



## 8DJH 12 – blue GIS

Load-break switchgear for the  
secondary distribution level

[siemens.com/8DJH12](https://www.siemens.com/8DJH12)

**SIEMENS**

# Features



Good for the environment and economically valuable. Our new 8DJH 12 blue GIS load-break switchgear meets the requirements of tomorrow, offering all benefits of the proven 8DJH concept at the same time. The factory-assembled, type-tested, and 3-pole metal-enclosed 8DJH 12 using Clean Air is a ring-main unit up to 12 kV, 21 kA and 630 A. By using Clean Air, the insulating medium free of F-gases which exclusively consists of the natural elements of the ambient air, it highly contributes to reducing greenhouse gas emissions.

## **Sustainable innovation**

The "Clean Air" technology stands for ecological, future-proof power distribution and easy handling throughout the entire lifecycle. It combines the sustainability of the "blue GIS" portfolio with the well-known advantages of the 8DJH product family that have been proven in practice for a long time. The result: Real innovation, which turns over a new, pathbreaking leaf in the area of load-break switchgear.

## **blue Switch**

The centerpiece of the switchgear is the innovative "blue Switch", a three-position switch-disconnector with vacuum interrupter in the secondary path, which does not produce any toxic decomposition products during the switching process. Thus, the dielectric strength of the gas remains constant throughout the entire service life, ensuring environmentally friendly disposal of the switchgear at the end of the lifecycle. The blue Switch is used in ring-main panels and – in combination with fuses – in transformer panels. The simple, reliable and well-known operating principle – close, open, earth – of the 8DJH product family is carried on within the blue GIS portfolio, and therefore ensures continuity.

# I Features

## **Cost-efficient. Safe. Durable.**

The ecological gas-insulated load-break switchgear 8DJH 12 blue GIS brings along everything that is required for safe and cost-efficient network operation. Of course, this includes a compact design, freedom from maintenance during the entire service life, high operating and personal safety, as well as a high availability. A hermetically sealed welded switchgear vessel ensures that the switchgear parts carrying high voltage are particularly insensitive to ambient conditions, and reliably prevent the ingress of foreign objects.

The medium-voltage switchgear has been developed for use in public and industrial energy systems of the secondary distribution level. Possible applications include secondary transformer substations, customer transfer substations, and switching substations, as well as industrial and infrastructure facilities that benefit from the proven advantages of Siemens GIS in their networks and want to use an insulating medium free of fluorine gas at the same time.

## **Intelligent. Digital.**

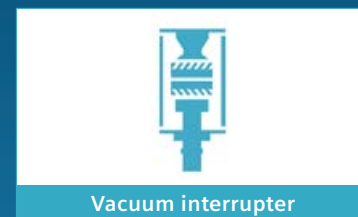
With the growing change of the distribution grids, the need for optimum system control and utilization increases. The 8DJH 12 can be equipped with motor operating mechanisms, integrated sensors, innovative electronic indicators, and IoT-capable communication units. This provides multiple intelligent and digital solutions.

## **blue GIS**

The new 8DJH 12 belongs to the blue portfolio of Siemens AG. Every GIS of this portfolio is equipped with Clean Air and the proven Siemens vacuum technology. It meets the expectations of the Siemens customers further on, for example, with respect to switchgear availability, maintenance-free design, personal safety, environmental independence and cost-efficiency. Clean Air consists of the natural elements of the ambient air and is therefore free of F-gases, with a global warming potential  $< 1$ , highly stable, non-toxic, non flammable, and suitable for every application temperature. The 8DJH 12 using Clean Air enables easy handling at any time up to disposal at the end of the product lifecycle.



Clean Air



Vacuum interrupter



Gas-insulated switchgear

# Technical data

| Common technical data                                        |                                                |          |                                       |    |
|--------------------------------------------------------------|------------------------------------------------|----------|---------------------------------------|----|
| Rated voltage $U_r$                                          |                                                | kV       | 7.2                                   | 12 |
| Rated short-duration power-frequency withstand voltage $U_d$ |                                                |          |                                       |    |
| – phase-to-phase, phase-to-earth, open contact gap           |                                                | kV       | 20                                    | 28 |
| – across the isolation distance                              |                                                | kV       | 23                                    | 32 |
| Rated lightning impulse withstand voltage $U_p$              |                                                |          |                                       |    |
| – phase-to-phase, phase-to-earth, open contact gap           |                                                | kV       | 60                                    | 75 |
| – across the isolation distance                              |                                                | kV       | 70                                    | 85 |
| Rated frequency $f_r$                                        |                                                | Hz       | 50                                    |    |
| Rated normal current $I_r$ – busbar                          |                                                | A        | 630                                   |    |
| Rated normal current $I_r$ – feeders                         |                                                | A        | 630                                   |    |
| Rated peak withstand current $I_p$                           |                                                | up to kA | 53                                    |    |
| Rated short-circuit making current $I_{ma}$                  |                                                | up to kA | 53                                    |    |
| Rated short-time withstand current $I_k$ (up to 3 s)         |                                                | kA       | 21                                    |    |
| Rated short-circuit breaking current $I_{sc}$                |                                                | kA       | 21                                    |    |
| Insulating medium                                            |                                                |          | Clean Air                             |    |
| GWP (Global Warming Potential)                               |                                                |          | < 1                                   |    |
| Rated filling level                                          |                                                | kPa      | 160                                   |    |
| Panel width                                                  |                                                | mm       | 310/430/840                           |    |
| Panel depth                                                  | Standard                                       | mm       | 775                                   |    |
|                                                              | Option with rear pressure-relief duct          | mm       | 890                                   |    |
| Panel height<br>(without low-voltage compartment)            | Standard                                       | mm       | 1400                                  |    |
|                                                              | Option                                         | mm       | 1200                                  |    |
|                                                              | Option with base and rear pressure-relief duct | mm       | 1700                                  |    |
| Ambient air temperature range                                | Standard                                       | °C       | –25 °C to +55 °C                      |    |
|                                                              | Option                                         | °C       | –40 °C to +70 °C                      |    |
| Internal arc classification (Option)                         |                                                |          | IAC A FLR 21 kA 1 s, IAC FL 21 kA 1 s |    |
| Partition class                                              |                                                |          | PM                                    |    |
| Loss of service continuity                                   |                                                |          | LSC 2                                 |    |
| Degree of protection                                         |                                                |          | Primary part IP65                     |    |
|                                                              |                                                | Standard | Switchgear enclosure IP2X             |    |
|                                                              |                                                | Option   | Switchgear enclosure IP3X             |    |

# Technical data

| Three-position switch-disconnector          |                     |                                    |                                      |     |
|---------------------------------------------|---------------------|------------------------------------|--------------------------------------|-----|
| Rated voltage $U_r$                         |                     | kV                                 | 7.2                                  | 12  |
| Rated normal current $I_r$                  |                     | A                                  | 630                                  | 630 |
| Rated short-circuit making current $I_{ma}$ | Switch-disconnector | up to kA                           | 53                                   | 53  |
|                                             | Earthing switch     | up to kA                           | 53                                   | 53  |
| Classification - mechanical                 | Switch-disconnector | Number of operating cycles / Class | 1000 / M1                            |     |
|                                             | Earthing switch     |                                    | 1000 / M0                            |     |
| Classification – electrical                 | Switch-disconnector | Number of operating cycles / Class | 100x $I_{load}$ and 5x $I_{ma}$ / E3 |     |
|                                             | Earthing switch     |                                    | 5x $I_{ma}$ / E2                     |     |

| Vacuum circuit-breaker with three-position disconnector |                 |                                    |                     |     |
|---------------------------------------------------------|-----------------|------------------------------------|---------------------|-----|
| Rated voltage $U_r$                                     |                 | kV                                 | 7.2                 | 12  |
| Rated normal current $I_r$                              |                 | A                                  | 630                 | 630 |
| Rated short-circuit breaking current $I_{sc}$           |                 | Up to kA                           | 21                  | 21  |
| Number of short-circuit breaking operations             |                 | n                                  | 6 or 20             |     |
| Rated operating sequence                                |                 |                                    | O–3 min–CO–3 min–CO |     |
| Classification – mechanical                             | Circuit-breaker | Number of operating cycles / class | 2000 / M1           |     |
|                                                         | Disconnecter    |                                    | 1000 / M0           |     |
|                                                         | Earthing switch |                                    | 1000 / M0           |     |
| Classification – electrical                             | Circuit-breaker | Class                              | E2                  |     |
|                                                         | Earthing switch | Number of operating cycles / class | 5x $I_{ma}$ / E2    |     |

# Typicals

## Built-in and built-on components



Three-position  
disconnecter



Vacuum  
circuit-breaker



Three-position  
switch-disconnector



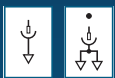
Capacitive voltage  
detecting system



Surge arrester  
or limiter

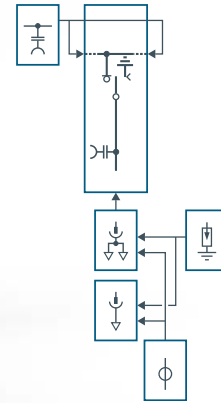


Cable-type  
current  
transformer

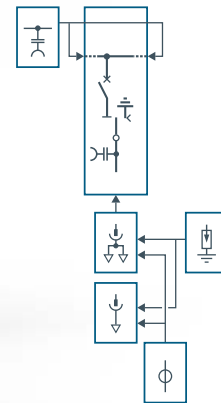


Cable connection with  
outside cone (not  
included in scope of  
supply)

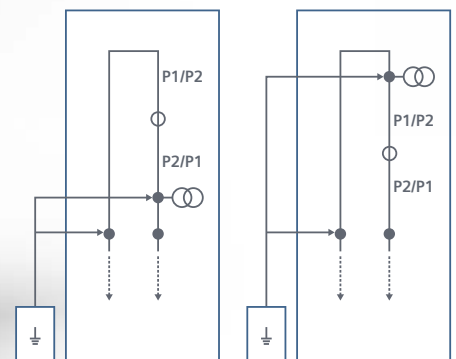
### Ring-main feeder (R)



### Circuit-breaker feeder (L)



### Billing metering panel (M)

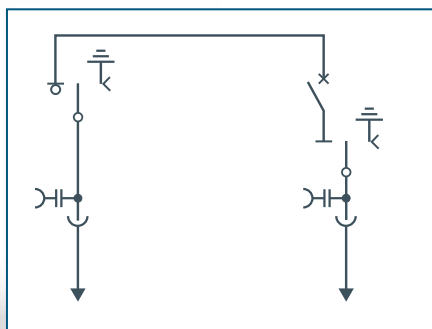


All dimensions in mm.

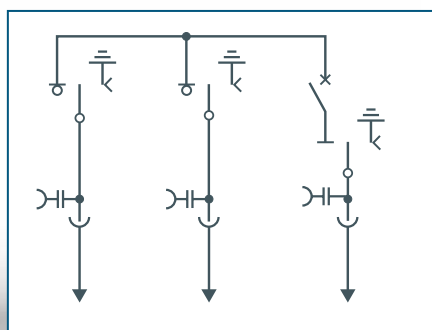
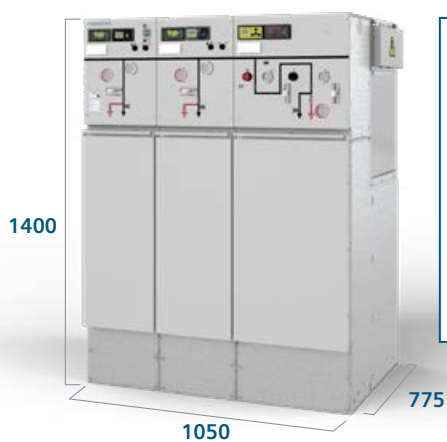
# Block versions

## Panel blocks with circuit-breaker feeders

**RL** 1 ring-main feeder, 1 circuit-breaker feeder



**RRL** 2 ring-main feeders, 1 circuit-breaker feeder



Three-position  
disconnecter



Vacuum  
circuit-breaker



Three-position  
switch-disconnector



Capacitive voltage  
detecting system



Surge limiter  
or arrester

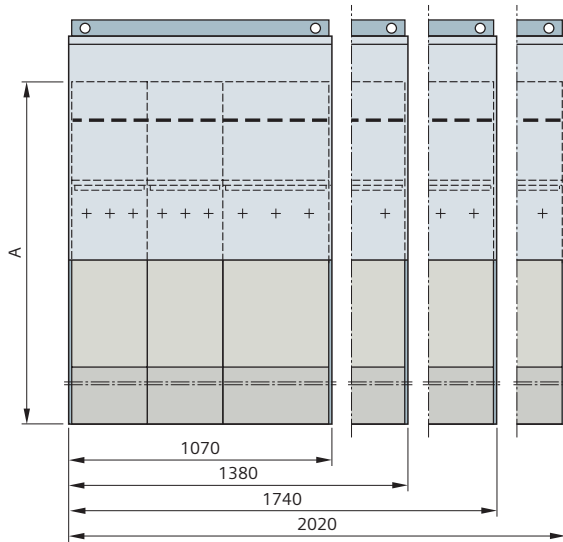


Cable-type  
current  
transformer

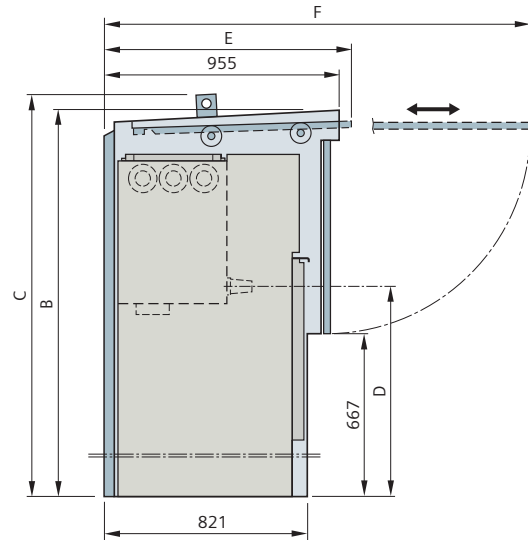


Cable connection with outside  
cone (not included in scope of  
supply)

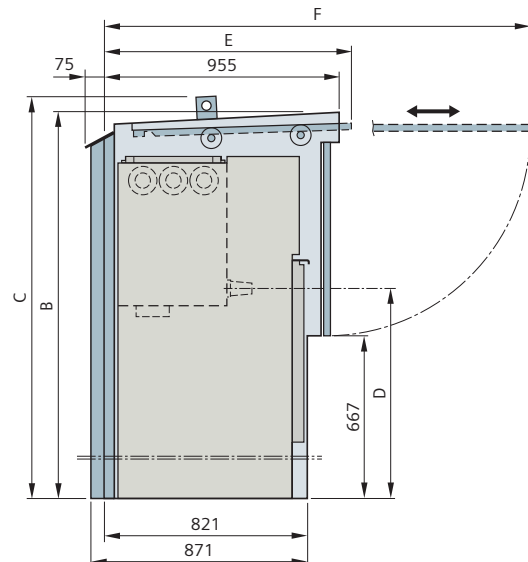
# Outdoor enclosure



Outdoor enclosure with pressure relief downwards or to the rear



Outdoor enclosure with pressure relief downwards or to the rear



Outdoor enclosure with pressure relief upwards

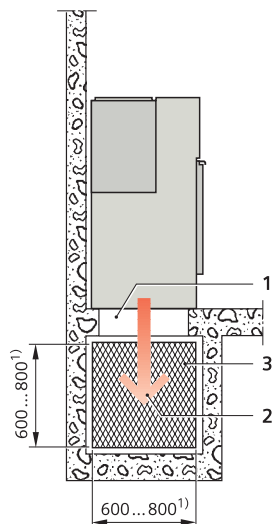
| Switchgear height                                          | without low-voltage compartment<br>with low-voltage compartment | A | 1200 |      |      |      | 1400 |      |      |
|------------------------------------------------------------|-----------------------------------------------------------------|---|------|------|------|------|------|------|------|
|                                                            |                                                                 |   | –    | 1400 | 1600 | 1800 | –    | 1600 | 1800 |
| Low-voltage compartment                                    | –                                                               | – | –    | 200  | 400  | 600  | –    | 1600 | 1800 |
| Enclosure height                                           | without crane profile                                           | B | 1575 | 1575 | 1775 | 1975 | 1575 | 1775 | 1975 |
|                                                            | with crane profile (removable)                                  | C | 1640 | 1640 | 1840 | 2040 | 1640 | 1840 | 2040 |
| Cable connection                                           | Typical R, L                                                    | D | 660  |      |      |      | 860  |      |      |
| Enclosure depth (roof level, without pressure relief duct) | Door open                                                       | E | 1000 | 1000 | 1200 | 1400 | 1000 | 1200 | 1400 |
|                                                            | Door while opening/closing                                      | F | 1725 | 1725 | 1925 | 2125 | 1725 | 1925 | 2125 |



# Pressure relief

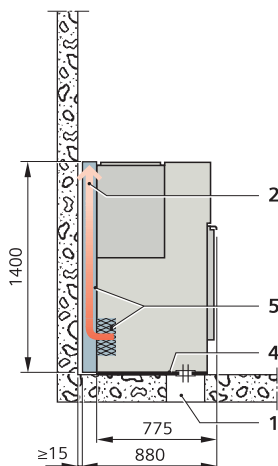
## Switchgear installation

Switchgear installation with pressure relief downwards (standard)



Side view

Switchgear installation with rear pressure relief duct (option) for switchgear blocks with IAC A FL or FLR up to 16 kA/1 s

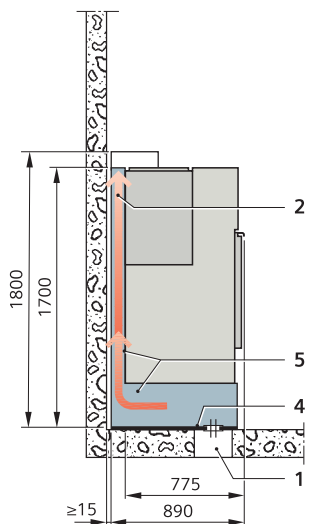


Side view

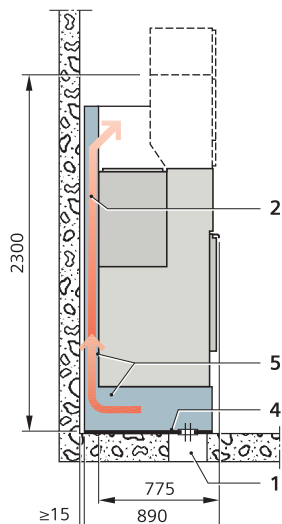
- 1 Floor opening
- 2 Direction of pressure relief
- 3 Expanded metal (supplied by site)
- 4 Floor cover (divided plate for comfortable working at the cable connection)
- 5 Pressure absorber system with pressure relief duct

1) Total opening minimum 0.48 m<sup>2</sup>

Switchgear installation with base and rear pressure relief duct (option) for switchgear with IAC A FL or FLR up to 21 kA/1 s

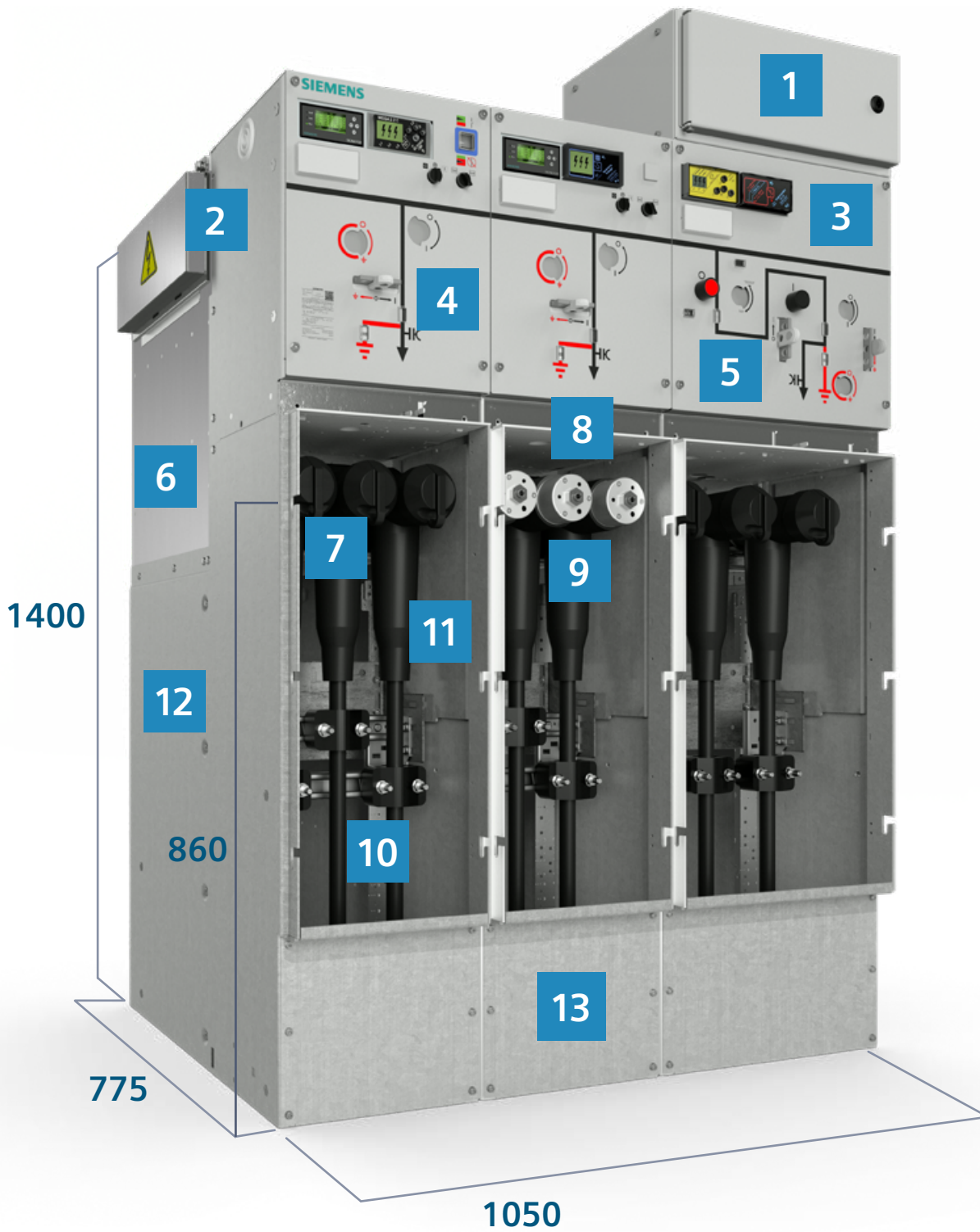


Side view, wall-standing arrangement without metering panel



Side view, free-standing arrangement, also metering panel for wall-standing arrangement

## Product range



# Product range

## 1 Low-voltage compartment

- Customer-specific options in different heights 200 mm, 400 mm, and 600 mm possible

## 2 Busbar extension, modularity

- Busbar extension as an ordering option
- Plug-in unit consisting of contact coupling and screened silicone coupling
- Insensitive to pollution and condensation
- Switchgear installation, extension, or panel replacement without gas work

## 3 Indicators

- Voltage detecting systems, short-circuit/earth-fault indicators, and transformer monitors from various manufacturers

## 4 Three-position switch-disconnector

- Switch positions: CLOSE – OPEN – EARTHED
- Switching functions as general-purpose switch-disconnector according to IEC/EN 62271-103 and IEC/EN 62271-102
- Designed as a three-position switch incorporating the functions of a switch-disconnector and a make-proof earthing switch
- Possible with and without motor

## 5 Vacuum circuit-breaker

- Consisting of a vacuum switching unit according to IEC/EN 62271-100 with an integrated three-position disconnector according to IEC/EN 62271-102 and associated operating mechanisms
- Possible with and without motor
- Auxiliary switch: 6 NO + 6 NC or 2 NO + 3 NC + 2 C/O contacts
- Options: Closing solenoid, shunt release, c.t.-operated release, low-energy magnetic release, undervoltage release, circuit-breaker tripping signal, varistor module, position switch, and operations counter

## 6 Enclosure

- Hermetically tight, welded switchgear vessel made of stainless steel
- Enclosure made of sendzimir-galvanized sheet steel, switchgear front powder-coated

## 7 SIBushing

- Outside-cone bushing type C with integrated measurement of current, voltage and temperature

## 8 Current sensor

- Single- or three-phase inductive current sensor according to IEC 61869-10

## 9 Voltage sensor

- Voltage sensor (resistor divider) according to IEC 61869-11

## 10 Cable-type current transformer

- According to IEC/EN 61869-1 and IEC/EN 61869-2
- Designed as ring-core current transformer, 1-phase
- Free of dielectrically stressed cast-resin parts
- Insulation class E
- Inductive type
- Secondary connection via terminal strip in the panel

## 11 Cable compartment

- Access to cable compartment only when the feeder is isolated and earthed
- Bushings according to DIN EN 50181 with outside cone and bolted connection M16, interface type C

### Connection of:

- Cable elbow plugs or cable T-plugs with bolted contact M16 for 630 A
- Paper-insulated mass-impregnated cables via commercial adapters
- Thermoplastic-insulated cables (1- and 3-core cables)
- Option: mounted cable clamps on cable bracket
- Surge arresters and surge limiters

## 12 Dimension options

- Switchgear heights 1200 mm and 1400 mm
- Deep cable compartment cover

## 13 Pressure relief

- Pressure relief downwards (up to 21 kA/1 s)
- To the rear and upwards with duct (up to 16 kA/1 s)
- To the rear and upwards with base and duct (up to 21 kA/1 s)

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8DJH 12



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We work together with customers and partners to create an ecosystem that both intuitively responds to the needs of people and helps customers achieve their business goals.

It helps our customers to thrive, communities to progress and supports sustainable development to protect our planet for the next generation.

**Creating environments that care.**  
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