



Totally Integrated Power – 8DA10/8DB10

Safe switching of capacitor banks and filter circuits

Gas-insulated medium-voltage switchgear and vacuum switching technology

Technical data	up to	
Rated voltage	40.5	kV
Rated frequency	50/60	Hz
Rated short-duration power-frequency withstand voltage	95	kV
Rated lightning impulse withstand voltage	200	kV
Rated short-circuit breaking current	40	kA
Rated short-circuit making current	100/104	kA
Rated normal current of the busbar	5,000	A
Rated normal current of feeders	2,500	A
Rated making current for a parallel capacitor battery	20/4,250	kA/Hz
Peak value of recovery voltage for filter circuit switching	> 100	kV

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Energy Management Division
Medium Voltage & Systems
Mozartstr. 31 C
91050 Erlangen, Germany

www.siemens.com/medium-voltage-switchgear

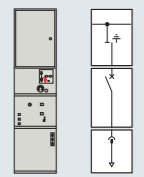
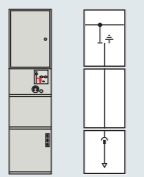
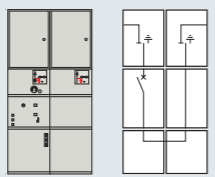
For more information,
please contact our
Customer Support Center.
Tel.: +49 180 524 7000
Fax: +49 180 524 2471
(Charges depending on provider)
E-mail: support.energy@siemens.com

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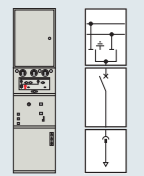
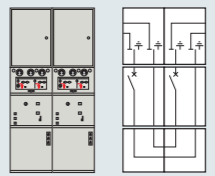
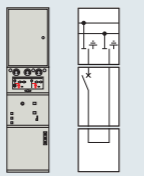
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Single-busbar switchgear 8DA10 Product range (excerpt)

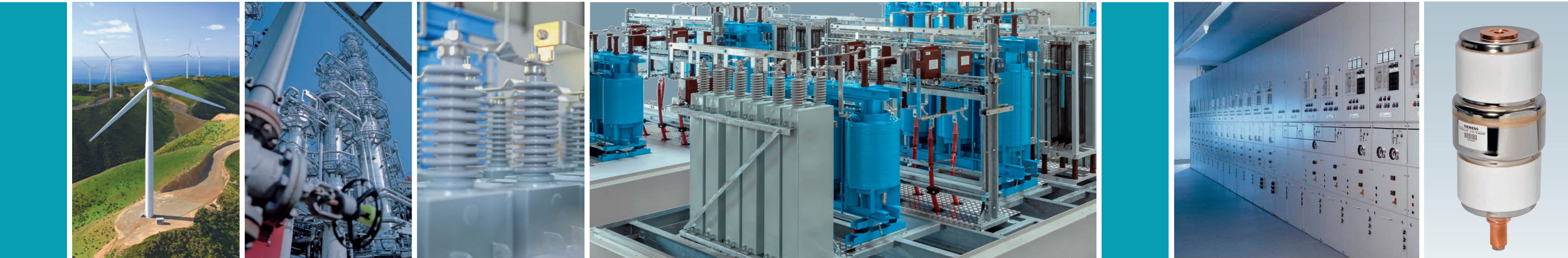
Circuit-breaker panel	Disconnecter panel	Bus sectionalizer
		

Double-busbar switchgear 8DB10 Product range (excerpt)

Circuit-breaker panel	Bus sectionalizer	Bus coupler
		

Dimensions for 8DA and 8DB

Dimensions		Dimensions in mm	
	Width (spacing)	W	600
	Height	H	Standard design 2,350 Design with high low-voltage compartment 2,700
	Depth	D1	Single-busbar switchgear 1,625
		D2	Double-busbar switchgear 2,665



Vacuum switching technology by Siemens

Given the outstanding economic and technological aspects of the vacuum extinction principle, the vacuum circuit-breaker is the world's most used switching device in the medium-voltage range up to 40.5 kV. Vacuum circuit-breakers are used for a wide range of applications in air- and gas-insulated switchgear.

The world of energy is changing

New demands for power quality

The use of regenerative power producers and state-of-the-art consumers is increasing. This situation can significantly affect the quality of the power supply, because both alternative power sources as well as modern consumers influence the power quality with different types of harmonics.

The load from harmonics is increasing

Worldwide, the trend is clear: Voltage distortion from harmonics increases with the greater use of power electronics. On the other hand, the sensitivity of devices to current and voltage distortion increases to the degree that these devices produce harmonics. Most systems are designed to operate efficiently with (nearly) sinusoidal voltage and current. This means that a very high power quality is essential for all of the devices to operate reliably and efficiently.

New power quality with power factor correction equipment

To ensure that the power quality promised to the consumer remains high, power factor correction equipment is increasingly being used. Power factor correction equipment consisting of capacitor banks and filter circuits must be reliably installed and connected. Siemens is positioned to meet this challenge with its medium-voltage switchgear with vacuum switching technology.

Typical applications

- Wind power plants, wind turbines
- Consumers with extensive power electronics such as industrial motors and converters
- Network designs with a decentralized power supply such as solar, water, biomass, etc.

Well-equipped for the future

New demands on switchgear

The use of power factor correction equipment means new requirements for circuit-breakers in medium-voltage systems: They must safely conduct and switch an increasing amount of inductive and especially capacitive currents and short-circuit currents. Switching inductive currents does not pose a significant challenge to the switching devices of today. High recovery voltages arise when switching already high capacity currents in capacitor banks – in comparison to no-load lines and cables.

Recovery voltages above 100 kV manageable

Our gas-insulated switchgear types 8DA10 and 8DB10 with vacuum switching technology are fully equipped to meet the new demands. They can easily handle recovery voltages above 100 kV with only a single vacuum interrupter. In addition to the special design of the vacuum interrupter, this is achieved by

a contact material developed specially for these requirements.



Detailed information on switching of capacitors and filter circuits is available in our *White Paper* as printed version with the article number: EMMS-T10028-00-7600

8DA10 and vacuum switching technology

Tried and true: Gas-insulated switchgear by Siemens

Whether in transformer and distribution technology of power supply companies or in medium-voltage systems of industries such as mining, steel manufacturing or paper production, gas-insulated switchgear by Siemens has proven itself time and again in countless applications for the distribution of electricity. Gas-insulated switchgear is also the preferred choice for special applications such as wind parks and offshore platforms. In all of these applications, gas-insulated switchgear by Siemens offers exceptional advantages with regard to climatic independence, protection of persons and maintenance-free design. Customers benefit from maximum supply reliability in their power systems.

Integrated vacuum switching technology

The gas-insulated, fixed-mounted circuit-breaker switchgear types 8DA10 and 8DB10 offer impressive integrated vacuum switching technology. The factory-assembled, type-tested, single-pole metal-enclosed, SF₆-insulated switchgear for single and double-busbar applications is able to handle operating voltages up to 40.5 kV.

Maintenance-free over the entire service life

High availability and a long service life are the most important requirements of efficient power distribution. This is ensured by vacuum switching technology, which is the preferred choice of more than 70 percent of network operators. The primary advantage are the consistent features over the entire life cycle. The hermetically sealed vacuum interrupters exclude all external influences. This means that the vacuum interrupters are always reliable over their entire service life – without any maintenance.

Performance features

- Type-tested according to IEC 62271-200
- Enclosure with modular housings of corrosion-proof aluminum alloy
- Safe-to-touch enclosure and standardized connections for plug-in cable terminations
- Operating mechanisms and instrument transformers outside the enclosure, and thus easily accessible
- Metal-enclosed, partition class PM
- Loss of service continuity category for switchgear: LSC 2
- Internal arc classification: IAC A FLR 40 kA, 1 s