

CUSTOM SOLUTION FOR POWER ELECTRONICS

General technical parameters

Rated voltage	500 V – 6 000 V DC
Rated capacitance	25 μ F – 24 000 μ F
Capacitance tolerance	\pm 10 %, other on request
Voltage test between terminals	1,5 x U _N DC/10 s
Mounting position	Any
Case temperature	-40/85 °C
Storage temperature	-40/85 °C
Hot spot	max 85 °C
Lifetime expectancy	100 000 - 200 000 h
FIT	50 – 200
Case	Aluminium or stainless steel
Safety device	Optional - segmented film or pressure switch

DC Link Capacitors



Design of capacitors

Rectangular capacitors offers wide range of design possibilities to fulfill all customer demands to offer comprehensive solution for the final application. High capacitance, voltage, current rating or extremely low self inductance as well as special terminals and overall dimensions and long lifetime are apparent requirements.

For higher safety of the capacitors in operation there is optional solution to use segmented film or pressure switch. The segmented film can be used in almost all available designs, the pressure switch is only for hermetically sealed containers.

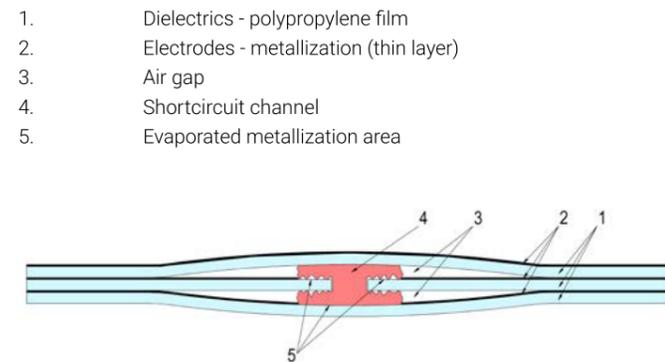
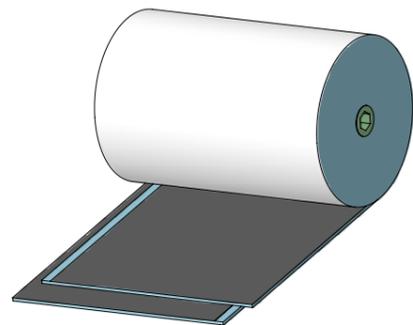
The capacitor housing may be hermetically sealed (customer design No 1) or with PUR layer on terminals side (customer design No 5) or with PUR layer on the bottom (customer design No 2). The material of the container may be stainless steel or aluminium alloy AlMg3. Aluminium containers are without surface treatment, stainless steel containers are painted.

Capacitors are filled with PU resin to protect winding elements from environmental interferences. On top of that resin also keeps winding elements mechanically safe and fixed against any vibrations.

Protection and Reliability

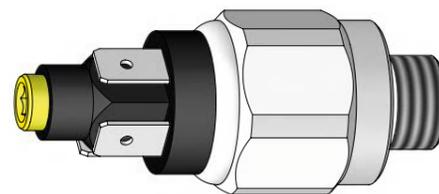
Self-healing

Special structure of winding ensures feature called "self-healing". In the event of voltage breakdown, the metal layer is evaporated around the breakdown channel in very short time. Thanks to evaporation, no conductive channel is created between both metal layers and capacitor is not restrained in functionality.



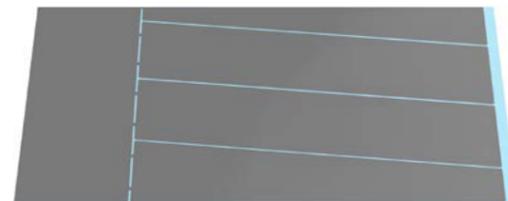
Pressure switch

Pressure switch might be used for capacitors with hermetical housing. When self-healing system fails, surge of temperature and pressure occurs and the capacitor might tear up. Overpressure sensor detects the surge of pressure and provides signal which shall be used for safety circuit and disconnection of capacitor. Sensor contains NC or NO switch. Switch is activated when overpressure reaches 0,3-0,5 bar. Switching voltage and current up to 250 V and 5 A.



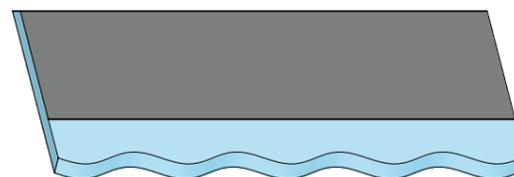
Segmented film

Segmented film offers one of the most important internal protective mechanism that ensures safe operation through the lifetime, ageing and during overload of the capacitor. Special segmented metallization feature fuse gates protect capacitor element from internal faults in case of improper self-healing caused by weak spots in PP film. Fuse gates are limiting current flowing into the weak spot and disconnects particular segment. Which protects winding element from destruction. Depending on rated voltage and type of foil, different segments are used. Capacitance decrease takes place when the capacitor is on the edge of its lifetime.



Wavecut

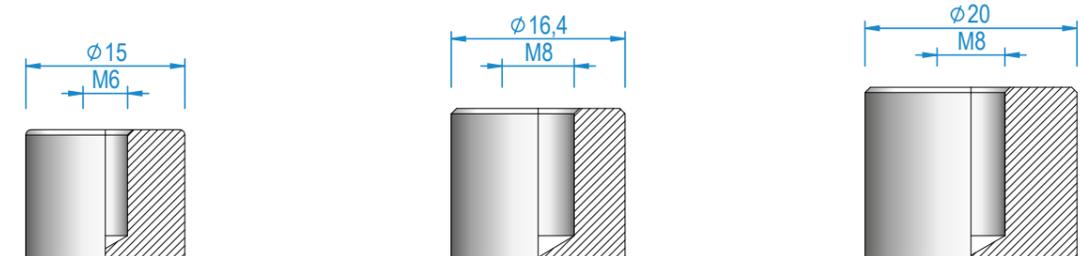
Wavecut is a special wavy edge of PP film, which provides more reliable contact with metallizing zinc layer. Film with wavecut allows higher current load of the winding element.



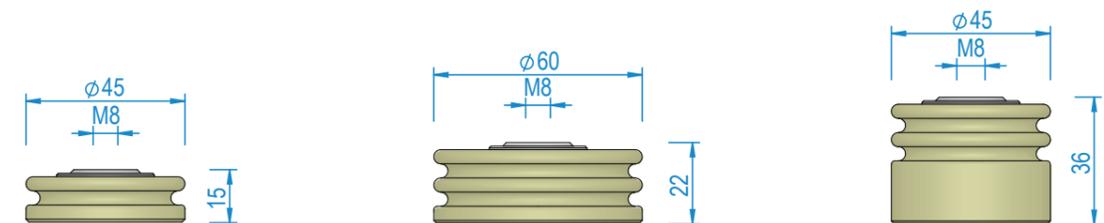
Terminal Options

Cylindrical or flat terminals are available. First possibility is cylindrical, nicked brass terminal with an inner thread (typically M6-M8). Other possibilities are cylindrical, nicked brass terminal with inner thread and insulator or nicked bolt terminal with insulator. Terminals may vary in number and height according to customer specification. Flat terminals, also called "Capacitors with integrated busbar", are made of nicked copper. Generally, customer specified solution. Commonly used terminals are at pictures below.

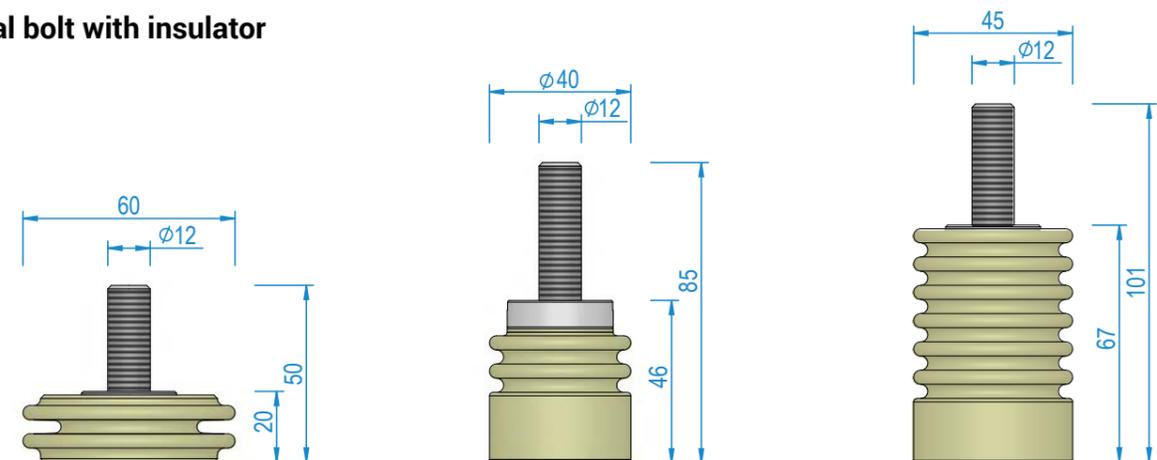
Inner thread terminal through PU resin



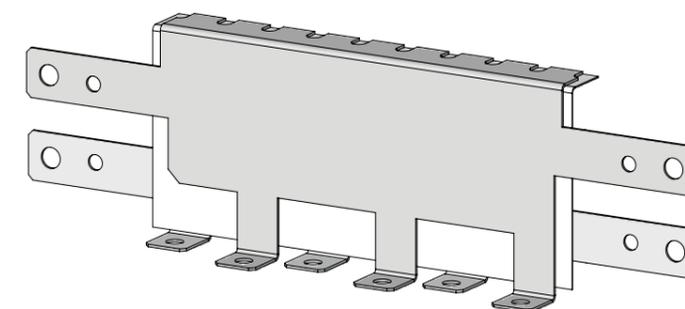
Inner thread terminal with insulator

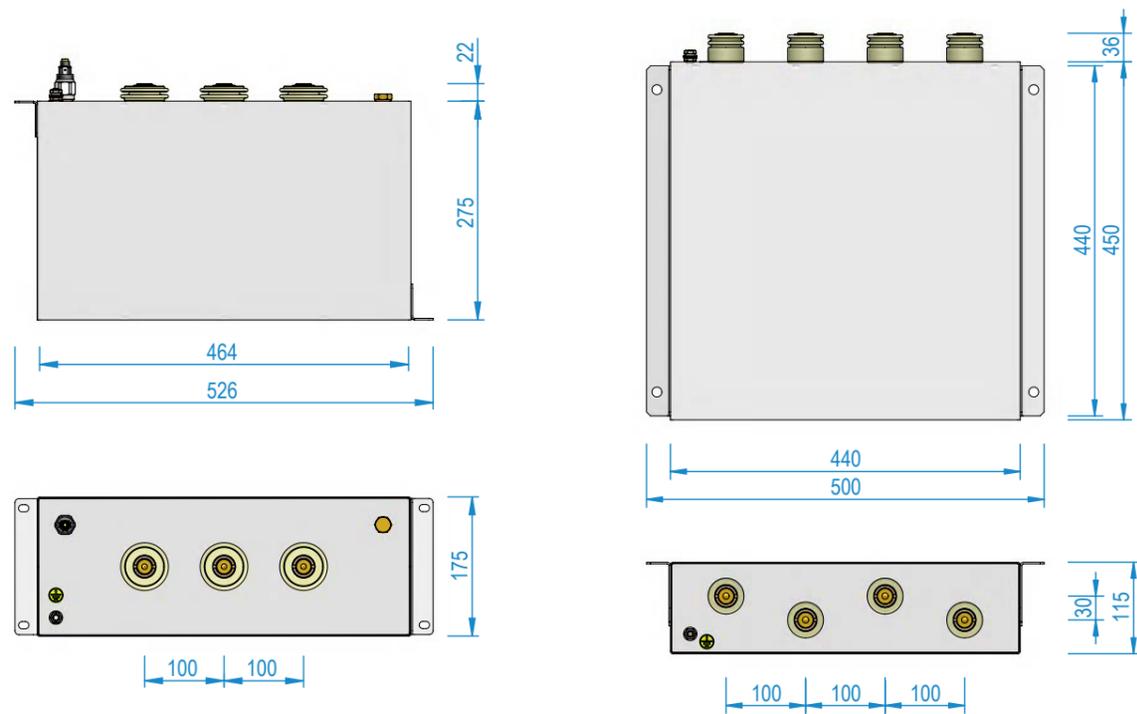


Terminal bolt with insulator



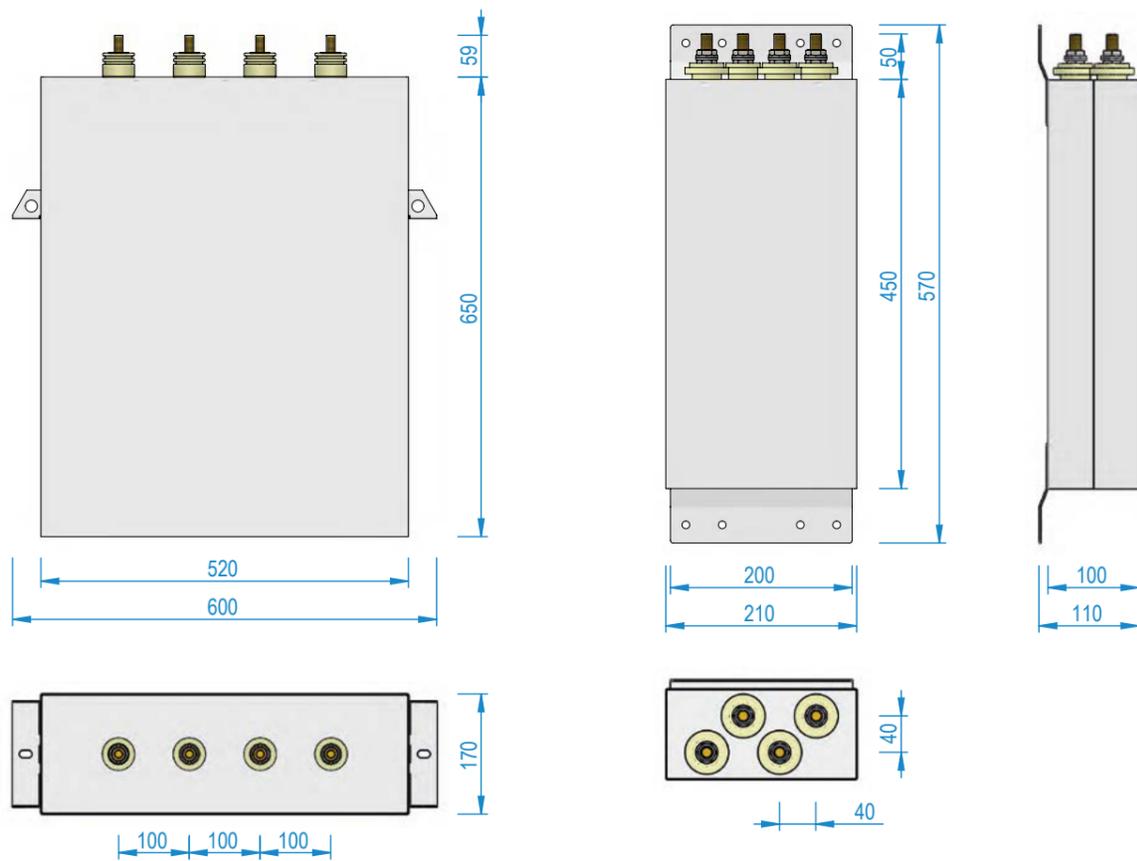
Busbar terminals





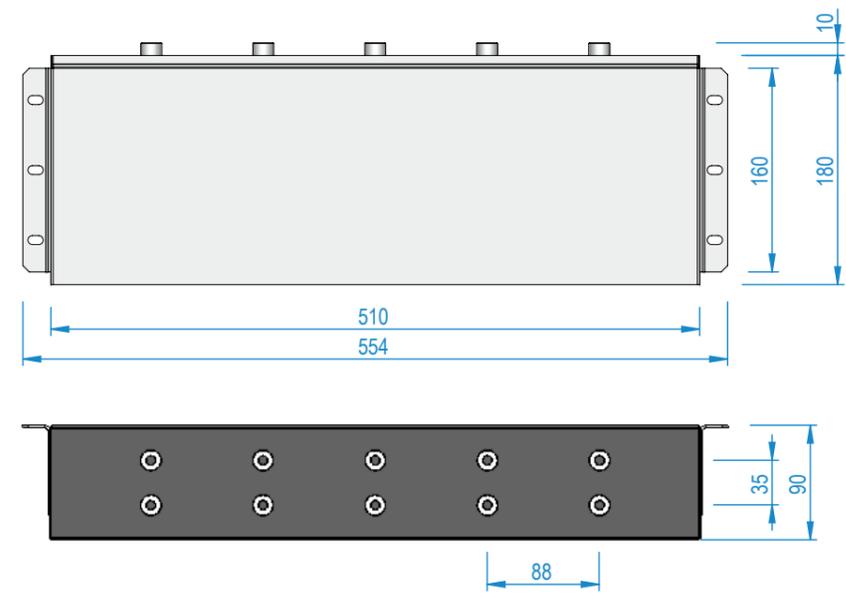
Customer design 1

Customer design 2

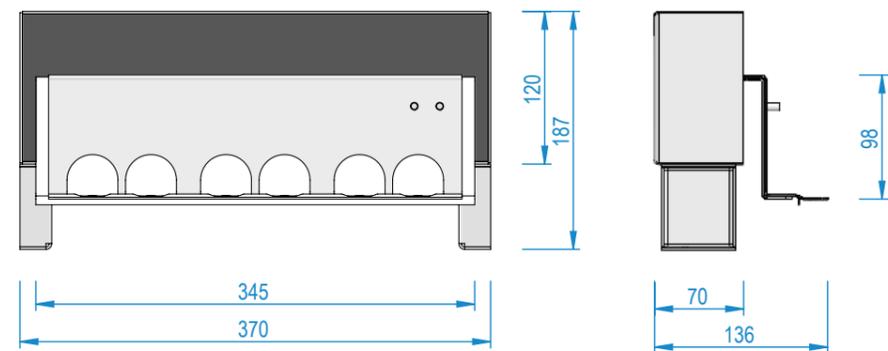


Customer design 3

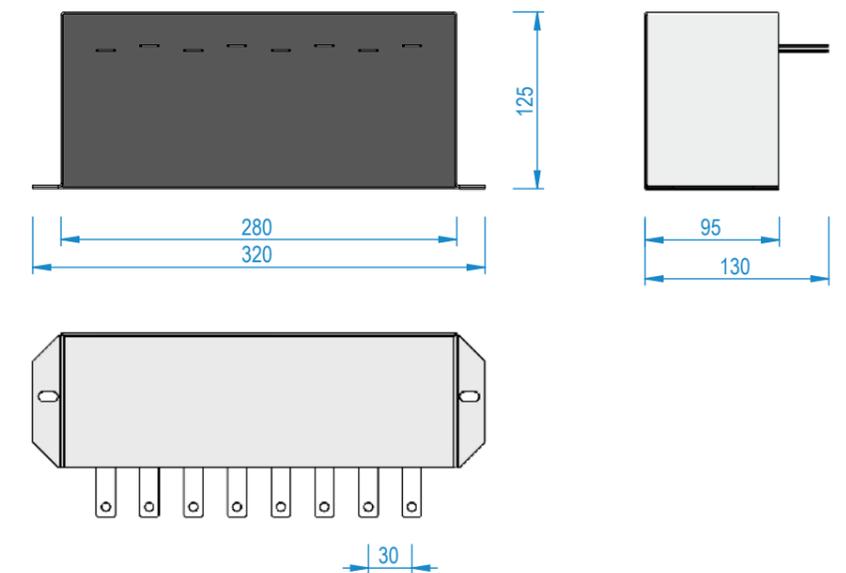
Customer design 4



Customer design 5



Customer design 6



Customer design 7