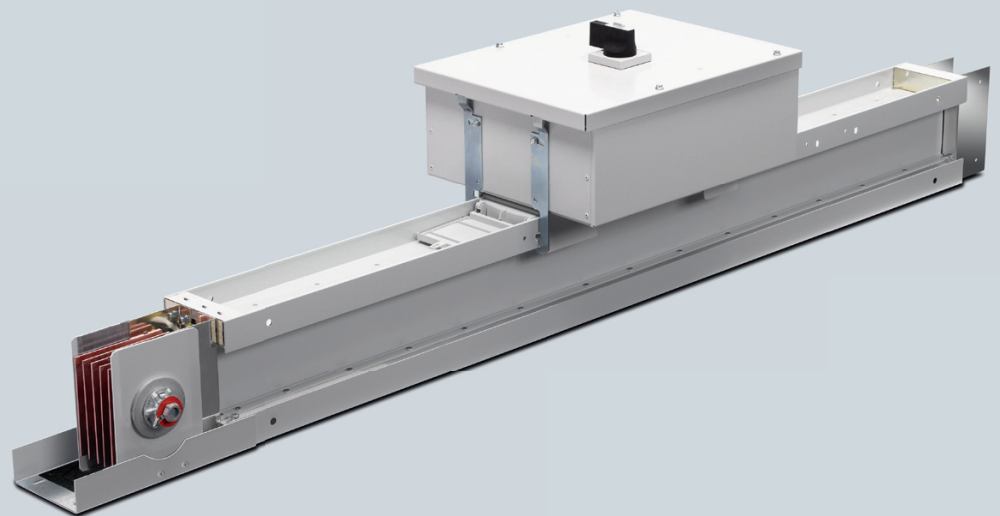


Busbar trunking system

SIVACON 8PS - Installation with LX system

Installation Manual · 06/2011



Low-Voltage Power Distribution and
Electrical Installation Technology

Answers for infrastructure.

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Low-voltage power distribution and
electrical installation technology

Busbar trunking system
SIVACON 8PS - Installation with
LX system


Installation Manual


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Legal information

Warning notice system

This manual contains notices you have to observe in order to ensure your personal safety, as well as to prevent damage to property. The notices referring to your personal safety are highlighted in the manual by a safety alert symbol, notices referring only to property damage have no safety alert symbol. These notices shown below are graded according to the degree of danger.

 DANGER
indicates that death or severe personal injury will result if proper precautions are not taken.

 WARNING
indicates that death or severe personal injury may result if proper precautions are not taken.

 CAUTION
with a safety alert symbol, indicates that minor personal injury can result if proper precautions are not taken.

CAUTION
without a safety alert symbol, indicates that property damage can result if proper precautions are not taken.

NOTICE
indicates that an unintended result or situation can occur if the relevant information is not taken into account.


If more than one degree of danger is present, the warning notice representing the highest degree of danger will be used. A notice warning of injury to persons with a safety alert symbol may also include a warning relating to property damage.

Qualified Personnel

The product/system described in this documentation may be operated only by **personnel qualified** for the specific task in accordance with the relevant documentation, in particular its warning notices and safety instructions. Qualified personnel are those who, based on their training and experience, are capable of identifying risks and avoiding potential hazards when working with these products/systems.

Proper use of Siemens products

Note the following:

 WARNING
Siemens products may only be used for the applications described in the catalog and in the relevant technical documentation. If products and components from other manufacturers are used, these must be recommended or approved by Siemens. Proper transport, storage, installation, assembly, commissioning, operation and maintenance are required to ensure that the products operate safely and without any problems. The permissible ambient conditions must be complied with. The information in the relevant documentation must be observed.

Trademarks

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Disclaimer of Liability

We have reviewed the contents of this publication to ensure consistency with the hardware and software described. Since variance cannot be precluded entirely, we cannot guarantee full consistency. However, the information in this publication is reviewed regularly and any necessary corrections are included in subsequent editions.

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Introduction

1.1 Introduction

This manual is designed to assist you in installing, maintaining and commissioning LX systems.

Note

Before installing the system on the site, you must read and follow the instructions on storage, transport and handling.

 WARNING
--

Only personnel who have been trained in site safety regulations (such as the wearing of helmets, safety goggles, safety shoes, high-visibility tabards, etc.) may work on construction sites and install busbar trunking systems. The responsible safety officer must provide mandatory safety training.
--

Manual overview

This manual consists of four sections:

- General information: Brief overview of busbar trunking system components and how they are installed
- Installation: Description of how the busbar trunking system elements are installed
- Inspection, expansions, checks: Description of how to handle the busbar trunking system once it has been installed
- Checklists and reports

You can find more detailed technical information on LX systems in the planning manual "Planning with SIVACON 8PS" (Order number A5E01541101).

In addition, observe the installation instructions for the individual busbar elements. The installation instructions contain specific details on how to install the various busbar elements. You can find an overview of the installation instructions at Installing a busbar run (Page 13).

Planning usage

2.1 Scope of delivery

All materials are packaged and sent out together with a delivery note and installation instructions.

2.2 Receiving goods

- Check that the material and documentation received corresponds to the scope of your installation project.
- Check the components supplied and ensure that they function as intended and correspond with the information on the documentation.
- Take particular note of the information on the packaging (symbols, labels, etc.). Observe the warning notices.
- The item number on the packaging and the project manual will help you to identify where the element is to be installed in the layout.
- Check that the material has been delivered in perfect condition and with no transport damage.

2.3 Safe handling

Handling material

NOTICE

As with all electrical equipment, this material should be handled with care, following the instructions listed here.

Proceed with caution and pay attention to personnel safety. Use all equipment necessary for correct handling of the material.

2.4 Storage

1. The material storage area has to meet the following requirements:
 - It must be stable, secure and not on a slope.
 - It must be protected against damp, extreme temperatures and water penetration.
 - Effective protection against dust, water, welding sparks and other factors that could damage the material supplied must be in place.
 - For safety reasons, the area must not serve as a gangway, nor must it be used to assemble other equipment.
2. Take note of the specific storage and packaging information featured on the packaging (symbols, labels, etc.).
3. If possible, store the material in its transport packaging. As a rule, the elements are supplied on pallets that must not be stacked on top of one another. If the transport packaging is removed, store the elements in their product packaging as follows:
 - Straight trunking units:
In single systems, a maximum of two elements may be stacked on top of one another either flat or vertical, while with double systems a maximum of two elements can be stacked and then only flat. Use wooden blocks (25 mm x 100 mm) to separate the individual layers.

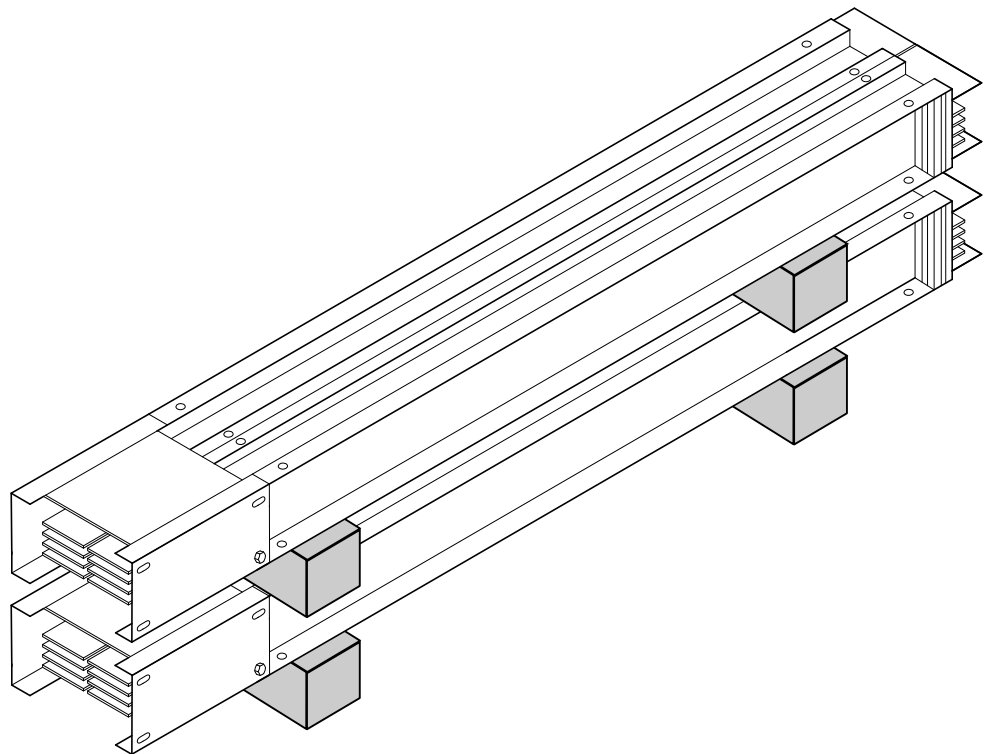


Figure 2-1 Storing double systems

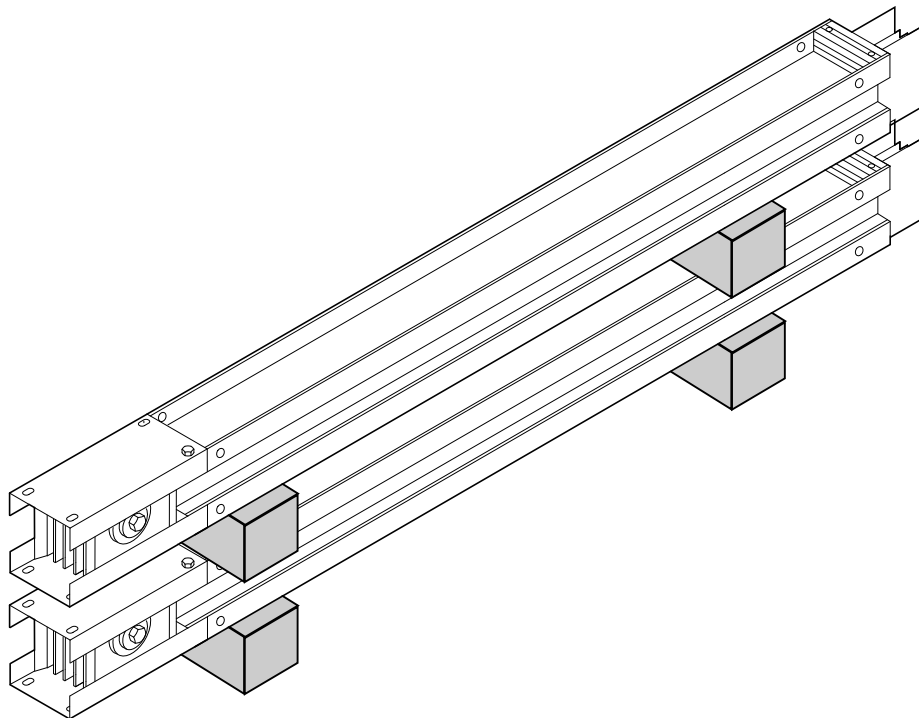


Figure 2-2 Storing single systems

- Tap-off units:
Tap-off units up to 630 A may be stacked two high (maximum). Tap-off units of 800 A, 1,000 A and 1,250 A must not be stacked.
 - All other elements such as junction units, flanged ends, AS transformer feeder units and cable feeder units must not be stacked.
4. Special handling applies to flanged ends and transformer feeder units. Refer to chapters Flanged end (Page 34) and Transformer connection (Page 40) for more detailed information.

NOTICE

Do not remove the protective covers from the ends of the busbar trunking until the electrical connection has been made, otherwise material may be damaged and functioning may be impaired following installation.

2.5 Packaging

The busbar trunking system elements are supplied with protective covers on their ends. These protect conductors, insulators and joint blocks against impact during transport and storage on the building site. The protective foil/packaging also protects the elements from dust and damp.

NOTICE
Do not remove the protective covers until the busbar trunking system elements are ready to be joined. Do not remove all the protective coverings until you install the elements.
Be very careful when removing the strap retainers. The sharp edges on the strap retainers pose a significant risk of injury when they spring off.

Note

The protective material can be recycled. When disposing of it, refer to the applicable standards for waste disposal in the installation area.

2.6 Handling

Handling

Busbar trunking system elements can be moved using a forklift and/or suspended from slings.



Figure 2-3 Transport using a forklift

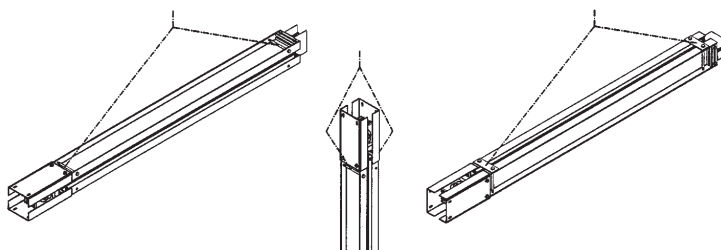


Figure 2-4 Suspension from slings

Ensure that the elements do not get damaged when transporting them with a forklift.

Use fabric slings to suspend the busbar trunking system elements.

As a rule, always attach slings to lift the elements.

The elements are supplied with special parts for securing the slings in place and for supporting their own weight. The suspended elements can be removed and placed in various positions, depending on their required application (see illustration).

NOTICE

Never use abrasive or metal slings under any circumstances.

Never suspend the elements by their conductors, as this could potentially damage them beyond repair.

Note

Special transport bolts can be attached at the ends of the trunking unit for the use of slings.

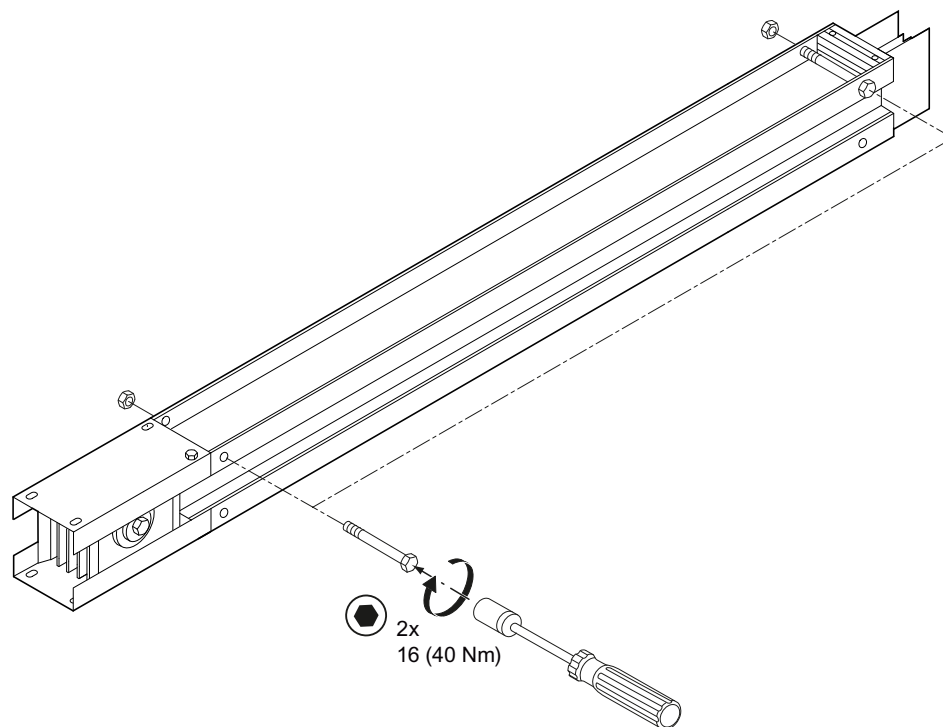


Figure 2-5 Attaching the special transport bolts

Installation

3.1 Overview

1. Checking elements:
Inspect all elements on receipt and ensure that neither the conductors nor their insulation have been damaged during handling and/or storage.
2. Correct installation sequence:
Install the elements in accordance with the planned layout as indicated in the installation drawings supplied.
3. Connecting elements:
 - Ensure that the spacing (230 mm, for details see Joining elements by joining the ends together (Page 28)) between adjoining elements is correct.
 - Establish the electrical connection between the conductors; do not place the covers on the junction yet (see Connecting units (Page 27)).
4. Checking the assembled elements:
Check the insulation resistance of the layout. No other equipment (transformers, tap-off units, end feed units, etc.) must be connected at this time (see chapter Commissioning (Page 55)).
5. Closing the junctions:
Place the covers on the mechanical junctions (see Connecting units (Page 27)).

3.2 Installing a busbar run

Installation

The steps that must be performed to install the different LX SYSTEM elements are described below, along with some accessories that have been designed for this purpose.

Although the parts are listed in order of installation, we do recommend that you read the instructions in full in order to familiarise yourself with the special characteristics of this installation procedure. Instructions are also provided with the elements. The instructions contain specific details on how to install the various busbar elements and must be followed at all times.

Note

A video clip demonstrating LX busbar installation is also available; please contact your SIEMENS contact for further available.

NOTICE
Plan the installation process carefully, resolving all possible difficulties prior to starting work. Always pay attention to personnel safety and ensure that material does not become damaged.

Overview of the installation instructions

Elements	Document No.
Trunking Straight lengths L, Z and T units Expansion unit End caps "Joint block" junctions	A5E00949806
Feeder units Transformer connections Flanged ends Siemens distribution board connections Cable feeder units	A5E00949814 A5E00949813 A5E00949816, A5E00949815 Available soon
Tap-off units From 50 A to 250 A From 315 A to 630 A From 800 A to 1,250 A	A5E00949807 A5E00949808 A5E00949809
Accessories Fixing brackets for horizontal layout Fixing brackets for vertical layout Fire barrier mounted at the factory Fire barrier to be mounted by the customer IP55 covers for tap-off units Kit for German approval fire barrier	A5E00949801 A5E00949803 A5E00949810 A5E00949802 A5E00949805 A5E00949761

3.3 Installation recommendations

Installation recommendations

Install either the whole line or parts of it, depending on how accessible and safe the layout is.

1. Start the installation by connecting the board outlets.
2. Once the distribution board has been installed, continue towards the transformer, sub-distribution board and consumers.

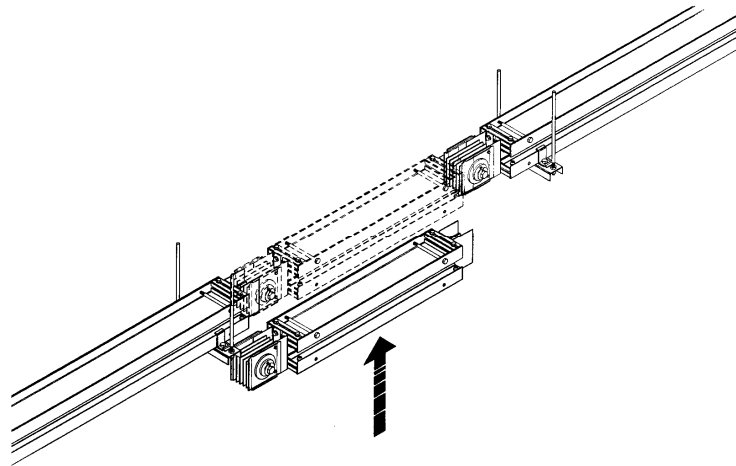


Figure 3-1 Straight trunking unit, last element to be assembled

To simplify handling, on runs between feeder units the last element to be inserted should be a straight trunking unit. If the run ends with an end cap, fit this last.

NOTICE

Protect all elements from adverse ambient conditions and other potentially damaging agents until installation has been completed.

Always pay attention to the safety of personnel and ensure that material does not get damaged.

Note

Deviating from the recommendations

These installation recommendations specify the general assembly sequence for the various busbar trunking system elements. As local conditions on the building site or within a project can vary, deviations from these recommendations are possible. In such cases, please get in touch with your SIEMENS contact.

3.4 Attaching fixing material

The LX busbar trunking system is generally attached to the structure of the building using externally provided supporting structures (e.g. threaded rods, C-profiles, joists or stands for intermediate levels) and the system-specific fixing bracket.

3.4.1 Overview

Types of fixing material

- Fixing material not available in the catalog (plugs, beams, suspension struts, spigots, etc.) must be provided by installation experts.
- Bracket for horizontal installations (ceiling/wall/floor brackets, fixed points)
- Bracket for vertical installations (wall and floor brackets, fixed points)

Attaching fixing material

In all cases, proceed as follows:

1. Attach the fixing brackets to the building via the supporting structure.
2. Raise the LX system element and suspend it on the brackets without securing it.
3. Move the element until it is inserted in the adjoining joint block and place it in its final position.
4. Secure the element.

Note

Consulting installation experts

These instructions only refer to accessories manufactured by SIEMENS. For further information, please refer to the catalogue.

It is beyond the scope of this manual to document the vast number of different on-site conditions that may arise. Therefore, we recommend that installation experts evaluate on-site conditions.

NOTICE

Always follow the instructions provided in the manual and the installation instructions.
--

3.4.2 Bracket for horizontal installations

Ceiling bracket

- Attach the suspension bracket to the ceiling or another suitable structural support.
- Ensure that the ceiling or structural support is strong enough to hold the weight of the system.
- Place the element to be suspended in its intended final position on the brackets, leaving the element in a horizontal position.
- Join the adjacent elements and secure them using fixing studs "B".
- The fixing studs "B" can be used for elements mounted flat or on their edge (see illustration).

3.4 Attaching fixing material

- As far as possible, use the fixed point fixing studs to attach the fixing brackets directly onto solid building components. If you do not do this, your fixed points will have to be suspended using additional transverse stays in the form of spigots or fixing struts (see illustration). The exact configuration will depend on on-site conditions.
- The surface finish of both the spigots and the screws used must be adapted to on-site ambient conditions.

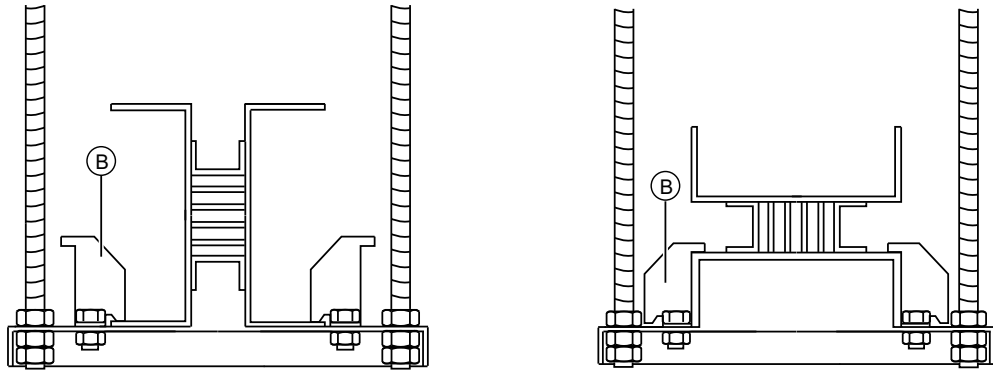


Figure 3-2 Detailed view of the fixing studs "B", mounting positions: left-hand image horizontal, flat; right-hand image horizontal, on edge

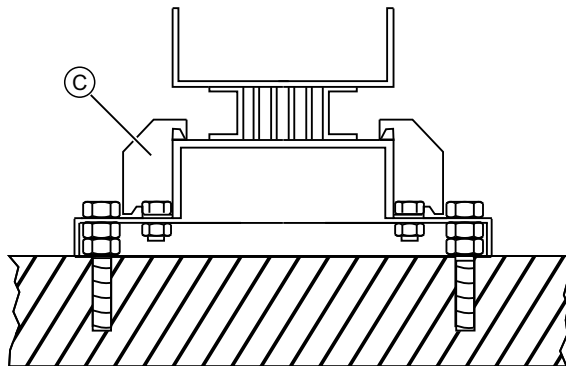


Figure 3-3 Fixed point (fixing studs "C" incl. bracket) attached to solid building structure

Note

When selecting plugs to use, take the ceiling material and quality as well as the weight to be supported into account.

Attaching the ceiling bracket

Before attaching the bracket, make sure you are aware of exactly what type of bracket is being used and exactly where it needs to be positioned.

- Take the following specifications into account:
 - An element must never be left unsupported. For easier levelling, always use two supports for each element wherever possible.
 - A bracket must never coincide with a joint block. Always maintain a distance of at least 250 mm between the centre of the joint block and the bracket.
 - To meet the specific static circumstances when using fixed point brackets, we recommend using supporting structures with transverse stays. Siemens does not supply supporting structures. Please contact the special suppliers of such materials.

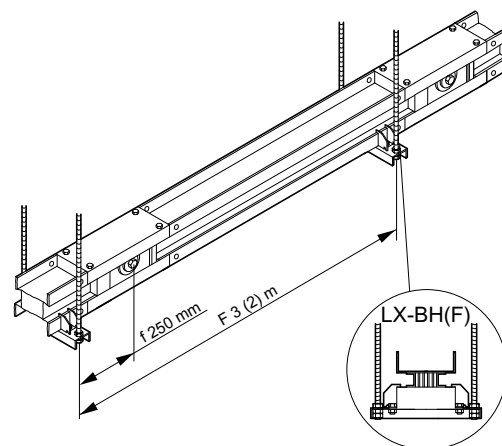


Figure 3-4 Bracket for LX element mounted on its edge

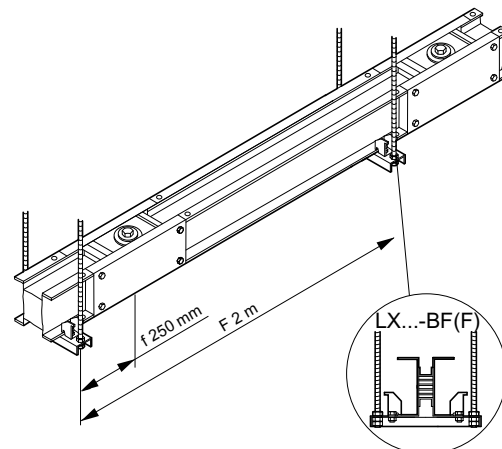


Figure 3-5 Bracket for LX element mounted flat

3.4 Attaching fixing material

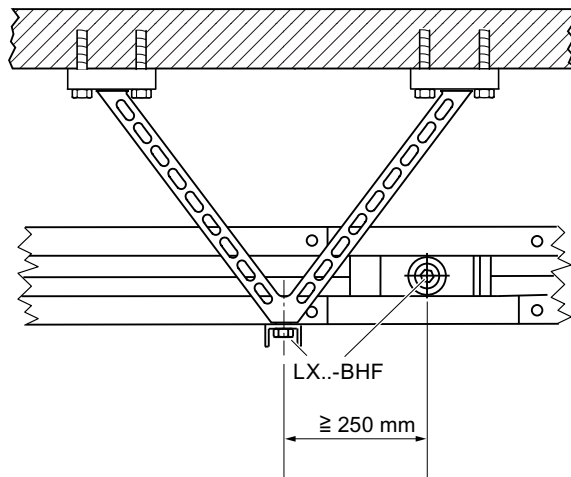


Figure 3-6 Using transverse stays for fixed points

- Never support an element at any point other than a fixing bracket. The maximum distance between horizontal fixing brackets will depend on their design (load capacity, etc.); in theory, 2 m is considered a suitable distance. Greater distance between fixing brackets only on request.

Trunking weights and bracket distances

Type LX,		A01	A02	A04	A05	A06	A07	A08	A09	A10
Horizontal, on edge	m	2	2	2	2	2	2	2	2	2
Horizontal, flat	m	2	2	2	2	2	2	2	2	2
Weight	kg	12.6	14.7	18.9	26.8	33.1	41.3	55	67.2	83.7

Type LX,		C01	C02	C03	C04	C05	C06	C07	C08	C09
Horizontal, on edge	m	2	2	2	2	2	2	2	2	2
Horizontal, flat	m	2	2	2	2	2	2	2	2	2
Weight	kg	23.5	29	32.4	40.8	48.6	77.5	100.4	125.4	155.9

- In designing supports, consider the following:
 - The maximum capacity of fixing brackets in terms of supporting at least the weight of the busbar trunking system plus 90 kg, in accordance with IEC/EN 60439-2
 - Fixing points on the structure and suitable accessories (plugs, etc.)
 - Feasibility of fixed points (should be given particular consideration as regards horizontal run layouts)
- Please take the particular requirements of vertical trunking, i.e. manoeuvrability, suspension of elements, execution, etc. into consideration.

Wall bracket

The same maximum permissible values apply to wall brackets as to ceiling brackets.

You must also insert additional transverse stays when implementing fixed points.

A wall bracket consists of a wall beam and a set of clamping brackets (type LX-K from LX range). The customer must provide the wall beams.

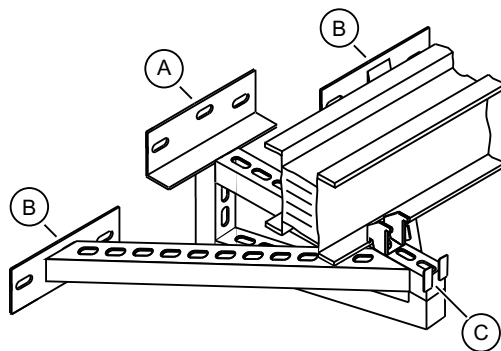


Figure 3-7 Wall bracket for LX element mounted flat

3.4.3 Spring brackets for vertical installation on walls

Mounting the bracket for vertical installation

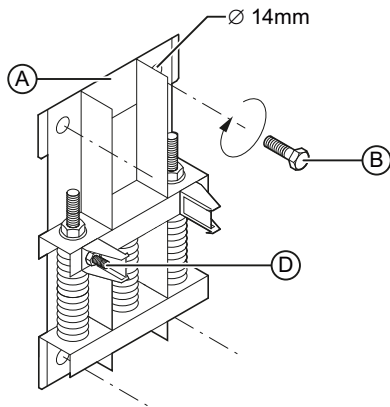


Figure 3-8 Mounting the bracket for vertical installation on the wall

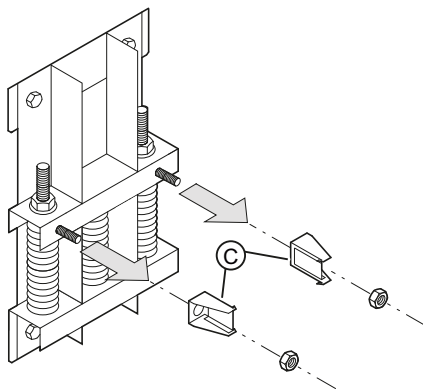


Figure 3-9 Mounting the bracket for vertical installation on the wall

CAUTION

When delivered, fixing brackets are adjusted to the weight to be supported using the red screws. Do not remove these screws until installation has been completed. Follow the installation steps described here to the letter.

1. Mark the anchorage holes on the wall, using fixing bracket "A" (1) as a template if you so wish.
2. Drill the holes and insert the plugs into them.

Note

The fixing bracket should be attached to the wall using plugs appropriate to the weight to be supported and the fixing material used.

3. Attach the bracket for vertical installation using screws "B" (4).
4. Remove fixing studs "C" (2), held by nuts "D" (2), which fix the busbar trunking system.
5. Install all fixing brackets in the corresponding locations before installing the busbar trunking run.

Mounting the busbar trunking system on a bracket for vertical installation

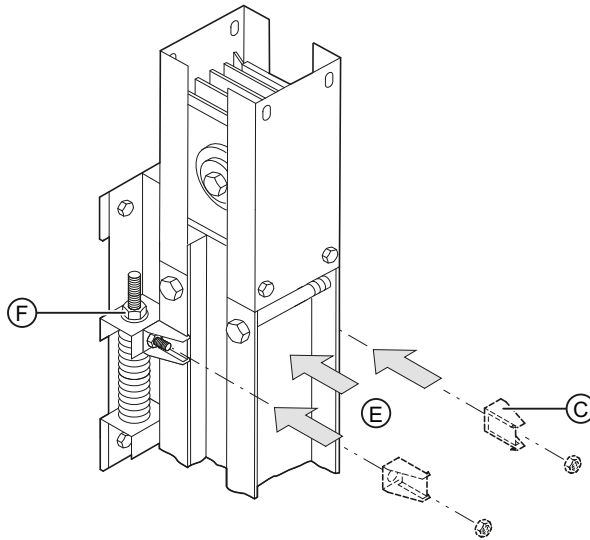


Figure 3-10 Mounting the busbar trunking system on a bracket for vertical installation

1. Position busbar trunking system element "E" (1) at the desired installation location using slings or other lifting lugs. Observe the installation instructions.
2. Ensure that the element is correctly positioned in terms of the adjoining element.
3. Establish an electrical and mechanical connection between adjoining elements, taking note of the relevant instructions.
4. Screw fixing studs "C" (2) onto the fixing bracket in order to fasten the element. Place them against the wing of the element as shown in the diagram. Also use nuts and washers "D" (2).
5. Remove the slings or lifting lug used. The element is now supported solely by the fixing bracket.
6. Once installation of the entire vertical busbar run is complete, slacken and fully remove the red upper adjustment screws "F" (2) to activate the fixing bracket.
7. Keep the red adjustment screws "F" for any extensions that may need to be added later on.

3.4.4 Floor fixing for spring brackets

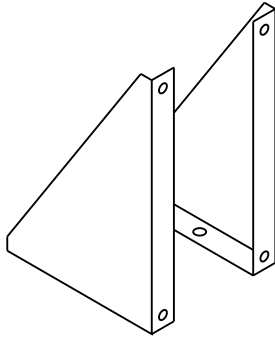


Figure 3-11 Mounting the bracket for vertical installation on the floor

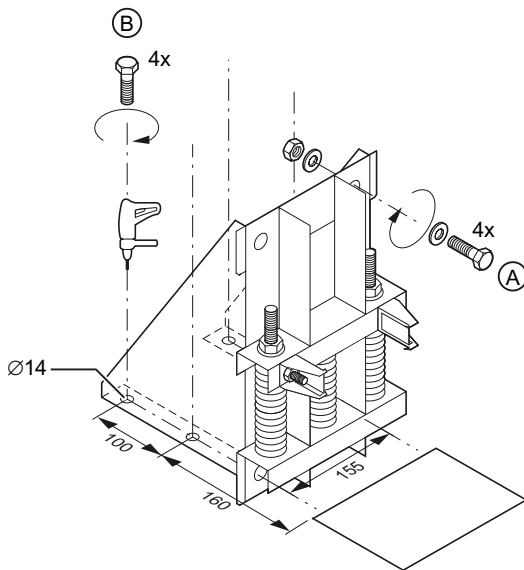


Figure 3-12 Mounting the bracket for vertical installation on the floor

1. Use screws "A" (4) to attach the additional vertical flange to a module.

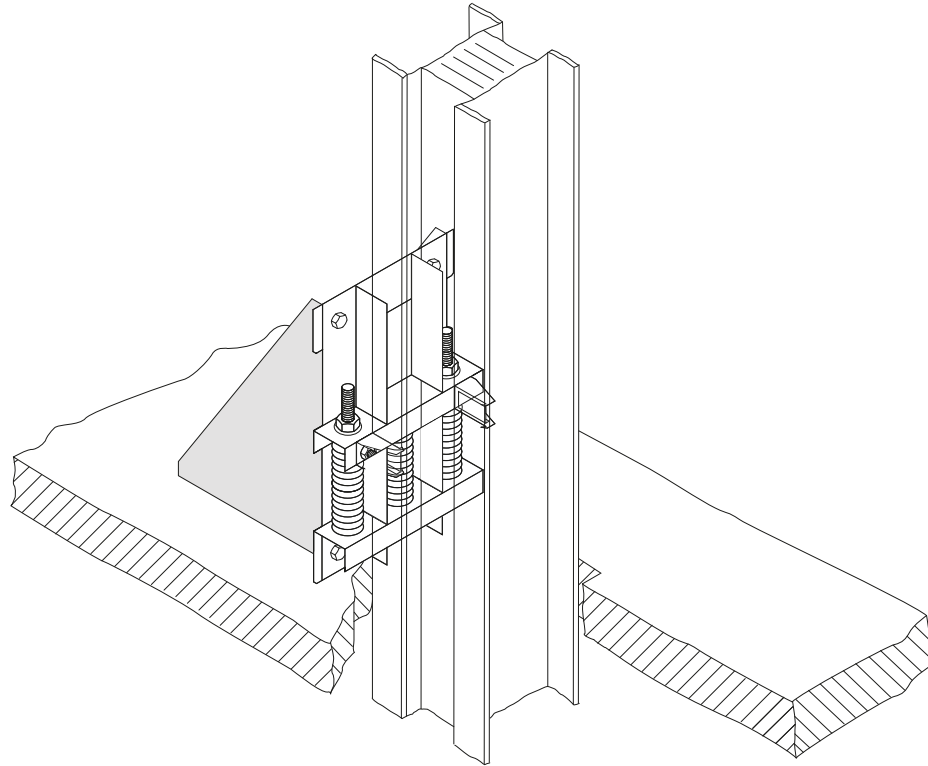


Figure 3-13 Mounting the bracket for vertical installation on the floor

2. Use screws "B" (4) to attach the module to the floor via the additional flange.
3. Please refer to the description in Spring brackets for vertical installation on walls (Page 22) for details on how to attach the busbar trunking system elements.

3.4.5 Fixing brackets with fixed point for vertical installation

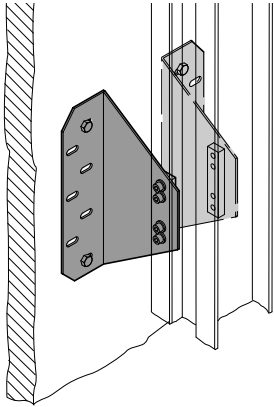


Figure 3-14 Fixing brackets with fixed point for vertical installation

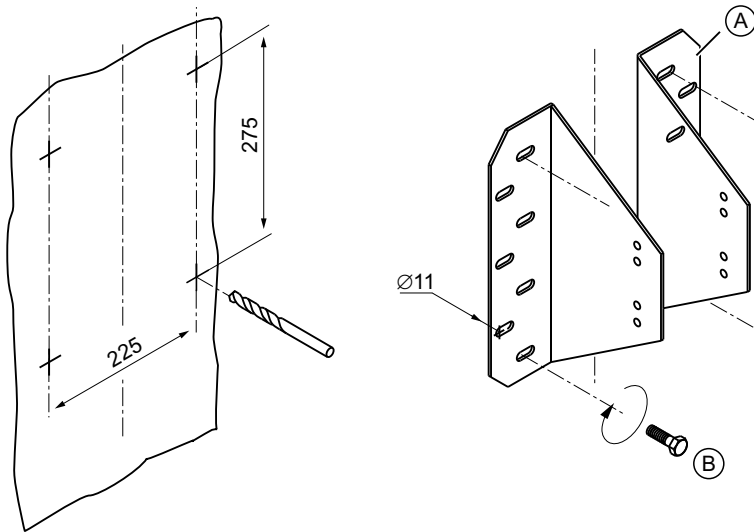


Figure 3-15 Mounting fixing brackets with fixed point for vertical installation

1. Mark the anchorage holes on the wall, using fixing bracket "A" (1) as a template if you so wish.
2. Use screws "B" (4) to attach the fixing brackets with fixed points to the wall.

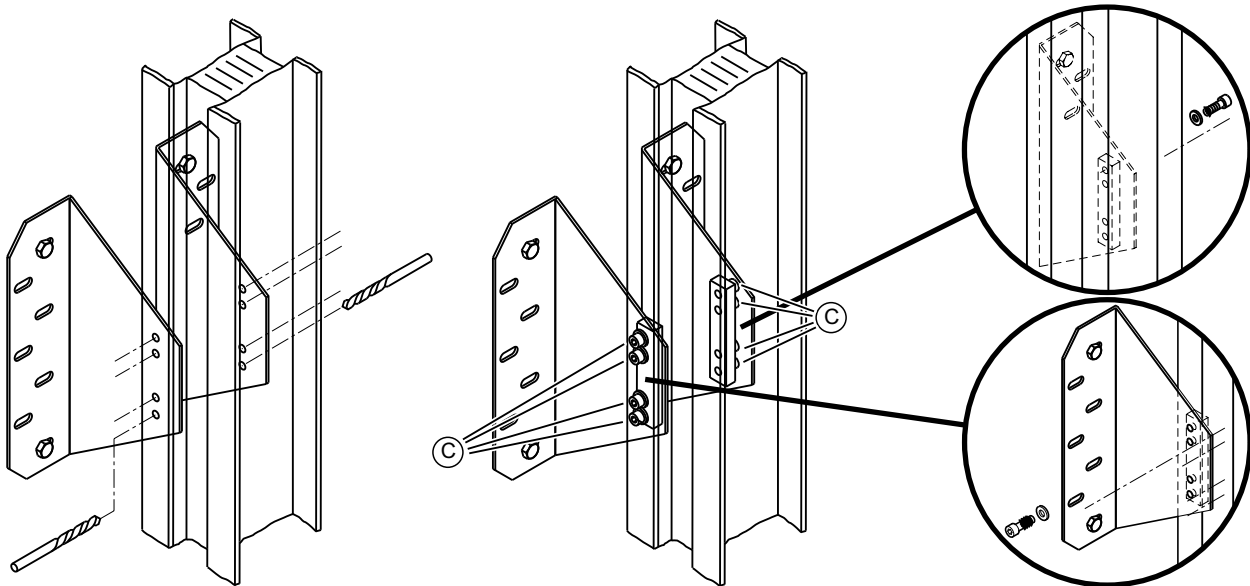


Figure 3-16 Mounting fixing brackets with fixed point for vertical installation

3. Mark the anchorage holes on the heat sink wings of the busbar enclosure, using the fixed point drill holes as a template.

NOTICE

Ensure that all joint block connections are completely covered before you start to drill. No metal chips should be allowed to fall into the joint blocks, as these would adversely affect the electrical connection.

4. Drill the holes and extract all resulting metal chips during the drilling process.
5. Use screws "C" to attach the fixing bracket with fixed point to the busbar enclosure.

3.5 Connecting units

NOTICE

Ensure that all contact surfaces are clean and free of impurities.

3.5 Connecting units

The joint block offers two different joining options, depending on the requirements of the installation and the installation engineer:

1. Joining option where the busbar trunking system elements are assembled by joining the ends together (recommended option).
2. Joining option where the busbar trunking system elements are assembled from above.

3.5.1 Joining elements by joining the ends together

1. Remove the upper junction cover "A" (1) and the transportation lock by removing screws "B" (4).
2. Turn the junction nut "C" (1) anti-clockwise to open the junction fully.

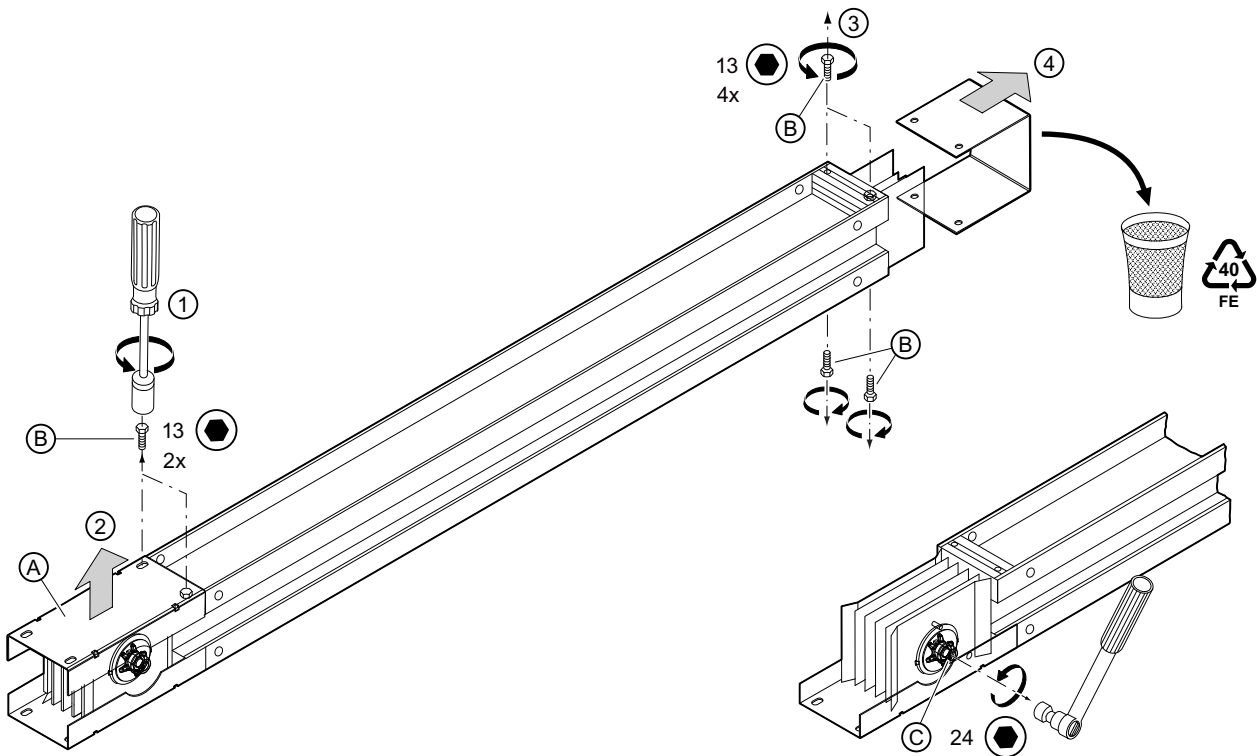


Figure 3-17 Dismantling the joint block's flange cover

3. Line up the elements to be joined to one another, ensuring that the joint block does not become tilted.

4. Move the element "D" (1) so that the ends are inserted into the joint block of the fixed element "E" (1). Check the position of the elements to be connected. If necessary, realign the elements so that they sit flush and do not get bent in the joint block.

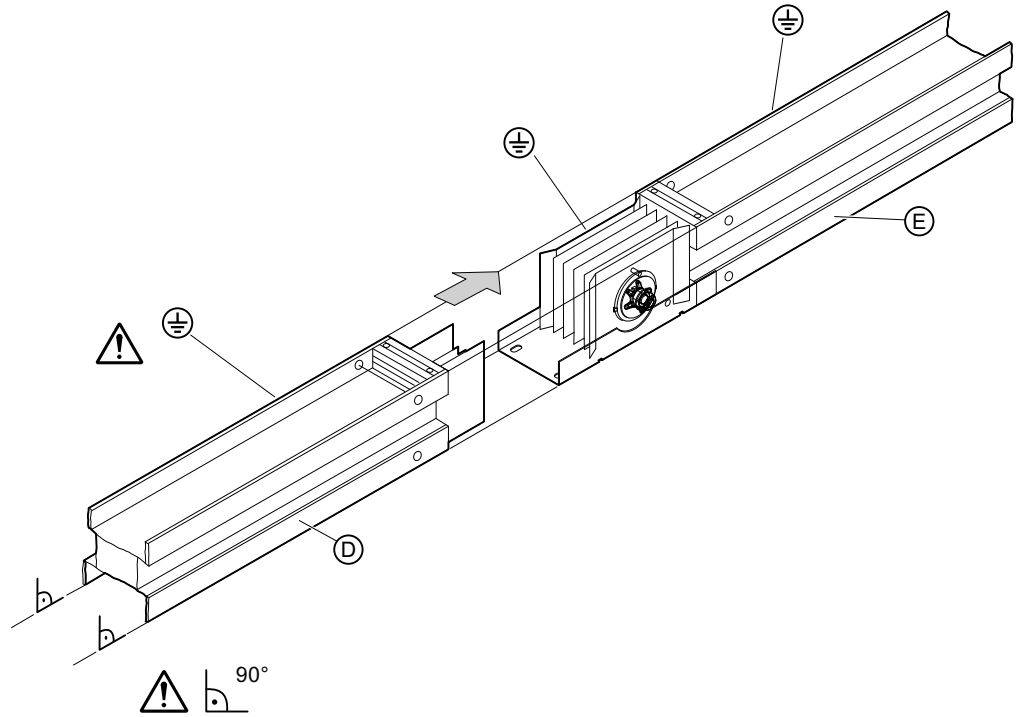


Figure 3-18 Connecting busbar trunking system elements with elements on their edge When flat, the entire busbar run is rotated 90°.

5. Move the elements towards each other to such an extent that the distance between them is exactly 230 mm and the pin fits into the control opening of the flange cover (see following figure).

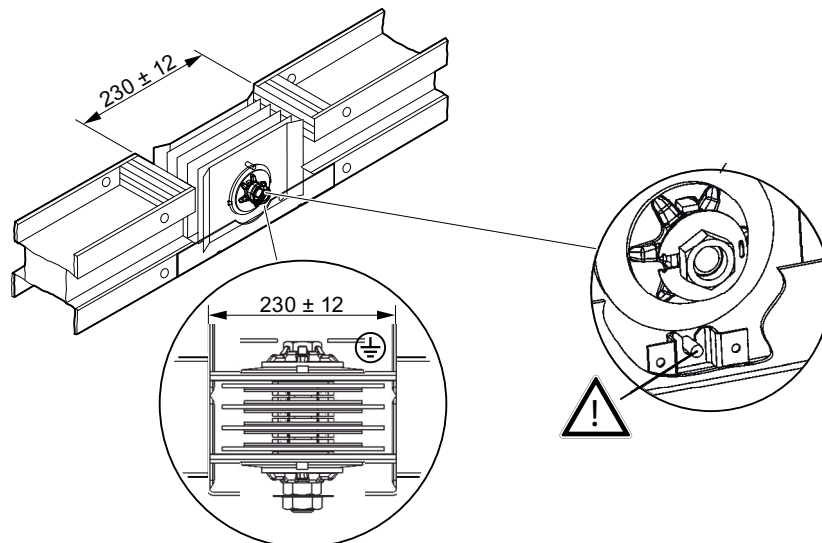


Figure 3-19 Connecting busbar trunking system elements with elements on their edge When flat, the entire busbar run is rotated 90°.

6. Gradually and carefully, turn the nut "C" (1) clockwise without stopping until the external nut breaks off, giving a tightening torque of between 110 Nm and 120 Nm.

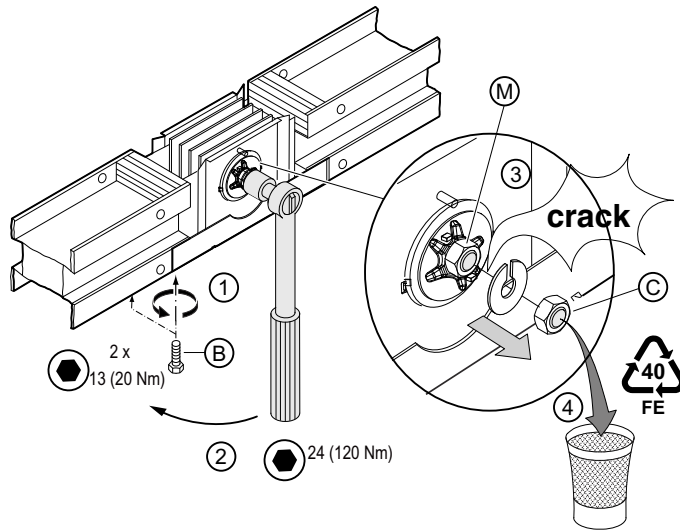


Figure 3-20 Checking the position of the joint block

7. Check the distance between the elements again and ensure that it is 230 mm. Check again to ensure that the top pin fits into the top flange cover.
8. After checking the clamping position, attach the flange cover "A" using the screws "B" (4). The joint block assembly is then complete.

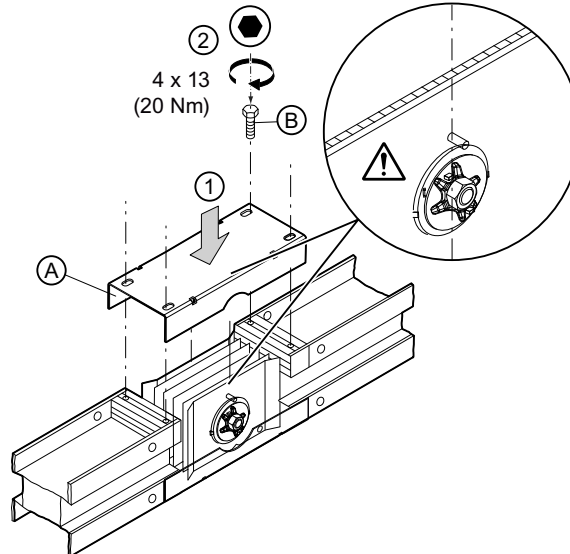


Figure 3-21 Attaching the flange cover

CAUTION

There is a second internal nut "M" under the retaining ring for future use.

The external nut has been designed to break off at the pressure required to achieve electrical and mechanical contact.

When the external nut breaks off, the red safety ring drops down. This shows that the joint has been tightened (no further checking is necessary).

See also

Handling (Page 11)

3.5.2 Connection from above

It may sometimes be necessary to insert and join the elements from above or below. This is usually the case if the length fits snugly or if not much space is available.

To do so, carefully guide the open end into the joint block (as shown in the example) from above or below.

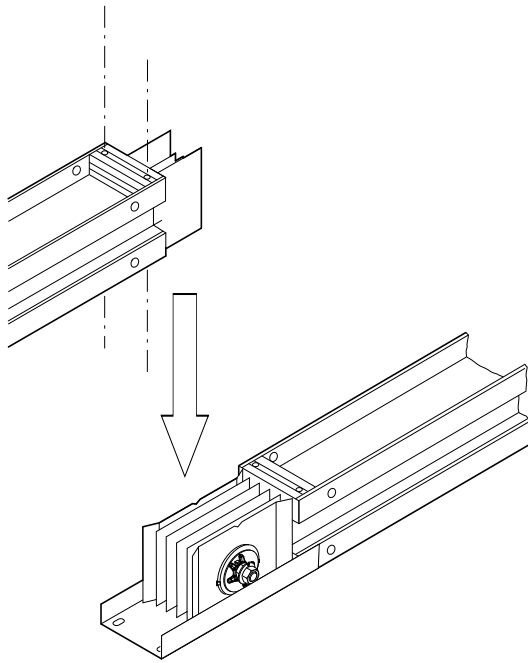


Figure 3-22 Connection from above

NOTICE

Ensure that the joint block is correctly centred between the two elements to be joined.
Plan the installation of the connections in advance to avoid subsequent problems.
Never knock or hit the joint block when inserting it between the two elements. Instead, insert it carefully, otherwise the elements may get damaged.

You can find details on the further assembly steps for joining the busbar trunking system elements under Joining elements by joining the ends together (Page 28). The other steps and notes apply and must be observed.

3.6 Expansion unit

Mounting the expansion unit

- Prior to mounting, ensure that the expansion element is blocked by the fixing bracket "C" shown (delivery condition).

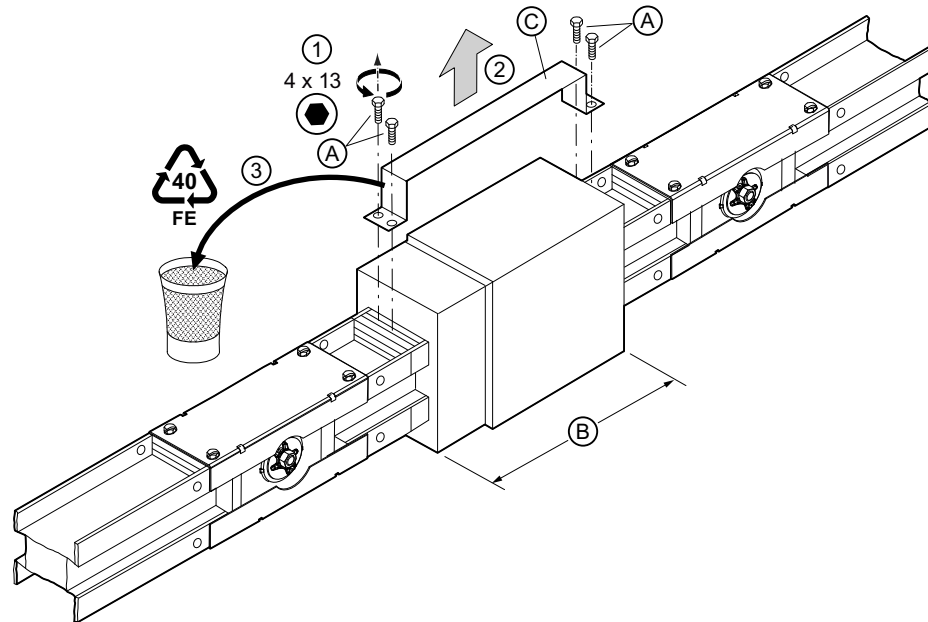


Figure 3-23 Expansion unit

- Fit the expansion unit in the same way as any other busbar trunking system element in the position indicated in the installation drawings, following the assembly instructions given in Connecting units (Page 27).
- Place the expansion unit on two beams.

- Without releasing the expansion unit, install the following busbar trunking system element and attach it to the corresponding flanges.
- Releasing: Remove screws "A" (4) from the expansion element to enable it to move freely.

CAUTION
Never install fixing brackets in the expansion area "B".
Do not attach expansion elements to the fixing bracket, as this will result in the temperature-dependent expansion of the run not being fully compensated.
Attach one fixing bracket in front of the expansion area and one behind to ensure that the element works correctly. Two support points are provided for each expansion unit.
Do not remove screws "A" (4) without having first installed the two elements adjoining the expansion unit in their final positions.

3.7 Flanged end

3.7.1 Flanged end

The flanged end connects the busbar trunking system to external power supplies or outputs, both mechanically and electrically. These external power supplies are usually distribution boards for low-voltage main distribution systems.

Once the equipment has been received from the factory, the procedure below must be strictly adhered to prior to installation:

1. Storage in accordance with Storage prior to installation (Page 34).
2. Transport and handling leading up to installation in the distribution board in accordance with Transport and handling at the installation location (Page 35).
3. Installation in accordance with Installation (Page 37).

3.7.2 Storage prior to installation

Take note of the following when storing the flanged end:

- Store the flanged end in its original packaging and use site transportation equipment (pallet, fixing devices).
- Do not subject the flanged end to any additional mechanical loads.

3.7.3 Transport and handling at the installation location

- Only use appropriate transportation equipment to transport the transformer connection unit. Do not remove any protective transportation devices until transport has been completed.
- Attach lifting aids such as fabric ropes and belts (B) to the whole of the flanged end, i.e. around the flange plate and parallel to the connection busbars of phases L1, L2, L3 and N(PEN). Ensure that the mechanical stress on the enclosure and on the busbars is equally distributed.
- The LX...FA flanged end must be in a vertical position whilst it is being lifted (see illustration).

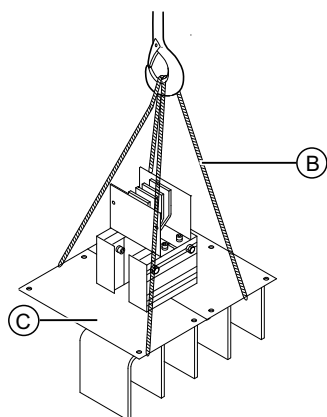


Figure 3-24 Transporting the flanged end

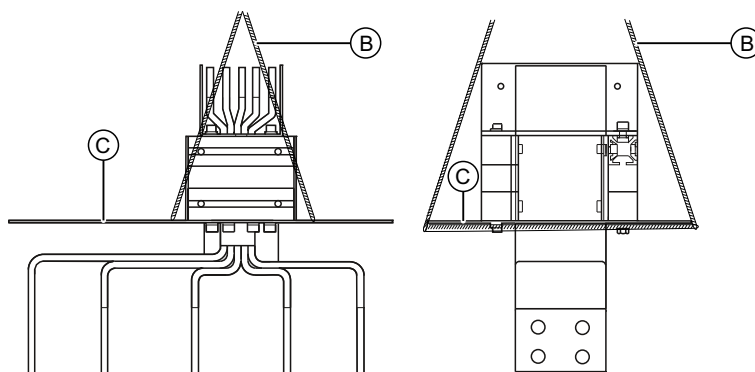
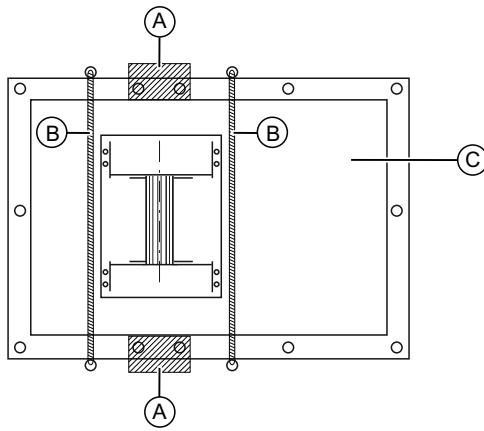


Figure 3-25 Transporting the flanged end

The LX...FA flanged end must be placed on two wooden blocks (A) on top of the distribution board in the position specified (see illustration). Then remove the ropes and the wooden blocks to install the LX...FA in the distribution board after setting it down.



- A Wooden block
- B Rope
- C Cover plate

Figure 3-26 Correct transport position

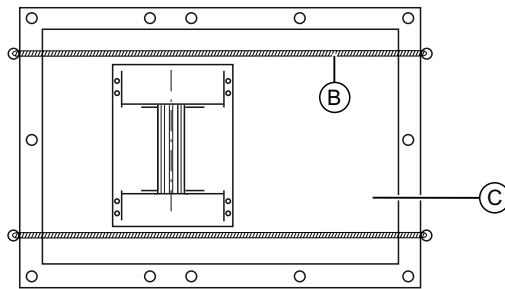


Figure 3-27 Impermissible transport position (no wooden blocks, rope attached incorrectly)

3.7.4 Installation

Preparing the non-Siemens distribution board for the connection of the flanged end

1. Align the distribution board mounting surface so that it is flat.
2. Make the cut-outs in accordance with document No. A5E00949813.
3. Reinforce the distribution board mounting surface in accordance with the weight of the flanged end.
4. The distribution board must contain fixtures for mechanically securing the flanged end. The flanged end's own weight must be mechanically decoupled from the electrical connection (copper connection).
5. Electrical connecting lugs must be provided for the electrical connection. During this process, observe the flanged end connection dimensions and cross-section specifications, as well as the distribution board manufacturer's specifications.

Installing the flanged end in the distribution board

Following storage and transport to the installation location, you must first mechanically secure the flanged end in the distribution board. After that, you electrically connect the flanged end to the busbars or the circuit breaker.

Securing the flanged end mechanically

1. The power cables of the LX...FA must be mechanically fixed in the distribution board. The LX...FA busbars must not be subjected to any additional forces.
2. Attach cover plate "C" to the distribution board enclosure. Observe the distribution board specifications relating to the degree of protection. It may be necessary to use additional sealant in order to achieve degrees of protection higher than IP 55.

Connecting the flanged end electrically

1. Remove the protective transportation devices.
2. Perform the electrical connection in accordance with the flanged end specifications (minimum cross-sections in accordance with the installation instructions) and the information provided by the distribution board manufacturer. Dimension the connecting material in accordance with these specifications.
3. Take note of the following when connecting conductor lugs with flanged ends:
 - Drill holes are provided for connection in the case of single systems.
 - No drill holes are provided in the parallel connectors of double systems; you must make these holes yourself during installation.

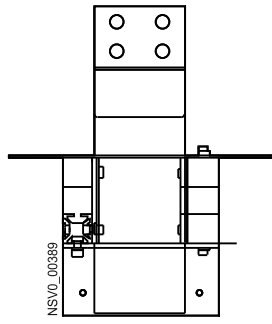


Figure 3-28 Flanged end, single system with drill holes for connection

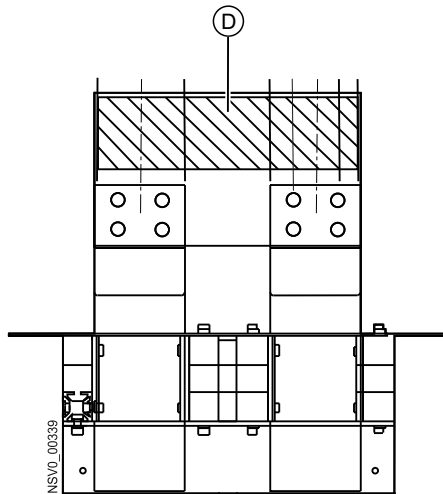


Figure 3-29 Flanged end, double system without drill holes in the parallel connector "D"

Note

You must comply with the required minimum cross-sections for the flanged end, otherwise the maximum permissible limit temperature of 130°C cannot be guaranteed. The design of the electrical connection determines the short circuit strength. The designer, usually the distribution board manufacturer or constructor, is responsible for the temperature and short circuit strength of the electrical connection.

NOTICE

Depending on the system, the flanged ends weigh between 13.4 kg and 89.6 kg.
--

3.7.5 Handling if multiple busbar runs are laid in parallel

Procedure

With busbar runs connected and laid in parallel, consisting of individual systems, the electrical conductors are connected in parallel to the terminal boxes for flanged ends and transformers.

The parallel connection is carried out using additional parallel connectors that in the case of parallel connected single systems must, like all other connecting material, be provided by the customer. Installation is performed as described in Installation (Page 37).

CAUTION

You must follow the assembly sequence step by step in order to install multiple flanged ends connected in parallel. The first step deals with the mechanical and the second with the electrical connection.

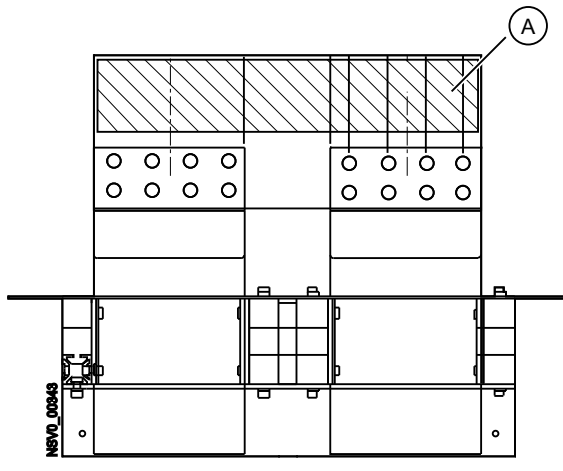


Figure 3-30 Using parallel connector "A" on the flanged end

3.8 Transformer connection

3.8.1 Transformer connection unit

The transformer connection unit connects the busbar trunking system to external transformers, both mechanically and electrically. The mechanical connection is only possible with encapsulated transformers on the transformer enclosure via the adapter flange LX-FLP.

However, you can also connect the transformer connection unit to other external power supplies, such as distribution boards for low-voltage main distribution systems or generators.

3.8.2 Storage prior to installation

Take note of the following when storing the transformer connection unit:

- Store the transformer connection unit in its original packaging and use site transportation equipment (pallet, fixing devices).
- Do not subject the transformer connection unit to any additional mechanical loads.

3.8.3 Transport on-site

- Only use appropriate transportation equipment to transport the transformer connection unit.
- Attach lifting aids such as fabric ropes and belts to the whole of the transformer connection unit.
- Use fabric slings to suspend the busbar trunking system elements. Attach the slings as shown in the illustration.
- The elements are supplied with special parts for securing the slings in place and for supporting their own weight.

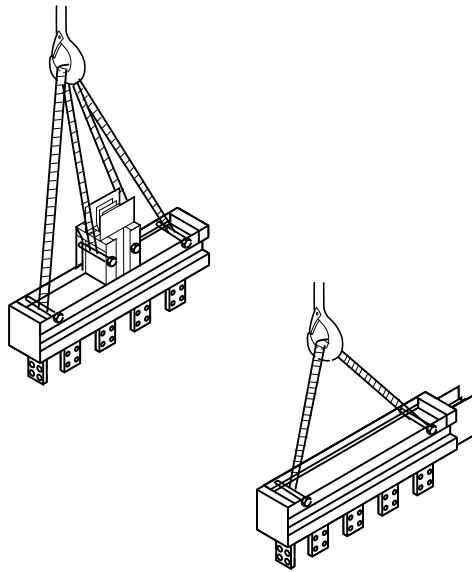


Figure 3-31 Transformer connection units

CAUTION

Never use abrasive or metal slings under any circumstances.

Never suspend the elements by their conductors, as this could potentially damage them beyond repair.

3.8.4 Positioning the transformer connection unit above the transformer

- Always position the connection lugs of the transformer connection unit over the centre of the transformer connection lugs; you may have to move the transformer to achieve this.
- Ensure that no more than 200 mm separate the connection lugs of the transformer connection unit and those of the transformer.
- Only use appropriate flexible connecting devices (such as flexible copper strips provided by the customer) to establish the electrical connection.

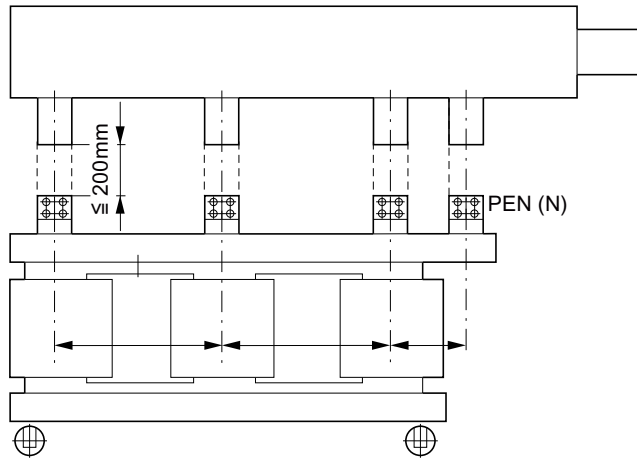


Figure 3-32 Positioning the transformer connection unit

3.8.5 Attaching the transformer connection unit at the installation location

The element can be suspended in the following ways:

- Via the LX clamping brackets on the on-site fixing struts provided by the customer
- Via the transport bolt eyes on the side of the element

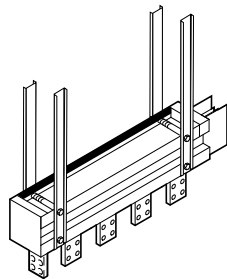


Figure 3-33 Attaching the transformer connection unit

3.8.6 Handling if multiple busbar runs are laid in parallel

Procedure

If busbar runs are laid in parallel, you must connect multiple transformer connection units in parallel too.

1. Mechanical connection:
When attaching the units above the transformer, the large amount of space required means that you must take particular note of the installation dimensions of the transformer connection units and the transformer.
2. Electrical connection:
The parallel connection is carried out using additional parallel connectors that must be provided by the customer. Refer to the supplied installation instructions for minimum specifications relating to the connecting surface and cross-section of the parallel connectors.

An installation engineer must inspect the external electrical and mechanical connections.

Note

It is beyond the scope of this manual to document the huge number of different on-site conditions that may arise. Therefore, we recommend that installation experts evaluate on-site conditions.

CAUTION

You must follow the assembly sequence step by step in order to install multiple transformer connection units connected in parallel. The first step deals with the mechanical and the second with the electrical connection.

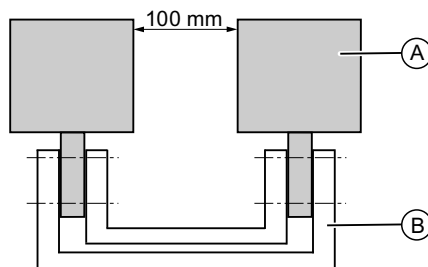
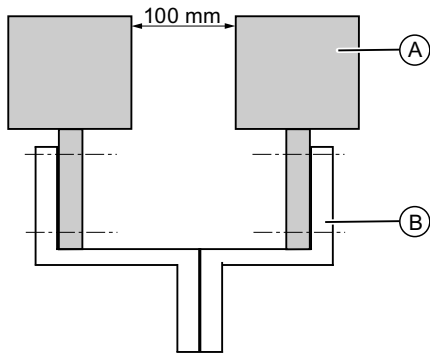


Figure 3-34 Example: Parallel connection only



- A Transformer connection unit
- B Parallel connector

Figure 3-35 Example: Parallel connection plus connection to transformer

3.9 Fire barrier

3.9.1 Fire barrier regulations

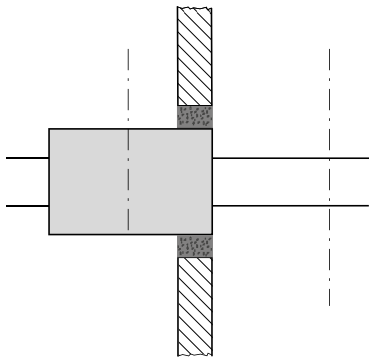
If the busbar run passes through a fire wall or ceiling, you must provide the run with a fire barrier. For individual systems, the fire barrier can be fitted around the busbar element in the factory prior to delivery. Alternatively, the busbar element and the fire barrier can also be supplied separately in an MOS version. It is then fitted to the busbar element on site. For double systems, the fire barrier can only be fitted to the busbar element in the factory. The MOS version is not available.

It is not permissible to mount the fire barrier via the junction (joint block).

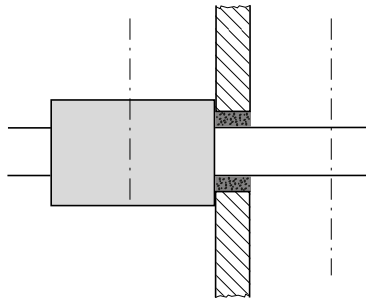
Note

Depending on country-specific regulations, it may be necessary to attach additional fire barrier notices directly at the installation site. Fire barrier signs required directly at the installation site.

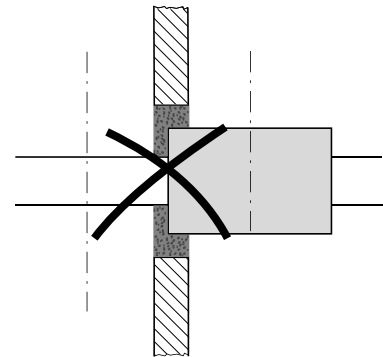
The following conditions must be met in order for fire barrier to be installed (see illustration):



Permissible fire barrier



Permissible fire barrier



Permissible fire barrier

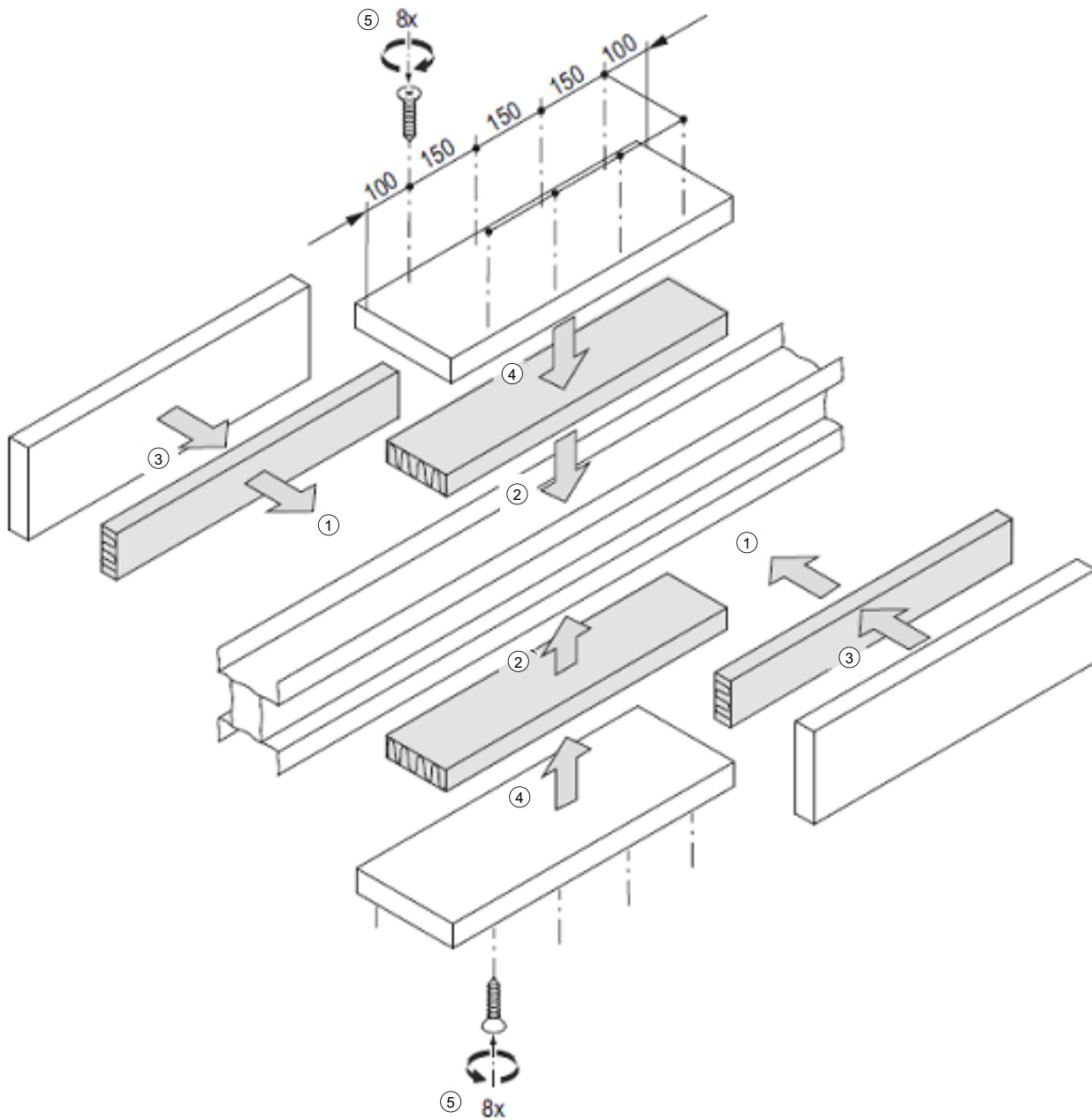
3.9.2 Installation of MOS fire barrier

Check the kit to ensure nothing is missing.

- Components for the inner fire barrier channel:
 - 4 Promat plates
 - 4 mineral mats
 - 16 fixing screws
- Components for the outer fire barrier channel:
 - 4 Promat outer plates
 - 2 Promat front plates
 - 32 fixing screws
- Other components:
 - 1 tube Promat filler
 - 4 Promat sealing blocks
 - 2 Promat fixing brackets for vertical assembly

3.9 Fire barrier

1. Install the first fire barrier cladding in 5 steps as shown below.
2. Once the LX system has been installed in the fire wall, use mineral mortar to fill the gap.




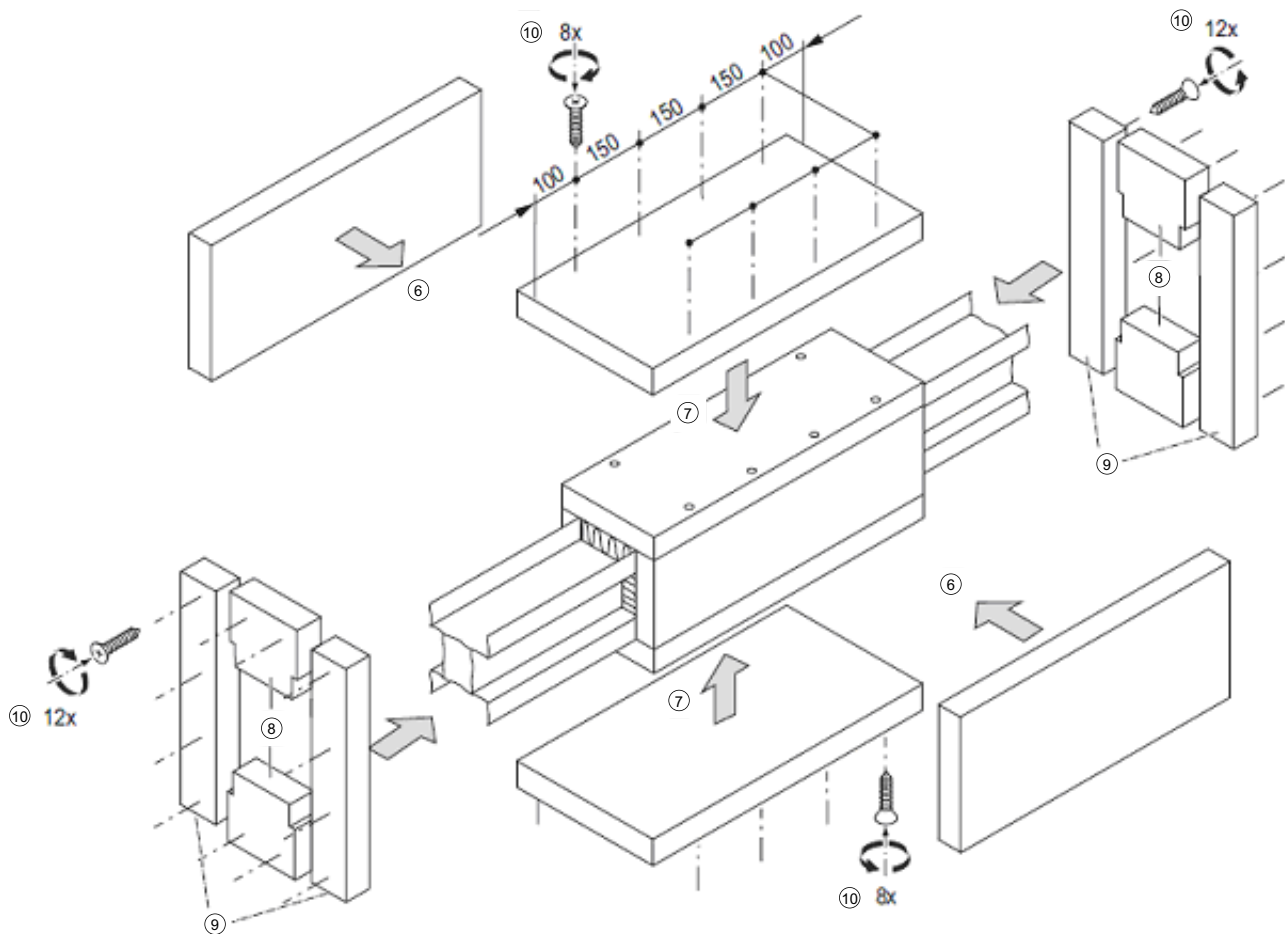
- ① 2x
- ② 2x
- ③ 2x 650 x (140/165/210/290)
- ④ 2x 650 x 197
- ⑤ 16x 

Figure 3-36 MOS fire barrier

3. Install the second fire barrier cladding in steps 6 to 10 as shown below.




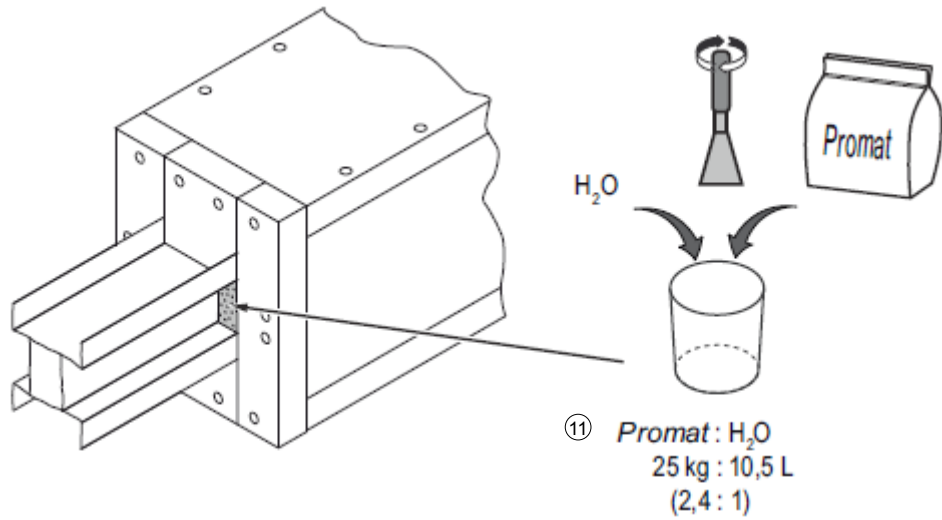
- ⑥ 2x 650 x (190/215/260/340)
- ⑦ 2x 650 x 247
- ⑧ 4x
- ⑨ 4x 50.5 x (242/266/312/392)
- ⑩ 40x 

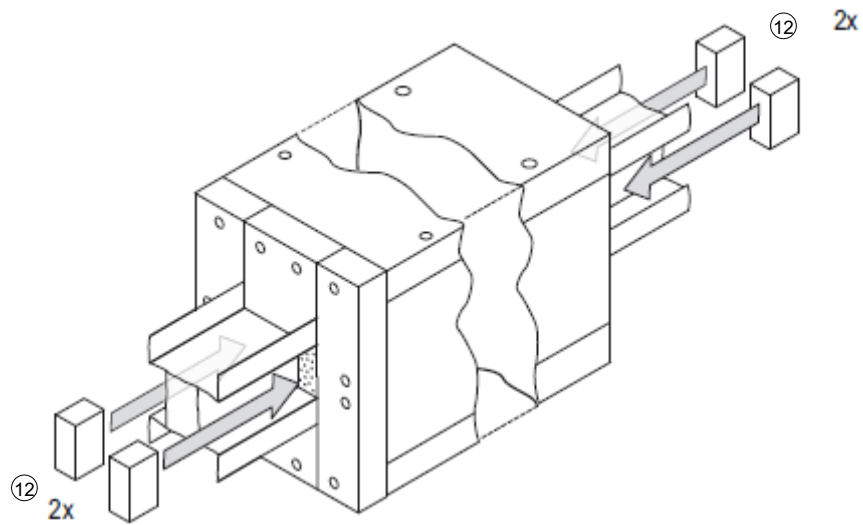
Figure 3-37 MOS fire barrier

4. Insert the filler (step 11) and the components (12) in the openings in the profile.



⑪ Filler

Figure 3-38 MOS fire barrier



⑫ Components

Figure 3-39 MOS fire barrier

Particular aspects of installation in a wall in compliance with the building authority approval Z19.15-1330

The building authority approval Z19.15-1330 is valid for the German market.

Wall barrier

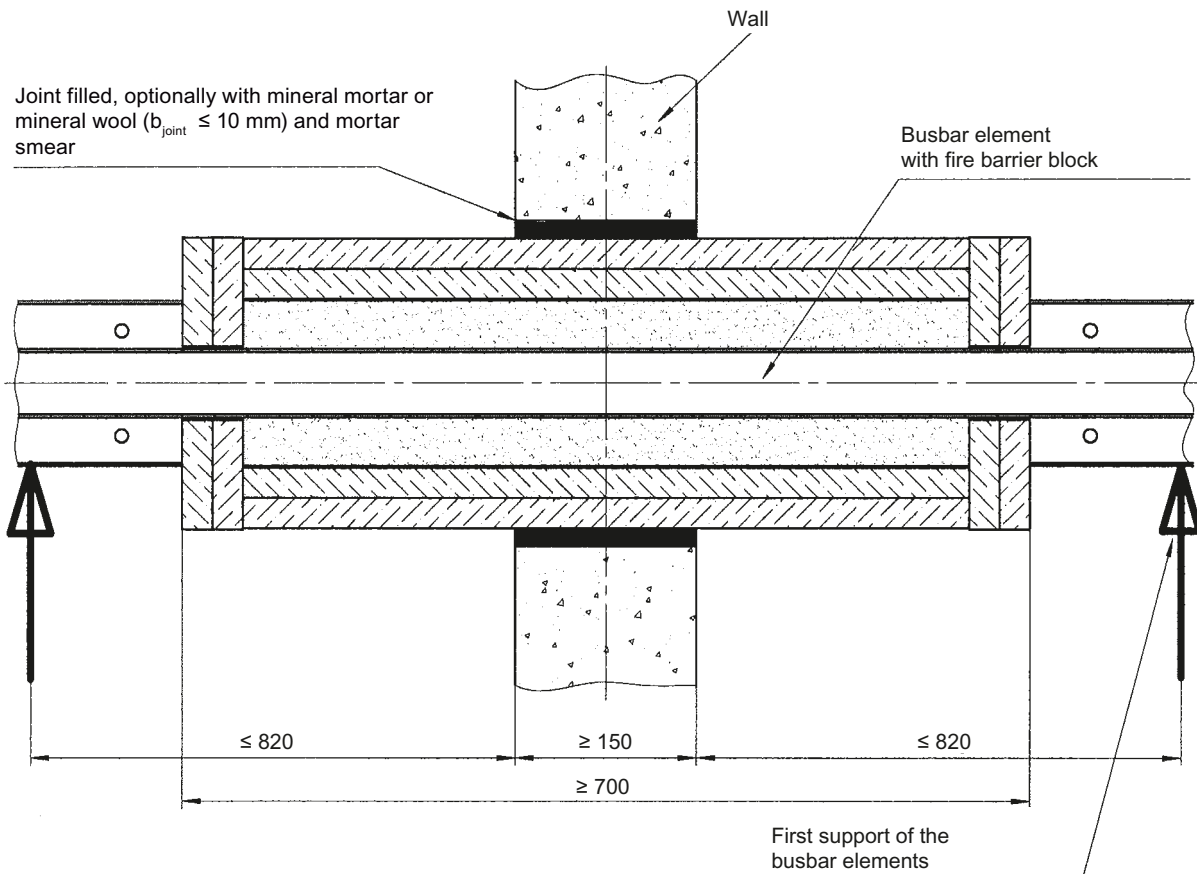


Figure 3-40 Max. permissible LX system fixing distances for wall installation

Ceiling barrier

Fire barrier block in centre in building shell opening
Installation tolerance ± 50 mm

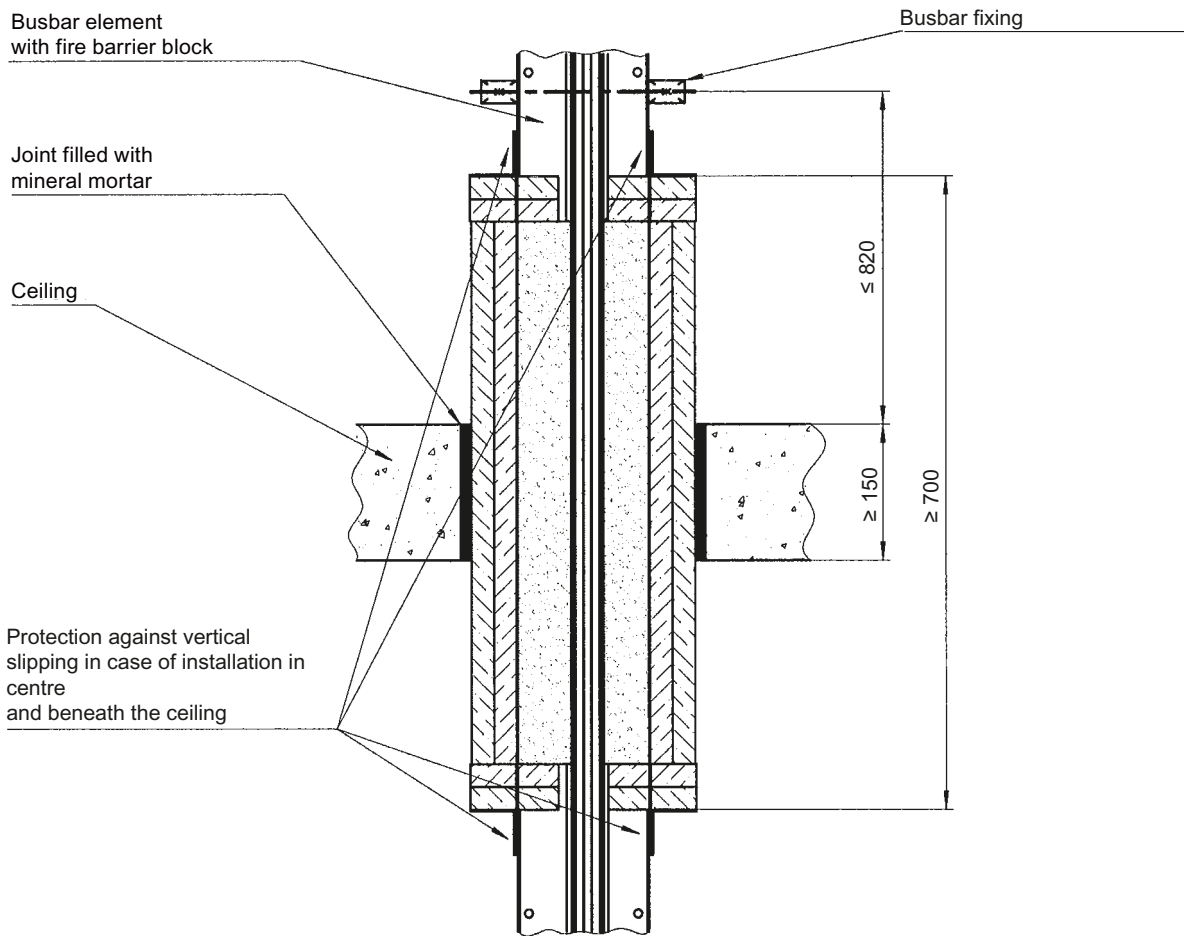


Figure 3-41 Max. permissible LX system fixing distances for centre ceiling installation

Fire barrier block, end side
adjoining the ceiling

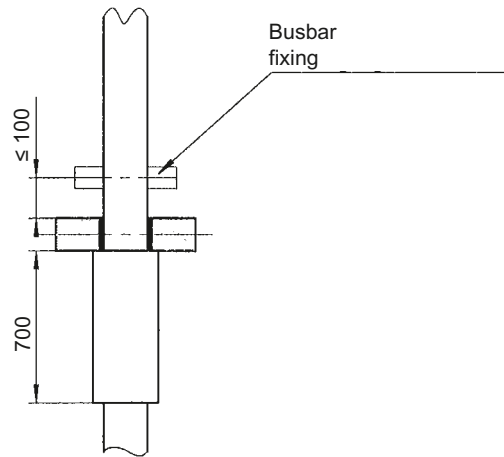


Figure 3-42 Max. permissible LX system fixing distances for ceiling surface installation

3.10 Tap-off unit

3.10.1 Tap-off units from 50 A to 630 A

1. These tap-off units are positioned at the tap-off points on the trunking. Power is tapped via the tap-off point.
2. See the relevant instructions for more details and instructions on mounting tap-off units.

Note

You must check the necessary space requirements prior to mounting.

These tap-off units cannot be positioned at junctions above a joint block. The necessary space requirements must be taken into account during the project design stage.

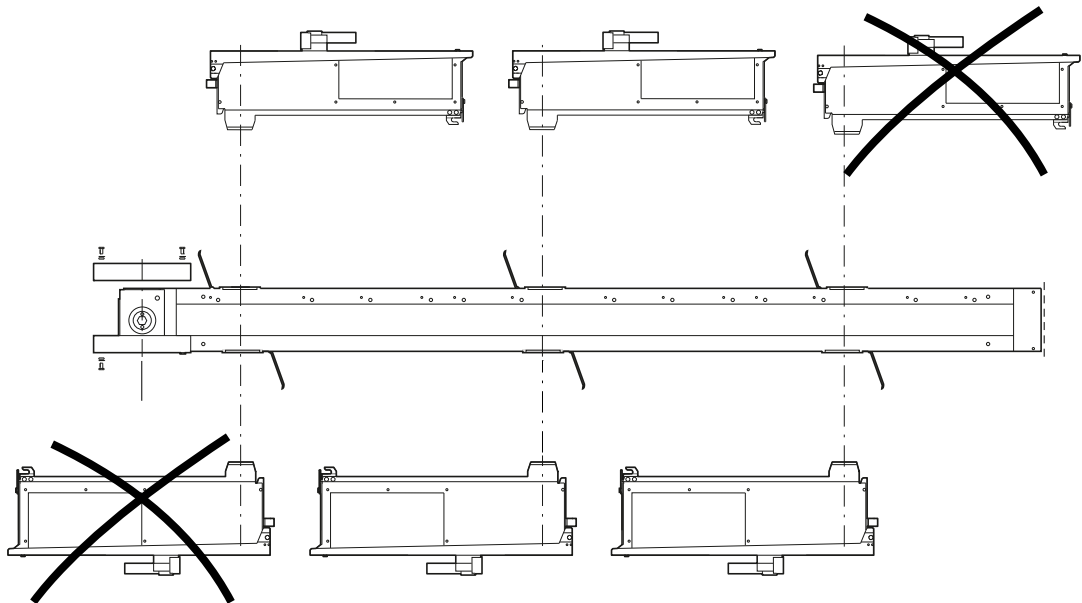


Figure 3-43 Space requirements for tap-off units

3.10.2 Tap-off units from 800 A to 1,250 A

1. These tap-off units are permanently mounted (bolted on) above the trunking's junction joint block.
2. This joint block must be replaced by a special tap-off joint block in order to enable power to be tapped.

3. Switch the voltage off and safeguard the run against restart in accordance with on-site regulations.
4. See the relevant installation instructions for more details and instructions on mounting tap-off units.

Note

You must check the necessary space requirements prior to mounting.

Tap-off units can only be mounted via straight trunking units with a minimum distance of 2000 mm from the centre of one joint block to the next. The necessary space requirements must be taken into account during the project design stage.

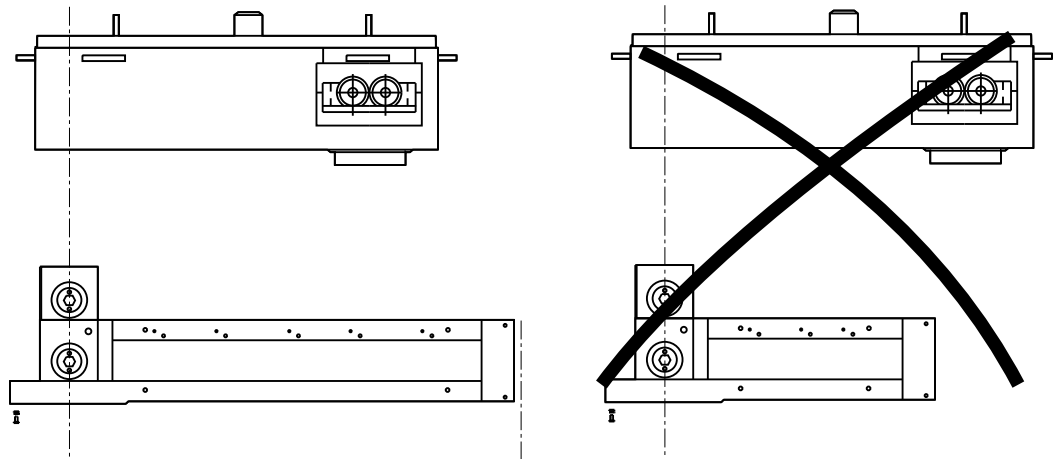
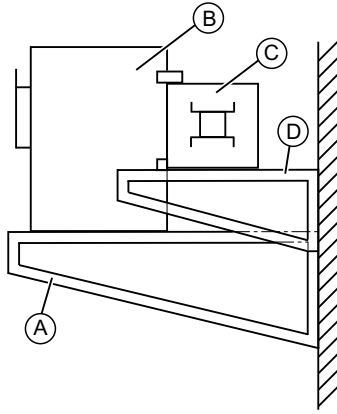


Figure 3-44 Plug-in compatibility of the tap-off units

3.10.3 Lateral mounting of tap-off units above 400 A in runs for horizontal installation

If the tap-off units are mounted laterally, the mechanical load caused by the weight of the units and the cables to be connected mean that we strongly recommend you use additional supports (beams or brackets).



- A Additional beam for tap-off unit
- B Tap-off unit
- C Busbar run
- D Beam for busbar run

Figure 3-45 Laterally mounted tap-off units should have additional mechanical support

Additional beams in line with A und D are not available as LX attachment accessories and must be procured externally.

Note

It is beyond the scope of this manual to document the huge number of different on-site conditions that may arise. Therefore, we recommend that installation experts evaluate on-site conditions.

4

Commissioning

4.1 Steps to be performed prior to electrification of the line

Steps to be performed prior to electrification of the line

 **WARNING**

Hazardous voltage! Danger of death or serious injury! Therefore, proceed with extreme caution and follow these instructions carefully.

1. Check that all connections are fully tightened. Follow the instructions relating to tightening torques (visual inspection with record of results).
2. Check all suspension and fixing elements. All the fixing studs and screws of the fixing brackets must be tightened.
3. Make sure that all tap-off units and tapping equipment is disconnected (OFF).
4. Insulate the busbar trunking system from the connections to transformers, switches, meters, etc.
5. Carry out an insulation resistance test to make sure that there are no short circuits or earth failures in the system (phase - earth, phase - neutral and phase - phase). You will observe that the readings vary depending on the length of the run, the number and size of the conductors and the level of moisture in the atmosphere. Record the measured values in an insulation test report.
If you obtain readings lower than 1 M Ω per 100 m (1 M Ω x 100/length of run in metres), please contact technical support. As a rule, you must comply with the relevant country-specific regulations (in Germany, this is a minimum of 0.5 M Ω).
6. Check that the poles on the busbar trunking system and those on the transformers, switches, meters, etc. correspond correctly on electrification.

4.2 Electrifying the line

Electrifying the line



WARNING

Hazardous voltage! Danger of death or serious injury! The first time that the busbar trunking system conductors are electrified can be dangerous. Therefore, you must follow the instructions below to the letter, along with the country-specific regulations valid in each case.

1. Qualified personnel must be present the first time the line is electrified. If short circuits or earth failures caused by incorrect installation have not been previously detected, this can lead to serious consequences once voltage is applied.
2. There must be no electrical load connected to the busbar trunking system when it is electrified; the entire system must be checked to ensure that this is the case.
3. You must electrify the line step by step, starting at the power supply and moving towards the loads at the end. The principal elements must be electrified first, followed by the feed equipment and, finally, the secondary element circuits. You must act with purpose and conviction when connecting the line.
4. Once the line has been connected, consumers such as lights, contactors, heaters and motors can be switched on.
5. In normal operation the busbar trunking system will produce a slight buzzing sound. Excessive noise may indicate that components have not been properly secured or metal parts have been incorrectly assembled.
6. Faults caused by short circuits must trigger the protective device for the feeder unit in the manner prescribed by the official regulations. You must ensure that the system is de-energised before you eliminate the cause of the fault. Observe the five safety rules:
 1. Disconnect;
 2. Safeguard against restart;
 3. Ensure the system is de-energised;
 4. Earth and short circuit;
 5. Cover and safeguard neighbouring live parts.

Service and maintenance

The LX busbar trunking system is maintenance-free as long as the following conditions are met:

- Assembly was performed in line with the valid guidelines as per the installation instructions and the installation manual.
- Commissioning was performed correctly and then checked and logged with insulation measurements and visual inspections.
- There are no extreme mechanical loads due to external forces or significant impairment due to foreign bodies or dust.
- There are no extreme stresses/loads due to water or liquids.
- There are no extreme stresses/loads due to aggressive media.
- There are no other malfunction-based loads/stresses due to short circuits, fire or gas.

This maintenance-free claim does not include devices fitted in tap-off units, feeder units or coupling units. The instructions on their maintenance should be taken from the respective manuals/documentation supplied with the devices.

If any of the conditions listed above cannot be guaranteed, you should consult your SIEMENS contact directly.

Please also get in touch with your SIEMENS contact for any additional inspections that have to be performed regularly for the erector and operator due to country-specific standards, regulations on accident prevention and safety, as well as for special work areas.

Expansions


As a flexible power distribution board, the LX busbar trunking system can in principle adapt to meet local needs in terms of loads and can also be expanded for new loads.


As a first stage it can be sufficient simply to plug existing or new tap-off units into existing, unused tap-off points. If there are no more tap-off points available or if certain buildings/areas are not supplied by the LX, it is necessary in a second stage to extend the LX run with appropriate trunking units. This involves removing the busbar trunking system element from the LX run.

Dismantling busbar trunking system elements

It may sometimes be necessary to dismantle a length of the busbar trunking system for the purposes of expansion or replacement.

These instructions indicate the correct procedure to follow in such a case.

 WARNING
Before disconnecting, take the switching capacity of the busbar trunking system protector element into consideration. <ul style="list-style-type: none">• All power must be disconnected before you disconnect the busbar trunking system.• The header protection systems must be disconnected in order to insulate the busbar trunking system.

 WARNING
Remember to completely disconnect the line before handling. Observe the five safety rules: <ol style="list-style-type: none">1. Disconnect2. Safeguard against restart3. Ensure the system is de-energised4. Earth and short circuit5. Cover and safeguard neighbouring live parts

NOTICE
Only qualified personnel with electrotechnical knowledge may perform the operations indicated in this section.

5.1 Dismantling a busbar trunking system element in a horizontal line

1. Disconnect all power to the busbar trunking system.
2. Disconnect the busbar trunking system from the supply.
3. Fully insulate the busbar trunking system and safeguard it against restart.
4. Completely release the joint blocks of the relevant elements (see the section titled "Dismantling junctions" in this chapter).

The first element must be removed in a transversal direction. All other elements can be removed in a longitudinal or transversal direction.

The busbar trunking system must be handled in accordance with the installation instructions (see installation instructions).

5.2 Dismantling a busbar trunking system element in a vertical line

1. Disconnect the line in accordance with the aforementioned instructions, "Dismantling a busbar trunking system element".
2. Let the busbar trunking system cool until the expansion disappears and the run reassumes its initial length (this takes 12 hours at the most).
3. Fix the entire vertical line in place by blocking the springs of all brackets for vertical installation on the respective line
4. by (manually) threading the red nuts F (2) onto the spigot until they make contact with the profile of support G. Do not tighten the nuts.

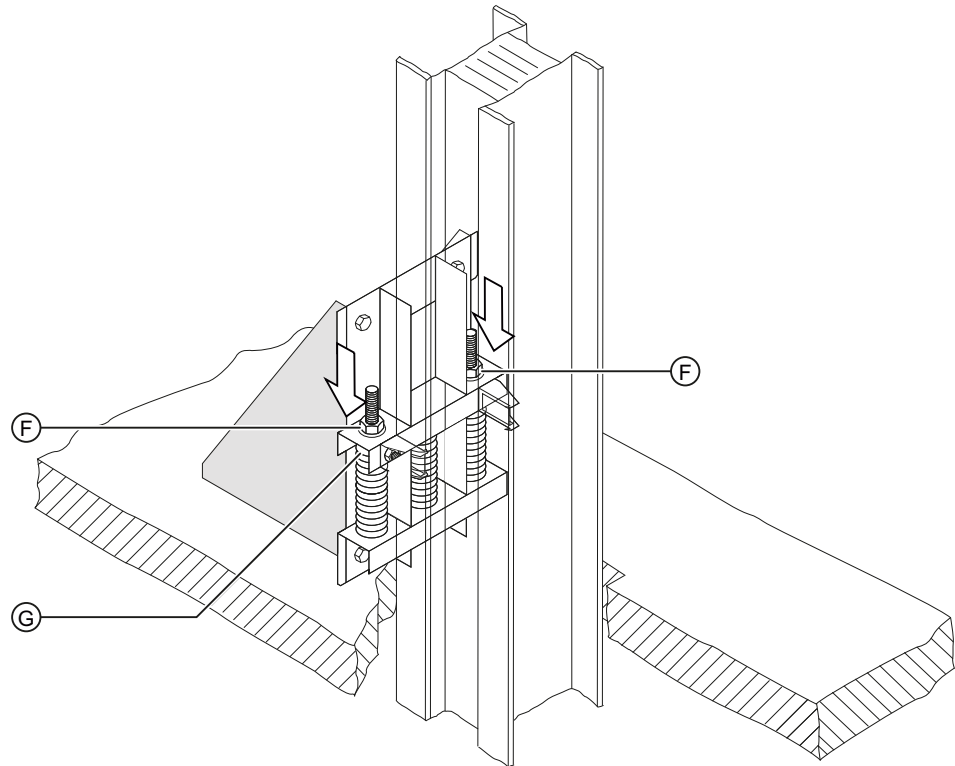


Figure 5-1 Brackets for vertical installation

NOTICE

Lock the brackets for vertical installation before removing the weight of the busbar trunking system, otherwise the brackets will have to be readjusted.

5. Completely release the joint blocks of the element to be dismantled.
6. Release and remove the retaining clamps from the fixing bracket.
7. Remove the element (see operating manual).

8. The first element must be removed in a transversal direction. All other elements can be removed in a longitudinal or transversal direction.
9. The busbar trunking system must be handled in accordance with the installation instructions (see installation instructions).

5.3 Dismantling joint blocks

1. Completely disconnect the busbar trunking system from the mains before dismantling a junction in order to avoid accidents. Disconnect the busbar trunking system by following the instructions found in the section titled "Dismantling a length of the busbar trunking system" in this chapter.
2. Slacken the 4 screws "A" of the upper cover "B" of the joint block and remove the cover "B".
3. Slacken and remove the connection nut "C" using a suitable tool "D".
4. Slacken the 4 screws "E" of the lower cover "F" of the joint block and remove the cover "F".

CAUTION
Make sure that the joint block does not slide out!

5. Slacken and remove the joining screw (C).

The junction has now been released and the joint block can be removed.

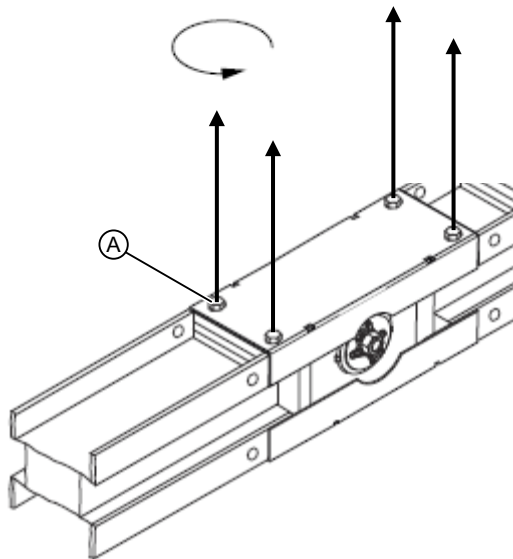


Figure 5-2 Removing joint blocks - Step 1

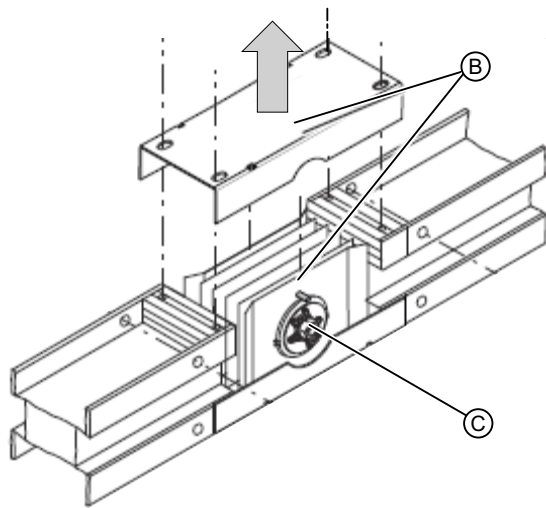


Figure 5-3 Removing joint blocks - Step 2

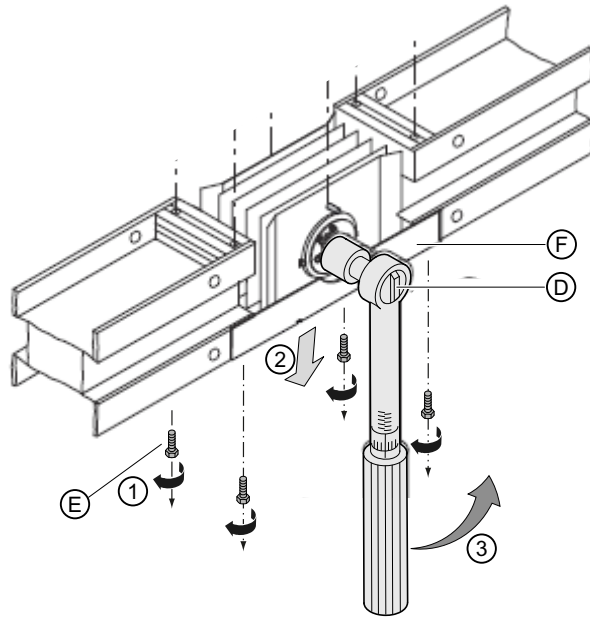


Figure 5-4 Removing joint blocks - Step 3

5.4 Reassembling joint blocks

CAUTION

Ensure that all contact surfaces are clean and free of impurities.
--

1. Assemble the rear junction cover "F" without fully tightening the screws that hold it. The cover acts as a separator and a horizontal support for the junction.
2. Insert the joint block "G" so that it is correctly centred between the two elements to be connected. Align the correct position of the joint block with the aid of the relevant pin. The pin must engage in the control opening of the respective flange cover. This ensures the correct position of the joint block.
3. Use a torque spanner to gradually tighten the joining screw "C" without stopping, until a tightening torque of 120 Nm is reached.
4. Mark the tightened joining screw with clearly visible sealing wax for inspection purposes.

CAUTION

The screw "C" must have a tightening torque of exactly 120 Nm for the connection to work correctly, both mechanically and electrically.

5. Close the joint block using the upper cover "B" and fully tighten it using the screws "A". Make sure that the pin fits in the control opening.

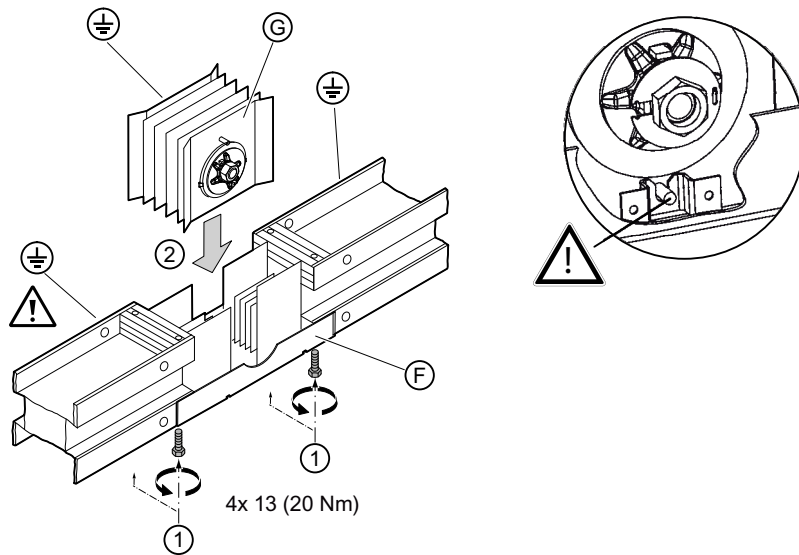


Figure 5-5 Refitting joint blocks - Step 1

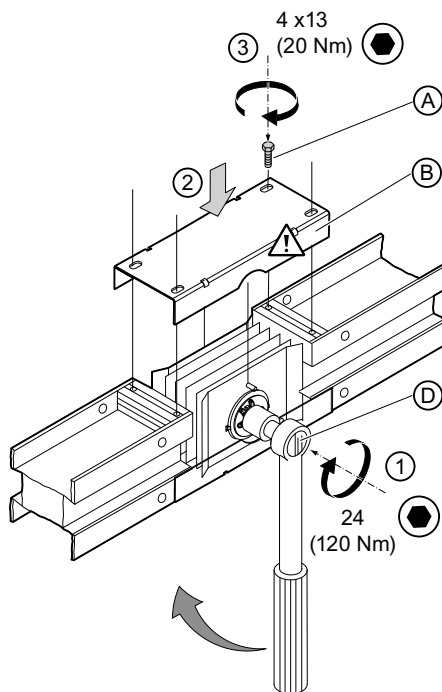


Figure 5-6 Refitting joint blocks - Step 2

Note

Please also refer to Connecting units (Page 27) for a more detailed description of how to assemble joint blocks.

Weights

Number of busbars	Conduct or material	Type	Busbar run		Feeder units		
			Run	Expansion unit	Flanged end (FA)	Transformer connection (AS.)	Cable infeed (KE.)
			[kg/m]	[kg/m]	[kg/piece]	[kg/piece] ²⁾	[kg/piece]
3	Al	LXA0130	9,6	s. LXC0130	1)	1)	1)
3	Al	LXA0230	10,6	s. LXC0230	1)	1)	1)
3	Al	LXA0430	13,3	s. LXC0430	1)	1)	1)
3	Al	LXA0530	17,8	33,5	22,8	1)	1)
3	Al	LXA0630	21,8	s. LXC0630	1)	1)	1)
3	Al	LXA0730	26,3	s. LXC0730	1)	1)	1)
6	Al	LXA0830	35,5	s. LXC0830	1)	1)	1)
6	Al	LXA0930	43,4	s. LXC0930	1)	1)	1)
6	Al	LXA1030	52,1	103,4	67,2	1)	1)
3	Cu	LXC0130	15	15,6	10	1)	1)
3	Cu	LXC0230	17,8	18	11,7	1)	1)
3	Cu	LXC0330	19,9	19,8	13	1)	1)
3	Cu	LXC0430	24,2	32,7	15,4	1)	1)
3	Cu	LXC0530	28,6	27,5	17,6	1)	1)
3	Cu	LXC0630	44	41	26,7	1)	1)
3	Cu	LXC0730	55,8	51,6	33,5	1)	1)
6	Cu	LXC0830	70,7	67,6	44	1)	1)
6	Cu	LXC0930	87,8	82,4	53,5	1)	1)
4	Al	LXA0151(..41)	10,6	s. LXC0151	1)	35,9	120
4	Al	LXA0251(..41)	12	s. LXC0251	1)	38,5	120
4	Al	LXA0451(..41)	15,2	s. LXC0451	1)	45,1	122
4	Al	LXA0551(..41)	20,8	44,6	30,4	50,4	130
4	Al	LXA0651(..41)	25,6	s. LXC0651	1)	67,1	128
8	Al	LXA0851(..41)	42	s. LXC0851	1)	114,4	134
8	Al	LXA0951(..41)	51,3	s. LXC0951	1)	135,1	1)
8	Al	LXA1051(..41)	62,6	137,9	89,6	157,7	1)
4	Cu	LXC0151(..41)	17,9	20,7	13,4	33,2	120
4	Cu	LXC0251(..41)	21,6	24	15,6	64,0	120
4	Cu	LXC0351(..41)	24,1	26,4	17,1	70,2	122
4	Cu	LXC0451(..41)	29,7	31,5	20,5	83,8	122
4	Cu	LXC0651(..41)	55,2	54,7	35,6	146,1	134
4	Cu	LXC0751(..41)	70,6	68,8	44,7	183,3	134

Number of busbars	Conduct or material	Type	Busbar run		Feeder units		
			Run	Expansion unit	Flanged end (FA)	Transformer connection (AS.)	Cable infeed (KE.)
			[kg/m]	[kg/m]	[kg/piece]	[kg/piece] ²⁾	[kg/piece]
8	Cu	LXC0851 (.41)	88,9	90,1	58,6	240,5	1)
8	Cu	LXC0951 (.41)	110,5	109,8	71,4	292,8	1)
5	Al	LXA0152 (.61)	11,6	s. LXC0152	1)	1)	1)
5	Al	LXA0252 (.61)	13,3	s. LXC0252	1)	1)	1)
5	Al	LXA0452 (.61)	17	s. LXC0452	1)	1)	1)
5	Al	LXA0552 (.61)	23,8	59,5	40,5	1)	1)
5	Al	LXA0652 (.61)	29,3	s. LXC0652	1)	1)	1)
5	Al	LXA0752 (.61)	36,3	s. LXC0752	1)	1)	1)
10	Al	LXA0852 (.61)	48,5	s. LXC0852	1)	1)	1)
10	Al	LXA0952 (.61)	59,2	s. LXC0952	1)	1)	1)
10	Al	LXA1052 (.61)	73,2	184	119,5	1)	1)
5	Cu	LXC0152 (.53, ..61)	20,7	27,6	17,9	1)	1)
5	Cu	LXC0252 (.53, ..61)	25,3	32	20,8	1)	1)
5	Cu	LXC0352 (.53, ..61)	28,2	35,2	22,8	1)	1)
5	Cu	LXC0452 (.53, ..61)	35,2	42	27,3	1)	1)
5	Cu	LXC0552 (.53, ..61)	41,9	48,8	31,2	1)	1)
5	Cu	LXC0652 (.53, ..61)	66,3	73	47,5	1)	1)
5	Cu	LXC0752 (.53, ..61)	85,5	92	59,6	1)	1)
8	Al	LXA0851 (.41)	42	s. LXC0851	1)	114,4	134
10	Cu	LXC0852 (.53, ..61)	107,2	120	78,1	1)	1)
10	Cu	LXC0952 (.53, ..61)	133,2	146,4	95,2	1)	1)
6	Al	LXA0162	12,6	s. LXC0162	1)	1)	1)
6	Al	LXA0262	14,7	s. LXC0262	1)	1)	1)
6	Al	LXA0462	18,9	s. LXC0462	1)	1)	1)
6	Al	LXA0562	26,8	66,5	51,8	1)	1)
6	Al	LXA0662	33,1	s. LXC0662	1)	1)	1)
6	Al	LXA0762	41,3	s. LXC0762	1)	1)	1)
12	Al	LXA0862	55	s. LXC0862	1)	1)	1)
12	Al	LXA0962	67,2	s. LXC0962	1)	1)	1)
12	Al	LXA1062	83,7	1)	1)	1)	1)
6	Cu	LXC0162 (.54)	23,5	37,6	24,3	1)	1)
6	Cu	LXC0262 (.54)	29	43,6	28,4	1)	1)
6	Cu	LXC0362 (.54)	32,4	48	31	1)	1)
6	Cu	LXC0462 (.54)	40,8	57,3	37,3	1)	1)
6	Cu	LXC0562 (.54)	48,6	77,2	42,5	1)	1)
6	Cu	LXC0662 (.54)	77,5	99,5	64,7	1)	1)
6	Cu	LXC0762 (.54)	100,4	125	81,2	1)	1)

Number of busbars	Conduct or material	Type	Busbar run		Feeder units		
			Run	Expansion unit	Flanged end (FA)	Transformer connection (AS.)	Cable infeed (KE.)
			[kg/m]	[kg/m]	[kg/piece]	[kg/piece] ²⁾	[kg/piece]
12	Cu	LXC0862 (..54)	125,4	163,8	106	1)	1)
12	Cu	LXC0962 (..54)	155,9	200	129	1)	1)

¹⁾ On request

²⁾ Applies to the maximum length of the terminal box determined by the phase space

Tap-off units

Type	Weight [kg]
LX-AK5 (6) / FSH-125...-3S	9,6
LX-AK5 (6) / FSH-125...-4S	10,1
LX-AK5 (6) / FSH-250...-3S	20,5
LX-AK5 (6) / FSH-250...-4S	21,8
LX-AK5 (6) / FSH-400...-3S	32,9
LX-AK5 (6) / FSH-400...-4S	34,2
LX-AK5 / FSH-630...-3S	50
LX-AK5 / FSH-630...-4S	53
LX-AK6 / FSH-630...-3S	53
LX-AK6 / FSH-630...-4S	56
LX-AK5 (6) / LSH-DC (AE) 50 (...125) -HS	9,5
LX-AK5 (6) / LSH-EM (EC) 50 (...125) -HS	11
LX-AK5 / LSH-EC160 (...315) -HS	20,5
LX-AK6 / LSH-DC (AE) 160 (...315) -HS	19
LX-AK5 (6) / LSH-DC (AE) 400-HS	37,2
LX-AK5 (6) / LSH-EC400-HS	40
LX-AK5 / LSH-DC (AE) 630-HS	44
LX-AK5 / LSH-EC630-HS	45
LX-AK6 / LSH-DC (AE) 630-HS	47
LX-AK6 / LSH-EC630-HS	48
LX-AK5 / LSH-AE800 (....1250)-LS	155
LX-AK5 / LSH-BE800 (....1250)-LS	163

Test reports

The following test reports are available for commissioning and for maintenance/expansion purposes:

- Test report for inspecting assembled joint blocks on initial assembly
- Test report for inspecting assembled joint blocks on subsequent assembly
- Insulation test report

7.1 Test report for inspecting assembled joint blocks on initial assembly

Test report	
For inspecting assembled joint blocks on initial assembly for SIEMENS LX busbar systems	
Customer:	Type of installation:
Contact:	Site:
Street:	Manufacturer/Type:
City/Post code:	Year of manufacture:
Consignment no.:	Run number / designation:
Date:	Run length:
Test starts at position no.:	Drawing coord.:
Date of drawing:	Sheet no.:

Drawing coordinates	Position	Joint block initial assembly, red control ring removed	New bolt joint(s), sealed with wax	Other remarks	Test as a whole
Place:	Date:	Tester's signature:			

7.2 Test report for inspecting assembled joint blocks on subsequent assembly

7.2 Test report for inspecting assembled joint blocks on subsequent assembly

Test report	
For inspecting assembled joint blocks on subsequent assembly for SIEMENS LX busbar systems	
Customer:	Type of installation:
Contact:	Site:
Street:	Manufacturer/Type:
City/Post code:	Year of manufacture:
Consignment no.:	Run number / designation:
Date:	Run length:
Test starts at position no.:	Drawing coord.:
Date of drawing:	Sheet no.:

Drawing coordinates	Position	Joint block subsequent assembly, at a tightening torque of 120 Nm	Bolt joint(s), sealed with wax	Other remarks	Test as a whole
Place:	Date:	Tester's signature:			

7.3 Insulation test report

Insulation test report		
For inspecting assembled joint blocks on initial assembly for SIEMENS LX busbar systems		
Customer:	Type of installation:	
Contact:	Site:	
Street:	Manufacturer/Type:	
City/Post code:	Year of manufacture:	
Consignment no.:	Run number / designation:	
Date:	Run length:	
Meter data:		
Meter manufacturer:	Type:	Direct measuring circuit voltage:
Climate data:		
Time:		
Air temperature:		
Humidity:		

!! There must be no loads connected when the insulation resistance is tested !!

!! The insulation resistance must be at least 1 megohm !!

System design: 4-pole 5-pole

Specify measured values in megohms.

Component	N-PE	L1-L2	L2-L3	L3-L1	L1-PE	L2-PE	L3-PE	L1-N	L2-N	L3-N	L1-PEN	L2-PEN	L3-PEN
We hereby confirm that the measurements given above were performed correctly.													
Place:		Date:			Tester's signature:								

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