Low Voltage Power Capacitors

**GENERAL TECHNICAL INFORMATION**

**MKP-TECHNOLOGY**

Capacitors are used in many diverse applications, and many different capacitor technologies are available. In low voltage applications, MKP-type capacitors which are made in accordance with metallized polypropylene technology have proved to be most appropriate and also the most cost effective. Dependent on the nominal voltage of the capacitor, the thickness of the polypropylene film will differ.

**MKP-TYPE CAPACITOR**

(metallized polypropylene film)

![Design of a MKP-type capacitor](image)

1. Electrodes (metallized)
2. Polypropylene film
3. Electric contact (schooping)
4. Non-metallized edge

**FILLING AGENT**

**ESTAprop**

ESTAprop MKP-type capacitors are filled with a natural oil. The highly fire-resisting insulation oil on vegetable base (flash point 285 °C, ignition point 315 °C) is fully biodegradable and non-toxic.

After an extended drying period, the filling of the capacitor casing with oil is carried out under high vacuum for removal of moisture. Following this process, the capacitor will be hermetically sealed. This process ensures excellent heat dissipation and constant capacitance over full service life.

**ESTAdry**

ESTAdry MKP-type capacitors are “dry”. That is, after the extended drying period and before the hermetic sealing of the casing, a non-liquid filling agent is used instead of natural oil. In case of tubular cans, it is an environmentally friendly inert gas-filling to avoid corrosion of the winding elements and inner electric contacts. For larger dry capacitors, e.g. the D-type capacitors or the DW-type filter capacitors, the filling agent is a resin.

A little “g” shows the difference in the type designation between the oil-filled (PhMKP) and the dry version (PhMKPg).

Both versions comply with the highest temperature class D, specified by the standards.

**PROVIDING THE WINDING ELEMENT WITH ELECTRIC CONTACTS**

For ESTAprop and ESTAdry MKP-type capacitors, metallized electrodes are used. A winding element consists of two displaced polypropylene films, wound together. The front surface of the winding elements is joined by means of a metal spray process. This process is called schooping. Due to the displacement of the two polypropylene films, only one film will be electrically connected on one side of the element. The terminal leads can be soldered onto this sprayed metal surface.
OVERPRESSURE TEAR-OFF FUSE

OPERATING CONDITION
At the end of service life, due to inadmissible electrical or thermal overload, an overpressure builds up and causes an expansion of the cover. Expansion over a certain limit causes the tear-off of the internal fuses. The active capacitor elements are thus cut off from the source of supply. The pressure within the casing separates the breaking point so rapidly that no harmful arc can occur.

TORNOFF CONDITION

CE-MARKING
ESTAprop Low voltage capacitors conform with the regulations of the following European directive:
73/23 EEC Low Voltage Directive
All ESTAprop and ESTAdry low voltage power factor correction capacitors are supplied with CE-marking.

UL- AND ULC-MARKING
ESTAprop and ESTAdry cylindrical type capacitors have been tested and approved by independent laboratories such as Underwriters Laboratories Inc. (UL). ESTAprop and ESTAdry low voltage capacitors conform with UL standard 810 and Canadian standard C 22.2. UL and ULC marks are included in standard component marking.