

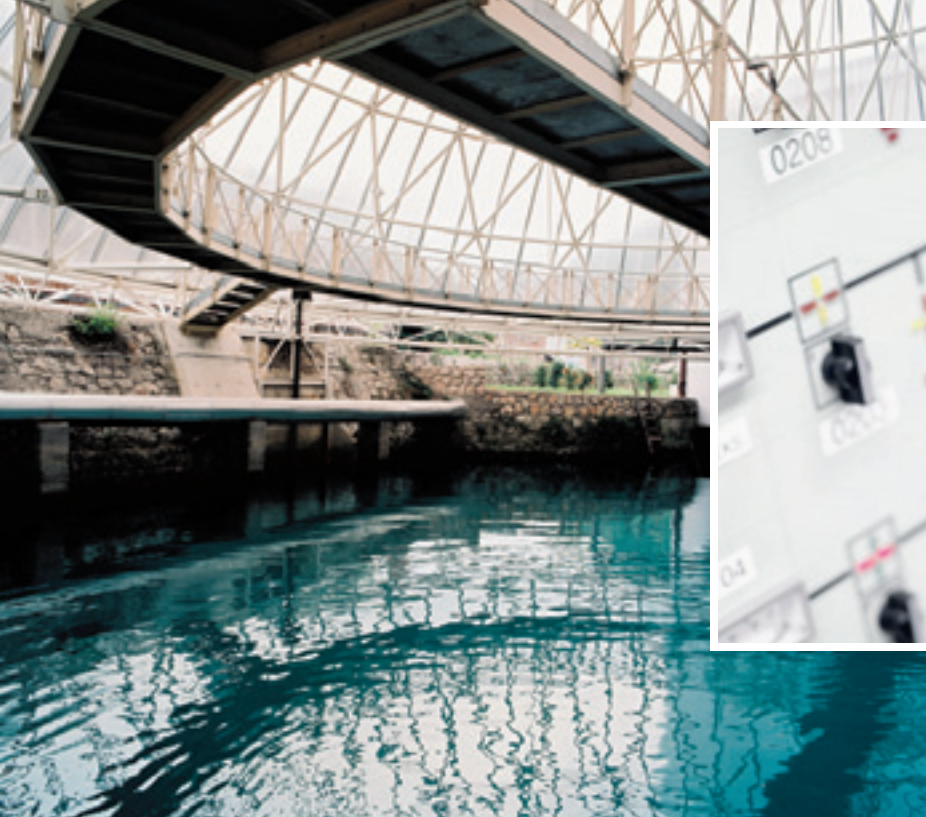


Gas-insulated medium-voltage switchgear

for the water and wastewater industry

Answers for energy.

SIEMENS



8DH10 switchgear
up to 24 kV, up to 20 kA, up to 1,250 A
up to 17.5 kV, up to 25 kA, up to 1,250 A

Full power for maximum reliability

Clean water – at all times, in all places, in sufficient quantity – is something taken for granted in many countries nowadays. This is based both on strict water quality regulations and high technical standards which enable cost-efficient operation and meet even stricter future requirements.

Initial planning is a key step in order to provide maximum performance and cost-efficiency of sewage treatment plants, waterworks, sewage pump stations, and desalination plants. For reliable, safe and, at the same time, efficient plant operation, the configuration of automation and power distribution is essential. It goes without saying that, in this respect, reliable energy supply plays an important role.

This is where the gas-insulated medium-voltage switchgear from Siemens points the way: Compact, maintenance-free and climate-independent, our switchgear performs reliably even under extreme conditions. This makes it ideally suited for applications in the water and wastewater industry, as absolute operational safety and reliability are essential in this sector.

Siemens supports operators, designers, consulting engineers, and constructors with products and solutions tailored to the specific demands of the water industry. Whether in energy distribution, automation and telecontrol engineering, or in measurement techniques and energy management, Siemens offers comprehensive solutions which allow for easy integration and non-stop operation.



NXPLUS C switchgear
up to 24 kV, up to 25 kA, up to 2,500 A
up to 15 kV, up to 31.5 kA, up to 2,500 A



8DA10 switchgear
up to 40.5 kV, up to 40 kA, up to 5,000 A

Superior technology for demanding tasks

Highly available, maintenance-free, compact, robust: Gas-insulated medium-voltage switchgear from Siemens provides a convincing solution, even under the most extreme conditions. A worldwide unique, hermetically welded pressure system in a stainless-steel vessel, vacuum switching technology, and a digital protection system make it independent from environmental conditions, and provide maintenance-free operation for life. On top of that, the SF₆ insulation enables an extremely compact construction.

The result: minimum operating costs, maximum performance, and highest safety in every respect.

Reliability

- Type and routine tests in accordance with IEC 62271-200
- Standardized, NC production processes
- Experience from more than 100,000 installed panels
- Quality assurance in accordance with DIN EN ISO 9001

Operational safety

- Hermetically welded switchgear vessels
- Permanently maintenance-free operating mechanisms
- Optimum accessibility of current and voltage transformers
- Complete logical mechanical interlocks
- Minimum fire load

Personal safety

- Safe-to-touch and hermetically welded primary enclosure
- Design tested for resistance to internal faults, metallic partitions, logical mechanical interlocks and capacitive voltage detecting system
- IP65 degree of protection for the primary part



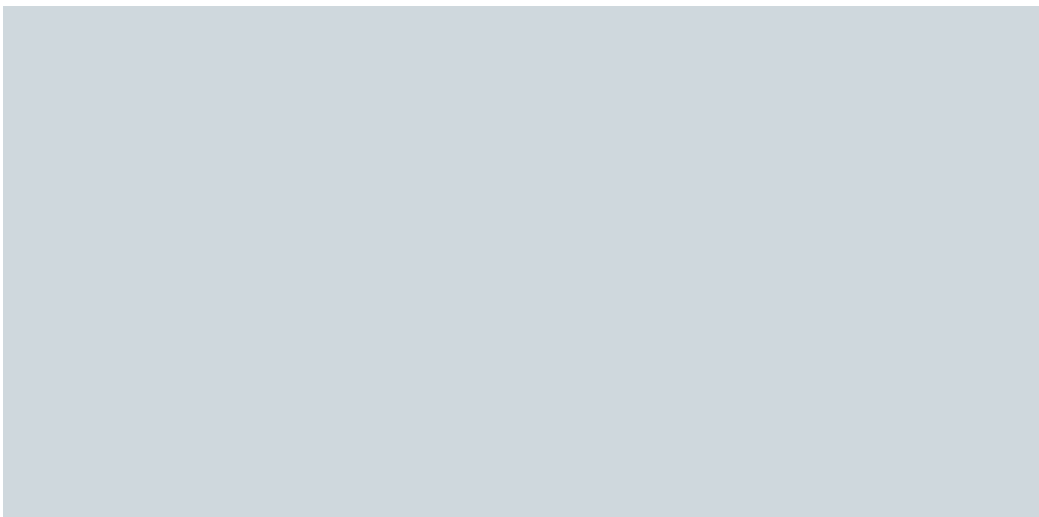
Reliable

The challenge: maximum performance around the clock

Energy supply for water supply, sewage disposal, and desalination must operate with absolute reliability around the clock, as every outage has immediate consequences on the supply reliability, the environment, and the quality of our water.

The Siemens solution: extremely reliable technology

With every gas-insulated medium-voltage switchgear from Siemens you benefit from 25 years of experience and a degree of expertise only the market leader in this technology can provide. The probability of an outage is reduced to the absolute minimum, which means maximum reliability and availability.



Robust

The challenge: reliable operation despite extreme environmental conditions

A reliable supply of energy is absolutely necessary for effective water supply and sewage disposal all over the world. In many regions, dust and climatic stress put the switchgear to severe tests. The equipment must function reliably and continuously at any time, within a wide temperature range, and in different climatic zones such as the Near and Middle East, as well as the cold or high-altitude regions of the world.

The Siemens solution: consistent exclusion of damaging environmental influences

Reliable protection of the high-voltage part of our gas-insulated medium-voltage switchgear is provided by a hermetically sealed primary enclosure and by an insulation consisting of inert sulfur hexafluoride. This makes the switchgear resistant to environmental effects such as humidity, saline air and dust, but also prevents ingress of small animals. Live parts of the primary circuit – busbar, three-position switch, vacuum circuit-breaker, connecting bars, bushings and cable connection – fulfill the IP65 degree of protection.

Compact

The challenge: individual adjustment to all space requirements

Net building volume is a cost factor in water business. Therefore it is essential that the available space is used as efficiently as possible. The space available in existing buildings is often restricted for switchgear in water supply and sewage disposal plants. That is why it is necessary for switchgear to adjust flexibly to given conditions. Space-saving installations call for a compact construction and minimum dimensions.



Safe

The Siemens solution: modular and compact construction

Medium-voltage switchgear from Siemens provides the ideal solution for installations in confined spaces. Thanks to its modular design and small dimensions, our switchgear can be flexibly adapted to situations where space is limited. It goes without saying that no compromises are made regarding safety. The protection against accidental contact, and a maximum resistance to internal faults offer a high degree of personal safety. Moreover, if an internal arc occurs, the pressure stress of the switchgear room is significantly reduced by absorbers.

The challenge: safe operation and perfect integration

Safe operation of distribution switchgear is of the utmost importance. Operators are exposed to two main risks: direct contact with the primary circuit and internal arcs during maintenance. Therefore, they need to be protected as much as possible from the effects of internal faults in the switchgear and its components. Remote control of the switchgear through integration in the process control system also significantly minimizes possible risks.

The Siemens solution: state-of-the-art, gas-insulated switching technology

Maintenance-free gas-insulated medium-voltage switchgear from Siemens, corresponding to IP65 degree of protection for all electrical primary components, is hermetically enclosed and safe-to-touch. This means that internal faults caused by environmental influences such as dust and humidity or by maintenance are virtually impossible. In comparison with air-insulated switchgear, personal safety is therefore considerably higher.

In the highly unlikely case of an internal fault, arcs are safely controlled throughout the system. The switchgear is tested on internal faults in accordance with IEC, and offers the highest degree of safety through pressure relief into the cable duct or pressure relief upwards with pressure absorber systems. Maloperation is also prevented by mechanical and electrical interlocks on fuses and cable connections, whereas capacitive voltage detecting systems, metal-enclosed voltage transformers, and make-proof earthing switches increase the active safety of the switchgear. And, finally, as our gas-insulated switchgear is totally maintenance-free, the possibility of faults incurred during maintenance is reduced to zero.



Efficient

The challenge: maximum performance around the clock

Water supply and sewage disposal must be available at all times: 24 hours a day and 7 days a week. Outages are costly, they damage a company's reputation, and should therefore be avoided by all means. That's why maximum availability and a minimum need for maintenance are decisive quality criteria for medium-voltage switchgear used in the water industry.

The Siemens solution: highest reliability and availability

Medium-voltage switchgear from Siemens features a sealed pressure system, which makes the equipment maintenance-free, even under the toughest possible operating conditions. This allows for reduced operating costs and a higher return on investment.

Highly performant

The challenge: safe control of high currents

The water industry requires increasingly high performance and efficiency levels. In this respect, medium-voltage switchgear is particularly important for safe processes, as it has to control and distribute all generated energy reliably.

The Siemens solution: a wide product range

Siemens offers a comprehensive range of gas-insulated medium-voltage switchgear. Whatever your requirements are, there is always a suitable type of Siemens switchgear to meet them.

- **8DH10**
up to 17.5 kV, up to 25 kA, up to 1,250 A
up to 24 kV, up to 20 kA, up to 1,250 A
- **NXPLUS C**
up to 15 kV, up to 31.5 kA, up to 2,500 A
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up to 40.5 kV, up to 40 kA, up to 5,000 A

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Order No. E50001-G710-A275-X-4A00
Printed in Germany
Dispo 30403, c4bs No. 7474
fb 1644 480263 WS 04093.5

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