

R.2

Power capacitors

Low Voltage



R.2 - Low voltage power capacitors

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Power capacitors, LV

Prismatic capacitors

The **CS** dry-type prismatic capacitor range covers all power and voltage requirements, from 50 to 60 Hz.

The design, manufacturing and testing processes of capacitors with prismatic technology guarantee the production of top quality and long lasting capacitors.

Technology

Prismatic capacitors are equipped with different basic capacities. These capacities are configured to obtain the voltage and power required

- **Basic capacities**

Basic capacities are produced with metallised polypropylene and are encapsulated in thermo-hardened polyurethane resin. This system provides a high electric and mechanical rigidity to basic capacities.

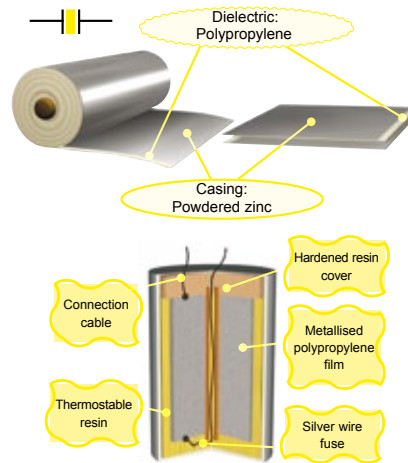
- **Capacitor**

The set of basic capacities is introduced in a metallic casing and filled in with Vermiculite. This component provides a high safety to the set of basic capacities, given its dielectric properties and as a non-flammable inert material.

Protection levels

In case of a fault:

- **Level 1.** The zinc layer evaporates when it reaches the "fault" point (de-metallized zone), so that the arc disappears
- **Level 2.** In the case of high currents (high voltage, harmonics), the internal fuse disconnects the basic capacity
- **Level 3.** If the fault is not limited by the fuse, gases are generated inside the faulty capacitor, so that lifting the overpressure cover disconnects the basic capacitor
- **Level 4.** For a greater security, the VERMICULITE (inert and fireproof) prevents any form of deflagration



Advantages of CS prismatic capacitors

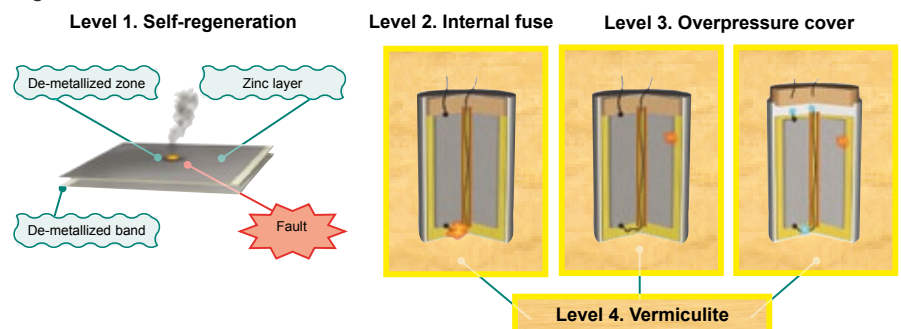
This technology offers the following advantages:

- **Continuity of the service**

In case of the fault of a basic capacity, it is disconnected and it does not affect the rest, continuing with the unit's normal operation.

- **Greater protection**

Each basic capacity is equipped with protections, whereby the Vermiculite carries out the global protection tasks. This system lengthens the unit's working life.



Prismatic capacitors

The application of new technologies and the use of printed circuit boards to manufacture prismatic capacitors have allowed CIRCUTOR to reinvent the classic CS capacitor, manufactured for over 35 years.

The spirit of innovation and proprietary technology used during the design of the new CSB capacitor have increased the lifespan of traditional prismatic capacitors by over 60%.

This new series has improved all aspects of the previous models, offering our customers a longer-lasting, safer and more profitable capacitor.

Innovative processes

Manufactured in a fully automated assembly line, with processes that have been designed to eliminate the most critical aspects that affect the capacitor lifespan, such as the contact with damp environments and extreme temperatures.

The assembly processes and intermediate tests carried out with the new series of CSB capacitors guarantee a 60% longer lifespan.

Use of collector plates

The new assembly method of capacitive elements is based on a collector plate that is similar to the kind of technology used in power electronics, which offers a number of significant advantages over the usual cable-based connection method, such as:

- Uniform arrangement of capacitive elements inside the metal casing, guaranteeing a totally homogeneous thermal dissipation, thus increasing the lifespan of the capacitor.

- Full elimination of interconnection cabling, thus reducing total losses (higher efficiency) and reducing the assembly time, while minimising the potential problems caused by hot spots.

- Shorter metal casings than those used to date for the same power levels. This reduces the weight and, therefore, the transport and space required, for both capacitors and automatic capacitor banks equipped with these capacitors.

+60%
Lifespan

The use of the PCB collector plate guarantees the minimum losses.



Tubular capacitors

The **CLZ** tubular capacitor range is composed of capacitors with a tubular casing, of the dry-type, covering a wide range of power and voltage ratings, at 50 and 60 Hz.

The design, manufacturing and testing processes of **CLZ** tubular capacitors guarantee the production of top quality and long lasting capacitors.

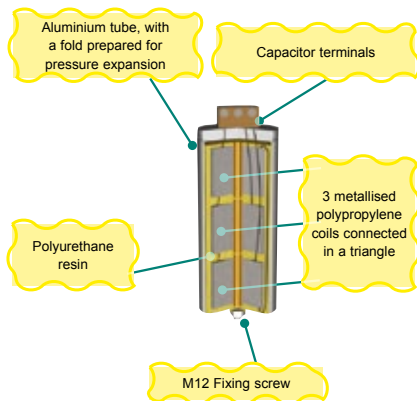
New technology

New refrigeration technology.

CLZ capacitors up to 25 kvar offer a new refrigeration technology that employs nitrogen gas, offering a top-performance, harmless and fireproof refrigeration system.

Small dimensions and high dissipation

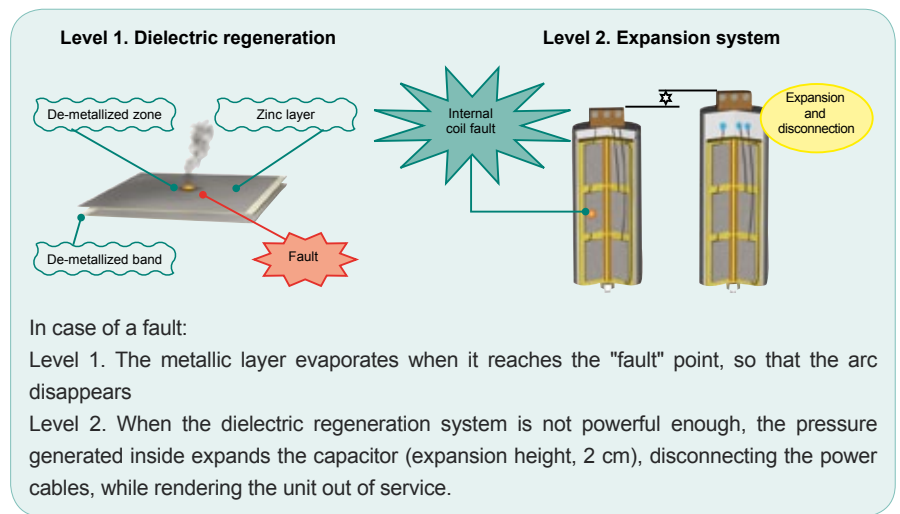
- Diameters: 85, 110 and 136 mm.
- Reduced capacitor height
- Aluminium casing



Protection levels

In case of a fault:

- **Level 1.** The metallic layer evaporates when it reaches the "fault" point, so that the arc disappears
- **Level 2.** When the dielectric regeneration system is not powerful enough, the pressure generated inside expands the capacitor (expansion height, 2 cm), disconnecting the power cables, while rendering the unit out of service.



In case of a fault:

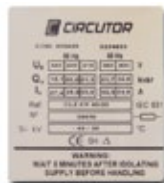
- Level 1. The metallic layer evaporates when it reaches the "fault" point, so that the arc disappears
- Level 2. When the dielectric regeneration system is not powerful enough, the pressure generated inside expands the capacitor (expansion height, 2 cm), disconnecting the power cables, while rendering the unit out of service.

New inert gas refrigeration technology and aluminium casing



New technology

New inert gas refrigeration technology and aluminium casing



Multi-mark labels

Use of a plate with a power equivalent to 220/230/240 V, 400/440 V, 460 V, 480/520/550 V (50 or 60 Hz)



IP 20 Degree of protection (up to 30 kvar)

With terminal cover **TLCZ-FP** IP 54

Product selection table

	Features	Range	Maximum power	Voltage	Frequency	Page
CLZ-FPT		Low power	7.5 kvar	230 to 480 V a.c.	50 ... 60 Hz	7
CLZ-FP		High power	50 kvar	230 to 520 V a.c.	50 ... 60 Hz	9
CV		Low power	25 kvar	230 to 480 V a.c.	50 ... 60 Hz	11
CQ		Medium power	50 kvar	230 to 480 V a.c.	50 ... 60 Hz	13
CSB		High power: - Electromechanical capacitor banks	100 kvar	230 to 1,000 V a.c.	50 ... 60 Hz	15
CS-6B		High power: - Static system capacitor banks	100 kvar	230 to 1,000 V a.c.	50 ... 60 Hz	17
CF		Filters: - Electromechanical capacitor banks	100 kvar	230 to 1,000 V a.c.	50 ... 60 Hz	19
CF-6B		Filters: - Static system capacitor banks	100 kvar	230 to 1,000 V a.c.	50 ... 60 Hz	21
CSF		Fixed compensation with fuses	80 kvar	230 / 400 V a.c.	50 ... 60 Hz	23
CSM		Fixed compensation with circuit breaker 10 kA	60 kvar	230 / 400 V a.c.	50 ... 60 Hz	25
CSB-A		Fixed compensation with automatic switch 35 kA	100 kvar	230 / 400 V a.c.	50 ... 60 Hz	27
FRF / FRM		Fixed compensation with reactors and fuses (FRF) / automatic (FRM)	80 kvar	230 / 400 V a.c.	50 ... 60 Hz	29

CLZ-FPT

Tubular capacitor, Faston terminal



Description

The **CLZ** tubular capacitor range is composed of capacitors with a tubular casing, of the dry-type, covering a wide range of power and voltage ratings, at 50 and 60 Hz. The design, manufacturing and testing processes of **CLZ** tubular capacitors guarantee the production of top quality and long lasting capacitors.

CLZ capacitors are composed of three basic units, which are introduced in a cylindrical metallic casing that is filled in with a gel, fulfilling the dielectric and mechanical housing functions.

Application

Its application is based on the compensation in installations with fixed and variable loads (capacitor banks).

Features

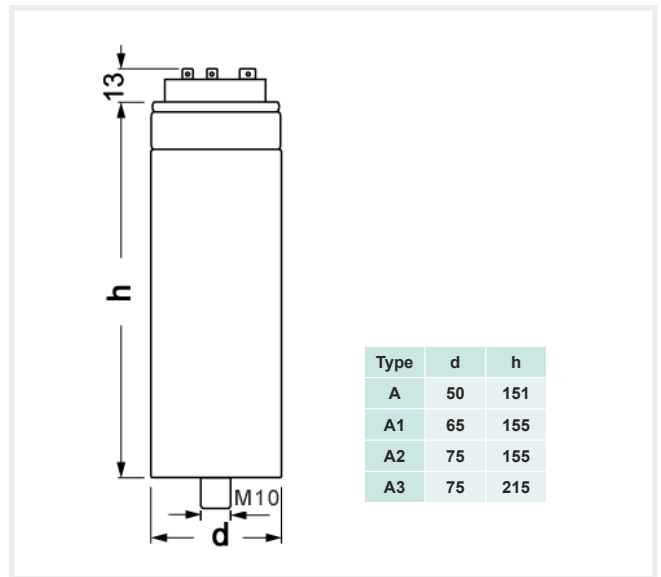
Features		
Overcurrent		1.3 times the rated current permanently
Overvoltage		10 % 8 over 24 hours
		15 % up to 15 minutes over 24 hours
		20 % up to 5 minutes over 24 hours
		30 % up to 1 minute over 24 hours
Insulation level		3 / 15 kV
Tolerance		-5...+15 %
Discharge resistance		75 V / 3 minutes
Frequency		50 or 60 Hz
Losses:	<ul style="list-style-type: none"> • Dielectric • Total 	CLZ system levels: < 0.2 W / kvar < 0.5 W / kvar
Protections		<ul style="list-style-type: none"> • Dielectric regeneration • Expansion system
Construction features		
Enclosure		Aluminium
Power terminals		Faston type
Fixing screws		M10
Degree of protection		IP 00 for CLZ-FPT and CLZ-FP >30 kvar IP 20 for CLZ-FP ≤ 30 kvar IP 54 for CLZ-FP with terminal cover
Ambient conditions		
Class D temperature:	Daily mean	45 °C
	Annual mean	35 °C
	Maximum	50 °C
	Minimum	-25 °C
Humidity		80 % RH
Altitude		2,000 m
Assembly conditions		
Type of assembly		Vertical
Ventilation		Natural or forced, depending on the cabinet design
Distance between capacitors		Minimum, 2 cm
Standards		
CEI 60831-1, CEI 70/7, UNE 20827, UNE 20010, BS 1650, VDE 560		

CLZ-FPT

Tubular capacitor, Faston terminal



Dimensions



References

kvar (50 Hz)		kvar (60 Hz)		Dimensions mm (d x h)	Weight (kg)	Type Fig.	Type	Code
400 V	440 V	400 V	400 V					
2	2,5	2,5		50 x 151	0,3	A	CLZ-FPT-44/2.5	R20574
2,5	3	3		50 x 151	0,3	A	CLZ-FPT-44/3	R20575
4	5	5		65 x 155	0,5	A1	CLZ-FPT-43/5	R20578
5	6,25	6		75 x 155	0,7	A2	CLZ-FPT-44/6.25	R20579
6,25	7,5	7,5		75 x 215	1	A3	CLZ-FPT-44/7.5	R2057A

CLZ-FP

Tubular capacitor with terminal connection



Description

The **CLZ** tubular capacitor range is composed of capacitors with a tubular casing, of the dry-type, covering a wide range of power and voltage ratings, at 50 and 60 Hz. The design, manufacturing and testing processes of **CLZ** tubular capacitors guarantee the production of top quality and long lasting capacitors.

New refrigeration technology.

CLZ capacitors up to 25 kvar offer a new refrigeration technology that employs nitrogen gas, offering a top-performance, harmless and fireproof refrigeration system.

Application

Its application is based on the compensation in installations with fixed and variable loads (capacitor banks).

Features

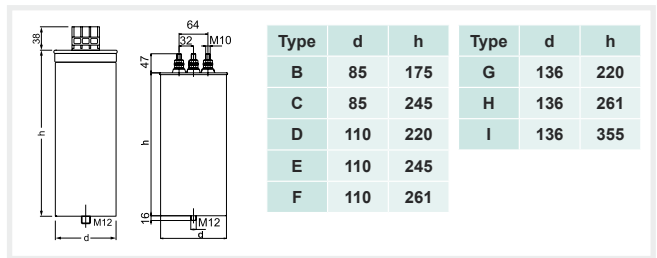
Features		
Overcurrent		1.3 times the rated current permanently
Overvoltage		10 % 8 over 24 hours
		15 % up to 15 minutes over 24 hours
		20 % up to 5 minutes over 24 hours
		30 % up to 1 minute over 24 hours
Insulation level		3 / 15 kV
Tolerance		-5...+15 %
Discharge resistance		75 V / 3 minutes
Frequency		50 or 60 Hz
Losses:	• Dielectric	CLZ system levels: < 0.2 W / kvar
	• Total	< 0.5 W / kvar
Protections		<ul style="list-style-type: none"> • Dielectric regeneration • Expansion system
Construction features		
Enclosure		Aluminium
Power terminals		M10
Fixing screws		M12
Degree of protection		IP 00 for CLZ-FPT and CLZ-FP >30 kvar IP 20 for CLZ-FP ≤ 30 kvar IP 54 for CLZ-FP with terminal cover
Ambient conditions		
Class D temperature:	Daily mean	45 °C
	Annual mean	35 °C
	Maximum	55 °C
	Minimum	-40 °C
Humidity		95 % RH
Altitude		4,000 m
Assembly conditions		
Type of assembly		Vertical / Horizontal
Ventilation		Natural or forced, depending on the cabinet design
Distance between capacitors		Minimum, 2 cm
Standards		
CEI 60831-1, CEI 70/7, UNE 20827, UNE 20010, BS 1650, VDE 560		

CLZ-FP

Tubular capacitor with terminal connection



Dimensions



References

230 V

220 V	kvar (50 Hz)		kvar (60 Hz)		Dimensions mm (d x h)	Weight (kg)	Type Fig.	Type	Code
	230 V	240 V	220 V	230 V					
2,3	2,5	2,7	2,7	3	85 x 175	1,2	B	CLZ-FP-23/2.5	R20514
3,7	4	4,4	4,4	4,8	85 x 245	1,6	C	CLZ-FP-23/4	R20517
4,6	5	5,4	5,5	6	85 x 245	1,6	C	CLZ-FP-23/5	R20518
5,7	7,5	8,2	8,2	9	110 x 245	2,6	E	CLZ-FP-23/7.5	R2051A
9,1	10	10,9	11	12	110 x 245	2,6	E	CLZ-FP-23/10	R2051C
11,4	12,5	13,6	--	--	136 x 220	3,3	G	CLZ-FP-23/12.5	R2051D
13,7	25	--	--	--	136 x 220	3,3	G	CLZ-FP-23/15	R2051E

440 V

	400 V	440 V	400 V					
	8	10	10	85 x 245	1	C	CLZ-FP-44/10	R2057C
	10	12,5	12	85 x 245	1,2	C	CLZ-FP-44/12.5	R2057D
	12,5	15	15	85 x 245	1,3	C	CLZ-FP-44/15	R2057E
	15	18,2	18	110 x 245	2	E	CLZ-FP-44/18.2	R2057M
	16	20	20	110 x 245	2	E	CLZ-FP-44/20	R2057F
	20	25	--	110 x 245	2,2	E	CLZ-FP-44/25	R2057G
	25	30	--	110 x 245	3,3	E	CLZ-FP-44/30	R2057H
	32	40	--	136 x 261	4,2	H	CLZ-FP-44/40	R2057J
	40	50	--	136 x 261	5,5	I	CLZ-FP-44/50	R2057K

525 V

480 V	525 V	550 V	480 V	525 V					
1,7	2	2,2	2,0	2,4	85 x 175	1,2	B	CLZ-FP-52/2	R20553
2,1	2,5	2,7	2,5	3	85 x 175	1,2	B	CLZ-FP-52/2.5	R20554
2,5	3	3,3	3,0	3,6	85 x 175	1,2	B	CLZ-FP-52/3	R20555
3,3	4	4,4	4,0	4,8	85 x 175	1,2	B	CLZ-FP-52/4	R20557
4,2	5	5,5	5,0	6	85 x 175	1,2	B	CLZ-FP-52/5	R20558
5,2	6,25	6,8	6,2	7,5	85 x 175	1,2	B	CLZ-FP-52/6.25	R20559
6,3	7,5	8,2	7,5	9	85 x 245	1,6	C	CLZ-FP-52/7.5	R2055A
6,7	8	8,7	8	9,6	85 x 245	1,6	C	CLZ-FP-52/8	R2055B
8,4	10	11	10,0	12	85 x 245	1,6	C	CLZ-FP-52/10	R2055C
10,4	12,5	13,7	12,5	15	110 x 220	2,2	D	CLZ-FP-52/12.5	R2055D
12,5	15	16,5	15,0	18	110 x 245	2,6	E	CLZ-FP-52/15	R2055E
16,7	20	22	20,1	24	110 x 245	2,6	E	CLZ-FP-52/20	R2055F
20,89	25	27,4	24,57	30	110 x 245	2,7	E	CLZ-FP-52/25	R2055G
25	30	33	30	36	136 x 220	2,8	G	CLZ-FP-52/30	R2055H
33	40	44	40	50	136 x 261	2,9	H	CLZ-FP-52/40	R2055J
42	50	55	50	60	136 x 355	3	I	CLZ-FP-52/50	R2055K

460 V - filtering uses

Reactance	Code R.	460 V	440 V	460 V					
R-5-400	P70110	6	6,6	7,2	85 x 175	0,9	B	CLZ-FP-46/6.25	R20589
R-10-400	P70115	12,5	13,7	15	85 x 245	1,2	C	CLZ-FP-46/12.5	R2058D
R-12.5-400	P70117	15	16,5	18	85 x 245	1,4	C	CLZ-FP-46/15	R2058E
R-15-400	P70120	19	20,9	22,8	85 x 245	1,9	C	CLZ-FP-46/19	R2058L
R-20-400	P70125	25	27,4	30	85 x 245	2,1	C	CLZ-FP-46/25	R2058G
R-25-400	P70130	30	32,9	36,6	136 x 220	3	G	CLZ-FP-46/30	R2058H

CV

Low voltage three-phase power capacitors



Description

The **CV** dry-type prismatic capacitor range covers all power and voltage requirements, from 50 to 60 Hz.

The design, manufacturing and testing processes of tubular capacitors guarantee the production of top quality and long lasting capacitors.

The 4 internal protection levels (self-regulation of the internal fuse, protection cover and vermiculite) make prismatic capacitors the safest units in the market.

Application

Its application is based on the compensation in installations with fixed and variable loads (capacitor banks).

Features

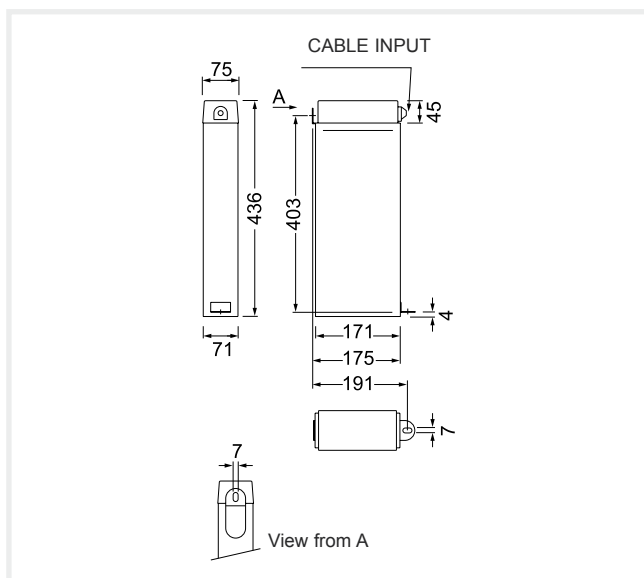
Features		
Overcurrent		1.3 times the rated current permanently
Overvoltage		10 % 8 over 24 hours 15 % up to 15 minutes over 24 hours 20 % up to 5 minutes over 24 hours 30 % up to 1 minute over 24 hours
Insulation level		3 / 15 kV
Power tolerance		-5...+15 %
Discharge resistance		75 V / 3 minutes
Frequency		50 or 60 Hz
Losses:	<ul style="list-style-type: none"> • Dielectric • Total 	< 0.2 W / kvar < 0.5 W / kvar
Protections		<ul style="list-style-type: none"> • Dielectric regeneration • Internal fuse • Overpressure system • Vermiculite
Construction features		
Enclosure		Treated and painted steel, colour RAL 3005
Terminals:	<ul style="list-style-type: none"> • Power rating • Earth 	<ul style="list-style-type: none"> • M6 for CV, M10 for CQ, CSB, CSB-6B, CFB, CFB-6B • M6
Torque value		<ul style="list-style-type: none"> • CV 5 Nm • CQ, CSB, CSB-6B, CFB, CFB-6B: 15 Nm
Degree of protection		IP 42 with terminal cover
Ambient conditions		
Class C temperature:	Daily mean	40 °C
	Annual mean	30 °C
	Maximum	55 °C
	Minimum	-40 °C
Humidity		80 %
Altitude		2,000 m
Assembly conditions		
Type of assembly		Vertical
Ventilation		Natural or forced, depending on the cabinet design
Distance between capacitors		Minimum, 4 cm
Weight		0.4 kg
Standards		
CEI 60831-1, CEI 70/7, UNE 20827, UNE 20010, BS 1650, VDE 560		

CV

Low voltage three-phase power capacitors



Dimensions



References

230 V

kvar		Weight (kg)	Dim. (mm) width x height x depth	Type	Code
50 Hz	60 Hz				
2,5	3	3	204 x 435 x 75	CV-23/2.5	R20114
3,75	4,5	3,5	204 x 435 x 75	CV-23/3.75	R20116
5	6	3,5	204 x 435 x 75	CV-23/5	R20118
7,5	9	4	204 x 435 x 75	CV-23/7.5	R2011A
10	12,5	4	204 x 435 x 75	CV-23/10	R2011C
12,5	15	4,5	204 x 435 x 75	CV-23/12.5	R2011D
15	17,5	4,5	204 x 435 x 75	CV-23/15	R2011E

400 V

kvar		Weight (kg)	Dim. (mm) width x height x depth	Type	Code
50 Hz	60 Hz				
2,5	3	2,5	204 x 435 x 75	CV-40/2.5	R20134
5	4,5	2,5	204 x 435 x 75	CV-40/5	R20138
7,5	9	3	204 x 435 x 75	CV-40/7.5	R2013A
10	12,5	3	204 x 435 x 75	CV-40/10	R2013C
12,5	15	3,5	204 x 435 x 75	CV-40/12.5	R2013D
15	17,5	4,5	204 x 435 x 75	CV-40/15	R2013E
20	25	4,5	204 x 435 x 75	CV-40/20	R2013F
25	30	6,5	204 x 435 x 75	CV-40/25	R2013G

440 V

kvar		Weight (kg)	Dim. (mm) width x height x depth	Type	Code
50 Hz	60 Hz				
2,5	3	2	204 x 435 x 75	CV-44/2.5	R20144
5	4,5	2	204 x 435 x 75	CV-44/5	R20148
7,5	9	2,5	204 x 435 x 75	CV-44/7.5	R2014A
10	12,5	2,5	204 x 435 x 75	CV-44/10	R2014C
12,5	15	3	204 x 435 x 75	CV-44/12.5	R2014D
15	17,5	4	204 x 435 x 75	CV-44/15	R2014E
20	25	4	204 x 435 x 75	CV-44/20	R2014F
25	30	6	204 x 435 x 75	CV-44/25	R2014G
30	35	6,5	204 x 435 x 75	CV-44/30	R2014J

460 V

kvar		Weight (kg)	Dim. (mm) width x height x depth	Type	Code
50 Hz	60 Hz				
2,5	3	1	204 x 435 x 75	CV-46/2.5	R20154
5	6	1	204 x 435 x 75	CV-46/5	R20158
7,5	9	1,5	204 x 435 x 75	CV-46/7.5	R2015A
10	12,5	1,5	204 x 435 x 75	CV-46/10	R2015C
12,5	15	2	204 x 435 x 75	CV-46/12.5	R2015D
15	17,5	3	204 x 435 x 75	CV-46/15	R2015E

CQ

Low voltage three-phase power capacitors

**Description**

The **CQ** dry-type prismatic capacitor range covers all power and voltage requirements, from 50 to 60 Hz.

The design, manufacturing and testing processes of prismatic capacitors guarantee the production of top quality and long lasting capacitors.

The 4 internal protection levels (self-regulation of the internal fuse, protection cover and vermiculite) make prismatic capacitors the safest units in the market.

Application

Its application is based on the compensation in installations with fixed and variable loads (capacitor banks).

Features

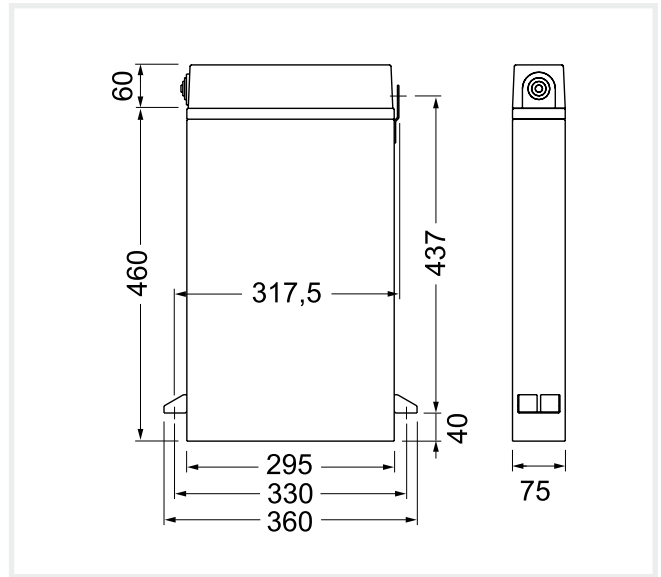
Features		
Overcurrent		1.3 times the rated current permanently
Overvoltage		10 % 8 over 24 hours 15 % up to 15 minutes over 24 hours 20 % up to 5 minutes over 24 hours 30 % up to 1 minute over 24 hours
Insulation level		3 / 15 kV
Power tolerance		-5...+15 %
Discharge resistance		75 V / 3 minutes
Frequency		50 or 60 Hz
Losses:	<ul style="list-style-type: none"> • Dielectric • Total 	< 0.2 W / kvar < 0.5 W / kvar
Protections		<ul style="list-style-type: none"> • Dielectric regeneration • Internal fuse • Overpressure system • Vermiculite
Construction features		
Enclosure		Treated and painted steel, colour RAL 3005
Terminals:	<ul style="list-style-type: none"> • Power rating • Earth 	<ul style="list-style-type: none"> • M6 for CV, M10 for CQ, CSB, CSB-6B, CFB, CFB-6B • M6
Torque value		<ul style="list-style-type: none"> • CV 5 Nm • CQ, CSB, CSB-6B, CFB, CFB-6B: 15 Nm
Degree of protection		IP 42 with terminal cover
Ambient conditions		
Class C temperature:	Daily mean	40 °C
	Annual mean	30 °C
	Maximum	50 °C
	Minimum	-40 °C
Humidity		80 %
Altitude		2,000 m
Assembly conditions		
Type of assembly		Vertical
Ventilation		Natural or forced, depending on the cabinet design
Distance between capacitors		Minimum, 4 cm
Weight		0.4 kg
Standards		
CEI 60831-1, CEI 70/7, UNE 20827, UNE 20010, BS 1650, VDE 560		

CQ

Low voltage three-phase power capacitors



Dimensions



References

230 V

kvar		Weight (kg)	Dim. (mm) width x height x depth	Type	Code
50 Hz	60 Hz				
10	12,5	4,9	360 x 520 x 75	CQ-23/10	R2031C
12,5	15	4,9	360 x 520 x 75	CQ-23/12.5	R2031D
15	17,5	4,9	360 x 520 x 75	CQ-23/15	R2031E
20	25	6,4	360 x 520 x 75	CQ-23/20	R2031F
25	30	7,9	360 x 520 x 75	CQ-23/25	R2031G
30	35	7,9	360 x 520 x 75	CQ-23/30	R2031H

400 V

kvar		Weight (kg)	Dim. (mm) width x height x depth	Type	Code
50 Hz	60 Hz				
10	12,5	4	360 x 520 x 75	CQ-40/10	R2033C
12,5	15	4,5	360 x 520 x 75	CQ-40/12.5	R2033D
15	17,5	5	360 x 520 x 75	CQ-40/15	R2033E
20	25	6	360 x 520 x 75	CQ-40/20	R2033F
25	30	6	360 x 520 x 75	CQ-40/25	R2033G
30	35	6	360 x 520 x 75	CQ-40/30	R2033H
40	50	7	360 x 520 x 75	CQ-40/40	R2033J
50	60	9	360 x 520 x 75	CQ-40/50	R2033K

440 V

kvar		Weight (kg)	Dim. (mm) width x height x depth	Type	Code
50 Hz	60 Hz				
15	17,5	4,1	360 x 520 x 75	CQ-44/15	R2034E
20	25	4,9	360 x 520 x 75	CQ-44/20	R2034F
25	30	4,9	360 x 520 x 75	CQ-44/25	R2034G
30	35	4,9	360 x 520 x 75	CQ-44/30	R2034H
40	50	6	360 x 520 x 75	CQ-44/40	R2034J
50	60	7,9	360 x 520 x 75	CQ-44/50	R2034K

460 V

kvar		Weight (kg)	Dim. (mm) width x height x depth	Type	Code
50 Hz	60 Hz				
10	12,5	4,1	360 x 520 x 75	CQ-46/10	R2035C
12,5	15	4,1	360 x 520 x 75	CQ-46/12.5	R2035D
15	17,5	4,1	360 x 520 x 75	CQ-46/15	R2035E
20	25	4,9	360 x 520 x 75	CQ-46/20	R2035F
25	30	4,9	360 x 520 x 75	CQ-46/25	R2035G
30	35	4,9	360 x 520 x 75	CQ-46/30	R2035H
40	50	7,9	360 x 520 x 75	CQ-46/40	R2035J
50	60	7,9	360 x 520 x 75	CQ-46/50	R2035K
60	-	8,1	360 x 520 x 75	CQ-46/60	R2035L

CSB

State-of-the-art low voltage three-phase power capacitors



Description

The application of new technologies and the use of printed circuit boards to manufacture prismatic capacitors have allowed **CIRCUTOR** to reinvent the classic **CS** capacitor, manufactured for over 35 years.

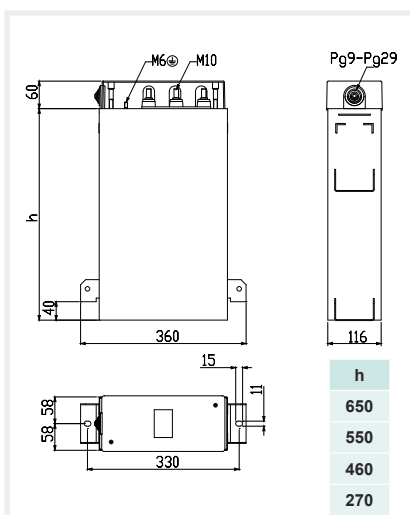
The spirit of innovation and proprietary technology used during the design of the new **CSB** capacitor have increased the lifespan of traditional prismatic capacitors by over 60%.

This new series has improved all aspects of the previous models, offering our customers a longer-lasting, safer and more profitable capacitor.

Application

Its application is based on the compensation in installations with fixed and variable loads (capacitor banks).

Dimensions



Features

Features	
Overload	1,3 times the rated current
Overvoltage	10%, 8 over 24 hours 15%, up to 15 minutes over 24 hours 20%, up to 5 minutes over 24 hours 30%, up to 1 minute over 24 hours
Insulation level	3 / 15 kV
Power ratings	5 kvar to 120 kvar
Voltage	230 V to 1100 V
Power tolerance	-5 ... +15%
Discharge resistance	75 V/3 min
Frequency	50 ... 60 Hz
Losses	Dielectric < 0,2 W / kvar Total < 0,5 W / kvar
Protections	Dielectric regeneration Internal fuse Over-pressure system Vermiculite
Construction conditions	
Enclosure	Treated and painted steel, colour RAL 3005
Terminals	Power M10 Earth M6
Torque value	15 Nm
Protection degree	IP 42 con tapa cubre bornes
Environmental conditions	
Class D temperature	Daily average 45 °C Annual average 35 °C Maximum 55 °C Minimum -40 °C
Relative humidity	80% (without condensation)
Maximum altitude	2000 m
Assembly conditions	
Type of assembly	Vertical / Horizontal
Ventilation	Natural or forced, depending on the design of the cabinet
Distance between capacitors	Minimum: 4 cm
Standards	
CEI 60831-1, UNE - EN 60831-1	

CSB

State-of-the-art low voltage three-phase power capacitors



References

kvar		Weight (kg)	Dim. (mm) width x height x depth	Type	Code
50 Hz	60 Hz				
10	12,5	3,3	360 x 330 x 120	CSB-23/10	R2321C
12,5	15	3,3	360 x 330 x 120	CSB-23/12,5	R2321D
15	17,5	3,3	360 x 330 x 120	CSB-23/15	R2321E
20	25	4,2	360 x 330 x 120	CSB-23/20	R2321F
25	30	5,0	360 x 330 x 120	CSB-23/25	R2321G
30	35	5,0	360 x 330 x 120	CSB-23/30	R2321H
40	50	7,3	360 x 520 x 120	CSB-23/40	R2321J
50	60	8,2	360 x 520 x 120	CSB-23/50	R2321K

kvar		Weight (kg)	Dim. (mm) width x height x depth	Type	Code
50 Hz	60 Hz				
15	17,5	3,3	360 x 330 x 120	CSB-40/15	R2323E
20	25	3,3	360 x 330 x 120	CSB-40/20	R2323F
25	30	3,3	360 x 330 x 120	CSB-40/25	R2323G
30	35	4,2	360 x 330 x 120	CSB-40/30	R2323H
40	50	5,0	360 x 330 x 120	CSB-40/40	R2323J
50	60	5,0	360 x 330 x 120	CSB-40/50	R2323K
60	70	6,6	360 x 520 x 120	CSB-40/60	R2323L
80	95	8,2	360 x 520 x 120	CSB-40/80	R2323Q
100	120	9,0	360 x 520 x 120	CSB-40/100	R2323R

kvar		Weight (kg)	Dim. (mm) width x height x depth	Type	Code
50 Hz	60 Hz				
15	17,5	2,6	360 x 330 x 120	CSB-44/15	R2324E
20	25	3,3	360 x 330 x 120	CSB-44/20	R2324F
25	30	3,3	360 x 330 x 120	CSB-44/25	R2324G
30	35	3,5	360 x 330 x 120	CSB-44/30	R2324H
40	50	4,2	360 x 330 x 120	CSB-44/40	R2324J
50	60	5,0	360 x 330 x 120	CSB-44/50	R2324K
60	70	5,0	360 x 330 x 120	CSB-44/60	R2324L
80	95	7,3	360 x 520 x 120	CSB-44/80	R2324Q
100	120	8,2	360 x 520 x 120	CSB-44/100	R2324R

kvar		Weight (kg)	Dim. (mm) width x height x depth	Type	Code
50 Hz	60 Hz				
15	17,5	3,3	360 x 330 x 120	CSB-46/15	R2325E
20	25	3,3	360 x 330 x 120	CSB-46/20	R2325F
25	30	4,2	360 x 330 x 120	CSB-46/25	R2325G
30	35	4,2	360 x 330 x 120	CSB-46/30	R2325H
40	50	5,0	360 x 330 x 120	CSB-46/40	R2325J
50	60	6,6	360 x 520 x 120	CSB-46/50	R2325K
60	70	7,3	360 x 520 x 120	CSB-46/60	R2325L
80	95	9,0	360 x 520 x 120	CSB-46/80	R2325Q
100	120	10,9	360 x 610 x 120	CSB-46/100	R2325R

kvar		Weight (kg)	Dim. (mm) width x height x depth	Type	Code
50 Hz	60 Hz				
8	10	2,8	360 x 330 x 120	CSB-48/10	R277AC
12,5	15	3,5	360 x 330 x 120	CSB-48/15	R277AE
16,7	20	3,5	360 x 330 x 120	CSB-48/20	R277AF
20,8	25	4,2	360 x 330 x 120	CSB-48/25	R277AG
25	30	4,2	360 x 330 x 120	CSB-48/30	R277AH
33,3	40	5,0	360 x 330 x 120	CSB-48/40	R277AJ
41,7	50	6,8	360 x 520 x 120	CSB-48/50	R277AK
50	60	7,5	360 x 520 x 120	CSB-48/60	R277AL
66,7	80	9,0	360 x 520 x 120	CSB-48/80	R277AQ
83,8	100	10,9	360 x 610 x 120	CSB-48/100	R277AR

kvar		Weight (kg)	Dim. (mm) width x height x depth	Type	Code
50 Hz	60 Hz				
9,11	10,93	2,6	360 x 330 x 120	CSB-52/10	R2326C
13,67	16,4	3,3	360 x 330 x 120	CSB-52/15	R2326E
18,22	21,87	3,3	360 x 330 x 120	CSB-52/20	R2326F
22,78	27,33	4,2	360 x 330 x 120	CSB-52/25	R2326G
27,33	32,8	4,2	360 x 330 x 120	CSB-52/30	R2326H
36,45	43,74	5,0	360 x 330 x 120	CSB-52/40	R2326J
45,56	54,67	6,6	360 x 520 x 120	CSB-52/50	R2326K
54,67	65,6	7,3	360 x 520 x 120	CSB-52/60	R2326L
63,78	76,54	8,2	360 x 520 x 120	CSB-52/70	R2326M

kvar		Weight (kg)	Dim. (mm) width x height x depth	Type	Code
50 Hz	60 Hz				
10	12,5	2,6	360 x 330 x 120	CSB-69/10	R232BC
15	17,5	3,3	360 x 330 x 120	CSB-69/15	R232BE
20	25	3,3	360 x 330 x 120	CSB-69/20	R232BF
25	30	3,3	360 x 330 x 120	CSB-69/25	R232BG
30	35	4,2	360 x 330 x 120	CSB-69/30	R232BH
40	50	5,0	360 x 330 x 120	CSB-69/40	R232BJ
50	60	5,0	360 x 330 x 120	CSB-69/50	R232BK
60	70	6,6	360 x 520 x 120	CSB-69/60	R232BL
80	95	8,2	360 x 520 x 120	CSB-69/80	R232BQ
100	-	9,0	360 x 520 x 120	CSB-69/100	R232BR

kvar		Weight (kg)	Dim. (mm) width x height x depth	Type	Code
50 Hz	60 Hz				
10	12	3,5	360x330x120	CSB-110/10	R2327C
20	24	5,0	360x330x120	CSB-110/20	R2327F
30	36	5,0	360x330x120	CSB-110/30	R2327H
40	48	7,5	360x480x120	CSB-110/40	R2327J
50	60	9,0	360x520x120	CSB-110/50	R2327K
60	72	9,0	360x520x120	CSB-110/60	R2327L
70	84	10,9	360x610x120	CSB-110/70	R2327M

CSB-6B

Low voltage three-phase power capacitors. Dual-voltage



Description

The application of new technologies and the use of printed circuit boards to manufacture prismatic capacitors have allowed **CIRCUTOR** to reinvent the classic **CS** capacitor, manufactured for over 35 years.

The spirit of innovation and proprietary technology used during the design of the new **CSB** capacitor have increased the lifespan of traditional prismatic capacitors by over 60%.

This new series has improved all aspects of the previous models, offering our customers a longer-lasting, safer and more profitable capacitor.

Application

Its application is based on the compensation in installations with fixed and variable loads (capacitor banks). Application for static systems.

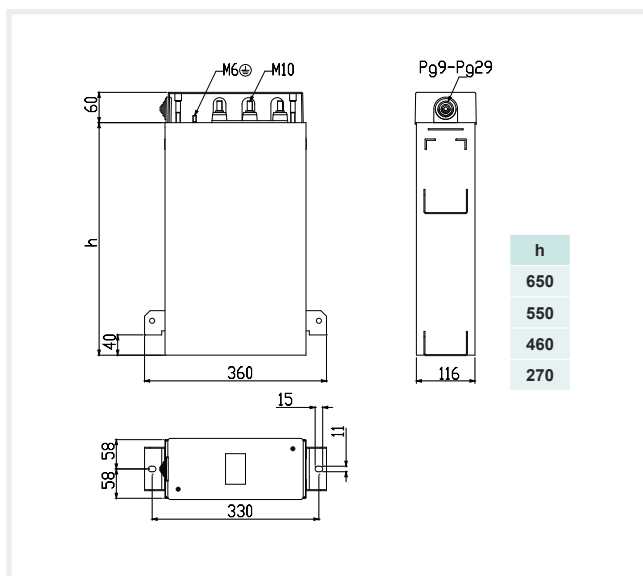
Features

Features		
Overcurrent		1.3 times the rated current permanently
Overvoltage		10 % 8 over 24 hours
		15 % up to 15 minutes over 24 hours
		20 % up to 5 minutes over 24 hours
		30 % up to 1 minute over 24 hours
Insulation level		3 / 15 kV
Power tolerance		-5...+15 %
Discharge resistance		75 V / 3 minutes
Frequency		50 or 60 Hz
Losses:	• Dielectric	< 0.2 W / kvar
	• Total	< 0.5 W / kvar
Protections		• Dielectric regeneration
		• Internal fuse
		• Overpressure system
		• Vermiculite
Construction features		
Enclosure		Treated and painted steel, colour RAL 3005
Terminals:	• Power rating	• M6 for CV, M10 for CQ, CSB, CSB-6B, CFB, CFB-6B
	• Earth	• M6
Torque value		• CV 5 Nm
		• CQ, CSB, CSB-6B, CFB, CFB-6B: 15 Nm
Degree of protection		IP 42 with terminal cover
Ambient conditions		
Class C temperature:	Daily mean	40 °C
	Annual mean	30 °C
	Maximum	50 °C
	Minimum	-40 °C
Humidity		80 %
Altitude		2,000 m
Assembly conditions		
Type of assembly		Vertical
Ventilation		Natural or forced, depending on the cabinet design
Distance between capacitors		Minimum, 4 cm
Weight		0.4 kg
Standards		
CEI 60831-1, CEI 70/7, UNE 20827, UNE 20010, BS 1650, VDE 560		

CSB-6B

Low voltage three-phase power capacitors.
Dual-voltage

Dimensions



References

DUAL-VOLTAGE 230 / 400 V

kvar		Weight (kg)	Dim. (mm) width x height x depth	Type	Code
50 Hz	60 Hz				
5	6	3,3	360 x 330 x 120	CSB-2340/5	R23288
7,5	9	3,9	360 x 330 x 120	CSB-2340/7.5	R2328A
10	12,5	3,9	360 x 330 x 120	CSB-2340/10	R2328C
12,5	15	3,9	360 x 330 x 120	CSB-2340/12.5	R2328D
15	17,5	4,6	360 x 330 x 120	CSB-2340/15	R2328E
20	25	4,6	360 x 330 x 120	CSB-2340/20	R2328F
25	30	4,6	360 x 330 x 120	CSB-2340/25	R2328G
30	35	6,2	360 x 330 x 120	CSB-2340/30	R2328H
40	50	8,3	360 x 520 x 120	CSB-2340/40	R2328J

DUAL-VOLTAGE 400 / 690 V

kvar		Weight (kg)	Dim. (mm) width x height x depth	Type	Code
50 Hz	60 Hz				
5	6	3,3	360 x 330 x 120	CSB-4069/5	R23298
7,5	9	3,3	360 x 330 x 120	CSB-4069/7.5	R2329A
10	12,5	3,9	360 x 330 x 120	CSB-4069/10	R2329C
12,5	15	3,9	360 x 330 x 120	CSB-4069/12.5	R2329D
15	17,5	3,9	360 x 330 x 120	CSB-4069/15	R2329E
20	25	4,6	360 x 330 x 120	CSB-4069/20	R2329F
25	30	4,6	360 x 330 x 120	CSB-4069/25	R2329G
30	35	6,2	360 x 330 x 120	CSB-4069/30	R2329H
40	50	7	360 x 330 x 120	CSB-4069/40	R2329J
50	60	9,2	360 x 330 x 120	CSB-4069/50	R2329K
60	70	9,9	360 x 520 x 120	CSB-4069/60	R2329L
75	95	10,5	360 x 520 x 120	CSB-4069/75	R2329P
80	96	11,3	360 x 520 x 120	CSB-4069/80	R2329Q

Note: Dual-voltage capacitors can be used for the fixed compensation of motors.

CFB

Capacitor for detuned filters



Description

The application of new technologies and the use of printed circuit boards to manufacture prismatic capacitors have allowed **CIRCUTOR** to reinvent the classic **CS** capacitor, manufactured for over 35 years.

The spirit of innovation and proprietary technology used during the design of the new **CSB** capacitor have increased the lifespan of traditional prismatic capacitors by over 60%.

This new series has improved all aspects of the previous models, offering our customers a longer-lasting, safer and more profitable capacitor.

Application

Its application is focused on the compensation of installations under fixed and variable loads (capacitor banks) with a high content of harmonics and/or the risk of resonance.

Features

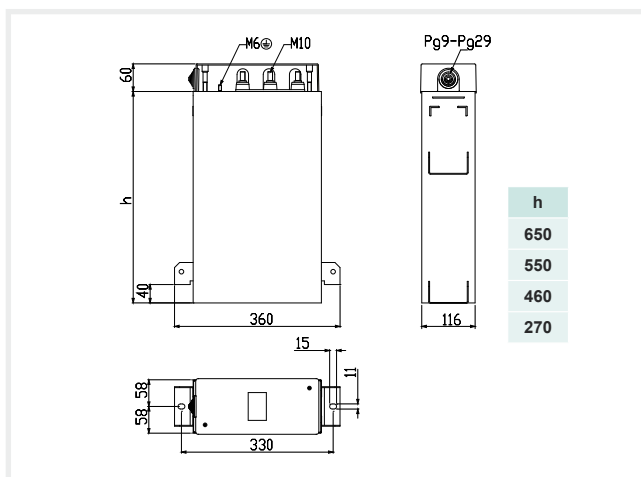
Features		
Overcurrent		1.3 times the rated current permanently
Overvoltage		10 % 8 over 24 hours 15 % up to 15 minutes over 24 hours 20 % up to 5 minutes over 24 hours 30 % up to 1 minute over 24 hours
Insulation level		3 / 15 kV
Power tolerance		-5...+15 %
Discharge resistance		75 V / 3 minutes
Frequency		50 or 60 Hz
Losses:	<ul style="list-style-type: none"> • Dielectric • Total 	<ul style="list-style-type: none"> • < 0.2 W / kvar • < 0.5 W / kvar
Protections		<ul style="list-style-type: none"> • Dielectric regeneration • Internal fuse • Overpressure system • Vermiculite
Construction features		
Enclosure		Treated and painted steel, colour RAL 3005
Terminals:	<ul style="list-style-type: none"> • Power rating • Earth 	<ul style="list-style-type: none"> • M6 for CV, M10 for CQ, CSB, CSB-6B, CFB, CFB-6B • M6
Torque value		<ul style="list-style-type: none"> • CV 5 Nm • CQ, CSB, CSB-6B, CFB, CFB-6B: 15 Nm
Degree of protection		IP 42 with terminal cover
Ambient conditions		
Class C temperature:	<ul style="list-style-type: none"> Daily mean Annual mean Maximum Minimum 	<ul style="list-style-type: none"> 40 °C 30 °C 50 °C -40 °C
Humidity		80 %
Altitude		2,000 m
Assembly conditions		
Type of assembly		Vertical
Ventilation		Natural or forced, depending on the cabinet design
Distance between capacitors		Minimum, 4 cm
Weight		0.4 kg
Standards		
CEI 60831-1, CEI 70/7, UNE 20827, UNE 20010, BS 1650, VDE 560		

CFB

Capacitor for detuned filters



Dimensions



References

CFB 260 V

kvar (230 V)	Weight (kg)	Dimensions	For reactance	Type	Code
5	2,6	360 x 330 x 120	R-5-230	CFB 26/6,3	R2412A
10	3,3	360 x 330 x 120	R-10-230	CFB 26/12,5	R2412D
15	3,3	360 x 330 x 120	RB-15-230	CFB 26/18	R2412E
20	4,2	360 x 330 x 120	RB-20-230	CFB 26/25	R2412G
25	5,0	360 x 330 x 120	RB-25-230	CFB 26/30	R2412H
30	5,0	360 x 330 x 120	RB-30-230	CFB 26/37	R2412J
40	7,3	360 x 520 x 120	RB-40-230	CFB 26/48	R2412K
50	8,2	360 x 520 x 120	RB-50-230	CFB 26/60	R2412L

CFB 460 V

kvar (400 V)	kvar (440 V)	Weight (kg)	Dimensions	For reactance	Type	Code
5	6,25	3,3	360 x 330 x 120	R-5-400 / 6-460	CFB 46/6	R2415A
10	12,5	3,9	360 x 330 x 120	R-10-400 / 12,5-460	CFB 46/12,5	R2415D
12,5	15	3,9	360 x 330 x 120	R-12,5-400 / 15-460	CFB 46/15	R2415E
15	18,75	3,9	360 x 330 x 120	R-15-400 / 19-460	CFB 46/19	R2415F
20	25	4,6	360 x 330 x 120	RB-20-400 / 25-460	CFB 46/25	R2415G
25	30	4,6	360 x 330 x 120	RB-25-400 / 30-460	CFB 46/30	R2415H
30	37,5	6,2	360 x 330 x 120	RB-30-400 / 37-460	CFB 46/37	R2415J
40	50	7,0	360 x 520 x 120	RB-40-400 / 50-460	CFB 46/50	R2415K
50	60	9,2	360 x 520 x 120	RB-50-400 / 62-460	CFB 46/62	R2415L
60	75	9,9	360 x 520 x 120	RB-60-400 / 74-460	CFB 46/74	R2415P
80	100	11,3	360 x 520 x 120	RB-80-400 / 100-460	CFB 46/100	R2415R

CFB 790 V

kvar (690 V)	Weight (kg)	Dimensions	For reactance	Type	Code
5	2,6	360 x 330 x 120	RE-5-400 / 6-460	CFB 79/6	R241DA
10	2,6	360 x 330 x 120	RE-10-400 / 12,5-460	CFB 79/12,5	R241DD
15	3,3	360 x 330 x 120	RE-15-400 / 19-460	CFB 79/19	R241DF
20	3,3	360 x 330 x 120	RE-20-400 / 25-460	CFB 79/25	R241DG
25	4,2	360 x 330 x 120	RE-25-400 / 30-460	CFB 79/30	R241DH
30	4,2	360 x 330 x 120	RE-30-400 / 37-460	CFB 79/37	R241DI
40	5,0	360 x 330 x 120	RE-40-400 / 50-460	CFB 79/50	R241DK
50	6,6	360 x 330 x 120	RBE-50-400 / 62-460	CFB 79/62	R241DL
60	7,3	360 x 520 x 120	RBE-60-400 / 74-460	CFB 79/74	R241DP
80	9,0	360 x 520 x 120	RBE-80-400 / 100-460	CFB 79/100	R241DR

*NOTE The filtering unit supplies a voltage of 400/230 V to the network. To compensate the reactance's overvoltage effect, the capacitor has been dimensioned to support 460/260 V and a power exceeding 25% of that stated in all columns

CFB-6B

Special capacitor for harmonic filters of the FRE Series



Description

The application of new technologies and the use of printed circuit boards to manufacture prismatic capacitors have allowed **CIRCUTOR** to reinvent the classic **CS** capacitor, manufactured for over 35 years.

The spirit of innovation and proprietary technology used during the design of the new **CSB** capacitor have increased the lifespan of traditional prismatic capacitors by over 60%.

This new series has improved all aspects of the previous models, offering our customers a longer-lasting, safer and more profitable capacitor.

Application

Its application is focused on the compensation of installations under fixed and variable loads (capacitor banks) with a high content of harmonics and/or the risk of resonance. Application for static systems.

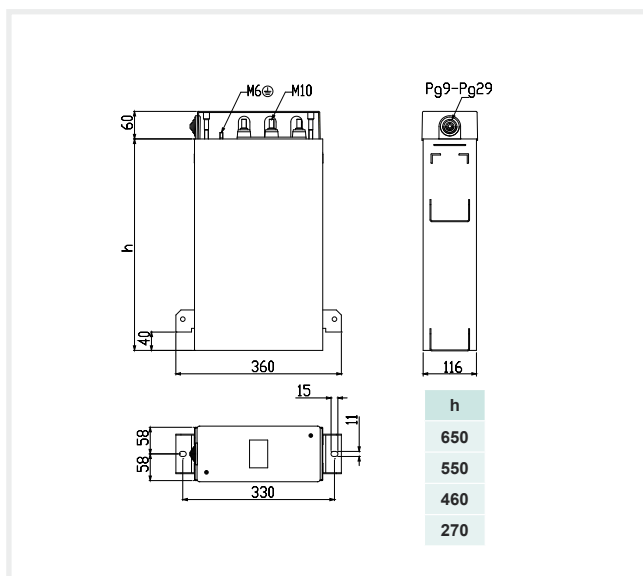
Features

Features		
Overcurrent		1.3 times the rated current permanently
Overvoltage		10 % 8 over 24 hours
		15 % up to 15 minutes over 24 hours
		20 % up to 5 minutes over 24 hours
		30 % up to 1 minute over 24 hours
Insulation level		3 / 15 kV
Power tolerance		-5...+15 %
Discharge resistance		75 V / 3 minutes
Frequency		50 or 60 Hz
Losses:	<ul style="list-style-type: none"> • Dielectric • Total 	< 0.2 W / kvar < 0.5 W / kvar
Protections		<ul style="list-style-type: none"> • Dielectric regeneration • Internal fuse • Overpressure system • Vermiculite
Construction features		
Enclosure		Treated and painted steel, colour RAL 3005
Terminals:	<ul style="list-style-type: none"> • Power rating • Earth 	<ul style="list-style-type: none"> • M6 for CV, M10 for CQ, CSB, CSB-6B, CFB, CFB-6B • M6
Torque value		<ul style="list-style-type: none"> • CV 5 Nm • CQ, CSB, CSB-6B, CFB, CFB-6B: 15 Nm
Degree of protection		IP 42 with terminal cover
Ambient conditions		
Class C temperature:	Daily mean	40 °C
	Annual mean	30 °C
	Maximum	50 °C
	Minimum	-40 °C
Humidity		80 %
Altitude		2,000 m
Assembly conditions		
Type of assembly		Vertical
Ventilation		Natural or forced, depending on the cabinet design
Distance between capacitors		Minimum, 4 cm
Weight		0.4 kg
Standards		
CEI 60831-1, CEI 70/7, UNE 20827, UNE 20010, BS 1650, VDE 560		

CFB-6B

Special capacitor for harmonic filters of the FRE Series

Dimensions



References

CFB 460-6B V

kvar (L-C) (400 V)	kvar (L-C) (440 V)	Weight (kg)	Dimensions	For reactance	Type	Code
5	6,25	2,6	360 x 330 x 120	RE-5-400 / 6-460	CFB-46/6-6B	R2425A
10	12,5	2,6	360 x 330 x 120	RE-10-400 / 12,5-460	CFB-46/12,5-6B	R2425D
15	18,75	3,3	360 x 330 x 120	RE-15-400 / 19-460	CFB-46/19-6B	R2425F
20	25	3,3	360 x 330 x 120	RE-20-400 / 25-460	CFB-46/25-6B	R2425G
25	30	4,2	360 x 330 x 120	RE-25-400 / 30-460	CFB-46/30-6B	R2425H
30	37,5	4,2	360 x 330 x 120	RE-30-400 / 37-460	CFB-46/37-6B	R2425J
40	50	5,0	360 x 330 x 120	RE-40-400 / 50-460	CFB-46/50-6B	R2425K
50	60	6,6	360 x 330 x 120	RBE-50-400 / 62-460	CFB-46/62-6B	R2425L
60	75	7,3	360 x 520 x 120	RBE-60-400 / 74-460	CFB-46/74-6B	R2425P
80	100	9,0	360 x 520 x 120	RBE-80-400 / 100-460	CFB-46/100-6B	R2425R

CFB 260-6B V

kvar (L-C) (230 V)	Weight (kg)	Dimensions	For reactance	Type	Code
5	3,2	360 x 330 x 120	RE-5-230	CFB-26/6,3-6B	R2422A
10	3,9	360 x 330 x 120	RE-10-230	CFB-26/12,5-6B	R2422D
15	4,6	360 x 330 x 120	RE-15-230	CFB-26/18-6B	R2422E
20	6,2	360 x 330 x 120	RBE-20-230	CFB-26/25-6B	R2422G
25	7,0	360 x 330 x 120	RBE-22-230	CFB-26/30-6B	R2422H
30	6,2	360 x 330 x 120	RBE-30-230	CFB-26/37-6B	R2422J
40	8,3	360 x 520 x 120	RBE-40-230	CFB-26/48-6B	R2422K

NOTE: The power stated is the real power supplied by the filtering unit to the network at a voltage of 400/230 V. To compensate the reactance overvoltage effect, the capacitor has been dimensioned for 460/260 V and for a power that exceeds 25% of that stated for all columns.

CSB-F

Three-phase power capacitor with fuse protection



Description

The application of new technologies and the use of printed circuit boards to manufacture prismatic capacitors have allowed **CIRCUTOR** to reinvent the classic **CS** capacitor, manufactured for over 35 years.

The spirit of innovation and proprietary technology used during the design of the new **CSB** capacitor have increased the lifespan of traditional prismatic capacitors by over 60%.

This new series has improved all aspects of the previous models, offering our customers a longer-lasting, safer and more profitable capacitor.

Application

Its application is mainly based on the compensation of transformers and motors. In general, they are used for the compensation of installations with constant loads.

Features

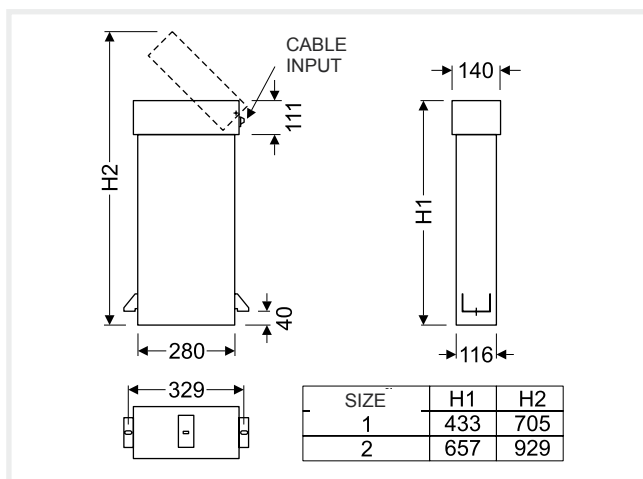
Features		
Operating voltage		230, 400 V (for other voltages, please ask)
Support voltage 400 V		440 V
Capacity tolerance		± 10%
Unit composed of		CS Capacitor + General protection fuses of the NH-00 type with high rupture power (HRP)
Insulation level		3 / 15 kV
Discharge resistance		75 V / 3 minutes
Overcurrent		1.3 times the rated current permanently
Overvoltage		10% 8 over 24 hours 15% up to 15 minutes over 24 hours 20% up to 5 minutes over 24 hours 30% up to 1 minutes over 24 hours
Frequency		50 or 60 Hz
Losses:	<ul style="list-style-type: none"> • Dielectric • Total 	< 0.2 W / kvar < 0.5 W / kvar
Protections		<ul style="list-style-type: none"> • Dielectric regeneration • Internal fuse • Overpressure system • Vermiculite
Construction features		
Terminals:	<ul style="list-style-type: none"> • Power rating • Earth 	<ul style="list-style-type: none"> • M6 for CV, M10 for CQ, CSB, CSB-6B, CFB, CFB-6B • M6
Torque value		<ul style="list-style-type: none"> • CV 5 Nm • CQ, CSB, CSB-6B, CFB, CFB-6B: 15 Nm
Ambient conditions		
Class D temperature:	Daily mean	45 °C
	Annual mean	35 °C
	Maximum	50 °C
	Minimum	-25 °C
Humidity		80 % RH
Altitude		2,000 m
Assembly conditions		
Degree of protection		IP 21
Type of assembly		Vertical
Ventilation		Natural or forced, depending on the option
Colour		RAL 7035: Grey / RAL 3005: Maroon
Standards		
CEI 60831-1, CEI 70/7, UNE 20827, UNE 20010, BS 1650, VDE 560		

CSB-F

Three-phase power capacitor with fuse protection



Dimensions



References

CSB-F 230 V / 50 Hz

kvar	Interrupting power	(A)	Fuses (A)	Cable section (mm ²)	Weight (kg)	Dimensions (mm) width x height x depth	Type	Code
5	50 kA	13	20	6	9	280 x 433 x 140	CSB-F - 5 - 230	R23618
7,5	50 kA	19	35	6	9,2	280 x 433 x 140	CSB-F - 7.5 - 230	R2361A
10	50 kA	25	50	10	9,5	280 x 433 x 140	CSB-F - 10 - 230	R2361C
12,5	50 kA	31	63	10	9,5	280 x 433 x 140	CSB-F - 12.5 - 230	R2361D
15	50 kA	38	80	16	11,3	280 x 433 x 140	CSB-F - 15 - 230	R2361E
20	50 kA	50	100	25	11,8	280 x 433 x 140	CSB-F - 20 - 230	R2361F
25	50 kA	63	125	35	10,8	280 x 433 x 140	CSB-F - 25 - 230	R2361G
30	50 kA	75	160	50	10,8	280 x 657 x 140	CSB-F - 30 - 230	R2361H
40	50 kA	100	160	70	14,5	280 x 657 x 140	CSB-F - 40 - 230	R2361J

CSB-F 440 V / 50 Hz

kvar	Interrupting power	(A)	Fuses (A)	Cable section (mm ²)	Weight (kg)	Dimensions (mm) width x height x depth	Type	Code
5	4 50 kA	6,6	16	6	8	280 x 433 x 140	CSB-F - 5 - 440	R23958
7,5	6 50 kA	10	20	6	8	280 x 433 x 140	CSB-F - 7.5 - 440	R2395A
10	8 50 kA	13	25	6	8	280 x 433 x 140	CSB-F - 10 - 440	R2395C
12,5	10 50 kA	16	35	6	8,5	280 x 433 x 140	CSB-F - 12.5 - 440	R2395D
15	12,5 50 kA	20	50	6	8,5	280 x 433 x 140	CSB-F - 15 - 440	R2395E
20	17 50 kA	26	50	10	9,5	280 x 433 x 140	CSB-F - 20 - 440	R2395F
25	21 50 kA	33	50	10	9,5	280 x 433 x 140	CSB-F - 25 - 440	R2395G
30	25 120 kA	39	80	16	11	280 x 433 x 140	CSB-F - 30 - 440	R2395H
37,5	31 120 kA	49	100	25	12,5	280 x 433 x 140	CSB-F - 37.5 - 440	R2395J
50	42 120 kA	66	125	35	15	280 x 433 x 140	CSB-F - 50 - 440	R2395K
60	50 120 kA	79	160	50	16	280 x 657 x 140	CSB-F - 60 - 440	R2395L
75	63 120 kA	103	160	70	18	280 x 657 x 140	CSB-F - 75 - 440	R2395P
100	80 120 kA	131	200	70	18,5	280 x 657 x 140	CSB-F - 100 - 440	R2395Q

CSB-F 525 V / 50 Hz

kvar	Interrupting power	(A)	Fuses (A)	Cable section (mm ²)	Weight (kg)	Dimensions (mm) width x height x depth	Type	Code
10	50 kA	11	25	6	8	280 x 433 x 140	CSB-F - 10 - 525	R2366C
15	50 kA	16	35	6	8	280 x 433 x 140	CSB-F - 15 - 525	R2366E
20	50 kA	21	50	6	8,5	280 x 433 x 140	CSB-F - 20 - 525	R2366F
25	50 kA	26	63	10	9,5	280 x 433 x 140	CSB-F - 25 - 525	R2366G
30	50 kA	32	80	16	11	280 x 433 x 140	CSB-F - 30 - 525	R2366H
40	50 kA	42	100	25	12,5	280 x 433 x 140	CSB-F - 40 - 525	R2366J
50	50 kA	53	125	35	15	280 x 433 x 140	CSB-F - 50 - 525	R2366K
60	50 kA	63	160	70	17	280 x 433 x 140	CSB-F - 60 - 525	R2366L
70	50 kA	74	160	70	18	280 x 433 x 140	CSB-F - 70 - 525	R2366M

CSB-M

Three-phase power capacitor with circuit-breaker protection



Description

The application of new technologies and the use of printed circuit boards to manufacture prismatic capacitors have allowed **CIRCUTOR** to reinvent the classic **CS** capacitor, manufactured for over 35 years.

The spirit of innovation and proprietary technology used during the design of the new **CSB** capacitor have increased the lifespan of traditional prismatic capacitors by over 60%.

This new series has improved all aspects of the previous models, offering our customers a longer-lasting, safer and more profitable capacitor.

Application

Its application is mainly based on the compensation of transformers and motors. In general, they are used for the compensation of installations with constant loads.

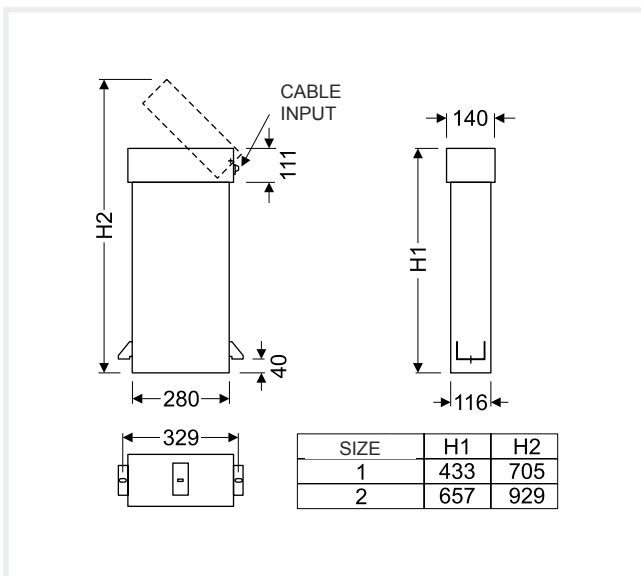
Features

Features		
Operating voltage		230, 400 V (for other voltages, please ask)
Support voltage 400 V		440 V
Capacity tolerance		± 10%
Unit composed of		CS Capacitor General three-pole protection circuit breaker
Insulation level		3 / 15 kV
Discharge resistance		75 V / 3 minutes
Overcurrent		1.3 times the rated current permanently
Overvoltage		10 % 8 over 24 hours
		15 % up to 15 minutes over 24 hours
		20 % up to 5 minutes over 24 hours
		30 % up to 1 minute over 24 hours
Frequency		50 or 60 Hz
Losses:	• Dielectric	< 0.2 W / kvar
	• Total	< 0.5 W / kvar
Protections		<ul style="list-style-type: none"> • Dielectric regeneration • Internal fuse • Overpressure system • Vermiculite
Construction features		
Terminals:	• Power rating	• M6 for CV , M10 for CQ , CSB , CSB-6B , CFB , CFB-6B
	• Earth	• M6
Torque value		<ul style="list-style-type: none"> • CV 5 Nm • CQ, CSB, CSB-6B, CFB, CFB-6B: 15 Nm
Ambient conditions		
Class D temperature:	Daily mean	45 °C
	Annual mean	35 °C
	Maximum	50 °C
	Minimum	-25 °C
Humidity		80% RH
Altitude		2,000 m
Assembly conditions		
Degree of protection		IP 21
Type of assembly		Vertical
Ventilation		Natural or forced, depending on the option
Colour		RAL 7035: Grey / RAL 3005: Maroon
Standards		
CEI 60831-1, CEI 70/7, UNE 20827, UNE 20010, BS 1650, VDE 560		

CSB-M

Three-phase power capacitor with circuit-breaker protection

Dimensions



References

CSB-M 230 V / 50 Hz

kvar	Interrupting power	(A)	Automatic switch	Cable section (mm ²)	Weight (kg)	Dimensions (mm) width x height x depth	Type	Code
5	10 kA	13	20	6	9	280 x 433 x 140	CSB-M - 5 - 230	R23718
7,5	10 kA	19	35	6	9,2	280 x 433 x 140	CSB-M - 7.5 - 230	R2371A
10	10 kA	25	50	10	9,5	280 x 433 x 140	CSB-M - 10 - 230	R2371C
12,5	10 kA	31	63	10	9,5	280 x 433 x 140	CSB-M - 12.5 - 230	R2371D
15	10 kA	38	80	16	11,3	280 x 433 x 140	CSB-M - 15 - 230	R2371E
20	10 kA	50	100	25	11,8	280 x 433 x 140	CSB-M - 20 - 230	R2371F
25	10 kA	63	125	35	10,8	280 x 433 x 140	CSB-M - 25 - 230	R2371G
30	10 kA	75	160	50	10,8	280 x 657 x 140	CSB-M - 30 - 230	R2371H

CSB-M 440 V / 50 Hz

kvar	Interrupting power	(A)	Automatic switch	Cable section (mm ²)	Weight (kg)	Dimensions (mm) width x height x depth	Type	Code	
440 V	400 V								
5	4	10 kA	6,6	10	6	8	280 x 433 x 140	CSB-M - 5 - 440	R23948
7,5	6	10 kA	10	16	6	8	280 x 433 x 140	CSB-M - 7.5 - 440	R2394A
10	8	10 kA	13	20	6	8	280 x 433 x 140	CSB-M - 10 - 440	R2394C
12,5	10	10 kA	16	25	6	8,5	280 x 433 x 140	CSB-M - 12.5 - 440	R2394D
15	12,5	10 kA	20	32	6	8,5	280 x 433 x 140	CSB-M - 15 - 440	R2394E
20	17	10 kA	26	40	10	9,5	280 x 433 x 140	CSB-M - 20 - 440	R2394F
25	21	10 kA	33	50	10	9,5	280 x 433 x 140	CSB-M - 25 - 440	R2394G
30	25	10 kA	39	63	16	11	280 x 433 x 140	CSB-M - 30 - 440	R2394H
37,5	31	10 kA	49	80	25	12,5	280 x 433 x 140	CSB-M - 37.5 - 440	R2394J
50	42	10 kA	66	100	35	15	280 x 433 x 140	CSB-M - 50 - 440	R2394K
60	50	10 kA	79	160	50	16	280 x 657 x 140	CSB-M - 60 - 440	R2394L
75	66	10 kA	105	160	50	18	280 x 657 x 140	CSB-M - 75 - 440	R2394M

Interrupting power 15 kA

CSB-A

Three-phase power capacitor with automatic protection



Description

The **CSB-A** capacitors with automatic switch protection are fixed compensation units that have been designed for reactive energy compensation purposes in motors and transformers with constant load levels. Including a general protection system with an automatic switch for the capacitor.

Application

Its application is mainly based on the compensation of transformers and motors. In general, they are used for the compensation of installations with constant loads.

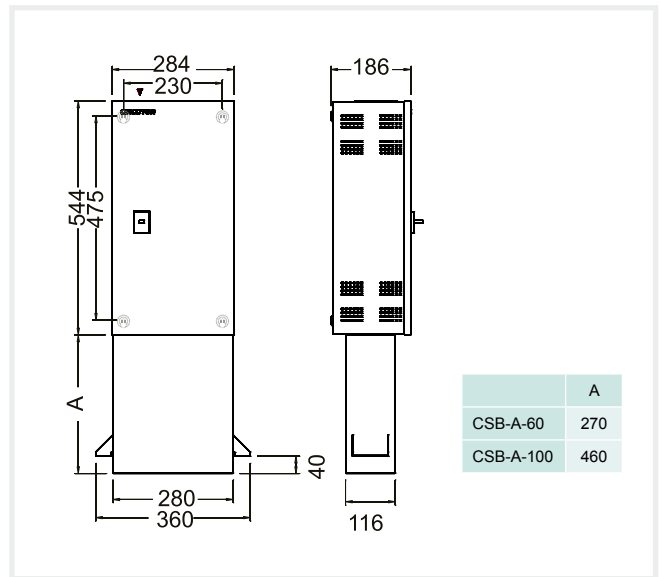
Features

Features		
Operating voltage		230, 400 V (for other voltages, please ask)
Support voltage 400 V		440 V
Capacity tolerance		± 10%
Unit composed of		CS Capacitor General automatic three-pole protection switch
Insulation level		3 / 15 kV
Discharge resistance		75 V / 3 minutes
Overcurrent		1.3 times the rated current permanently
Overvoltage		10 % 8 over 24 hours 15 % up to 15 minutes over 24 hours 20 % up to 5 minutes over 24 hours 30 % up to 1 minute over 24 hours
Frequency		50 or 60 Hz
Losses:	<ul style="list-style-type: none"> • Dielectric • Total 	< 0.2 W / kvar < 0.5 W / kvar
Protections		<ul style="list-style-type: none"> • Dielectric regeneration • Internal fuse • Overpressure system • Vermiculite
Construction features		
Terminals:	<ul style="list-style-type: none"> • Power rating • Earth 	<ul style="list-style-type: none"> • M6 for CV, M10 for CQ, CSB, CSB-6B, CFB, CFB-6B • M6
Torque value		<ul style="list-style-type: none"> • CV 5 Nm • CQ, CSB, CSB-6B, CFB, CFB-6B: 15 Nm
Ambient conditions		
Class D temperature:	Daily mean	45 °C
	Annual mean	35 °C
	Maximum	50 °C
	Minimum	-25 °C
Humidity		80 % RH
Altitude		2,000 m
Assembly conditions		
Degree of protection		IP 21
Type of assembly		Vertical
Ventilation		Natural or forced, depending on the option
Colour		RAL 7035: Grey / RAL 3005: Maroon
Standards		
CEI 60831-1, CEI 70/7, UNE 20827, UNE 20010, BS 1650, VDE 560		

CSB-A

Three-phase power capacitor with automatic protection

Dimensions



References

CSB-A 440 V / 50 Hz

kvar		Interrupting power	(A)	Automatic switch	Cable section (mm ²)	Weight (kg)	Dimensions (mm) width x height x depth	Type	Code
440 V	400 V								
25	21	35 kA	33	63	16	15	360 x 814 x 186	CSB-A- 25 - 440	R2473H
37,5	31	35 kA	49	80	25	11	360 x 814 x 186	CSB-A- 37.5 - 440	R2473G
50	42	35 kA	66	100	25	16	360 x 814 x 186	CSB-A- 50 - 440	R2473J
60	50	35 kA	79	125	35	20	360 x 814 x 186	CSB-A- 60 - 440	R2473K
75	62	35 kA	99	160	50	21	360 x 1004 x 186	CSB-A- 75 - 440	R2473L
100	83	35 kA	131	200	70	26	360 x 1004 x 186	CSB-A- 100 - 440	R2473M
120	100	35 kA	158	250	95	28	360 x 1004 x 186	CSB-A- 120 - 440	R2473N

FRF / FRM

Fixed capacitor with rejection reactance $p = 7\%$



Description

The **FRF / FRM** Series capacitor banks with detuned filters have been designed for reactive energy compensation purposes in motors and transformers with a constant load level, a high content of harmonics and where there is a risk of resonance. Including:

FRF: general protection with **NH-00** fuses with a high rupture power (HRP).

FRM: general circuit breaker protection for the capacitor.

Application

Its application is mainly based on the compensation of transformers and motors. In general, it is used for the compensation of installations under constant loads and where there is a high content of harmonics in the network.

Features

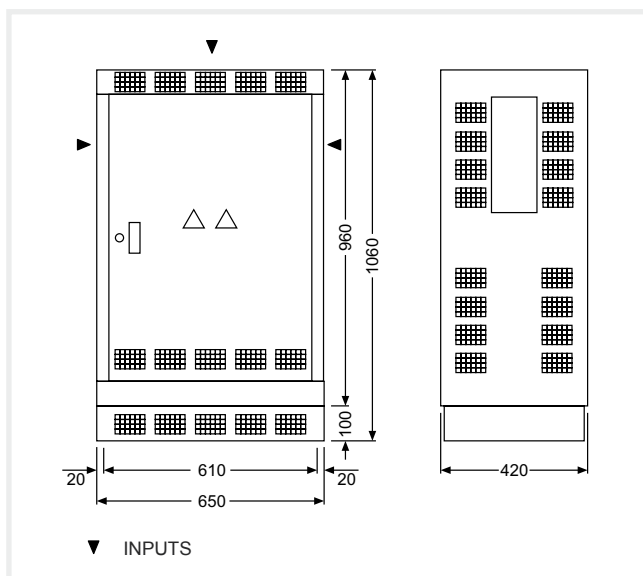
Features		
Operating voltage		230, 400 V (for other voltages, please ask)
Support voltage 400 V		440 V
Capacity tolerance		±10%
Unit composed of		CF Capacitor. FRF : General protection fuse, type NH-00 with a high rupture power (HRP) FRM : General three-pole protection circuit breaker Detuned filters tuned at 189 Hz for the protection against harmonics present in the network and to avoid the problems of resonance with fifth or higher order harmonics. Built-in thermostat for the disconnection of the step in case of excessive temperatures (90 °C)
Insulation level		3 / 15 kV
Discharge resistance		75 V / 3 minutes
Overcurrent		1.3 times the rated current permanently
Overvoltage		10 % 8 over 24 hours 15 % up to 15 minutes over 24 hours 20 % up to 5 minutes over 24 hours 30 % up to 1 minute over 24 hours
Frequency		50 or 60 Hz
Losses:	<ul style="list-style-type: none"> • Dielectric • Total 	< 0.2 W / kvar < 0.5 W / kvar
Protections		<ul style="list-style-type: none"> • Dielectric regeneration • Internal fuse • Overpressure system • Vermiculite
Construction features		
Terminals:	<ul style="list-style-type: none"> • Power rating • Earth 	<ul style="list-style-type: none"> • M6 for CV, M10 for CQ, CSB, CSB-6B, CFB, CFB-6B • M6
Torque value		<ul style="list-style-type: none"> • CV 5 Nm • CQ, CSB, CSB-6B, CFB, CFB-6B: 15 Nm
Ambient conditions		
Class D temperature:	Daily mean Annual mean Maximum Minimum	45 °C 35 °C 50 °C -25 °C
Humidity		80% RH
Altitude		2,000 m
Assembly conditions		
Degree of protection		IP 21
Type of assembly		Vertical
Ventilation		Natural or forced, depending on the option
Colour		RAL 7035: Grey / RAL 3005: Maroon
Standards		
CEI 60831-1, CEI 70/7, UNE 20827, UNE 20010, BS 1650, VDE 560		

FRF / FRM

Fixed capacitor with rejection reactance $p = 7\%$



Dimensions



References

440 V / 50 Hz
FRF: HRP Fuse protection

kvar		(A)	Weight (kg)	Cable section (mm ²)	Dimensions (mm) width x height x depth	Type	Code
440 V	400 V						
25	21	33	78	10	650 x 1060 x 420	FRF-25-440	R55350
37,5	31	47	82	16	650 x 1060 x 420	FRF-37.5-440	R55370
50	42	66	85	25	650 x 1060 x 420	FRF-50-440	R55380
60	50	79	90	35	650 x 1060 x 420	FRF-60-440	R55390
75	62	99	96	50	650 x 1060 x 420	FRF-75-440	R553A0
100	83	131	110	70	650 x 1060 x 420	FRF-100-440	R553B0

440 V / 50 Hz
FRM: Three-pole automatic protection

kvar		(A)	Weight (kg)	Cable section (mm ²)	Dimensions (mm) width x height x depth	Type	Code
440 V	400 V						
25	21	33	78	10	650 x 1060 x 420	FRM-25-440	R57350
37,5	31	47	82	16	650 x 1060 x 420	FRM-37.5-440	R57370
50	42	66	85	25	650 x 1060 x 420	FRM-50-440	R57380
60	50	79	90	35	650 x 1060 x 420	FRM-60-440	R57390
75	62	99	96	50	650 x 1060 x 420	FRM-75-440	R573A0
100	83	131	110	70	650 x 1060 x 420	FRM-100-440	R573B0

R.2

Power capacitors, LV

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