

FRF / FRM

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



Description

The **FRF / FRM** Series capacitor banks with detuned filters have been designed for power 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) for the capacitor.
- **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

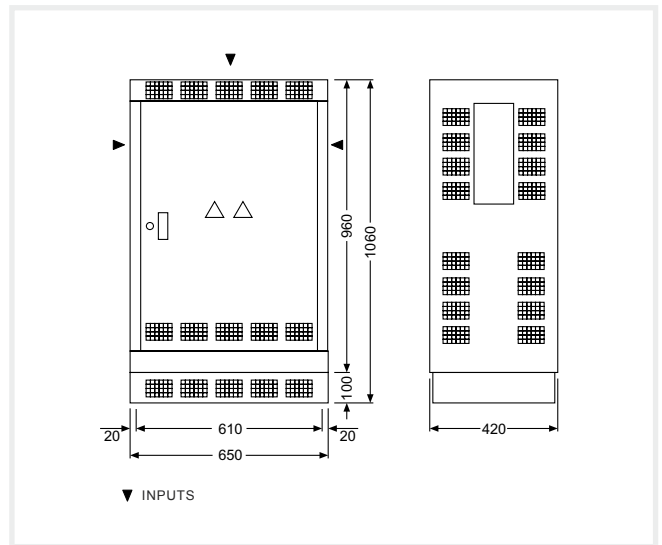
Features		
Operating voltage		230, 400 (for other voltages, please ask)
Support voltage (400 V)		440 V
Capacity tolerance		±10%
Unit composed of		<ul style="list-style-type: none"> • CFB capacitor • FRF: General protection fuse, type NH-00 with a high rupture power (HRP) • FRM: General three-pole protection 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
Overload		1.3 times the rated current permanently
Overvoltage		<ul style="list-style-type: none"> • 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 	<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		
Terminals:	<ul style="list-style-type: none"> • Power rating • Earth 	<ul style="list-style-type: none"> • M6 for CV, M10 para 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		

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Dimensions



References

440 V / 50 Hz

FRF: APR 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