



RTR
energia

Leaders in Power Factor Correction

All most 40 years of experience in Power Factor Correction, one of leading PFC manufacturing facility in world, focused in innovations and developments of new products range in the sector of electrical energy efficiency, certified by many organizations which guarantee high products.

International Presence

The RTR group has a strong international vocation. Since its foundation/ head office in Spain also has a production facility in Chile and has been opened its own delegations/ Sales offices in various parts of the world like Russia, South Korea, China, Mexico and India with distribution network over 70 countries.

RTR exports more than 65% of its production worldwide.



Quality and certifications

The quality department of **RTR Energía** ensures that the manufacturing of its products following strictest quality requirements according to international standards.

RTR professional and dedicated team of **R&D (i+D+I)** and **QC**, allowing us for continuous developments, innovations, safety improvements and various certification for its products and equipment, as recently **V0 self-extinguishing Polyurethane Resin certified under UL94**, certification of Three-phase reactors for harmonic filters by **AENOR**, type tested of three-phase capacitor series DWCAP by L.C.O.E. which gives security and satisfaction disposal to customers.



- Lighting and motor run capacitors, certification by AENOR
- Capacitor for power correction, UL810 certification
- Self-extinguishing resin V0, under standard UL94
- Reactors for Harmonic filters certification, by AENOR
- Capacitor for Power Factor Correction DWCAP, by AENOR



Engineering and technology

RTR Energía has the most modern technology for the manufacturing capacitors, harmonic filters, transformers, capacitor banks and polyurethane resin.



Assistance and customized manufacturing

The extensive technical equipment of RTR Energía is specialized in designing, manufacturing and installation of solutions adapted to every needs and provides technical assistance to its customers for any phase of the project.



Innovation and design

Highly qualified specialized technical team, latest technology, new materials with the highest performance and designs allowing RTR Energía for innovation and development the best products to improve electrical energy efficiency.

Thanks to this commitments for innovation, RTR Energía has Patented its new three phase capacitor model DWCAP and have certificates for products as ISO-9001:2008, three-phase capacitors under UL810, Lighting capacitors by AENOR, V0 self-extinguishing resin under UL94, three-phase harmonic filters by AENOR and type tested three-phase capacitor DWCAP by L.C.O.E.

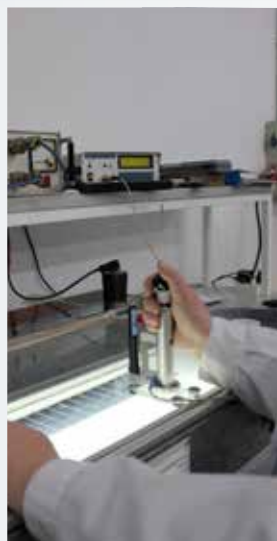


Verification and control laboratories

RTR Energía has laboratories:

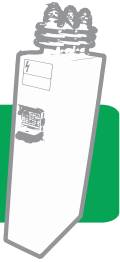
- Low Voltage Laboratory
- High Voltage Laboratory
- Chemical Laboratory

These laboratories allow developing the control of raw material, verification the finished product and development new technologies to deliver high performance product.



MV Capacitors and Banks

MV Capacitor are constituted by elementary units, consisting of aluminum foil windings of high purity and polypropylene film of the highest quality.



BO/R MT **TP Series**



BO/R MT **SP Series**



MV Capacitor Banks

LV Capacitors

Power capacitors are manufactured with low loss metallized self-healing polypropylene film. Dry type capacitors are filled with polyurethane self-extinguishing resin V0, developed under standard UL94 with certification number 20141031-E470994.



New 3Phase DWCAP Series



3Phase MA/C/CE and
1Phase EA Series



3Phase MA/C/CE TER Series



3Phase BO/R Series

LV Fixed Capacitors Banks

Three-phase protected power capacitors are specially designed for reactive power factor correction for installations where inductive automatic load is constant and regulation is not required.



LV Automatic Capacitor Banks

These capacitor banks are used in power factor correction for installations where is variable load.



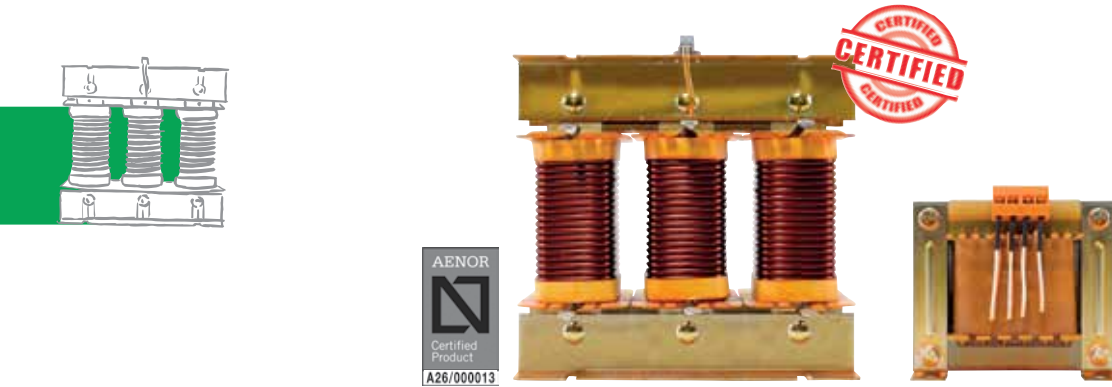
ARM Series
with harmonic filters



ST Series with static contactors

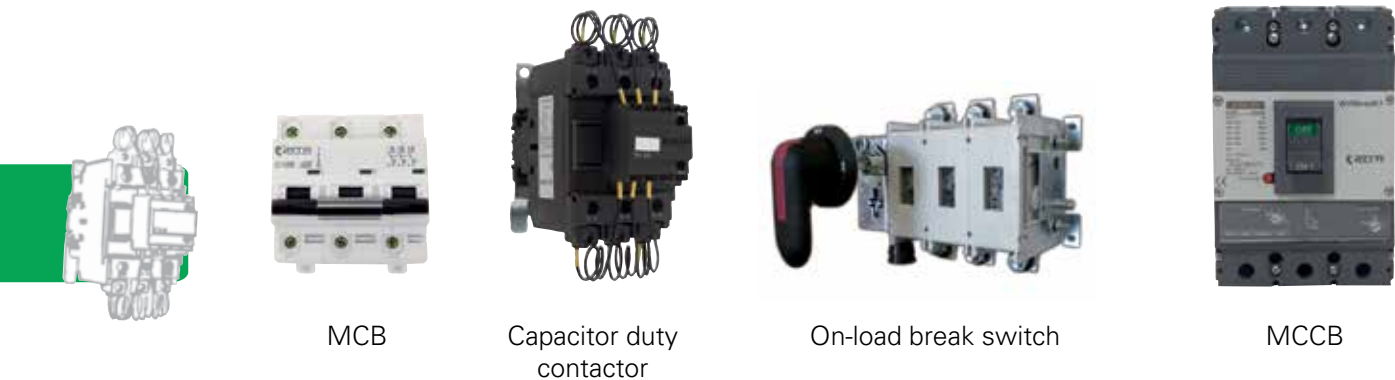
Harmonic Filters and Transformers

Three phase harmonic filters are made of low losses magnetic, copper conductor and 90°C thermal protection relay. Standard surge factor is 5,67 %, 7% and 14% with 252, 227 and 160 Hz for 60 Hz networks. Single phase transformers are made of low losses magnetic plates, copper conductor.

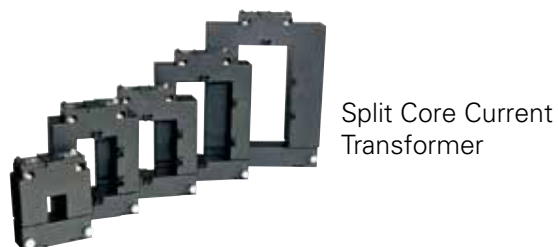


Accessories

The best equipment for the protection and control of our capacitor Banks.



Automatic Power Factor Controllers



Capacitors for power factor correction



MA/C/CE/TER Series

Three phase capacitors

400/440/480/525 V, 60 Hz

Characteristics and utility

- Three phase capacitor
- Delta connected
- Discharge resistors Incorporated
- Reactive power factor correction
- Dry type
- Connector type terminal
- Indoor mounting

Triple safety

- Overpressure disconnection system
- Protection by internal fuses

Construction and materials

- Low losses metallized self-healing polypropylene film, high density, high temperature and greater dielectric resistance Volt/μ
- Polyurethane self-extinguishing resin V0, developed under standard UL 94 by RTR Energía with certification number 20141031-E470994
- Aluminium case with bottom fixing M12x16

Standards

- IEC 60831-1/2
- EN 60831- 1/2



Technical Characteristics

Capacitance tolerance	-5% +10%
Frequency	60 Hz
Temperature range	-25°C +55°C
Dielectric losses	≤0.2 W/KVAr
Total losses	≤0.45 W/KVAr *
Over voltage	1.10 x Un (8h/day) 1.15 x Un (30min/day) 1.20 x Un (5 min/day) 1.30 x Un (1 min/day)
Over current	1.50 x In
Max. THD in voltage	2%
Max. THD in current	25%
Discharge resistance	Incorporated
Connection	Delta
Voltage test between terminals	2,15 x Un 2 sec.
Voltage test between terminals and case	3kV for 10 sec. AC
Inrush current	upto 200 x In
Protection	IP-20
Humidity	Max. 95%
Life Expectancy	100 000 h (Temp. type D) 120 000 h (Temp. type C)
Altitude	2000 a.s.l.
Mounting position	Universal



* Without resistors

Código	Potencia	Tensión	Frecuencia	Intensidad	Capacidad	Dimensiones
	KVAr	V	Hz	A	µF	mm
C4000256TER0000	2,5	400	60	3,61	3x 13,82	70X260
C4000506TER0000	5	400	60	7,22	3x 27,63	70X260
C4000756TER0000	7,5	400	60	10,83	3x 41,45	70X260
C4001006TER0000	10	400	60	14,43	3x 55,26	85X260
C4001256TER0000	12,5	400	60	18,04	3x 69,08	100X260
C4001506TER0000	15	400	60	21,65	3x 82,89	100X260
C4002006TER0000	20	400	60	28,87	3x110,52	100X345
C4002506TER0000	25	400	60	36,08	3x138,16	120X345
C4003006TER0000	30	400	60	43,30	3x165,79	120X345
C4003506TER0000	35	400	60	50,52	3x193,42	120X345
C4004006TER0000	40	400	60	57,74	3x221,05	120X345
C4005006TER0000	50	400	60	72,17	3x276,31	136X345

Código	Potencia	Tensión	Frecuencia	Intensidad	Capacidad	Dimensiones
	KVAr	V	Hz	A	µF	mm
C4400256TER0000	2,5	440	60	3,28	3x 11,42	70X260
C4400506TER0000	5	440	60	6,56	3x 22,84	70X260
C4400756TER0000	7,5	440	60	9,84	3x 34,25	70X260
C4401006TER0000	10	440	60	13,12	3x 45,67	85X260
C4401256TER0000	12,5	440	60	16,40	3x 57,09	85X260
C4401506TER0000	15	440	60	19,68	3x 68,51	100X260
C4402006TER0000	20	440	60	26,24	3x 91,34	100X345
C4402506TER0000	25	440	60	32,80	3x114,18	100X345
C4403006TER0000	30	440	60	39,36	3x137,01	120X345
C4403506TER0000	35	440	60	45,93	3x159,85	120X345
C4404006TER0000	40	440	60	52,49	3x182,68	120X345
C4405006TER0000	50	440	60	65,61	3x228,36	136X345

Código	Potencia	Tensión	Frecuencia	Intensidad	Capacidad	Dimensiones
	KVAr	V	Hz	A	µF	mm
C4800256TER0000	2,5	480	60	3,01	3x 9,59	70X260
C4800506TER0000	5	480	60	6,01	3x 19,19	70X260
C4800756TER0000	7,5	480	60	9,02	3x 28,78	70X260
C4801006TER0000	10	480	60	12,03	3x 38,38	85X260
C4801256TER0000	12,5	480	60	15,04	3x 47,97	100X260
C4801506TER0000	15	480	60	18,04	3x 57,56	100X260
C4802006TER0000	20	480	60	24,06	3x 76,75	100X345
C4802506TER0000	25	480	60	30,07	3x 95,94	100X345
C4803006TER0000	30	480	60	36,08	3x115,13	120X345
C4803506TER0000	35	480	60	42,10	3x134,32	120X345
C4804006TER0000	40	480	60	48,11	3x153,51	120X345
C4805006TER0000	50	480	60	60,14	3x191,88	136X345

Código	Potencia	Tensión	Frecuencia	Intensidad	Capacidad	Dimensiones
	KVAr	V	Hz	A	µF	mm
C5250256TER0000	2,5	525	60	3,01	3x 9,59	70X260
C5250506TER0000	5	525	60	6,01	3x 19,19	70X260
C5250756TER0000	7,5	525	60	9,02	3x 28,78	70X260
C5251006TER0000	10	525	60	12,03	3x 38,38	85X260
C5251256TER0000	12,5	525	60	15,04	3x 47,97	100X260
C5251506TER0000	15	525	60	18,04	3x 57,56	100X260
C5252006TER0000	20	525	60	24,06	3x 76,75	100X345
C5252506TER0000	25	525	60	30,07	3x 95,94	100X345
C5253006TER0000	30	525	60	36,08	3x115,13	120X345
C5253506TER0000	35	525	60	42,10	3x134,32	120X345
C5254006TER0000	40	525	60	48,11	3x153,51	120X345
C5255006TER0000	50	525	60	60,14	3x191,88	136X345

* Other power and voltage upon request

Three phase capacitors for harmonics filter application

400/440/480 V, 60Hz

Characteristics and utility

- Three phase capacitor
- Delta connected
- Discharge resistors Incorporated
- Reactive power factor correction
- Special design to install with 227 Hz three phase harmonic filters.
- Dry type
- Connector type terminal
- Indoor mounting

Triple safety

- Overpressure disconnection system
- Protection by internal fuses

Construction and materials

- Low losses metallized self-healing polypropylene film, high density, high temperature and greater dielectric resistance Volt/ μ
- Polyurethane self-extinguishing resin V0, developed under standard UL 94 by RTR Energía with certification number 20141031-E470994
- Aluminium case with bottom fixing M12x16

Standards

- IEC 60831-1/2
- EN 60831- 1/2



Technical Characteristics	
Capacitance tolerance	-5% +5%
Frequency	60 Hz
Temperature range	-25°C +55°C
Dielectric losses	≤ 0.2 W/KVAr
Total losses	≤ 0.45 W/KVAr *
Over voltage	1.15 x Un
Over current	1.50 x In
Discharge resistance	Incorporated
Connection	Delta
Voltage test between terminals	2,15 x Un 2 sec.
Voltage test between terminals and case	3kV for 10 sec. AC
Inrush current	upto 200 x In
Protection	IP-20
Humidity	Max. 95%
Life Expectancy	130 000 h (Temp. type C) 120 000 h (Temp. type D)
Altitude	2000 a.s.l.
Mounting position	Universal



* Without resistors

Código	Potencia	Tensión	Frecuencia	Intensidad	Capacidad	Dimensiones
	KVAr	V	Hz	A	µF	mm
C4000256TER0RTF	2,5	400	60	7,22	3x 13,82	70X260
C4000506TER0RTF	5	400	60	7,22	3x 27,63	70X260
C4000756TER0RTF	7,5	400	60	10,83	3x 41,45	70X260
C4001006TER0RTF	10	400	60	14,43	3x 55,26	85X260
C4001256TER0RTF	12,5	400	60	18,04	3x 69,08	100X260
C4001506TER0RTF	15	400	60	21,65	3x 82,89	100X260
C4002006TER0RTF	20	400	60	28,87	3x110,52	100X345
C4002506TER0RTF	25	400	60	36,08	3x138,16	120X345
C4003006TER0RTF	30	400	60	43,30	3x165,79	120X345
C4003506TER0RTF	35	400	60	50,52	3x193,42	120X345
C4004006TER0RTF	40	400	60	57,74	3x221,05	120X345
C4005006TER0RTF	50	400	60	72,17	3x276,31	136X345

Código	Potencia	Tensión	Frecuencia	Intensidad	Capacidad	Dimensiones
	KVAr	V	Hz	A	µF	mm
C4400256TER0RTF	2,5	440	60	3,28	3x 11,42	70X260
C4400506TER0RTF	5	440	60	6,56	3x 22,84	70X260
C4400756TER0RTF	7,5	440	60	9,84	3x 34,25	85X260
C4400256TER0RTF	10	440	60	13,12	3x 45,67	85X260
C4401006TER0RTF	12,5	440	60	16,40	3x 57,09	100X260
C4401506TER0RTF	15	440	60	19,68	3x 68,51	100X345
C4402006TER0RTF	20	440	60	26,24	3x 91,34	100X345
C4402506TER0RTF	25	440	60	32,80	3x114,18	120X345
C4403006TER0RTF	30	440	60	39,36	3x137,01	120X345
C4403506TER0RTF	35	440	60	45,93	3x159,85	120X345
C4404006TER0RTF	40	440	60	52,49	3x182,68	136X345
C4404506TER0RTF	45	440	60	59,05	3x205,52	136X345

Código	Potencia	Tensión	Frecuencia	Intensidad	Capacidad	Dimensiones
	KVAr	V	Hz	A	µF	mm
C4800256TER0RTF	2,5	480	60	3,01	3x 9,59	70X260
C4800506TER0RTF	5	480	60	6,01	3x 19,19	70X260
C4800756TER0RTF	7,5	480	60	9,02	3x 28,78	70X260
C4800256TER0RTF	10	480	60	12,03	3x 38,38	85X260
C4801006TER0RTF	12,5	480	60	15,04	3x 47,97	100X260
C4801506TER0RTF	15	480	60	18,04	3x 57,56	100X260
C4802006TER0RTF	20	480	60	24,06	3x 76,75	100X345
C4802506TER0RTF	25	480	60	30,07	3x 95,94	100X345
C4803006TER0RTF	30	480	60	36,08	3x115,13	120X345
C4803506TER0RTF	35	480	60	42,10	3x134,32	120X345
C4804006TER0RTF	40	480	60	48,11	3x153,51	120X345
C4805006TER0RTF	50	480	60	60,14	3x191,88	136X345

Código	Potencia	Tensión	Frecuencia	Intensidad	Capacidad	Dimensiones
	KVAr	V	Hz	A	µF	mm
C5250256TER0RTF	2,5	525	60	2,75	3x 8,02	70X260
C5250506TER0RTF	5	525	60	5,50	3x 16,04	70X260
C5250756TER0RTF	7,5	525	60	8,25	3x 24,06	85X260
C5250256TER0RTF	10	525	60	11,00	3x 32,08	85X225
C5251006TER0RTF	12,5	525	60	13,75	3x 40,10	100X260
C5251506TER0RTF	15	525	60	16,50	3x 48,12	100X260
C5252006TER0RTF	20	525	60	21,99	3x 64,16	100X345
C5252506TER0RTF	25	525	60	27,49	3x 80,20	100X345
C5253006TER0RTF	30	525	60	32,99	3x 96,24	120X345
C5253506TER0RTF	35	525	60	38,49	3x112,28	120X345
C5254006TER0RTF	40	525	60	43,99	3x128,32	120X345
C5255006TER0RTF	50	525	60	54,99	3x160,40	136X345

* Other power and voltage upon request

Three phase capacitors for harmonics filter application 400/440 V, 60Hz

Characteristics and utility

- Three phase capacitor
- Delta connected
- Discharge resistors Incorporated
- Reactive power factor correction
- Special design to install with 227 Hz three phase harmonic filters.
- Dry type
- Connector type terminal
- Indoor mounting

Triple safety

- Overpressure disconnection system
- Protection by internal fuses

Construction and materials

- Low losses metallized self-healing polypropylene film, high density, high temperature and greater dielectric resistance Volt/ μ
- Polyurethane self-extinguishing resin V0, developed under standard UL 94 by RTR Energía with certification number 20141031-E470994
- Aluminium case with bottom fixing M12x16

Standards

- IEC 60831-1/2
- EN 60831- 1/2



Technical Characteristics	
Capacitance tolerance	-5% +5%
Frequency	60 Hz
Temperature range	-25°C +55°C
Dielectric losses	≤ 0.2 W/KVAr
Total losses	≤ 0.45 W/KVAr *
Over voltage	1.15 x Un
Over current	1.50 x In
Discharge resistance	Incorporated
Connection	Delta
Voltage test between terminals	2,15 x Un 2 sec.
Voltage test between terminals and case	3kV for 10 sec. AC
Inrush current	upto 200 x In
Protection	IP-20
Humidity	Max. 95%
Life Expectancy	130 000 h (Temp. type C) 120 000 h (Temp. type D)
Altitude	2000 a.s.l.
Mounting position	Universal

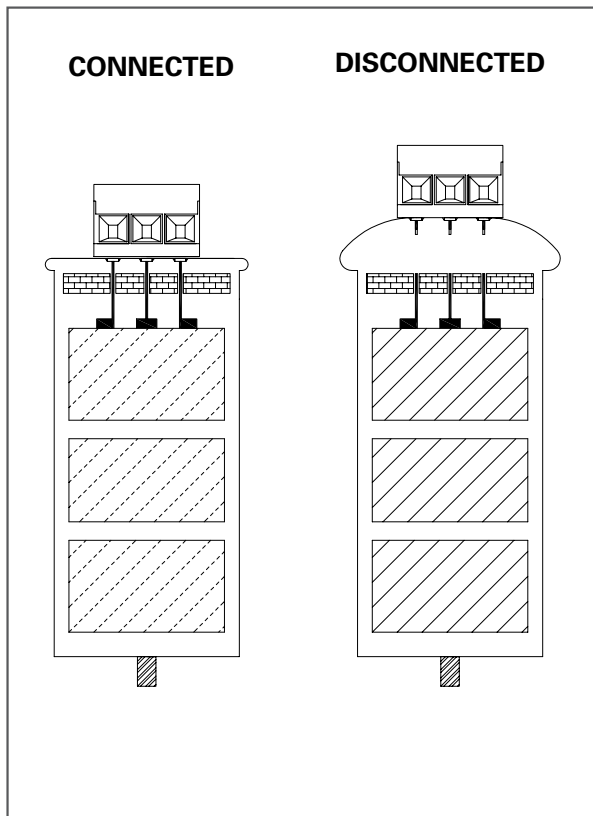


* Without resistors

Code	Power KVAr	Voltage V	Frequency Hz	Detuning factor p(%)	Current A	Capacitance µF	Dimension mm
C4000256TER5RCT	2,5	400	60	5,67	3,61	3x13,03	70X260
C4000506TER5RCT	5	400	60	5,67	7,22	3x26,06	70X260
C4000756TER5RCT	7,5	400	60	5,67	10,83	3x39,10	85X260
C4001006TER5RCT	10	400	60	5,67	14,43	3x52,13	85X260
C4001256TER5RCT	12,5	400	60	5,67	18,04	3x65,16	100X260
C4001506TER5RCT	15	400	60	5,67	21,65	3x78,19	100X260
C4002006TER5RCT	20	400	60	5,67	28,87	3x104,26	100X345
C4002506TER5RCT	25	400	60	5,67	36,08	3x130,32	120X345
C4003006TER5RCT	30	400	60	5,67	43,30	3x156,39	120X345
C4003506TER5RCT	35	400	60	5,67	50,52	3x182,45	120X345
C4004006TER5RCT	40	400	60	5,67	57,74	3x208,52	136X345
C4004506TER5RCT	45	400	60	5,67	64,95	3x234,58	136X345
C4000256TER7RCT	2,5	400	60	7	3,61	3x12,85	70X260
C4000506TER7RCT	5	400	60	7	7,22	3x25,70	70X260
C4000756TER7RCT	7,5	400	60	7	10,83	3x38,55	85X260
C4001006TER7RCT	10	400	60	7	14,43	3x51,39	85X260
C4001256TER7RCT	12,5	400	60	7	18,04	3x64,24	100X260
C4001506TER7RCT	15	400	60	7	21,65	3x77,09	100X260
C4002006TER7RCT	20	400	60	7	28,87	3x102,79	100X345
C4002506TER7RCT	25	400	60	7	36,08	3x128,48	120X345
C4003006TER7RCT	30	400	60	7	43,30	3x154,18	120X345
C4003506TER7RCT	35	400	60	7	50,52	3x179,88	120X345
C4004006TER7RCT	40	400	60	7	57,74	3x205,58	136X345
C4004506TER7RCT	45	400	60	7	64,95	3x231,27	136X345
C4000256TER1RCT	2,5	400	60	14	3,61	3x11,88	70x260
C4000506TER1RCT	5	400	60	14	7,22	3x23,76	70x260
C4000756TER1RCT	7,5	400	60	14	10,83	3x35,64	85x260
C4001006TER1RCT	10	400	60	14	14,43	3x47,53	100x260
C4001256TER1RCT	12,5	400	60	14	18,04	3x59,41	100x260
C4001506TER1RCT	15	400	60	14	21,65	3x71,29	100x345
C4002006TER1RCT	20	400	60	14	28,87	3x95,05	100x345
C4002506TER1RCT	25	400	60	14	36,08	3x118,81	120x345
C4003006TER1RCT	30	400	60	14	43,30	3x142,58	120x345
C4003506TER1RCT	35	400	60	14	50,52	3x166,34	136x345
C4004006TER1RCT	40	400	60	14	57,74	3x190,10	136x345

Code	Power KVAr	Voltage V	Frequency Hz	Detuning factor p(%)	Current A	Capacitance µF	Dimension mm
C4400256TER5RCT	2,5	440	60	5,67	3,28	3x10,77	70X260
C4400506TER5RCT	5	440	60	5,67	6,56	3x21,54	70X260
C4400756TER5RCT	7,5	440	60	5,67	9,84	3x32,31	85X260
C4401006TER5RCT	10	440	60	5,67	13,12	3x43,08	85X260
C4401256TER5RCT	12,5	440	60	5,67	16,40	3x53,85	100X260
C4401506TER5RCT	15	440	60	5,67	19,68	3x64,62	100X260
C4402006TER5RCT	20	440	60	5,67	26,24	3x86,16	100X345
C4402506TER5RCT	25	440	60	5,67	32,80	3x107,70	100X345
C4403006TER5RCT	30	440	60	5,67	39,36	3x129,24	120X345
C4403506TER5RCT	35	440	60	5,67	45,93	3x150,79	120X345
C4404006TER5RCT	40	440	60	5,67	52,49	3x172,33	136X345
C4405006TER5RCT	50	440	60	5,67	65,61	3x215,41	136X345
C4400256TER7RCT	2,5	440	60	7	3,28	3x10,62	70X260
C4400506TER7RCT	5	440	60	7	6,56	3x21,24	70X260
C4400756TER7RCT	7,5	440	60	7	9,84	3x31,86	85X260
C4401006TER7RCT	10	440	60	7	13,12	3x42,47	85X260
C4401256TER7RCT	12,5	440	60	7	16,40	3x53,09	100X260
C4401506TER7RCT	15	440	60	7	19,68	3x63,71	100X260
C4402006TER7RCT	20	440	60	7	26,24	3x84,95	100X345
C4402506TER7RCT	25	440	60	7	32,80	3x106,19	100X345
C4403006TER7RCT	30	440	60	7	39,36	3x127,42	120X345
C4403506TER7RCT	35	440	60	7	45,93	3x148,66	120X345
C4404006TER7RCT	40	440	60	7	52,49	3x169,90	136X345
C4405006TER7RCT	50	440	60	7	65,61	3x212,37	136X345
C4400256TER1RCT	2,5	440	60	14	3,28	3x9,82	70x260
C4400506TER1RCT	5	440	60	14	6,56	3x19,64	70x260
C4400756TER1RCT	7,5	440	60	14	9,84	3x29,46	85x260
C4401006TER1RCT	10	440	60	14	13,12	3x39,28	100x260
C4401256TER1RCT	12,5	440	60	14	16,40	3x49,10	100x260
C4401506TER1RCT	15	440	60	14	19,68	3x58,92	100x345
C4402006TER1RCT	20	440	60	14	26,24	3x78,55	100x345
C4402506TER1RCT	25	440	60	14	32,80	3x98,19	120x345
C4403006TER1RCT	30	440	60	14	39,36	3x117,83	120x345
C4403506TER1RCT	35	440	60	14	45,93	3x137,47	136x345
C4404006TER1RCT	40	440	60	14	52,49	3x157,11	136x345
C4405006TER1RCT	45	440	60	14	59,05	3x176,75	136x345

* Other power and voltage upon request



Temperature (IEC 60831-1/2)

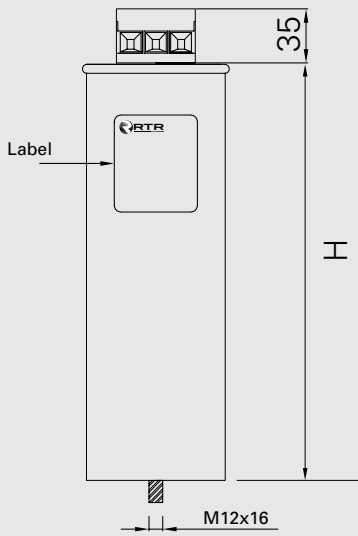
Symbol	Ambient temperature °C		
	Maximum	Highest mean over any period of	
		24h	1 year
A	40	30	20
B	45	35	25
C	50	40	30
D	55	45	35

Dimensions

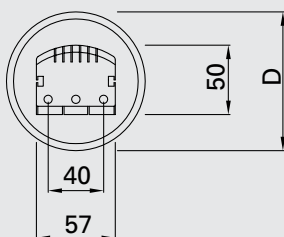
Dimensions	Connection terminal	DRAWING
D x H (mm ²)	Max. cable section 1 kV-RV (mm ²)	
70x230	10	DRAWING A
85x230	10	
100x230	10	
120x230	35	DRAWING B
136x230	35	

Dimensions

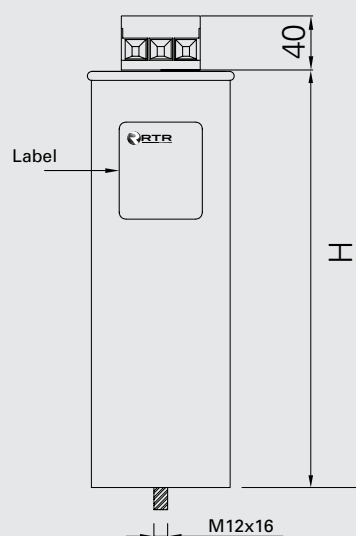
DRAWING A



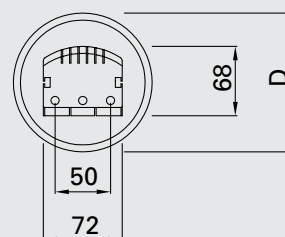
- Washer DIN 6798 A M12
- Screw DIN 936 M12 ZNC



DRAWING B



- Washer DIN 6798 A M12
- Screw DIN 936 M12 ZNC



Capacitors for power factor correction



DWCAP Series

Three phase capacitors

400/440/480/525 V, 60Hz

Characteristics and utility

- Three phase capacitor DUAL WINDING internally delta connected
- Discharge resistors Incorporated
- Reactive power factor correction
- Dry type
- Connector type terminal
- Indoor mounting

Triple safety

- Overpressure disconnection system
- Protection by internal fuses
- DWCAP system (patent) internal windings Displacement

Construction and materials

- Low losses metallized self-healing polypropylene film, high density, high temperature and greater dielectric resistance Volt/ μ
- Polyurethane self-extinguishing resin V0, developed under standard UL 94 by RTR Energía with certification number 20141031-E470994
- Aluminium case with bottom fixing M12x16

Standards

- IEC 60831-1/2
- EN 60831- 1/2

Certificates



Technical Characteristics	
Capacitance tolerance	-5% +10%
Frequency	60 Hz
Temperature range	-25°C +55°C
Dielectric losses	≤ 0.2 W/KVAr
Total losses	≤ 0.45 W/KVAr *
Over voltage	1.10 x Un (8h/day) 1.15 x Un (30min/day) 1.20 x Un (5 min/day) 1.30 x Un (1 min/day)
Over current	1.50 x In
Max. THD in voltage	2%
Max. THD in current	25%
Discharge resistance	Incorporated
Connection	Delta
Voltage test between terminals	2,15 x Un 2 sec.
Voltage test between terminals and case	3kV for 10 sec. AC
Inrush current	upto 200 x In
Protection	IP-20
Humidity	Max. 95%
Life Expectancy	100 000 h (Temp. type D) 120 000 h (Temp. type C)
Altitude	2000 a.s.l.
Mounting position	Universal



* Without resistors

Code	Power	Voltage	Frequency	Current	Capacitance	Dimensions
	KVAr	V	Hz	A	μF	mm
D4001006TER0000	10	400	60	14,43	3x 55,26	70 x 260
D4001256TER0000	12,5	400	60	18,04	3x 69,08	85 x 260
D4001506TER0000	15	400	60	21,65	3x 82,89	85 x 260
D4002006TER0000	20	400	60	28,87	3x110,52	100 x 260
D4002506TER0000	25	400	60	36,08	3x138,16	120 x 260
D4003006TER0000	30	400	60	43,30	3x165,79	120 x 260
D4003506TER0000	35	400	60	50,52	3x193,42	136 x 260
D4004006TER0000	40	400	60	57,74	3x221,05	136 x 260

Code	Power	Voltage	Frequency	Current	Capacitance	Dimensions
	KVAr	V	Hz	A	μF	mm
D4401006TER0000	10	440	60	13,12	3x 45,67	70 x 260
D4401256TER0000	12,5	440	60	16,40	3x 57,09	85 x 260
D4401506TER0000	15	440	60	19,68	3x 68,51	85 x 260
D4402006TER0000	20	440	60	26,24	3x 91,34	100 x 260
D4402506TER0000	25	440	60	32,80	3x114,18	120 x 260
D4403006TER0000	30	440	60	39,36	3x137,01	120 x 260
D4403506TER0000	35	440	60	45,93	3x159,85	136 x 260
D4404006TER0000	40	440	60	52,49	3x182,68	136 x 260
D4404506TER0000	45	440	60	59,05	3x205,52	136 x 260

Code	Power	Voltage	Frequency	Current	Capacitance	Dimensions
	KVAr	V	Hz	A	μF	mm
D4801006TER0000	10	480	60	12,03	3x 38,38	85 x 260
D4801256TER0000	12,5	480	60	15,04	3x 47,97	85 x 260
D4801506TER0000	15	480	60	18,04	3x 57,56	100 x 260
D4802006TER0000	20	480	60	24,06	3x 76,75	120 x 260
D4802506TER0000	25	480	60	30,07	3x 95,94	120 x 260
D4803006TER0000	30	480	60	36,08	3x115,13	136 x 260
D4803506TER0000	35	480	60	42,10	3x134,32	136 x 260

Code	Power	Voltage	Frequency	Current	Capacitance	Dimensions
	KVAr	V	Hz	A	μF	mm
D5251006TER0000	10	525	60	12,03	3x 38,38	85 x 260
D5251256TER0000	12,5	525	60	15,04	3x 47,97	85 x 260
D5251506TER0000	15	525	60	18,04	3x 57,56	100 x 260
D5252006TER0000	20	525	60	24,06	3x 76,75	120 x 260
D5252506TER0000	25	525	60	30,07	3x 95,94	120 x 260
D5253006TER0000	30	525	60	36,08	3x115,13	136 x 260
D5253506TER0000	35	525	60	42,10	3x134,32	136 x 260

Reinforced three phase capacitors

400/440/480/525 V, 50 Hz

Characteristics and utility

- Three phase capacitor DUAL WINDING internally delta connected
- Discharge resistors Incorporated
- Reactive power factor correction
- Reinforced design to support over voltage
- Dry type
- Connector type terminal
- Indoor mounting

Triple safety

- Overpressure disconnection system
- Protection by internal fuses
- DWCAP system (patent) internal windings Displacement

Construction and materials

- Low losses metallized self-healing polypropylene film, high density, high temperature and greater dielectric resistance Volt/ μ
- Polyurethane self-extinguishing resin V0, developed under standard UL 94 by RTR Energía with certification number 20141031-E470994
- Aluminium case with bottom fixing M12x16

Standards

- IEC 60831-1/2
- EN 60831-1/2

Certificates



Technical Characteristics	
Capacitance tolerance	-5% +10%
Frequency	60 Hz
Temperature range	-25°C +55°C
Dielectric losses	≤ 0.2 W/KVAr
Total losses	≤ 0.45 W/KVAr *
Over voltage	1.15 x Un
Over current	1.50 x In
Max. THD in voltage	3%
Max. THD in current	30%
Discharge resistance	Incorporated
Connection	Delta
Voltage test between terminals	2,15 x Un 2 sec.
Voltage test between terminals and case	3kV for 10 sec. AC
Inrush current	upto 200 x In
Protection	IP-20
Humidity	Max. 95%
Life Expectancy	130 000 h (Temp. type C) 120 000 h (Temp. type D)
Altitude	2000 a.s.l.
Mounting position	Universal

* Without resistors



Code	Power	Voltage	Frequency	Current	Capacitance	Dimensions
	KVAr	V	Hz	A	μF	mm
D4001006TER0RTF	10	400	60	14,43	3x55,26	70 x 260
D4001256TER0RTF	12,5	400	60	18,04	3x69,08	85 x 260
D4001506TER0RTF	15	400	60	21,65	3x82,89	100 x 260
D4002006TER0RTF	20	400	60	28,87	3x110,52	100 x 260
D4002506TER0RTF	25	400	60	36,08	3x138,16	120 x 260
D4003006TER0RTF	30	400	60	43,30	3x165,79	120 x 260
D4003506TER0RTF	35	400	60	50,52	3x193,42	136 x 260
D4004006TER0RTF	40	400	60	57,74	3x221,05	136 x 260

Code	Power	Voltage	Frequency	Current	Capacitance	Dimensions
	KVAr	V	Hz	A	μF	mm
D4401006TER0RTF	10	440	60	13,12	3x45,67	85 x 260
D4401256TER0RTF	12,5	440	60	16,40	3x57,09	85 x 260
D4401506TER0RTF	15	440	60	19,68	3x68,51	100 x 260
D4402006TER0RTF	20	440	60	26,24	3x91,34	100 x 260
D4402506TER0RTF	25	440	60	32,80	3x114,18	120 x 265
D4403006TER0RTF	30	440	60	39,36	3x137,01	120 x 265
D4403506TER0RTF	35	440	60	45,93	3x159,85	136 x 265
D4404006TER0RTF	40	440	60	52,49	3x182,68	136 x 265

Code	Power	Voltage	Frequency	Current	Capacitance	Dimensions
	KVAr	V	Hz	A	μF	mm
D4801006TER0RTF	10	480	60	12,03	3x38,38	85 x 260
D4801256TER0RTF	12,5	480	60	15,04	3x47,97	85 x 260
D4801506TER0RTF	15	480	60	18,04	3x57,56	100 x 260
D4802006TER0RTF	20	480	60	24,06	3x76,75	120 x 265
D4802506TER0RTF	25	480	60	30,07	3x95,94	120 x 265
D4803006TER0RTF	30	480	60	36,08	3x115,13	136 x 265
D4803506TER0RTF	35	480	60	42,10	3x134,32	136 x 265

Code	Power	Voltage	Frequency	Current	Capacitance	Dimensions
	KVAr	V	Hz	A	μF	mm
D5251006TER0RTF	10	525	60	11,00	3x32,08	85 x 260
D5251256TER0RTF	12,5	525	60	13,75	3x40,10	100 x 260
D5251506TER0RTF	15	525	60	16,50	3x48,12	100 x 260
D5252006TER0RTF	20	525	60	21,99	3x64,16	120 x 265
D5252506TER0RTF	25	525	60	27,49	3x80,20	120 x 265
D5253006TER0RTF	30	525	60	32,99	3x96,24	136 x 265
D5253506TER0RTF	35	525	60	38,49	3x112,28	136 x 265

Other power and voltage upon request

Three phase capacitors with connector for harmonics filter application

400/440 V, 60Hz

Characteristics and utility

- Three phase capacitor DUAL WINDING internally delta connected
- Discharge resistors Incorporated
- Reactive power factor correction
- Special design to install with 252, 227 and 160 Hz three phase harmonic filters.
- Dry type
- Connector type terminal
- Indoor mounting

Triple safety

- Overpressure disconnection system
- Protection by internal fuses
- DWCAP system (patent) internal windings Displacement

Construction and materials

- Low losses metallized self-healing polypropylene film, high density, high temperature and greater dielectric resistance Volt/ μ
- Polyurethane self-extinguishing resin V0, developed under standard UL 94 by RTR Energía with certification number 20141031-E470994
- Aluminium case with bottom fixing M12x16

Standards

- IEC 60831-1/2
- EN 60831- 1/2

Certificates



Technical Characteristics	
Capacitance tolerance	-5% +5%
Frequency	60 Hz
Temperature range	-25°C +55°C
Dielectric losses	≤ 0.2 W/KVAr
Total losses	≤ 0.45 W/KVAr *
Over voltage	1.15 x Un
Over current	1.50 x In
Discharge resistance	Incorporated
Connection	Delta
Voltage test between terminals	2,15 x Un 2 sec.
Voltage test between terminals and case	3kV for 10 sec. AC
Inrush current	upto 200 x In
Protection	IP-20
Humidity	Max. 95%
Life Expectancy	130 000 h (Temp. type C) 120 000 h (Temp. type D)
Altitude	2000 a.s.l.
Mounting position	Universal

* Without resistors



Code	Power	Voltage	Frequency	Detuning factor	Current	Capacitance	Dimension
	KVAr	V	Hz	p(%)	A	μF	mm
D4001006TER5RCT	10	400	60	5,67%	14,43	3x 52,13	70 x 260
D4001256TER5RCT	12,5	400	60	5,67%	18,04	3x 65,16	85 x 260
D4001506TER5RCT	15	400	60	5,67%	21,65	3x 78,19	85 x 260
D4002006TER5RCT	20	400	60	5,67%	28,87	3x104,26	100 x 260
D4002506TER5RCT	25	400	60	5,67%	36,08	3x130,32	120 x 260
D4003006TER5RCT	30	400	60	5,67%	43,30	3x156,39	120 x 260
D4003506TER5RCT	35	400	60	5,67%	50,52	3x182,45	136 x 260
D4004006TER5RCT	40	400	60	5,67%	57,74	3x208,52	136 x 260

Code	Power	Voltage	Frequency	Detuning factor	Current	Capacitance	Dimension
	KVAr	V	Hz	p(%)	A	μF	mm
D4001006TER7RCT	10	400	60	7%	14,43	3x 51,39	70 x 260
D4001256TER7RCT	12,5	400	60	7%	18,04	3x 64,24	85 x 260
D4001506TER7RCT	15	400	60	7%	21,65	3x 77,09	85 x 260
D4002006TER7RCT	20	400	60	7%	28,87	3x102,79	100 x 260
D4002506TER7RCT	25	400	60	7%	36,08	3x128,48	120 x 260
D4003006TER7RCT	30	400	60	7%	43,30	3x154,18	120 x 260
D4003506TER7RCT	35	400	60	7%	50,52	3x179,88	136 x 260
D4004006TER7RCT	40	400	60	7%	57,74	3x205,58	136 x 260

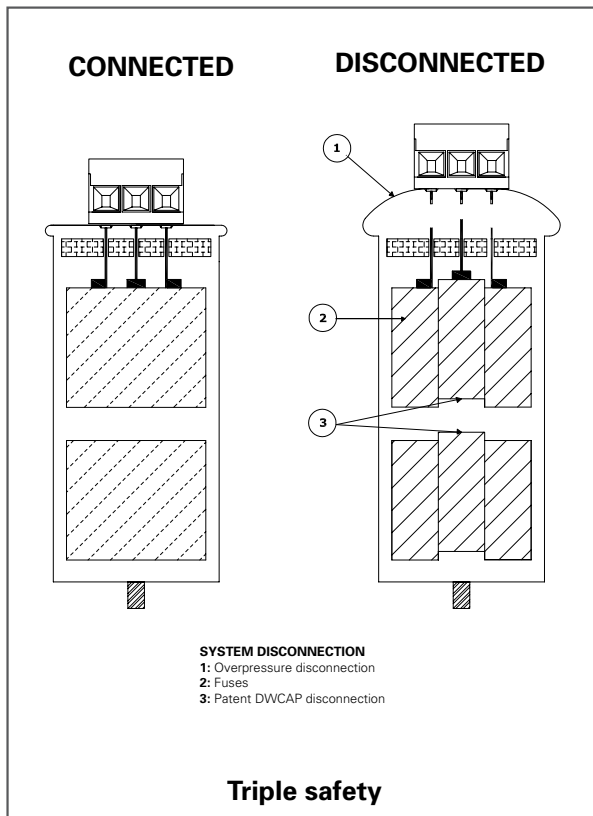
Code	Power	Voltage	Frequency	Detuning factor	Current	Capacitance	Dimension
	KVAr	V	Hz	p(%)	A	μF	mm
D4001006TER1RCT	10	400	60	14%	14,43	3x 47,53	85 x 260
D4001256TER1RCT	12,5	400	60	14%	18,04	3x 59,41	100 x 260
D4001506TER1RCT	15	400	60	14%	21,65	3x 71,29	100 x 260
D4002006TER1RCT	20	400	60	14%	28,87	3x 95,05	120 x 260
D4002506TER1RCT	25	400	60	14%	36,08	3x118,81	120 x 260
D4003006TER1RCT	30	400	60	14%	43,30	3x142,58	136 x 260
D4003506TER1RCT	35	400	60	14%	50,52	3x166,34	136 x 260

Code	Power	Voltage	Frequency	Detuning factor	Current	Capacitance	Dimension
	KVAr	V	Hz	p(%)	A	μF	mm
D4401006TER5RCT	10	440	60	5,67%	13,12	3x 43,08	85 x 260
D4401256TER5RCT	12,5	440	60	5,67%	16,40	3x 53,85	100 x 260
D4401506TER5RCT	15	440	60	5,67%	19,68	3x 64,62	100 x 260
D4402006TER5RCT	20	440	60	5,67%	26,24	3x 86,16	120 x 265
D4402506TER5RCT	25	440	60	5,67%	32,80	3x107,70	120 x 265
D4403006TER5RCT	30	440	60	5,67%	39,36	3x129,24	136 x 265
D4403506TER5RCT	35	440	60	5,67%	45,93	3x150,79	136 x 265

Code	Power	Voltage	Frequency	Detuning factor	Current	Capacitance	Dimension
	KVAr	V	Hz	p(%)	A	μF	mm
D4401006TER7RCT	10	440	60	7%	13,12	3x 42,47	85 x 260
D4401256TER7RCT	12,5	440	60	7%	16,40	3x 53,09	100 x 260
D4401506TER7RCT	15	440	60	7%	19,68	3x 63,71	100 x 260
D4402006TER7RCT	20	440	60	7%	26,24	3x 84,95	120 x 265
D4402506TER7RCT	25	440	60	7%	32,80	3x106,19	120 x 265
D4403006TER7RCT	30	440	60	7%	39,36	3x127,42	136 x 265
D4403506TER7RCT	35	440	60	7%	45,93	3x148,66	136 x 265

Code	Power	Voltage	Frequency	Detuning factor	Current	Capacitance	Dimension
	KVAr	V	Hz	p(%)	A	μF	mm
D4401006TER1RCT	10	440	60	14%	13,12	3x 39,28	85 x 260
D4401256TER1RCT	12,5	440	60	14%	16,40	3x 49,10	100 x 260
D4401506TER1RCT	15	440	60	14%	19,68	3x 58,92	100 x 260
D4402006TER1RCT	20	440	60	14%	26,24	3x 78,55	120 x 265
D4402506TER1RCT	25	440	60	14%	32,80	3x 98,19	120 x 265
D4403006TER1RCT	30	440	60	14%	39,36	3x117,83	136 x 265
D4403506TER1RCT	35	440	60	14%	45,93	3x137,47	136 x 265

Other power and voltage upon request



Temperature (IEC 60831-1/2)

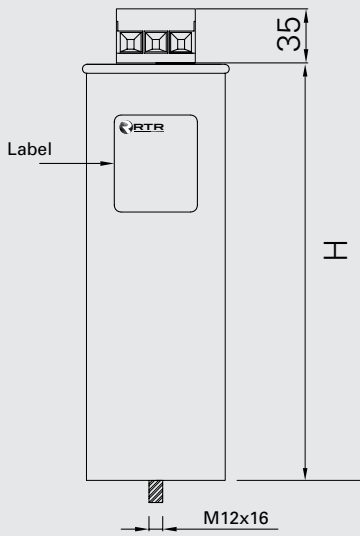
Symbol	Ambient temperature °C		
	Maximum	Highest mean over any period of	
		24h	1 year
A	40	30	20
B	45	35	25
C	50	40	30
D	55	45	35

Dimensions

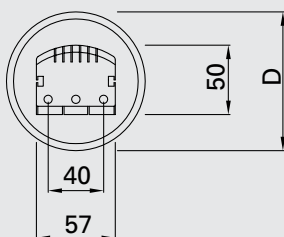
Dimensions	Connection terminal	DRAWING
D x H (mm ²)	Max. cable section 1 kV-RV (mm ²)	
70x230	10	DRAWING A
85x230	10	
100x230	10	
120x230	35	DRAWING B
136x230	35	

Dimensions

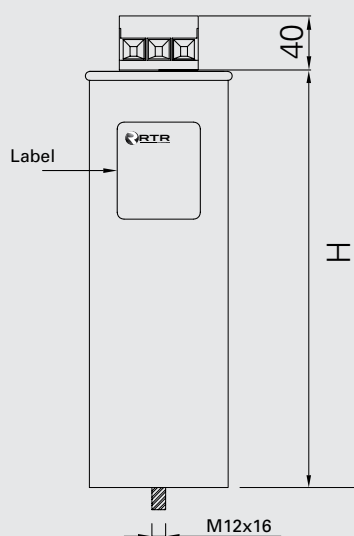
DRAWING A



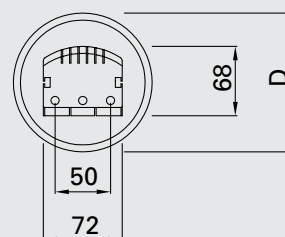
Washer DIN 6798 A M12
 Screw DIN 936 M12 ZNC



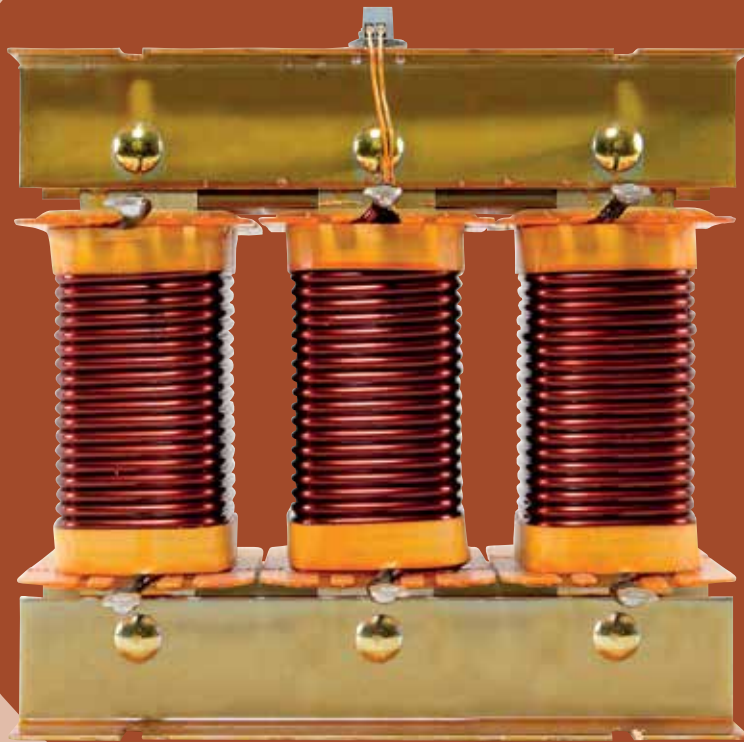
DRAWING B



Washer DIN 6798 A M12
 Screw DIN 936 M12 ZNC



Reactors for Harmonic Filters



Three Phase Harmonic Filters

Characteristics and utility

- Three phase harmonic filters.
- Avoid resonance between inductive impedance and three phase capacitors for power factor correction
- Detuning with MA/C/CE TER RCT and DWCAP RCT, with resonance frequency 252, 227 or 160 Hz.

Upon request

RTR's technical team offers the possibility of manufacturing equipment according to customer application need, defining power, voltage, frequency...

Construction and Materials

- Low losses magnetic plates
- Copper and aluminium conductor class F(155°C) with permanent regime
- Thermal protection relay
- Specially designed to increasing ventilation, and improving thermal dissipation

Standards

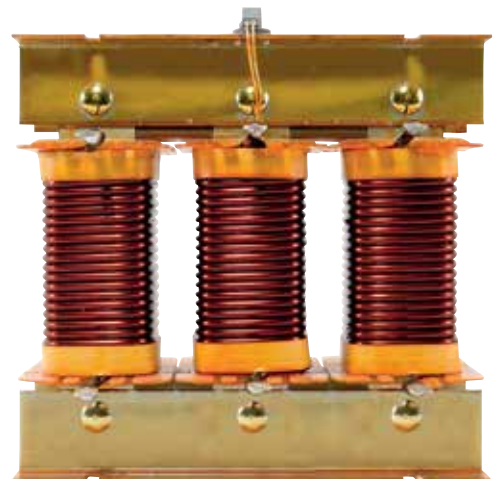
- EN 60076-6
- IEC 60076-6

Certifications



Technical Characteristics

Tolerance "L"	5 %
Frequency networks	60 Hz
Linearity Inductance	1,8 x In
Detuning factor	5.67,7 and 14 %
Heat Insulation	F Class (155° C)
Proof strees	4 KV
Thermal Protection	90° C
Permissible Overload	1,07 x In
Protection Degree	IP 00



REACTORS FOR HARMONIC FILTERS

Code	Power	Voltage	Nominal	Detuning	Resonance	Current	Capacitance	Inductance
	KVAr	V	Frequency Hz	Factor %	Frequency Hz	A	µF	mH
RTF040001002526	10	400	60	5,67	252	156,39	14,43	2,55
RTF040001252526	12,5	400	60	5,67	252	195,48	18,04	2,04
RTF040001502526	15	400	60	5,67	252	234,58	21,65	1,70
RTF040002002526	20	400	60	5,67	252	312,77	28,87	1,28
RTF040002502526	25	400	60	5,67	252	390,97	36,08	1,02
RTF040005002526	50	400	60	5,67	252	781,93	72,17	0,51
RTF040008002526	80	400	60	5,67	252	1251,09	115,47	0,32
RTF040010002526	100	400	60	5,67	252	1563,86	144,34	0,26
Code	Power	Voltage	Nominal	Detuning	Resonance	Current	Capacitance	Inductance
	KVAr	V	Frequency Hz	Factor %	Frequency Hz	A	µF	mH
RTF040001002276	10	400	60	7	227	14,43	154,18	3,19
RTF040001252276	12,5	400	60	7	227	18,04	192,73	2,56
RTF040001502276	15	400	60	7	227	21,65	231,27	2,13
RTF040002002276	20	400	60	7	227	28,87	308,36	1,60
RTF040002502276	25	400	60	7	227	36,08	385,45	1,28
RTF040005002276	50	400	60	7	227	72,17	770,91	0,64
RTF040008002276	80	400	60	7	227	115,47	1233,45	0,40
RTF040010002276	100	400	60	7	227	144,34	1541,81	0,32
Code	Power	Voltage	Nominal	Detuning	Resonance	Current	Capacitance	Inductance
	KVAr	V	Frequency Hz	Factor %	Frequency Hz	A	µF	mH
RTF040001001606	10	400	60	14	160	142,58	14,43	6,91
RTF040001251606	12,5	400	60	14	160	178,22	18,04	5,53
RTF040001501606	15	400	60	14	160	213,86	21,65	4,61
RTF040002001606	20	400	60	14	160	285,15	28,87	3,45
RTF040002501606	25	400	60	14	160	356,44	36,08	2,76
RTF040005001606	50	400	60	14	160	712,88	72,17	1,38
RTF040008001606	80	400	60	14	160	1140,61	115,47	0,86
RTF040010001606	100	400	60	14	160	1425,76	144,34	0,69
Code	Power	Voltage	Nominal	Detuning	Resonance	Current	Capacitance	Inductance
	KVAr	V	Frequency Hz	Factor %	Frequency Hz	A	µF	mH
RTF044001002526	10	440	60	5,67	252	13,12	129,24	3,09
RTF044001252526	12,5	440	60	5,67	252	16,40	161,56	2,47
RTF044001502526	15	440	60	5,67	252	19,68	193,87	2,06
RTF044002002526	20	440	60	5,67	252	26,24	258,49	1,54
RTF044002502526	25	440	60	5,67	252	32,80	323,11	1,23
RTF044005002526	50	440	60	5,67	252	65,61	646,22	0,62
RTF044008002526	80	440	60	5,67	252	104,97	1033,96	0,39
RTF044010002526	100	440	60	5,67	252	131,22	1292,45	0,31
Code	Power	Voltage	Nominal	Detuning	Resonance	Current	Capacitance	Inductance
	KVAr	V	Frequency Hz	Factor %	Frequency Hz	A	µF	mH
RTF044001002276	10	440	60	7	227	13,12	127,42	3,87
RTF044001252276	12,5	440	60	7	227	16,40	159,28	3,09
RTF044001502276	15	440	60	7	227	19,68	191,13	2,58
RTF044002002276	20	440	60	7	227	26,24	254,85	1,93
RTF044002502276	25	440	60	7	227	32,80	318,56	1,55
RTF044005002276	50	440	60	7	227	65,61	637,11	0,77
RTF044008002276	80	440	60	7	227	104,97	1019,38	0,48
RTF044010002276	100	440	60	7	227	131,22	1274,23	0,39
Code	Power	Voltage	Nominal	Detuning	Resonance	Current	Capacitance	Inductance
	KVAr	V	Frequency Hz	Factor %	Frequency Hz	A	µF	mH
RTF044001001606	10	440	60	14	160	13,12	117,83	8,36
RTF044001251606	12,5	440	60	14	160	16,40	147,29	6,69
RTF044001501606	15	440	60	14	160	19,68	176,75	5,57
RTF044002001606	20	440	60	14	160	26,24	235,66	4,18
RTF044002501606	25	440	60	14	160	32,80	294,58	3,34
RTF044005001606	50	440	60	14	160	65,61	589,16	1,67
RTF044008001606	80	440	60	14	160	104,97	942,65	1,04
RTF044010001606	100	440	60	14	160	131,22	1178,32	0,84

Other power and voltage upon request
 ** Consultar las dimensiones

Power Factor regulator

PR-11D

General Characteristics

- Four quadrants Operations
- Selecting the CT connection phase
- Measure of current harmonics



Technical Characteristics

Nominal Voltage	230,400 and 480 V (Preferably to phases L2-L3)
Frequency	45-64 Hz
Current measurement margin	0.05 to 5 A (maximum overload +20 %)
Current measurement circuit	In/5 (Preferably in phase L1)
Power consumptions	230V: 7,4 VA (no load) ; 8,2 VA(6 relays); 9,9 VA(12 relays) 400V: 5 VA (no load) ; 6,6 VA(6 relays); 8,8 VA(12 relays) 480V: 8,7 VA (no load) ; 9,5 VA(6 relays); 10,7 VA(12 relays)
Accuracy of measurements	Voltage and current :1% ; cos j : 2% ± 1 digit
Display	1 line x 3 digits x 7segments + 20 icons

Physical Characteristics

Protection degree	IP40
Temperature Range	-20°C + 60°C
Humidity	Máx. 95%
Type of installation	Front panel mounted
Dimensions	143x143x62

Code	Steps	Voltage
		V
REG06DPR1100003	6	230
REG12DPR1100003	12	230
REG06DPR1100000	6	400
REG12DPR1100000	12	400
REG06DPR1150004	6	480
REG12DPR1150004	12	480

Power Factor Regulator

PR-12D Remote management

General Characteristics

- Smart Alarm system: advise us when we're getting closer to penalization, if any does not work properly, etc.
- Its information system allows us to know the basic parameters in general and per phase: state of capacitors, temperature, voltage and current....
- Net analyzed: allows us to know THD both voltage and current.
- Interactive menu
- Parameters selection: time of connection / disconnection of capacitors, protection for step.
- Telegestion: Communication accessory for the transmission of information.



Technical Characteristics

Nominal Voltage, Un	220 Vac (Phase/neutral) or 380 Vac /phase/phase)
Frequency	50/60 Hz
Current measurement circuit	5/5...10000/5 A
Minimum current value	10 mA
Power consumptions	< 1 VA
Accuracy of measurement	1% ±digit
Display	3,2"
Connection	RS485

Physical Characteristics

Protection degree	IP20
Temperature Range	-5 °C + 50 °C
Humidity	15%-95%
Type of installation	Front panel mounted
Dimensions	144x144x45 mm

Code	Steps	Voltage V
REG12DPR1200000	12	220 Vac (Phase/Neutral) 380 Vac (Phase/phase)

Communication accessory for the transmission of information.

Code
REGCOMCON2RJ450

Dimensions

