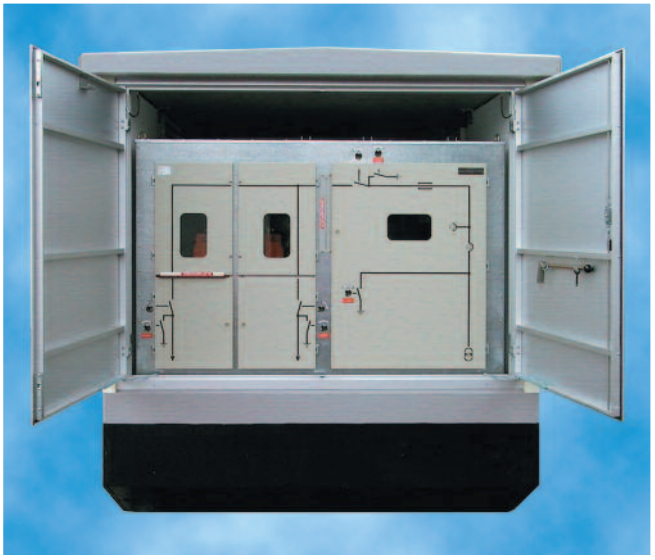
# DRIESCHER - Air-Insulated Medium-Voltage Compact Switchgears for Substations

- Rated voltage
  12 kV to 24 kV
- Rated current
  630 A



12k

24 k

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# DRIESCHER - Compact Switchgears for Substations

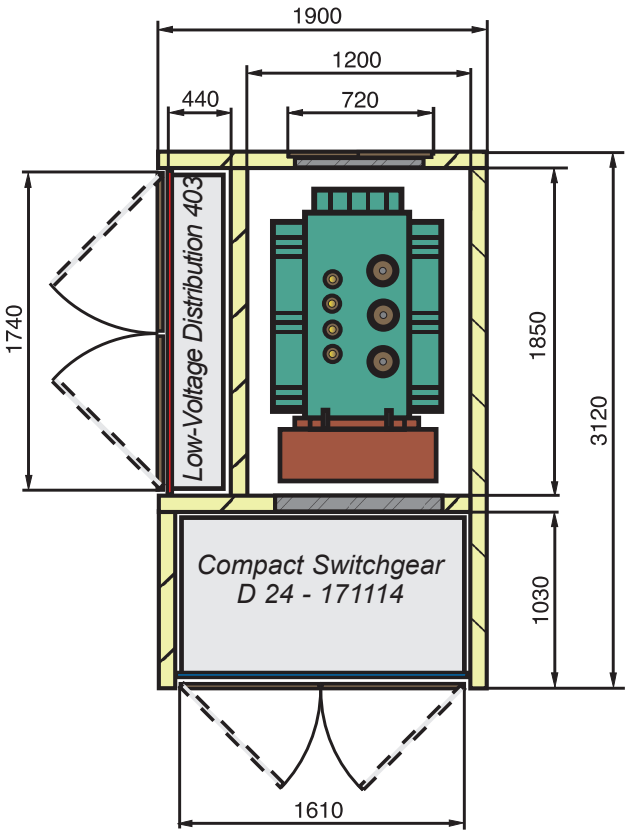
in compliance with EN 62271-200

## General

**The new air-insulated DRIESCHER medium-voltage compact switchgears are ideal for application in secondary substations without control aisles.**
**They meet the user's specific requirements to the full and ensure a satisfactory power distribution.**

**These new air-insulated medium-voltage compact switchgears have been designed to meet demands for flexibility, maximum levels in quality and safety as well as maximum operating convenience in the network control.**

- **Compact dimensions**
- **No need for gaseous or solid insulators**
- **Environmental compatibility, also in the event of a malfunction;**
  **there are no toxic reaction products under the influence of accidental arcs**
- **Future-oriented design with subassemblies which are predominantly recyclable, hazardous substances are avoided.**
- **No special surge voltage protector equipment and cable sealing ends**
- **Maximum safety**
- **Easy handling**
- **Minimum amount of maintenance**




Height (above floor) 1600 mm

**Drawing:**

Example of secondary unit substation with

- Medium-voltage compact switchgear,
  Type D 24 - 171114 comprising two cable panels as well as a transformer feeder
- Low-voltage distribution, Type 403 with infeed of max. 1250 A and up to ten outgoing circuits 400 A / 630 A
- Maximum transformer rated power 2500 kVA

**Upon request we can also provide complete secondary substations!**

## Operating Conditions

The air-insulated compact switchgears are installed in closed electrical operating areas to which only trained personnel and appropriately instructed persons have access.
The equipment can be used at altitudes of up to 1000 m above sea level.

For installations above an altitude of 1000 m the rated insulating level of the switchgear must be corrected accordingly. The switch panels are designed for use under normal operating conditions in compliance with the standard EN 62271-1.

## Technical Standards

The design of the air-insulated switchgears corresponds to the specifications of the EN 62271-200. The resistance to accidental arcs of the switch panels has been determined at 16, 20 and 25 kA; 1 s, by an independent testing institute.

The installed switchgear equipment is designed in compliance with EN 62271-1. The degree of protection of the switch panels corresponds to IP 3X. The technical data of the installed switch-disconnectors are given in list 727.

## Technical Data

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Rated voltage | $U_r$ | 12 | kV | Rated short-circuit duration | $t_k$ | 1 | s |
| Rated lightning impulse withstand voltage | $U_p$ | 75 | kV | Rated frequency | $f_r$ | 50 | Hz |
| Rated short-time withstand voltage | $U_d$ | 28 | kV | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Rated voltage | $U_r$ | 24 | kV | Rated short-circuit duration | $t_k$ | 1 | s |
| Rated lightning impulse withstand voltage | $U_p$ | 125 | kV | Rated frequency | $f_r$ | 50 | Hz |
| Rated short-time withstand voltage | $U_d$ | 50 | kV | | | | |

| Technical data for the installed switchgear equipment | Rated (operating) current | Rated short-time current $I_k$ | Rated peak current $I_p$ |
|---|---|---|---|
| Switch-disconnetor H 27 (Feeder cable) | 630 A | up to 20 kA | up to 50 kA |
| Switch-fuse combination H27 SEA and H27 SuT (Transformer feeder) | 125 A | h.v.h.b.c. fuse | h.v.h.b.c. fuse |

# Description of the Compact Switchgear

## Design

The air-insulated medium-voltage compact switchgears comprise at least one outgoing feeder cable and one transformer feeder.

The compact switchgears frame is made of a screwed, hot-galvanized composite structure.

The entire compact switchgear is metal-encapsulated to guarantee optimal protection to persons and plant.

The compact switchgears are fitted at the front with single-wing sheet steel doors which have inserted compound glass windows for visual inspection of the switch-disconnectors.

Every compact switchgear has a screwed on rear panel of galvanized sheet steel with separate assembly openings.
Connecting cables are conducted from the bottom into the switch panels where they are mounted on adjustable rails.

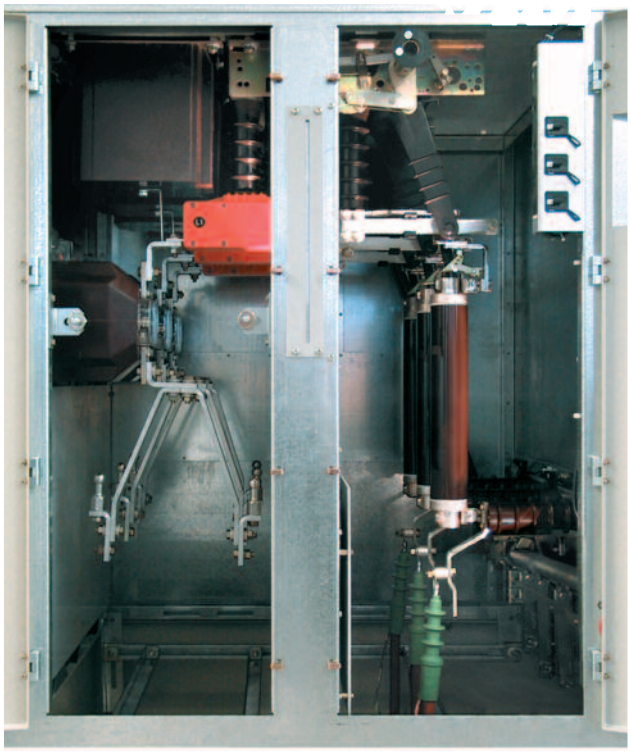


*Fig.:*
*24 kV Compact switchgear*
*Type D 24 - 121114 open*

## Equipment

The cable panels are equipped with an in-line switch-disconnector H 27 EK.

A fuse switch-disconnector H 27 SEA or H 27 SuT is installed in the transformer feeder panel. The HV-HBC fuse mounting contacts have been turned through 90° to optimally use the available space (fuses can be pulled out towards the front).

The compact switchgears can, of course, also be equipped with an earthing switch as well as with current and voltage transformers.

The optimal interlocking of the devices practically rules out any incorrect operation.

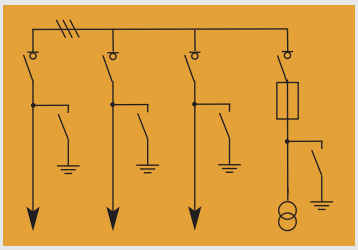
Earthing switches or spherical fixed points are available for earthing and short-circuiting.
When work is being carried out insulating protective barriers can be inserted in the open isolating distance of the switching devices in question, with the door closed.

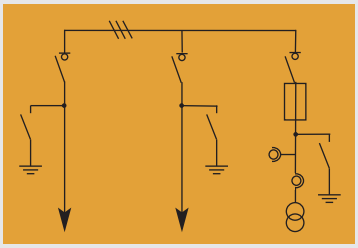
Pressure relief is in downward direction.

The doors and covers of the switchgear are painted in structural paint (selectable in different colours to meet the customer's request).
All switch panels are designed for central locking with double-bit key. Additional locking means, with profile cylinder or padlock, are available on request.

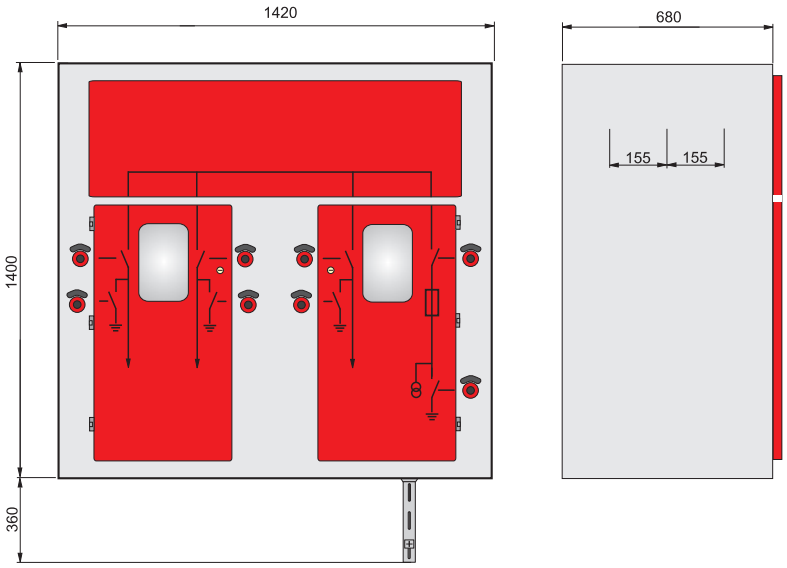
optional

not possible





| Type D 12 - 147014 | | | | |
|---|---|---|---|---|
| Switch-disconnector | H 27 EK | H 27 SEA | H 27 EK | H 27 SEA |
| Earthing switch | ● | | ● | |
| Current transformer | - | | ● | |
| Voltage transformer | - | | ● | |




- Rated voltage
  12 kV
- Rated (operating) current
  630 A
- Rated isolation level
  75 kV

*Fig. 1:*
*12 kV Compact switchgear in front and side view*

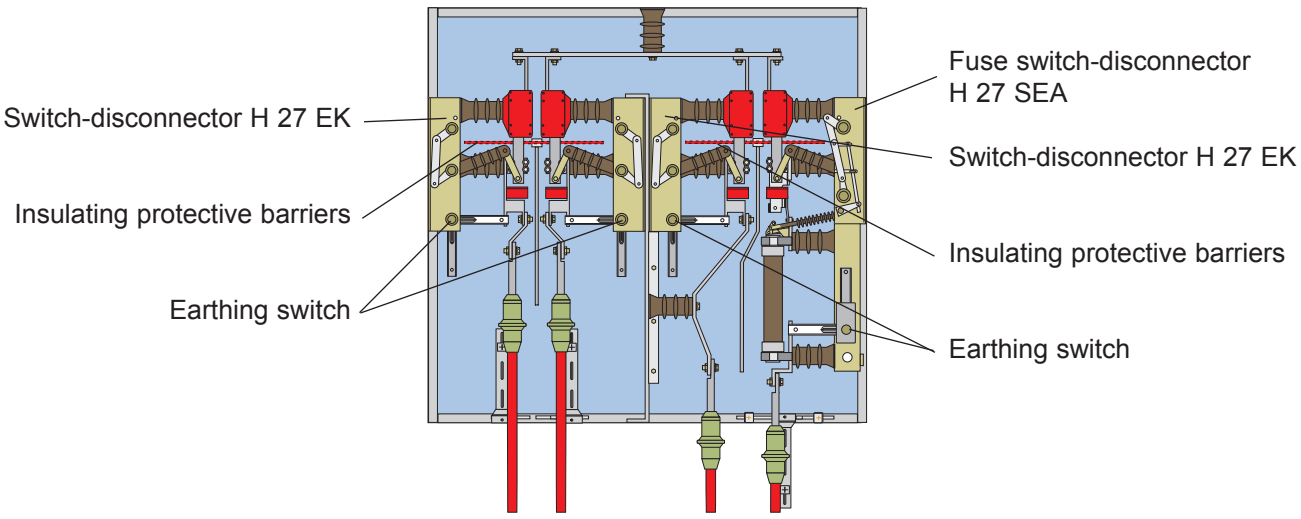
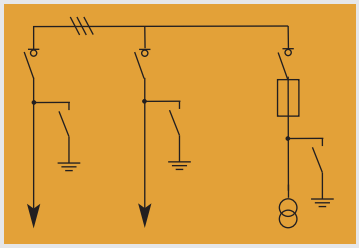


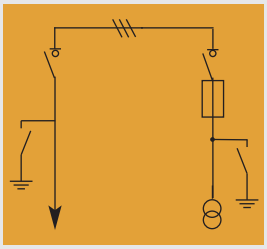

*Fig. 2:*
*12 kV Compact switchgear - open*

# DRIESCHER - Compact Switchgears 12 kV

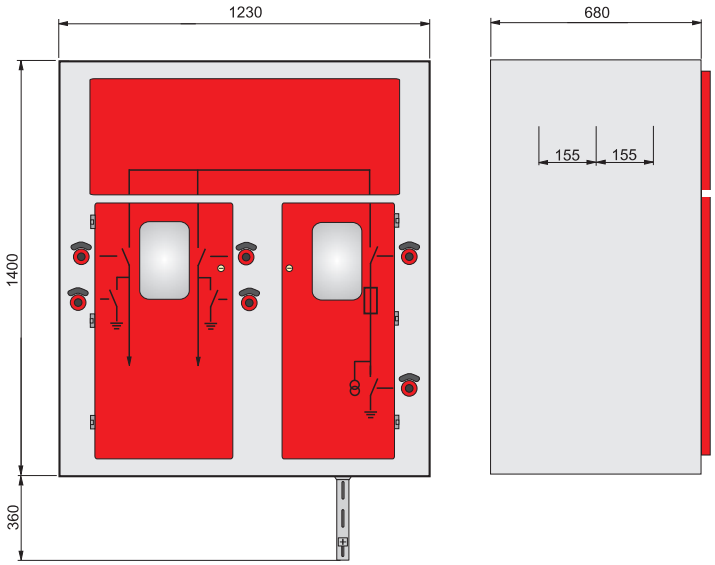
optional

- not possible





| Type D 12 - 127014 | | | | |
|---|---|---|---|---|
| Switch-disconnector | H 27 EK | H 27 SEA | H 27 EK | H 27 SEA |
| Earthing switch | ● | | ● | |
| Current transformer | - | | - | |
| Voltage transformer | - | | - | |




- Rated voltage
  12 kV
- Rated (operating) current
  630 A
- Rated isolation level
  75 kV

*Fig. 3:*
*12 kV Compact switchgear in front and side view*

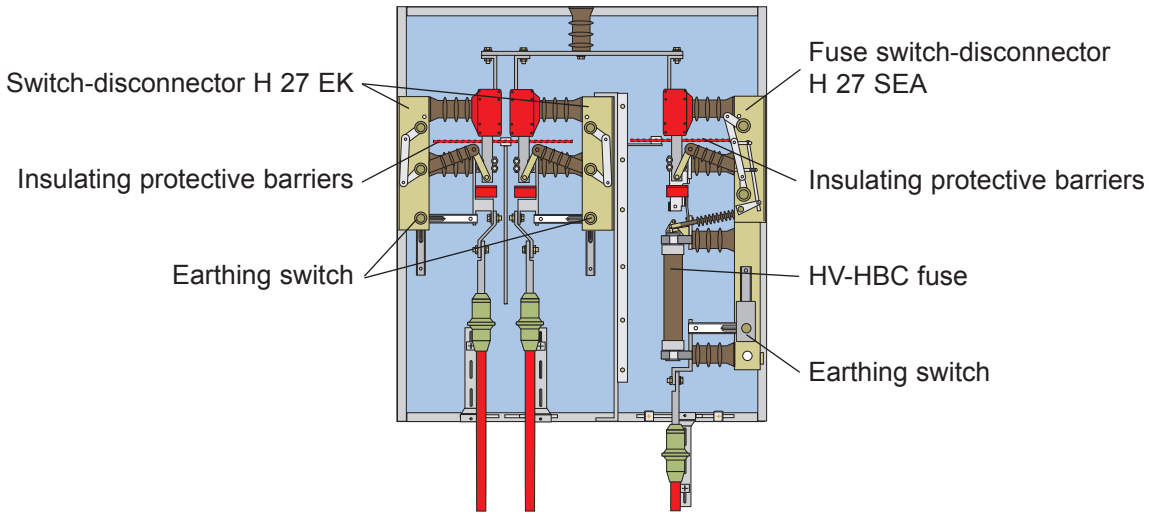
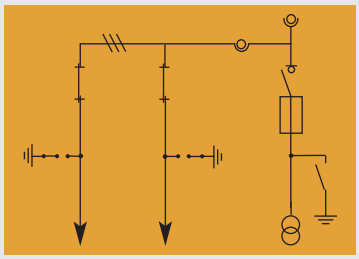
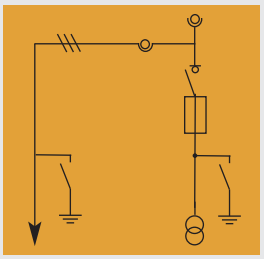



*Fig. 4:*
*12 kV Compact switchgear - open*

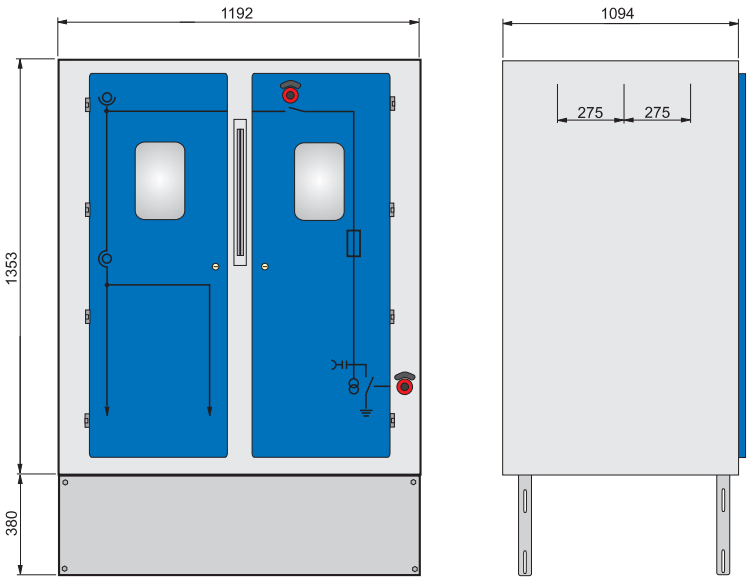
optional

not possible





| Type D 24 - 121114 | | | | |
|---|---|---|---|---|
| Switch-disconnector | H 27 EK | H 27 SuT | H 27 EK | H 27 SuT |
| Earthing switch | ● | | ● | |
| Current transformer | ● | | ● | |
| Voltage transformer | ● | | ● | |




- Rated voltage
  24 kV
- Rated (operating) current
  630 A
- Rated isolation level
  125 kV

*Fig. 5:*
*24 kV Compact switchgear in front and side view*

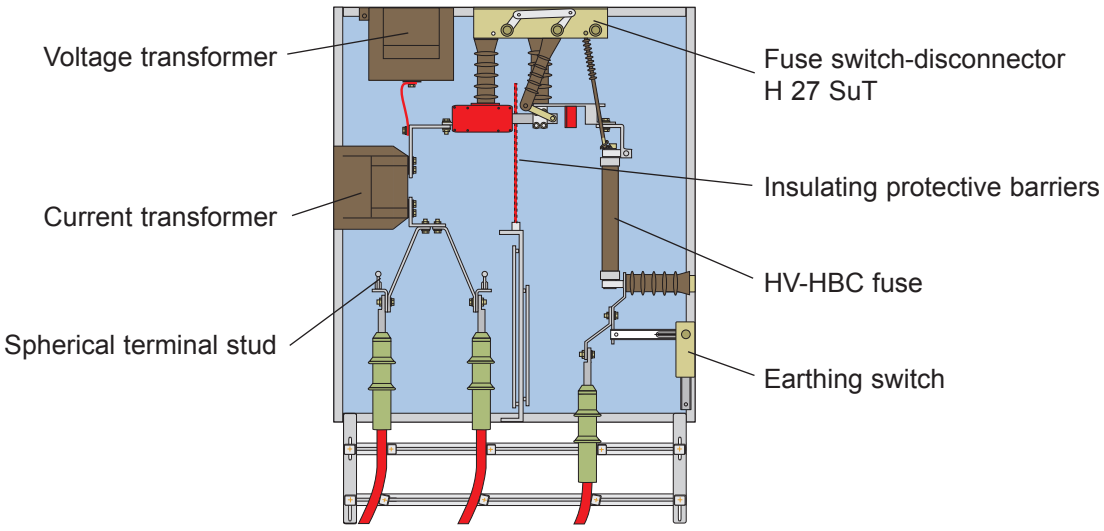
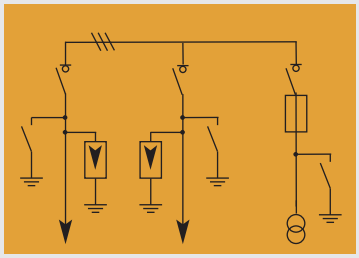
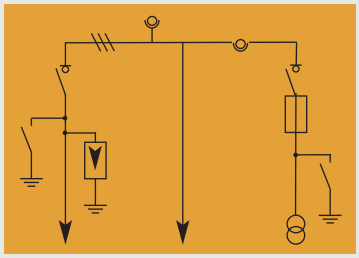



*Fig. 6:*
*24 kV Compact switchgear - open*

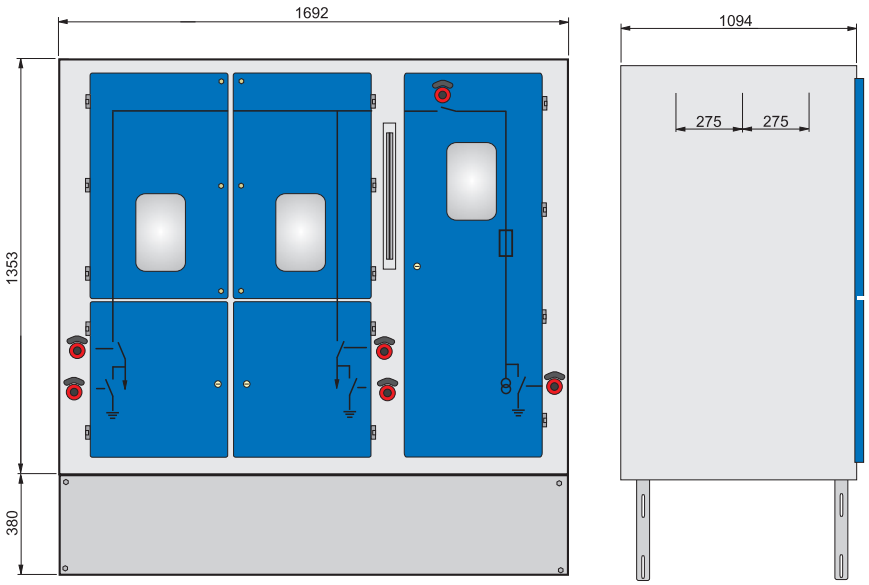
optional

not possible





| Type D 24 - 171114 | | | | |
|---|---|---|---|---|
| Switch-disconnector | H 27 EK | H 27 SuT | H 27 EK | H 27 SuT |
| Earthing switch | | | | |
| Current transformer | - | | | |
| Voltage transformer | - | | | |




- Rated voltage
  24 kV
- Rated (operating) current
  630 A
- Rated isolation level
  125 kV

*Fig. 7:*
*24 kV Compact switchgear in front and side view*

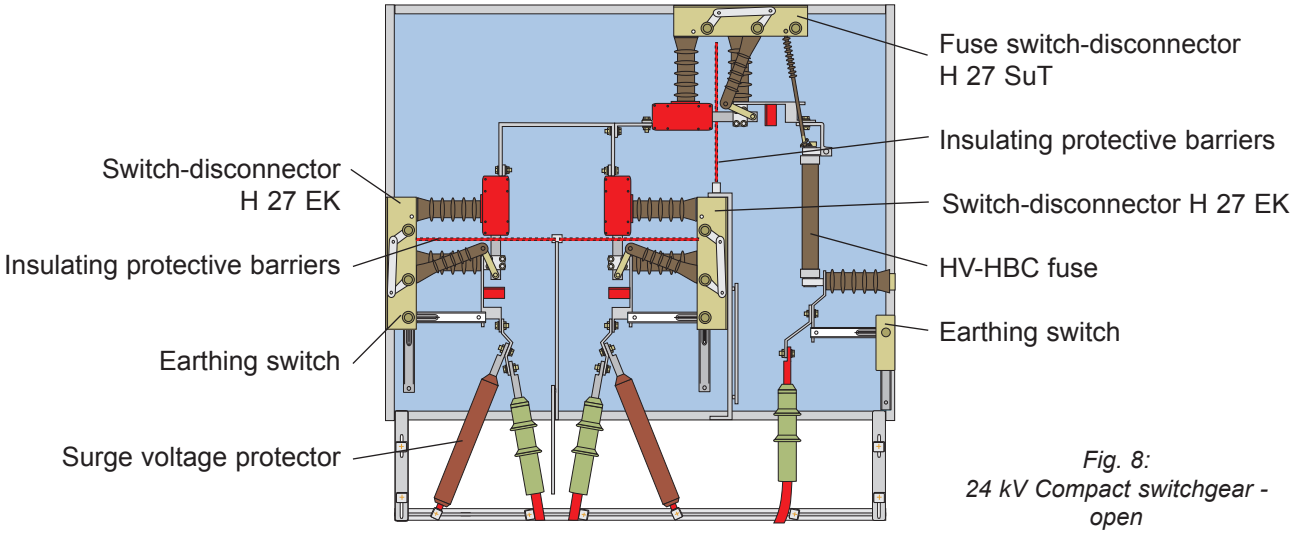
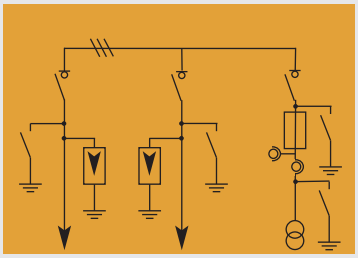



*Fig. 8:*
*24 kV Compact switchgear - open*

# DRIESCHER - Compact Switchgears 24 kV

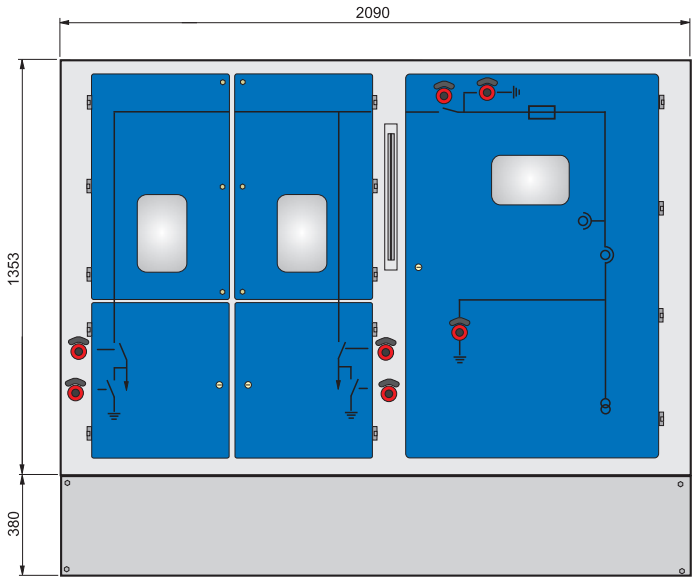
optional

- not possible



| Type D 24 - 211114 | H 27 EK | H 27 SEA |
|---|---|---|
| Switch-disconnector | | |
| Earthing switch | ● | |
| Current transformer | ● | |
| Voltage transformer | ● | |

- Rated voltage
  24 kV
- Rated (operating) current
  630 A
- Rated isolation level
  125 kV



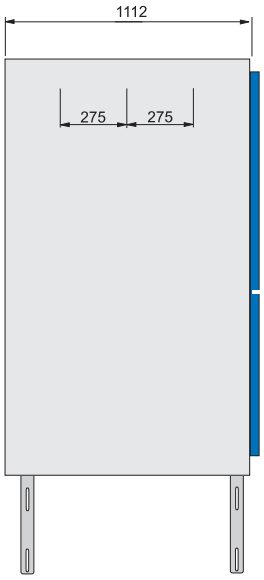




*Fig. 9:*
*24 kV Compact switchgear in front and side view*

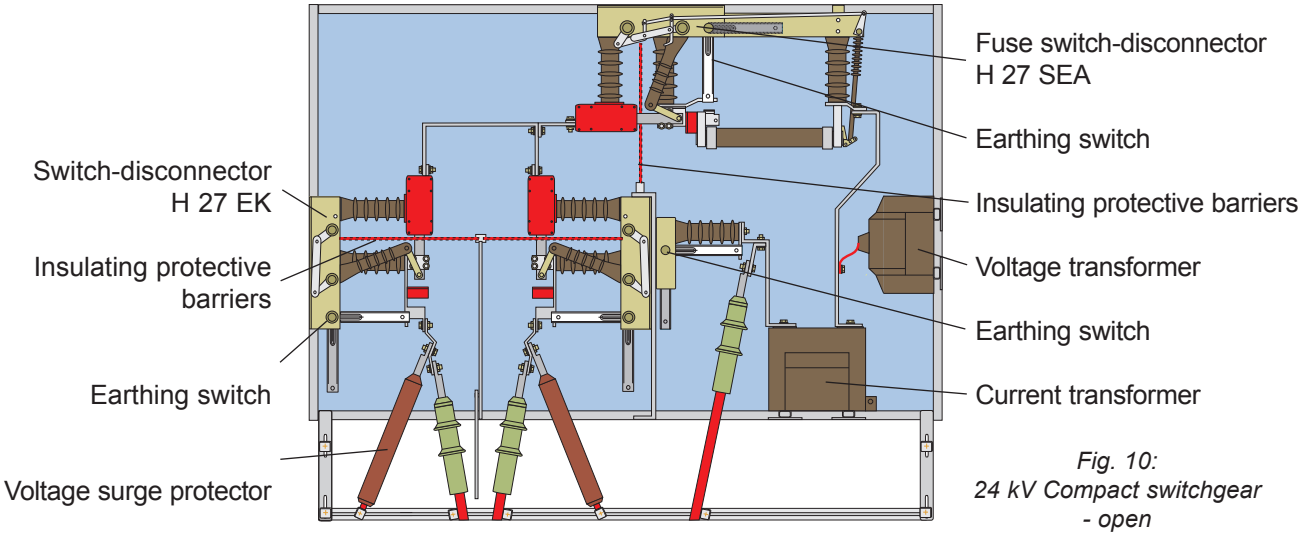



*Fig. 10:*
*24 kV Compact switchgear - open*

## Available Auxiliary Equipment

Designation

- Cable panel with surge voltage protector
- Installation of test sockets for capactive voltage tapping
- Attachment of a fuse box
- Cable panel with switch-disconnector 630 A
- Transformer panel with switch-disconnector 630 A
- Additional locking features with profile cylinder and lockable operating mechanisms
- Base
- Installation of various short-circuit display systems
- Panel illumination
- Delivery is possible with voltage display and transformer system DEHNcap/AWS for measuring phase-to-earth and phase-to-phase voltages for control and protection

## Required Plant Accessories

Designation

- 1 manual operating lever
- 1 door key with double-bit DIN 43668, size 5
- 1 insulating protective barrier, VDE 0682, Part 552
- for additional station accessories please refer to List 773

## Weights

| Type | Weight with maximum equipment approx.kg | Drawing-no. |
|---|---|---|
| D 12 - 127014 | 390 | KS2 - 094311 |
| D 12 - 147014 | 480 | KS2 - 094311 |
| D 24 - 121114 | 630 | KS2 - 094311 |
| D 24 - 171114 | 590 | KS2 - 094311 |
| D 24 - 211114 | 960 | KS3 - 097157 |

**For assembly, commissioning and maintenance always proceed as specified in the appropriate instructions.**

**Our range of products includes:**

**Medium-voltage systems**

- Single-bus and duplicate-bus switchgear
- Non-withdrawable, withdrawable, and truck-type units
- Compact switchgear assemblies
- Custom-made models
- Industrial systems

**Medium-voltage switchgear**

- Indoor switches, disconnectors, and earthing switches (single and triple pole)
- Indoor circuit breakers (vacuum)
- Outdoor switches (low oil content and vacuum)
- High-voltage high-breaking-capacity fuses

**Low-voltage systems**

- Open-framework design
- Enclosed break devices (up to 6.300 A)
- Cable and fixed-station distribution cabinets

**Low-voltage switchgear**

- Switch disconnectors
- Switch and fuse blocks
- Low-voltage high-breaking-capacity fuses

**Driving gear**

- Hand-operated and motor-operated mechanisms
- Indoor and outdoor driving gear

**Accessories**

- For medium and low voltages
- For station equipment
- Insulators (0.5 kV - 38.5 kV)
- Plastic and glass-reinforced plastic screening



**switching • electricity • safely**

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