

Set Series

# EasySet MV STANDARD

Medium Voltage Distribution 12 kV

Air-insulated Switchgear with Vacuum Switching Devices

## Installation Manual

GEX2564100-02

10/2025



# Legal Information

The information provided in this document contains general descriptions, technical characteristics and/or recommendations related to products/solutions.

This document is not intended as a substitute for a detailed study or operational and site-specific development or schematic plan. It is not to be used for determining suitability or reliability of the products/solutions for specific user applications. It is the duty of any such user to perform or have any professional expert of its choice (integrator, specifier or the like) perform the appropriate and comprehensive risk analysis, evaluation and testing of the products/solutions with respect to the relevant specific application or use thereof.

The Schneider Electric brand and any trademarks of Schneider Electric SE and its subsidiaries referred to in this document are the property of Schneider Electric SE or its subsidiaries. All other brands may be trademarks of their respective owner.

This document and its content are protected under applicable copyright laws and provided for informative use only. No part of this document may be reproduced or transmitted in any form or by any means (electronic, mechanical, photocopying, recording, or otherwise), for any purpose, without the prior written permission of Schneider Electric.

Schneider Electric does not grant any right or license for commercial use of the document or its content, except for a non-exclusive and personal license to consult it on an "as is" basis.

Schneider Electric reserves the right to make changes or updates with respect to or in the content of this document or the format thereof, at any time without notice.

**To the extent permitted by applicable law, no responsibility or liability is assumed by Schneider Electric and its subsidiaries for any errors or omissions in the informational content of this document, as well as any non-intended use or misuse of the content thereof.**

## Set Series

Featuring outstanding medium-voltage (MV) and low-voltage (LV) switchboards, motor control centres and power distribution solutions for high-performance power applications, Schneider Electric Set Series provides optimized solutions based on high levels of safety and an optimized footprint. Built on a modular architecture and incorporating smart connected devices for maximum safety, reliability, performance and energy efficiency, the Set Series is delivered to customers directly from our Schneider Electric plants or via a global network of licensed partner panel builders, who are trained and audited to provide quality equipment and support.

---

# Table of Contents

Safety Information.....	5
About the Document .....	7
Safety Provisions .....	8
Environmental and Operating Conditions.....	9
Utilization in Line with the Intended Purpose .....	10
Disposal After the End of the Useful Life .....	10
Design and Description .....	11
Panel Design.....	11
Panel Variants .....	13
Feeder Panels with Switching Devices .....	15
Panels for Bus Section .....	15
Panels with Busbar Voltage Transformer and Earthing Switch .....	17
Dimensions and Weights (Without Packaging) .....	19
EasySet MV Series Ratings .....	20
Nameplate .....	21
Technical Data of Electrical Control and Operating Devices .....	21
Packaging, Transport, Delivery, and Storage .....	23
Shipping Units .....	23
Transport .....	24
Storage.....	26
Access to the Main Circuit Compartments .....	28
Safety Provisions.....	28
Access to the Cable Compartment.....	28
Removing the Rear Cable Compartment Cover .....	28
Access to Switching Device Compartment.....	29
Opening and Closing the Front Door .....	29
Removal and Insertion of the Low-Voltage Connector .....	30
Extracting the Circuit Breaker from the Panel .....	31
Insertion of the Circuit Breaker into the Panel .....	32
Access to the Busbar Compartment .....	33
Top Access.....	33
Assembly.....	35
Safety Provisions.....	35
Important Information for Assembly.....	35
Requirements Regarding the Switchgear Room.....	36
Transport of the Panels/Circuit Breakers on the Construction Site .....	38
Transport using a Crane .....	38
Transport on the Floor .....	39
Transport of Circuit Breakers .....	39
Aligning and Fastening Panels.....	41
Screw-Fastening the Panels to One Another.....	44
Busbar Assembly .....	45
Arrangement of Busbars in Branch-Circuit Panels .....	45
Arrangement of the Lower Busbars in Bus Section Couplers .....	45
Mounting Busbars .....	45
Assembly of the Earth Bus .....	47
High-Voltage Connection.....	49

---

Overview of Cable Connection System .....	49
Connection of High-Voltage Cables.....	50
<b>Commissioning .....</b>	<b>53</b>
Final Steps.....	53
Checking Switching Functions and Interlocks .....	54
Power Frequency Test of Busbar (Optional) .....	55
Cable Test after Assembly .....	56
<b>Annexure .....</b>	<b>58</b>
Screw Fastenings .....	58
Required Tools (not Included in the Scope of Supplies).....	59
Operation Accessories .....	60
Transport Trolley for Circuit Breaker .....	60
Handling Crane for Circuit Breaker (Optional).....	61

# Safety Information

## Important Information

Read these instructions carefully and look at the equipment to become familiar with the device before trying to install, operate, service, or maintain it. The following special messages may appear throughout this documentation or on the equipment to warn of potential hazards or to call attention to information that clarifies or simplifies a procedure.



The addition of this symbol to a “Danger” or “Warning” safety message indicates that an electrical hazard exists which will result in death or serious injury if the instructions are not followed.



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages with this symbol to avoid possible injury or death.

### **⚠ DANGER**

**DANGER** indicates a hazardous situation which, if not avoided, **will result in death or serious injury.**

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

### **⚠ WARNING**

**WARNING** indicates a hazardous situation which, if not avoided, **could result in death or serious injury.**

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

### **⚠ CAUTION**

**CAUTION** indicates a hazardous situation which, if not avoided, **could result in minor or moderate injury.**

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

### **NOTICE**

NOTICE is used to address practices not related to physical injury.

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

## Please Note

Electrical equipment should be installed, operated, serviced, and maintained only by qualified personnel. No responsibility is assumed by Schneider Electric for any consequences arising out of the use of this material.

A qualified personnel is one who has skills and knowledge related to the construction, installation, and operation of electrical equipment and its installation, and has received safety training to recognize and avoid the hazards involved.

## Safety Precautions

### Safety Rules

#### **DANGER**

##### **HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH**

- Apply appropriate personal protective equipment (PPE) and follow safe electrical work practices. See NFPA 70E or CSA Z462. personnel.
- This equipment must only be installed and serviced by qualified electrical personnel.
- Turn off all power supplies of the equipment before working on or inside equipment.
- Respect the LOTO (Lock Out Tag Out) procedure.
- Always use a properly rated voltage sensing device to confirm that power is off.
- Put all devices, doors, and covers back into place before turning on power to this equipment.
- Beware of potential hazards, and carefully inspect the work area for tools and objects that may have been left inside the equipment.
- Never go behind the panel when it is energized.

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

#### **NOTICE**

##### **HAZARD OF DEGRADED EQUIPMENT PERFORMANCE**

- Comply with the handling rules and avoid causing any shocks to the device.
- If the equipment is stored before its final installation, ensure the storage conditions.

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

## Cleaning Instructions

#### **DANGER**

##### **HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH**

- Do not use solvents or alcohol for cleaning the equipment.
- Do not use high-pressure cleaner for cleaning the equipment.

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

# About the Document

## Intended Use

This installation manual describes air-insulated medium-voltage switchgear units of the series EasySet MV standard.

It is exclusively intended for use by the manufacturers staff or by persons certified for the EasySet MV series (training certificate).

Read instructions before operating, servicing, or doing maintenance of the equipment.

This installation manual is an integral part of the product and should be stored so that it is readily accessible at all times for and can be used by persons who are to work on the switchgear. If the switchgear is relocated to another site, this installation manual must be passed on to the new operators along with the unit.

As our products are subject to continuous development; we reserve the right to make changes regarding the standards, illustrations, and technical data described in this installation manual.

This installation manual cannot describe every imaginable individual case or every customer-specific version of the product. For information which is not included in this manual, contact the manufacturer.

All dimensional data in this manual is in millimeters.

## Related Documents

The following additional documents must be complied with:

- Purchase agreement with the stipulations regarding the switchgear-specific equipment and the legal details.
- The appropriate switchgear-specific circuit diagrams or documentation.
- The operating manuals of the low-voltage devices installed in the switchgear (for example, voltage presence detecting systems and devices in low-voltage cabinet).
- The assembly drawings supplied with the equipment.
- The assembly instructions of the manufacturer of the cable connection systems to be connected to the switchgear.
- The operating instructions of the trucks being used

Title of Document	Reference Number
EasyPact EXE Vacuum Circuit Breaker up to 17.5 kV	NNZ5908501
EasySet MV User Guide	GEX2563900-02
EasyPact EXE User Guide	BQT6143100

# Safety Provisions

Read the following instructions carefully before you work on the switchgear, and perform the work detailed in them as described. Do not perform any work which is not described in this guide.

## Applicable Standards and Regulations

Series EasySet MV switchgear units with vacuum switching devices are:

- IEC 62271-200: 2021: AC metal-enclosed switchgear and control gear for rated voltages above 1 kV and up to and including 52 kV.
- EN 50110-1: Operation of electrical equipment:
- The locally applicable standards and regulations related to accident prevention, operating and work instructions. These national standards must be compliant with the international standards above.
- Metal-enclosed; loss of service continuity category accordance IEC 62271-200: 2021 LSC 2B-PM.
- Type-tested.
- Optional: tested for internal faults (qualification Internal arc classification (IAC))<sup>(1)</sup>.
- Dimensioned for indoor installation.

<sup>(1)</sup> Contact to Schneider Electric Sales team.

### DANGER

#### HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

Before performing mounting and maintenance work, comply with the below safety rules:

- On the earthing and testing truck or panel, de-energize the system, verify it for zero voltage and earth the system according to the applicable safety rules pursuant to EN50110-1.
- After removal of covers, isolate the appropriate part of the switchgear unit from the power supply, for the operator safety in accordance to IEC 62271-200.
- On the drive mechanism, switch off the supply voltage and prevent it from reclosing.
- Release the energy-storing device by: an OFF–ON–OFF operating sequence for the circuit breaker and a closing via the make proof earthing switch.

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

The EasySet MV switchgear units meet the following standards and regulations:

Designation	IEC/EN-Standard
Switchgear	IEC 62271-200: 2011 IEC 62271-1: 2017
IAC	IEC 62271-200: 2011
Circuit breaker	IEC 62271-100: 2017
Earthing switch	IEC 62271-102: 2018
Current transformer	IEC 61869-2: 2012
Voltage transformer	IEC 61869-3: 2011
Protection against accidental contact, foreign bodies and water	IEC 62271-200: 2011 IEC 60529: 2013
Operation of electrical equipment	EN 50110-1

Degrees of protection against accidental contact and foreign objects according to IEC 60529: 2013	
External enclosure of panel	IP4X
Between the compartments of the panel	IP2X

## Environmental and Operating Conditions

EasySet MV is an indoor switchgear and may only be operated under normal conditions in accordance with IEC 62271-1: 2017.

Operation under conditions deviating from these is only admissible subject to consultation with and written approval from the manufacturer.

Ambient conditions in accordance with IEC 62271-1: 2017	
Temperature class	-5 °C Indoors <sup>(1)</sup>
Ambient temperature minimum or maximum	-5 °C/+45 °C <sup>(1)</sup>
Average value over 24 hours	≤ 35 °C
Mean relative air humidity: 24 hours/1 month	≤ 95%/≤ 90%
Installation altitude above sea-level	≤1000 m
<sup>(1)</sup> Higher values available on request.	

## Utilization in Line with the Intended Purpose

EasySet MV series air-insulated medium-voltage switchgear units are designed exclusively for switching and distributing electrical power. They may only be used in the scope of the specified standards and the switchgear-specific technical data. Any other utilization constitutes improper use and may result in dangers or damage of equipment.

### **⚠ WARNING**

#### **HAZARD OF INCORRECT ASSEMBLY, USE AND OPERATION**

- Only use the EasySet MV series air-insulated medium-voltage switchgear units in the scope of the specified standards and the switchgear-specific technical data.
- Operate the EasySet MV series air-insulated medium-voltage switchgear unit according to its intended use.
- Assemble, connect, or operate the EasySet MV series air-insulated medium-voltage switchgear unit properly.
- Use accessories or spare parts which have been approved by the manufacturer.
- Do not convert the switchgear or attach inadmissible parts without the manufacturers approval.

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

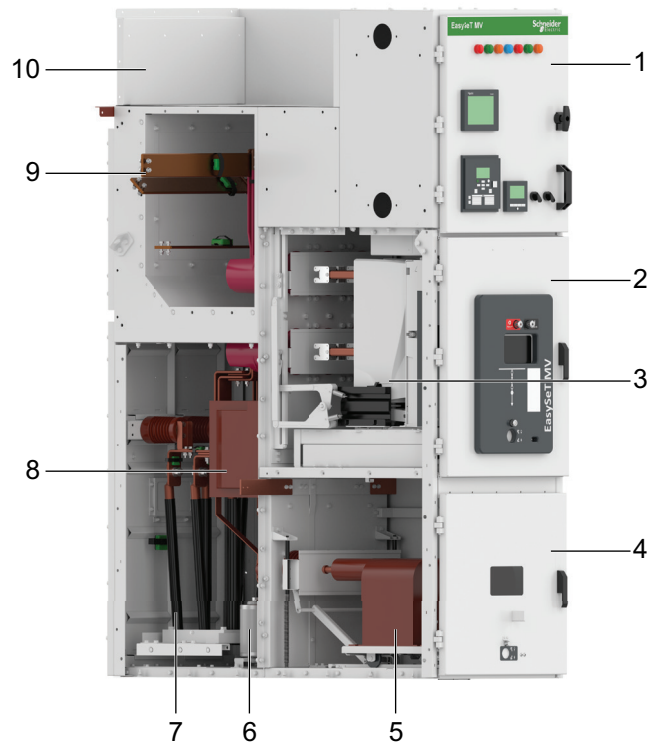
## Disposal After the End of the Useful Life

A material and recycling data sheet can be provided on request for the disposal of series EasySet MV switchgear at the end of its service life.

Disposal is performed as a service by the manufacturers service center which to payment.

# Design and Description

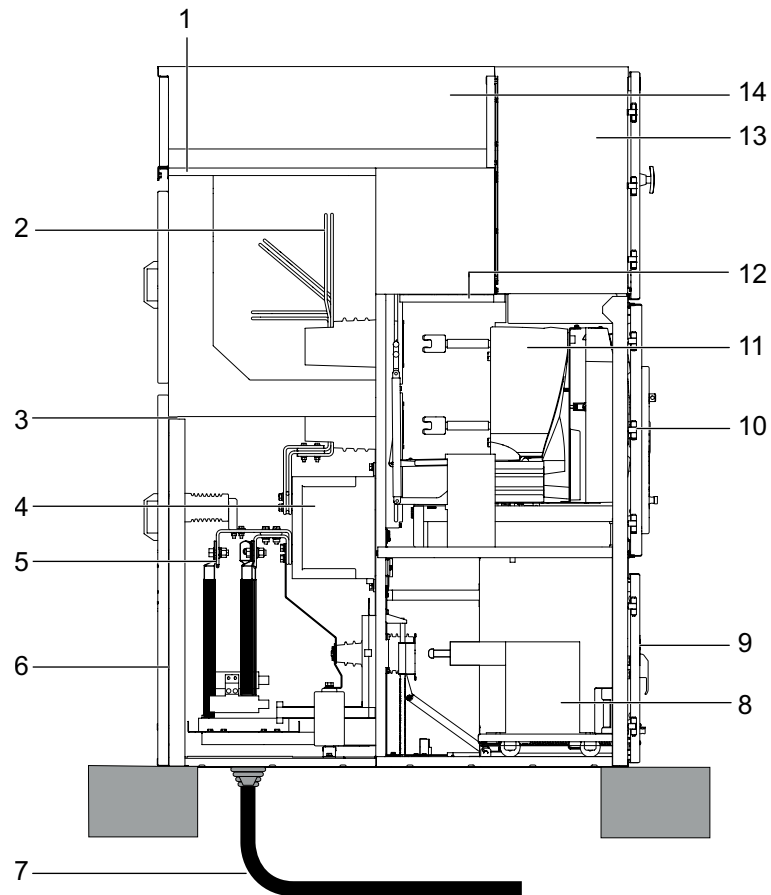
## Panel Design



**Figure 1**  
Feeder Panel EasySet MV 12 with Circuit Breaker Truck EasyPact EXE  
(for rated currents  $\leq 2000$  A)

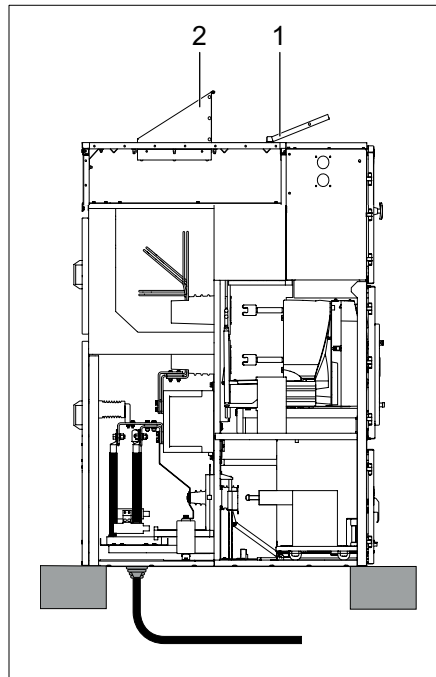
1	Low-voltage compartment door	6	Surge arresters
2	Circuit breaker compartment door	7	MV cables
3	Circuit breaker EasyPact EXE	8	Current transformers
4	Voltage transformer compartment door	9	Main busbar
5	Voltage transformers	10	Panel frame

**NOTE:** Image is for representation purpose. Actual color of component or product may differ from document.



**Figure 2**  
Feeder Panel with Circuit Breaker Truck EasyPact EXE  
(for rated currents  $\leq 2000$  A)

1	Pressure relief flap from busbar chamber	8	Voltage transformer
2	Busbars	9	Voltage transformer compartment door
3	Pressure relief flap from cable chamber	10	Circuit breaker compartment door
4	Current transformer	11	Easypact EXE circuit breaker
5	Cable connection	12	Pressure relief flap from CB chamber
6	Cable compartment cover	13	Low voltage compartment
7	HV cable	14	Pressure relief duct



**Figure 3**  
Panel with Internal Arc Classification (IAC)

- 1 Deflector
- 2 Pressure relief duct

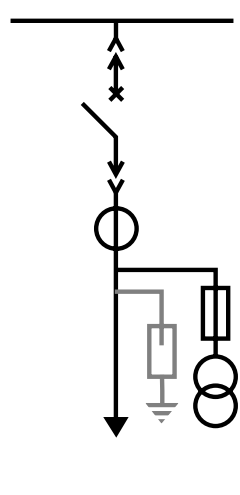
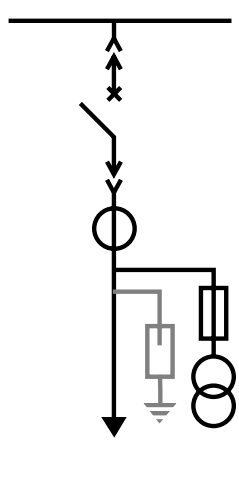
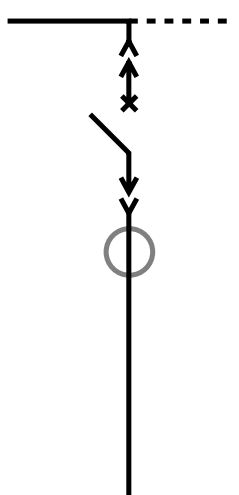
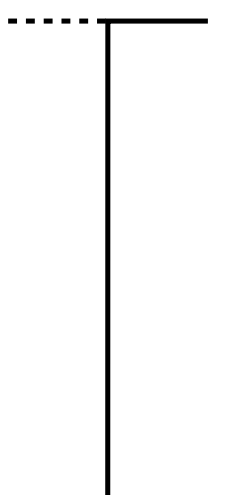
## Panel Variants

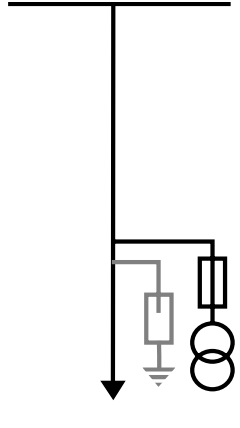
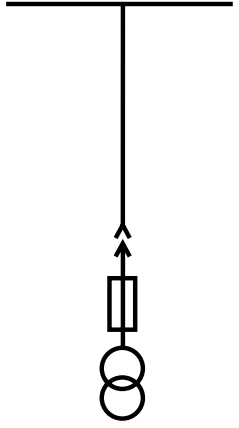
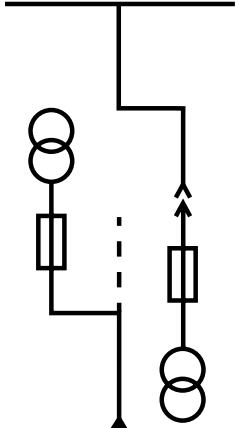
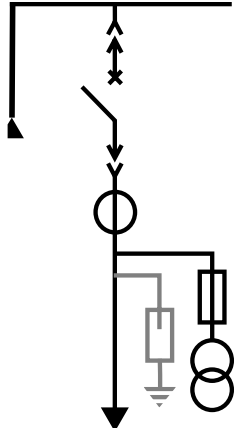
The sub-chapters always show panel types with the appropriate basic equipment. Customized models with additional equipment are described in the switchgear-specific documentation.

## Functional Overview

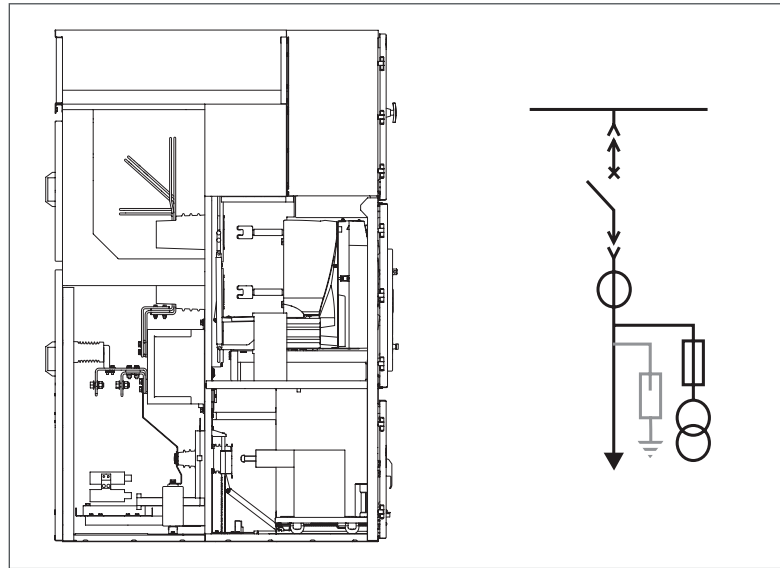
EasySet MV has a comprehensive range of functions to suit all requirements for many applications.

The table below can be used to link requirements to functional units and gives basic information on the general composition of each unit.

Panel Architecture	Feeder		Bus coupler	Bus riser
Application	Line transformer/ generator	Line transformer/ motor/capacitor	Bus section coupler	Bus section riser
Main device	Circuit breaker	Circuit breaker	Circuit breaker	Fix copper bar
Type of device	EasyPact EXE	EasyPact EXE	EasyPact EXE	Copper bar
Panel function	Incomer	Outgoing	Bus sectioning	
Panel name, code	F	F	BSC	BSR
Single line diagram				

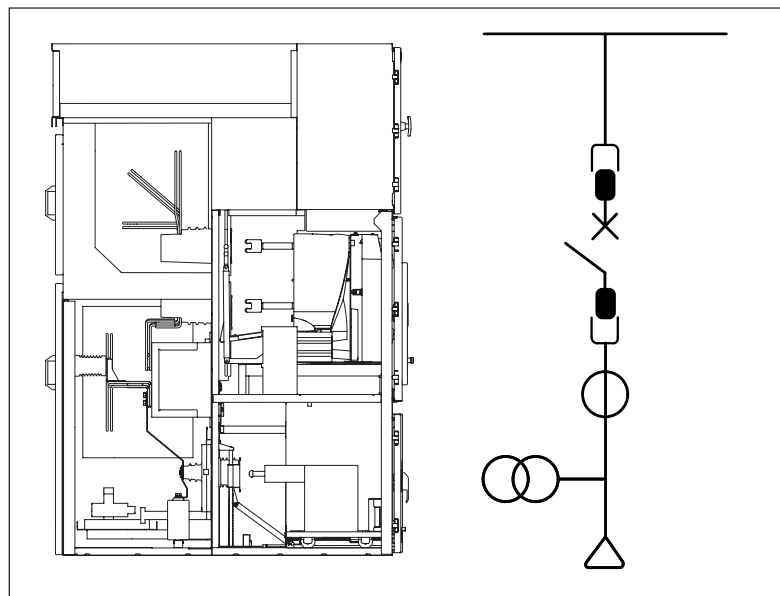
Panel Architecture	Metering			Incoming and Outgoing
Application	Line PT	Bus PT	Line and bus PT	ICOG
Main device	Voltage Transformer	Voltage Transformer	Voltage Transformer	Circuit Breaker
Type of device	NA	NA	NA	EasyPact EXE
Panel function	Line side voltage metering	Busbar voltage metering	Line side and busbar voltage metering	Single incoming and outgoing panel
Panel name, code	LPT	BPT	BLPT	ICOG
Single line diagram				

## Feeder Panels with Switching Devices

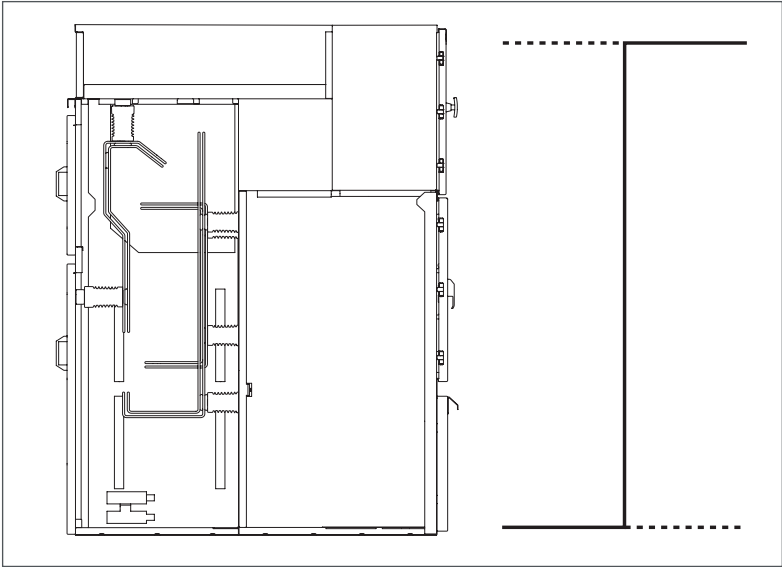


**Figure 4**  
Feeder Panel with Circuit Breaker Truck EasyPact EXE (for rated currents < 2000 A) and Voltage Transformer (optional)

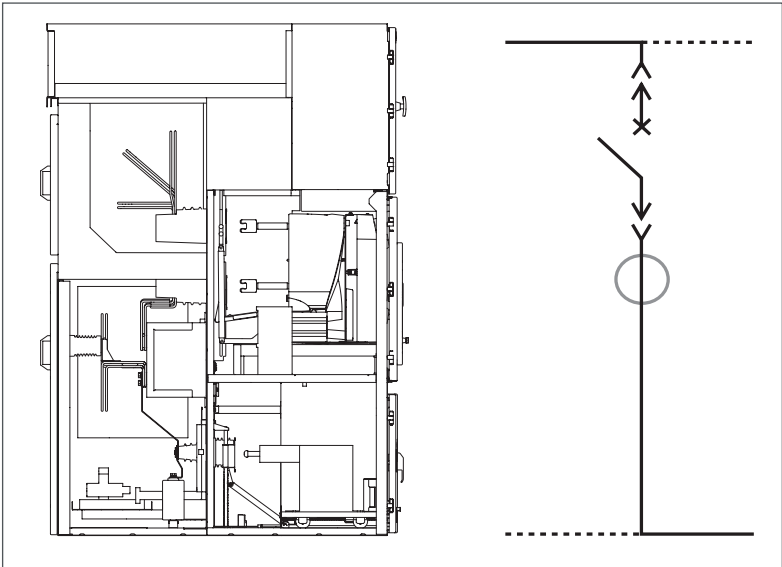
## Panels for Bus Section



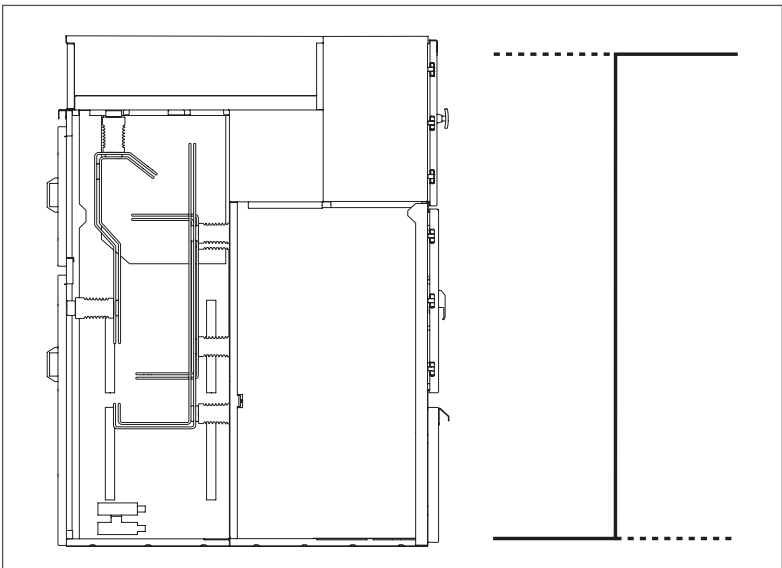
**Figure 5**  
Bus Section Coupler Circuit Breaker Panel



**Figure 6**  
Bus Riser Panel with EasyPact EXE

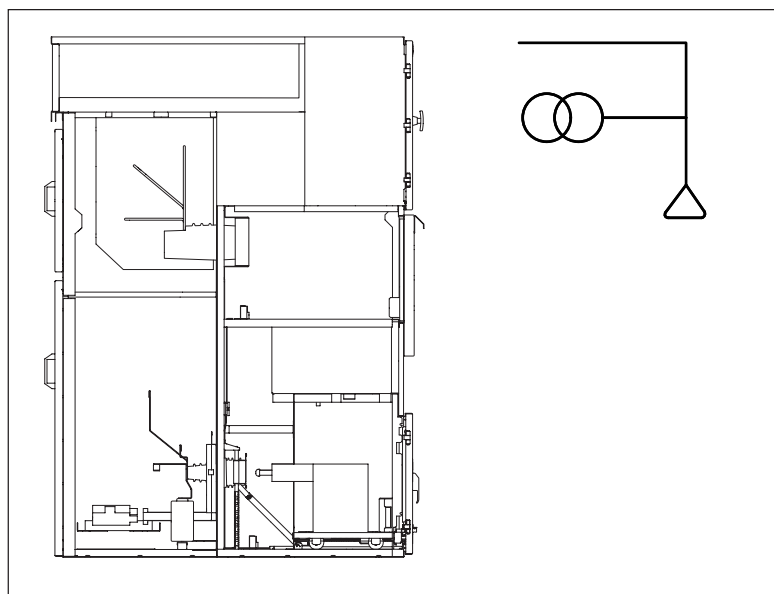


**Figure 7**  
Bus Section Coupler Bus Riser Panel with EasyPact EXE

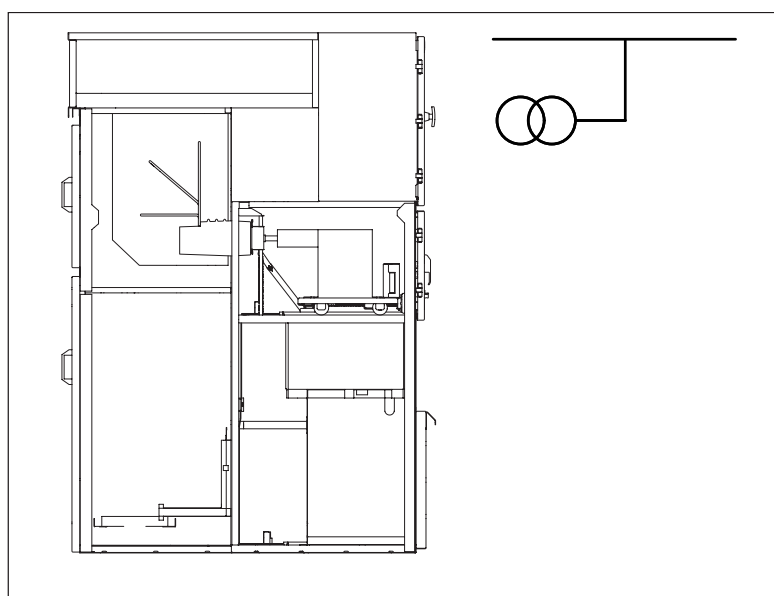


**Figure 8**  
Bus Section Coupler Bus Riser Panel

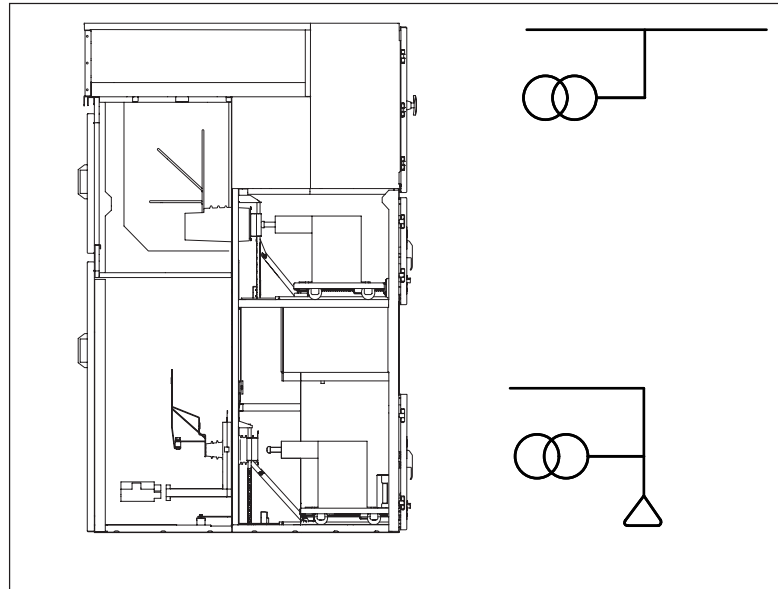
## Panels with Busbar Voltage Transformer and Earthing Switch



**Figure 9**  
Metering Panel with Line Side Metering Truck



**Figure 10**  
Metering Panel with Busbar Voltage Metering Truck

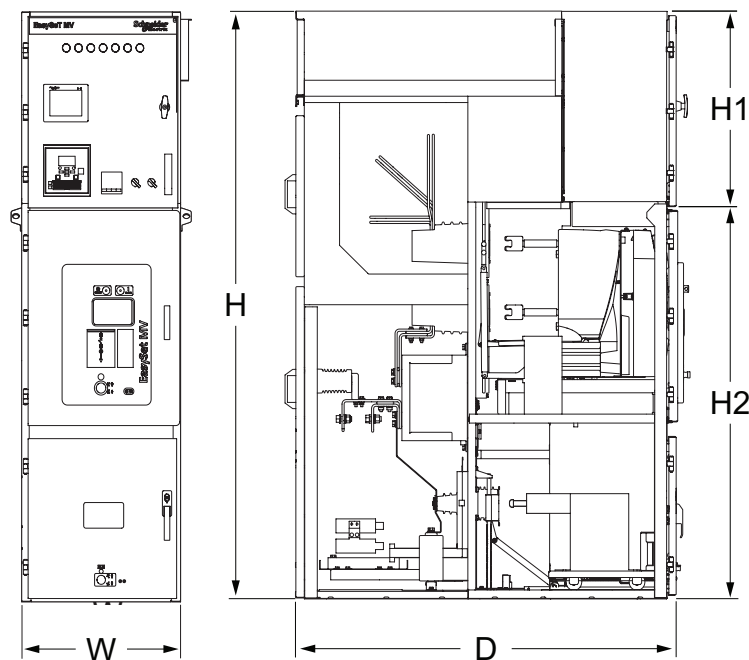


**Figure 11**  
Metering Panel with Line Side and Busbar Voltage Metering Truck and Busbar Earthing Switch

## Dimensions and Weights (Without Packaging)

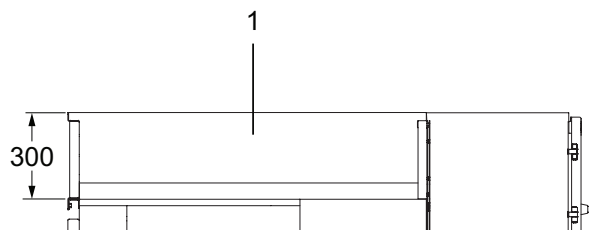
For the precise panel dimensions, refer to the switchgear-specific documentation. These depend on:

- Rated voltage
- Rated normal current
- Rated short-time current and
- Additional equipment:
  - Busbar or fan attachments
  - Rear high voltage cable connection



**Figure 12**  
Dimensions of EasySet MV Panels

- W Panel width
- H Panel height (depending on height of low-voltage compartment)
- H1 Height of low-voltage compartment
- H2 Panel height without low-voltage compartment and attachments
- D Panel depth



**Figure 13**  
Dimensions of Deflector

- 1 Deflector

## EasySet MV Series Ratings

Rated voltage	$U_r$	kV	12
Rated lightning impulse withstand voltage	$U_p$	kV	75
Rated power frequency withstand voltage	$U_d$	kV	28
Rated frequency	f	Hz	50/60
Rated short circuit breaking current	$I_{sc}$	kA	up to 26.3
Rated peak withstand current	$I_p@50\text{ Hz}$	kV	65.75
Rated duration of short circuit	$t_k$	s	3
Rated current busbar	max $I_r$ bb	A	up to 2000 <sup>(1)</sup>
Rated current circuit breaker	$I_r$	A	800
			1250
			2000
Dimensions	H	mm	2100
	D	mm	1450
	W	mm	600
Approximate mass		kg	600
<sup>(1)</sup> For the rated current busbar requirement of 2000 A, contact Schneider Electric.			

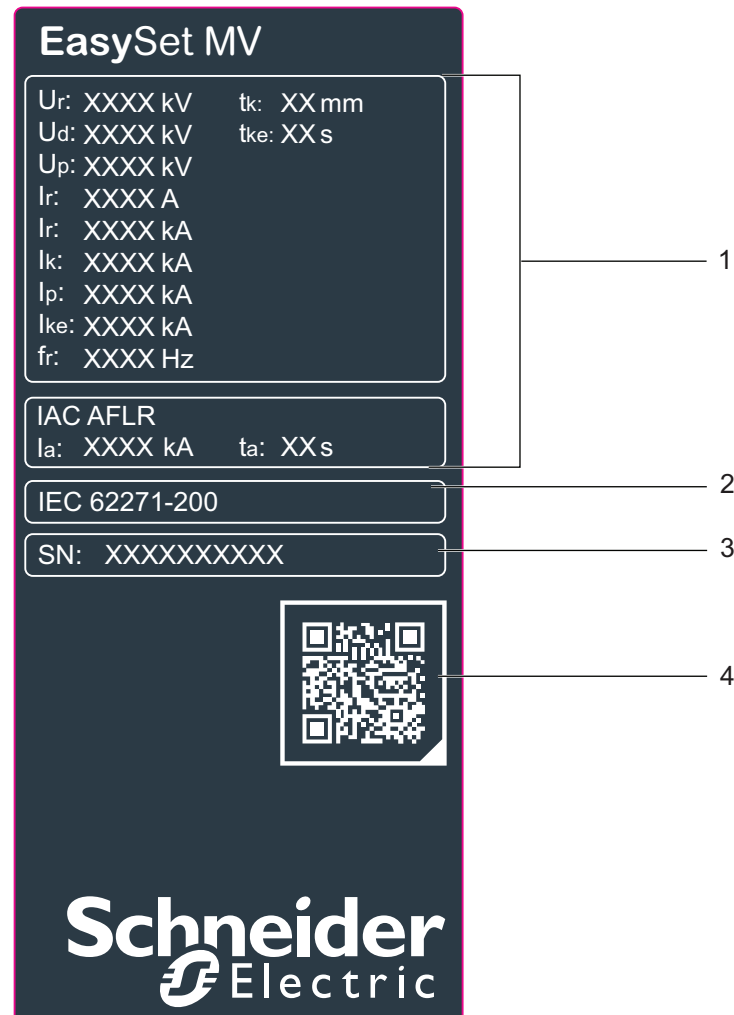
The applicable panel-specific technical data are indicated on the nameplate (refer to Nameplate, page 21) and in the switchgear-specific documentation.

The technical data of the switching device (EasyPact EXE) are indicated on the nameplate and in the operating manual of the device concerned.

## Nameplate

The type designation on the nameplates on the front of the panels (see Figure 14) informs about essential technical data. The information below is required when submitting enquiries to the manufacturer or ordering spare parts:

- Type designation
- Serial number
- Year of construction



**Figure 14**  
Nameplate on the Front Panel

- |                    |                        |
|--------------------|------------------------|
| 1 Technical data   | 3 Serial number        |
| 2 Type designation | 4 Year of construction |

## Technical Data of Electrical Control and Operating Devices

The switchgear panels have been designed on principle so as to permit manual operation.

The drive mechanisms of the individual switching devices can be equipped, depending on the specific customers model, with additional electrical control and

operating devices. These are defined in the switchgear-specific circuit diagram (refer switchgear documentation).

Component fitting options:

- Auxiliary switches are always actuated directly by the truck or by the switch shaft via an intermediate linkage. Their position always corresponds to that of the main contacts. The switching functions have been set in the factory according to the circuit diagram.
- Micro-switches are used depending on the customized panel models.

Supply	Overview of rated supply voltages (V)					
Direct voltage DC	24	48	60	110	125	220
Alternating voltage AC	(110)/120			(220)/230		

Device	Rated power consumption	
	DC approximately. [W]	AC 50/60 Hz approximately. [VA]
Blocking coil	12	
Motor for earthing switch	150	

For the details of solenoids and the motor power consumption, refer to EasyPact EXE user guide (BQT6143100).

### Trucks

For details of electrical control and operating devices of trucks, refer to respective technical manuals Reference documents, page 7.

# Packaging, Transport, Delivery, and Storage

## Shipping Units

The shipping information of panels are as follows:

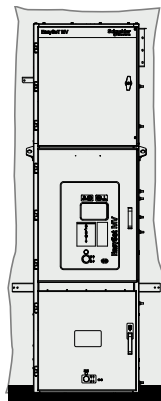
- The conditions and types of transport have been stipulated in the contract details.
- The type of packaging depends on the type of transport and the storage conditions.
- The panels are delivered individually and are fastened on pallets. The standard accessories are included.
- In the case of panels with a width of 450 mm and 600 mm, the trucks can be delivered within the panels. They are in disconnected position.
- The panels are delivered in vertical position.
- The weight of the entire transport unit is indicated on the packaging.

## Packaging

The packaging for various modes of transportation are as follows:

- If packed exclusively for truck transport, the panels are delivered on a pallet with PE protective film (Figure 15).
- For sea transport, the units are packed in sealed aluminium foil with desiccant and in a closed wooden case with tightly closed wooden base (also for container transport, Figure 16).
- In case of air transport, the panels are packed in wooden crates with a protective PE film hood (dust protection) or in wooden crates, also with closed wooden bases, however without protective hoods (Figure 16).

**NOTE:** Observe the centre of gravity label (Figure 16) to help ensure safe transport. You can find the label on the packaging or on the switchgear panel.



**Figure 15**  
Packaging in PE Protective Film, on a Pallet



**Figure 16**  
Centre of Gravity Information on the Transport Unit (wooden crate for export packaging)

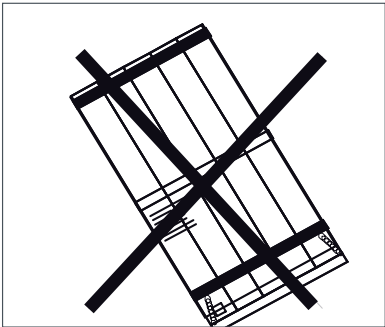
# Transport

**⚠ WARNING**

**HAZARD OF FALLING**

- When transporting the switchgear, ensure that the units do not slip or tip. If necessary, nail down transport pallets to the loading surface.
- For transporting the trucks, comply with the transport specifications in the appropriate manuals.

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



# Transport with Forklift Truck

**⚠ CAUTION**

**HAZARD OF FALLING**

- For transport, the panels must be packaged completely.
- The entire length of the forks must be placed under the transport unit.

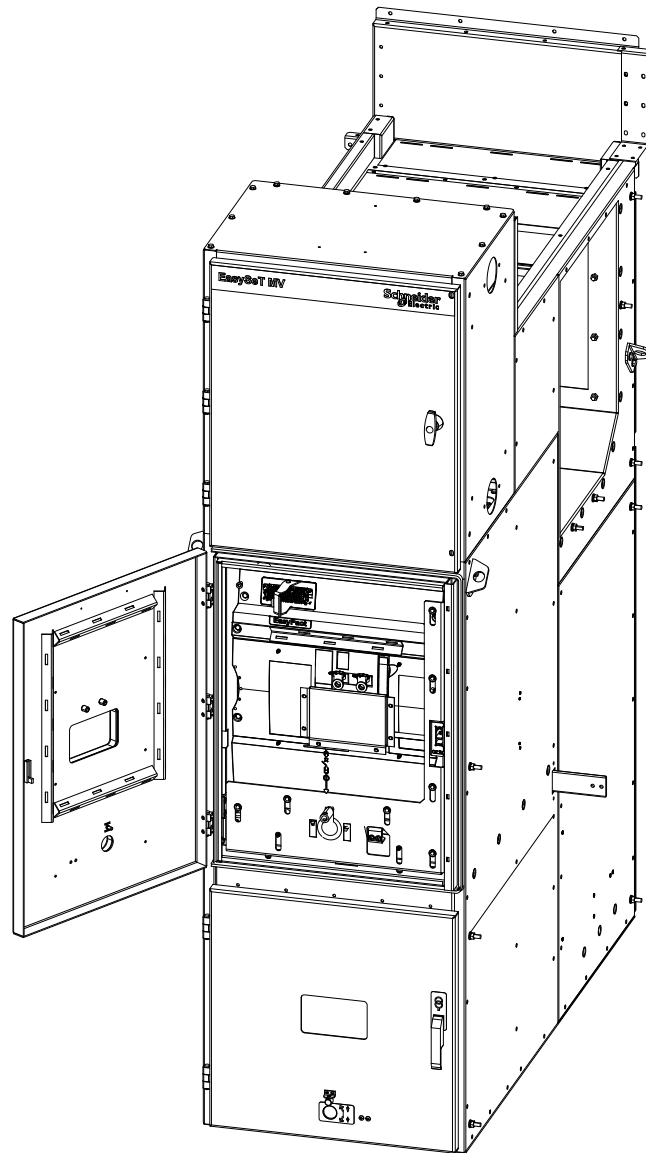
**Failure to follow these instructions can result in injury or equipment damage.**



**Transport with circuit breaker in the switchgear panel (for 450 and 600 mm panel width)**

The switchgear with circuit breaker is delivered in the below condition:

- Circuit breaker in the test position
- Earthing switch ON



**Figure 17**  
Transport with Circuit Breaker in the Switchgear Panel

# Delivery

Shipping units must be checked upon receipt. Any damage which may have occurred in transit must be recorded and reported to the manufacturer immediately.

<b>NOTICE</b>
<p><b>HAZARD OF INCORRECT HANDLING</b></p> <ul style="list-style-type: none"> <li>• Competent operators must handle the lifting of the panel.</li> <li>• It is recommended to use inspected cranes or forklifts for transportation.</li> <li>• The lifting or handling of the panel from the loaded transportation vehicle should be done safely.</li> <li>• Careful disassembly of the packaging is essential to help prevent damage to the panel.</li> </ul> <p><b>Failure to follow these instructions can result in equipment damage.</b></p>

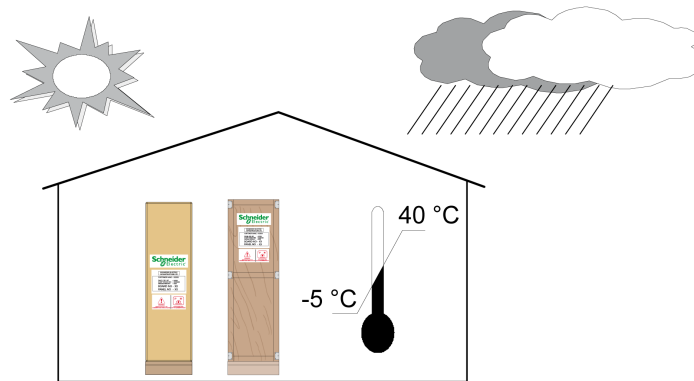
- NOTE:**
- Check completeness of consignment based on the transport documents.
  - The supplier should be notified in writing without delay about any deviations.

# Storage

<b>⚠ WARNING</b>
<p><b>HAZARD OF STORING UNDER INADEQUATE CONDITIONS</b></p> <ul style="list-style-type: none"> <li>• Sufficient stability and evenness of the supporting area must be ensured.</li> <li>• Panels must be stored in vertical positions and must not be stacked.</li> </ul> <p><b>Failure to follow these instructions can result in death, serious injury, or equipment damage.</b></p>

If the panels are not installed immediately after delivery, they can be stored under the following conditions:

- Indoor storage only is admissible.
- Switchgear and accessories are required to be stored sealed with desiccants in aluminum foil and packed in a wooden box (the storing time before installation is compliant with the warranty period in the terms and conditions).
- Do not remove the pallet until the installation.
- Storage only in packed condition. Performance will not be guaranteed if stored in open condition.
- The storage room environment is required to be healthy, with no rodents, humidity control  $\leq 95\% / \leq 90\%$  for 24 hours and 1 month respectively, and no water on the floor.



**Figure 18**  
Schematic Diagram of the Storage Conditions for EasySet MV Panels

Store the devices in their original packaging, placed on dry ground or on a material insulating it from environmental condition.

## **NOTICE**

### **HAZARD OF DEGRADED EQUIPMENT PERFORMANCE**

Ensure that the equipment is not stored for longer than six months.

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

The panel storage conditions within the period are as follows:

- Between 6 and 12 months, perform basic level preventive maintenance to help ensure a correct panel and withdrawable devices operation.
- Beyond 12 months, contact Schneider Electric Services local representative for check-up.

**NOTE:** Switchgear is to be checked periodically for any signs of deterioration.

After unpacking, check the panel carefully for:

- Absence of broken or damaged parts.
- Absence of condensation marks or droplets.
- Absence of visible degradation (color change, rust, deposits, and so on).

In case of any degradation detected, the panel cannot be installed.

# Access to the Main Circuit Compartments

## Safety Provisions

After removal of covers, isolate the appropriate part of the switchgear unit from the power supply, for the operator safety in accordance to IEC 62271-200.

### DANGER

#### HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- Before opening, remove doors or covers, and isolate the compartment in question.
- Check for zero voltage and earth in accordance with the safety provisions in EN 50110-1.

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

## Access to the Cable Compartment

### DANGER

#### HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

Open the cable compartment only if the earthing switch is ON. Refer to Operation - Switching ON the Earthing Switch in User Manual (GEX2563900).

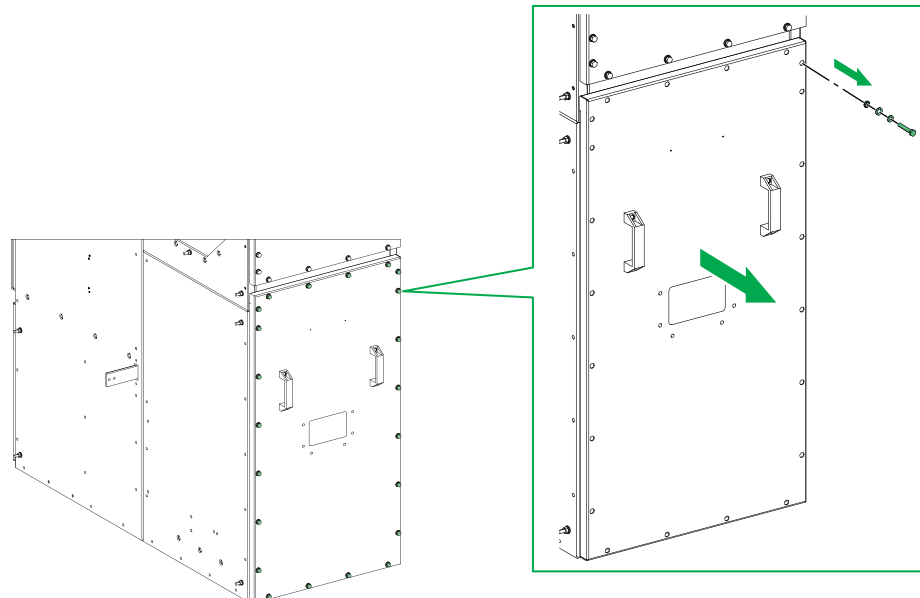
**Failure to follow these instructions will result in death or serious injury.**

The panels can be equipped with supplementary cylinder locks to lock the cable compartment cover. Refer to Operation - Interlocks in User Manual (GEX2563900).

## Removing the Rear Cable Compartment Cover

Follow the below steps to remove the cable compartment cover:

1. Release locking clips (Figure 19) and the securing bolts of the cable compartment cover.
2. Lift the handle and remove the cable compartment cover.
3. The cable compartment is now accessible from the rear.



**Figure 19**  
Rear Cable Compartment Cover

## Re-mount the Rear Cable Compartment Cover

After terminating assembly work, place cable compartment cover onto the panel and lower it till the arrow sticker of cable matches with the arrow sticker of panel.

## Access to Switching Device Compartment

### **⚠️ DANGER**

#### **HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH**

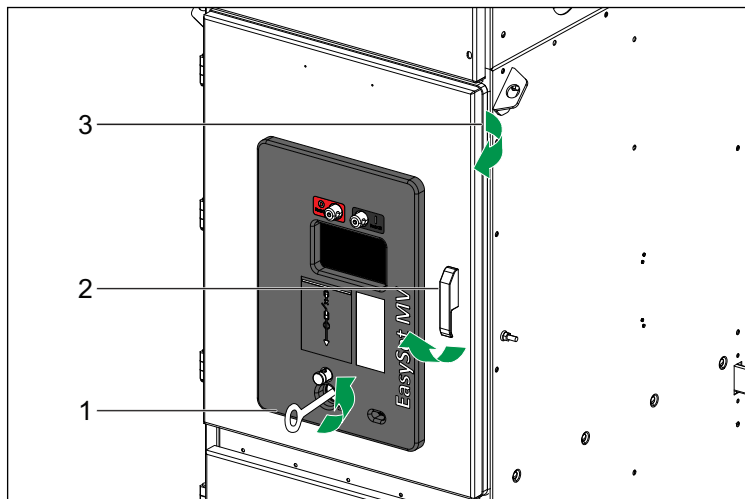
Open the switching device compartment only if the truck is in disconnected position. Refer to Operation — Racking-out the truck from service into disconnected position in User Manual (GEX2563900).

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

## Opening and Closing the Front Door

### Opening the Front Door

1. Insert double-bit key into the door opening and turn it to the left (Figure 20, 1).  
The door is unlocked.
2. Insert handle with the lever pointing down, and turn handle to the left (2).  
The front door is lifted.
3. To open the door, swing it to the left (3).



**Figure 20**  
Opening the Front Door

#### Closing the Front Door

1. Close the door completely.
2. Turn the handle downwards; the door is locked.

## Removal and Insertion of the Low-Voltage Connector

### **NOTICE**

#### **HAZARD OF INCORRECT OPERATION**

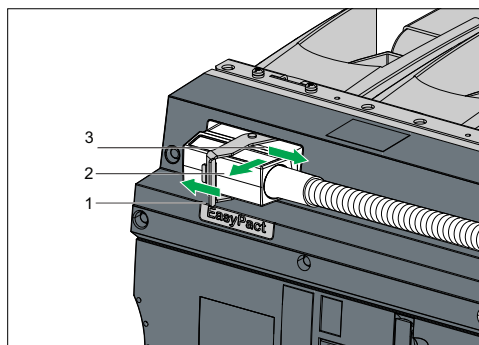
Remove or insert the low-voltage connector only if the truck is in disconnected position.

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

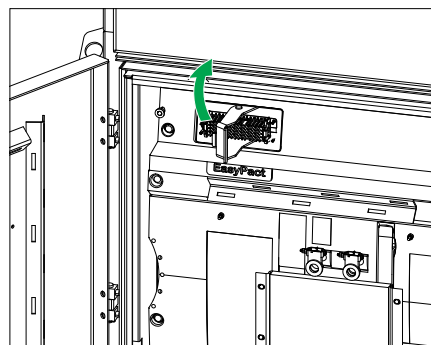
### Removing the Low-Voltage Connector

Follow the below steps to remove the low voltage connector:

1. Pull interlocking slide of low voltage connector forward (Figure 21, 1) and remove the connector (2).
2. Stow low-voltage connector in storage tray above the circuit breaker (Figure 22).



**Figure 21**  
Removing the low-voltage connector



**Figure 22**  
Place low-voltage connector in tray above the circuit breaker

## Inserting the Low-Voltage Connector

Follow the below steps to insert the low voltage connector:

1. Take low-voltage connector from the storage tray above the circuit breaker (Figure 22).
2. Insert low-voltage connector into the circuit breaker and press interlocking slide forward.

## Extracting the Circuit Breaker from the Panel

### Coupling the Transport Trolley

Follow the below steps to couple the transport trolley to the panel

1. Adjust rails and unlocking bar of trolley to the correct track width of the circuit breaker (refer to Transport Trolley for Circuit Breaker , page 60).
2. Turn lever to the left (Figure 23, 1).  
The trolley is lifted on the front.
3. Move trolley to the panel so that the lateral guides (Figure 24, 2) are close to the panel, and turn lever (1) back to the right. The trolley is locked on the panel (3).



**Figure 23**  
Turning Lever on Trolley to the Left



**Figure 24**  
Locking Transport Trolley on Panel

### Extracting the Circuit breaker

Follow the below steps to remove the Circuit breaker:

1. Push unlocking bar (Figure 25, 4) forward to its stop.  
The latching of the circuit breaker in the panel is released.
2. Pull the circuit breaker onto the trolley via the two handles (5) until it snaps in on the trolley audibly.
3. Turn lever back to the left (6).  
The trolley is lifted on the front, and extracted from the panel.

- Pull trolley with the circuit breaker away from the panel (Figure 26, 7) and turn lever back to the right to lower it (8).



**Figure 25**  
Coupling the Transport Trolley to Panel



**Figure 26**  
Extracting the Circuit Breaker onto Trolley

- Now the circuit breaker can be raised by means of a crane, and deposited.  
For more information, refer to *Transport of Circuit Breakers*, page 39.  
Instructions regarding lifting and transporting trucks (EasyPact EXE).

## Insertion of the Circuit Breaker into the Panel

### **NOTICE**

#### **HAZARD OF INAPPROPRIATE ASSEMBLY**

Circuit breakers and panels must match rating to prevent the truck from being racked completely into the panel.

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

Follow the below steps to insert the circuit breaker into the panel:

- Move the circuit breaker on the trolley in front of the panel.
- Turn the lever on the trolley clockwise to lift the transport table.
- Move the trolley on the handles (Figure 27, 2) with the lateral guides (3) to the panel and turn the lever to the right again.
- Press the left release button (Figure 28, 5) and push the circuit breaker briefly over the locking lever.
- Push the circuit breaker into the panel by means of the handles (6) until it engages in the control panel.
- Turn the lever to the left again (7).  
The trolley is lifted at the front and released from the panel.
- Pull the trolley away from the panel and turn the lever to the right again to lower it.



**Figure 27**  
Move trolley with circuit breaker towards the panel until they are in contact, and lock.



**Figure 28**  
Pushing the circuit breaker into the panel.

## Access to the Busbar Compartment

<p><b>⚠ ⚠ DANGER</b></p> <p><b>HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH</b></p> <p>Open the busbar compartment only if the busbar is earthed. Refer to Operation — Earthing the busbar in User Manual (GEX2563900).</p> <p><b>Failure to follow these instructions will result in death or serious injury.</b></p>
---

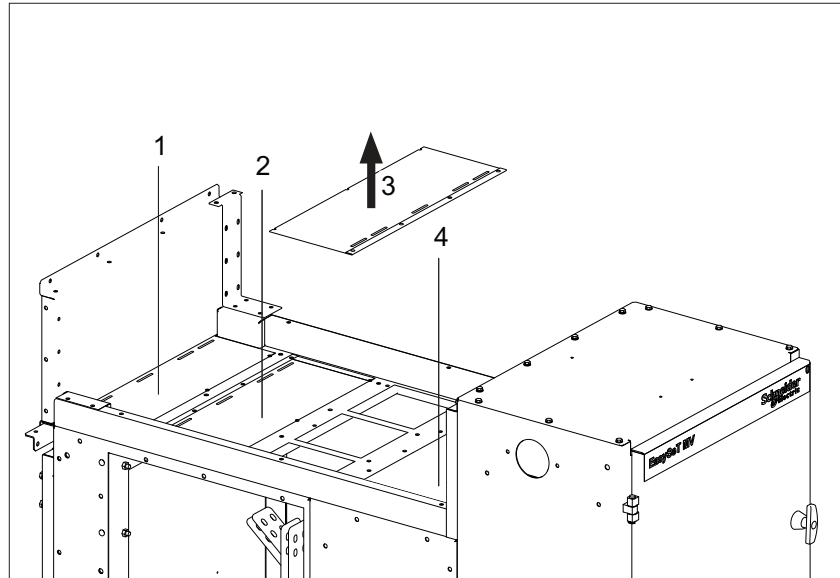
## Top Access

<p><b>⚠ WARNING</b></p> <p><b>HAZARD OF FALLING</b></p> <ul style="list-style-type: none"> <li>Do not walk on the top sides of the panels.</li> <li>If work has to be performed on the panel top, temporarily position a solid base plate to step on.</li> </ul> <p><b>Failure to follow these instructions can result in death, serious injury, or equipment damage.</b></p>
---

**NOTE:** Access to the busbar is possible from the top as well (Figure 29) provided the space available so permits (sufficient ceiling height is required).

To access the busbar from the top:

1. Cover top of panel using a temporary base plate (1).
2. Release the screw fastening of the upper busbar compartment cover (2) and remove sheet metal cover (3).
3. Now, the busbar compartment (4) is accessible.

**Figure 29****Top Access to the Busbar Compartment**

- |                        |                      |
|------------------------|----------------------|
| 1 Temporary base plate | 3 Sheet metal cover  |
| 2 Screw fastening      | 4 Busbar compartment |

# Assembly

## Safety Provisions

The switchgear panels may only be installed and assembled by the manufacturers staff or by persons who have been certified for this work.

<b>⚡⚠ DANGER</b>
<b>HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH</b>
During assembly, installation and connection, the energy storing devices must not be charged.
<b>Failure to follow these instructions will result in death or serious injury.</b>

<b>⚠ WARNING</b>
<b>HAZARD OF INCORRECT OPERATION</b>
<ul style="list-style-type: none"> <li>• Watch out for floor openings in the switchgear room.</li> <li>• Do not walk on the top sides of the panels. When work has to be performed on the panel top, for example for assembly of deflectors, fans or pressure relief ducts, temporarily position a solid base plate to step on.</li> <li>• The switchgear panels must only be installed and assembled by the manufacturers staff or by persons who have been certified for this work.</li> <li>• Comply with the Safety Provisions, page 8.</li> </ul>
<b>Failure to follow these instructions can result in death, serious injury, or equipment damage.</b>

## Important Information for Assembly

In the case of panels with a width of 800 mm, the trucks can be delivered within the panels. They are in disconnected position. The circuit breakers are always shipped in open state (OFF) with the energy storing device released.

<b>⚠ CAUTION</b>
<b>HAZARD OF INCORRECT ASSEMBLY</b>
<ul style="list-style-type: none"> <li>• Condensation, dirt and dust during assembly must be avoided on all accounts, in order to prevent damage to the panels.</li> <li>• For assembly, observe the assembly drawings supplied with the equipment.</li> <li>• For all Screw Fastenings , page 58, comply with the tightening torques specified.</li> </ul>
<b>Failure to follow these instructions can result in injury or equipment damage.</b>

## Requirements Regarding the Switchgear Room

### **NOTICE**

#### **HAZARD OF INCORRECT EQUIPMENT OPERATION**

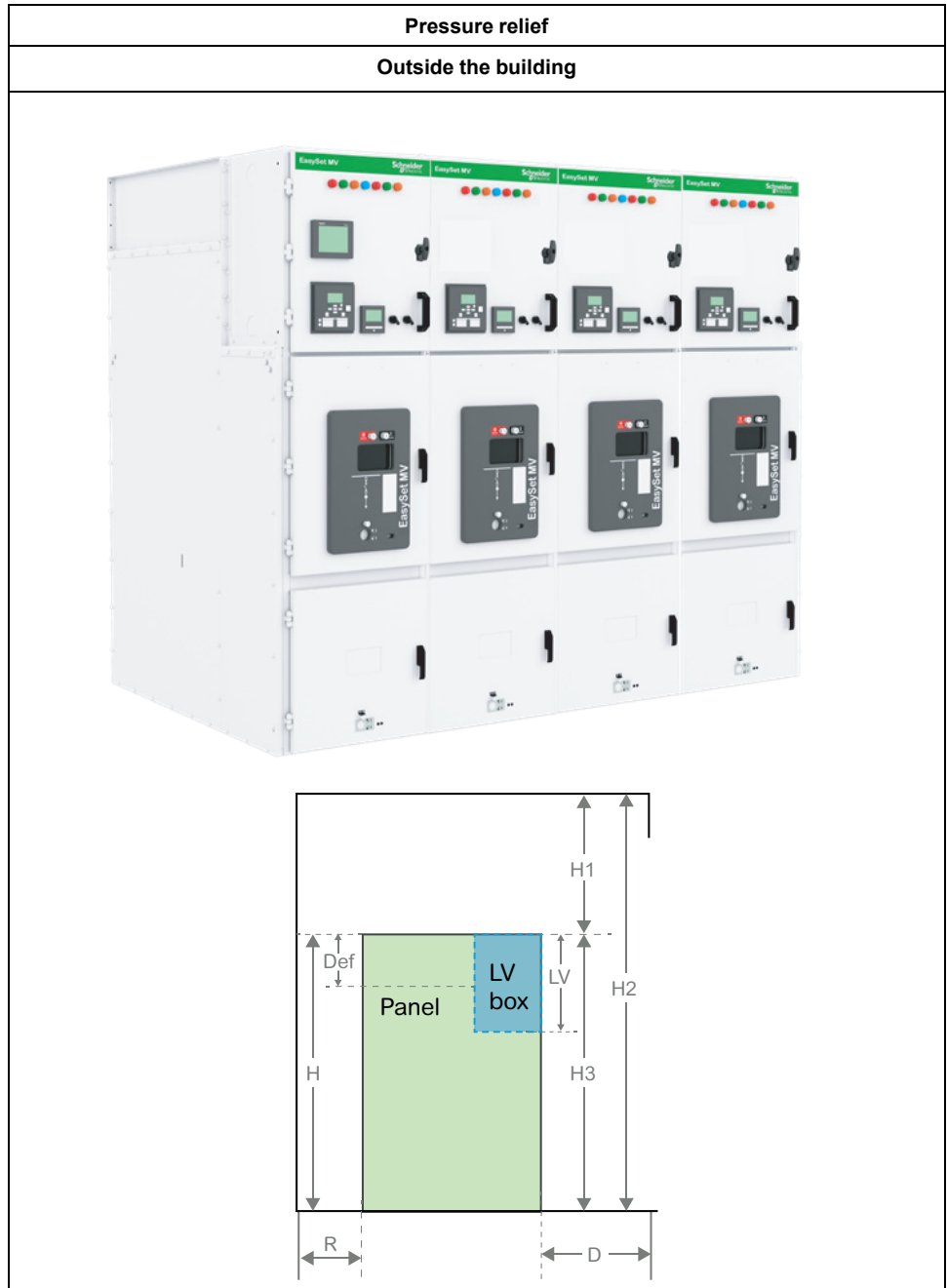
- Before positioning the switchgear at its installation site, ensure that the fastening points are at the correct level.
- Unevenness must not exceed  $\pm 2$  mm/m and there must not be a height difference of more than 6 mm over the entire width of the switchgear.

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

Before installing the switchgear panels, make sure that the switchgear room is checked according to the switchgear documentation.

- Observe the minimum distance between the switchgear and the wall of the building.
- The load-bearing capacity of the fastening areas must correspond to the weight of the switchgear (perform a stress analysis of the building).
- Check base frame (if used) for dimensions and positional tolerances.
- Check position of floor openings for high-voltage and low-voltage cables.

**NOTE:** Observe switchgear-specific space assignment plan.



Basic structure panels				Pressure relief		
				Inside the building		
				Deflector		
Ur	H (mm) *	LV (mm)	H3 (mm)	Def (mm)	H1 (mm)	H2 (mm)
12 kV	2100	680	2100	300	900	3000
		630	2230			3390
		730	2330			3490
H	Panel height, basic structure					
LV	LV box height					
H3	Basic panel including LV box height					
H1	Distance to ceiling					
H2	Height of ceiling					
Def	Deflector height					

Basic structure panels				Pressure relief		
				Inside the building		
				Deflector		
Ur	H (mm) *	LV (mm)	H3 (mm)	Def (mm)	H1 (mm)	H2 (mm)
			Tunnel	Deflector AFLR		
R	Distance to rear wall		>100 mm	>1000 mm		
D	Width of control aisle		1500 mm	1500 mm		

## Transport of the Panels/Circuit Breakers on the Construction Site

<b>⚠ WARNING</b>
<p><b>HAZARD OF TOPPLING</b></p> <ul style="list-style-type: none"> <li>• Ensure the rope or chains being are strong enough to bear the weight of the panel and the trucks.</li> <li>• Comply with the relevant provisions for hoisting equipment.</li> <li>• On lowering the panels and the trucks, ensure that the supporting platform is sufficiently stable and even.</li> </ul> <p><b>Failure to follow these instructions can result in death, serious injury, or equipment damage.</b></p>

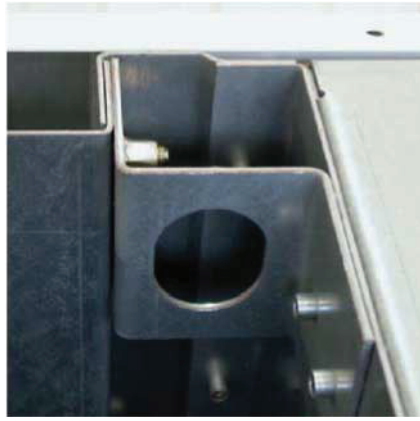
<b>⚠ WARNING</b>
<p><b>HAZARD OF FALLING</b></p> <p>Watch out for floor openings in the switchgear room.</p> <p><b>Failure to follow these instructions can result in death, serious injury, or equipment damage.</b></p>

## Transport using a Crane

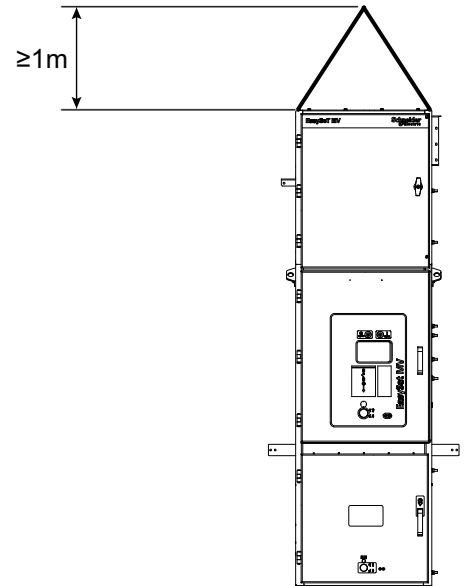
<b>⚠ CAUTION</b>
<p><b>HAZARD OF INCORRECT OR INAPPROPRIATE HANDLING</b></p> <ul style="list-style-type: none"> <li>• Make sure to utilize the lifting bracket when handling the EasySet MV switchgear and ensure that lifting bracket is properly secured with fasteners.</li> <li>• Adhere to the specified height for lifting. Lifting cables must be secured firmly before lifting and follow the recommended lifting procedures.</li> <li>• Refrain swing area of the panels when lowering or raising it into position.</li> </ul> <p><b>Failure to follow these instructions can result in injury or equipment damage.</b></p>

Follow the below steps to transport the panels and circuit breakers using crane:

1. Attach the crane straps in the four jack rings on top of the panel (Figure 30). Make sure to leave a minimum height of 1 m (Figure 31).
2. Release the front and rear panel screw fastening from the transport packaging. To this effect, remove the cable compartment cover, refer to *Opening and Closing the Front Door* , page 29.
3. Carefully lift the panel and deposit it at the intended location.



**Figure 30**  
Jack Rings on Top of the Panel

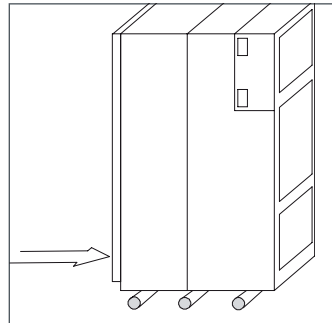


**Figure 31**  
Observe the Minimum Height

## Transport on the Floor

Follow the below steps to transport the panels and circuit breakers using cylindrical rollers:

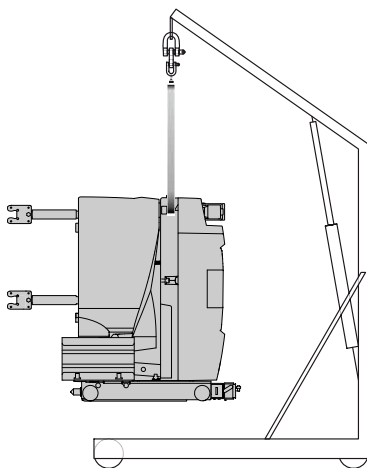
1. Push panel onto three cylindrical rollers (minimum diameter 30 mm) (Figure 32).
2. Move the panel until it reaches its final location.



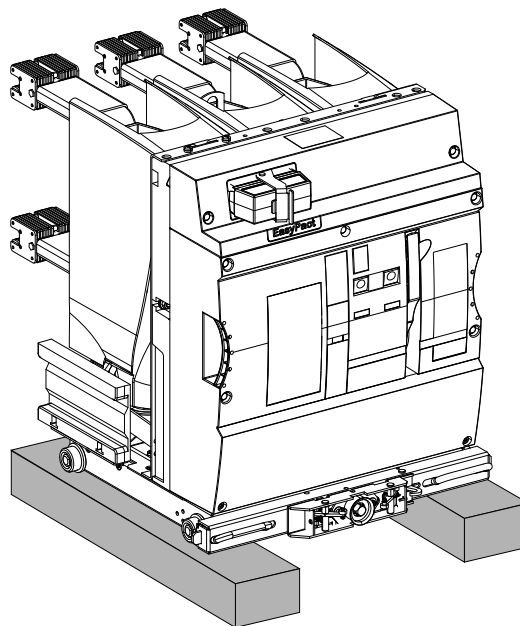
**Figure 32**  
Transport of the Panel on the Floor

## Transport of Circuit Breakers

The circuit breaker can be transported by means of the optional handling crane (Figure 33). Trucks must always be deposited on external wooden beams (Figure 34).



**Figure 33**  
 Transport of Circuit Breaker using the  
 Handling Crane



**Figure 34**  
 Circuit Breakers must always be placed on External  
 Wooden Beams

## Aligning and Fastening Panels

### **▲ WARNING**

#### **HAZARD OF INSTALLING UNDER INADEQUATE CONDITIONS**

If a panel is found to be raised after the next one is installed, there is a risk of experiencing vibrations, depending on the load.

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

### **NOTICE**

#### **HAZARD OF INSTALLING UNDER INADEQUATE CONDITIONS**

- Before positioning the switchgear at its installation site, ensure that the fastening points are at the correct level.
- Unevenness should not exceed  $\pm 2$  mm/m and there should not be a height difference of more than 6 mm over the entire width of the switchgear.

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

### **NOTICE**

#### **HAZARD OF INAPPROPRIATE ASSEMBLY**

Comply with precise measurements for the placement of the panel, as the positioning of the first panel determines the placement of the remaining panels.

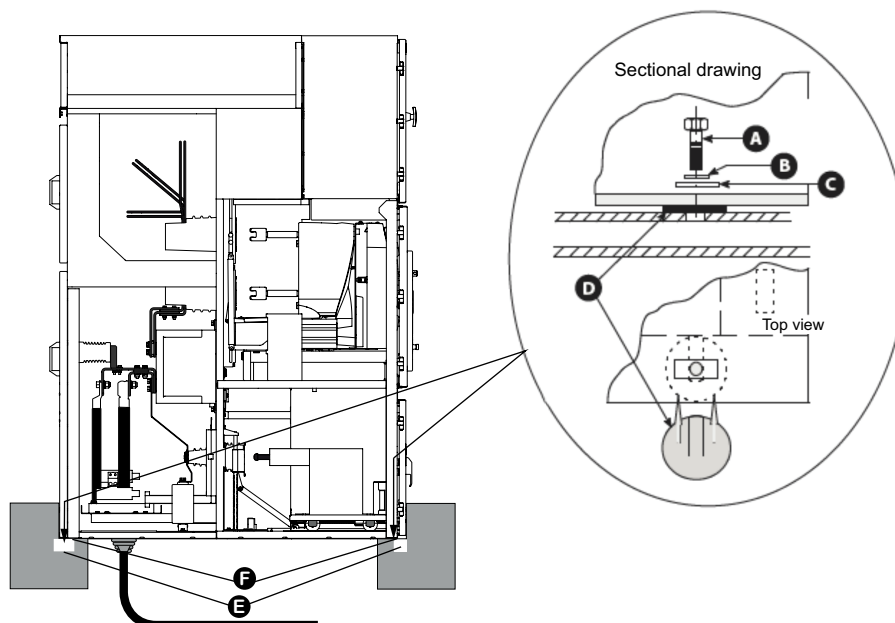
**Failure to follow these instructions can result in equipment damage.**

## Fastening on Base Frame

Follow the below steps to fasten the panel on base frame:

1. Drill holes ( $\varnothing 8.5$  mm) into the base frame at the intended panel fastening points (Figure 35).
2. Cut threads M10 in the bore holes.
3. Screw-fasten panel to the frame.

**NOTE:** Screws, bolts and accessories are not included in the scope of delivery.



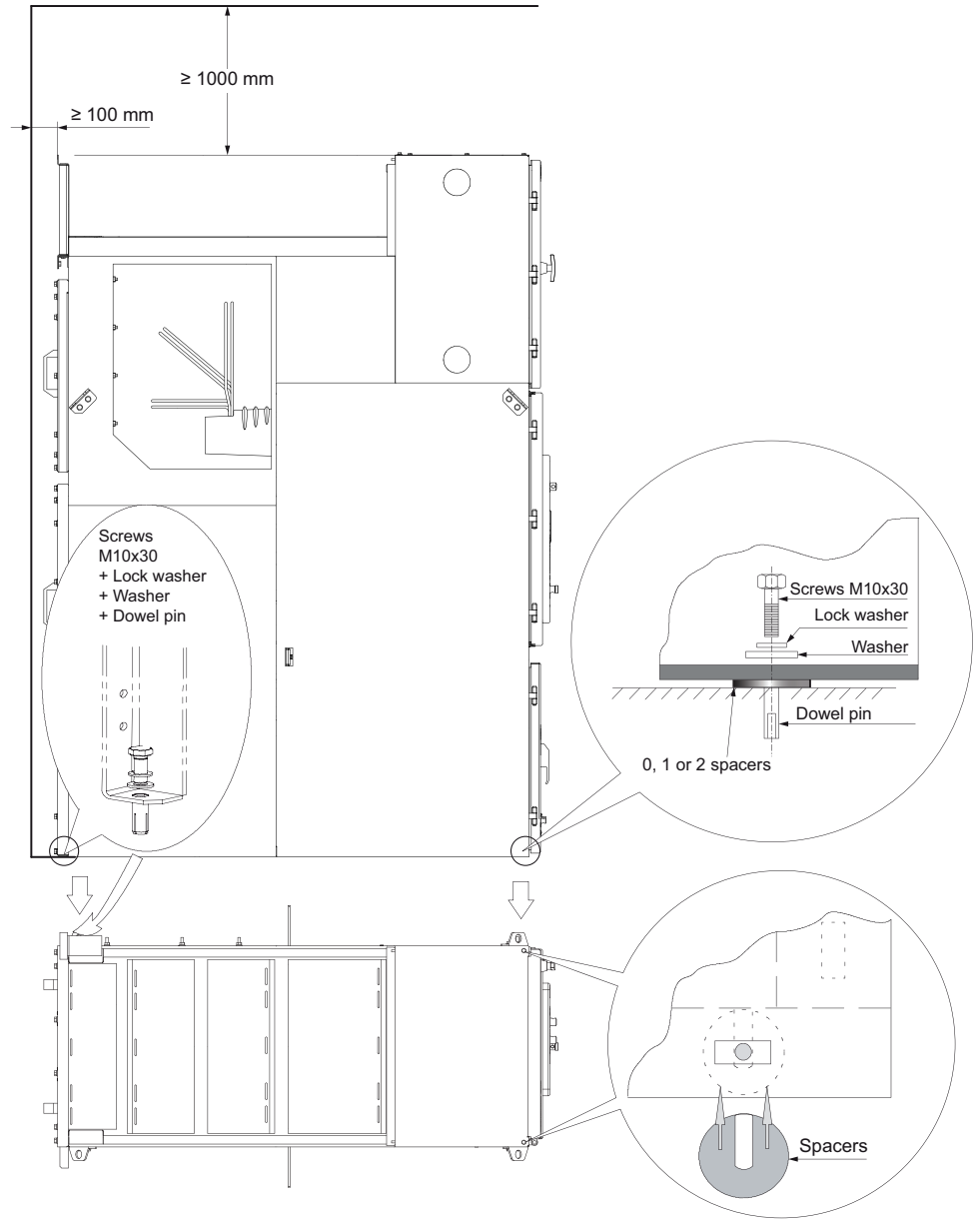
**Figure 35**  
Panel fastening on base frame

A	Hex. bolt M10	D	0, 1 or 2 shims
B	Lock washer ES10	E	Base frame
C	Washer ES12	F	Fastening points

## Fastening on Concrete Foundations

Follow the below steps to fasten the panel on concrete foundations:

1. Position first panel on the foundations in accordance with the switchgear specific space assignment plan.
2. Remove cable compartment cover (refer to *Access to the Cable Compartment*, page 28).
3. Once the panel is positioned:
  - a. Verify that the panel front is correctly aligned both horizontally and vertically.
  - b. If necessary, raise the panel and insert shims below the panel near the fastening points until the correct horizontal position is achieved, refer to Figure 36.
4. Fasten the panel with screws to the two fastening points on both the front end and the rear end.



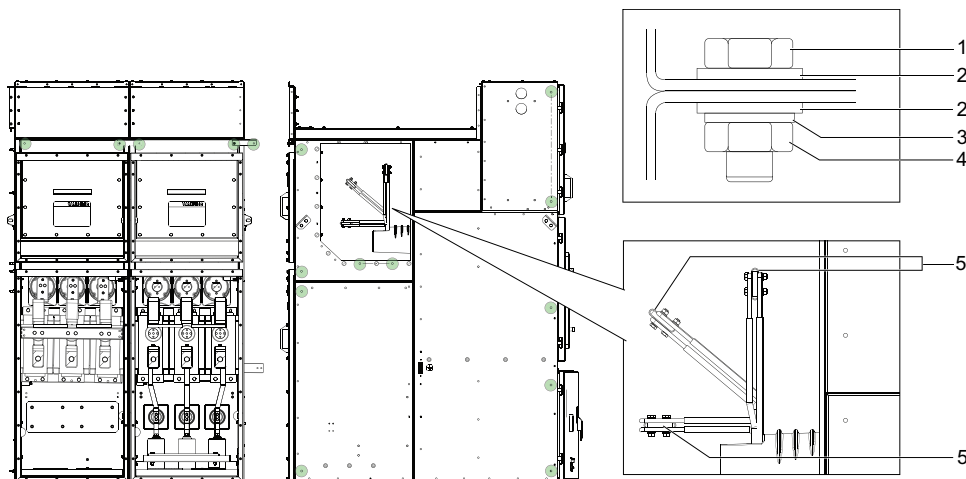
**Figure 36**  
 Panel Fastening on Concrete Foundations

## Screw-Fastening the Panels to One Another

Assembly drawing: SEM102056-01.

Follow the below steps to screw fasten the panels to one another:

1. Position the second panel next to the previous one, install the panels to one another on the front, middle and rear side with fastening hardware (Figure 37).
2. Fasten panels to one another at the top on the rear side using a connecting link. Use the screws provided on the panel.



**Figure 37**  
Screw-Fastening the Panels to One Another

- |   |               |   |                 |
|---|---------------|---|-----------------|
| 1 | Screw M8      | 4 | Hex. nut M8     |
| 2 | Plain washer  | 5 | Connecting link |
| 3 | Spring washer |   |                 |

# Busbar Assembly

## Arrangement of Busbars in Branch-Circuit Panels

		Number of busbars per phase		
		1	2	3
Number of feeder bars per phase	1			
	2		1250 A (60x10) 	1250 A (60x10) 
	3	-		

## Arrangement of the Lower Busbars in Bus Section Couplers

		Number of busbars per phase		
		1	2	3
Number of feeder bars per phase	1			-
	2	-	-	

## Mounting Busbars

Access to the busbar compartment: refer to Access to the Busbar Compartment, page 33.

### ⚠ CAUTION

#### HAZARD OF INCORRECT ASSEMBLY

Comply with the specifications on treatment of contact surfaces and the tightening torques for busbar. For standard torques, refer to Screw Fastenings, page 58

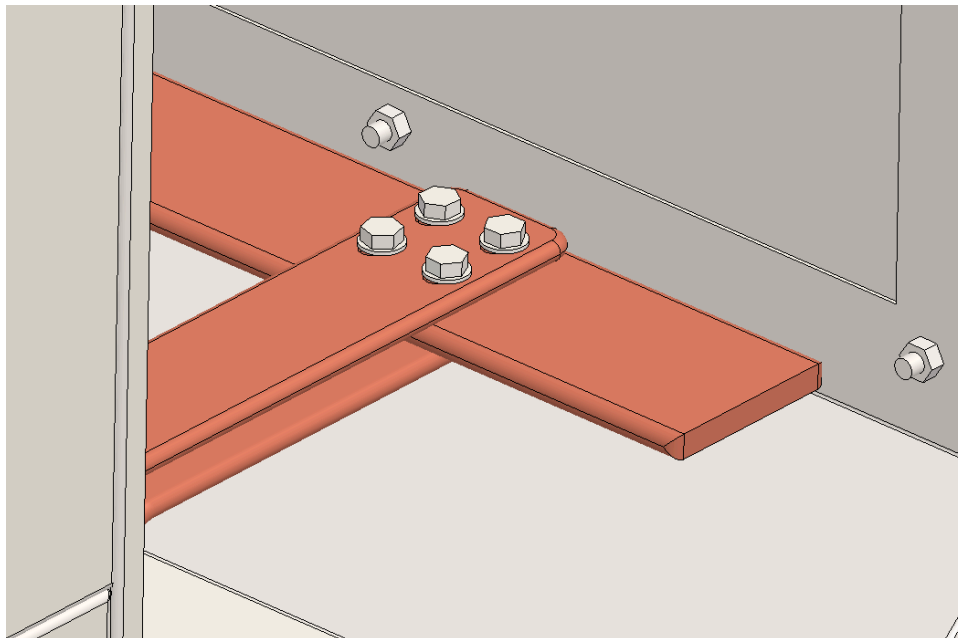
**Failure to follow these instructions can result in injury or equipment damage.**

Follow the below steps for mounting busbars:

1. Clean all contact areas of the busbars and feeder bars in the switchgear panels and coat them with lubricant KL.

2. Screw-fasten busbars to the feeder bars as shown in Figure 38 using four bolts.
3. Observe location of busbars and feeder bars (see Arrangement of Busbars in Branch-Circuit Panels , page 45).

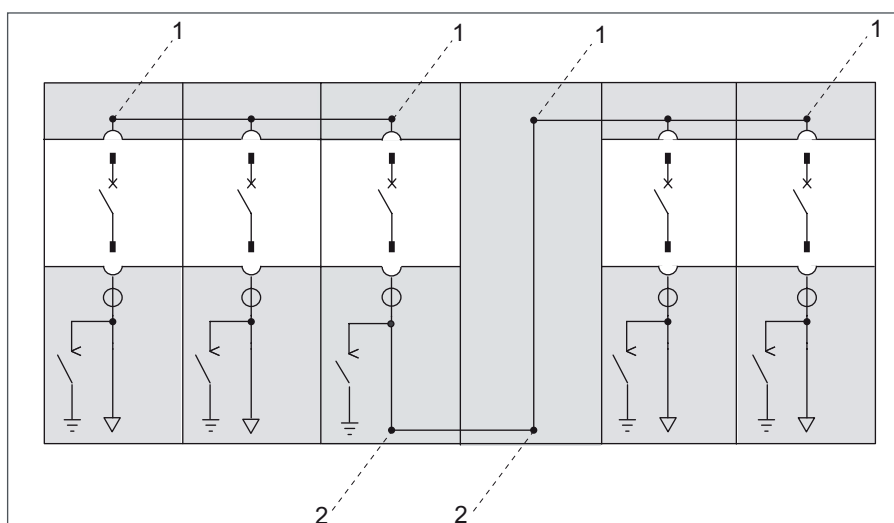
## Busbar Screw Fastening for EasySet MV



**Figure 38**  
Busbar

Consider the various methods of fastening busbar screws in the end panels of the EasySet MV busbar:

1. In busbar end panels, the phases L1 and L3 must be screw-fastened to electrodes in accordance with EasySet MV (Figure 39, 1).
2. In the bus section coupler, all phases L1/L2/L3 in the lower busbar must be screw fastened to electrodes in accordance with EasySet MV (Figure 39, 2).



**Figure 39**  
EasySet MV Busbar End Panels

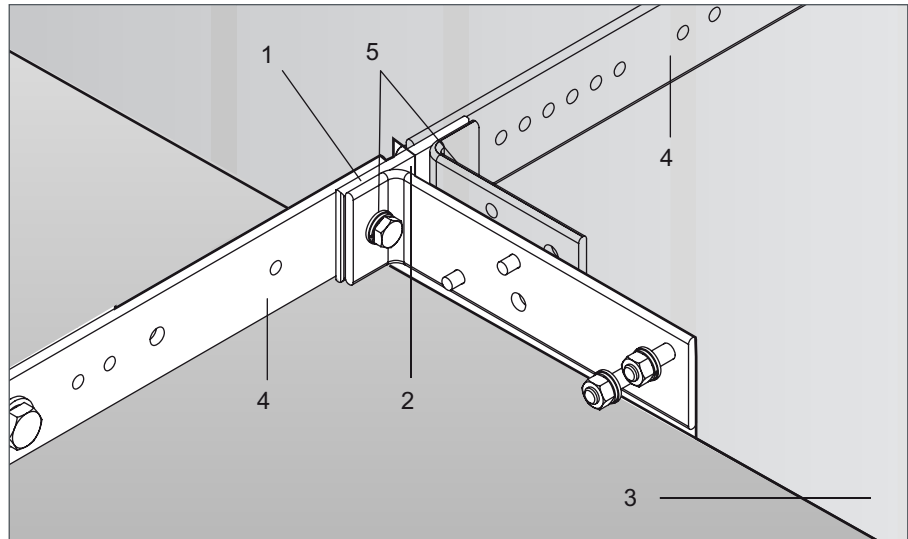
# Assembly of the Earth Bus

Earth bars are screw-fastened between the switchgear panels using connecting bars (Figure 40).

<b>⚠ CAUTION</b>
<b>HAZARD OF INCORRECT ASSEMBLY</b>
<ul style="list-style-type: none"> <li>• Comply with the specifications on treatment of contact surfaces and the tightening torques for busbar Screw Fastenings , page 58 in the Annexure.</li> <li>• Comply with the country specific standards referring to earthing systems.</li> </ul> <p><b>Failure to follow these instructions can result in injury or equipment damage.</b></p>

Follow the below steps for assembly of the earth bus:

1. Clean all contact areas of the connecting bar and the appropriate earth bar in the switchgear panels and coat them with lubricant KL.
2. Slip the connecting bar (Figure 40, 1) into the adjacent panel (3) through the cutout in the panel-supporting structure (2).
3. Screw-fasten (5) connecting bar on both sides to the earth bar (4) in question.



**Figure 40**  
Mounting the Earth Bar

- |  |  |
|--|--|
| 1 Connecting bar                       | 4 Earthing bars in the panels                        |
| 2 Cutout in panel-supporting structure | 5 Screw fastening of connecting bar to earthing bars |
| 3 Adjacent panel                       |  |

4. Connect earth bus (Figure 41) to the earthing system of the switchgear building (connecting lines and screw accessories are not included in the scope of supplies).



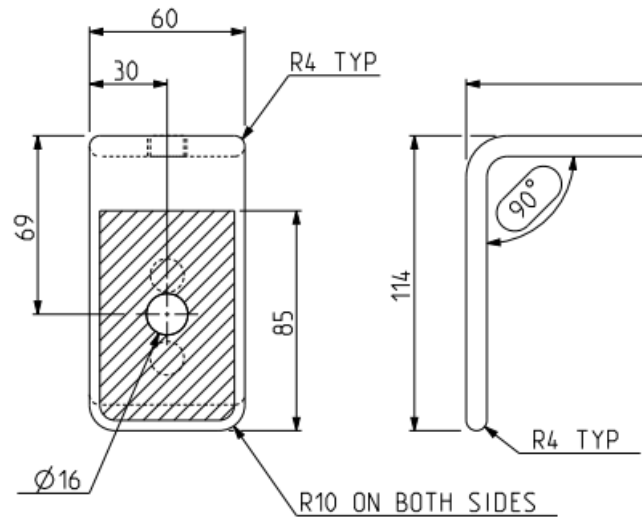
**Figure 41**  
Connecting Point of Switchgear Earth Bus to Building Earth

# High-Voltage Connection

## Overview of Cable Connection System

**Cable connection variants:**

Cable connection for  $\varnothing 16$



**Figure 42**  
Connecting bar with dimensions for the fastening of cable sealing end

**Overview of cable connection variants**

Cable terminal per phase	Representation of a connection phase	
	Front view	Side view
Max. 2		

**NOTE:**

Additional options for cable connection variants are available upon request:

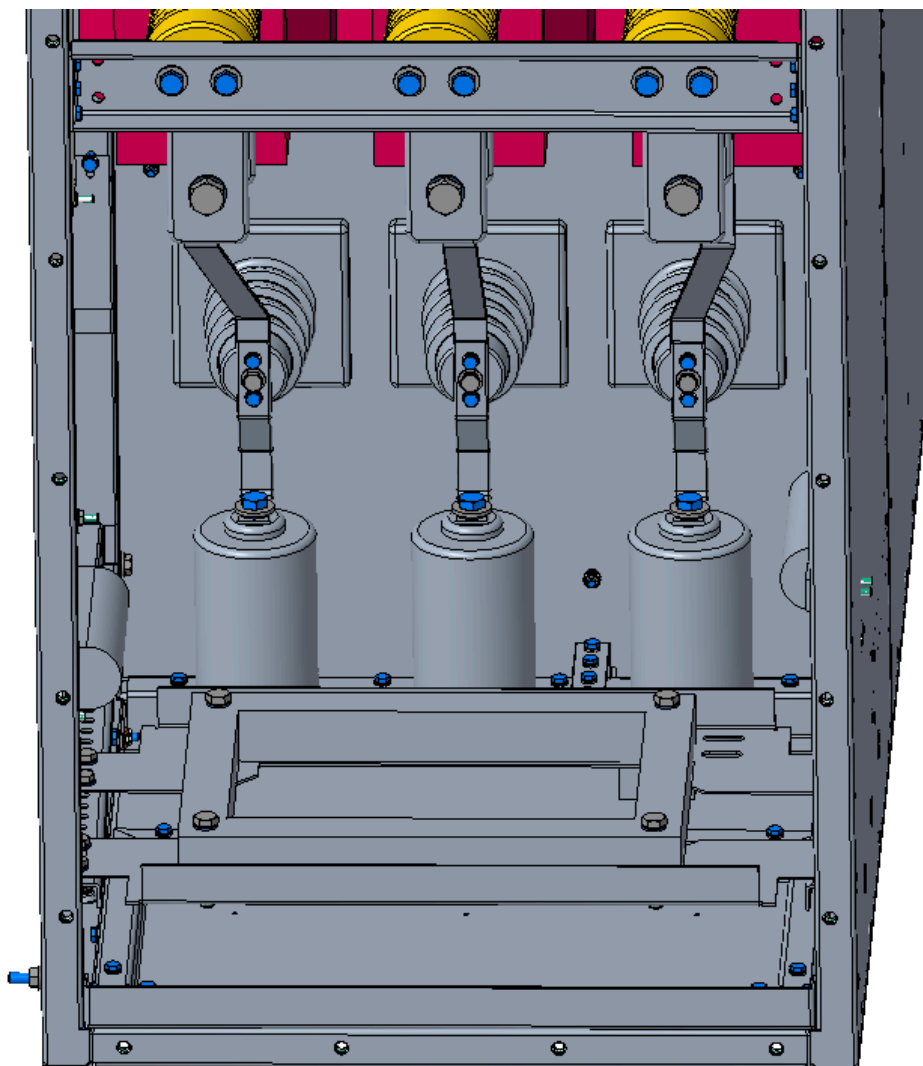
- Metal-clad rear cable compartment for cable connections behind the panel
- Conductor bar terminal

Clarify technical details and design specifications with the manufacturer, as required.

## Connection of High-Voltage Cables

### Preparation of Cable Compartment

Access to cable compartment



**Figure 43**  
Cable Compartment

**NOTE:** This image is for representation purposes only.

### Mount Sealing End and Cable Lug

#### **▲ CAUTION**

##### **HAZARD OF INCORRECT MOUNTING**

- Do not use aluminium cable lugs for the cable connection. Materials do not match.
- Observe the phase assignment of the switchgear panel.
- Unless otherwise specified by the cable manufacturer, comply with the specified tightening torques and pre-coat contact areas.

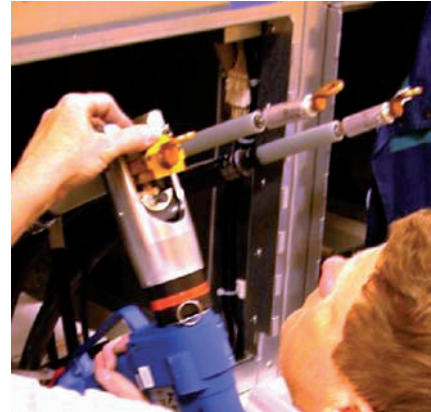
**Failure to follow these instructions can result in injury or equipment damage.**

Follow the below steps to mount sealing end:

1. Route the individual cables outwards through the cable compartment of the panel to enable assembly of the cable ends.
2. Cut the rubber sleeves to fit the cable diameter, and push them onto the cables (Figure 40).
3. Strip cable ends and assemble the sealing end as specified by the cable manufacturer.



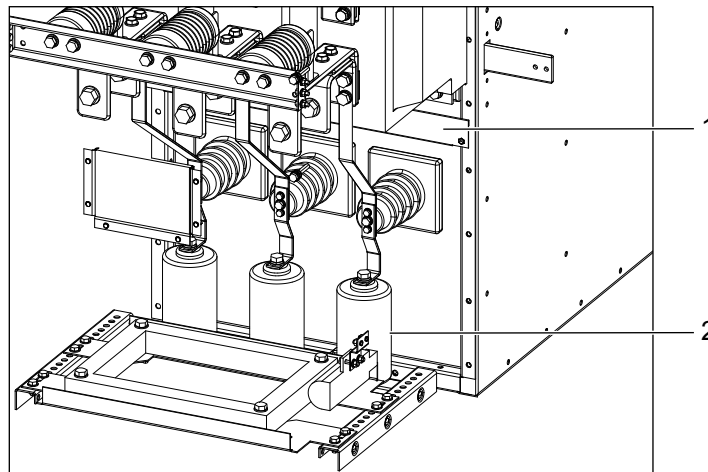
**Figure 44**  
Cut rubber sleeves to size and slip them onto the cables



**Figure 45**  
Mount cable lug

Follow the below steps to mount cable lug:

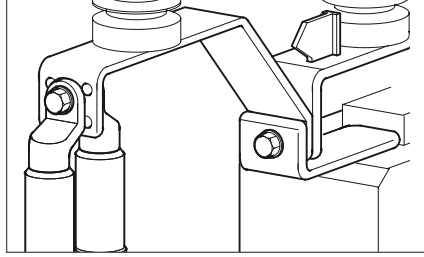
1. Fasten the individual cables to the appropriate connection surfaces (Figure 46 and Figure 47). In case of two cables per phase, connect the two cables to the first connection (Figure 47).
2. Re-mount the base plates.
3. Fasten high-voltage cable to the base plates using clamping assemblies.
4. Screw-fasten the cables (1) to the earthing bar (2) of the panel.



**Figure 46**  
Mount Sealing End

1 Earthing bar

2 High-voltage cable



**Figure 47**  
Connection using 1–2 cables

**NOTE:** The first cable position is reserved for a withdrawable voltage transformer. It can be used for a normal cable connection, if no withdrawable voltage transformer is used.

# Commissioning

## Final Steps

### **⚠️⚠️ DANGER**

#### **HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH**

- Turn off all power supplies of the equipment before working on or inside equipment.
- All active parts must be earthed.
- Do not commission the earthing and testing truck if you detect anomalies, faults or malfunctions. Inform the manufacturer.

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

**NOTE:** Whenever you detect anomalies, faults or malfunctions, do not commission the switchgear, but inform the manufacturer.

## Cleaning the panel and checking panel assembly

### **NOTICE**

#### **INCORRECT CLEANING AND CHECKING OF ASSEMBLY**

Observe the following instructions for this step.

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

1. Clean the switchgear, removing contamination resulting from assembly work.
2. Remove all the attached information tags, cards, brochures and instructions no longer needed.
3. Check the tightening torques of all screw fastenings and connections established on the site of installation:
  - a. High-voltage connection.
  - b. Earth conductor.
  - c. Panel screw fastenings.
  - d. Busbar links.
  - e. Deflector fastening.
  - f. Special attachments.

## Damaged paint

The panels are powder-coated. Minor damage to the paint can be repaired using commercially available paint (standard color RAL 9003 or corresponding color).

## Re-mounting the covers

1. Removed partition and cover plates in the busbar and switching device compartment.
2. Cable duct covers of the external control and measurement cables.
3. Cable compartment cover (refer to *Access to the Cable Compartment*, page 28).
4. Remove temporary base from the panel top, if such a base has been used (refer to *Top Access*, page 33).

## Inspection

1. Check the switchgear for damage which might be due to transport or assembly work.
2. Compare data on nameplate to the required ratings.

## Close front doors

Refer to *Opening and Closing the Front Door* , page 29.

**NOTE:** Check operation of all doors after the installation.

## Checking Switching Functions and Interlocks

### **DANGER**

#### **HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH**

- The high-voltage supply must not be connected.
- All active parts must be earthed.

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

#### **Preparation**

1. Apply supply voltage.
2. Perform several manual test operations with each switching device.
3. Check switch position indicators.
4. Check electrical functions of control and operating devices:
  - a. Closing and opening releases for circuit breaker.
  - b. Optional motor-operated drives for the truck and the earthing switch.
5. Check switch position indicators and interlocks (refer to *Operation — Interlocks* in User Manual (GEX2563900)).

## Power Frequency Test of Busbar (Optional)

### ⚠ WARNING

#### HAZARD OF INCORRECT OPERATION

Comply with the safety provisions, page 8.

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

A test unit and a test adapter (not included in scope of supply) are required for the power frequency test.

## Preparation

### ⚠⚠ DANGER

#### HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- Make sure that no high-voltage cables are connected.
- Observe the assembly and operating instructions for the test unit and the test adapter.
- All panels must be isolated from the power supply and earthed. Switch position during the power frequency test (example: five panels).

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

1. All panels must be isolated from the power supply and earthed (see Figure 44).
2. Busbar:  
Disconnect voltage transformer (EasyPact EXE) and surge arrester. Earth voltage detecting systems.
3. Incoming feeder panel for voltage test:  
Remove cable compartment cover and disconnect voltage transformer and surge arrester. Earth voltage detecting systems.

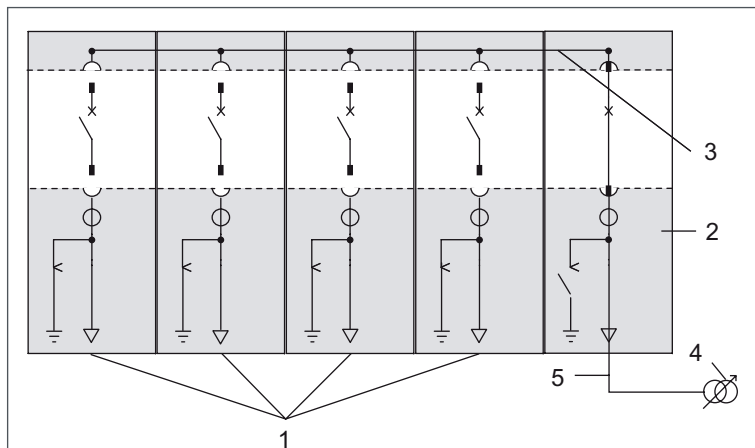
#### NOTE:

- Observe the assembly and operating instructions for the test unit and the test adapter.
- Observe admissible test values for the switchgear and the admissible test values for power-frequency tests after installation of the switchgear in accordance with IEC 62271-200: 2011.

## Performing the Power Frequency Tests

Follow the below steps to perform the power frequency tests:

1. Connect test unit to the test cable.
2. Switch the earthing switch OFF.
3. Move circuit breaker truck EasyPact EXE into service position and switch circuit breaker ON.
4. Perform the power frequency test successively for all three phases (L1, L2 and L3) in accordance with the specifications of the test unit manufacturer. Make sure to earth the adjacent phases.



**Figure 48**  
Switch position during the power frequency test (for example, five panels)

- |  |  |
|--|--|
| 1 Feeder panels                          | 4 Test unit (for example, high-voltage source, test transformer) |
| 2 Incoming feeder panel for test voltage | 5 Test cable   |
| 3 Busbar                                 |  |

## After the Power Frequency Test

Follow the below steps after the power frequency test:

1. Switch circuit breaker OFF and put circuit-breaker truck into disconnected position.
2. Switch earthing switch ON.
3. Remove test unit and test cables.
4. Reconnect disconnected voltage transformers and surge arresters.

## Cable Test after Assembly

### **⚠ WARNING**

#### **HAZARD OF INCORRECT OPERATION**

Comply with the safety provisions, page 8.

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

A test unit and a test adapter (not included in scope of supply) are required for cable testing.

**NOTE:** The assembly, operating and testing instructions for cable fittings and connectors and the test unit must be taken into consideration.

During the cable test, the busbar can be operated at rated voltage (refer to Nameplate, page 21). For qualification of the current transformers for cable tests, enquire at the appropriate manufacturers.

## Preparation

<b>⚠ WARNING</b>
<p><b>HAZARD OF INCORRECT OPERATION</b></p> <p>Strictly observe the assembly instructions for the test adapters and the operating and inspection instructions for the test unit.</p> <p><b>Failure to follow these instructions can result in death, serious injury, or equipment damage.</b></p>

1. Isolate outgoing feeder cable of the panel to be tested.
2. Isolate outgoing feeder cable in remote station.
3. Earth outgoing feeder cable of the panel to be tested.
4. Remove cable compartment cover (refer to *Access to the Cable Compartment*, page 28).
5. Disconnect voltage transformer and surge arrester; earth voltage detecting systems.

## Performing the cable test

<b>⚠⚠ DANGER</b>
<p><b>HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH</b></p> <ul style="list-style-type: none"> <li>• Ensure the test process and procedure as per IEC 62271-200.</li> <li>• Apply appropriate PPE and follow safe work practices.</li> <li>• EasySet MV switchgear must only be tested by qualified personnel.</li> <li>• Ensure that the metallic components of the test adapter are at a sufficient distance from the earthed switchgear components (for example, housing).</li> </ul> <p><b>Failure to follow these instructions will result in death or serious injury.</b></p>

1. Connect the test adapter to a free cable connection in the panel and on the test unit. To this effect, observe the specifications of the test units manufacturer.
2. Set switchgear panel to test position:

Circuit breaker:	OFF
Truck:	in disconnected position
Earthing switch:	OFF

3. Perform cable test according to the cable manufacturers specifications. When doing so, do not exceed the admissible limits (see Table).

Description	DC test voltage [kV] max. 15 min.
EasySet MV	34 <sup>(1)</sup>
<small>(1) Admissible limits for the switchgear in case of cable tests with a testing frequency of 0.1 Hz available on request from the manufacturers.</small>	

Once the cable test has been completed:

1. Earth feeder cable again.
2. Remove test set.
3. Reconnect voltage transformer, surge arrester and voltage detection systems or de-earth them.
4. Reposition cable compartment cover.

# Annexure

## Screw Fastenings

### ⚠ CAUTION

#### HAZARD OF INAPPROPRIATE ASSEMBLY

Comply with the specified torque values for the installations that are covered in this guide.

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

The following elements must be used for all screw fastenings:

- Screws and bolts: Grade  $\geq 8.8$
- Nuts: Grade 8

**NOTE:** Do not grease screws or nuts.

Hex. bolts and socket-head capscrews (except slotted screws) and nuts (except self-locking nuts)

Thread size	Tightening torque [N•m]	
	min.	max.
M5	3.8	4.7
M6	7	9
M8	16	24
M10	36	44
M12	63	77






Screw fastening with casting nuts in cast resin parts (transformer and post insulator)

Thread size	Tightening torque [N•m]	
	min.	max.
M6	5	7.5
M8	12	18
M10	24	38
M12	36	54

Screw fastening for current transmission, conductor material: copper

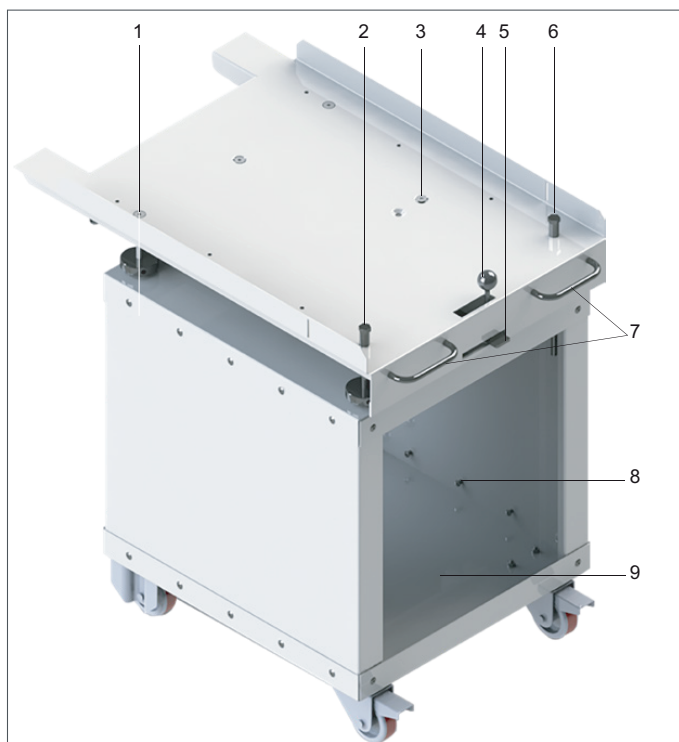
Thread size	Tightening torque [N•m]	
	min.	max.
M6	5.5	7.5
M8	15	19
M10	30	40
M12	60	76
M12	63	77

## Required Tools (not Included in the Scope of Supplies)

Cutter	
Nail puller	
Approved torque wrenches with different bits for hexagon socket screws and socket-head screws and nuts; bits for screw and nut grades M5, M6, M8, M10, M12	
Screwdriver and Philips screwdriver	
Cutting pliers	
4 Crane straps/chains of L $\geq$ 2000 mm	-
Lint-free, clean rags	-

## Operation Accessories

### Transport Trolley for Circuit Breaker



**Figure 49**  
Transport trolley for truck

- |  |  |
|--|--|
| 1 M10 X 220 HEX socket flat CSK head screw | 6 Bush                                       |
| 2 M10X250 stainless steel bolt hexagon     | 7 Door handle                                |
| 3 CSK screw M8X85                          | 8 Blind rivet protruding HD 6.4 mm X 11 mm C |
| 4 Ball knob                                | 9 VCB handling trolley base plate            |
| 5 Trolley locking plate                    |  |

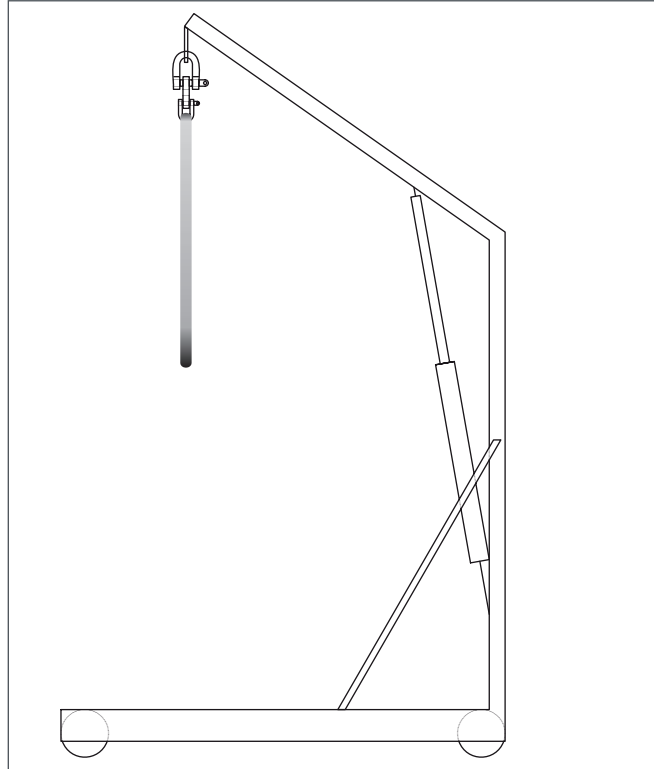
Rated volt-age Ur of the panel [kV]	Panel width [mm]	Truck	Item number of trolley
≤ 12	650/800	EasyPact EXE	EIB AE1 148-01 <sup>(1)</sup>
<sup>(1)</sup> The trolley can be used for panel widths of 650 mm and 800 mm.			

#### Adjusting the track width

Follow the steps to adjusting the track width:

1. Release three screws on each track (Figure 49, 2).
2. Adjust the two tracks to the appropriate panel track width and check them. Remount the six screws.
3. Adapt position of unlocking bar (10) also to the appropriate panel (same procedure).

## Handling Crane for Circuit Breaker (Optional)



**Figure 50**  
Handling crane for trucks Item no. AGSC73258-01

Schneider Electric  
35 rue Joseph Monier  
92500 Rueil Malmaison  
France

+ 33 (0) 1 41 29 70 00

[www.se.com](http://www.se.com)

As standards, specifications, and design change from time to time, please ask for confirmation of the information given in this publication.

© 2025 – Schneider Electric. All rights reserved.

GEX2564100-02