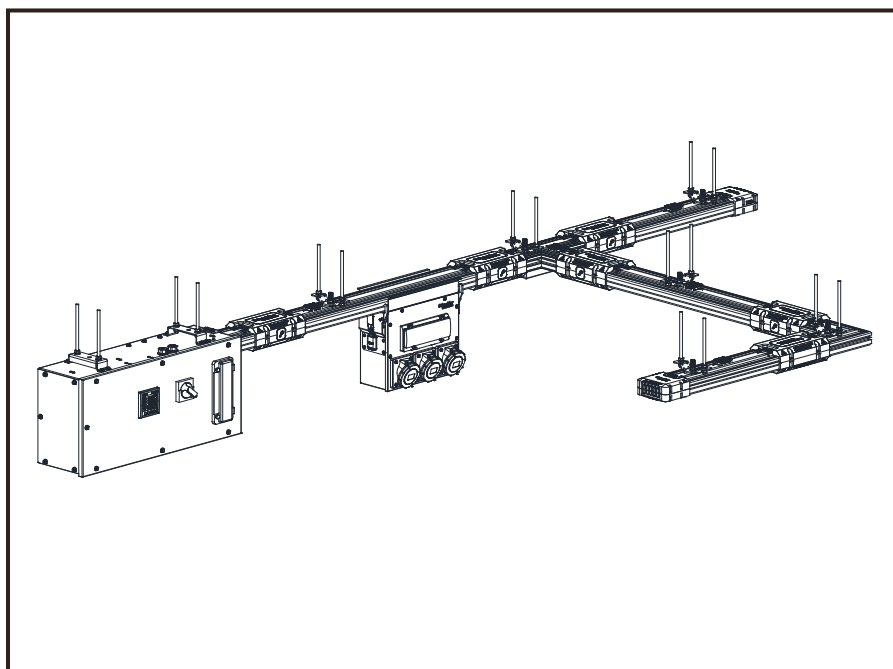


# SCHNEIDER ELECTRIC

## I-LINE™ Track BUSWAY INSTALLATION INSTRUCTION



**Follow the safety label instructions on this equipment and inside this bulletin.**



## **DANGER**



### **HAZARD OF ELECTRIC SHOCK, BURN, OR EXPLOSION**

- Only qualified electrical maintenance personnel should install, operate, service or maintain this equipment. This document should not be viewed as sufficient for those who are not otherwise qualified to operate, service, or maintain the equipment discussed.
  - Turn off power to busway before installing, removing, or working on this equipment. Use properly rated voltage sensing device to confirm power is off.
  - The successful operation of this equipment depends upon proper handling, installation, operation, and maintenance.
  - Conduct insulation resistance test with DC 500V tester before energizing.
  - Before installing, removing, or performing any work on or inside the Plug-in Unit:
    1. Wear electrical personal protective equipment appropriate for the hazard;
    2. Turn off the Plug-in Unit;
    3. Always use a properly rated voltage sensing device at all load side connections to confirm that the Plug-in Unit is OFF.
- Never operate the Plug-in Unit with the door open.  
Never install the Plug-in Unit onto the busway without having a Circuit Breaker installed.

**Failure to follow these instructions will result in death or serious injury.**



## **WARNING**

### **HAZARD OF ELECTRIC SHOCK, BURN, OR EXPLOSION**

- Protect this equipment from contaminants such as water, salts, concrete and other foreign matter and other corrosive environments before and during installation.
- Outdoor equipment is not weather resistant until completely and properly installation.
- Do not sit, walk or stand on this equipment.
- Make sure the busways installed in the correct phase direction.

**Failure to follow these instructions can result in death, serious injury, or equipment damage.**



## **CAUTION**

### **HAZARD OF EQUIPMENT DAMAGE**

- Hydrocarbon spray propellants and hydrocarbon-based sprays or compounds will cause degradation of certain plastics. Before using products to clean, dry, or lubricate components during installation or maintenance, contact your local Schneider Electric sales office.

**Failure to follow these instructions can result in injury, or equipment damage.**

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# INTRODUCTION

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This manual contains instructions for the handling, storage, installation, operation, and maintenance of I-LINE Track busway equipment manufactured by Schneider Electric. The purchasers, engineering, installation, and operating staff supervisors should familiarize themselves with this manual and become acquainted with the appearance and characteristics of each piece of the busway.

Every I-LINE Track busway device is carefully inspected and packaged at the assembly plant. Construction is checked, both structurally and electrically. After a complete inspection, the busway is prepared for shipment. Each section is packaged for easy handling before installation.

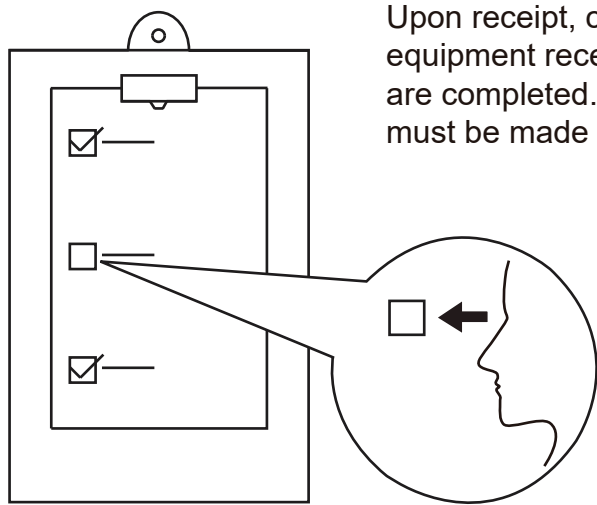
I-LINE Track complies with IEC 61439-6:2012 Low-voltage switchgear and controlgear assemblies – Part 6: Busbar trunking systems (busways).

The catalog number is plainly marked on each shipping section.



# RECEIVING, HANDLING & STORAGE

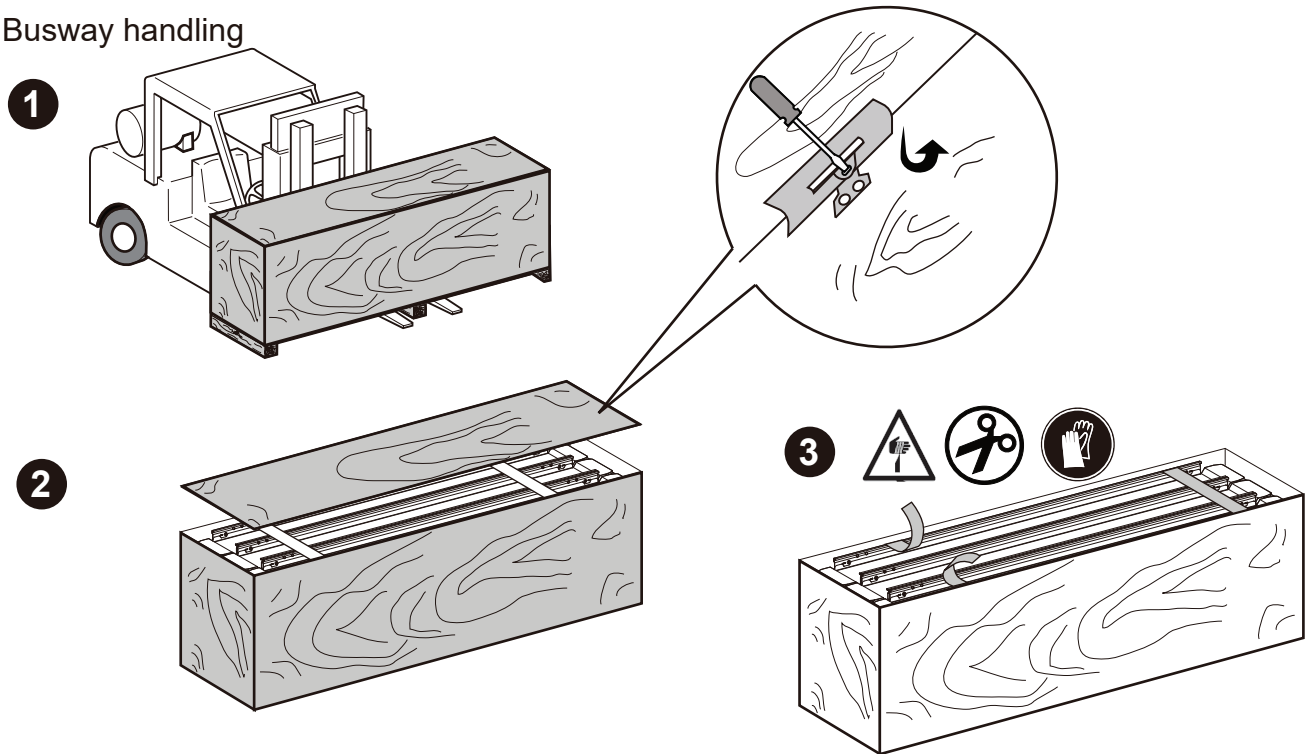
## Receiving



Upon receipt, check the packing list against the equipment received to ensure the order and shipment are completed. Claims for shortages or other errors must be made immediately.

## Handling

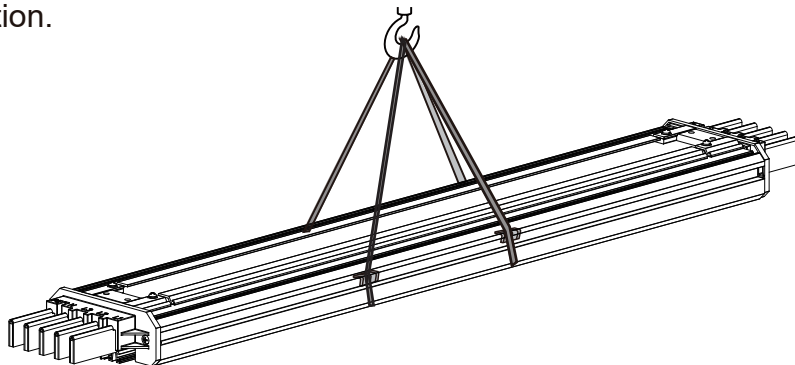
### Busway handling



PIU handling : with cart or man power



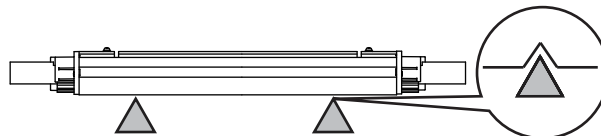
Use nylon straps to distribute the weight of the section.



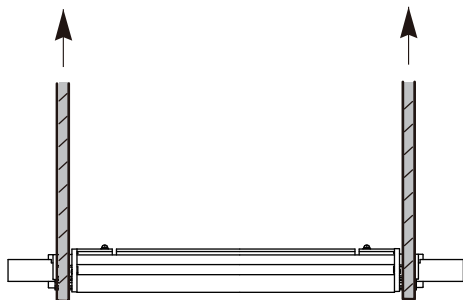
**NOTE :** Handle busway with care to avoid damage to internal components and the enclosure or its finish.



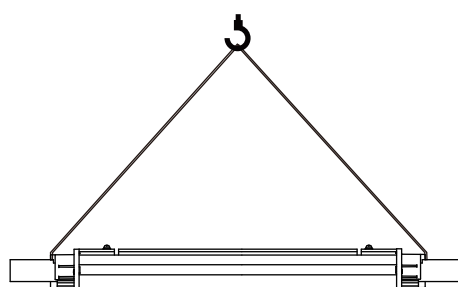
**✗** Do not drag busway on the floor.



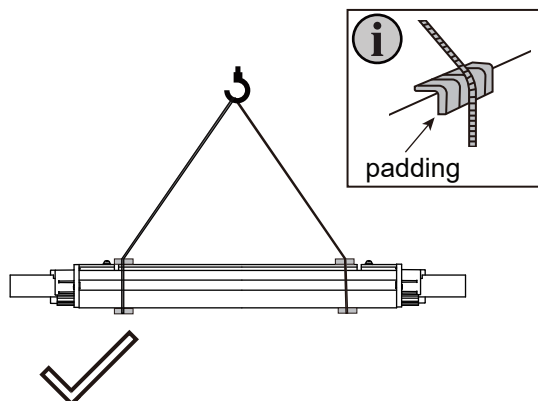
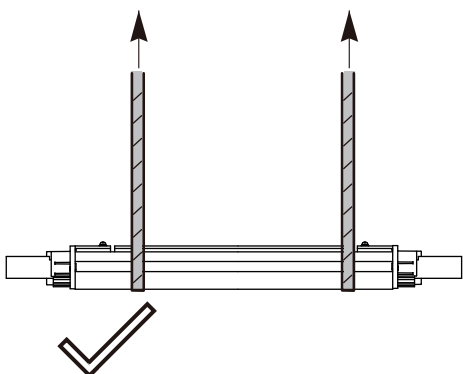
**✗** Avoid using objects with sharp edges to lift busway.



**✗** Do not use busway ends for lifting.



**✗** Do not use busway ends for lifting.

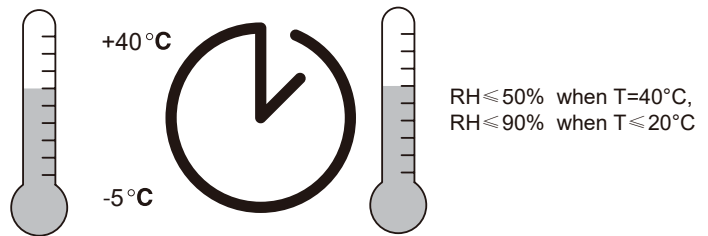


## Storage

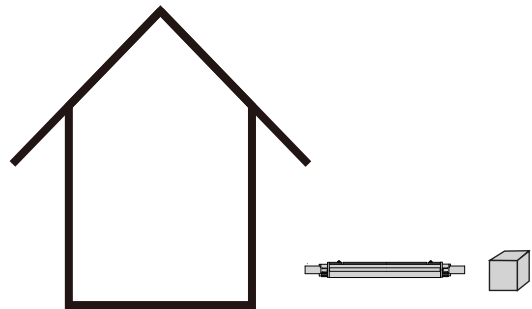
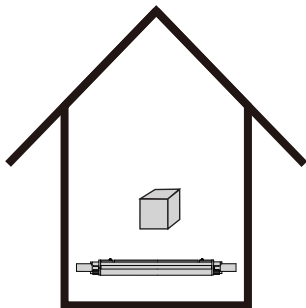
Waterproof, anti-theft, dustproof



Control temperature and humidity



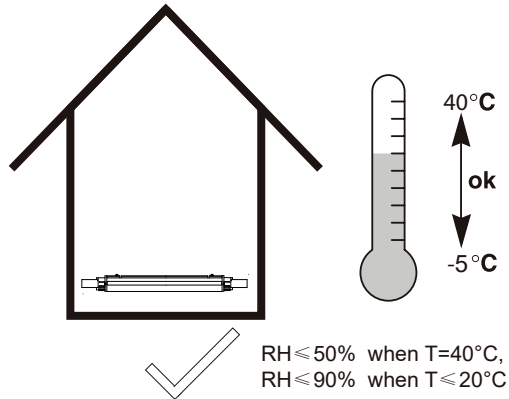
Stored indoor



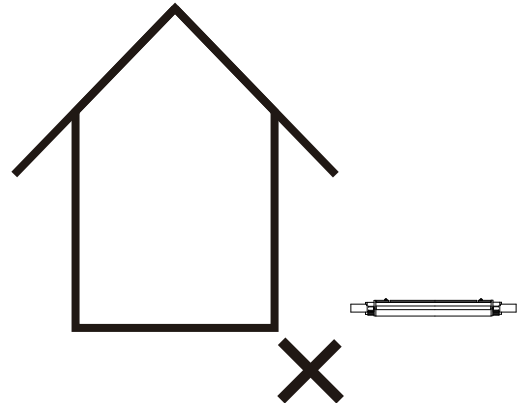
# INSTALLATION NOTE

## Environment

Indoor installation

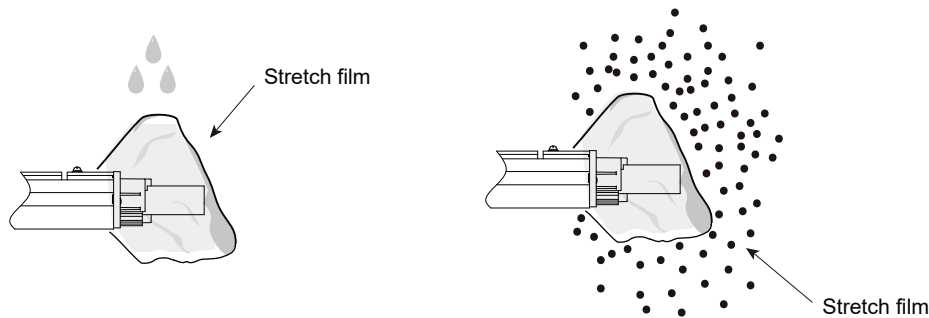


NOT Outdoor installation



## Protection

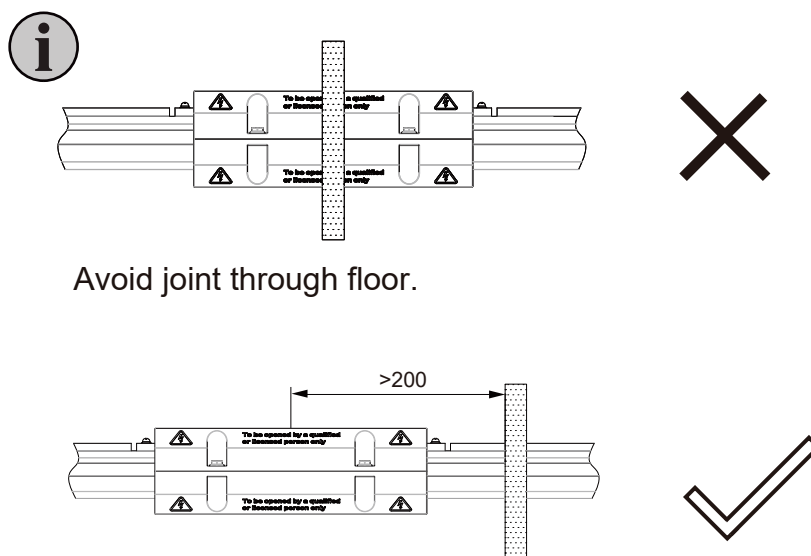
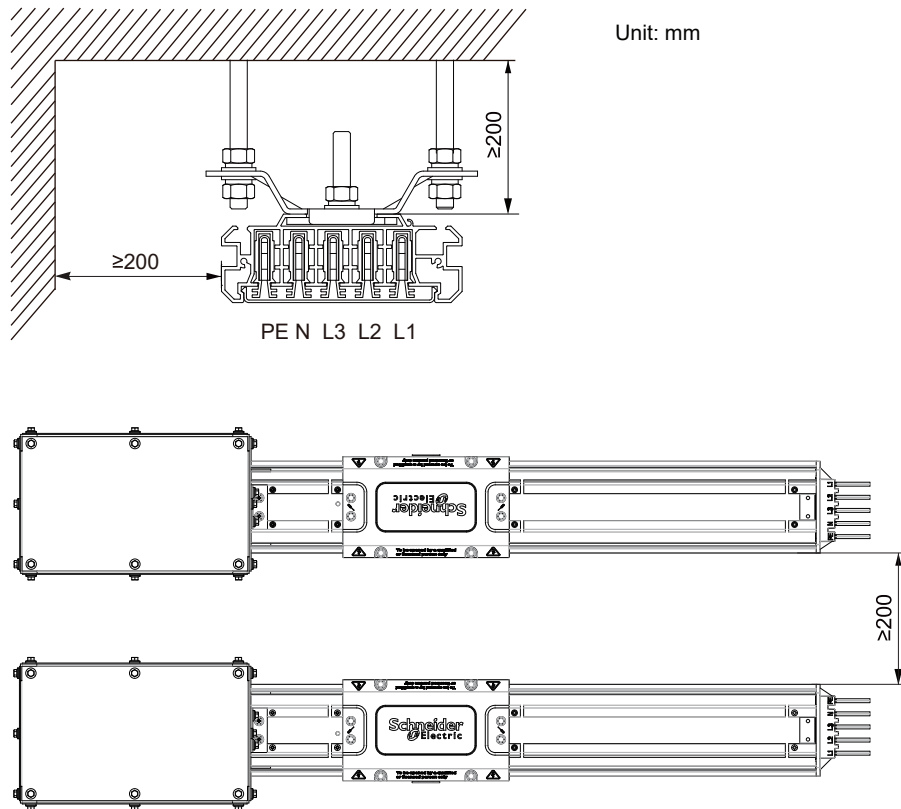
Use “installation protection bag” at the end of unfinished run



Stretch film: need to be purchased additionally.

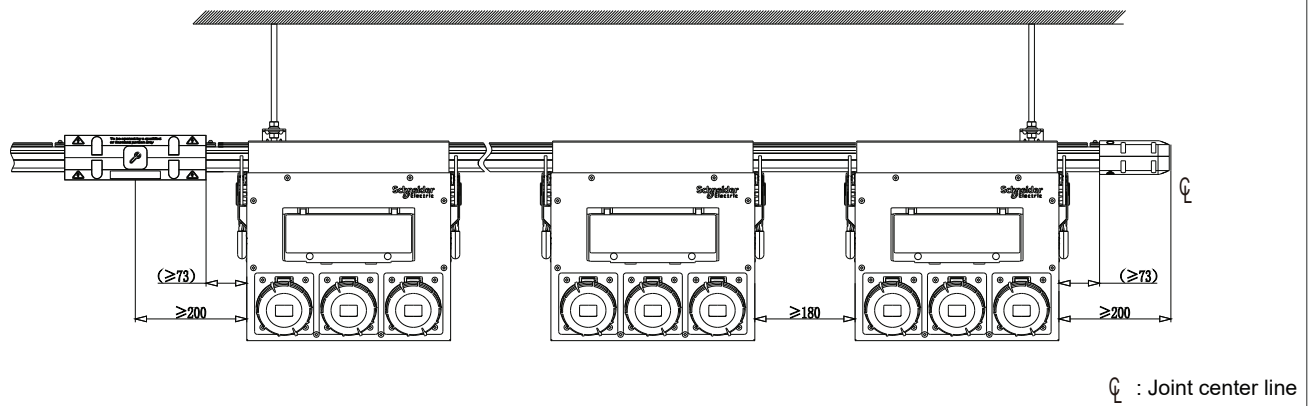
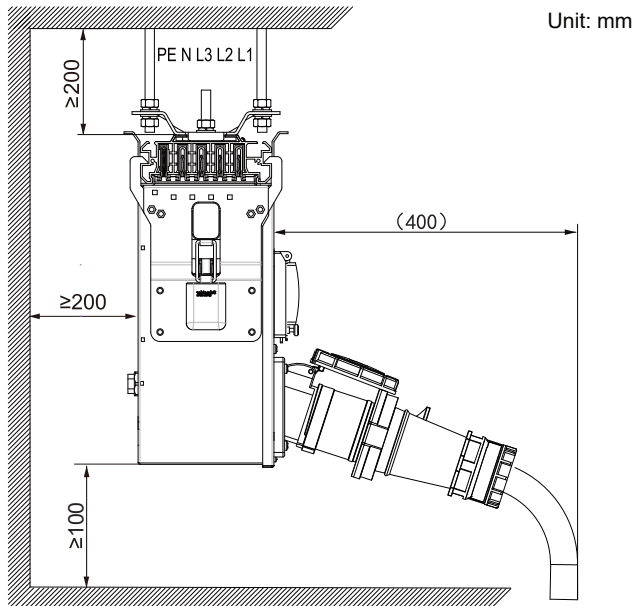
## Clearance

Minimum clearance for busway installation(without plug-in units)



When the joint is on either side of the wall, end of busbar should be more than 200 mm away from the wall.

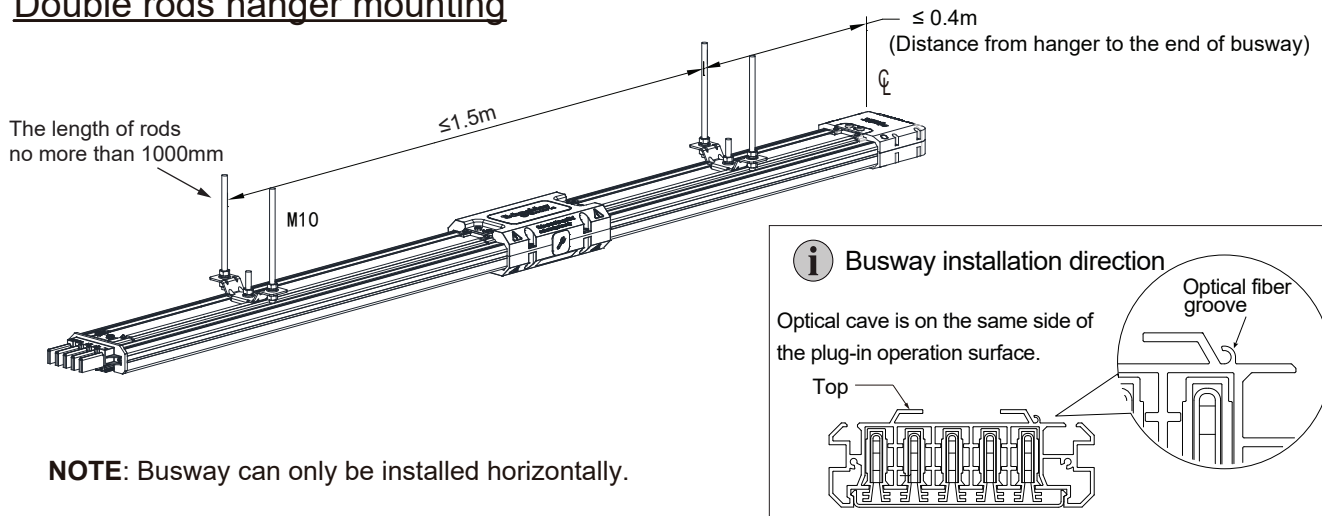
## Required clearance for Plug-in Unit mounting



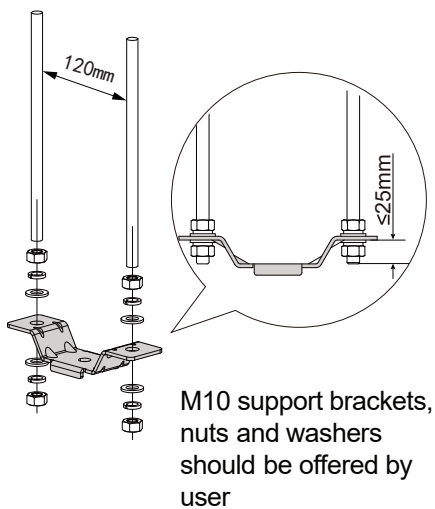
(Check these dimensions carefully before installation)

# HANGER INSTALLATION

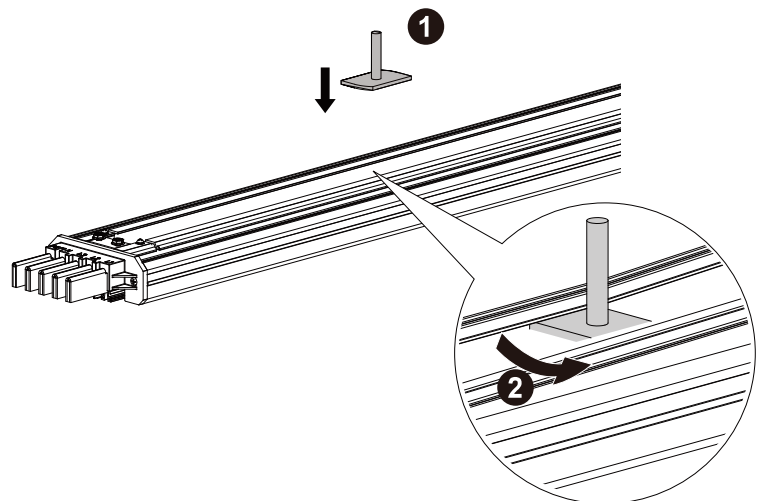
## Double rods hanger mounting



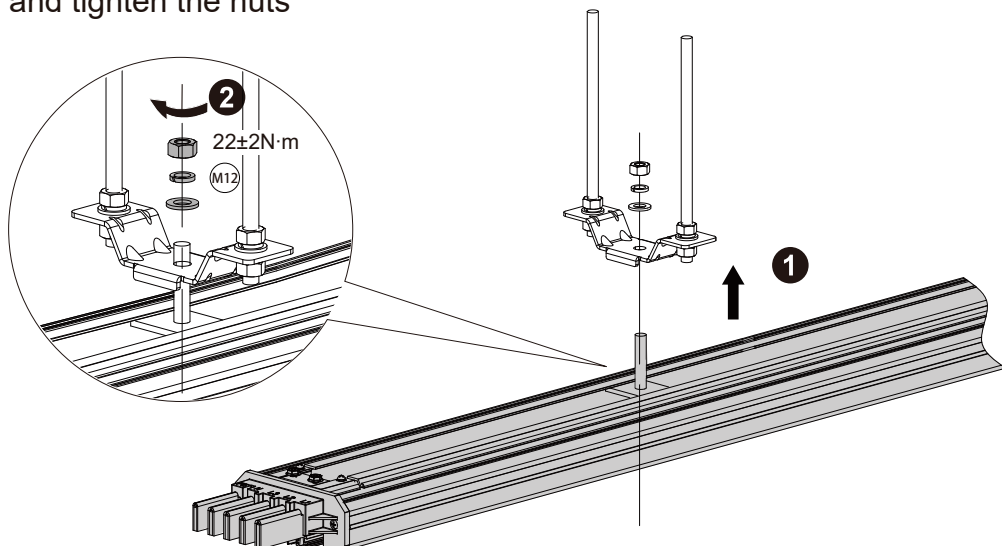
### 1 Fix the hanger at the correct height



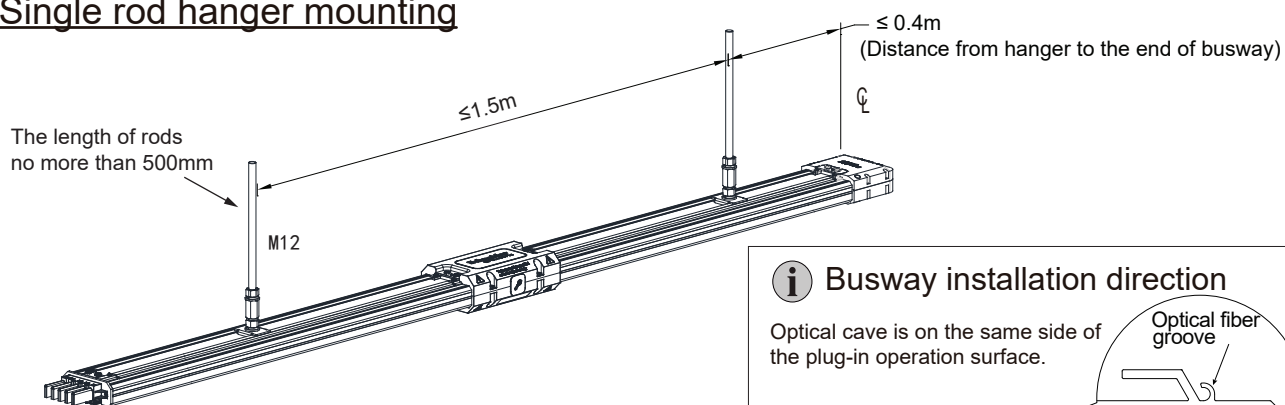
### 2 Place the hanger bracket



### 3 Fix busway and tighten the nuts



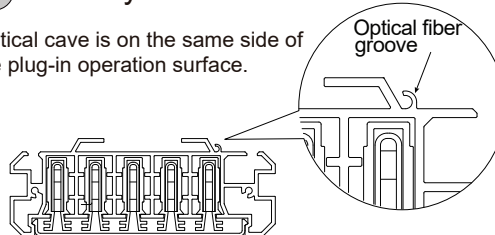
## Single rod hanger mounting



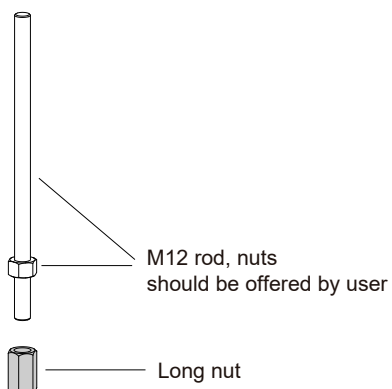
**NOTE:** Busway can only be installed horizontally.

### i Busway installation direction

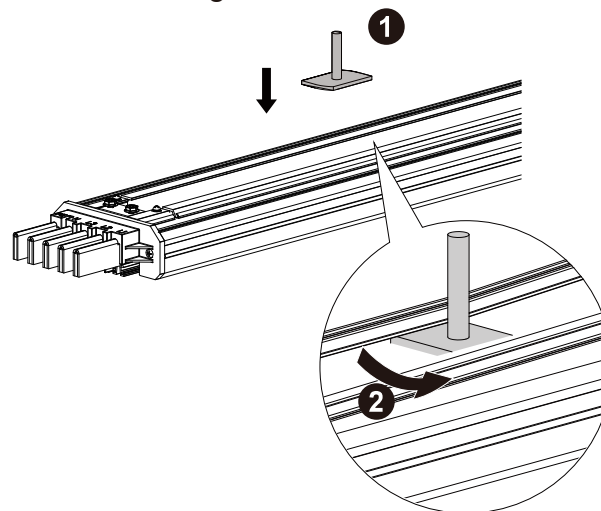
Optical cave is on the same side of the plug-in operation surface.



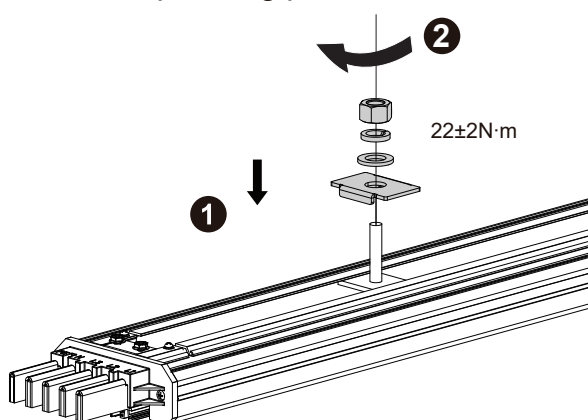
### 1 Place the long nut on the rod



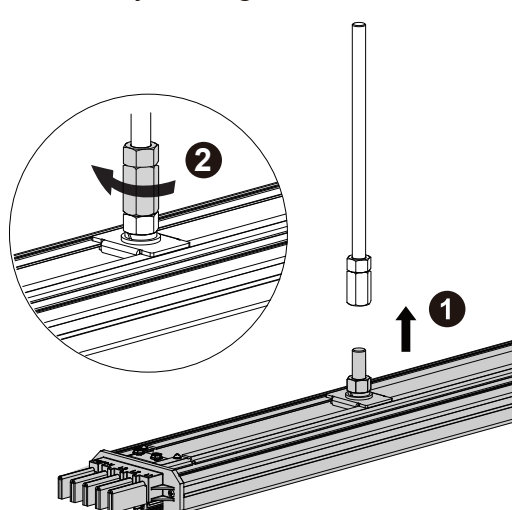
### 2 Place the hanger bracket



### 3 Install the pressing plate



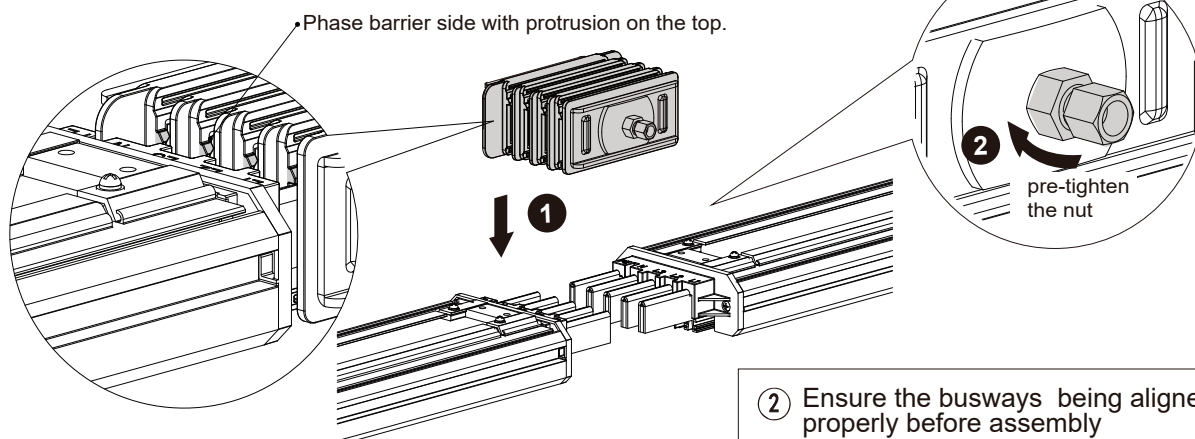
### 4 Fix busway and tighten the nuts



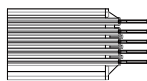
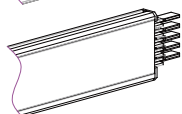
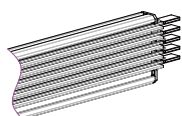


# BUSWAY INSTALLATION

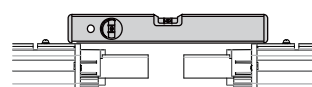
## 1 Insert the joint



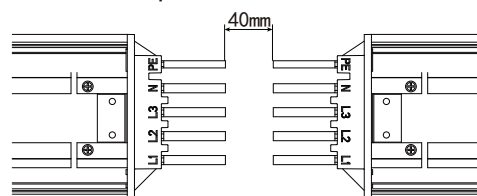
- ① Ensure the busways bottom cover is not damaged



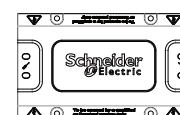
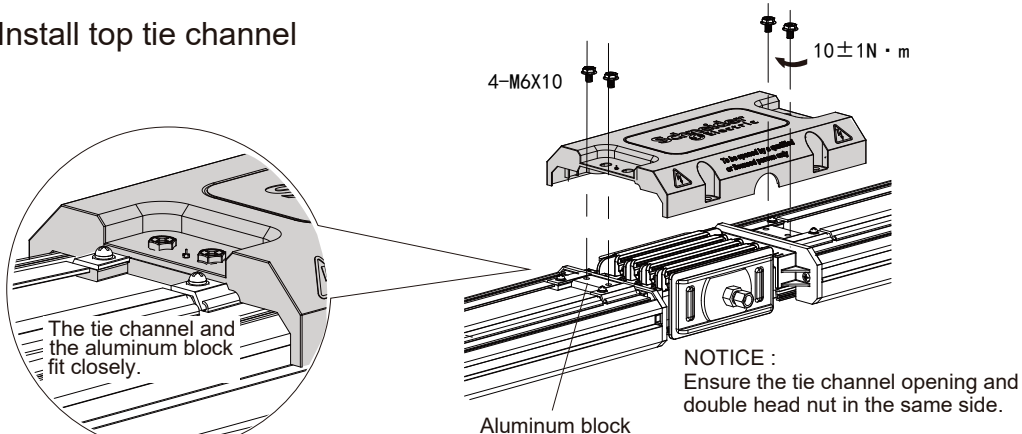
- ② Ensure the busways being aligned properly before assembly



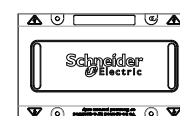
- ③ Ensure the busways installed in the correct phase direction



## 2 Install top tie channel

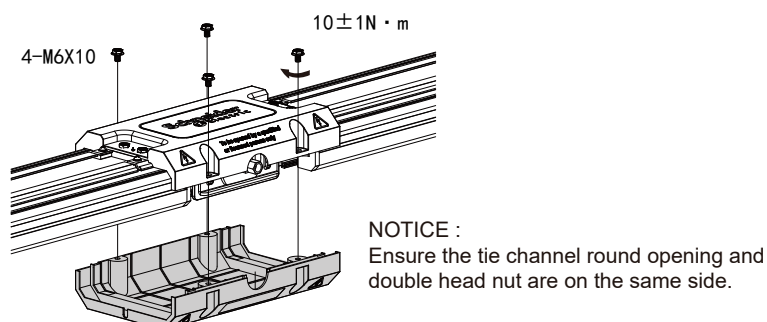


Top tie channel



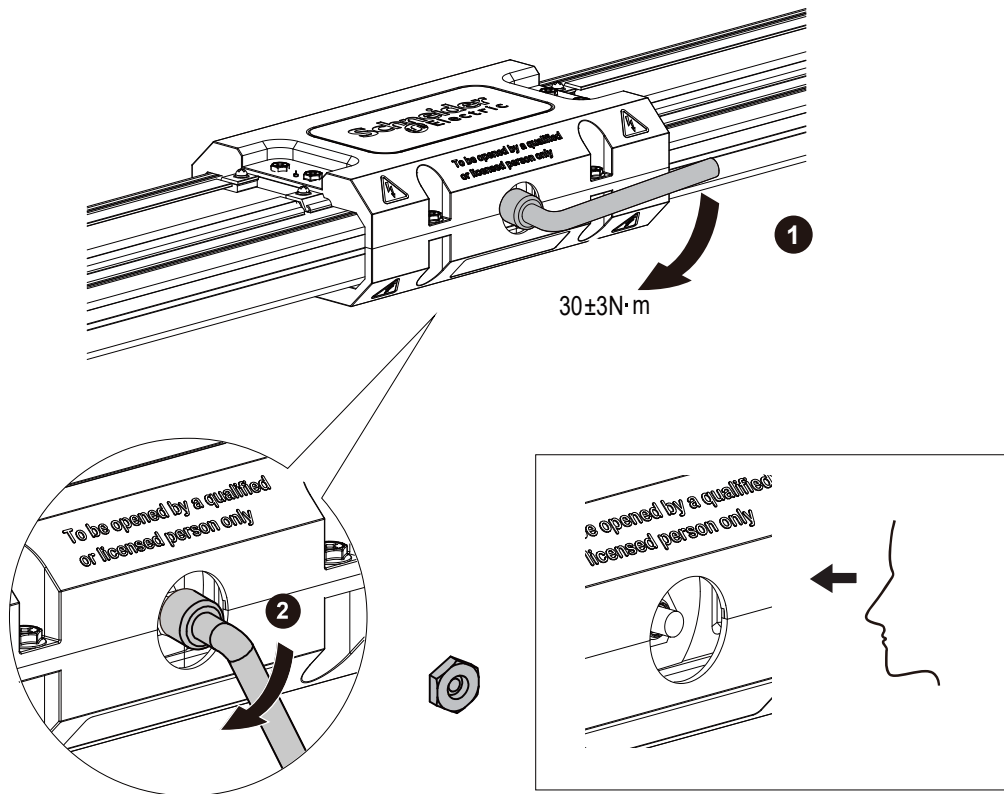
Bottom tie channel

## 3 Install bottom tie channel



4

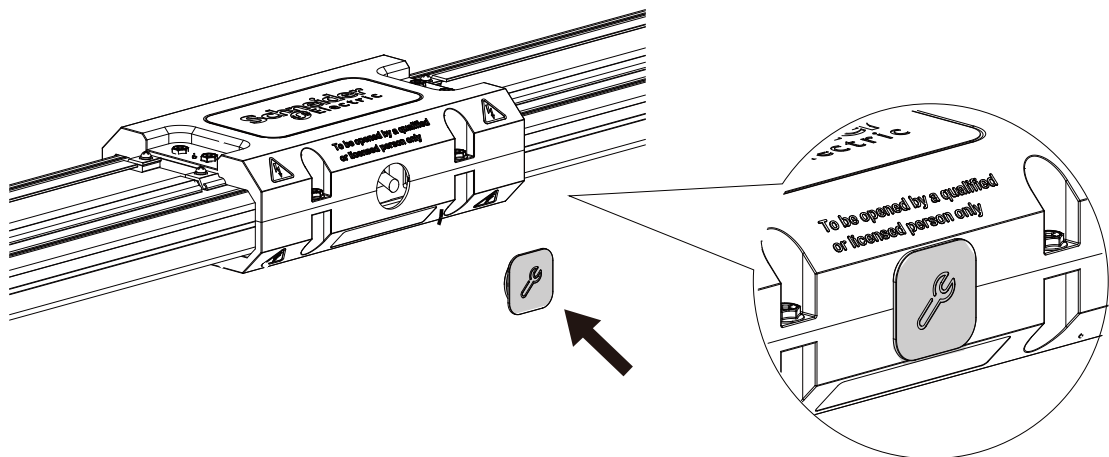
Tighten joint nut till the VISI-TITE nut is broken off



For better product performance, pre-tighten the nut first, and then tighten the nut uniformly after the entire circuit is installed.

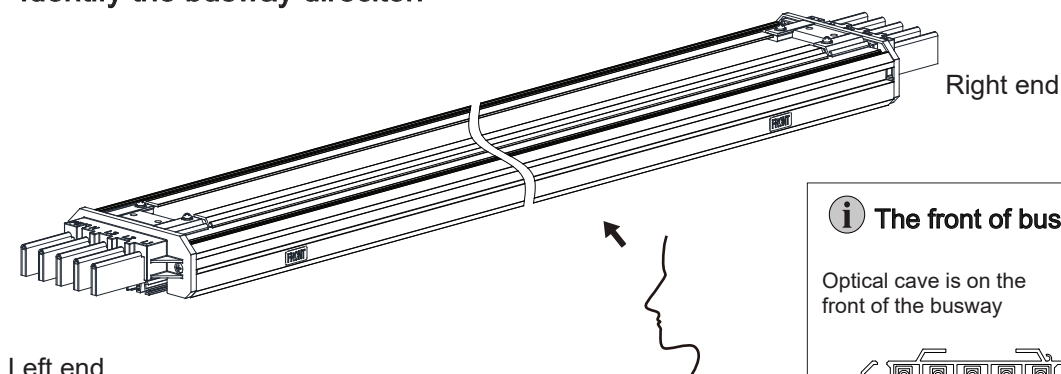
5

Install the rubber plug



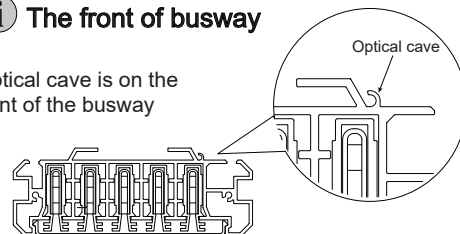
# END CLOSURE ASSEMBLY

## 1 Identify the busway direction



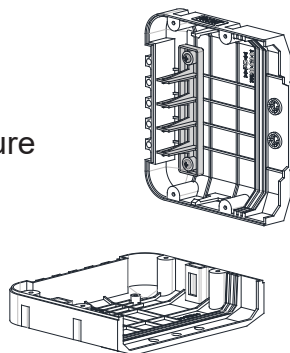
### i The front of busway

Optical cave is on the front of the busway

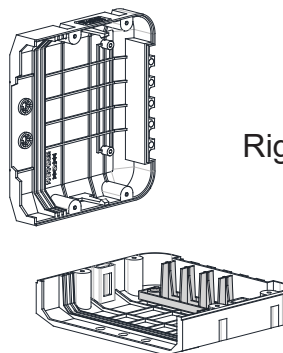


## 2 Identify the left / right end closure

Left end closure

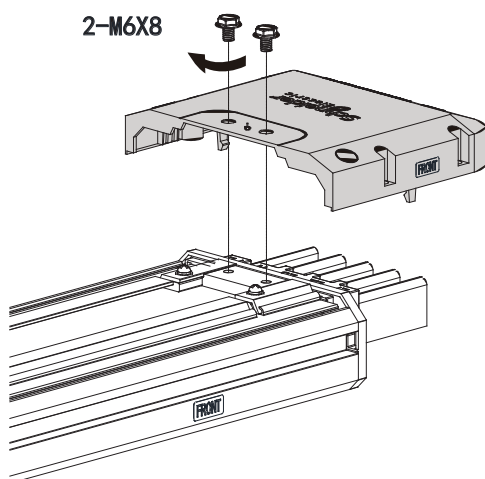


Right end closure



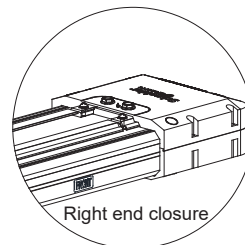
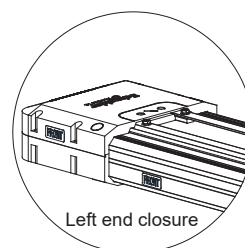
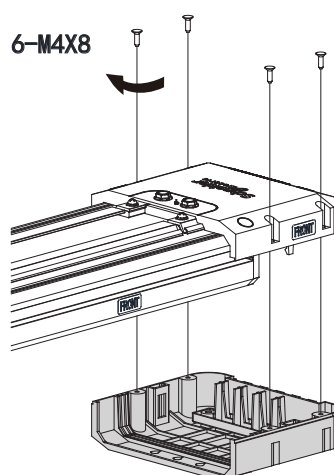
## 3 Install top cover (Example: right end closure)

2-M6X8



## 4 Install bottom cover (Example: right end closure)

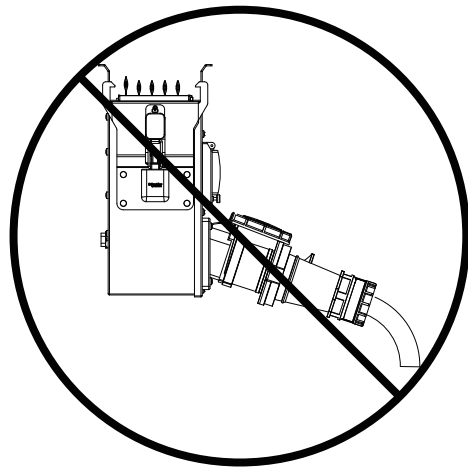
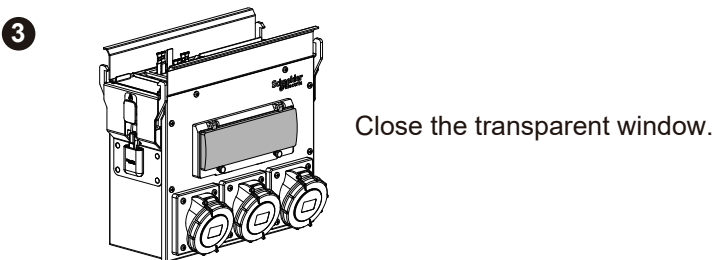
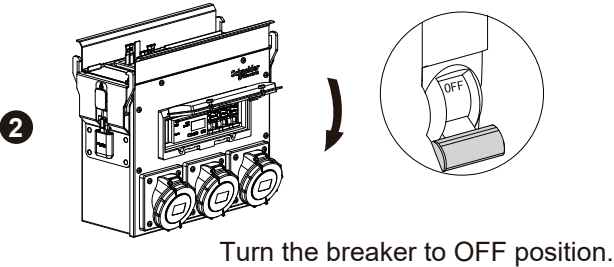
6-M4X8



# PLUG-IN UNIT INSTALLATION

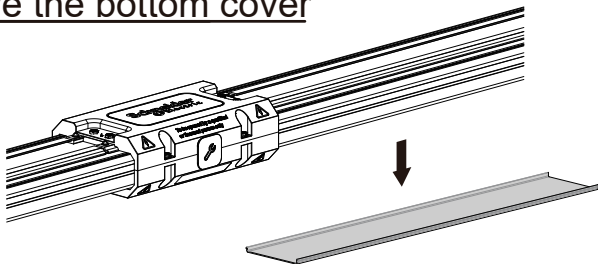
## 1 Pre-installation check

1 Insulation resistance test, see details page 17.



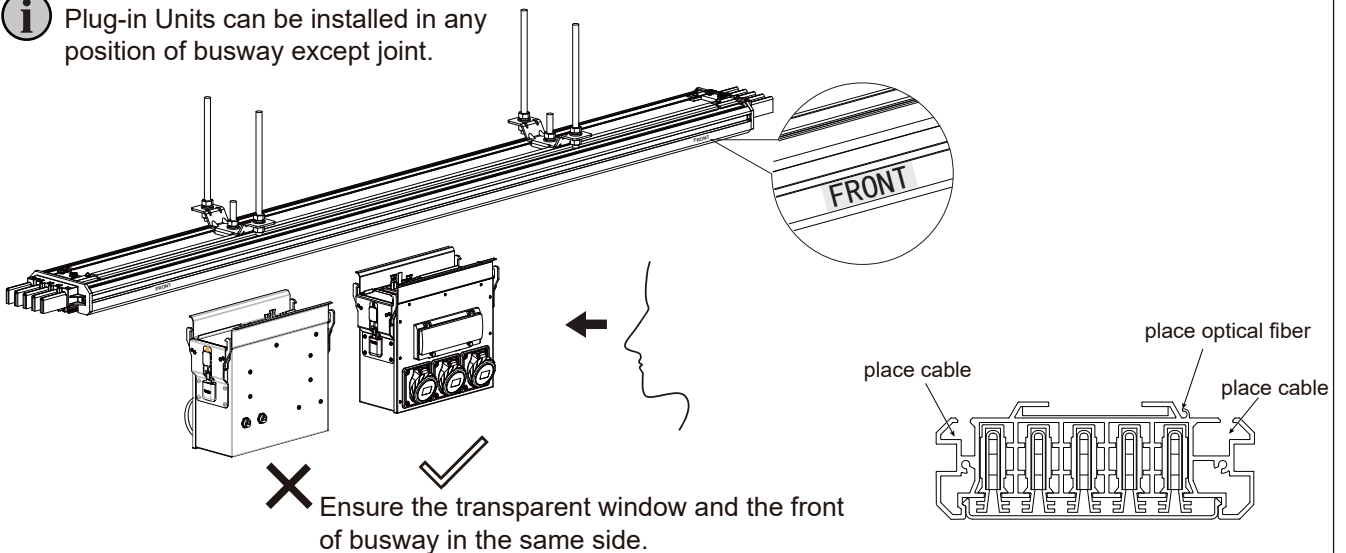
Industrial plugs and communication cable should be disconnected.

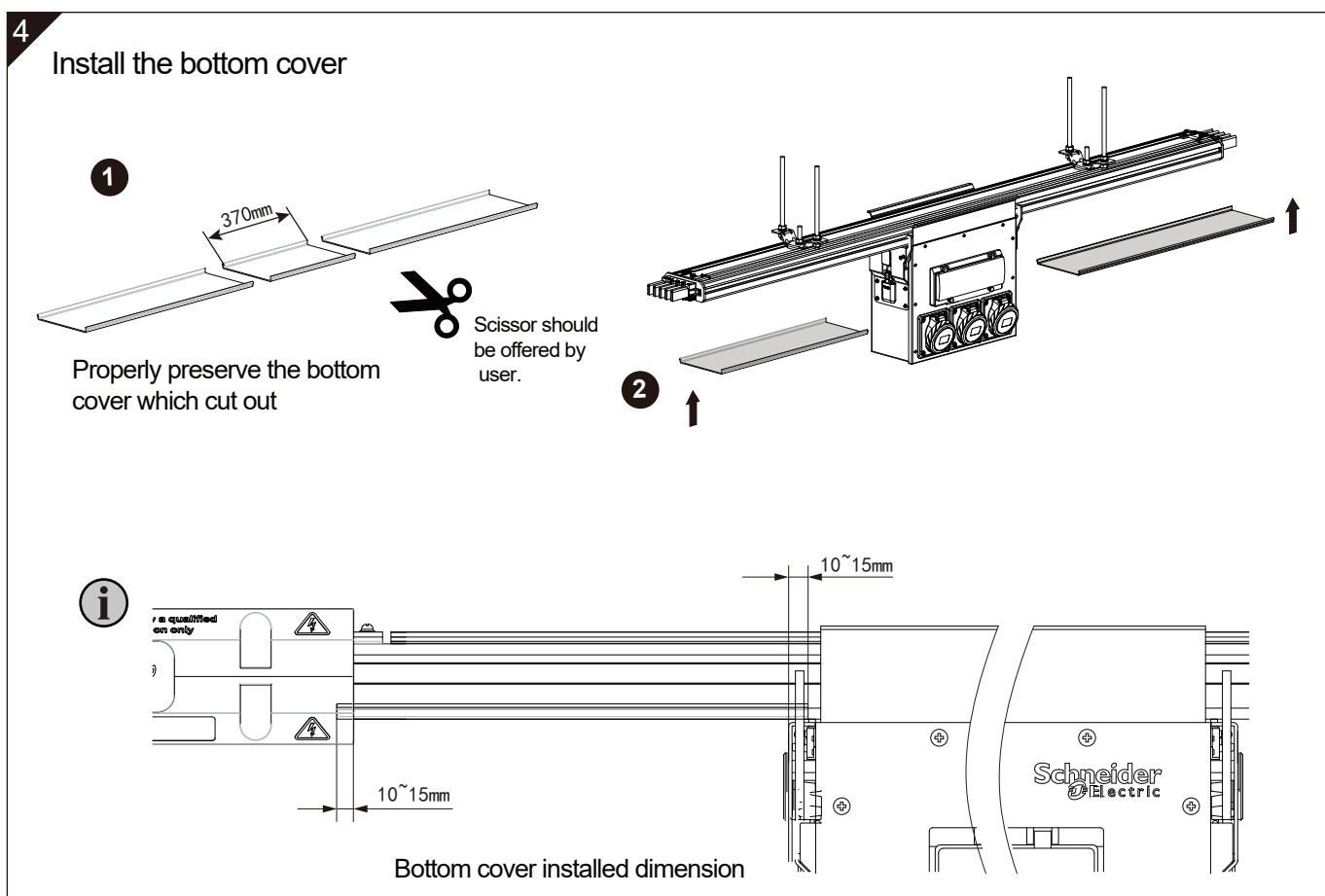
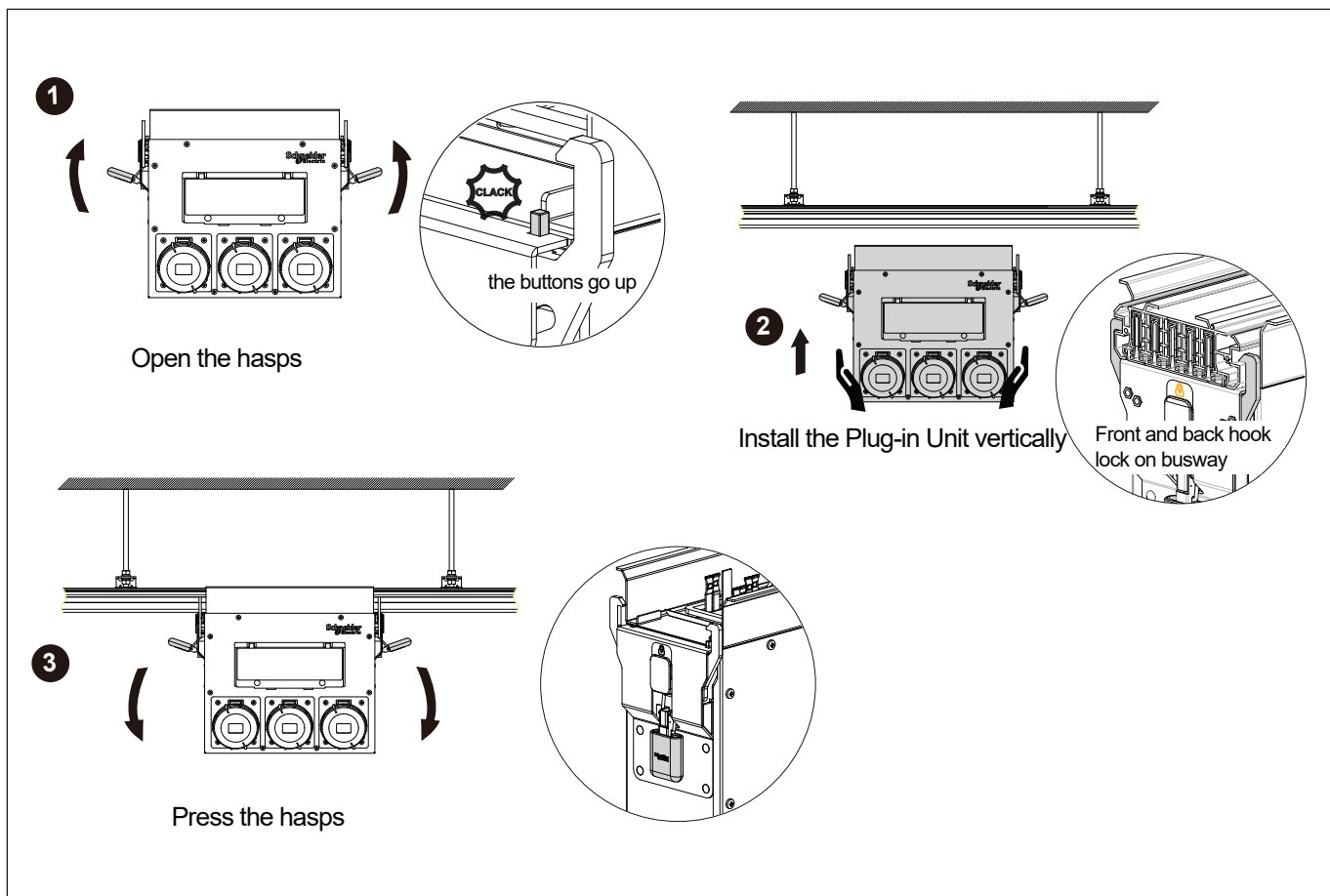
## 2 Remove the bottom cover



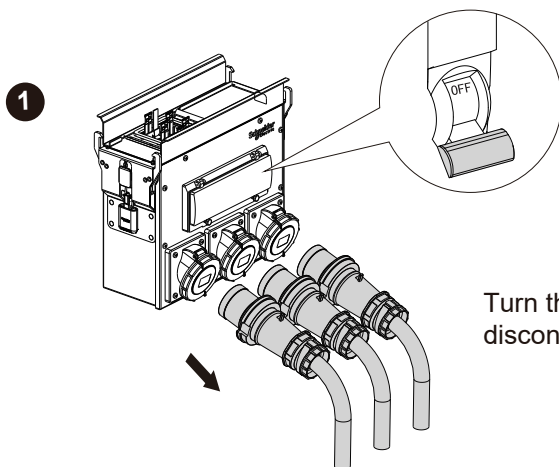
## 3 Install Plug-in Unit

i Plug-in Units can be installed in any position of busway except joint.

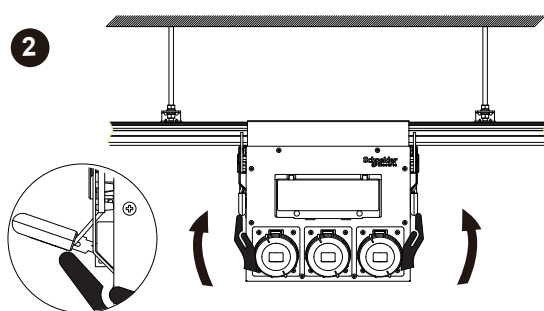




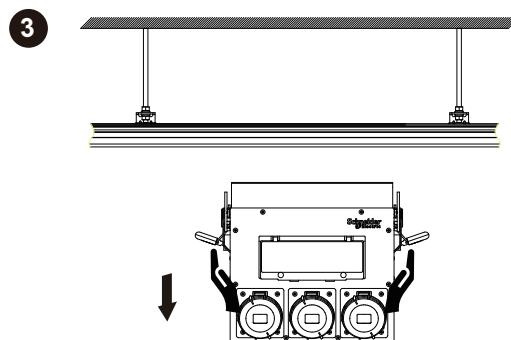
**i** Remove Plug-in Unit



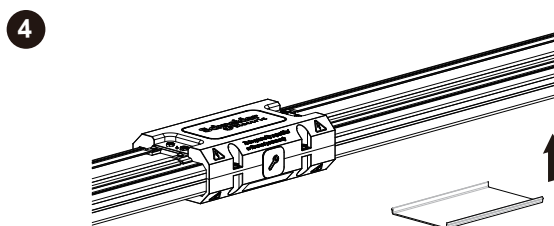
Turn the breaker to OFF position and disconnect the socket and cable



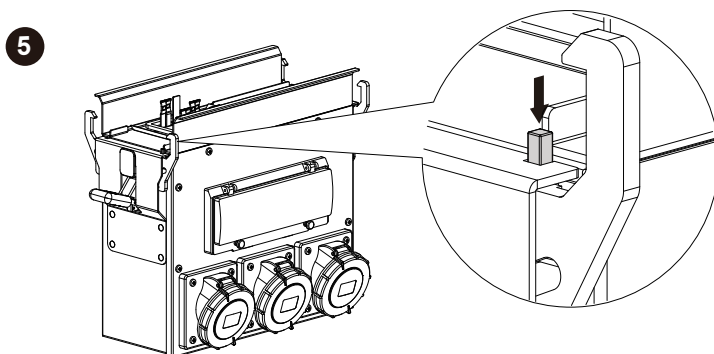
Open hasps with two hands



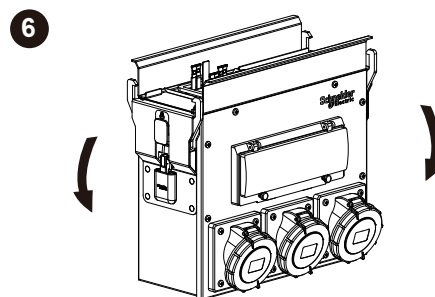
Remove the Plug-in Unit vertically



Install the bottom cover which cut out



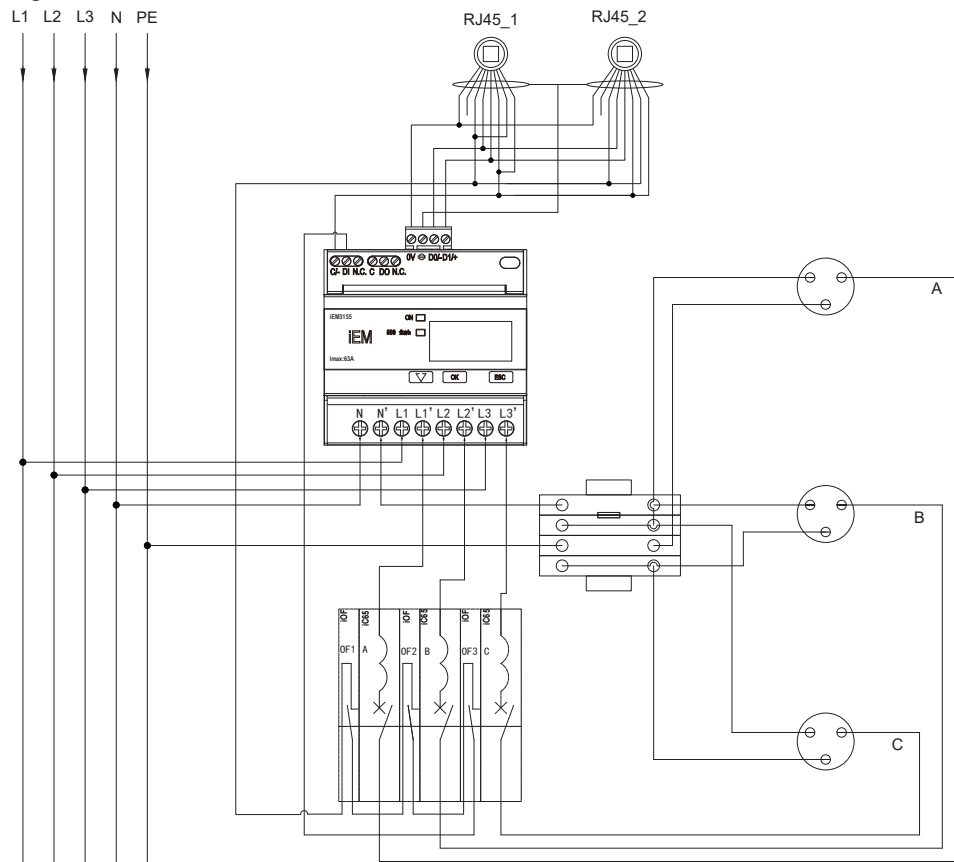
Press the button



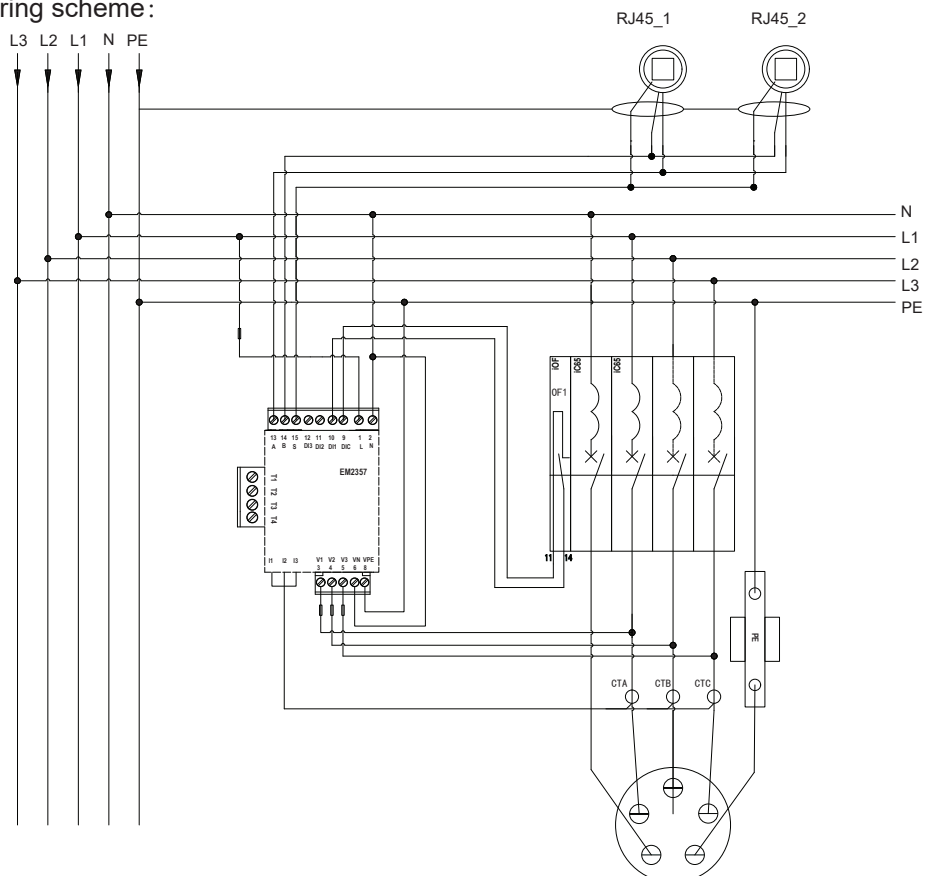
Rotate and close the hasps

## Plug-in Unit wiring diagram(typical configuration)

iEM3155 wiring scheme:



EM2357 wiring scheme:

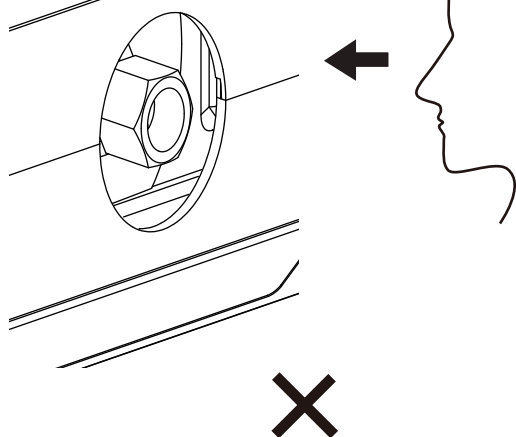


# STEPS TO TAKE BEFORE ENERGIZING

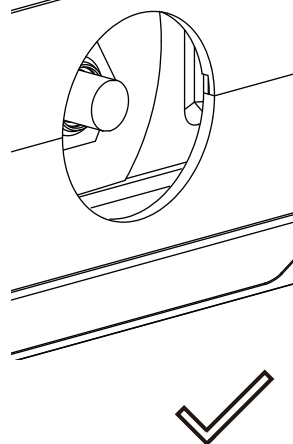
## 1 Check VISI-TITE nuts

Ensure all of the outer heads of VISI-TITE nuts are broken off.

opened by  
licensed person only

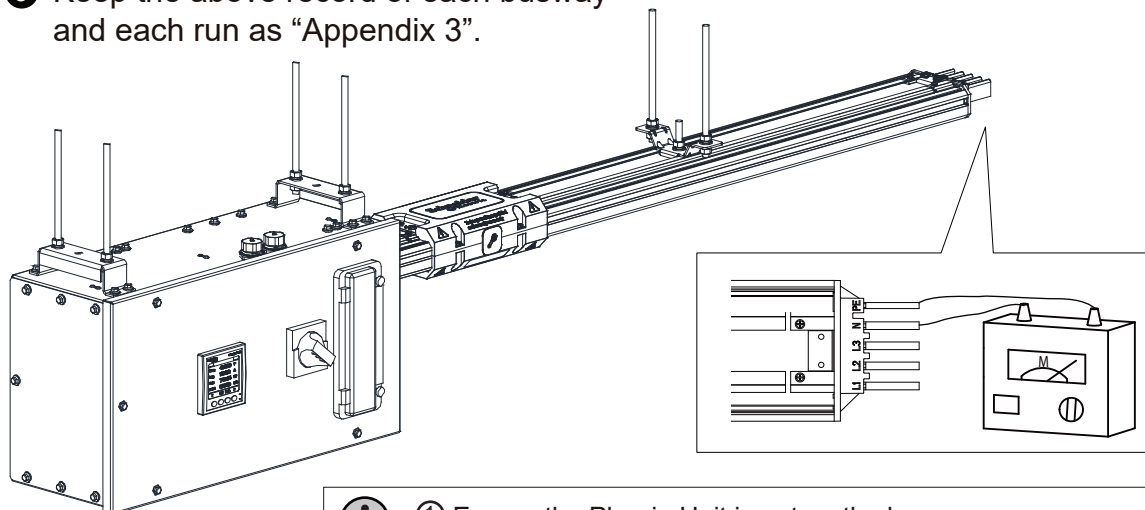


ened by a  
sed person only



## 2 Insulation resistance test

- ① Conduct an insulation resistance test on each busway before installation.
- ② Conduct an insulation resistance test on the whole run after installation.
- ③ Keep the above record of each busway and each run as "Appendix 3".



- ① Ensure the Plug-in Unit is not on the busway.
- ② Ensure the Cable tap box-end's secondary circuit are disconnected.
- ③ Conduct insulation resistance test with DC 500V tester.
- ④ The megohm reading should not be less than the value calculated from the following formula, neither should be less than 5 Megohms  

$$\text{Megohms} = 30.5 / \text{length of run (in meters)}$$



## CHECK POINTS BEFORE ENERGIZING

Items	Check Points	Methods	Judging Standards	Page
Busway	1. Check if all the VISI-TITE nuts are tightened to a correct torque.	Visual confirmation	The outer head of VISI-TITE nuts is broken off .	P11
	2. If the outer head of VISI-TITE nuts is broken off, check if the bolt re-tightened to a correct torque.	Torque wrench	$30 \pm 3 \text{ N} \cdot \text{m}$	
	3. Check the earth connection of Flange end/Feed unit/ PIU and the phase sequence.	Visual confirmation	Earth wire is connected to the earth terminal. Correct the phase sequence.	
	4. Check if there's any damage, deformation or water stain on busway or other parts.	Visual confirmation	No damage, deformation or water stain.	
	5. Measure the insulation resistance.	Insulation resistance tester	The resistance is more than $5 \text{ M}\Omega$ (use insulation resistance tester with DC 500V range).	P17
	6. Check if the tie channel is fitting closely with aluminum block at the end of the busway.	Visual confirmation/ Torque wrench	Torque of screws on tie channel: $10 \pm 1 \text{ N} \cdot \text{m}$	P9
	7. Make sure the alignment of busway for horizontal application.	Spirit level	Horizontal alignment.	P10
	8. Check joints or terminations (only for maintenance)	Visual confirmation	If joints and terminations are badly discoloured, corroded, or pitted, or if they show evidence of having been subjected to high temperatures, contact Schneider Electric. the devices must be replaced with new Factory-built devices.	
Plug-in unit	8. Inspect the joint compound on the Plug-In jaws for contamination.	Visual confirmation	Replace the joint compound if necessary	
	9. Check if the hook catch the busway.	Visual confirmation	front and back hook catch the busway	P14

\* This table also applies to maintenance.

# ENERGIZING THE EQUIPMENT

When the equipment is energized for the first time, qualified electrical personnel should be present. If short circuits and ground faults caused by damage or poor installation practices have not been detected in the checkout procedure, serious damage can result when the power is turned on.

The busway should have no electrical load on it when it is energized. Because busway typically extends through several rooms and floor levels, ensure that all devices fed from the busway are in the off position.

Energize the equipment in sequence by starting at the source end of the system and working toward the load end. In other words, energize the main devices, then the feeder devices, and then the branch-circuit devices. Turn the devices to the ‘ON’ position with a firm positive motion.

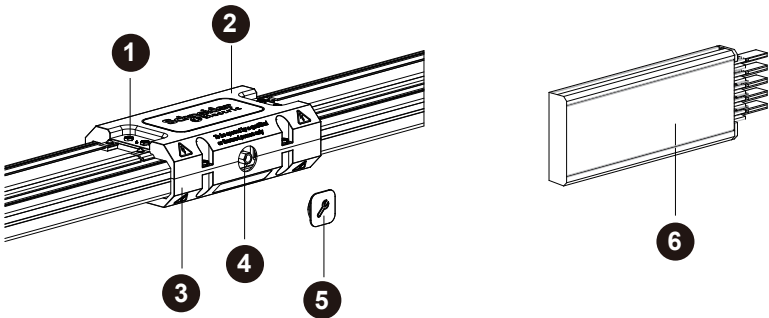
After all over current devices have been turned on, loads such as lighting circuits, heaters, and motors may be turned on.

Busway, when operating properly, will have a moderate hum. Excessive noise may be an indication of hardware that has not been tightened or of metal parts that have been improperly assembled.

Occurrence of sparking at any point along the busway is not a normal condition. De-energize the busway immediately. Correct the cause of the sparking condition. Then conduct an insulation resistance test according to page 20 before attempting to energize again.

## Appendix 1: Busway components quick selection table

No.	Item	Description
1	77110-057-01	Tie Channel Screw M6-10
2	77400-016-XX	250A~400A Top Tie Channel
	77232-001-XX	630A Top Tie Channel
3	77400-017-XX	250A~400A Bottom Tie Channel
	77232-002-XX	630A Bottom Tie Channel
4	77110-055-01	Double Head Nut
5	77122-048-01	Rubber Plug
6	77126-116-XX	Bottom Cover



## Appendix 2: Plug-in unit components quick selection table

Description	Catalog No.
Joint Compound	PJC7201

## Appendix 3: Insulation Resistance Readings

\* For Daily Report by Contractor

DATE: RUN NAME:	
Phase	MΩ
A—PE	
B—PE	
C—PE	
N—PE	
A—B	
A—C	
A—N	
B—C	
B—N	
C—N	

DATE: RUN NAME:	
Phase	MΩ
A—PE	
B—PE	
C—PE	
N—PE	
A—B	
A—C	
A—N	
B—C	
B—N	
C—N	

DATE: RUN NAME:	
Phase	MΩ
A—PE	
B—PE	
C—PE	
N—PE	
A—B	
A—C	
A—N	
B—C	
B—N	
C—N	

DATE: RUN NAME:	
Phase	MΩ
A—PE	
B—PE	
C—PE	
N—PE	
A—B	
A—C	
A—N	
B—C	
B—N	
C—N	

DATE: RUN NAME:	
Phase	MΩ
A—PE	
B—PE	
C—PE	
N—PE	
A—B	
A—C	
A—N	
B—C	
B—N	
C—N	

DATE: RUN NAME:	
Phase	MΩ
A—PE	
B—PE	
C—PE	
N—PE	
A—B	
A—C	
A—N	
B—C	
B—N	
C—N	

DATE: RUN NAME:	
Phase	MΩ
A—PE	
B—PE	
C—PE	
N—PE	
A—B	
A—C	
A—N	
B—C	
B—N	
C—N	

DATE: RUN NAME:	
Phase	MΩ
A—PE	
B—PE	
C—PE	
N—PE	
A—B	
A—C	
A—N	
B—C	
B—N	
C—N	

DATE: RUN NAME:	
Phase	MΩ
A—PE	
B—PE	
C—PE	
N—PE	
A—B	
A—C	
A—N	
B—C	
B—N	
C—N	

DATE: RUN NAME:	
Phase	MΩ
A—PE	
B—PE	
C—PE	
N—PE	
A—B	
A—C	
A—N	
B—C	
B—N	
C—N	

DATE: RUN NAME:	
Phase	MΩ
A—PE	
B—PE	
C—PE	
N—PE	
A—B	
A—C	
A—N	
B—C	
B—N	
C—N	

DATE: RUN NAME:	
Phase	MΩ
A—PE	
B—PE	
C—PE	
N—PE	
A—B	
A—C	
A—N	
B—C	
B—N	
C—N	

Note: the insulation resistance reading should not be less than  $30.5 \div \text{length of run (in meters)}$ , neither should be less than 5 megohms.

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Electrical equipment should be serviced only by qualified  
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