DE BUSDUCT

POWERLINE SERIES

EXTRUSION ALUMINIUM HOUSING BUSDUCT SYSTEM

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Dynamic Electrical

Dynamic Electrical

SUPERB POWER SOLUTION

POWERLINE

Powerline is one of the DE Busduct series meets the requirements of IEC standard and is manufactured in an ISO 9001 certified facilities provided by Dynamic Electrical base in Malaysia. If offers a complete line of compatible, compact constructed to suit the requirements to distribute electrical energy or power to the right and needed place such as transformer – switchboard or switchboard - main sub board connection, and in the main power distributing for commercial, industrial, high-rise building, service industry, power plant, and server building. Busduct itself provides you advantages from various factors.

ACHIEVEMENT

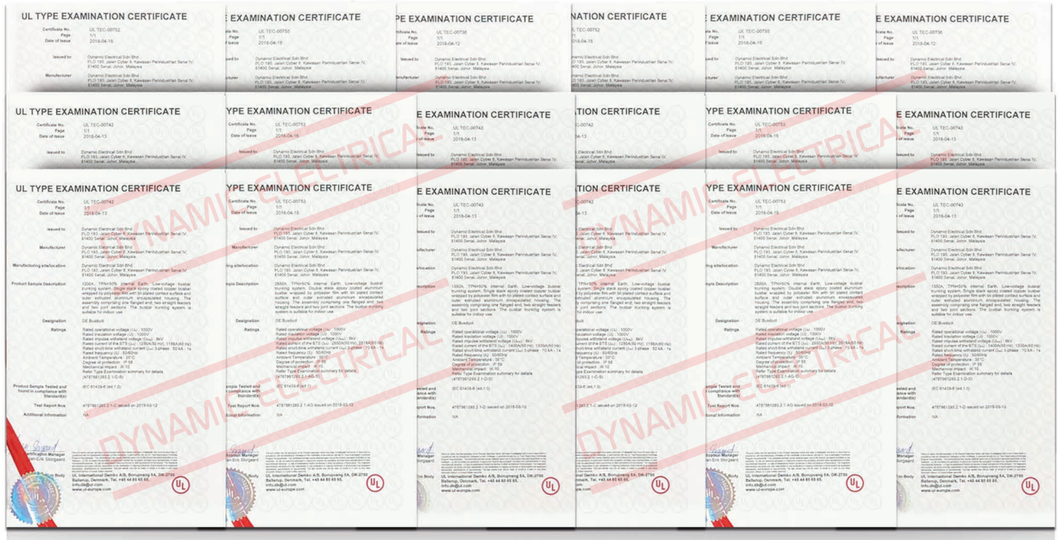
QUALITY ASSURANCE

UL CLASSIFIED PRODUCT

Copper busduct 850A – 6300A
Aluminium Busduct 630A – 5000A

FIRST BRAND IN ASEAN

Tested & validated by Underwriters Laboratories (UL)



UNDERWRITES LABORATORIES

WHAT IS UL?

UL is an organisation working on product safety. UL has more than a century of experience by helping clients to bring products to market. Todays' global economy brings increasing technical requirements and an ever-greater need for speed to market with more than 10,000 people and 131 testing laboratories operating in over 39 counties.

WHAT IS DQS?

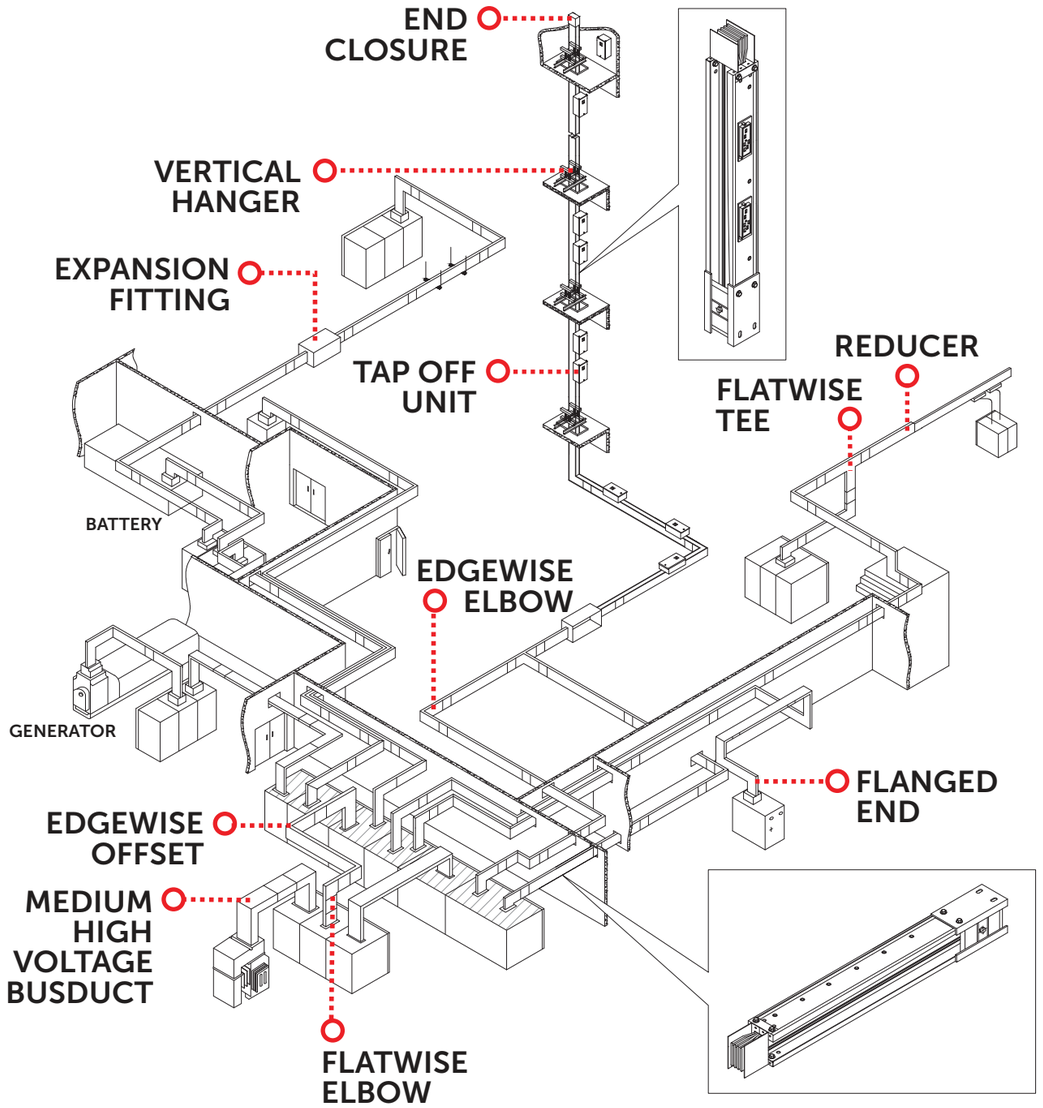
DQS Group controls the international business development of 80 offices in 60 countries. With a total group turnover of about 120 million Euros (as of 12/2015), the group is among the top 10 of certification service providers for management systems.

With over 2,500 international auditors and experts in virtually every industry sector, DQS ensures a high level of expertise as well as consistency in values and audit principles. Today, the service portfolio of DQS Group comprises assessments and certifications to more than 200 different standards, plus unique company-specific requirements.

FULL TYPE TESTED & CERTIFIED ACCORDING TO IEC 61439-6 STANDARD BY UL.

1. **STRENGTH OF MATERIALS AND PARTS 10.2**
   - Resistance to corrosion 10.2.2
   - Properties of insulation materials 10.2.3
   - Thermal stability 10.2.3.1
   - Resistance to abnormal heat and fire due to internal electrical effects 10.2.3.2
   - Lifting 10.2.5
   - Mechanical impact 10.2.6
   - Ability to withstand mechanical loads 10.2.101
2. **DEGREE OF PROTECTION 10.3**
3. **CLEARANCES AND CREEPAGE DISTANCES 10.4**
4. **PROTECTION AGAINST ELECTRIC SHOCK AND INTEGRITY OF PROTECTIVE CIRCUIT 10.5.2/ 10.5.3**
5. **DIELECTRIC PROPERTIES 10.9**
6. **TEMPERATURE-RISE LIMITS 10.10.2.3.5**
7. **SHORT CIRCUIT WITHSTAND TEST 10.11**
8. **MECHANICAL OPERATION 10.13**
9. **RESISTANCE TO FLAME PROPAGATION 10.101**
10. **FIRE RESISTANCE TO BUILDING PENETRATION 10.102**

DEBUSDUCT SYSTEM



GENERAL SPECIFICATION

CONDUCTOR

99.9% Cu 29 Copper 63.546

With only 99.9% purity copper will be used in our product to ensure low surface contact resistance and low voltage drop. All contact surface was electroplated with tin, this is to prevent surface from oxidation but to improve contact resistance.

INSULATION MATERIAL

Insulation used in DE Busduct, Powerline system is manufactured with a Class B rated (130°C) polyester film. The insulation wraps around each bus bar, giving excellent separation from phase-to phase and phase-to-ground while enhancing the short circuit rating and long lasting.

Optional:

Polyester film
Class F (155°C)
Class H (180°C)
Electrostatic Powder Coating

HOUSING

The Extruded Aluminium Housing with finishing of anodising helped it prevent corrosion.

Aluminium is good in heat dissipation.

Our patented two piece housing design improved the entire ingress protection of DE Busduct.

All the below test was tested on every rating instead of representative:

1. Light weight and passed mechanical impact test
2. Highest IK10 standard
3. Lifting test & ability to withstand mechanical loads test passed with heavy load

Type of housing available upon request:

1. Electro Galvanised Steel
2. Stainless Steel

JOINT STACK

Easy

The design of joint for DE Busduct is Bridge Type.

Tin plated the contact surface for stable efficiency. Easy & faster installation.Design compliance with clearance & creepage distance standard. Double headed bolt is used on the joint with 55lb/ft +-5 designed for easy usage. Allow 10mm adjustment to correct site measurement inaccuracy.

BENEFIT OF DEBUSDUCT

LOW INSTALLATION COST

Busduct snaps together and is easily hung over equipment, making power drops simple. Hence you can save your time and cost for installing the busduct system compared for installing cable tray.

MORE COMPACT & SMALLER SIZE

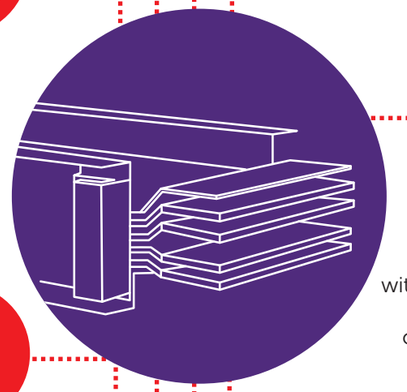
Sandwich designed busduct system makes it ideal for all industrial applications. Smaller size means easier fit into tight hallway ceilings and will dramatically reduce your ceiling weight load. Besides, it also reduces delivery cost, simplifies storage and facilities handling.

PREDICTABLE ELECTRICAL CHARACTERISTIC

Not only busduct system electrical characteristic can be verified independently which including voltage drop, short circuit ratings, weight, reactance, impedance, temperature rise and dielectric rating. Busduct system also had greater short circuit ratings and low voltage drop.

VIRTUALLY NO MAINTENANCE

Most busduct face weakness in their joint section. Therefore, we come out with a unique double headed bolt joint stack. It had been carefully and professionally designed to ensure that when joint stack is properly tightened, there is no need for retightened again in the subsequence year.



EXPANSION FLEXIBILITY

Busduct is willing to grow together as your company keep growing. Whereby, the busduct runs can be easily added or dis-assembled and relocated with minimum effort and safely. Most application will be fall into four categories: service entrance, single load, multiple load and riser.

PATENDED TWO PIECE HOUSING DESIGN

Housing for electric conductors design registration no: 17-00664-0101

EXTRUDED ALUMINIUM HOUSING

13 Al ALUMINIUM 26.982

DECLARATION OF CONFORMITY, CE.

99.9% OF COPPER PURITY

13 Cu Copper 63.546

MADE IN MALAYSIA

WHY US?

WHY DE BUSDUCT?

We are dynamically driven to provide our best products, services and solutions. We also emphasize in teamwork, strive on professionalism, to excel in research and development.

PROCESS

Our engineer will participate to guide our clients from the initial stage to produce the best system for our clients.

1 **START**
Dynamic Electrical's engineer provide suggestion for client

2 **DESIGN & DEVELOPMENT**
Provide technical support for client. Provide system design & development.

3 **PRODUCTION**

4 **INSTALLATION**
Product test and installation support

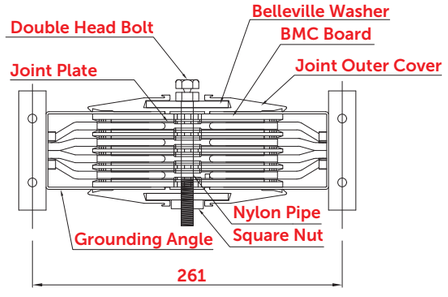
PHYSICAL DATA

JOINT STACK

Joint Stack is used for connection between Busduct sections. Each Busduct section is supplied with a Joint Stack and Joint Covers installed at one end of the busduct.

The Joint Stack features a single or multiple bolt design with double head break off bolts. This eliminates the need for torque wrenches during initial installation and assures proper torque. When the proper torque value is achieved, the top bolt head will shear off.

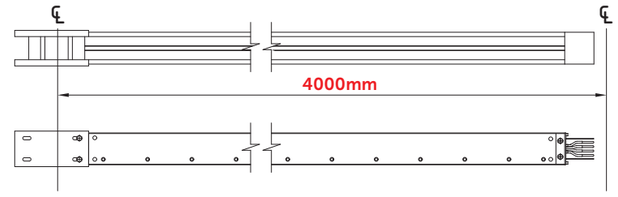
Each Joint Stack allows for an adjustment of + 10mm at each joint. Over-adjustment is prevented by the joint covers. It is possible to remove any joint stack assembly to allow electrical or physical removal of a busduct section.



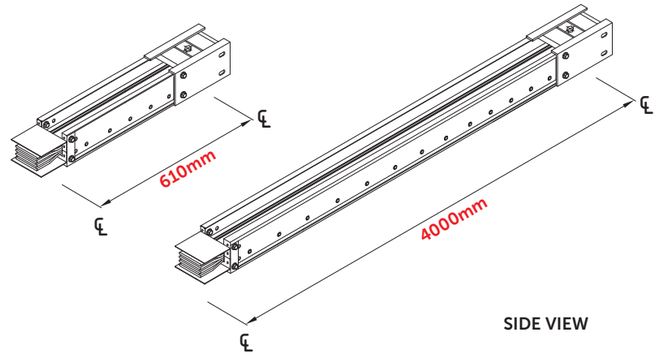
FEEDER (FST)

MAX 4000mm
MIN 610mm

It carries the role to distribute current from power supply directly to the power system. Usually used in concentrated load sytem where it does not have Plug-in Outlet. Busduct available in maximum length 4000mm and with minimum length 610mm.



TOP VIEW



SIDE VIEW

STRAIGHT LENGTH PLUG-IN

Plug-In section designed with plug-in openings centered on 543mm intervals. Its is available in both side of the section for optimum utilization. It is used in distribution load system required.
Plug-in section available in standard length of 3000mm and minimum 742mm.
The plug-in meet the highest IP55 (splash Proof).

PLUG-IN SECTION CATAGORIES

STANDARD BUSDUCT

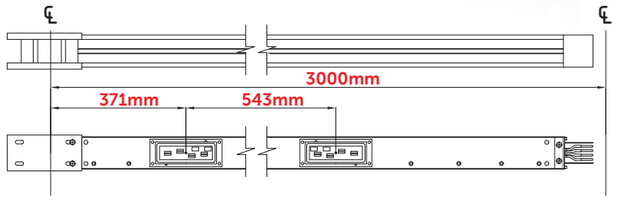
Outlets is on both sides on 543mm interval to optimized the amount of plug-in units in horizontal applications.

RISER BUSDUCT

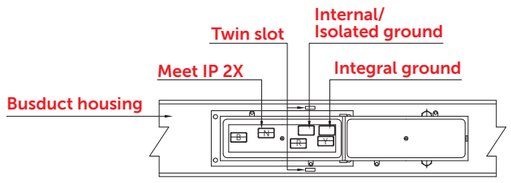
Outlets is on one side on 543mm interval to fit the vertical applications.

LIMITED ACCESS BUSDUCT

Customized design, where the plug-in outlets can be placed as customer request.



STANDARD PLUG-IN SECTION TOP VIEW



PLUG-IN OUTLET FEATURES

Molded guard designed is to eliminates the risk of incidential finger contact with live conductor. In additional, Plug-in Outlet also provided cover to be close during plug-in been taken off to protect the Plug-in contact surfaces from rust, water, pest and chemicals. Plug-in Outlet are IP2X rated whereby 12mm test probe is unable to enter a Plug-in Outlet. Proper marking provided on the connections on the Plug-in Outlet to ensure proper contact of phase and ground bars with Plug-in fingers.

ELBOW

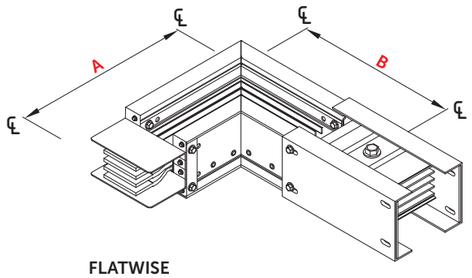
Elbow designed to ease and meet the changes of the direction of the busduct run.There are Flatwise and Edgewise elbows.

EDGEWISE ELBOW

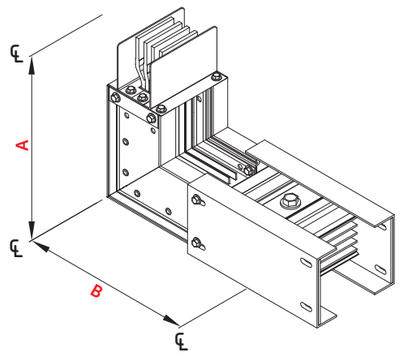
The Edgewise elbow 90 bend standard measurement is 300mm for every ampere rating. It is simple and easy for installer to intall no matter it is in the right or the left running position.

FLATWISE ELBOW

Flatwise elbows measurements different depend on size of current rating.



FLATWISE ELBOW



EDGEWISE ELBOW

CURRENT RATING	LENGTH (mm)	
	FLATWISE (AxB)	EDGEWISE (AxB)
400	380 x 380	300 x 300
630		
800		
1000		
1200		
1350		
1600		
2000		
2500	510 x 510	
3200		
4000		
5000	650 x 650	
6300		

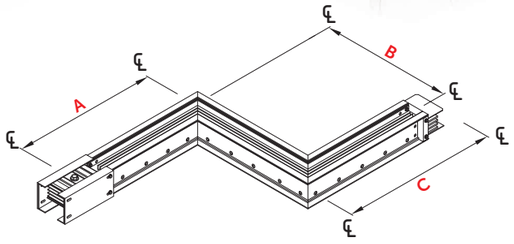
PRODUCT DATA

OFFSET
(FLATWISE & EDGEWISE)

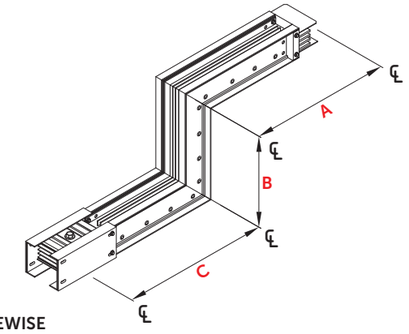
Offset is applied where critical site condition does not allow connection standard elbows together.

CURRENT RATING	LENGTH (mm)	
	FLATWISE (AxBxC)	EDGEWISE (AxBxC)
400	350 x 350 x 350	300 x 300 x 300
630		
800		
1000		
1200		
1350		
1600		
2000		
2500	510 x 510 x 510	
3200		
4000		
5000	650 x 650 x 650	
6300		

PRODUCT DATA



FLATWISE
OFFSET



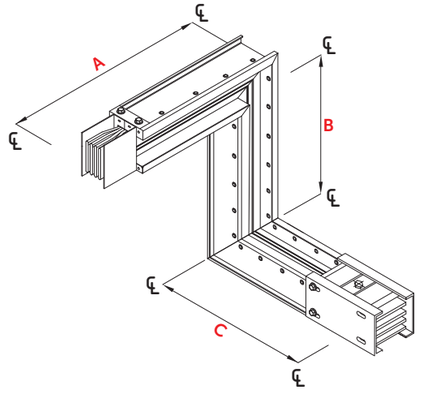
EDGEWISE
OFFSET

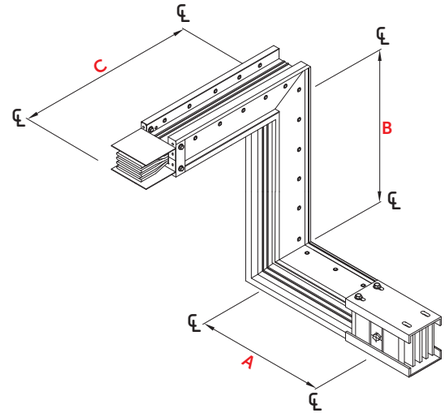
COMBINATION ELBOW

Combination Elbow is been designed to solve the problem where busduct routine from flatwise to edgewise or from edgewise to flatwise. Each designmeasurement different from the range of current size.

CURRENT RATING	FLATWISE+EDGEWISE (mm)
	A x B x C
400	380 x 380 x 300
630	
800	
1000	
1200	
1350	
1600	
2000	
2500	510 x 510 x 300
3200	
4000	
5000	650 x 650 x 300
6300	

PRODUCT DATA

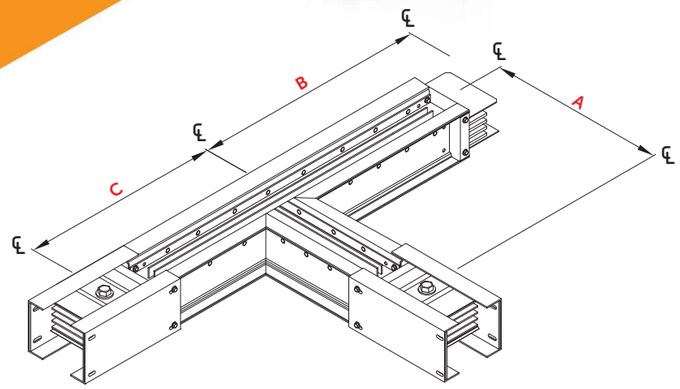




TEE

Tee is used to create branches from the busduct run. Its size measurement various from different current rating. It is easy to install.

Easy



CURRENT RATING	LENGTH (mm) A x B x C
400	380 x 380 x 380
630	
800	
1000	
1200	
1350	
1600	
2000	
2500	510 x 510 x 510
3200	
4000	
5000	650 x 650 x 650
6300	

PRODUCT DATA

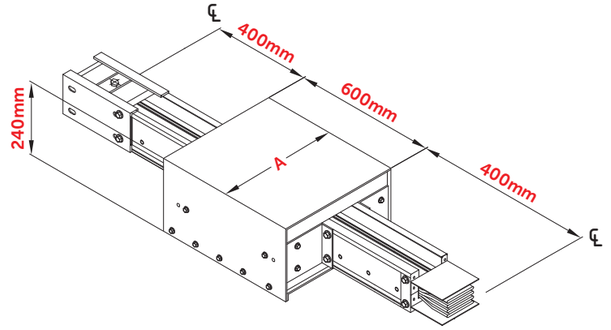
EXPANSION FITTING

Expansion Fitting provides for expansion and contraction of a busduct run. In order to compensate the different in the coefficient of expansion between the copper bus bars and the housing, an expansion joint must be used.

Expansion joint to be installed at the center of long busduct runs, where both ends of the run are held in a permanent, fixed position or where a busduct crosses an expansion joint of a building.

±40mm

Expansion Joint allow for ±40mm movement along the length of the busduct system.

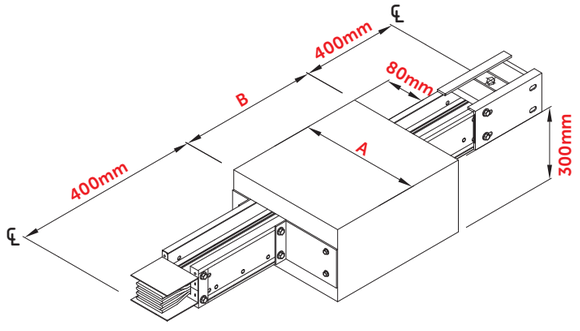


AMPERE (A)	A (mm)
400-1200	263
1350-2500	500
3200-6300	900

PRODUCT DATA

CENTER TAP BOX

Center Tap Box is a device that is non-fusible utilized to take off power from middle of the busduct run.. It is used in the condition when loads served by the busduct run do not require over-current protection.



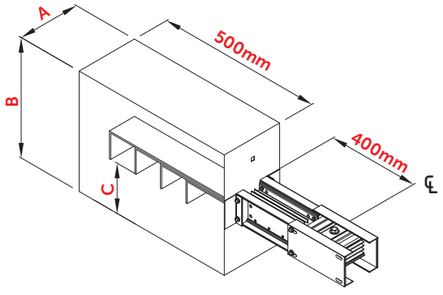
AMPERE (A)	A (mm)	B (mm)
400-1200	600	380
1350-2500	850	600
3200-6300	1250	650

PRODUCT DATA

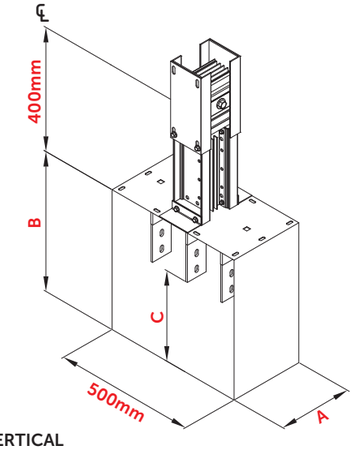
END TAP BOX

End Tap Box are non-fusible devices used to connect cable and conduit to the end of the busduct run or where busduct runs connect without the need for over current protection.The End Tap Box can be installed at the beginning or end of the run. Extended end tap boxes are available if application require wire bending spaces.

The End Tap Box comes into Vertical and Horizontal application.



HORIZONTAL



VERTICAL

AMPERE (A)	A (mm)	B (mm)	C (mm)
400-1200	250	400	160
1350-2500	480	450	210
3200-6300	890	500	260

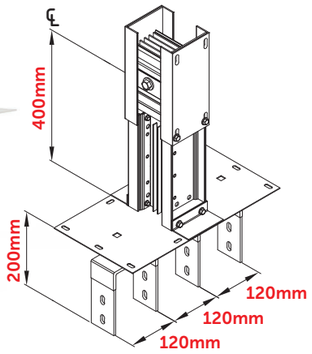
HORIZONTAL END TAP BOX PRODUCT DATA

AMPERE (A)	A (mm)	B (mm)	C (mm)
400-1200	250	400	200
1350-2500	480	500	300
3200-6300	890	600	400

VERTICAL END TAP BOX PRODUCT DATA

FLANGED END

Flanged End provides direct connection into low voltage switchgear, control panel, and other electrical distribution equipment. See more details on the illustration for the flanged end drilling patterns and measurements. Flanged ends are shipped with one joint stack assembly.



ALUMINIUM	DIMENSION (mm)		FIG. NO.
AMPERE	A	B	
400-630	209	149	1
800	224	164	1
1000	239	179	1
1200	269	209	1
1350	304	244	1
1600	339	279	1
2000	369	309	1
2650	508	448	2
3200	578	518	2
4000	638	578	2
5000	907	847	3

COPPER	DIMENSION (mm)		FIG. NO.
AMPERE	A	B	
400	189	129	1
600	199	139	1
850	209	149	1
1100	224	164	1
1250	239	179	1
1400	254	194	1
1650	269	209	1
2000	319	259	1
2500	359	299	1
3000	399	339	1
4000	538	478	2
5000	618	558	2
6300	877	817	3

PRODUCT DATA

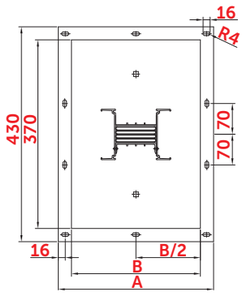


FIGURE 1

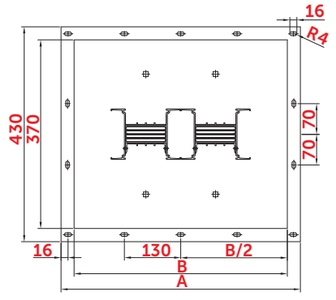


FIGURE 2

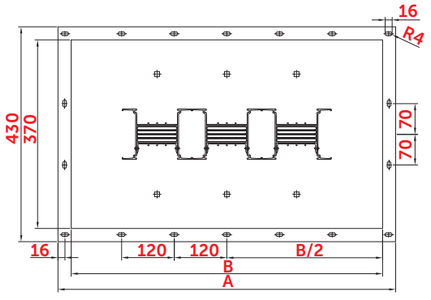


FIGURE 3

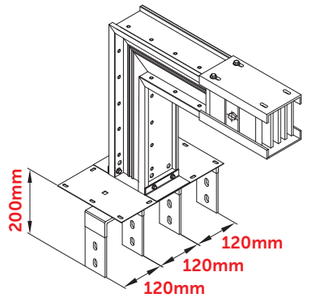
FLANGE END BUS DUCT PUNCHING PATTERN

COMBINATION FLANGED END

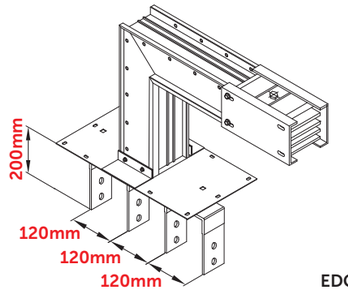
Combination Flanged End/Elbow can accommodated when the busduct is in close proximity to the switchgear.

CURRENT RATING	LENGTH (mm)	
	FLATWISE (A+B)	EDGEWISE (A+B)
400	380 x 380	300 x 300
630		
800		
1000		
1200		
1350		
1600		
2000		
2500	510 x 510	
3200		
4000		
5000	650 x 650	
6300		

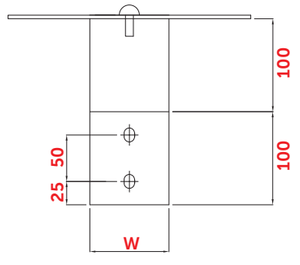
PRODUCT DATA



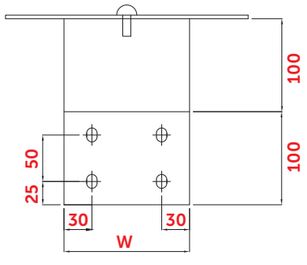
FLATWISE



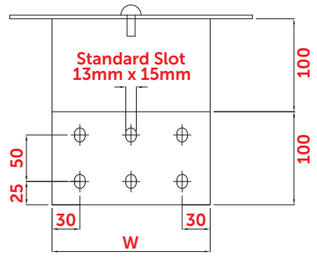
EDGEWISE



BAR SIZE: 20mm-85mm



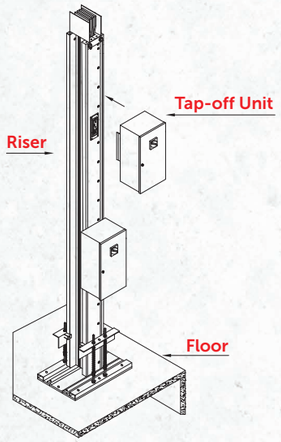
BAR SIZE: 100mm-150mm



BAR SIZE: 170mm-230mm

FLANGE END BUS DUCT PUNCHING PATTERN

ACCESSORIES



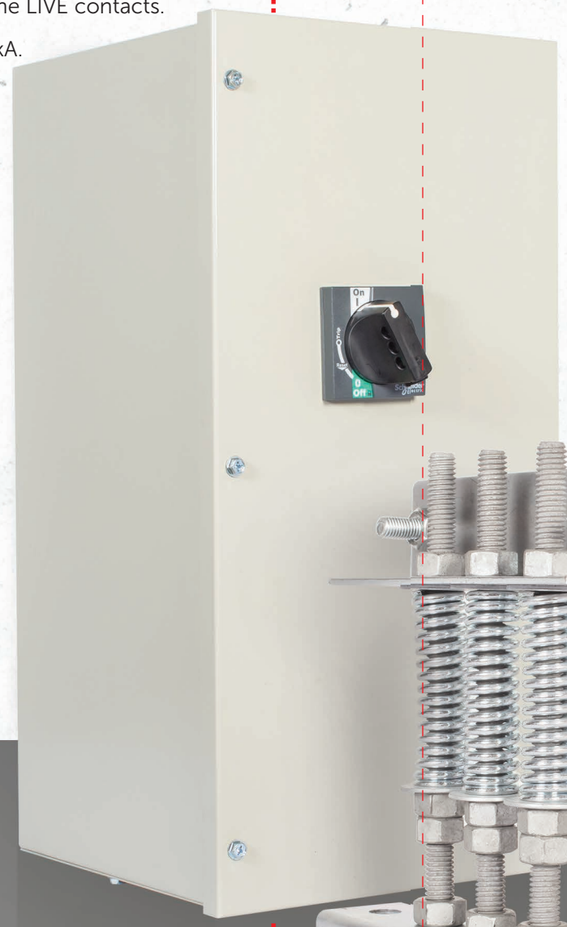
TAP OFF UNIT

Tap-off Unit is a device to tap off current from busduct run which is accommodated with a MCCB each.

With the mechanical technology design of the Tap-off Unit, installer can remove and install safely and easily just a matter of minutes. It also can be installed and be removed from a LIVE busduct system and have been modify to allow ample room for the termination of outgoing cables.

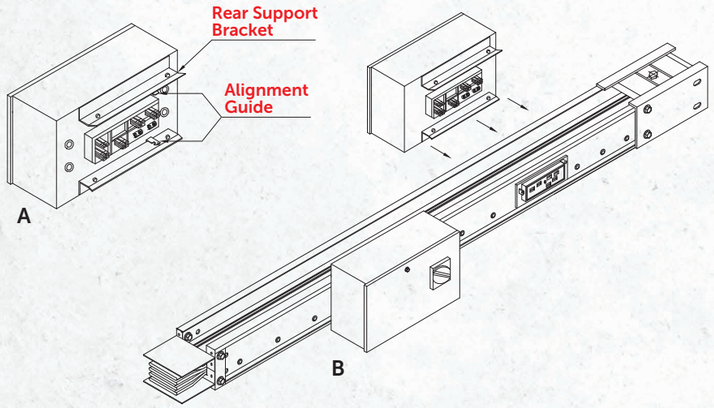
Tap-off Unit interlock provided to prevent the box being open when it is in On position. Earth contacts fitted in the Plug-in Unit to ensure earth contact is made prior to the LIVE contacts.

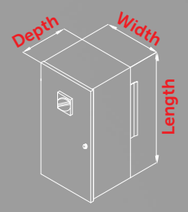
MCCB available in range from 10kA to 70kA.



The Tap off unit also features with water resistance capability to suit customer's need. The plug in is rated IP40 as standard and optional IP55.

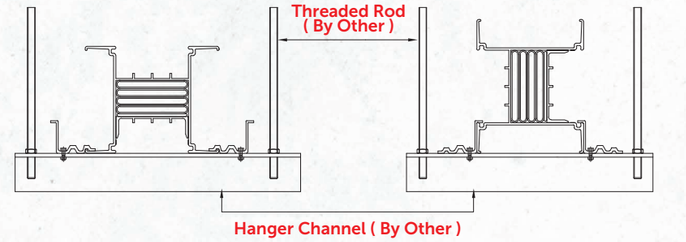
Picture show the plug in back position (A). It is easy to install (B)whereby just plug in the box as shown above picture and 'ON' the plug in unit. With the plug in unit turned 'on', the plug in unit door can't be open.



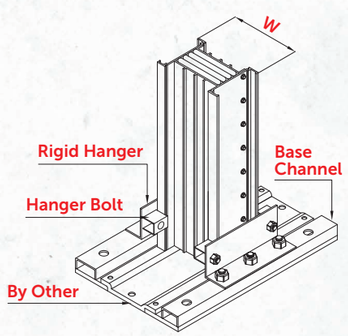


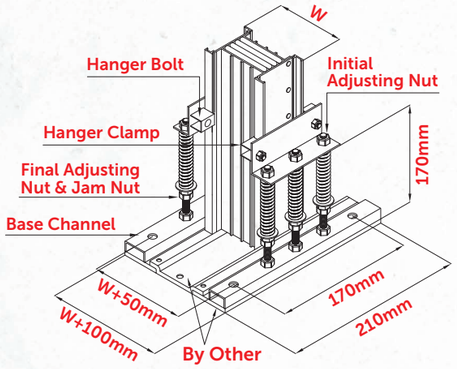
AMPERE (A)	LENGTH (mm)		
	LENGTH	WIDTH	DEPTH
15-100	360	280	270
100-250	460	280	270
300-400	560	280	290
500-800	1000	480	380
1000 or above	PLEASE CONSULT MANUFACTURER		

PRODUCT DATA

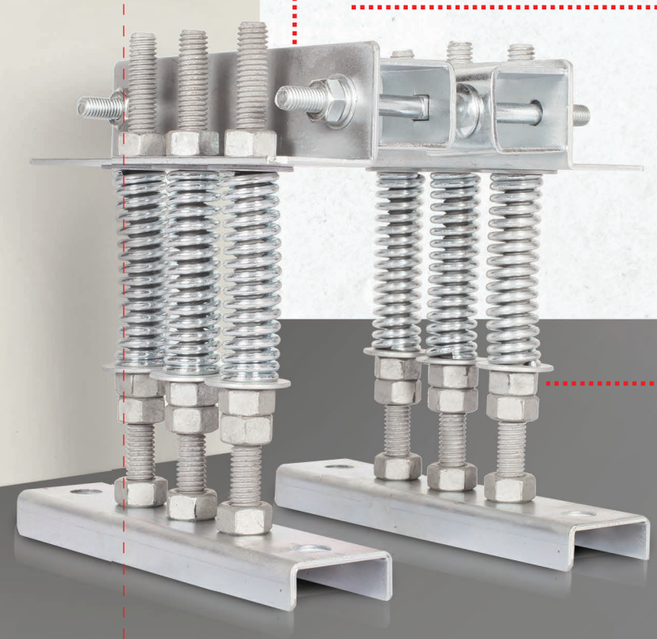


HORIZONTAL MOUNTING





VERTICAL MOUNTING

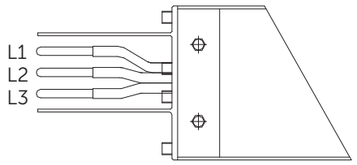


HANGERS

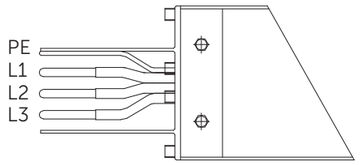
Hangers been created to support the busduct run both in horizontal and vertical application. Vertical application comes into hanger with spring and hanger without spring. Spring hangers and floor supports must applicable to secure mounting of the busduct run in vertical applications. Horizontal application, contractors must supply drop rods in order to complete installation for hangers.

BUSBAR CONFIGURATION

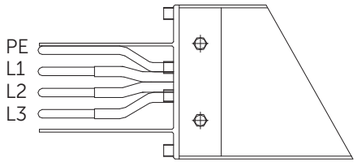
POWERLINE BUSDUCT AVAILABLE IN VARIOUS BUSBAR CONFIGURATIONS:



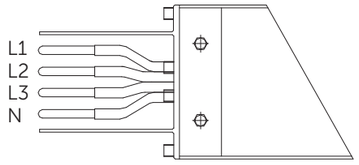
3P + Integral Ground



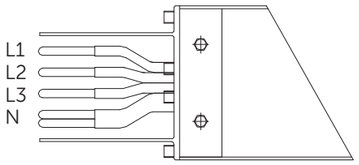
3P + 50% Internal Ground



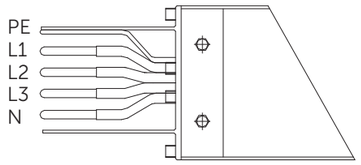
3P + 100% Internal Ground bar



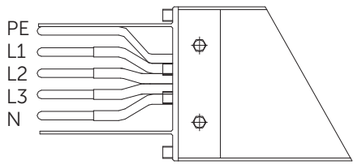
3P + 100% Neutral + Integral Ground



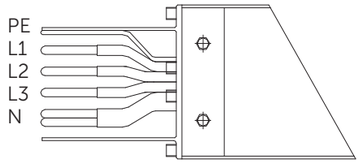
3P + 200% Neutral + Integral Ground



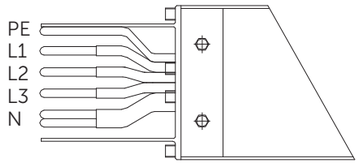
3P + 100% Neutral + 50% Internal Ground Bar



3P + 100% Neutral + 100% Internal Ground Bar

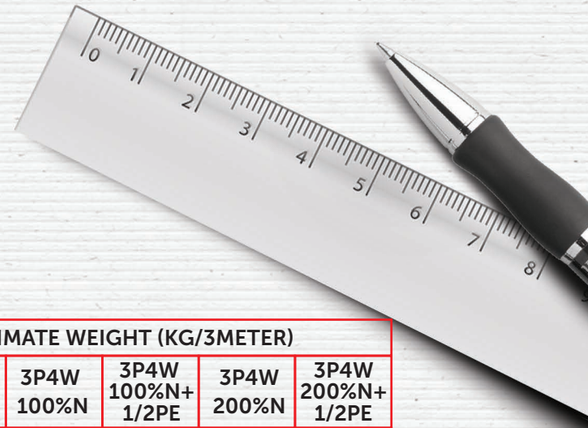


3P + 200% Neutral + 50% Internal Ground Bar



3P + 200% Neutral + 100% Internal Ground Bar

CONDUCTOR CONSTRUCTION



WEIGHT & DIMENSION:

AMPERE RATING	FIGURE NO	DIMENSION (W)	APPROXIMATE WEIGHT (KG/3METER)					
			3P3W	3P3W+ 1/2PE	3P4W 100%N	3P4W 100%N+ 1/2PE	3P4W 200%N	3P4W 200%N+ 1/2PE
COPPER								
400	1	89	20	22	23	26	27	28
600	1	99	25	27	30	32	34	37
850	1	109	31	34	37	40	44	47
1100	1	124	39	43	48	52	57	61
1250	1	139	47	53	58	64	69	75
1400	1	154	52	59	66	73	79	86
1650	1	169	63	71	79	87	95	103
2000	1	219	87	99	112	122	124	135
2500	1	259	107	118	137	148	144	154
3000	1	299	127	136	163	174	163	173
4000	2	438	174	198	224	244	248	270
5000	2	518	214	236	274	296	288	308
6300	3	777	321	354	411	522	489	519
ALUMINIUM								
400-630	1	109	17	18	19	20	21	22
800	1	124	20	21	22	23	24	25
1000	1	139	23	24	25	26	27	28
1200	1	154	29	30	31	32	33	34
1350	1	204	36	37	38	39	40	41
1600	1	239	43	44	45	46	47	48
2000	1	269	49	50	51	52	53	54
2650	2	408	77	79	80	82	84	86
3200	2	478	87	89	91	93	95	97
4000	2	538	98	100	102	104	106	108
5000	3	807	147	150	153	156	159	162

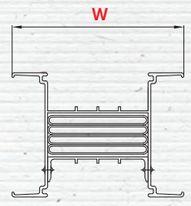


FIGURE 1

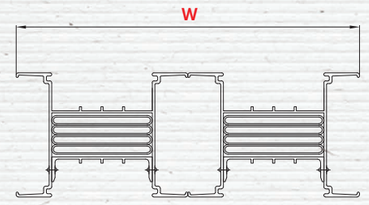


FIGURE 2

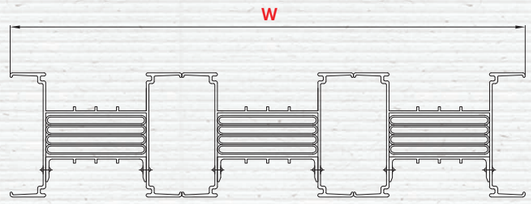
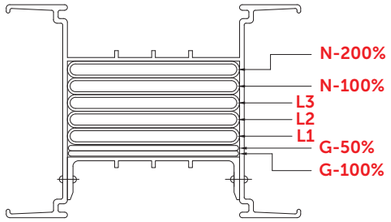
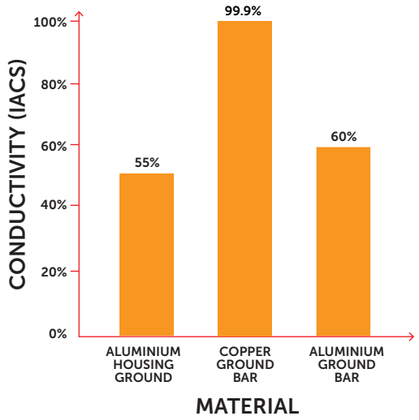


FIGURE 3

GROUND RESISTANCE





Powerline series aluminium housing provides extremely high ground capacity. The table showing the conductivity and current carrying capacity offered by the housing is at least 2 times greater than the active copper ground bar (sized 50% of the phase bar).

AMPERE RATING (A)	ALUMINIUM HOUSING CROSS SECTIONAL AREA INTEGRAL GROUND (mm^2)	COPPER SECTIONAL AREA 50% INTERNAL GROUND BAR (mm^2)	CAPACITY RATIO (INTEGRAL/INTERNAL)
COPPER			
400	1355	58	23.4 : 1
600	1395	88	15.9 : 1
850	1513	116	13 : 1
1100	1603	161	10 : 1
1250	1693	206	8.2 : 1
1400	1799	251	7.2 : 1
1650	1909	296	6.4 : 1
2000	1931	401	4.8 : 1
2500	2111	506	4.2 : 2
3000	2769	596	4.6 : 2
4000	2830	802	3.5 : 2
5000	3190	1012	3.2 : 3
6300	4269	1522	2.8 : 4
ALUMINIUM			
400-630	1513	116	13 : 1
800	1603	161	10 : 1
1000	1693	206	8.2 : 1
1200	1909	251	7.6 : 1
1350	2139	296	7.2 : 1
1600	2369	401	5.9 : 1
2000	2569	506	5.1 : 1
2650	3246	596	5.4 : 1
3200	3706	802	4.6 : 1
4000	4106	1012	4.1 : 1
5000	5643	1522	3.7 : 1

ELECTRICAL DATA

VOLTAGE DROP VALUE FORMULA

Formula below prepared to guide you to calculate actual voltage drop.

Plug-in distributed Loads application:

$$\frac{\text{VOLTAGE DROP VALUES}}{2}$$

Determine voltage drop line-to neutral:

$$\text{LINE TO LINE VALUES} \times 0.866$$

Actual voltage drop for different lengths and at loadings less than full rated current:

$$\frac{V_d \text{ (TABLE)} \times \text{ACTUAL LOAD}}{\text{RATED LOAD} \times \text{ACTUAL LENGTH (M)} /100\text{M}}$$

New voltage drop:

$$\text{AMP LOADS} \times \sqrt{3}(\text{RCOS } \varnothing + \text{XSIN } \varnothing)$$

where cos Ø = Power Factor

For 50Hz: **REACTANCE (X) x 0.85**
Note: Do not change resistance value.

For 400Hz: **REACTANCE (X) x 3.75**
Note: Resistance value x 1.4

VOLTAGE DROP & IMPEDANCE

Table below indicates the busduct system electrical characteristics in copper and aluminium conductors. (50/60Hz)

CURRENT LOAD	OHM*10^-3/100M LINE TO LINE			VOLTAGE DROP CONCENTRATED LOADS LINE TO LINE/100M AT RATED LOAD, 50°C										
				POWER FACTOR										
	R	X	Z	1	0.95	0.9	0.85	0.8	0.75	0.7	0.65	0.6	0.55	0.5
COPPER														
400	15.44	3.14	15.75	10.70	10.84	10.57	10.24	9.86	9.46	9.04	8.60	8.16	7.70	7.23
600	10.49	2.13	10.71	10.90	11.05	10.78	10.43	10.05	9.64	9.21	8.77	8.31	7.85	7.37
850	7.05	1.43	7.20	9.77	9.90	9.66	9.35	9.01	8.64	8.26	7.86	7.45	7.03	6.60
1100	4.90	0.99	5.01	8.51	8.62	8.41	8.14	7.84	7.52	7.19	6.84	6.49	6.12	5.75
1250	4.11	0.84	4.20	8.55	8.67	8.45	8.18	7.88	7.56	7.23	6.88	6.52	6.15	5.78
1400	3.18	0.65	3.24	7.43	7.53	7.35	7.11	6.85	6.57	6.28	5.98	5.67	5.35	5.02
1650	2.73	0.55	2.79	7.57	7.67	7.48	7.24	6.98	6.69	6.40	6.09	5.77	5.45	5.12
2000	2.08	0.42	2.12	7.20	7.30	7.12	6.89	6.64	6.37	6.08	5.79	5.49	5.18	4.87
2500	1.72	0.35	1.75	7.44	7.54	7.36	7.12	6.86	6.58	6.29	5.99	5.68	5.36	5.03
3000	1.45	0.29	1.48	8.01	8.12	7.92	7.67	7.39	7.09	6.77	6.45	6.11	5.77	5.42
4000	1.19	0.24	1.21	8.23	8.34	8.13	7.87	7.58	7.28	6.95	6.62	6.27	5.92	5.56
5000	0.90	0.18	0.92	7.78	7.89	7.69	7.45	7.17	6.88	6.58	6.26	5.93	5.60	5.26
6300	0.74	0.15	0.76	8.13	8.24	8.03	7.78	7.49	7.19	6.87	6.54	6.20	5.85	5.49
ALUMINIUM														
400	11.10	2.26	11.30	7.70	7.80	7.61	7.36	7.09	6.81	6.50	6.19	5.87	5.54	5.20
630	11.10	2.26	11.30	12.12	12.28	11.98	11.60	11.17	10.72	10.24	9.75	9.24	8.72	8.19
800	7.99	1.62	8.15	11.07	11.22	10.94	10.59	10.20	9.79	9.35	8.90	8.44	7.97	7.48
1000	5.36	1.09	5.47	9.28	9.41	9.18	8.88	8.56	8.21	7.85	7.47	7.08	6.68	6.27
1200	4.54	0.92	4.63	9.44	9.57	9.33	9.03	8.70	8.35	7.98	7.59	7.20	6.79	6.38
1350	3.29	0.67	3.36	7.70	7.80	7.61	7.36	7.09	6.81	6.50	6.19	5.87	5.54	5.20
1600	3.14	0.64	3.20	8.69	8.81	8.59	8.32	8.01	7.69	7.34	6.99	6.63	6.25	5.87
2000	2.64	0.54	2.70	9.15	9.27	9.04	8.76	8.43	8.09	7.73	7.36	6.98	6.58	6.18
2650	1.88	0.38	1.92	8.16	8.26	8.06	7.80	7.52	7.21	6.89	6.56	6.22	5.87	5.51
3200	1.67	0.34	1.70	9.26	9.38	9.15	8.86	8.53	8.18	7.82	7.44	7.06	6.66	6.26
4000	1.42	0.29	1.45	9.83	9.97	9.72	9.41	9.06	8.70	8.31	7.91	7.50	7.08	6.65
5000	1.07	0.22	1.09	9.26	9.39	9.16	8.86	8.54	8.19	7.83	7.45	7.06	6.67	6.26

Note: Current density (amps/in2) rated busduct available. Please consult factory.

PROTECTION DEGREE & SHORT CIRCUIT WITHSTAND

WATER RESISTANCE & RUST PROTECTION

The busduct system has been successfully developed into as high as IP68, whereby the busduct is protected against dust tight and effects of immersion of water. This fine completion system is in 100% compliance with IEC standards and is approved through third party authority certification.

DEGREE OF PROTECTION	FEEDER	PLUG-IN FEEDER	TAP -OFF UNIT
IP 40	✓	✓	✓
IP 55	✓	✓	✓
IP 66	✓		
IP 67	✓		
IP 68	✓		

Note: All Powerline plug-In busduct is IP 2x rated. (Finger Safe Plug-in outlets)

IEC-529 LEVEL OF PROTECTION

IP 2X Protection against object greater than 12mm.

IP 40 Enclosure protects against object greater than 1mm. Indoor application.

IP 44 Enclosure protects against object greater than 1mm and spalashed water. Indoor application

IP 55 Enclosure is dust protected and spalashed water. Indoor application.

IP 66 Enclosure is dust tight and protects against heavy jets. Outdoor application.

IP 67 Enclosure is dust tight and protects against effects of immersion in water up to 1m depth. Outdoor application.

IP 68 Enclosure is dust tight and protects against effects of immersion in water 1m or more depth. Outdoor application.

FIRE RESISTANCE (FR) SYSTEM

Busduct available for fire resistance. The fire resistance specially designed upon customer's request where the application comes into an emergency and safety system. The rating available from 800A to 6300A feeder, larger rating also available. The design and construction is comply to IEC 331, BS6387 and JISA 1304.

RESISTANCE TO FIRE

IEC 60331 category "C": 3 hours at 950°C

RESISTANCE TO FIRE WITH WATER

IEC 60331 category "W": 640°C

RESISTANCE TO FIRE WITH MECHANICAL SHOCK

IEC 60331 category "Z": 950°C

CATALOGUE NUMBERING SYSTEM

BUSDUCT AND FITTING

P C 4 25 G0 5 F 0000 (FR)

P = Powerline Series

BUSBAR MATERIAL
C = Copper
A = Aluminum

CONFIGURATION
1 = (3P3W)
2 = (3P3W+50%G)
3 = (3P3W+100%G)
4 = (3P4W)
5 = (3P4W+200%N)
6 = (3P4W+50%G)
7 = (3P4W+100%G)
8 = (3P4W+200%N+50%G)
9 = (3P4W+200%N+100%G)

AMPERE RATING

04 = 400A	20 = 2000A
06 = 600A	25 = 2500A
08 = 800A	32 = 3200A
10 = 1000A	40 = 4000A
12 = 1200A	50 = 5000A
13 = 1350A	60 = 6300A
16 = 1600A	

GROUND
G0 = Integral Housing Ground
G5 = 50%Internal Ground Bar
G10 = 100%Internal Ground Bar

IP RATING

0 = IP40	6 = IP66
4 = IP44	7 = IP67
5 = IP55	8 = IP68

Length

FST = Feeder Busduct
PLG = Plug-in Busduct
EDW = Edgewise Elbow
FLW = Flatwise Elbow
CE = Combination Elbow
TE = Tee
EXPF = Expansion Fitting
EC = End Closure
ETBH = End Tap Box (Horizontal)
ETBV = End Tap Box (Vertical)
CTP = Center Tap Box
EO = Edgewise Offset
FO = Flatwise Offset

Fire Resistance

TAP OFF UNIT

P M 4 6 400 G0 0

P = Powerline Series

TAP-OFF UNIT TYPES
M=MCCB
F=BS (Fusible Type)
A=ACB

CONFIGURATION
1 = (3P3W)
2 = (3P3W+50%G)
3 = (3P3W+100%G)
4 = (3P4W)
5 = (3P4W+200%N)
6 = (3P4W+50%G)
7 = (3P4W+100%G)
8 = (3P4W+200%N+50%G)
9 = (3P4W+200%N+100%G)

RATED VOLTAGE
2 = 220/110Vac
3 = 380/415Vac
6 = 690Vac

AMPERE RATING

015 = 15A	400 = 400A
⋮	⋮
400 = 400A	800 = 800A

GROUND
G0 = Integral Housing Ground
G5 = 50%Internal Ground Bar
G10 = 100%Internal Ground Bar

IP RATING
0 = IP40
4 = IP44
5 = IP55

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