

Main technical characteristics

Parameter	Norm
Rated voltage, kV	220
Maximum operating voltage, kV	252
Rated current, A	4000
Rated breaking current, kA	40
Creepage distance of external insulation, cm, not less than	630
Opening time, ms, not more than	25±2,5
Total break time, ms, not more than	60
Closing time, ms, not more than	100
Time-diversity of poles performance, s, not more than:	
• when closing	0,005
• when breaking	0,0033
Rated breaking current of off-load overhead line, A,	125
Upper limit of excess SF6 pressure (filling pressure corrected at +20°C), MPa (kg/cm2)	0,40(4,0)
Lower limit of excess SF6 pressure (lock pressure of the circuit-breaker corrected at +20°C), MPa (kg/cm2)	0,34(3,4)
Switching service life before mid-life repair	15(8)
Service life of the circuit-breaker as per mechanical durability	10000
Life cycle until mid-life repair, years	25
Life cycle before write-off, years	40
Weight of the circuit-breaker, kg	4080
Dimensions (without built-up support structure), mm, not more than length, width, height	6500x760x7562

Circuit-breakers are not intended for switching of shunt reactor and capacitor banks.

Circuit-breakers comply with the requirements of GOST R 52656 «Circuit-breakers of alternative current for voltage from 3 to 750 kV. General technical requirements».



Sf6 column circuit breaker VGT 220

Intended use

Circuit breakers VGT-220 are intended for switching electric circuits under normal and emergency modes and operation in cycles of autoreclosing in three-phase alternating current networks for frequency 50Hz with rated voltage 220kV with grounded neutral.

Advantages

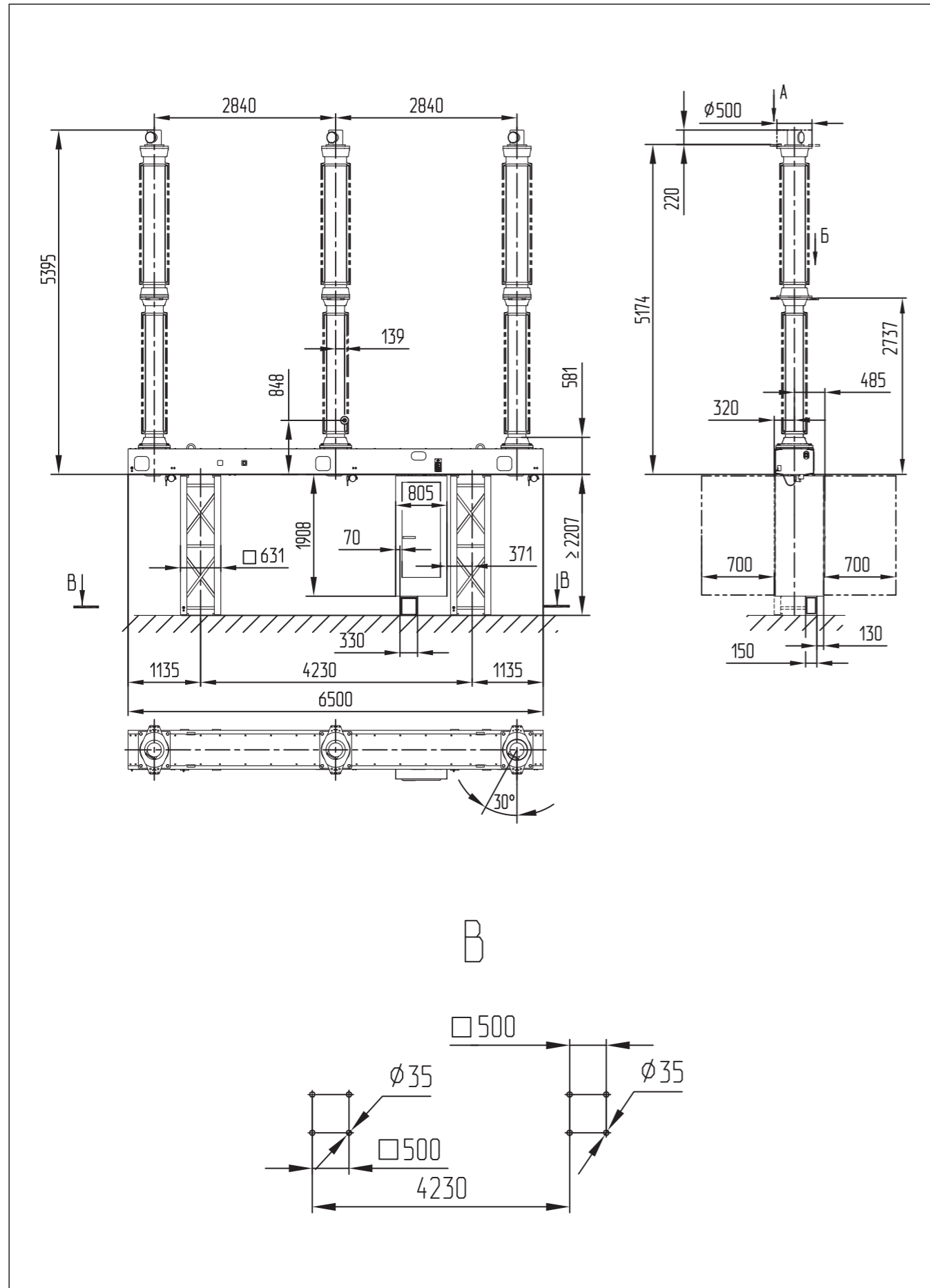
- ⚡ Conservation of insulation strength of the circuit-breaker under voltage equal to 168 kV, in case of excess gas pressure loss in the circuit-breaker.
- ⚡ Design is of compact and explosion-proof version.
- ⚡ Switching-off of capacitive currents without restrikes, low overvoltages.
- ⚡ Low level of sound noises at response (conforms to environmental requirements).
- ⚡ Low dynamic loads on foundation supports.
- ⚡ The presence of two heating stages in automatic control (anticondensate and basic) of motor drive cubicle and its running order control.
- ⚡ Component parts are purchased from the leading time-proven domestic and foreign manufactures.
- ⚡ Block-module construction of the circuit-breaker makes it possible to deliver supplies to the Customer in the easy-to-use container of minimum volume under minimum transportation expenses as well as providing convenient and quick assembly and putting into service, that are done under control of engineering supervisor.

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Overall, Installation and coupling dimensions



Operating conditions

Circuit breaker is intended for the operation in macroclimatic areas of moderate and cold climate (climatic version is U1 and UKHL 1 as per GOST15150 standard), herewith:

- ⚡ Environment without reactive and hazardous additives which can lead to explosion (II type atmosphere as per GOST 15150 standard);
- ⚡ Operating range of ambient air temperature:
 - upper – plus 40°C,
 - lower – minus 45°C;
- ⚡ Relative humidity under temperature 20°C – 80% (upper operating value – 100% under 25°C);
- ⚡ Altitude of installation is no more 1000m above the sea level;
- ⚡ Wind speed:
 - under the conditions of the absence of glaze – clear ice – is not more than 40m/s,
 - under glaze – clear ice with ice crust thickness up to 20mm is not more than 15m/s;
- ⚡ Intensity of seismic forces – is not more than 9 points under scale MSK- 64.

Design features

- ⚡ Circuit breakers consist of three-pole (columns) installed on a common frame and controlled by one hydraulic drive PG – 12.
- ⚡ Low level of SF6 leakage is not more than 0,5 per year.
- ⚡ Construction is of compact and explosion – proof version.
- ⚡ Steel parts of the circuit breaker and support metal structures have corrosion – resistant coatings.
- ⚡ Conservation of insulation strength of the circuit – breaker under voltage equal to 168 kV in case of excess gas pressure loss in the circuit – breaker.
- ⚡ Switching-off of capacitive currents without restrikes, low overvoltages.
- ⚡ The presence of automatic control of two heating stages (anticondensate and basic) of motor drive cubicle and its running order control.
- ⚡ Component parts (devices) are purchased from leading time – proven domestic and foreign manufactures.
- ⚡ Construction of the circuit – breaker makes it possible to deliver supplies to the Customer in the easy – to-use container of minimum volume under minimum transportation expenses as well as providing convenient and quick assembly and putting into service. Assembling and commissioning are performed under control of engineering supervisor.

Symbolic designations

VGT - 220III40/X X₁ 1

- V - Circuit – breaker;
- G - Gas – filled;
- T - Three – poled;
- 220 - Rated voltage, kV;
- III - Pollution degree as per GOST 9920 Standard;
- 40 - Rated breaking current, kA;
- X - Rated current, A;
- X₁ - U, UKHL climatic category as per GOST 15150 Standard;
- 1 - Placement category as per GOST 15150 Standard.