ElectriDistro

ED-MT-GMZ-EN
Rev. 02 · October 2026
English edition

Technical manual

GM-Z MV Busway

Medium-voltage busway with solid epoxy-resin insulation.

3.6–40.5 kV
Medium voltage

800–6,300A
Rated current

IP68 · IK10
Protection (12kV class)

Copper
Conductor

Manufactured by **Wetown Electric Group** · Distributed in the Americas by **ElectriDistro**
Authorized distribution channels: **BYB Electric Ecuador** · **Colombia** · **Peru**

WETOWN

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1.1 About this manual

Scope

GM-Z MV medium-voltage busway.
12kV class: 800A to 6,300A.
35kV class: 1,600A to 4,000A.

Conventions

Period for decimals, comma for thousands.
Example: 17.5 or 6,300.
Copper conductors across the series.

Data may change due to technical or production improvements.
Confirm values with ElectriDistro when ordering.

1.2 · Manufacturer

Wetown Electric Group

The busway manufacturer with the largest production plant in Asia.
30+ years designing, testing and manufacturing busway in China.

Wetown Electric Group headquarters · China

136,000m²	700,000m	30+	40+
industrial complex 84,000m² built	of busway per year	years building busway	countries with installed projects

1.2.1 Manufacturing capacity

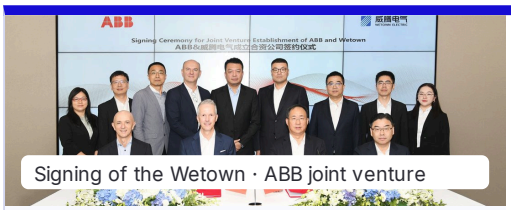
Plants	4 manufacturing bases and 10+ subsidiaries in China and abroad
Stated capacity	Busway **700,000m** · copper bar **10,000t** · aluminum profile **4,000t**
Research	Three R&D centers in China
In-house laboratory	40+ tests · recognized by CNAS, DEKRA (formerly KEMA), ASTA and TÜV
Manufacturing	Automated assembly lines · high-speed saw cutting · silver-plated contacts
Technical alliances	GE (2007) · ABB (2016) · Westinghouse (2017)
Listed company	Shanghai Stock Exchange, STAR Market · code 688226

1.2.2 Global presence

1.3 · Manufacturer

Manufacturer backing

1.3.1 Technical alliances with global brands



Signing of the Wetown · ABB joint venture

Since 2007 | Since 2016 | Since 2017

- Wetown works with **GE, ABB and Westinghouse** as technical allies.
- With ABB, it formed a joint venture: **Jiangsu Wetown ABB Busway**.
- That shared know-how backs every Wetown busway.

Extensive technical know-how, without the overhead of a global brand.
That's the ElectriDistro competitive edge.

1.3.2 Certifications

Management systems	ISO 9001 Quality	ISO 14001 Environment	OHSAS 18001 Health & safety	SA 8000 Social accountability			
Product certification	UL United States	CE European Union	CCC China	CIDET Colombia	EAC Eurasian Union	GOST-R Russia	RoHS Restricted substances
Testing laboratories	DEKRA Netherlands · formerly KEMA	ASTA United Kingdom					

1.3.3 Manufacturer reference projects

Marina Bay Sands Hotel
Singapore · hotel

Casino Tower
Macau · casino and hotel

National Stadium
Beijing · stadium

Asian Games Stadium
Stadium

Shenzhen Baohe Hospital
Shenzhen · hospital

Wanda Plaza
Shopping center

Panzhihua Steel (Group)
Steel industry

Gezhouba Group
Hydropower

1.3.4 Authorized distribution chain

WETOWN
Manufacturer
Wetown Electric Group
Design, testing and manufacturing

→

ElectriDistro
Exclusive distributor
ElectriDistro
Represents Wetown in the Americas

→

Authorized distribution channels
BYB Electric
- BYB Electric Ecuador
- BYB Electric Colombia
- BYB Electric Peru

Sales, technical support and warranty.

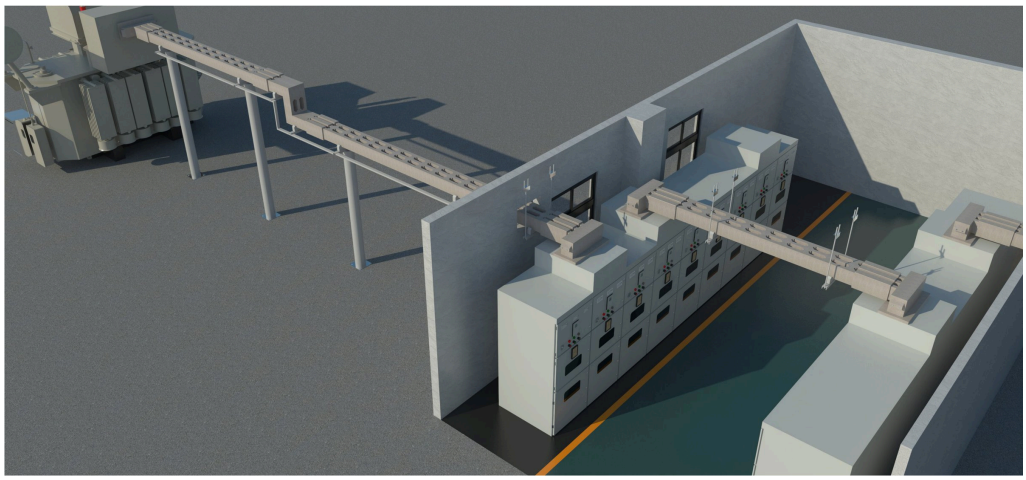
2 · System

GM-Z MV busway system

Integrated three-phase medium-voltage busway with solid insulation.
Carries power from generators and transformers to switchgear and equipment.

3.6–40.5 kV	800–6,300A	IP68 · IK10	−50 to +65°C
medium voltage 12kV and 35kV classes	12kV class 35kV: 1,600–4,000A	12kV class 35kV: IP67 · IK10	ambient temperature

Figure 2.1 Typical system — transformer, outdoor runs on supports and connection to MV switchgear



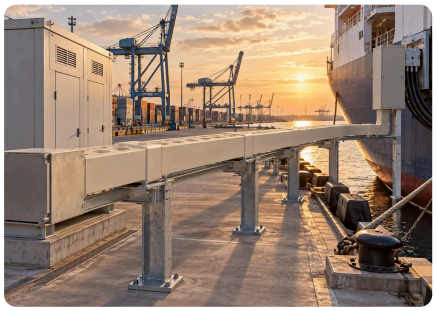
2.1 Applications

Power plants, petrochemical, shipyards, docks, offshore platforms, industry and mining.

Nuclear power plants

Power generation plants

Substations and industry



Ports and shipyards

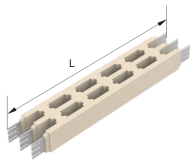
Petrochemical and salt-laden air

Illustrative images

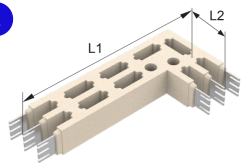
2 · System

Components and names

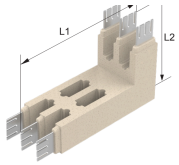
The names in this manual match the ElectriDistro quote.

1


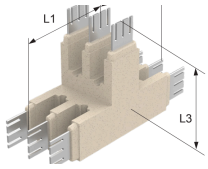
Straight length

2


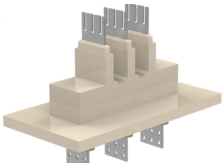
Horizontal BEND

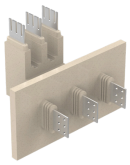
3


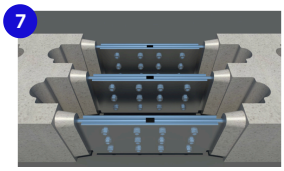
Vertical BEND

4


Vertical TEE

5

T1 disc connector

6

L1 disc connector

7

Field-cast joint

	ElectriDistro name	Also called
1	**Straight length**	Straight section, feeder run
2	**Horizontal BEND**	Flat bend, change of direction in plane
3	**Vertical BEND**	Edgewise bend, rise or drop
4	**Vertical TEE**	T-section, branch
5	**T1 disc connector**	T1 disc joint, equipment connection, flange end
6	**L1 disc connector**	L1 disc joint, L-shaped equipment connection
7	**Field-cast joint**	Joint, poured joint, cast-in-place joint

> Tap-offs, expansion joints and special parts are also built to project requirements.

3 · Design features

Design and performance

What each design detail of the GM-Z MV busway delivers.

Figure 3.1 Section 12kV

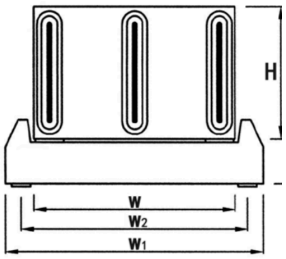


Figure 3.2 Joint assembly

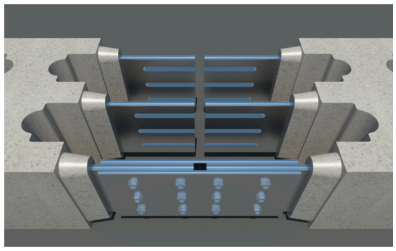
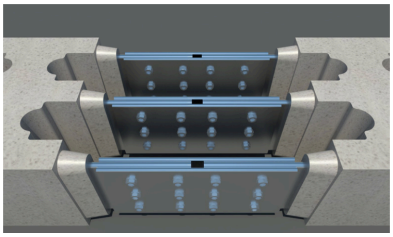


Figure 3.3 Joint bolted



3.1 Solid resin insulation

- Conductor sealed in fluidized powder.
- Vacuum-cast in epoxy resin and mineral filler.
- No stress between conductor and resin.
- Low capacitive current to ground.

3.2 High-purity copper conductor

- Electrolytic copper, purity ≥ 99.9935%.
- Conductivity above 98% IACS.
- Low voltage drop.

3.3 IP68 and IK10

- IP68 per IEC 60529 in the 12kV class.
- Operates under water jets and immersion.
- IK10 even after aging.

3.4 Nuclear-grade seismic design

- Meets nuclear seismic category I.
- Equivalent to seismic intensity 8.
- Wetown took part in NB/T 25076-2017.
- The only manufacturer that helped draft it.

3.5 Material safety

- Class B insulation.
- Flame retardant F-V0, self-extinguishing.
- Explosion-proof, corrosion-free.
- Resists UV, fungus and rodents.

3.6 Cooling and maintenance

- Patented ventilation windows.
- Stiffer body, better heat dissipation.
- Compact and easy to install.
- Maintenance-free once installed.

3.7 · Design features

Service conditions, standards and model code

Where the GM-Z MV can operate and how each model is identified.

3.7.1 Service conditions

Altitude	≤ 1,000m; above that, derate per GB/T 11022: $Ka = e^{m(H-1000)/8150}$
Ambient temperature	−50°C to +65°C
Relative humidity	0% to 100%
Atmospheric pressure	86kPa to 106kPa
Air	Salt-laden atmosphere
Water	Powerful water jets and prolonged immersion
Dust	Dust present is acceptable
Seismic	0 to 2,000Hz frequency, 0.2g peak ground acceleration (intensity 8)

For special environments, contact ElectriDistro.

3.7.2 Standards

IEC / industry standard	GB equivalent	Scope
IEC 62271-1	GB/T 11022	Common specifications for high-voltage switchgear
IEC 62271-200	GB 3906	Metal-enclosed switchgear, 1 to 52kV
GB/T 8349	—	Metal-enclosed busway
NB/T 25076-2017	—	Nuclear industry standard, more demanding
IEC 60529	GB 4208	Degrees of protection (IP code)

3.7.3 Model code

G Cast-resin insulation | **M** Busway system | **Z** Medium voltage 3.6–40.5kV - **3200** Rated current (A) / **12** Operating voltage (kV)

Example · GMZ-3200/12

GM-Z MV busway, 3,200A, 12kV, copper conductor.

4.1 · Technical data

12kV class: electrical data

Rated voltage 3.6–12kV. Copper conductor, conductivity above 98% IACS.

Table 4.1 12kV class · 800A to 2,500A 12kV

Rated current (A)	800	1,000	1,250	1,600	2,000	2,500
Rated voltage	3.6–12kV					
Frequency	50/60Hz					
Resistance at 25°C (µΩ/m)	39.0	27.6	25.6	20.8	18.2	17.5
Resistance at 90°C (µΩ/m)	47.6	35.5	30.1	24.9	22.1	21.7
Power-frequency withstand, 1 min	45kV					
Lightning impulse withstand voltage	105kV					
Icw, short-time withstand current (kA · s)	50 · 4s	50 · 4s	50 · 4s	50 · 4s	50 · 4s	50 · 4s
Ipk, peak withstand current (kA)	125	125	125	125	125	135
Power losses (W/m)	≤150	≤150	≤150	≤150	≤150	≤120
Degree of protection IP / IK	IP68 / IK10					

Table 4.2 12kV class · 3,200A to 6,300A 12kV

Rated current (A)	3,200	3,500	4,000	4,500	5,000	6,300
Rated voltage	3.6–12kV					
Frequency	50/60Hz					
Resistance at 25°C (µΩ/m)	17.1	14.2	8.8	7.3	5.8	4.6
Resistance at 90°C (µΩ/m)	21.4	17.8	13.3	11.5	9.9	8.5
Power-frequency withstand, 1 min	45kV					
Lightning impulse withstand voltage	105kV					
Icw, short-time withstand current (kA · s)	50 · 4s	100 · 2s	100 · 2s	100 · 2s	100 · 2s	100 · 2s
Ipk, peak withstand current (kA)	135	250	250	250	250	250
Power losses (W/m)	≤120	≤90	≤90	≤90	≤90	≤90
Degree of protection IP / IK	IP68 / IK10					

> **Icw** (rated short-time withstand current): current withstood for the stated time without damage.
> **Ipk** (rated peak withstand current): maximum peak value withstood.
> For special specifications, contact ElectriDistro.

4.2 · Technical data

12kV class: dimensions and weight

Constant 330mm outside width. Height increases with current.

Figure 4.1 Cross-section — 800A to 2,500A

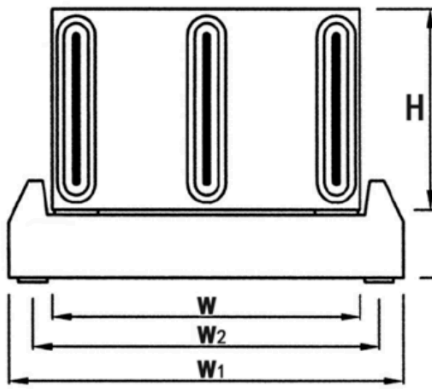


Figure 4.2 Cross-section — 3,200A to 6,300A

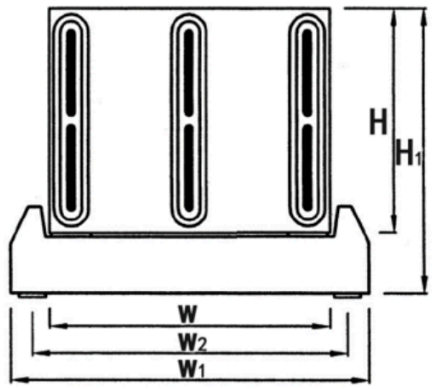


Table 4.3 Dimensions · 800A to 2,500A 12kV

Rated current (A)	800	1,000	1,250	1,600	2,000	2,500
Width × height W × H (mm)	330×100	330×105	330×125	330×150	330×150	330×170
Width W2 (mm)	350	350	350	350	350	350
Width × height with base W1 × H1 (mm)	425×175	425×180	425×200	425×225	425×225	425×245
Weight (kg/m)	57	60	73	88	93	109

Table 4.4 Dimensions · 3,200A to 6,300A 12kV

Rated current (A)	3,200	3,500	4,000	4,500	5,000	6,300
Width × height W × H (mm)	330×200	330×200	330×200	330×300	330×300	330×300
Width W2 (mm)	350	350	350	350	350	350
Width × height with base W1 × H1 (mm)	425×275	425×275	425×275	425×375	425×375	425×375
Weight (kg/m)	133	140	153	188	201	280

> W: body width. W2: width at the base. W1 × H1: overall width and height with the base.

4.3 · Technical data

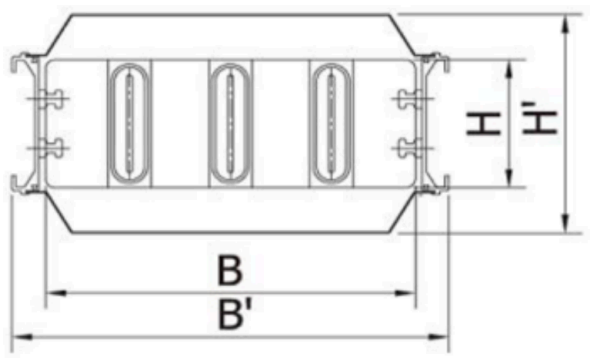
35kV class: data and dimensions

For 35kV systems. Copper conductor, conductivity above 98% IACS.

Table 4.5 35kV class · 1,600A to 4,000A 35kV

Rated current (A)	1,600	2,000	2,500	3,200	3,500	4,000
Rated voltage	35kV					
Frequency	50/60Hz					
Resistance at 25°C (µΩ/m)	29.2	21.9	15.0	11.2	9.3	7.4
Resistance at 90°C (µΩ/m)	55.5	40.6	26.5	21.3	19.5	14.8
Power-frequency withstand, 1 min	100kV					
Lightning impulse withstand voltage	185kV					
Icw, short-time withstand current (kA · s)	100 · 4s	100 · 4s	100 · 4s	100 · 4s	100 · 4s	100 · 4s
Ipk, peak withstand current (kA)	135	250	250	250	250	250
Power losses (W/m)	≤220	≤220	≤220	≤200	≤200	≤200
Degree of protection IP / IK	IP67 / IK10					
Width × height B × H (mm)	550×150	550×150	550×170	550×200	550×200	550×200
Overall width × height B' × H' (mm)	650×360	650×360	650×380	650×410	650×410	650×410

Figure 4.3 Section 35kV · B width · H height



The 35kV class is rated IP67 / IK10.

B × H: body. B' × H': overall dimensions.

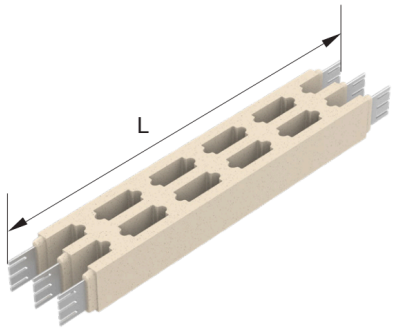
For weights and special specifications, contact ElectriDistro.

5.1 · Components

Straight length, BENDs and TEE

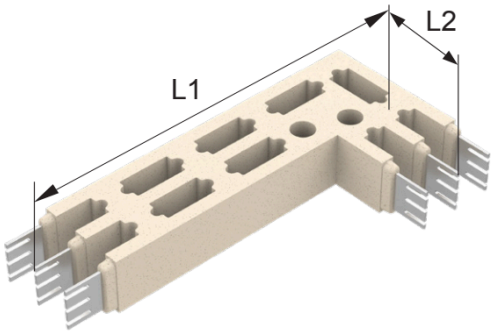
Standard run components. All lengths can be customized.

Figure 5.1 Straight length



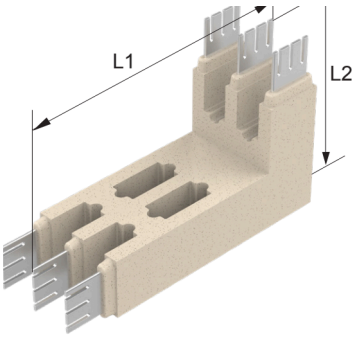
Code: GM Z-☐/☐-01
Length: L = 1,000, 2,000, 3,000 or 4,000mm.

Figure 5.2 Horizontal BEND



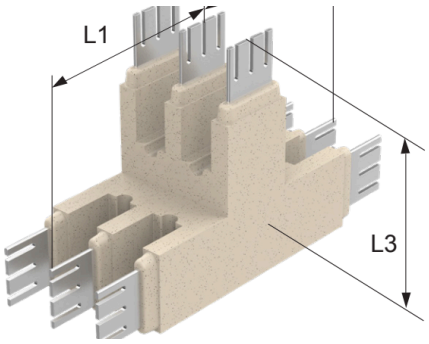
Code: GM Z-☐/☐-02
Length: L1 + L2 = 1,000 or 2,000mm.

Figure 5.3 Vertical BEND



Code: GM Z-☐/☐-03
Length: L1 + L2 = 1,000 or 2,000mm.

Figure 5.4 Vertical TEE



Code: GM Z-☐/☐-04
Length: L1 + L2 + L3 = 1,500 or 3,000mm.

> In the code, ☐/☐ is rated current / operating voltage. Example: GM Z-3200/12-01.

5.2 · Components

T1 disc connector

Connects the busway to switchgear, transformers and generators.
Code GM Z-□/□-05. Dimensions in mm.

Figure 5.5 Type T1

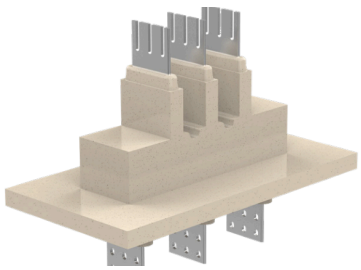


Figure 5.6 Single bar — front and side views

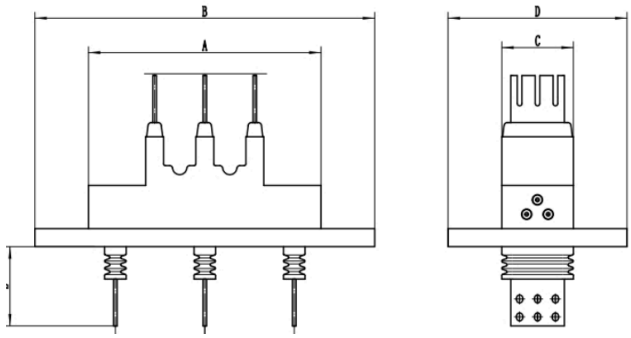


Table 5.1 Single bar

Bar width (mm)	Al	A	B	C	D	E
150	250	650	950	200	500	220
120	250	650	950	170	470	220
100	250	650	950	150	450	220
80	250	650	950	130	430	200
60	250	650	950	110	410	180
50	250	650	950	100	400	170

Figure 5.7 Double bar — front and side views

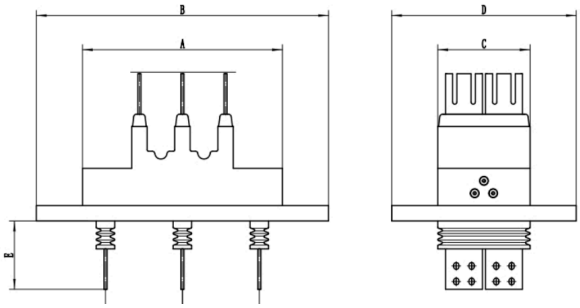


Table 5.2 Double bar

Bar width (mm)	Al	A	B	C	D	E
120 × 2	250	650	950	300	600	220
100 × 2	250	650	950	260	560	220

> Dimensions of each part are detailed in the order drawings. For special sizes, contact ElectriDistro.

5.3 · Components

L1 disc connector

Connects the busway to switchgear, transformers and generators.
Code GM Z-□/□-06. Dimensions in mm.

Figure 5.8 Type L1

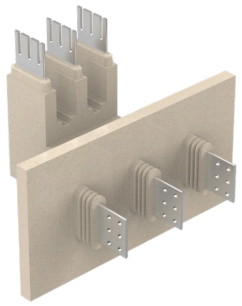


Figure 5.9 Single bar — front and side views

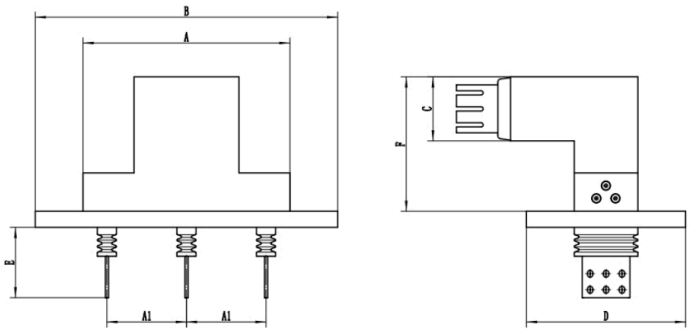


Table 5.3 Single bar

Bar width (mm)	Al	A	B	C	D	E	F
150	250	650	950	200	500	220	>350
120	250	650	950	170	470	220	>320
100	250	650	950	150	450	220	>300
80	250	650	950	130	430	200	>280
60	250	650	950	110	410	180	>260
50	250	650	950	100	400	170	>250

Figure 5.10 Double bar — front and side views

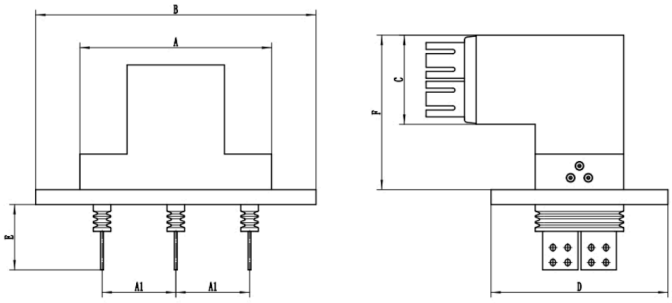


Table 5.4 Double bar

Bar width (mm)	Al	A	B	C	D	E	F
120 × 2	250	650	950	300	600	220	>450
100 × 2	250	650	950	260	560	220	>410

> Dimensions of each part are detailed in the order drawings. For special sizes, contact ElectriDistro.

6.1 · Installation

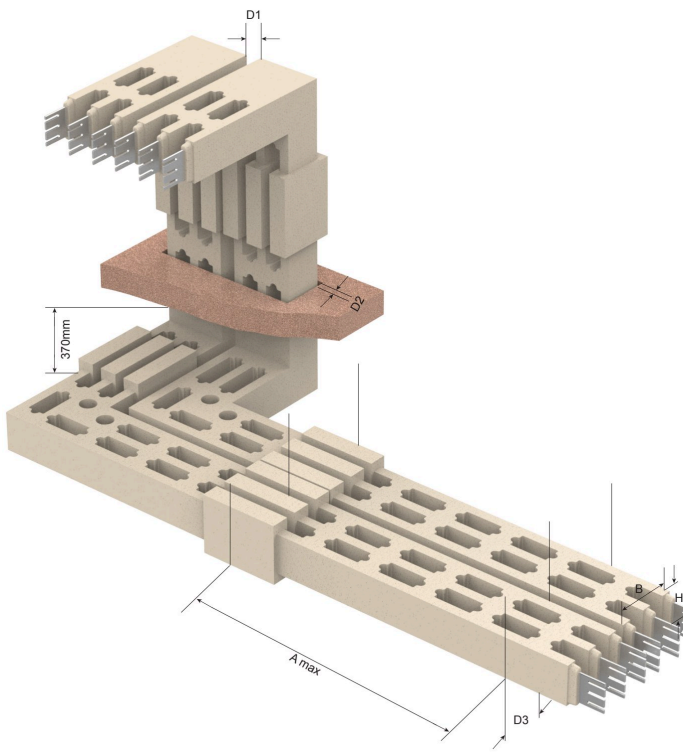
Supports and clearances

Mounting clearances for all models.

Table 6.1 Installation clearances

Maximum support spacing, horizontal run (Amax)	3,000mm
Maximum support spacing, vertical run (Amax)	2,000mm
Minimum spacing between busway runs (D1)	150mm
Minimum clearance to walls (D2)	100mm
Clearance between support and busway (D3)	75mm
Minimum distance from support to joint	250mm

Figure 6.1 Clearances — D1, D2, D3 and Amax



Same values for all of the manufacturer's models.

12kV: from 330×100 to 330×300mm.
40.5kV: 330×100mm.

The manufacturer designs the supports for site conditions and may adjust the clearances.

If the busway has a protective cover or other protection, these clearances do not apply.

6.2 · Installation

Field-cast joint

Parts are bolted together and the joint is sealed with resin cast on site.

Figure 6.2 Gap ≤ 20mm

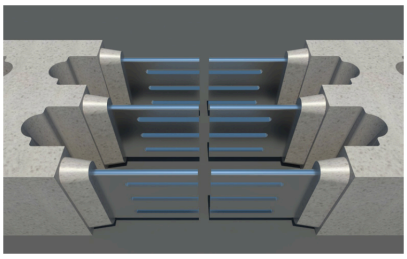


Figure 6.3 Connect bars

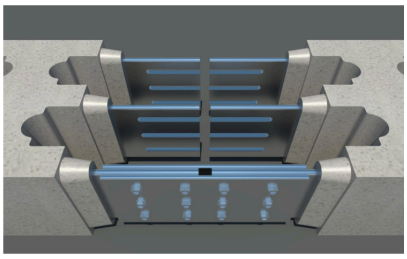


Figure 6.4 Tighten torque

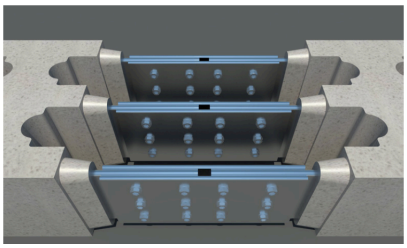
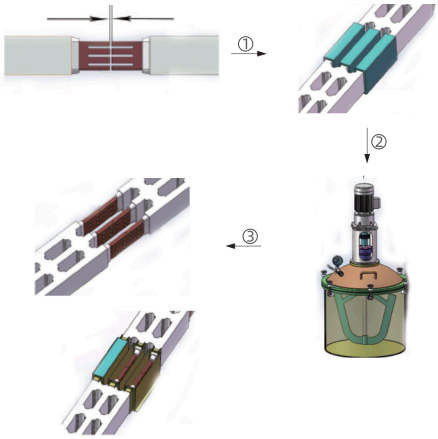


Figure 6.5 Casting steps 1 to 3



6.2.1 Sequence

- Leave up to 20mm between parts and connect the bars.
- Tighten the bolts with a torque wrench.
- Measure contact and insulation resistance.
- Fit the mold and pour the resin.
- Resin is prepared in a vacuum mixing tank.

Table 6.2 Bolt torque (N·m)

Bolt	M10	M12
Copper conductor	43	74

6.2.2 Testing and casting conditions

After tightening, measure contact and insulation resistance. The manufacturer provides the reference values.

Pour the mold only if the measurements meet those values.

Work above 5°C and below 85% relative humidity.

Otherwise, fix site conditions first and get the manufacturer's guidance and approval.

The complete procedure is in the manufacturer's installation manual.

7 · Tests

Tests and quote data

Factory tests on every GM-Z MV busway and the data we need for your quote.

7.1 Factory routine tests

No.	Test	Parameter	Standard and clause
1	**Power-frequency withstand voltage**	Phase-to-phase and to ground (dry / wet): 45 / 30kV, 1 min	GB/T 8349-2000, 8.2.3
2	**Lightning impulse withstand voltage**	Phase-to-phase and to ground: 105kV	GB/T 8349-2000, 8.2.3
3	**Partial discharge**	1.1 × 12kV, ≤ 20pC	GB/T 8349-2000, 8
4	**Main circuit resistance**	—	GB/T 11022-2011, 6.4
5	**Insulation resistance**	≥ 10GΩ	GB/T 8349-2000, 8.2.3

> Parameters in the table apply to the 12kV class.
> For the 35kV class and additional tests, contact ElectriDistro.

7.2 Data needed for a quote

With this data, ElectriDistro prepares an accurate medium-voltage quote.

System voltage	3.6–12kV or up to 40.5kV
Rated current	Based on the load, from 800A to 6,300A
Run length	Meters of straight length, with drawings or isometrics
BENDs and TEEs	Quantity, type and dimensions L1, L2, L3
Connected equipment	Transformer, generator or switchgear, with model
Mounting	Horizontal, vertical, indoor or outdoor
Environment	Salt air, water, immersion, dust, altitude and seismic zone
Short circuit	System short-circuit current (kA)

> Send your drawings and bill of materials as shown in section 8.

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