3AV1 Blue Circuit Breaker™

Dead tank circuit breakers 72.5 – 145 kV
F-gas free product for CO_2 neutral grids

siemens-energy.com

SIEMENS energy

Vacuum technology Clean air Blue

Your clean air vacuum dead tank circuit breaker

Zero F-gases and Zero global warming potential – this game changing technology is the solution for F-gas free high-voltage power grids.

Siemens Energy recognizes climate change as a challenge that is facing the world. SF_6, the insulating gas utilized in most modern gas-insulated equipment, boast a global warming potential of approximately 24,300 times that of CO_2.

Siemens Energy is going "Blue" – a revolutionary development for high-voltage grids

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 CO_2 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 SF_6 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
- Improved life cycle costs

Instead of SF_6, 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 or reporting.

Essential facts and features

Zero environmental impact

- Zero SF_6 and and other F- or greenhouse gas emissions
- Zero GWP

Zero regulation

- Zero reporting and accounting of gases required (no gas cards needed)
- Zero issues with current and potential legislationagainst PFAS F-gases

Zero impact on health & safety

- Zero toxic insulation gases or toxic decomposition products
- Zero special safety measures needed during maintenance
- Zero special safety measures needed during maintenance
- Zero disposal of gases required at end of life

Zero compromise on performance and reliability

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

CO_2 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 in operation.
Siemens Energy 3AV1 Blue DT 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.

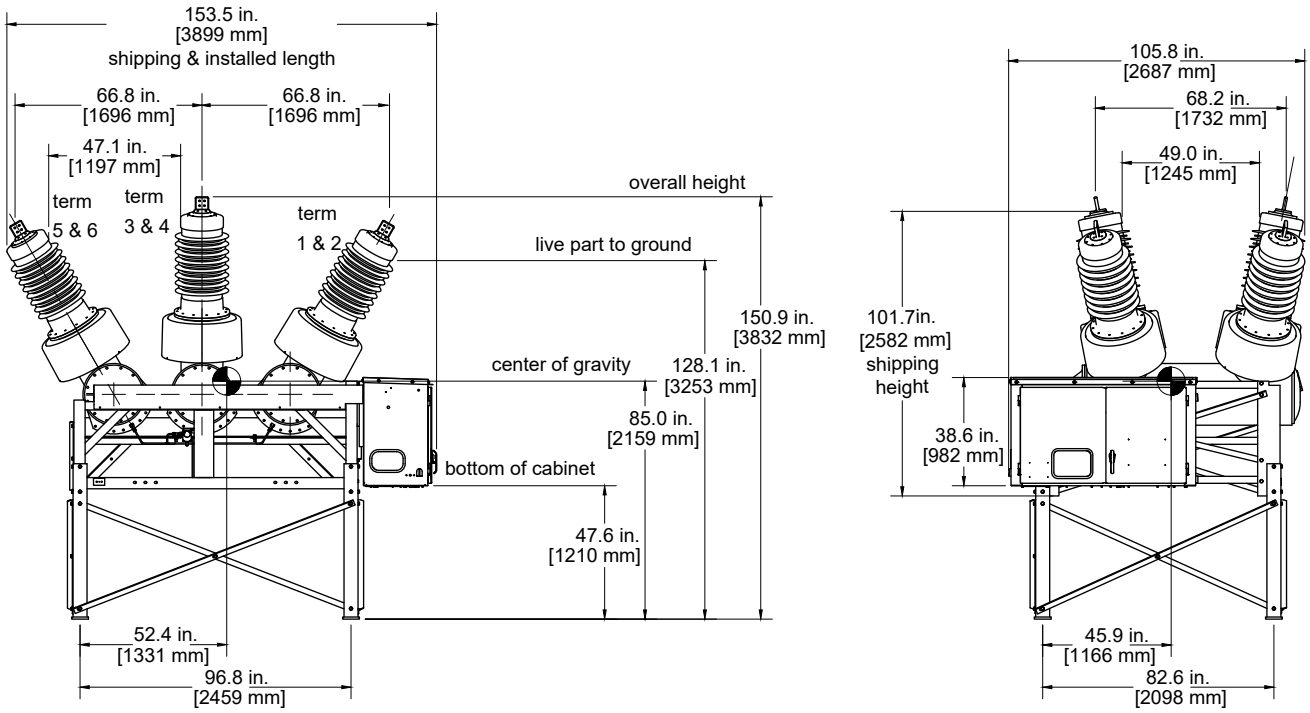
LET'S MAKE TOMORROW DIFFERENT TODAY

Technical details 3AV1 Blue DT

Type	72.5 kV / 40 kA	123 kV / 40 kA	123 kV / 63 kA	145 kV / 40 kA	145 kV / 63 kA
No. of operation at rated short-circuit breaking current	30 per phase	30 per phase	30 per phase	30 per phase	30 per phase
No. of interrupters per pole	1	1	1	1	1
Rated continuous current (A, rms)	up to 3000	up to 3000	up to 3000	up to 3000	up to 3000
Rated break time	3/2 cycles	3/2 cycles	3/2 cycles	3/2 cycles	3/2 cycles
Rated short-circuit breaking current up to	40 kA	40 kA	63 kA	40 kA	63 kA
Rated frequency	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz
Rated power frequency withstand voltage	160 kV	260 kV	260 kV	275 kV	275 kV
Rated lightning impulse withstand voltage	350 kV	550 kV	550 kV	650 kV	650 kV
Rated duration of short-circuit	3 s	3 s	3 s	3 s	3 s
Rated peak withstand current (2.7 p.u.)	108 kA	108 kA	170 kA	108 kA	170 kA
First pole to clear factor	1.5 / 1.3 p.u.	1.5 / 1.3 p.u.	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.	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	-60° C up to 50° C	-60° C up to 50° C
Insulating medium	clean air	clean air	clean air	clean air	clean air
Mass of F-gas	0	0	0	0	0
Global Warming Potential (GWP) Impact	0	0	0	0	0

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

3AV1 DT 72.5 kV / 40 kA



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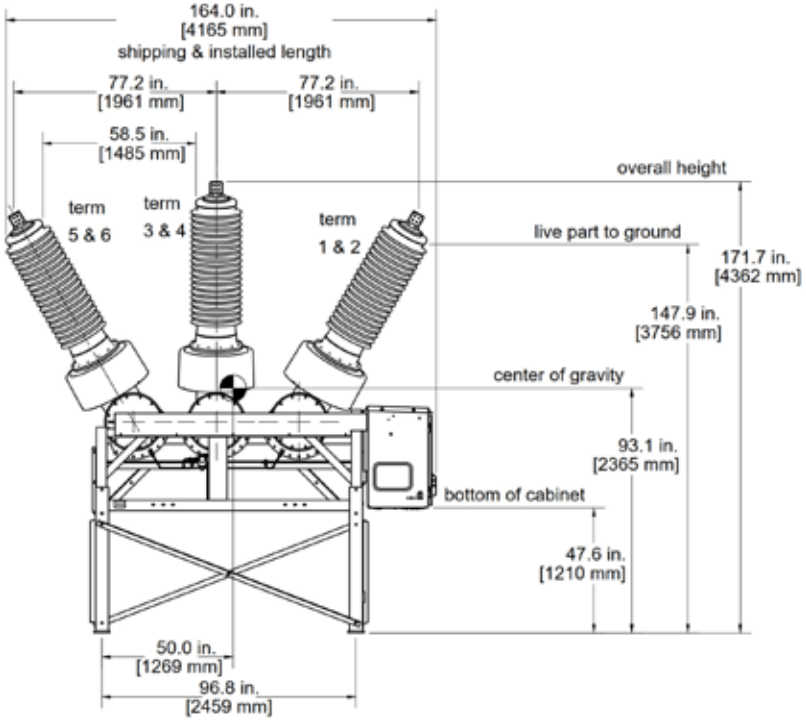

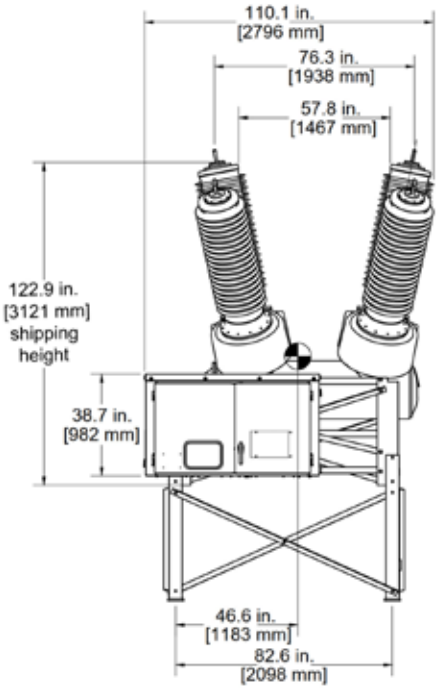

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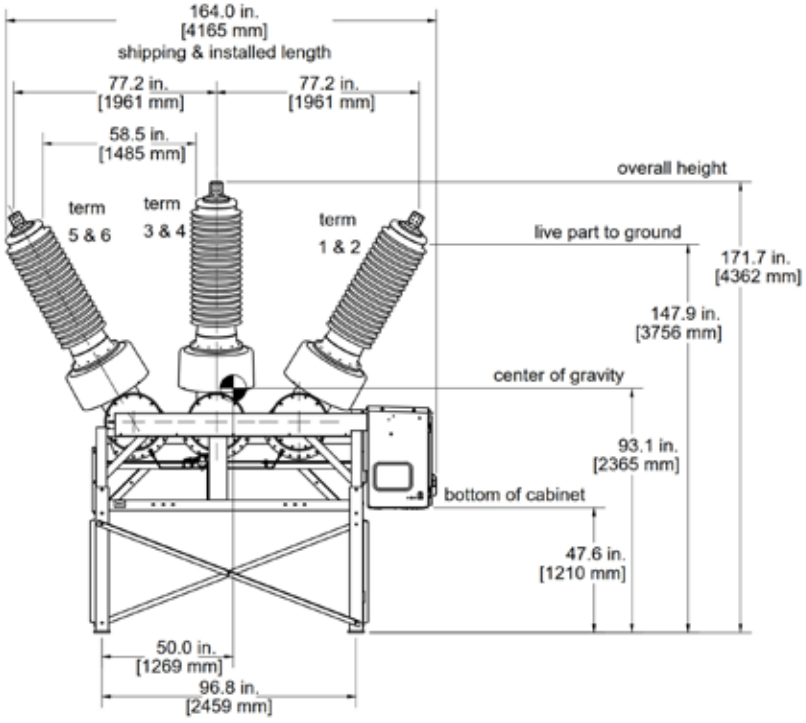

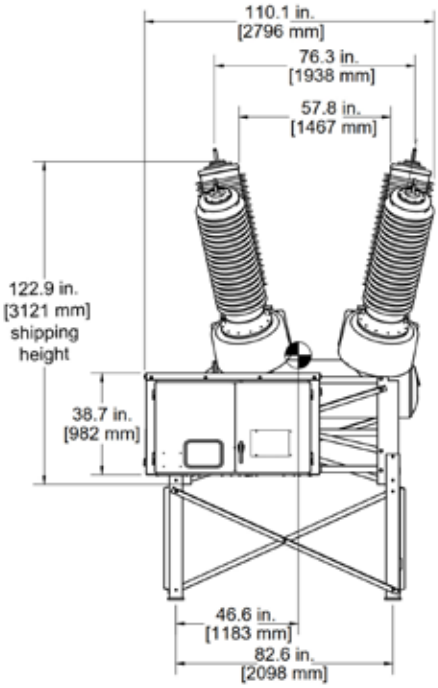

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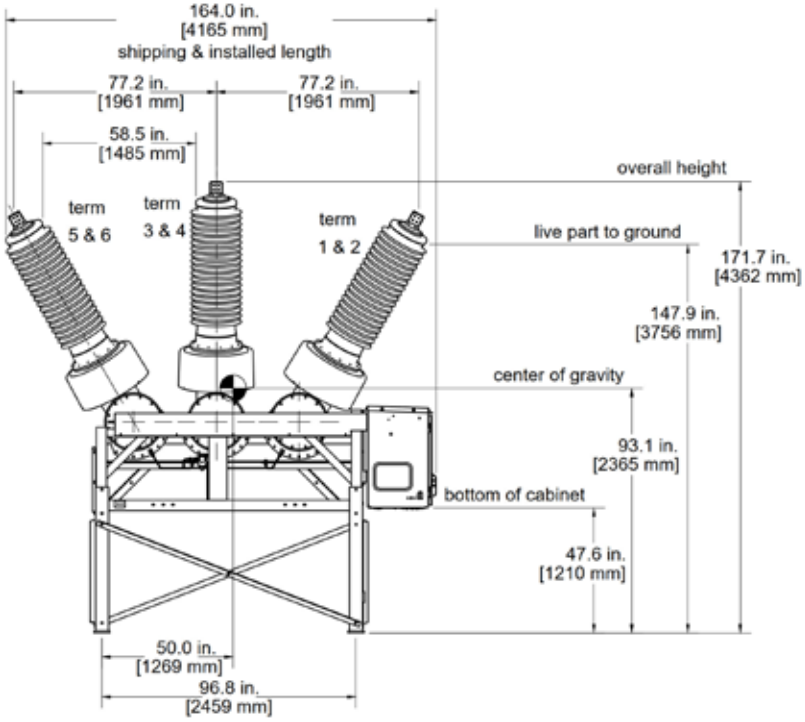

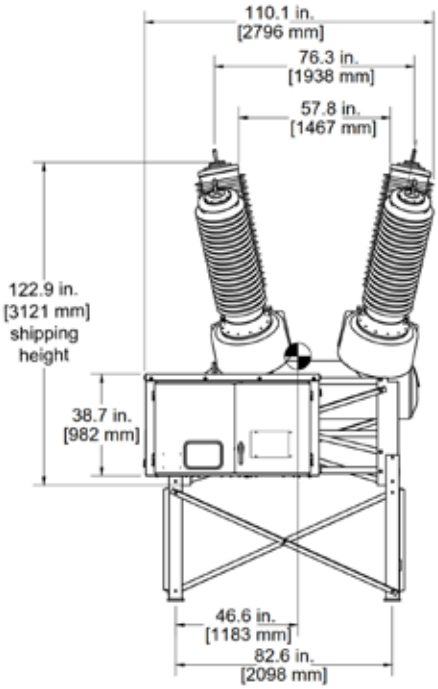

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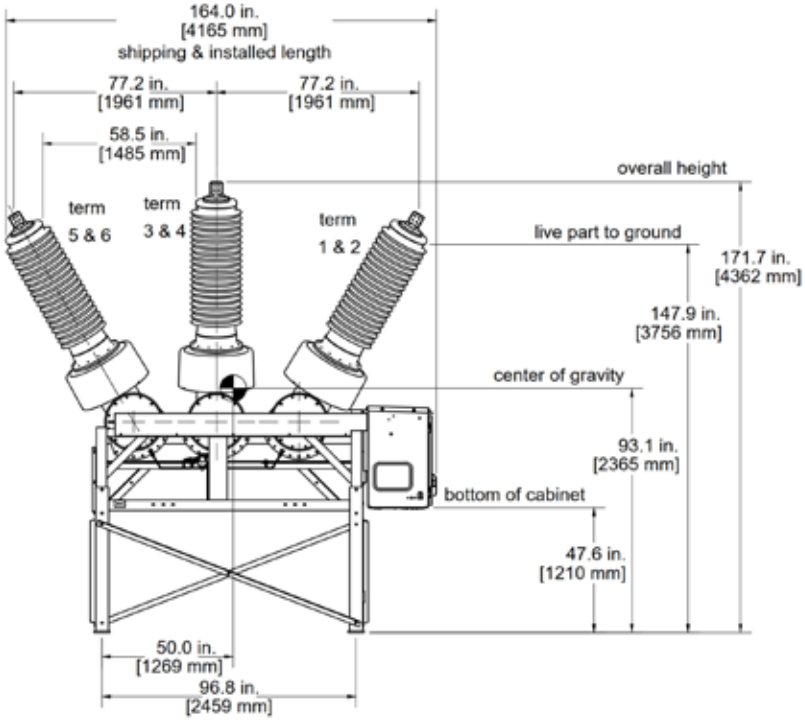

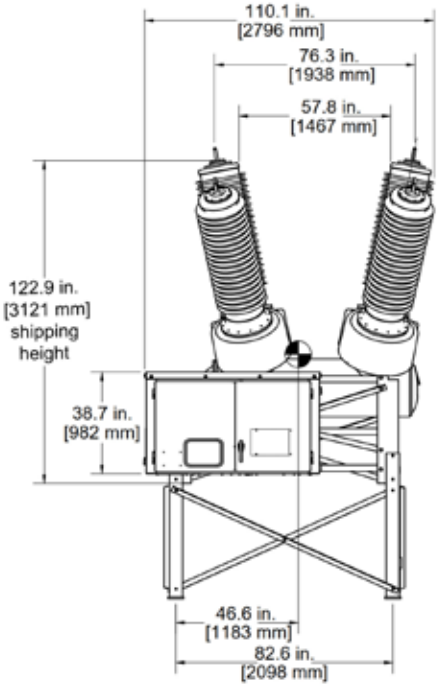

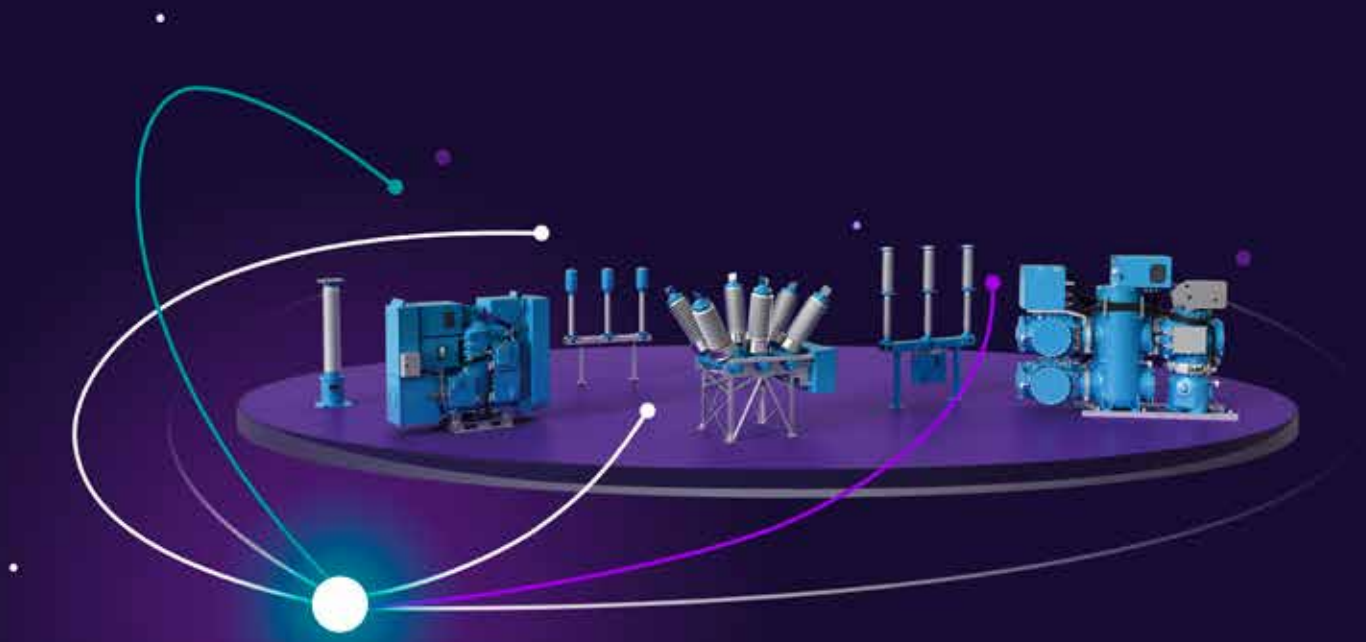

Siemens Energy Blue portfolio covers many more F-gas free product lines and ratings. Learn more at https://www.siemens-energy.com/global/en/offerings/power-transmission/innovation/blue-high-voltage-products.html

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