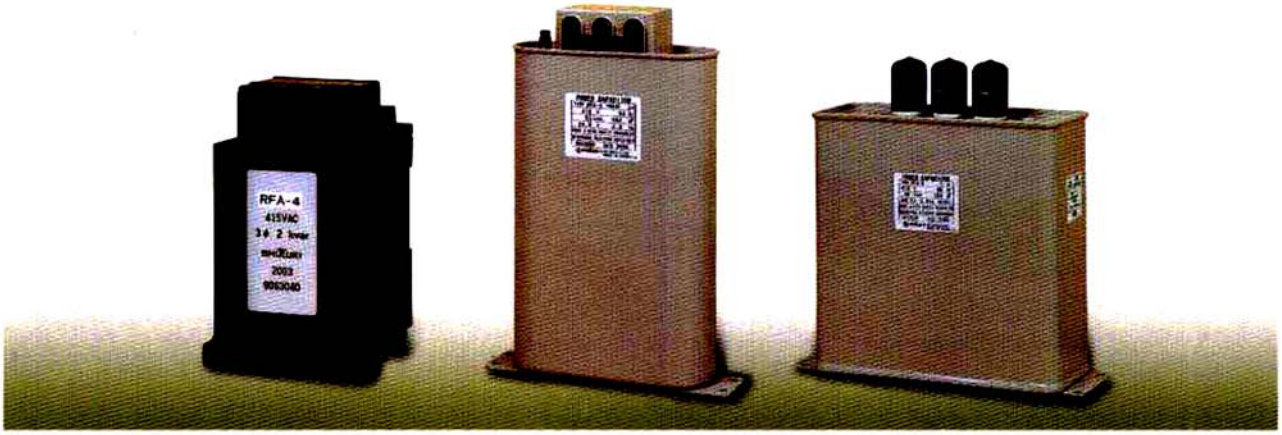
SHIZUKI

Low Voltage Power Factor Correction Capacitors

Type : RFA-4



■THREE PHASE ■380V, 400V, 415VAC ■50Hz/60Hz

[APPLIED STANDARDS]

The capacitors are designed,manufactured and tested to meet the requirements of the latest IEC Publication No.IEC 60831-1: 1996 60831-2: 1995 & JIS.C 4901

[SAFETY FEATURES]

1.Discharge device: The capacitors are provided with an internal discharge resistor which will reduce the residual voltage from the peak value to 75 volts or less within a maximum time of 3 minutes after they are disconnected from the source of supply.

2.Protective mechanism: When a breakdown occurs in the capacitor, a fault current will flow through the fuse of the defective unit capacitor, disconnecting the defective unit capacitor from the power supply. Should a breakdown occur, therefore, only the defective unit capacitor will be disconnected from the power supply, while a large number of other unit capacitors remain intact and continue to work properly.

[DESIGN AND CONSTRUCTION]

1.Type RFA-4 capacitors are made with specially processed metallized polypropylene film impregnated with wax .

2.The capacitors are normally designed to suit for mounting in vertical position with terminals on top.

3.The capacitor container is coated with non-corrosive poly-urethane resin enamel in Munsell color notation 5Y7/1 to extend maintenance free service life.

[ELECTRICAL CHARACTERISTICS]

1.The capacitors are capable of withstanding the operation at the following overvoltages for the maximum duration shown below.

Maximum permissible voltages vs duration

Voltage factor (x rated voltage)	Maximum duration
1.10	8 hours max. in every 24 hours
1.15	30 minutes max. in every 24 hours
1.20	5 minutes max. x 2 times max. in a month
1.30	1 minute max. x 2 times in a month

2.The capacitors are capable of continuous operation at a current not exceeding 1.3 times the rated current. For capacitors having a capacitance reading which is within the tolerance but in the positive side, the maximum permissible current can be increased by the positive percentage of the capacitance.

3.Every capacitor is subjected to the following tests to verify that the requirements of the applicable standard are met.

a.Dielectric withstand test:

The capacitors shall successfully withstand the application of the following voltages.

(1) Between terminals: 1.75 times the rated voltage for more than 2 seconds.

(2) Between terminals (connected together) and container: 3,000 volts for 10 seconds. (3,000 volts for arated voltage exceeding 250 volts)

b.Capacitance (Output):

The capacitors shall have a capacitance within +15% and -5% of the rated value when measured by an A.C. bridge at a room temperature. Output will be calculated based on the capacitance value.

c.Capacitor losses:

Capacitor loss including the loss of the discharge resistor shall be not more than 0.2% when measured by Schering Bridge at the rated voltage.

d. Sealing test:

Capacitors shall be free from leaks when heated to and maimtained at 70℃ for more than 2 hours.

[WARRANTY]

The Company warrants these capacitors against defects in materials and workmanship for one(1) full year from date of installation.
The Company, at its option, will repair or replace any capacitors returned to the factory, which the Company, upon inspection, shall determine to be defective in material and/or workmanship.

[NAMEPLATE MARKING]

Each capacitor is provided with a nameplate showing the following information.

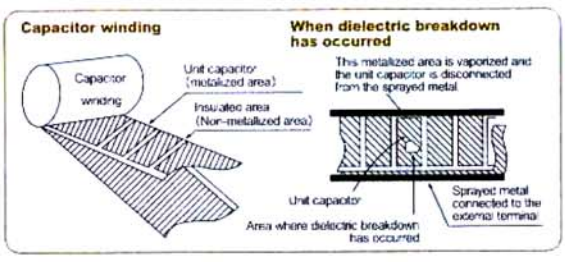
a.Name of manufacturer	e.Rated frequency	i.Weight
b.Type number	f.Number of phase	j.Internal discharge device fitted or not
c.Rated terminal voltage	g.Rated current	k.Internal protective device fitted or not
d.Rated output in kvar	h.Connection	l.Date of manufacture or serial number

[NOTE]

The dimensions, characteristics and other details contained in this publication are accurate at date of issue. However, the Company reserves the right to make, from time to time, such departure from the information contained in this publication as may be required to permit improvements in the design of its products.

Protective Mechanism

These capacitors comprise a number of segments (unit capacitors) with a small capacitance connected in parallel with each other. Should a dielectric breakdown occur in a unit capacitor, only the unit capacitor will be disconnected from the source of power in a moment without causing breakdown on other unit capacitors to protect the capacitor from smoking or igniting. Other unit capacitors will remain connected, and the capacitor as a whole will continue to function properly with a slight capacitance loss.



[SPECIFICATION]

Type : RFA-4

Rated voltage	380V,400V,415VAC
Frequency	50Hz/60Hz
Phase	Three Phase
Withstand voltage	Between terminals Rated voltage×1.75 for more than 2 seconds
	Between terminals and container 3,000VAC for 10 seconds
Output (CAP)	1kvar~50kvar
Tolerance	-5%~+15%

Reference	JIS-C-4901 IEC 60831-1:1996 and 60831-2:1995
Operating temperature	-25℃~+50℃
Dissipation factor	Less than 0.20%
Painting	Munsell 5Y7/1 (Light gray)
Installation	Indoor only
Altitude	Not exceeding 1,000 meters above sea level
Safety & machanism & discharge resistors fitted.	

[DIMENSIONS]

Type : RFA-4

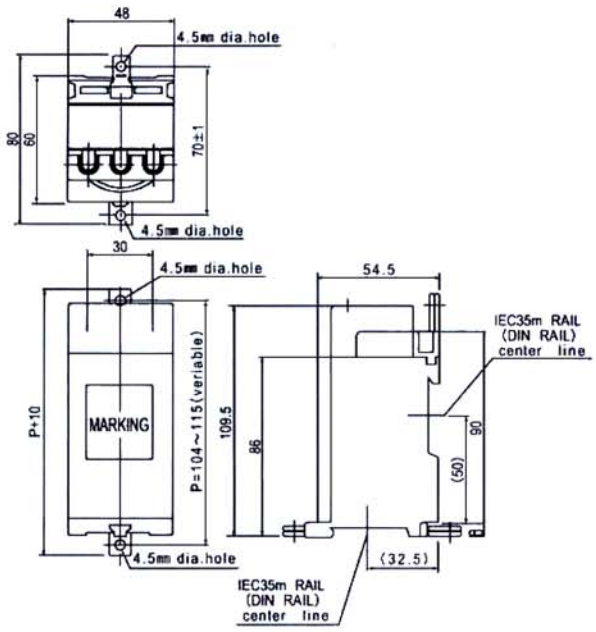


Fig.1

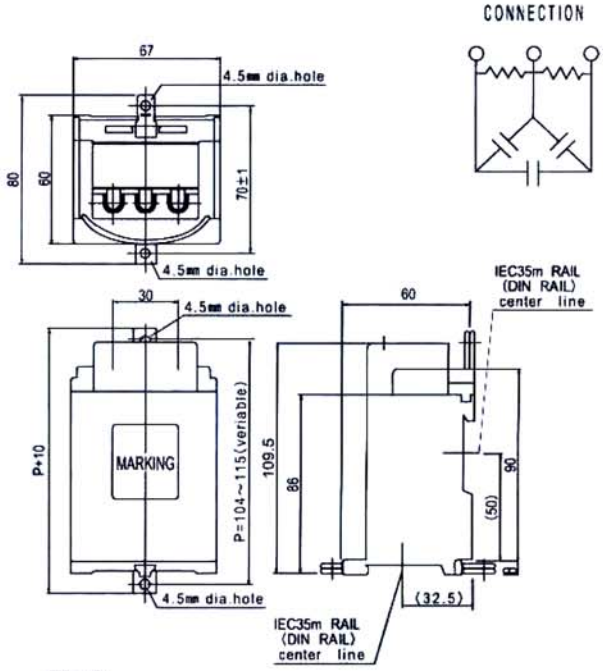


Fig.2

50Hz, 60Hz

RATED VOLTAGE (V)	RATED OUTPUT (kvar)	GROSS MASS (kg)	Fig
380	1	0.32	1
	1.5	0.42	2
400	1	0.32	1
	1.5	0.42	2
	2	0.42	2
415	1	0.32	1
	1.5	0.42	2
	2	0.42	2

Type : RFA-4

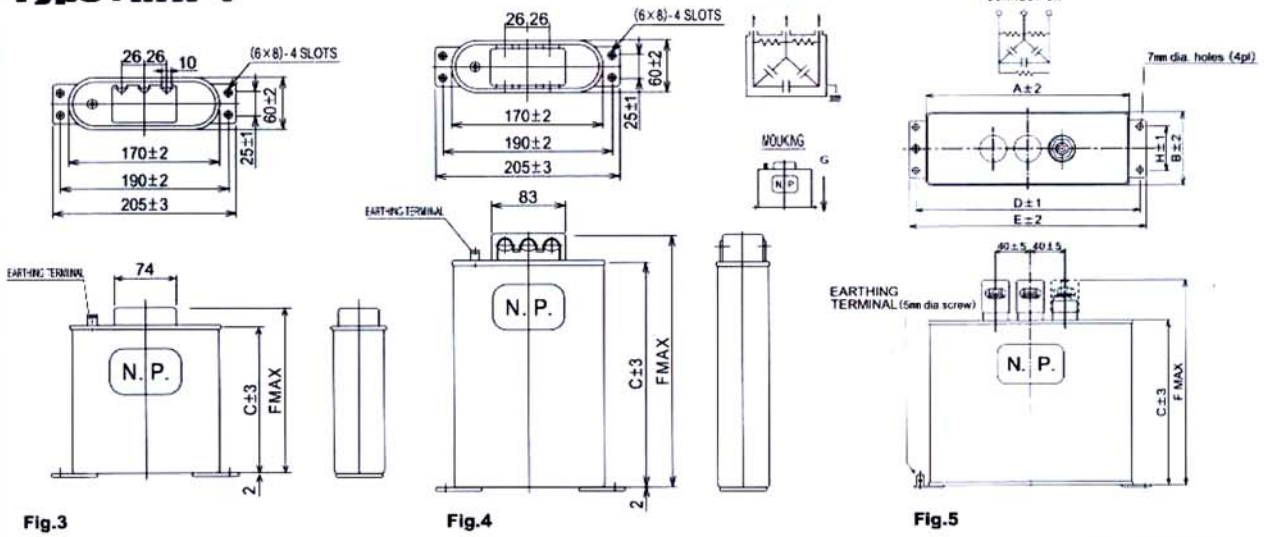


Fig.3 Fig.4 Fig.5

50Hz

RATED VOLTAGE (V)	CAP. (kvar)	DIMENSION C	DIMENSION F	GROSS MASS (kg)	Fig
380	10	147	165	1.3	3
	15	167	185	1.5	3
	20	247	265	2.2	3
	25	257	295	2.3	4
400	10	127	145	1.1	3
	15	167	185	1.5	3
	20	247	265	2.2	3
	25	257	295	2.3	4
415	10	127	145	1.1	3
	15	147	165	1.3	3
	20	207	225	1.9	3
	25	257	295	2.3	4

60Hz

RATED VOLTAGE (V)	CAP. (kvar)	DIMENSION C	DIMENSION F	GROSS MASS (kg)	Fig
380	10	127	145	1.1	3
	15	167	185	1.5	3
	20	247	265	2.2	3
	25	257	295	2.3	4
400	10	127	145	1.1	3
	15	167	185	1.5	3
	20	247	265	2.2	3
	25	257	295	2.3	4
415	10	107	125	1.0	3
	15	147	165	1.3	3
	20	167	185	1.5	3
	25	207	245	2.0	4

50Hz

RATED VOLTAGE (V)	RATED OUTPUT (kvar)	DIMENSIONS A	B	C	D	E	F	H	GROSS MASS (kg)	FIG.No.
380	30	240	90	180	265	280	235	55	4.5	5
	40	240	90	230	265	280	285	55	5.5	5
	50	240	90	250	265	280	305	55	6.0	5
400	30	240	90	180	265	280	235	55	4.5	5
	40	240	90	230	265	280	285	55	5.5	5
	50	240	90	250	265	280	305	55	6.0	5
415	30	173	70	270	190	205	325	40	4.5	5
	40	240	90	200	265	280	255	55	5.0	5
	50	240	90	230	265	280	285	55	5.5	5

60Hz

RATED VOLTAGE (V)	RATED OUTPUT (kvar)	DIMENSIONS A	B	C	D	E	F	H	GROSS MASS (kg)	FIG.No.
380	30	173	70	270	190	205	325	40	4.5	5
	40	240	90	200	265	280	255	55	5.0	5
	50	240	90	250	265	280	305	55	6.0	5
400	30	173	70	270	190	205	325	40	4.5	5
	40	240	90	180	265	280	235	55	4.5	5
	50	240	90	230	265	280	285	55	5.5	5
415	30	173	70	270	190	205	325	40	4.5	5
	40	240	90	180	265	280	235	55	4.5	5
	50	240	90	230	265	280	285	55	5.5	5

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