

# MKA 450

Motor Film Capacitors



The **MKA 450** capacitors are suitable for the **standard** motor applications.

## TECHNICAL DATA

Climatic category	-25 °C / +85 °C
Protection degree	IP00
Loss Factor	$\leq 5 \times 10^{-4}$ typical value
Test Voltage between terminals	1,75 Vn x 2 sec (min.)
Test Voltage between terminals and case	2 Vn x 2 sec (min.)

## PERFORMANCE DATA

■ Rated Voltage	450 Vac
■ Rated Frequency	50 / 60 Hz
■ Capacitance Tolerance	-/+ 5%
■ Operating class	400V – B 10000 h (HPFNT) 450V – C 3000 h (HPFPU)
■ Dielectric	Self-healing MKP
■ Safety class	S0

## STANDARDS AND APPROVALS

Reference standards CEI EN 60252-1; VDE560-8

Homologation EN60252-1 (1.5 ± 45 µF)

EN60252-1 (1.5 ± 45 µF)

File E214047 (upon request)



## MECHANICAL CONFIGURATIONS

Case	Plain base self-extinguishing (V2) plastic case	Plain base self-extinguishing (V2) plastic case	Plain base self-extinguishing (V2) plastic case	Bottom M8 metal stud self-extinguishing (V2) plastic case	Bottom M8 metal stud self-extinguishing (V2) plastic case	Bottom M8 metal stud self-extinguishing (V2) plastic case
Finishing	Bipolar cable. Length = 250 mm (other length on request)	Two flexible leads. Length = 150 mm (other length on request)	Faston terminal. Single if $\varnothing = 25$ mm, otherwise double. Size = 6,3 x 0,8 mm	Bipolar cable. Length = 250 mm (other length on request)	Two flexible leads. Length = 150 mm (other length on request)	Faston terminal. Single if $\varnothing = 25$ mm, otherwise double. Size = 6,3 x 0,8 mm
Figure						
Top view						
Naming	Pla-PB CB250	Pla-PB CVF150	Pla-PB FS/FD	Pla-C8 CB250	Pla-C8 CVF150	Pla-C8 FS/FD

Optional item:

- Capacitors can be equipped with plastic **protective cap**

## CONFIGURATION

Table

Type	Cn ( $\mu$ F)	Homologation	Dimension D x H (mm)	Pcs x bag*
MKA 450-1	1		25 x 57	50
MKA 450-1,25	1,25		25 x 57	50
MKA 450-1,5	1,5	VDE   IMQ	25 x 57	50
MKA 450-2	2	VDE   IMQ	25 x 57	50
MKA 450-2,5	2,5	VDE   IMQ	25 x 57	50
MKA 450-3	3	VDE   IMQ	25 x 57	50
MKA 450-3,15	3,15	VDE   IMQ	25 x 57	50
MKA 450-3,5	3,5	VDE   IMQ	25 x 57	50
MKA 450-3,75	3,75	VDE   IMQ	25 x 57	50
MKA 450-4	4	VDE   IMQ	25 x 57	50
MKA 450-4,5	4,5	VDE   IMQ	25 x 57	50
MKA 450-5	5	VDE   IMQ	30 x 57	50
MKA 450-5,5	5,5	VDE   IMQ	30 x 57	50
MKA 450-6	6	VDE   IMQ	30 x 57	50
MKA 450-6,3	6,3	VDE   IMQ	30 x 57	50
MKA 450-7	7	VDE   IMQ	30 x 57	50
MKA 450-8	8	VDE   IMQ	30 x 70	50
MKA 450-9	9	VDE   IMQ	30 x 70	50
MKA 450-10	10	VDE   IMQ	30 x 70	50
MKA 450-11	11	VDE   IMQ	35 x 70	50
MKA 450-12	12	VDE   IMQ	35 x 70	50
MKA 450-12,5	12,5	VDE   IMQ	35 x 70	50
MKA 450-13	13	VDE   IMQ	35 x 70	50
MKA 450-14	14	VDE   IMQ	35 x 70	50
MKA 450-15	15	VDE   IMQ	40 x 70	50
MKA 450-16	16	VDE   IMQ	40 x 70	50
MKA 450-18	18	VDE   IMQ	40 x 70	50
MKA 450-20	20	VDE   IMQ	40 x 70	50
MKA 450-22	22	VDE   IMQ	40 x 94	50
MKA 450-25	25	VDE   IMQ	40 x 94	50
MKA 450-30	30	VDE   IMQ	40 x 94	50
MKA 450-31,5	31,5	VDE   IMQ	40 x 94	50
MKA 450-35	35	VDE   IMQ	45 x 94	50
MKA 450-40	40	VDE   IMQ	45 x 94	50
MKA 450-45	45	VDE   IMQ	50 x 94	50
MKA 450-50	50		50 x 94	50
MKA 450-55	55		50 x 94	50
MKA 450-60	60		50 x 120	50
MKA 450-70	70		50 x 120	50
MKA 450-75	75		50 x 120	50
MKA 450-80	80		50 x 120	50
MKA 450-90	90		60 x 120	50
MKA 450-100	100		60 x 120	50

Other solutions are available on request.

\* All capacitors are supplied inside polyethylene bag, in order to reduce cardboard boxes.

# MK 450

## Motor Film Capacitors



The **MK 450** capacitors are suitable for the **heavy duty** motor applications.

### TECHNICAL DATA

Climatic category	-25 °C / +85 °C
Protection degree	IP00
Loss Factor	$\leq 5 \times 10^{-4}$ typical value
Test Voltage between terminals	1,75 Vn x 2 sec (min.)
Test Voltage between terminals and case	2 Vn x 2 sec (min.)

### PERFORMANCE DATA

Rated Voltage	450 Vac
Rated Frequency	50 / 60 Hz
Capacitance Tolerance	-/+ 5%
Operating class	420 V – A 30000 h (HPFNS) 450 V – B 10000 h (HPFNT)
Dielectric	Self-healing MKP
Safety class	S0

### STANDARDS AND APPROVALS

Reference standards CEI EN 60252-1; VDE560-8

Homologation EN60252-1 (1.5  $\pm$  45  $\mu$ F)  
EN60252-1 (1.5  $\pm$  45  $\mu$ F)



### MECHANICAL CONFIGURATIONS

Case	Plain base self-extinguishing (V2) plastic case	Plain base self-extinguishing (V2) plastic case	Plain base self-extinguishing (V2) plastic case	Bottom M8 metal stud self-extinguishing (V2) plastic case	Bottom M8 metal stud self-extinguishing (V2) plastic case	Bottom M8 metal stud self-extinguishing (V2) plastic case
Finishing	Bipolar cable. Length = 250 mm (other length on request)	Two flexible leads. Length = 150 mm (other length on request)	Faston terminal. Single if $\varnothing = 25$ mm, otherwise double. Size = 6,3 x 0,8 mm	Bipolar cable. Length = 250 mm (other length on request)	Two flexible leads. Length = 150 mm (other length on request)	Faston terminal. Single if $\varnothing = 25$ mm, otherwise double. Size = 6,3 x 0,8 mm
Figure						
Top view						
Naming	Pla-PB CB250	Pla-PB CVF150	Pla-PB FS/FD	Pla-C8 CB250	Pla-C8 CVF150	Pla-C8 FS/FD

Optional item:

- Capacitors can be equipped with plastic **protective cap**

## CONFIGURATION

Table

Type	Cn ( $\mu$ F)	Homologation	Dimension D x H (mm)	Pcs x bag*
MK 450-1	1	VDE   IMQ	30 x 57	50
MK 450-1,25	1,25	VDE   IMQ	30 x 57	50
MK 450-1,5	1,5	VDE   IMQ	30 x 57	50
MK 450-2	2	VDE   IMQ	30 x 57	50
MK 450-2,5	2,5	VDE   IMQ	30 x 57	50
MK 450-3	3	VDE   IMQ	30 x 57	50
MK 450-3,15	3,15	VDE   IMQ	30 x 57	50
MK 450-3,5	3,5	VDE   IMQ	30 x 57	50
MK 450-3,75	3,75	VDE   IMQ	30 x 57	50
MK 450-4	4	VDE   IMQ	30 x 57	50
MK 450-4,5	4,5	VDE   IMQ	30 x 57	50
MK 450-5	5	VDE   IMQ	30 x 57	50
MK 450-5,5	5,5	VDE   IMQ	30 x 70	50
MK 450-6	6	VDE   IMQ	30 x 70	50
MK 450-6,3	6,3	VDE   IMQ	30 x 70	50
MK 450-7	7	VDE   IMQ	30 x 70	50
MK 450-8	8	VDE   IMQ	30 x 70	50
MK 450-9	9	VDE   IMQ	35 x 70	50
MK 450-10	10	VDE   IMQ	35 x 70	50
MK 450-11	11	VDE   IMQ	40 x 70	50
MK 450-12	12	VDE   IMQ	40 x 70	50
MK 450-12,5	12,5	VDE   IMQ	40 x 70	50
MK 450-13	13	VDE   IMQ	40 x 70	50
MK 450-14	14	VDE   IMQ	40 x 70	50
MK 450-15	15	VDE   IMQ	40 x 70	50
MK 450-16	16	VDE   IMQ	40 x 70	50
MK 450-18	18	VDE   IMQ	40 x 94	50
MK 450-20	20	VDE   IMQ	40 x 94	50
MK 450-22	22	VDE   IMQ	40 x 94	50
MK 450-25	25	VDE   IMQ	45 x 94	50
MK 450-30	30	VDE   IMQ	45 x 94	50
MK 450-31,5	31,5	VDE   IMQ	45 x 94	50
MK 450-35	35	VDE   IMQ	50 x 94	50
MK 450-40	40	VDE   IMQ	50 x 94	50
MK 450-45	45	VDE   IMQ	50 x 120	50
MK 450-50	50		50 x 120	50
MK 450-55	55		55 x 120	50
MK 450-60	60		55 x 120	50
MK 450-70	70		60 x 120	50
MK 450-75	75		60 x 120	50
MK 450-80	80		60 x 120	50

Other solutions are available on request.

\* All capacitors are supplied inside polyethylene bag, in order to reduce cardboard boxes.



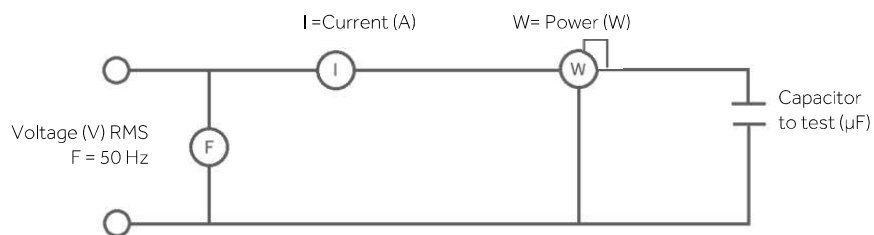
The **EL** electrolytic capacitor have **high capacitance** ( $\mu\text{F}$  value) able to provide an high starting torque to the motor. It is a non polarized capacitor especially designed for intermittent AC voltage applications for single-phase motors.

### PERFORMANCE DATA

- **Rated Voltage**                    **320 Vac** (capacitance  $\leq 315 \mu\text{F}$ )  
    **250 Vac** (capacitance  $\geq 315 \mu\text{F}$ )
- **Rated Frequency**                **50 / 60 Hz**
- **Capacitance Range**               **from 25  $\mu\text{F}$  to 550  $\mu\text{F}$**
- **Capacitance Tolerance**         **- 0% + 25% or -/+ 10%**
- **Working Condition**                The standard time rating defined of IEC 252 is 1,67% full time and corresponds to a duty cycle of 3 seconds on and 177 seconds off.

### TECHNICAL DATA

- Operating Temperature**                 $-45 \text{ }^\circ\text{C} / +65 \text{ }^\circ\text{C}$  (higher temperatures on request)
- Storage Temperature**                  $-40 \text{ }^\circ\text{C} / +70 \text{ }^\circ\text{C}$
- Endurance test**                            500 h
- Dissipation Loss Angle**                Measurement frequency: 50 Hz, the typical value shall not exceed 0,10, calculated as follows:  
 $\text{Tan } d = W / (V \times I) = (\text{true watts} / \text{apparent watts})$
- Capacitance Measurement**            Capacitance shall be determined by measuring the current – after 2/3 sec. of energizing – through the capacitor at rated voltage and frequency.  
 The capacitance is defined as follows:  $C = (I \times 10^6) / 2 \pi^2 \times f \times V$



### TYPICAL VALUES

For Single-phase Motor	<i>kW</i>	0,074	0,183	0,368	0,552	0,736	1,104	1,472
	<i>HP</i>	1/10	1/4	1/2	3/4	1	1,5	2
220 V		20 $\mu\text{F}$	50 $\mu\text{F}$	100 $\mu\text{F}$	150 $\mu\text{F}$	200 $\mu\text{F}$	300 $\mu\text{F}$	-
280 V		10 $\mu\text{F}$	25 $\mu\text{F}$	50 $\mu\text{F}$	80 $\mu\text{F}$	100 $\mu\text{F}$	150 $\mu\text{F}$	200 $\mu\text{F}$

Note: the indicated voltages are the working capacitor voltages

### STANDARDS AND APPROVALS

**Reference standards**    CEI EN 60252-2 (capacitor); CEI EN 60695-11-10 (electrolyte).

**Directives**                It complies with the RoHs Directive

## CONFIGURATION

Table

Type	Cn ( $\mu$ F)	Rated Voltage	Dimension D x H <sub>1</sub> /H <sub>2</sub> (mm)
8140610	25 - 31,5	250/320	46 x 85/98
8140710	31,5 - 40	250/320	46 x 85/98
8140810	40 - 50	250/320	46 x 85/98
8140910	50 - 63	250/320	46 x 85/98
8141010	63 - 80	250/320	46 x 85/98
8141110	80 - 100	250/320	46 x 85/98
8141210	100 - 125	250/320	46 x 85/98
8141310	125 - 160	250/320	46 x 85/98
8141410	160 - 200	250/320	46 x 85/98
8141510	200 - 250	250/320	46 x 85/98
8141610	250 - 315	250/320	46 x 85/98
8141710	315 - 400	250	46 x 85/98
8141810	400 - 480	250	46 x 85/98
8141910	450 - 550	250	46 x 85/98

Other solutions are available on request.

## Optional requests:

- **Protective cap**, code 730050;
- **Mounting bracket**, code 565008;
- **Bipolar cable**, length 300 mm with Female Faston 6.35 mm, code 7850694;
- EL Capacitors can be equipped with **Resistors** (codes on request);
- EL Capacitors can be supplied in a more compact version, with a **diameter of 36.5 mm** (codes on request).

## MECHANICAL CONFIGURATION

Case	Plane base self-extinguishing (V2) plastic case
Finishing	Double faston terminal. Size = 6,3 x 0,8 mm
Figure	