SeT Series

MCSeT

Digitally Native Upto 24 kV
Air-insulated Switchgear
With EvoPacT HVX Vacuum Circuit Breaker

Receipt Guide

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Schneider Electric

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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's SeT Series is 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.

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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 label indicates that an electrical hazard exists which will result in personal 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 that follow 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.

⚠ WARNING

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

⚠ CAUTION

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

NOTICE

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

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

About the Document

Intended Use

This receipt guide describes about air-insulated MV switchgear units of the MCSeT.

The operations described in this guide should be performed by a qualified personnel with proven experience regarding:

- The MCSeT series
- All relevant safety provisions

This receipt guide is the integral part of the product and should be stored such that it is readily accessible at all times and can be used by persons who work on the switchgear. If the switchgear is relocated to another site, this guide should be passed on to the new operator along with the unit.

This guide does not describe every imaginable individual case or every customer-specific version of the product. For more information, contact Schneider Electric.

Validity Note

This guide is valid only for MCSeT cubicle. The design provides easy rack-in/rack-out operation without the need for a separate trolley. It is an extension of the MCSeT range and delivers performances up to 24 kV. It is equipped with the EvoPacT HVX Vacuum Circuit Breaker and CVX Contactor and has other functional trolley like the EvoPacT Metering Truck (MTX).

For product compliance and environmental information (RoHS, REACH, PEP, EOLI, and so on), go to the Green Premium page on the Schneider Electric website.

The information contained in this guide is likely to be updated at any time. Schneider Electric strongly recommends that you have the most recent and up-to-date version available on https://www.se.com/ww/en/download.

The technical characteristics of the devices described in this guide also appear online. To access the information online, go to the Schneider Electric home page at www.se.com.

Product Related Information

Air-insulated MV units of the MCSeT series are designed exclusively for switching and distributing electrical power. They can only be used within the scope of the specified standards and the switchgear-specific technical data. Any other utilization constitutes improper use and can result in danger and damage.

⚠⚠DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

The MCSeT switchgear must be used only in scope of specified standards and specific technical data.

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

Safety Provisions

Introduction

Before performing work on the cubicle, it is essential that you comply with the following instructions:

⚠⚠DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

Before removing covers and performing assembly or maintenance work:

- Ensure that the system is isolated from high voltage, supply voltage, and properly grounded.
- Ensure that the Vacuum Circuit Breaker (VCB)/Contactor is in test condition, the Earthing Switch (E/S) is closed, and access is locked.
- Follow the Lock Out Tag Out (LOTO) process to perform any work on switchboard.
- Install barriers, cables, and polycarbonates in accordance with the design specifications wherever necessary.

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

⚠WARNING

HAZARD OF MOVABLE PARTS IN MECHANICAL DRIVES

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

- Isolate from the supply voltage.
- Release the energy-storing device of the VCB by performing the OFF-ON-OFF operation.
- Activate the make-proof E/S to ON position, to ensure that the equipment is ready for use (if any).
- Do not remove the mechanisms during maintenance work.

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

⚠WARNING

HAZARD OF SHARP-EDGED SHEET METAL AND METAL PARTS

During installation and maintenance work, comply with the below safety rules:

- Apply appropriate Personal Protective Equipment (PPE) and follow safe electrical work practices. See standards or local equivalent.
- Always cover sharp edges.

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

Applicable Standards and Regulations:

The following are the applicable standards and regulations:

- Metal-enclosed AC switchgear for rated voltages > 1 kV up to including 52 kV: IEC 62271-200, Common Specification: IEC 62271-1.
- Comply with the locally applicable accident avoidance, operating, and work instructions.
- Assembly and maintenance: IEC 61936-1.
- Operation of electrical equipment: EN 50110-1.

NOTE:

- The national standards applicable in the country where the equipment is to be installed should be complied.
- Other standards or regulations have to be checked and accessed locally.

Behavior in case of Incidents or Accidents

If an internal arc fault occurs, the MCSeT switchgear is equipped with pressure relief absorbers or ports to help prevent the cubicles and switchgear from being blown off.

This receipt guide does not include information regarding the safety of buildings in case of internal faults (pressure load of the switchgear room and necessary pressure relief ports). Pressure calculations for switchgear rooms, including recommendations regarding pressure relief ports, can be provided upon request for a fee. For more details, contact Schneider Electric.

In case of fire or internal faults, toxic and caustic decomposition products may be produced. Comply with the locally applicable accident and safety provisions.

Make sure that first-aid measures are taken in case of injury to persons.

Dimensions and Weights

Cubicles Without Internal Arc Accessories

The list of cubicles with one Current Transformer (CT) per phase in the MCSeT are:

- Incomer/Feeder (I/F)
- Bus Section Coupler (BSC)
- Bus Section Riser (BSR)
- Busbar Metering and Earthing (BME)

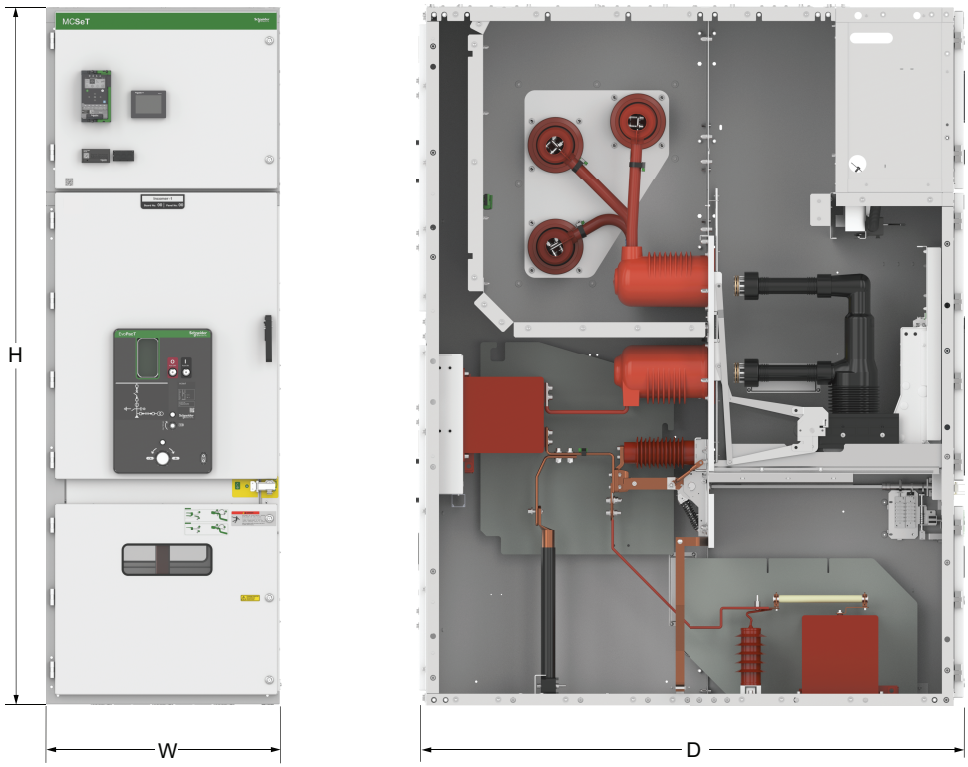

Figure 1
Dimensions of Cubicles

NOTE: The images shown here are for illustration purpose only.

Table 1 Dimensions of I/F, BSC, BSR, and BME Cubicles

Rated voltage (kV)	Dimensions	I/F			BSC			BSR			BME		
	Width W (mm)	**650**	**800**	**1000**	**650**	**800**	**1000**	**650**	**800**	**1000**	**650**	**800**	**1000**
12/17.5	Height H (mm)(1)	2240	2240	2240	2240	2240	2240	2240	2240	2240	2240	2240	–
	Depth D (mm)(2)	1440	1440	1440	1440	1440	1440	1440	1440	1440	1440	1440	–
	Approximate weight with packing (kg)(3)	800	920	1050	720	840	970	480	630	750	470	720	–
	Approximate weight without packing (kg)(3)	700	820	950	620	740	870	380	530	650	350	620	–
24	Height H (mm)(1)	–	2400	2400	–	2400	2400	–	2400	2400	–	2400	2400
	Depth D (mm)(2)	–	1860	1860	–	1860	1860	–	1860	1860	–	1860	1860
	Approximate weight with packing (kg)(3)	–	1160	1470	–	1190	1510	–	800	1030	–	765	980
	Approximate weight without packing (kg)(3)	–	1020	1330	–	1120	1440	–	730	960	–	700	910

(1) The specified height covers standard LV compartment and does not include internal arc accessories.

(2) The mentioned depth refer to a single CT with bottom cable entry; it may differ for other designs.

(3) Fully equipped cubicle with surge arrester and fixed Voltage Transformer (VT).

NOTE:

- For a 4000 A cubicle with a width of 1000 mm, the depth is 1640 mm.
- All weights mentioned in this document may vary. The actual weights are specified on the cubicle packaging.

Refer to the below table for the weight of the cubicle and the VCB dispatched separately:

Table 2 Weights of Cubicle and VCB

Description	**Weight (kg)**	
Rated voltage (kV)	12/17.5	24
Cubicle without packaging	990	1162
Cubicle with packaging	1090	1232
VCB without packaging	165	242
VCB with packaging	195	272

NOTE: For current of above 1250 A, the VCB is dispatched in a separate box.

Dimensions of Internal Arc Accessories

Table 3 Dimensions of Internal Exhaust

Internal arc accessories	Dimension (mm)	
Rated voltage (kV)	12/17.5	24
Height of the tunnel T	473	420
Height of the tunnel T + Height of the absorber A	728	670

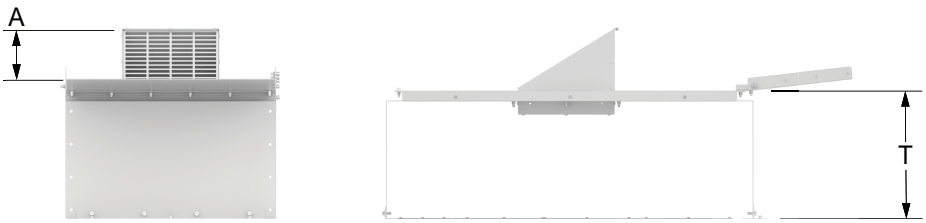

Figure 2
Dimension of Internal Exhaust

Table 4 Dimensions of External Exhaust

Internal arc accessories	Dimension (mm)	
Rated voltage (kV)	12/17.5	24
Height of the tunnel T1	473	523
Height of the tunnel T2	473	419

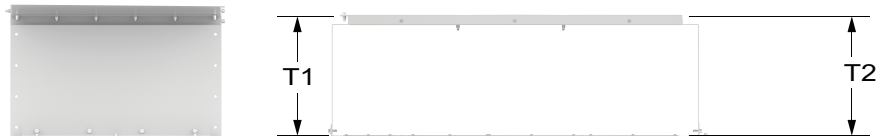

Figure 3
Dimension of External Exhaust 12/17.5 kV

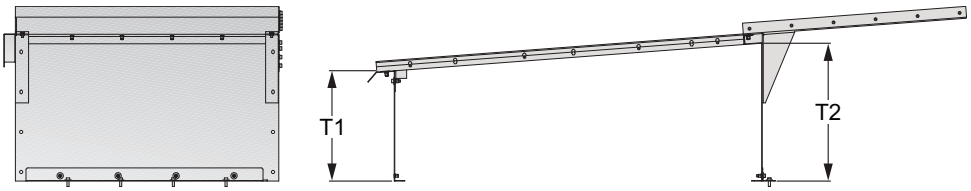

Figure 4
Dimension of External Exhaust 24 kV

NOTE: The images shown here are for illustration purpose only.

Transport Trolley for Vacuum Circuit Breaker

Table 5 Weight of Trolley with Accessories

Rated voltage Ur of the Cubicle (kV)	Cubicle width (mm)	Weight of trolley with accessories without packaging (kg)	Weight of trolley with accessories with packaging (kg)	View
12/17.5	650	56	86	
	800	56	86	
	1000	62	96	
24	800	56	86	
	1000	62	96	

NOTE:

- All operating handles and keys shall be dispatched inside the trolley.
- The images shown here are for illustration purpose only.

Receipt Guidelines

Shipping Units

The following points are considered while shipping the units:

- The condition and the type of transport is stipulated in the contract details.
- The type of packaging depends on the type of transport and the storage conditions.
- The cubicles are dispatched individually and fastened on the pallets.
- The trolley are dispatched in a separate box.
- The standard accessories are included.
- The cubicles are dispatched in upright position.

NOTE: The weight of the entire transport unit is indicated on the packaging.

Packing

The following points are considered while packing the units:

- If packed exclusively for land transport, the cubicles are dispatched on a pallet with cardboard box as shown in the Figure 5.
- For water or air transport, the units are packed in sealed aluminium foil with desiccant and in a closed wooden case with a tightly closed wooden base, as shown in the Figure 6.

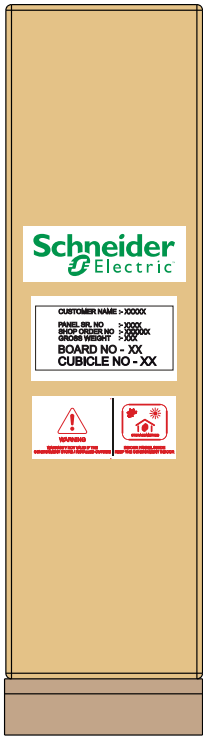

Figure 5
Packed in Cardboard Box, on a Pallet

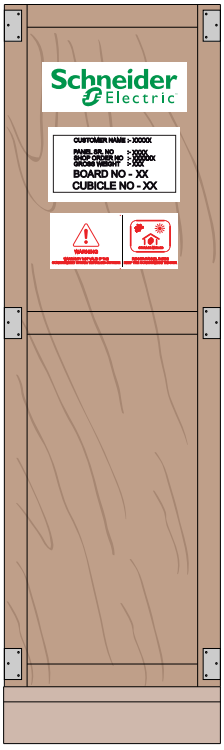

Figure 6
Packed in a Wooden Case

Unloading

Lifting Through Overhead Crane

⚠WARNING

HAZARD OF FALLING OR TOPPLING

Transport unit must be secured sufficiently during transport to avoid slipping and tipping over.

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

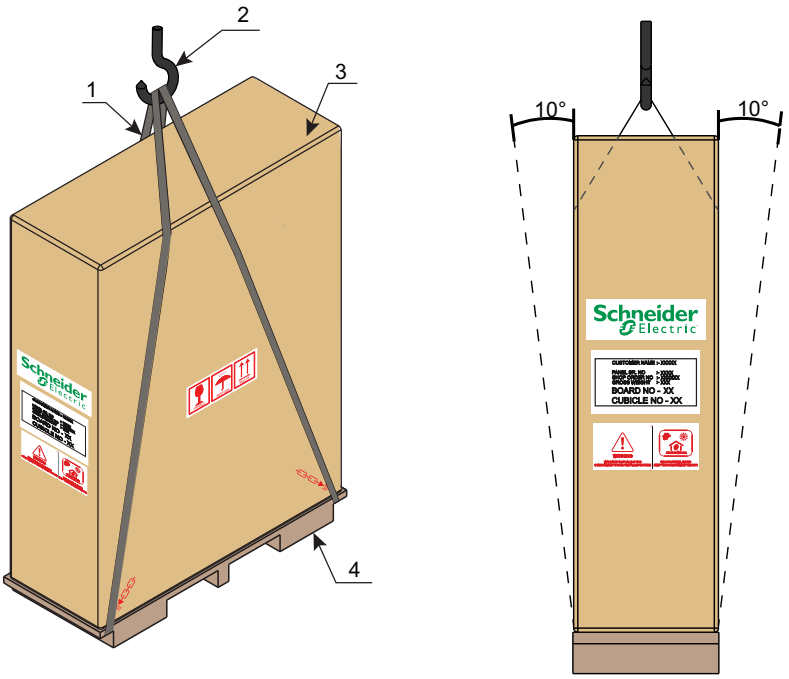

Figure 7
Lifting Through Overhead Crane

1	Belt (non-metallic)	3	Cubicle
2	Hook	4	Wooden base frame

Lifting Through Forklift

⚠WARNING

HAZARD OF FALLING OR TOPPLING

Transport unit must be secured sufficiently during transport to avoid slipping and tipping over.

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

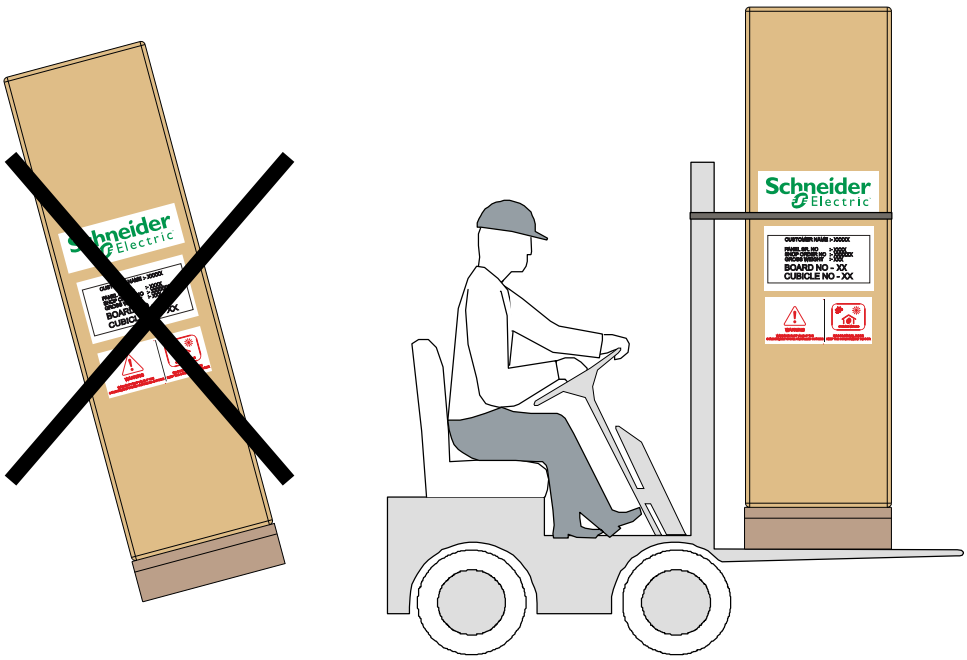

Figure 8
Lifting Through Forklift

Receipt and Inspection

⚠CAUTION

HAZARD OF INAPPROPRIATE HANDLING

- Shipped units must be checked for any damage, upon receipt. Any damage occurred in transit must be recorded and reported to Schneider Electric as soon as possible.
- Check the completeness of the consignment based on the transport documents. The supplier must be notified in writing about any possible deviations without delay.

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

Handle shipped units carefully during unloading and unpacking as follows:

- If packing box is damaged, report to the Schneider Electric as soon as possible.
- Loose materials per switchboard are dispatched in a separate box.
- The trolley and VCB above 1250 A will be dispatched in a separate box.
- The tunnel and the absorber are dispatched in a separate box.

For an example of representation, refer to Figure 9.

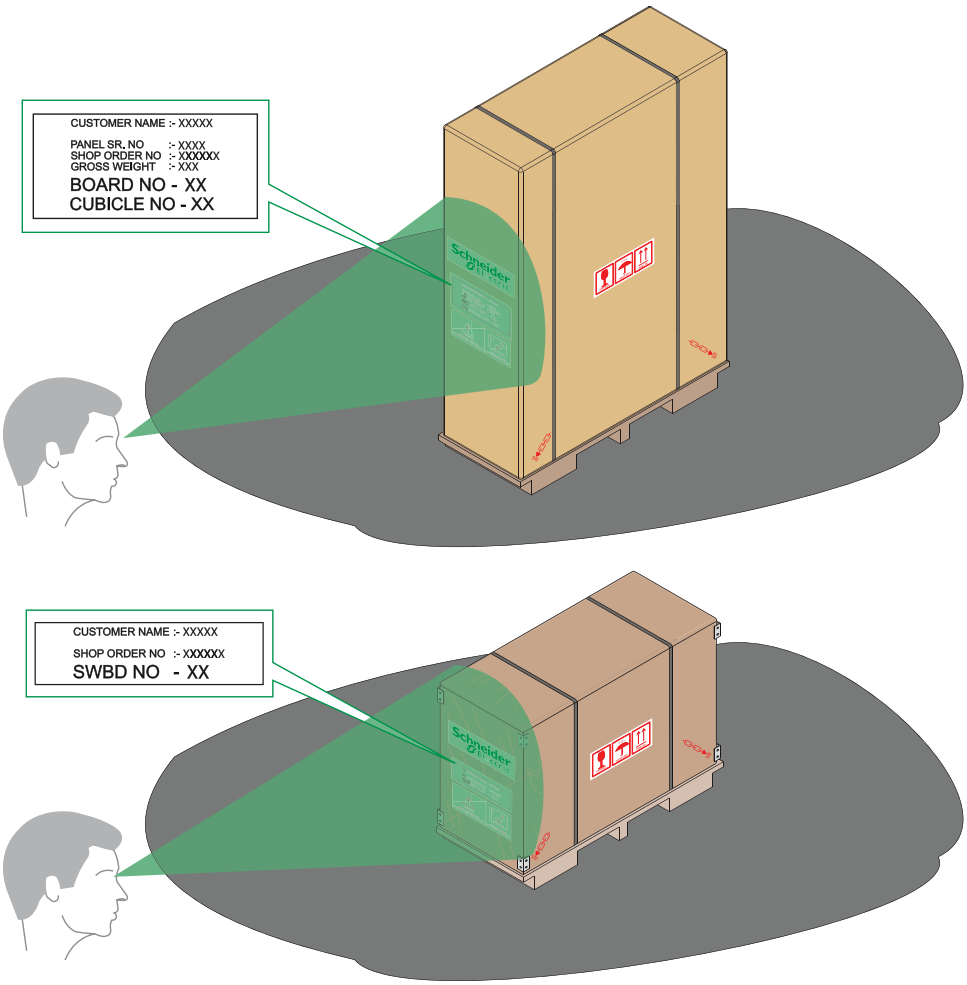

Figure 9
Inspection upon Receipt

Storage

⚠WARNING

HAZARD OF STORING UNDER INAPPROPRIATE CONDITIONS

- Ensure that the supporting area has sufficient stability and evenness.
- Cubicles must be stored in vertical position and must not be stacked.
- Indoor storage only is admissible.
- Switchgear and accessories should be stored, sealed with desiccants in aluminium foil, and packed in a wooden box (the storing time before installation is compliant with the warranty period in the terms and conditions).
- Pallet should not be removed until the installation.
- The storage room environment should be healthy, no rodents, humidity control ≤ 95%/≤ 90% for 24 hours and 1 month respectively, and no water on the floor.

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

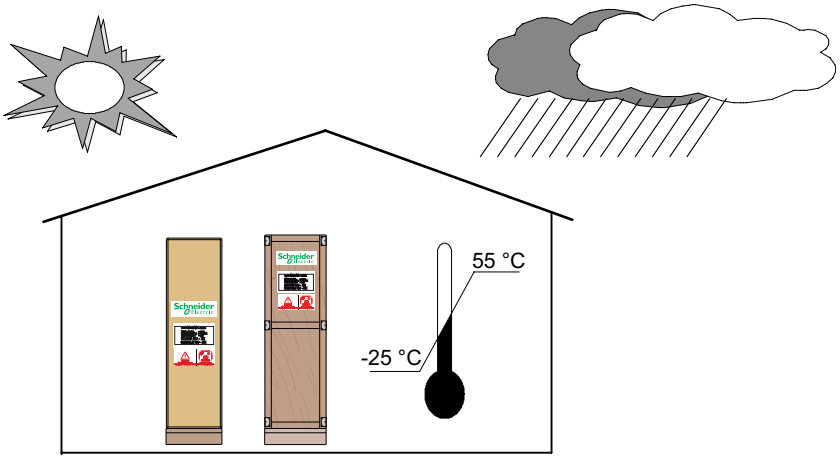

Figure 10
Storage Conditions

Intervention Levels

Table 6 Description of Personnel Skilled at Different Intervention Levels

Definition	Personnel	Levels
All qualified personnel with basic electrician skills performing operations according to instruction leaflet provided by Schneider Electric with the product.	Skilled	1
Skilled electrical professionals following Schneider Electric's documentation and processes, ideally formalized in a commercial agreement (audit, training, and no specific tools).	Independent panel builder	2A
Licensed electrical personnel carrying out tasks authorized by Schneider Electric as outlined in a compulsory commercial agreement (certification, training, and specific tools) relative to one or more ranges.	License panel builder	2B
Licensed electrical personnel carrying out tasks authorized by Schneider Electric as outlined in a compulsory commercial agreement (certification, heavy training, and specific tools).	EcoXpert	2
Local divisions of Schneider Electric responsible for providing services.	SE service	3

NOTE: For support on any of the above mentioned levels, contact Schneider Electric customer care.

Specific Instructions for Storage Less than 6 Months

Table 7 Skilled Personnel Intervention for Storage Less Than 6 Months

Definition	Levels				
	1	2A	2B	2	3
Packaging under plastic covers.	✓	✓	✓	✓	✓
Inspect the packaging periodically.	✓	✓	✓	✓	✓
While unpacking, check the mechanical operation by carrying out about several operations.	✓	✓	✓	✓	✓
Power frequency test for busbar (80% of power frequency value).	✓	✓	✓	✓	✓

Specific Instructions for Storage from 6 to 12 Months

Table 8 Skilled Personnel Intervention for Storage from 6 to 12 Months

Definition	Levels				
	1	2A	2B	2	3
Packaging under heat-sealable linen, with the presence of bags of desiccant(1).	✓	✓	✓	✓	✓
Inspect the packaging periodically (absence of perforation amongst others).	✓	✓	✓	✓	✓
While unpacking, check the mechanical operation by carrying out about several operations.	–	✓	✓	✓	✓
Test the minimum threshold level (AC, 85% rated Un; DC, 70% of Un) for electrical operation of the coils.	–	✓	✓	✓	✓
Power frequency test for complete Switchboard(2) (80% of power frequency value).	–	✓	✓	✓	✓
(1) Desiccant to be added by customer. For details, contact Schneider Electric. (2) Necessary shorting of CTs, VTs, VDIS and so on to be taken care during the test.					

Specific Instructions for Storage from 12 to 24 Months

Table 9 Skilled Personnel Intervention for Storage from 12 to 24 Months

Definition	Levels				
	1	2A	2B	2	3
Packaging under heat-sealable linen, with inspection hatch to change the bags of desiccant(1).	✓	✓	✓	✓	✓
Inspect the packaging periodically (absence of perforation amongst others).	✓	✓	✓	✓	✓
Replace the bags of desiccant periodically.	✓	✓	✓	✓	✓
While unpacking, light maintenance work.	–	–	–	–	✓
• Check the mechanical operation by carrying out about ten operations. • Test the minimum threshold level (AC, 85% rated Un; DC, 70% of Un) for electrical operation of the coils.	– –	– –	– –	– –	✓ ✓
Power frequency test for complete Switchboard(2) (80% of power frequency value).	–	–	–	–	✓
(1) Desiccant to be added by customer. For details, contact Schneider Electric. (2) Necessary shorting of CTs, VTs, VDIS and so on to be taken care during the test.					

Glossary

B

BME: Busbar Metering and Earthing

BSC: Bus Section Coupler

BSR: Bus Section Riser

C

CT: Current Transformer

E

E/S: Earthing Switch

EvoPacT HVX: Vacuum Circuit Breaker

EvoPacT MTX: Metering Truck

F

F: Feeder

FU: Functional Unit (cubicle + mobile part)

I

I: Incomer

L

LV: Low Voltage

M

MV: Medium Voltage (voltage class up to 24 kV)

V

VCB: Vacuum Circuit Breaker

VDIS: Voltage Detecting and Indicating System

VT: Voltage Transformer

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