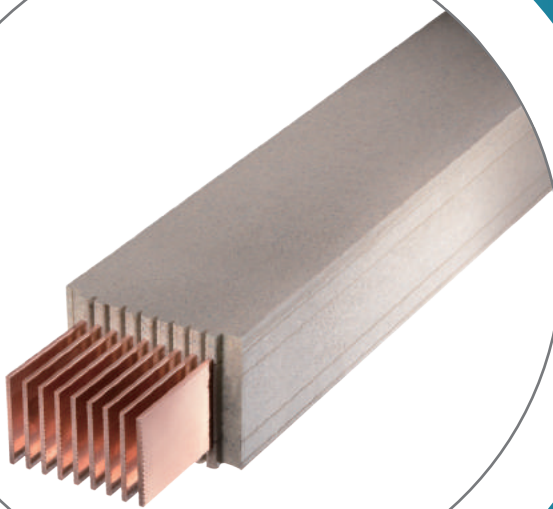
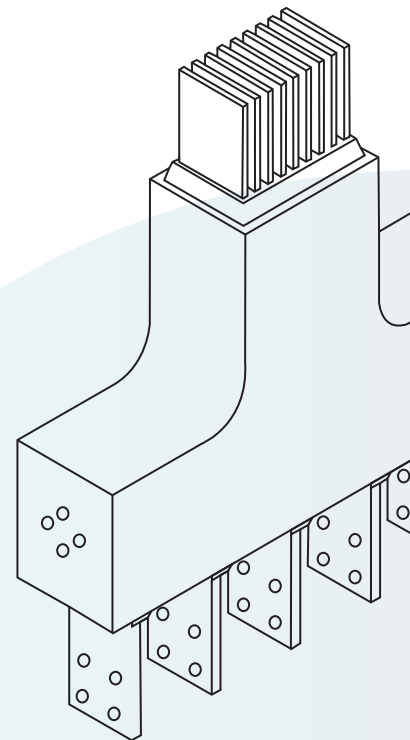


TEC  **BAR**

CAST-RESIN INSULATED BUSWAY SYSTEMS



LOW
Voltage



Content

| | |
|--|----|
| Content..... | 1 |
| Foreword..... | 2 |
| Excellence..... | 3 |
| Product Feature..... | 4 |
| Product Certification..... | 5 |
| Electrical Characteristics of Low Voltage Busway..... | 6 |
| Product Specifications..... | 7 |
| Selection of Standard Parts (Low Voltage Series)..... | 9 |
| Product Installation..... | 11 |
| Assembly Diagrams of Low Voltage Busway Junction..... | 12 |
| Low Voltage Busway Horizontal Hanger Standard..... | 13 |
| Low Voltage Busway Vertical Hanger Standard..... | 14 |
| Dimensions of Standard Terminal Elements for Low Voltage Busway..... | 15 |
| Dimensions of Standard Terminal Elements Copper Plate for Low Voltage Busway..... | 19 |
| Opening Requirement of Standard Terminal Elements and Switchgear for Low Voltage Busway..... | 20 |
| Low Voltage Busway Terminal Element and Switchgear Standard Guideline..... | 21 |
| Low Voltage Busway Terminal Element and Generator Connection Standard Guideline..... | 22 |
| Plug-in Unit..... | 23 |
| Product Design Theory..... | 24 |
| Product Model Identification / Low Voltage Busway Routine Test Items..... | 25 |
| Projects Reference List..... | 26 |

Foreword

Due to drastic increase in the requirement of safety and stability for power distribution among public engineering, the conventional power cable and metal -enclosed busway can no longer fulfill the requirement stated above. TAIAN-ECOBAR Technology Co., Ltd. was established in 1988 to further develop the cutting edge cast-resin insulated busway systems from Europe to reach its fullest potential.

TECOBAR product is built with excellent features of electrical characteristic and mechanical strength, fire and water proof, anti-corrosion, compact size, easy installation and most importantly maintenance free. Today, TECOBAR has become the first choice of power transmission serving broad range of applications from high-rise residential buildings to nuclear power plants.

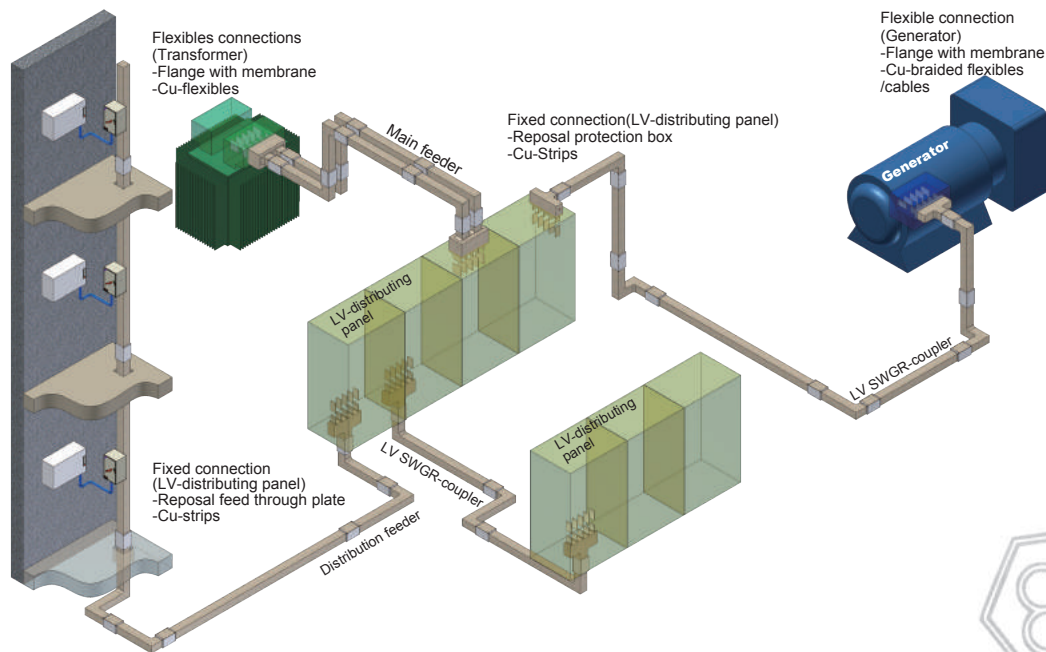
With the reputation based on strong customer orientation, solid engineering support and fast delivery schedule, TECOBAR cater a complete package of services from conceptual design to commissioning to global clientele.

We will continue to make every effort to further enhance our services in our continuous pursuit for service excellence.

Excellence

1. Low voltage products meet the standard of IEC 61439-6.
2. Compact, easy to install, no emission of toxic gas.
3. The purity of conductor is 99.9% for copper with conductivity above 98% IACS.
4. Low voltage drop / high short-circuit current withstand, carried out overload 20% for 2 hours.
5. Degree of protection tested in accordance with IEC 60529, IP68. Mechanical Impacts IK10.
6. Fire-proof property:
At 950°C for 3 hours tested in accordance with IEC 60331-21.
At 840°C for 30 minutes tested in accordance with CNS 14286.
7. Anti-explosion certification meets EN 50028 no. EEx m II .
8. Mixing excellent material such as non-organic volcanic rock with small amount of resin made of busway. With excellent insulation and heat dissipation properties. Temperature rise of busway is no more than 55K at 40°C ambient.
9. Low EMC.
10. Insulation level of class B 130°C .
11. Products have shown excellent results for at least 40 years, and passed aging test with safety operation over 50 years .
12. Maintenance free.

TECOBAR busbar routings



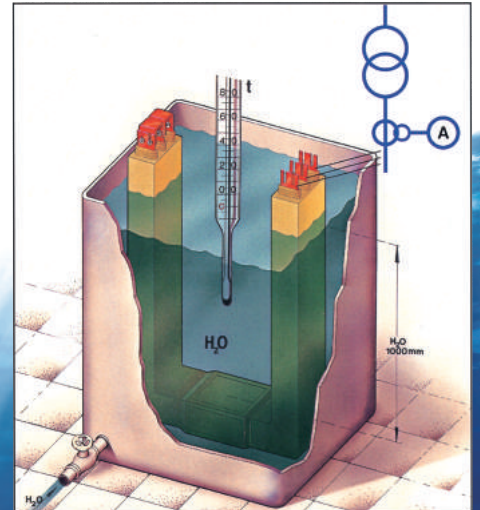
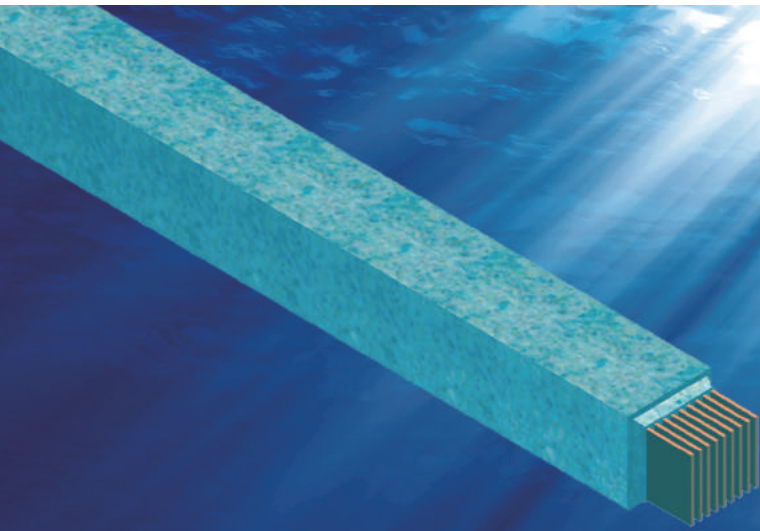
IP68
Degree of protection

IK10
Mechanical Impacts

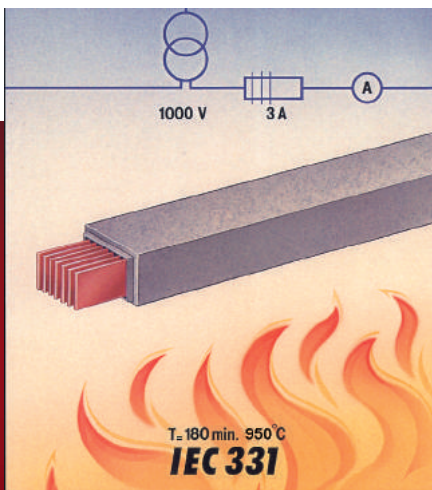
IEC 60331-21
Withstand Fire Test

EMC
Electromagnetic compatibility

Product Feature

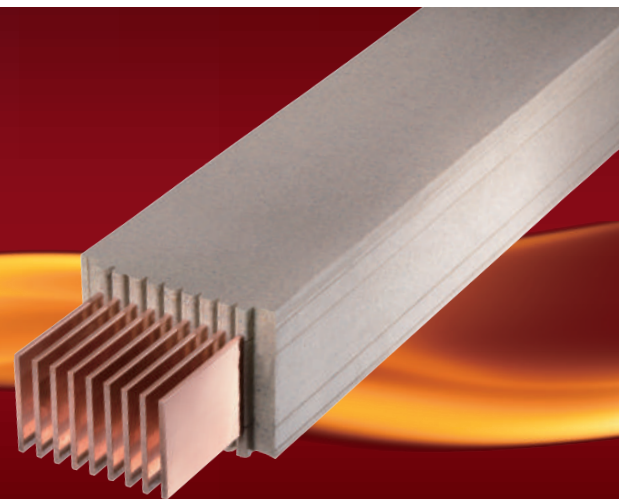


Waterproof The water proof test of Busway (with junction) meets the standard of IEC 60529 reaching IP68.



Fireproof

The fire proof test of Busway meets the standard of IEC 60331-21 950°C for 3 hours
CNS 14286, 840°C for 30 minutes.



Product Certification

Product quality and capability have been assured and certified by international renowned testing authorities including Dekra, KEMA, UL and approved to be environmental friendly.



Technical Advantages

- Whole busway route cast-resin molded (including the junction part between elements)
- Full type tested by Dekra and KEMA; China 3C certified
- Fireproof certified (CNS14286, IEC60331)
- Highest Protection Level (Waterproof/Dustproof) IP68 : LV /MV
- Best in Class of Mechanical Impact – IK10 (IEC 60068)
- Seismic Restraint certified including the junction – 0.8G passed
- Anti-Explosive certified
- Anti-Corrosive
- Electromagnetic Compatibility certified
- Compact design for easy installation and space saving
- High flexibility and custom design to fit in any condition
- ISO 9001 / ISO 14001 certified

Electrical Characteristics of Low Voltage Busway

1. Title : TECOBAR Low Voltage Cast-Resin Insulated Non Segregated Phase Busway.

2. Product Description:

TECOBAR Low Voltage Cast-Resin Insulated Busway is developed for electrical systems below 1kV. The product has features of safety and compact. It is designed to use the insulation material to perform cast resin sealing to the copper (aluminum) conductor. The insulation material is cast resin which contains non-organic volcanic rock with the features of excellent insulation characteristics, mechanical strength, humidity-proof, non-combustible, and self-extinguishing .

3. Applicable Scope:

TECOBAR busway is manufactured in accordance with IEC61439-1 and IEC 61439-6 and The elements include as listed below:

3.1 Straight element, elbow elements geometrical shape, phase-switch element, expansion element, transfer elements, split element and terminal elements.

3.2 Distribution boxes: There are fixed type tap-off box and draw-out type plug-in box.

* Note: The plug-in leads shall be reserved in advance. Therefore, the number of plug-in units shall be confirmed while purchase.

4. Condition of Use:

TECOBAR busway is composed of the elements listed in item 3.1. The element are connected through junction units on site before cast molding with insulation mix to complete the low voltage busway.

Conditions for TECOBAR:

4.1 Altitude: below 2000m, indoor and outdoor site.

4.2 Ambient temperature: -45°C~65°C

4.3 Ambient humidity: 0%~100%

5. Technical Specifications:

5.1 Rated Voltage V : AC1000V.

5.2 Rated Current A : 400A~6569A.

5.3 Frequency Hz : 50/60.

5.4 System : 1 φ 3w, 1 φ 3w+1/2G, 1 φ 3w+G, 3 φ 3w, 3 φ 4w, 3 φ 3w+1/2G, 3 φ 3w+G, 3 φ 4w+1/2G, 3 φ 4w+G.

5.5 Conductor Material : Copper conductor (Purity : 99.9% Conductivity : Above 98% IACS) and Aluminum (Bi-metal).

According to standards : JIS H3140 , DIN1787, DIN1759, DIN40500.

5.6 Electrical characteristics of each TECOBAR element less than 4m

Insulation capabilities : ◎ AC voltage withstand phase to phase is AC 5kV/1min.

◎ Insulation resistance phase to phase is $\geq 2G\Omega/DC 1KV$.

Temperature rise limit : ◎ At average ambient temperature of 35°C with daily peak 40°C, temperature rise of busway is $\leq 55K$.

Fireproof : ◎ In accordance with CNS 14286 fire proof regulation of 840°C, 30 minutes for busway.

◎ In accordance with IEC-60331-21 at 950°C for 3 hours.

Protection degree : ◎ In accordance with IEC 60529 IP68.

Mechanical impacts : ◎ In accordance with IEC 60068-2-75 IK10.

Grounding : ◎ Internal grounding (Optional grounding phase with aluminum conductor)

Product Specifications LA

50/60 Hz 1000V IP68 IK10

| TYPE | B x H mm | I _n (A) norm | I _n (A) 35/40°C | Cond. mm ² | R ₂₀ μΩ/m | R ₆₀ μΩ/m | R ₉₀ μΩ/m | X μΩ/m | I _{cw} kA/1Sec | I _{peak} | P _{Loss90} W/m | Total Weight kg/m |
|------|-------------|----------------------------|-------------------------------|--------------------------|-------------------------|-------------------------|-------------------------|-----------|----------------------------|-------------------|----------------------------|-------------------------|
|------|-------------|----------------------------|-------------------------------|--------------------------|-------------------------|-------------------------|-------------------------|-----------|----------------------------|-------------------|----------------------------|-------------------------|

COPPER

Single Line

| | | | | | | | | | | | | |
|--------|----------|------|------|-----|-------|-------|-------|-------|----|-----|-----|------|
| LA02EC | 104x 60 | 400 | 400 | 80 | 158.0 | 182.2 | 201.5 | 147.0 | 10 | 22 | 97 | 13.8 |
| LA04EC | 104x 80 | 630 | 630 | 160 | 106.0 | 122.7 | 135.2 | 70.2 | 15 | 30 | 161 | 20.3 |
| | | 800 | 800 | 240 | 70.3 | 81.3 | 89.6 | 70.5 | 25 | 53 | 172 | 23.3 |
| LA08EC | 104x 120 | 1000 | 1000 | 320 | 54.2 | 62.7 | 69.1 | 42.4 | 40 | 84 | 207 | 33.5 |
| | | 1250 | 1250 | 400 | 42.4 | 49.1 | 54.1 | 41.8 | 50 | 105 | 253 | 35.7 |
| LA12EC | 104x 160 | 1600 | 1600 | 600 | 28.0 | 32.4 | 35.7 | 32.7 | 65 | 143 | 274 | 50.2 |
| LA16EC | 104x 200 | 2000 | 2000 | 800 | 18.4 | 21.3 | 23.5 | 20.8 | 80 | 176 | 282 | 64.4 |
| | | 2221 | 2221 | 960 | 18.8 | 21.8 | 24.0 | 45.7 | 80 | 176 | 288 | 71.5 |

Double Lines

| | | | | | | | | | | | | |
|--------|----------|------|------|-------|------|------|------|------|-----|-----|-----|-------|
| LA08DC | 404x 120 | 2500 | 2500 | 2x480 | 19.9 | 23.0 | 25.4 | 25.6 | 80 | 176 | 476 | 78.6 |
| LA12DC | 404x 160 | 3150 | 3200 | 2x600 | 13.2 | 15.3 | 16.8 | 18.2 | 85 | 187 | 501 | 111.0 |
| LA16DC | 404x 200 | 4000 | 4000 | 2x800 | 13.2 | 15.3 | 16.8 | 14.8 | 100 | 220 | 808 | 128.8 |
| | | 4202 | 4202 | 2x960 | 10.2 | 11.8 | 13.0 | 28.2 | 120 | 264 | 624 | 143.0 |

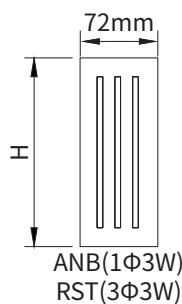
ALUMINUM

Single Line

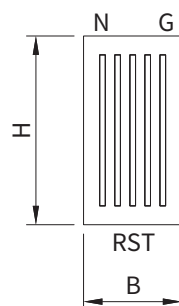
| | | | | | | | | | | | | |
|--------|----------|------|------|-----|-------|-------|-------|------|----|-----|-------|------|
| | 104x 80 | 400 | 500 | 160 | 175.0 | 202.5 | 223.0 | 58.6 | 12 | 45 | 167.4 | 15.3 |
| | | 630 | 630 | 240 | 115.0 | 133.0 | 146.6 | 59.2 | 18 | 45 | 174.6 | 15.8 |
| LA08EA | 104x 120 | 800 | 810 | 320 | 85.7 | 99.2 | 109.3 | 35.2 | 22 | 75 | 215.1 | 23.3 |
| | | 1000 | 1000 | 480 | 57.0 | 66.0 | 72.7 | 37.6 | 33 | 75 | 218.0 | 24.4 |
| LA12EA | 104x 160 | 1250 | 1375 | 720 | 38.5 | 44.6 | 49.0 | 26.7 | 40 | 90 | 278.4 | 31.1 |
| LA16EA | 104x 200 | 1600 | 1700 | 960 | 27.9 | 32.2 | 35.5 | 23.3 | 53 | 120 | 308.4 | 41.3 |

Double Lines

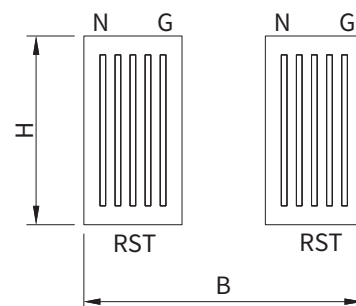
| | | | | | | | | | | | | |
|--------|----------|------|------|-------|------|------|------|------|----|-----|-------|------|
| LA12DA | 404x 160 | 2000 | 2380 | 2x600 | 23.2 | 26.8 | 29.5 | 14.0 | 67 | 150 | 502.7 | 48.8 |
| | | 2500 | 2660 | 2x720 | 19.8 | 22.9 | 25.2 | 15.5 | 80 | 175 | 535.9 | 65.4 |
| LA16DA | 404x 200 | 3150 | 3250 | 2x960 | 14.7 | 17.0 | 18.7 | 13.2 | 90 | 200 | 593.9 | 82.6 |



Single Line



Single Line



Double Lines

- ※ Conductor: 1Φ3W represents single phase, three wires
- 3Φ3W3Φ3W represents three phases, three wires
- 3Φ4W represents three phases, four wires.
- G represents grounding phase 100% of rated current.
- 200% N and aluminum grounding conductor optional

※ Applicable to DC requirement.

※ Please refer to the temperature correction coefficient of rated current on page 24 while ambient temperature exceeds 40°C.

Product Specifications LB

50/60 Hz 1000V IP68 IK10

| TYPE | B x H mm | I _n (A) norm | I _n (A) 35/40°C | Cond. mm ² | R ₂₀ μΩ/m | R ₆₀ μΩ/m | R ₉₀ μΩ/m | X μΩ/m | I _{cw} kA/1Sec | I _{peak} | P _{Loss90} W/m | Total Weight kg/m |
|------|-------------|----------------------------|-------------------------------|--------------------------|-------------------------|-------------------------|-------------------------|-----------|----------------------------|-------------------|----------------------------|-------------------------|
|------|-------------|----------------------------|-------------------------------|--------------------------|-------------------------|-------------------------|-------------------------|-----------|----------------------------|-------------------|----------------------------|-------------------------|

COPPER

Single Line

| | | | | | | | | | | | | |
|--------|----------|------|------|---------|------|------|------|------|-----|-----|-------|-------|
| LB08EC | 168x 120 | 2000 | 2000 | 2 x 400 | 19.2 | 22.2 | 24.5 | 23.3 | 65 | 143 | 293.8 | 55.1 |
| LB12EC | 168x 160 | 2500 | 2500 | 2 x 600 | 17.4 | 20.1 | 22.2 | 19.6 | 85 | 187 | 416.0 | 86.5 |
| LB16EC | 168x 200 | 3150 | 3200 | 2 x 800 | 10.2 | 11.8 | 13.0 | 17.6 | 100 | 220 | 387.1 | 111.5 |
| | | | 3443 | 2 x 960 | 9.0 | 10.4 | 11.5 | 20.8 | 100 | 220 | 341.6 | 122.0 |

Double Lines

| | | | | | | | | | | | | |
|--------|----------|------|------|---------|------|------|------|------|-----|-----|-------|-------|
| LB08DC | 468x 120 | 4000 | 4000 | 4 x 400 | 13.1 | 15.1 | 16.6 | 5.5 | 100 | 220 | 798.7 | 110.2 |
| LB12DC | 468x 160 | 5000 | 5000 | 4 x 600 | 8.1 | 9.3 | 10.3 | 8.7 | 120 | 264 | 770.8 | 173.0 |
| LB16DC | 468x 200 | 6300 | 6300 | 4 x 800 | 6.5 | 7.5 | 8.3 | 8.1 | 125 | 275 | 986.8 | 223.0 |
| | | | 6569 | 4 x 960 | 4.8 | 5.6 | 6.1 | 16.1 | 120 | 264 | 728.7 | 244.0 |

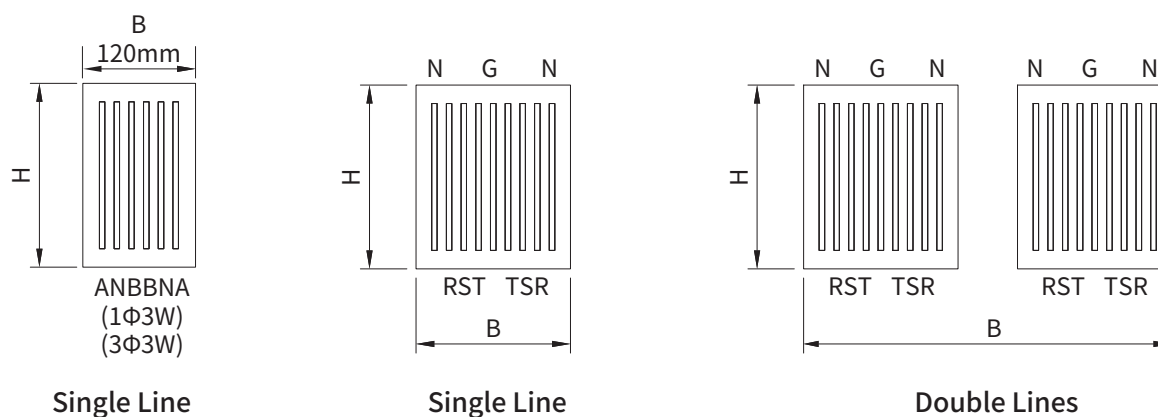
ALUMINUM

Single Line

| | | | | | | | | | | | | |
|--------|----------|------|------|---------|------|------|------|------|----|-----|-------|------|
| LB12EA | 168x 160 | 2000 | 2100 | 2 x 720 | 20.0 | 23.1 | 25.5 | 18.5 | 80 | 175 | 337.4 | 53.5 |
| LB16EA | 168x 200 | 2500 | 2540 | 2 x 960 | 14.3 | 16.5 | 18.2 | 13.9 | 90 | 200 | 352.9 | 63.6 |

Double Lines

| | | | | | | | | | | | | |
|--------|----------|------|------|---------|------|------|------|------|-----|-----|-------|-------|
| LB08DA | 468x 120 | 3150 | 3200 | 4 x 480 | 14.6 | 16.9 | 18.6 | 13.6 | 100 | 220 | 571.9 | 79.0 |
| LB12DA | 468x 160 | 4000 | 4250 | 4 x 720 | 10.0 | 11.6 | 12.8 | 10.4 | 120 | 260 | 690.9 | 101.1 |
| LB16DA | 468x 200 | 5000 | 5400 | 4 x 960 | 7.9 | 9.1 | 10.1 | 10.2 | 130 | 290 | 881.2 | 135.0 |



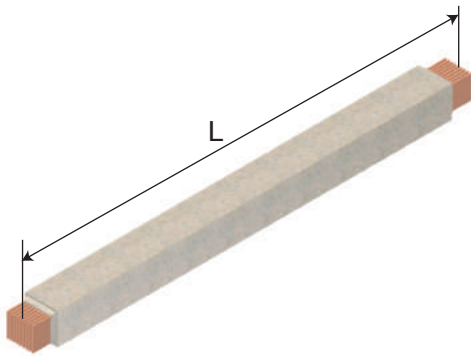
- ※ Conductor : 1Φ3W represents single phase, three wires
3Φ3W3Φ3W represents three phases, three wires
3Φ4W represents three phases, four wires.
G represents grounding phase 100% of rated current.
200% N and aluminum grounding conductor optional

※ Applicable to DC requirement.

※ Please refer to the temperature correction coefficient of rated current on page 24 while ambient temperature exceeds 40°C.

Selection of Standard Parts

Straight Feeder



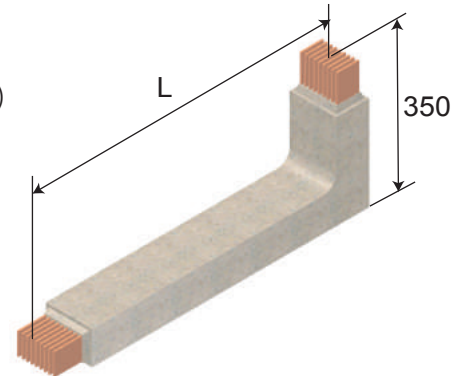
◀ **Straight Feeder**

| Model | Length |
|-------|-----------------------|
| RE | L=1000mm~4000mm (Max) |

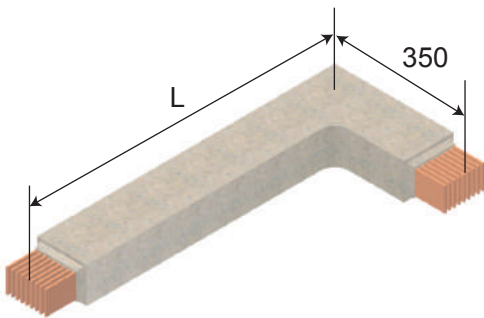
Vertical Elbow ▶

| Model | Length |
|-------|----------------|
| HL1 | L=650mm (Max) |
| HL2 | L=1650mm (Max) |

Vertical Elbow



Horizontal Elbow



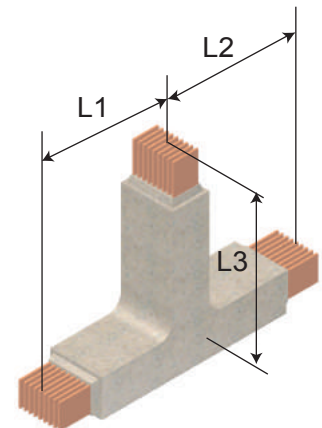
◀ **Horizontal Elbow**

| Model | Length |
|-------|----------------|
| HB1 | L=650mm (Max) |
| HB2 | L=1650mm (Max) |

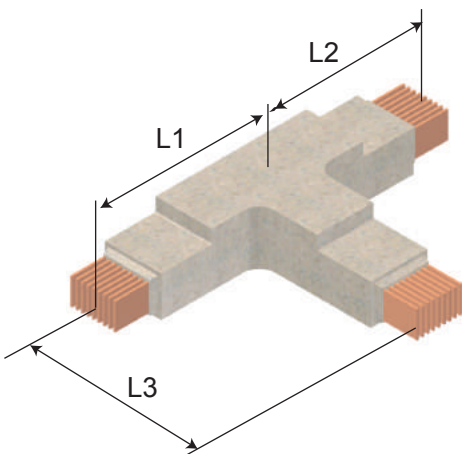
Tee Elbow (Vertical) ▶

| Model | Length |
|-------|----------------|
| TL2 | L1=L2=L3=350mm |

Tee Elbow (Vertical)



Tee Elbow (Horizontal)



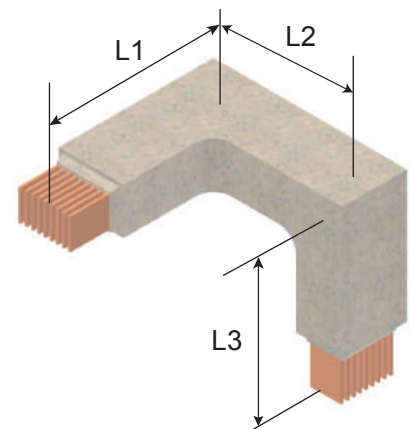
◀ **Tee Elbow (Horizontal)**

| Model | Length |
|-------|----------------|
| TB2 | L1=L2=L3=500mm |

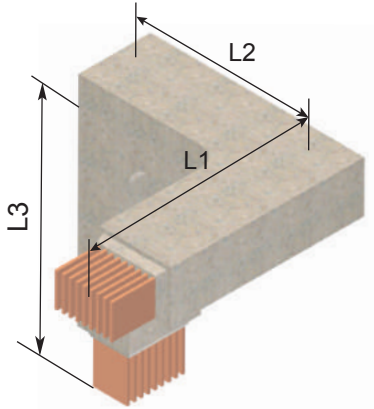
Combination Elbow (Right) ▶

| Model | Length |
|-------|-----------------|
| XR1 | L1+L2+L3=1000mm |
| XR2 | L1+L2+L3=2000mm |

Combination Elbow (Right)



Combination Elbow (Left)



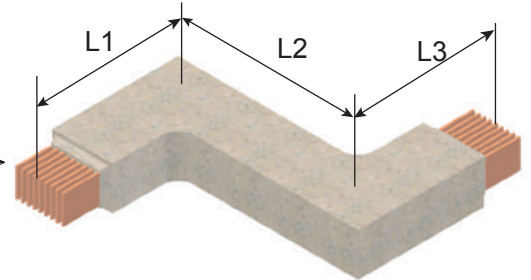
Combination Elbow(Left)

| Model | Length |
|-------|-----------------|
| XL1 | L1+L2+L3=1000mm |
| XL2 | L1+L2+L3=2000mm |

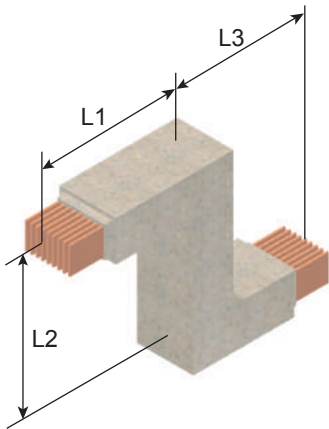
Horizontal Offset

| Model | Length |
|-------|-----------------|
| ZB1 | L1+L2+L3=1000mm |
| ZB2 | L1+L2+L3=2000mm |

Horizontal Offset



Vertical Offset



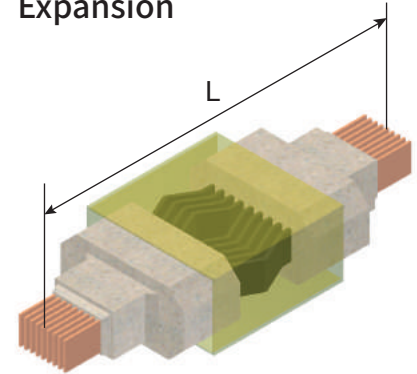
Vertical Offset

| Model | Length |
|-------|-----------------|
| ZL1 | L1+L2+L3=1000mm |
| ZL2 | L1+L2+L3=2000mm |

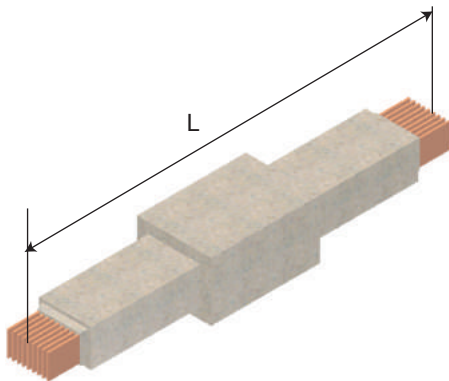
Expansion

| Model | Length |
|-------|----------|
| EX | L=1000mm |

Expansion



Phase Switch Feeder



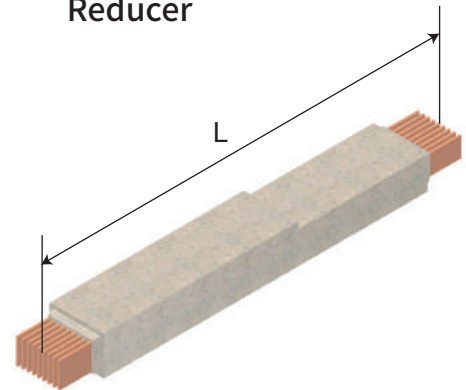
Phase Switch Feeder

| Model | Length |
|-------|----------|
| PC1 | L=1200mm |

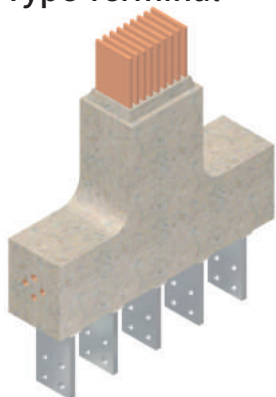
Reducer

| Model | Length |
|-------|----------|
| TF1 | L=1200mm |

Reducer



AG Type Terminal



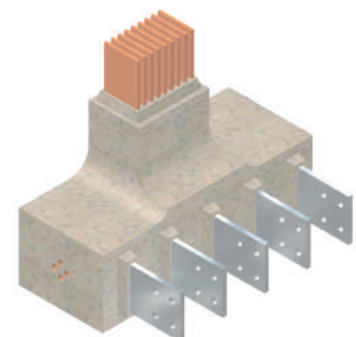
AG Type Terminal

| Model | Length |
|-------|------------------|
| AG1 | Refer to Page 15 |

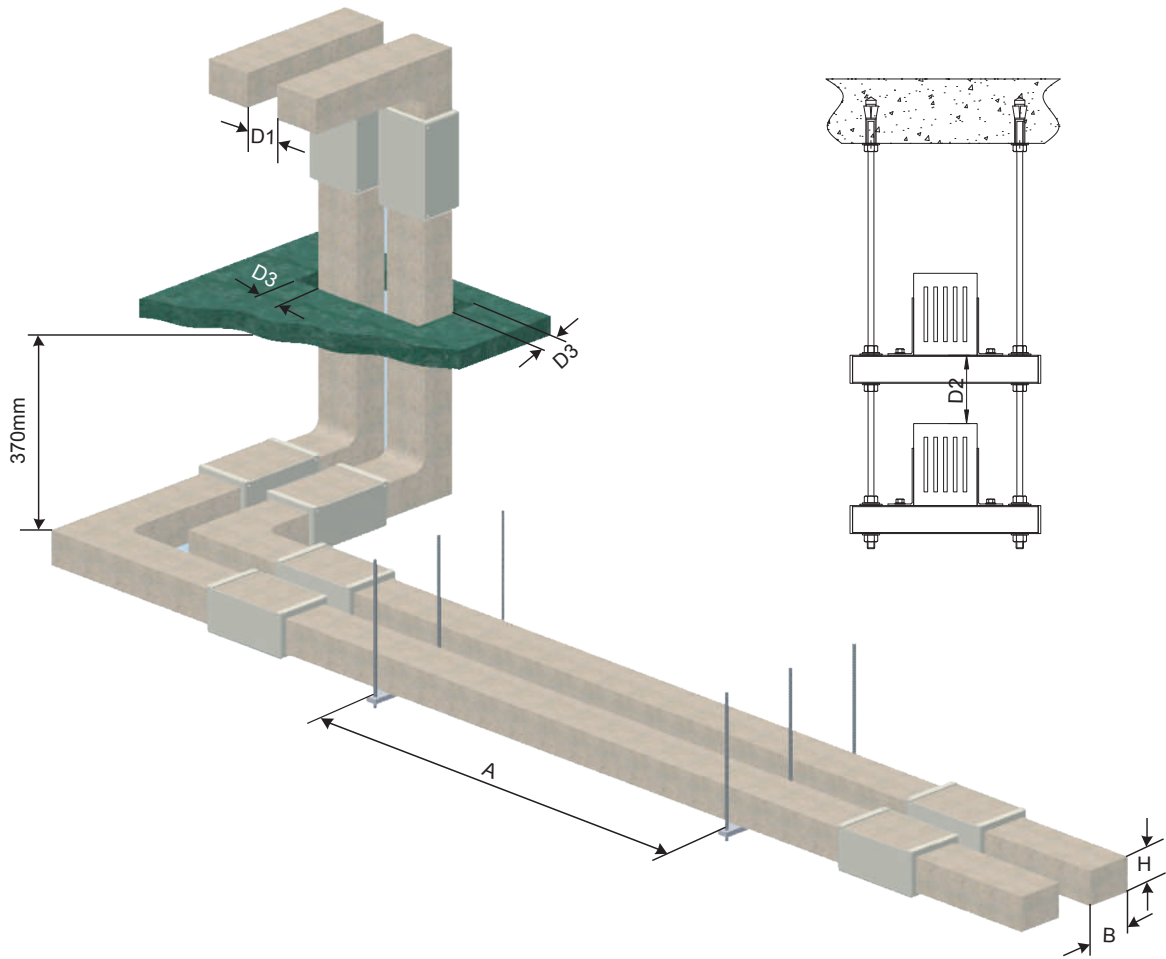
AO Type Terminal

| Model | Length |
|-------|------------------|
| AO1 | Refer to Page 16 |

AO Type Terminal



Product Installation

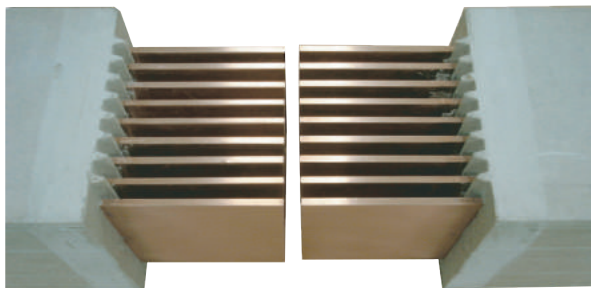


Unit:mm

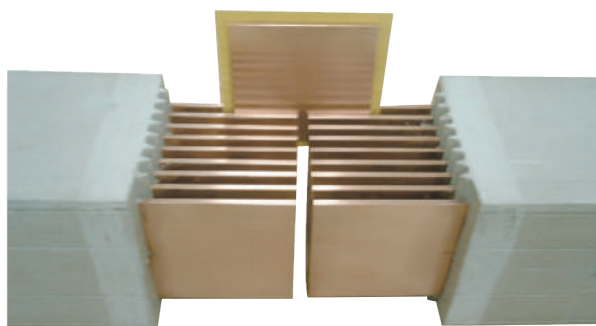
| Type | External Size B×H | Limit of Hanger Installation Pitch A | | Minimum pitch between busway | | |
|------|----------------------|--------------------------------------|-----------------------|------------------------------|--|----|
| | | Horizontal Installation | Vertical Installation | Layout of busway arrangement | Distance between wall opening and busway | |
| | | | | | | |
| LA02 | 104×60 | 1500 | 4000 | 196 | 100 | 50 |
| LA04 | 104×80 | | | | | |
| LA08 | 104×120 | | | | | |
| LA12 | 104×160 | | | | | |
| LA16 | 104×200 | | | 132 | 100 | 50 |
| LB08 | 168×120 | | | | | |
| LB12 | 168×160 | | | | | |
| LB16 | 168×200 | | | | | |

Note:Distance between hangers and busway are allowed to be adjusted on site while required.

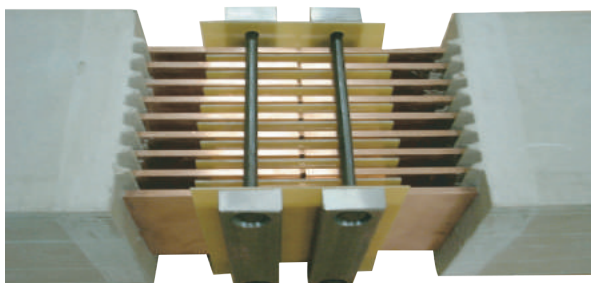
Assembly Diagrams of Low Voltage Busway Junction



- ▶ Distance between two elements are within $10\text{mm} \pm 10\text{mm}$ (inclusive). The distance can be flexibly adjusted on site by the requirement of construction.



- ▶ Illustration of JUNCTION assembly. (LB series)

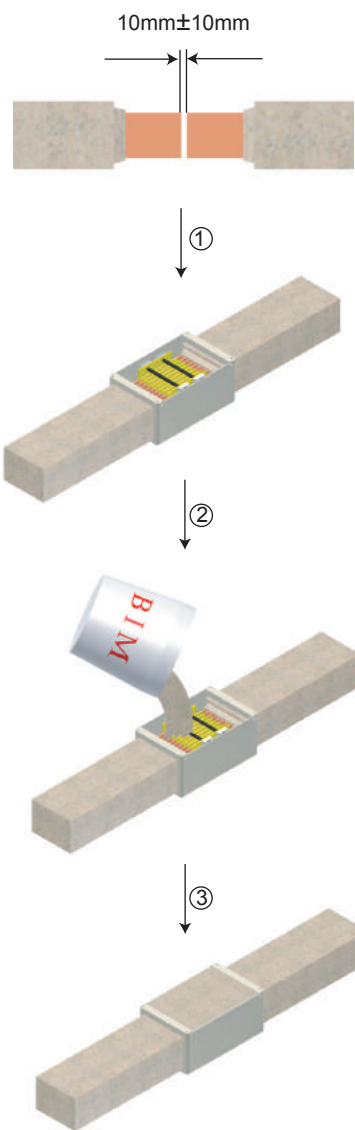


- ▶ The assembly bolt of Junction must be secured by torque wrench.

Illustration of cast-resin after completion.



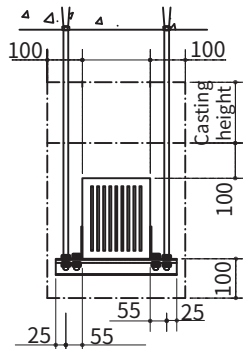
Refer to installation guide for casting method on site



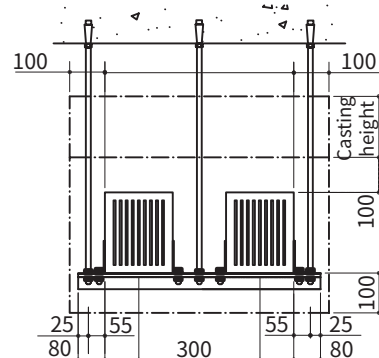
Torque of bolt during work:

| | |
|---------------------------|-----|
| Specs | M10 |
| Torque value (N-m) for Cu | 43 |
| Torque value (N-m) for Al | 30 |

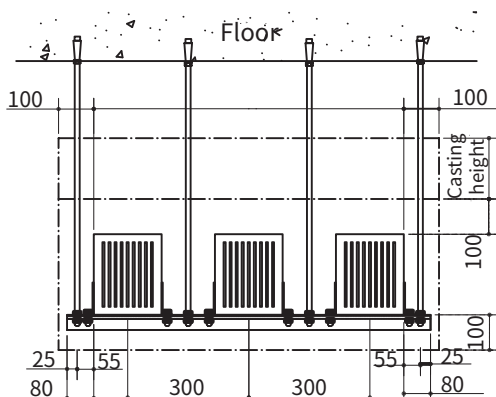
Low Voltage Busway Horizontal Hanger Standard



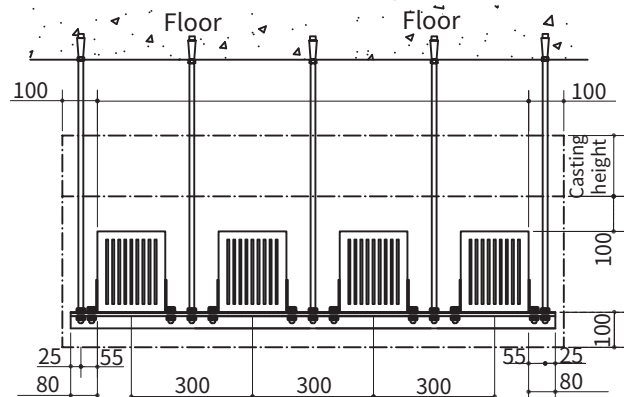
Cross-sectional Diagram of Single-Busway



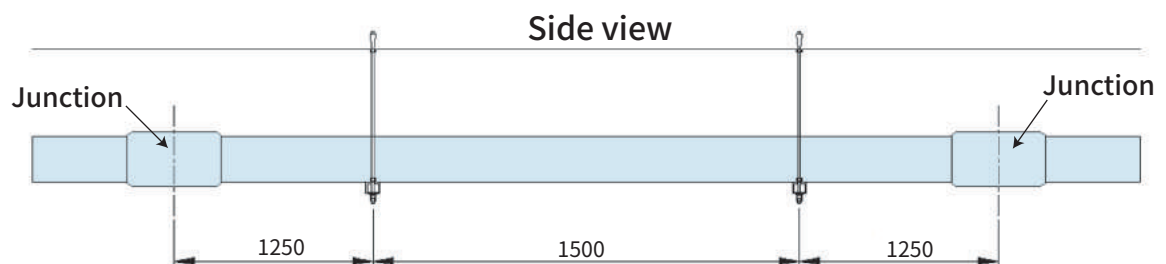
Cross-sectional Diagram of Dual-Busway



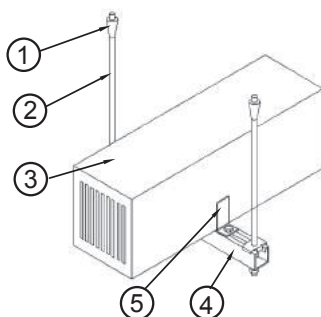
Cross-sectional Diagram of Triple-Busway



Cross-sectional Diagram of Quadruple-Busway

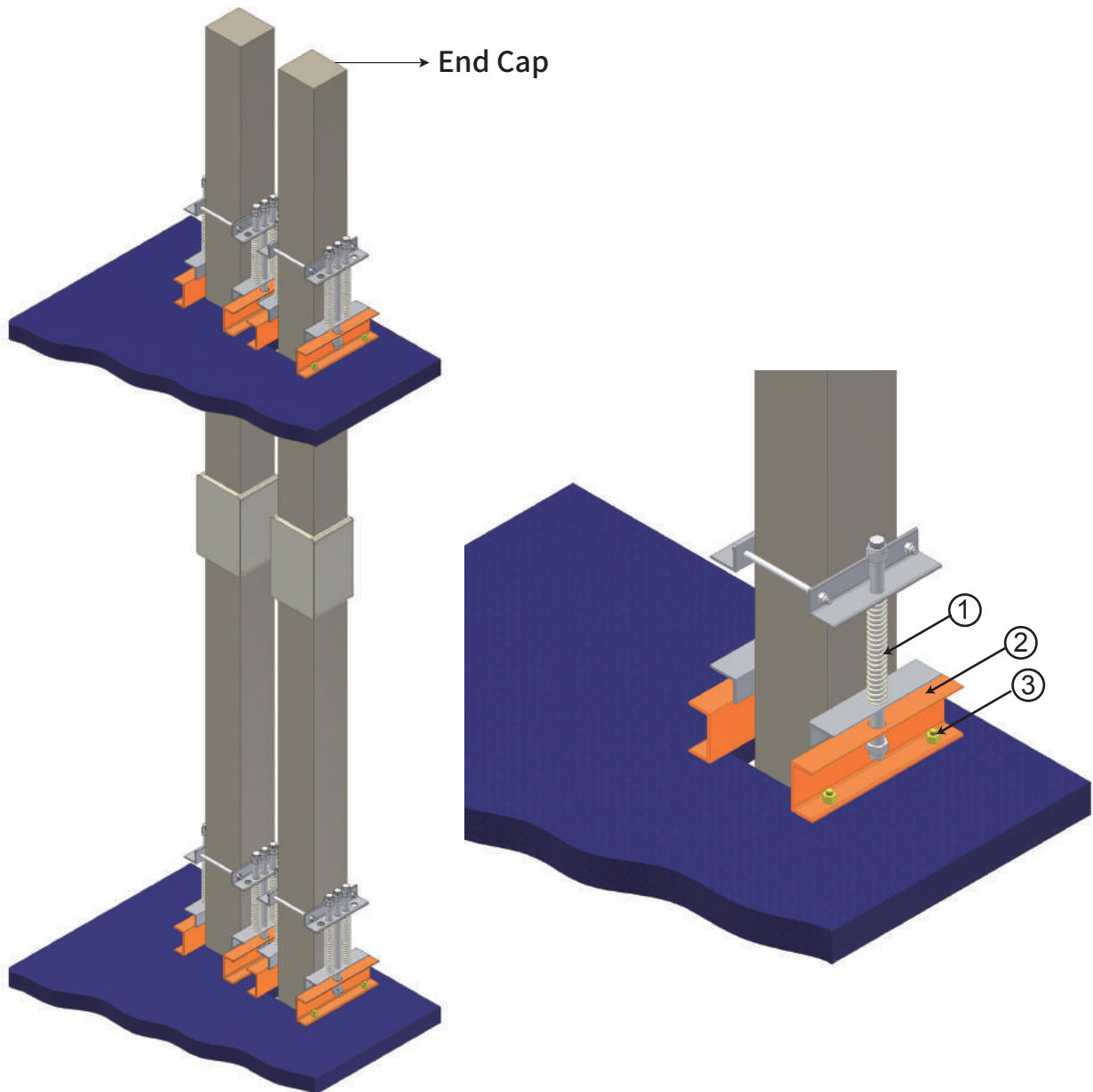


1. The installation pitch between each hanger has to comply with the standard as above. If the work condition can not meet the standard, it may be adjusted according to the condition on site. However, it must meet the requirement described in page 18 of the installation guide: minimum pitch requirement of the busway.
2. The space required for installing busway is shown in the diagram. The safety space above the busway should have 100mm + casting height of 270mm = 370 mm for clearance standard of installation space. In addition, the height of the floor should be within 5m above the ground to allow expansion of bolts, full-thread bolts, and channel, etc. to install at the bottom of the floor.
3. One set of L-shape stopping plate part.



| No. | Name of Part | Specs | Remark |
|-----|------------------------------|------------|---|
| 1 | Inner thread inflated screws | 1/2"*2" | Zinc-plated item. (Included in installation work) |
| 2 | Full thread bolts | 1/2" | Zinc-plated item. (Included in installation work) |
| 3 | Busway | | TECOBAR |
| 4 | Channel | 2t*41*41mm | Zinc-plated item. (Included in installation work) |
| 5 | L-shape stopping plate | 2.3t*80*40 | Zinc-plated item. |

Low Voltage Busway Vertical Hanger Standard



Vertical Hanger Units

| No. | Name of Part | Specs | Remark |
|-----|-----------------|----------|--|
| 1 | Spring Box Set | - | Zinc-plated item. |
| 2 | Channel | 75x50x5t | Zinc-plated item. (Included in installation work) |
| 3 | Inflated Screws | 1/2" | Zinc-plated item. (Included in installation work) |

※The selection of spring box is according to different busway type.

Dimensions of Standard Terminal Elements for Low Voltage Busway (Copper Conductor)

AG Type Terminal Elements

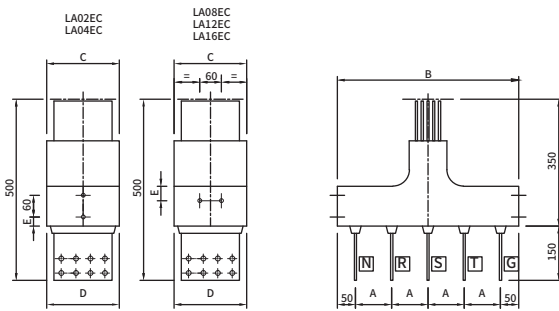


Figure 1

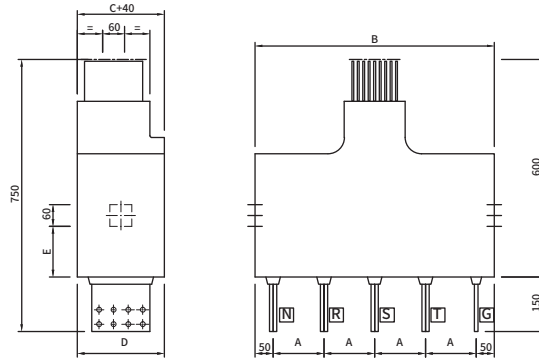


Figure 2

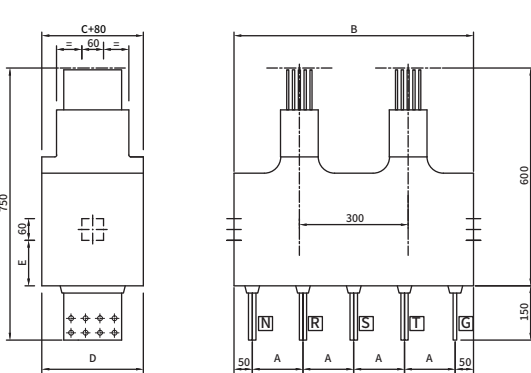


Figure 3

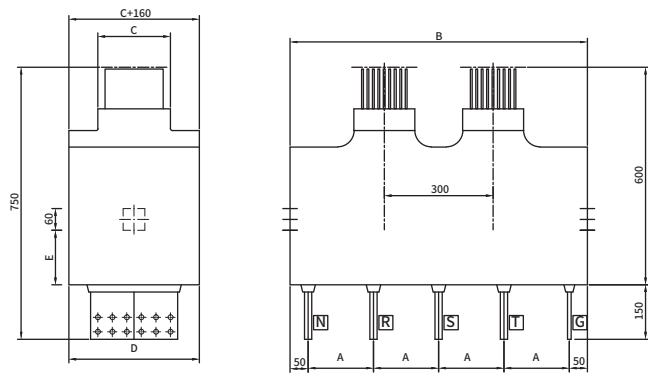


Figure 4

Unit:mm

| Figure No. | Type | 3Φ4W+G or 3Φ4W+1/2G(NRSTG) | | | | | 3Φ4W(NRST) or 3Φ3W+1/2G(RSTG) | | | | |
|------------|--------|----------------------------|-----|-----|-----|-----|-------------------------------|-----|-----|-----|-----|
| | | A | B | C | D | E | A | B | C | D | E |
| Figure 1 | LA02EC | 100 | 500 | 60 | 60 | 20 | 100 | 400 | 60 | 60 | 20 |
| | LA04EC | 100 | 500 | 80 | 80 | 20 | 100 | 400 | 80 | 80 | 20 |
| | LA08EC | 100 | 500 | 120 | 120 | 40 | 100 | 400 | 120 | 120 | 40 |
| | LA12EC | 100 | 500 | 160 | 160 | 40 | 100 | 400 | 160 | 160 | 40 |
| | LA16EC | 100 | 500 | 200 | 200 | 40 | 100 | 400 | 200 | 200 | 40 |
| Figure 2 | LB08EC | 140 | 660 | 120 | 160 | 125 | 140 | 520 | 120 | 160 | 125 |
| | LB12EC | 140 | 660 | 160 | 200 | 125 | 140 | 520 | 160 | 200 | 125 |
| | LB16EC | 140 | 660 | 200 | 240 | 140 | 140 | 520 | 200 | 240 | 140 |
| Figure 3 | LA08DC | 140 | 660 | 120 | 200 | 95 | 140 | 520 | 120 | 200 | 95 |
| | LA12DC | 140 | 660 | 160 | 240 | 95 | 140 | 520 | 160 | 240 | 95 |
| | LA16DC | 140 | 660 | 200 | 280 | 95 | 140 | 520 | 200 | 280 | 95 |
| Figure 4 | LB08DC | 140 | 660 | 120 | 280 | 95 | 140 | 560 | 120 | 280 | 95 |
| | LB12DC | 140 | 660 | 160 | 320 | 120 | 140 | 560 | 160 | 320 | 120 |
| | LB16DC | 180 | 820 | 200 | 360 | 150 | 180 | 640 | 200 | 360 | 150 |

Note : 1. 1Φ3W~3Φ3W Single line: B=3Φ4W B-A (Figure 1, 2)
2. 1Φ3W~3Φ3W Double lines: B=3Φ4W B (Figure 3, 4)

Dimensions of Standard Terminal Elements for Low Voltage Busway (Copper Conductor)

AO Type Terminal Elements

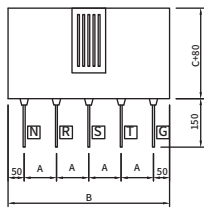


Figure 1

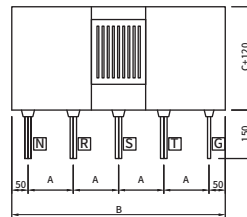
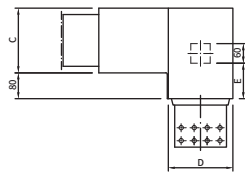


Figure 2

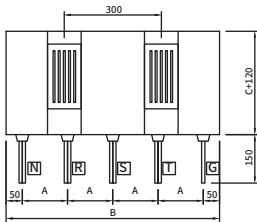
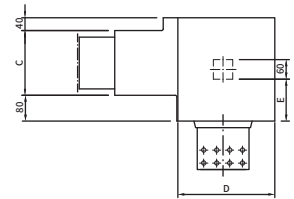


Figure 3

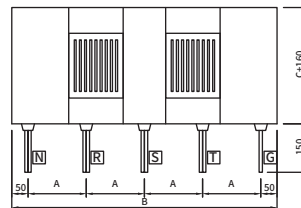
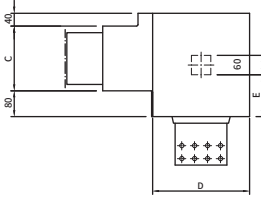
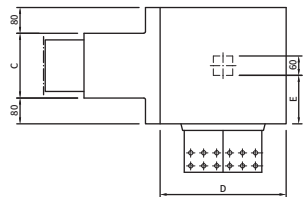


Figure 4



Unit:mm

| Figure No. | Type | 3Φ4W+G or 3Φ4W+1/2G(NRSTG) | | | | | 3Φ4W(NRST) or 3Φ3W+1/2G(RSTG) | | | | |
|------------|--------|----------------------------|-----|-----|-----|-----|-------------------------------|-----|-----|-----|-----|
| | | A | B | C | D | E | A | B | C | D | E |
| Figure 1 | LA02EC | 100 | 500 | 60 | 60 | 40 | 100 | 400 | 60 | 60 | 40 |
| | LA04EC | 100 | 500 | 80 | 80 | 50 | 100 | 400 | 80 | 80 | 50 |
| | LA08EC | 100 | 500 | 120 | 120 | 115 | 100 | 400 | 120 | 120 | 115 |
| | LA12EC | 100 | 500 | 160 | 160 | 155 | 100 | 400 | 160 | 160 | 155 |
| | LA16EC | 100 | 500 | 200 | 200 | 195 | 100 | 400 | 200 | 200 | 195 |
| Figure 2 | LB08EC | 140 | 660 | 120 | 220 | 55 | 140 | 520 | 120 | 220 | 55 |
| | LB12EC | 140 | 660 | 160 | 260 | 95 | 140 | 520 | 160 | 260 | 95 |
| | LB16EC | 140 | 660 | 200 | 300 | 135 | 140 | 520 | 200 | 300 | 135 |
| Figure 3 | LA08DC | 140 | 660 | 120 | 220 | 120 | 140 | 520 | 120 | 220 | 120 |
| | LA12DC | 140 | 660 | 160 | 260 | 110 | 140 | 520 | 160 | 260 | 110 |
| | LA16DC | 140 | 660 | 200 | 300 | 130 | 140 | 520 | 200 | 330 | 130 |
| Figure 4 | LB08DC | 140 | 660 | 120 | 310 | 110 | 140 | 560 | 120 | 310 | 110 |
| | LB12DC | 140 | 660 | 160 | 350 | 130 | 140 | 560 | 160 | 350 | 130 |
| | LB16DC | 180 | 820 | 200 | 390 | 150 | 180 | 640 | 200 | 390 | 150 |

Note : 1. 1Φ3W~3Φ3W Single line: B=3Φ4W B-A (Figure 1, 2)
 2. 1Φ3W~3Φ3W Double lines: B=3Φ4W B (Figure 3, 4)

Dimensions of Standard Terminal Elements for Low Voltage Busway (Aluminum Conductor)

AG Type Terminal Elements

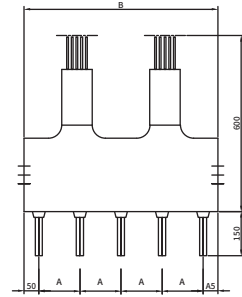
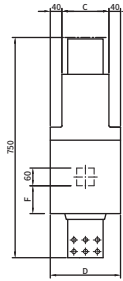
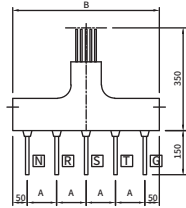
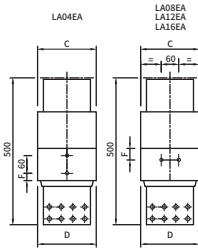


Figure 1

Figure 2

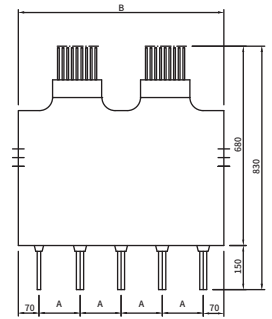
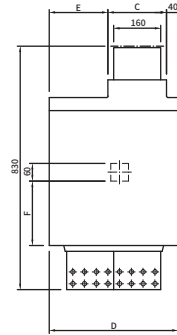
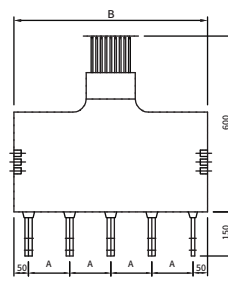
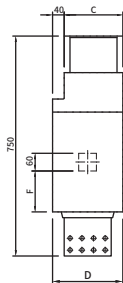
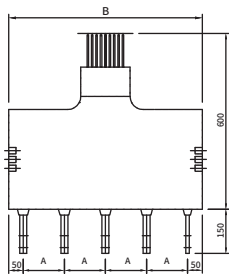
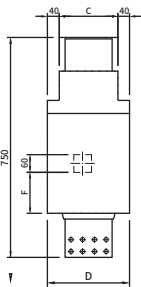


Figure 3

Figure 4

Figure 5

Unit:mm

| Figure No. | Type | 3P4W+G or 3P4W+1/2G(NRSTG) | | | | | | 3P4W(NRST) or 3P3W+1/2G(RSTG) | | | | | |
|------------|--------|----------------------------|-----|-----|-----|-----|-----|-------------------------------|-----|-----|-----|-----|-----|
| | | A | B | C | D | E | F | A | B | C | D | E | F |
| Figure 1 | LA02EA | 100 | 500 | 60 | 60 | - | 20 | 100 | 400 | 60 | 60 | - | 20 |
| | LA04EA | 100 | 500 | 80 | 80 | - | 20 | 100 | 400 | 80 | 80 | - | 20 |
| | LA08EA | 100 | 500 | 120 | 120 | - | 40 | 100 | 400 | 120 | 120 | - | 40 |
| | LA12EA | 100 | 500 | 160 | 160 | - | 40 | 100 | 400 | 160 | 160 | - | 40 |
| | LA16EA | 100 | 500 | 200 | 200 | - | 40 | 100 | 400 | 200 | 200 | - | 40 |
| Figure 2 | LA08DA | 140 | 660 | 120 | 200 | - | 95 | 140 | 520 | 120 | 200 | - | 95 |
| | LA12DA | 140 | 660 | 160 | 240 | - | 95 | 140 | 520 | 160 | 240 | - | 95 |
| | LA16DA | 140 | 660 | 200 | 280 | - | 95 | 140 | 520 | 200 | 280 | - | 95 |
| Figure 3 | LB12EA | 140 | 660 | 160 | 240 | - | 140 | 140 | 520 | 160 | 240 | - | 140 |
| Figure 4 | LB16EA | 140 | 660 | 200 | 280 | - | 140 | 140 | 520 | 200 | 280 | - | 140 |
| Figure 5 | LB08DA | 140 | 700 | 120 | 280 | 120 | 220 | 140 | 560 | 120 | 280 | 120 | 220 |
| | LB12DA | 140 | 700 | 160 | 360 | 160 | 220 | 140 | 560 | 160 | 360 | 160 | 220 |
| | LB16DA | 140 | 700 | 200 | 440 | 200 | 220 | 140 | 640 | 200 | 440 | 200 | 220 |

Note : 1. 1Φ3W~3Φ3W Single line: B=3Φ4W B-A (Figure 1, 3, 4)
2. 1Φ3W~3Φ3W Double lines: B=3Φ4W B (Figure 2, 5)

Dimensions of Standard Terminal Elements for Low Voltage Busway (Aluminum Conductor)

AO Type Terminal Elements

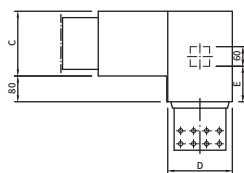
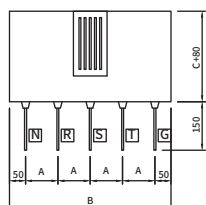


Figure 1

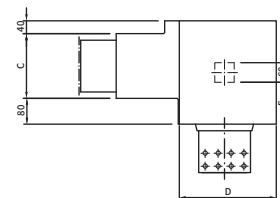
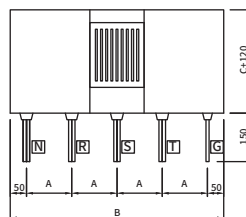


Figure 2

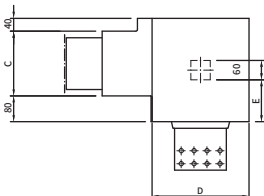
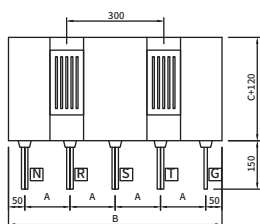


Figure 3

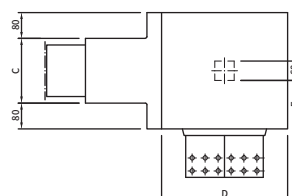
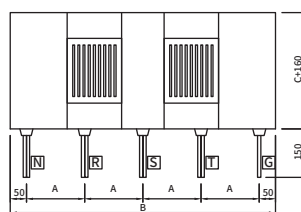


Figure 4

Unit:mm

| Figure No. | Type | 3P4W+G or 3P4W+1/2G(NRSTG) | | | | | 3P4W(NRST) or 3P3W+1/2G(RSTG) | | | | |
|------------|--------|----------------------------|-----|-----|-----|-----|-------------------------------|-----|-----|-----|-----|
| | | A | B | C | D | E | A | B | C | D | E |
| Figure 1 | LA04EA | 100 | 500 | 80 | 80 | 50 | 100 | 400 | 80 | 80 | 50 |
| | LA08EA | 100 | 500 | 120 | 120 | 115 | 100 | 400 | 120 | 120 | 115 |
| | LA12EA | 100 | 500 | 160 | 160 | 155 | 100 | 400 | 160 | 160 | 155 |
| | LA16EA | 100 | 500 | 200 | 200 | 195 | 100 | 400 | 200 | 200 | 195 |
| Figure 2 | LB12EA | 140 | 660 | 160 | 280 | 95 | 140 | 520 | 160 | 280 | 95 |
| | LB16EA | 140 | 660 | 200 | 320 | 135 | 140 | 520 | 200 | 320 | 135 |
| Figure 3 | LA12DA | 140 | 660 | 160 | 240 | 110 | 140 | 520 | 160 | 240 | 110 |
| | LA16DA | 140 | 660 | 200 | 280 | 130 | 140 | 520 | 200 | 280 | 130 |
| Figure 4 | LB08DA | 140 | 660 | 120 | 320 | 110 | 140 | 560 | 120 | 320 | 110 |
| | LB12DA | 140 | 660 | 160 | 400 | 130 | 140 | 560 | 160 | 400 | 130 |
| | LB16DA | 180 | 820 | 200 | 480 | 150 | 180 | 640 | 200 | 480 | 150 |

Note : 1. 1Φ3W~3Φ3W Single line: B=3Φ4W B-A (Figure 1, 2)

2. 1Φ3W~3Φ3W Double lines: B=3Φ4W B (Figure 3, 4)

Dimensions of Standard Terminal Elements Copper Plate for Low Voltage Busway

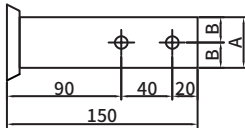


Figure 1

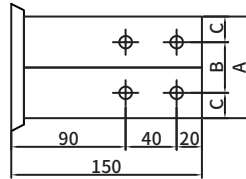


Figure 2

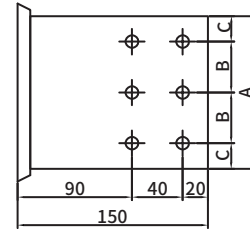


Figure 3

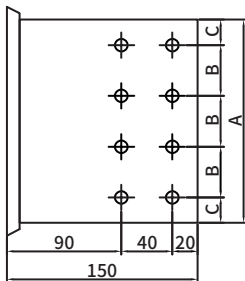


Figure 4

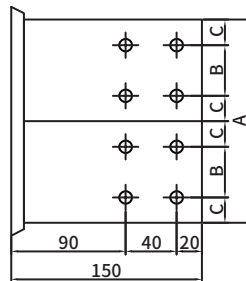


Figure 5

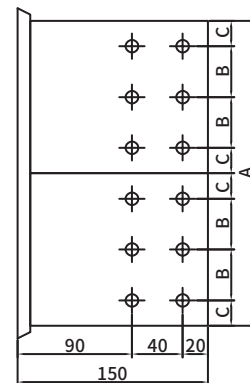


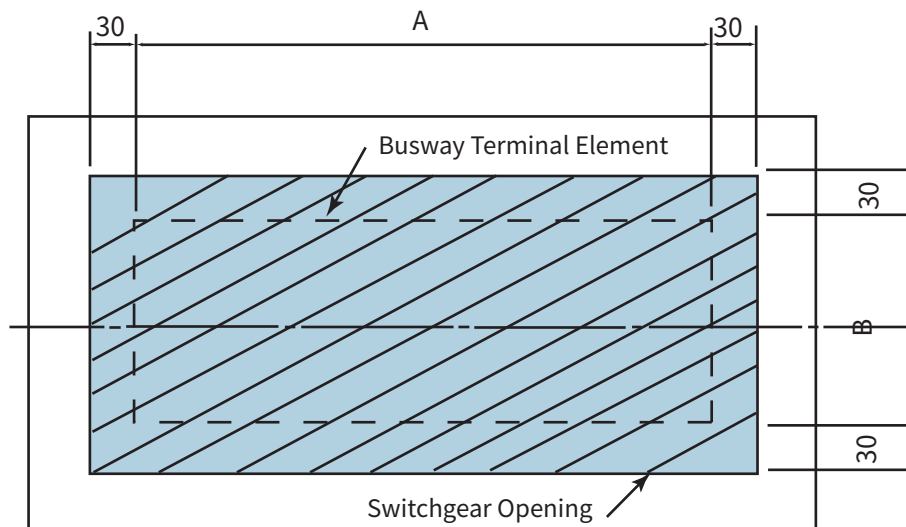
Figure 6

| Figure No. | Type | Type of Terminal Elements | Dimensions(unit:mm) | | |
|----------------------------|---------|---------------------------|---------------------|----|----|
| | | | A | B | C |
| Figure 1 | LA02 | AG/AO | 20 | 10 | - |
| | LA04 | AG/AO | 40 | 20 | - |
| Figure 2 | LA08 | AG/AO | 80 | 40 | 20 |
| | LB08 | AG/AO | 80 | 40 | 20 |
| | LA08(D) | AG/AO | 80 | 40 | 20 |
| Figure 3 | LA12 | AG/AO | 120 | 40 | 20 |
| | LB12 | AG/AO | 120 | 40 | 20 |
| | LA12 | AG/AO | 120 | 40 | 20 |
| Figure 4 | LA16 | AG/AO | 160 | 40 | 20 |
| | LA16(D) | AG/AO | 160 | 40 | 20 |
| Figure 5 | LB16 | AG/AO | 160 | 40 | 20 |
| | LB08(D) | AG/AO | 160 | 40 | 20 |
| | LB12(D) | AG/AO | 200 | 40 | 30 |
| Figure 6 | LB16 | AG/AO | 240 | 40 | 20 |
| Copper /Aluminum Conductor | | | | | |

*(D)Double Lines

Opening Requirement of Standard Terminal Elements and Switchgear for Low Voltage Busway

Opening Dimensions of Switchgear Top, Bottom, and Rear Side



Busway Terminal Elements Opening Dimensions (Copper)

| No. | Type | 3P3W | | 3P3W+G(1/2G) or 3P4W | | 3P4W+G(1/2G) | |
|-----|--------|-------|-------|----------------------|-------|--------------|-------|
| | | A(mm) | B(mm) | A(mm) | B(mm) | A(mm) | B(mm) |
| 1 | LA02EC | 300 | 60 | 400 | 60 | 500 | 60 |
| 2 | LA04EC | 300 | 80 | 400 | 80 | 500 | 80 |
| 3 | LA08EC | 300 | 120 | 400 | 120 | 500 | 120 |
| 4 | LA12EC | 300 | 160 | 400 | 160 | 500 | 160 |
| 5 | LA16EC | 300 | 200 | 400 | 200 | 500 | 200 |
| 6 | LA08DC | 520 | 200 | 520 | 200 | 660 | 200 |
| 7 | LA12DC | 520 | 240 | 520 | 240 | 660 | 240 |
| 8 | LA16DC | 520 | 280 | 520 | 280 | 660 | 280 |
| 9 | LB08EC | 380 | 160 | 520 | 160 | 660 | 160 |
| 10 | LB12EC | 380 | 200 | 520 | 200 | 660 | 200 |
| 11 | LB16EC | 380 | 240 | 520 | 240 | 660 | 240 |
| 12 | LB08DC | 560 | 280 | 660 | 280 | 660 | 280 |
| 13 | LB12DC | 560 | 320 | 660 | 320 | 660 | 320 |
| 14 | LB16DC | 560 | 360 | 800 | 360 | 800 | 360 |

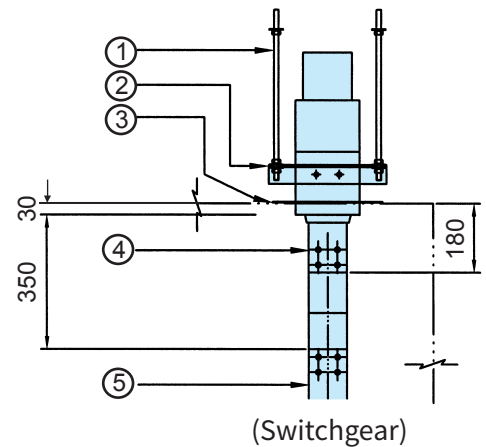
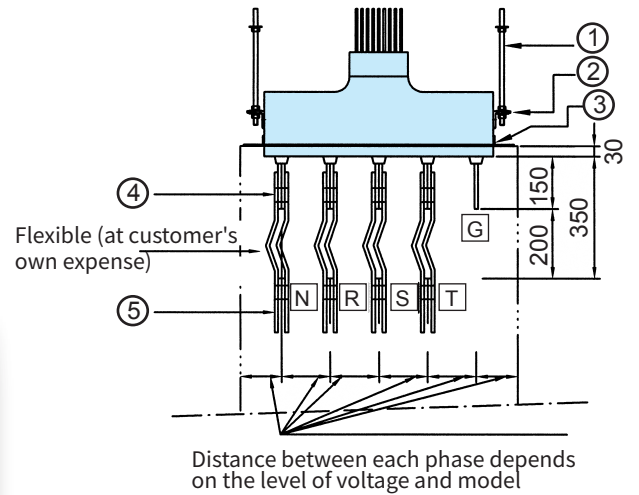
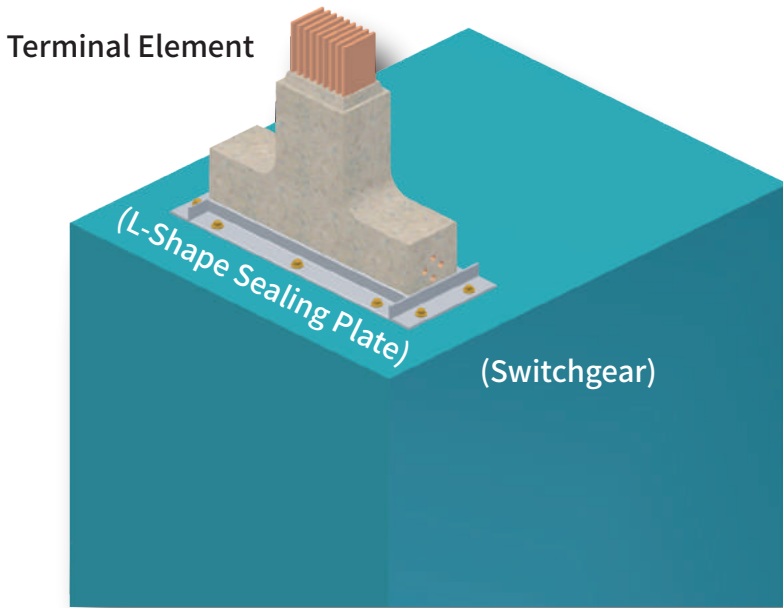
| No. | Type | 3P3W | | 3P3W+G(1/2G) or 3P4W | | 3P4W+G(1/2G) | |
|-----|--------|-------|-------|----------------------|-------|--------------|-------|
| | | A(mm) | B(mm) | A(mm) | B(mm) | A(mm) | B(mm) |
| 1 | LA02EC | 300 | 60 | 400 | 80 | 500 | 80 |
| 2 | LA04EC | 300 | 80 | 400 | 80 | 500 | 80 |
| 3 | LA08EC | 300 | 120 | 400 | 120 | 500 | 120 |
| 4 | LA12EC | 300 | 160 | 400 | 160 | 500 | 160 |
| 5 | LA16EC | 300 | 200 | 400 | 200 | 500 | 200 |
| 6 | LA08DC | 520 | 220 | 520 | 220 | 660 | 220 |
| 7 | LA12DC | 520 | 260 | 520 | 260 | 660 | 260 |
| 8 | LA16DC | 520 | 300 | 520 | 300 | 660 | 300 |
| 9 | LB08EC | 380 | 220 | 520 | 220 | 660 | 220 |
| 10 | LB12EC | 380 | 260 | 520 | 260 | 660 | 260 |
| 11 | LB16EC | 380 | 300 | 520 | 300 | 660 | 300 |
| 12 | LB08DC | 600 | 310 | 660 | 310 | 660 | 310 |
| 13 | LB12DC | 600 | 350 | 660 | 350 | 660 | 350 |
| 14 | LB16DC | 600 | 390 | 800 | 390 | 800 | 390 |

Busway Terminal Elements Opening Dimensions (Aluminum)

| No. | Type | 3P3W | | 3P3W+G(1/2G) or 3P4W | | 3P4W+G(1/2G) | |
|-----|--------|-------|-------|----------------------|-------|--------------|-------|
| | | A(mm) | B(mm) | A(mm) | B(mm) | A(mm) | B(mm) |
| 1 | LA04EA | 300 | 80 | 400 | 80 | 500 | 80 |
| 2 | LA08EA | 300 | 120 | 400 | 120 | 500 | 120 |
| 3 | LA12EA | 300 | 160 | 400 | 160 | 500 | 160 |
| 4 | LA16EA | 300 | 200 | 400 | 200 | 500 | 200 |
| 5 | LA12DA | 520 | 240 | 520 | 240 | 700 | 240 |
| 6 | LA16DA | 520 | 280 | 520 | 280 | 700 | 280 |
| 7 | LB12EA | 380 | 240 | 580 | 240 | 720 | 240 |
| 8 | LB16EA | 380 | 280 | 580 | 280 | 720 | 280 |
| 9 | LB08DA | 600 | 280 | 700 | 280 | 700 | 280 |
| 10 | LB12DA | 600 | 360 | 700 | 360 | 700 | 360 |
| 11 | LB16DA | 600 | 440 | 700 | 440 | 700 | 440 |

| No. | Type | 3P3W | | 3P3W+G(1/2G) or 3P4W | | 3P4W+G(1/2G) | |
|-----|--------|-------|-------|----------------------|-------|--------------|-------|
| | | A(mm) | B(mm) | A(mm) | B(mm) | A(mm) | B(mm) |
| 1 | LA04EA | 300 | 80 | 400 | 80 | 500 | 80 |
| 2 | LA08EA | 300 | 120 | 400 | 120 | 500 | 120 |
| 3 | LA12EA | 300 | 160 | 400 | 160 | 500 | 160 |
| 4 | LA16EA | 300 | 200 | 400 | 200 | 500 | 200 |
| 5 | LA12DA | 520 | 240 | 520 | 240 | 700 | 240 |
| 6 | LA16DA | 520 | 280 | 520 | 280 | 700 | 280 |
| 7 | LB12EA | 380 | 280 | 580 | 280 | 720 | 280 |
| 8 | LB16EA | 380 | 320 | 580 | 320 | 720 | 320 |
| 9 | LB08DA | 600 | 320 | 700 | 320 | 700 | 320 |
| 10 | LB12DA | 600 | 400 | 700 | 400 | 700 | 400 |
| 11 | LB16DA | 600 | 480 | 700 | 480 | 700 | 480 |

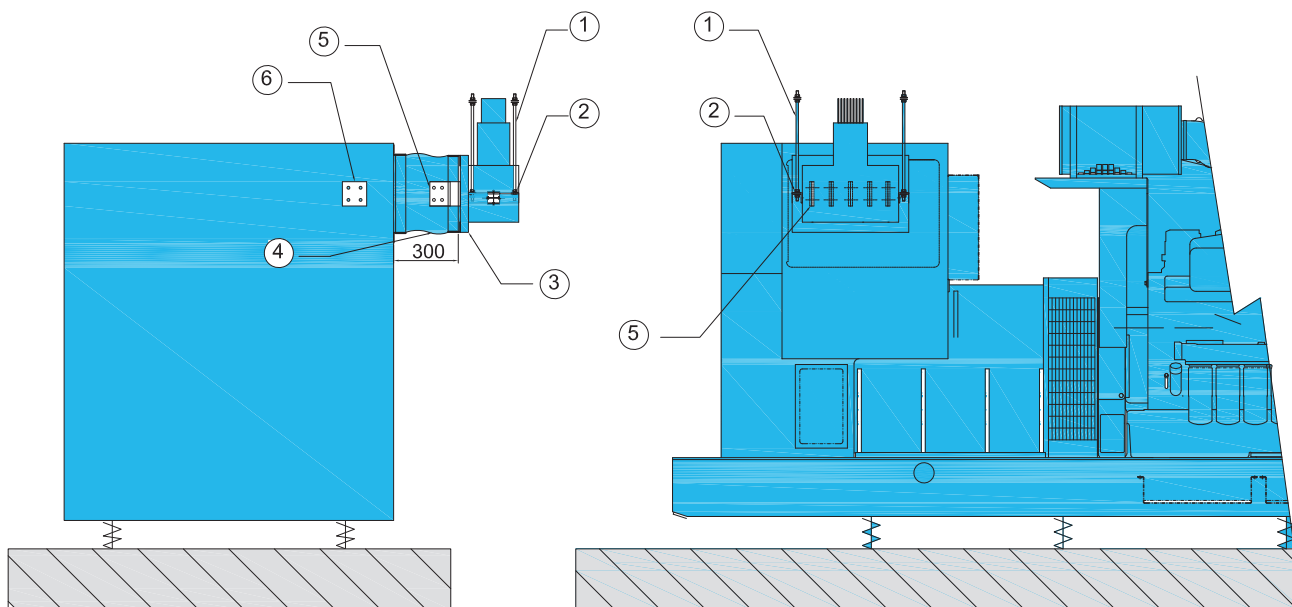
Low Voltage Busway Terminal Element and Switchgear Standard Guideline



| No. | Name | Specs | Remark |
|-----|---------------------------------------|--|--|
| 1 | Full threaded screw | 1/2" | Zinc-plated product (Included in installation work) |
| 2 | Angle Steel | 6t×50×50mm | Zinc-plated product (Included in installation work) |
| 3 | Terminal element seal | Steel plate t= 2mm | Painted |
| 4 | Flexibles | The 200mm reserved space between terminal element and switchgear are connected by flexibles. | Materials of this portion and connection work does not belong to the busway contractor. |
| 5 | Connection copper plate of switchgear | According to Switchgear design. | The drillings on copper plate are designed, processed and connected by switchger contractor. |

Note: This diagram is the standard connection interface.
Actual location of connection is determined case by case.

Low Voltage Busway Terminal Element and Generator Connection Standard Guideline



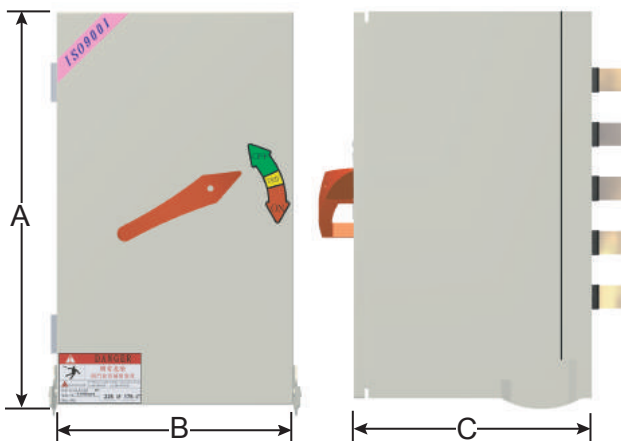
Transformer

Generator

| No. | Name | Specs | Remark |
|-----|---|---------------------------------|---|
| 1 | Full threaded screw | 1/2" | Zinc-plated product (Included in installation work) |
| 2 | Angle Steel | 6t × 50 × 50mm | Zinc-plated product (Included in installation work) |
| 3 | Terminal element seal | Steel plate t=2mm | Painted |
| 4 | Fire-resistant tarpaulin | | Non-Combusion (Included in installation of flange) |
| 5 | Flexibles | | Materials of this portion and connection work does not belong to the busway contractor. |
| 6 | Connection copper plate of generator/ transformer | According to Switchgear design. | The drillings on copper plate are designed, processed and connected by switchgear contractor. |

Plug-in Unit

- A. The standard length of each section of plug-in unit type busway is 3m and 4m. The plug-in points should be compared with the quantity and position of MCCB from customer's system drawing. Extra points need to be reserved by customer's actual requirement and the price is determined separately.
- B. When the plug-in unit is taken off, the opening of the leads is sealed by the insulation cover with the protection level IP65.
- C. There is an interlock device between plug-in unit and busway. In order to ensure the safety of operator, the plug-in unit can not be taken off from busway unless MCCB is off.
- D. The "ON/OFF" indication is shown on the cover for operation of plug-in unit. There has an interlock between the cover of plug-in unit and MCCB to make sure when MCCB is turned ON that the cover of plug-in unit can not be opened. (Unlock the cover from outside when MCCB is turned ON, which is another option for customer. The price differs from general type.)
- E. The design of plug-in unit meets the requirement of IEC60529 IP54/IP55. (IP55 is optional, the price is determined separately.)
- F. For minimum distance between busway, please refer to the horizontal/vertical pitch of "Product Installation Description". If the different rated current plug-in unit is installed, the maximum unit size should be used as basis.
- G. The design of plug-in unit fingers and flange connection are patented with M328135, low contact resistance is the major advantage for the design.
- H. The standard colour of plug-in unit is white N-9.5. (The colour is optional.)



| BUSWAY TYPE | CURRENT RATING(A) | DIMENSION(mm) (AxBxC) |
|---------------------|------------------------------------|--------------------------|
| 3Φ4W+G(5P) | 125AF,15~125AT | 350x260x282 |
| 3Φ4W+1/2G(9P) | 125AF,15~125AT | 500x300x302 |
| 3Φ4W+G 3Φ4W+1/2G | 250AF,125~250AT | |
| 3Φ4W+G 3Φ4W+1/2G | 400AF,250~400AT | 600x300x302 |
| 3Φ4W+G 3Φ4W+1/2G | 630AF,500~630AT 800AF,700~800AT | 900x350x375 |
| 3Φ4W+G 3Φ4W+1/2G | 1000~1600AF 1000~1600AT | 1350x500x495 |

Note:1. Design is based on TO/TG series MCCB of TECO.
2. MCCB other than TECO is selected, the price is discussed separately.

1. When the plug-in unit is taken off, the opening of the leads must be placed by the insulation cover.



2. Install the basement of plug-in unit.



3. Insert the plug-in unit onto the support plate of basement.



4. Installation completed.



Product Design Theory

1. Temperature correction coefficient for rated current

| | | | | | | | | | |
|--------------------------------------|------|------|------|------|------|------|------|------|------|
| Maximum ambient temperature °C | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 |
| Daily average ambient temperature °C | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 |
| Correction coefficient | 1.18 | 1.14 | 1.09 | 1.05 | 1.00 | 0.94 | 0.88 | 0.82 | 0.75 |

2. Voltage drop calculation

(1) 1Φ2w

$$\Delta U = 2 \times I_s \times L \times (R \cdot \cos\theta + X \cdot \sin\theta) \times 10^{-6}$$

(2) 1Φ3w / 3Φ4w (Line to neutral)

$$\Delta U = I_s \times L \times (R \cdot \cos\theta + X \cdot \sin\theta) \times 10^{-6}$$

(3) 3Φ3w

$$\Delta U = \sqrt{3} \times I_s \times L \times (R \cdot \cos\theta + X \cdot \sin\theta) \times 10^{-6}$$

ΔU = Voltage drop (Line to line) (Volts)

I_s = Load current (Amps)

L = Line length (m)

R = Resistance ($\mu\Omega/m$)

X = Reactance ($\mu\Omega/m$)

$\cos\theta$ = Power factor

$\sin\theta = \sqrt{1 - \cos^2\theta}$

Product Model Identification

| | | |
|-------------------|-------------------------------------|--|
| LA 08 E C 5 - 400 | | |
| LA | Product series code | LA : LA Series 1kV LB : LB Series 1kV |
| 08 | Copper bar width | 04 w=40mm , 08 w=80mm , 12 w=120mm , 16 w=160mm, |
| E | Sing/Double conductor of each phase | E : Single Line D : Double Lines |
| C | Conductor type | C : Copper conductor A : Aluminum conductor |
| 5 | No. of conductors | |
| 400 | Cross sectional area of conductor | 400mm ² |

For calculation of general product data or technical information, please contact with manufacturer or local agency.

Low Voltage Busway Routine Test Items

A. Low voltage busway dielectric tests: Insulation resistance test and power frequency voltage withstand test

| Electrical tests | Insulation resistance test | Power frequency voltage withstand |
|------------------|----------------------------|-----------------------------------|
| Standards | TECOBAR | IEC 61439-6 |
| Ur at 60Hz V | R at 1kV DC M Ω | U at 60 Hz 1min V |
| 1000 | 2000 | 5000 |

B. Appearance inspection

The appearance of each element must be inspected. Result to be mentioned in final inspection report.

C. Dimension inspection

All dimensions are to be compared with customer's order sheet. Result to be mentioned in final inspection report.

D. Outgoing test report

Low voltage parts shall be tested prior to shipment and attached with outgoing test report.

Projects Reference List



OFFICE BUILDING

- FUSIONPOLIS FIT-OUT AT ASTAR (SINGAPORE)
- NANGANG SOFTWARE PARK (TAIWAN)
- PFIZEER INC. (TAIWAN)
- UC-BANILAD (PHILIPPINES)
- UC-MED MEDICAL CLINIC BUILDING (PHILIPPINES)

RESIDENTIAL

- PLAM RANGSIT PROJECT (THAILAND)
- YCK PARAGON RESIDENCE (SINGAPORE)

HOTEL & RESORT

- CEBU REEF II RESORT (PHILIPPINES)
- CEBU REEF RESORT (PHILIPPINES)
- CROWNE PLAZA HOTEL (TAIWAN)
- DURACON HOTEL (PHILIPPINES)
- FULON HOTEL (TAIWAN)
- HALONG BAY HOTEL (VIETNAM)
- KODAK HOTEL (TAIWAN)
- NOVETEL (TAIWAN)
- SHANGRI LA (CAMBODIA)
- SHERATON (TAIWAN)
- SOLEA 2 HOTEL (PHILIPPINES)

MUSEUM

- GRAND PRIX MUSEUM (MACAU)
- NATIONAL MESEUM OF PREHISTORY (TAIWAN)

DATA CENTER

- GLOBAL SWITCH (SINGAPORE)
- GOOGLE WEN I (SINGAPORE)
- TELSTRA-PACNET PHASEZ 2 (SINGAPORE)



HOSPITAL

- APMWCI PROJECT HOSPITAL (PHILIPPINES)
- CATHAY GENERAL HOSPITAL (TAIWAN)
- CHANG-HUA CHRISTIANITY HOSPITAL (TAIWAN)
- CHI MEI MEDICAL CENTER (TAIWAN)
- LOSHEN SANATORIUM (TAIWAN)
- TAIWAN UNIVERSITY MEDICAL (TAIWAN)



AIRPORT

- AERO THAI (THAILAND)
- AERONAUTICAL RADIO (THAILAND)
- FAR GLORY AIR CARGO TERMINAL (TAIWAN)
- JAKARTA SOEKARNO-HATTA INTERNATIONAL AIRPORT (INDONESIA)
- PEMASANGGAN PIPA FUEL TERMINAL 3 (INDONESIA)
- SHANGHAI HON QIAO AIRPORT (CHINA)
- SHANGHAI HONGQIAO AIRPORT (TAIWAN)
- TAIPEI SONGSHAN AIRPORT (TAIWAN)
- TAOYUAN INTERNATION AIRPORT



EXPRESSWAY & TUNNEL

- MARINA COASTAL EXPRESSWAY-C463&C461 (SINGAPORE)
- SYUESHAN TUNNEL (TAIWAN)



ELECTRONIC & SEMICONDUCTOR

- AGC DISPLAY GLASS (TAIWAN)
- AU OPTRONICS CORP (TAIWAN)
- CORNING (TAIWAN)
- FORMOSA EPITAXY (TAIWAN)
- HTC CORP (TAIWAN)
- OPTO TECH CORPORATION (TAIWAN)
- SEMILEDS OPTOELECTRONICS (TAIWAN)
- SOLARCITY COMPANY (TAIWAN)
- TSMC (TAIWAN)
- UNITED MICOELECTRONICS CORPORATION (TAIWAN)



Projects Reference List



CLEANROOM

- JTC CLEANROOM (SINGAPORE)

METRO & HIGH SPEED RAIL

- KAOHSIUNG MRT (TAIWAN)
- KAOHSIUNG RAPID TRANSIT CORPORATION (TAIWAN)
- TAIPEI CITY HALL MRT (TAIWAN)
- TAIPEI RAPID TRANSIT CORPORATION (TAIWAN)
- TAIWAN HIGH SPEED RAIL (TAIWAN)



IRON & STEEL

- FORMOSA HA TINH STEEL CORPORATION (COKING PLANT - 0601) (VIETNAM)
- FORMOSA HA TINH STEEL CORPORATION (COKING PLANT - 0602) (VIETNAM)
- FORMOSA HA TINH STEEL CORPORATION (COKING PLANT - 0635) (VIETNAM)
- FORMOSA HA TINH STEEL CORPORATION (COKING PLANT - 06B5) (VIETNAM)
- FORMOSA HA TINH STEEL CORPORATION (COKING PLANT - BRANCH) (VIETNAM)
- FORMOSA HA TINH STEEL CORPORATION (WATER TREATMENT PLANT - 2) (VIETNAM)
- FORMOSA HA TINH STEEL CORPORATION (WATER TREATMENT PLANT) (VIETNAM)



ENERGY & INFRASTRUCTURE

- ABB PNG LNG (SINGAPORE)
- CHAOZHOU SANBAIMEN POWER STATION (CHINA)
- EGAT MAE MOH POWER PLANT (THAILAND)
- FUJIAN XIANYOU PUMPED STORAGE HYDROPOWER EXCITATION SYSTEMS (CHINA)
- GLOW IMPROVEMENT - EC PLANT P5 (THAILAND)
- GUANGDON QINGYUAN PUMPED STORAGE POWER STATION (CHINA)
- GUANGDONG SHAOGUAN #1 #2 (CHINA)
- GUANGDONG SHAOGUAN THERMAL POWER STATION (CHINA)
- HSIN YUAN POWER PLANT (TAIWAN)
- MALAYSIA FAST TRACK3A (MALAYSIA)
- MALAYSIA FAST TRACK4A (MALAYSIA)
- QINGYUAN PUMPED STORAGE POWER STATION (CHINA)
- SHANGHAI JINQIAO EXPORT PROCESSING ZONE (CHINA)
- XIANJU HYDRO POWER #1 #2 (CHINA)



SHIPYARD

- CHANGXING ISLAND #1#2 SHIPYARD (CHINA)
- CHANGXING ISLAND FACILITY (CHINA)
- CHANGXING ISLAND SHIPBUILDING (CHINA)
- SHANGHAI WAIGAOQIAO SHIPBUILDING CO., LTD. (CHINA)
- SHIPYARD AT PANDAN ROAD (SINGAPORE)



PHARMACEUTICAL

- NOVARTIS (SINGAPORE)



CHEMICAL PLANT

- AEROSIL (THAILAND)
- AMMONIA AND UREA PLANT IN MARY (TURKMENISTAN)
- ASAHI CHEMICAL (THAILAND)
- BINTULU PROJECT (MALAYSIA)
- KRABI (THAILAND)

Projects Reference List



PETROCHEMICAL

- AMMONIA AND UREA PLANTS IN MARY-MERV (TURKMENISTAN)
- FORMOSA CHEMICALS & FIBRE CORPORATION (NINGPO FACTORY DEVELOPMENT PROJECT) (CHINA)
- FORMOSA PALNT VN2 (VIETNAM)
- FORMOSA PALNT WATER SOURCE (VIETNAM)
- FORMOSA PLANT-FIRST PHASE (VIETNAM)
- FORMOSA PLANT-SCOND PHASE (VIETNAM)
- NCC SIDE CRACKER (KOREA)
- SHANGHAI ORIENTAL PETROCHEMICAL CORPL (CHINA)
- SHANGHAI XIAO HUA (CHINA)
- SHANGHAI YADONG PETROCHEMICAL PLANT (CHINA)
- YIAN XION PETROCHEMICAL PLANT (CHINA)

OIL & GAS

- FUEL TANK FIRM CONSTRUCTION (MYANMAR)
- HUUHOT OIL & GAS PROJECT (CHINA)
- TAIYO NIPPON SANSO ENGINEERING (INDIA)

OFF-SHORE OIL DRILLING

- YANTAI RAFFLES OFFSHORE LTD,F&G MILLENIUM SA SEMI-SUBMERSIBLE DRILLING UNIT BAERFIELD HULL NO:YRO2006-193.



PULP & PAPER

- TJIWI KIMIA PAPER MILL (INDONESIA)
- CHENG LOONG (VIETNAM)
- MONDI RICHARD BAY (SOUTH AFRICA)

FACTORY

- CHENG SHIN TYRE (INDONESIA)
- FAR EASTERN NEW CNETURY CORPORATION (VIETNAM)
- FORMOSA CHEMICALS & FIBER CORPORATION (NINGBO FACTORY - IIR) (CHINA)
- FORMOSA CHEMICALS & FIBER CORPORATION (NINGBO FACTORY) (CHINA)
- FORMOSA TAFFETA (DONG NAI) CO., LTD. (VIETNAM)"
- FUJIANG TECO FACTORY FIRST PERIOD (CHINA)
- JIANGXI TECO FACTORY RELOCATION (CHINA)
- KALLANG PAYA LEBAR KPE (SINGAPORE)
- POU CHEN MYANMAR PHASE III PROJECT (VIETNAM)
- POUSUNG VIETNAM (POU CHEN GROUP) EXTENSION (VIETNAM)
- QINGDAO TECO COMPRESSOR FACTORY (CHINA)
- QINGDAO TECO COMPRESSOR FACTORY-ADDITIONAL FEEDER (CHINA)
- RAHEJA MINDSPACE (INDIA)
- SANFAN CHEMICAL (VIETNAM)
- TECO WUXI FACTORY (CHINA)



E-HOUSE

- HELANG FPSO (MALAYSIA)
- TAN BURRUP (AUSTRALIA)

INCINERATOR

- TUAS TUAS SOUTH INCINERATION PLANT (SINGAPORE)

Projects Reference List



Data Center Hi-Tech Industry



Petrochemical



Airport



Industry



High Rise Building



Oil & Gas



Power Plant



CAST-RESIN INSULATED BUSWAY SYSTEMS



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