



## 8DAB 12 – blue GIS

Gas-Insulated

Medium-Voltage Switchgear

[siemens.com/8dab12](https://www.siemens.com/8dab12)

**SIEMENS**

# Features



Gas-insulated switchgear (GIS) type 8DA/B has been an integral part of the medium-voltage portfolio at Siemens for more than three decades. More than 125,000 panels of this switchgear type have already been installed worldwide. The 8DA/B portfolio has now been extended by 8DAB 12 – a switchgear using Clean Air – an insulating gas exclusively consisting of natural elements of the ambient air.



8DAB 12 is available as single and double busbar with ratings up to 2750 A and 40 kA with the panel types circuit-breaker panel, bus coupler and bus sectionalizer, disconnecter panel, metering panel, and cable connection panel, also featuring many different options for integrated and top-mounted components. This provides numerous and variable possibilities of application. Another special feature is the single-pole enclosure, which ensures an extraordinarily high service continuity.



Gas-insulated switchgear type 8DAB 12 are particularly appropriate for use in transformer substations and switching substations, and, for example, in power supply companies, in the cement industry, automotive industry, steel and aluminum industry, textile, paper and food industry, in the chemical and pharmaceutical industry, in the petroleum industry, in airports and ports, in rolling mills, in the mining industry, and many more.

Thanks to its enclosed high-voltage part, the switchgear is especially suitable for applications under aggressive ambient conditions, such as saline air, air humidity, dust, and condensation.

Furthermore, the 8DAB 12 offers full protection against ingress of, for example, pollution and small animals. It is independent of the site altitude.

The use of digital secondary systems and combined protection and control devices ensures clear integration in process control systems, flexible and highly simplified adaptation to new system conditions, and thus to cost-efficient operation. With this thoroughly studied switchgear concept, the service life to be expected is at least 35 years under normal operating conditions.

**blue GIS**

The new 8DAB 12 belongs to the “blue GIS” 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.

Clean Air



Vacuum interrupter



Gas-insulated switchgear

# Technical data

## Common electrical data, filling pressure and temperature

Rated insulation level	Rated voltage $U_r$	kV	7.2	12
	Rated short-duration power-frequency withstand voltage $U_d$ :			
	– phase-to-earth, open contact gap	kV	20 <sup>1)</sup>	28 <sup>1)</sup>
	– across the isolating distance	kV	23 <sup>1)</sup>	32 <sup>1)</sup>
	Rated lightning impulse withstand voltage $U_p$ :			
	– phase-to-earth, open contact gap	kV	60	75
	– across the isolating distance	kV	70	85
Rated frequency $f_r$		Hz	50/60	50/60
Rated normal current $I_r$	of the busbar <sup>3)</sup>	A	1250	1250
		A	2000	2000
		A	2500	2500
		A	2750	2750
Rated functional level $p_{re}$	(relative) of the busbar		140 kPa at 20 °C	
Ambient air temperature			(-25) – 5 °C to +55 °C	
Internal arc classification IAC			IAC A FL 40 kA 1 s IAC A FLR 40 kA 1 s	
Partition class			PM	
Loss of service continuity			LSC 2	

## Data of the switchgear panels: Circuit-breaker, bus sectionalizer, bus coupler, cable connection, disconnecter

Rated normal current $I_r$ <sup>3)</sup>		A	1250	1250
		A	1600	1600
		A	2000	2000
		A	2500	2500
		A	2750 <sup>2)</sup>	2750 <sup>2)</sup>
Rated short-time withstand current $I_k$	$t_k = 3$ s	up to kA	40	40
Rated peak withstand current $I_p$		up to kA	100/104	100/104
Rated short-circuit making current $I_{ma}$		up to kA	100/104	100/104
Rated short-circuit breaking current $I_{sc}$		up to kA	40	40
Electrical endurance of vacuum circuit-breakers	at rated normal current		10,000 operating cycles	
	at rated short-circuit breaking current		50 breaking operations	
Rated functional level $p_{re}$	(relative) for feeders		140 kPa at 20 °C	

1) Higher values according to national standards on request

2) 2750 A with forced ventilation

3) Maximum permissible normal current dependent on ambient air temperature

# Integrated and top-mounted components

## Single busbar



Three-position disconnecter



Vacuum circuit-breaker



Capacitive voltage detecting system



Busbar earthing switch



Plug-in type voltage transformer plugged in directly or with cable connection



Current transformer



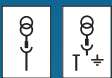
Surge arrester



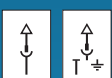
Panel connection with inside-cone plug or bar connection



Zero-sequence current transformer



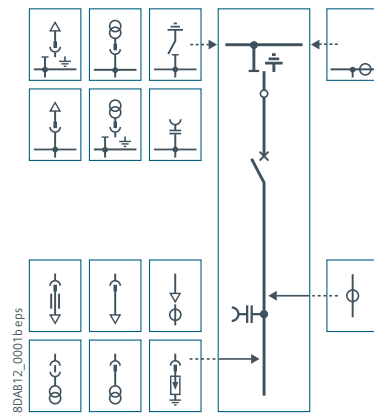
Voltage transformer with or without three-position disconnecter



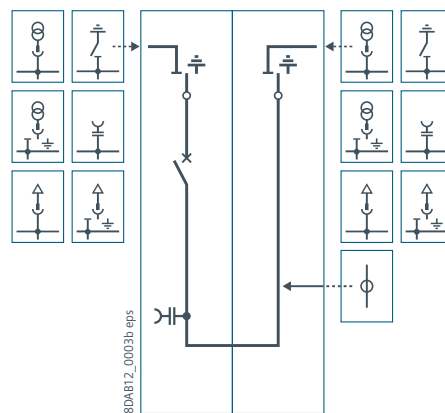
Busbar connection with or without three-position disconnecter

Further versions available: bus sectionalizer, metering panel, cable connection panel and dummy panel.

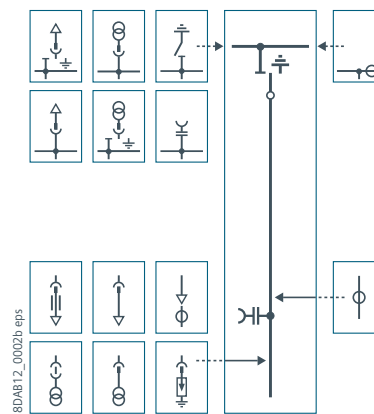
### Circuit-breaker panel



### Bus sectionalizer



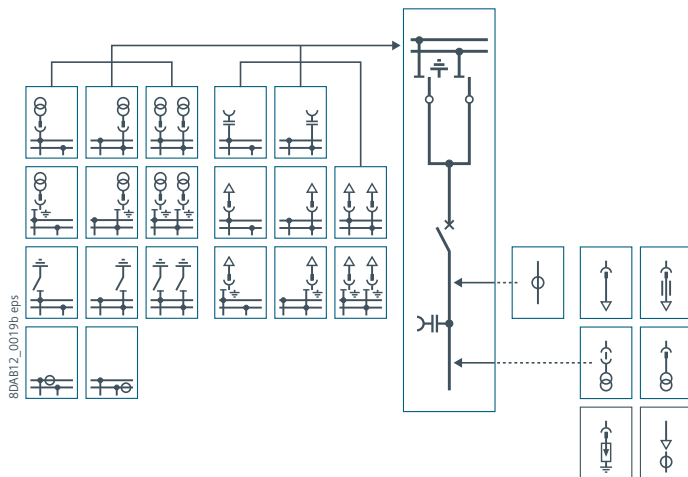
### Disconnecter panel







# Integrated and top-mounted components

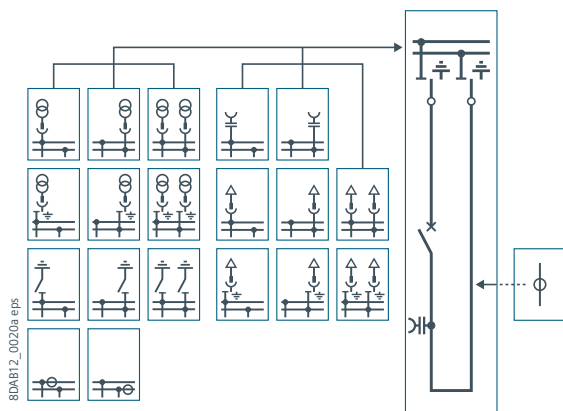
## Double busbar





### Circuit-breaker panel



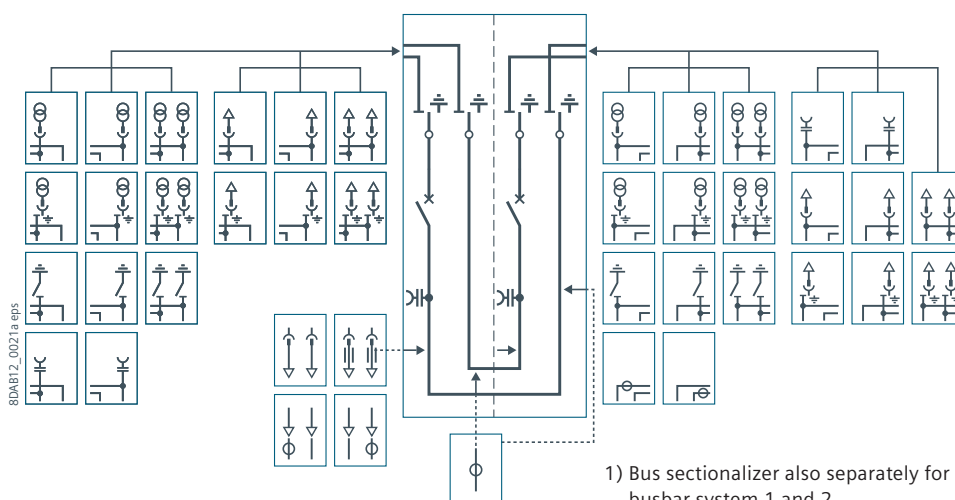
-  Three-position disconnector
-  Vacuum circuit-breaker
-  Capacitive voltage detecting system
-  Busbar earthing switch




### Bus coupler



-  Plug-in type voltage transformer plugged in directly or with cable connection
-  Current transformer
-  Surge arrester
-  Panel connection with inside-cone plug or bar connection

### Bus sectionalizer<sup>1)</sup>



-  Zero-sequence current transformer
-  Voltage transformer with or without three-position disconnector
-  Busbar connection with or without three-position disconnector

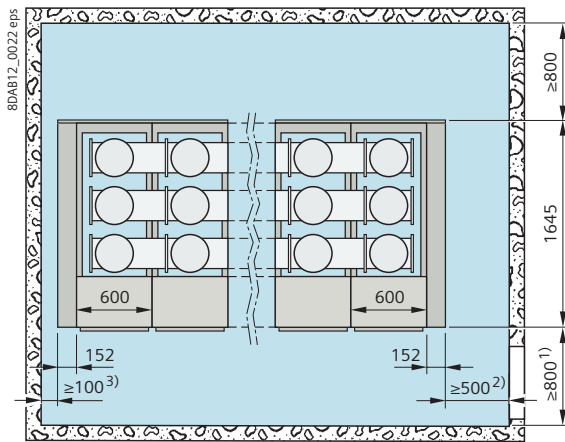
1) Bus sectionalizer also separately for busbar system 1 and 2

Further versions available:  
bus sectionalizer, metering panel,  
cable connection panel, and  
dummy panel.

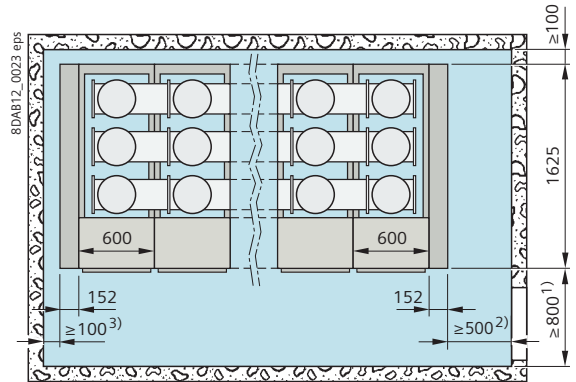
# Room planning

## Single busbar

Free-standing arrangement

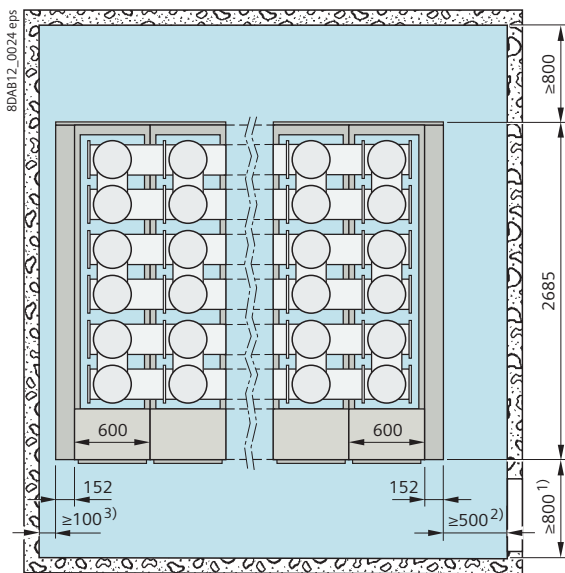


Wall-standing arrangement

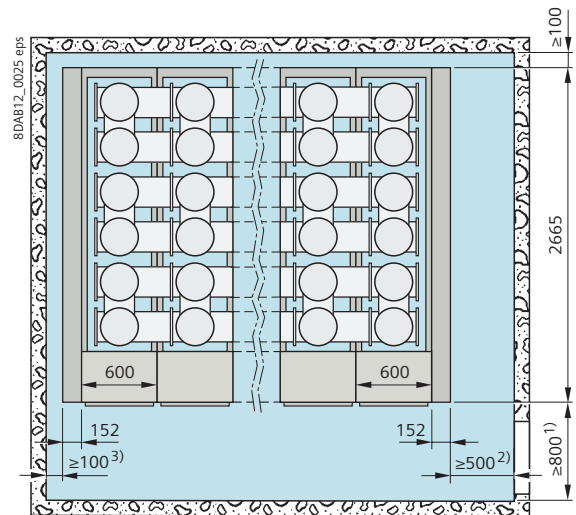


## Double busbar

Free-standing arrangement



Wall-standing arrangement



- 1) Depending on national requirements
- 2) Lateral wall distance  $\geq 500$  mm optionally required on the left or on the right
- 3) Minimum lateral wall distance  $\geq 100$  mm optionally required on the left or on the right

# Product range



1) Double busbar: 2665 mm

2) Low-voltage compartment: 850 mm

## 1. Busbar

Own continuous gas compartment (single-pole) for single and double busbar.

## 2. Circuit-breaker

Conforming to IEC 62271-100 with the classes M2, E2, and C2; maintenance-free under normal operating conditions according to IEC 62271-1.

## 3. Panel connection

Inside-cone plug-in system size S2, S3 and S4, and solid-insulated bar connection can be implemented.

## 4. Low-voltage compartment

Customer-specific options in different heights, 850 mm and 1200 mm.

## 5. Voltage transformer

Single-pole insulated and metal-enclosed voltage transformer possible at the busbar with/without disconnecting facility, and at the outgoing feeder.

## 6. Current transformer

Ring-core current transformer possible at the busbar, at the cable connection housing, and on the cable.

## 7. Three-position disconnecter

According to IEC 62271-102 with classes M1 and E2 and the switch positions CLOSED, OPEN, EARTHED, or READY-TO-EARTH. Possible with and without motor operating mechanism.

## 8. Internal enclosure

Hermetically single-pole enclosed modular housing made of corrosion-proof aluminum alloy – protected against environmental influences.

## 9. External enclosure

Safe-to-touch: All high-voltage parts incl. cable connections, busbars, and voltage transformers are metal-enclosed. Accessibility to the busbar, switching-device, and cable compartments, as well as to the low-voltage compartment is tool-based.

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