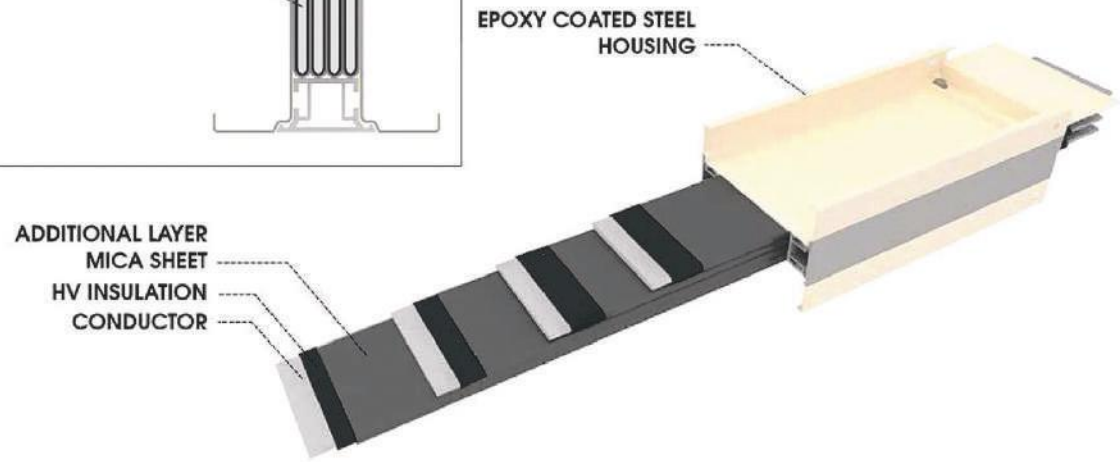
Plug-in Busway

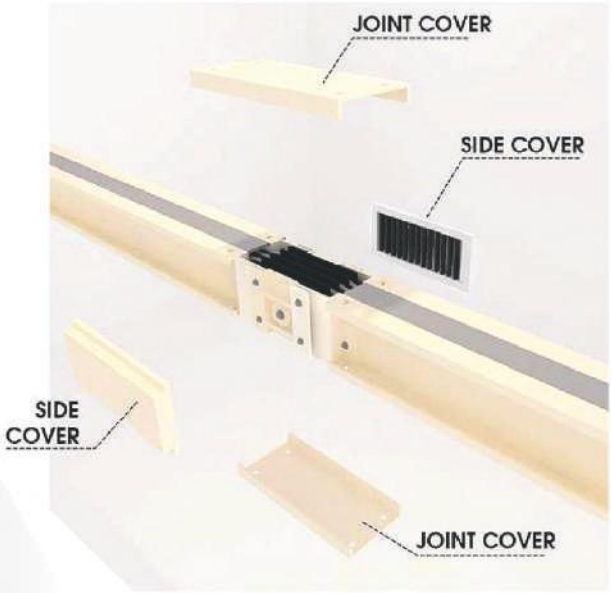


Fire Rated Pioneer Busway

Pioneer Busway is designed and manufactured in accordance to BS6387 & IEC60331 standard. Fire temperature between 750 - 950 °C up to 3 hours.

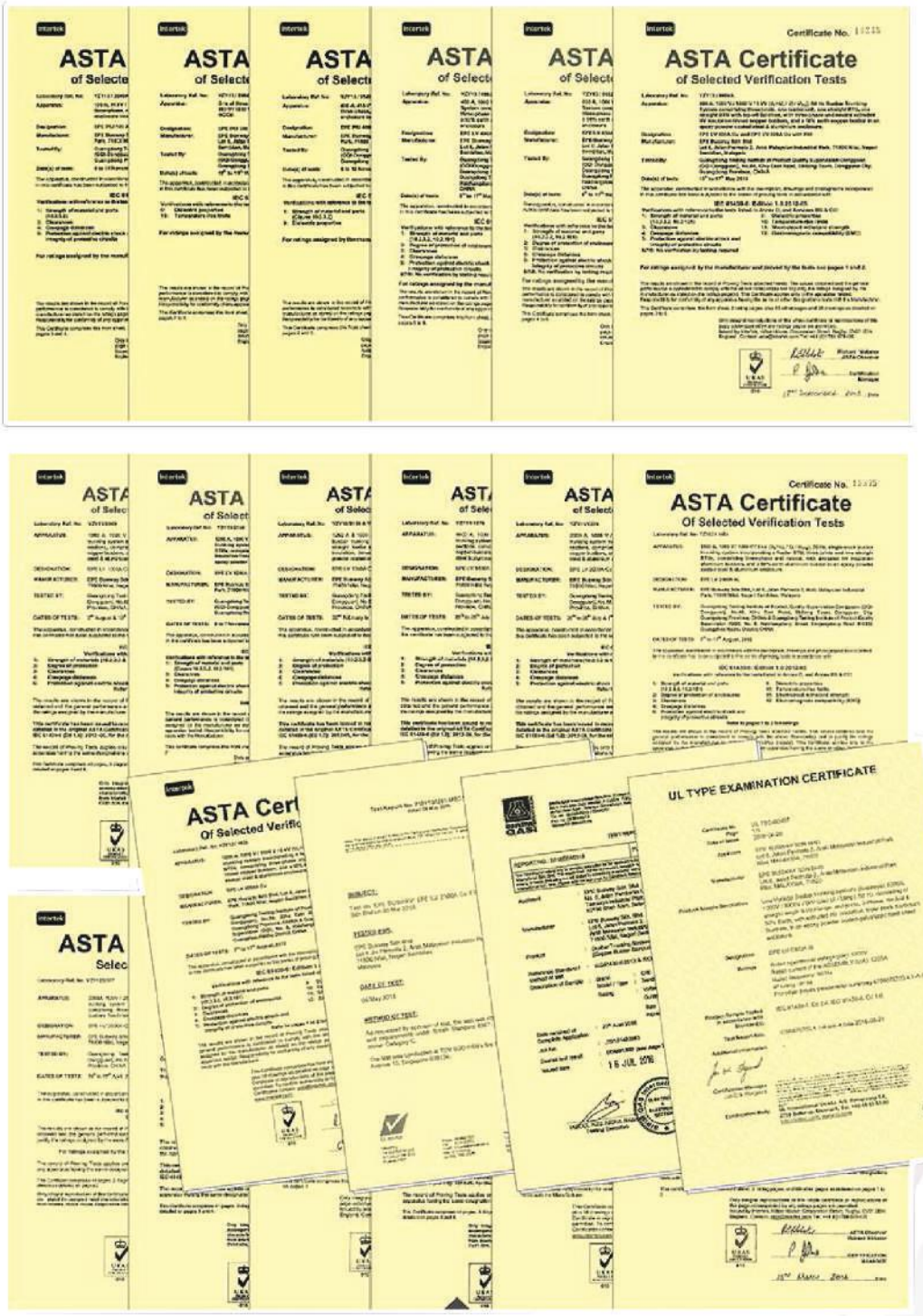






Quality Assurance

Type tests are being carried out regularly by ASTA & UL, to comply required standards as well as customer requirements.



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