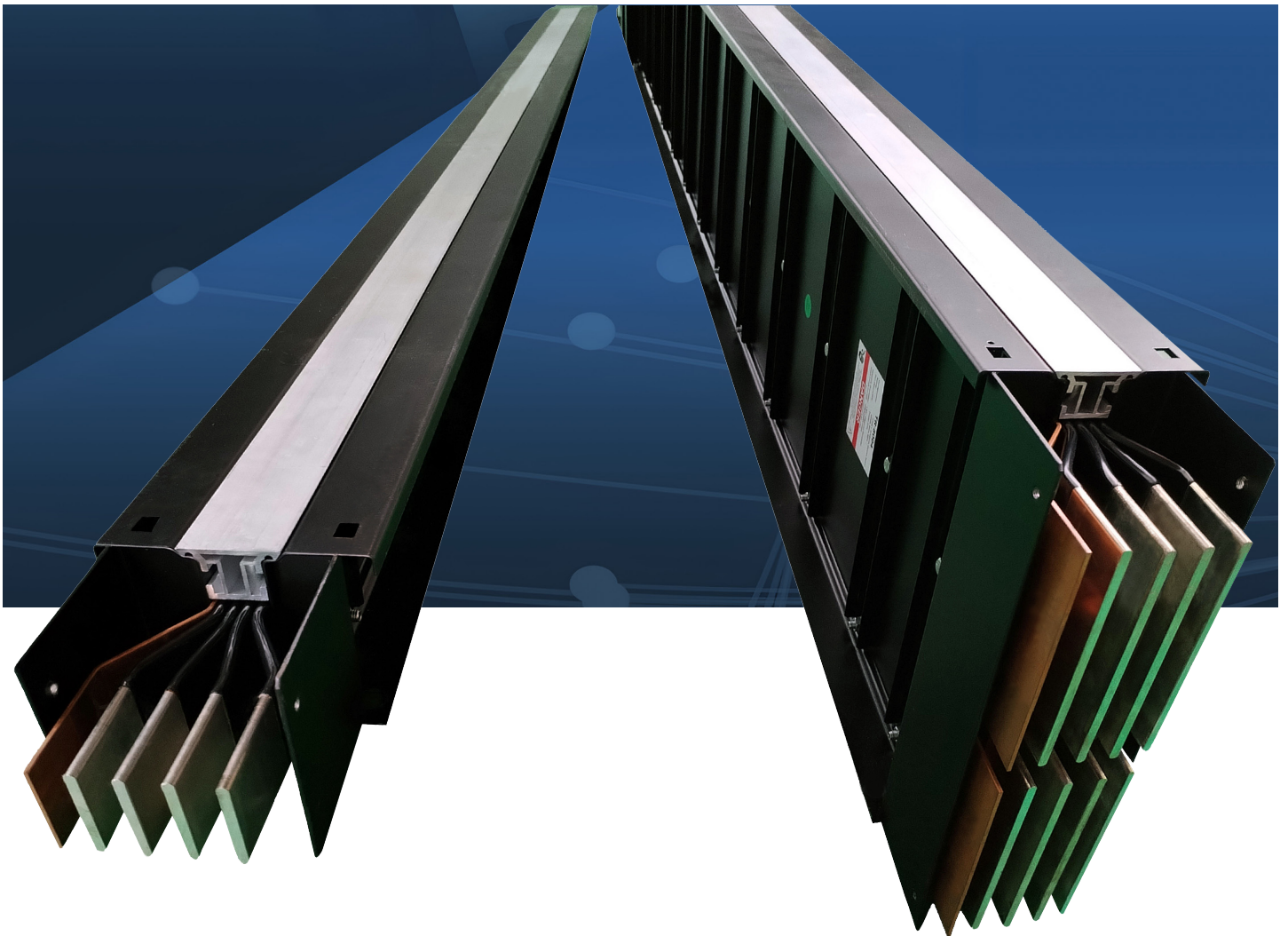




## MK SERIES 550A TO 7500A LV BUSWAY SYSTEM



## MIKRO CORPORATE MILESTONE

<b>1997</b> <ul style="list-style-type: none"> <li>Company established.</li> <li>Registered as Industri Teknologi MIKRO Sdn Bhd.</li> <li>Sale of analogue, digital &amp; computer controlled electronic devices.</li> <li>1st office located in shop lot Shah Alam.</li> </ul>	<b>1998</b> <ul style="list-style-type: none"> <li>MIKRO 1st generation of analogue products.</li> </ul>	<b>2001</b> <ul style="list-style-type: none"> <li>MIKRO 1st numerical relay, MK2000.</li> </ul>
<b>2002</b> <ul style="list-style-type: none"> <li>First export to oversea market. (Vietnam)</li> </ul>	<b>2004</b> <ul style="list-style-type: none"> <li>Started to expand in-house R&amp;D and manufacturing facilities.</li> <li>Established Formula Concept Sdn Bhd. (Manufacturing &amp; assembling works)</li> </ul>	<b>2005</b> <ul style="list-style-type: none"> <li>Listed on ACE market Bursa. Malaysia as Industri Teknologi MIKRO Berhad.</li> </ul>
<b>2006</b> <ul style="list-style-type: none"> <li>Granted MSC Status. (MIKRO MSC Sdn Bhd)</li> </ul>	<b>2007</b> <ul style="list-style-type: none"> <li>MIKRO celebrated its 10th year anniversary.</li> </ul>	<b>2008</b> <ul style="list-style-type: none"> <li>Obtained certification for ISO 9001 UKAS by LRQA.</li> <li>MIKRO MK series launched.</li> </ul>
<b>2009</b> <ul style="list-style-type: none"> <li>Internal restructuring of MIKRO group, transfer of listing status to MIKRO MSC Berhad.</li> </ul>	<b>2011</b> <ul style="list-style-type: none"> <li>Obtained certification for ISO 14001 UKAS by LRQA.</li> <li>MIKRO 1st Digital Power Meter.</li> </ul>	<b>2014</b> <ul style="list-style-type: none"> <li>Awarded SME achiever Awards.</li> <li>MIKRO achieved its ONE million unit productivity.</li> </ul>
<b>2015</b> <ul style="list-style-type: none"> <li>Awarded Sin Chew Business Excellence Awards.</li> <li>Company workforce surpassed 90 over employees.</li> </ul>	<b>2017</b> <ul style="list-style-type: none"> <li>Awarded ASEAN Corporate Governance Recognition Awards.</li> <li>MIKRO NX series launched.</li> </ul>	<b>2018</b> <ul style="list-style-type: none"> <li>MIKRO celebrated its grand 20th anniversary in Sunway Convention Center.</li> <li>Official launch of all new X-Series.</li> </ul>
<b>2019</b> <ul style="list-style-type: none"> <li>MIKRO acquired EPE Busway Sdn Bhd &amp; Mittric Systems Sdn Bhd</li> <li>Total employees over 160.</li> </ul>	<b>2020</b> <ul style="list-style-type: none"> <li>MIKRO moved to new facilities located in Kota Kemuning, Selangor.</li> <li>Subsidiary MIKRO Smart Connection Sdn Bhd started manufacturing of coil and transformer.</li> </ul>	<b>2021</b> <ul style="list-style-type: none"> <li>MIKRO RX product series launched.</li> </ul>
<b>2022</b> <ul style="list-style-type: none"> <li>Officially renamed as MIKRO Busway Sdn Bhd. (Formerly known as EPE Busway Sdn Bhd)</li> </ul>	<b>2023</b> <ul style="list-style-type: none"> <li>Busway product rebranded as MIKRO Busway officially.</li> <li>MIKRO ventured business into of biomass fuel business. (Bio Eneco Sdn Bhd)</li> </ul>	<b>2024</b> <ul style="list-style-type: none"> <li>MIKRO Busway obtained UL 857 standard and DEKRA (KEMA KEUR) certifications (IEC 61439-6 standard)</li> </ul>



## CONTENTS

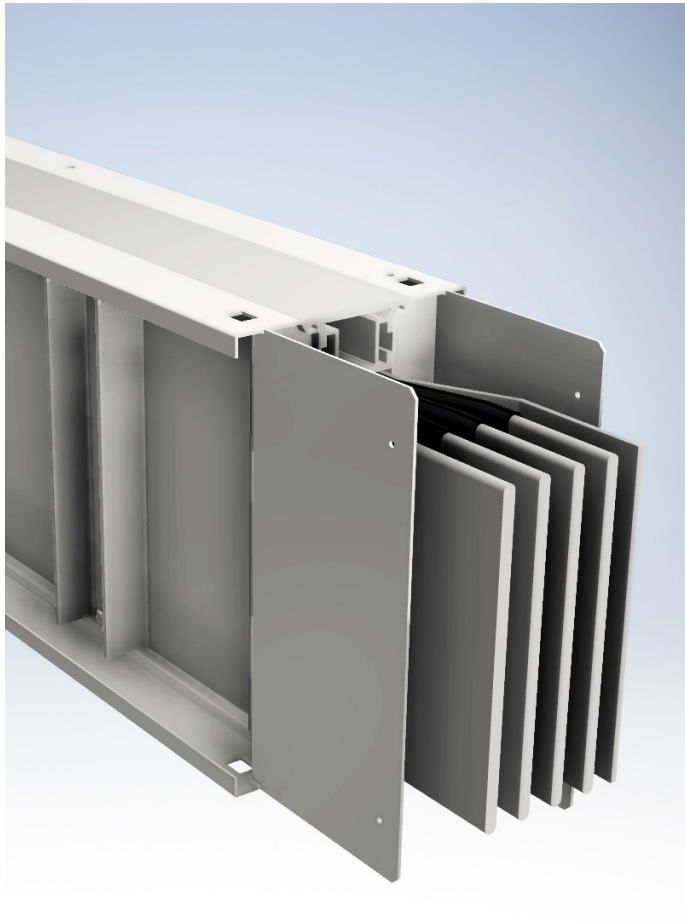
	02	▶	Company Milestone
Contents	03		
	04	▶	Introduction
MIKRO Corporate Goals	05		
	06	▶	Principal Business Activities Busway Construction Perfect Balancing Joint System
Reliable Insulation	07		
	08	▶	Plug-in & Tap-off Power Distribution
Quality & Testing	09		
	10	▶	Busway Stacking Busbar Configuration
LV Sandwich Type Technical Specifications Busway Size & Weight Electrical Characteristics	11		
Feeder Busduct Plug-In Busduct Horizontal Elbow Vertical Elbow	12	▶	Joint Assembly Details
Vertical Offset Horizontal Offset Reducer	13		
	14	▶	Combination Elbow Vertical Tee Horizontal Tee
Plug-In Box & Tap-Off Box Wall Flange End closure	15		
	16	▶	Flange End Flange End Box Expansion Box
Horizontal Hanger Vertical Spring Hanger	17		
	18	▶	MV NSPB Type Busway LV NSPB Type Busway
Fire Rated Type Busway TMSNX Busway Temperature Measurement Sensor Connection Diagram	19		
	20	▶	Mini Type Busway
Frequently Asked Questions (FAQs)	21		
	22	▶	Multi Point MIKROSAFE Software
	23		
	24	▶	Company Contact



## INTRODUCTION

Busway systems have become widely accepted and increasingly installed in the modern electrical industry due to their reliability and efficiency in power distribution. They have gained recognition in recent years, particularly with the rapid economic growth and the rising demands for dependable electrical infrastructure. Busway systems offer several advantages over traditional cable distribution systems, including:

1. **Low Voltage Drop and Impedance:** Busway systems are designed to minimize voltage drop and impedance, ensuring efficient power delivery over long distances and reducing energy losses.
2. **Flexibility in Power Distribution and Expansion:** Busway systems offer great flexibility in power distribution, allowing easy modifications and expansions to accommodate changing electrical load requirements. This adaptability makes them ideal for dynamic environments where power needs may evolve.
3. **Easy Installation and Maintenance:** The modular design of busway systems simplifies installation and maintenance. Components can be easily assembled and disassembled, reducing installation time and labor costs. Maintenance tasks are also straightforward, allowing for quick access and repairs.
4. **Compact Design and Space Efficiency:** Busway systems require less physical space compared to traditional cable systems. Their compact design allows for efficient use of space, making them suitable for installations in areas with limited room.
5. **Robust and Strong Enclosure:** The enclosure of busway systems is designed to be more rigid and durable, providing better protection against mechanical impacts and environmental factors. This enhances the safety and longevity of the system.
6. **Higher Short Circuit Withstand Strength:** Busway systems have a higher short circuit withstand strength, which means they can handle high fault currents without sustaining damage. This feature contributes to the overall safety and reliability of the electrical system.
7. **Longer Lifespan:** Due to their robust construction and superior materials, busway systems have a longer lifespan compared to traditional cable systems. This durability results in lower long-term maintenance and replacement costs.



MIKRO Busway has been developed to meet the increasing demands of the busway industry, particularly in the low voltage (LV) segment. The system offers several key advantages and features, making it a superior choice for reliable and efficient power distribution:

1. **Unique Compact Design:** The busway features a unique construction that combines galvanized steel and an aluminum heat sink channel. This compact design not only provides structural strength but also enhances heat dissipation, improving the system's overall efficiency.
2. **Perfect Balancing Joint System:** MIKRO Busway employs a specially designed joint system that ensures perfect balancing of electrical load across connections. This design minimizes the risk of electrical imbalances and enhances system stability.
3. **Easy Installation:** The system is designed for straightforward installation, reducing labor costs and time. Its modular components allow for quick assembly and disassembly, making it ideal for projects with tight schedules.
4. **High-Quality Epoxy Insulation:** The busway uses epoxy insulation known for its excellent thermal conductivity. This insulation material helps manage heat effectively, ensuring safe and efficient operation even under high load conditions.
5. **Safe and Efficient Plug-In Process:** MIKRO Busway offers an easy and safe plug-in process for power distribution. This feature simplifies the connection of additional units and enhances the flexibility of the system.
6. **High Operating Temperature and Short Circuit Withstand Strength:** The system is designed to operate at higher temperatures and withstand significant short circuit currents, providing robust protection against electrical faults.
7. **Stringent Quality Control:** Production and processes are conducted under stringent quality control measures, ensuring that each unit meets high standards of performance and safety.
8. **Temperature Monitoring System:** An integrated temperature monitoring system provides real-time data on operating conditions, allowing for proactive maintenance and ensuring long-term reliability.
9. **On-Time Delivery:** MIKRO Busway is committed to on-time delivery, ensuring that projects stay on schedule and avoid costly delays.
10. **Prompt After-Sales Support and Service:** The company provides prompt and responsive after-sales support, addressing any issues or concerns quickly and effectively to maintain customer satisfaction.

## MIKRO CORPORATE GOALS

We aim to explore and strengthen our presence in the electrical infrastructure distribution and services sector. This involves expanding our market reach and enhancing our service offerings to meet the growing demands of the industry, which is continuous improvement in manufacturing efficiency and productivity.





Key areas of focus include:

1. **Continuous Improvement in Manufacturing Efficiency and Productivity:** We are committed to optimizing our manufacturing processes to increase efficiency and productivity. This includes investing in advanced technologies, streamlining work flows, and implementing best practices to reduce costs and improve product quality.
2. **Competency Enhancement through Workforce Development and Training:** We prioritize the development and training of our employees to enhance their skills and competencies. By providing ongoing training programs and professional development opportunities, we ensure that our team remains knowledgeable and adept at handling the latest industry trends and technologies. This not only improves individual performance but also strengthens the overall capabilities of our organization.

## PRINCIPAL BUSINESS ACTIVITIES

We specialize in the design and manufacture of both medium voltage and low voltage busway systems. Our products are engineered to provide high efficiency and reliable electrical distribution, ensuring optimal performance for a wide range of applications. We offerings:

1. **High Efficiency and Reliable Electrical Distribution:** Our busway systems are designed with advanced technology to deliver efficient power distribution, minimizing energy losses and maximizing system reliability. They are built to meet stringent industry standards, ensuring consistent and safe electrical performance.
2. **Responsive After-Sales and Support Services:** We pride ourselves on offering fast and effective after-sales support. Our dedicated service team is always ready to assist with any inquiries, providing timely solutions and ensuring customer satisfaction.
3. **Operation & Maintenance Services:** To ensure the long-term reliability and efficiency of our busway systems, we offer comprehensive operation and maintenance services. These services include regular inspections, preventive maintenance, and prompt repair work, helping to extend the lifespan of the equipment and prevent unexpected downtime.

Our commitment to quality and customer service makes us a trusted partner for all your medium voltage and low voltage busway system needs.

## BUSWAY CONSTRUCTION

MIKRO Busway features a unique housing construction designed for compactness and enhanced performance. The housing combines 1.6mm thick galvanized steel on both sides with an epoxy powder coating, and an aluminum heat sink channel on the top and bottom sides. This design provides several advantages:

1. **Enhanced Heat Dissipation:** The aluminum heat sink channel effectively dissipates heat, ensuring better thermal management.
2. **Grounding System:** The aluminum heat sink channel, along with the aluminum joint cover, supports an efficient grounding system.
3. **Electromagnetic Field (EMF) elimination:** The aluminum heat

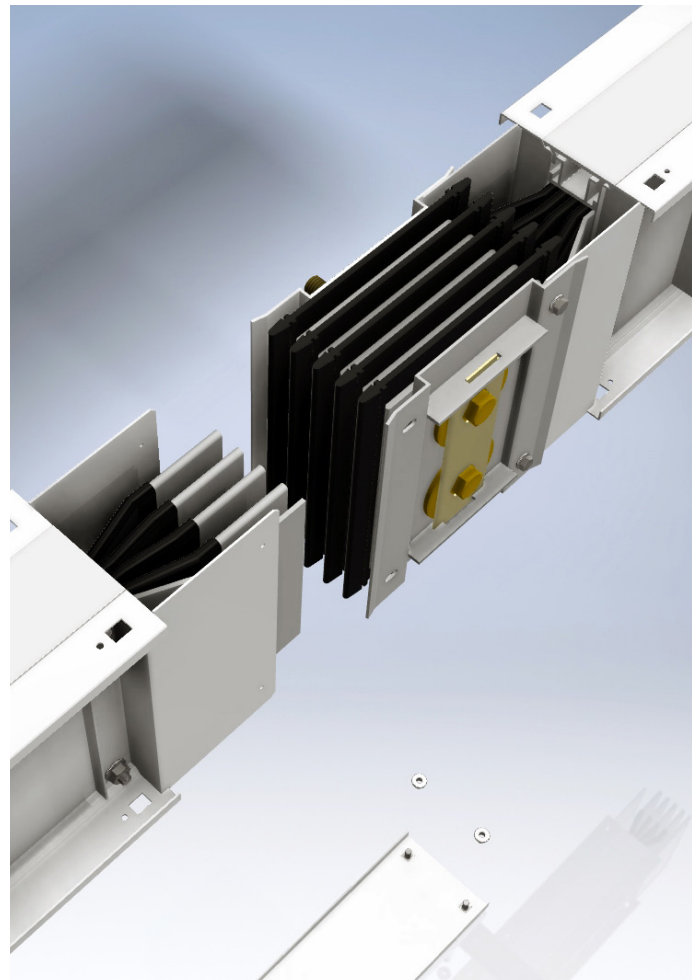
sink channel helps eliminate electromagnetic fields, reducing potential interference.

4. **Increased Mechanical Strength:** The use of galvanized steel provides higher mechanical withstand strength, making the busway robust and durable.
5. **Corrosion Resistance:** The epoxy coating and aluminum heat sink channel offer excellent corrosion resistance, ensuring longevity and reliability in various environments.

The busway design & construction are based on IEC 61439-1, IEC 61439-6, BS 5486 and other equivalent standards. The constructions also provides minimum ingress of protection (IP) of IP54 and maximum up to IP68 based on IEC 60529, with also flame propagation protection (based on IEC 60332-3) as a basic for every busway risers. It also been designed for fire rated based on IEC 60331 & BS 6387 standards upon request.

## PERFECT BALANCING JOINT SYSTEM

MIKRO Busway incorporates a bridge-type joint design that balances the current capacity at each joint section, specifically for double and



triple stack busways. This design ensures even distribution of electrical load, enhancing overall system reliability.

The joint features a single-bolt design with several key components:

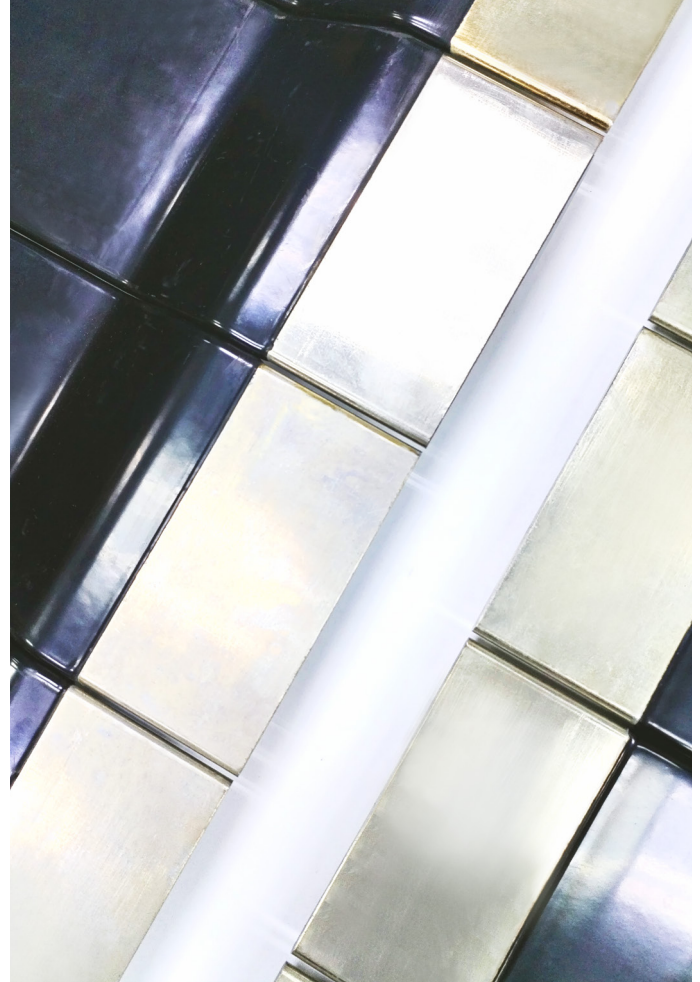
1. **Insulated Bolt with Maintenance-Free Nut (MF Nut / Double-Headed Nut):** The MF nut is designed to shear off automatically when a torque of 160-180 Nm is reached during tightening. This ensures proper installation torque without the need for torque measurement tools, making installation work easier and reducing the risk of human error.
2. **Belleville Washer:** This washer provides a secure grip on the conductors, ensuring a high surface contact area. It helps maintain a low electrical resistance and temperature, contributing to efficient current flow and system stability.
3. **Easy Installation and Maintenance:** The design allows for easy installation and maintenance, as the joints can be detached and reinstalled without the need to remove adjacent busway feeders. This feature simplifies maintenance procedures and minimizes system downtime.

## RELIABLE INSULATION

MIKRO Busway features superior insulation for its conductors, utilizing high-grade epoxy insulation material rated for 180°C. The insulation process involves a unique technique of applying high-grade epoxy powder coating directly onto the conductors. This method ensures a seamless bond, eliminating any air gaps between the insulation and the conductor, which enhances the overall performance and safety of the system. The insulation has been tested based on IEC 61439-6.

Advantages of MIKRO Busway Insulation:

1. **Good Thermal Conductivity:** The high-grade epoxy material efficiently dissipates heat, maintaining optimal operating temperatures.
2. **Resistance to Thermal Heat Shock:** The insulation can withstand sudden changes in temperature, preventing damage from thermal expansion or contraction.
3. **Water and Chemical Resistance:** The epoxy coating provides a protective barrier against moisture and corrosive chemicals, enhancing the durability and longevity of the busway system.
4. **Electrical Resistance:** The insulation effectively resists electrical glitches and spikes, ensuring reliable performance under varying electrical conditions.
5. **Mechanical Strength:** The epoxy insulation offers robust mechanical strength, protecting the conductors from impact and physical damage.
6. **Flexibility:** The insulation is capable of expanding and contracting during peak and off-peak operations, accommodating thermal expansion and contraction without compromising its integrity.
7. **Non-Toxic and Environmentally Friendly:** The insulation material is non-toxic and aligns with green technology principles, making it safe for both users and the environment.
8. These features make MIKRO Busway a reliable and safe choice for electrical distribution, offering enhanced protection and performance in various operating environments.



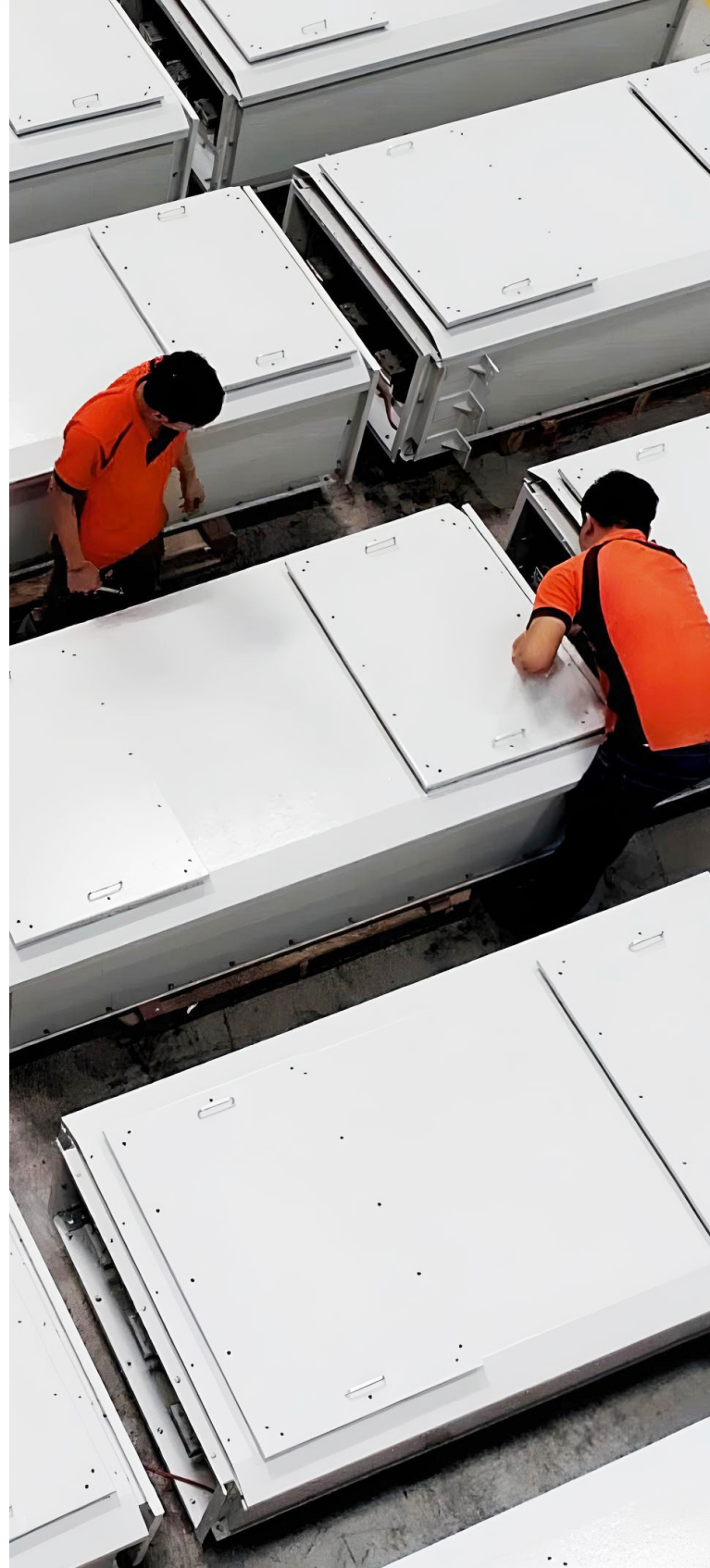
## PLUG IN & TAP OFF POWER DISTRIBUTION

MIKRO Busway offers a versatile range of power distribution options, accommodating currents up to 2000A. The system includes built-in molded case circuit breakers (MCCBs) for enhanced safety and functionality. The power distribution is available in two configurations:

1. **Plug-In Type:** This configuration supports circuit breakers rated up to 400A. It is designed for ease of installation and flexibility, allowing users to connect and disconnect units as needed.
2. **Tap-Off Type (Bolted Type):** This configuration is designed for circuit breakers rated above 400A and up to 2000A. It provides a robust solution for higher power requirements, ensuring secure connections and reliable performance.

Safety features include:

1. **Interlocking System:** The plug-in unit is equipped with an interlocking system that prevents the unit's removal while it is in operation. This safety feature ensures that power cannot be interrupted accidentally, reducing the risk of electrical hazards.
2. **Copper Clips with Spring Clamps:** The plug-in unit's copper clips are equipped with spring clamps, ensuring a secure and stable connection to the conductors in the plug-in openings. This design helps maintain a consistent electrical contact, minimizing resistance and potential power losses.
3. **Insulation Block Class C 200°C:** The copper clips are protected by an insulation block rated for Class C 200°C. This protection helps prevent flashovers, enhancing the safety and reliability of the system under various operating conditions.





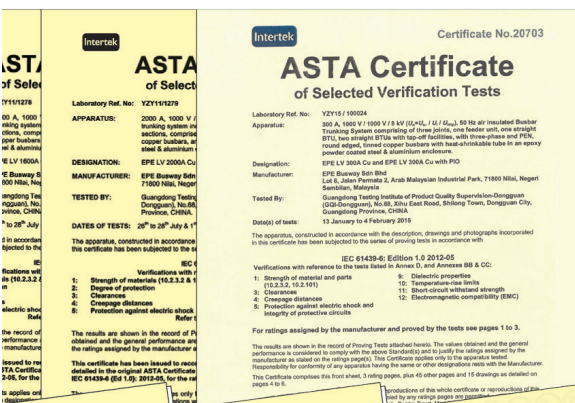
## QUALITY TESTING

Before shipment or delivery to the site, all MIKRO Busway feeders will undergo a thorough internal factory test conducted and verified by qualified Quality Control (QC) personnel. This process ensures that each product meets the required quality standards.

The factory test comprises two major assessments:

1. **Insulation Resistance Test:** This test checks the integrity of the insulation material to ensure that it can effectively resist electrical leakage.
2. **Withstand Voltage Test:** This test verifies the busway's ability to withstand high voltages without breaking down, ensuring its safety and reliability under operating conditions.

In addition to internal testing, MIKRO Busway products are also subjected to third-party testing and verification. They are certified by reputable authorities such as UL, following the UL 857 standard, ASTA and DEKRA (KEMA-KEUR), following the IEC 61439-6 standard. These certifications confirm that the products meet international safety and performance requirements.

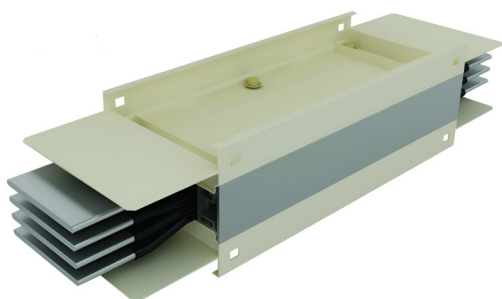




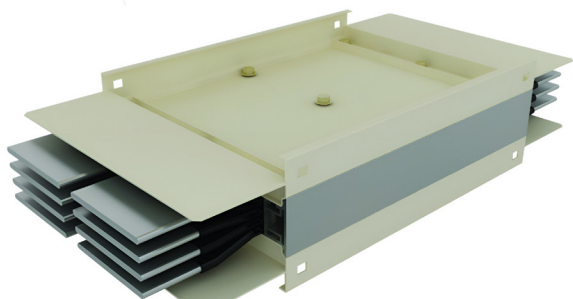
## BUSWAY STACKING

MIKRO Busway provides single stack system up to 1600A, double stack system up to 4000A, and triple stack system up to 7500A.

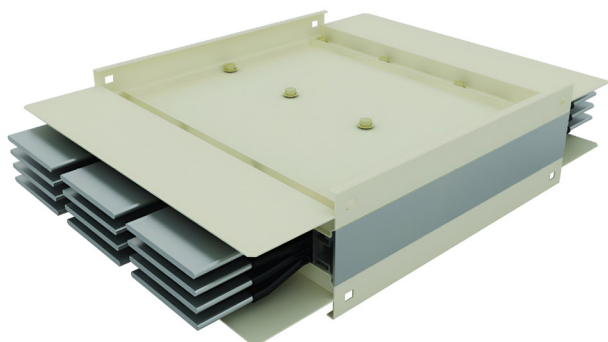
Single stack



Double Stack



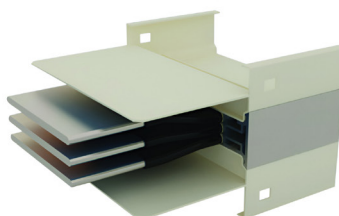
Triple Stack



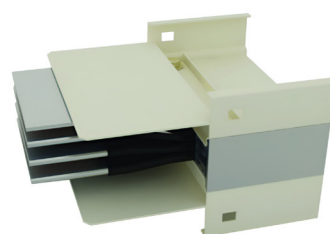
## BUSBAR CONFIGURATION

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

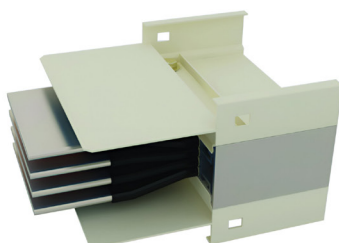
3P3W



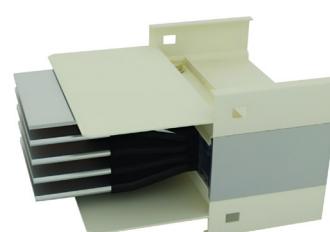
3P3W + E



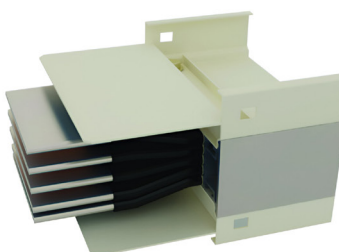
3P4W



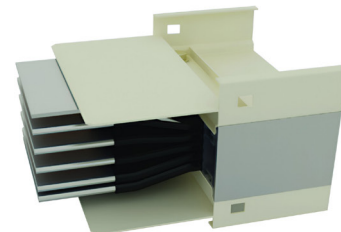
3P4W + E



3P5W (200%N)



3P5W + (200%N)



## LV SANDWICH TYPE TECHNICAL SPECIFICATIONS

Type of busway construction:	Compact design	Frequency:	50Hz / 60Hz
Standard:	IEC 61439-6	Current rating:	Up to 7500A
System configuration:	3P3W, 3P3W+E, 3P4W, 3P4W+E 3P5W(200%N) & 3P5W+E(200%N)	Conductor:	Copper
Ingress of protection (IP) rating:	IP54 to IP68	Service temperature:	Up to 50°C
Rated AC Voltage:	Up to 1kV	Short circuit capacity:	Up to 150kA
Rated DC Voltage:	Up to 1kV	Plug in type distribution:	Up to 400A
		Tap off type distribution:	Up to 2000A

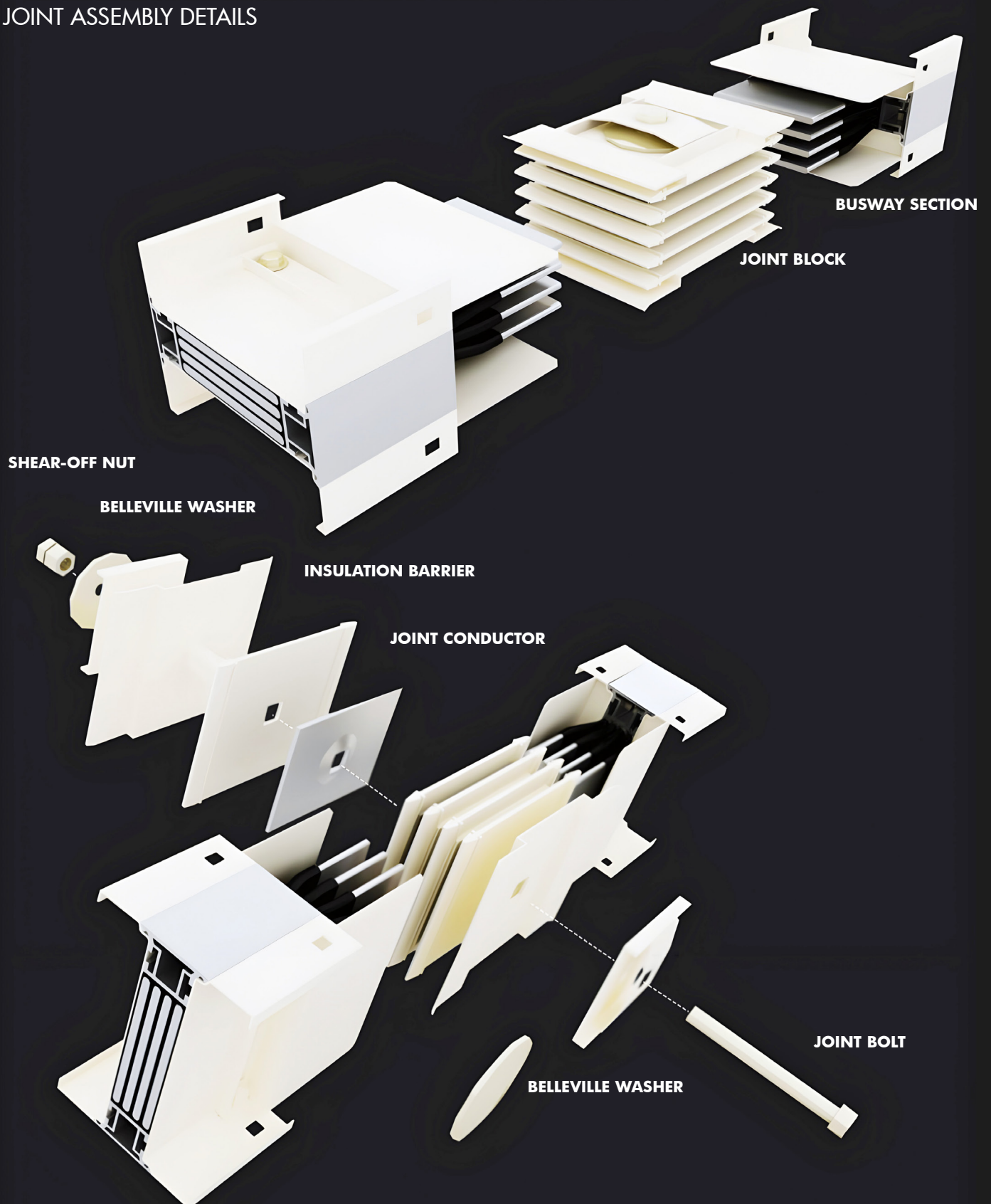
## BUSWAY SIZE AND WEIGHT

NO.	RATED CURRENT (A)	BUSWAY STACKING	WIDTH (W) (mm)	HEIGHT (H) (mm)	3W (kg/m)	3W+PE (kg/m)	4W (kg/m)	4W+PE (kg/m)
1	550	1	125	95	12	12	13	14
2	630	1	125	95	13	13	14	15
3	800	1	125	105	14	15	16	17
4	1000	1	125	115	16	17	18	20
5	1350	1	125	145	22	24	25	27
6	1600	1	125	165	26	28	30	32
7	2000	2	125	245	40	44	47	51
8	2500	2	125	285	48	52	57	61
9	3200	2	125	325	56	61	66	71
10	4000	2	125	405	71	78	85	92
11	5000	3	125	540	99	108	118	127
12	6300	3	125	615	114	125	136	147
13	7500	3	125	705	132	145	158	171

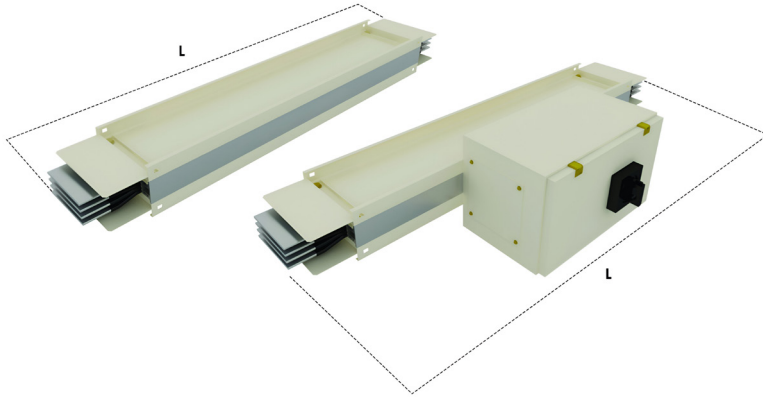
## ELECTRICAL CHARACTERISTICS

NO.	RATED CURRENT (A)	BUSWAY STACKING	R ( $\mu\Omega$ /m)	X ( $\mu\Omega$ /m)	Z ( $\mu\Omega$ /m)	VD/m (V) 0.80PF	VD/m (V) 0.85PF	VD/m (V) 0.90PF
1	550	1	131.0	53.8	141.6	0.13	0.13	0.13
2	630	1	128.0	55.4	139.5	0.15	0.15	0.15
3	800	1	89.4	44.5	99.9	0.14	0.14	0.14
4	1000	1	70.4	37.4	79.7	0.14	0.14	0.14
5	1350	1	44.0	26.8	51.5	0.12	0.12	0.12
6	1600	1	35.3	23.8	42.6	0.12	0.12	0.12
7	2000	2	21.9	14.9	26.5	0.10	0.10	0.10
8	2500	2	17.8	12.6	21.8	0.09	0.09	0.09
9	3200	2	14.8	11.6	18.8	0.10	0.10	0.10
10	4000	2	11.0	10.1	14.9	0.10	0.10	0.10
11	5000	3	8.1	8.5	11.7	0.11	0.11	0.10
12	6300	3	6.9	7.0	9.8	0.11	0.10	0.10
13	7500	3	6.0	6.2	8.6	0.11	0.11	0.11

## JOINT ASSEMBLY DETAILS

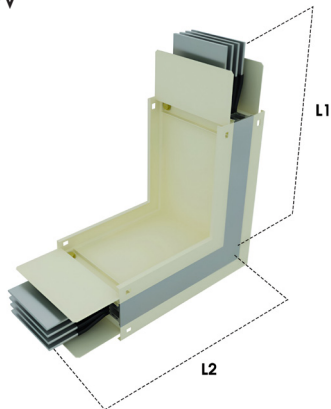


## FEEDER & PLUG-IN BUSWAY



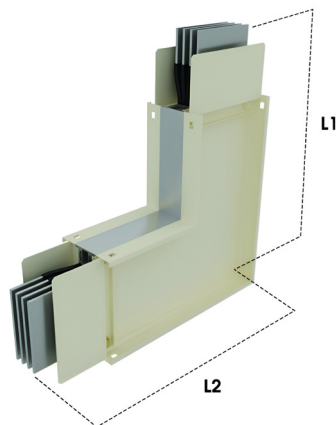
Item	Ampere (A)	Feeder Busway L (mm)		Plug-in Busway L (mm)	
1	550A	450	3000	1000	3000
2	630A	450	3000	1000	3000
3	800A	450	3000	1000	3000
4	1000A	450	3000	1000	3000
5	1350A	450	3000	1000	3000
6	1600A	450	3000	1000	3000
7	2000A	450	3000	1000	3000
8	2500A	450	3000	1000	3000
9	3200A	450	3000	1000	3000
10	4000A	450	3000	1000	3000
11	5000A	450	3000	1000	3000
12	6300A	450	3000	1000	3000
13	7500A	450	3000	1000	3000

## HORIZONTAL ELBOW



Item	Ampere (A)	Horizontal Elbow L1 (mm) x L2 (mm)
1	550A	400 x 400
2	630A	400 x 400
3	800A	400 x 400
4	1000A	400 x 400
5	1350A	400 x 400
6	1600A	400 x 400
7	2000A	400 x 400
8	2500A	400 x 400
9	3200A	400 x 400
10	4000A	400 x 400
11	5000A	400 x 400
12	6300A	400 x 400
13	7500A	400 x 400

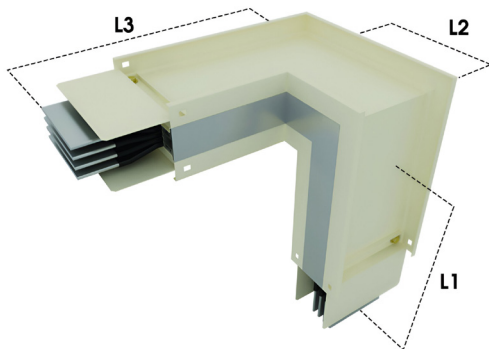
## VERTICAL ELBOW



Item	Ampere (A)	Vertical Elbow L1 (mm) x L2 (mm)
1	550A	300 x 300
2	630A	300 x 300
3	800A	300 x 300
4	1000A	300 x 300
5	1350A	325 x 325
6	1600A	325 x 325
7	2000A	375 x 375
8	2500A	400 x 400
9	3200A	425 x 425
10	4000A	450 x 450
11	5000A	550 x 550
12	6300A	600 x 600
13	7500A	600 x 600

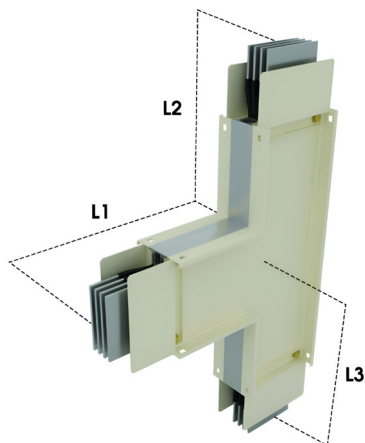


## COMBINATION ELBOW



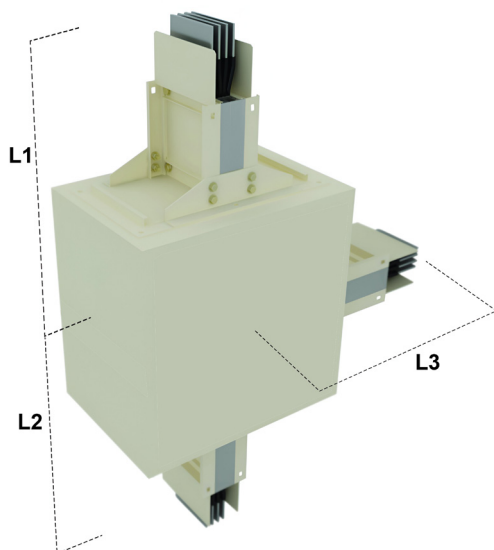
Item	Ampere (A)	Combination Elbow L1 (mm) x L2 (mm) x L3 (mm)
1	550A	400 x 250 x 300
2	630A	400 x 250 x 300
3	800A	400 x 250 x 300
4	1000A	400 x 250 x 325
5	1350A	400 x 250 x 325
6	1600A	400 x 250 x 325
7	2000A	400 x 300 x 375
8	2500A	400 x 300 x 400
9	3200A	400 x 350 x 425
10	4000A	400 x 400 x 450
11	5000A	400 x 450 x 550
12	6300A	400 x 500 x 600
13	7500A	400 x 550 x 600

## VERTICAL TEE



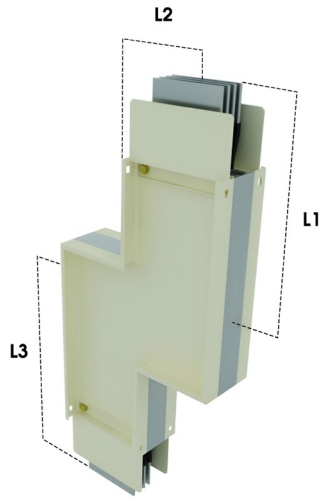
Item	Ampere (A)	Vertical Tee L1 (mm) x L2 (mm) x L3 (mm)
1	550A	300 x 300 x 300
2	630A	300 x 300 x 300
3	800A	300 x 300 x 300
4	1000A	300 x 300 x 300
5	1350A	325 x 325 x 325
6	1600A	325 x 325 x 325
7	2000A	375 x 375 x 375
8	2500A	400 x 400 x 400
9	3200A	425 x 425 x 425
10	4000A	450 x 450 x 450
11	5000A	550 x 550 x 550
12	6300A	600 x 600 x 600
13	7500A	600 x 600 x 600

## HORIZONTAL TEE



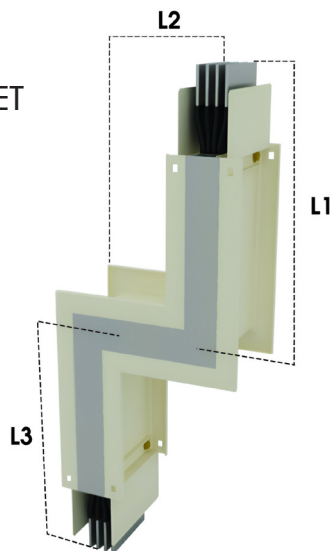
Item	Ampere (A)	Horizontal Tee L1 (mm) x L2 (mm) x L3 (mm)
1	550A	600 x 600 x 600
2	630A	600 x 600 x 600
3	800A	600 x 600 x 600
4	1000A	600 x 600 x 600
5	1350A	600 x 600 x 600
6	1600A	600 x 600 x 600
7	2000A	600 x 600 x 600
8	2500A	600 x 600 x 600
9	3200A	600 x 600 x 600
10	4000A	600 x 600 x 600
11	5000A	600 x 600 x 600
12	6300A	600 x 600 x 600
13	7500A	600 x 600 x 600

## VERTICAL OFFSET



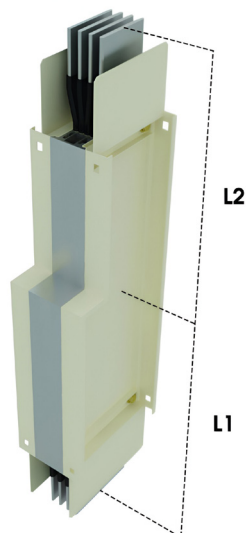
Item	Ampere (A)	Vertical Offset L1 (mm) x L2 (mm) x L3 (mm)
1	550A	300 x 300 x 300
2	630A	300 x 300 x 300
3	800A	300 x 300 x 300
4	1000A	300 x 300 x 300
5	1350A	325 x 325 x 325
6	1600A	325 x 325 x 325
7	2000A	375 x 375 x 375
8	2500A	400 x 400 x 400
9	3200A	425 x 425 x 425
10	4000A	450 x 450 x 450
11	5000A	550 x 550 x 550
12	6300A	600 x 600 x 600
13	7500A	600 x 600 x 600

## HORIZONTAL OFFSET



Item	Ampere (A)	Horizontal Offset L1 (mm) x L2 (mm) x L3 (mm)
1	550A	400 x 250 x 400
2	630A	400 x 250 x 400
3	800A	400 x 250 x 400
4	1000A	400 x 250 x 400
5	1350A	400 x 250 x 400
6	1600A	400 x 250 x 400
7	2000A	400 x 250 x 400
8	2500A	400 x 250 x 400
9	3200A	400 x 250 x 400
10	4000A	400 x 250 x 400
11	5000A	400 x 250 x 400
12	6300A	400 x 250 x 400
13	7500A	400 x 250 x 400

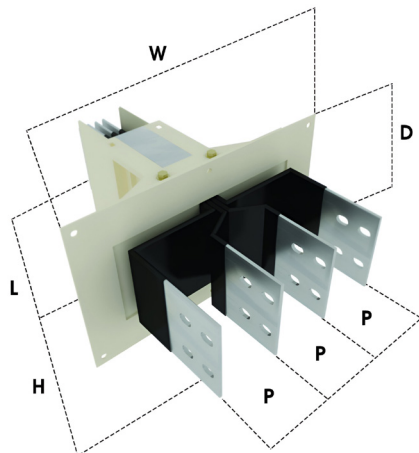
## REDUCER



Item	Ampere (A)	Reducer L1 (mm) x L2 (mm)
1	550A	500 x 500
2	630A	500 x 500
3	800A	500 x 500
4	1000A	500 x 500
5	1350A	500 x 500
6	1600A	500 x 500
7	2000A	600 x 600
8	2500A	600 x 600
9	3200A	600 x 600
10	4000A	600 x 600
11	5000A	700 x 700
12	6300A	700 x 700
13	7500A	700 x 700

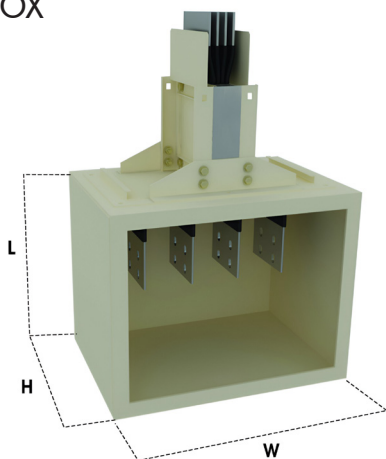


## FLANGE END



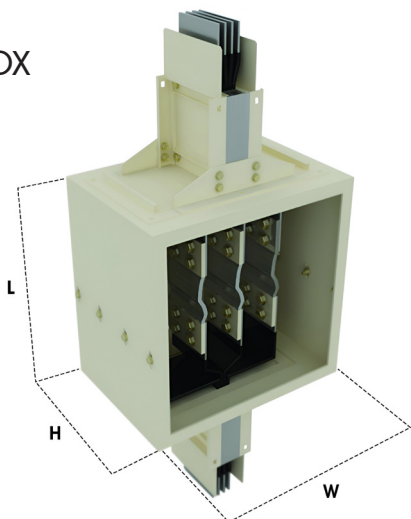
Item	Ampere (A)	Flange End				
		L(mm)	P(mm)	W(mm)	D(mm)	H(mm)
1	550A	350	100	450	155	200
2	630A	350	100	450	155	200
3	800A	350	100	450	165	200
4	1000A	350	100	450	175	200
5	1350A	350	100	450	205	200
6	1600A	350	100	450	225	200
7	2000A	350	130	540	305	200
8	2500A	350	130	540	345	200
9	3200A	350	130	540	385	200
10	4000A	350	130	540	465	200
11	5000A	350	130	540	600	200
12	6300A	350	130	540	675	200
13	7500A	350	130	540	765	200

## FLANGE END BOX



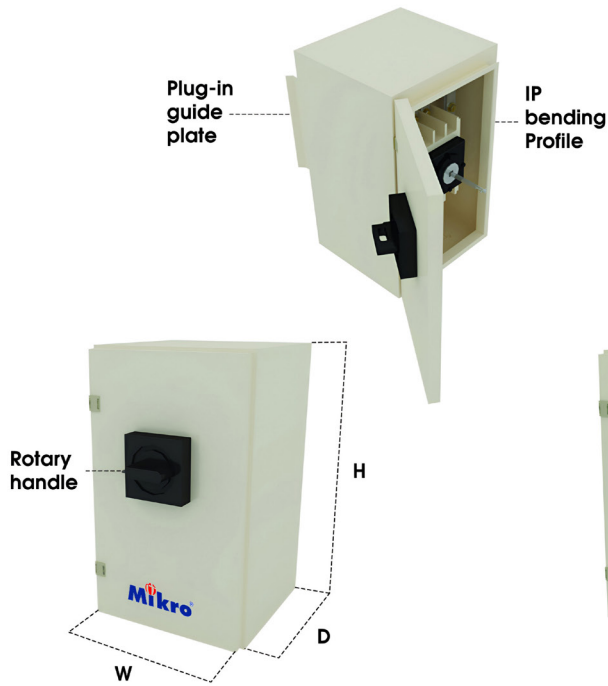
Item	Ampere (A)	Flange End Box		
		L(mm)	W(mm)	H(mm)
1	550A	500	500	195
2	630A	500	500	195
3	800A	500	500	205
4	1000A	500	500	215
5	1350A	500	500	245
6	1600A	500	500	265
7	2000A	500	590	345
8	2500A	500	590	385
9	3200A	500	590	425
10	4000A	500	590	505
11	5000A	500	590	640
12	6300A	500	590	715
13	7500A	500	590	805

## EXPANSION BOX



Item	Ampere (A)	Expansion Box		
		L(mm)	W(mm)	H(mm)
1	550A	570	500	195
2	630A	570	500	195
3	800A	570	500	205
4	1000A	570	500	215
5	1350A	570	500	245
6	1600A	570	500	265
7	2000A	570	590	345
8	2500A	570	590	385
9	3200A	570	590	425
10	4000A	570	590	505
11	5000A	570	590	640
12	6300A	570	590	715
13	7500A	570	590	805

## PLUG-IN & TAP-OFF BOX

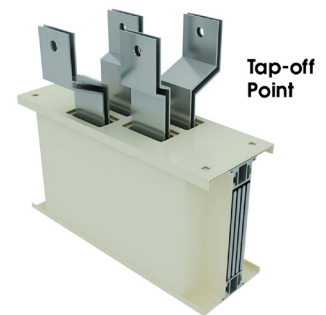


Item	Ampere (A)	W(mm)	Plug in Box D(mm)	H(mm)
1	16A - 125A	250	220	420
2	150A - 250A	250	220	250
3	300A - 400A	250	320	600

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

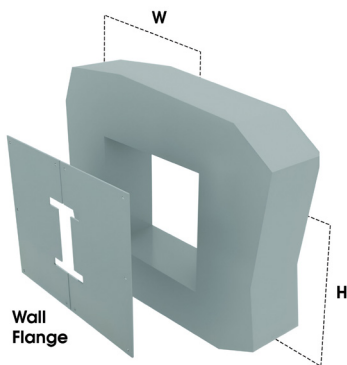


Window Type



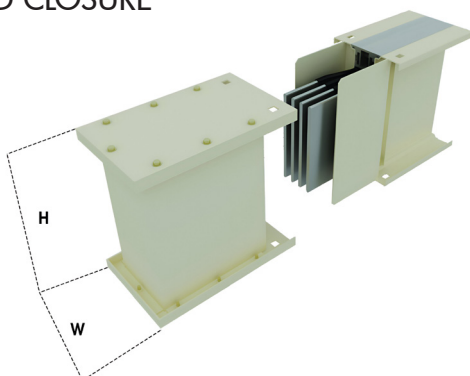
Tap-off Point

## WALL FLANGE



Item	Ampere (A)	Wall Opening W(mm)	H(mm)
1	550A	200	195
2	630A	200	195
3	800A	200	205
4	1000A	200	215
5	1350A	200	245
6	1600A	200	265
7	2000A	200	345
8	2500A	200	385
9	3200A	200	425
10	4000A	200	505
11	5000A	200	640
12	6300A	200	715
13	7500A	200	805

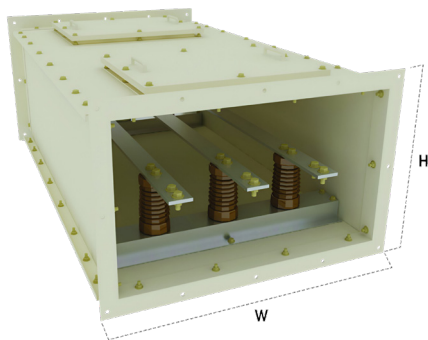
## END CLOSURE



Item	Ampere (A)	End Closure W(mm)	H(mm)
1	550A	130	100
2	630A	130	100
3	800A	130	110
4	1000A	130	120
5	1350A	130	150
6	1600A	130	170
7	2000A	130	250
8	2500A	130	290
9	3200A	130	330
10	4000A	130	410
11	5000A	130	545
12	6300A	130	620
13	7500A	130	710

## MV NSPB TYPE BUSWAY TECHNICAL SPECIFICATION

Type Of Busway Construction	: NSPB
Standard	: IEC 62271-200
System Configuration	: 3P3W, 3P3W+E
Ingress Of Protection (IP) Rating	: Up to IP66
Rated AC Voltage	: Up to 36kV
Frequency	: 50Hz / 60Hz
Current Rating	: Up to 6500A
Conductor	: Copper
Service Temperature	: Up to 50°C
Short Circuit Capacity	: 50kA

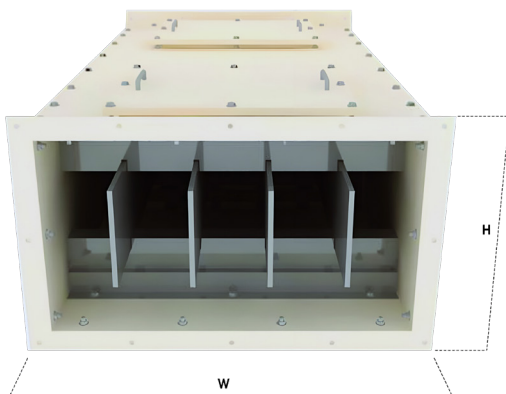


Item	Ampere (A)	3.6/7.2kV		12kV	
		W(mm)	H(mm)	W(mm)	H(mm)
1	630A	590	450	770	550
2	800A	590	450	770	550
3	1000A	665	450	845	550
4	1250A	710	450	890	550
5	1600A	770	450	950	550
6	2000A	710	450	890	550
7	2500A	810	450	950	550
8	3150A	1060	450	1150	550
9	4000A	1310	450	1400	550

Item	Ampere (A)	24kV		36kV	
		W(mm)	H(mm)	W(mm)	H(mm)
1	630A	1110	550	1610	920
2	800A	1110	550	1610	920
3	1000A	1185	550	1685	920
4	1250A	1230	550	1730	920
5	1600A	1290	550	1790	920
6	2000A	1230	550	1730	920
7	2500A	1290	550	1790	920
8	3150A	1440	550	1940	920
9	4000A	1590	550	2090	920

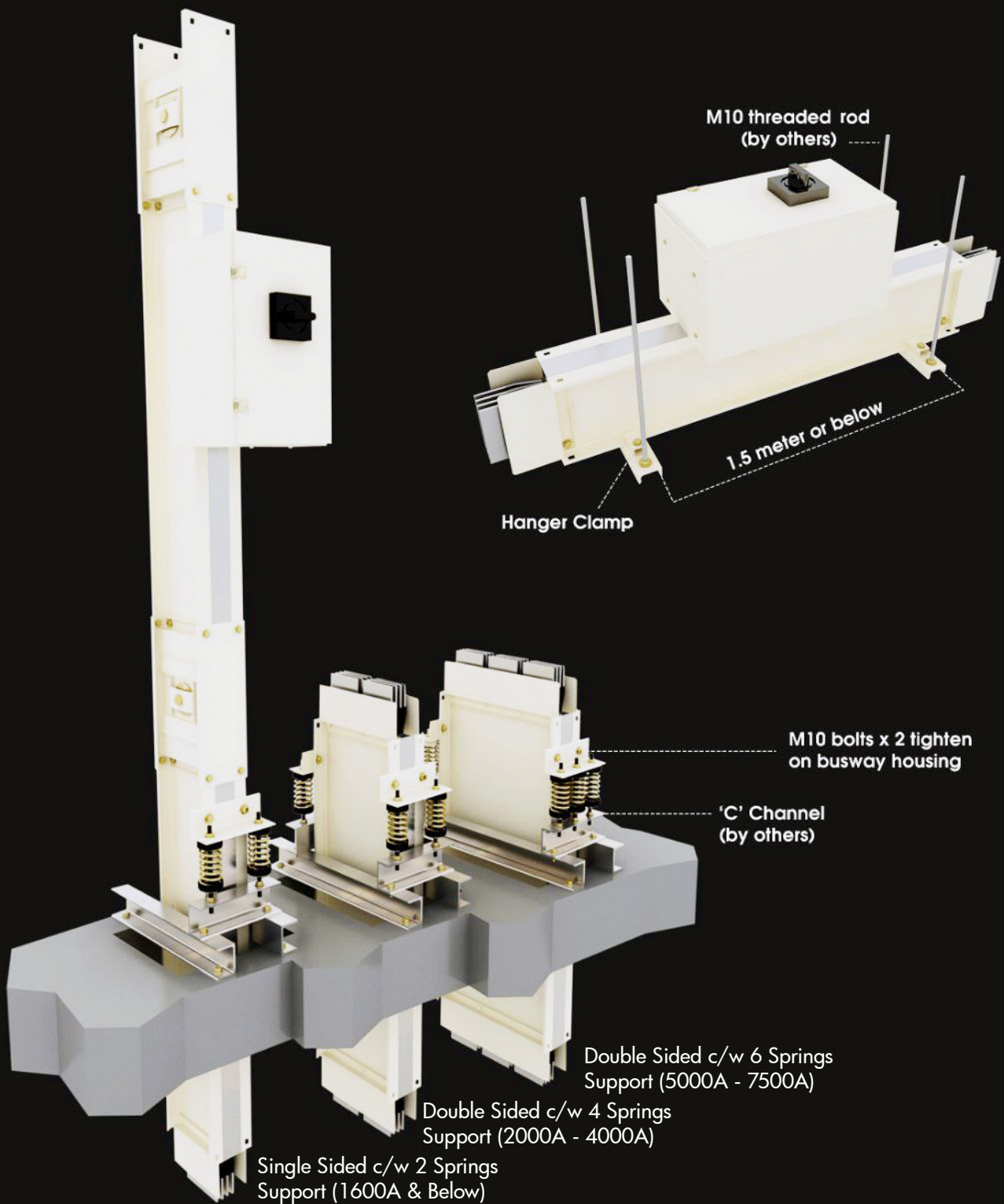
## LV NSPB TYPE BUSWAY TECHNICAL SPECIFICATION

Type of Busway Construction	: NSPB / Air Insulated
Standard	: IEC 61439-6 & IEC 62271-200
System Configuration	: 3P3W, 3P3W+E, 3P4W & 3P4W+E
Ingress of Protection (IP) Rating	: Up to IP66
Rated AC Voltage	: Up to 3.6kV
Frequency	: 50Hz / 60Hz
Current Rating	: Up to 6500A
Conductor	: Copper
Service Temperature	: Up to 50°C
Short Circuit Capacity	: 80kA



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

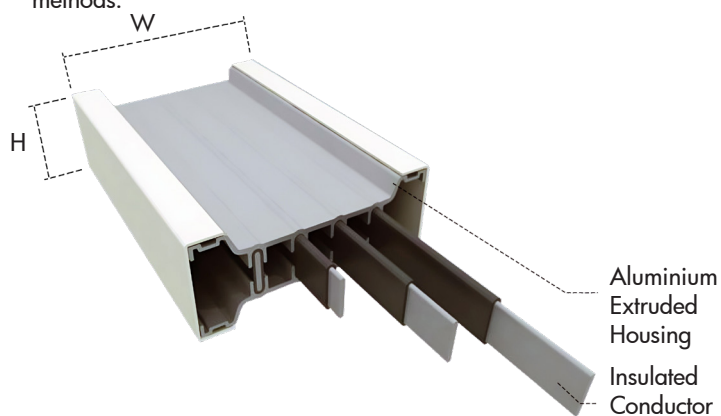
## HORIZONTAL HANGER AND VERTICAL SPRING HANGER





## LV MINI TYPE BUSWAY

Rating from 200A to 630A, this solution provides an alternative to traditional, expensive cable and conduit installations by offering a lightweight aluminum housing design. This design serves as both an integral grounding system and a heat sink, providing significant advantages in power distribution. It is particularly beneficial for various types of industrial construction projects. The system's minimum hardware requirements make it easier and more cost-effective to install, offering a more efficient solution compared to conventional methods.

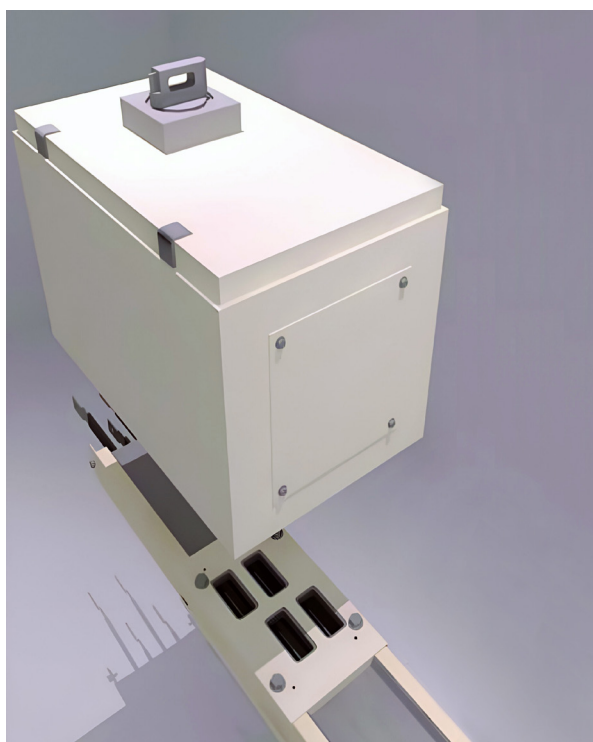


## PLUG IN BOX c/w CEE FORM SOCKET

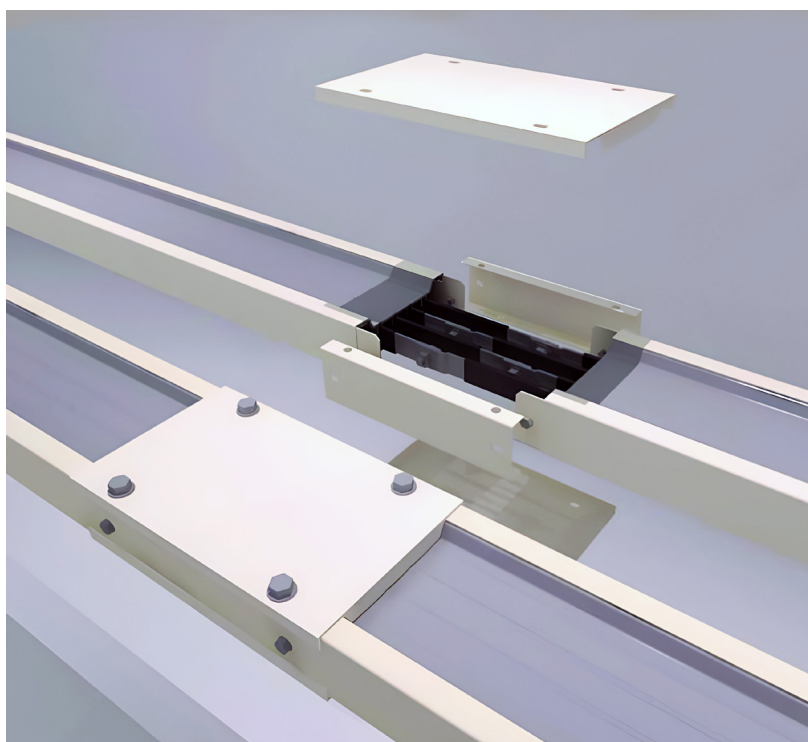


Item	Ampere (A)	W (mm)	H (mm)	WEIGHT (kg/m)
1	200A	150	60	8.0
2	300A	150	60	8.0
3	400A	150	65	8.7
4	500A	150	75	10.0
5	630A	150	85	11.5

## PLUG-IN BOX

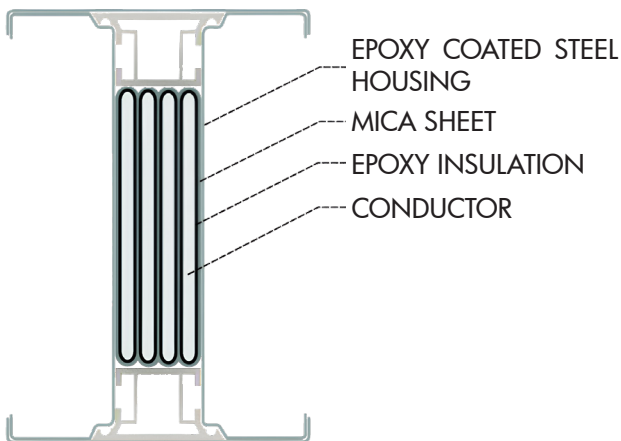


## JOINT CONNECTION DETAILS



## LV FIRE RATED TYPE

MIKRO Fire Rated Busway is designed to maintain its structural integrity and electrical functionality during a fire. These busduct systems are crucial in buildings where fire safety is a primary concern, such as high-rise buildings, hospitals, data centers, and other critical infrastructure facilities.



MIKRO Busway is designed and manufactured in accordance with the IEC 60331 and BS 6387 standards. It can withstand fire temperatures of up to 950°C, using materials and techniques that allow it to maintain functionality for a specified duration of up to 3 hours.

### Construction:

1. Enclosure: The housing is made of epoxy powder-coated steel.
2. Insulation: The insulation consists of epoxy insulation covered with Mica sheets. Mica is a fire-resistant material that prevents the spread of fire and maintains electrical insulation properties during a fire event.

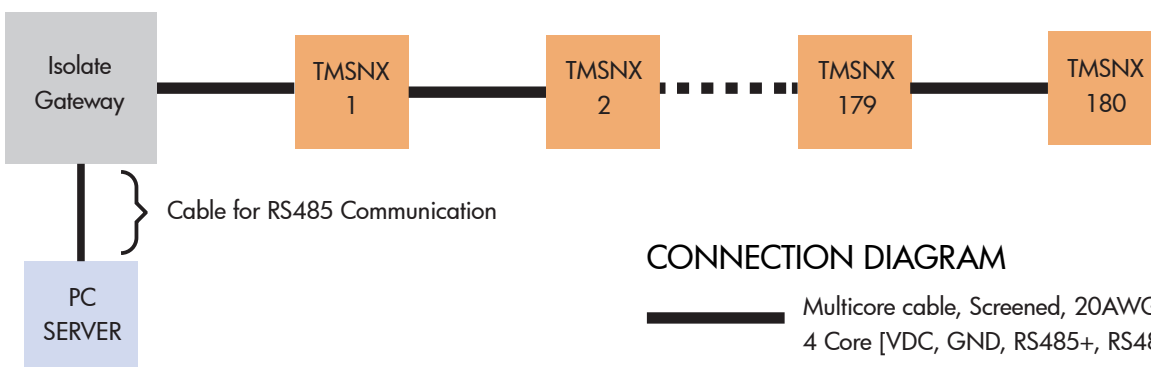
MIKRO Busways are commonly installed in vertical risers or horizontal runs. They help prevent the spread of fire through electrical systems, thereby reducing the risk of extensive damage and facilitating safe evacuation.

## TMSNX TEMPERATURE MEASUREMENT SENSOR



## TECHNICAL DATA

- Input voltage range : 8 VDC to 24 VDC
- Humidity : 5% to 95%
- Sensor measurement range : 0 °C to +120°C
- Measurement accuracy : +/-2°C
- Maximum cable withstand temperature: +120°C
- Power consumption : 3W Max
- Communication : Non Isolated RS485 Modbus RTU Protocol, 9600 Baudrate, Even Parity, 1 Stop bits
- Dimension without casing : 70mm(w) x 15mm(h) x 39mm(d)
- Dimension with casing : 70mm(w) x 15mm(h) x 41mm(d)
- Enclosure protection : IP20
- Compliance with IEC : IEC 61010-1 Safety Test
- Compatible with Mikrosafe Software

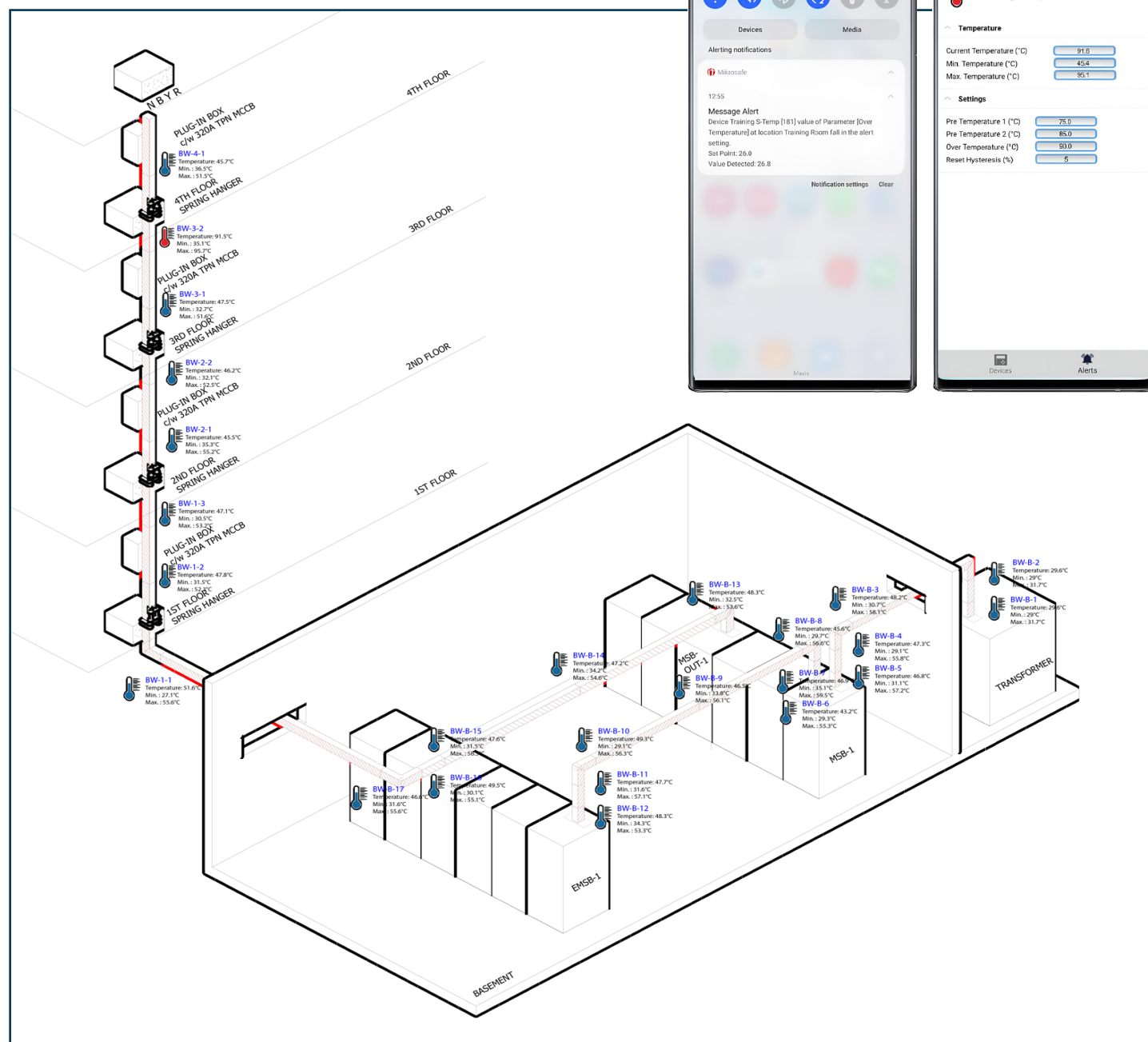


## MULTI POINT MIKROSAFE SOFTWARE

MIKRO multipoint busway temperature monitoring system is the latest enhancement to the Mikrosafe system. It includes a temperature sensor module, power supply, and fire-retardant cable. This system can monitor the temperature at every critical joint in the busway and is capable of linking to a protective relay. When critical temperatures are detected, the system can trigger the protection mechanism and trip the relay.

Users can set access controls, define alert levels, and receive notifications to prompt the maintenance crew when abnormal temperatures are detected. The system provides real-time temperature

monitoring data to facility or building managers through their PC or mobile phone via a mobile app, available on Android and Apple systems. It enables rapid troubleshooting and identification of problem segments in the busway with over-temperature issues. Additionally, users can receive push notifications of alerts on the mobile application.





## FREQUENTLY ASKED QUESTIONS (FAQS)

### 1. What is a busduct?

A busduct is a prefabricated electrical distribution system consisting of conductors enclosed in a protective housing. It is used to transmit large currents of electricity within buildings or between buildings.

### 2. What are the advantages of using busducts?

- Efficiency: lower impedance and reduced losses compared to traditional cable systems.
- Space saving: compact design saves installation space.
- Scalability: easy to expand or modify without major disruptions.
- Safety: reduced risk of electrical faults and easier maintenance.

### 3. What types of busducts are available?

There are several types of busducts, including:

- Compact Busduct: features a sandwich-like construction, reducing electromagnetic interference (EMF) and ensuring efficient heat dissipation.
- Air Insulated Busduct: uses air as the insulation medium.
- Lighting busduct: designed to efficiently distribute electrical power to various lighting fixtures.
- Isolated Phase Busduct (IPB): provides electrical insulation for each phase.
- Non-Segregated Phase Busduct (NSPB): all three phases share a common housing.
- Segregated Phase Busduct (SPB): each phase is individually housed for maximum safety.

### 4. What materials are used in busduct construction?

Busducts can be constructed from materials such as aluminum, copper, or a combination of both. The choice of material depends on factors such as current-carrying capacity, cost, and environmental considerations.

### 5. What are the typical applications of busducts?

Busducts are commonly used in various industries, including:

- Power generation plants
- Manufacturing facilities
- Data centers
- Commercial buildings
- Transportation systems

### 6. How is a busduct installed?

The installation process involves:

- Planning the route and support structure.
- Assembling the busduct sections.
- Connecting to power sources and loads.
- Conducting insulation and continuity tests.

### 7. What maintenance is required for busducts?

- Checking the tightness of connections.
- Monitoring temperature levels.

### 8. How do busducts compare to traditional cable systems?

Busducts offer advantages such as higher ampacity, better space utilization, lower installation costs (especially over long distances), and easier maintenance compared to traditional cable systems.

### 9. How do environmental conditions affect busduct performance?

Busducts are designed to operate in various environmental conditions. However, factors like temperature, humidity, and exposure to corrosive elements can affect their performance. Special coatings or enclosures may be used to protect against harsh environments.

### 10. What are the cost considerations for busduct systems?

The cost of busduct systems can vary based on factors such as the material used, the length and complexity of the installation, and any customization required. However, busducts can offer long-term savings due to lower maintenance costs and increased efficiency.

### 11. How long is the lifespan of a busduct system?

At least 20 years, the lifespan of a busduct system can vary depending on the quality of materials used, the operating environment, and the level of maintenance. Generally, busducts are designed for long-term use and can last several decades with proper care.

### 12. Can busducts be used in seismically active areas?

Yes, busducts can be designed and installed to meet seismic standards, ensuring they remain safe and operational during and after seismic events.

  
**Mikro<sup>®</sup>**  
**MIKRO BUSWAY SDN BHD**  
F.K.A. EPE BUSWAY SDN BHD  
(Reg. No.: 201001002004)

Lot 6, Jalan Permata 2,  
Arab Malaysian Industrial Park,  
71800 Nilai,  
Negeri Sembilan, Malaysia.  
Tel: +606 7998500  
Email: sales@itmikro.com

