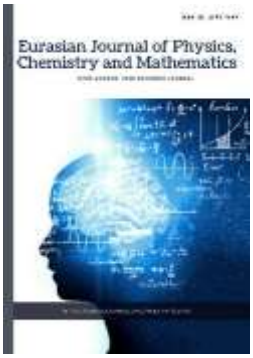

Methodology for checking the balance of energy in a battery of condensers

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ABSTRACT

This article provides information about condensers and details the methodology for checking the balance of energy in their battery.

Keywords: condensers, electromehanics, battery, energy balance, power, etc

An electrical device designed to generate a known size of electrical insurance is called a condenser. The capacity of the condenser is determined as follows:

$$C = \frac{q}{U} \text{ [F]}$$

In this case, q is charged, it is the power between the condenser covers, [F] is the pharaoh. The purpose of the use of controlled condenser batteries is not only to compensate for reactive power but also to maintain the established value of the power transmitted from the network during maximum and minimum loads. A condenser is one of the most important electrical parts available in electronic and electrical chains; This means that any digital device has these components essential for it to function properly. By generating an electric field, capacitors have the ability to store electricity. condensers consist of two metal sheets, which in turn are separated by an electrical or dielectric insulator; while the capacitors are charging electricity, one of the sheets is charged with electrons (particles charged with negative energy); the latter releases this negative energy, leaving it with a positive charge. Then, when the initially used power supply is turned off, the capacitors are still charged with energy, as they store it as emergency power; Since one sheet is charged with electrons and the other with positive energy, both hold the charges and attract each other, even if they do not receive energy from the power supply. The material used as an insulation keeps the metal sheets close to each other, but does not allow them to be disinfected by the connection between them.

The condenser stores electricity when the charge is disconnected in the throes of a charge, so it can be used as a temporary battery. Condensers are usually used in electronic devices to provide electricity supply when batteries are modified. (This prevents loss of information in variable memory.) Capacitors are used in electricity supply, where they smooth the output of a complete or semi-wave recipe (a device that converts AC flow to DC). They can also be used in charged pump chains as an energy storage element in the production

of high-energy stresses from the input voltage. To provide a "clean" power supply for signal or control chains, most condensers are connected in parallel with electrical chains of electronic devices and large systems (e.g. factories) and hide flow variability from the main power source. For example, audio devices use multiple capacitors to escape the power transmission network before it appears in the alarm circuit. Condensers act as local reserves for the city's power supply and bypass AC currents from electricity. This lead is used in automotive audio programs when it compensates for the agitation and resistance that results in an acid car battery.

To mitigate the uneven distribution of the current, capacitors can be used to correct the power factor. Such condensers often come as three capacitors connected as three-phase load. Typically, the values of these capacitors are given as the reagent power in the volt-amper (VAr) rather than in the farads. The goal is to counter the induced loading of electric motors and fluorescent lamps to make the load appear to be resisting. Capacitors transmit AC, but block DC signals (when charged up to the used DC voltage), which are often used to separate ac and DC parts of the signal. Ac connect, which is known as this method. (Sometimes transformers are used for the same effect.) This applies a large capacity where the value should not be precisely controlled but the reaction at the alarm frequency is small. To do this, the capacitors designed to be installed through a metal panel are called feed condensers, and they have a slightly different schematic character.

When the induced circuits rust, the flow through the induction breaks down quickly, forming a voltage that causes the key or seat to rust open circuits. If the induction is large enough, the energy generates a spark, which leads to the oxidation, deterioration of contact points or sometimes welding to each other or the destruction of the key in a solid state. The condenser that leads to the rusting of newly opened contacts bypasses the contact areas of this impulse, thereby creating a way to save their lives; they are usually found in circuit circuit systems, for example. Similarly, in chains of smaller scale, sparks may not be enough to damage the key, but it broadcasts unpleasant radio frequency noise (RFI). The filter condenser is requested. To distribute energy and minimize RFI, Snubber condensers are commonly used in a series with a low-value resistor. Such resistor-condenser combinations are available in a single package. In the reverse order, to start a rapid flow through an induced circuit, it requires more voltage than is required to maintain it; When using larger motors, this can cause unwanted start-up properties and a tool is used to increase the flow of coins that facilitate the initial condenser motor operation. For evenly distributing tension between these units, capacitors are also applied parallel to the intersections of a high voltage switch. In this case, they are called gradation condensers. In schematic diagrams, a capacitor, mainly used to maintain the DC charge, is drawn vertically, often in linear schemes drawn with low, negative, plate. The correct plate indicates a positive terminal of the device, if it is saved.

Energy stored in a condenser can be used to present information in a two-fold form, DRAM or analog form, analog filters and CCDs. Capacitors are components of integrators during analog circuits, or more complex filters and negative feedback can be used in street stabilization. Signal processing schemes also use condensers to integrate the current signal. Capacitors and inductors are applied together in adjusted chains to select data in specific frequency ranges. For example, radio receivers rely on variable capacitors to adjust the frequency of the station. The dynamics use passive analog crossovers, and analog equalizers use condensers to select different audio tapes.

After the power chain is turned off, the condensers can hold the charge for a long time; this charge can cause shocks (sometimes fatal) or damage to the connected device. For example, even a device that seems to be as malicious as a one-time camera flash-block powered by a 1.5-volt AA battery can charge more than 300 volts. It is very painful and is probably capable of easily delivering a lethal blow. Before servicing the equipment contained in it, care must be paid for the correct discharge of any large or high-voltage capacitor. All large capacitors must be charged before processing

for safety purposes. For board-level capacitors, this is done by placing the resistor condenser throughout the terminals, the flow of leakage will not affect the rusting of the circuits if its resistance is great, but will be sufficient to be charged for a short time after the power is turned off. High-voltage capacitors must be stored in short-circuit terminals, as temporarily charge-free capacitors can cause dangerous voltages when they lead to the rusting of the circuits. Older condensers filled with large fat must be discarded properly, as some of them contain polychlorized biphenyl (PCB). It is known that waste PCBs can flow into groundwater under a police station. If contaminated water is consumed, PCBs are cancerous, even in very small quantities. If the condenser is physically large, it can be dangerous and requires additional precautions in addition to those described above. New electrical components are no longer produced with PCB. (In electronics, "PCB" usually refers to a printed electronic card, but use above is an exception.) Condensers containing PCB were given "Askarel" and several other trade names.

Aside from the usual job-related hazards leading to the rusting of high-voltage, high-energy contacts, there are a number of risks that are typical of high-voltage capacitors. High voltage capacitors can destructively break out when exposed to voltages or currents or they reach the end of their normal life. Failures in dielectric or metal disruption can cause arteries to form in fat-filled units, evaporating the dielectric fluid, causing an explosion, cracking or even dissolving of burning oil, a fire exit and damage to nearby equipment. Cylindrical glass or plastic boxes with hard cages are more prone to explosion than in case of rectangular shape due to the fact that they do not expand easily under pressure. Condensers used in RF or in continuous upstream applications can be overheated, especially in the center of the capacitor rolls. The healed heat can cause rapid internal heating and destruction, despite the fact that the outer coating is relatively cool. Capacitors used in high-energy capacitor banks, a failure in one capacitor, can explode strongly if they throw away the energy stored in the rest of the bank into the failed unit. And high-voltage vacuum capacitors can generate soft X-rays even during normal work. Proper storage, dissolving and prophylaxis will help minimize these risks. High voltage condensers can benefit from pre-charging to limit the currents that cause the HVDC circuits to rust. This extends the life of the component and can reduce high voltage risks. The separation of charge results in voltage throughout the capacitor due to the electrical field of these charges due to the accumulation of opposite charges on the capacitor plates. This should be done continuously against the ever-increasing electric field, as more charge is allocated. The energy stored in the condenser (measured by a joule, SI) is equal to the amount of work required to detect the voltage inside the capacitor and hence the electric field. The maximum energy that can be safely stored in a particular capacitor is limited to the maximum electrical field that can withstand it before the dielectric disintegration. Therefore, all capacitors produced by the same dielectric have the same maximum energy density (joule energy per cubic meter).

Capacitor parameters

- Nominal opportunities are the value of potential. The actual size of the work is equal to the nominal power, taking into account the tolerance associated with changes in dielectric dielectric change as a result of changes in atmospheric temperature. Tolerance depends on the type of dielectric.
- Nominal voltage is the maximum voltage applied to the capacitor. This stress, as a rule, is a sum of urban tension and is the highest value of AC voltage.
- The condenser's insulation resistance condenser's electrical resistance is a direct flow of a particular voltage. This characterizes the quality of the dielectric and the quality of its production.

About electrolytic capacitors. They are used directly to rustling of current circuits. In addition, in the chains of powerlessness of transistors cascades, stabilizers and transistors, they cannot. However, as the article says, they do not miss direct current but do not want to

work on alternative streaming. There are non-non-non-condiments for AC schemes, and many of them indicate that working conditions are very diverse. Air and ceramic capacitors are used in cases where high stability of the parameters is required and the frequency is very high. The parameters of such condensers meet the growing requirements. If the frequencies are low, e.g. the frequency of the light network or the frequency of the sound range can be used on paper and metal capacitors. Paper dielectric condensers are covered with fine metal foil, most commonly aluminum. The thickness of the boards varies between 5-10 mm, which depends on the construction of the capacitor. There is a dielectric made of condenser paper embedded with an insulating compound between the plates. To increase the working voltage of the condenser, the paper can be placed in several layers. The bundle is rolled up like a carpet and is located in a round or rectangular shape. In this case, of course, the conclusions are removed from the plates, and in such a capacitor state, nothing is connected.

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