



OPTIM HYB2-270-440, Capacitor bank

Code: R4E108. DESCATALOGADO

- > Cable section (mm2): 1 x 240
- > kvar (400 V): 225
- > kvar (440 V): 270
- > Man.Switch (A): Included
- > Composition 230V/50Hz (Single-phase): (3 x 3 x 5) +
- > Composition 400V/50Hz (Three-phase): (6 x 30)
- > Use voltage (V): 440

Description

The **OPTIM HYB** automatic capacitor banks with hybrid switching are units designed for automatic compensation of reactive energy in networks in which the load levels fluctuate, with power variation rates of seconds and also independently of the level of unbalance in the installation. The compensation system is based on the combination of switching by three-phase step contact breakers and single-phase step semiconductors (thyristors), controlled by a smart regulator that uses the electrical parameters provided via communications by a power analyzer of the **CVM-MINI** range for its calculations.

Application

The OPTIM HYB series is ideal for achieving very accurate reactive power compensation in any installation, and especially those that present a certain degree of unbalance, since the compensation between phase and neutral adds to the fast reply provided by the static switching of the thyristor. It is therefore possible to quarantee a significant reduction in the chance of penalties in comparison with conventional capacitor banks.







Automatic hybrid switching capacitor banks

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Specifications

Losses (W) Olscharge resistance TS V / 3 min 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 20 % up to 5 min over 24 hours 30 % up to 1 min over 24 hours 20 % up to 5 min over 24 hours 30 % up to 1 min over 24 hours 20 % up to 5 min o	AC power supply	
Losses (W) < 0.5 W/kvar Discharge resistance 75 V / 3 min 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 20% up to 5 min over 24 hours 20% up to 15 min over 24 hours 20%	Frequency	50 Hz
Discharge resistance 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 20 % up to 5 min over 24 hours 30 % up to 1 min over 24 hours Manoeuvre voltage Contactors: 230 V Reinforcement voltage 3 x 440 V F-F / 1x 254 V F-N Tolerance C -5% / 410% Mechanical characteristics Size (mm) width x height x depth 800 x 1840 x 640 (mm) Envelope Steel sheet grey RAL 7035 Fastening Vertical Ventialition Natural Weight (kg) 181 Environmental characteristics Protection class Protection class Relative humidity (without condensation) 80% Working temperature -25 445 °C Current measurement circuit Allowable overload 1,3 In Standards Electrical safely, Maximum height (m) Standards Electrical safely, Maximum height (m) Standards Curponents	Electrical characteristics	
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 20 % up to 5 min over 24 hours 30 % up to 1 min over 24 hours 20 % up to 5 min over 24 hours 30 % up to 1 min over 24 hours 40 % up to 5 min over 24 hours 40 % up to 5 min over 24 hours 40 % up to 5 min over 24 hours 40 % up to 5 min over 24 hours 40 % up to 5 min over 24 hours 40 % up to 5 min over 24 hours 40 % up to 5 min over 24 hours 40 % up to 5 min over 24 hours 40 % up to 5 min over 24 hours 40 % up to 5 min over 24 hours 20 % up to 6 min over 24 hours 20 %	Losses (W)	< 0,5 W/kvar
Manoeuvre voltage Contactors: 230 V Reinforcement voltage 3 x 440 V F-F / 1 x 254 V F-N Tolerance C -5% / +10% Mechanical characteristics Size (mm) width x height x depth 800 x 1840 x 640 (mm) Envelope Steel sheet grey RAL 7035 Festering Vertical Ventilation Natural Weight (kg) 181 Environmental characteristics Protection class IP 21 Relative humidity (without condensation) 80% Working temperature 25	Discharge resistance	75 V / 3 min
Reinforcement voltage 3 x 440 V F-F / 1 x 254 V F-N Tolerance C -5% / +10% Mechanical characteristics Size (mm) width x height x depth 800 x 1840 x 640 (mm) Envelope Steel sheet grey RAL 7035 Fastening Vertical Ventilation Natural Weight (kg) 181 Environmental characteristics Protection class IP 21 Relative humidity (without condensation) 80% Working temperature -25 +45 °C Current measurement circuit Allowable overload 1,3 In Standards Electrical safety, Maximum height (m) < 2000 Standards Features / performance Components Cylindrical capacitor, CLZ-FP type aluminium casing Reactive energy regulator, HPB computer communicating via RS-485 with a CVM-MINI-RS485 type power analyser Optional Protection	Surge	
Tolerance C -5% / +10% Mechanical characteristics Size (mm) width x height x depth 800 x 1840 x 640 (mm) Envelope Steel sheet grey RAL 7035 Fastening Vertical Ventilation Netural Weight (kg) 181 Environmental characteristics Protection class IP 21 Relative humidity (without condensation) 80% Working bemperature -25 +45 °C Current measurement circuit Allowable overload 1,3 In Standards Electrical safety, Maximum height (m) < 2000 Standards IEC 61921, IEC 61642, IEC 60831 Features / performance Curponents Cylindrical capacitor, CLZ-FP bype aluminium casing Reactive energy regulator, HYB computer communicating via R5-485 with a CVM-MINI-R5485 type power analyser Optional 4-pole circuit breaker at capacitor bank header 4-pole circuit breaker + earth leakage protection at capacitor bank header 4-pole circuit breaker + earth	Manoeuvre voltage	Contactors: 230 V
Size (mm) width x height x depth 800 x 1840 x 640 (mm) Envelope Steel sheet grey RAL 7035 Fastening Vertical Ventilation Natural Weight (kg) 181 Environmental characteristics Protection class IP 21 Relative humidity (without condensation) 80% Working temperature -25 445 °C Current measurement circuit Allowable overload 1,3 in Standards Electrical safety, Maximum height (m) < 2000 Standards IEC 61921, IEC 61642, IEC 60831 Features / performance Components Cylindrical capacitor, CLZ-FP type aluminium casing Reactive energy regulator, H'B computer communicating via RS-485 with a CVM-MINI-RS485 type power analyser Optional 4-pole circuit breaker at capacitor bank header 4-pole circuit breaker + earth leakage protection at capacitor bank header 4-pole circuit breaker + earth	Reinforcement voltage	3 x 440 V F-F / 1 x 254 V F-N
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Ventilation Weight (kg) Environmental characteristics Protection class Protection class Protection (lass Protection class Protection (lass Protection (lass) Protection (lass) Protection (lass) Protection (lass) Protection (lass) Protection (lass) Protection Protection (lass) Protection Protection (lass) Protection P	Envelope	Steel sheet grey RAL 7035
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Protection class Relative humidity (without condensation) 80% Working temperature -25 +45 °C Current measurement circuit Allowable overload 1,3 In Standards Electrical safety, Maximum height (m) \$ < 2000 Standards Electrical safety, Maximum height (m) \$ (2000) Standards Electrical safety, Maximum height (m) Components Components Components Components Cylindrical capacitor, CLZ-FP type aluminium casing Reactive energy regulator, HYB computer communicating via RS-485 with a CVM-MINI-RS485 type power analyser Optional 4-pole circuit breaker at capacitor bank header 4-pole circuit breaker + earth leakage protection at capacitor bank header	Weight (kg)	181
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Allowable overload 7,3 In Standards Electrical safety, Maximum height (m) < 2000 Standards EC 61921, IEC 61642, IEC 60831 Features / performance Components Cylindrical capacitor, CLZ-FP type aluminium casing Reactive energy regulator, HYB computer communicating via RS-485 with a CVM-MINI-RS485 type power analyser Optional Protection 7,3 In 4-pole circuit breaker at capacitor bank header 4-pole circuit breaker + earth leakage protection at capacitor bank header	Working temperature	-25 +45 °C
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Cylindrical capacitor, CLZ-FP type aluminium casing Reactive energy regulator, HYB computer communicating via RS-485 with a CVM-MINI-RS485 type power analyser Optional 4-pole circuit breaker at capacitor bank header 4-pole circuit breaker + earth leakage protection at capacitor bank header Protection	Standards	IEC 61921, IEC 61642, IEC 60831
HYB computer communicating via RS-485 with a CVM-MINI-RS485 type power analyser Optional 4-pole circuit breaker at capacitor bank header 4-pole circuit breaker + earth leakage protection at capacitor bank header Protection	Features / performance	
leakage protection at capacitor bank header Protection	Components	HYB computer communicating via RS-485 with a CVM-MINI-RS485 type power
	Optional	
Circuit breaker type Single or three-pole circuit breaker protection in each single or three-phase step	Protection	
	Circuit breaker type	Single or three-pole circuit breaker protection in each single or three-phase step







Automatic hybrid switching capacitor banks

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Dimensions



