

OPTIM FRE8-700-440, Static detuned capacitor bank

Code: R64K40.

- > Cable section (mm2): 3x150
- > Nr steps: 7
- > kvar (400 V): 579
- > kvar (440 V): 700
- > Optional circuit breaker (A) : 1250
- > Optional manual switch (A): 1250
- > Composition: 7 x 100
- > Use voltage (V): 440

#### 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.

#### Application

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.

## Circutor



Automatic capacitor banks with detuned filters and thyristors

Code: R64K40.

#### Specifications

Nous 30 % up to 1 min over 24 hours       Reinforcement voltage     40 V       Tolerance C     -5% / 10 %       Voltage     400 V (50 Hz) (other voltages on request)       Aechanical characteristics     500 x 1900 x 650 (mm)       Size (mm) width x height x depth     500 x 1900 x 650 (mm)       Fastening     Vertical / Self-supporting       Vertical / Self-supporting     Vertical / Self-supporting       Vertical / Self     Vertical / Self       Vertical / Self     Self       Vertica	Electrical characteristics	
Surge 10 % 8 h over 24 h 15 % up to 15 min over 24 hours   Surge 10 % 8 h over 24 h 15 % up to 15 min over 24 hours   Reinforcement voltage 440 V   Tolerance C -55 / 10 %   Voltage 400 V (5D Hz) (ather voltages on request)   Vechanical characteristics -55 / 10 %   Size (mm) width x height x depth 1500 x 1900 x 650 (mm)   Envelope Sheet metal RAL 7035 Grey / RAL 3005 Garnet   Fastering Vertical / Self-supporting   Vential for forced according to options Weight (xg)   Stree (mm) width x height x depth 192 1   Envelope Sheet metal RAL 7035 Grey / RAL 3005 Garnet   Fastering Vertical / Self-supporting   Vential for forced according to options Weight (xg)   Stree (mm) Stree (mm)   Envelope Sheet metal RAL 7035 Grey / RAL 3005 Garnet   Envelope Sheet metal RAL 7035 Grey / RAL 3005 Garnet   Fastering Vertical / Self-supporting   Ventialtion Natural or forced according to options   Weight (xg) S55   Envelope Protection class   Protection class IP / 1   Relative humidity (without condensation) 80%   Working temperature Co °c   Everter measurement dicuit Permanent overload<	Losses (W)	< 0,5 W/kvar
Neurs 30 % up to 1 min over 24 hours       Reinforcement voltage     440 V       Tolerance C     -55% / 10 %       Voltage     400 V (50 Hz) (other voltages on request)       Wethanical characteristics     500 × 1900 x 650 (mm)       Size (mm) width x height x depth     1500 × 1900 x 650 (mm)       Envelope     Sheet metal RAL 7035 Grey / RAL 3005 Garnet       Eastening     Vertical / Self-supporting       Vertical / Self-supporting     Natural or forced according to options       Weight (kg)     555       Envelope     Protection class       IP 21     Relative humidity (without condensation)       80%     Song Careet       Protection class     IP 21       Relative humidity (without condensation)     80%       Working temperature     "Class D: Daily average: 45 °C, annual average: 35 °C, maximum: 55 °C, maximum: 55 °C, maximum: 55 °C       Externet measurement circuit     Na Sandards       Permanet overfload     1,3 In       Transformation rabo     1000 m       Standards     UNE-EN E1921, UNE-EN E1439-1, UNE EN 60831       Externet safety, Maximum height (m)     2000 m       Standards     UNE-EN E1921, U	Discharge resistance	75 V / 3 min
Tolerance C -5% / 10 %   Voltage 400 V (50 Hz) (other voltages on request)   Mechanical characteristics   Size (nm) with x height x depth 1500 x 1500 x 650 (nm)   Envelope Sheet metal RAL 7335 Grey / RAL 3005 Garnet   Fastening Vertical / Self-supporting   Vertilation Natural or forced according to options   Weight (kg) 555   Environmental characteristics   Protection class IP 21   Relative humidity (without condensation) 80%   Working temperature 7° class D: Daily average: 45 °C, annual average: 35 °C, maximum: 55 °C, mini -50 °C   Current measurement circuit 1,3 In   Permanent overload 1,3 In   Transformation ratio In 7 5A   Standards UNE-EN 61921, UNE-EN 61439-1, UNE EN 60831   Electrical safety, Maximum height (m) 2000 m   Standards ULZ capacitor Static switching unit on capacitor bark met oregula operations. Reactive energy regulator of the Computer MAX-F Built- in therm on the heatshift of disconnecting the stage in the case of excessive lenguide operations. Standards   Components CLZ capacitor Static switching unit on capacitor bank hard or of higher.   Optional Manual switch on capacitor bank harder forced werekliator unatou on the heatshift of disconnecting the stage in the case of excessive lenguide of highigh and operations. Reactive energy regulator of the Computer MAX	Surge	10 % 8 h over 24 h 15 % up to 15 min over 24 hours 20 % up to 5 min over 24 hours 30 % up to 1 min over 24 hours
Voltage 400 V (50 Hz) (sher voltages on request)   Vectorical characteristics   Size (mm) witht x height x depth 1500 x 1900 x 650 (mm)   Envelope Sheet metal RAL 7035 Grey / RAL 3005 Garnet   Eastening Vertical / Self-supporting   Ventilation Natural or forced according to options   Weight (kg) 555   Envelope Potection class   Protection class IP 21   Relative humidity (without condensation) 80%   Working temperature Tr class D: Daily average: 45 °C, annual average: 35 °C, maximum: 55 °C, mini -50 °C   Current measurement circuit Permanent overfioad   Permanent overfioad 1,3 In   Transformation ratio In / 5A   Standards UNE-EN 61921, UNE-EN 61439-1, UNE EN 60831   Electrical safety, Maximum height (m) 2000 m   Standards CLZ capacitor Static switching unit on each stage, made up of static contactor (thyristors) Two-pole circuit breaker protection for capacitor bank and regulal operations. Reactive energy regulator of the Computer MAX-F Built-in thermo on the hestarik for disconcering the stage in the case of excessive temperat (90 °C) Detuned filters tuned to 189 Hz for protection against there or higher.   Optional Manual switch on capacitor bank hader forced werething resonance with harmonics pres (100 °C) Detuned filters tuned to 189 Hz for protection against there or higher.	Reinforcement voltage	440 V
Mechanical characteristics       Size (mm) width x height x depth     1500 x 1900 x 550 (mm)       Envelope     Sheet metal RAL 7035 Grey / RAL 3005 Garnet       Fastening     Vertical / Self-supporting       Ventilation     Natural or forced according to options       Weight (kg)     555       Environmental characteristics     P21       Relative humidity (without condensation)     80%       Working temperature     T <sup>4</sup> class D: Daily average: 45 °C, annual average: 35 °C, maximum: 55 °C, mini -50 °C       Environment overload     1,3 In       Transformation ratio     In / 5A       Standards     UNE-EN 61439-1, UNE EN 60831       Evertures / performance     CLZ capacitor Static switching unit on each stage, made up of static contactor of thyristors) Two-pole circuit breaker protection for capacitor bank and regular operations. Reactive energy regulation of the Standard of the static nort and for preventing resonance with harmonics of the St ord or higher.       Optional     Manual switch on capacitor bank header Circuit breaker on capacitor bank header forced bank header Greet on against harmonics or the St ord or operations. Reactive energy regulation against harmonics or the St ord or operation against harmonics or th	Tolerance C	-5% / 10 %
Size (mm) width x height x depth 1500 x 1900 x 650 (mm)   Envelope Sheet metal RAL 7035 Grey / RAL 3005 Garnet   Fastening Vertical / Self-supporting   Ventilation Natural or forced according to options   Weight (kg) 555   Environmental characteristics Protection class   Protection class IP 21   Relative humidity (without condensation) 80%   Working lemperature T* class D: Daily average: 45 °C, annual average: 35 °C, maximum: 55 °C, mini -50 °C   Current measurement circuit 13 In   Permanent overload 1,3 In   Transformation ratio In / 5A   Standards UNE-EN 61429-1, UNE EN 60831   Electrical safety, Maximum height (m) 2000 m   Standards UNE-EN 61429-1, UNE EN 60831   Electrical safety, Maximum height (m) 2000 m   Standards UNE-EN 61429-1, UNE EN 60831   Electrical safety, Maximum height (m) 2000 m   Standards UNE-EN 61429-1, UNE EN 60831   Electrical safety, Maximum height (m) 2000 m   Standards UNE-EN 61429-1, UNE EN 60831   Electrical safety, Maximum height (m) 2000 m   Standards UNE-EN 61429-1, UNE EN 60831   Optional CL2 capacitor Static switching unit on each stage, made up of static contactor (thy	Voltage	400 V (50 Hz) (other voltages on request)
Envelope   Sheet metal RAL 7035 Grey / RAL 3005 Garnet     Fastening   Vertical / Self-supporting     Ventilation   Natural or forced according to options     Weight (kg)   555     Environmental characteristics   Protection class     Protection class   IP 21     Relative humidity (without condensation)   80%     Working temperature   T° class D: Daily average: 45 °C, annual average: 35 °C, maximum: 55 °C, mini ~50 °C     Current measurement circuit   Permanent overload     Permanent overload   1,3 In     Transformation ratio   In / 5A     Standards   UNE -EN 61439-1, UNE EN 60831     Electrical safety, Maximum height (m)   2000 m     Standards   UNE -EN 61439-1, UNE EN 60831     Electrical safety, Maximum height (m)   2000 m     Standards   UNE -EN 61439-1, UNE EN 60831     Electrical safety, Performance   Curgononents     Components   CLZ capacitor Static switching unit on each stage, made up of static contactor (thyristors) Two-pole circuit breaker protection for capacitor bank and regulal or the basterio in the case of excessive temperat (90 °C) Detuned filters tuned to 189 Hz for protection against harmonics pres the network and for greventing resonance with harmonics of the 5 th order or higher.     Optional	Mechanical characteristics	
Fastening   Vertical / Self-supporting     Ventilation   Natural or forced according to options     Weight (kg)   555     Environmental characteristics   Potection class     Protection class   IP 21     Relative humidity (without condensation)   80%     Working temperature   T* class D: Daily average: 45 °C, annual average: 35 °C, maximum: 55 °C, mini -50 °C     Current measurement circuit   Permanent overload     Permanent overload   1,3 In     Transformation ratio   In / 5A     Standards   UNE-EN 61921, UNE-EN 61439-1, UNE EN 60831     Electrical safety, Maximum height (m)   2000 m     Standards   UNE-EN 61921, UNE-EN 61439-1, UNE EN 60831     Evers / performance   C/// Capacitor Static switching unit on each stage, made up of static contactor (thyristors) Two-pole circuit breaker protection for capacitor bank and regulat operations. Reactive energy regulator of the Computer MAX-F Built-in thermo on the heatink for disconnecting the stage in the case of excessive temperat (90 °C) Detuned Tilters tuned to 189 Hz for protection against harmonics pres the network and for protection against harmonics pres the network and for protection against harmonics pres the network and for protection against harmonics of the store or higher.     Optional   Manual switch on capacitor bank header forced ventilation unit + thermostat Polycarbonate sheat for protection against direce </td <td>Size (mm) width x height x depth</td> <td></td>	Size (mm) width x height x depth	
Ventilation Natural or forced according to options   Weight (kg) 555   Environmental characteristics IP 21   Protection class IP 21   Relative humidity (without condensation) 80%   Working temperature T* class D: Daily average: 45 °C, annual average: 35 °C, maximum: 55 °C, mini -50 °C   Current measurement circuit In / 5A   Permanent overload 1,3 In   Transformation ratio In / 5A   Standards UNE-EN 61439-1, UNE EN 60831   Electrical safety, Maximum height (m) 2000 m   Standards UNE-EN 61439-1, UNE EN 60831   Corponents CLZ capacitor Static switching unit on each stage, made up of static contactor (thyristors)) Two-pole circuit breaker protection for capacitor bank and regulad or operations. Reactive energy regulator of the Computer MAX-F Built-In thermo on the heatsink for disconnecting the stage in the case of excessive temperat (90 °C) Detuned Tilters thand for protection against harmonics presenting resonance with harmonics of the Stb order or higher.   Optional Manual switch no capacitor bank neader Forced verbitation unit + thermostat Polycarbonate sheet for protection against direct verbitation unit + thermostat Polycarbonate sheet for protection against direct verbitation unit + thermostat Polycarbonate sheet for protection against direct verbitation unit + thermostat Polycarbonate sheet for protection against direct verbitation unit + thermostat Polycarbonate sheet for protection against direct verbitation unit + thermostat Polycarbonate sheet for protection against direct ver	Envelope	Sheet metal RAL 7035 Grey / RAL 3005 Garnet
Weight (kg)   555     Environmental characteristics     Protection class   IP 21     Relative humidity (without condensation)   80%     Working temperature   T* class D: Daily average: 45 °C, annual average: 35 °C, maximum: 55 °C, mini -50 °C     Current measurement circuit   -     Permanent overload   1,3 In     Transformation ratio   In / 5A     Standards   UNE-EN 61921, UNE-EN 61439-1, UNE EN 60831     Features / performance   CZ capacitor Static switching unit on each stage, made up of static contactor (thyristors) Two-pole circuit breaker protection for capacitor bank and regulai on the heatsink for disconnecting the stage in the case of excessive temperat (90 °C) Detuned filters time to 169 Hz for protection against harmonics pres the network and for preventing resonance with harmonics of the 5th order or higher.     Optional   Manual switch on capacitor bank harder Forced ventilibrio unit + thermostal Polycarbonate sheet for protection against harmonics pres the network and for preventing resonance with harmonics of the 5th order or higher.	Fastening	Vertical / Self-supporting
Environmental characteristics     Protection class   IP 21     Relative humidity (without condensation)   80%     Working temperature   T <sup>2</sup> class D: Daily average: 45 °C, annual average: 35 °C, maximum: 55 °C, mini -50 °C     Eurrent measurement circuit   12     Permanent overload   1,3 In     Transformation ratio   In / 5A     Standards   2000 m     Electrical safety, Maximum height (m)   2000 m     Standards   UNE-EN 61921, UNE-EN 61439-1, UNE EN 60831     Features / performance   CLZ capacitor Static switching unit on each stage, made up of static contactor (thyristors) Two-pole circuit breaker protection for capacitor bank and regulal operations. Reactive energy regulator of the Computer MAX-F Built-in thermoin on the heatsink for disconnecting the stage in the case of excessive temperat (90 °C) Detuned filters tuned to 189 Hz for protection against harmonics pres the network and for preventing resonance with harmonics of the Sth order or higher.     Optional   Manual switch on capacitor bank header Circuit breaker on capacitor bank header Forced vertiliation unit + thermostal Polycarbonate sheet for protection against direct or higher.	Ventilation	Natural or forced according to options
Protection class   IP 21     Relative humidity (without condensation)   80%     Working temperature   T* class D: Daily average: 45 °C, annual average: 35 °C, maximum: 55 °C, mini -50 °C     Current measurement circuit   -50 °C     Permanent overload   1,3 In     Transformation ratio   In / 5A     Standards   -50 °C     Electrical safety, Maximum height (m)   2000 m     Standards   UNE-EN 61921, UNE-EN 61439-1, UNE EN 60831     Features / performance   CLZ capacitor Static switching unit on each stage, made up of static contactor (thyristors) Two-pole circuit breaker protection for capacitor bank and regulal operations. Reactive energy regulator of the Computer MAX-F Built-in thermo on the heatsink for disconnecting the stage in the case of excessive temperatic (90 °C) Detuned filters tuned to 189 Hz for protection against harmonics pres the network and for preventing resonance with harmonics of the 5th order or higher.     Optional   Manual switch on capacitor bank header Circuit breaker on capacitor bank header Forced vertilation unit + thermsstat Polycarbonate sheet for protection against directive avertilation unit + thermsstat Polycarbonate sheet for protection against directive vertilation unit + thermsstat Polycarbonate sheet for protection against directive vertilation unit + thermsstat Polycarbonate sheet for protection against directive vertilation unit + thermsstat Polycarbonate sheet for protection against directive vertilation unit + thermsstat Polycarbonate sheet for protection against direcontagainst directive vertilation unit + th	Weight (kg)	555
Relative humidity (without condensation)   80%     Working temperature   T* class D: Daily average: 45 °C, annual average: 35 °C, maximum: 55 °C, mini -50 °C     Current measurement circuit   -50 °C     Permanent overload   1,3 In     Transformation ratio   In / 5A     Standards	Environmental characteristics	
Working temperature   T* class D: Daily average: 45 °C, annual average: 35 °C, maximum: 55 °C, mini -50 °C     Current measurement circuit   In     Permanent overload   1,3 In     Transformation ratio   In / 5A     Standards   In     Electrical safety, Maximum height (m)   2000 m     Standards   UNE-EN 61921, UNE-EN 61439-1, UNE EN 60831     Features / performance   CLZ capacitor Static switching unit on each stage, made up of static contactor (thyristors) Two-pole circuit breaker protection for capacitor bank and regulal operations. Reative energy regulator of the Computer MAX-F Built-in thermo on the heatsink for disconnecting the stage in the case of excessive temperate (90 °C) Detuned filters tuned to 189 Hz for protection against harmonics pres the network and for preventing resonance with harmonics of the 5th order or higher.     Optional   Manual switch on capacitor bank header Forced vertilation unit + thermostat Polycarbonate sheet for protection against direct	Protection class	IP 21
-50 °C     Current measurement circuit     Permanent overload   1,3 ln     Transformation ratio   ln / 5A     Standards   Standards     Electrical safety, Maximum height (m)   2000 m     Standards   UNE-EN 61921, UNE-EN 61439-1, UNE EN 60831     Features / performance   CLZ capacitor Static switching unit on each stage, made up of static contactor (thyristors) Two-pole circuit breaker protection for capacitor bank and regula on the heatsink for disconnecting the stage in the case of excessive temperat (90 °C) Detuned filters tuned to 189 Hz for protection against harmonics pres the network and for preventing resonance with harmonics of the 5th order or higher.     Optional   Chanual switch on capacitor bank header Circuit breaker on capacitor bank header Forced ventilation unit + thermostat Polycarbonate sheet for protection against direct	Relative humidity (without condensation)	80%
Permanent overload   1,3 In     Transformation ratio   In / 5A     Standards   Standards     Electrical safety, Maximum height (m)   2000 m     Standards   UNE-EN 61921, UNE-EN 61439-1, UNE EN 60831     Features / performance   CLZ capacitor Static switching unit on each stage, made up of static contactor (thyristors) Two-pole circuit breaker protection for capacitor bank and regulal operations. Reactive energy regulator of the Computer MAX-f Built-in thermo on the heatsink for disconnecting the stage in the case of excessive temperat (90 °C) Detuned filters tuned to 189 Hz for protection against harmonics pres the network and for preventing resonance with harmonics of the 5th order or higher.     Optional   Manual switch on capacitor bank header Forced ventilation unit + thermostat Polycarbonate sheet for protection against direction on capacitor bank header Forced ventilation unit + thermostat Polycarbonate sheet for protection against direction on capacitor bank header Forced ventilation unit + thermostat Polycarbonate sheet for protection against direction on capacitor bank header Forced ventilation unit + thermostat Polycarbonate sheet for protection against direction on capacitor bank header Forced ventilation unit + thermostat Polycarbonate sheet for protection against direction on capacitor bank header Forced ventilation unit + thermostat Polycarbonate sheet for protection against direction on capacitor bank header Forced ventilation unit + thermostat Polycarbonate sheet for protection against direction on capacitor bank header Forced ventilation unit + thermostat Polycarbonate sheet for protection against direction on capacitor bank header Forced ventilation unit + thermostat Polycarbonate sheet for protec	Working temperature	Tª class D: Daily average: 45 °C, annual average: 35 °C, maximum: 55 °C, minimum -50 °C
Transformation ratio   In / 5A     Standards   Electrical safety, Maximum height (m)   2000 m     Standards   UNE-EN 61921, UNE-EN 61439-1, UNE EN 60831     Features / performance   CLZ capacitor Static switching unit on each stage, made up of static contactor (thyristors) Two-pole circuit breaker protection for capacitor bank and regulal operations. Reactive energy regulator of the Computer MAX-f Built-in thermo on the heatsink for disconnecting the stage in the case of excessive temperat (90 °C) Detuned filters tuned to 189 Hz for protection against harmonics pres the network and for preventing resonance with harmonics of the 5th order or higher.     Optional   Manual switch on capacitor bank header Circuit breaker on capacitor bank header Forced ventilation unit + thermostat Polycarbonate sheet for protection against direction against direction on the header for protection against direction the for protection against direction on the header forenon the h	Current measurement circuit	
Standards     Electrical safety, Maximum height (m)   2000 m     Standards   UNE-EN 61921, UNE-EN 61439-1, UNE EN 60831     Features / performance   CLZ capacitor Static switching unit on each stage, made up of static contactor (thyristors) Two-pole circuit breaker protection for capacitor bank and regulal operations. Reactive energy regulator of the Computer MAX-f Built-in thermo on the heatsink for disconnecting the stage in the case of excessive temperat (90 °C) Detuned filters tuned to 189 Hz for protection against harmonics pres the network and for preventing resonance with harmonics of the 5th order or higher.     Optional   Manual switch on capacitor bank header Circuit breaker on capacitor bank header Forced ventilation unit + thermostat Polycarbonate sheet for protection against direct	Permanent overload	1,3 In
Electrical safety, Maximum height (m)   2000 m     Standards   UNE-EN 61921, UNE-EN 61439-1, UNE EN 60831     Features / performance   Electrical safety, Maximum height (m)     Components   CLZ capacitor Static switching unit on each stage, made up of static contactor (thyristors) Two-pole circuit breaker protection for capacitor bank and regulal operations. Reactive energy regulator of the Computer MAX-f Built-in thermo on the heatsink for disconnecting the stage in the case of excessive temperat (90 °C) Detuned filters tuned to 189 Hz for protection against harmonics pres the network and for preventing resonance with harmonics of the 5th order or higher.     Optional   Manual switch on capacitor bank header Circuit breaker on capacitor bank header Forced ventilation unit + thermostat Polycarbonate sheet for protection against direct	Transformation ratio	In / 5A
Standards   UNE-EN 61921, UNE-EN 61439-1, UNE EN 60831     Features / performance   CLZ capacitor Static switching unit on each stage, made up of static contactor (thyristors) Two-pole circuit breaker protection for capacitor bank and regulal operations. Reactive energy regulator of the Computer MAX-F Built-in thermo on the heatsink for disconnecting the stage in the case of excessive temperat (90 °C) Detuned filters tuned to 189 Hz for protection against harmonics pres the network and for preventing resonance with harmonics of the 5th order or higher.     Optional   Manual switch on capacitor bank header Circuit breaker on capacitor bank header Forced ventilation unit + thermostat Polycarbonate sheet for protection against direction ag	Standards	
Features / performance     Components   CLZ capacitor Static switching unit on each stage, made up of static contactor (thyristors) Two-pole circuit breaker protection for capacitor bank and regulal operations. Reactive energy regulator of the Computer MAX-f Built-in thermo on the heatsink for disconnecting the stage in the case of excessive temperat (90 °C) Detuned filters tuned to 189 Hz for protection against harmonics pres the network and for preventing resonance with harmonics of the 5th order or higher.     Optional   Manual switch on capacitor bank header Circuit breaker on capacitor bank header Forced ventilation unit + thermostat Polycarbonate sheet for protection against direction on the state of the state on capacitor bank header forced ventilation unit + thermostat Polycarbonate sheet for protection against direction	Electrical safety, Maximum height (m)	2000 m
Components   CLZ capacitor Static switching unit on each stage, made up of static contactor (thyristors) Two-pole circuit breaker protection for capacitor bank and regulal operations. Reactive energy regulator of the Computer MAX-F Built-in thermo on the heatsink for disconnecting the stage in the case of excessive temperat (90 °C) Detuned filters tuned to 189 Hz for protection against harmonics press the network and for preventing resonance with harmonics of the 5th order or higher.     Optional   Manual switch on capacitor bank header Circuit breaker on capacitor bank header Forced ventilation unit + thermostat Polycarbonate sheet for protection against direction on the stage protection on capacitor bank header forced ventilation unit + thermostat Polycarbonate sheet for protection against direction	Standards	UNE-EN 61921, UNE-EN 61439-1, UNE EN 60831
Optional   (thyristors) Two-pole circuit breaker protection for capacitor bank and regulal operations. Reactive energy regulator of the Computer MAX-F Built-in thermo on the heatsink for disconnecting the stage in the case of excessive temperat (90 °C) Detuned filters tuned to 189 Hz for protection against harmonics press the network and for preventing resonance with harmonics of the 5th order or higher.     Optional   Manual switch on capacitor bank header Circuit breaker on capacitor bank header Forced ventilation unit + thermostat Polycarbonate sheet for protection against direction unit + thermostat Polycarbonate sheet for protection against direction	Features / performance	
Circuit breaker + earth leakage protection on capacitor bank header Forced ventilation unit + thermostat Polycarbonate sheet for protection against direction against directio	Components	CLZ capacitor Static switching unit on each stage, made up of static contactors (thyristors) Two-pole circuit breaker protection for capacitor bank and regulator operations. Reactive energy regulator of the Computer MAX-f 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 the network and for preventing resonance with harmonics of the 5th order or higher.
	Optional	ventilation unit + thermostat Polycarbonate sheet for protection against direct



Automatic capacitor banks with detuned filters and thyristors

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#### Protection

Element

Protection by stage by fuses with high cut-off power (APR). NH-00 series.

#### OPTIM FRE

Automatic capacitor banks with rejection filters (static contactor), 50 Hz.

CODE	TYPE	kvar (400 V)	kvar (440 V)	Nr steps	Cable section (mm2)
FRES					
R64R88.	OPTIM FRES-90-440	74	90	4	70
FRE4					
R64E24.	OPTIM FRE4-150-440	125	150	3	95
R64E25.	OPTIM FRE4-175-440	145	175	3	120
R64E28.	OPTIM FRE4-200-440	165	200	3	150
R64E29.	OPTIM FRE4-250-440	207	250	3	185
R64E30.	OPTIM FRE4-300-440	248	300	4	240
R64E32.	OPTIM FRE4-350-440	289	350	4	2x150
R64E34.	OPTIM FRE4-400-440	331	400	4	2x185
FRE6					
R64J25.	OPTIM FRE6-400-440	331	400	5	2x185
R64J30.	OPTIM FRE6-450-440	372	450	5	2x185
R64J35.	OPTIM FRE6-500-440	413	500	5	2x240
R64J40.	OPTIM FRE6-550-440	455	550	6	2x240
R64J45.	OPTIM FRE6-600-440	496	600	6	2x240
FRE8					
R64K36.	OPTIM FRE8-600-440	496	600	7	2x240
R64K38.	OPTIM FRE8-650-440	537	650	7	3x150
R64K40.	OPTIM FRE8-700-440	579	700	7	3x150
R64K42.	OPTIM FRE8-750-440	620	750	8	3x185
R64K44.	OPTIM FRE8-800-440	661	800	8	3x185
FRE10					
R64C25.	OPTIM FRE10-800-440	661	800	8	2x240 / 240
R64C30.	OPTIM FRE10-850-440	702	850	9	2x240 / 240
R64C35.	OPTIM FRE10-900-440	744	900	9	2x240 / 240
R64C40.	OPTIM FRE10-950-440	785	950	10	2x240 / 2x185
R64C45.	OPTIM FRE10-1000-440	826	1000	10	2x240 / 2x185
FRE12					
R64L50.	OPTIM FRE12-1050-440	868	1050	11	2x240 / 2x240
R64L55.	OPTIM FRE12-1100-440	909	1100	11	2x240 / 2x240
R64L60.	OPTIM FRE12-1150-440	950	1150	12	2x240 / 2x240

Circutor



Automatic capacitor banks with detuned filters and thyristors

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CODE	ТҮРЕ	kvar (400 V)	kvar (440 V)	Nr steps	Cable section (mm2)
R64L65.	OPTIM FRE12-1200-440	992	1200	12	2x240 / 2x240

Cable cross-section for installations with Un= 400 V. The installation company must ensure compliance with the low voltage directive at all times, in accordance with the characteristics of each installation and type of cable.

# Circutor



Automatic capacitor banks with detuned filters and thyristors Code: R64K40.

## Dimensions

# Connections

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