

# 4000 Series

Automatic Capacitor Banks for networks  
with high harmonic distortion

< 60% THD in current [30 - 500Kvar / 400V 50Hz]



The special AENER's Automatic Capacitors Bank 4000 series which absorb harmonics, were specially designed by our Technical Department to be equipped with the best and highly reliable components in the market. That yielded a sophisticated product and capable of operating under most stringent conditions.

This equipment is unique at absorbing harmonics distortion without incorporating harmonic filters.

The capacitors, contactors and other components used are suitably prepared for operation under problem voltage and current conditions.

## Technical specifications

- Rated voltage: **400V – 50Hz.**
  - Maximum admissible current: **≤1,6 IN.**
  - Tolerance of capacitance: **0 + 10 %.**
  - Insulation test:
    - **MAIN POWER CIRCUIT:**  
Operating voltage (U): **400V.**  
Testing voltage: **2.500V between terminals and terminals to case.**
    - **AUXILIAR CIRCUIT**  
Testing voltage: **2 x U + 1.000V, but not less than 1.500V between terminals and terminals to case.**
  - Temperature range inside the equipment:
    - Maximum Temperature: **45° C.**
    - Max. average over 24 hrs: **35° C.**
    - Max. average over 365 days: **25° C.**
    - Minimum Temperature: **- 5° C.**
  - Life expectancy:
    - Capacitors: **> 120.000 h.**
    - Capacitor Duty Contactors: **> 200.000 times.**
  - Auto-transformer: **400V / 230V integrated.**
  - Protection level: **IP31.**
  - Colour: **RAL 7032.**
  - Standards:
    - CE Conformity:
      - **73/23/CEE Directive**, about safety (and following amendments).
      - **89/336/CEE Directive**, about electromagnetic compatibility (and following amendments).
- Above mentioned product is made according to the following harmonization standards:
- **IEC 60439-1:1999 (UNE-EN 60439-1:2001)**, Low-voltage switchgear and control-gear assemblies - Part 1: Type-tested and partially type-tested assemblies.

- **IEC 61921:2003 (UNE-NE 61921:2003)**, Power capacitors - Low-voltage power factor correction banks.

Moreover, all capacitors used are manufactured and tested according to established regulations in the standards:

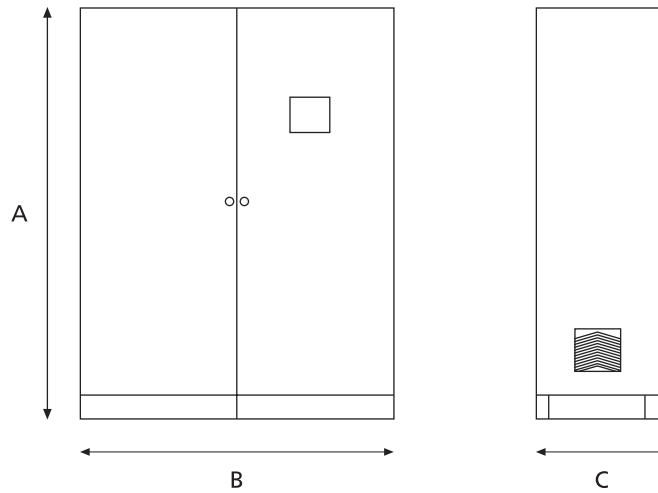
- **CEI 60831-1:1995 (UNE-EN 60831-1: 1998).**
- **CEI 60831-2:1995 (UNE-EN 60831-2: 1998).**

## Standard equipment

- New generation of reactive energy controller V170 or V650 with a powerful microprocessor.
- Capacitor duty contactors.
- Three-phase cylindrical capacitors of the TR30 series with internal safety system, specially designed to absorb harmonics distortion up to 60% of THD in current.
- Step protection fuses.
- Three-pole on-load circuit breaker (up to 90Kvar).
- Top quality metal cabinet.
- Built-in fan for a better refrigeration of the bank.
- Halogen free internal wiring.

## Optional equipment

- Three-pole on-load circuit breaker.
- Automatic thermo- magnetic circuit breaker MCCB (Mini Circuit Contact Breaker).
- ELCB Residual current circuit breaker.
- Specially protected cabinets for outdoor installation, (polyester, stainless steel, etc.).
- Cabinets with other protection levels (IP54, IP55, etc.).
- Special colours.



**4000 Series**

Code	Power (Kvar)	Voltage (V)	Steps	Dimensions			Weight (Kg)
				A	B	C	
HC030400	30	400	10 + 10 + 10	600	650	280	31
HC040400	40	400	10 + 10 + 20	600	650	280	33
HC050400	50	400	10 + 20 + 20	600	650	280	35
HC060400	60	400	10 + 10 + 20 + 20	800	650	280	60
HC070400	70	400	10 + 20 + 20 + 20	800	650	280	62
HC080400	80	400	10 + 20 + 20 + 30	800	650	280	64
HC090400	90	400	10 + 20 + 30 + 30	800	650	280	66
HC100400	100	400	10 + 20 + 30 + 40	1100	600	600	115
HC110400	110	400	10 + 20 + 40 + 40	1100	600	600	118
HC120400	120	400	10 + 20 + 40 + 50	1100	600	600	120
HC130400	130	400	10 + 20 + 50 + 50	1100	600	600	120
HC150400	150	400	25 + 25 + 2 x 50	1700	600	500	170
HC180400	180	400	10 + 20 + 50 + 50 + 50	1700	600	500	175
HC200400	200	400	2 x 25 + 3 x 50	1700	600	500	180
HC250400	250	400	2 x 25 + 4 x 50	1700	1200	500	280
HC300400	300	400	6 x 50	1700	1200	500	300
HC350400	350	400	7 x 50	1700	1200	500	320
HC400400	400	400	4 x 50 + 2 x 100	1700	1200	500	340
HC450400	450	400	3 x 50 + 3 x 100	1700	1800	500	360
HC500400	500	400	2 x 50 + 4 x 100	1700	1800	500	380

► Other power ratings, voltages, steps or frequencies available upon request  
It's recommended before choosing equipment to analyse the net.  
For Harmonics value > 2,5 % THDV, please refer to our Technical Department.

Halogen Free

Technical Advise

Do Not Spread Flame

Polluted Nets

Safety System

Technical Service