

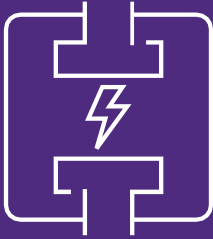
# 3AV2 Blue LT Circuit Breaker

Coming soon:  
delivering performance up  
to 420 kV with Zero CO<sub>2</sub>e  
emissions and Zero harm

[siemens-energy.com/blue-products](https://www.siemens-energy.com/blue-products)

**SIEMENS**  
ENERGY

## Vacuum technology



## Clean air



## Blue



### Delivering Zero with Zero delay

Renewable energy sources are only part of the solution as we aim for the decarbonization of the energy sector. It's essential that we achieve Zero Global Warming Potential (GWP) in the transmission of power as well as in its generation.

Most switchgear still use SF<sub>6</sub> for insulation – a gas 24,300 times more climate-hostile than CO<sub>2</sub> and one which stays in the atmosphere for up to 1,000 years.

Recognizing the harmfulness of SF<sub>6</sub> and other F-gases, the EU has legislated to restrict their use and allows only GWP < 1 solutions if available.

By contrast, our future-ready Blue portfolio, including the 3AV2 live tank circuit breaker, uses Zero fluorinated gases of any kind and has Zero harmful impact on the environment.

### Zero SF<sub>6</sub> – just clean air

The sustainable, non-toxic alternative to F-gases is clean air. This is the only way to achieve zero GWP.

The 3AV2 live tank circuit breaker combines vacuum switching technology with clean air insulation. It operates with Zero harmful greenhouse gases of any kind, with Zero toxic decomposition products and Zero safety requirements during handling and maintenance.

The clean air used – consisting of 80% nitrogen and 20% oxygen, cleaned and free of humidity – can be released into the atmosphere with Zero harmful effects to people or the environment.

At the same time, the 3AV2 maintains the highest standards of technical performance and reliability, together with low lifecycle costs. This proven technology has already been introduced into power transmission networks delivering up to 145 kV, and the application range is now being extended to levels of 420 kV and above.



#### Zero environmental impact

- Zero SF<sub>6</sub> and other F-gases
- Zero greenhouse gas emissions
- Zero GWP



#### Zero impact on health & safety

- Zero toxic insulation gases
- Zero toxic decomposition products
- Zero special safety measures needed during maintenance
- Zero regulations on handling of gas
- Zero disposal of gases required at end of life



#### Zero regulation

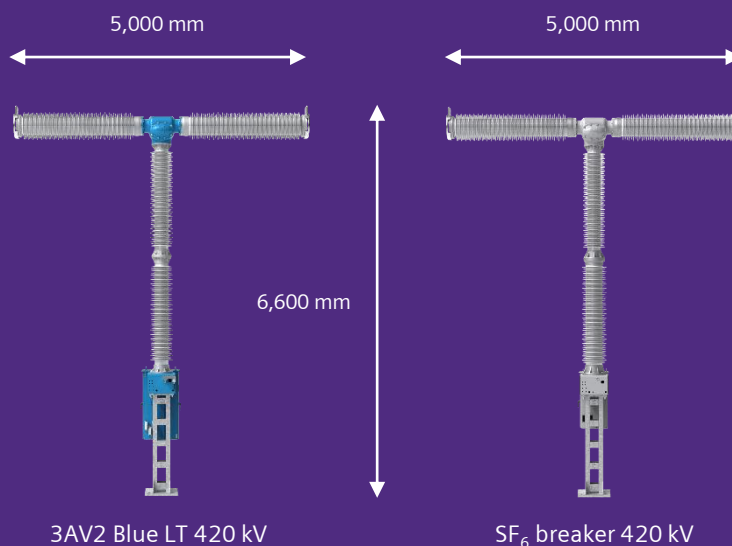
- Zero reporting and accounting of gases required
- Zero F-gas training needed
- Zero issues with current and potential legislation against F-gases



#### Zero compromise on performance and reliability

- Voltage levels up to 420 kV
- High number of short-circuit and rated current interruptions
- Two-cycle current interruption
- 10+ years of experience in HV vacuum switching
- Perfect for low temperature applications

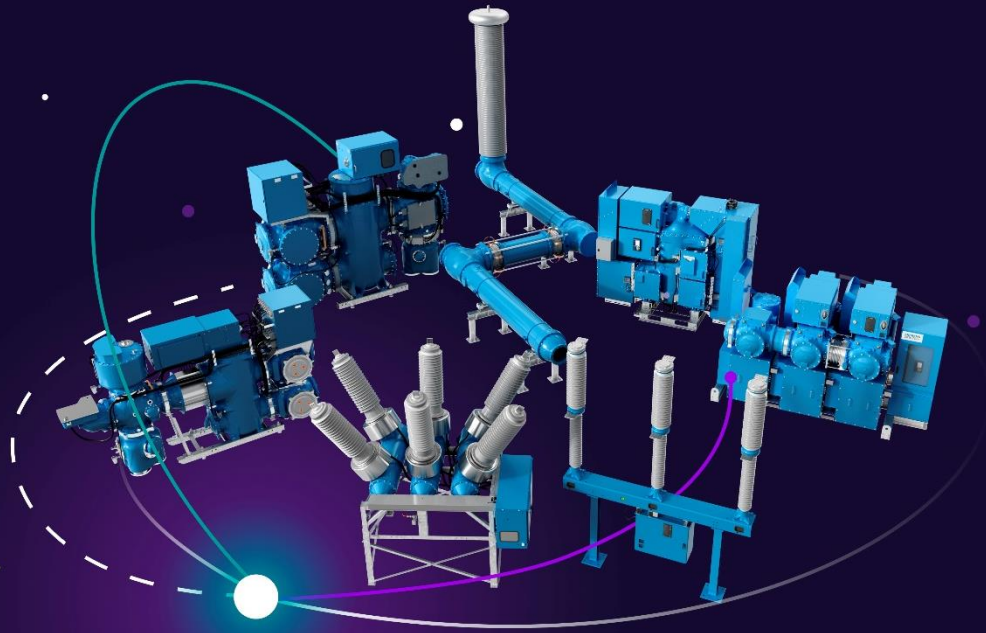
# Technical details



	3AV2 Blue LT 420 kV <sup>1</sup>	vs. SF <sub>6</sub> breaker 420 kV
No. of operations at rated short-circuit breaking current (63 kA)	30	10 - 12
No. of interrupter units per pole	2	2
No. of operations at rated normal current (4,000 A)	10,000	6,000
Break-time	2 cycles	2 cycles
Rated normal current, up to	5,000 A	5,000 A
Rated short-circuit breaking current, up to	63 / 80 kA	63 / 80 kA
Rated frequency	50 / 60 Hz	50 / 60 Hz
Rated short-duration power-frequency withstand voltage	610 kV	610 kV
Rated lightning impulse withstand voltage	1,425 kV	1,425 kV
Rated switching impulse withstand voltage	1,050 kV	1,050 kV
Rated duration of short circuit	3 s	3 s
Peak withstand current (2.5 p.u.)	158 kA	158 kA
Rated first-pole-to-clear factor	1.3 p.u.	1.3 p.u.
Capacitive voltage factor (class C2)	1.4 p.u.	1.4 p.u.
Ambient air temperature range	-60 up to +55 °C	-30 up to +55 °C
Maintenance schedule	every 12 years: visual inspection and checks; up to 10,000 operations at 4,000 A	every 12 years: visual inspection and checks; 25 years: maintenance; up to 6,000 operations at 4,000 A
Insulating medium	clean air	SF <sub>6</sub>
Mass of fluorinated greenhouse gases / mass of CO <sub>2</sub> equivalent	0 kg / 0 t	53 kg / 1245 t

<sup>1</sup> final solution, rating for pilots need to be aligned

All values in accordance with IEC; other values on request



Siemens Energy Blue portfolio covers many more F-gas free product lines and ratings. Learn more at [siemens-energy.com/blue-products](https://www.siemens-energy.com/blue-products)



#### Published by

Siemens Energy Global GmbH & Co. KG  
Grid Technologies  
Siemenspromenade 9  
91058 Erlangen  
Germany

For more information, please visit our website:  
[siemens-energy.com](https://www.siemens-energy.com)

or contact us via Email:  
[support@siemens-energy.com](mailto:support@siemens-energy.com)

© Siemens Energy, 2024

Siemens Energy is a trademark licensed by Siemens AG.

Subject to changes and errors. The information given in this document only contains general descriptions and/or performance features which may not always specifically reflect those described, or which may undergo modification in the course of further development of the products. The requested performance features are binding only when they are expressly agreed upon in the concluded contract. All product designations may be trademarks or product names of Siemens Energy Global GmbH & Co. KG or other companies whose use by third parties for their own purposes could violate the rights of the owners.

#### For the U.S. published by

Siemens Energy, Inc.  
Grid Technologies  
8841 Wadford Drive  
Raleigh, NC  
USA