OPTIM FRE

Automatic capacitor banks with detuned filters and thyristors

Description

The capacitor banks with detuned filters of the **OPTIM FRE** series have been designed for reactive energy correction in networks with fluctuating load levels, high harmonic presence and a risk of resonance.

The power variations are relatively quick (measured in milliseconds), and the operation is thus carried out by thyristors, which are connected to a voltage controller board, so that the connection and disconnection of the capacitor is carried out with zero voltage difference. Transients are prevented between the connection and disconnection of the steps, obtaining an immediate response to the load fluctuations.

Applications

The most common application is with individual loads or in installations where a quick compensation response is needed (e.g. welding units, motors for lifting units, lifts, etc.) and where the network has high harmonic content.

Technical features

Electrical features	Operating voltage	230, 400 V (for other voltages, please ask)
	Support voltage	440 V (400 V)
	Capacity tolerance	± 10%
	Tr connection delay	40 ms...2 s
Unit made up of	**CLZ** capacitor	
	Static switching unit on each stage, made up of static contactors (thyristors)	
	Protection by stage by fuses with high cut-off power (**APR**). **NH-00** series.	
	Two-pole circuit breaker protection for capacitor bank and regulator operations.	
	Reactive energy regulator of the **Computer MAX-f**	
	Heatsinks	
	Built-in thermostat on the heatsink for disconnecting the stage in the case of excessive temperatures (90 °C)	
	Detuned filters tuned to 189 Hz for protection against harmonics present in the network and for preventing resonance with harmonics of the 5th order or higher.	
Add-ons	Manual switch on capacitor bank header	
	Circuit breaker on capacitor bank header	
	Circuit breaker + earth leakage protection on capacitor bank header	
	Forced ventilation unit + thermostat	
	Polycarbonate sheet for protection against direct contacts	
	400/230 V autotransformer	
Insulation level	3 / 15 kV	
Discharge resistance	75 V / 3 minutes	
Overload	1.3 times the nominal hold 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	
Environmental features	Temperature class D	Daily mean: 45 °C Annual mean: 35 °C Maximum: 50 °C Minimum: -25 °C
	Humidity	80% RH
	Altitude	2,000 m
Mechanical features	Protection degree	IP 21
	Colour	RAL 7035 grey RAL 3005 maroon
Assembly conditions	Type of assembly	Vertical
	Ventilation	Natural or forced, in accordance with the options
	Distance between capacitors	At least 2 cm
Standards	**IEC 60831-1, IEC 70/7, UNE 20827, UNE 20010, BS 1650, VDE 560**	

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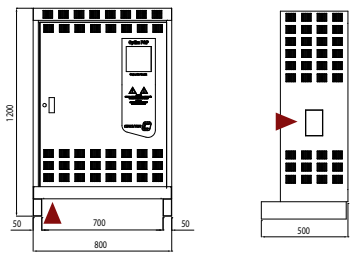
References

Type	Code	kvar		Composition	Switch (A)	Cable section (mm²)	Weight (kg)	Dimensions (mm) width x height x depth
		440	400					
OPTIM FRES-31,25-440	R64R64	31,25	26	6,25 + 2 x 12,5	Included	10	82	800 x 1200 x 500
OPTIM FRES-43,75-440	R64R74	43,75	36	6,25 + 12,5 + 25	Included	25	84	800 x 1200 x 500
OPTIM FRES-62,5-440	R64R81	62,5	52	12,5 + 2 x 25	Included	35	86	800 x 1200 x 500
OPTIM FRES-90-440	R64R88	90	74	2 x 15 + 2 x 30	Included	70	104	800 x 1200 x 500
OPTIM FRES-105-440	R64R92	105	87	15 + 3 x 30	Included	70	121	800 x 1200 x 500
OPTIM FRES-120-440	R64R95	120	99	4 x 30	Included	95	128	800 x 1200 x 500
OPTIM FRE4-150-440	R64E24	150	125	30 + 2 x 60	400	95	355	900 x 1900 x 650
OPTIM FRE4-175-440	R64E25	175	145	25 + 50 + 100	400	120	365	900 x 1900 x 650
OPTIM FRE4-200-440	R64E28	200	165	50 + 50 + 100	400	150	380	900 x 1900 x 650
OPTIM FRE4-250-440	R64E29	250	207	50 + 2 x 100	630	185	390	900 x 1900 x 650
OPTIM FRE4-300-440	R64E30	300	248	50 + 50 + 2 x 100	630	240	410	900 x 1900 x 650
OPTIM FRE4-350-440	R64E32	350	289	50 + 3 x 100	630	240	430	900 x 1900 x 650
OPTIM FRE4-400-440	R64E34	400	331	4 x 100	800	240	460	900 x 1900 x 650
OPTIM FRE6-400-440	R64J25	400	331	50 + 50 + 3 x 100	800	2x185	550	1200 x 1900 x 650
OPTIM FRE6-450-440	R64J30	450	372	50 + 4 x 100	800	2x185	587	1200 x 1900 x 650
OPTIM FRE6-500-440	R64J35	500	413	5 x 100	1000	2x240	621	1200 x 1900 x 650
OPTIM FRE6-550-440	R64J40	550	455	50 + 5 x 100	1000	2x240	658	1200 x 1900 x 650
OPTIM FRE6-600-440	R64J45	600	496	6 x 100	1250	2x240	685	1200 x 1900 x 650
OPTIM FRE8-600-440	R64K36	600	496	50 + 50 + 5 x 100	1250	2x240	820	1500 x 1900 x 650
OPTIM FRE8-650-440	R64K38	650	537	50 + 6 x 100	1600	3x150	865	1500 x 1900 x 650
OPTIM FRE8-700-440	R64K40	700	579	7 x 100	1600	3x150	910	1500 x 1900 x 650
OPTIM FRE8-750-440	R64K42	750	620	50 + 7 x 100	1600	3x185	955	1500 x 1900 x 650
OPTIM FRE8-800-440	R64K44	800	661	8 x 100	1600	3x185	1000	1500 x 1900 x 650
OPTIM FRE10-800-440	R64C25	800	661	8 x 100	1250 / 400	2x240/ 240	950	2100 x 1900 x 650
OPTIM FRE10-850-440	R64C30	850	702	50 + 8 x 100	1000 / 630	2x240/ 240	987	2100 x 1900 x 650
OPTIM FRE10-900-440	R64C35	900	744	9 x 100	1250 / 630	2x240/ 240	1024	2100 x 1900 x 650
OPTIM FRE10-950-440	R64C40	950	785	50 + 9 x 100	1000 / 800	2x240/ 2x185	1061	2100 x 1900 x 650
OPTIM FRE10-1000-440	R64C45	1000	826	10 x 100	1250 / 800	2x240/ 2x185	1098	2100 x 1900 x 650
OPTIM FRE12-1050-440	R64L50	1050	868	50 + 10 x 100	1250 / 800	2x240/ 2x240	1285	2400 x 1900 x 650
OPTIM FRE12-1100-440	R64L55	1100	909	11 x 100	1250 / 1000	2x240/ 2x240	1322	2400 x 1900 x 650
OPTIM FRE12-1150-440	R64L60	1150	950	50 + 11 x 100	2 X 1250	2x240/ 2x240	1359	2400 x 1900 x 650
OPTIM FRE12-1200-440	R64L65	1200	992	12 x 100	2 X 1250	2x240/ 2x240	1389	2400 x 1900 x 650

Dimensions

OPTIM FRES



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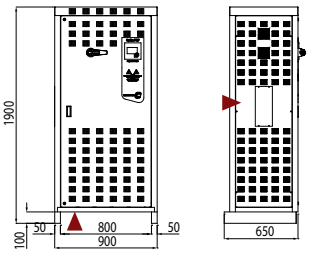

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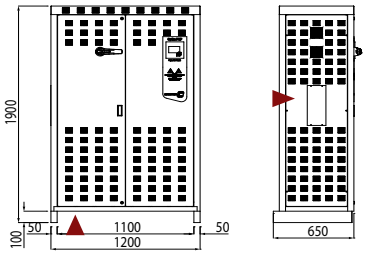

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