

# T155 DUAL GAS GIL

## One 420 kV GIL design for SF<sub>6</sub> and SF<sub>6</sub>-free

Grid Solutions at GE Vernova has more than 50 years of experience in the design, material selection, development, engineering, manufacturing and servicing of gas-insulated substations.

Our dual gas-insulated lines (GIL) meet the challenges of networks up to 420 kV for all applications: power generation, transmission and heavy industry.

### Ready for SF<sub>6</sub> gas regulations

This dual gas equipment is available in g<sup>3</sup> or SF<sub>6</sub>. Based on the same design, transmission system operators can buy the SF<sub>6</sub> version today and later easily switch from SF<sub>6</sub> to our SF<sub>6</sub>-free g<sup>3</sup> solution.

### Reduced carbon footprint

- New dual gas GIL launched in 2022 is available with g<sup>3</sup> gas
- The T155g GIL is available in a fully SF<sub>6</sub>-free version using our g<sup>3</sup> technology, one of the company's alternative technologies to SF<sub>6</sub>, allowing for a 99% CO<sub>2</sub>-eq reduction of the gas contribution to global warming. while it has the same dimensions, performance and ratings as SF<sub>6</sub>
- Gas mass reduced by more than 15% compared to previous version
- First-in-class gas sealing system
- Improved tightness thanks to sealing length divided by two compared to previous version

### Reliability based on field experience

- Design grounded with 50 years of field experience in SF<sub>6</sub> GIL and almost 10 years in g<sup>3</sup> GIL
- Superior know-how based on more than 200 km of SF<sub>6</sub>-GIL worldwide and more than 30 km of g<sup>3</sup> GIL

### Smart grid features

Full-digital monitoring: BWatch and PDWatch monitoring devices are available. They are recommended as both devices are SF<sub>6</sub> and g<sup>3</sup> gases compatible, which means that there is no need to replace the monitoring system when you replace the SF<sub>6</sub> gas with our g<sup>3</sup> gas technology.



### The path to Decarbonization

- The T155g SF<sub>6</sub>-free GIS is part of our GRIDEA portfolio of solutions designed to accelerate the decarbonization of the grid
- Lower carbon footprint over a 40-year substation life cycle compared to the use of SF<sub>6</sub> products
- Improved tightness due to sealing length divided by two, compared to the previous version
- The gas contribution to global warming is reduced by 99% using g<sup>3</sup> gas instead of SF<sub>6</sub>
- No increase of strategic raw material consumption, and consequently, carbon footprint, when compared to previous generation of GIL

### Customer Benefits

- SF<sub>6</sub> and g<sup>3</sup> GIL available with a single design
- Easy move to SF<sub>6</sub>-free in short time with g<sup>3</sup> adaptation kit
- Field-proven reliability
- Lowest electromagnetic field
- Low total cost of ownership
- Smart grid ready



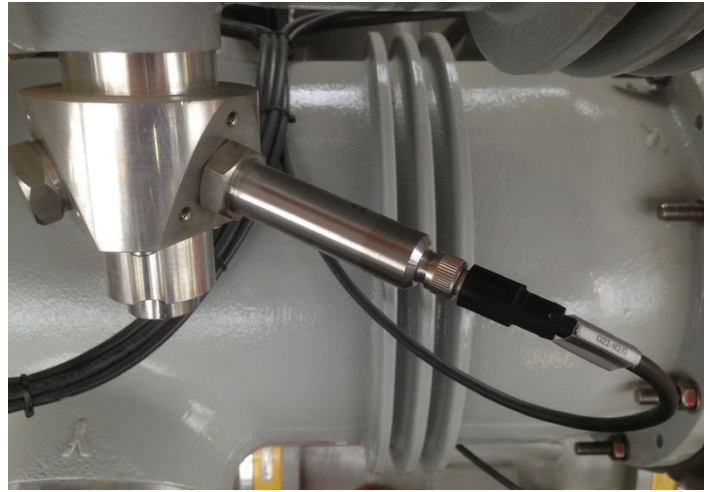
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## SF<sub>6</sub>-free with g<sup>3</sup> Adaptation Kit

Only a few GIL components need to be replaced when you decide to replace SF<sub>6</sub> with our g<sup>3</sup> gas:

### g<sup>3</sup> adaptation kit for 362/420 kV GIL

- g<sup>3</sup> gas
- g<sup>3</sup> filling valves
- g<sup>3</sup> molecular sieves
- g<sup>3</sup> conventional densimeter
- If the BWatch digital monitoring system is already installed, simply select g<sup>3</sup> on the device



*BWatch integrated SF<sub>6</sub> and g<sup>3</sup> monitoring system and internal arc localization for GIS/GIL*

## Dual gas GIL Specifications

GIL TYPE		B105	T155	T155	T168	T210
Voltage	kV	253	362	420	550	800
Standards		IEC/IEEE	IEC/IEEE	IEC/IEEE	IEC/IEEE	IEC/IEEE
Insulating gas		SF <sub>6</sub>	g <sup>3</sup> / SF <sub>6</sub>	g <sup>3</sup> / SF <sub>6</sub>	SF <sub>6</sub>	SF <sub>6</sub>
Frequency	Hz	50/60	50/60	50/60	50/60	50/60
Withstand voltages						
• Short-duration power-frequency	kV	460	520	650	740	960
• Switching impulse	kV (peak)	-	950	1050	1175	1550
• Lightning pulse	kV (peak)	1050	1175	1425	1550/1675	2100
Continuous current	A	4000	5000	5000	5000	5000
Short-time withstand current	kA	63	63	63	63	63
Peak withstand current	kAp	170	170	170	170	170
Temperature	°C	-25	-30	-30	-30	-30

Other values on request

# Gas Data\*

The functioning of this equipment relies upon SF<sub>6</sub> or a gas mixture based on CO<sub>2</sub>/O<sub>2</sub> and 5% of an additive, C<sub>4</sub>F<sub>7</sub>N (also known as C<sub>4</sub>-FN or Iso-C<sub>3</sub>F<sub>7</sub>CN), a fluorinated greenhouse gas, which helps preserve dimensions and performance equivalent to those of SF<sub>6</sub> equipment while reducing the gas carbon footprint

	SF <sub>6</sub> version	g <sup>3</sup>	
		C <sub>4</sub> F <sub>7</sub> N additive**	g <sup>3</sup> gas mixture
Average mass of gas/mixture in the equipment (kg)*	4.2	0.4	2.0
GWP <sub>100</sub> of gas/mixture (CO <sub>2</sub> -equivalent)	24,300	2,750	560
CO <sub>2</sub> -eq of gas/mixture in the equipment (t <sub>co2-eq</sub> ) *	102.1	1.1	1.1

\* For information purposes only considering a typical GIS arrangement (double busbar cable bay). It varies depending on the equipment considered.

\*\* This component's physical properties are essential to g<sup>3</sup>.

For more information, visit [gevernova.com/grid-solutions](https://gevernova.com/grid-solutions)

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