PSS

POWER SYSTEM SOLUTIONS

BY ALTAWAKOL ELECTRIC

BUSWAY

PRODUCT CATALOG

Reliable Power. Intelligent Distribution.

Engineered to Power Tomorrow.



Safety & Protection

Easy Installation

High Power



PSS POWER SYSTEM SOLUTIONS

BY ALTAWAKOL ELECTRIC

www.pss-altawakol.com

Built to Power

From ambitious projects to demanding environments, busway delivers the power distribution solutions to keep performance at its peak. Engineered with innovation and built with confidence, busway powers progress.

PSS POWER SYSTEM SOLUTIONS

BY ALTAWAKOL ELECTRIC

PSS GROUP IN NUMBERS



Power System Solutions (PSS)

Established in 2016 as a brand of Al Tawakol Group, Power System Solutions (PSS) has grown into a trusted Egyptian manufacturer of low-voltage busway systems and advanced power distribution solutions.

Built on a strong foundation of engineering expertise, modern manufacturing capabilities, and rigorous quality standards, PSS delivers reliable and high-performance solutions tailored to the evolving requirements of commercial, industrial, and infrastructure projects.

Designed and manufactured in Egypt, our busway systems are compliant with IEC 61439 standards and engineered to provide safe, efficient, flexible, and dependable power distribution—supporting the demanding electrical requirements of today's projects while being built for the needs of tomorrow.

10+
Years of Experience

3
Active Factories

20,000m²
Enclosed Space

1
R&D Center



INDEX

CHAPTER 1 01 - 10

Company Profile: About Us and Our Products

CHAPTER 2 11

Busway Features

CHAPTER 3 12 - 15

Busway Power Flow System

CHAPTER 4 16 - 27

Fittings: Design and Dimensions

CHAPTER 5 28 - 29

Plug-In Riser: Standard Dimensions

CHAPTER 6 30 - 32

Tap-Off Units: Design, Ratings and Accessories



CHAPTER 7 33

Smart Busway Temperature Monitoring System

CHAPTER 8 34 - 35

Design Guide

CHAPTER 9 36

Certificates

CHAPTER 10 37

Where Quality Is Proven

CHAPTER 11 38 - 40

Temperature Derating

CHAPTER 12 41

Voltage Drop & Short-Circuit

OUR VISION & FUTURE

Since its establishment, PSS has continued to develop with a clear vision: to build a strong Egyptian manufacturing platform capable of delivering high-quality electrical distribution solutions to an increasingly demanding market. Our growth is driven by continuous investment in people, technology, manufacturing capabilities, and product development, allowing us to expand our capabilities while maintaining the quality and reliability expected from a modern electrical equipment manufacturer.

We are committed to building a long-term future based on continuous improvement, responsible manufacturing, and strong relationships with our customers and partners. As electrical infrastructure continues to evolve, PSS is focused on developing solutions that support the changing requirements of modern buildings, industrial facilities, infrastructure, and critical applications. Through ongoing development of our products, processes, and capabilities, we aim to strengthen our position as a trusted regional manufacturer and contribute to the advancement of reliable electrical power distribution.






Engineering Excellence

Engineering is at the core of every PSS solution. We work closely with consultants, contractors, panel builders, and project owners to develop busway systems tailored to each project's electrical and installation requirements.

Before any system is manufactured, our engineers evaluate load capacity, short-circuit withstand performance, voltage drop, routing, and future expansion requirements to ensure optimum system performance and full compliance with IEC 61439.

Whether supplying a transformer-to-switchboard connection, a horizontal distribution network, or a multi-floor vertical riser, PSS provides coordinated engineering support from concept through installation.

Manufacturing with Confidence

Manufactured in Egypt using precision production processes and rigorous quality control, every PSS busway system is built to deliver dependable performance and consistent quality.

By combining local manufacturing with internationally recognized engineering standards, we provide customers with reliable solutions, responsive technical support, and competitive lead times.

Whether powering a commercial building, an industrial facility, or a large-scale infrastructure project, PSS delivers engineered busway systems that combine performance, safety, and reliability for modern electrical power distribution



- **ISO 9001 :** 2015 Quality Management
- **ISO 10002:** 2014 Customer Satisfaction Management
- **ISO 14001:** 2015 Environmental Management
- **ISO/IEC 27001:** 2013 Information Security Management Systems
- **ISO 50001:** 2018 Energy Management System

Power System Solutions

As power distribution requirements continue to evolve, PSS remains focused on innovation, product development, and continuous improvement. By investing in engineering expertise, advanced manufacturing technologies, and rigorous quality assurance, we continuously enhance our solutions to meet the growing demands of modern electrical infrastructure. Our objective is to build long-term partnerships by delivering reliable products, responsive technical support, and engineered solutions that provide lasting value throughout every stage of a project's lifecycle.

CATALOG NUMBERING SYSTEM

PSS	IISC	08	P	T	40P	55	SF

01 Company Name

PSS

02 Busway Type

CODE
IISC
IISA

03 Rated Current

CODE	Rated current
08	800A
10	1000A
12	1250A
16	1600A
20	2000A
25	2500A
32	3200A
40	4000A
50	5000A
63	6300A

04 Insulation

CODE	Insulation
P	PET
E	Epoxy

05 Plating

CODE	Plating
S	Silver contact
T	Tin contact
TS	Tin Bar & Silver

06 Polarity

CODE	Polarity
40P	4-Wire
45P	4.5-Wire
50P	5-Wire
60P	6-Wire

07 IP

CODE	Description
54-55	Plug-in & Tap-Off Indoor
55-65	Feeder
66	Feeder W/ Canopy Out/Indoor

08 Item Type

CODE	Item Type
FS	Flange Straight
FT	Flange Transformer
FE	Flange Elbow Edgewise
FF	Flange Elbow Flatwise
SF	Straight Feeder
SP	Straight Plug In
EE	Elbow Edgewise
EF	Elbow Flatwise
ZE	Z-Unit Edgewise
ZF	Z-Unit flatwise
OUL	Offset Edgewise-Up-Left
OUR	Offset Edgewise-Up-Right
TU	Tee Unit
XU	Cross Unit
TOU	Tap-Off Unit
EX	Expansion Unit
RE	Reducer
CB	Cable Box
JP	Joint Pack
EC	End Cap
FX	Flexible Connection

Sample Orders

CODE	Description
PSSIISC08PT40P55SF	Copper Conductor, 800A,PET Insulated, Tin Plating, 4-WIRE,IP55, Straight Feeder
PSSIISA12PT40P55EF	Bi-metal Conductor, 1250A,PET Insulated, Tin Plating, 4-WIRE,IP55, Elbow Flatwise
PSSIISC16PT40P55CB	Copper Conductor, 1600A,PET Insulated, Tin Plating, 4-WIRE,IP55, Cable Box
PSSIISC08PT40P55FX	Copper Conductor, 800A,PET Insulated, Tin Plating, 4-WIRE,IP55, Flexible Connection

Note: Fire-rated insulation can be provided Using fire rated sheets upon request.

Our Products

Engineered for durability and versatility, the aluminum sheet enclosure combines a lightweight construction with excellent structural integrity. Designed to withstand demanding operating conditions, it provides reliable protection, ease of installation, and long-term performance.

01



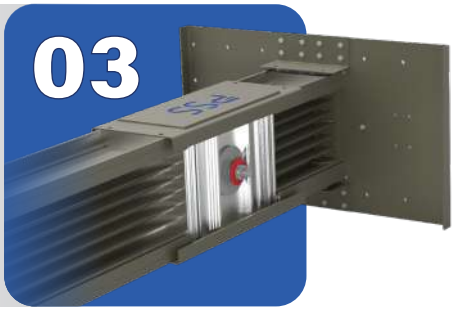


02

An air-insulated busway system with a robust extruded aluminum enclosure, designed to provide efficient heat dissipation, mechanical strength, and reliable power distribution. Available from 160A to 800A, it offers a compact and flexible solution for commercial, industrial, and infrastructure applications, combining ease of installation with dependable long-term performance.

Engineered with a finned extruded aluminum enclosure that provides excellent mechanical strength and enhanced natural heat dissipation. The robust design improves current-carrying performance while delivering a lightweight solution.

03





04

A fully encapsulated busway system designed for demanding power distribution environments, providing excellent resistance to water, moisture, dust, corrosion, and harsh operating conditions. Available from 800A to 5000A with protection up to IP68, it offers high mechanical strength, fire resistance, and reliable long-term performance for industrial, infrastructure, and critical applications.

Warranty Commitment

To maintain the highest standards of quality, reliability, and customer satisfaction, we provide a comprehensive warranty for all our products. Our warranty reflects our confidence in the quality of our materials, manufacturing processes, and rigorous quality-control procedures. We are committed to ensuring that every product delivers reliable and consistent performance throughout its intended service life, while providing our customers with the assurance and support they deserve.

Sandwich Type Products

IISC
Copper

Rated Current	800 A	1000 A	1250 A	1600 A	2000 A	2500 A	3200 A	4000 A	5000 A	6300 A
Enclosure	Aluminum									
Insulation Type	PET B/F						Epoxy B/F			
Frequency	50 / 60									
IP	55 / 65 / 66									
Voltage	Up to 1000 V									
Number of Conductors	Conductor Configuration									
	L1	L2	L3	N (100% Neutral)	2N (200% Neutral)	Isolated		Integrated		Earth (Housing)
						Earth	½ Earth	Earth	½ Earth	
3 Conductor	✓	✓	✓							✓
4 Conductor	✓	✓	✓	✓						✓
4 ½ Conductor	✓	✓	✓	✓			✓		✓	✓
5 Conductor	✓	✓	✓	✓		✓		✓		✓
6 Conductor	✓	✓	✓		✓					✓

IISA
Bi-metal

Rated Current	800 A	1000 A	1250 A	1600 A	2000 A	2500 A	3200 A	4000 A	5000 A	6300 A
Enclosure	Aluminum									
Insulation Type	PET B/F						Epoxy B/F			
Frequency	50 / 60									
IP	55 / 65 / 66									
Voltage	Up to 1000 V									
Number of Conductors	Conductor Configuration									
	L1	L2	L3	N (100% Neutral)	2N (200% Neutral)	Isolated		Integrated		Earth (Housing)
						Earth	½ Earth	Earth	½ Earth	
3 Conductor	✓	✓	✓							✓
4 Conductor	✓	✓	✓	✓						✓
4 ½ Conductor	✓	✓	✓	✓			✓		✓	✓
5 Conductor	✓	✓	✓	✓		✓		✓		✓
6 Conductor	✓	✓	✓		✓					✓

BUSWAYS FEATURES

HIGH CURRENT CAPACITY
Availability in the standard range from 800A to 6300A.

HIGH RESISTANCE TO SHORT-CIRCUIT STRESSES
Compact dimensions enhance its resistance to short-circuit stresses.

MAXIMIZED SPACE UTILIZATION
Our busway system frees up valuable floor and ceiling space for other uses, unlike traditional cables.

WIDE SELECTION OF TAP-OFF BOXES
A wide selection of tap-off boxes that range from 16A up to 1600A, allowing you to locally protect and feed different types of loads by housing protective devices such as fuses and MCCBs.

LOW IMPEDANCE
Low circuit impedance helps control voltage drop and allows the installation of high-power electrical systems, even in confined spaces.

COMPACT & SPACE SAVING
Compact design for modern spaces. Sleek and streamlined, the busway system fits seamlessly into tight spaces while maintaining high functionality.

COMPLIANCE WITH STANDARDS
Compliance with the IEC 61439-1&6 standard.

QUICK & EASY INSTALLATION
Excellent performance, with quick, easy, and flexible installation and routing.

SUPERIOR SHORT-CIRCUIT RESISTANCE
Engineered compact dimensions enhance its resistance to short -circuit stresses and handle high fault currents without damage, ensuring safety and reliability in all conditions.

Circuit Integrity Under Fire Conditions
- IEC 60331
- BS 6397

HIGH AMBIENT TEMPERATURE
Referred to the average ambient temperature of 35 °C as required by the Standard. Available also for 50/55 °C average ambient temperature.

CERTIFIED BY ASTA
Our compact busway systems are fully certified by ASTA, ensuring performance, safety, and reliability.

FIRE PERFORMANCE
Low Fire Load for Maximum Safety. Built with fire-resistant components, the system minimizes fire risks, offering unmatched safety for critical environments.

Verification of Fire Resistance in Buildings
- ISO 834
- DIN 4102-9
- EN-1363-1
- EN-1366-3

RELIABLE PROTECTION
Insulation Material: Epoxy Casing: Aluminum
- IP Protection: IP55/IP66
- Grounding/Earthing

Test Procedure for Seismic Classification of Electrical Equipment
- IEC 60068-3-3
- IEC 60068-2-57
- IEC 60980

MAINTENANCE-FREE OPERATION
Designed to be self-sufficient, reducing the need for regular maintenance and lowering long-term operational costs.

ECONOMICAL SOLUTION
Lower TCO (Total Cost of Ownership), reduced installation time, and minimal energy losses combine for excellent cost efficiency.

Distribution & Horizontal Applications

The following preliminary data should be available before starting the electrical distribution system design:

- Load locations, quantities, types, and estimated power ratings.
- Transformer capacity, short-circuit level, and demand/utilization factor.
- Interface and coordination with other building services.
- Planned routing according to the project layout.
- Coordination with existing or parallel electrical distribution systems, where applicable.
- Selection of suitable support and suspension methods.

Utilization Factor (α):

The Utilization factor is typically around 0.8, 0.85, or 0.9, or as specified by project requirements.

Voltage Drop:

Practical voltage drop calculations, including the required values, formulas, and simplified calculation methods, are provided in the technical characteristics tables on pages 34–35.

Rated Current:

The operating current is determined using the following equation:

$$I_B = \frac{P.\alpha}{\sqrt{3}.U.\cos\varphi}$$

I_B = Operating current (A)
P = Connected load (W)
α = Utilization factor
U = Supply voltage (V)

Selection Guidelines:

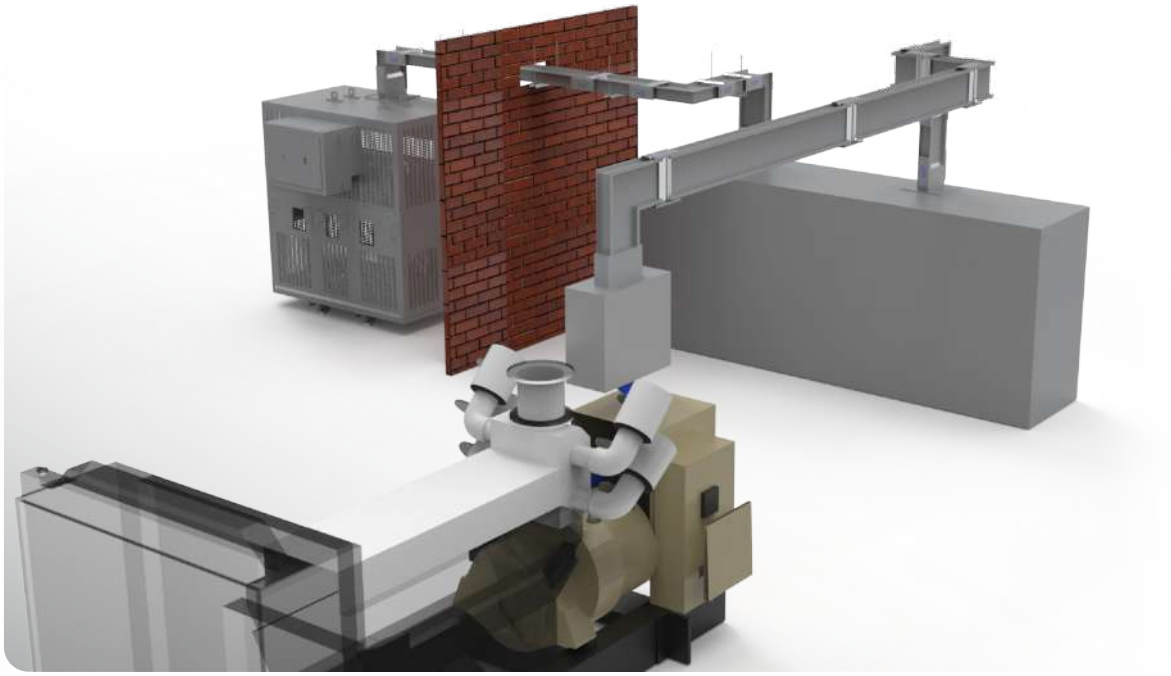
- The busway current rating should be selected to be equal to or greater than the calculated operating current (I_B).
- After verifying the voltage drop, if the selected rating does not satisfy the required limits, the next higher current rating should be selected.

Short-Circuit:

Details of the tested short-circuit performance are available in the technical characteristics tables on pages 34–35.

Busway Installation Plan:

Our engineering department is available to assist in the preparation of customized busway installation layouts and project drawings upon request.



Riser & Vertical Applications

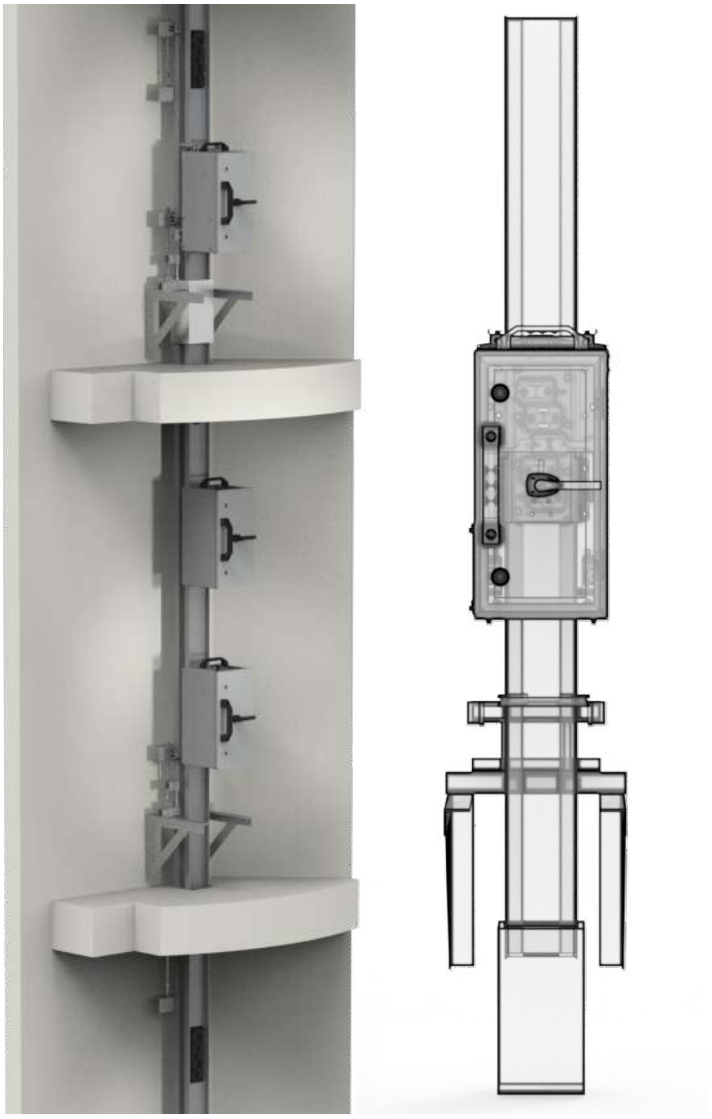
Due to variations in building structures, every vertical installation should be designed to suit the specific project requirements.

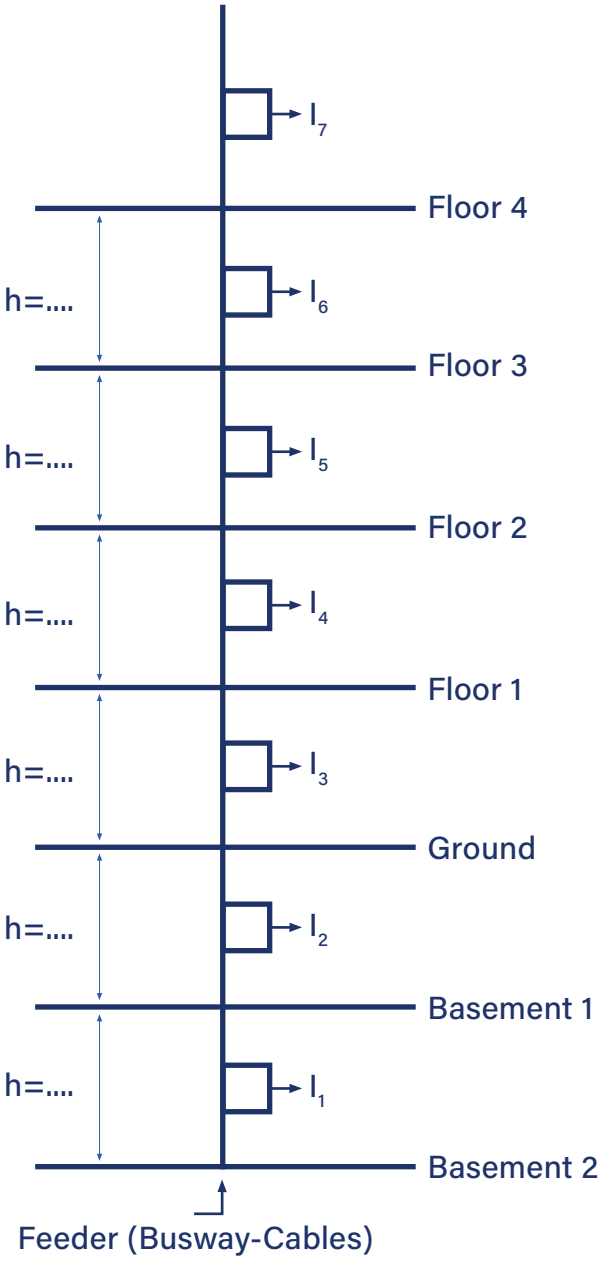
The information provided in this section serves as a guide for developing an efficient and reliable vertical application design.

Project Design Information:

To ensure proper system design, please provide the following details to our Projects & Design Department:

- Floor location and dimensions where the vertical system will be installed.
- Number of floors and the thickness of each slab or ceiling.
- Estimated electrical load for every floor.
- Preferred vertical distribution method (Busway System or Cable System).





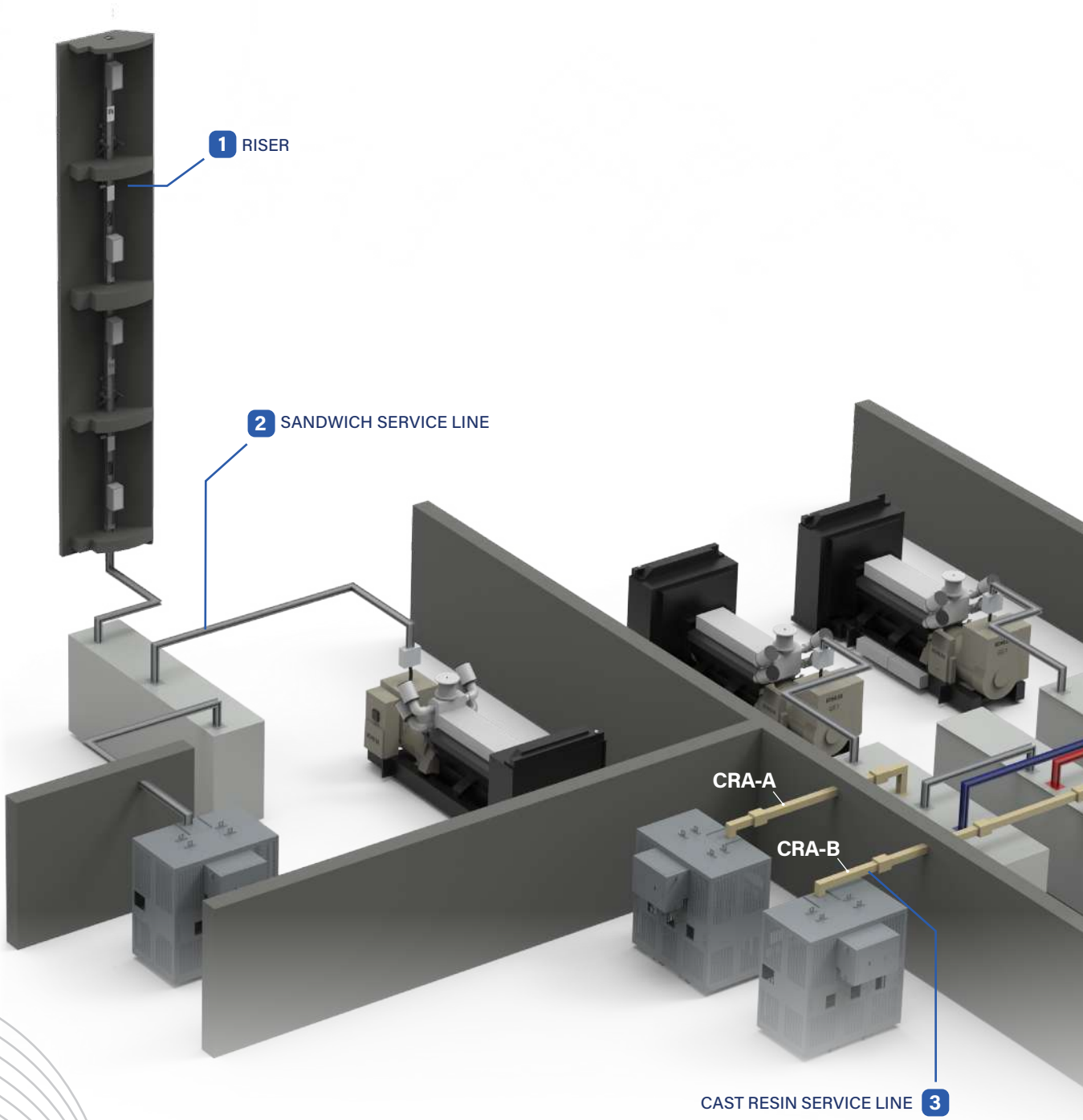
BUSWAY SYSTEM

POWER DISTRIBUTION SOLUTION

HIGH RELIABILITY
Ensures uninterrupted power for critical loads

SCALABLE DESIGN
Easy to expand to meet future requirements

EASY INSTALLATION
Prefabricated systems reduce on-site time



POWER FLOW

UTILITY SUPPLY → TRANSFORMER → MAIN LV SWITCHBOARD → BUSWAY SYSTEM → TAP-OFF UNITS → SERVER RACKS

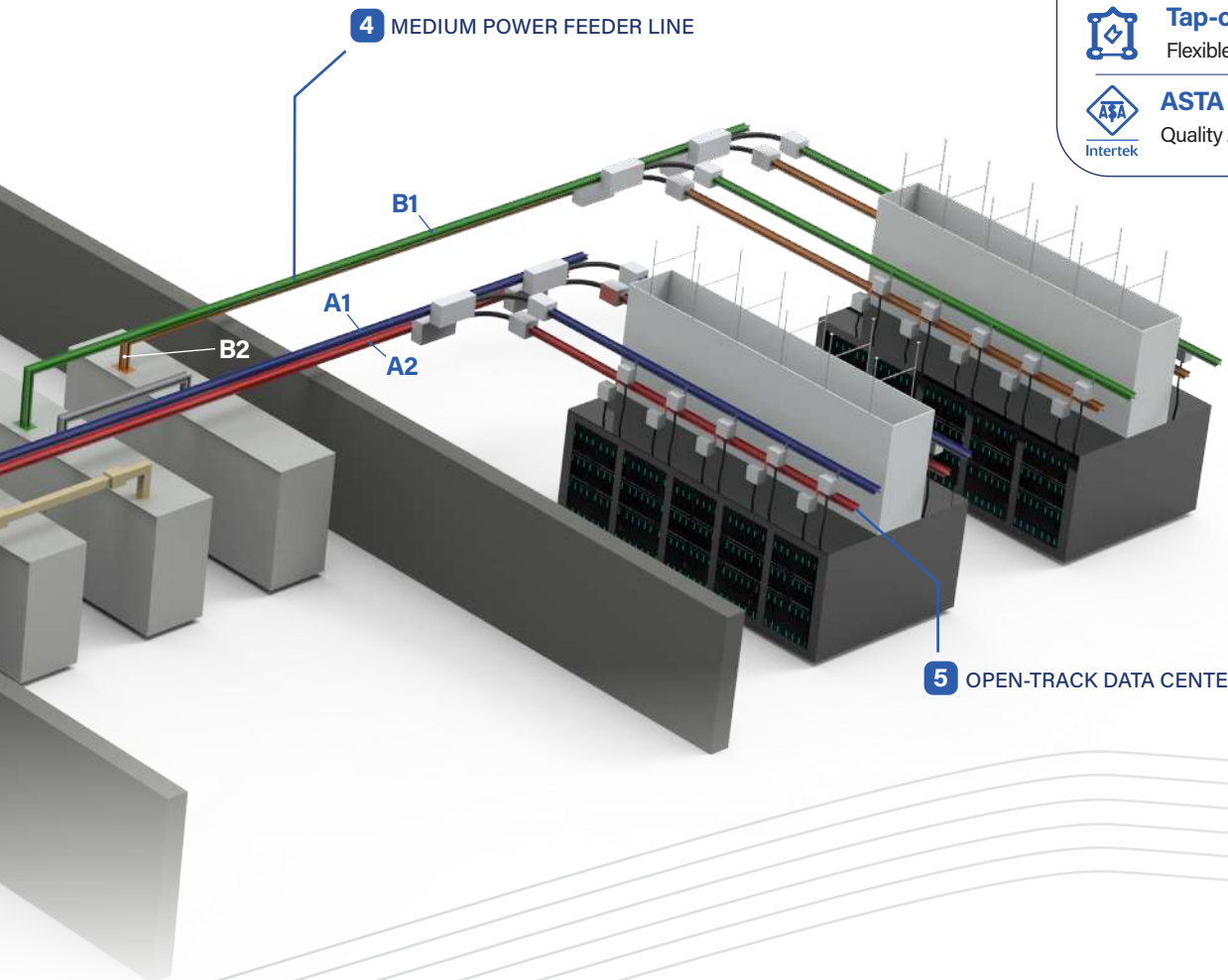
SMART MONITORING
Real-time monitoring for maximum uptime

HIGH AVAILABILITY
Supports n+1 and 2N power configurations

SAFE & COMPLIANT
Designed & tested to IEC 61439-6

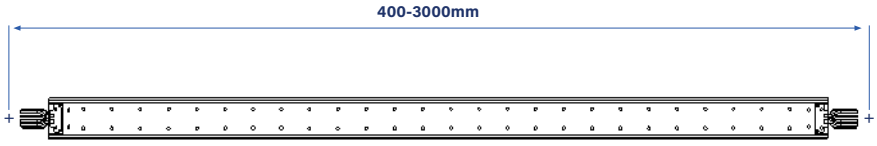
SYSTEM HIGHLIGHTS

- **Up to 6300A** System Rating
- **IEC 61439-1 & 6** Fully Type Tested
- **Copper / Aluminum** Conductor Options
- **IP55/IP65/IP66/IP68** Degree of Protection
- **Tap-off up to 1600A** Flexible Distribution
- **ASTA Certified** Quality Assured

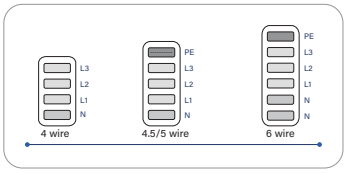


STRAIGHT FEEDER

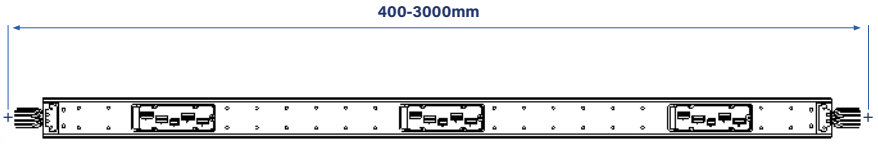
Standard-Special



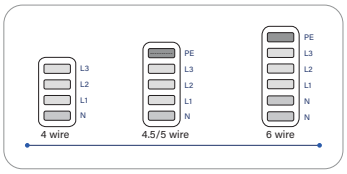




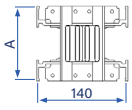
Plug-in (Standard-Special)

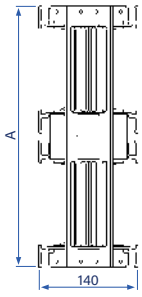


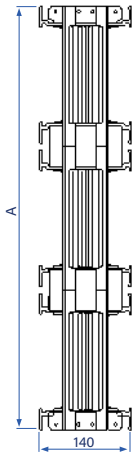




Outer Busbar Dimensions



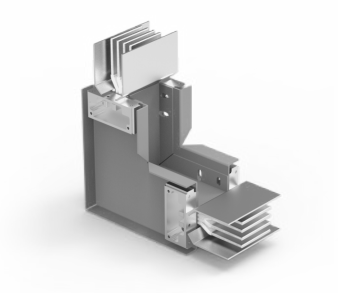


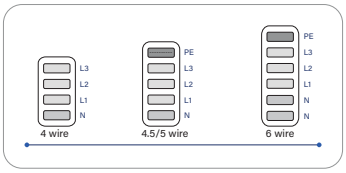


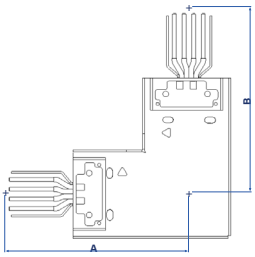
AL	RATED CURRENT	800	1000	1250	1600	2000	2500	3200	4000	5000	6300
	A (mm)	115	140	160	210	260	370	430	530	650	860
	No. of stacks	1	1	1	1	1	2	2	2	3	3
CU	RATED CURRENT	800	1000	1250	1600	2000	2500	3200	4000	5000	6300
	A (mm)	140	160	180	210	260	290	430	530	590	800
	No. of stacks	1	1	1	1	1	1	2	2	2	3

FITTINGS

Flat Elbow

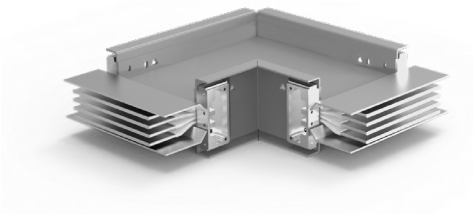


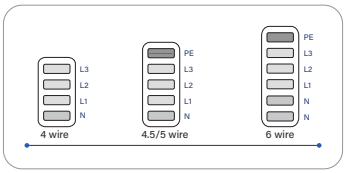


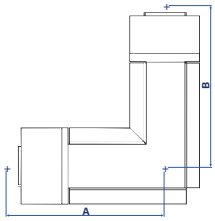


AL - CONDUCTOR	RATED CURRENT (A)	800	1000	1250	1600	2000	2500	3200	4000	5000	6300
A	(mm)	300	300	300	300	300	300	300	300	300	300
B	(mm)	300	300	300	300	300	300	300	300	300	300
CU - CONDUCTOR	RATED CURRENT (A)	800	1000	1250	1600	2000	2500	3200	4000	5000	6300
A	(mm)	300	300	300	300	300	300	300	300	300	300
B	(mm)	300	300	300	300	300	300	300	300	300	300

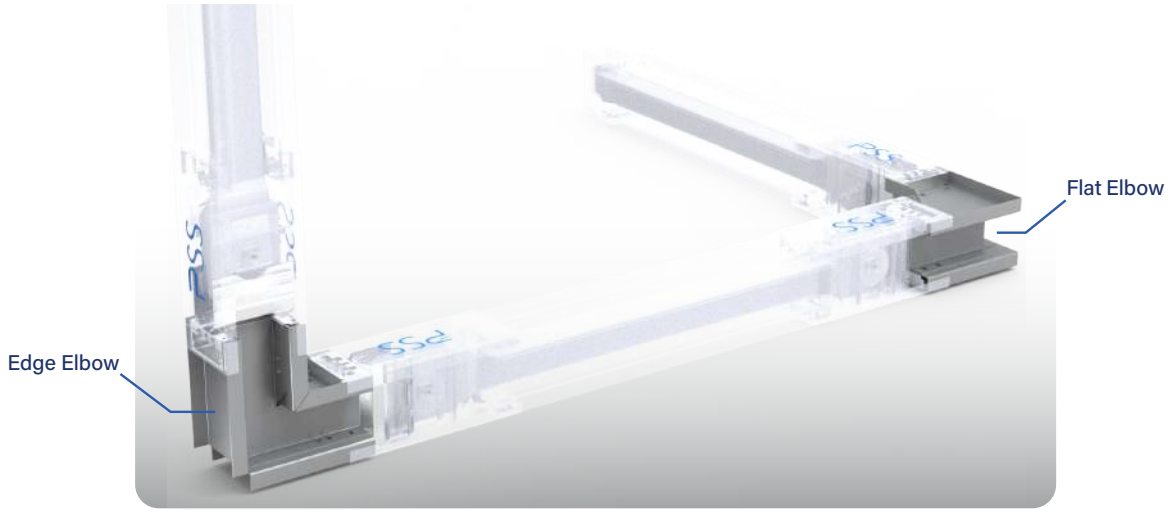
Edge Elbow





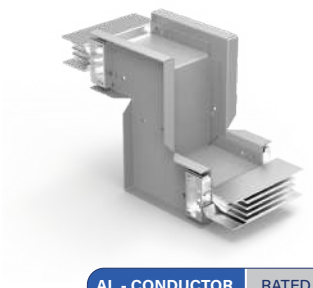


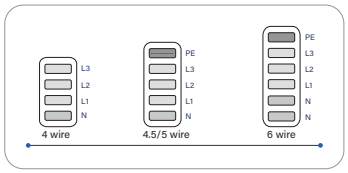
AL - CONDUCTOR	RATED CURRENT (A)	800	1000	1250	1600	2000	2500	3200	4000	5000	6300
A	(mm)	298	310	320	345	370	430	460	510	575	680
B	(mm)	298	310	320	345	370	430	460	510	575	680
CU - CONDUCTOR	RATED CURRENT (A)	800	1000	1250	1600	2000	2500	3200	4000	5000	6300
A	(mm)	310	320	330	345	370	385	460	510	540	650
B	(mm)	310	320	330	345	370	385	460	510	540	650

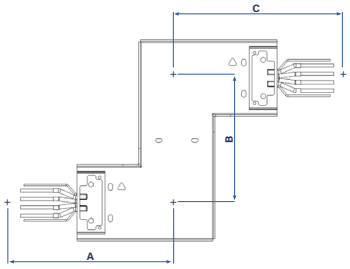


FITTINGS

Flat Z Unit

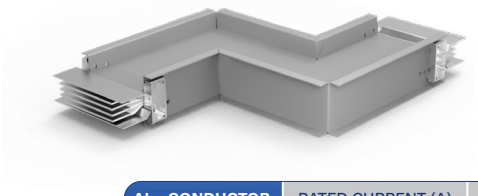


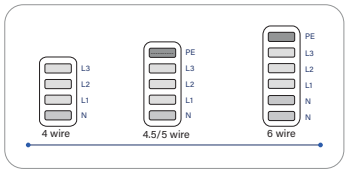


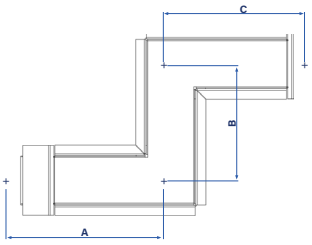


AL - CONDUCTOR	RATED CURRENT (A)	800	1000	1250	1600	2000	2500	3200	4000	5000	6300
A	(mm)	300	300	300	300	300	300	300	300	300	300
B	(mm)	140	140	140	140	140	140	140	140	140	140
C	(mm)	300	300	300	300	300	300	300	300	300	300
CU - CONDUCTOR	RATED CURRENT (A)	800	1000	1250	1600	2000	2500	3200	4000	5000	6300
A	(mm)	300	300	300	300	300	300	300	300	300	300
B	(mm)	140	140	140	140	140	140	140	140	140	140
C	(mm)	300	300	300	300	300	300	300	300	300	300

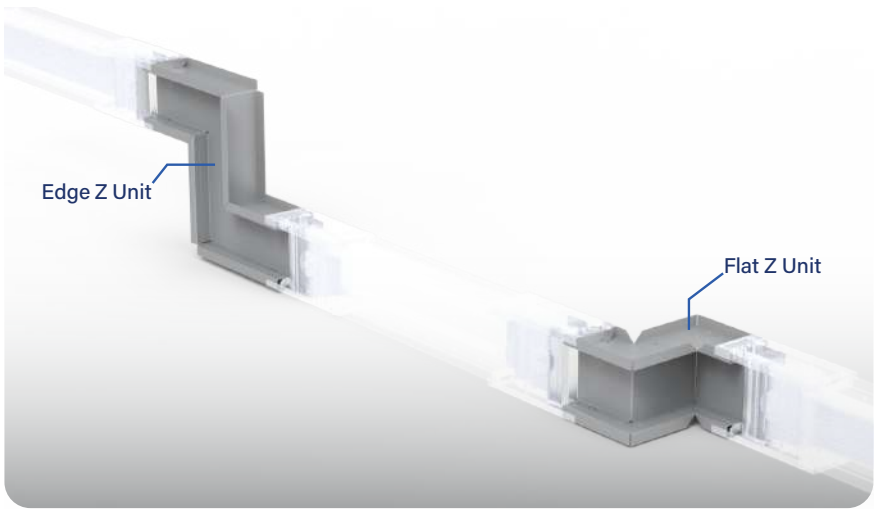
Edge Z Unit







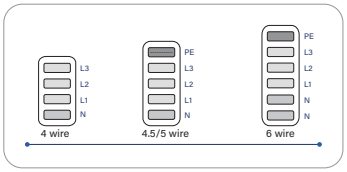
AL - CONDUCTOR	RATED CURRENT (A)	800	1000	1250	1600	2000	2500	3200	4000	5000	6300
A	(mm)	298	310	320	345	370	430	460	510	575	680
B	(mm)	170	170	170	170	170	170	170	170	170	170
C	(mm)	298	310	320	345	370	430	460	510	575	680
CU - CONDUCTOR	RATED CURRENT (A)	800	1000	1250	1600	2000	2500	3200	4000	5000	6300
A	(mm)	310	320	330	345	370	385	460	510	540	650
B	(mm)	170	170	170	170	170	170	170	170	170	170
C	(mm)	310	320	330	345	370	385	460	510	540	650

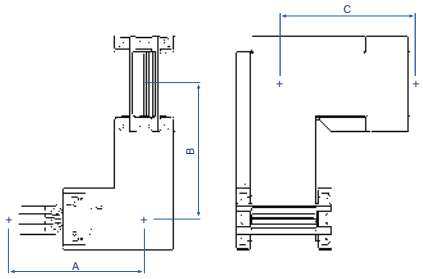


FITTINGS

Offset Up Left

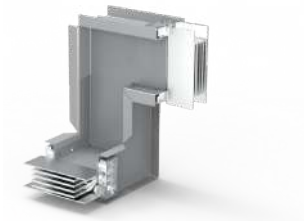


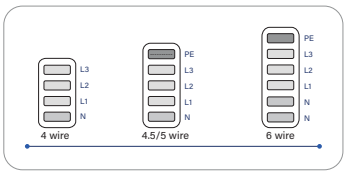


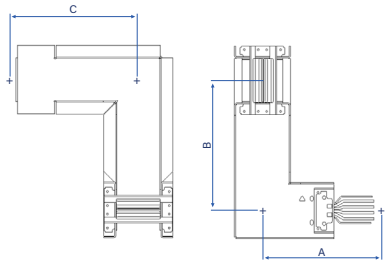


AL - CONDUCTOR	RATED CURRENT (A)	800	1000	1250	1600	2000	2500	3200	4000	5000	6300
A	(mm)	300	300	300	300	300	300	300	300	300	300
B	(mm)	298	310	320	345	370	430	460	510	575	680
C	(mm)	298	310	320	345	370	430	460	510	575	680
CU - CONDUCTOR	RATED CURRENT (A)	800	1000	1250	1600	2000	2500	3200	4000	5000	6300
A	(mm)	300	300	300	300	300	300	300	300	300	300
B	(mm)	310	320	330	345	370	385	460	510	540	650
C	(mm)	310	320	330	345	370	385	460	510	540	650

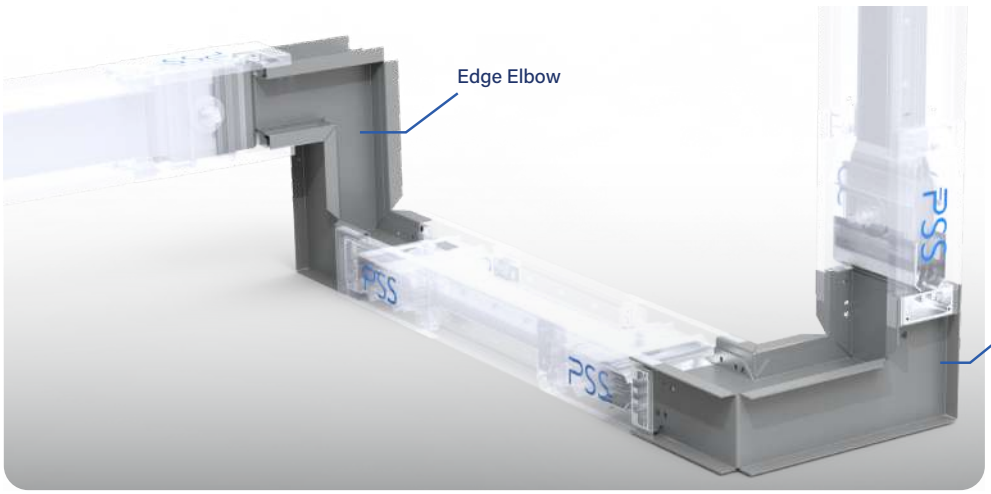
Offset Up Right





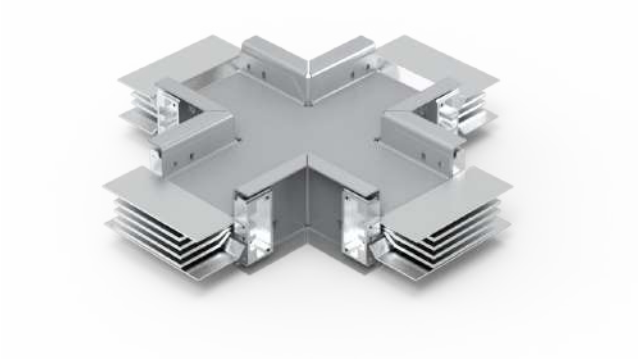


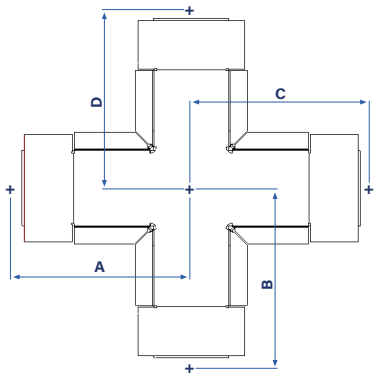
AL - CONDUCTOR	RATED CURRENT (A)	800	1000	1250	1600	2000	2500	3200	4000	5000	6300
A	(mm)	298	310	320	345	370	430	460	510	575	680
B	(mm)	298	310	320	345	370	430	460	510	575	680
C	(mm)	300	300	300	300	300	300	300	300	300	300
CU - CONDUCTOR	RATED CURRENT (A)	800	1000	1250	1600	2000	2500	3200	4000	5000	6300
A	(mm)	310	320	330	345	370	385	460	510	540	650
B	(mm)	310	320	330	345	370	385	460	510	540	650
C	(mm)	300	300	300	300	300	300	300	300	300	300

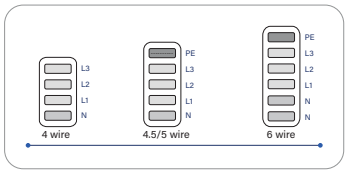


FITTINGS

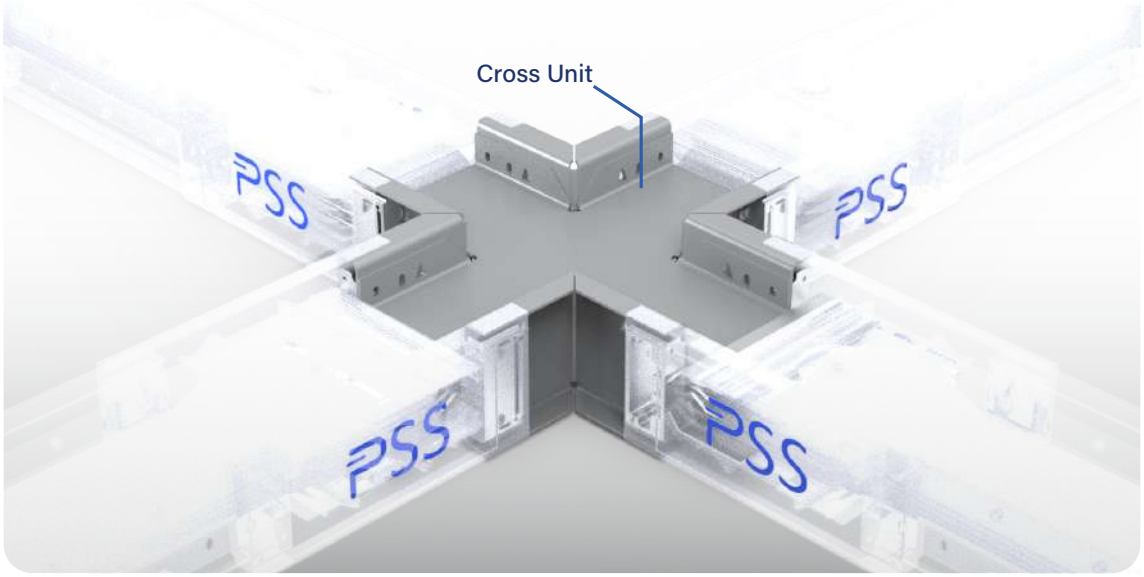
Cross Unit







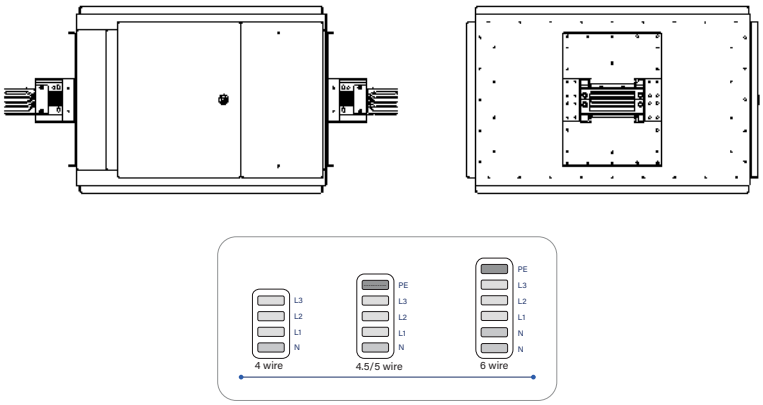
AL - CONDUCTOR	RATED CURRENT (A)	800	1000	1250	1600	2000	2500	3200	4000	5000	6300
A	(mm)	298	310	320	345	370	430	460	510	575	680
B	(mm)	298	310	320	345	370	430	460	510	575	680
C	(mm)	298	310	320	345	370	430	460	510	575	680
D	(mm)	298	310	320	345	370	430	460	510	575	680
CU - CONDUCTOR	**RATED CURRENT (A)**	**800**	**1000**	**1250**	**1600**	**2000**	**2500**	**3200**	**4000**	**5000**	**6300**
A	(mm)	310	320	330	345	370	385	460	510	540	650
B	(mm)	310	320	330	345	370	385	460	510	540	650
C	(mm)	310	320	330	345	370	385	460	510	540	650
D	(mm)	310	320	330	345	370	385	460	510	540	650



FITTINGS

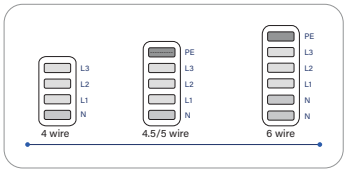
Reducer

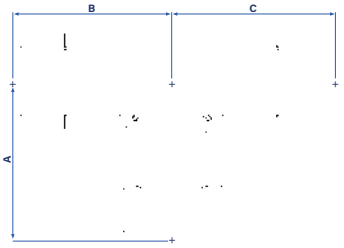




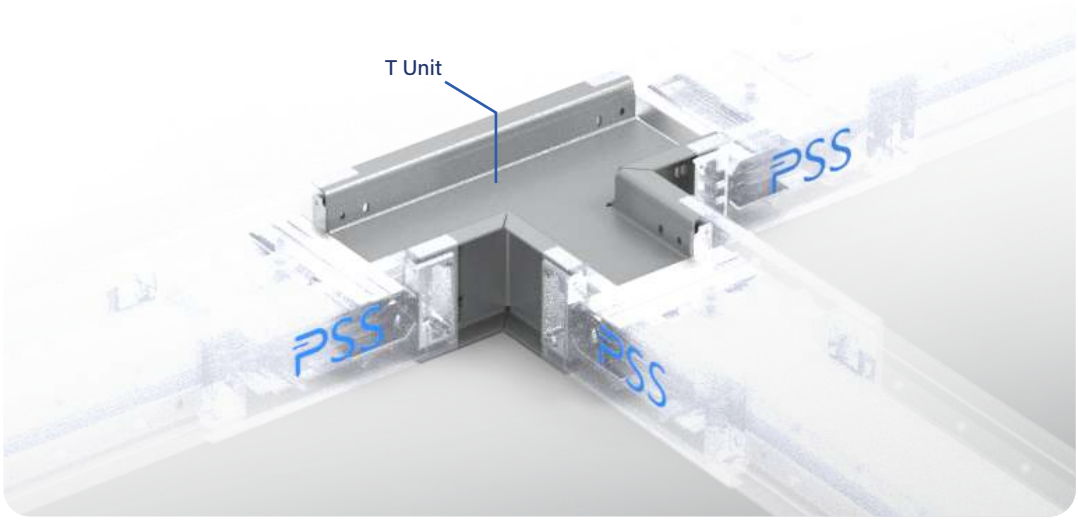
Tee Unit







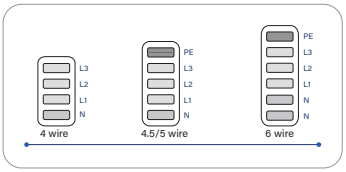
AL - CONDUCTOR	RATED CURRENT (A)	800	1000	1250	1600	2000	2500	3200	4000	5000	6300
A	(mm)	298	310	320	345	370	430	460	510	575	680
B	(mm)	298	310	320	345	370	430	460	510	575	680
C	(mm)	298	310	320	345	370	430	460	510	575	680
CU - CONDUCTOR	RATED CURRENT (A)	800	1000	1250	1600	2000	2500	3200	4000	5000	6300
A	(mm)	310	320	330	345	370	385	460	510	540	650
B	(mm)	310	320	330	345	370	385	460	510	540	650
C	(mm)	310	320	330	345	370	385	460	510	540	650

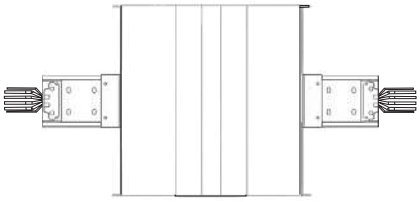


FITTINGS

Expansion Unit

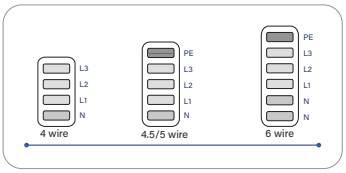


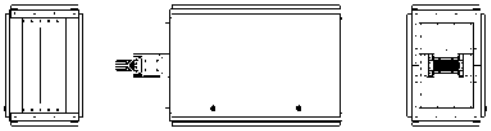




Cable Box Unit







End Cap





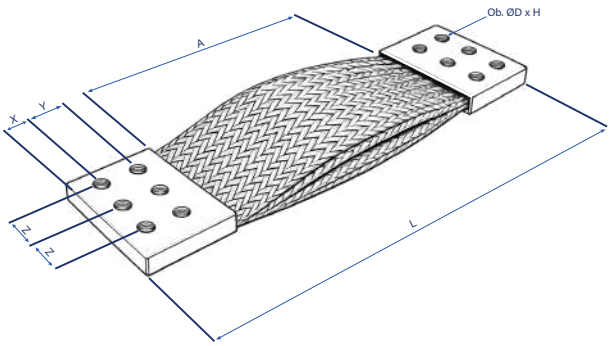
* **Note:** Used to close the busway line.

Flexible Connection



* **Note:** Dimensions are in accordance with the required specifications.

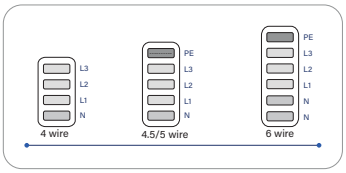
A =.....mm L =.....mm
X =.....mm Y =.....mm
Z =.....mm Ø =.....mm
H =.....mm

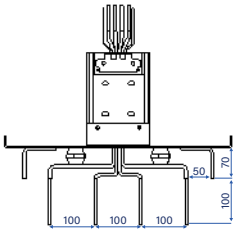


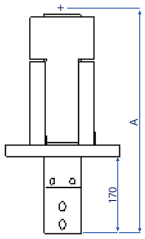
FITTINGS

Straight Flange



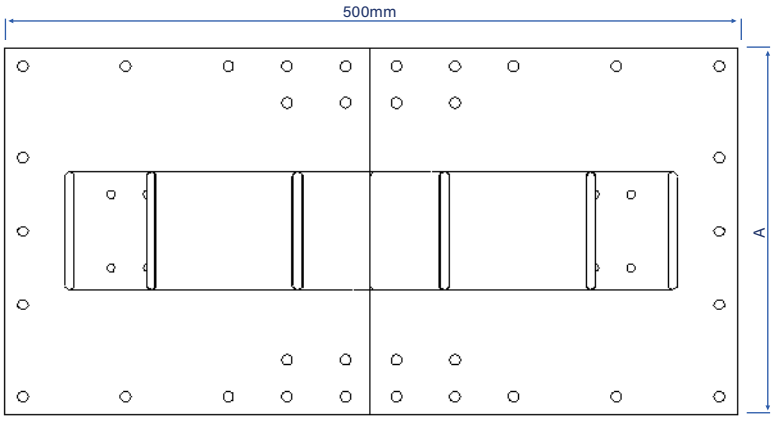




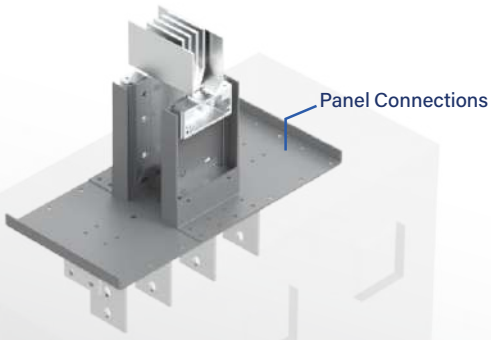


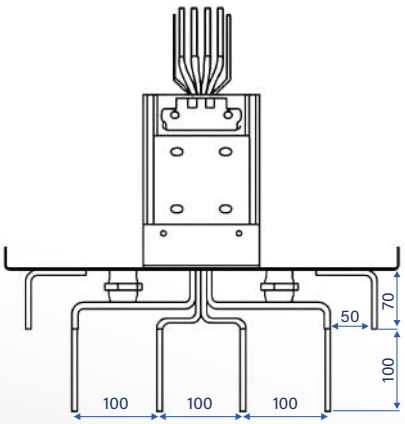
AL - CONDUCTOR	RATED CURRENT (A)	800	1000	1250	1600	2000	2500	3200	4000	5000	6300
A	(mm)	500	500	500	500	500	500	500	500	500	500
CU - CONDUCTOR	RATED CURRENT (A)	800	1000	1250	1600	2000	2500	3200	4000	5000	6300
A	(mm)	500	500	500	500	500	500	500	500	500	500

Panel Connections



	AL		CU	
Rated Current (A)	A (mm)	Stacks	A (mm)	Stacks
800	225	1	250	1
1000	250	1	270	1
1250	270	1	290	1
1600	320	1	320	1
2000	370	1	370	1
2500	480	2	400	1
3200	540	2	540	2
4000	640	2	640	2
5000	760	3	700	2
6300	970	3	910	3

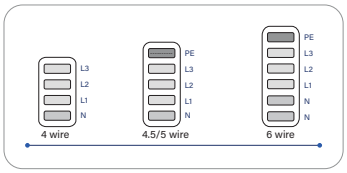


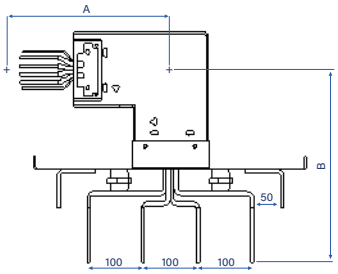


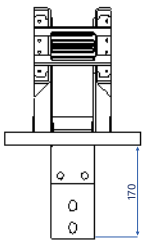
FITTINGS

Flat Elbow Flange





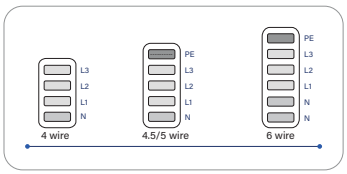


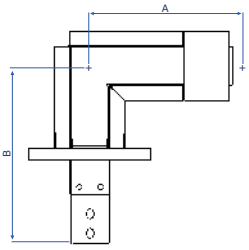


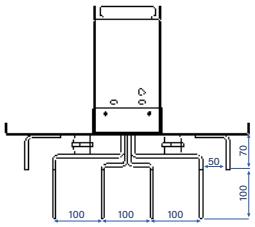
AL - CONDUCTOR	RATED CURRENT (A)	800	1000	1250	1600	2000	2500	3200	4000	5000	6300
A	(mm)	300	300	300	300	300	300	300	300	300	300
B	(mm)	353	353	353	353	353	353	353	353	353	353
CU - CONDUCTOR	RATED CURRENT (A)	800	1000	1250	1600	2000	2500	3200	4000	5000	6300
A	(mm)	300	300	300	300	300	300	300	300	300	300
B	(mm)	353	353	353	353	353	353	353	353	353	353

Edge Elbow Flange

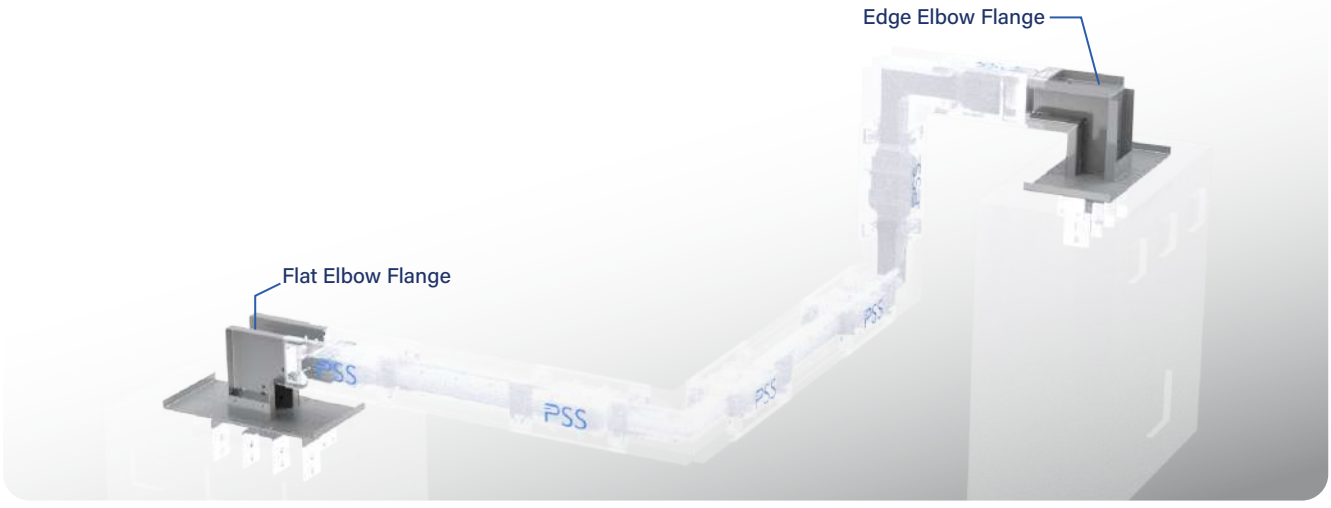






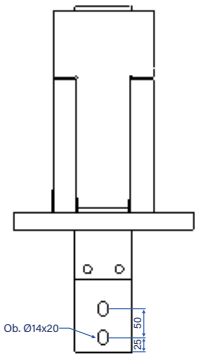


AL - CONDUCTOR	RATED CURRENT (A)	800	1000	1250	1600	2000	2500	3200	4000	5000	6300
A	(mm)	298	310	320	345	370	430	460	510	575	680
B	(mm)	351	363	373	398	423	483	513	563	628	733
CU - CONDUCTOR	RATED CURRENT (A)	800	1000	1250	1600	2000	2500	3200	4000	5000	6300
A	(mm)	310	320	330	345	370	385	460	510	540	650
B	(mm)	363	373	383	398	423	438	513	563	593	703

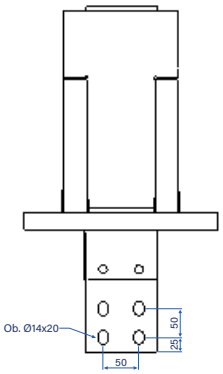


FITTINGS

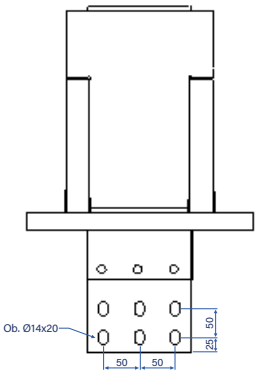
Panel Connections



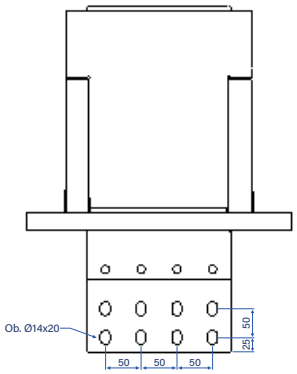
CONDUCTOR	RATED CURRENT (A)
AL	800
	1000
CU	800



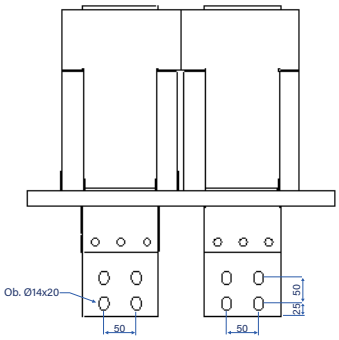
CONDUCTOR	RATED CURRENT (A)
AL	1250
CU	1000
	1250



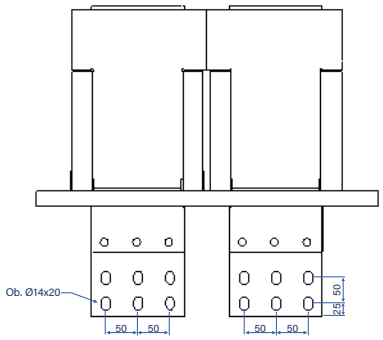
CONDUCTOR	RATED CURRENT (A)
AL	1600
CU	1600



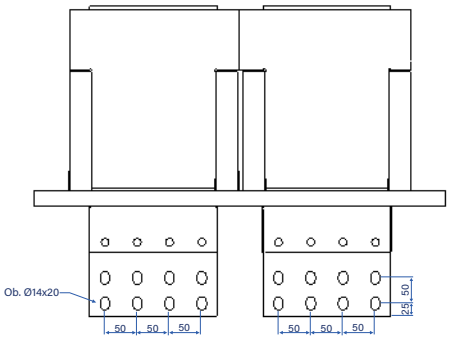
CONDUCTOR	RATED CURRENT (A)
AL	2000
CU	2000
	2500



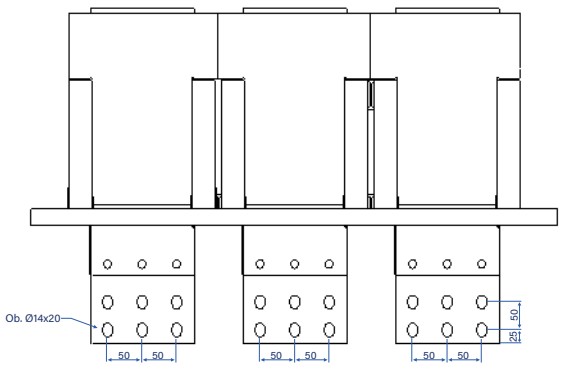
CONDUCTOR	RATED CURRENT (A)
AL	2500



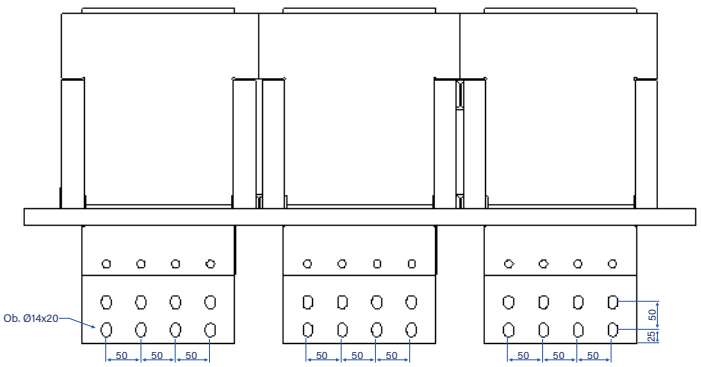
CONDUCTOR	RATED CURRENT (A)
AL	3200
CU	3200



CONDUCTOR	RATED CURRENT (A)
AL	4000
CU	4000
	5000



CONDUCTOR	RATED CURRENT (A)
AL	5000

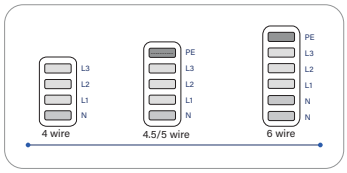


CONDUCTOR	RATED CURRENT (A)
AL	6300
CU	6300

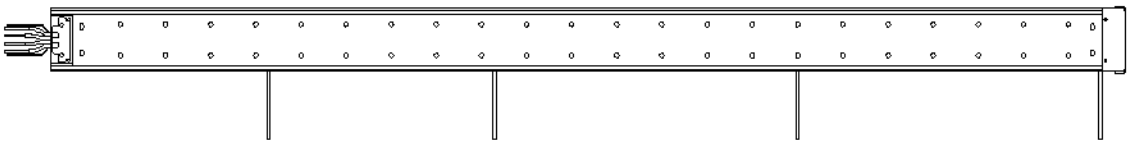
FITTINGS

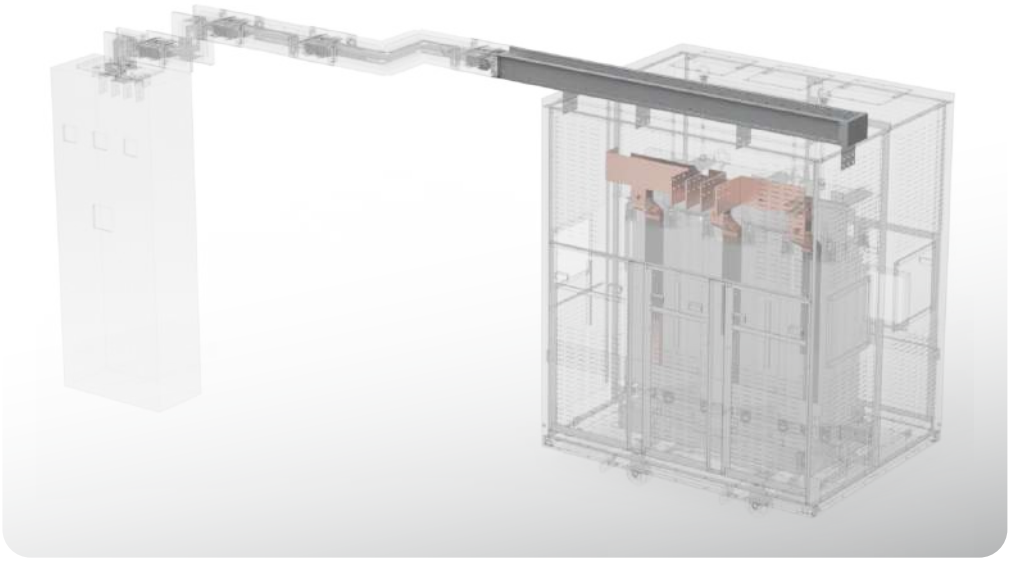
Transformer Flange











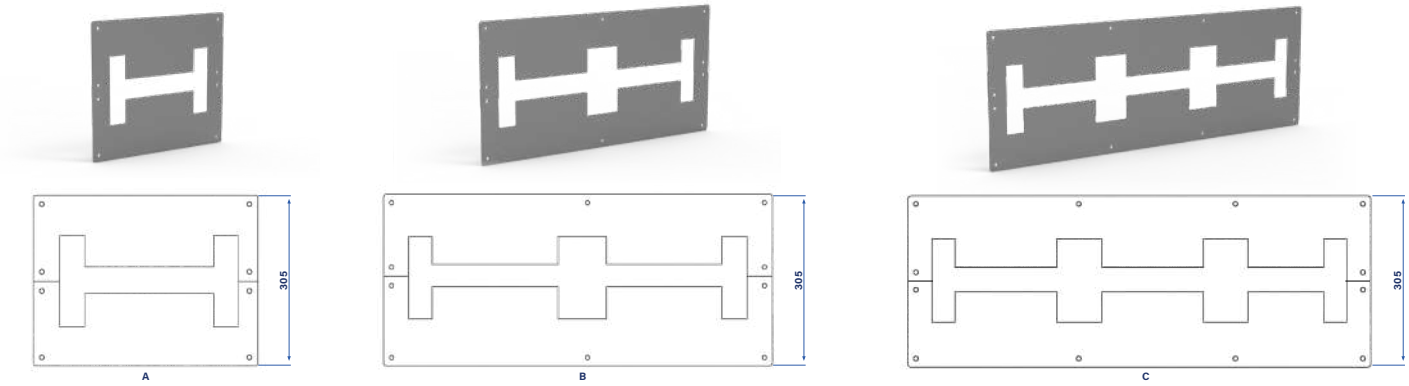
Connection	Electrical Contact	Contact Reliability	Application
Silver ↔ Silver	Excellent	Excellent	Premium / demanding applications
Tin ↔ Tin	Very Good	Excellent	Standard / general applications
Silver ↔ Tin	Very Good	Very Good	Available upon request

To meet different project and application requirements, PSS busway connection surfaces can be supplied with Silver-Silver, Tin-Tin, or Silver-Tin plating configurations. These options provide flexibility in selecting the appropriate contact finish for copper and bi-metal conductor systems, considering electrical performance, environmental conditions, and installation requirements.

- Direct transformer to busway connection
- Secure, reliable and safe connection
- Suitable for different transformer types
- Easy installation and alignment
- Ensures efficient power transmission

WALL FLANGE





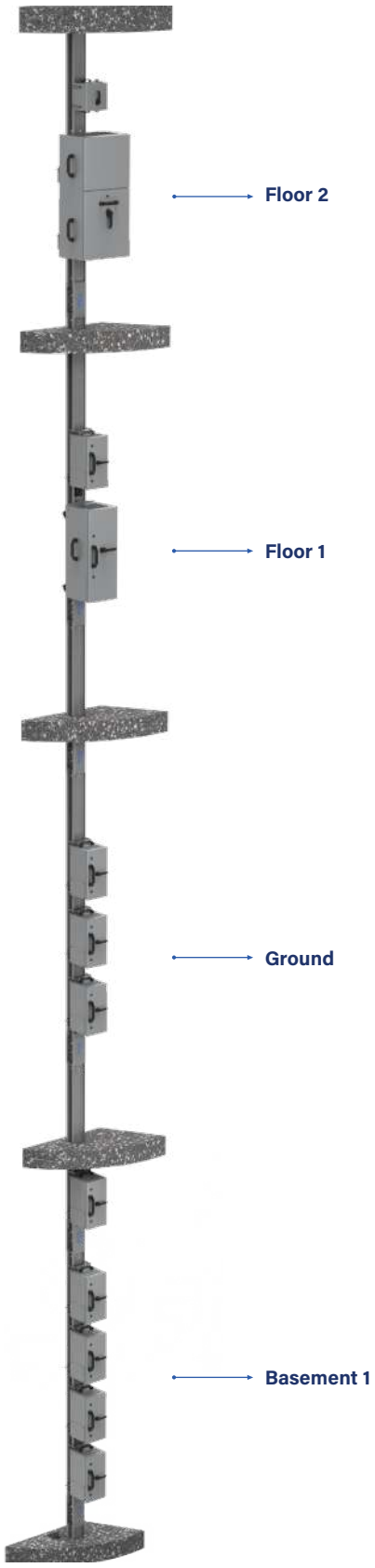
AL - CONDUCTOR	RATED CURRENT (A)	800	1000	1250	1600	2000	2500	3200	4000	5000	6300
WIDTH	(mm)	A=211	A=236	A=256	A=306	A=356	B=466	B=526	B=626	C=746	C=956
CU - CONDUCTOR	RATED CURRENT (A)	800	1000	1250	1600	2000	2500	3200	4000	5000	6300
WIDTH	(mm)	A=236	A=256	A=276	A=306	A=356	A=386	B=526	B=626	B=686	C=896

Fire Rated Sealing

To maintain the fire integrity of walls and floor penetrations, our busway systems are designed with certified fire-rated sealing materials surrounding the wall flange. These materials effectively seal the annular gap between the busway and building structure, helping prevent the passage of flames, hot gases, and smoke during a fire. The fire barrier system is engineered to withstand high temperatures for extended periods, helping preserve the fire-resistance rating of the compartment and maintain the integrity of the penetration under severe fire conditions. Manufactured from high-performance intumescent and fire-resistant materials, the sealing system provides excellent thermal insulation, durability, and reliable performance while supporting applicable fire protection requirements and overall building fire compartmentation.

- Maintains Fire Integrity
- Seals Flames, Gas & Smoke
- Preserves Fire Resistance Rating
- Durable & Reliable performance

PLUG-IN RISER



The standard busway riser assembly shown illustrates a typical vertical power distribution arrangement designed to deliver safe, reliable, and efficient electrical power throughout multi-story buildings.

By utilizing strategically positioned tap-off units at each floor, the system provides a flexible and modular solution that allows power to be distributed precisely where it is required while simplifying installation, future expansion, and maintenance. The modular construction enables tap-off units to be added, relocated, or replaced with minimal disruption, making the system ideal for commercial buildings, hospitals, hotels, industrial facilities, airports, and data centers where power requirements may evolve over time.

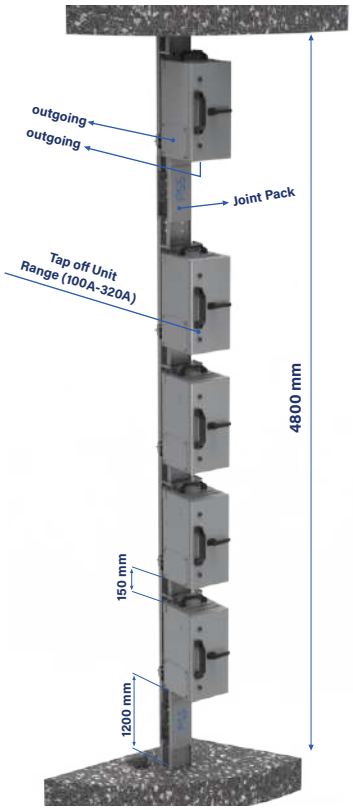
Every riser configuration is engineered to maintain the highest standards of electrical safety, mechanical strength, and operational reliability while optimizing the use of installation space.

The arrangement shown represents our standard riser concept; however, each project can be customized to accommodate different building heights, floor layouts, current ratings, tap-off locations, and customer-specific requirements.

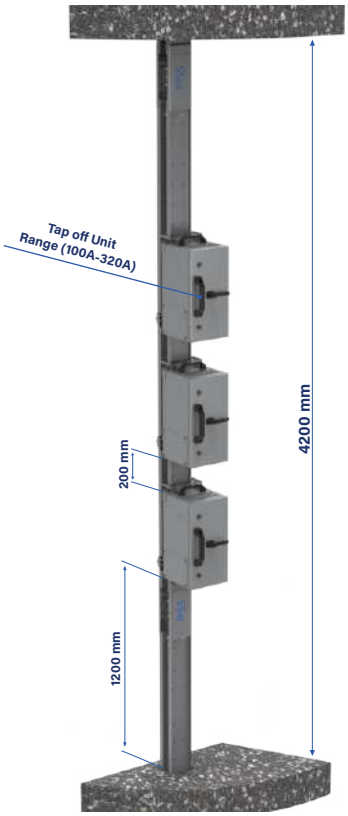
The following pages provide comprehensive technical information for each riser configuration, including overall dimensions, standard section lengths, support arrangements, tap-off unit locations, installation clearances, and additional engineering details.

These drawings are intended to assist consultants, designers, and installation teams in selecting the most suitable configuration and ensuring seamless integration of the busway system into a wide range of building applications.

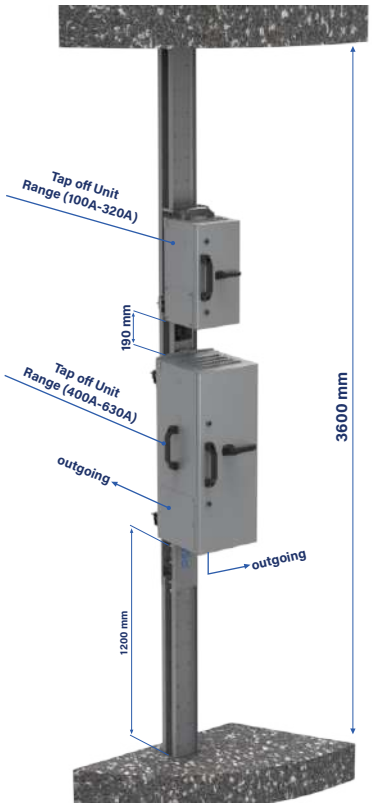
Basement 1



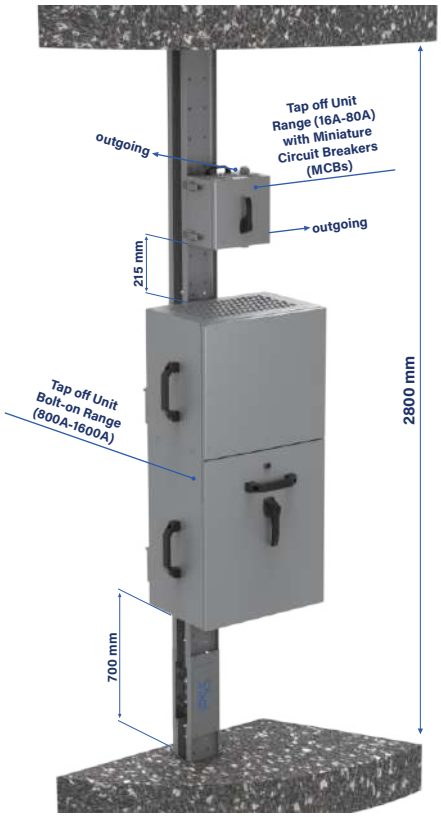
Ground



Floor 1

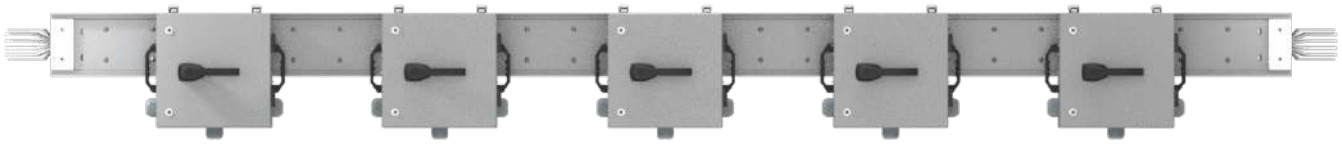


Floor 2

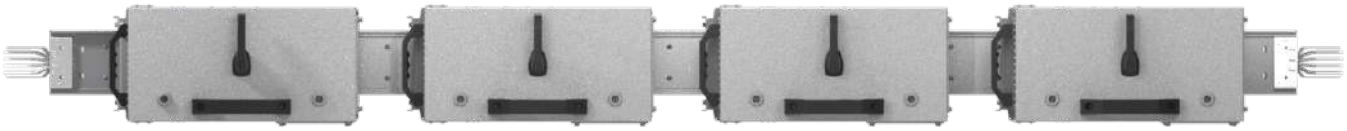


TAP-OFF UNITS

Range (16A-80A) with Miniature Circuit Breakers (MCBs)



Range (100A-320A)



Range (400A-630A)



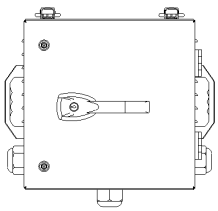
Bolt-on Range (800A-1600A)

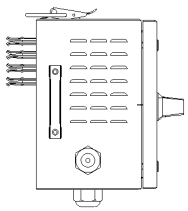


TAP-OFF UNITS

Range (16A-80A) with Miniature Circuit Breakers (MCBs)

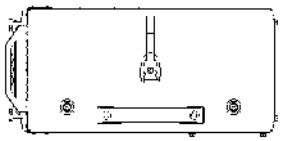


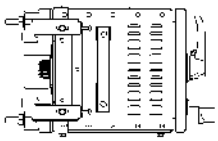




Range (100A-320A)

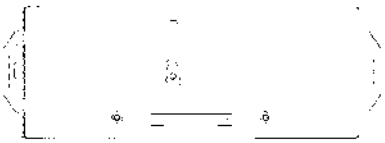


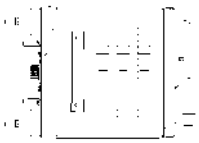




Range (400A-630A)

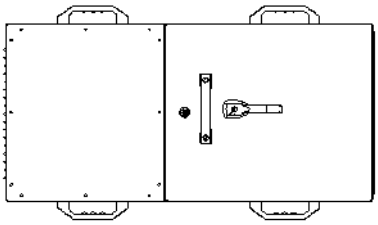


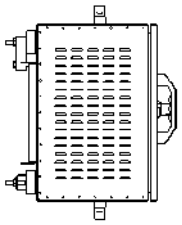




Bolt-on Range (800A-1600A)







TAP-OFF UNITS

Tap-Off Accessories

Tap-off accessories provide a safe, flexible, and efficient method of distributing power from the main busway to individual loads without interrupting the primary power supply. Designed for seamless integration with the busway system, these accessories enable quick installation, easy relocation, and future expansion while maintaining the highest standards of electrical safety and mechanical reliability. Available in a wide range of current ratings and enclosure configurations, tap-off units can accommodate various protective devices, including MCCBs, MCBs, fuse switches, and metering equipment to suit diverse application requirements.

Manufactured with precision-engineered components and high-quality insulation materials, our tap-off accessories ensure secure electrical connections, low contact resistance, and dependable long-term performance. Their robust construction provides excellent resistance to vibration, mechanical stress, and environmental conditions, making them suitable for industrial facilities, commercial buildings, data centers, and infrastructure projects. Each tap-off unit is designed to complement the busway system, delivering safe power distribution, simplified maintenance, and maximum operational flexibility throughout the life of the installation.



Smart Busway Temperature Monitoring System

Intelligent Real-Time Monitoring for Enhanced Busway Protection

The Smart Busway Temperature Monitoring System provides continuous monitoring of critical conductor and busbar connection temperatures, helping detect abnormal temperature rise before it develops into a serious fault. Wireless sensors installed at key connection points continuously transmit temperature data without the need for complex signal wiring.

The system can identify abnormal heating caused by loose connections, overload conditions, increased contact resistance, and other operating abnormalities. Early detection enables timely corrective action, helping reduce the risk of equipment damage, unexpected shutdowns, and potential safety hazards.

Temperature data can be monitored, recorded, and analyzed to support condition-based maintenance. Through RS-485 / Modbus RTU communication, the system can be integrated with building management systems and other supervisory monitoring platforms.

Key Features

Wireless Temperature Monitoring

Continuous measurement at critical busway connection points with simplified installation.

Early Fault Detection

Identifies abnormal heating caused by overloads, loose connections, and excessive contact resistance.

Real-Time Monitoring & Alarms

Provides continuous temperature visibility with warnings when predefined limits are exceeded.

Data Logging & Analysis

Records temperature data to support trend analysis and predictive maintenance.

How It Works

Wireless sensors measure temperatures at selected busbar connection points and transmit the data to a central monitoring unit. The system compares measured values with predefined limits and can issue alarms when abnormal temperature rise is detected.

This provides continuous condition monitoring, helping identify potential problems before they lead to equipment damage or an unplanned power interruption.

Smart Monitoring. Early Detection. Enhanced Reliability

Available upon request as an optional monitoring solution





Design Guide

General Technical Specifications

IISC with Copper Conductors, Aluminium Enclosure

Rating											
Busway Rating	**In**	**A**	800	1000	1250	1600	2000	2500	3200	4000	5000	6300
Standards & Specifications			IEC 61439-1 / 6									
Degree of Protection	IP		IP 55/ 56 / 66									
Frequency	F	Hz	50 / 60									
Ambient Temperature Min. / Max.*	T	°C	-5 / +55									
Rated Insulation Voltage Ui	UI	V	1000									
Rated Operational Voltage Ue	Ue	V	1000									
Mechanical Impact	IK		10									
Rated Short-Time Current For Three Phase Fault (1s)	I_{cw}	kA	36	36	50	65	80	100	100	120	120	150
Allowable Peak Current for Three Phase Fault	I_{PK}	kA	79.2	79.2	110	143	176	220	220	264	264	330
Resistance	R	μΩ/m	80.990	61.644	55.815	53.465	28.993	26.034	22.793	14.902	13.731	11.580
Reactance	X		118.223	53.600	42.139	37.395	15.453	13.979	12.539	11.043	9.654	7.134
Impedance	Z		143.304	81.688	69.936	65.245	32.853	29.550	26.015	18.548	16.785	13.57
Voltage Drop(V/100m)	cosØ	0.8	18.807	14.112	15.141	18.071	11.247	12.650	14.276	12.850	14.529	14.780
		0.85	18.168	13.966	15.078	18.053	11.357	12.771	14.399	12.806	14.512	14.841
		0.9	17.241	13.656	14.853	17.852	11.372	12.784	14.399	12.627	14.347	14.766
		1	11.222	10.677	12.084	14.817	10.043	11.273	12.633	10.324	11.891	12.636
Figure			I	I	I	I	I	I	II	II	II	III
Dimensions	H	mm	140	140	140	140	140	140	140	140	140	140
	W	mm	140	160	180	210	260	290	430	530	590	650

Design Guide

General Technical Specifications

IISA with Bi-Metal Conductors, Aluminium Enclosure

Rating											
Busway Rating	**In**	**A**	800	1000	1250	1600	2000	2500	3200	4000	5000	6300
Standards & Specifications			IEC 61439-1 / 6									
Degree of Protection	IP		IP 55 / 56 / 66									
Frequency	F	Hz	50 / 60									
Ambient Temperature Min. / Max.*	T	°C	-5 / +55									
Rated Insulation Voltage Ui	UI	V	1000									
Rated Operational Voltage Ue	Ue	V	1000									
Mechanical Impact	IK		10									
Rated Short-Time Current For Three Phase Fault (1s)	I_{cw}	kA	36	36	50	65	80	100	100	120	150	150
Allowable Peak Current for Three Phase Fault	I_{PK}	kA	79.2	79.2	110	143	176	220	220	264	330	330
Resistance	R	μΩ/m	96.348	63.021	54.779	43.727	23.712	20.405	18.642	12.188	11.48	8.61
Reactance	X	μΩ/m	124.622	54.927	42.87	37.048	15.34	12.874	12.471	10.997	9.52	7.084
Impedance	Z	μΩ/m	158.523	83.719	70.11	57.114	28.412	24.394	22.36	16.367	14.704	11.161
Voltage Drop(V/100m)	cosØ	0.8	21.07	14.54	15.248	15.797	9.875	10.445	12.594	11.345	12.841	12.081
		0.85	20.444	14.290	14.970	15.709	9.781	10.447	12.424	11.191	12.794	12.058
		0.9	19.55	14.101	14.848	15.284	9.794	10.385	12.336	11.069	12.442	11.769
		1	13.286	10.983	11.835	12.075	8.341	8.832	10.396	8.525	9.964	9.239
Figure			I	I	I	I	I	II	II	II	III	III
Dimensions	H	mm	140	140	140	140	140	140	140	140	140	140
	W	mm	115	140	160	210	260	370	430	530	650	860

Certificates

PSS Busway is ASTA Certified in accordance with IEC 61439-1&6:

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

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

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

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

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

Verification of dielectric properties according to Cl. no:10.9

Verification of temperature rise according to Cl.no: 10.10

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

Resistance to flame-propagation Cl. no: 10.101

Fire resistance in building penetrations Cl. no 10.102

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



Where Quality is Proven

Innovation Through Engineering

Innovation drives everything we design. Our dedicated Research & Development (R&D) team combines advanced engineering expertise, modern design tools, and continuous product validation to develop busway systems that deliver outstanding performance, safety, and reliability. From concept and 3D design to prototype development and final verification, every product is engineered to comply with international standards and meet the evolving requirements of industrial, commercial, and infrastructure projects. Before production, each design undergoes comprehensive laboratory testing to verify its electrical, mechanical, and environmental performance under demanding operating conditions. Product validation is carried out using advanced testing equipment in accredited laboratories operating under internationally recognized quality systems, with testing performed in accordance with EGAC accreditation and **ILAC MRA** recognition, providing confidence in the accuracy, traceability, and global acceptance of the test results.



Idea



Design



Prototype



Testing

Temperature Rise Validation

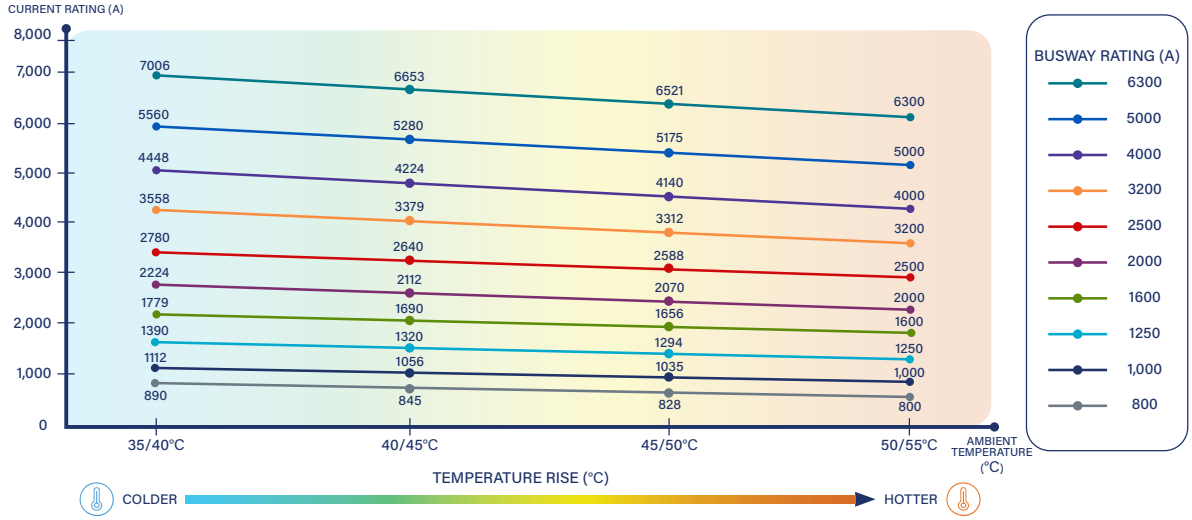
Temperature rise is a key indicator of the thermal performance and operational reliability of a busway system. To ensure compliance with IEC 61439-6, Electrical products are subjected to temperature rise testing under rated current conditions to verify that conductor and connection temperatures remain within permissible limits. For continuous operation, wired temperature sensors can be installed at critical joints and connection points to provide real-time temperature monitoring, enabling early detection of abnormal heating and supporting preventive maintenance for improved system safety and reliability.



Temperature Derating

The ambient temperature surrounding a busway installation can affect its continuous current-carrying capacity. As the operating temperature increases, the available thermal margin decreases, which may require a reduction in the permissible rated current. The applicable derating factors are determined according to the average ambient temperature at the installation location. The following graphs illustrate the relationship between ambient temperature and the corresponding current-carrying capacity of the busway system, allowing the appropriate rating to be selected for the actual operating conditions.

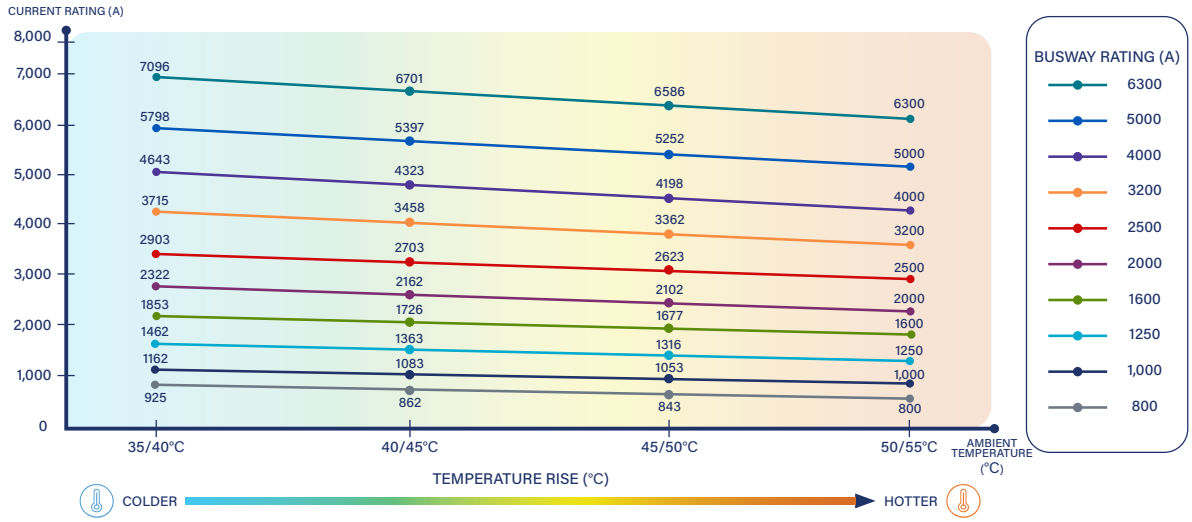
CU



HIGHER TEMPERATURE RISE
Results in higher current carrying capacity

SAME BUSWAY DIMENSIONS
No change in size or installation

AL



HIGHER TEMPERATURE RISE
Results in higher current carrying capacity

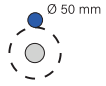
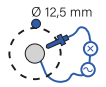
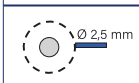
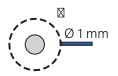
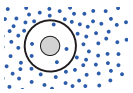
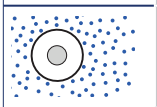
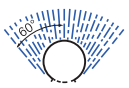
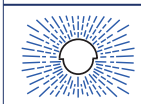
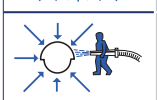
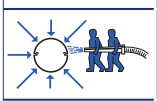
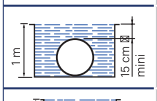
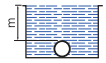
SAME BUSWAY DIMENSIONS
No change in size or installation

Ingress Protection

IP: Degree of Protection Provided Against Intrusion

IP

Enclosures are classified according to IEC 60529 based on their degree of protection against solid objects and water. The degree of protection is indicated by two digits (protection against solid bodies and liquids) following the symbol IP. To facilitate selection of the most suitable busway according to installation requirements, the following table summarizes the relevant IP protection levels. based on the IP degree of protection according to the IEC 60529 standard.

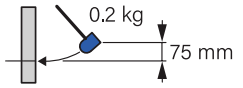
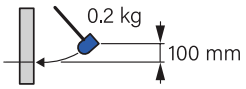
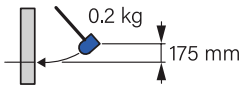
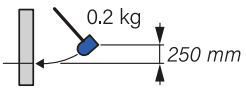
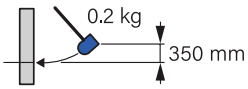
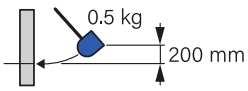
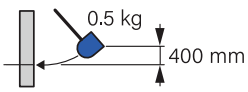
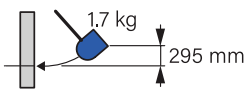
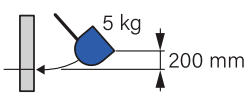
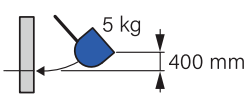
1st Digit IP		
Protection Against Penetration of Solid Bodies		
	0	No protection
	**1**	Protection against solid bodies larger than 50 mm (e.g: accidental contact)
	**2**	Protection against solid bodies larger than 12 mm (e.g.: finger)
	**3**	Protection against solid bodies larger than 2.5 mm
	**4**	Protection against solid bodies larger than 1 mm
	**5**	Protection against dust
	**6**	Complete protection against dust
2nd digit IP		
Protection Against Penetration of Liquids		
	**2**	Protection against drops of water falling up to 15° from the vertical
	**3**	Protection against drops of water up to 60° from the vertical
	**4**	Protection against sprays of water from all directions
	**5**	Protection against jets of water from all directions
	**6**	Protection against jets of water (similar force to heavy seas)
	**7**	Protection against the effects of immersion
	**8**	Protection against effects of immersion under pressure

Mechanical Impact

IK: Degree of Protection of Equipment to Mechanical Impact

IK

Standard IEC 62262 defines an IK code that characterises the ability of equipment to withstand mechanical impacts.

IK	Test	Impact Energy (In Joules)
IK 00		0
IK 01		0.15
IK 02		0.2
IK 03		0.35
IK 04		0.5
IK 05		0.7
IK 06		1
IK 07		2
IK 08		5
IK 09		10
IK 10		20

Ingress Protection Validation (IP)

Ingress Protection (IP) testing is an essential part of our product validation process, confirming the ability of our busway systems to resist the ingress of solid particles and water under defined environmental conditions. In accordance with IEC 60529, our products are subjected to comprehensive laboratory testing using specialized IP test equipment that accurately simulates real operating environments. These tests verify that each enclosure maintains its specified protection rating, ensuring reliable operation, enhanced safety, and long-term durability. Through rigorous testing and strict quality control, we deliver busway systems capable of providing dependable performance in industrial, commercial, and infrastructure applications, even in demanding environmental conditions.



Mechanical Impact Validation (IK)

Mechanical Impact (IK) testing is performed to verify the ability of our busway systems and enclosures to withstand external mechanical impacts without compromising their structural integrity or protective performance. Conducted in accordance with IEC 62262, these tests use calibrated impact equipment to simulate accidental knocks, collisions, and other mechanical stresses that may occur during transportation, installation, or normal service. By evaluating the enclosure's resistance to specified impact energy levels, the IK test confirms that the system maintains its strength, reliability, and protection under demanding operating conditions. This rigorous validation process ensures enhanced durability, extended service life, and dependable performance in industrial, commercial, and infrastructure environments where mechanical protection is essential.



Voltage Drop & Short-Circuit

Voltage Drop

Voltage drop is the reduction in electrical potential along the busway caused by the impedance of the conductors under load. It is influenced by conductor resistance, inductive reactance, load current, power factor, conductor length, load distribution, and the presence of harmonic currents. Busway systems are designed with low impedance to minimize voltage losses and maximize power transmission efficiency.

Voltage Drop Equation (Three-Phase)

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

Where:

VD = Voltage drop (V)
K = Load distribution factor
(**1.0** for end-fed busway-
(n+1)/2n for uniformly distributed loads)
L = Busway length (m)
R = Total AC resistance of the busway conductor at operating temperature and frequency (Ω)
X = Total inductive reactance of the busway (Ω)
I = Load current (A)
φ = Load power factor angle
cosφ = Power factor
sinφ = Reactive power component

Note: AC resistance **(R)** increases with conductor temperature and harmonic currents because of the **skin effect** and **proximity effect**, resulting in higher voltage drop.

Short-Circuit Current

A short circuit produces extremely high fault currents that generate severe thermal and electrodynamic forces within the busway. The system must safely withstand these stresses until the protective device interrupts the fault. Busway short-circuit ratings are defined by the **rated short-time withstand current (Icw)** and the **rated peak withstand current (Ipk)** in accordance with IEC 61439-6.

Prospective Short-Circuit Current

$$I_{sc} = \frac{V}{\sqrt{3} \times Z}$$

Where:

Isc = Prospective short-circuit current (A)
V = System line-to-line voltage (V)
Z = Total source and circuit impedance (Ω)

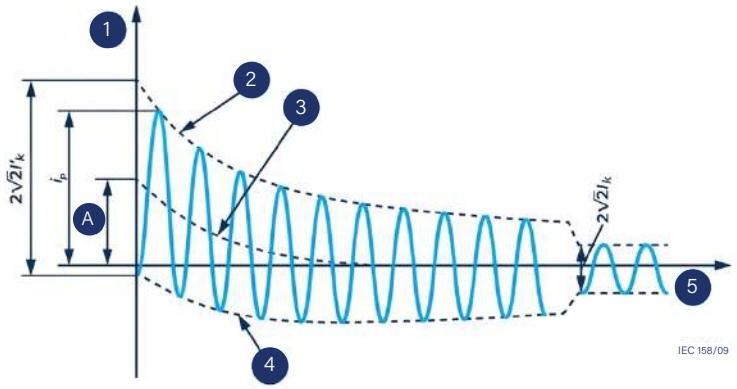
Definitions

I_{cw} – Rated Short-Time Withstand Current

The RMS value of fault current that the busway can withstand for a specified duration **(1 s)** without exceeding its thermal limits or suffering permanent damage.

I_{pk} – Rated Peak Withstand Current

The maximum instantaneous peak current occurring during the first half-cycle of a short circuit. It defines the busway's ability to withstand the electrodynamic forces generated during a fault.



KEY

1. Current
2. Top envelope
3. Decaying d.c.component, i d.c of the short circuit current
4. Bottom envelope
5. Time

A. Initial value of the d.c. component, i d.c of the short circuit current

NOTES

NOTES

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