DRIESCHER - Air-Insulated Medium-Voltage Switchgears

- Type W 12 - 607519
- Type W 12 - 757521
- Type W 12 - 907521

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

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http://www.driescher.com

W 12

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DRIESCHER - 12 kV Switchgears

in compliance with DIN VDE 0670, Part 6 and IEC 60298

General

The metal-encapsulated, air-insulated medium-voltage switchgears, Type W 12 are for universal application:
They range from compact ring cable switchgears up to complex power distribution switchgears.
Tailored to meet the needs of public utility networks and power supply companies in industry and municipal buildings.
These medium-voltage switchgears meet the user's specific requirements in full and ensure a satisfactory power distribution.

The W 12 standard panel types are available in three different dimensional sizes:

1. W 12 - 607519; W x D x H: 600 x 750 x 1900 mm.
2. W 12 - 757521; W x D x H: 750 x 750 x 2100 mm.
3. W 12 - 907521; W x D x H: 900 x 750 x 2100 mm.

They are available as individual panels or as a combined switchgear, where the equipment, panel sequence etc. can be determined by the customer.
The switch panels are type-tested in compliance with DIN VDE 0670, Part 6, including the Pehla directive No. 4.

Operating Conditions

The switch panels of Type W 12 are installed in closed electrical operating areas which are only to be entered by skilled personnel and appropriately instructed persons.
The equipment can be used at an altitude 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 DIN VDE 0670, Part 1000 (IEC 60694).

Technical Standards

The design of the air-insulated switch panels corresponds to the specifications of the DIN VDE 0670, Part 6 (IEC 60298). The resistance to accidental arcs of the switch panels has been determined at 16 kA and 20 kA; 1 s, by and independent testing institute. The installed switchgear equipment is designed in compliance with DIN VDE 0670, Part 1000 (IEC 60694).

The degree of protection of the switch panels corresponds to IP 3X.
Technical data on the installed switchgear equipment are available for

- Switch-disconnector H 22 in list 722
- Earthing and disconnecting switches in list 731
- Circuit breakers L 163 in list 744
- Circuit breakers V 625 in list 745

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				

Technical data for the installed switchgear equipment	Rated (operating) current I_r	Rated short-time current I_k	Rated peak current I_p
Panels with circuit breaker V 625	630 A	25 kA	63 kA
Panels with circuit breaker L 163	630 A	16 kA	40 kA
Panels with switch-disconnector H22	630 A	20 kA	50 kA

Benefits

- **Reliable** and safe based on the high quality of our products
- **Economical** through continuous further development
- **Flexible**
- **Compact design**
- **Easy handling**
- **Minimum amount of maintenance**

Description of the Switch Panels

Design

The air-insulated medium-voltage switch panels of Type W 12 with a panel width of 600 mm, 750 mm and 900 mm are metal-encapsulated.
The switch panel frame is made of a screwed, hot-galvanized composite structure.
The front of the switch panels has a single-wing door of steel sheet with door hinge optionally on the right or left. A window of compound glass is inserted in the door.
The cover in front of the bus bar compartment is either screwed on or designed as a door for the relay box positioned behind it.
Each switch panel has a screwed on rear panel of galvanized sheet metal.
Connecting cables are conducted into the switch panels from below and are mounted on cross rails which can be adjusted in two dimensions.
The doors and covers of the switchgear are painted in structural paint (available in different colours according to the customer's request).

Equipment

The switch panels of Type W 12 are available in the following versions:

- Cable switch panel Type WK 12
- Transformer feeder panel Type WT 12
- Measuring switch panel Type WM 12
- Bus sectionalizer panel Type WÜ 12
- Circuit-breaker panel Type WL 12

All switch panels are partitioned off from panel to panel, in the busbar area, by means of fibrous-glass reinforced plastic plates with lead-in openings.

Pressure relief can be in upward or downward direction.
Switch panels equipped with load-break switches can optionally be fitted with an earthing switch as well.

Integrated in the circuit-breaker panel, Type WL 12, there is also a bus disconnector.
It is also possible to equip these panels with a set of current transformers and voltage transformers as well as with an earthing switch.

The optional interlocking of the equipment practically rules out any form of incorrect operation.
All built-in switchgear equipment can be operated manually or via motor-operated mechanisms when the panel door is closed.

The product program is completed by special measuring panels which are fitted with current and voltage transformers.

Earthing switches or spherical fixed points are available for earthing and short-circuiting.
An insulating protective plate can be inserted when the panel door is closed.
It is possible to install appropriate surge voltage protectors in the panel, if required.

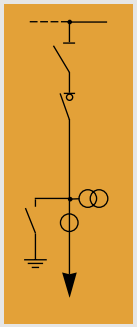
All switch panels are designed with central locking and double-bit key.
There are additional locking features available in the form of profile cylinders or padlocks, if required.

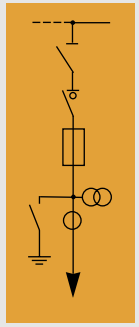
Air-Insulated Medium-Voltage Switch Panel 12 kV
Type W 12 - 607519, Type W 12 - 757521 and Type W 12 – 907521

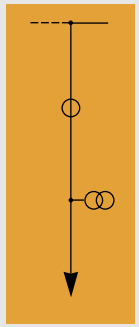
optional

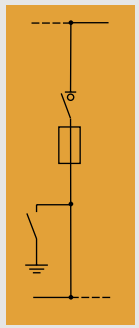
\- not possible

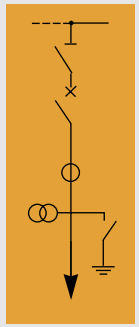
* not possible with current or voltage transformer

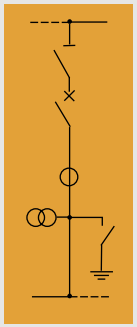












Switch Panel Type W 12 - 607519	Cable panel (WK) Fig. 2,3,4,13,14,15	Transformer feeder panel (WT) Fig. 5,6,18	Measuring panel (WM) Fig. 9,10,16,17	Bus sectionalizer panel (WÜ) Fig. 7,8,14,18	Circuit-breaker panel (WL) Fig. 11,12,19,20,21,22	Circuit-breaker bus sectionalizer panel (WÜL) Fig. 23,24
Disconnecting switch	*	*	-	-		
Switch-disconnector / Circuit breaker	H 22 EA/EK	H 22 SEA	-	H 22 EK/EA/SEA	L 163 F	L 163 F
Earthing switch			-			-
Current transformer				-		
Voltage transformer				-	-	-
Switch Panel Type W 12 - 757521/907521						
Disconnecting switch	-	-	-	-		
Switch-disconnector / Circuit breaker	H 22 EA/EK	H 22 SEA	-	H 22 EK/EA/SEA	L163 F V 625F / KUF	V 625F / KUF
Earthing switch			-			-
Current transformer				-		
Voltage transformer				-		-

Switch Panels Type W 12 - 607519

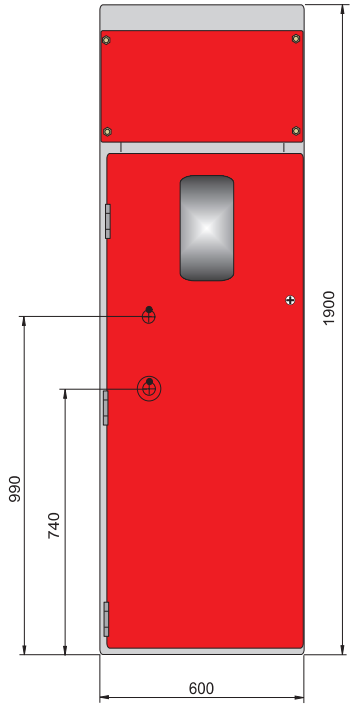


Fig. 1: 12 kV Switch panel - front view

12 kV Switch panel according to drawing HA 2-070735

- Rated voltage 12 kV
- Rated (operating) current up to 630 A
- Rated insulation level 75 kV
- Resistance to accidental arcs 20 kA; 1 s

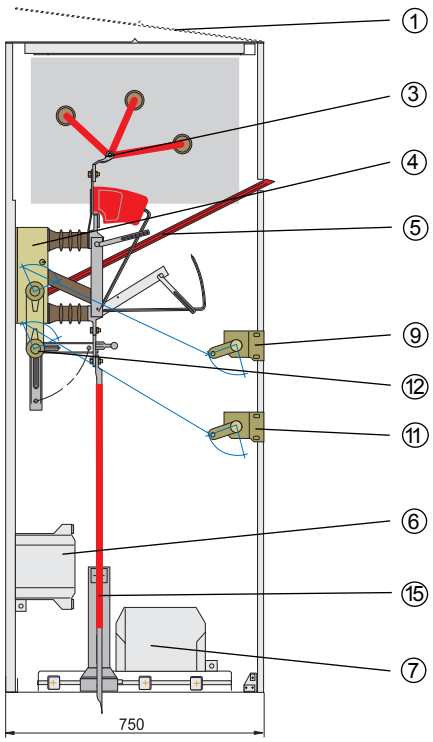


Fig. 2: 12 kV Cable panel with switch-disconnector H22 EA also possible with current and voltage transformer

① Pressure relief plate
② Relay box
③ Bus terminal
④ Switch-disconnector H 22
⑤ Withdrawable plate *
⑥ Current transformer
⑦ Voltage transformer
⑧ Circuit breaker
⑨ Position indicator and actuation of load-break switch
⑩ Position indicator and actuation of disconnecting switch
⑪ Position indicator and actuation of earthing switch
⑫ Earthing switch
⑬ Disconnecting switch
⑭ HV-HBC fuse
⑮ Cable terminal

* The FRP withdrawable plate can be inserted when the switchgear unit is switched off.

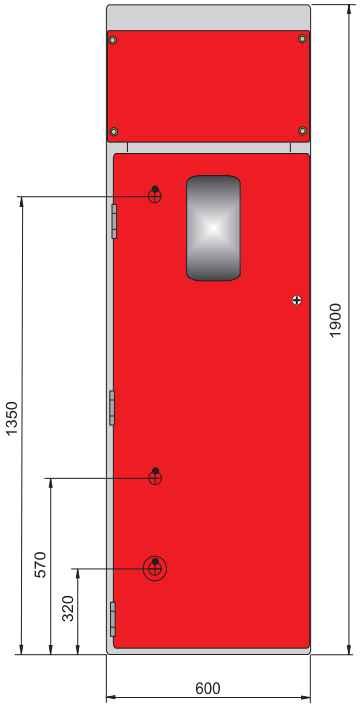


Fig. 3: Front view of 12 kV cable panel with switch-disconnector H 22 EA/EK and disconnecting switch

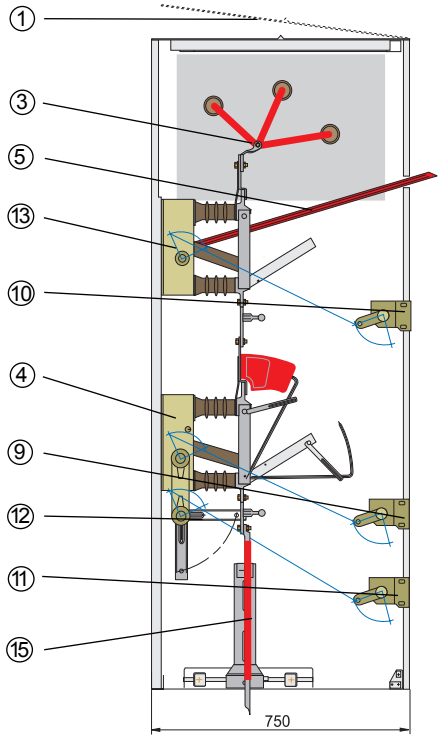


Fig. 4: Side view of 12 kV cable panel with switch-disconnector H 22 EA/EK and disconnecting switch

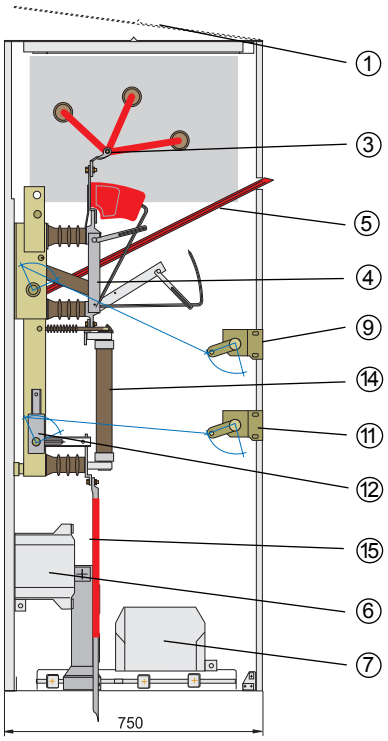


Fig. 5: 12 kV Transformer feeder panel with switch-disconnector H22 SEA, also possible with current and voltage transformer

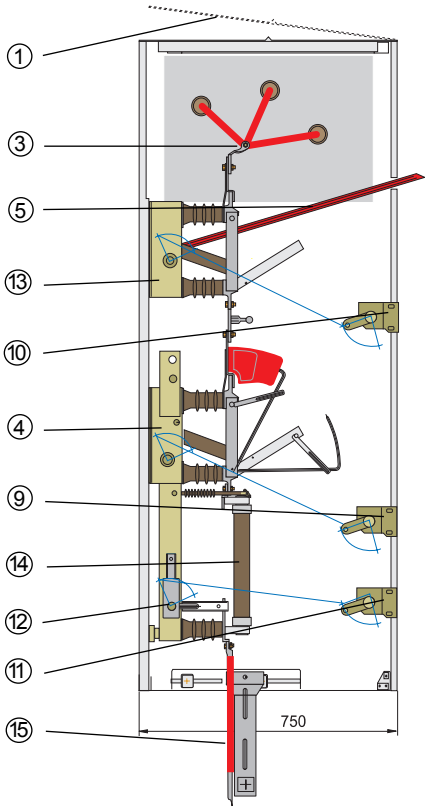


Fig. 6: 12 kV Transformer feeder panel with switch-disconnector H22 SEA and disconnecting switch

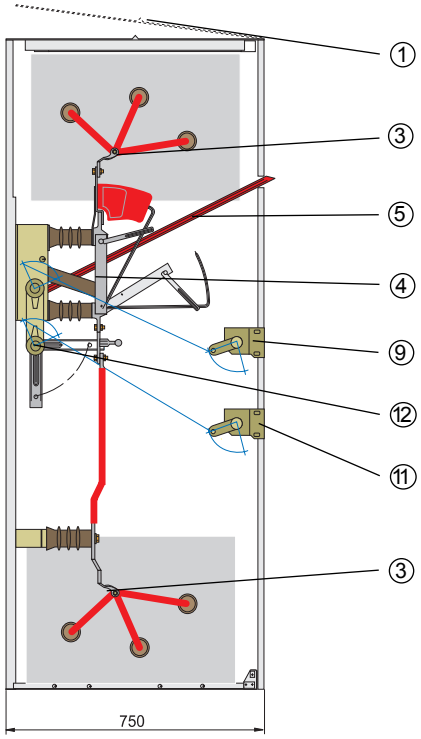


Fig. 7: 12 kV Bus sectionalizer panel with switch-disconnector H22 EA/EK

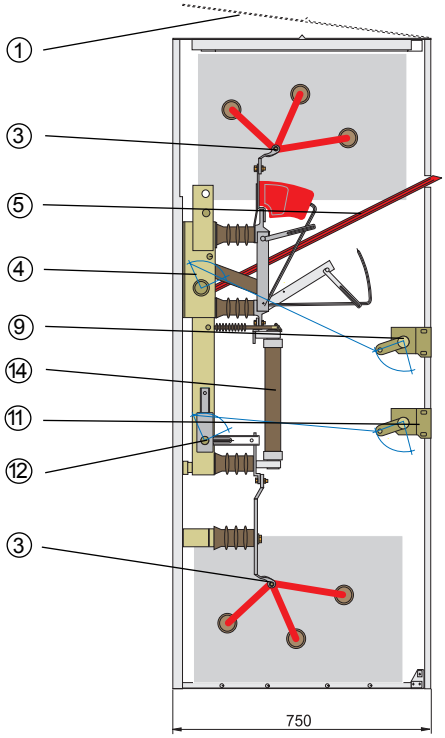


Fig. 8: 12 kV Bus sectionalizer panel with switch-disconnector H22 SEA

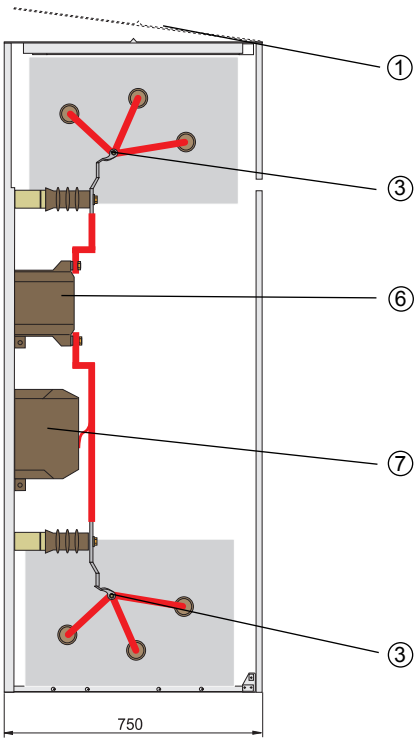
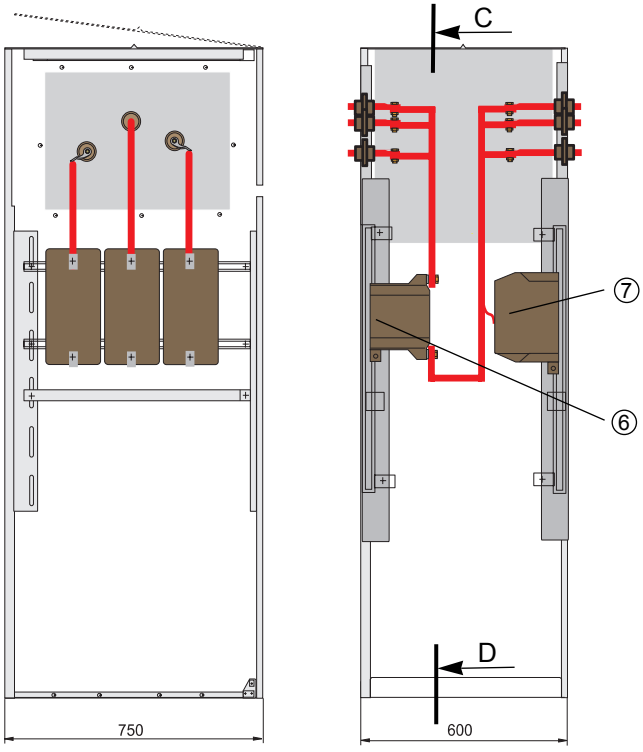


Fig. 9: 12 kV Measuring panel with current and voltage transformers



Schnitt C - D

Fig. 10: 12 kV Measuring panel in longitudinal rails with current and voltage transformers Section C – D

Switch Panels Type W 12 - 607519

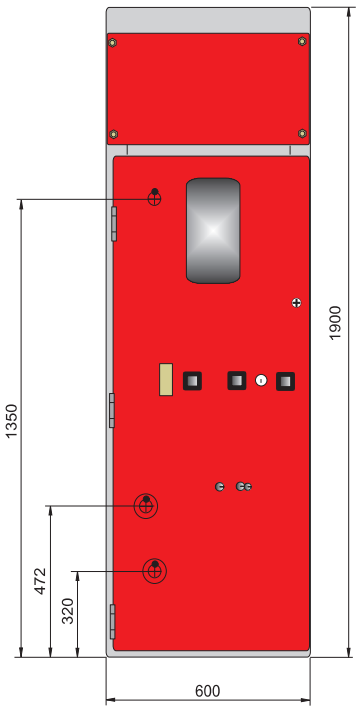


Fig. 11: Front view of 12 kV circuit-breaker panel with disconnecting switch

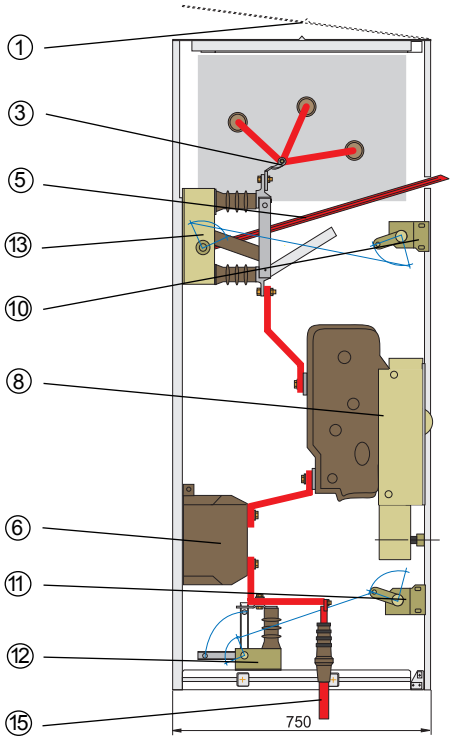
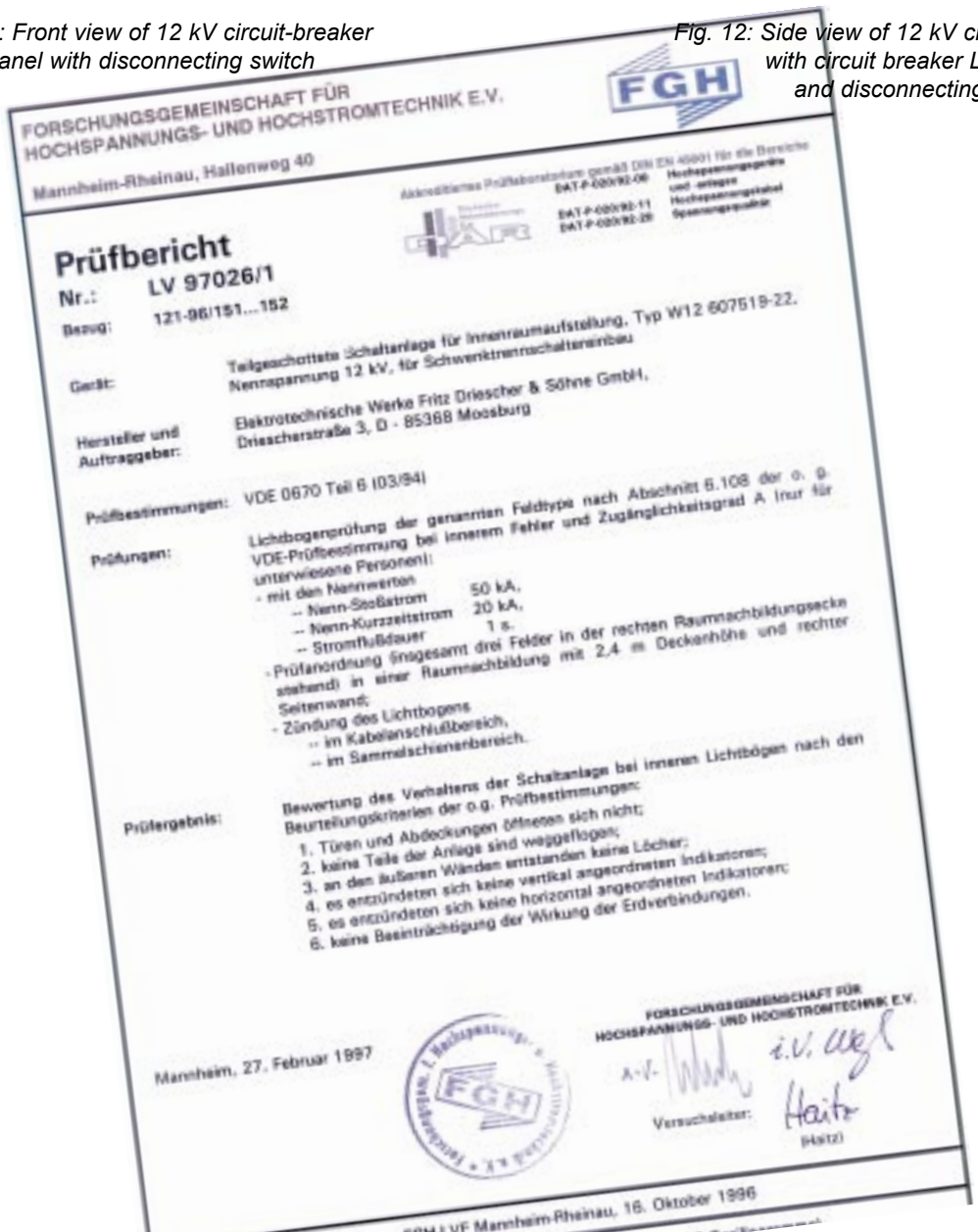


Fig. 12: Side view of 12 kV circuit-breaker panel with circuit breaker LS L 163 F and disconnecting switch



FORSCHUNGSGEMEINSCHAFT FÜR HOCHSPANNUNGS- UND HOCHSTROMTECHNIK E.V.
Mannheim-Rheinau, Hallenweg 40

FGH

Akkreditiertes Prüflaboratorium gemäß DIN EN 45001 für die Bereiche
DAT-P-020/92-08 Hochspannungsgeräte und -anlagen
DAT-P-020/92-11 Hochspannungskabel
DAT-P-020/92-20 Spannungsqualität

Prüfbericht

Nr.: LV 97026/1

Bezug: 121-96/151...152

Gerät: Teilgeschottete Schaltanlage für Innenraumaufstellung, Typ W12 607519-22. Nennspannung 12 kV, für Schwenktrennschalteranbau

Hersteller und Auftraggeber: Elektrotechnische Werke Fritz Driescher & Söhne GmbH, Driescherstraße 3, D - 85368 Moosburg

Prüfbestimmungen: VDE 0670 Teil 6 (03/94)

Prüfungen: Lichtbogenprüfung der genannten Feldtype nach Abschnitt 6.108 der o. g. VDE-Prüfbestimmung bei innerem Fehler und Zugänglichkeitsgrad A (nur für unterwiesene Personen):
- mit den Nennwerten
  - Nenn-Stoßstrom 50 kA,
  - Nenn-Kurzzeitstrom 20 kA,
  - Stromflußdauer 1 s.
- Prüfanordnung (insgesamt drei Felder in der rechten Raumnachbildungsecke stehend) in einer Raumnachbildung mit 2,4 m Deckenhöhe und rechter Seitenwand;
- Zündung des Lichtbogens
  - im Kabelanschlußbereich,
  - im Sammelschienenbereich.

Prüfergebnis: Bewertung des Verhaltens der Schaltanlage bei inneren Lichtbögen nach den Beurteilungskriterien der o.g. Prüfbestimmungen:
1. Türen und Abdeckungen öffneten sich nicht;
2. keine Teile der Anlage sind weggeflogen;
3. an den äußeren Wänden entstanden keine Löcher;
4. es entzündeten sich keine vertikal angeordneten Indikatoren;
5. es entzündeten sich keine horizontal angeordneten Indikatoren;
6. keine Beeinträchtigung der Wirkung der Erdverbindungen.

Mannheim, 27. Februar 1997

FORSCHUNGSGEMEINSCHAFT FÜR HOCHSPANNUNGS- UND HOCHSTROMTECHNIK E.V.
i.V. Wgl
A.-V.
Versuchsleiter: Haitz (Haitz)

FGH UF Mannheim-Rheinau, 16. Oktober 1996

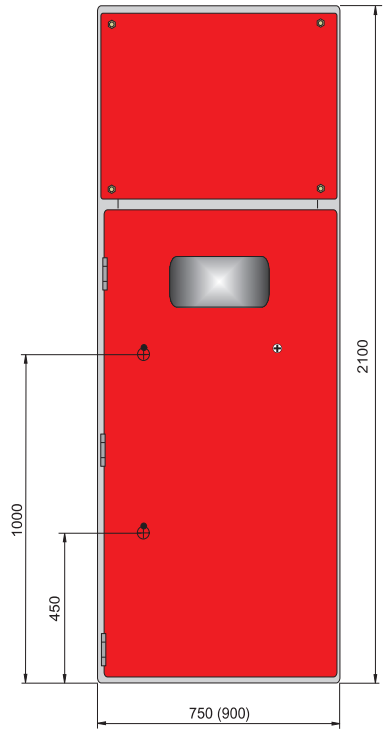


Fig. 13: Front view of 12 kV cable panel with switch-disconnector H 22 EK/EA

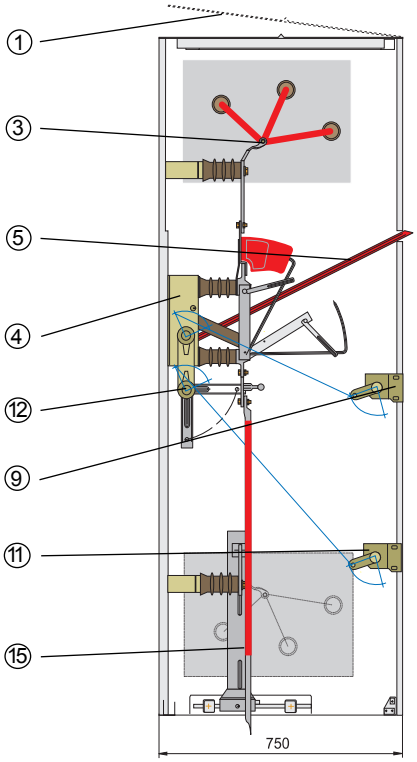


Fig. 14: 12 kV Cable panel (bus sectionalizer panel) with switch-disconnector H 22 EK/EA

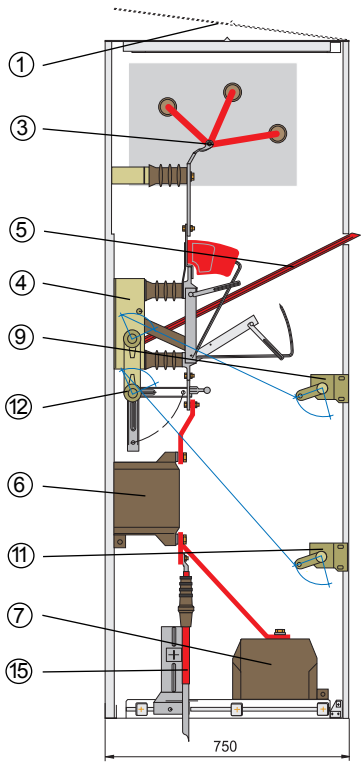


Fig. 15: 12 kV Cable panel with switch-disconnector H 22EK/EA, current and voltage transformer

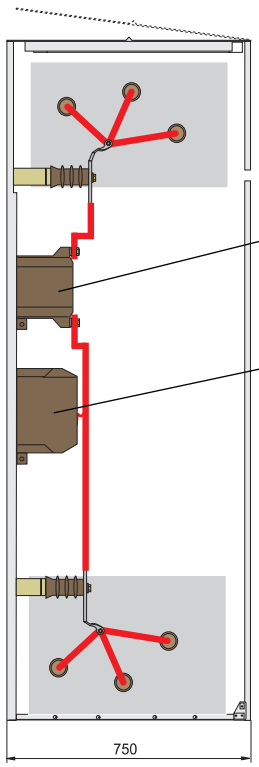


Fig. 16: 12 kV Measuring panel with current and voltage transformer

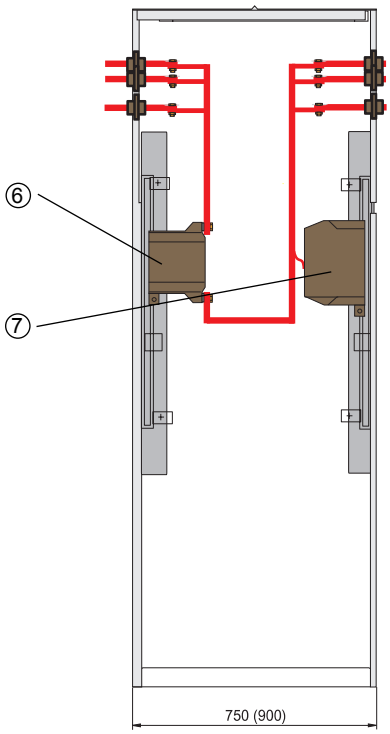


Fig. 17: 12 kV Measuring panel in longitudinal rails with current and voltage transformer

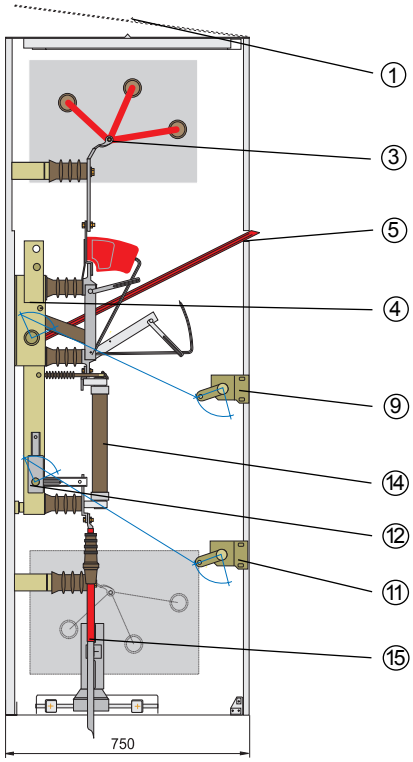


Fig. 18: 12 kV Transformer feeder panel (bus sectionalizer panel) with switch-disconnector H 22 SEA

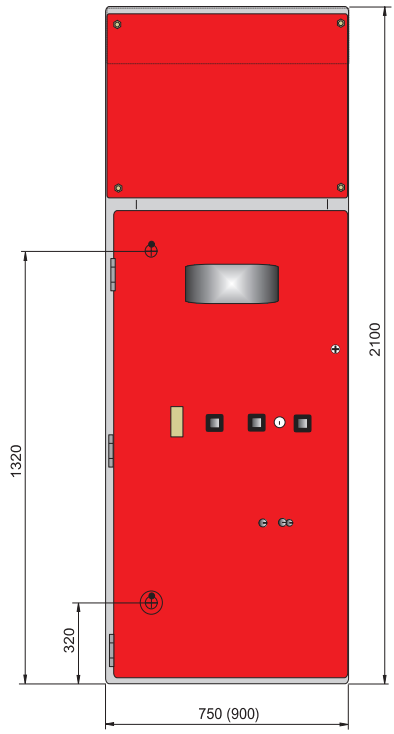


Fig. 19:
Front view of 12 kV circuit-breaker panel

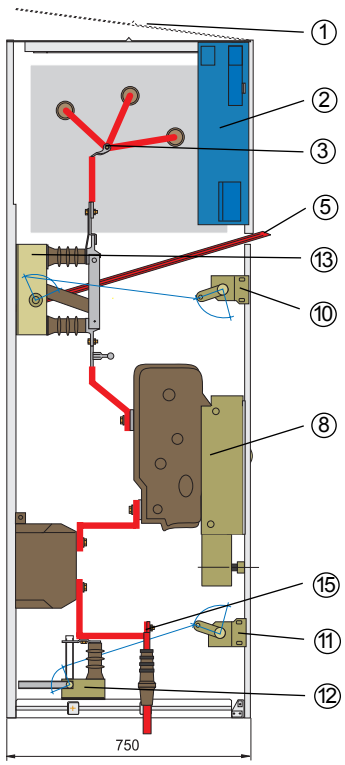


Fig. 20:
12 kV Circuit-breaker panel with circuit breaker L163

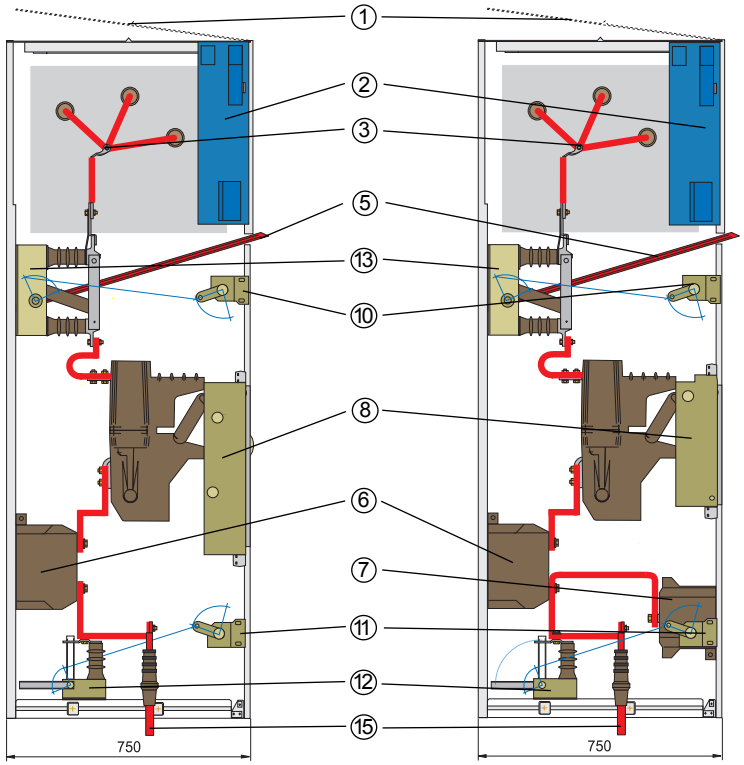


Fig. 21:
12 kV Circuit-breaker panel with circuit breaker V625 KUF

Fig. 22:
12 kV Circuit-breaker panel with circuit breaker V625 F

Switch Panels Type W 12 - 757521 and W 12 - 907521

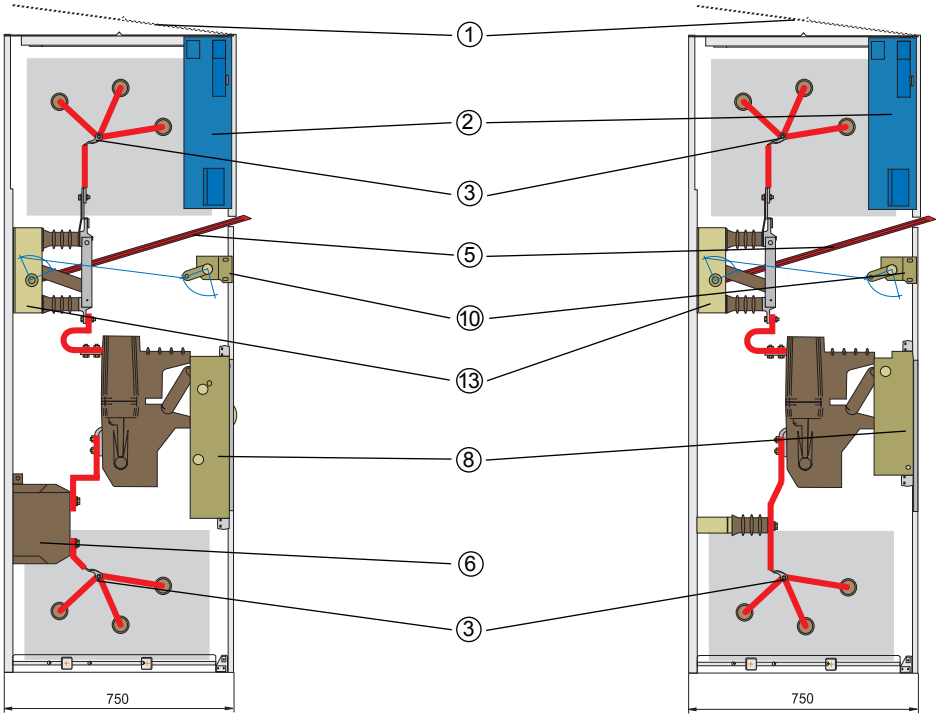


Fig. 23:
12 kV Bus sectionalizer/circuit-breaker panel with circuit breaker V625 KUF

Fig. 24:
12 kV Bus sectionalizer/circuit-breaker panel with LS V625 F

Withdrawable Plates

The insulated protective plate is to prevent impermissible approach to live parts and unintentional contact with such parts. This plate is to be inserted with the panel door closed when work is to be carried out on the switch panel and the system cannot be switched completely dead.

Auxiliary Equipment

- Insulating protective plate in compliance with DIN VDE 0681 Part 8
- Panel illumination
- Capacitive voltage testing system in compliance with (E) DIN VDE 0682 Part 415
- Addtional locking systems with profile cylinder and lockable operating mechanisms
- Short-circuit indicator
- Floor coverings

Weights

Type	Designation	Weight approx. kg	Drawing-no.
WK 12-607519 - 22	Cable panel	245	HA2 - 070735
WT 12-607519 - 22	Transformer feeder panel	275	HA2 - 070735
WÜ 12-607519 - 22	Bus sectionalizer panel	300	HA2 - 070735
WM 12-607519	Measuring panel	240	HA2 - 070735
WL 12-607519 - L163	Circuit-breaker panel	350	HA2 - 070735
WK 12-757521 - 22	Cable panel	275	HA2 - 071124
WT 12-757521 - 22	Transformer feeder panel	305	HA2 - 071124
WÜ 12-757521 - 22	Bus sectionalizer panel	330	HA2 - 071124
WM 12-757521	Measuring panel	270	HA2 - 071124
WL 12-757521 - V625/L163	Circuit-breaker panel	380	HA2 - 071124
WK 12-907521 - 22	Cable panel	290	HA2 - 70773
WT 12-907521 - 22	Transformer feeder panel	320	HA2 - 70773
WÜ 12-907521 - 22	Bus sectionalizer panel	345	HA2 - 70773
WM 12-907521	Measuring panel	285	HA2 - 70773
WL 12-907521 - V625/L163	Circuit-breaker panel	395	HA2 - 70773

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 (low oil content and 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 6,000 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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