

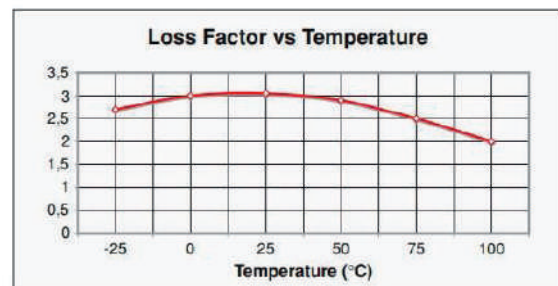
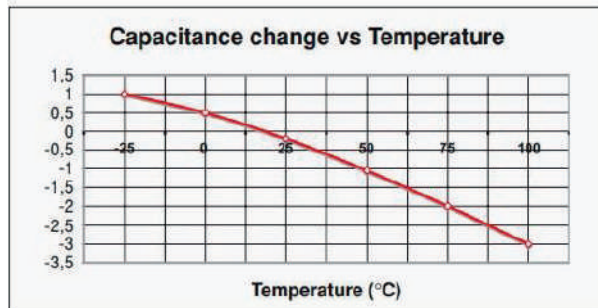
Data sheet:

Motor Capacitors



GENERAL INFORMATIONS:

The capacitors produced by COMAR CONDENSATORI S.p.A. are made with a self-healing metallized polypropylene film dielectric. The selection of raw materials and the use of state-of-the-art automatic machines ensure the high reliability of COMAR products.



Applications:

Thanks to their wide choice of types and numerous constructive versions, capacitors in the "MOTOR" line offer the ideal solution for any application involving single-phase motors or three-phase motors with single-phase power supply. Single-phase or three-phase electric motors with single-phase power supply require a capacitor to start them up, producing a phase-shifted current that induces a rotating magnetic field.

The capacitor can also be used for continuous operation, in which case the capacitor will maintain the magnetic field and produce a rephasing effect for the motor. There are two types of capacitors used for these applications:

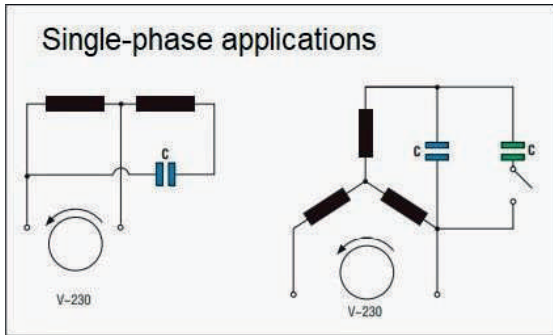
- **Motor starting capacitors**, they are electrolytic capacitors with a high capacitance value (in μF), able to provide high starting torque to the motor, they are disconnected after starting in order to avoid overload to the motor winding.
- **Permanent capacitor for motor**, they are used to improve the value of the $\cos \varphi$ when motor is working at rated load conditions, they are permanently connected to the motor.

When using single-phase motors, the permanent capacitor maintains the rotating magnetic field. For single-phase motors supplied at 230Vac 50Hz, the capacitance required for the permanent capacitor varies between 30 and 50 μF per kW of motor power.

When using single-phase, three-phase motors, the permanent capacitor ensures the presence of the third phase. For single-phase, 230Vac 50Hz, three-phase motors, the capacitance required for the permanent capacitor is around 70 μF per kW of motor power.

Typical applications:

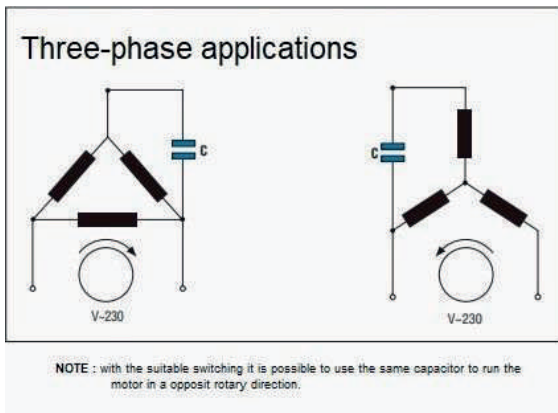
Single-phase motor applications:



Typical value for single-phase motor

Motor Power	0,075 Kw	0,18 Kw	0,37 Kw	0,55 Kw	0,75 Kw	0,92 Kw	1,1 Kw	1,5 Kw
	0,1 CV	0,25 CV	0,5 CV	0,75 CV	1 CV	1,25 CV	1,5 CV	2 CV
3000'/min 50 Hz - 2 poles	6,3	10	16	20	25	30	32	40
1500'/min 50 Hz - 4 poles	6,3	12,5	16	20	25	28	32	40
1000'/min 50 Hz - 6 poles	-	10	20	25	25	30	36	50

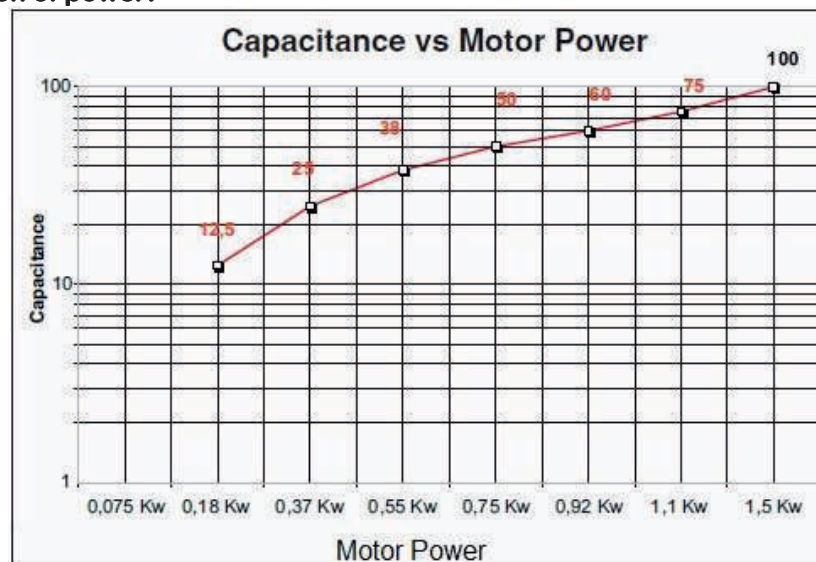
three-phase motor applications:



Three-phase applications in single-phase

Motor power	0,18 Kw	0,37 Kw	0,55 Kw	0,75 Kw	0,92 Kw	1,1 Kw	1,5 Kw
	0,25 CV	0,5 CV	0,75 CV	1 CV	1,25 CV	1,5 CV	2 CV
Full Load	12,5	25	38	50	60	75	100

Capacity as a function of power:



Permanent capacitor for motor



Description

These capacitors are suitable for standard motor applications

Executions

Case Pla-PB
 Terminals CB250 ou FD ($\varnothing \geq 30\text{mm}$)

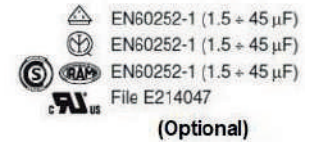
Technical data

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

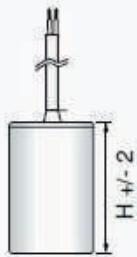
Reference standards

EN60252-1
 VDE560-8

Approvals

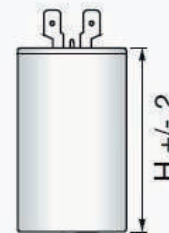


Pla-PB : Plane base self-extinguishing (V2) plastic case
CB250 : Bipolar cable length 250mm



Motor run capacitor with bipolar cable

Pla-PB : Plane base self-extinguishing (V2) plastic case
FD : Double tag 6.3mm x 0.8mm



Motor run capacitor with double tag

References tables

Permanent capacitor with bipolar cable for motor: CPM Série 450 Vac

Model	Capacitance µF	Case: Pla-PB CB250	
		Ø x H (mm)	
C1F	1	25	57
C1.25F	1.25	25	57
C1.5F	1.5	25	57
C2F	2	25	57
C2.5F	2.5	25	57
C3F	3	25	57
C3.15F	3.15	25	57
C3.5F	3.5	25	57
C4F	4	25	57
C4.5F	4.5	30	57
C5F	5	30	57
C5.5F	5.5	30	57
C6F	6	30	57
C6.3F	6.3	30	57
C7F	7	30	70
C8F	8	30	70
C9F	9	30	70
C10F	10	30	70
C12F	12	35	70
C12.5F	12.5	35	70
C14F	14	35	70
C15F	15	40	70
C16F	16	40	70
C18F	18	40	70
C20F	20	40	70
C25F	25	40	94
C30F	30	40	94
C31.5F	31.5	40	94
C35F	35	45	94
C40F	40	45	94
C45F	45	50	94
C50F	50	50	94
C55F	55	50	120
C60F	60	50	120
C70F	70	50	120
C75F	75	50	120
C80F	80	50	120
C90F	90	60	120
C100F	100	60	120

Permanent capacitor with double tag for motor: CPS Série 450 Vac

Model	Capacitance µF	Case : Pla-PB FD	
		Ø x H (mm)	
C1-450	1	25	57
C1.25-450	1.25	25	57
C1.5-450	1.5	25	57
C2-450	2	25	57
C2.5-450	2.5	25	57
C3-450	3	25	57
C3.15-450	3.15	25	57
C3.2-450	2	25	57
C3.5-450	3.5	25	57
C4-450	4	25	57
C4.5-450	4.5	25	57
C5-450	5	30	57
C5.5-450	5.5	30	57
C6-450	6	30	57
C6.3-450	6.3	30	57
C7-450	7	30	57
C8-450	8	30	70
C9-450	9	30	70
C10-450	10	30	70
C12-450	12	35	70
C12.5-450	12.5	35	70
C14-450	14	35	70
C15-450	15	40	70
C16-450	16	40	70
C18-450	18	40	70
C20-450	20	40	70
C22-450	22	40	70
C25-450	25	40	94
C30-450	30	40	94
C31.5-450	31.5	40	94
C35-450	35	45	94
C40-450	40	45	94
C45-450	45	50	94
C50-450	50	50	94
C55-450	55	50	94
C60-450	60	50	120
C70-450	70	50	120
C75-450	75	50	120
C80-450	80	50	120
C90-450	90	60	120
C100-450	100	60	120