

XAP Series Busduct

Busduct systems with aluminum and copper conductors range 250 – 6300A

Adaptable busduct systems
for virtually any application



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Eaton XAP Series Busduct

Modular busduct system, 250 - 6300A

Eaton's XAP series busduct system is your obvious choice, when searching for a combination of technical performance and attractive design. Eaton's constant development of the busduct product portfolio has not only ensured economical and reliable solutions; XAP series busduct has evolved into an unsurpassed range able to adapt to virtually any installation.

As an integral part of the power distribution product offering from Eaton, XAP series busduct is complementing Eaton's range of power distribution equipment from packaged substations and MV and LV distribution switchboards to a complete selection of fused switchgear, circuit breaker systems, motor control gear and OEM products.

XAP series busduct systems are thoroughly tested and comply fully with IEC439-1/2. The range extends from 250A to 6300A with low, medium and low impedance high power versions, together with a wide selection of accessories.

The straightforward and highly styled design makes XAP series busduct easy to both install and use.

Working with XAP series busduct brings you the following advantages

The Eaton range of XAP series busduct tested to the latest IEC439-1/2 standard makes for the perfect choice where flexibility and reliability are the key to a projects success. We have the ability to produce the busduct system that meets the requirement of any indoor installation.

Eaton is a worldwide player in busduct systems. Deliver busduct to many countries globally.

The advantages of XAP series busduct summarized:

- High power busduct up to 6300 A
- Verified by testing according to IEC439-1/2
- Applicable for vertical or horizontal installation
- Complete range of tap-off units with Eaton devices and wide range of options and accessories
- No de-rating in line with current standards
- IP65 for feeder type, IP 54 for plug-in type
- Ease of installation
- Fit-for-purpose for Eaton switchboards and panelboards
- Superior electrical services and worldwide references for busduct applications by Eaton

XAP Series Busduct Application Areas



- Shopping malls
- High rise buildings



- Data Centres
- Hospitals
- Distribution warehouses



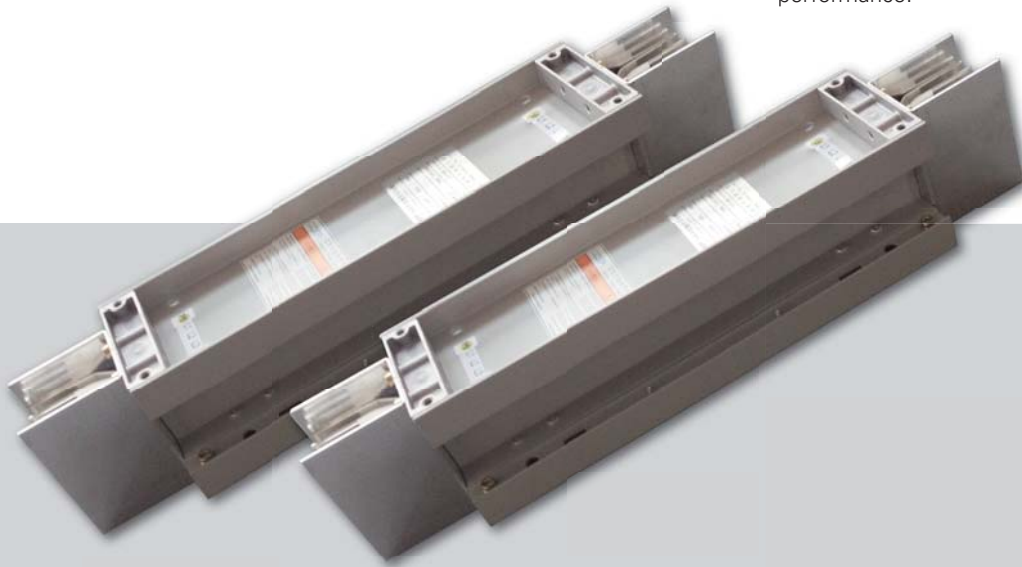
- Industrial areas
- Manufacturing facilities



- Rising mains buildings
- Commercial areas

Features and Benefits

- The IP65 intensive construction of XAP busduct is assembled with Self-Pressing Riveting Joint Technology is capable of being widely used in harsh environment
- XAP series is available in feeder type and plug-in type
- High grounding performance is secured by adopting busduct housing which is above 50% of entire phase line capacity as grounding system
- Plug-in version is applicable for both vertical and horizontal installation. Up to 10 sockets for 3m length, which allows easy changes in layout with reserved sockets
- Lightweight, environmentally friendly almag (aluminium-magnesium alloy) housing ensures lower magnetic loss and pollution. Compression moulded side structure and complemented heat sinks ensures higher thermal resistance, mechanical strength and dynamic-thermal stability
- Compact design enables low impedance, lower voltage drop and line losses
- Class B 130°C mylar wrapped insulation
- XAP tap-off unit has good heat dissipation, voltage drop, resistance to mechanical shock performance benefits. The safety interlock structure ensures electrical safety performance.



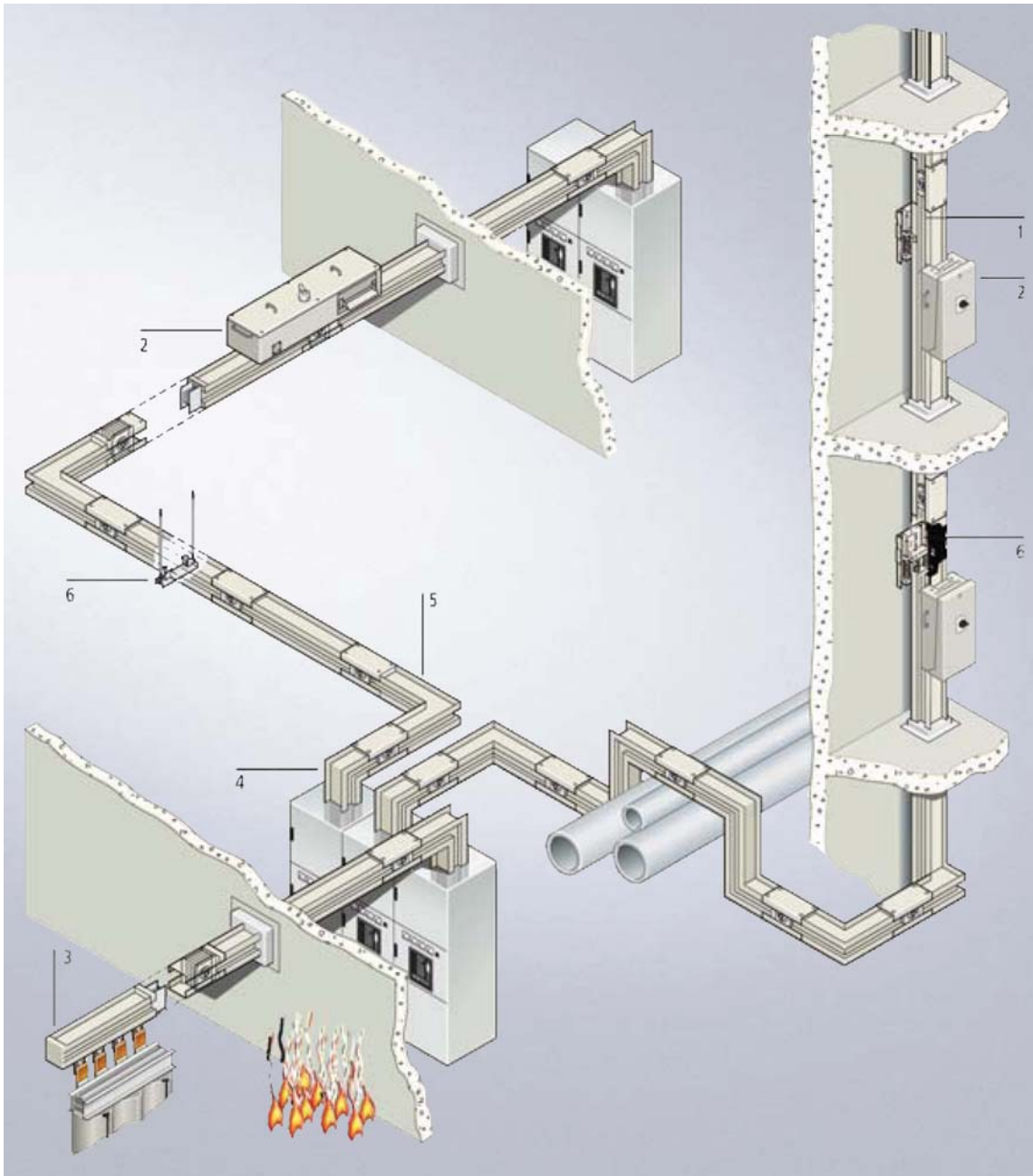
In addition to Eaton's standard busduct features, many other custom made applications can be made possible



Eaton can offer the following services:

- **Site measurement** – upon receipt of an order, an engineer will attend site to survey routes and discuss any technical detail or questions that you may have. This service normally applies to Rising Busduct Systems and complex lateral runs where special lengths or angles maybe necessary to complete the project.
- **Pricing and configuration** – Eaton's common pricing and configuration tool, "Bid manager", provides a standardised working practice to provide budget quotations in the face of the customer. Linked closely with the latest autocad based drawing packages, Eaton can prepare full working drawings to make any installation run smoothly.
- **Installation** – we have an experienced site installation team that will provide competitive pricing for your installation works. Alternatively, a full training program can be offered for installation techniques if required.
- **Commissioning** – as part of our site services we can also offer the services for testing and commissioning of installations

XAP Construction Overview



1. Straight busduct

2. Tap-off unit

3. Transformer connection

4. Switchgear connection

5. Transfer busduct

6. Accessories

XAP Busduct System Key Components

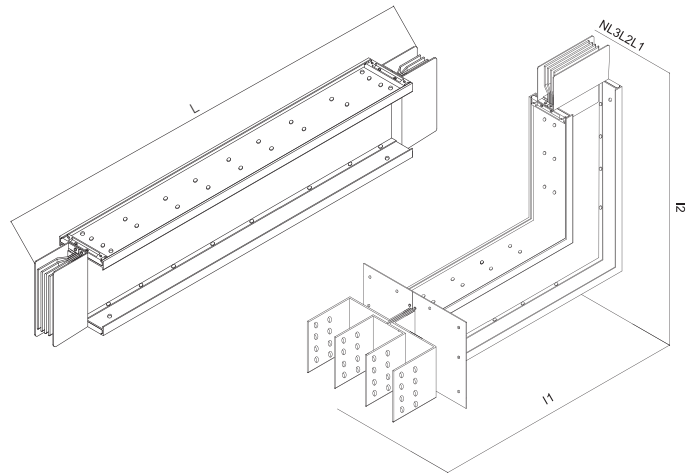
- Feeder or plug-in busduct straight length unit
- Angle units: L-shape, T-shape, Z-shape
- Connection units: transformer connection, switchgear connection, cable connection
- Tap-off units

Standard design for all units while customization and site-inspection can be offered to meet specific needs.

Key Components

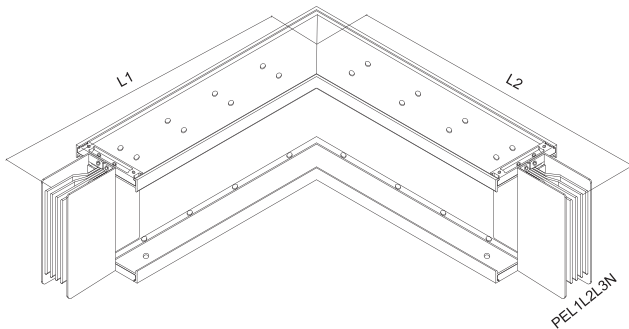
Straight busduct length

- Rated current: 250~6300A
- Available for 4 bar 3-phase or 5 bar 3-phase
4 bar 3-phase: L1、L2、L3、N
5 bar 3-phase: N、L1、L2、L3、PE
- Up to 10 plug units per 3 metres straight length
- Apply to IP54 for plug units, IP65 for feeder busbar.
- Lightweight magaluma-housing construction for lower power loss and pollution.
- High strength H-type concentrated construction for high mechanical strength and dynamic thermal stability.
- Heat sinks on the shell expand the area for heat dissipation.



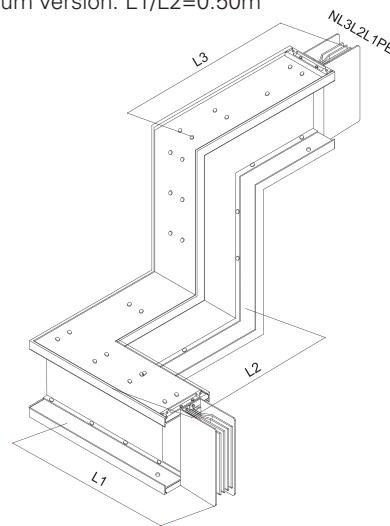
L-shape horizontal edge elbow

- Rated current: 250~6300A
- Standard length:
 - Copper version: L1/L2=0.35m
 - Aluminum version: L1/L2=0.35m



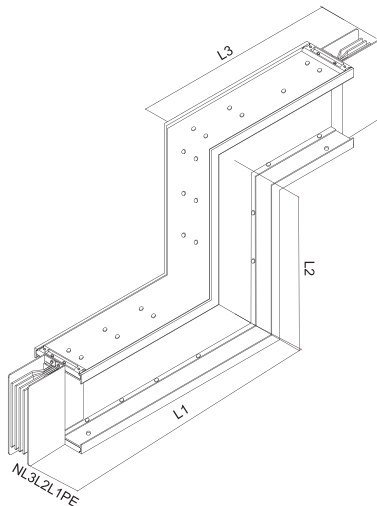
L-shape vertical edge elbow

- Standard length:
 - Copper version: L1/L2=0.50m
 - Aluminum version: L1/L2=0.50m



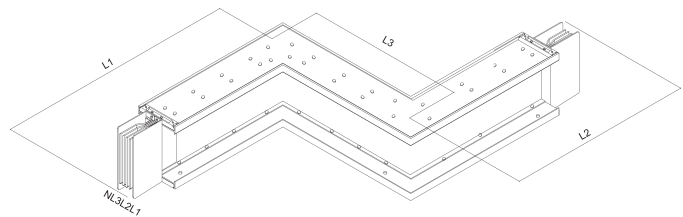
Z-shape vertical edge elbow

- Standard length:
 - Copper version: L1/L2=0.50m L3=0.20m
 - Aluminum version: L1/L2=0.50m L3=0.20m



Z-shape horizontal edge elbow

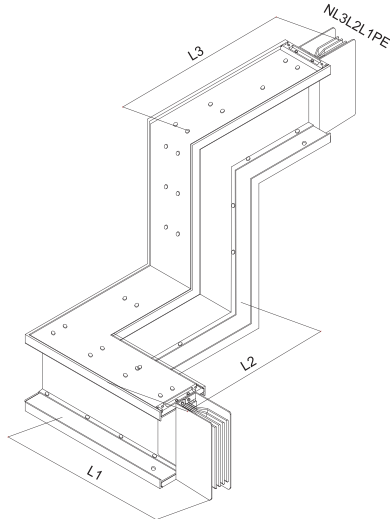
- Standard length:
 - Copper version: L1=0.35m L2=0.35m L3=0.30m
 - Aluminum version: L1=0.35m L2=0.35m L3=0.30m



Key Components

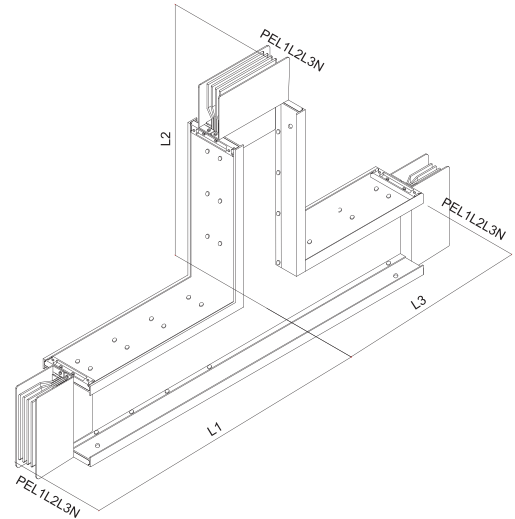
Not standard elbow

- Standard length:
 - Copper version: L1=0.35m L2=0.50m L3=0.45m
 - Aluminum version: L1=0.35m L2=0.50m L3=0.45m



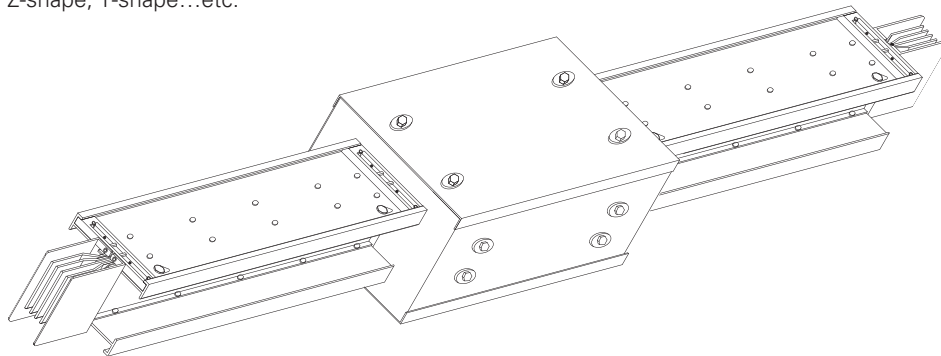
T-shape vertical edge elbow

- Standard length:
 - Copper version: L1/L2=0.50m
 - Aluminum version: L1/L2=0.50m L3=0.50m

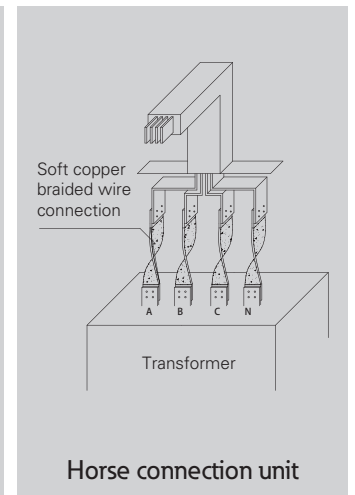
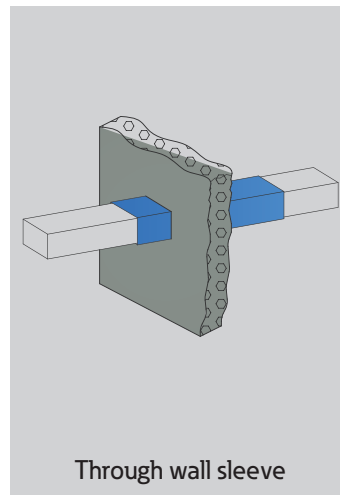
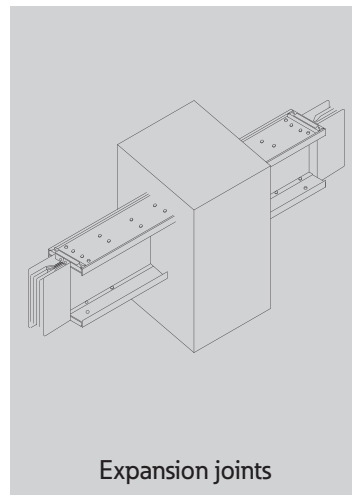
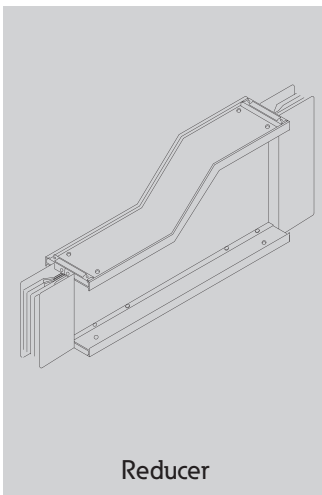


Transfer busduct

Available in L-shape, Z-shape, T-shape...etc.

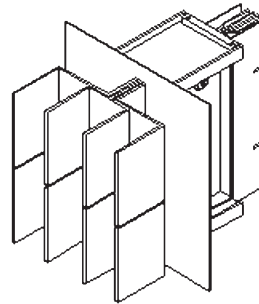
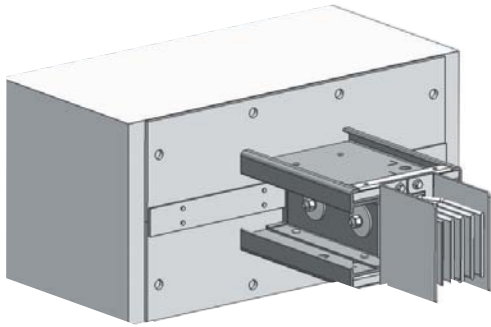


Listed, not limited to the following devices



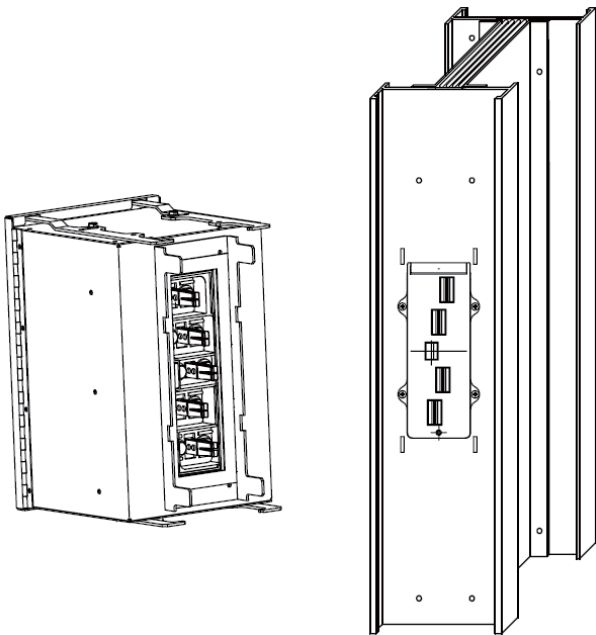
Key Components

Terminal



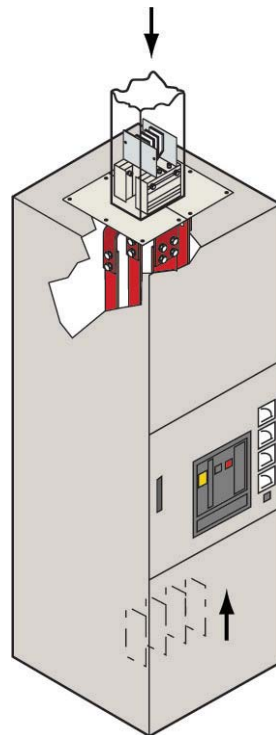
Tap-off unit

- Eaton NZM MCCB integrated tap-off
- The safety double interlock structure allows hot plugging
- Easy plug-in socket. Offering IP3X or higher protection for hot plugging
- Advanced T-shape plug improved thermal dissipation and current carrying capacity, so as to ensure the dynamic thermal stability



Connection to LV switchgear

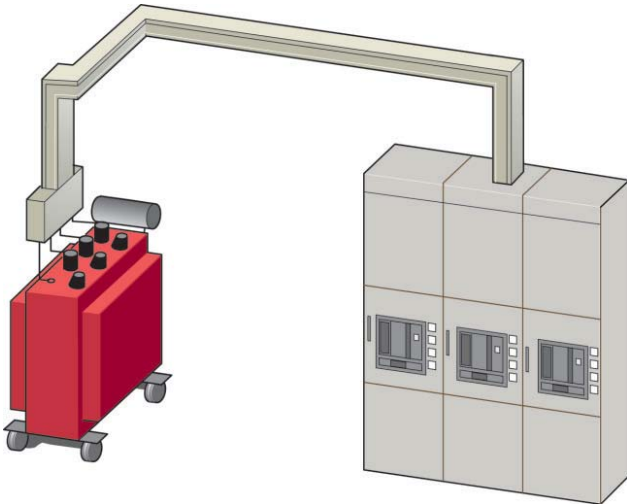
We offers specialized terminal, connection units as well as customized design for switchgear connection with XAP series busduct system. Can be either top or bottom connected with the rated current up to 6300A.



Key Components

Connection to transformers

The Copper type XAP busduct provides flexible connection with various transformers up to 6300A with minimal effects of transformer vibration. We also offer customized design to ensure the minimized length and time of connection. The unique design for top connection units maximize the operational safety and protection level.



Single-bolt

Discard the traditional design. use a single bolt clamping, making assembly fast and reliable. Its speed of assembling is 1 time faster than that of conventional joint.

Using dual-head torque bolt to ensure the pressure required for connection; Matched with a specially-crafted disk spring, to ensure the sustained pressure between connection contact surfaces.

Equipped with temperature indicator module. to remind maintenance for too high temperature rising or system fault.

Connecting busbar section is above 1.2 times than that of busbar trunking, meanwhile. contact surface is double sided lapping, effectively reducing contact resistance.



Safe & reliable tapping units

Structure of bi-metal pins, silver plated, ensuring lasting contact pressure and low contact resistance. Equipped with safe interlocking mechanism. plug-in box can not be switched on/off when it is not in place, effectively avoiding on-load plugging.

Phase-dislocation proof design, ensuring correct plugging. An effective electrical isolation is processed to all live parts of plug-in box, when installing Plug-in box. its grounding line will be connected before phase line, while for disassembling, grounding wire will be last disconnected.



Technical Data

Copper Range

I_n	Size W x D	I_{pk} (kA)	I_{cw} (kA)	Cross-sectional area of protective conductor A (mm ²)	R20 (mΩ/m) (20 °C)	X20 (mΩ/m) (20 °C)	Z20 (mΩ/m) (20 °C)	Voltage drop (cosφ=0.9) (V/m)	Voltage loss / 100 meter (100%)
400A	142x113	63	30	1918	0.132	0.037	0.137	0.093	0.025
630A	142x113	63	30	1918	0.099	0.032	0.104	0.112	0.03
800A	142x113	63	30	1918	0.079	0.028	0.084	0.116	0.03
1000A	142x128	63	30	2012	0.061	0.024	0.066	0.113	0.03
1250A	142x143	63	30	2111	0.049	0.022	0.054	0.117	0.031
1600A	142x178	143	65	2340	0.034	0.018	0.039	0.107	0.028
2000A	142x213	143	65	2640	0.026	0.015	0.03	0.104	0.027
2500A	142x263	143	65	3181	0.02	0.012	0.023	0.099	0.026
3150A	142x357	143	65	4544	0.016	0.01	0.018	0.1	0.026
4000A	142x437	220	100	5223	0.012	0.007	0.014	0.095	0.025
5000A	142x537	220	100	6343	0.009	0.004	0.01	0.087	0.023
6300A	142x615	264	100	6763	0.007	0.004	0.006	0.023	0.023

Aluminum Range

I_n	Size W x D	I_{pk} (kA)	I_{cw} (kA)	Cross-sectional area of protective conductor A (mm ²)	R20 (mΩ/m) (20 °C)	X20 (mΩ/m) (20 °C)	Z20 (mΩ/m) (20 °C)	Voltage drop (cosφ=0.9) (V/m)	Voltage loss / 100 meter (100%)
250A	142x113	63	30	1918	0.195	0.032	0.197	0.131	0.034
400A	142x113	63	30	1918	0.156	0.028	0.158	0.166	0.044
630A	142x128	63	30	2012	0.12	0.024	0.122	0.164	0.043
800A	142x143	63	30	2111	0.097	0.022	0.1	0.168	0.044
1000A	142x178	63	30	2340	0.068	0.018	0.07	0.148	0.039
1250A	142x213	105	50	2640	0.052	0.015	0.054	0.147	0.039
1600A	142x263	105	50	3181	0.039	0.012	0.041	0.139	0.037
2000A	142x337	105	50	4430	0.034	0.01	0.035	0.152	0.04
2500A	142x407	176	80	5018	0.026	0.008	0.027	0.146	0.038
3150A	142x507	176	80	6101	0.019	0.005	0.02	0.136	0.036
4000A	142x567	176	80	6585	0.016	0.003	0.017	0.14	0.037

Busduct Weight (per meter)

Copper Range B.P.(KG)

Aluminum Range B.P.(KG)

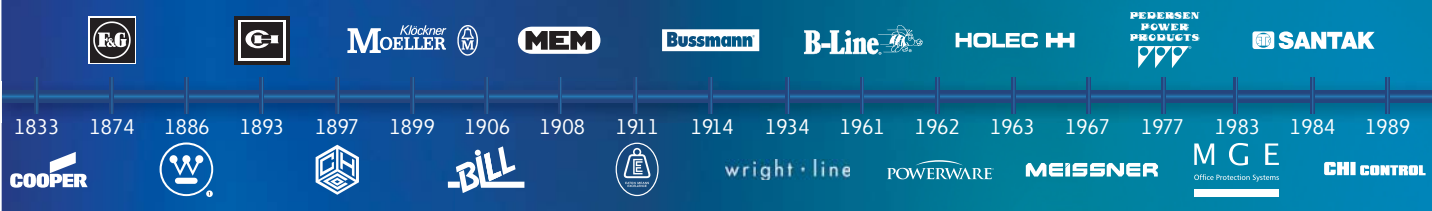
Current rating	Copper Range B.P.(KG)			Aluminum Range B.P.(KG)		
	4 bar 3-phase	5 bar 3-phase (PE housing)	5 bar 3-phase	4 bar 3-phase	5 bar 3-phase (PE housing)	5 bar 3-phase
250A	/	/	/	9.1	9.2	9.5
400A	12.3	12.4	13.2	9.6	9.7	10
630A	14	14.1	15.1	10.8	10.9	11.3
800A	15.7	15.8	17.1	12	12.1	12.7
1000A	18.8	18.9	20.5	14.8	14.9	15.8
1250A	21.8	21.9	24	17.9	18	19.1
1600A	29	29.1	32.1	22.5	22.6	24.2
2000A	36.4	36.5	40.4	29	29.2	31
2500A	47.1	47.2	52.4	34.8	35	37.3
3150A	61.1	61.3	67.8	44	44.2	47.4
4000A	77.8	78	86.7	50.2	50.4	54
5000A	99.4	99.6	110.9	/	/	/
6300A	129.4	129.6	142.9	/	/	/

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Electrical Sector Asia Pacific

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