



EXPORT 2017



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 heigh 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, Thailand and Turkey 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 has Quality Certificate ISO 9001 and Enviromental Certificate ISO 14001. Also RTR provides certificates for products as its three phase capacitor under UL810, V0 self-extinguishing resin under UL94; and lighting capacitor, three phase capacitor DWCAP and three phase harmonic filter certified by AENOR.

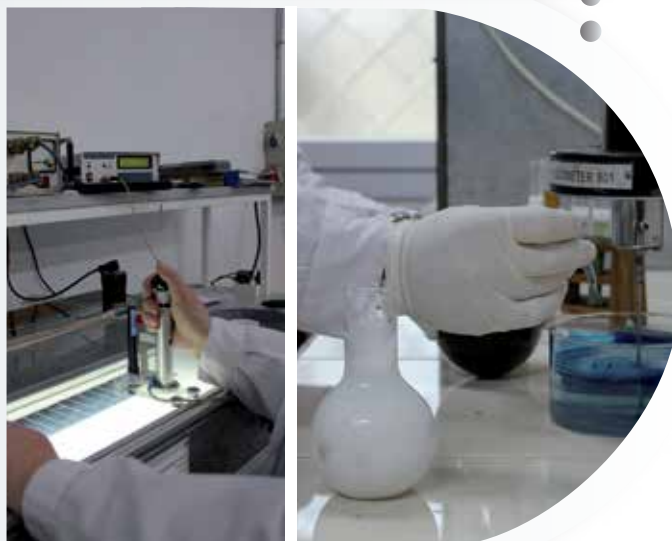


Verification and control laboratories

RTR Energía has laboratories:

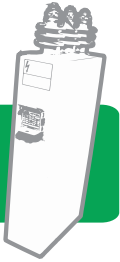
- Low Voltage Laboratory
- High Voltage Laboratory
- Chemical Laboratory

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 SUPERDWCAP and 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.



PRE Series

PRBA Series

PRBD Series

Compact-1

Compact-2

LV Automatic Capacitor Banks

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



Compact-4

Compact-7

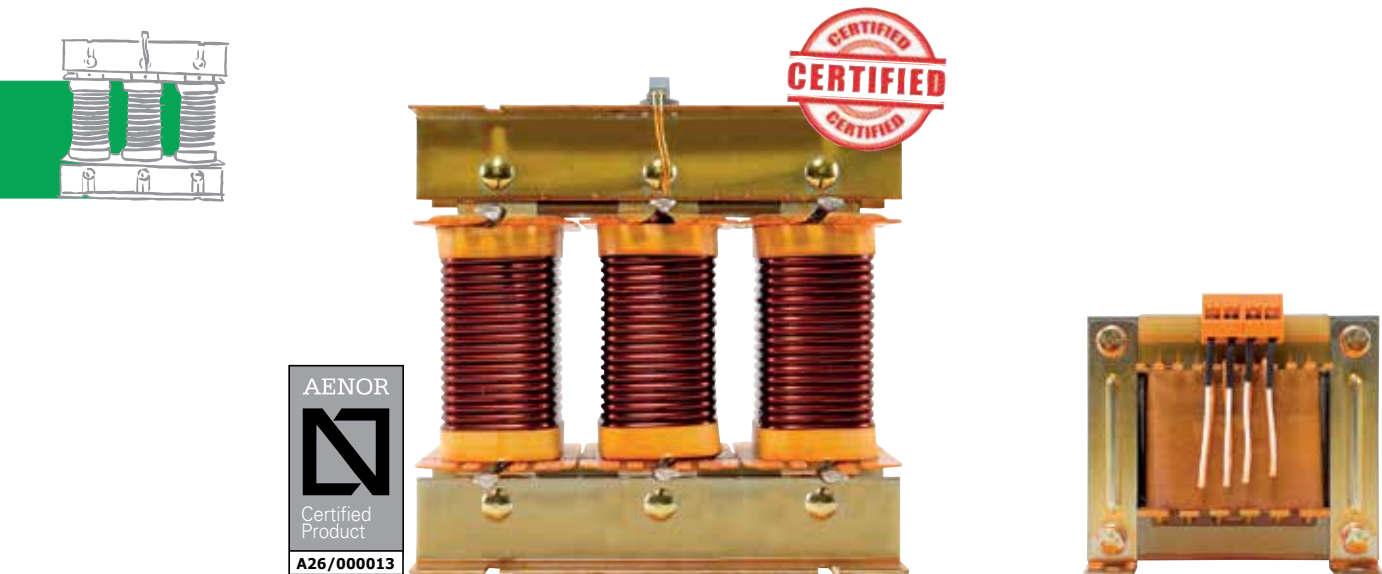
Compact-9

ARM Series
with harmonic filters

ST Series with static contactors

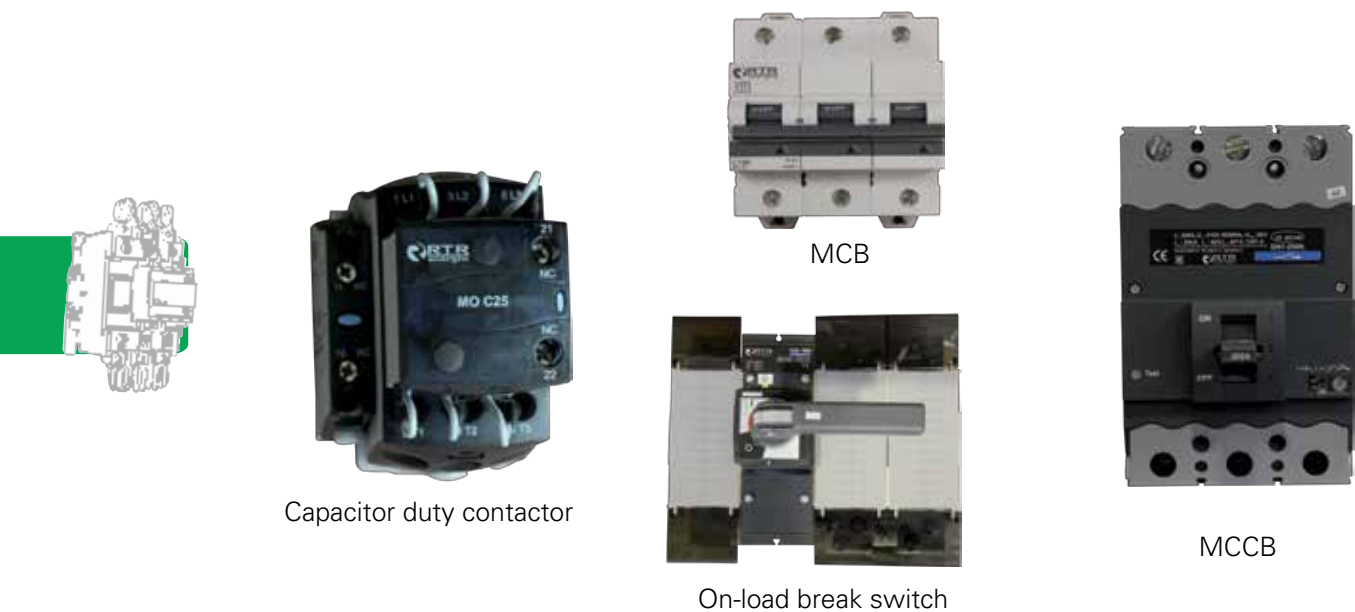
Harmonic Filters and Transformers

Three phase harmonic filters are made of low losses magnetic, copper conductor and 90, 120, 140 and 160°C thermal protection relay. Standard surge factor is 5,67 %, 7% and 14% with 210, 189 and 134 Hz for 50 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.





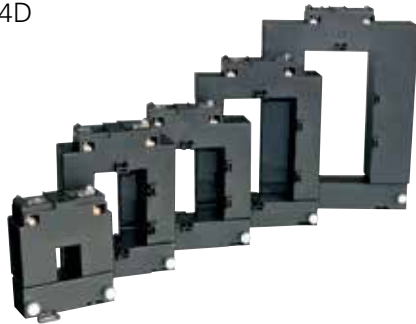
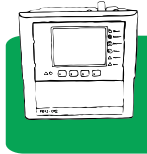
Automatic Power Factor Controllers



PR-14D



PR-12D
Remote Management



Split Core Current
Transformer



PR-16D

Lighting Components



Lighting capacitor



Electronic Ballast



Powerline programmable and dimmable led driver



Three phase capacitors

400/415/440/480/525/690 V, 50Hz

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

Discharge time

- 50V/60s (3x 120kohm/3W)

Lighting impuls withstand

- 8kV a wave of 1.2/50 μ s to 5/50 μ s

Standards

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

Certifications



Technical Characteristics	
Capacitance tolerance	-5% +10%
Frequency	50 Hz (60 Hz upon request)
Temperature range	-25°C +55°C / Type D
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	5kV
Inrush current	upto 200 x In
Protection	IP-20
Humidity	Max. 95%
Life Expectancy	130 000 h
Altitude	4000 a.s.l.
Mounting position	Universal



Code	Power	Voltage	Frequency	Current	Capacitance	Dimensions
	KVAr	V	Hz	A	µF	mm
D4001005TER0000	10	400	50	14,43	3x66,31	85 x 230
D4001255TER0000	12,5	400	50	18,04	3x82,89	85 x 230
D4001505TER0000	15	400	50	21,65	3x99,47	100 x 230
D4002005TER0000	20	400	50	28,87	3x132,63	120 x 230
D4002505TER0000	25	400	50	36,08	3x165,79	120 x 230
D4003005TER0000	30	400	50	43,30	3x198,94	136 x 230

Code	Power	Voltage	Frequency	Current	Capacitance	Dimensions
	KVAr	V	Hz	A	µF	mm
D4151005TER0000	10	415	50	13,91	3x61,61	85 x 230
D4151255TER0000	12,5	415	50	17,39	3x77,01	85 x 230
D4151505TER0000	15	415	50	20,87	3x92,41	100 x 230
D4152005TER0000	20	415	50	27,82	3x123,21	120 x 230
D4152505TER0000	25	415	50	34,78	3x154,02	120 x 230
D4153005TER0000	30	415	50	41,74	3x184,82	136 x 230
D4153505TER0000	35	415	50	48,69	3x215,63	136 x 230

Code	Power	Voltage	Frequency	Current	Capacitance	Dimensions
	KVAr	V	Hz	A	µF	mm
D4400505TER0000	5	440	50	6,56	3x27,40	70 x 260
D4401005TER0000	10	440	50	13,12	3x54,81	70 x 230
D4401255TER0000	12,5	440	50	16,40	3x68,51	85 x 230
D4401505TER0000	15	440	50	19,68	3x82,21	85 x 230
D4402005TER0000	20	440	50	26,24	3x109,61	100 x 230
D4402505TER0000	25	440	50	32,80	3x137,01	120 x 230
D4403005TER0000	30	440	50	39,36	3x164,42	120 x 230
D4403505TER0000	35	440	50	45,93	3x191,82	136 x 230
D4404005TER0000	40	440	50	52,49	3x219,22	136 x 230

Code	Power	Voltage	Frequency	Current	Capacitance	Dimensions
	KVAr	V	Hz	A	µF	mm
D4801005TER0000	10	480	50	12,03	3x46,05	85 x 230
D4801255TER0000	12,5	480	50	15,04	3x57,56	100 x 230
D4801505TER0000	15	480	50	18,04	3x69,08	100 x 230
D4802005TER0000	20	480	50	24,06	3x92,10	120 x 230
D4802505TER0000	25	480	50	30,07	3x115,13	136 x 230
D4803005TER0000	30	480	50	36,08	3x138,16	136 x 230

Code	Power	Voltage	Frequency	Current	Capacitance	Dimensions
	KVAr	V	Hz	A	µF	mm
D5250755TER0000	7,5	525	50	8,25	3x28,87	85 x 230
D5251005TER0000	10	525	50	11,00	3x38,50	85 x 230
D5251255TER0000	12,5	525	50	13,75	3x48,12	85 x 230
D5251505TER0000	15	525	50	16,50	3x57,74	100 x 230
D5251725TER0000	17,2	525	50	18,92	3x66,21	100 x 230
D5252005TER0000	20	525	50	21,99	3x76,99	120 x 230
D5252505TER0000	25	525	50	27,49	3x96,24	120 x 230
D5253005TER0000	30	525	50	32,99	3x115,49	136 x 230
D5253505TER0000	35	525	50	38,49	3x134,73	136 x 230

Code	Power	Voltage	Frequency	Current	Capacitance	Dimensions
	KVAr	V	Hz	A	µF	mm
D6901005TER0000	10	690	50	8,37	3x22,29	70 x 230
D6901255TER0000	12,5	690	50	10,46	3x27,86	85 x 230
D6901505TER0000	15	690	50	12,55	3x33,43	85 x 230
D6902005TER0000	20	690	50	16,73	3x44,57	100 x 230
D6902505TER0000	25	690	50	20,92	3x55,71	120 x 230
D6903005TER0000	30	690	50	25,10	3x66,86	120 x 230
D6903505TER0000	35	690	50	29,29	3x78,00	120 x 230
D6904005TER0000	40	690	50	33,47	3x89,14	136 x 230

Reinforced three phase capacitors

230/400/415/440/480 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 2014103 - E470994
- Aluminium case with bottom fixing M12x16

Discharge time

- 50V/60s (3x 120kohm/3W)

Lighting impuls withstand

- 8kV a wave of 1.2/50 μ s to 5/50 μ s

Standards

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

Certifications



Technical Characteristics	
Capacitance tolerance	-5% +10%
Frequency	50 Hz (60 Hz upon request)
Temperature range	-25°C +55°C / Type D
Dielectric losses	≤ 0.2 W/KVAr
Total losses	≤ 0.45 W/KVAr
Over voltage	1.15 x Un
Over current	1.80 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	5kV
Inrush current	upto 250 x In
Protection	IP-20
Humidity	Max. 95%
Life Expectancy	140 000 h
Altitude	4000 a.s.l.
Mounting position	Universal



Code	Power	Voltage	Frequency	Current	Capacitance	Dimensions
	KVAr	V	Hz	A	μF	mm
D2300505TER0RTF	5	230	50	12,55	3x100,29	85 x 230
D2300755TER0RTF	7,5	230	50	18,83	3x150,43	100 x 230
D2301005TER0RTF	10	230	50	25,10	3x200,57	120 x 230
D2301255TER0RTF	12,5	230	50	31,38	3x250,72	136 x 230
D2301505TER0RTF	15	230	50	37,65	3x300,86	136 x 230

Code	Power	Voltage	Frequency	Current	Capacitance	Dimensions
	KVAr	V	Hz	A	μF	mm
D4001005TER0RTF	10	400	50	14,45	3 x 66,3	85 x 230
D4001255TER0RTF	12,5	400	50	18,06	3 x 82,9	85 x 230
D4001505TER0RTF	15	400	50	21,68	3 x 99,5	100 x 230
D4002005TER0RTF	20	400	50	28,90	3 x 132,6	120 x 230
D4002505TER0RTF	25	400	50	36,13	3 x 165,8	120 x 230
D4003005TER0RTF	30	400	50	43,35	3 x 198,9	136 x 230

Code	Power	Voltage	Frequency	Current	Capacitance	Dimensions
	KVAr	V	Hz	A	μF	mm
D4151005TER0RTF	10	415	50	13,93	3 x 61,6	85 x 230
D4151255TER0RTF	12,5	415	50	17,41	3 x 77	100 x 230
D4151505TER0RTF	15	415	50	20,89	3 x 92,4	100 x 230
D4152005TER0RTF	20	415	50	27,86	3 x 123,2	120 x 230
D4152505TER0RTF	25	415	50	34,82	3 x 154	136 x 230
D4153005TER0RTF	30	415	50	41,79	3 x 184,8	136 x 230

Code	Power	Voltage	Frequency	Current	Capacitance	Dimensions
	KVAr	V	Hz	A	μF	mm
D4401005TER0RTF	10	440	50	13,12	3x54,81	85 x 230
D4401255TER0RTF	12,5	440	50	16,40	3x68,51	100 x 230
D4401505TER0RTF	15	440	50	19,68	3x82,21	100 x 230
D4402005TER0RTF	20	440	50	26,24	3x109,61	120 x 230
D4402505TER0RTF	25	440	50	32,80	3x137,01	136 x 230
D4403005TER0RTF	30	440	50	39,36	3x164,42	136 x 230

Code	Power	Voltage	Frequency	Current	Capacitance	Dimensions
	KVAr	V	Hz	A	μF	mm
D4801005TER0RTF	10	480	50	12,03	3x46,05	85 x 230
D4801255TER0RTF	12,5	480	50	15,04	3x57,56	100 x 230
D4801505TER0RTF	15	480	50	18,04	3x69,08	100 x 230
D4802005TER0RTF	20	480	50	24,06	3x92,10	120 x 230
D4802505TER0RTF	25	480	50	30,07	3x115,13	136 x 230
D4803005TER0RTF	30	480	50	36,08	3x138,16	136 x 230

Other power and voltage upon request

Three phase capacitors for harmonics filter application

230/400/440 V, 50Hz

Characteristics and utility

- Three phase capacitor DUAL WINDING internally delta connected
- Discharge resistors Incorporated
- Reactive power factor correction
- Special design to install with 210, 189 or 134 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

Discharge Time

- 50V/60s (3x 120kohm/3W)

Lighting impuls withstand

- 8kV a wave of 1.2/50 μs to 5/50 μs

Standards

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

Certifications



Technical Characteristics	
Capacitance tolerance	-5% +5%
Frequency	50 Hz (60 Hz upon request)
Temperature range	-25°C +55°C / Type D
Dielectric losses	≤0.2 W/KVAr
Total losses	≤0.45 W/KVAr
Over voltage	1.15 x Un
Over current	1.80 x In
Discharge resistance	Incorporated
Connection	Delta
Voltage test between terminals	2,15 x Un 2 sec.
Voltage test between terminals and case	5kV
Inrush current	upto 250 x In
Protection	IP-20
Humidity	Max. 95%
Life Expectancy	140 000 h
Altitude	4000 a.s.l.
Mounting position	Universal



Code	Power KVA _r	Detuning Factor	Voltage V	Frequency Hz	Current A	Capacitance μF	Dimensions mm
D2300255TER7RCT	2,5	7%	230	50	6,28	3x46,63	70 x 230
D2300505TER7RCT	5	7%	230	50	12,55	3x93,27	85 x 230
D2300755TER7RCT	7,5	7%	230	50	18,83	3x139,90	100 x 230
D2301005TER7RCT	10	7%	230	50	25,10	3x186,53	120 x 230
D2301255TER7RCT	12,5	7%	230	50	31,38	3x233,17	136 X 230
D2301505TER7RCT	15	7%	230	50	37,65	3x279,80	136 X 230

Code	Power KVA _r	Detuning Factor	Voltage V	Frequency Hz	Current A	Capacitance μF	Dimensions mm
D2300255TER1RCT	2,5	14%	230	50	6,28	3x43,12	70 x 230
D2300505TER1RCT	5	14%	230	50	12,55	3x86,25	85 x 230
D2300755TER1RCT	7,5	14%	230	50	18,83	3x129,37	100 x 230
D2301005TER1RCT	10	14%	230	50	25,10	3x172,49	120 x 230
D2301255TER1RCT	12,5	14%	230	50	31,38	3x215,62	120 x 230
D2301505TER1RCT	15	14%	230	50	37,65	3x258,74	136 X 230

Code	Power KVA _r	Detuning Factor	Voltage V	Frequency Hz	Current A	Capacitance μF	Dimensions mm
D4001005TER7RCT	10	7%	400	50	14,43	3x61,67	85 x 230
D4001255TER7RCT	12,5	7%	400	50	18,04	3x77,09	100 x 230
D4001505TER7RCT	15	7%	400	50	21,65	3x92,51	100 x 230
D4002005TER7RCT	20	7%	400	50	28,87	3x123,35	120 x 230
D4002505TER7RCT	25	7%	400	50	36,08	3x154,18	136 X 230
D4003005TER7RCT	30	7%	400	50	43,30	3x185,02	136 x 230

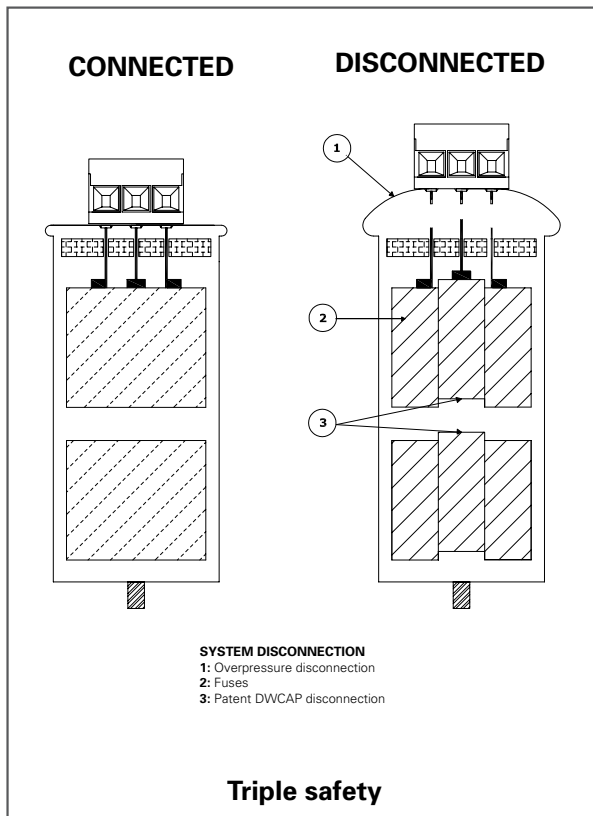
Code	Power KVA _r	Detuning Factor	Voltage V	Frequency Hz	Current A	Capacitance μF	Dimensions mm
D4001005TER1RCT	10	14%	400	50	14,43	3x57,03	100 x 230
D4001255TER1RCT	12,5	14%	400	50	18,04	3x71,29	100 x 230
D4001505TER1RCT	15	14%	400	50	21,65	3x85,55	120 x 230
D4002005TER1RCT	20	14%	400	50	28,87	3x114,06	136 X 230
D4002505TER1RCT	25	14%	400	50	36,08	3x142,58	136 x 230

Code	Power KVA _r	Detuning Factor	Voltage V	Frequency Hz	Current A	Capacitance μF	Dimensions mm
D4401005TER5RCT	10	5.67%	440	50	13,12	3x51,70	85 x 230
D4401255TER5RCT	12,5	5.67%	440	50	16,40	3x64,62	100 x 230
D4401505TER5RCT	15	5.67%	440	50	19,68	3x77,55	120 x 230
D4402005TER5RCT	20	5.67%	440	50	26,24	3x103,40	120 x 230
D4402505TER5RCT	25	5.67%	440	50	32,80	3x129,24	136 X 230

Code	Power KVA _r	Detuning Factor	Voltage V	Frequency Hz	Current A	Capacitance μF	Dimensions mm
D4401005TER7RCT	10	7%	440	50	13,12	3x50,97	85 x 230
D4401255TER7RCT	12,5	7%	440	50	16,40	3x63,71	100 x 230
D4401505TER7RCT	15	7%	440	50	19,68	3x76,45	120 x 230
D4402005TER7RCT	20	7%	440	50	26,24	3x101,94	120 x 230
D4402505TER7RCT	25	7%	440	50	32,80	3x127,42	136 X 230
D4403005TER7RCT	30	7%	440	50	39,36	3x152,91	136 x 230

Code	Power KVA _r	Detuning Factor	Voltage V	Frequency Hz	Current A	Capacitance μF	Dimensions mm
D4401005TER1RCT	10	14%	440	50	13,12	3x47,13	100 x 230
D4401255TER1RCT	12,5	14%	440	50	16,40	3x58,92	100 x 230
D4401505TER1RCT	15	14%	440	50	19,68	3x70,70	120 x 230
D4402005TER1RCT	20	14%	440	50	26,24	3x94,27	136 X 230
D4402505TER1RCT	25	14%	440	50	32,80	3x117,83	136 x 230

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

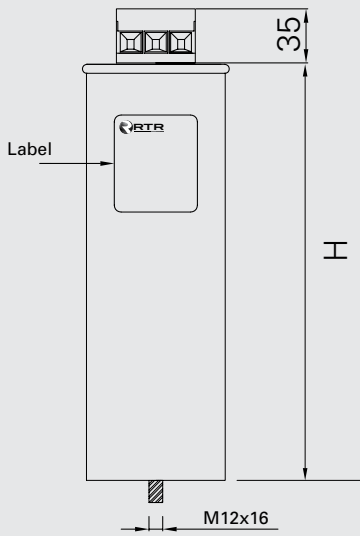
Dimensions

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	

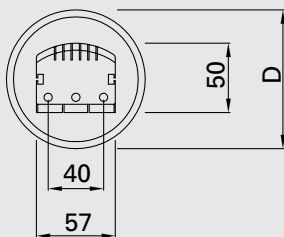
* H tolerance: ±2%

Dimensions

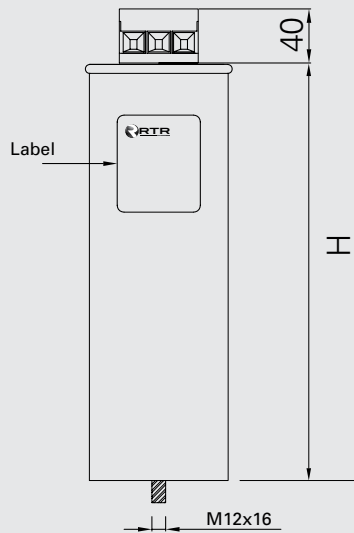
DRAWING A



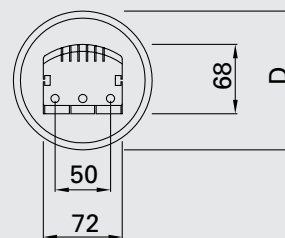
- Washer DIN 6798 A M12
- Screw DIN 936 M12 ZNC



DRAWING B



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



Capacitor for power factor correction



SUPER DWCAP Series

Three phase capacitors

400/440 V, 50/60Hz

Characteristics and utility

- Three phase capacitor THREE DUAL WINDING internally series / 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: internal winding displacement

Construction and materials

- Low losses metallized self-healing polypropylene film, high density, high temperature and greater dielectric resistance Volts/ μ
- Polyurethane self-extinguishing resin V0, developed under standard UL 94 by RTR Energía with certification no. 20141031-E470994
- Aluminium case with bottom fixing M12 x 16

Standard

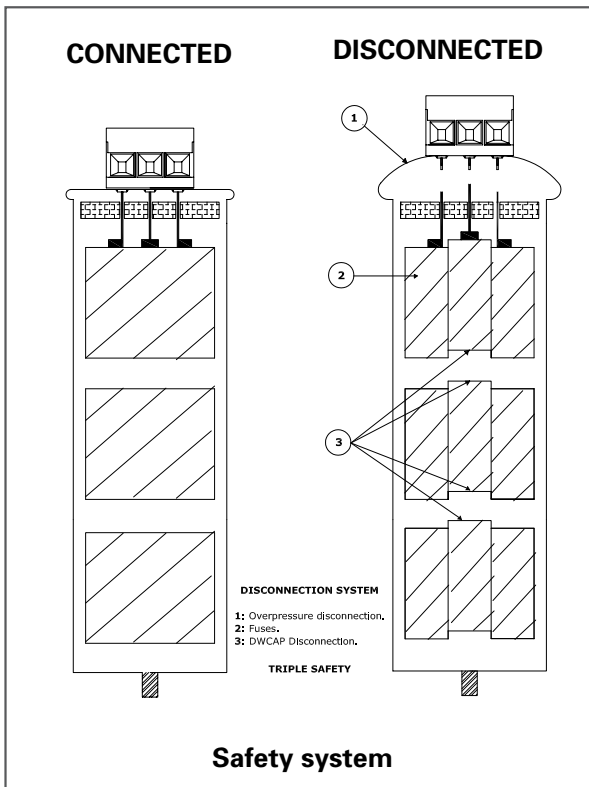
IEC 60831-1 and IEC 60831-2
EN 60831-1 and EN 60831-2



Technical Characteristics	
Capacitance tolerance	-5% + 10%
Frecuency	50Hz /60 Hz
Temperature range	-25% + 55% /D
Dielectric losses	$\leq 0,2$ W/KVAr
Total losses	$\leq 0,45$ W/KVAr
Max. over voltage	2,05 x Un (900V)
Over voltage	+10% (24h), +15% (30 min/24h), 20% (5min/24h), +30% (1min/24h)
Over current	2,0 x In
Máx. THD in voltage	3%
Máx. THD in current	30%
Discharge resistance	Incorporated
Connection	Delta
Voltage test between terminals	2.15 x Un 10 sec.
Voltage test between terminal in case	5KV for 1 min. AC
Inrush current	up to 350 x In
Protection	IP 20
Humidity	Max. 95%
Life Expectancy	200 000 h (Temp. class C)
Altitude	4000 a.s.l
Mounting position	Universal

* Without resistors





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

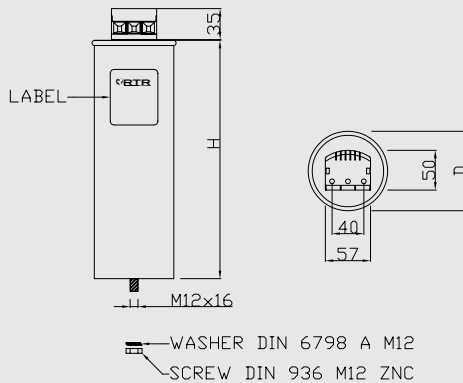
Dimensions

Dimensions	Connection terminal	DRAWING
DxH (mm)	Max. cable section 1 kV-RV (mm ²)	
70x360	10	DRAWING A
85x360	10	
100x360	10	
120x360	35	DRAWING B
136X360	35	

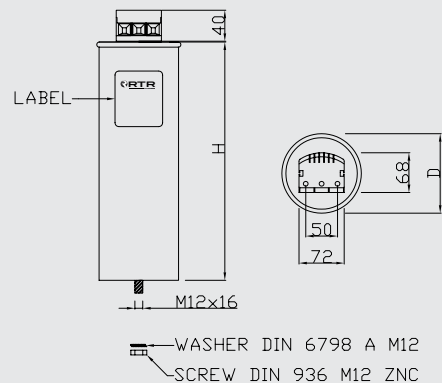
* H tolerance: ±2%

Dimensions

DRAWING A



DRAWING B



Code	Power KVA _r	Voltage V	Frequency Hz	Current A	Capacitance µF	Dimensions mm
S4000255TER0000	2,5	400	50	3,61	3x16,58	70 x 395
S4000505TER0000	5	400	50	7,22	3x33,16	70 x 395
S4000755TER0000	7,5	400	50	10,83	3x49,74	85 x 395
S4001005TER0000	10	400	50	14,43	3x66,31	100 x 395
S4001255TER0000	12,5	400	50	18,04	3x82,89	100 x 395
S4001505TER0000	15	400	50	21,65	3x99,47	120 x 400
S4002005TER0000	20	400	50	28,87	3x132,63	136 x 400
S4002505TER0000	25	400	50	36,08	3x165,79	136 x 400

Code	Power KVA _r	Voltage V	Frequency Hz	Current A	Capacitance µF	Dimensions mm
S4400255TER0000	2,5	440	50	3,28	3x13,70	70 x 395
S4400505TER0000	5	440	50	6,56	3x27,40	70 x 395
S4400755TER0000	7,5	440	50	9,84	3x41,10	85 x 395
S4401005TER0000	10	440	50	13,12	3x54,81	85 x 395
S4401255TER0000	12,5	440	50	16,40	3x68,51	100 x 395
S4401505TER0000	15	440	50	19,68	3x82,21	100 x 395
S4402005TER0000	20	440	50	26,24	3x109,61	120 x 400
S4402505TER0000	25	440	50	32,80	3x137,01	136 x 400
S4403005TER0000	30	440	50	39,36	3x164,42	136 x 400

Single phase capacitor with faston terminal

230/400/440/525/690 V, 50Hz

Technical Characteristics	
Capacitance tolerance	-5 % +10%
Frequency	50 Hz (60 Hz upon request)
Temperature range	-25°C +55 °C
Dielectric losses	≤0.2 W/KVAr
Total losses	≤0.45 W/KVAr
Over voltage	1.10 x Un (8 h/day) 1.15 x Un (30 min/day) 1.20 x Un (5 min/day) 1.30 x Un (1 min/day)
Over current	1.5 x In
Max. THD in voltage	2 %
Max. THD in current	25 %
Discharge resistance	Incorporated
Connection	Single-phase
Voltage test between terminals	2,15 x Un 2 sec.
Voltage test between terminals and case	3kV for 10 sec. AC
Inrush current	Up to 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 KVar	Voltage V	Frequency Hz	Current A	Capacitance µF
EA0230083500000	0,83	230	50	3,61	49,94
EA0230167500000	1,67	230	50	7,26	100,49
EA0230250500000	2,5	230	50	10,87	150,43

Code	Power KVar	Voltage V	Frequency Hz	Intensidad A	Capacitance µF
EA0400083500000	0,83	400	50	2,08	16,51
EA0400167500000	1,67	400	50	4,18	33,22
EA0400250500000	2,5	400	50	6,25	49,74
EA0400333500000	3,33	400	50	8,33	66,25
EA0400417500000	4,17	400	50	10,43	82,96
EA0400500500000	5,00	400	50	12,5	99,47
EA0400660500000	6,60	400	50	16,5	131,30

Code	Power KVar	Voltage V	Frequency Hz	Intensidad A	Capacitance µF
EA0440083500000	0,83	440	50	1,89	13,65
EA0440167500000	1,67	440	50	3,80	27,46
EA0440250500000	2,50	440	50	5,68	41,10
EA0440333500000	3,33	440	50	7,57	54,75
EA0440417500000	4,17	440	50	9,48	68,56
EA0440500500000	5	440	50	11,36	82,21
EA0440660500000	6,6	440	50	15	108,51

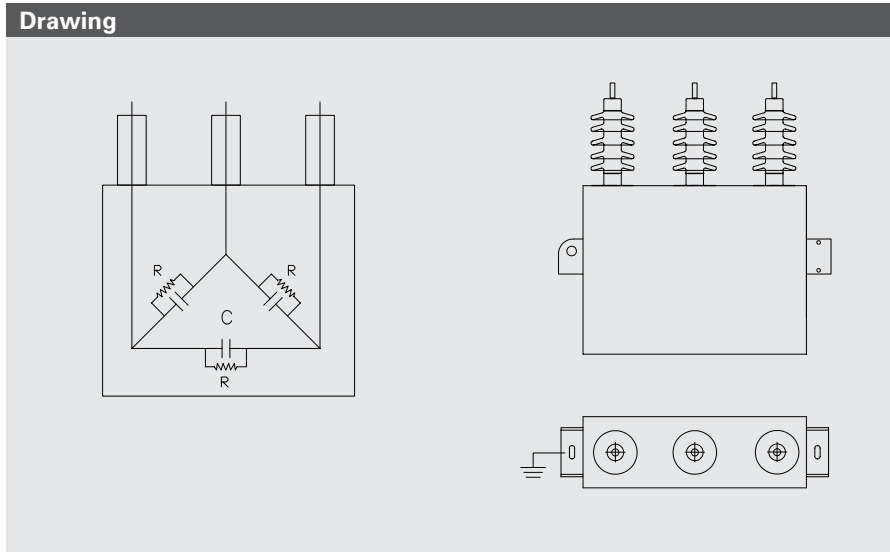
* Other voltages and frequencies upon request

Medium Voltage



3PH BO/R MT Series. Medium Voltage Three Phase Capacitors

Technical Characteristics	
Standard	IEC 871-1/2
Voltage	1-12 kV
Power	Until 500 kVAr
Frequency	50-60 Hz
Losses	<0.15 W/kVAr
Temperature	-50+55° C
Dielectric Liquid	MDBT Nonchlorinated (biodegradable)
Residual Voltage	10% U_n later 5 min.
Dielectric	Hazy polypropylene film
Fuses	Optional
Use	Indoor-outdoor
Altitud	1000 m.s.n.m.
Maximun over voltage	1.1 x U_n
Maximun over current	1.3 x I_n
Tolerance	-5+15%
Voltage test (Terminal-Terminal)	4.3 x U_n (10 sec)

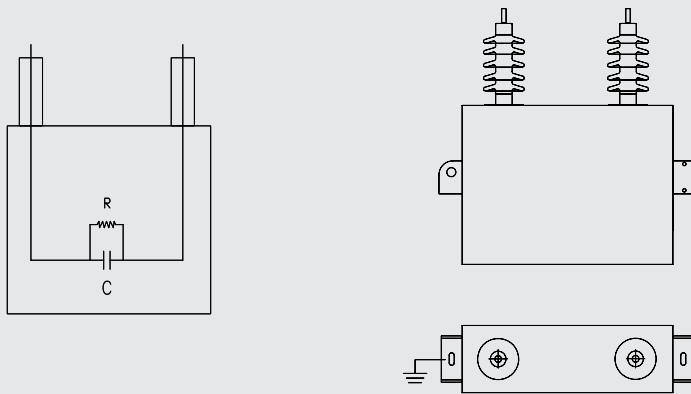


1PH BO/R MT Series. Medium Voltage Single Phase Capacitors

Technical Characteristics	
Standard	IEC 871-1/2
Voltage	1-13.8 kV (with internal fuses) +13.8 kV (without internal fuses)
Power	Until 1000 kVAr
Frequency	50-60 Hz
Losses	<0.15 W/kVAr
Temperature	-50+55° C
Dielectric Liquid	MDBT Nonchlorinated (biodegradable)
Residual Voltage	10% un later 5 min.
Dielectric	Hazy polypropylene film
Fuses	Optional
Use	Indoor-outdoor
Altitud	1000 m.s.n.m.
Maximun over voltage	1.1 x Un
Maximun over current	1.3 x In
Tolerance	-5+15%
Voltage test (Terminal-Terminal)	4.3 x Un (10 sec)



Drawing



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 134, 189 or 210 Hz.

Upon request

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

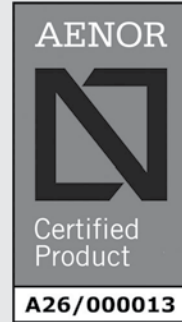
Construction and Materials

- Low losses magnetic plates
- Copper and aluminium conductor reactor insulation thermal class H with permanent regime
- Thermal protection relay
- Specially designed to increasing ventilation, and improving thermal dissipation
- Thermal class of electrical insulating material 180°C

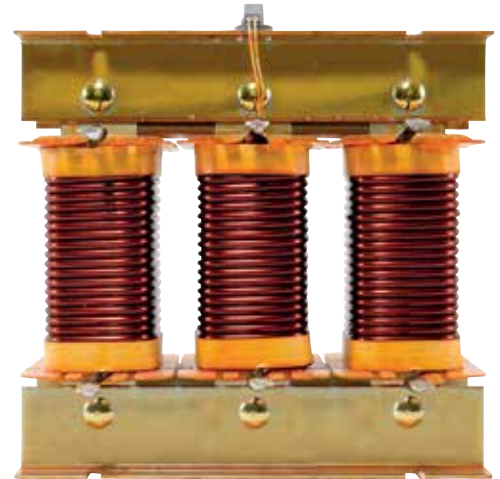
Standards

- EN 60076-6
- IEC 60076-6

Certifications



Technical Characteristics	
Tolerance "L"	5 %
Frequency networks	50 / 60 Hz
Linearity Inductance	1,8 x In
Detuning factor	5,67 % , 7%, 14%
Proof strees	4 KV
Thermal Protection	90 ° C, 120° C, 140° C, 160 °C
Permissible Overload	1,07 x In
Protection Degree	IP 00



HARMONIC FILTERS

Code	Power	Voltage	Frequency	Resonance Frec.	Detuninf Factor	Capacitance	Current	Inductance	Losses
	kVAr	V	Hz	Hz	%	µF	A	mH	Watt
RTF040001001895	10	400	50	189	7	185,02	14,43	3,83	50
RTF040001251895	12,5	400	50	189	7	231,27	18,04	3,07	70
RTF040001501895	15	400	50	189	7	277,53	21,65	2,56	80
RTF040002001895	20	400	50	189	7	370,04	28,87	1,92	90
RTF040002501895	25	400	50	189	7	462,54	36,08	1,53	100
RTF040005001895	50	400	50	189	7	925,09	72,17	0,77	190

Code	Power	Voltage	Frequency	Resonance Frec.	Detuninf Factor	Capacitance	Current	Inductance	Losses
	kVAr	V	Hz	Hz	%	µF	A	mH	Watt
RTF040001001345	10	400	50	134	14	171,09	14,43	8,29	90
RTF040001251345	12,5	400	50	134	14	213,86	18,04	6,63	120
RTF040001501345	15	400	50	134	14	256,64	21,65	5,53	150
RTF040002001345	20	400	50	134	14	342,18	28,87	4,15	150
RTF040002501345	25	400	50	134	14	427,73	36,08	3,32	190
RTF040005001345	50	400	50	134	14	855,46	72,17	1,66	320

Code	Power	Voltage	Frequency	Resonance Frec.	Detuninf Factor	Capacitance	Current	Inductance	Losses
	kVAr	V	Hz	Hz	%	µF	A	mH	Watt
RTF041500251895	2,5	415	50	189	7	42,97	3,48	16,50	30
RTF041500501895	5	415	50	189	7	85,94	6,96	8,25	40
RTF041501001895	10	415	50	189	7	171,88	13,91	4,13	60
RTF041501251895	12,5	415	50	189	7	214,86	17,39	3,30	70
RTF041501501895	15	415	50	189	7	257,83	20,87	2,75	80
RTF041502001895	20	415	50	189	7	343,77	27,82	2,06	100
RTF041502501895	25	415	50	189	7	429,71	34,78	1,65	110
RTF041505001895	50	415	50	189	7	859,42	69,56	0,83	190
RTF041507501895	75	415	50	189	7	1289,13	104,34	0,55	260
RTF041510001895	100	415	50	189	7	1718,85	139,12	0,41	340

Code	Power	Voltage	Frequency	Resonance Frec.	Detuninf Factor	Capacitance	Current	Inductance	Losses
	kVAr	V	Hz	Hz	%	µF	A	mH	Watt
RTF041500251345	2,5	415	50	134	14	39,74	3,48	35,50	40
RTF041500501345	5	415	50	134	14	79,47	6,96	17,75	60
RTF041501001345	10	415	50	134	14	158,95	13,91	8,88	110
RTF041501251345	12,5	415	50	134	14	198,68	17,39	7,10	120
RTF041501501345	15	415	50	134	14	238,42	20,87	5,92	150
RTF041502001345	20	415	50	134	14	317,89	27,82	4,44	160
RTF041502501345	25	415	50	134	14	397,37	34,78	3,55	190
RTF041505001345	50	415	50	134	14	794,74	69,56	1,78	320
RTF041505631345	56,3	415	50	134	14	894,87	78,32	1,58	360

Code	Power	Voltage	Frequency	Resonance Frec.	Detuninf Factor	Capacitance	Current	Inductance	Losses
	kVAr	V	Hz	Hz	%	µF	A	mH	Watt
RTF044001002105	10	440	50	210	5,67	155,09	13,12	3,70	50
RTF044001252105	12,5	440	50	210	5,67	193,87	16,40	2,96	60
RTF044001502105	15	440	50	210	5,67	232,64	19,68	2,47	70
RTF044002002105	20	440	50	210	5,67	310,19	26,24	1,85	80
RTF044002502105	25	440	50	210	5,67	387,73	32,80	1,48	100
RTF044005002105	50	440	50	210	5,67	775,47	65,61	0,74	140
RTF044008002105	80	440	50	210	5,67	1240,75	104,97	0,46	230
RTF044010002105	100	440	50	210	5,67	1550,94	131,22	0,37	270

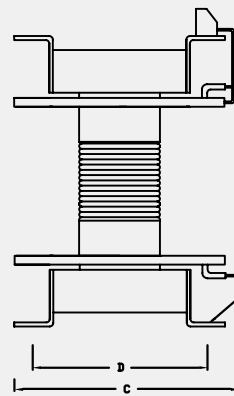
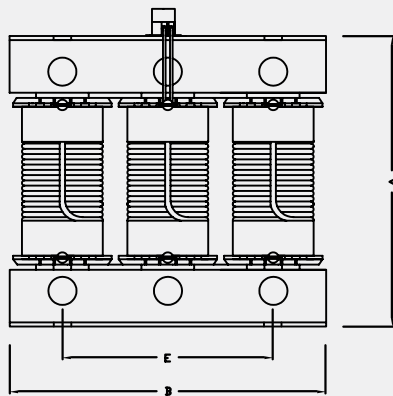
Code	Power	Voltage	Frequency	Resonance Frec.	Detuninf Factor	Capacitance	Current	Inductance	Losses
	kVAr	V	Hz	Hz	%	µF	A	mH	Watt
RTF044001001895	10	440	50	189	7	152,91	13,12	4,64	60
RTF044001251895	12,5	440	50	189	7	191,13	16,40	3,71	60
RTF044001501895	15	440	50	189	7	229,36	19,68	3,09	80
RTF044002001895	20	440	50	189	7	305,81	26,24	2,32	100
RTF044002501895	25	440	50	189	7	382,27	32,80	1,86	110
RTF044005001895	50	440	50	189	7	764,54	65,61	0,93	180

Code	Power	Voltage	Frequency	Resonance Frec.	Detuninf Factor	Capacitance	Current	Inductance	Losses
	kVAr	V	Hz	Hz	%	µF	A	mH	Watt
RTF044001001345	10	440	50	134	14	141,40	13,12	10,03	110
RTF044001251345	12,5	440	50	134	14	176,75	16,40	8,03	120
RTF044001501345	15	440	50	134	14	212,10	19,68	6,69	150
RTF044002001345	20	440	50	134	14	282,80	26,24	5,02	160
RTF044002501345	25	440	50	134	14	353,49	32,80	4,01	200
RTF044005001345	50	440	50	134	14	706,99	65,61	2,01	340

* Other voltages and frequencies upon request

HARMONIC FILTERS

Dimensions



Code	A	B	C	D	E	Ø	Weight
	mm	mm	mm	mm	mm	mm	kg
RTF040001001895	170	180	90	80	140	9	10
RTF040001251895	170	180	90	80	140	9	10
RTF040001501895	170	180	90	80	140	9	9
RTF040002001895	220	240	100	90	200	9	16
RTF040002501895	220	240	100	90	200	9	17
RTF040005001895	270	300	120	100	200	9	29

Code	A	B	C	D	E	Ø	Weight
	mm	mm	mm	mm	mm	mm	kg
RTF040001001345	220	240	100	90	200	9	16
RTF040001251345	220	240	100	90	200	9	16
RTF040001501345	220	240	110	100	200	9	18
RTF040002001345	220	240	110	100	200	9	20
RTF040002501345	270	300	120	100	200	9	30
RTF040005001345	320	360	150	125	300	9	50

Code	A	B	C	D	E	Ø	Weight
	mm	mm	mm	mm	mm	mm	kg
RTF041500501895	170	180	80	70	140	9	7
RTF041500501895	170	180	80	70	140	9	7
RTF041501001895	170	180	90	80	140	9	8
RTF041501251895	170	180	90	80	140	9	8
RTF041501501895	170	180	90	80	140	9	8
RTF041502001895	220	240	100	90	200	9	16
RTF041502501895	220	240	100	90	200	9	17
RTF041505001895	270	300	120	100	200	9	29
RTF041507501895	270	300	130	110	200	9	34
RTF041510001895	320	360	150	125	300	9	48

Code	A	B	C	D	E	Ø	Weight
	mm	mm	mm	mm	mm	mm	kg
RTF041500251345	170	180	80	70	140	9	7
RTF041500501345	220	240	100	90	200	9	15
RTF041501001345	220	240	100	90	200	9	15
RTF041501251345	220	240	100	90	200	9	16
RTF041501501345	220	240	110	100	200	9	18
RTF041502001345	220	240	130	120	200	9	25
RTF041502501345	270	300	120	100	200	9	30
RTF041505001345	270	300	160	140	200	9	48
RTF041505631345	270	300	160	140	200	9	47

Code	A	B	C	D	E	Ø	Weight
	mm	mm	mm	mm	mm	mm	kg
RTF044001252105	170	170	180	80	70	140	9
RTF044001252105	170	180	80	70	140	9	8
RTF044001502105	170	180	80	70	140	9	8
RTF044002002105	170	180	90	80	140	9	10
RTF044002502105	220	240	100	90	200	9	16
RTF044005002105	270	300	120	100	200	9	30
RTF044008002105	270	300	130	110	200	9	33
RTF044010002105	320	360	150	125	300	9	48

Code	A	B	C	D	E	Ø	Weight
	mm	mm	mm	mm	mm	mm	kg
RTF044001001895	170	180	90	80	140	9	9
RTF044001251895	170	180	90	80	140	9	10
RTF044001501895	170	180	90	80	140	9	10
RTF044002001895	170	180	90	80	140	9	10
RTF044002501895	220	240	100	90	200	9	16
RTF044005001895	270	300	120	100	200	9	30

Code	A	B	C	D	E	Ø	Weight
	mm	mm	mm	mm	mm	mm	kg
RTF044001001345	220	240	100	90	200	9	15
RTF044001251345	220	240	100	90	200	9	16
RTF044001501345	220	240	110	100	200	9	18
RTF044002001345	270	300	120	100	200	9	30
RTF044002501345	270	300	120	100	200	9	30
RTF044005001345	320	360	150	125	300	9	49

Power Factor Regulator

PRD three phase remote management

Features

- 06/14 steps
- Configurable Alarm Setting
- Alarm Indication Display
- Programmable fan control
- ModBus-RTU communication (only for 12 relay option)



Technical Specifications

Power factor desired	0.08 ind +0.80 cap.
Power and voltage supply	90 to 240 V AC, 43 to 67Hz, 7VA

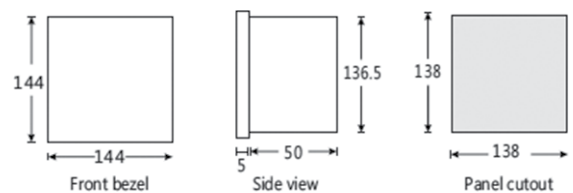
Frequency

Connection time	5 - 1200 seconds
Reconnection delay time	5 - 1200 seconds
Smallest capacitor current	(0.02-2A) x CT ratio
Connection & section power setting	Automatic or Manual
Current harmonic & THDI meas. accuracy	±5% ± 1 digit (for UI >10% of range)
CT primary	5-9950 A
CT secondary	1 A - 5 A
Temperature meas. Range/actually range/accuracy	-30 to 60°C ± 5°C
Number of outputs relays	6/14
Output relay load rating	250V AC/4A
Alarm Setting	<ul style="list-style-type: none"> - Undercurrent - Overcurrent - Voltage loss - Undervoltage - Overvoltage - THDI - THDU - CHL - Comp.error - Export - No. of connections - Section error - Overheated - Ext. alarm

Physical and operating conditions

Working Environmental	Class C1 (according IEC 654-1)
Operating temperature	40° to +60°C
Relative Humidity	5 to 100%
Protection	Front: IP40
Back: IP20	1 to 08/12
Dimensions	144x144 mm
Peso	0.7 kg

Dimensions



Code	Steps	Voltage
REG06DPR1600000	6	90 to 550V
REG14DPR1600000	14	90 to 550V

Power Factor Regulator

PR-12D three phase 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

Power Supply, Un	230 Vac (Phase/Neutral)
Vin:	10-300 Vac (L-N) and 15-500 Vac (L-L)
Operation voltage range	(0,8-1,1) x Un
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

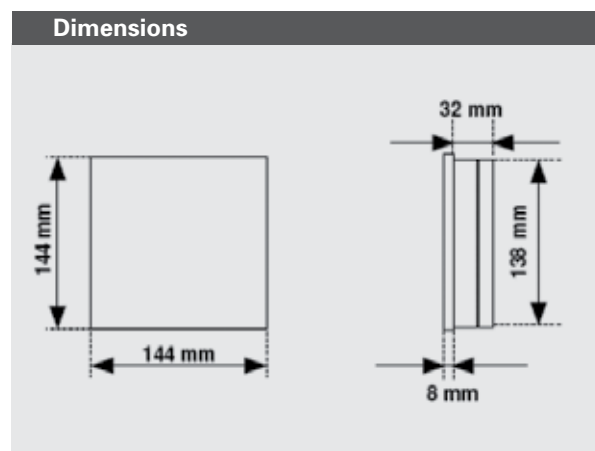
Physical Characteristics

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	230 Vac (Phase/Neutral) 400 Vac (Phase/phase)

Communication accessory for the transmission of information. (optional)

Code
REGCOMCON2RJ450







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