



**Leaders in power factor
correction**

2018-2019

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ABOUT RTR



WORLDWIDE PRESENCE

RTR Exports to more than 70 countries worldwide.

- 2 Headquarters: Spain and Chile
- Sales Office: China, South Korea, Russia, Thailand, Turkey.





ABOUT RTR

RTR COMMITMENT:

- Engineering, Technology and Innovation: LV DWCAP and SUPER DWCAP WORLDWIDE PATENTS
- Quality and Certification: ISO9001, ISO14001, UL and AENOR certification. Other certifications in progress.
- Satisfaction of our clients





**MANUFACTURING MV CAPACITORS
CAPACITOR BANKS**



**MANUFACTURING LV CAPACITORS
MANUFACTURING LV REACTORS
FOR HARMONIC FILTERING
CAPACITOR BANKS**



**LIGHTING:
STREET LIGHTING
INDUSTRIAL LIGHTING
CONTROL AND TELEGESTION**



MV CAPACITORS



3PH CAPACITOR

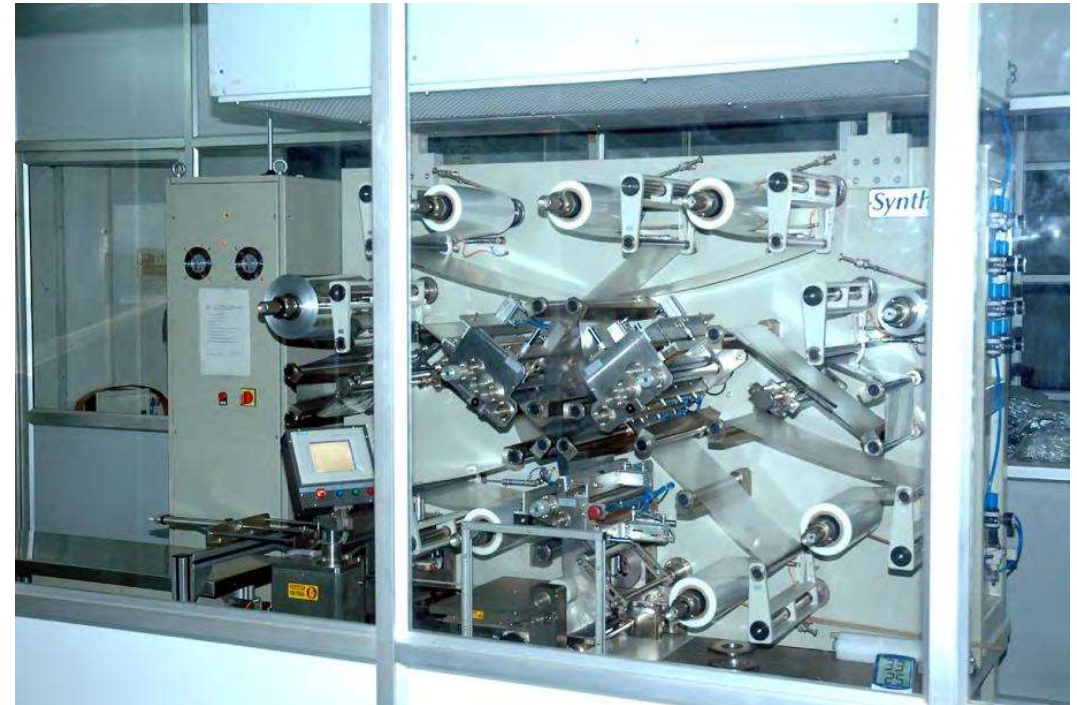


1PH CAPACITOR



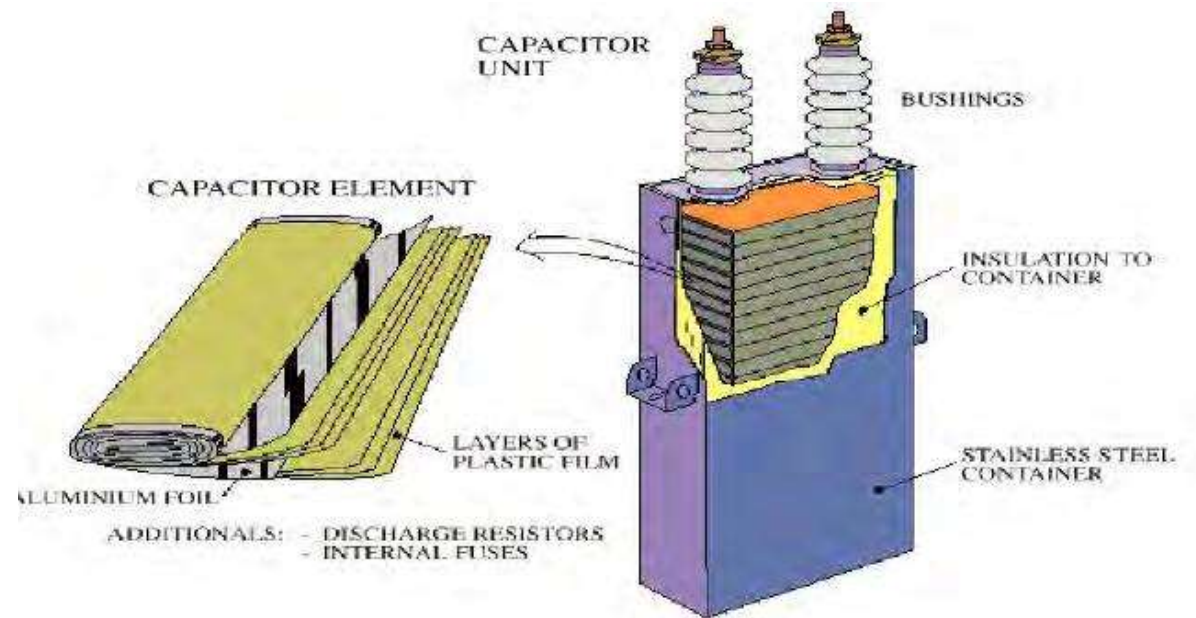
MANUFACTURING PROCESS

- **WINDING OF BASIC ELEMENT**
 - Fully Automatic Winding Machine
- **Winding Room:**
 - Fully air-conditioned
 - Humidity controlled through de-humidifiers
 - Air filters provided to eliminate any ingress of dust or dirt



MV CAPACITORS DESIGN

- Aluminum foil + PP films design
- Internal discharge resistor.
- Bushings welded to casing.
- Impregnated with non-PCB liquid
- Container made of Stainless steel
- Internal element fuses
- TIG welding method adopted.
- Epoxy painted to have excellent finish.





3PH CAPACITORS



TECHNICAL DATA SHEET	
Standard	IEC 60871-1/2
Rated voltage	1-12kV
Rated power	Up to 1000kVAr
Frequency	50-60Hz
Tolerance	-5 +10%
Losses	<0,15WkVAr
Temperature rango	-50 +55°C
Dielectric	PXE Oil, non PCB
Fuses	Optional. Recommendation: <ul style="list-style-type: none">- Internal up to 13,8kV- External for higher voltage
Mounting	Universal. Vertical-horizontal Indoor-outdoor
Altitude	<1000masl (more altitude upon request)
Max. Overvoltage	1,1xUn
Max. Overcurrent	1,3xIn



1PH CAPACITORS

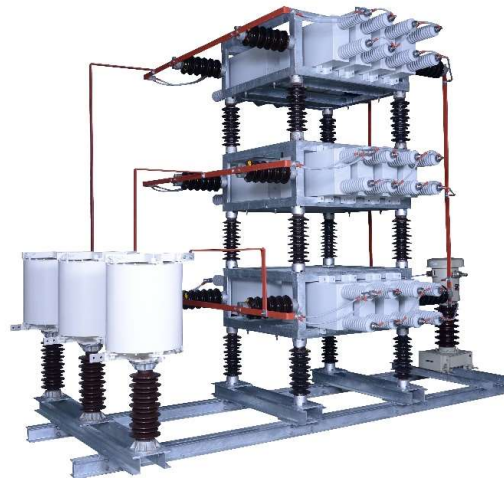


TECHNICAL DATA SHEET

Standard	IEC 60871-1/2
Rated voltage	1-24kV
Rated power	Up to 1000kVAr
Frequency	50-60Hz
Tolerance	-5 +10%
Losses	<0,15WkVAr
Temperature rango	-50 +55°C
Dielectric	PXE Oil, non PCB
Fuses	Optional. Recommendation: <ul style="list-style-type: none">- Internal up to 13,8kV- External for higher voltage
Mounting	Universal. Vertical-horizontal Indoor-outdoor
Altitude	<1000masl (more altitude upon request)
Max. Overvoltage	1,1xUn
Max. Overcurrent	1,3xIn



MV CAPACITORS BANK



CUSTOMIZED SOLUTIONS





COMPONENTS

RTR Energía offers a full range of MV equipment for their capacitor Banks depending on every project and customer:

- Inrush current limiting reactor
- Detuned reactor for harmonic filter
- MV fuse
- Vacuum contactor for automatic capacitor bank
- Vacuum braker, SF6 breaker, capsitcher
- Off load isolator with earth switch
- APF relay
- Unbalance current transformer and unbalance relay
- Voltaje transformer and voltaje presence relay
- Control and scada connection
- Cabinet (protection IP depending on specification)





REFERENCES

6 units of 20MVAr 30kV 50Hz
**THE LARGEST SOLAR PLANT IN
EUROPE**

Customer: Grupo Cobra, Siemens

Final customer: Tecnosolar

Facility: Parque fotovoltaico Mula,
Murcia, España





REFERENCES

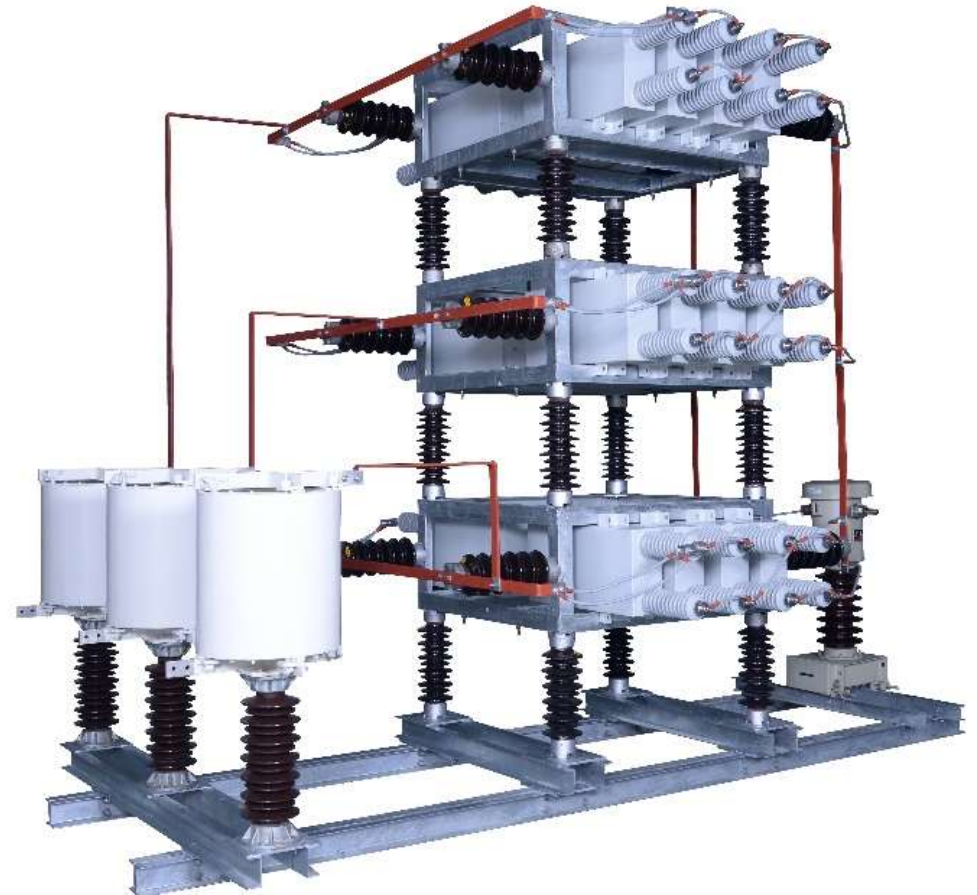
• 1 unit of 6MVAR 34,5kV 50Hz
CAPACITOR BANK WITH CAPSWITCH
TECHNOLOGY (Zero Crossing)
Customer: Grupo TSK
Final Customer: Siemens Gamesa
Facility: Agua Clara wind park,
Dominican Republic.





REFERENCES

- 2 units of 9MVAr 33kV 50Hz,
OPEN RACK STRUCTURE
Customer: Eiffage Energía
Final Customer: Enel Generación
Facility: Sierra Gorda wind park,
Atacama Desert, Chile





REFERENCES

- 2 units of 1200kVAr 4,16kV 60Hz
(10 stages x 120kVAr)
AUTOMATIC CAPACITOR BANK
Customer: Acciona Agua
Final customer: CNEL (Corporación
Nacional de Electricidad de Ecuador)
Facility: water treatment Plant
Esmeraldas, Ecuador





REFERENCES

- 281, 1168 and 1480kVAr 8,32kV
50Hz WITH DETUNED REACTORS
Customer: Temic
Final Customer: Siemens Gamesa
Installation: Cementera, Bolivia





REFERENCES

- 5,4MVAR and 3,6MVAR 20kV 50Hz WITH ZERO CROSS SWITCH

Customer: Ibedrola

Final Customer: -

Installation: Mihai Viteazu wind park, Rumania

- 2MVAR and 4MVAR 20kV 50Hz

Customer: Unión Fenosa

Final Customer: -

Installation: Corzán wind park, Spain

- 3MVAR 17kV 50Hz

Customer: -

Final Customer: FERROATLÁNTICA

Installation: CEE-Dumbria Port, Spain





REFERENCES

- 2 units of 2,5MVAr 13,8kV 60Hz
Customer: FUJI Electric (5stages 500kVA)
Final Customer: Pertamina (oil & gas)
Installation: SE, Indonesia
- 1 unit of 9MVAr 34,5kV 60Hz
Customer: Global Gulf Pioneers
Final Customer: Saudi ARAMCO (oil & gas)
Installation: Oil and gas refinery Saudi Arabia
- 1 unit of 5MVAr 10kV 60Hz
Customer: IMG
Final Customer: Electro Oriente (Utility)
Installation: SE Yurimaguas





REFERENCES

- ④ 1 unit each of 1MVA & 3MVA 30kV 50Hz
Customer: GRUPO COBRA
Final customer: -
Installation: PE COSCOJAR, ZARAGOZA, ESPAÑA
- ④ 1 unit of 4,5MVA 23kV 60Hz, Open Rack
Engineering : -
Final customer: EMPRESA ELÉCTRICA DE QUITO
Installation: SE MIRADOR ALTO Y NUEVA MACHACHI
- ④ 9units FIX CAPACITOR BANK 150kVA 3,3kV 50Hz
Customer : Harb Electric, Lebanon
Final customer: - Project in Iraq
Installation: different SE in Iraq



REFERENCES

- OPEN RACK 14,4MVA_r 66kV 60Hz
Customer: IBERDROLA
Final customer: IBERDROLA (Utility)
Installation: **SE BURGOS, SPAIN**

- AUTOMATIC CAPACITOR BANK 7MVA_r 20kV 50Hz (2 steps)
Customer : SIEMSA
Final customer: NATURGI
Installation: **MONTOUTO WIND PARK, GALICIA, SPAIN.**

- 2 units FIX CAPACITOR BANK 8MVA_r 20kV 50Hz
Customer : SOLARIG
Final customer: -
Installation: **SEVILLA WIND PARK, SEVILLA, SPAIN**



REFERENCES

- 3units AUTOMATIC CAPACITOR BANK 833+1666kVAr 6,3kV 50Hz (2 steps)
Engineering : -
Final customer: MATSA, MINAS DE AGUAS TEÑIDAS
Installation: MINE MATSA IN ALMONASTER LA REAL, HUELVA, SPAIN.
- 2units FIX CAPACITOR BANK 150kVAr 10kV 50Hz
Customer : HYFOTEC
Final customer: Grupo Electrostocks
Installation: Comunidad de Regantes de Córdoba



REFERENCES

- 1 unit FIX CAPACITOR BANK 2MVA_r 30kV 50Hz
Customer : COBRA
Final customer: Molinos del Ebro
Installation: **Pedrola Wind Park (Parque Eólico)**

- 4 units FIX CAPACITOR BANK WITH 6% DETUNED REACTORS
1.75MVA_r 6.3kV 50Hz
Customer : VECTOR-VS LTD
Final customer: Ferrexpo – Poltava Mining
Installation: **Ferrexpo – Poltava mining in Ukraine**



REFERENCES

- ❖ 2 Fixed Banks 150kVAr 10kV 50Hz
Customer: HYFOTEC
Final client: **Grupo Electrostocks**
Facility: Comunidad de Regantes, Córdoba
- ❖ 10 Fixed Banks 150kVAr 3,3kV 50Hz
Customer: - Harb Electric
Final client: - SE Iraq
Installation: **Subestaciones en Irak**
- ❖ 1 Fixed Bank 2MVA 30kV 50Hz
Customer: COBRA
Final client: Molinos del Ebro
Installation: PE Pedrola





REFERENCES

- ❖ 2 Automatic Banks 8MVAR 30kV 50Hz
Customer: COBRA INSTALACIONES
Final client: S.E. Bienvenida
Installation: Extremadura
- ❖ 2ud Fixed Banks 4,75MVAR 30kV 50Hz
Customer: ELECNOR
Final client: P.S Palma del río Séneca
Installation: Córdoba
- 2 Automatic Banks 10MVAR 33kV 50Hz
Customer: GES GLOBAL
Final client: P.E. Calama
Installation: Chile





EN CONSTRUCCIÓN

- 1 Fixed Bank 1MVAr 11kV 50Hz
Customer: VECTOR
Final client: - Oblenergo
Installation: Ucrania
- 2ud Fixed Banks 2MVAr 30kV 50Hz
Customer: ELECNOR
Final client: P.E. REGOELLE DUMBRÍA
Installation: A Coruña
- 1 Fixed Bank 2MVAr 33kV 50Hz
Customer: COBRA ENERGÍA
Final client: PSFV ZEERUST
Installation: Sudáfrica





Keeping in Spain one of the largest client portfolio

- Distribution



- Utility



- Engineering & Contracting



- Institutions & Government

