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SWITCHGEAR

A switchgear is an electrical installation that serves for receiving and distributing electricity and contains switching devices, prefabricated and connecting buses, auxiliary devices (compressors, batteries, etc.), as well as protection devices, automation and measuring devices. Switchgears are designed for receiving and distributing electricity of the same voltage for further transmission to consumers, as well as for powering equipment within the electrical installation.

If all or the main equipment of the switchgear is located outdoors, it is called open (OPY); if it is located in a building, it is closed (3PY). A switchgear consisting of fully or partially closed cabinets and blocks with built-in devices, protection devices and automation, supplied assembled or fully prepared for assembly is called complete and is designated for the internal installation (KPY), and for the external installation (KPH).

KPY-6(10), 20 and 35 cell is designed for receiving and distributing electrical energy of three-phase alternating current with a frequency of 50 Hz, voltage from 6 to 35 kV. It is installed indoors in KPY-6(10), 20 and 35 kV electrical substations of power systems and enterprise networks. Currently, the most reliable protection of the line is considered to be a vacuum circuit breaker controlled by a relay protection and automation device (RPA) based on microprocessor devices. A complete switchgear for outdoor installation (KPH) receives and redistributes electricity from a three-phase AC network. KPH-6(10) cell is designed for an electric current with a frequency of 50 Hz. The mains voltage is 6, 10, 20, 35 kV. KPH is used in switchgears of the corresponding voltage substations and power systems. Cell of switchgear is a piece of equipment that converts and distributes electric current. It is intended for use in three-phase networks with alternating current frequency of 50 Hz. The switchgear KPY-6(10) is used for a wide range of objects. High-voltage cells of external and internal installation are produced. The switchgear installation, operating in a three-phase network, consists of 4 compartments. High-voltage chambers are:

three high voltage chambers:

1. cable compartment (input or line). Voltage and current transformers are installed in this compartment. There are non-linear voltage limiters and cabling here;

2. breaker compartment. This element is often of a retractable design;

3. busbar compartment. Here you can find the power busbars, which ensure the coordinated operation of the distribution device sections;

and one low voltage compartment. Low-voltage equipment is represented by secondary circuits and is called a relay compartment. Devices for measuring electric current and systems operation are usually mounted on the door. Here you

can find the controls, lighting installations. Air insulation is used in all series of switchgear with a voltage of up to 35 kV.

KPH designed for a rated voltage of 6 (10) kV are installed outdoors. These devices are available in different configurations:

Roll-out. They have standard or small sizes. The assembly does not differ from models intended for internal use.

Stationary. There are no plug disconnectors in the design. Instead, their analogues are used in the system and have RV-10 drives, BB/TEL switches and PB10 fuses. A blocking system is provided for when performing incorrect actions.

Voluminous. The cells can be arranged in one or two rows. They are assembled from sheet-type panels, installed in a prepared room. During maintenance, a corridor is formed for the movement of maintenance personnel.

Due to the high mounting density of the equipment inside the panel, the final product has significantly smaller dimensions compared to an electrical installation assembled from individual components. The use of switchgear cubicles is possible both individually and as a part of switchgear substations supplying several load lines. In the case of a group installation of cells, they are installed in a row, joined together with the side walls. Due to the obvious advantages of this layout solution, switchgear designs of low and medium voltage in modern substations are based on a complete switchgear, so KPY is the most popular type of switchgear on industrial, power and residential construction sites.