



Jaivic®

Save power... Serve the nation...

SINCE 1975



IS :13585



CML-3640657

AN ISO 9001 COMPANY

IS :13340



CML-0709450

INTRODUCTION

JAIVIC Power Factor Correction Capacitors are manufactured adopting the latest techniques, by our specially trained team of Engineers and skilled workers in a well equipped modern plant at NASIK. Best available imported and indigenous material are used and production is carried out with utmost care in dust controlled air conditioned atmosphere. Experience of three decades in the field of manufacturing Capacitors, updated by new trends in technology, has made **JAIVIC** Capacitors the most trusted and reliable.

PRODUCT SELECTION GUIDE

PRODUCT IMAGE				
PARAMETER	MPP OIL FILLED CAPACITORS	MPP DRY CAPACITORS	MPP CYLINDRICAL CAPACITORS	MPP SQUARE MFD CAPACITORS
SINGLE UNIT KVAR	1 TO 30 KVAR	1 TO 25 KVAR	1 TO 25 KVAR	36 MFD TO 244 MFD
BANKING RANGE IN KVAR	50 TO 250 KVAR	50 TO 250 KVAR	NA	NA
TYPES AVAILABLE	NORMAL, HEAVY DUTY	NORMAL, HEAVY DUTY	NORMAL, HEAVY DUTY	NORMAL (DRY), HEAVY DUTY (OIL)
RATED VOLTAGE	230 TO 690 VAC	230 TO 690 VAC	230 TO 690 VAC	440 VAC
MAX PERMISSIBLE OVER VOLTAGE	110% OF RATED VOLTAGE	110% OF RATED VOLTAGE	110% OF RATED VOLTAGE	110% OF RATED VOLTAGE
MAX PERMISSIBLE OVER CURRENT	130% OF RATED CURRENT	130% OF RATED CURRENT	130% OF RATED CURRENT	130% OF RATED CURRENT
RATED FREQUENCY	50 /60HZ	50 /60HZ	50 /60HZ	50HZ
CONNECTION	DELTA	DELTA	DELTA	TWO TERMINAL
PHASE	SINGLE, 3 PHASE , 6 TERMINAL	SINGLE, 3 PHASE , 6 TERMINAL	SINGLE, 3 PHASE	SINGLE
DIELECTRIC	IMPORTED METALLISED POLYPROPELENE HEAVY EDGE FILM	IMPORTED METALLISED POLYPROPELENE HEAVY EDGE FILM	IMPORTED METALLISED POLYPROPELENE HEAVY EDGE FILM	IMPORTED METALLISED POLYPROPELENE HEAVY EDGE FILM
IMPREGNANT	NON -PCB OIL	NON -PCB PU FLEXIBLE RESIN	NON -PCB PU FLEXIBLE RESIN	NON -PCB PU FLEXIBLE RESIN
TERMINAL	STEATITE CERAMIC BUSHINGS	STEATITE CERAMIC BUSHINGS	BAKELITE MOULDED	STEATITE CERAMIC BUSHINGS
OUTER BODY	CRCA	CRCA POWDER COATED	ALUMINIUM CYLINDRICAL	CRCA
TEMP CATEGORY	-5 TO +50°C	-5 TO +50°C	-5 TO +50°C	-5 TO +50°C
DISCHARGE DEVICE	RESISTOR EXTERNALLY FITTED	RESISTOR EXTERNALLY FITTED	RESISTOR EXTERNALLY FITTED	
REF STANDARD	IS 13340, IEC 60831-1&2	IS 13340, IEC 60831-1&2	IS 13340, IEC 60831-1&2	REF IS : 2993
ISI LIC. NO.	CM/L - 0709450	CM/L - 0709450	CM/L - 0709450	
PROTECTION	IP20	IP 20	IP 20, PRESSURE DISCONNECTOR	
PROPERTY	SELF HEALING	SELF HEALING	SELF HEALING	SELF HEALING
LOSS FACTOR	LESS THAN 0.5 W PER KVAR	LESS THAN 0.5 W PER KVAR	LESS THAN 0.5 W PER KVAR	LESS THAN 0.5 W PER KVAR
TESTED & VALIDATED BY	BIS ,ERDA & CPRI	BIS ,ERDA & CPRI	BIS ,ERDA & CPRI	
APPROVALS	ALL ELECTRICITY BOARDS IN INDIA, GWSSB,DGS &DT,DELHI JAL BOARD & VARIOUS PSU.	ALL ELECTRICITY BOARDS IN INDIA, GWSSB,DGS &DT,DELHI JAL BOARD & VARIOUS PSU.	ALL ELECTRICITY BOARDS IN INDIA, GWSSB,DGS &DT,DELHI JAL BOARD & VARIOUS PSU.	
GUARRANTY	1 YEAR	1 YEAR	1 YEAR	1YEAR
APPLICATIONS	FIXED COMPENSATION FOR MOTOR, LIGHTING LOADS TRANSFORMER, APFC PANELS,CAPACITOR BANKS, LINEAR LOADS MEDIUM DUTY INDUSTRIAL LOADS	FIXED COMPENSATION FOR MOTOR, LIGHTING LOADS TRANSFORMER, APFC PANELS,,CAPACITOR BANKS, LINEAR LOADS LIGHT DUTY INDUSTRIAL LOADS	APFC PANELS, FIXED COMPENSATION FOR MOTOR, LIGHTING LOADS TRANSFORMER, CAPACITOR BANKS, LINEAR LOADS NORMAL DUTY INDUSTRIAL LOADS	FOR MOTOR RUN APPLICATIONS , SUBMERSIBLE PUMPS ETC

PRODUCT IMAGE			PRODUCT IMAGE		
PARAMETER	APP LT CAPACITORS	HT APP SHUNT CAPACITOR	PARAMETERS	CONTACTORISED APFC PANEL	THYRISTORISED APFC PANEL
SINGLE UNIT KVAR	1 TO 30 KVAR	50 TO 600 KVAR	RATED POWER	25 TO 900 KVAR	50 TO 900 KVAR
BANKING RANGE IN KVAR	50 TO 250 KVAR	1000 TO 6000 KVAR	RATED VOLTAGE	440/415/525 VAC, WITH/WITHOUT 7 % DETUNING REACTORS	440/415/525 VAC, WITH/WITHOUT 7 % DETUNING REACTORS
TYPES AVAILABLE	SINGLE LAYER OR MULTI LAYER	SINGLE LAYER OR MULTI LAYER	CUBICLE	CRCA POWDER COATED	CRCA POWDER COATED
RATED VOLTAGE	230 TO 1000 VAC & OTHER VOLTAGES ON REQUEST	1.1 KV TO 11KVAC & OTHER VOLTAGES ON REQUEST	COOLING	EXHAUST FANS	EXHAUST FANS
MAX PERMISSIBLE OVER VOLTAGE	110% OF RATED VOLTAGE	110% OF RATED VOLTAGE	STEPS	4 TO 12 , MORE STEPS ON REQUEST	4 TO 12 , MORE STEPS ON REQUEST
MAX PERMISSIBLE OVER CURRENT	130% OF RATED CURRENT	130% OF RATED CURRENT	INCOMER	SFU/MCCB/ACB OF REPUTED MAKE	SFU/MCCB/ACB OF REPUTED MAKE
RATED FREQUENCY	50 /60HZ	50/60HZ	CONTROL	MCCB OF REPUTED MAKE	MCCB OF REPUTED MAKE
CONNECTION	DELTA / STAR	DELTA / STAR	CONTROLLER	INTELLIGENT MICRO PROCESSOR APFC RELAY	INTELLIGENT MICRO PROCESSOR APFC RELAY
PHASE	SINGLE,3 PHASE , III	SINGLE,3 PHASE ,	SWITCHING BY	HEAVY DUTY CONTACTORS OF REPUTED MAKE	THYRISTOR MODULES OF IMPORTED MAKE
DIELECTRIC	JAPANESE IMPORTED BOPP FILM +HIGH PURITY AL FOIL	JAPANESE IMPORTED BOPP FILM +HIGH PURITY AL FOIL	COMPENSATION	AS PER LOAD WITHIN SECONDS	REAL TIME COMPENSATION AT ZERO VOLTAGE
IMPREGNANT	NON -PCB IMPORTED PXE OIL	NON -PCB IMPORTED PXE OIL	CAPACITORS	MPP/APP/CYLINDRICAL HEAVY DUTY	MPP/APP/CYLINDRICAL HEAVY DUTY
TERMINAL	STEATITE CERAMIC BUSHINGS	HIGH GLAZED PORCELAIN BUSHINGS			
OUTER BODY	CRCA / SS	CRCA / SS	OUTER PANEL	HEAVY GUAGE CRCA POWDER COATED	HEAVY GUAGE CRCA POWDER COATED
TEMP CATEGORY	-5 TO + 50°C	-5 TO + 50°C	FEATURES	COMPACT DESIGN, ADVANCED TECHNOLOGY , FINE CONTROL , PROMT AFTER SALES SERVICE, ASTHETIC DESIGN WITH EVERY DETAILS DRG .	FAST RESPONSE, SMOOTH SWITCHING , LONG LIFE, HIGH ACCURACY , LOW LOSSES , RUGGED DESIGN, PROMT AFTER SALE SERVICE, ASTHETIC DESIGN WITH EVERY DETAILS DRG . ADJUSTABLE CONTROL AS PER LOAD VARIATIONS
DISCHARGE DEVICE	RESISTORS, EXTERNALLY FITTED	RESISTORS, INTERNALLY FITTED	MAX PERMISSIBLE OVER VOLTAGE	1.1 X VN	1.1 X VN
REF STANDARD	IS 13585, IEC 60931	IS 13925, IEC 60871	MAX PERMISSIBLE OVER CURRENT	1.3 X IN	1.3 X IN
ISI LIC. NO.	CM/L - 3640657	-			
PROTECTION	IP 20 , INTERNAL FUSES	IP 20 , INTERNAL FUSES / EXTERNAL FUSES	PROTECTION	INDIVIDUAL STEP FUSES/ MCBS. SC ,OV, OT AS PER REQUIREMENT.	INDIVIDUAL STEP FUSES/ MCBS. SC ,OV, OT AS PER REQUIREMENT.
PROPERTY	NON-SELF HEALING	NON-SELF HEALING	DESIGN FLEXIBILITY	EXPANDABLE AS PER REQUIREMENT	EXPANDABLE AS PER REQUIREMENT
LOSS FACTOR	LESS THAN 0.2 W PER KVAR	LESS THAN 0.05W PER KVAR			
TESTED & VALIDATED BY	BIS ,ERDA & CPRI	BIS ,ERDA & CPRI	STANDARDS	REF IEC60831 & 60439	REF IEC60831 & 60439
APPROVALS	ALL ELECTRICITY BOARDS IN INDIA, GWSSB,DGS &DT,DELHI JAL BOARD & VARIOUS PSU.	ALL ELECTRICITY BOARDS IN INDIA, GWSSB,DGS &DT,DELHI JAL BOARD & VARIOUS PSU.	APPROVALS	VARIOUS GOVT UNDERTAKINGS & MNCS & PSU.	VARIOUS GOVT UNDERTAKINGS & MNCS & PSU.
GUARRANTY	2 YEAR	1 YEAR	GUARRANTY	1 YEAR	1 YEAR
APPLICATIONS	FIXED COMPENSATION FOR MOTOR, TRANSFORMER, APFC PANELS,CAPACITOR BANKS, LINEAR LOADS AND NON LINEAR HEAVY INDUSTRIAL LOADS,COTTON INDUSTRIES, STEEL,CEMENT PLANTS ETC.	APFC PANELS,CAPACITOR BANKS, DISTRIBUTION LINE CAPACITORS,LINEAR LOADS ,HT LINE SUBSTATIONS,WATER SUPPLY HT MOTORS, COAL MINES ETC.	APPLICATIONS	AUTOMATIC POWER FACTOR CONTROL OF TOTAL LOAD OF ANY FACTORY,MAINLY SUITABLE FOR SMALL TO MEDIUM SIZE INDUSTRIES .	DYNAMIC REALTIME POWER FACTOR CONTROL OF ANY TYPE OF LOAD IN ALL TYPE INDUSTRIES .MAINLY SUITABLE FOR MEDIUM & LARGE SCALE INDUSTRIES HAVING VARIABLE FREQUENCY DRIVES & WELDING LOADS

FAN CAPACITORS *

AC FAN CAPACITORS DRY TYPE - POLY PROPYLENE CAN				
MFD	CAN SIZE	Terminals	Voltage	
2.00	27 x 52	WIRE TYPE	440 V	
2.25	27 x 52	WIRE TYPE	440 V	
2.50	27 x 52	WIRE TYPE	440 V	
3.15	27 / 30 x 52	WIRE TYPE	440 V	
3.50	27 / 30 x 52	WIRE TYPE	440 V	
4.00	27 / 30 x 52	WIRE TYPE	440 V	

AC FAN CAPACITORS DRY TYPE - ALUMINIUM CAN				
MFD	CAN SIZE	Terminals	Voltage	
2.00	27 x 52	WIRE TYPE	440 V	
2.25	27 x 52	WIRE TYPE	440 V	
2.50	27 x 52	WIRE TYPE	440 V	
3.15	30 x 52	WIRE TYPE	440 V	
3.50	30 x 52	WIRE TYPE	440 V	
4.00	30 x 52	WIRE TYPE	440 V	

AC FAN CAPACITORS OIL FILLED TYPE - ALUMINIUM CAN				
MFD	CAN SIZE	Terminals	Voltage	
2.00	27 x 52	PIN TYPE	440 V	
2.25	27 x 52	PIN TYPE	440 V	
2.50	27 x 52	PIN TYPE	440 V	
3.15	30 x 52	PIN TYPE	440 V	
3.50	30 x 52	PIN TYPE	440 V	
4.00	30 x 52	PIN TYPE	440 V	



CALCULATION OF REQUIRED CAPACITOR FOR POWER FACTOR CORRECTION

Power Factor Required

	0.85	0.90	0.91	0.92	0.93	0.94	0.95	0.96	0.97	0.98	0.99	1.00
0.50	1.112	1.248	1.276	1.306	1.337	1.369	1.403	1.440	1.481	1.529	1.590	1.732
0.60	0.714	0.849	0.878	0.907	0.938	0.970	1.005	1.042	1.083	1.130	1.191	1.333
0.70	0.400	0.536	0.565	0.594	0.625	0.657	0.692	0.729	0.770	0.817	0.878	1.020
0.80	0.130	0.266	0.294	0.324	0.355	0.387	0.421	0.458	0.499	0.547	0.608	0.750
0.85	0.000	0.135	0.164	0.194	0.255	0.257	0.291	0.328	0.369	0.417	0.477	0.620
0.90		0.000	0.029	0.058	0.089	0.121	0.156	0.193	0.234	0.281	0.342	0.484
0.91			0.000	0.030	0.060	0.093	0.127	0.164	0.205	0.253	0.313	0.456
0.92				0.000	0.031	0.063	0.097	0.134	0.175	0.223	0.284	0.426
0.93					0.000	0.032	0.067	0.104	0.145	0.192	0.253	0.395
0.94						0.000	0.034	0.071	0.112	0.160	0.220	0.363
0.95							0.000	0.037	0.078	0.126	0.186	0.329
0.96								0.000	0.041	0.089	0.149	0.292
0.97									0.000	0.048	0.108	0.251
0.98										0.000	0.061	0.203
0.99											0.000	0.142
1.00												0.000

Original Power Factor

Example:

Load of 400 KVA at 0.8 PF, to be corrected to 0.99 PF
 From the table multiplying factor is 0.608
 Convert KVA to KW : KVA x PF = KW
 $400 \times 0.8 = 320$ KW (Useful Power)
 Therefore Capacitor Required KVAR is
 Power x Multiplying Factor = KVAR
 $320 \times 0.608 = 195$ KVAR

Saving from this Example:

320 KW / 0.80 PF = 400 KVA
 320 KW / 0.99 PF = 323 KVA
 Reduction = 77 KVA

Saving in Rs. $77 \times 220 = 16,940/-$
 Cost of Capacitor = $195 \times 140 = 27,300/-$
 Payback Period = $27300 / 16940 = 1.6$ Months

STANDARD RATINGS OF OIL FILLED CAPACITORS & DETAILS OF ACCESSORIES

UNIT RATING IN KVAR	VOLTAGE	RATED CURRENT AMPS	CAPACITANCE BETWEEN PHASES MFD	APPROX DIMENSIONS WITH COVER			APPROX WEIGHT KGS.	CABLE SIZE Sq. Mm		FUSE RATING Amps.	SWITCHGEAR RATING Amps.	APP SIZES		
				Length	Width	Height		Cu	Al			Length	Width	Height
1	440	1.3	9.22	150	105	160	1.5	0.75	2.5	2	16	-	-	-
	415	1.4	9.24											
2	440	2.6	16.44	150	105	160	1.5	0.75	2.5	6	16	-	-	-
	415	2.8	16.48											
3	440	3.9	24.66	150	105	160	1.5	1	2.5	8	16	-	-	-
	415	4.2	27.72											
4	440	5.2	32.88	230	113	165	3.5	1	2.5	10	16	-	-	-
	415	5.5	36.96											
5	440	6.6	41.12	230	113	165	3.5	1.5	2.5	10	16	165	90	320
	415	6.9	46.23											
7.5	440	9.9	61.65	290	113	220	5.5	2.5	4	16	32	165	115	320
	415	10.4	69.3											
10	440	13.2	82.25	290	113	270	6.5	4	6	20	32	290	115	260
	415	13.9	92.46											
15	440	19.8	123.37	290	113	320	9	10	16	32	63	290	115	310
	415	20.8	138.68											
20	440	26.4	164.4	290	113	345	10	10	16	50	63	290	115	360
	415	27.8	184.91											
25	440	33	205.5	290	113	370	11	16	25	50	63	290	115	410
	415	34.8	231.41											
30	440	39.6	246.6	290	113	420	13	16	25	50	63	290	115	460
	415	41.7	277.2											



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