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Ensto Auguste

SF6 insulated overhead load-break switch

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SF6 insulated overhead load-break switch

Auguste switchgear is an overhead load break disconnecting switch designed to allow a load interruption up to 630 A for a medium voltage (up to 36 kV) electrical overhead line.

This switchgear is convenient for all types of networks, especially for those requiring frequent operations in severe weather conditions.
It is easily installed below the line, on the side of the pole.
The switchgear is extremely reliable, with high-level safety characteristics allowing it to be used with full confidence.
Auguste switchgear design is based on extensive experience, in co-operation with the public and private operators of overhead distribution electrical networks.

The equipment meets many demands :

- Assures quality service
- Easy to install
- Safe to use
- Improves network cost-effectiveness by decreasing the sources of output loss

Operational on all continents and subject to the most severe environmental and climatic conditions (saline humidity, rising sand, ice, snow, high altitude, industrial pollution, areas with high-density bird populations, etc.), these switches are valued by operators for their operational simplicity and high reliability.

The switch is used on all types of overhead distribution networks in rural or suburban areas.
Auguste switchgear is offered as manual or electrically controlled version. It is designed to be easily inserted in remote SCADA controlled networks.

Standards and testing ensure quality

Auguste switchgear is designed and manufactured according to an ISO 9001-certified quality assurance system.
The equipment complies with the recommendations in the most recent editions of international standards and specifications.

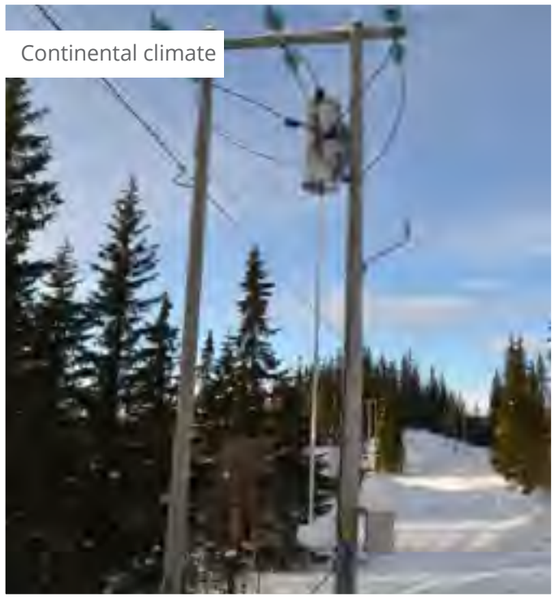
Type tests
Auguste load-break switches have successfully undergone all type tests specified in the international standards IEC 62271-103 IEC 62271-102 and IEC 62271-200.
The corresponding test reports are available on request.

Routine tests
All Auguste switches also undergo individual tests during manufacturing as specified by the standards in force, namely :

- Leak-proof tests
- Dielectric tests
- Voltage drop measurement
- Operation tests

Widely applicable

Ensuring reliable electricity distribution networks



Benefits of our load break switch Auguste

Versatile

- One product - three versions (manual, motorized and remotely operated)
- Customized to meet different customer expectations on various markets globally
- Complete range of options (fault detection, remote control etc.)
- Compatible with the SCADA remote control system

Compact

- Two functions in one device (switch + disconnector)
- Transformer integrated in the SF6 gas insulated tank
- Built-in selective sectionalizing function

Reliable

- A well-tried solution; long-term relationships with reputed customers
- Operation in extreme climatic conditions all over the world
- Suitable for all types of overhead distribution networks
- Safe and easy to install and use - low pressure, safety vent valve

Durable

- Long life-time with high mechanical and electrical endurance
- Maintenance-free operation with self-lubricating materials
- Vandalism-resistant materials

Sustainable

- Cost-efficient with minimum losses
- Fits into the environment; harmonious, timeless design
- Safe for birds and animals

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Variety of options and accessories

The modular design of the Auguste switch range enables the products to be adapted to the constraints of existing networks and to different modes of operation, as well as to future network evolutions.

The load-break switch is installed below the line at the top of the pole. A wide variety of mounting accessories for clamping, strapping or bolting enable the load-break switch to be very easily installed on any type of pole.

Load-break switches with manual control mechanism are operable by rod assembly or hot stick.
The motorized version uses the existing adaptable manual control mechanism as a fall safe operation. By adding a RTU control cabinet, the motorized version can be remote-controlled.

All the accessories needed for automation and telecontrol, such as the current sensors, voltage sensors, fault detectors, sectionaliser automatic control, modems, etc. are specified to enable changes to be made in the already installed equipment.

Auguste switches come with several options :

- Fault detection adapted to different earthing modes
- Sectionalizing function, electrically operated, automatically triggered by the fault detector while the absence of voltage
- Remote control compatible with standard protocols IEC 60870-5-101, IEC 60870-5-104, Modbus RTU, DNP3, HNZ (by adding adequate communication equipment)
- Public or private telephone network
- Radio network
- GSM/GPRS network
- Customer External RTU

Designed to be safe and sustainable

The switch is completely maintenance-free, doesn't require any lubrication and has low pressure SF6 gas which enables at least a 30-years operating life without gas refilling.

Another important factor taken into account in the design is the safety for people and operators:

- A safety valve fitted to the switch's sealed enclosure avoids any risk of explosion. If an internal arc occurs, the gas escapes upwards by the safety valve.
- An indicator mechanically linked to the contact operation shaft clearly shows the load-break switch's position. This indicator is visible from the base of the pole.
- The design of the breaking chamber enables the dielectric withstand across open contacts, even in the air.

RTU control cabinet
The RTU control cabinet controls and operates the switch locally and remotely (if equipped with remote control and communication equipment).

The cabinet's modular design takes into account user needs in ease of use, configuration, diagnostics and maintenance.

The cabinet enclosure is made of stainless steel. It is made of the following modules :

- Power supply
- Electrical control module
- CPU module
- Fault detection module

Characteristics

	UNIT	Auguste 24	Auguste 36
Rated voltage (Ur)	kV	24	36
Rated current (Ir)	A	400-630	400-630
Frequency (f)	Hz	50-60	50-60
Rated breaking current (A) - Mainly active load - Closed loop - No-load transformer - Line-charging - Cable-charging	 A A A A A	 400-630 400-630 25 40 40	 400-630 400-630 25 40 40
Rated lightning impulse withstand voltage (wave 1.2/50 µs) - Common value - Across the isolating distance	 kV kV	 125 145	 170 195
Rated power-frequency withstand voltage 1 min - Common value - Across the isolating distance	 kV kV	 50 60	 70 80
Rated short-time withstand current - 3-sec duration - 1-sec duration - peak	 kA kA kA peak	 12.5 20 50	 12.5 20 50
Rated short-circuit making current Internal fault current in accordance with IEC 60298 Electrical endurance	kA peak kA Class	31.5 12.5 E3	31.5 12.5 E3
Mechanical endurance	Class	M2 5000 opening/closing operations	
Protection index - Leak-proof tank - Mechanism - Control box	IP	IP 68 IP 45 (IP 65 on demand) IP 55	
Temperature range	°C	-25°C + 40°C (-50 °C Version available on demand)	
Operation under ice	mm	20 mm	
Humidity	% a °C	95 % at 40°C	

Dimensions and weights of main sub-units

Auguste 24 - 36 kV	H (mm)	L (mm)	P (mm)	Weight (kg)
Load-break switch assembly without VT, with manual control mechanism	1150	1490	511	105
Load-break switch assembly with VT, with motorised control mechanism	1150	1490	511	140 (*)
RTU control cabinet	640 (**)	330	370	15
Retractable lever and rod assembly				13

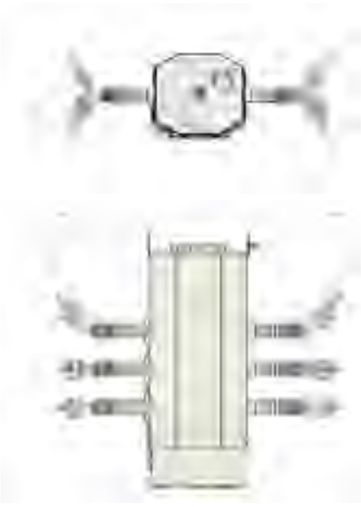
(*) : 155 kg for 36kV versions
(**) : also available in extended version

Available Options:

- Model for very low temperatures up to -50 ° C
- Homopolar transformer for low current detection
- Pressure switch for SF6 low pressure detection
- Installation of plug-in terminals instead of bushings for the connection of the MV network

- Sealed tank containing pressurized SF6 gas (fluorinated greenhouse gas).
- Filling pressure = 1.3 bar (Auguste -25°C) and 1.55 bar (Auguste -50°C).
- Leakage rate tested < 0.1% / year.

Total quantity of SF6 - Kg	Equivalent CO2 - Tonne	Switch type
1.57	35.8	Export -25°C
1.71	39	Export -50°C



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