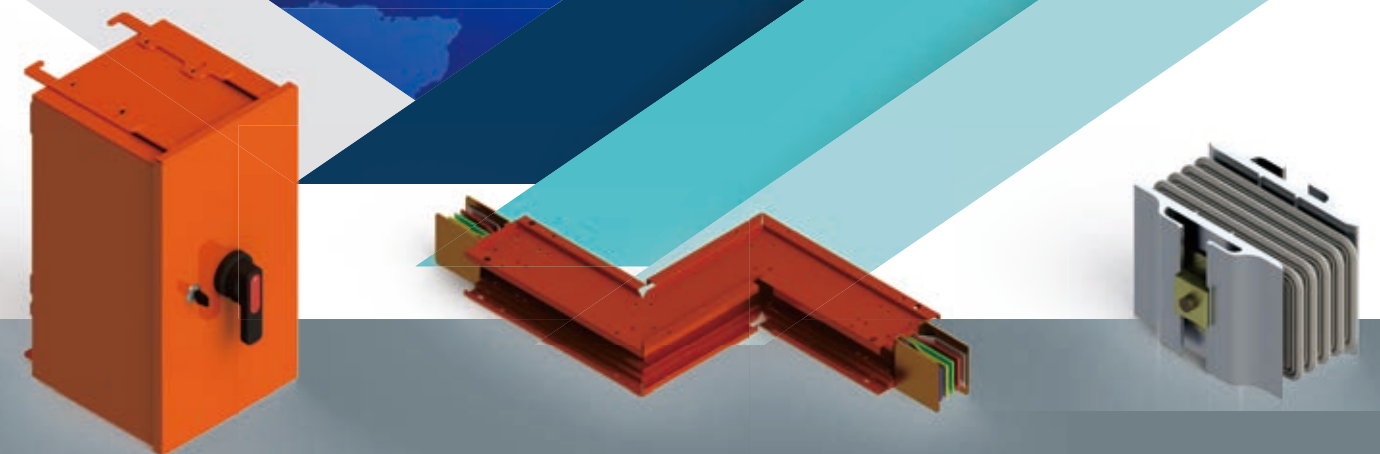


# Busway Trunking System



## Manufacturing center :

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OPT-EN-6-1803

The manufacturer reserves the right of product changes.



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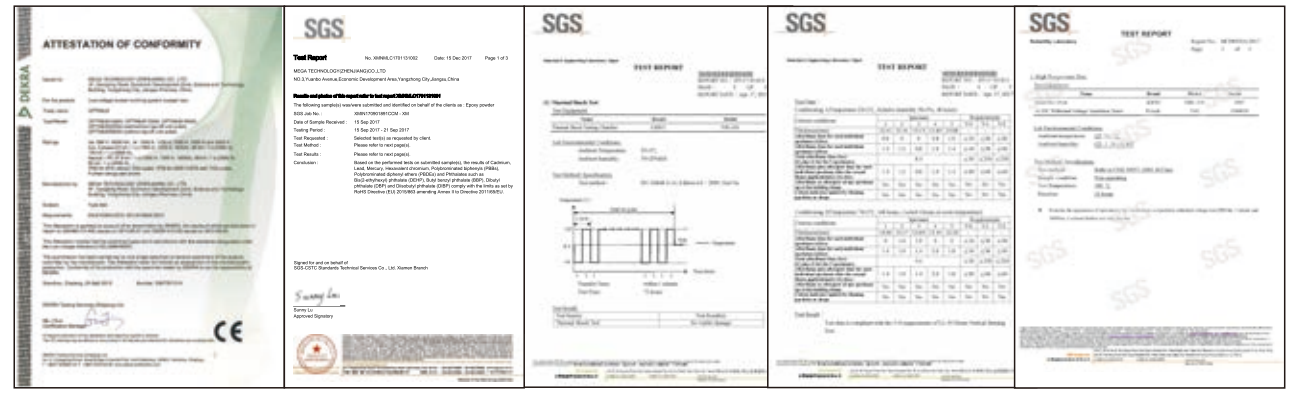
### About Us

**PRO OPTIMUS** busway trunking systems possess strong R&D resource, perfect quality and satisfactory service, which have successfully completed many projects to overseas and local market. With the continuing product research and development process carried out by Mega Technology(Zhenjiang) Co.,Ltd, we are able to provide uniquely designed and highly reliable products. This is achieved by adopting sophisticated thermodynamic design applications and quality manufacturing methods to deliver high performance products to our customers.





**Waterproof intensify busway** uses Epoxy coating and it has been successfully tested with UL 94 V-0 and successfully passed 36 cycle thermal shock tests in accordance with IEC60068-2-14 and EU ROHS certificate .

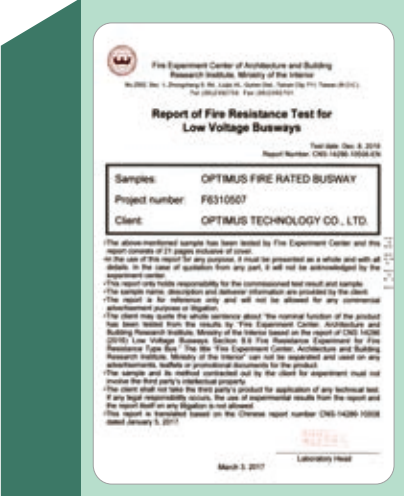


Full type test certificates of **PRO OPTIMUS** busway trunking system is in accordance with IEC 61439-6:2012 and IEC 60439-2:2005.



### Earthquake Test

**PRO OPTIMUS** busway trunking system has been successfully tested of 7.0 earthquake strength on three axissimulations of the AC156, IBC2006 and ASCE7-05 standard.



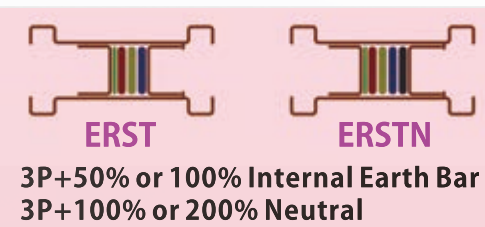
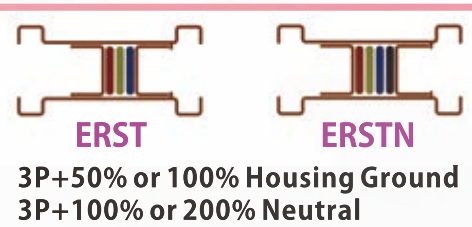
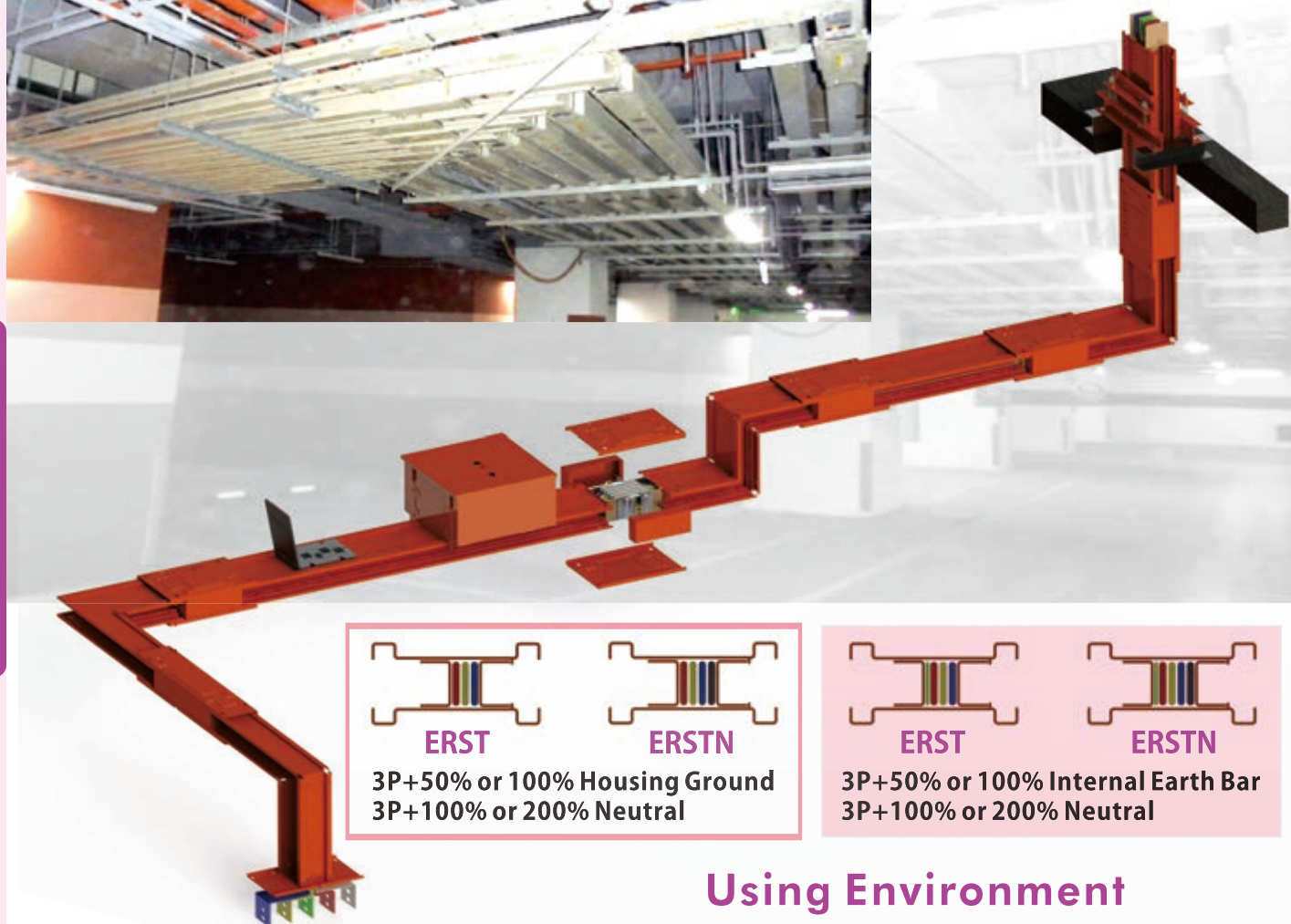
### Fire Resistance Test

**PRO OPTIMUS** busway trunking system has been successfully tested for 840 °C in 30 minutes of the fire proof resistance in accordance with JIS C8364, JIS A1304, CNS 14286, and CNS 12514.

### Protection Test

**PRO OPTIMUS** busway trunking system has been successfully tested for IP66 and IP68 in accordance with resistance of IEC 60529.





## Harmonic Suppression

System Harmonic hazards to the busway are mainly caused by the third harmonic neutral phase's overload, according to the content of the third harmonic  $I_{h_3}$  different, and we can take different solutions:

- ◆  $I_{h_3} \leq 15\%$  :The cross-sectional area of neutral phase should choose half cross-sectional area of phase line.
- ◆  $I_{h_3} \leq 33\%$  :The cross-sectional area of neutral phase should be the same as cross-sectional area of phase line.
- ◆  $I_{h_3} > 33\%$  :Should be considered to install active or passive filter device in the harmonic branch.

## Using Environment

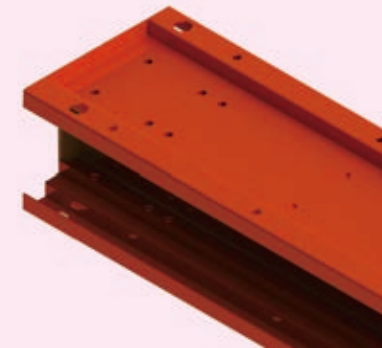
- ◆ **Height of the sea** : indoor or outdoor site at an altitude of 2,500 m below.
- ◆ **Humidity** : indoor or outdoor site at relative humidity of 98% below.
- ◆ **Ambient Temperature** : indoor or outdoor site at between 0 °C to 50 °C.
- ◆ **Frequent Range** : 50 or 60Hz.
- ◆ **Voltage** : 1000V and below.

## Reference Standards

PRO OPTIMUS busway trunking systems are tested and certified by KEMA KEUR and 3C to comply with :

- |                          |             |
|--------------------------|-------------|
| ◆ IEC 60439-1            | ◆ UL 857    |
| ◆ IEC 60439-2            | ◆ UL1709    |
| ◆ IEC61439-1/IEC 61439-6 | ◆ ANSI      |
| ◆ IEC 60331/IEC 60332    | ◆ IEEE/IEEE |
| ◆ GB 7251.1/GB 7251.2    | ◆ NFPA 70   |
| ◆ CNS 14286/CNS 12514    | ◆ NEMA BU1  |
| ◆ JIS C8364/JIS A1304    | ◆ IEC 60529 |

## Housing



### Materials:

- ◆ Aluminum Extrusion
- ◆ Cold rolled Steel
- ◆ Electro-galvanised Steel
- ◆ Stainless Steel Sheet

PRO OTIMUS busway trunking systems are high heat dissipation, extremely low impedance ground path and totally enclosed (sandwich type) in the powder coated housing. Any orientation of the system under severe site conditions will not affect the performance of the busduct.

◆ **Ground Capacity**: 50% or 100%.

◆ **Protection IP Degree**: IP40/IP42/IP54/IP55/IP65/IP66/IP67/IP68.

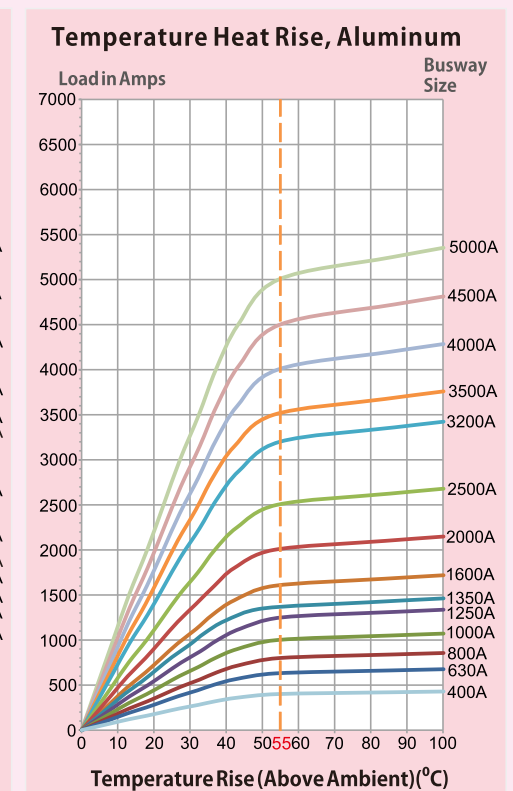
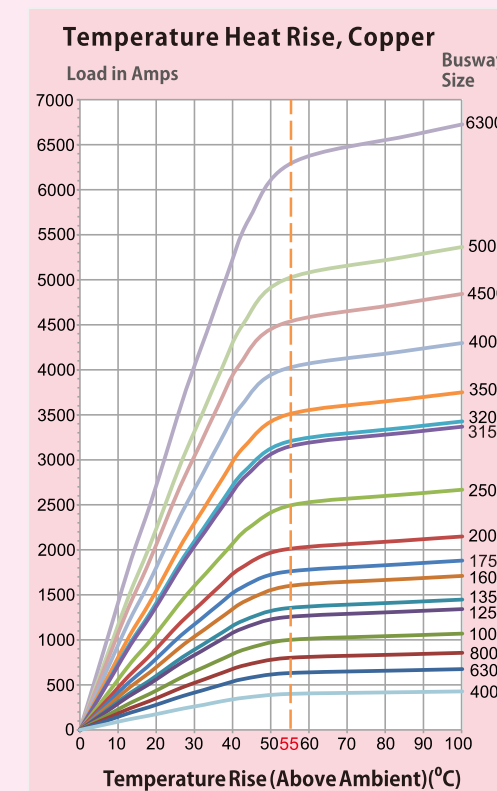
Note : Protection of outdoor type can be provided upon special request for customers.



※The Metal housing passed 1,800 hours of salt spray test.

## Conductors

- ◆ **Copper busbars** have high conductivity (>99.99%) with high purity (>99.97%) , tin or silver-plated.
- ◆ **Aluminum bars** have conductivity > 58% ~ 61%, copper plated and tin or silver-plated for contact aluminum system.
- ◆ According to customer's request, we can provide the products which overload 25% and sustained 24 hours of high reliability products.



As the line graph shown above, when rated current of 50 or 60 Hz flows in the PRO OPTIMUS Busway, the values of saturation temperature rise in the conductor are not more than 55 °C for any rated current.

## Insulation



Mylar Film

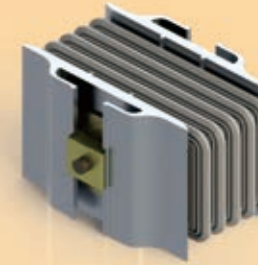
Mica Film

Epoxy Coating

- ◆ **Normal busway** uses the whole wrap in Mylar film of the Class B (130 °C) or Class F(155 °C), providing insulation and dielectric strength of up to 15 kV/mm. The busway of riser configuration has been successfully tested for preventing flame propagation by IEC 60332-3 : 1992, GB/T 18380.3:2001 and fire barrier in building penetration of preventing ISO 834.
- ◆ **Fire rated busway** uses the whole wrap in Mica film of insulating material, and has been successfully tested for 840 °C 30 minutes of fire proof resistance of JIS C8364, JIS A1304, GA/T 537, CNS 14286, and CNS 12514.
- ◆ **Waterproof intensify busway** uses Epoxy coating of the Class H (180 °C), has been successfully tested for IP68 protection of IEC 60529 and comply by UL 94 V-0, EU ROHS.

Note: All busducts are tested at 2.5 kV / 3.75 kV / 5 kV / 6.5 kV for 1 minute and  $\geq 2000 \text{ M}\Omega$  in the testing condition of the factory.

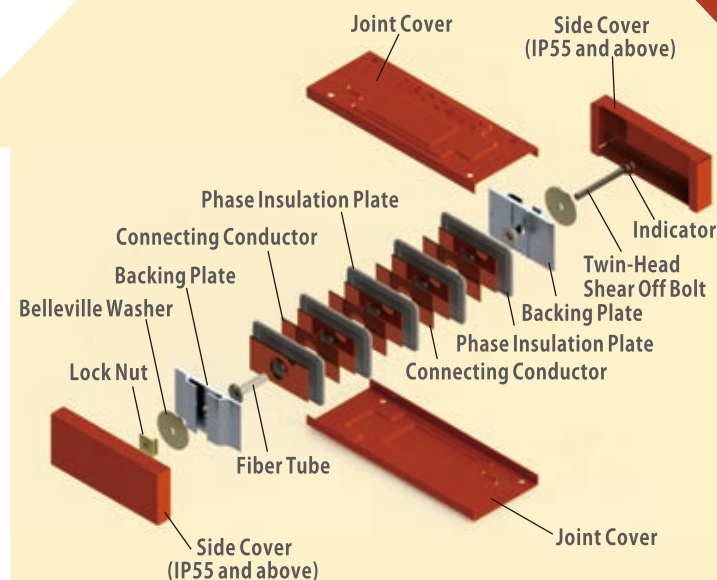
## Block Joint System (Bridge Type)



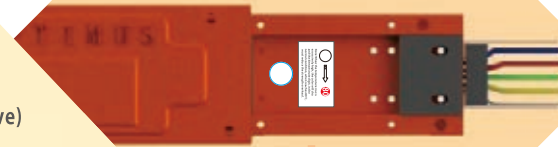
The bridge type joint which is easy to install / remove, providing outstanding features as follows:

- ◆ The design of the joint assembly cone-shaped insulation plate design increases mechanical strength while its molded joint side plate ensures cover not to deform.
- ◆ The steel large size of Belleville washers ensures average pressure of contact.
- ◆ Use common 16 mm socket wrench to tighten the torque bolt. (When indication disc falls off, the joint is properly tightened automatically).
- Note: Use a standard torque which is 70 Nm when the joint bolt reinstall.
- ◆ Each joint allows thermal expansion of 5 mm, and allows 10mm field adjustable isolation for job site flexibility during installation, allowing the tilt angle of  $\pm 5$ , and allows more than 40 mm area length of overlapping.
- ◆ Bolts and nuts can be stainless, galvanized or chromed black high tensile steel.
- ◆ The earth effect of the cable characteristic is more than  $150 \text{ mm}^2$  electric.
- ◆ The temperature rise sensors can be purchased according to customer needs to examine if the joints overload or overheat.

## Detail of The Block Joint



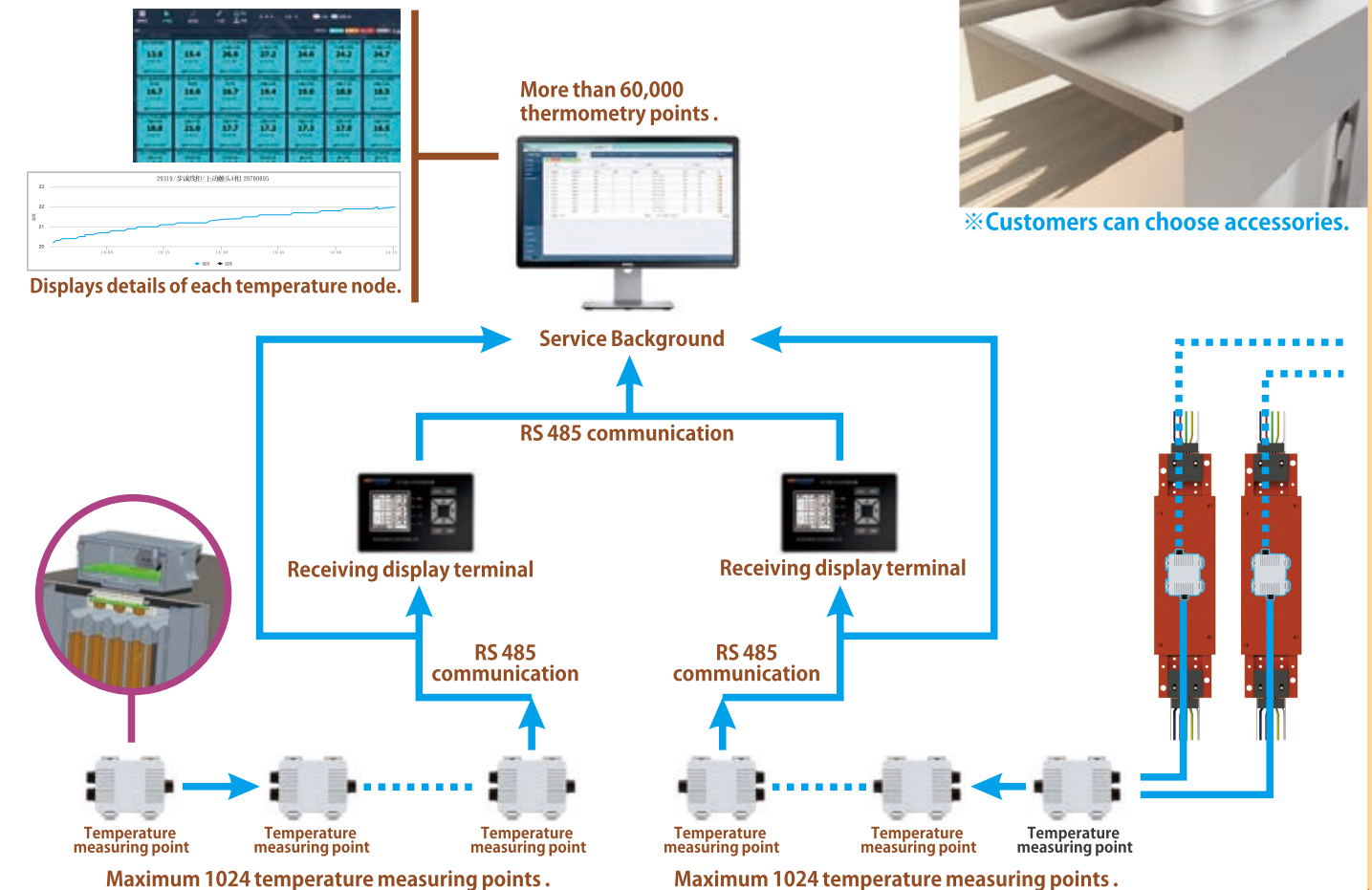
## Temperature Sensor Sticker



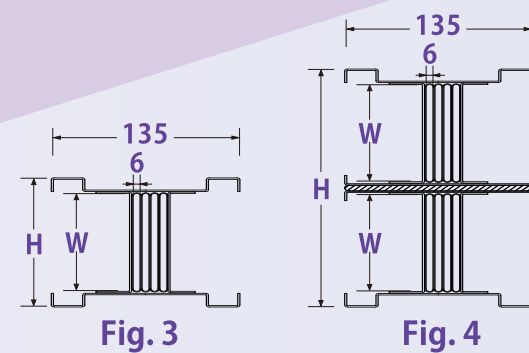
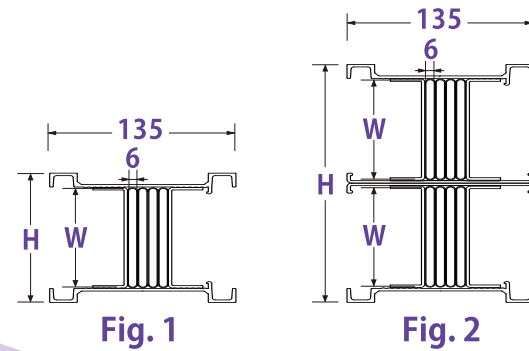
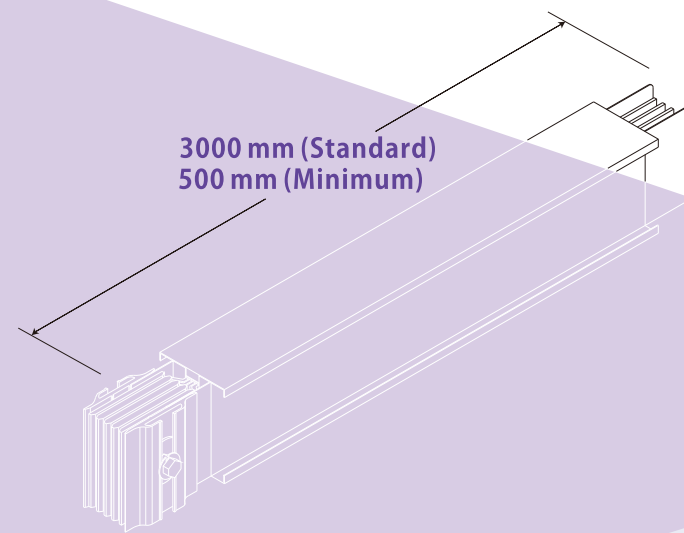
Note: When the temperature rise is excessively high, the color will change and the demonstrate digit, in the normal condition, when reaching 80°C, must reduce the power strength overhaul.

※Customers can choose accessories.

## Temperature monitoring technology system



## Feeder Busduct



| Rating<br>(A) |      | W<br>(mm) | H<br>(mm) | Aluminum Extrusion |           |       |           | Fig | H<br>(mm) | Steel Sheet   |           |       |           | Fig |      |   |
|---------------|------|-----------|-----------|--------------------|-----------|-------|-----------|-----|-----------|---------------|-----------|-------|-----------|-----|------|---|
|               |      |           |           | Weight (kg/m)      |           |       |           |     |           | Weight (kg/m) |           |       |           |     |      |   |
|               |      |           |           | 3P3W               | 3P3W 1/2E | 3P4W  | 3P4W 1/2E |     |           | 3P3W          | 3P3W 1/2E | 3P4W  | 3P4W 1/2E |     |      |   |
| CU Conductor  | 400  | 25        | 57        | 7.3                | 8.0       | 8.7   | 9.3       | 1   | 57        | 9.7           | 10.4      | 11.1  | 11.7      | 3   |      |   |
|               | 630  | 35        | 67        | 9.0                | 10.0      | 10.9  | 11.9      |     | 67        | 11.6          | 12.5      | 13.5  | 14.4      |     |      |   |
|               | 800  | 45        | 77        | 10.8               | 12.0      | 13.2  | 14.4      |     | 77        | 13.4          | 14.6      | 15.8  | 17.0      |     |      |   |
|               | 1000 | 60        | 92        | 13.4               | 15.0      | 16.6  | 18.2      |     | 92        | 16.2          | 17.7      | 19.4  | 21.0      |     |      |   |
|               | 1250 | 75        | 107       | 16.0               | 18.0      | 20.1  | 22.0      |     | 107       | 18.9          | 20.9      | 23.0  | 24.9      |     |      |   |
|               | 1350 | 85        | 117       | 17.7               | 20.0      | 22.3  | 24.6      |     | 117       | 20.7          | 23.0      | 25.3  | 27.6      |     |      |   |
|               | 1600 | 100       | 132       | 20.4               | 23.0      | 25.8  | 28.4      |     | 132       | 23.5          | 26.1      | 28.9  | 31.5      |     |      |   |
|               | 1750 | 125       | 157       | 24.7               | 28.0      | 31.5  | 34.7      |     | 157       | 38.1          | 31.4      | 34.8  | 38.1      |     |      |   |
|               | 2000 | 160       | 192       | 30.8               | 35.0      | 39.4  | 43.6      |     | 192       | 34.5          | 38.7      | 43.1  | 47.3      |     |      |   |
|               | 2500 | 185       | 217       | 35.2               | 40.0      | 45.1  | 50.0      |     | 217       | 39.1          | 43.9      | 49.1  | 53.9      |     |      |   |
|               | 3150 | 250       | 282       | 46.5               | 53.0      | 60.0  | 66.5      |     | 282       | 51.0          | 54.6      | 64.5  | 71.1      |     |      |   |
|               | 3200 | (2) 125   | 290       | 49.0               | 55.6      | 62.5  | 69.1      | 2   | 295       | 55.4          | 62.0      | 68.9  | 75.5      | 4   |      |   |
|               | 3500 | (2) 140   | 320       | 54.2               | 61.6      | 69.3  | 76.7      |     | 325       | 60.9          | 68.3      | 76.0  | 83.4      |     |      |   |
|               | 4000 | (2) 160   | 360       | 61.2               | 69.6      | 78.5  | 86.9      |     | 365       | 68.3          | 76.7      | 85.5  | 93.9      |     |      |   |
|               | 4500 | (2) 205   | 450       | 76.9               | 87.6      | 99.0  | 109.7     |     | 455       | 84.8          | 95.5      | 106.9 | 117.7     |     |      |   |
|               | 5000 | (2) 225   | 490       | 83.8               | 95.6      | 108.1 | 119.9     |     | 495       | 92.1          | 103.9     | 116.4 | 128.2     |     |      |   |
|               | 6300 | (2) 250   | 540       | 92.5               | 105.6     | 119.5 | 132.6     |     | 545       | 101.3         | 114.4     | 128.3 | 141.4     |     |      |   |
|               |      |           |           |                    |           |       |           |     |           |               |           |       |           |     |      |   |
| AL Conductor  | 400  | 50        | 82        | 6.2                | 6.6       | 7.0   | 7.4       | 1   | 82        | 8.8           | 9.2       | 9.7   | 10.1      | 3   |      |   |
|               | 630  | 60        | 92        | 6.8                | 7.3       | 7.9   | 8.3       |     | 92        | 9.6           | 10.0      | 10.6  | 11.1      |     |      |   |
|               | 800  | 75        | 107       | 7.8                | 8.4       | 9.1   | 9.7       |     | 107       | 10.7          | 11.3      | 12.0  | 12.6      |     |      |   |
|               | 1000 | 90        | 122       | 8.7                | 9.5       | 10.3  | 11.0      |     | 122       | 11.8          | 12.5      | 13.3  | 14.1      |     |      |   |
|               | 1250 | 110       | 142       | 10.0               | 10.9      | 11.9  | 12.8      |     | 142       | 13.2          | 14.1      | 15.2  | 16.0      |     |      |   |
|               | 1350 | 150       | 182       | 12.6               | 13.8      | 15.2  | 16.4      |     | 182       | 16.2          | 17.4      | 18.8  | 20.0      |     |      |   |
|               | 1600 | 170       | 202       | 13.9               | 15.2      | 16.8  | 18.2      |     | 202       | 17.7          | 19.0      | 20.6  | 22.0      |     |      |   |
|               | 2000 | 200       | 232       | 15.8               | 17.4      | 12.3  | 20.9      |     | 232       | 19.9          | 21.5      | 23.4  | 25.0      |     |      |   |
|               | 2500 | (2)150    | 340       | 24.8               | 27.2      | 30.0  | 32.4      |     | 2         | 345           | 31.7      | 34.1  | 36.9      |     | 39.3 | 4 |
|               | 3200 | (2) 170   | 380       | 27.4               | 30.1      | 33.3  | 36.0      |     |           | 385           | 34.6      | 37.3  | 40.5      |     | 43.2 |   |
|               | 3500 | (2) 185   | 410       | 29.3               | 32.2      | 35.7  | 38.7      |     |           | 415           | 36.8      | 39.8  | 43.3      |     | 46.2 |   |
|               | 4000 | (2) 200   | 440       | 31.2               | 34.4      | 38.2  | 41.4      | 445 |           | 39.0          | 42.2      | 46.0  | 49.2      |     |      |   |
|               | 4500 | (2) 225   | 490       | 34.4               | 38.0      | 42.3  | 45.8      | 495 |           | 42.7          | 46.3      | 50.5  | 54.1      |     |      |   |
|               | 5000 | (2) 250   | 540       | 37.7               | 41.6      | 46.3  | 50.3      | 545 |           | 46.4          | 50.4      | 55.1  | 59.1      |     |      |   |
|               |      |           |           |                    |           |       |           |     |           |               |           |       |           |     |      |   |

Unit:  $10^{-6} \Omega/m$  (20 °C)

| Rating<br>(A) |         | Busbar Size<br>(mm) | 50Hz  |      |       | 60Hz  |      |       |
|---------------|---------|---------------------|-------|------|-------|-------|------|-------|
|               |         |                     | R     | X    | Z     | R     | X    | Z     |
| CU Conductor  | 400     | 25                  | 123.5 | 56.3 | 135.7 | 123.5 | 67.8 | 140.9 |
|               | 630     | 35                  | 86.9  | 44.6 | 97.7  | 86.9  | 53.7 | 102.2 |
|               | 800     | 45                  | 67.0  | 34.2 | 75.2  | 67.0  | 41.2 | 78.7  |
|               | 1000    | 60                  | 50.0  | 27.9 | 57.3  | 50.0  | 33.6 | 60.2  |
|               | 1250    | 75                  | 40.0  | 32.6 | 51.6  | 40.0  | 39.3 | 56.1  |
|               | 1350    | 85                  | 35.0  | 29.8 | 46.0  | 35.0  | 35.9 | 50.1  |
|               | 1600    | 100                 | 30.0  | 24.4 | 38.7  | 30.0  | 29.4 | 42.0  |
|               | 1750    | 125                 | 23.7  | 21.2 | 31.8  | 23.7  | 25.5 | 34.8  |
|               | 2000    | 160                 | 19.8  | 13.2 | 23.8  | 19.8  | 15.9 | 25.4  |
|               | 2500    | 185                 | 16.2  | 12.9 | 20.7  | 16.2  | 15.5 | 22.4  |
|               | 3150    | 250                 | 12.6  | 8.2  | 15.0  | 12.6  | 9.9  | 16.0  |
|               | 3200    | (2) 125             | 12.6  | 7.8  | 14.8  | 12.6  | 9.4  | 15.7  |
|               | 3500    | (2) 140             | 10.9  | 7.3  | 13.1  | 10.9  | 8.8  | 14.0  |
|               | 4000    | (2) 160             | 9.5   | 6.8  | 11.7  | 9.5   | 8.2  | 12.5  |
|               | 4500    | (2) 205             | 7.4   | 6.4  | 9.8   | 7.4   | 7.7  | 10.7  |
| 5000          | (2) 225 | 6.7                 | 5.8   | 8.9  | 6.7   | 7.0   | 9.7  |       |
| 6300          | (2) 250 | 6.1                 | 5.0   | 7.9  | 6.1   | 6.0   | 8.6  |       |
| AL Conductor  | 400     | 50                  | 98.6  | 42.0 | 107.2 | 98.6  | 50.6 | 110.8 |
|               | 630     | 60                  | 81.8  | 35.2 | 89.1  | 81.8  | 42.4 | 92.1  |
|               | 800     | 75                  | 66.9  | 25.8 | 71.7  | 66.9  | 31.1 | 73.8  |
|               | 1000    | 90                  | 54.9  | 23.2 | 59.6  | 54.9  | 28.0 | 61.6  |
|               | 1250    | 110                 | 44.2  | 19.1 | 48.2  | 44.2  | 23.0 | 49.8  |
|               | 1350    | 150                 | 33.3  | 15.9 | 36.9  | 33.3  | 19.2 | 38.4  |
|               | 1600    | 170                 | 29.1  | 14.8 | 32.6  | 29.1  | 17.8 | 34.1  |
|               | 2000    | 200                 | 24.2  | 11.9 | 27.0  | 24.2  | 14.3 | 28.1  |
|               | 2500    | (2)150              | 16.1  | 8.9  | 18.4  | 16.1  | 10.7 | 19.3  |
|               | 3200    | (2) 170             | 14.2  | 6.6  | 15.7  | 14.2  | 8.0  | 16.3  |
|               | 3500    | (2) 185             | 13.1  | 6.2  | 14.5  | 13.1  | 7.5  | 15.1  |
|               | 4000    | (2) 200             | 12.1  | 6.0  | 13.5  | 12.1  | 7.2  | 14.1  |
|               | 4500    | (2) 225             | 10.7  | 5.4  | 12.0  | 10.7  | 6.5  | 12.5  |
|               | 5000    | (2) 250             | 9.7   | 4.8  | 10.8  | 9.7   | 5.8  | 11.3  |

Note : Voltage drop = amps load x  $\sqrt{3} \times (R \cos \theta + X \sin \theta)$ ,  $\cos \theta$  = Power Factor

## Ambient Temperature Application

When installed in higher ambient temperature, the busduct current rating shall be decreased according to the factors for the following table:

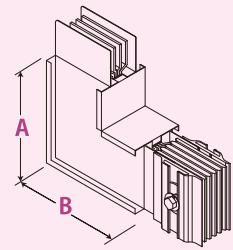
| Ambient Temperature<br>(°C) | Derating Factor |
|-----------------------------|-----------------|
| 40 and below                | 1.00            |
| 45                          | 0.95            |
| 50                          | 0.90            |
| 55                          | 0.85            |
| 60                          | 0.80            |
| 65                          | 0.78            |
| 70                          | 0.74            |
| 80                          | 0.70            |

## Short-circuit current withstand

PRO Optimus busway trunking systems provide predictable, consistent strength and high short - circuit ratings.

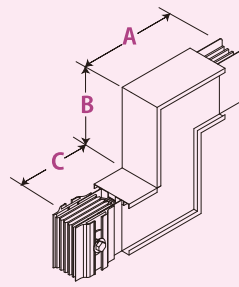
Testing is certified by **KEMA KEUR** , in accordance with IEC 60439-1 & 2 and IEC 61439-6 of short circuit withstand test for 1 second and 3 seconds.





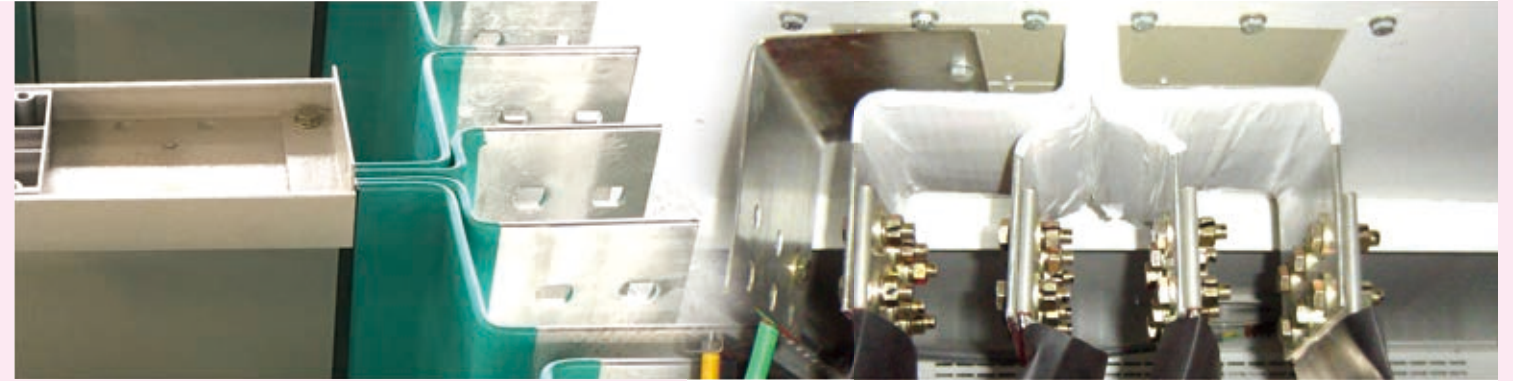
### Flatwise Elbow

|    | Rating (A)  | Standard Length (mm) |
|----|-------------|----------------------|
| CU | 400 - 2500  | A / B = 350          |
|    | 3150        | A / B = 400          |
|    | 3200 - 4000 | A / B = 450          |
|    | 4500 - 5000 | A / B = 500          |
|    | 6300        | A / B = 550          |
| AL | 400 - 2000  | A / B = 350          |
|    | 2500 - 3200 | A / B = 450          |
|    | 3500 - 4500 | A / B = 500          |
|    | 5000        | A / B = 550          |

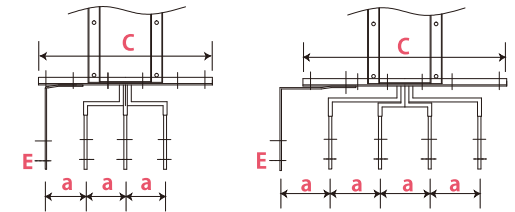
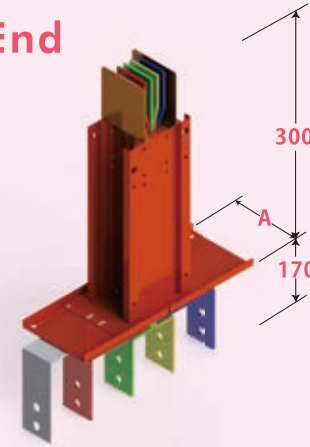


### Flatwise Offset

|    | Rating (A)  | Standard Length (mm) |
|----|-------------|----------------------|
| CU | 400 - 2500  | A / C = 350, B = 300 |
|    | 3150        | A / C = 400, B = 300 |
|    | 3200 - 4000 | A / C = 450, B = 400 |
|    | 4500 - 5000 | A / C = 500, B = 400 |
|    | 6300        | A / C = 550, B = 400 |
| AL | 400 - 2000  | A / C = 350, B = 300 |
|    | 2500 - 3200 | A / C = 450, B = 350 |
|    | 3500 - 4500 | A / C = 500, B = 400 |
|    | 5000        | A / C = 550, B = 400 |



### Flange End



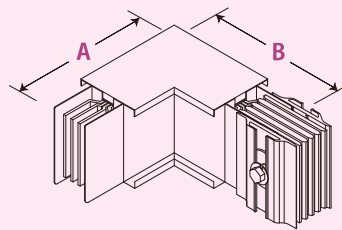
3P3W

3P4W

◆ E : 50% / 100% PE

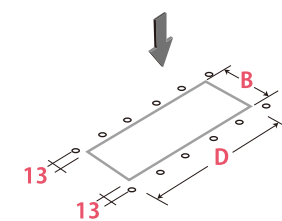
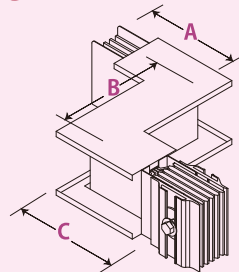
◆ E : 50% / 100% (Housing Ground)

### Edgewise Elbow



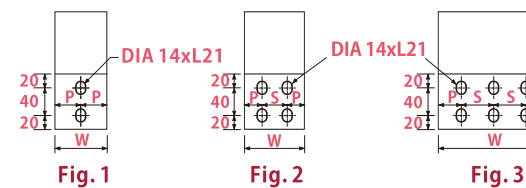
|    | Rating (A) | Standard Length (mm) |
|----|------------|----------------------|
| CU | 400 - 6300 | A / B / C = 350      |
| AL | 400 - 5000 |                      |

### Edgewise Offset

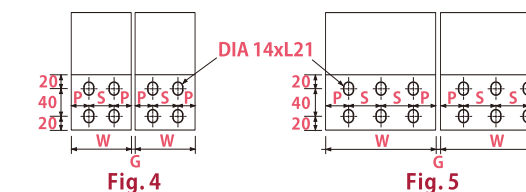


| Phase | Interval "a" (mm) | Mounting Dimension "C" (mm) | Opening Dimension "D" (mm) |
|-------|-------------------|-----------------------------|----------------------------|
| 3W    | 80                | 250                         | 230                        |
|       | 100               | 310                         | 290                        |
| 4W    | 80                | 350                         | 280                        |
|       | 100               | 410                         | 340                        |

### One Trunk

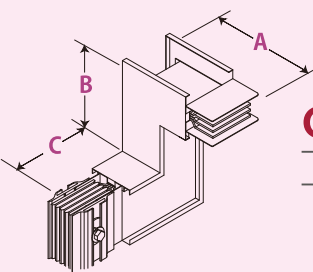


### Double Trunk



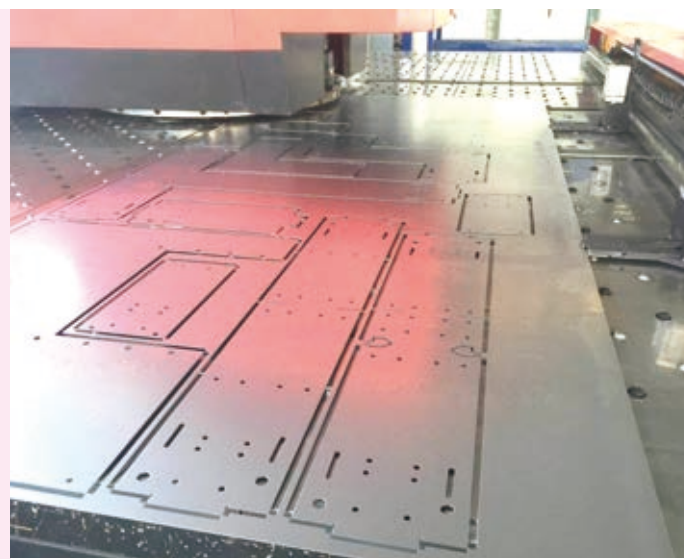
| Rating<br>(A) |        | Dimension (mm) |      |      |                    |     |     |             |     |     | Fig |
|---------------|--------|----------------|------|------|--------------------|-----|-----|-------------|-----|-----|-----|
|               |        | W              | S    | P    | Aluminum Extrusion |     |     | Steel Sheet |     |     |     |
|               |        |                |      |      | G                  | A   | B   | G           | A   | B   |     |
| CU Conductor  | 400    | 25             | -    | 12.5 | -                  | 111 | 55  | -           | 111 | 55  | 1   |
|               | 630    | 35             | -    | 17.5 | -                  | 121 | 65  | -           | 121 | 65  |     |
|               | 800    | 45             | -    | 22.5 | -                  | 131 | 75  | -           | 131 | 75  |     |
|               | 1000   | 60             | -    | 30   | -                  | 146 | 90  | -           | 146 | 90  |     |
|               | 1250   | 75             | -    | 37.5 | -                  | 161 | 105 | -           | 161 | 105 |     |
|               | 1350   | 85             | -    | 42.5 | -                  | 171 | 115 | -           | 171 | 115 | 2   |
|               | 1600   | 100            | 50   | 25   | -                  | 186 | 130 | -           | 186 | 130 |     |
|               | 1750   | 125            | 60   | 32.5 | -                  | 211 | 155 | -           | 211 | 155 |     |
|               | 2000   | 160            | 80   | 40   | -                  | 246 | 190 | -           | 246 | 190 | 3   |
|               | 2500   | 185            | 60   | 32.5 | -                  | 271 | 215 | -           | 271 | 215 |     |
|               | 3150   | 250            | 80   | 45   | -                  | 336 | 280 | -           | 336 | 280 |     |
|               | 3200   | (2)125         | 60   | 32.5 | 8                  | 344 | 288 | 13          | 349 | 293 | 4   |
|               | 3500   | (2)140         | 80   | 30   | 8                  | 374 | 318 | 13          | 379 | 323 |     |
|               | 4000   | (2)160         | 80   | 40   | 8                  | 414 | 358 | 13          | 419 | 363 |     |
|               | 4500   | (2)205         | 60   | 42.5 | 8                  | 504 | 448 | 13          | 509 | 453 | 5   |
| 5000          | (2)225 | 80             | 32.5 | 8    | 544                | 488 | 13  | 549         | 493 |     |     |
| 6300          | (2)250 | 80             | 45   | 8    | 594                | 538 | 13  | 599         | 543 |     |     |

| Rating<br>(A) |      | Dimension (mm) |    |      |                    |     |     |             |     |     | Fig |
|---------------|------|----------------|----|------|--------------------|-----|-----|-------------|-----|-----|-----|
|               |      | W              | S  | P    | Aluminum Extrusion |     |     | Steel Sheet |     |     |     |
|               |      |                |    |      | G                  | A   | B   | G           | A   | B   |     |
| AL Conductor  | 400  | 50             | -  | 25   | -                  | 136 | 80  | -           | 136 | 80  | 1   |
|               | 630  | 60             | -  | 30   | -                  | 146 | 90  | -           | 146 | 90  |     |
|               | 800  | 75             | -  | 37.5 | -                  | 161 | 105 | -           | 161 | 105 |     |
|               | 1000 | 90             | -  | 45   | -                  | 176 | 120 | -           | 176 | 120 |     |
|               | 1250 | 110            | 50 | 30   | -                  | 196 | 140 | -           | 196 | 140 | 2   |
|               | 1350 | 150            | 80 | 35   | -                  | 236 | 180 | -           | 236 | 180 |     |
|               | 1600 | 170            | 80 | 45   | -                  | 256 | 200 | -           | 256 | 200 | 3   |
|               | 2000 | 200            | 60 | 40   | -                  | 286 | 230 | -           | 286 | 230 |     |
|               | 2500 | (2)150         | 80 | 35   | 8                  | 394 | 338 | 13          | 399 | 343 | 4   |
|               | 3200 | (2)170         | 80 | 45   | 8                  | 434 | 378 | 13          | 439 | 383 |     |
|               | 3500 | (2)185         | 60 | 32.5 | 8                  | 464 | 408 | 13          | 469 | 413 | 5   |
|               | 4000 | (2)200         | 60 | 40   | 8                  | 494 | 438 | 13          | 499 | 443 |     |
|               | 4500 | (2)225         | 80 | 32.5 | 8                  | 544 | 488 | 13          | 549 | 493 |     |
|               | 5000 | (2)250         | 80 | 45   | 8                  | 594 | 538 | 13          | 599 | 543 |     |



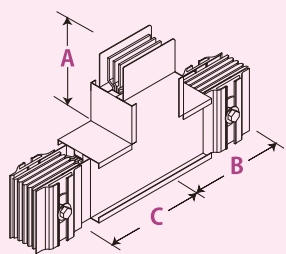
### Combination Elbow

|    | Rating (A)  | Standard Length (mm) |
|----|-------------|----------------------|
| CU | 400 - 2500  | A / B = 300, C = 300 |
|    | 3150        | A / B = 300, C = 400 |
|    | 3200 - 4000 | A = 300, B / C = 450 |
|    | 4500 - 5000 | A = 300, B / C = 500 |
|    | 6300        | A = 300, B / C = 550 |
| AL | 400 - 2000  | A / B = 300, C = 350 |
|    | 2500 - 3200 | A = 300, B / C = 450 |
|    | 3500 - 4500 | A = 300, B / C = 500 |
|    | 5000        | A = 300, B / C = 550 |



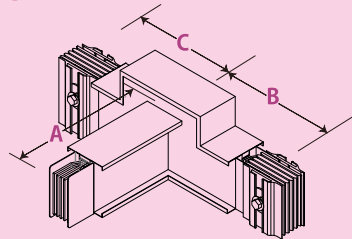


### Flatwise Tee



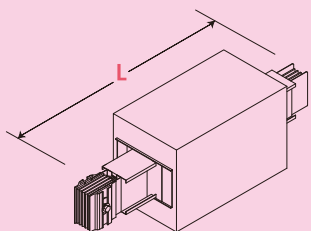
| Rating (A) | Standard Length (mm) |
|------------|----------------------|
| CU         | 400-2500 A/B/C=350   |
|            | 3150 A/B/C=400       |
|            | 3200-4000 A/B/C=450  |
|            | 4500-5000 A/B/C=500  |
| AL         | 6300 A/B/C=550       |
|            | 400-2000 A/B/C=350   |
|            | 2500-3200 A/B/C=450  |
|            | 3500-4500 A/B/C=500  |
|            | 5000 A/B/C=550       |

### Edgewise Tee



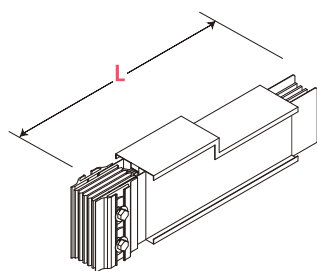
| Rating (A) | Standard Length (mm)     |
|------------|--------------------------|
| CU         | 400-1750 A=500, B/C=450  |
|            | 2000-2500 A=500, B/C=500 |
|            | 3150-6300 A=500, B/C=550 |
| AL         | 400-1250 A=500, B/C=450  |
|            | 1350-2000 A=500, B/C=500 |
|            | 2500-5000 A=500, B/C=550 |
|            |                          |

### Expansion Unit



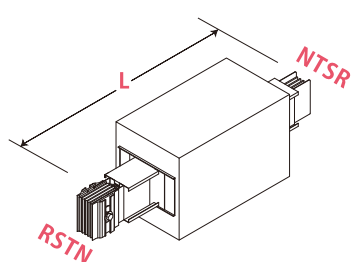
| Rating (A) | Standard Length (mm) |
|------------|----------------------|
| 630 - 6300 | L = 1200 ± 25        |

### Reducer Unit



| Rating (A) | Standard Length (mm) |
|------------|----------------------|
| 630 - 6300 | L = 1000             |

### Phase Transposition Unit

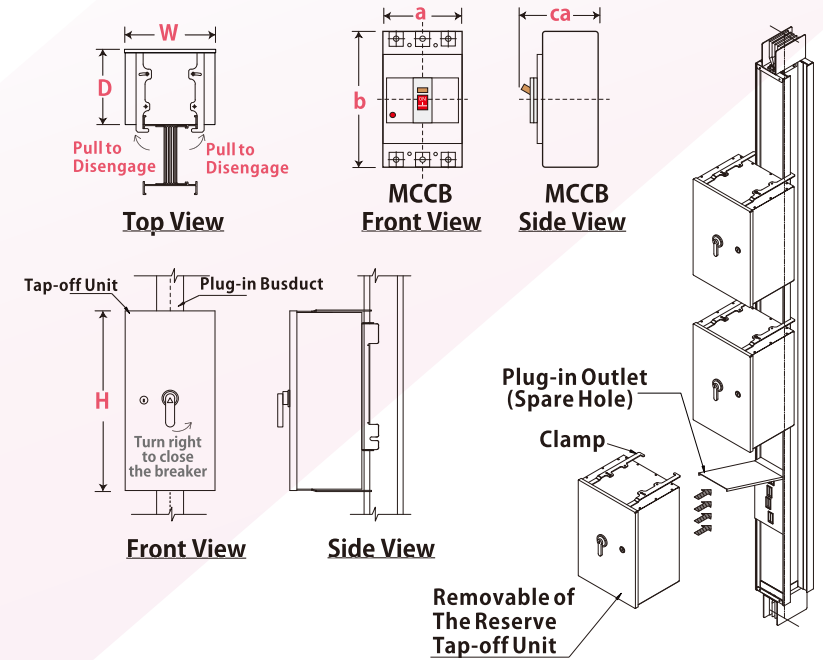


| Rating (A) | Standard Length (mm) |
|------------|----------------------|
| 630 - 6300 | L = 1200             |

### Plug-in Busduct and Plug-in Unit

| Rating of MCCB | Box Size (mm) |     |     |     |     |     |
|----------------|---------------|-----|-----|-----|-----|-----|
|                | a             | b   | ca  | H   | W   | D   |
| 100 A          | 75            | 130 | 90  | 400 | 250 | 220 |
|                | 90            | 155 | 112 | 400 | 250 | 250 |
| 100 A / 250A   | 105           | 165 | 92  | 400 | 250 | 220 |
|                | 105           | 165 | 112 | 400 | 250 | 250 |
| 400 A          | 140           | 343 | 132 | 550 | 320 | 320 |
|                | 140           | 343 | 155 | 550 | 320 | 350 |
| 630 A          | 210           | 449 | 155 | 680 | 420 | 360 |

Note: The plug-in box size decided upon the brand of MCCB.

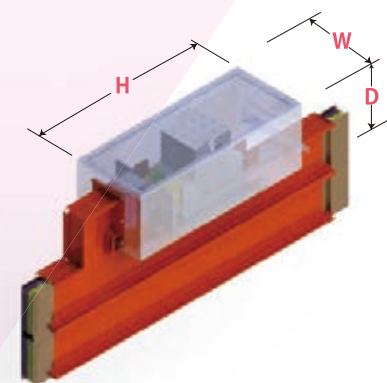


- ◆ Tap-off unit (plug-in) protection : IP2X / IP40 / IP42 / IP54 / IP55.
- ◆ Plug-in hole conductor with tin or silver plated.
- ◆ Tap-off units with non-fused circuit breakers (MCCB) or fused-switch breakers of various current ratings are available for catering to most installations.
- ◆ Maximum five (5) tap-off units per face can be installed, total ten (10) nos per length of 3 m busduct pending upon the size of MCCB<sub>s</sub>.
- ◆ Tap-off units are interlocked to prevent removal when outgoing device is in "on" position.
- ◆ When the tap-off unit cover is "open", it is interlocked that MCCB cannot be turned "on".

### Plug-in Unit (Bridge Type)

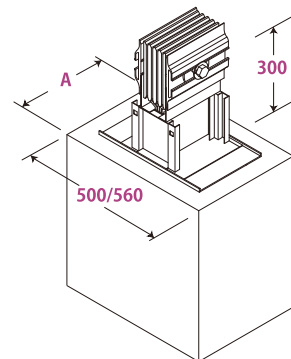


| Rating of MCCB | Box Size (mm) |     |                      |                        |
|----------------|---------------|-----|----------------------|------------------------|
|                | H             | W   | D (Manual Operation) | D (Electric Operation) |
| 800 A          | 900           | 420 | 320                  | 300                    |
| 1000 A         | 1050          | 420 | 300                  | 400                    |
| 1200 A         | 1050          | 450 | 300                  | 400                    |
| 1600 A         | 1150          | 500 | 300                  | 400                    |

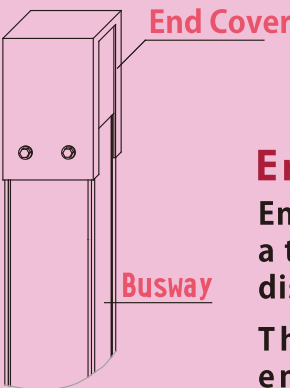
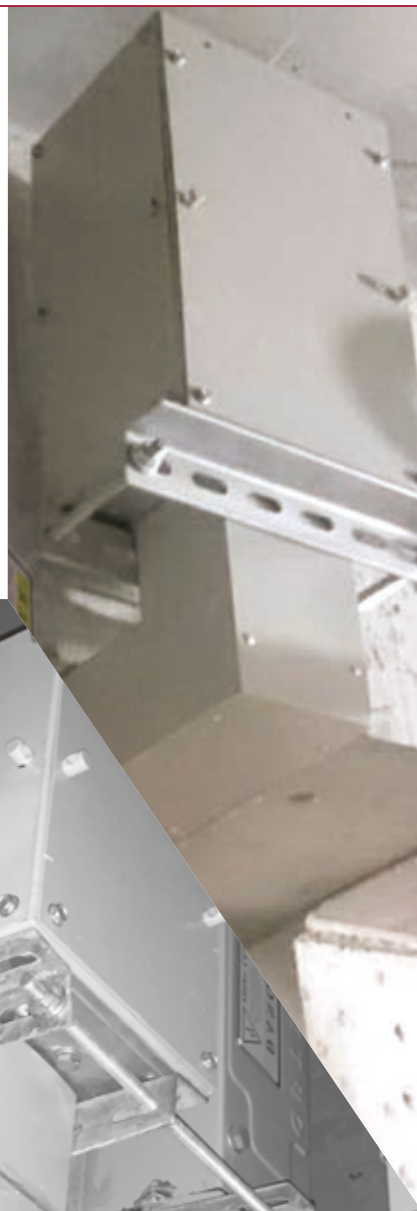


- Note: 1.Can be inserted into the connector in power on condition.  
2.With electric / manual operation ON -OFF.  
3.The plug-in box size decided upon the brand of MCCB.

End Feed Box



| Rating (A)     | Copper A (mm)            | Rating (A)     | Aluminum A (mm)          |
|----------------|--------------------------|----------------|--------------------------|
| 400            | 205                      | 400            | 230                      |
| 630            | 215                      | 630            | 240                      |
| 800            | 225                      | 800            | 255                      |
| 1000           | 240                      | 1000           | 270                      |
| 1250           | 255                      | 1250           | 290                      |
| 1350           | 265                      | 1350           | 330                      |
| 1600           | 280                      | 1600           | 350                      |
| 1750           | 305                      | 2000           | 380                      |
| 2000           | 340                      | 2500 and above | Contact with the factory |
| 2500           | 365                      |                |                          |
| 3150           | 430                      |                |                          |
| 3200 and above | Contact with the factory |                |                          |

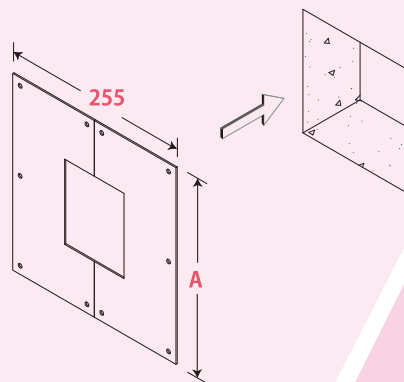


End Cover

End covers are used at the ends of distribution feeders. They are used to ensure the whole system which is devoid of exposed live parts.



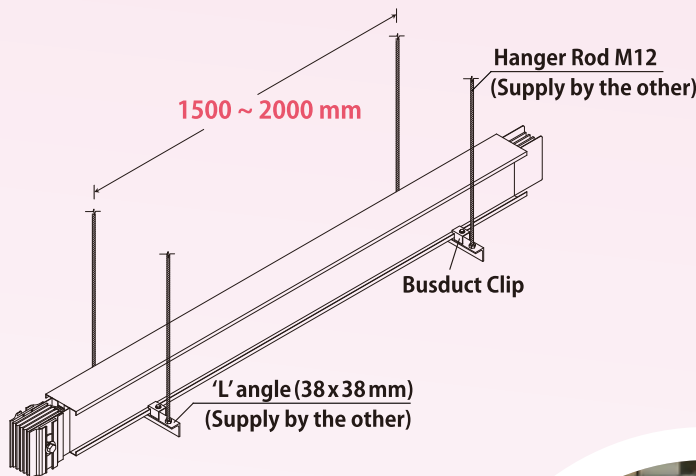
Floor / Wall Flange



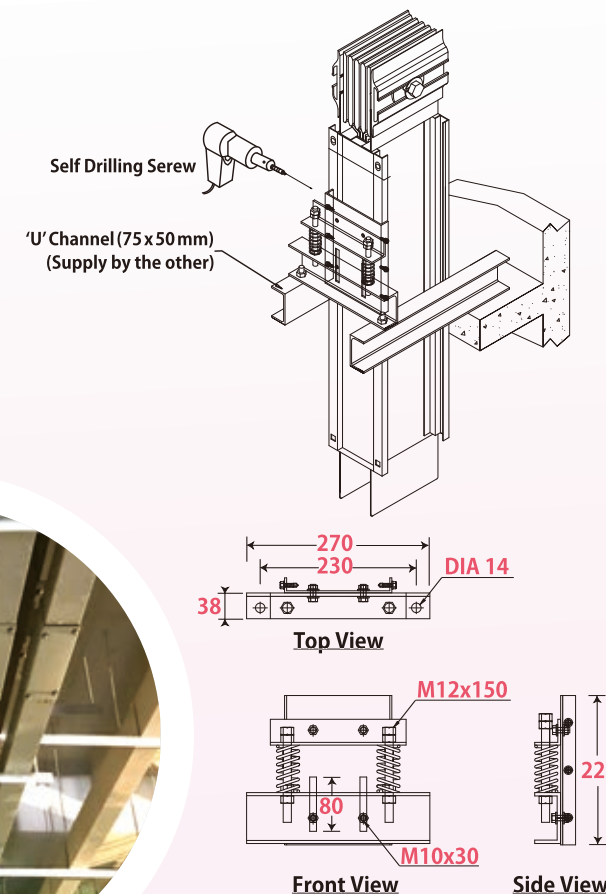
| Rating (A) | Copper A(mm)       |       |
|------------|--------------------|-------|
|            | Aluminum Extrusion | Steel |
| 400        | 175                | 175   |
| 630        | 185                | 185   |
| 800        | 195                | 195   |
| 1000       | 210                | 210   |
| 1250       | 225                | 225   |
| 1350       | 235                | 235   |
| 1600       | 250                | 250   |
| 1750       | 275                | 275   |
| 2000       | 310                | 310   |
| 2500       | 335                | 335   |
| 3150       | 400                | 400   |
| 3200       | 410                | 415   |
| 3500       | 440                | 445   |
| 4000       | 480                | 485   |
| 4500       | 570                | 575   |
| 5000       | 610                | 615   |
| 6300       | 660                | 665   |

| Rating (A) | Aluminum A(mm)     |       |
|------------|--------------------|-------|
|            | Aluminum Extrusion | Steel |
| 400        | 200                | 200   |
| 630        | 210                | 210   |
| 800        | 225                | 225   |
| 1000       | 240                | 240   |
| 1250       | 260                | 260   |
| 1350       | 300                | 300   |
| 1600       | 320                | 320   |
| 2000       | 350                | 350   |
| 2500       | 465                | 460   |
| 3200       | 505                | 500   |
| 3500       | 535                | 530   |
| 4000       | 565                | 560   |
| 4500       | 615                | 610   |
| 5000       | 665                | 660   |

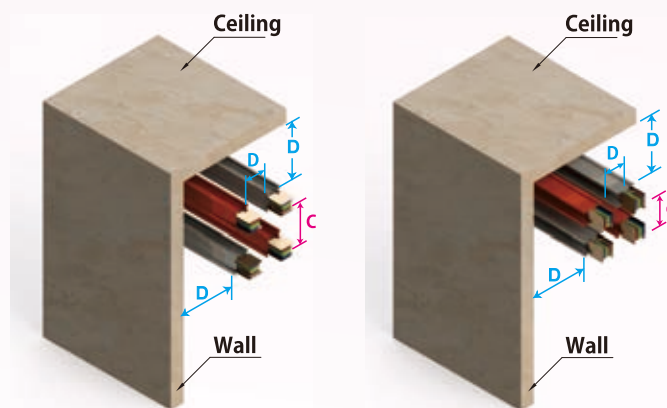
Horizontal Support



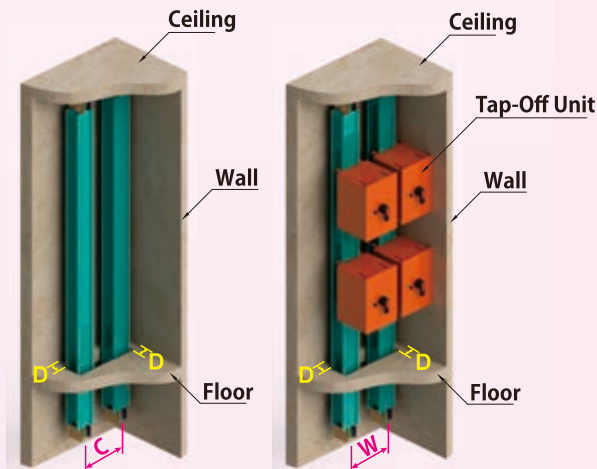
Vertical Spring Hanger



Minimum Space Required for Horizontal Installation



Minimum Space Required for Vertical Installation



Note: D=100mm, "D" represents the distance from the edge of between the busway and the wall.  
C=250mm, "C" represents the distance from the center of the busway.  
W=350~600mm, according to the rating of the plug-in unit determinesthe distance of the busway center.

◆ISO 9001



◆ISO 14001



◆ISO 18001



Shopping Malls



Skyscraper / Hotel



IT Plant / Data Center

Residential Building



Substation Center

