

Natural Origin Gas-Insulated Switchgear for Climate Neutral Power Grids

The safe and environmentally-friendly F-gas free solution for new generation T&D systems

Features

- Greenhouse gas free, No potential conflict with future regulations.**
 No fluorinated gas (F-gas) is used at all, adopting synthetic air for high-voltage insulating gas as an alternative to SF₆.^{*1}
- No EHS (environmental, health and safety) concern, Easy gas handling and maintenance**
 Synthetic air insulation + well-proven vacuum interrupting technologies.
 No gas recovery needed and maintenance requirements minimized.
- Ready for digital substations.**
 Cutting-edge monitoring and diagnostic systems can be equipped, based on IEC 61850.

AEROXIATM
72.5 kV F-gas free GIS^{*2}

"AEROXIA" = "AERO" + "AXIA"
 Natural - Origin gas Value (in Greek)



Specifications	
Rated voltage (kV)	72.5
Rated interruption current (kA)	31.5
LI withstand voltage (kV)	350
PF withstand voltage (kV)	140
Rated current (A)	up to 3000
Rated frequency(Hz)	50/60
Short-time withstand current (kA x 2 sec)	31.5

"7 requirements" as evaluation criteria	Evaluation
1. EHS	No EHS concern with synthetic air insulation. No decomposed gases due to short circuit interruptions.
-25°C 2. Use condition	Applicable to outdoor use down to -25°C without a heater.
3. Stable gas supply	Quite common gas used in lots of industries. Stable gas supply proven.
4. Gas handling	Pre-mixed gas supply. No special handling gear needed.
5. Total cost	Reasonable total cost expected, considering operation cost as well as initial cost.
6. Replaceable footprint	Replaceable equipment size expected even for restricted cases e.g. underground substations.
550kV 7. Scalability	Scalable to higher ratings in principle based on the natural origin gas concept.

*1 Environmental impact of 1kg of SF₆ gas emission is considered equivalent to 25.2 ton of CO₂ gas emission.

*2 Collaboratively developed with MEIDENSHA CORPORATION.

*3 Criteria to evaluate SF₆ alternative technologies, suggested by the "SF₆ Alternative Gas Study Group" composed of Japanese 11 utilities, 7 manufacturers, 6 academia and CRIEPI, together with TGDC and JEMA as observers.