

APP



LOW VOLTAGE POWER CAPACITORS



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Application and Construction

Capacitors are intended for improvement of power factor in low voltage power networks. Used MKP technology consists of metallized PP film with extremely low loss factor. Dielectric system is selfhealing and completely dry with no liquid impregnation.

Capacitor elements in cylindrical aluminium boxes are N₂ Gas or molded by dry material that has vegetable origin and presents no ecologically

problems. For this reason there is not any dangerous environment pollution. The case of capacitors is protected by over pressure disconnecter against the rapture of case. It ensures safety disconnecting of capacitors from power line during the short circuit and the end of life time.

Capacitors are equipped with three discharge resistors and due to all the mentioned characteristics have very high reliability and durability.

Technical Data

Rated voltage:	230V, 240V, 260V, 400V, 440V, 480V, 525V, 600V (the other voltages by request)
Rated frequency:	50Hz or 60Hz
Max. voltage:	$1.1 \times U_a$
Max. current:	$1.3 \times I_a$
Max. inrush current:	$200 \times I_a$
Temperature Category:	-25 / +50°C
Dielectric losses:	$\leq 0.2 \text{ W/kvar}$
Capacitor losses:	$\leq 0.3 \text{ W/kvar}$
Total losses:	$\leq 0.5 \text{ W/kvar}$
Tolerance of capacitance:	-5%...+15%
Insulating level:	3kV/10s, Terminal -terminal $2.15 \times U_a / 10\text{s}$
Standards:	IEC831 – 1.2/87, VDE0560
Discharge resistors:	Discharging winthin 1 minute to 50 V
Construction:	Indoor instalation, single and three phase
Coverage:	- Cylindrical case IP00, IP20 (IP44 by request) - Square case IP00(IP42 by request)

Operating temperature range

Symbol	Ambient air temperature(°C)		
	Maximum	Highest mean over any period of	
		24h	1 year
A	+40	+30	+20
B	+45	+35	+25
C	+50	+40	+30
D	+55	+45	+35

Permitted operating voltage

Rated voltage	230V	400V	440V	480V	525V
Permanent	260V	440V	460V	520V	580V
8 h / day	270V	470V	490V	560V	610V
30 min / day	280V	500V	520V	590V	640V
5 min / 200 times	290V	520V	540V	620V	670V
1 min / 200 times	310V	560V	580V	660V	710V
Permitted peak voltage during operation	900V	1250V	1350V	1500V	1580V

Recommended values of connected cables

Cross section of Cu cable (mm ²)	Rated power (kvar) for 400V and 440V
2.5	≤8
4	≤12.5
6	≤20
10	≤25
35	≤60
70	≤80
95	≤100

Capacity Table

230V Three Phase

Type	Power (Kvar)	Capacutance (μF)	Current (A)	Dimension D×H(mm)	Mass (Kg)	Fig
AP230/5	5	3×83.6	12.6	85×245	2.3	1
AP230/10	10	3×167.2	25.2	110×261	2.5	1 , 2
AP230/15	15	3×250.8	37.8	110×261	2.5	2
AP230/20	20	3×334.4	50.2	136×261	3.7	2
AP230/25	25	3×418.1	62.8	136×261	3.8	2

240V Three Phase

Type	Power (Kvar)	Capacutance (μF)	Current (A)	Dimension D×H(mm)	Mass (Kg)	Fig
AP240/5	5	3×76.8	12.0	85×245	2.3	1
AP240/10	10	3×153.6	24.0	110×261	2.5	1 , 2
AP240/15	15	3×230.4	36.0	110×261	2.5	2
AP240/20	20	3×307.1	48.1	136×261	3.7	2
AP240/25	25	3×383.9	60.1	136×261	3.8	2

260V Three Phase

Type	Power (Kvar)	Capacutance (μF)	Current (A)	Dimension D×H(mm)	Mass (Kg)	Fig
AP260/5	5	3×65.4	11.1	85×245	2.3	1
AP260/10	10	3×130.8	22.2	110×261	2.5	1 , 2
AP260/15	15	3×196.2	33.3	110×261	2.5	2
AP260/20	20	3×261.7	44.4	136×261	3.7	2
AP260/25	25	3×327.1	55.5	136×261	3.8	2

400V Three Phase

Type	Power (Kvar)	Capacutance (μF)	Current (A)	Dimension D×H(mm)	Mass (Kg)	Fig
AP400/5	5	3×33.2	7.2	85×175	1.2	1
AP400/10	10	3×66.4	14.4	85×245	1.6	1
AP400/15	15	3×99.6	21.6	85×245	2.6	1
AP400/20	20	3×132.8	28.8	110×261	2.6	1 , 2
AP400/25	25	3×166.0	36.0	110×261	2.9	2
AP400/30	30	3×199.2	43.2	110×261	2.9	2
AP400/40	40	3×265.6	57.7	136×261	3.5	2
AP400/50	50	3×332.0	72.2	136×355	4.6	2
AP400/60	60	3×398.4	86.6	136×355	4.6	2

440V Three Phase

Type	Power (Kvar)	Capacutance (μF)	Current (A)	Dimension D×H(mm)	Mass (Kg)	Fig
AP440/5	5	3×27.4	6.6	85×175	1.2	1
AP440/10	10	3×54.8	13.2	85×245	1.6	1
AP440/15	15	3×82.2	19.8	85×245	2.6	1
AP440/20	20	3×109.6	26.4	110×261	2.6	1 , 2
AP440/25	25	3×137.0	33.0	110×261	2.9	2
AP440/30	30	3×164.4	39.6	110×261	2.9	2
AP440/40	40	3×219.2	52.5	136×261	3.5	2
AP440/50	50	3×274.0	65.6	136×355	4.6	2
AP440/60	60	3×328.8	78.7	136×355	4.6	2

480V Three Phase

Type	Power (Kvar)	Capacutance (μF)	Current (A)	Dimension D×H(mm)	Mass (Kg)	Fig
AP480/5	5	3×23	6.0	85×175	1.2	1
AP480/10	10	3×46.1	12.0	85×245	1.2	1
AP480/15	15	3×69.0	18.0	110×261	2.0	1
AP480/20	20	3×92.1	24.1	110×261	2.6	1 , 2
AP480/25	25	3×115.2	30.1	110×261	2.6	2
AP480/30	30	3×138.2	36.1	136×220	3.2	2
AP480/40	40	3×184.4	48.1	136×261	3.5	2
AP480/50	50	3×230.5	60.1	136×355	4.6	2
AP480/60	60	3×276.6	72.2	136×355	4.6	2

525V Three Phase

Type	Power (Kvar)	Capacutance (μF)	Current (A)	Dimension D×H(mm)	Mass (Kg)	Fig
AP525/10	10	3×38.4	11.0	85×245	1.6	1
AP525/15	15	3×57.6	16.5	110×245	2.6	1
AP525/20	20	3×76.8	22.0	110×261	2.6	1 , 2
AP525/30	30	3×115.2	33.0	110×261	3.2	2
AP525/40	40	3×153.6	44.0	146×261	3.5	2
AP525/50	50	3×192.0	55.0	146×355	4.6	2
AP525/60	60	3×230.4	66.0	146×355	4.6	2

Dimensions

Fig.1
IP20

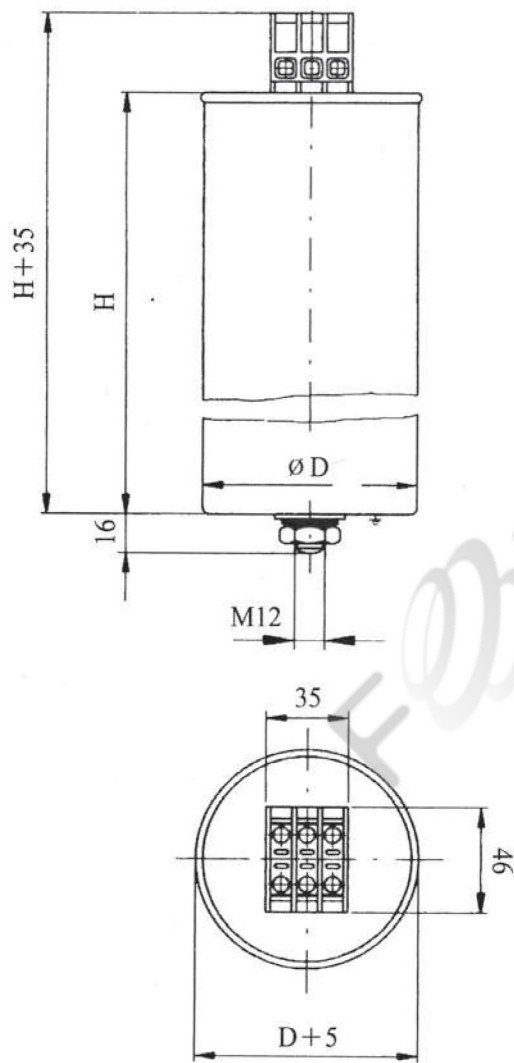
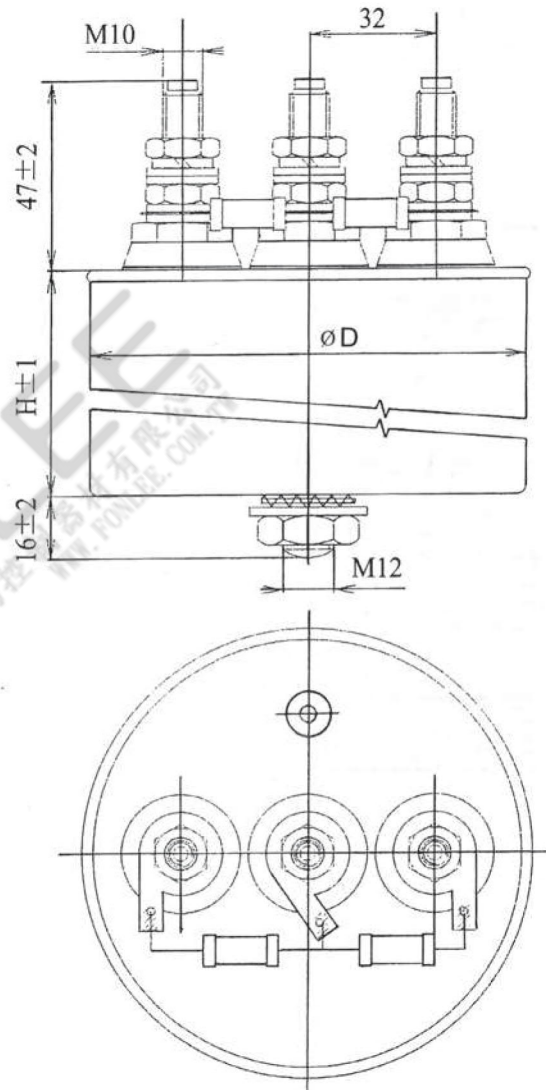


Fig.2



MODULES FOR RECONSTRUCTION OF CAPACITOR BANKS

Construction

Capacitor block is installed on supporting instrument 2mm thick metal plate with dimensions of 570 x 200 x 155mm (width x height x deep). Surface finish is made by powder paint. Max. dimensions of module installed elements are 570 x 331 x 310mm. Distance of fixed holes for bolts M10 (oval 12 x 30mm) is 530 x 100mm.

There are two switch-disconnectors type LTL 00 with fuses PN 00 or PN 000 (characteristic "gG") and double step contactors with resistive switching of capacitors (their control circuits are connected to nonscrew - shaped terminal) on the front side of panel.

There are placed the selfhealing capacitors on the rear side of panel.

The value of protection element and connection conductors is calculated according to switched power. All conductors have the moulded outlets (cavities and loop-holes).

Standard module block is made in two - up to four - step performance with power up to 100 kVAr and voltage 230 V, 240 V, 260 V, 400 V, 440 V, 480 V, 525 V, 600 V.

Customer can choose the module blocks (see table) according to the total required power, connect outlets to switchdisconnectors with bus-bars and connect also control conductors to regulator. Then capacitor bank can be put into operation according to instruction of regulator.

Dimensions

