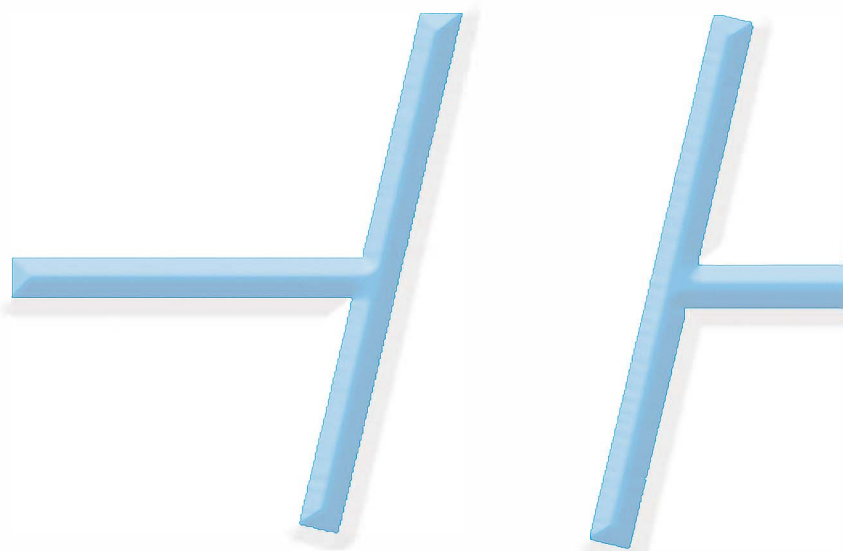


RTR[®]

Capacitors



CATALOGO GENERAL GENERAL CATALOGUE





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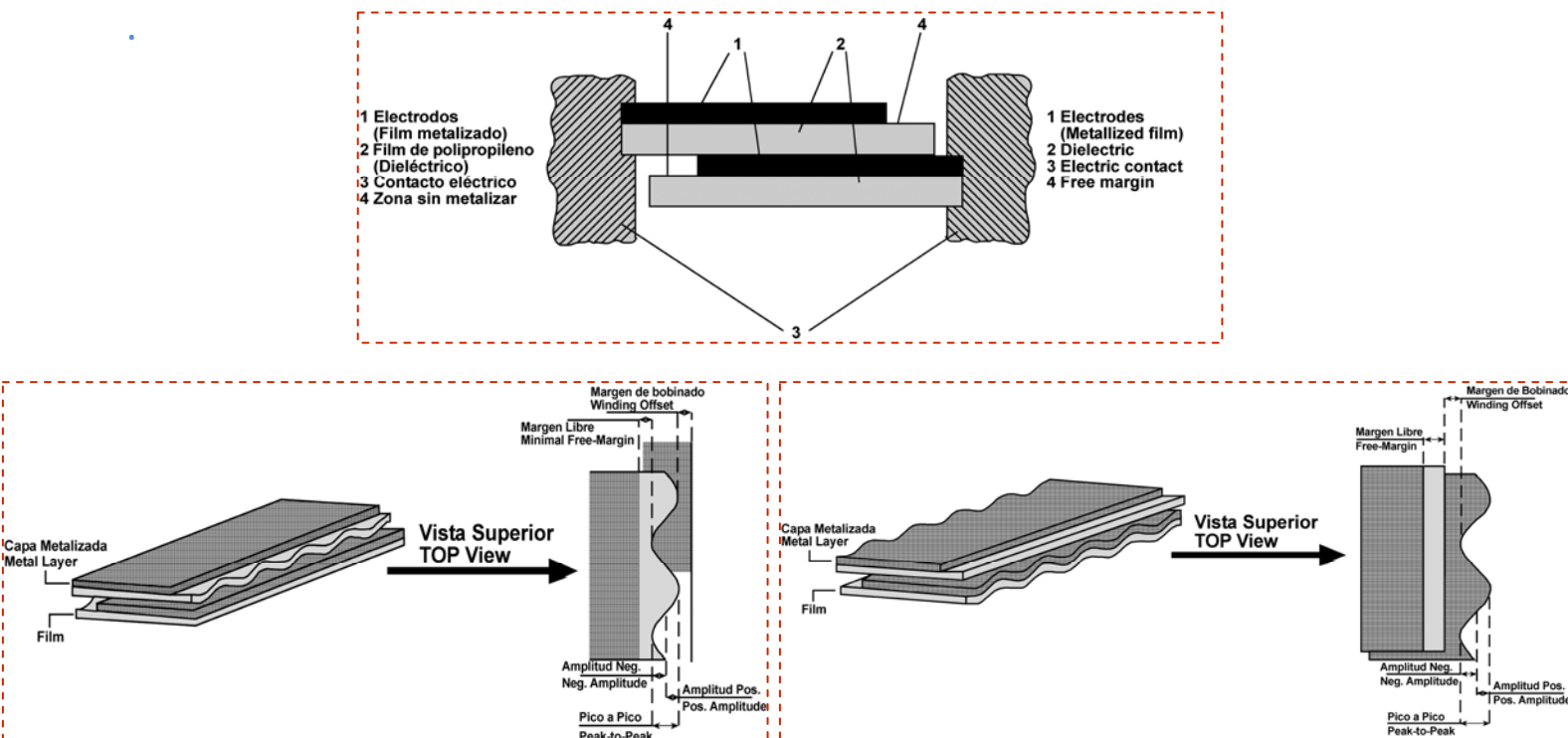
CONDENSADORES CAPACITORS

RTR Energía S.L. power capacitors are specially designed for reactive power factor correction using the highest quality raw materials, the most developed manufacturing process and according to the standards EN 60831. 1-2.

RTR Capacitors are manufactured with low loss metallized self healing polypropylene film. The windings are placed in a cylindrical aluminium can and filled with an advanced polyurethane resin of great heat dissipation properties. An overpressure disconnection system is used to disconnect the capacitor in case of inadmissible working conditions caused by extreme electrical or thermal conditions.

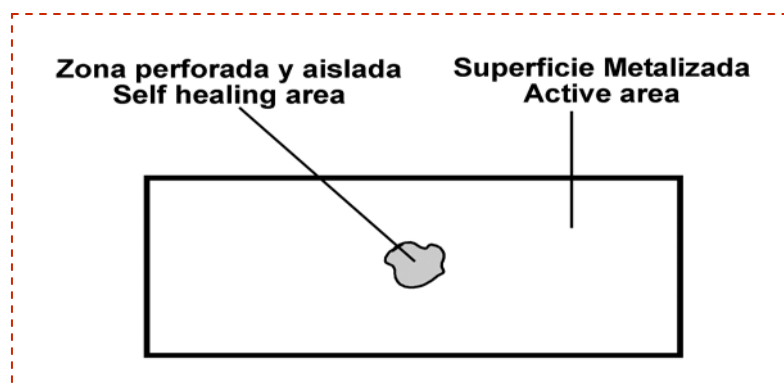
MKP - (METALLIZED POLYPROPYLENE FILM)

RTR Energía S.L. uses the most advanced and developed metallized polypropylene film reverting in a great capacitor performance.



SELF - HEALING FILM

RTR Capacitors are manufactured with self-healing film. Due to extreme and inadmissible electrical working conditions a perforation breakdown may occur. The metallized area next to the feature is re-established, insulating the perfored area. After a self-healing the capacitor can still work in normal conditions



DRY TYPE

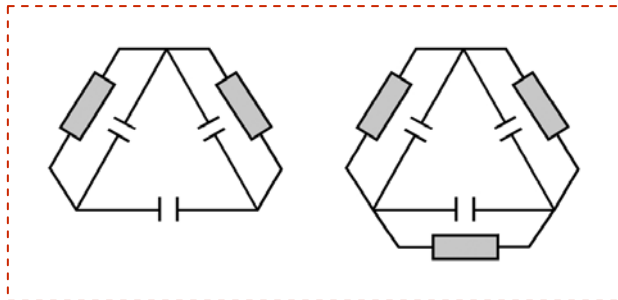
(ECOLOGICAL POLIUTHERANE RESIN)

RTR Energía S.L. dry type capacitors are filled with a non toxic and ecological poliutherane resin. RTR Capacitors resin provides an excelent heat dissipation properties, increasing the capacitor excepted life.

DISCHARGE RESISTORS

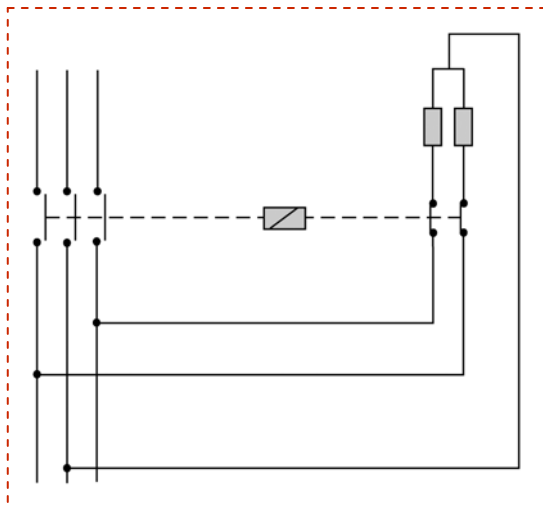
RTR Capacitors are delivered with discharge resistors able to discharge the capacitor to less than 75v within three minutes.

Capacitors discharge resistors connexion diagram



RTR Energía S.L. recomends the use of five contacts contactors with quick discharge resistors in capacitor banks to avoid overcharges in the capacitor and to connect the capacitor when it is discharged

Contactors discharge resistors connexion diagram

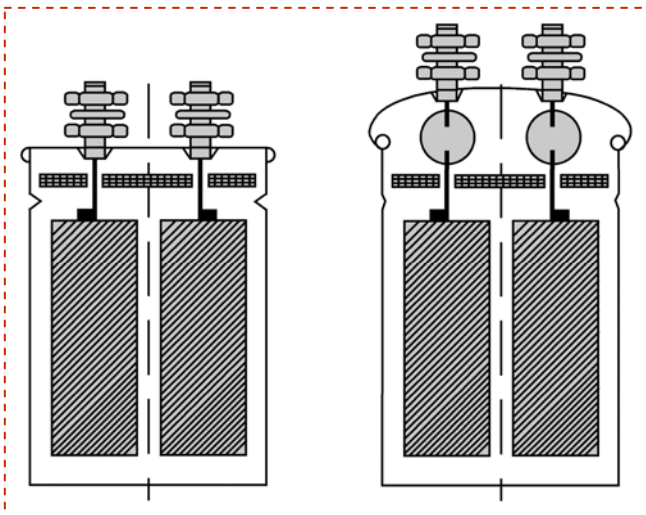


OVERPRESSURE DISCONNECTION SYSTEM (ONLY FOR MA/C/CE SERIES)

RTR Energía S.L. Capacitors have been designed to be interrupted by an overpressure disconnection system. When the terminal cover expands, the internal connections are interrupted disconnecting the capacitor.

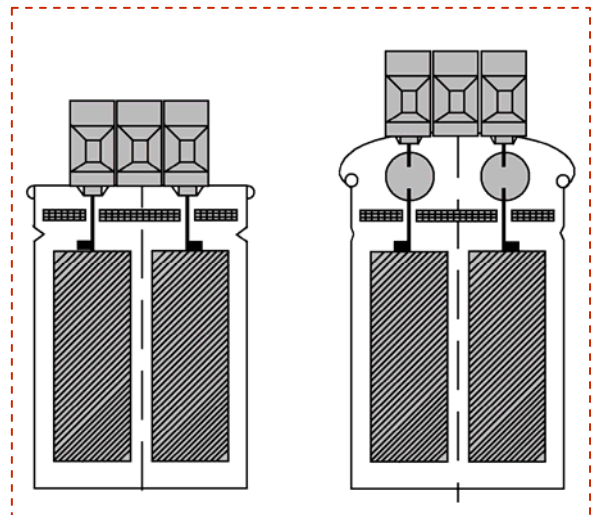
Normal Operating Conditions

Disconnection by Overpressure



Normal Operating Conditions

Disconnection by Overpressure



Three-Phase Capacitors with Connector

(240/260/415/440/480/525/690V,60Hz)

MA/C/CE TER Series

TECHNICAL CHARACTERISTICS

- Standard EN 60831-1/2
- Capacitance tolerance - 5% + 10%
- Frequency 60Hz (50Hz upon request)
- Temperature range -25°C + 55°C
- Dielectric losses < 0.5 W/KVAr
- Maximum over voltage 1,1 x Un
- Maximum over current 1,5 x In
- Max. THD in voltage 2%
- Max. THD in current 25%
- Discharge resistance Incorporated
- Connection Delta
- Casing Aluminium can
- Disconnection system Overpressure
- Dielectric Metallized polypropylene film
- Voltage test
 - between terminals 2,15 x Un 2 Sec.
- Voltage test
 - terminals to case 3 KV for 10 sec. AC
- Terminal Connector

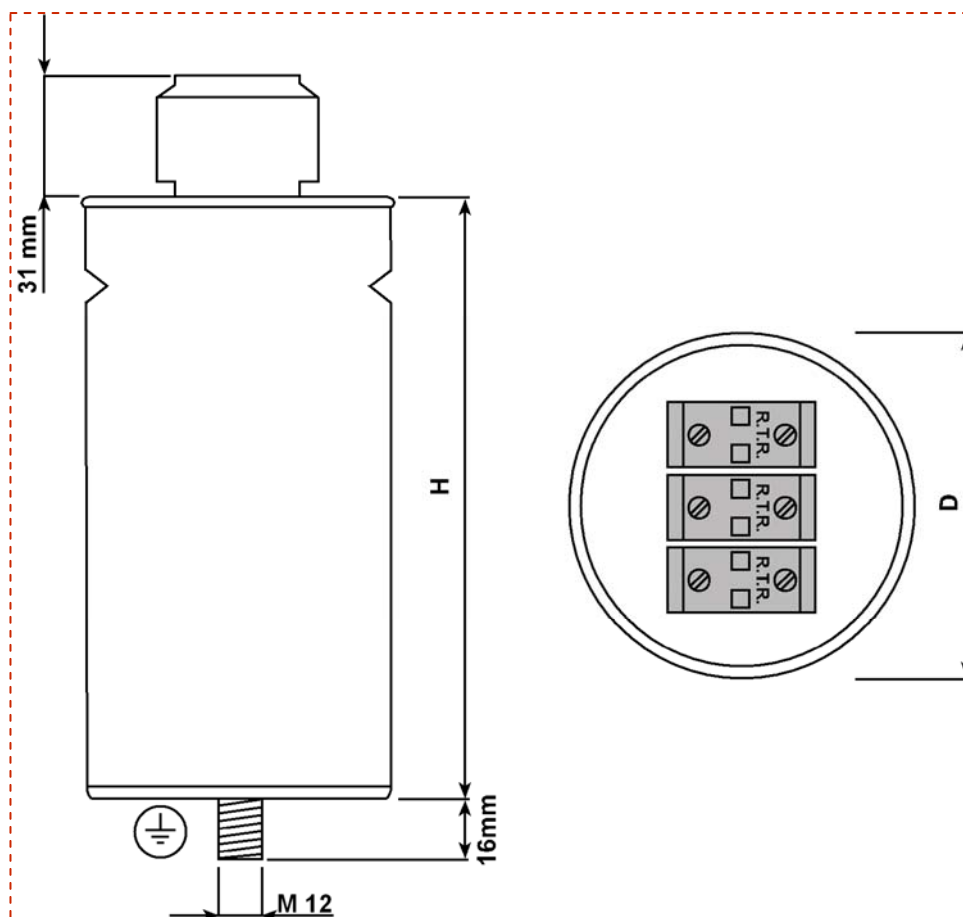


MA/C/CE TER

Serie MA/C/CE TER

(240/260/415/440/480/525/690V,60Hz)

MA/C/CE Dimensions



Dimensions D x H (mm)	Term M
70 x 215	FAD 6.3
85 x 215	M5
100 x 215	M6
100 x 300	M6
120 x 300	M8
136 x 300	M8

Industrial frequency "8 hours every 24 hours" of fluctuation and regulation of voltage, higher values may cause damages in capacitor. EN 60831-1-1996 (20.1)

Serie MA/C/CE TER

(240/260/415/440/480/525/690V,60Hz)

MA/C/CE TER Series

POWER KVAR	Voltage .c.a	Dimensions D x H (mm)	Code
2.5	240V 60Hz	70 x 215	SC-RTR24002.5
5	240V 60Hz	85 x 215	SC-RTR24005
7.5	240V 60Hz	100 x 215	SC-RTR24007.5
10	240V 60Hz	100 x 215	SC-RTR24010
12.5	240V 60Hz	100 x 300	SC-RTR24012.5
15	240V 60Hz	100 x 300	SC-RTR24015
20	240V 60Hz	120 x 300	SC-RTR24020
25	240V 60Hz	136 x 300	SC-RTR24025
30	240V 60Hz	136 x 300	SC-RTR24030

POWER KVAR	Voltage .c.a	Dimensions D x H (mm)	Code
2.5	260V 60Hz	70 x 215	SC-RTR26002.5
5	260V 60Hz	85 x 215	SC-RTR26005
7.5	260V 60Hz	85 x 215	SC-RTR26007.5
10	260V 60Hz	100 x 215	SC-RTR26010
12.5	260V 60Hz	100 x 300	SC-RTR26012.5
15	260V 60Hz	100 x 300	SC-RTR26015
20	260V 60Hz	120 x 300	SC-RTR26020
25	260V 60Hz	136 x 300	SC-RTR26025
30	260V 60Hz	136 x 300	SC-RTR26030

Serie MA/C/CE TER

(240/260/415/440/480/525/690V,60Hz)

MA/C/CE TER Series

POWER KVAR	Voltage .c.a	Dimensions D x H (mm)	Code
2.5	415V 60Hz	70 x 215	SC-RTR41502.5
5	415V 60Hz	70 x 215	SC-RTR41505
7.5	415V 60Hz	85 x 215	SC-RTR41507.5
10	415V 60Hz	85 x 215	SC-RTR41510
12.5	415V 60Hz	100 x 215	SC-RTR41512.5
15	415V 60Hz	100 x 215	SC-RTR41515
20	415V 60Hz	100 x 300	SC-RTR41520
25	415V 60Hz	100 x 300	SC-RTR41525
30	415V 60Hz	120 x 300	SC-RTR41550
35	415V 60Hz	120 x 300	SC-RTR41535
40	415V 60Hz	120 x 300	SC-RTR41540
50	415V 60Hz	136 x 300	SC-RTR41550

POWER KVAR	Voltage .c.a	Dimensions D x H (mm)	Code
2.5	440V 60Hz	70 x 215	SC-RTR44002.5
5	440V 60Hz	70 x 215	SC-RTR44005
7.5	440V 60Hz	85 x 215	SC-RTR44007.5
10	440V 60Hz	85 x 215	SC-RTR44010
12.5	440V 60Hz	85 x 215	SC-RTR44012.5
15	440V 60Hz	100 x 215	SC-RTR44015
20	440V 60Hz	100 x 300	SC-RTRF44020
25	440V 60Hz	100 x 300	SC-RTR44025
30	440V 60Hz	120 x 300	SC-RTR44050
35	440V 60Hz	120 x 300	SC-RTR44035
40	440V 60Hz	120 x 300	SC-RTR44040
50	440V 60Hz	136 x 300	SC-RTR44050

Serie MA/C/CE TER

(240/260/415/440/480/525/690V,60Hz)

MA/C/CE TER Series

POWER KVAR	Voltage .c.a	Dimensions D x H (mm)	Code
2.5	480V 60Hz	70 x 215	SC-RTR48002.5
5	480V 60Hz	70 x 215	SC-RTR48005
7.5	480V 60Hz	85 x 215	SC-RTR48007.5
10	480V 60Hz	85 x 215	SC-RTR48010
12.5	480V 60Hz	85 x 215	SC-RTR48012.5
15	480V 60Hz	100 x 215	SC-RTR48015
20	480V 60Hz	100 x 300	SC-RTRF48020
25	480V 60Hz	100 x 300	SC-RTR48025
30	480V 60Hz	120 x 300	SC-RTR48050
35	480V 60Hz	120 x 300	SC-RTR48035
40	480V 60Hz	120 x 300	SC-RTR48040
50	480V 60Hz	136 x 300	SC-RTR48050

POWER KVAR	Voltage .c.a	Dimensions D x H (mm)	Code
2.5	525V 60Hz	70 x 215	SC-RTR52502.5
5	525V 60Hz	70 x 215	SC-RTR52505
7.5	525V 60Hz	70 x 215	SC-RTR52507.5
10	525V 60Hz	85 x 215	SC-RTR52510
12.5	525V 60Hz	100 x 215	SC-RTR52512.5
15	525V 60Hz	100 x 215	SC-RTR52515
20	525V 60Hz	100 x 300	SC-RTRF52520
25	525V 60Hz	100 x 300	SC-RTR52525
30	525V 60Hz	120 x 300	SC-RTR52530
35	525V 60Hz	120 x 300	SC-RTR52535
40	525V 60Hz	120 x 300	SC-RTR52540
50	525V 60Hz	136 x 300	SC-RTR52550

Serie MA/C/CE TER

(240/260/415/440/480/525/690V,60Hz)

MA/C/CE TER Series

POWER KVAR	Voltage .c.a	Dimensions D x H (mm)	Code
2.5	690V 60Hz	70 x 215	SC-RTR69002.5
5	690V 60Hz	70 x 215	SC-RTR69005
7.5	690V 60Hz	70 x 215	SC-RTR69007.5
10	690V 60Hz	85 x 215	SC-RTR69010
12.5	690V 60Hz	85 x 215	SC-RTR69012.5
15	690V 60Hz	100 x 215	SC-RTR69015
20	690V 60Hz	100 x 300	SC-RTRF69020
25	690V 60Hz	100 x 300	SC-RTR69025
30	690V 60Hz	100 x 300	SC-RTR69050
35	690V 60Hz	120 x 300	SC-RTR69035
40	690V 60Hz	120 x 300	SC-RTR69040
50	690V 60Hz	136 x 300	SC-RTR69050
60	690V 60Hz	136 x 300	SC-RTR69060

※ 50Hz upon request

※ Other Voltages upon request

BANCOS DE COMPENSACIÓN DE REACTIVA PARA MEDIA TENSIÓN MV CAPACITOR BANKS



AENOR Asociación Española de Normalización y Certificación *Copia*

CERTIFICADO DE REGISTRO DE EMPRESA
REGISTERED FIRM CERTIFICATE

ER-0569/2000

La Asociación Española de Normalización y Certificación (AENOR) certifica que el Sistema de Gestión de la Calidad adoptado por: *The Spanish Association for Standardization and Certification (AENOR) certifies that Quality Management System adopted by:*

RTR ENERGIA, S.L.

para: *for:*

LA PRODUCCIÓN DE CONDENSADORES ELÉCTRICOS DE POTENCIA Y ELECTRÓNICA INDUSTRIAL Y BATERÍAS AUTOREGULADAS PARA LA CORRECCIÓN DEL FACTOR DE POTENCIA.
LA PRODUCCIÓN DE CONDENSADORES PARA MOTORES DE CORRIENTE ALTERNAL.
LA PRODUCCIÓN DE CONDENSADORES PARA CIRCUITOS DE LUMINARIAS Y OTRAS LÁMPARAS DE DESCARGA.
LA VENTA DE EQUIPOS DE MEDIDA ELÉCTRICOS, REACTANCIAS Y TRANSFORMADORES DE INTENSIDAD.
LA REPARACIÓN DE CONDENSADORES DE POTENCIA Y EQUIPOS DE MEDIDA MARCA RTR.

THE PRODUCTION OF ELECTRICAL POWER CAPACITORS AND ELECTRONIC APPLIANCE CAPACITORS, CAPACITOR BANKS FOR POWER FACTOR CORRECTION.
THE PRODUCTION OF A/C MOTOR CAPACITORS.
THE PRODUCTION OF CAPACITORS FOR USE IN LUMINAIRES AND OTHER DISCHARGE LAMP CIRCUITS.
THE SELLING OF ELECTRICAL MEASUREMENT EQUIPMENT, FILTERS AND CURRENT TRANSFORMERS.
THE REPAIRS OF POWER CAPACITORS AND ELECTRICAL MEASUREMENT EQUIPMENT OF RTR BRAND NAME.

que se realiza/en o desde el establecimiento: *which is/are carried out in or from the establishment:*

PLA ESTACIÓN, CL GAVILANES, 11
28328 - PINTO
(MADRID)

es conforme a las exigencias de la Norma Española UNE-EN ISO 9001:2000 Sistemas de Gestión de la Calidad. *Requisitos. Complies with the requirements of the Standard UNE-EN ISO 9001:2000 Quality Management Systems Requirements.*

El presente Certificado es válido salvo suspensión, expiración o retirada notificada en tiempo por AENOR. *The Certificate is valid unless it is suspended, cancelled or withdrawn upon AENOR's written notification.*

Cualquier aclaración adicional relativa tanto al alcance de este certificado como a la aplicabilidad de los requisitos de la norma ISO 9001:2000 puede obtenerse consultando a la organización. *Further clarifications regarding the scope of this certificate and the applicability of ISO 9001:2000 requirements may be obtained by consulting the organization.*

Fecha de emisión: 2000-05-12 Fecha de renovación: 2006-06-13 Fecha de expiración: 2009-06-13
Issued on Renewed on Expires on

AENOR *Asociación Española de Normalización y Certificación*

El Director General de AENOR
General Manager of AENOR

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AENOR - CI Ginebra, 9 - 20004 MADRID(Spain) - Teléfono: (+34) 914 320 000 - Telefax: (+34) 913 104 518 - www.aenor.es

Entidad de certificación acreditada por ENAC con acreditación n° 01/C-SC001

IQNet®

THE INTERNATIONAL CERTIFICATION NETWORK

CERTIFICATE

IQNet and AENOR
hereby certify that the organization

RTR ENERGIA, S.L.

PLA ESTACIÓN, CL GAVILANES, 11
28328 - PINTO
(MADRID)

for the following field of activities

THE PRODUCTION OF ELECTRICAL POWER CAPACITORS AND ELECTRONIC APPLIANCE CAPACITORS, CAPACITOR BANKS FOR POWER FACTOR CORRECTION.
THE PRODUCTION OF A/C MOTOR CAPACITORS.
THE PRODUCTION OF CAPACITORS FOR USE IN LUMINAIRES AND OTHER DISCHARGE LAMP CIRCUITS.
THE SELLING OF ELECTRICAL MEASUREMENT EQUIPMENT, FILTERS AND CURRENT TRANSFORMERS.
THE REPAIRS OF POWER CAPACITORS AND ELECTRICAL MEASUREMENT EQUIPMENT OF RTR BRAND NAME.

has implemented and maintains a

Quality Management System

which fulfills the requirements of the following standard

ISO 9001:2000

Issued on: 2000-05-12 Renewed on: 2006-06-13 Validity date: 2009-06-13

Registration Number: ES-0569/2000

IQNet **AENOR**

Dr. Fabio Rovero
President of IQNet

Ramón S.A.Z.
General Manager of AENOR

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