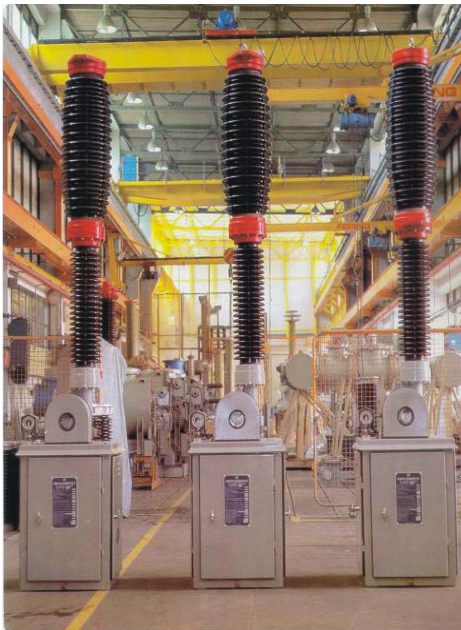




CIRCUIT BREAKERS IN SF₆ TECHNIQUE 123 kV – 170 kV WITH MOTOR-SPRING OPERATING MECHANISM TYPE SFEL



DESCRIPTION

SFEL circuit breakers for rated voltages up to 170 kV have one interrupter per pole. They are manufactured on a modular principle in order to achieve the highest possible component unify, simple design and high reliability. The only difference among circuit breakers of particular rated voltages is in the length of the insulator and the pulling insulating rod and in the distance between poles, which is determined by the value of the applied service voltage.

Circuit breakers are manufactured for each voltage level with three-pole and single-pole operation.

They are driven by motor-spring operating mechanism enclosed in weatherproof housings which also contain the various control functions of the circuit breaker.

The circuit breakers are filled with SF₆ at a rated pressure of 0.6 MPa (abs). Installation and commissioning are easy. No special equipment is required for initial charge of SF₆ gas.

OPERATING MECHANISM

The circuit breaker movable contacts are driven by a motor-spring operating mechanism via a direct operating mechanism-pole connection in circuit breakers with single-pole control, and via a coupling leverage system in circuit breakers with three-pole control.

The design and operation of the operating mechanism is classic and simple.

The circuit breaker opening operation is made possible by the release of the stored energy from the opening spring pressing the opening push-button which releases the lever for locking the opening operation. Pressing the closing push-button, i.e. releasing the locking lever, the circuit breaker is closed with a simultaneous charging of the circuit breaker closing spring.

After completion of the circuit breaker closing operation, the closing spring is charged and the operating mechanism i.e. the circuit breaker is ready for the cycle O-CO even in case of motor supply failure.

Besides the possibility of electrical local and remote control there is the possibility of manual control of the circuit breaker and manual charging of the closing spring in case of failure of auxiliary voltage. It should be pointed out that these circuit breakers easily break short-line fault currents, the most difficult task for most of the SF₆ circuit breakers made on the classic puffer principle.

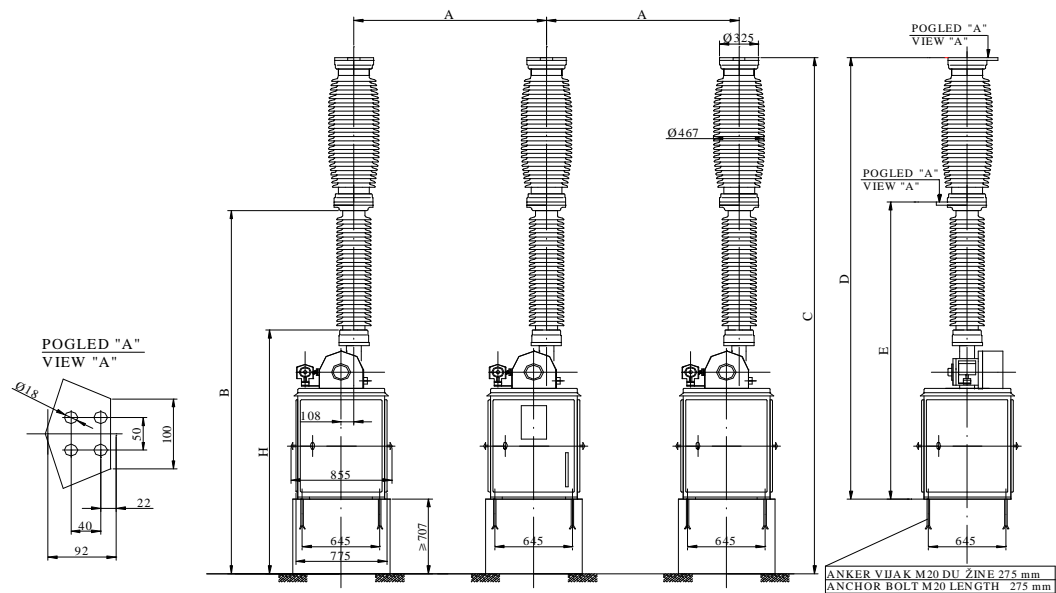
FEATURES

- Mechanical simplicity
- Reliability
- Low noise level
- Reliable sealed gas system
- Long contact life
- Easy installation
- Minimum maintenance

TO SPECIFY FOR AN ORDER

- Type destination
- Rated voltage
- Rated normal current
- Rated short circuit breaking current
- Rated supply voltage of electromotor
- Rated supply voltage of Closing Coil and Opening Coil
- Number of auxiliary contacts

TECHNICAL CHARACTERISTICS



TYPE		SFEL 11	SFEL 12	SFEL 13
RATED VOLTAGE	kV	123	145	170
RATED POWER FREQUENCY WITHSTAND VOLTAGE (1 min)	kV	230	275	325
RATED LIGHTNING IMPULSE WITHSTAND VOLTAGE (1,2/50 μ s)	kV	550	650	750
RATED NORMAL CURRENT	A	2000		
RATED SHORT CIRCUIT BREAKING CURRENT	kA	31,5 (40)		
RATED DURATION OF SHORT CIRCUIT (3 s)	kA	31,5 (40)		
RATED SHORT CIRCUIT MACKING CURRENT	kA	80 (100)		
RATED FREQUENCY	Hz	50		
RATED OPERATING SEQUENCE		O – 0,3s – CO – 3min – CO, CO – 15s – CO		
BREAK TIME	ms	50		
OPENING TIME	ms	35		
CLOSING TIME	ms	160		
NOMINAL CREEPAGE DISTANCE (PHASE-GROUND)*	mm	2842	2842	3912
		3297	3297	4542
		3612	3612	5385
MAIN DIMENSIONS				
A	mm	1600	1750	2000
B THE LOWEST POINT AT RATED VOLTAGE	mm	3400	3400	3800
C	mm	4795	4795	5595
D	mm	4088	4088	4888
E	mm	2800	2800	3200
H THE HIGHEST EARTHED POINT	mm	2300	2300	2300
RATED GAS PRESSURE	MPa abs	0,6		
MASS OF SF6 GAS PER POLE	kg	3		
MASS OF CIRCUIT BREAKER PER POLE	kg	900	900	950
PERMISSIBLE TENSILE FORCE ON TERMINALS	N	2000		
STANDARD	In accordance with all valid JUS,IEC,BS and other international standards			

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