

CATALOG 2017



CISAR®

POWER FACTOR CORRECTION AND HARMONICS, SINCE 1979

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Underwriters Laboratories Inc.®

c/. Cobalto, 110-08907-Hospitalet de Llobregat (Barcelona-Spain) - tel. +(34) 933 378 264 - fax +(34) 933 378 169 - cisarbcn@cisar.es

CONDENSADORES INDUSTRIALES, S.L.

GUIDE FOR THE CORRECT CAPACITOR BANK CHOICE

01_p.3

"PHICAP_400 V"

01_p.4

Application : for reactive compensation installations without harmonic distortion. Integrated automatic circuit breaker (3P+N) : until 50 kVAr (neutral connection required until 50 kVAr)

"PHICAP PLUS_440 V"

01_p.9

Application : for reactive compensation installations without harmonic distortion. Integrated automatic circuit breaker (3P+N) : until 50 kVAr (neutral connection required until 50 kVAr)

"FAST CAP_400 V"

01_p.13

Application: to installations with very fluctuating loads and need small steps to compensate small residual charges. Reactive compensation installations without harmonic distortion. Very low power first steps to effectively compensate for residual loads (0,5 kVAr / 1 kVAr / 1,5 kVAr). Integrated automatic circuit breaker (3P+N) : until 52,50 kVAr (neutral connection required until 52,50 kVAr)

"R-CAP_400 V"

01_p.16

Application: reactive compensation in installations with moderate harmonic content (THDi \leq 10% / THDu \leq 2%). Integrated automatic circuit breaker (3P+N) : until 19 kVAr (neutral connection required until 19 kVAr)

"PHICAP_230 V"

01_p.20

Application: reactive compensation in installations without harmonic distortion, 230 V III (230 V between phases without neutral). Integrated automatic circuit breaker (3P) : until 25 kVAr

"WITH STATIC CONTACTORS (THYRISTORS)"

01_p.24

Application: to installations with ultra-fast loads (lifts, welding machines, overhead cranes, renewable energy, ...) without harmonic distortion Special static contactors (thyristors) for capacitive loads

"with III DETUNED REACTORS (\geq 5th harmonic)"

01_p.28

Application : to electric networks with high level of harmonic distortion (THDi \geq 10% / THDu \geq 2%) where it (THDi) predominates from 5th harmonic ... **CONSULT CISAR'S TECHNICAL DEPARTMENT** .Three phase detuned reactors with safety thermostat and reinforced to withstand THDu \leq 6%

"with STATIC CONTACTORS (TRYRISTORS) and III DETUNED REACTORS (\geq 5th Harmonic)"

01_p.32

Application : to installations with ultra-fast loads (lifts, welding machines, overhead cranes, renewable energy, ...) and a high harmonic distortion (THDi \geq 10% / THDu \geq 2%) predominates from 5th harmonic ... **CONSULT CISAR'S TECHNICAL DEPARTMENT** .Special static contactors (thyristors) for capacitive loads. Three phase detuned reactors with with safety thermostat and reinforced to withstand THDu \leq 6%

“MIXED (CONTACTORS + THYRISTORS) with III DETUNED REACTORS ($\geq 5^{\text{th}}$ Harmonic)”

01_p.36

Application: to installations with fast loads and a high harmonic distortion (THDi $\geq 10\%$ / THDu $\geq 2\%$) predominates from 5th harmonic. ... **CONSULT CISAR'S TECHNICAL DEPARTMENT** Ac6b contactors + thyristors for capacitive loads. Three phase detuned reactors with safety thermostat and reinforced to withstand THDu $\leq 6\%$

“with III DETUNED REACTORS ($\geq 3^{\text{th}}$ harmonic)”

01_p.40

Application : to electric networks with high level of harmonic distortion (THDi $\geq 10\%$ / THDu $\geq 2\%$) where it (THDi) predominates from 3rd harmonic ... **CONSULT CISAR'S TECHNICAL DEPARTMENT** Three phase detuned reactors with safety thermostat and reinforced to withstand THDu $\leq 6\%$

“GENERAL TERMS OF SALE”

01_p.44

GUIDE FOR THE CORRECT CAPACITOR BANK CHOICE

without HARMONICS in el. network

- Automatic capacitor bank “PHICAP
PHICAP_PHICAP PLUS_FAST CAP”

with an HARMONIC moderate level
ThdI $< 10\%$ THdU $\leq 2\%$

- Automatic capacitor bank “R-CAP”

With an HARMONIC high level
(ThdI $> 10\%$) (ThdU $\leq 6\%$)

- since 5th. harmonic ...
 $p=7\%$ (189 Hz)
- since 3rd. harmonic ...
 $p=14\%$ (134 Hz)
- With DETUNED FILTERS

for electric networks with ultra fast
cyclesmachines
(lifts, welding machines, renewable
energy, etc.)

- with “THYRISTORS” or “MIXED series”
(with or without detuned reactors)



01_p.3

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“PHICAP_400 V”

“PHICAP_400 V”

1/4

Technical Characteristics in 01_p.8



400 V

| series | KVAr/400 V (50 Hz) | steps | Automatic circ. breaker | dimens. (mm) H x A x P | kg | code | PRICE |
|--------|-----------------------|----------|-------------------------|---------------------------|------|---------------|------------|
| CRC-1 | 2,5 | 1x2,5 | INCLUDED | 450 x 264 x 150 | 6,5 | PC115000240M | ON REQUEST |
| | 5 | 1x5 | | | 6,5 | PC115000540M | |
| | 7,5 | 1x7,5 | | | 6,8 | PC115000740M | |
| | 10 | 1x10 | | | 7 | PC115001040M | |
| | 12,5 | 1x12,5 | | | 7,3 | PC115001240M | |
| | 15 | 1x15 | | | 7,3 | PC115001540M | |
| | 20 | 1x20 | | | 7,5 | PC115002040M | |
| | 25 | 1x25 | | | 8 | PC115002540M | |
| A-4 | 2,5 | 1+1,5 | | 215 x 320 x 140 | 6,1 | PA045000240M | |
| | 3,5 | 1+2,5 | | | 6,1 | PA045000340M | |
| | 4 | 1+3 | | | 6,2 | PA045000440M | |
| | 5 | 1+4 | | | 6,3 | PA045000540M | |
| | 6,5 | 1,5+5 | | | 6,5 | PA045000640M | |
| | 7,5 | 2,5+5 | | | 6,7 | PA045000740M | |
| CRC-2 | 10 | 2,5+7,5 | | 450 x 264 x 150 | 7,2 | PC2105001040M | |
| | 12,5 | 5+7,5 | | | 7,3 | PC2105001240M | |
| | 15 | 5+10 | | | 7,5 | PC2105001540M | |
| CRC-3 | 17,5 | 5+12,5 | | 500 x 395 x 180 | 13 | PC3105001740M | |
| | 20 | 7,5+12,5 | | | 13 | PC3105002040M | |
| | 22,5 | 7,5+15 | | | 13,1 | PC3105002240M | |
| | 25 | 10+15 | | | 13,5 | PC3105002540M | |
| | 27,5 | 7,5+20 | | | 14 | PC3105002740M | |
| | 30 | 2x15 | | | 14,5 | PC3105003040M | |

transformador de intensidad .../5 Amp. NO incluido

installation and maintenance : see Technical Manual

01_p.5

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“PHICAP_400 V”

Technical Characteristics in 01_p.8



400 V

| series | KVAr/400 V (50 Hz) | steps | Automatic circ. breaker | dimens. (mm) H x A x P | kg | code | PRICE |
|--------|-----------------------|-------------|-------------------------|---------------------------|-------------|-------------|------------|
| M 30 | 5 | 1,66+3,33 | INCLUDED | 500 x 395 x 180 | 13 | P115000540M | ON REQUEST |
| | 7,5 | 2,5+5 | | | 13 | P115000740M | |
| | 10 | 2x2,5+5 | | | 14 | P115001040M | |
| | 12,5 | 2,5+2x5 | | | 14 | P115001240M | |
| | 15 | 3x5 | | | 14 | P115001540M | |
| | 17,5 | 2,5+5+10 | | | 14 | P115001740M | |
| | 20 | 2x5+10 | | | 15 | P115002040M | |
| | 22,5 | 2,5+5+15 | | | 15 | P115002240M | |
| | 25 | 5+2x10 | | | 15 | P115002540M | |
| | 27,5 | 5+7,5+15 | | | 15 | P115002740M | |
| | 30 | 5+10+15 | | | 15,5 | P115003040M | |
| M 50 | 35 | 5+10+20 | 610 x 418 x 258 | 21 | P125003540M | ON REQUEST | |
| | 37,5 | 2,5+5+10+20 | | 22 | P125003740M | | |
| | 40 | 2x10+20 | | 26 | P125004040M | | |
| | 45 | 5+2x10+20 | | 27 | P125004540M | | |
| | 50 | 10+2x20 | | 28 | P125005040M | | |

| series | KVAr/400 V (50 Hz) | steps | Switch (*) | dimens. (mm) H x A x P | kg | ode | PRICE | PRICE_additional (\$)) |
|--------|-----------------------|-------------|------------|---------------------------|------|-------------|------------|-------------------------|
| M 100 | 55 | 5+10+2x20 | OPTIONAL | 710 x 754 x 258 | 39,5 | P135005540* | ON REQUEST | ON REQUEST |
| | 60 | 2x10+2x20 | | | 40 | P135006040* | | |
| | 62,5 | 12,5+2x25 | | | 41,5 | P135006240* | | |
| | 65 | 5+2x10+2x20 | | | 42 | P135006540* | | |
| | 70 | 10+3x20 | | | 43,5 | P135007040* | | |
| | 75 | 5+10+3x20 | | | 44 | P135007540* | | |
| | 80 | 4x20 | | | 44 | P135008040* | | |
| | 87,5 | 12,5+3x25 | | | 45 | P135008740* | | |
| | 90 | 10+4x20 | | | 45,5 | P135009040* | | |
| | 100 | 10+20+30+40 | | | 46 | P135010040* | | |

S III load break switch + aux. transformer Un /230 Vac

on request

A III aut. circuit breaker + auxiliary transformer Un/230 Vac

AD III aut. circuit breaker + residual current relay + aux. transformer Un/230 Vac

current transf. .../5 Amp. is NOT included

installation and maintenance : see Technical Manual

"PHICAP_400 V"

3/4



| series | KVAr/400 V (50 Hz) | steps | Switch (*) | dimens. (mm) H x A x P | kg | code | PRICE | PRICE_additional (\$) |
|----------|--------------------|----------------|------------------|------------------------|-------------|-------------|------------|-----------------------|
| M 225_01 | 112,5 | 12,5+4x25 | OPTIONAL | 1150 x 435 x 260 | 49 | P145011240* | ON REQUEST | ON REQUEST |
| | 125 | 2x12,5+2x25+50 | | | 53 | P145012540* | | |
| | 137,5 | 12,5+5x25 | | | 55 | P145013740* | | |
| M 225_02 | 150 | 2x12,5+25+2x50 | 1250 x 640 x 260 | 58 | P145015040* | | | |
| | 175 | 25+3x50 | | 61 | P145017540* | | | |
| S 500_03 | 200 | 2x25+3x50 | OPTIONAL | 1660 x 500 x 436 | 112 | P155020040* | | |
| | 225 | 25+4x50 | | | 114 | P155022540* | | |
| | 250 | 2x25+4x50 | | | 118 | P155025040* | | |
| | 275 | 25+5x50 | | | 120 | P155027540* | | |
| | 300 | 2x25+5x50 | | | 121 | P155030040* | | |
| S 600 | 325 | 25+6x50 | OPTIONAL | 1660 x 600 x 480 | 172 | P165032540* | | |
| | 350 | 2x25+6x50 | | | 178 | P165035040* | | |
| | 375 | 25+7x50 | | | 185 | P165037540* | | |
| | 400 | 2x25+7x50 | | | 190 | P165040040* | | |
| | 425 | 25+8x50 | | | 192 | P165042540* | | |
| | 450 | 2x25+8x50 | | | 198 | P165045040* | | |
| S 800_01 | 425 | 25+8x50 | OPTIONAL | 2070 x 800 x 600 | 216 | P185042540* | | |
| | 450 | 2x25+8x50 | | | 218 | P185045040* | | |
| | 475 | 25+9x50 | | | 219 | P185047540* | | |
| | 500 | 2x25+9x50 | | | 221 | P185050040* | | |
| | 525 | 25+10x50 | | | 224 | P185052540* | | |
| | 550 | 2x25+10x50 | | | 228 | P185055040* | | |
| | 575 | 25+11x50 | | | 231 | P185057540* | | |
| | 600 | 12x50 | | | 236 | P185060040* | | |
| S 800_02 | 650 | 50+6x100 | OPTIONAL | 2070 x 1600 x 600 | 408 | P185065040* | | |
| | 700 | 2x50+6x100 | | | 411 | P185070040* | | |
| | 750 | 50+7x100 | | | 418 | P185075040* | | |
| | 800 | 2x50+7x100 | | | 425 | P185080040* | | |
| | 850 | 50+8x100 | | | 432 | P185085040* | | |
| | 900 | 2x50+8x100 | | | 460 | P185090040* | | |
| | 950 | 50+9x100 | | | 468 | P185095040* | | |
| | 1000 | 2x50+9x100 | | | 501 | P185100040* | | |
| | 1050 | 50+10x100 | | | 525 | P185105040* | | |
| | 1100 | 2x50+10x100 | | | 551 | P185110040* | | |
| | 1200 | 12x100 | | | 601 | P185120040* | | |

more than 600 KVAR : with two or more enclosures ("master/slave"), either one with one input wires

| | |
|------------|---|
| S | III load break switch + aux. transformer Un /230 Vac |
| on request | |
| A | III aut. circuit breaker + auxiliary transformer Un/230 Vac |
| AD | III aut. circuit breaker + residual current relay + aux. transformer Un/230 Vac |

current transf. .../5 Amp. is NOT included
 installation and maintenance : see Technical Manual

01_p.7



POWER FACTOR CORRECTION AND HARMONICS. SINCE 1979

"PHICAP_400 V"**TECHNICAL CHARACTERISTICS**

Service Voltage : 400 Vac (50/60 Hz)

CAPACITORS

- "CRM" / "CRT" (characteristics in specific tec. features)

CONTACTORS

- special class_Ac6b
- inrush current damping resistors
- aux. rated voltage : 230 Vac
- UL 224924 Cert.

PROTECTIONS and AUX. CIRCUITS

- IV aut. circuit breaker_10 KA in CRC-1 / CRC-2 / CRC-3 / A-4 / M30 / M50
- NH00_120 kA hpc fuses
- "hpc" fuses for auxiliary circuits
- safety thermostat
- direct contacts protection

OPTIONAL PROTECTION

- load break switch + transformer Un/230 V
- automatic circuit breaker + transf. Un/230 V
- aut. c. breaker+res. current relay+tr Un/230 V

POWER FACTOR CONTROLLER

- alpha-numeric display and function keyboard
- multifunctional, with configurable alarms
- TTL-RS232 port, reprogrammable

"DCRM2" POWER FACTOR CONTROLLER

- in CRC-1 / CRC-2 / CRC-3 / A4
- leds signaling

MECHANICAL CHARACTERISTICS

- IP31 metal cabinet. RAL 7035
- input wires_bottom in "S 800" and "S 800_2"
- stuffing box or slide plate acc. enclosure
- upright mounting
- mounting_wall : "M30", "M50", "M100", "M225"
- mounting_floor: S500_03, S600, S800_01, S800_02
- one input wires for each enclosure
- forced cooling since 325 KVAR

ENVIRONMENTAL CONDITIONS

- permiss. humidity without condensing : 80%
- mean temp. during 24 h. : -5°C / +35°C
- max. temp. during 24 h. : 40°C
- max. altitude mounting : 4000 m. a.s.l.

STANDARDS

- IEC60831-1+2
- 2006/95/CE / 2004/108/CE
- IEC 61010-1
- IEC 61000-6
- IEC 61921
- IEC 61439-1/2



“PHICAP PLUS_440 V”

“PHICAP PLUS_440 V”

Technical Characteristics in 01_p.12



440 V

| series | KVAr/440V (50 Hz) | KVAr/400V (50 Hz) | steps | Automatic circ. breaker | dimens. (mm) H x A x P | kg | code | PRICE |
|--------|----------------------|----------------------|-------------|-------------------------|---------------------------|------|-------------|------------|
| M 30 | 5 | 4,15 | 1,66+3,33 | INCLUDED | 500 x 395 x 180 | 13,5 | P115000544M | ON REQUEST |
| | 7,5 | 6,23 | 2,5+5 | | | 13,5 | P115000744M | |
| | 10 | 8,30 | 2x2,5+5 | | | 14,5 | P115001044M | |
| | 12,5 | 10,38 | 2,5+2x5 | | | 14,5 | P115001244M | |
| | 15 | 12,5 | 3x5 | | | 14,5 | P115001544M | |
| | 17,5 | 14,53 | 2,5+5+10 | | | 15 | P115001744M | |
| | 20 | 16,60 | 2x5+10 | | | 15 | P115002044M | |
| | 22,5 | 18,68 | 2,5+5+15 | | | 15,5 | P115002244M | |
| | 25 | 20,75 | 5+2x10 | | | 15,5 | P115002544M | |
| | 27,5 | 22,83 | 5+7,5+15 | | | 16 | P115002744M | |
| M 50 | 30 | 25 | 5+10+15 | INCLUDED | 610 x 418 x 258 | 16 | P115003044M | ON REQUEST |
| | 35 | 29 | 5+10+20 | | | 21,5 | P125003544M | |
| | 37,5 | 31,25 | 2,5+5+10+20 | | | 21,5 | P125003744M | |
| | 40 | 33,25 | 2x10+20 | | | 22,5 | P125004044M | |
| | 45 | 37,35 | 5+2x10+20 | | | 26 | P125004544M | |
| | 50 | 41,5 | 10+2x20 | | | 28 | P125005044M | |

| series | KVAr/440V (50 Hz) | KVAr/400V (50 Hz) | steps | Switch (*) | dimens. (mm) H x A x P | kg | code | PRICE | PRICE_additional (S) |
|----------|----------------------|----------------------|--------------|------------|---------------------------|------|-------------|------------|----------------------|
| M 100 | 55 | 45 | 5+10+2x20 | OPTIONAL | 710 x 754 x 258 | 40,5 | P135005544* | ON REQUEST | ON REQUEST |
| | 60 | 50 | 3x20 | | | 41 | P135006044* | | |
| | 65 | 54 | 5+3x20 | | | 42 | P135006544* | | |
| | 70 | 58 | 10+3x20 | | | 42 | P135007044* | | |
| | 75 | 62 | 5+10+3x20 | | | 45 | P135007544* | | |
| | 80 | 64 | 4x20 | | | 46,5 | P135008044* | | |
| | 90 | 74 | 10+4x20 | | | 46,5 | P135009044* | | |
| | 100 | 83 | 2x10+2x20+40 | | | 47 | P135010044* | | |
| M 225_01 | 105 | 87,5 | 15+3x30 | OPTIONAL | 1150 x 435 x 260 | 52 | P145010544* | ON REQUEST | ON REQUEST |
| | 120 | 100 | 4x30 | | | 52,5 | P145012044* | | |
| | 135 | 112,5 | 15+4x30 | | | 56 | P145013544* | | |
| | 150 | 125 | 5x30 | | | 56,5 | P145015044* | | |

S III load break switch + aux. transformer Un /230 Vac

on request

A III aut. circuit breaker + auxiliary transformer Un/230 Vac

AD III aut. circuit breaker + residual current relay + aux. transformer Un/230 Vac

current transf. .../5 Amp. is NOT included

installation and maintenance : see Technical Manual

“PHICAP PLUS 440 V”

2/3



| series | KVAr/440V (50 Hz) | KVAr/400V (50 Hz) | steps | Switch (*) | dimens. (mm) H x A x P | kg | code | PRICE | PRICE_additional (\$) |
|----------|----------------------|----------------------|---------------|------------|---------------------------|---------|-------------|------------------|-----------------------|
| M 225_02 | 165 | 137,5 | 15+30+2x60 | OPTIONAL | 1250 x 640 x 260 | 58 | P145016544* | ON REQUEST | ON REQUEST |
| | 180 | 150 | 2x30+2x60 | | | 59 | P145018044* | | |
| | 210 | 175 | 30+3x60 | | | 60,5 | P145021044* | | |
| | 225 | 187,5 | 15+30+3x60 | | | 61 | P145022544* | | |
| S 500_03 | 240 | 200 | 2x30+3x60 | OPTIONAL | 1660 x 500 x 436 | 114 | P155024044* | | |
| | 255 | 212,5 | 15+2x30+3x60 | | | 116 | P155025544* | | |
| | 270 | 225 | 30+4x60 | | | 117 | P155027044* | | |
| | 285 | 237,5 | 15+30+4x60 | | | 118 | P155028544* | | |
| | 300 | 250 | 2x30+4x60 | | | 127 | P155030044* | | |
| | 315 | 262,5 | 15+2x30+4x60 | | | 140 | P155031544* | | |
| | 330 | 275 | 30+5x60 | | | 156 | P155033044* | | |
| | 345 | 287,5 | 15+30+5x60 | | | 159 | P155034544* | | |
| | 360 | 300 | 2x30+5x60 | | | 164 | P155036044* | | |
| | 390 | 325 | 30+6x60 | | | 166 | P155039044* | | |
| | 420 | 350 | 7x60 | | | 168 | P155042044* | | |
| | S 600 | 450 | 375 | | | 30+7x60 | OPTIONAL | 1660 x 600 x 480 | 189 |
| 480 | | 400 | 8x60 | 194 | P165048044* | | | | |
| 510 | | 425 | 30+8x60 | 198 | P165051044* | | | | |
| 540 | | 450 | 2x30+8x60 | 199 | P165054044* | | | | |
| S 800_01 | 570 | 475 | 30+9x60 | OPTIONAL | 2070 x 800 x 600 | 220 | P185057044* | | |
| | 600 | 500 | 10x60 | | | 224 | P185060044* | | |
| | 630 | 525 | 30+10x60 | | | 226 | P185063044* | | |
| | 660 | 550 | 2x30+10x60 | | | 228 | P185066044* | | |
| | 690 | 575 | 30+11x60 | | | 230 | P185069044* | | |
| | 720 | 600 | 2x30+11x60 | | | 236 | P185072044* | | |
| S 800_02 | 780 | 650 | 60+6x120 | OPTIONAL | 2070 x 1600 x 600 | 410 | P185078044* | | |
| | 810 | 675 | 30+3x60+5x120 | | | 414 | P185081044* | | |
| | 840 | 700 | 2x60+6x120 | | | 416 | P185084044* | | |
| | 870 | 725 | 30+2x60+6x120 | | | 420 | P185087044* | | |
| | 900 | 750 | 60+7x120 | | | 450 | P185090044* | | |
| | 960 | 800 | 2x60+7x120 | | | 472 | P185096044* | | |
| | 1020 | 850 | 60+8x120 | | | 501 | P185102044* | | |
| | 1080 | 900 | 2x60+8x120 | | | 530 | P185108044* | | |
| | 1140 | 950 | 60+9x120 | | | 580 | P185114044* | | |
| | 1200 | 1000 | 2x60+9x120 | | | 618 | P185120044* | | |
| | 1320 | 1100 | 2x60+10x120 | | | 621 | P185132044* | | |
| | 1440 | 1200 | 12x120 | | | 628 | P185144044* | | |

more than 720 KVAR : with two or more enclosures (*master/slave*), either one with one input wires

| | |
|------------|---|
| S | III load break switch + aux. transformer Un /230 Vac |
| on request | |
| A | III aut. circuit breaker + auxiliary transformer Un/230 Vac |
| AD | III aut. circuit breaker + residual current relay + aux. transformer Un/230 Vac |

current transf. .../5 Amp. is NOT included

installation and maintenance : see Technical Manual

01_p.11



POWER FACTOR CORRECTION AND HARMONICS. SINCE 1979

“PHICAP PLUS_440 V”

TECHNICAL CHARACTERISTICS

Service Voltage : 440 Vac (50/60 Hz)

CAPACITORS

- “CRM” / “CRT” (characteristics in specific tec. features)

CONTACTORS

- special class_Ac6b
- inrush current damping resistors
- aux. rated voltage : 230 Vac
- UL 224924 Cert.

PROTECTIONS and AUX. CIRCUITS

- IV aut. circuit breaker_10 KA in “M30”and “M50”
- NH00_120 kA hpc fuses
- “hpc” fuses for auxiliary circuits
- safety thermostat
- direct contacts protection

OPTIONAL PROTECTION

- load break switch + transformer Un/230 V
- automatic circuit breaker + transf. Un/230 V
- aut. c. breaker+res. current relay+tr Un/230 V

POWER FACTOR CONTROLLER

- alpha-numeric display and function keyboard
- multifunctional, with configurable alarms
- TTL-RS232 port
- reprogrammable
- rest of features in data sheet product

MECHANICAL CHARACTERISTICS

- IP31 metal cabinet. RAL 7035
- input wires_bottom in “S 800” and “S 800_2”
- stuffing box or slide plate acc. enclosure
- upright mounting
- mounting_wall : “M30”, “M50”, “M100”, “M225”
- mounting_floor : S500_03,S600, S800_01,S800_02
- one input wires for each enclosure
- forced cooling since 325 KVAR

ENVIRONMENTAL CONDITIONS

- permiss. humidity without condensing : 80%
- mean temp. during 24 h. : -5°C / +35°C
- max. temp. during 24 h. : 40°C
- max. altitude mounting : 4000 m. a.s.l.

STANDARDS

- IEC60831-1+2
- 2006/95/CE / 2004/108/CE
- IEC 61010-1
- IEC 61000-6
- IEC 61921
- IEC 61439-1/2



“FAST CAP_400 V”

“FAST CAP_400 V”

For electric networks with fast fluctuating loads
(around 5 seconds)

Excellent setup of steps (kvar)

Fast load/unload of the kvar steps

Technical Characteristics in 01_p.15



FASTCAP_01



FASTCAP_02



FASTCAP_03

400 V

| series | KVAr/400 V (50 Hz) | steps | Automatic circ. breaker | dimens. (mm) H x A x P | kg | code | PRICE |
|-------------|-----------------------|-------------------|-------------------------|---------------------------|------|-------------|------------|
| FAST CAP_01 | 5,5 | 0,5+1+1,5+2,5 | INCLUDED | 500 x 395 x 180 | 13,5 | F115000540M | ON REQUEST |
| | 8 | 0,5+1+1,5+5 | | | 13,5 | F115000840M | |
| | 9 | 0,5+1+2,5+5 | | | 14 | F115000940M | |
| | 12,5 | 1+1,5+2x2,5+5 | | | 14,5 | F115001240M | |
| | 15 | 1+1,5+2,5+2x5 | | | 14,5 | F115001540M | |
| | 17,5 | 1+1,5+5+10 | | | 15 | F115001740M | |
| | 19 | 1,5+2,5+5+10 | | | 15,5 | F115001940M | |
| | 24 | 1,5+2,5+5+15 | | | 15,5 | F115002440M | |
| | 27,5 | 2,5+5+2x10 | | | 16 | F115002740M | |
| 29 | 1,5+2,5+5+2x10 | 16 | | F115002940M | | | |
| FAST CAP_02 | 34 | 1,5+2,5+5+10+15 | | 610 x 418 x 258 | 21,5 | F125003440M | |
| | 39 | 1,5+2,5+5+10+20 | | | 21,5 | F125003940M | |
| | 41,5 | 1,5+2,5+7,5+10+20 | | | 22 | F125004140M | |
| | 47,5 | 2,5+5+2x10+20 | | | 22,5 | F125004740M | |
| | 52,5 | 2,5+5+10+15+20 | | | 24 | F125005240M | |

| series | KVAr/400 V (50 Hz) | steps | Automatic circ. breaker | dimens. (mm) H x A x P | kg | code | PRICE |
|-------------|-----------------------|-------------------|-------------------------|---------------------------|------|-------------|------------|
| FAST CAP_03 | 57,5 | 2,5+5+10+2x20 | INCLUDED | 710 x 754 x 258 | 41 | F135005740A | ON REQUEST |
| | 60 | 2x2,5+5+10+2x20 | | | 41,5 | F135006040A | |
| | 62,5 | 2,5+2x5+10+2x20 | | | 42 | F135006240A | |
| | 67,5 | 2,5+5+2x10+2x20 | | | 43 | F135006740A | |
| | 70 | 2x2,5+5+2x10+2x20 | | | 43,5 | F135007040A | |
| | 72,5 | 2,5+5+10+15+2x20 | | | 46 | F135007240A | |
| | 77,5 | 2,5+5+10+3x20 | | | 46,5 | F135007740A | |
| | 80 | 2x2,5+5+10+3x20 | | | 57,5 | F135008040A | |
| | 85 | 2,5+5+7,5+10+3x20 | | | 58 | F135008540A | |
| | 87,5 | 2,5+5+2x10+3x20 | | | 58 | F135008740A | |
| | 92,5 | 2,5+5+10+15+3x20 | | | 58,5 | F135009240A | |
| | 97,5 | 2,5+5+10+4x20 | | | 59 | F135009740A | |

FASTCAP_03 aux. transf. Un/230 Vac included

current transf. .../5 Amp. is NOT included

installation and maintenance : see Technical Manual

“FAST CAP_400 V”

2/2

TECHNICAL CHARACTERISTICS

Service Voltage : 400 Vac (50/60 Hz)

CAPACITORS

- “CRM” / “CRT” (characteristics in specific tec. features)

CONTACTORS

- special class_Ac6b
- inrush current damping resistors
- aux. rated voltage : 230 Vac
- UL 224924 Cert.

PROTECTIONS and AUX. CIRCUITS

- IV aut. circuit br. 10 KA : “FAST CAP_1”/“FAST CAP_2”
- IIII aut. circuit br. 25 KA : “FAST CAP_3”
- “hpc” fuses for auxiliary circuits
- safety thermostat
- direct contacts protection

OPTIONAL PROTECTION

- residual current relay

POWER FACTOR CONTROLLER_ fast response

- alpha-numeric display and function keyboard
- multifunctional, with configurable alarms
- TTL-RS232 port
- reprogrammable
- rest of features in data sheet product

MECHANICAL CHARACTERISTICS

- IP31 metal cabinet. RAL 7035
- input wires_by the top with stuffing box
- upright mounting on wall
- natural cooling

ENVIRONMENTAL CONDITIONS

- permiss. humidity without condensing : 80%
- mean temp. during 24 h. : -5°C / +35°C
- max. temp. during 24 h. : 40°C
- max. altitude mounting : 2000 m. a.s.l.

STANDARDS

- IEC60831-1+2
- 2006/95/CE / 2004/108/CE
- IEC 61010-1
- IEC 61000-6
- IEC 61921
- IEC 61439-1/2



We recommend a previously harmonic measurement with an electric network analyzer to study the suitability of a capacitors with rejection filters.

01_p.15

CISAR®

POWER FACTOR CORRECTION AND HARMONICS. SINCE 1979

c/. Coboalto, 110 - 08907 Hospitalet de Llobregat (Barcelona - Spain) - tel. +(34) 933 378 264 - fax +(34) 933 378 169 - cisarbcn@cisar.es - WWW.CISAR.ES - CONDENSADORES INDUSTRIALES, S.L.

“R-CAP_400 V”

“R-CAP_400 V”

1/3

To a electric networks with a moderate harmonic content

THDI \leq 10% / THDU \leq 2%

Technical Characteristics in 01_p.19



400 V

| series | KVAr/400 V (50 Hz) | steps | Automatic circ. breaker | dimens. (mm) H x A x P | kg | code | PRICE | |
|--------|-----------------------|---------------|-------------------------|---------------------------|------|-------------|------------|------------|
| M 30 | 5,5 | 0,5+1+1,5+2,5 | INCLUDED | 500 x 395 x 180 | 13,5 | R115000540M | ON REQUEST | |
| | 8 | 0,5+1+1,5+5 | | | 14 | R115000840M | | |
| | 9 | 0,5+1+2,5+5 | | | 14,5 | R115000940M | | |
| M 50 | 12,5 | 1+1,5+2x2,5+5 | | 610 x 418 x 258 | 22 | R125001240M | | ON REQUEST |
| | 15 | 1+1,5+2,5+2x5 | | | 22,5 | R125001540M | | |
| | 17,5 | 1+1,5+5+10 | | | 23 | R125001740M | | |
| | 19 | 1,5+2,5+5+10 | | | 23,5 | R125001940M | | |

| series | KVAr/400 V (50 Hz) | steps | Circuit breaker | dimens. (mm) H x A x P | kg | code | PRICE |
|--------|-----------------------|-------------------|-----------------|---------------------------|------|-------------|------------|
| M 100 | 24 | 1,5+2,5+5+15 | INCLUDED | 710 x 754 x 258 | 40 | R135002440S | ON REQUEST |
| | 27,5 | 2,5+5+2x10 | | | 40,5 | R135002740S | |
| | 29 | 1,5+2,5+5+2x10 | | | 41 | R135002940S | |
| | 34 | 1,5+2,5+5+10+15 | | | 41,5 | R135003440S | |
| | 39 | 1,5+2,5+5+10+20 | | | 42 | R135003940S | |
| | 41,5 | 1,5+2,5+7,5+10+20 | | | 43 | R135004140S | |
| | 47,5 | 2,5+5+2x10+20 | | | 44 | R135004740S | |
| | 52,5 | 2,5+5+10+15+20 | | | 45 | R135005240S | |

| on request | |
|------------|---|
| A | III aut. circuit breaker + auxiliary transformer Un/230 Vac |
| AD | III aut. circuit breaker + residual current relay + aux. transformer Un/230 Vac |

current transf. .../5 Amp. is NOT included

installation and maintenance : see Technical Manual

01_p.17

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POWER FACTOR CORRECTION AND HARMONICS. SINCE 1979

“R-CAP_400 V”

To a electric networks with a moderate harmonic content

THDI ≤ 10% / THDU ≤ 2%

Technical Characteristics in 01_p.19



400 V

| series | KVar/400V (50 Hz) | steps | Circuit breaker | dimens. (mm) H x A x P | kg | code | PRICE | |
|----------|----------------------|---------------|-----------------|---------------------------|------------------|-------------|------------|-------------|
| S 500_02 | 57,5 | 2,5+5+10+2x20 | INCLUDED | 1360 x 500 x 436 | 122 | R155005740S | ON REQUEST | |
| | 65 | 5+2x10+2x20 | | | 123 | R155006540S | | |
| | 75 | 5+10+3x20 | | | 124 | R155007540S | | |
| | 80 | 2x10+3x20 | | | 124 | R155008040S | | |
| | 90 | 10+4x20 | | | 125 | R155009040S | | |
| S 500_03 | 100 | 10+20+30+40 | | 1660 x 500 x 436 | 132 | R155010040S | | |
| | 110 | 10+3x20+40 | | | 133 | R155011040S | | |
| | 120 | 2x10+3x20+40 | | | 135 | R155012040S | | |
| S 800_01 | 140 | 20+3x40 | | INCLUDED | 2070 x 800 x 600 | 220 | | R185014040S |
| | 160 | 2x20+3x40 | | | | 224 | | R185016040S |
| | 180 | 20+4x40 | 228 | | | R185018040S | | |
| | 200 | 2x20+4x40 | 232 | | | R185020040S | | |
| | 220 | 120+5x40 | 236 | | | R185022040S | | |
| | 240 | 2x20+5x40 | 240 | | | R185024040S | | |
| | 260 | 20+6x40 | 244 | | | R185026040S | | |
| | 280 | 2x20+6x40 | 247 | | | R185028040S | | |
| | 300 | 20+7x40 | 251 | | | R185030040S | | |

on request

| | |
|----|---|
| A | III aut. circuit breaker + auxiliary transformer Un/230 Vac |
| AD | III aut. circuit breaker + residual current relay + aux. transformer Un/230 Vac |

current transf. .../5 Amp. is NOT included
installation and maintenance : see Technical Manual

01_p.18

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POWER FACTOR CORRECTION AND HARMONICS. SINCE 1979

CONDENSADORES INDUSTRIALES, S.L. - c/ Cobalto, 110 - 08907 Hospitalet de Llobregat (Barcelona - Spain) - tel. +(34) 933 378 264 - fax +(34) 933 378 169 - cisarbcn@cisar.es - WWW.CISAR.ES

“R-CAP_400 V”

3/3

TECHNICAL CHARACTERISTICS

Service Voltage : 400 Vac (50/60 Hz)

CAPACITORS

- “CRM and CRT_reinforced” (characteristics in specific tec. features)

CONTACTORS

- special class_Ac6b
- inrush current damping resistors
- aux. rated voltage : 230 Vac
- UL 224924 Cert.

PROTECTIONS and AUX. CIRCUITS

- IV aut. circuit breaker_10 KA in “M30”and “M50”
- load break switch + transformer Un/230 V
- NH00_120 kA hpc fuses
- “hpc” fuses for auxiliary circuits
- safety thermostat
- direct contacts protection

OPTIONAL PROTECTION

- automatic circuit breaker + transf. Un/230 V
- aut. c. breaker+res. current relay+tr. Un/230 V

POWER FACTOR CONTROLLER

- alpha-numeric display and function keyboard
- multifunctional, with configurable alarms
- TTL-RS232 port
- reprogrammable
- rest of features in data sheet product

MECHANICAL CHARACTERISTICS

- IP31 metal cabinet. RAL 7035
- input wires_by the top until 120 kvar
- input wires_by the bottom since 140 kvar
- upright mounting on wall until 52,5 kvar
- upright mounting on wall since 57,5 kvar
- forced cooling since 140kvar
- one input wires for each enclosure

ENVIRONMENTAL CONDITIONS

- permiss. humidity without condensing : 80%
- mean temp. during 24 h. : -5°C / +35°C
- max. temp. during 24 h. : 40°C
- max. altitude mounting : 2000 m. a.s.l.

STANDARDS

- IEC60831-1+2
- 2006/95/CE / 2004/108/CE
- IEC 61010-1
- IEC 61000-6
- IEC 61921
- IEC 61439-1/2



"PHICAP_230 V"

"PHICAP_230 V"

Technical Characteristics in 01_p.23



230 V (III)

| series | KVAr/230 V (50 Hz) | escalones steps | Automatic circ. breaker | dimens. (mm) H x A x P | kg | code | PRICE |
|--------|--------------------|-----------------|-------------------------|------------------------|------|-------------|------------|
| M 30 | 7,5 | 2,5+5 | INCLUDED | 500 x 395 x 180 | 13,5 | P115000720M | ON REQUEST |
| | 10 | 2x2,5+5 | | | 14 | P115001020M | |
| | 12,5 | 2,5+2x5 | | | 14,5 | P115001220M | |
| | 15 | 3x5 | | | 15 | P115001520M | |
| M 50 | 20 | 4x5 | | 610 x 418 x 258 | 19 | P125002020M | |
| | 25 | 5+2x10 | | | 22 | P125002520M | |

| series | KVAr/230V (50Hz) | steps | Switch(*) | dimens.(mm) HxAxP | kg | code | PRICE | PRICE_additional(S) |
|---------|------------------|------------|-----------|-------------------|----|-------------|------------|---------------------|
| M100 | 30 | 5+10+15 | OPTIONAL | 710x754x258 | 36 | P135003020* | ON REQUEST | ON REQUEST |
| | 35 | 5+10+20 | | | 36 | P135003520* | | |
| | 40 | 4x10 | | | 38 | P135004020* | | |
| | 45 | 5+2x10+20 | | | 40 | P135004520* | | |
| | 50 | 10+2x20 | | | 41 | P135005020* | | |
| M225_01 | 55 | 5+10+2x20 | | 1150x435x260 | 48 | P145005520* | | |
| | 60 | 2x10+2x20 | | | 53 | P145006020* | | |
| | 65 | 10+15+2x20 | | | 59 | P145006520* | | |
| | 70 | 10+3x20 | | | 61 | P145007020* | | |
| M225_02 | 80 | 4x20 | | 1250x640x260 | 63 | P145008020* | | |
| | 90 | 10+4x20 | | | 65 | P145009020* | | |

| | |
|------------|---|
| S | III load break switch + aux. transformer Un /230 Vac |
| on request | |
| A | III aut. circuit breaker + auxiliary transformer Un/230 Vac |
| AD | III aut. circuit breaker + residual current relay + aux. transformer Un/230 Vac |

current transf. .../5 Amp. is NOT included
 installation and maintenance : see Technical Manual

“PHICAP_230 V”

Technical Characteristics in 01_p.23



230 V (III)

| series | KVAr/230 V (50 Hz) | steps | Switch (*) | dimens. (mm) H x A x P | kg | code | PRICE | PRICE_additional (\$) |
|----------|-----------------------|----------------|------------|---------------------------|------------------|-------------|------------|-----------------------|
| S 500_03 | 100 | 2x10+4x20 | OPTIONAL | 1660x 500 x 436 | 111 | P155010020* | ON REQUEST | ON REQUEST |
| | 110 | 10+5x20 | | | 114 | P155011020* | | |
| | 120 | 2x10+5x20 | | | 116 | P155012020* | | |
| | 130 | 10+6x20 | | | 118 | P155013020* | | |
| | 140 | 2x10+6x20 | | | 124 | P155014020* | | |
| S 600 | 150 | 10+7x20 | | | 1660 x 600 x 480 | 158 | | |
| | 160 | 2x10+7x20 | | 162 | | P165016020* | | |
| | 165 | 15+5x30 | | 167 | | P165016520* | | |
| | 170 | 10+8x20 | | 177 | | P165017020* | | |
| | 180 | 2x10+8x20 | | 181 | | P165018020* | | |
| S 800_01 | 195 | 15+6x30 | | 2070 x 800 x 600 | 226 | P185019520* | | |
| | 210 | 7x30 | | | 228 | P185021020* | | |
| | 225 | 15+7x30 | | | 236 | P185022520* | | |
| | 240 | 8x30 | | | 241 | P185024020* | | |
| | 270 | 2x15+2x30+3x60 | | | 243 | P185027020* | | |
| | 285 | 15+30+4x60 | | | 245 | P185028520* | | |
| | 300 | 2x30+4x60 | | | 250 | P185030020* | | |
| | 330 | 30+5x60 | | | 256 | P185033020* | | |
| | 360 | 2x30+5x60 | | | 260 | P185036020* | | |

S III load break switch + aux. transformer Un /230 Vac

on request

A III aut. circuit breaker + auxiliary transformer Un/230 Vac

AD III aut. circuit breaker + residual current relay + aux. transformer Un/230 Vac

current transf. .../5 Amp. is NOT included

installation and maintenance : see Technical Manual

“PHICAP_230 V”

3/3

TECHNICAL CHARACTERISTICS

Service Voltage : 230 Vac (50/60 Hz)

CAPACITORS

- “CRM” / “CRT” (characteristics in specific tec. features)

CONTACTORS

- special class_Ac6b
- inrush current damping resistors
- aux. rated voltage : 230 Vac
- UL 224924 Cert.

PROTECTIONS and AUX. CIRCUITS

- III aut. circuit breaker_10 KA until 25 kvar
- NH00_120 kA hpc fuses
- “hpc” fuses for auxiliary circuits
- safety thermostat
- direct contacts protection

OPTIONAL PROTECTION

- load break switch
- automatic circuit breaker
- aut. c. breaker+res. current relay

POWER FACTOR CONTROLLER

- alpha-numeric display and function keyboard
- multifunctional, with configurable alarms
- TTL-RS232 port
- reprogrammable
- rest of features in data sheet product

MECHANICAL CHARACTERISTICS

- IP31 metal cabinet. RAL 7035
- input wires_top until 180kvar
- input wires_bottom since 195 kvar
- stuffing box or slide plate acc. enclosure
- upright mounting
- mounting at wall until 90 kvar
- mounting at floor since 100 kvar
- one input wires for each enclosure
- forced cooling since 195 KVAR

ENVIRONMENTAL CONDITIONS

- perm. humidity without condensing : 80%
- mean temp. during 24 h. : -5°C / +35°C
- max. temp. during 24 h. : 40°C
- max. altitude mounting : 4000 m. a.s.l.

STANDARDS

- IEC60831-1+2
- 2006/95/CE / 2004/108/CE
- IEC 61010-1
- IEC 61000-6
- IEC 61921
- IEC 61439-1/2



*Se recomienda realizar previamente una medición de armónicos para evaluar si es conveniente o necesario instalar una batería con filtros de rechazo.
We recommend a previously harmonic measurement with an electric network analyzer to study the suitability of a capacitors with rejection filters.*

01_p.23

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POWER FACTOR CORRECTION AND HARMONICS. SINCE 1979

“WITH STATIC CONTACTORS (THYRISTORS)”

“WITH STATIC CONTACTORS (THYRISTORS)”

To electric networks with ultrafast cycles machines (elevators, welding machines, overhead cranes, rubber processing, renewable energy, etc.)

Technical Characteristics i 01_p.27



400 V

| series | KVAr/400 V (50 Hz) | steps | Circuit breaker | dimens. (mm) H x A x P | kg | code | PRICE |
|----------|--------------------|-----------------|-----------------|------------------------|-----|-------------|------------|
| M 100 | 12,5 | 2x6,25 | INCLUDED | 710 x 754 x 258 | 51 | T135001240S | ON REQUEST |
| | 18,75 | 6,25+12,5 | | | 58 | T135001840S | |
| | 25 | 2x6,25+12,5 | | | 60 | T135002540S | |
| S 500_01 | 37,5 | 6,25+12,5+18,75 | | 970 x 500 x 436 | 79 | T155003740S | |
| | 43,75 | 6,25+12,5+25 | | | 83 | T155004340S | |
| S 500_02 | 50 | 2x12,5+25 | | 1360 x 500 x 436 | 88 | T155005040S | |
| | 62,5 | 12,5+2x25 | | | 91 | T155006240S | |
| S 500_03 | 75 | 2x12,5+2x25 | | 1660 x 500 x 436 | 114 | T155007540S | |
| | 87,5 | 12,5+3x25 | | | 118 | T155008740S | |
| S 600 | 100 | 2x12,5+3x25 | | 1660 x 600 x 480 | 143 | T165010040S | |
| | 112,5 | 12,5+2x25+50 | | | 146 | T165011240S | |
| | 125 | 25+2x50 | | | 151 | T165012540S | |
| | 150 | 2x25+2x50 | | | 158 | T165015040S | |

| on request | |
|------------|---|
| A | III aut. circuit breaker + auxiliary transformer Un/230 Vac |
| AD | III aut. circuit breaker + residual current relay + aux. transformer Un/230 Vac |

current transf. .../5 Amp. is NOT included
 installation and maintenance : see Technical Manual

“WITH STATIC CONTACTORS (THYRISTORS)”

To electric networks with ultrafast cycles machines (elevators, welding renewable energy, etc.)

machines, overhead cranes, rubber processing,



400 V

| series | KVAr/400 V (50 Hz) | steps | Circuit breaker | dimens. (mm) H x A x P | kg | code | PRICE |
|----------|-----------------------|---------------|-----------------|---------------------------|-----|-------------|------------|
| S 800_01 | 175 | 25+3x50 | INCLUDED | 2070 x 800 x 600 | 216 | T185017540S | ON REQUEST |
| | 200 | 2x25+3x50 | | | 217 | T185020040S | |
| | 225 | 25+4x50 | | | 218 | T185022540S | |
| | 250 | 2x25+4x50 | | | 218 | T185025040S | |
| | 275 | 25+5x50 | | | 219 | T185027540S | |
| | 300 | 2x25+5x50 | | | 220 | T185030040S | |
| | 325 | 25+6x50 | | | 222 | T185032540S | |
| | 350 | 2x25+6x50 | | | 223 | T185035040S | |
| | 375 | 25+7x50 | | | 228 | T185037540S | |
| | 400 | 2x25+7x50 | | | 230 | T185040040S | |
| | 425 | 25+8x50 | | | 235 | T185042540S | |
| | 450 | 2x25+8x50 | | | 235 | T185045040S | |
| | 475 | 25+9x50 | | | 236 | T185047540S | |
| | 500 | 10x50 | | | 236 | T185050040S | |
| S 800_02 | 525 | 25+10x50 | INCLUDED | 2070 x 1600 x 600 | 391 | T185052540S | ON REQUEST |
| | 550 | 2x25+10x50 | | | 394 | T185055040S | |
| | 600 | 12x50 | | | 397 | T185060040S | |
| | 625 | 25+2x50+5x100 | | | 400 | T185062540S | |
| | 650 | 50+6x100 | | | 403 | T185065040S | |
| | 675 | 25+50+6x100 | | | 406 | T185067540S | |
| | 700 | 2x50+6x100 | | | 410 | T185070040S | |
| | 725 | 25+2x50+6x100 | | | 414 | T185072540S | |
| | 750 | 50+7x100 | | | 418 | T185075040S | |
| | 775 | 25+50+7x100 | | | 421 | T185077540S | |
| | 800 | 2x50+7x100 | | | 424 | T185080040S | |
| | 825 | 25+2x50+7x100 | | | 428 | T185082540S | |
| | 850 | 50+8x100 | | | 431 | T185085040S | |
| | 875 | 25+50+8x100 | | | 436 | T185087540S | |
| | 900 | 2x50+8x100 | | | 442 | T185090040S | |
| | 925 | 25+2x50+8x100 | | | 446 | T185092540S | |
| | 950 | 50+9x100 | | | 452 | T185095040S | |
| | 975 | 25+50+9x100 | | | 460 | T185097540S | |
| | 1000 | 2x50+9x100 | | | 486 | T185100040S | |

more than 500 KVAr : with two or more enclosures ("master/slave"), either one with one input wires

on request

| | |
|----|---|
| A | III aut. circuit breaker + auxiliary transformer Un/230 Vac |
| AD | III aut. circuit breaker + residual current relay + aux. transformer Un/230 Vac |

current transf. .../5 Amp. is NOT included
installation and maintenance : see Technical Manual

“WITH STATIC CONTACTORS (THYRISTORS)”

3/3

TECHNICAL CHARACTERISTICS

Service Voltage : 400 Vac (50/60 Hz)

CAPACITORS

- “RDC” (characteristics in specific tec. features)

CONTACTORS

- static contactors (THYRISTORS)
- on/off in milliseconds

PROTECTIONS and AUX. CIRCUITS

- load break switch + transformer Un/230 V
- NH00_120 kA hpc fuses
- “hpc” fuses for auxiliary circuits
- safety thermostat
- direct contacts protection

OPTIONAL PROTECTION

- automatic circuit breaker + transf. Un/230 V
- aut. c. breaker+res. current relay+tr. Un/230 V

“fast” POWER FACTOR CONTROLLER

- alpha-numeric display and function keyboard
- multifunctional, with configurable alarms
- reprogrammable
- rest of features in data sheet product

MECHANICAL CHARACTERISTICS

- IP31 metal cabinet. RAL 7035
- input wires_by the top until 150 kvar
- input wires_by the bottom since 175 kvar
- upright mounting on wall until 43,75 kvar
- upright mounting on wall since 50 kvar
- forced cooling

ENVIRONMENTAL CONDITIONS

- permiss. humidity without condensing : 80%
- mean temp. during 24 h. : -5°C / +35°C
- max. temp. during 24 h. : 40°C
- max. altitude mounting : 2000 m. a.s.l.

STANDARDS

- IEC60831-1+2
- 2006/95/CE / 2004/108/CE
- IEC 61010-1
- IEC 61000-6
- IEC 61921
- IEC 61439-1/2



“WITH III DETUNED REACTORS ($\geq 5^{\text{TH}}$ HARMONIC)”

“WITH III DETUNED REACTORS ($\geq 5^{TH}$ HARMONIC)”

To electric networks with high level of harmonic distortion

$ThdI > 10\%$ $ThdU \leq 6\%$

➔ $p=7\%$

Technical Characteristics in 01_p.31



440 V

| series | KVAr/440V (50 Hz) | KVAr/400V (50 Hz) | steps | Interruptor (*) Switch (*) | dimens. (mm) H x A x P | kg | code | PRICE | PRICE_additional (\$) |
|----------|-------------------|-------------------|------------|-------------------------------|---------------------------|-----|---------------|------------|-----------------------|
| S 500_01 | 17,4 | 14,5 | 2,4+2x7,5 | OPTIONAL | 970 x 500 x 436 | 81 | 5FC155301744* | ON REQUEST | ON REQUEST |
| | 24,9 | 20,75 | 2,4+7,5+15 | | | 83 | 5FC155302444* | | |
| S 500_02 | 37,5 | 31,25 | 7,5+2x15 | | 1360 x 500 x 436 | 115 | 5FC155303744* | | |
| | 52,5 | 43,75 | 7,5+15+30 | | | 124 | 5FC155305244* | | |
| | 60 | 50 | 2x15+30 | | | 124 | 5FC155306044* | | |
| S 500_03 | 75 | 62,5 | 15+2x30 | | 1660 x 500 x 436 | 135 | 5FC155307544* | | |
| | 90 | 75 | 3x30 | | | 140 | 5FC155309044* | | |
| | 105 | 87,5 | 15+3x30 | | | 146 | 5FC155310544* | | |
| S 600 | 120 | 100 | 2x15+30+60 | | 1660 x 600 x 480 | 175 | 5FC165312044* | | |
| | 135 | 112,5 | 15+2x30+60 | | | 187 | 5FC165313544* | | |
| | 150 | 125 | 30+2x60 | | | 192 | 5FC165315044* | | |
| | 180 | 150 | 2x30+2x60 | | | 202 | 5FC165318044* | | |

they avoid harmonic amplifications above 189 Hz ($p=7\%$)

| | |
|------------|---|
| S | III load break switch + aux. transformer Un /230 Vac |
| on request | |
| A | III aut. circuit breaker + auxiliary transformer Un/230 Vac |
| AD | III aut. circuit breaker + residual current relay + aux. transformer Un/230 Vac |

current transf. .../5 Amp. is NOT included

installation and maintenance : see Technical Manual

“WITH III DETUNED REACTORS ($\geq 5^{\text{TH}}$ HARMONIC)”

To electric networks with high level of harmonic distortion they avoid harmonic amplifications above 189 Hz ($p=7\%$)

Technical Characteristics in 01_p.31

ThdI > 10% ThdU ≤ 6% → p=7%

440 V

| series | KVAr/440V (50 Hz) | KVAr/400V (50 Hz) | steps | Interruptor (*) Switch (*) | dimens. (mm) H x A x P | kg | code | PRICE | PRICE_additional (S) | | | | |
|----------|----------------------|----------------------|---------------|-------------------------------|---------------------------|------------|---------------|-------------------|----------------------|-----|---------------|----------|------------|
| S 800_01 | 210 | 175 | 30+3x60 | OPTIONAL | 2070 x 800 x 600 | 242 | 5FC185321044* | 7.296 € | ON REQUEST | | | | |
| | 240 | 200 | 2x30+3x60 | | | 266 | 5FC185324044* | 7.980 € | | | | | |
| | 270 | 225 | 30+4x60 | | | 290 | 5FC185327044* | 8.361 € | | | | | |
| | 300 | 250 | 2x30+4x60 | | | 360 | 5FC185330044* | 9.020 € | | | | | |
| | 330 | 275 | 30+5x60 | | | 383 | 5FC185333044* | 9.456 € | | | | | |
| | 360 | 300 | 2x30+5x60 | | | 390 | 5FC185336044* | 10.134 € | | | | | |
| | 390 | 325 | 30+6x60 | | | 392 | 5FC185339044* | 10.634 € | | | | | |
| | 420 | 350 | 2x30+6x60 | | | 395 | 5FC185342044* | 11.360 € | | | | | |
| | 450 | 375 | 30+7x60 | | | 415 | 5FC185345044* | 11.768 € | | | | | |
| | 480 | 400 | 2x30+7x60 | | | 420 | 5FC185348044* | 12.547 € | | | | | |
| | 510 | 425 | 30+8x60 | | | 453 | 5FC185351044* | 13.107 € | | | | | |
| | 540 | 450 | 2x30+8x60 | | | 492 | 5FC185354044* | 13.840 € | | | | | |
| | 570 | 475 | 30+9x60 | | | 508 | 5FC185357044* | 14.240 € | | | | | |
| | 600 | 500 | 10x60 | | | 535 | 5FC185360044* | 14.592 € | | | | | |
| | S 800_02 | 630 | 525 | | | 30+10x60 | OPTIONAL | 2070 x 1600 x 600 | | 695 | 5FC185363044* | 16.959 € | ON REQUEST |
| | | 660 | 550 | | | 2x30+10x60 | | | | 720 | 5FC185366044* | 16.893 € | |
| 690 | | 575 | 30+11x60 | 731 | 5FC185369044* | 17.301 € | | | | | | | |
| 720 | | 600 | 12x60 | 740 | 5FC185372044* | 18.312 € | | | | | | | |
| 750 | | 625 | 30+2x60+5x120 | 760 | 5FC185375044* | 18.480 € | | | | | | | |
| 780 | | 650 | 60+6x120 | 786 | 5FC185378044* | 18.645 € | | | | | | | |
| 810 | | 675 | 30+60+6x120 | 805 | 5FC185381044* | 19.449 € | | | | | | | |
| 840 | | 700 | 2x30+60+6x120 | 820 | 5FC185384044* | 21.670 € | | | | | | | |
| 870 | | 725 | 30+2x60+6x120 | 832 | 5FC185387044* | 21.681 € | | | | | | | |
| 900 | | 750 | 60+7x120 | 846 | 5FC185390044* | 22.265 € | | | | | | | |
| 930 | | 775 | 30+60+7x120 | 851 | 5FC185393044* | 22.912 € | | | | | | | |
| 960 | | 800 | 2x60+7x120 | 858 | 5FC185396044* | 23.347 € | | | | | | | |
| 990 | | 825 | 30+2x60+7x120 | 860 | 5FC185399044* | 24.201 € | | | | | | | |
| 1020 | | 850 | 60+8x120 | 868 | 5FC185402044* | 24.556 € | | | | | | | |
| 1050 | | 875 | 30+60+8x120 | 875 | 5FC185405044* | 25.283 € | | | | | | | |
| 1080 | | 900 | 2x60+8x120 | 890 | 5FC185408044* | 25.638 € | | | | | | | |
| 1110 | | 925 | 30+2x60+8x120 | 910 | 5FC185411044* | 26.329 € | | | | | | | |
| 1140 | | 950 | 60+9x120 | 925 | 5FC185414044* | 26.854 € | | | | | | | |
| 1170 | | 975 | 30+60+9x120 | 945 | 5FC185417044* | 27.228 € | | | | | | | |
| 1200 | | 1000 | 2x60+9x120 | 960 | 5FC185420044* | 27.845 € | | | | | | | |



S 800_01



S 800_02

more than 600 KVAR : with two or more enclosures ("master/slave"), either one with one input wires

| | |
|------------|---|
| S | III load break switch + aux. transformer Un /230 Vac |
| on request | |
| A | III aut. circuit breaker + auxiliary transformer Un/230 Vac |
| AD | III aut. circuit breaker + residual current relay + aux. transformer Un/230 Vac |

current transf. .../5 Amp. is NOT included

installation and maintenance : see Technical Manual

“WITH III DETUNED REACTORS ($\geq 5^{\text{TH}}$ HARMONIC)”

3/3

TECHNICAL CHARACTERISTICS

Service Voltage : 440V ac (50/60 Hz)

CAPACITORS

- “RDC_reinforced at 480 V ” (characteristics in specific tec. features)

CONTACTORS

- special class_Ac6b
- aux. rated voltage : 230 Vac
- UL 224924 Cert.

III PHASE DETUNED REACTORS

- $\text{ThdU} \leq 6\%$ $\text{ThdI} > 10\%$ $\text{p} = 7\%$ (189 Hz)
- temperature thermostat

PROTECTIONS and AUX. CIRCUITS

- NH00_120 kA hpc fuses
- “hpc” fuses for auxiliary circuits
- safety thermostat
- direct contacts protection

OPTIONAL PROTECTION

- automatic circuit breaker + transf. Un/230 V
- aut. c. breaker+res. current relay+tr. Un/230 V

POWER FACTOR CONTROLLER

- alpha-numeric display and function keyboard
- multifunctional, with configurable alarms
- reprogrammable
- rest of features in data sheet product

MECHANICAL CHARACTERISTICS

- IP31 metal cabinet. RAL 7035
- input wires_by the top until 180 kvar
- input wires_by the bottom since 210 kvar
- upright mounting on wall since 50 kvar
- forced cooling

ENVIRONMENTAL CONDITIONS

- permiss. humidity without condensing : 80%
- mean temp. during 24 h. : $-5^{\circ}\text{C} / +35^{\circ}\text{C}$
- max. temp. during 24 h. : 40°C
- max. altitude mounting : 2000 m. a.s.l.

STANDARDS

- IEC60831-1+2
- 2006/95/CE / 2004/108/CE
- IEC 61010-1
- IEC 61000-6
- IEC 61921
- IEC 61439-1/2



“WITH STATIC CONTACTORS (TRYRISTORS) AND III DETUNED REACTORS ($\geq 5^{\text{TH}}$ HARMONIC)”

“WITH STATIC CONTACTORS (TRYRISTORS) AND III DETUNED REACTORS ($\geq 5^{TH}$ HARMONIC)” 1/3

To electric networks with ultrafast cycles machines (elevators, welding processing, overhead cranes, rubber processing, renewable energy, etc).

Thdl > 10% ThdU ≤ 6% p=7% (*)

Technical Characteristics in 01_p.35



440 V

| series | KVAr/440V (50 Hz) | KVAr/400V (50 Hz) | steps | Circuit breaker | dimens. (mm) H x A x P | kg | code | PRICE |
|----------|-------------------|-------------------|------------|-----------------|------------------------|-----|---------------|------------|
| S 500_01 | 17,4 | 14,5 | 2,4+2x7,5 | INCLUDED | 970 x 500 x 436 | 81 | 5FT155301744S | ON REQUEST |
| | 24,9 | 20,75 | 2,4+7,5+15 | | | 83 | 5FT155302444S | |
| S 500_02 | 37,5 | 31,25 | 7,5+2x15 | | 1360 x 500 x 436 | 114 | 5FT155303744S | |
| | 52,5 | 43,75 | 7,5+15+30 | | | 115 | 5FT155305244S | |
| | 60 | 50 | 2x15+30 | | | 121 | 5FT155306044S | |
| S 500_03 | 75 | 62,5 | 15+2x30 | | 1660 x 500 x 436 | 135 | 5FT155307544S | |
| | 90 | 75 | 3x30 | | | 140 | 5FT155309044S | |
| | 105 | 87,5 | 15+3x30 | | | 146 | 5FT155310544S | |
| S 600 | 120 | 100 | 2x15+30+60 | | 1660 x 600 x 480 | 175 | 5FT165312044S | |
| | 135 | 112,5 | 15+2x30+60 | | | 187 | 5FT165313544S | |
| | 150 | 125 | 30+2x60 | | | 192 | 5FT165315044S | |
| | 180 | 150 | 2x30+2x60 | | | 202 | 5FT165318044S | |

(*) they avoid harmonic amplifications above 189 Hz (p=7%)

| opciones bajo demanda / on request | |
|------------------------------------|--|
| A | interruptor automático + transformador auxiliar Un/230 Vac III out. circuit breaker + auxiliary transformer Un/230 Vac |
| AD | interruptor automático + relé diferencial + transf. auxiliar Un/230 Vac III out. circuit breaker + residual current relay + aux. transformer Un/230 Vac |

transformador de intensidad .../5 Amp. NO incluido
current transf. .../5 Amp. is NOT included

instalación y mantenimiento según Manual Técnico
installation and maintenance : see Technical Manual

To electric networks with harmonics and ultrafast cycles machines (elevators, welding processing, overhead cranes, ...)

ThdI > 10% ThdU \leq 6% p=7% (*)

(*) they avoid harmonic amplifications above 189 Hz

Technical Characteristics in 01_p.35



440 V

| series | KVAr/440V (50 Hz) | KVAr/400V (50 Hz) | steps | Circuit breaker | dimens. (mm) H x A x P | kg | code | PRICE |
|----------|----------------------|----------------------|---------------|-----------------|---------------------------|-----|---------------|------------|
| S 800_01 | 210 | 175 | 30+3x60 | INCLUDED | 2070 x 800 x 600 | 242 | 5FT185321044S | ON REQUEST |
| | 240 | 200 | 2x30+3x60 | | | 266 | 5FT185324044S | |
| | 270 | 225 | 30+4x60 | | | 290 | 5FT185327044S | |
| | 300 | 250 | 2x30+4x60 | | | 360 | 5FT185330044S | |
| | 330 | 275 | 30+5x60 | | | 383 | 5FT185333044S | |
| | 360 | 300 | 2x30+5x60 | | | 390 | 5FT185336044S | |
| | 390 | 325 | 30+6x60 | | | 392 | 5FT185339044S | |
| | 420 | 350 | 2x30+6x60 | | | 395 | 5FT185342044S | |
| | 450 | 375 | 30+7x60 | | | 415 | 5FT185345044S | |
| | 480 | 400 | 2x30+7x60 | | | 420 | 5FT185348044S | |
| | 510 | 425 | 30+8x60 | | | 453 | 5FT185351044S | |
| | 540 | 450 | 2x30+8x60 | | | 492 | 5FT185354044S | |
| | 570 | 475 | 30+9x60 | | | 508 | 5FT185357044S | |
| | 600 | 500 | 10x60 | | | 535 | 5FT185360044S | |
| S 800_02 | 630 | 525 | 30+10x60 | INCLUIDO | 2070 x 1600 x 600 | 695 | 5FT185363044S | ON REQUEST |
| | 660 | 550 | 2x30+10x60 | | | 720 | 5FT185366044S | |
| | 690 | 575 | 30+6x60 | | | 731 | 5FT185369044S | |
| | 720 | 600 | 12x60 | | | 740 | 5FT185372044S | |
| | 750 | 625 | 30+2x60+5x120 | | | 760 | 5FT185375044S | |
| | 780 | 650 | 60+6x120 | | | 786 | 5FT185378044S | |
| | 810 | 675 | 30+60+6x120 | | | 805 | 5FT185381044S | |
| | 840 | 700 | 2x30+60+6x120 | | | 820 | 5FT185384044S | |
| | 870 | 725 | 30+2x60+6x120 | | | 832 | 5FT185387044S | |
| | 900 | 750 | 60+7x120 | | | 840 | 5FT185390044S | |
| | 930 | 775 | 30+60+7x120 | | | 861 | 5FT185393044S | |
| | 960 | 800 | 2x60+7x120 | | | 864 | 5FT185396044S | |
| | 990 | 825 | 30+2x60+7x120 | | | 863 | 5FT185399044S | |
| | 1020 | 850 | 60+8x120 | | | 868 | 5FT185402044S | |
| | 1050 | 875 | 30+60+8x120 | | | 875 | 5FT185405044S | |
| | 1080 | 900 | 2x60+8x120 | | | 890 | 5FT185408044S | |
| | 1110 | 925 | 30+2x60+8x120 | | | 910 | 5FT185411044S | |
| | 1140 | 950 | 60+9x120 | | | 925 | 5FT185414044S | |
| 1170 | 975 | 30+60+9x120 | 942 | 5FT185417044S | | | | |
| 1200 | 1000 | 2x60+9x120 | 960 | 5FT185420044S | | | | |

more than 600 KVAr : with two or more enclosures ("master/slave"), either one with one input wires

on request

| | |
|----|---|
| A | III aut. circuit breaker + auxiliary transformer Un/230 Vac |
| AD | III aut. circuit breaker + residual current relay + aux. transformer Un/230 Vac |

current transf. .../5 Amp. is NOT included
installation and maintenance : see Technical Manual

“WITH STATIC CONTACTORS (THYRISTORS) AND III DETUNED REACTORS ($\geq 5^{\text{TH}}$ HARMONIC)”

3/3

TECHNICAL CHARACTERISTICS

Service Voltage : 440V ac (50/60 Hz)

CAPACITORS

- “RDC_reinforced at 480 V” (characteristics in specific tec. features)

CONTACTORS

- static contactors (THYRISTORS)
- on/off in milliseconds

III PHASE DETUNED REACTORS

- $\text{ThdU} \leq 6\%$ $\text{ThdI} > 10\%$ $p = 7\%$ (189 Hz)
- temperature thermostat

PROTECTIONS and AUX. CIRCUITS

- load break switch + transformer Un/230 V
- NH00_120 kA hpc fuses
- “hpc” fuses for auxiliary circuits
- safety thermostat
- direct contacts protection

OPTIONAL PROTECTION

- automatic circuit breaker + transf. Un/230 V
- aut. c. breaker+res. current relay+tr. Un/230 V

“fast” POWER FACT CONTROLLER

- alpha-numeric display and function keyboard
- multifunctional, with configurable alarms
- reprogrammable
- rest of features in data sheet product

MECHANICAL CHARACTERISTICS

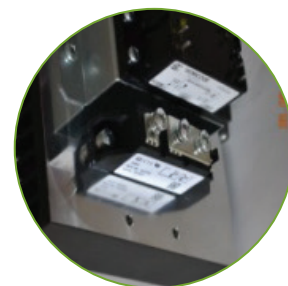
- IP31 metal cabinet. RAL 7035
- input wires_by the top until 180 kvar
- input wires_by the bottom since 210 kvar
- upright mounting on wall since 50 kvar
- forced cooling

ENVIRONMENTAL CONDITIONS

- permiss. humidity without condensing : 80%
- mean temp. during 24 h. : $-5^{\circ}\text{C} / +35^{\circ}\text{C}$
- max. temp. during 24 h. : 40°C
- max. altitude mounting : 2000 m. a.s.l.

STANDARDS

- IEC60831-1+2
- 2006/95/CE / 2004/108/CE
- IEC 61010-1
- IEC 61000-6
- IEC 61921
- IEC 61439-1/2



“MIXED (CONTACTORS + THYRISTORS) WITH III DETUNED REACTORS ($\geq 5^{\text{TH}}$. HARMONIC)”

“MIXED (CONTACTORS + THYRISTORS) WITH III DETUNED REACTORS ($\geq 5^{TH}$ HARMONIC)” 1/3

To electric networks with harmonics and ultrafast cycles machines (elevators, welding processing, overhead cranes, ...)

$ThdI > 10\%$ $ThdU \leq 6\%$ $p=7\%$ (*)

Technical Characteristics in 01_p.39



440 V

| armario series | KVAr/440V (50 Hz) | KVAr/400V (50 Hz) | escalones steps | Interruptor manual Circuit breaker | dimens. (mm) H x A x P | kg | código code | P.V.P. PRICE |
|----------------|-------------------|-------------------|-----------------|---------------------------------------|---------------------------|-----|---------------|-----------------|
| S 500_01 | 17,4 | 14,5 | 2,4t+7,5t+7,5c | OPTIONAL | 970 x 500 x 436 | 81 | 5FM155301744S | ON REQUEST |
| | 24,9 | 20,75 | 2,4t+7,5t+15c | | | 83 | 5FM155302444S | |
| S 500_02 | 37,5 | 31,25 | 7,5t+15t+15c | | 1360 x 500 x 436 | 115 | 5FM155303744S | |
| | 52,5 | 43,6 | 7,5t+15t+30c | | | 118 | 5FM155305244S | |
| S 500_03 | 60 | 50 | 2x15t+30c | | 1660 x 500 x 436 | 121 | 5FM155306044S | |
| | 75 | 62,5 | 15t+30t+30c | | | 135 | 5FM155307544S | |
| | 90 | 75 | 2x30t+30c | | | 140 | 5FM155309044S | |
| S 600 | 105 | 87 | 15t+30t+2x30c | | 1660 x 600 x 480 | 146 | 5FM155310544S | |
| | 120 | 100 | 2x15t+30c+60c | | | 175 | 5FM165312044S | |
| | 135 | 112,5 | 15t+30t+30c+60c | | | 187 | 5FM165313544S | |
| | 150 | 125 | 30t+60t+60c | | | 192 | 5FM165315044S | |
| | 180 | 150 | 2x30t+2x60c | | | 201 | 5FM165318044S | |

0 evitan la amplificación de armónicos por encima de los 189 Hz ($p=7\%$)

they avoid harmonic amplifications above 189 Hz ($p=7\%$)

| on request | |
|------------|---|
| A | III aut. circuit breaker + auxiliary transformer Un/230 Vac |
| AD | III aut. circuit breaker + residual current relay + aux. transformer Un/230 Vac |

current transf. .../5 Amp. is NOT included
installation and maintenance : see Technical Manual

“MIXED (CONTACTORS + THYRISTORS) WITH III DETUNED REACTORS ($\geq 5^{\text{TH}}$ HARMONIC)” 2/3

To electric networks with harmonics and ultrafast cycles machines (elevators, welding processing, overhead cranes, ...)

ThdI > 10% ThdU ≤ 6% p=7% (*)

(*) they avoid harmonic amplifications above 189 Hz

Technical Characteristics in 01_p.39

440 V

| series | KVAr/440V (50 Hz) | KVAr/400V (50 Hz) | steps | Circuit breaker | dimens. (mm) H x A x P | kg | code | PRICE |
|----------|----------------------|----------------------|-----------------------|-----------------|---------------------------|-----|---------------|------------|
| S 800_01 | 210 | 175 | 30t+60t+60t+60c | OPTIONAL | 2070 x 800 x 600 | 242 | 5FM185321044S | |
| | 240 | 200 | 2x30t+60t+2x60c | | | 266 | 5FM185324044S | |
| | 270 | 225 | 30t+2x60t+2x60c | | | 290 | 5FM185327044S | |
| | 300 | 250 | 2x30t+60t+3x60c | | | 360 | 5FM185330044S | |
| | 330 | 275 | 30t+2x60t+3x60c | | | 383 | 5FM185333044S | |
| | 360 | 300 | 2x30t+60t+4x60c | | | 390 | 5FM185336044S | |
| | 390 | 325 | 30t+2x60t+4x60c | | | 392 | 5FM185339044S | |
| | 420 | 350 | 2x30t+60t+5x60c | | | 395 | 5FM185342044S | |
| | 450 | 375 | 30t+2x60t+5x60c | | | 415 | 5FM185345044S | |
| | 480 | 400 | 2x30t+60t+6x60c | | | 420 | 5FM185348044S | |
| | 510 | 425 | 30t+2x60t+6x60c | | | 453 | 5FM185351044S | |
| | 540 | 450 | 2x30t+60t+7x60c | | | 492 | 5FM185354044S | |
| | 570 | 475 | 30t+2x60t+7x60c | | | 508 | 5FM185357044S | |
| | 600 | 500 | 3x60t+7x60c | | | 535 | 5FM185360044S | |
| S 800_02 | 630 | 525 | 30t+2x60t+8x60c | OPTIONAL | 2070 x 1600 x 600 | 695 | 5FM185363044S | ON REQUEST |
| | 660 | 550 | 2x30t+60t+9x60c | | | 720 | 5FM185366044S | |
| | 690 | 575 | 30t+2x60t+9x60c | | | 731 | 5FM185369044S | |
| | 720 | 600 | 3x60t+9x60c | | | 740 | 5FM185372044S | |
| | 750 | 625 | 30t+2x60t+120t+4x120c | | | 760 | 5FM185375044S | |
| | 780 | 650 | 60t+2x120t+4x120c | | | 786 | 5FM185378044S | |
| | 810 | 675 | 30t+60t+120t+5x120c | | | 805 | 5FM185381044S | |
| | 840 | 700 | 2x60t+120t+5x120c | | | 820 | 5FM185384044S | |
| | 870 | 725 | 30t+2x60t+6x120c | | | 832 | 5FM185387044S | |
| | 900 | 750 | 60t+2x120t+5x120c | | | 840 | 5FM185390044S | |
| | 930 | 775 | 30t+60t+120t+6x120c | | | 851 | 5FM185393044S | |
| | 960 | 800 | 2x60t+120t+6x120c | | | 858 | 5FM185396044S | |
| | 990 | 825 | 30t+2x60t+7x120c | | | 860 | 5FM185399044S | |
| | 1020 | 850 | 60t+2x120t+6x120c | | | 868 | 5FM185402044S | |
| | 1050 | 875 | 30t+60t+120t+7x120c | | | 875 | 5FM185405044S | |
| | 1080 | 900 | 2x60t+120t+7x120c | | | 890 | 5FM185408044S | |
| | 1110 | 925 | 30t+2x60t+8x120c | | | 910 | 5FM185411044S | |
| | 1140 | 950 | 60t+2x120t+7x120c | | | 925 | 5FM185414044S | |
| 1170 | 975 | 30t+60t+120t+8x120c | 945 | 5FM185417044S | | | | |
| 1200 | 1000 | 2x60t+120t+8x120c | 960 | 5FM185420044S | | | | |



ON REQUEST



more than 600 KVAr : with two or more enclosures ("master/slave"), either one with one input wires

on request

| | |
|----|---|
| A | III aut. circuit breaker + auxiliary transformer Un/230 Vac |
| AD | III aut. circuit breaker + residual current relay + aux. transformer Un/230 Vac |

current transf. .../5 Amp. is NOT included
installation and maintenance : see Technical Manual

“MIXED (CONTACTORS + THYRISTORS) WITH III DETUNED REACTORS ($\geq 5^{\text{TH}}$ HARMONIC)” 3/3**TECHNICAL CHARACTERISTICS**

Service Voltage : 440V ac (50/60 Hz)

CAPACITORS

- "RDC_reinforced at 480 V " (characteristics in specific tec. features)

CONTACTORS

- Ac6b contactors + Thyristors
- aux. rated voltage : 230 Vac

III PHASE DETUNED REACTORS

- $\text{ThdU} \leq 6\%$ $\text{ThdI} > 10\%$ $p=7\%$ (189 Hz)
- temperature thermostat

PROTECTIONS and AUX. CIRCUITS

- load break switch + transformer Un/230 V
- NH00_120 kA hpc fuses
- "hpc" fuses for auxiliary circuits
- safety thermostat
- direct contacts protection

OPTIONAL PROTECTION

- automatic circuit breaker + transf. Un/230 V
- aut. c. breaker+res. current relay+tr. Un/230 V

“mixed” POWER FACT CONTROLLER

- alpha-numeric display and function keyboard
- multifunctional, with configurable alarms
- reprogrammable
- rest of features in data sheet product

MECHANICAL CHARACTERISTICS

- IP31 metal cabinet. RAL 7035
- input wires_by the top until 180 kvar
- input wires_by the bottom since 210 kvar
- upright mounting on wall since 50 kvar
- forced cooling

ENVIRONMENTAL CONDITIONS

- permiss. humidity without condensing : 80%
- mean temp. during 24 h. : -5°C / +35°C
- max. temp. during 24 h. : 40°C
- max. altitude mounting : 2000 m. a.s.l.

STANDARDS

- IEC60831-1+2
- 2006/95/CE / 2004/108/CE
- IEC 61010-1
- IEC 61000-6
- IEC 61921
- IEC 61439-1/2



“WITH III DETUNED REACTORS ($\geq 3^{\text{TH}}$ HARMONIC)”

“WITH III DETUNED REACTORS ($\geq 3^{TH}$ HARMONIC)”

To electric networks with high level of harmonic distortion

ThdI > 10% ThdU ≤ 6%
 → p=14%

Technical Characteristics in 01_p.43



440 V

| series | KVAr/440V (50 Hz) | KVAr/400V (50 Hz) | steps | Interruptr (*) Switch (*) | dimens. (mm) H x A x P | code | PRICE | PRICE_additional (S) |
|----------|-------------------|-------------------|-------------|------------------------------|---------------------------|---------------|------------|----------------------|
| S 500_01 | 14,73 | 13 | 2x3,74+7,25 | OPTIONAL | 970 x 500 x 436 | 3FC155301444* | ON REQUEST | |
| | 26,24 | 22 | 3,74+7,5+15 | | | 3FC155302644* | | |
| S 500_02 | 30 | 25 | 2x7,5+15 | | 1360 x 500 x 436 | 3FC155303044* | | |
| | 37,5 | 31,25 | 7,5+2 x 15 | | | 3FC155303744* | | |
| | 52,5 | 43,6 | 7,5+15+30 | | | 3FC155305244* | | |
| S 500_03 | 60 | 50 | 2x15+30 | | 1660 x 500 x 436 | 3FC155306044* | | |
| | 75 | 60 | 15+2x30 | | | 3FC155307544* | | |
| | 90 | 75 | 3x30 | | | 3FC155309044* | | |
| S 600 | 120 | 100 | 2x15+30+60 | | 1660 x 600 x 480 | 3FC165312044* | | |
| | 135 | 112,5 | 15+2x30+60 | | | 3FC165313544* | | |
| | 150 | 125 | 30+2x60 | | | 3FC165315044* | | |
| | 180 | 150 | 2x30+2x60 | | | 3FC165318044* | | |

they avoid harmonic amplifications above 134 Hz and attenuates the existing harm. values (p=14%)

| | |
|------------|---|
| S | III load break switch + aux. transformer Un /230 Vac |
| on request | |
| A | III aut. circuit breaker + auxiliary transformer Un/230 Vac |
| AD | III aut. circuit breaker + residual current relay + aux. transformer Un/230 Vac |

current transf. .../5 Amp. is NOT included
 installation and maintenance : see Technical Manual

“WITH III DETUNED REACTORS ($\geq 3^{\text{TH}}$ HARMONIC)”

To electric networks with high level of harmonic distortion

they avoid harmonic amplifications above 134 Hz ($p=14\%$)

ThdI > 10% ThdU ≤ 6% → $p=14\%$

Technical Characteristics in 01_p.43

440 V

| series | KVAr/440V (50 Hz) | KVAr/400V (50 Hz) | steps | Interruptor (*) Switch (*) | dimens. (mm) H x A x P | code | PRICE | PR.P_additional (\$) |
|----------|----------------------|----------------------|---------------|-------------------------------|---------------------------|---------------|-------------------|----------------------|
| S 800_01 | 210 | 175 | 30+3x60 | OPTIONAL | 2070 x 800 x 600 | 3FC185321044* | ON REQUEST | ON REQUEST |
| | 240 | 200 | 2x30+3x60 | | | 3FC185324044* | | |
| | 270 | 225 | 30+4x60 | | | 3FC185327044* | | |
| | 300 | 250 | 2x30+4x60 | | | 3FC185330044* | | |
| | 330 | 275 | 30+5x60 | | | 3FC185333044* | | |
| | 360 | 300 | 2x30+5x60 | | | 3FC185336044* | | |
| | 390 | 325 | 30+6x60 | | | 3FC185339044* | | |
| | 420 | 350 | 2x30+6x60 | | | 3FC185342044* | | |
| | 450 | 375 | 30+7x60 | | | 3FC185345044* | | |
| | 480 | 400 | 2x30+7x60 | | | 3FC185348044* | | |
| | 510 | 425 | 30+8x60 | | | 3FC185351044* | | |
| | 540 | 450 | 2x30+8x60 | | | 3FC185354044* | | |
| | 570 | 475 | 30+9x60 | | | 3FC185357044* | | |
| 600 | 500 | 10x60 | 3FC185360044* | ON REQUEST | ON REQUEST | | | |
| S 800_02 | 630 | 525 | 30+10x60 | | | OPTIONAL | 2070 x 1600 x 600 | 3FC185363044* |
| | 660 | 550 | 2x30+10x60 | | | | | 3FC185366044* |
| | 690 | 575 | 30+6x60 | | | | | 3FC185369044* |
| | 720 | 600 | 12x60 | | | | | 3FC185372044* |
| | 750 | 625 | 30+2x60+5x120 | | | | | 3FC185375044* |
| | 780 | 650 | 60+6x120 | | | | | 3FC185378044* |
| | 810 | 675 | 30+60+6x120 | | | | | 3FC185381044* |
| | 840 | 700 | 2x30+60+6x120 | | | | | 3FC185384044* |
| | 870 | 725 | 30+2x60+6x120 | | | | | 3FC185387044* |
| | 900 | 750 | 60+7x120 | | | | | 3FC185390044* |
| | 930 | 775 | 30+60+7x120 | | | | | 3FC185393044* |
| | 960 | 800 | 2x60+7x120 | | | | | 3FC185396044* |
| | 990 | 825 | 30+2x60+7x120 | 3FC185399044* | | | | |
| 1020 | 850 | 60+8x120 | 3FC185402044* | | | | | |
| 1050 | 875 | 30+60+8x120 | 3FC185405044* | | | | | |
| 1080 | 900 | 2x60+8x120 | 3FC185408044* | | | | | |
| 1110 | 925 | 30+2x60+8x120 | 3FC185411044* | | | | | |
| 1140 | 950 | 60+9x120 | 3FC185414044* | | | | | |
| 1170 | 975 | 30+60+9x120 | 3FC185417044* | | | | | |
| 1200 | 1000 | 2x60+9x120 | 3FC185420044* | | | | | |



S 800_01



S 800_02

more than 600 KVAr : with two or more enclosures ("master/slave"), either one with one input wires

| | |
|------------|---|
| S | III load break switch + aux. transformer Un /230 Vac |
| on request | |
| A | III aut. circuit breaker + auxiliary transformer Un/230 Vac |
| AD | III aut. circuit breaker + residual current relay + aux. transformer Un/230 Vac |

current transf. .../5 Amp. is NOT included

installation and maintenance : see Technical Manual

“WITH III DETUNED REACTORS ($\geq 3^{\text{TH}}$ HARMONIC)”

3/3

TECHNICAL CHARACTERISTICS

Service Voltage : 440V ac (50/60 Hz)

CAPACITORS

- “RDC_reinforced at 480 V” (characteristics in specific tec. features)

CONTACTORS

- special class_Ac6b
- aux. rated voltage : 230 Vac
- UL 224924 Cert.

III PHASE DETUNED REACTORS

- $\text{ThdU} \leq 6\%$, $\text{ThdI} > 10\%$, $p=14\%$ (134 Hz)
- temperature thermostat

PROTECTIONS and AUX. CIRCUITS

- NH00_120 kA hpc fuses
- “hpc” fuses for auxiliary circuits
- safety thermostat
- direct contacts protection

OPTIONAL PROTECTION

- automatic circuit breaker + transf. Un/230 V
- aut. c. breaker+res. current relay+tr. Un/230 V

POWER FACTOR CONTROLLER

- alpha-numeric display and function keyboard
- multifunctional, with configurable alarms
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- IEC 61921
- IEC 61439-1/2



“GENERAL TERMS OF SALE”

GENERAL TERMS OF SALE

PRICES

- Prices will be negotiated with each specific Customer.
- Transport costs will be indicated on an invoice-proforma with the price of materials.
- Products are packed up for ground transport. Maritime or air packaging has to be consulted.
- CONDENSADORES INDUSTRIALES, S.L. reserves to himself the right to modify the characteristics of its products whenever it deems appropriate. All the modifications will be based on justifiable technical reasons.

PAYMENT FORM

- It has to be dealt with the Customer.
- Interests and bank charges, due to delays in payment, have to be paid by the Customer.

GUARANTEE

- Our products are guaranteed against manufacturing defects for two years since invoice date.
- The guarantee conditions and exclusions are described in technical manual. Use and maintenance tips are also describe there.
- CONDENSADORES INDUSTRIALES, S.L. does not take responsibility for personal or material damages arising from a misuse or an incorrect installation.
- If there is any incident during the transport or the unloading of the product, the Customer must report to CONDENSADORES INDUSTRIALES, S.L. the problems in writing within 24 hours after incident. It must be attached photographs in this report.

RETURNS POLICY

- Returns are not accepted without a prior communication and authorization to/from CONDENSADORES INDUSTRIALES, S.L.
- If there is any payment for the returned material it will be determined after being examined in our workshop.
- Special products cannot be returned.
- Shipping costs to CONDENSADORES INDUSTRIALES, S.L. will always be paid by the Customer.
- Any product return must be communicate within 15 days of the date of receipt. Returns are not accepted after this period.
- Any product returned have a demerit of 10% of the invoiced amount, regardless of their state of use.
- For defective materials, our liability is limited to the replacement or repair thereof in the established product warranty terms.

PROPERTY SECURE

- Materials submitted are property of CONDENSADORES INDUSTRIALES, S.L. until the Customer has paid the full amount of them.
- CONDENSADORES INDUSTRIALES, S.L. reserves to himself the right to recover the material in case of Customer's non-payment.
- Any conflict or divergence that might arise, shall be settled by the Courts of L'Hospitalet de Llobregat (Barcelona-Spain).



AUTOMATIC CAPACITOR BANKS

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POWER FACTOR CAPACITORS

HARMONICS FILTERING

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CONDENSADORES INDUSTRIALES, S.L.

c/. Clobalto, 110-08907-Hospitalet de Llobregat (Barcelona - Spain) - tel. +(34) 933 378 264 - fax +(34) 933 378 169 - cisarbcn@cisar.es

