



3AV1 Blue Circuit Breaker™

Dead Tank Circuit Breakers 72.5-145 kV
F-gas free product for CO₂ neutral grids

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

SIEMENS
ENERGY

Vacuum technology – Game changing technology for F-gas free high-voltage power grids

Siemens Energy recognizes climate change as a challenge that is changing the world. SF₆, the insulating gas utilized in most modern gas insulated equipment, boasts a global warming potential of approximately 23,500 times that of CO₂.

In a revolutionary development for high-voltage Siemens Energy is going “Blue”. Siemens Energy developed a vacuum technology with clean air insulation that is capable of reliable short-circuit interruption at voltage levels from 72.5-145 kV with zero CO₂ emissions over the lifetime of the equipment. This solution provides the best performance addressing the highest environmental standards in place now and ones in the future.

The members of our Blue circuit breaker family meet the same high-quality standards as our SF₆ portfolio:

- Reliable making and breaking capabilities
- High-performance and maintenance-free operating mechanism
- Highest availability and length of operation

Moreover, the vacuum technology promotes several features that are superior to traditional circuit breakers:

- 30 full short-circuit current interruptions
- 10,000 rated current interruptions
- Optional 2-cycle current interruption
- Full performance down to -60°C ambient temperature
- Maintenance-free interrupter unit during its lifetime

Instead of SF₆, our new generation of Blue high-voltage breakers use clean air for insulation consisting of 80 percent nitrogen and 20 percent oxygen. This insulation medium can be released into the atmosphere with zero harmful effects to people, environment and no greenhouse gas (GHG) emissions.

Environmental Health and Safety (EHS)

- Nontoxic insulation gas, no toxic decomposition products
- Greenhouse- and F-gas free insulation
- No special safety measures required

Efficiency

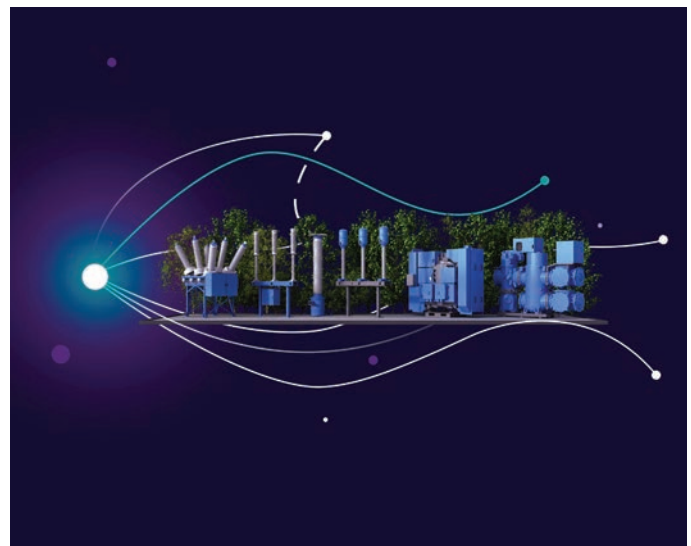
- No F-gas regulated – reporting, training, frequent density checks
- Minimized effort for gas handling during operation and end of life (no gas recycling)

Performance

- High number of short-circuit and rated current interruptions
- Two-cycle current interruption

Reliability

- More than 40 years of experience in medium-voltage vacuum switching technology – more than 10 years in high-voltage applications
- Perfect for low-temperature applications without heating systems



The world's most environmentally friendly dead tank breaker

CO₂ neutrality can only be achieved with a GWP of ZERO! Clean air insulation combined with vacuum technology is the only way to achieve this goal. It operates completely without harmful greenhouse gases nor any other hazardous F-gas and thereby goes well beyond the common health and safety standards.

The Blue product line design leverages our proven modular platform, 150 years of industry experience and has an 11-year

successful track record of implementing vacuum outdoor high voltage breaker applications with more than 400 devices in operation.

Siemens Energy 3AV1 DT Blue circuit breakers are tested in accordance with IEEE/ANSI standards.

The Siemens Energy 3AV1 Blue circuit breakers are another solid step to support our customers in achieving their goals of an environmentally friendly and resource-efficient, power generation.

Let's make tomorrow different today.

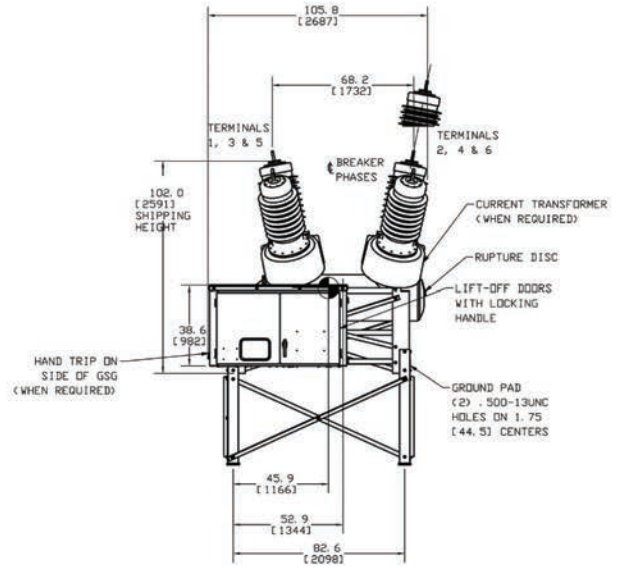
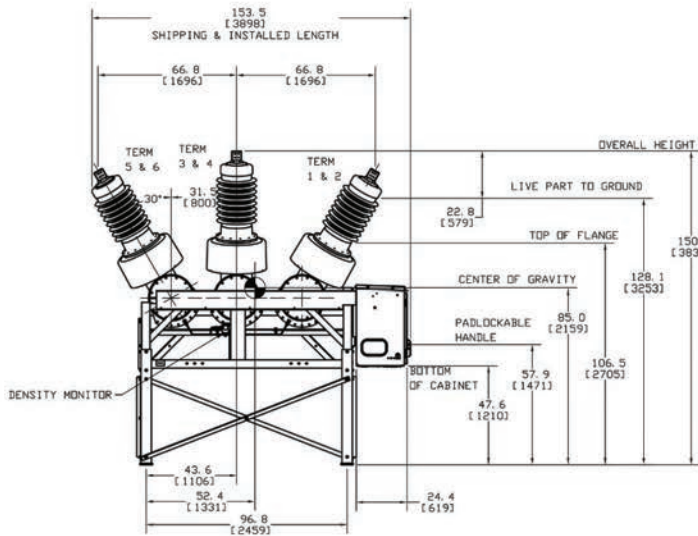
Ratings

Rated voltage	3AV1 Blue 72.5 kV	3AV1 Blue 123 kV	3AV1 Blue 145 kV*
No. of operation at rated short-circuit breaking current	30	30	30
No. of interrupters per pole	1	1	1
Rated continuous current (A,rms)	up to 3000	up to 3000	up to 3000
Rated break time	3/2 cycles	3/2 cycles	3/2 cycles
Rated short circuit breaking current up to	40	40	40
Rated frequency	50*/60 Hz	50*/60 Hz	50*/60 Hz
Rated power frequency withstand voltage	160 kV	260 kV	275 kV
Rated lightning impulse withstand voltage	350 kV	550 kV	650 kV
Rated duration of short circuit	3s	3s	3s
Rated peak withstand current (2.7 p.u.)	108 kA	108 kA	108 kA
First pole to clear factor	1.5/1.3 p.u.	1.5/1.3 p.u.	1.5/1.3 p.u.
Capacitive voltage factor	1.4 p.u.	1.4 p.u.	1.4 p.u.
Temperature range	-60° C up to 50° C	-60° C up to 50° C	-60° C up to 50° C
Maintenance schedule	12 years/7000 operations	12 years/7000 operations	12 years/10,000 operations
Insulating medium	clean air	clean air	clean air
Mass of F-gas	0	0	0

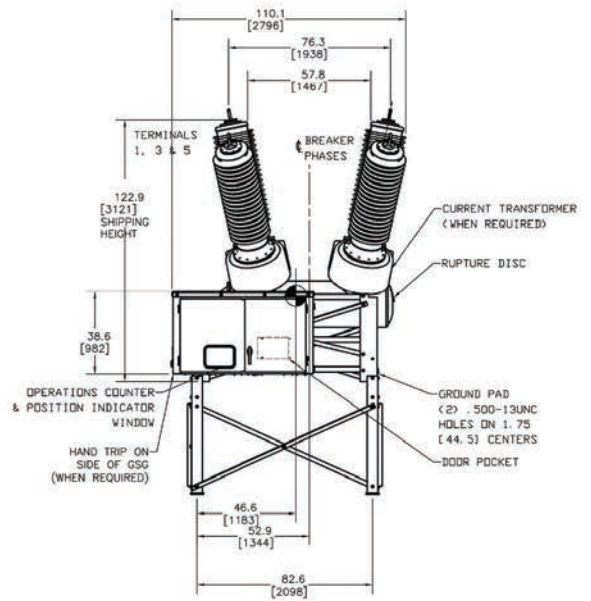
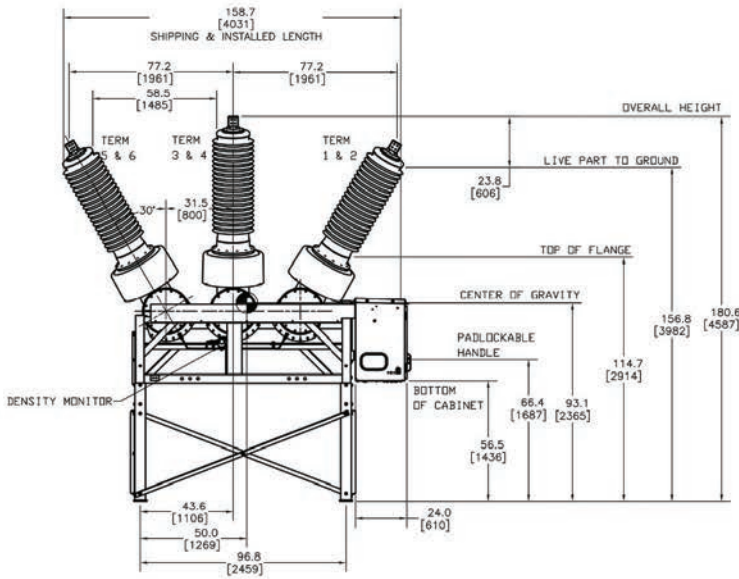
* Available in 2022.

All values in accordance with IEEE/ANSI; other values on request.

3AV1DT 72.5 kV



3AV1DT 145 kV



Published by

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