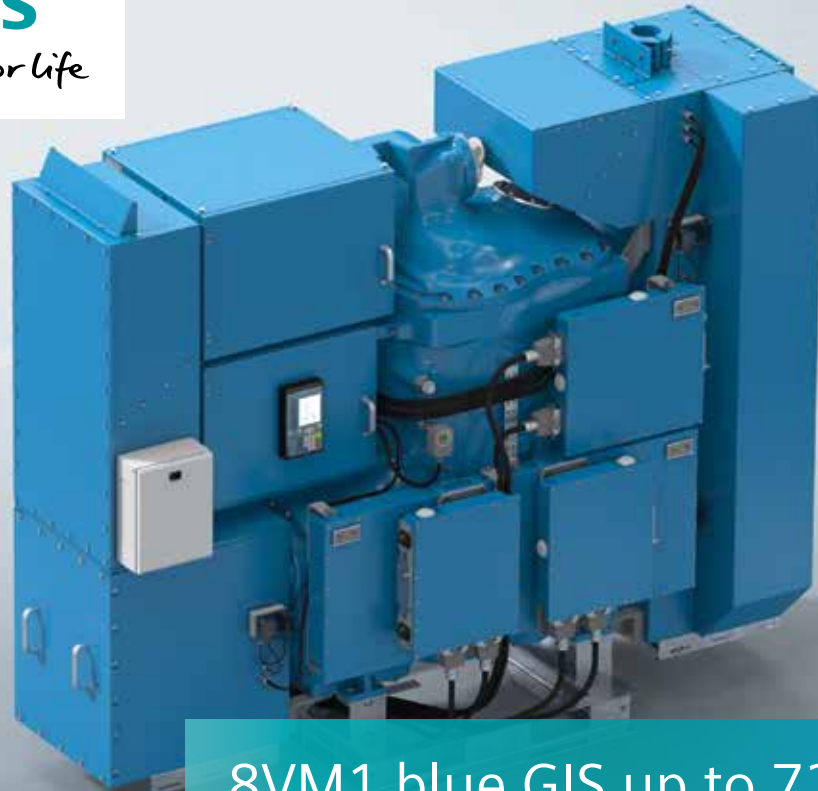


**SIEMENS**  
*Ingenuity for life*



## 8VM1 blue GIS up to 72.5 kV

Vacuum interrupting technology and clean air insulation for wind turbine applications

[siemens.com/hv-gis/8VM1](https://www.siemens.com/hv-gis/8VM1)

### Enabling higher voltage levels within wind turbines

It is essential to raise environmental awareness and increase resource efficiency, and offshore wind power is making a major contribution to meeting these challenges. Growing power demand requires a new generation of wind power plants equipped with innovative technologies. One core aspect: Due to increased wind turbine power, there is a movement to high voltage within the wind turbine network to decrease the current and therefore the cable losses. This is where compact, environmentally friendly, gas-insulated high-voltage switchgear can make an optimal contribution.

### Introducing Siemens' compact vacuum solution

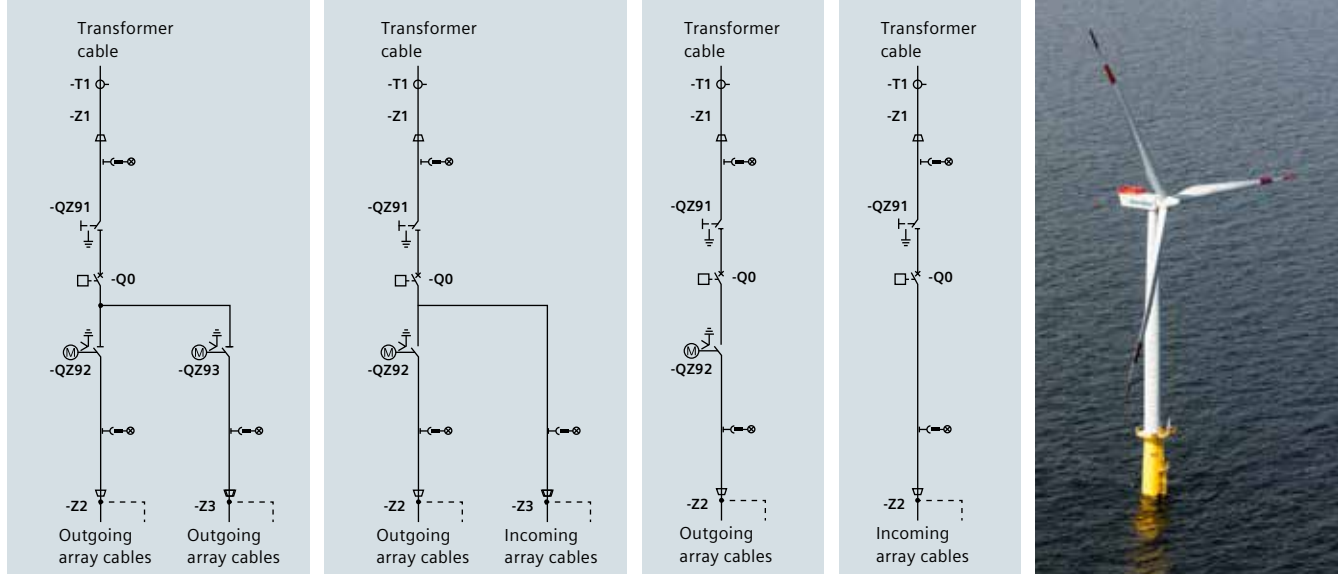
Based on more than 40 years of experience in producing medium-voltage vacuum interrupters and more than 5 million delivered units, Siemens introduced this proven technology to high-voltage power networks in 2010. All

installed vacuum circuit-breakers up to 72.5 kV are under successful operation.

Siemens vacuum circuit-breakers are designed in a well proven modular platform concept. Operating mechanism, control system, base frame, kinematic chain, and insulator designs are based on decades of manufacturing and operating experience.

The vacuum high-voltage circuit-breaker offers the same benefits as the Siemens SF<sub>6</sub> circuit-breaker portfolio:

- Reliable making and breaking capabilities
- Excellent interrupting performance at rated nominal current and rated short-circuit current
- High-performance and maintenance-free operating mechanism
- Highest availability and long working life



Typical switchgear configurations of existing offshore wind turbine installations

### Clean air as insulating medium

Vacuum interrupting technology enables the implementation of clean air as insulating medium for 72.5 kV gas insulated switchgear (GIS). The clean air is compressed up to the operation pressure into the single switchgear gas compartment, consisting of vacuum circuit-breaker, disconnectors, and earthing switches.

Compact and maintenance-free GIS solution is designed for offshore wind turbine installations based on proven component technology.

Vacuum interrupter and Siemens' clean air technology realizes the F-gas (fluorinated greenhouse gas)-free insulation and supports the demand for fully environmentally compatible wind power.

### Main features

- Worldwide leading F-gas-free environmentally friendly technology
- Innovative clean air insulation medium
- Proven vacuum interrupter unit technology
- Compact GIS solution designed for offshore wind turbine installations
- Optimal installation, commissioning, and service concept
- Completely factory assembled and tested switchgear
- Shipped in single transport unit, ready for cable connection
- One gas compartment for circuit-breaker, disconnectors, and earthing switches
- Component design based on well proven technology
- Cable terminals for T-connectors
- Maintenance-free operation
- Safe and easy handling
- High operational safety

### Technical data

Switchgear type	8VM1
Rated voltage	up to 72.5 kV
Rated frequency	50/60 Hz
Rated short-duration power-frequency withstand voltage (1 min)	up to 140 kV
Rated lightning impulse withstand voltage (1.2/50 μs)	up to 325 kV
Rated continuous current	up to 1250 A
Rated short-circuit breaking current	up to 25 kA
Rated peak withstand current	up to 68 kA
Rated short-time withstand current (up to 1 s)	up to 25 kA
Leakage rate per year and gas compartment (type-tested)	< 0.1%
Driving mechanism of circuit-breaker	stored energy-spring
Rated operating sequence	O-0.3 s-CO-3 min-CO
	CO-15 s-CO
Interrupter technology	vacuum
Insulation medium	clean air
Weight of SF <sub>6</sub> or other fluorinated greenhouse gases	0 kg
GWP Global Warming Potential	0
CO <sub>2</sub> equivalent	0 kg
Rated filling pressure	0.56 MPa abs
Bay width common pole drive	1050 mm
Bay height, depth (depending on bay arrangement)	2330 mm x 2500 mm
Bay weight (depending on bay arrangement)	1.6 t
Ambient temperature range	-30°C up to +45°C
Installation	indoor
First major inspection	> 25 years
Expected lifetime	> 50 years
Standards	IEC/IEEE

Other values on request

### Siemens AG

Energy Management  
High Voltage Products  
Freyeslebenstrasse 1  
91058 Erlangen, Germany

Article No. EMHP-B10002-03-7600  
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