

ALPIMATIC – Automatic power factor correction

Part Number: MS.R28040.189



Alpimatic capacitor bank, SAH Type (with detuned reactors), reinforced class, is an automatic PFC system, with electromechanical contactors to switch on or off each step. Contactors are controlled by ALPTEC Power Factor Controller. MS.R28040.189 is made of Alpimatic racks with reinforced class detuned reactors type R7.

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1. Technical data

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|--------------------------|---|
| Range: | ALPIMATIC |
| Type: | SAH, reinforced class |
| Nominal power: | 280 kVAr |
| Steps: | 40 + 3 x 80 kVAr |
| Nominal voltage: | 400 V - 50 Hz - Tri |
| Max permissible voltage: | 520 V (capacitor) |
| Insulation class: | 6 / 25 kV (capacitor) |
| Harmonic level: | 4% < THDU < 6% & 20% < THDI < 40% 35% < SH/ST ≤ 50% |
| Loss factor: | 6 W / kVAr |
| Temperature class: | -10°C / +45°C Average over 24H : +40°C Annual average : +35°C |
| Weight: | 400 kg |
| Dimensions (W x D x H): | 800 x 500 x 1900 mm |
| Type: | Indoor |
| Storage: | -30°C / +60°C |
| Environment: | Dry Dust-free Non-corrosive Vibration-free |
| Standard: | IEC 61439-1 and 2 |

2. Description

This automatic capacitor bank includes:

- **4 Steps made of:**
 - 1 ALPIVAR3 capacitor:
 - Totally dry unit (without oil impregnation)
 - Double insulation or class II
 - Internal electrical protection by self-healing film, electrical fuse and disconnection device in case of overpressure
 - With discharge resistors (discharging time 3 minutes)
 - Complies with international standard (IEC 60831-1 & 2)
 - 1 detuned reactor, three-phase, reinforced class:
 - Tuning frequency = 189 Hz
 - Blocking factor p% = 7%
 - Thermal protection by temperature probe
 - 1 electromechanical contactor suitable for capacitive currents (coil 400 Vac).
 - 1 Protection by 3 HRC fuses, gG type.

▪ 1 digital Power Factor controller – Alptec5.2:

- LCD backlight display
- Optical communication port
- Switching by electromechanical relays
- Displays: cos φ, U, I, temperature, ΔkVAr ...
- Displays alarms: under compensation, over compensation, low current, high current, low voltage ...
- Disconnection on current overload and over temperature

▪ 1 single-phase power supply for auxiliary circuits.

▪ 1 three-phase power connection (copper busbar 30 x 10 mm with M10 screw).

▪ 1 NC dry contact to disconnect the capacitor bank when operation with GenSet (to be wired on site)

▪ 1 cubicle in which are mounted and wired the above components:

- IP 31-IK 05
- Power cable entry from the bottom of the cabinet (from the top on request)
- Ventilation louvers on the front, sides and rear
- RAL 7035 grey, black base (height = 100 mm)

3. Additional equipment

The capacitor bank must be protected against overloads and short circuits with a thermal-magnetic circuit breaker 630 A, set at 600 A.

Power connecting cables with minimum cross section of 2 x 95 mm² Cu / phase.

1 CT (Current Transformer) to be located on phase L1 of the general installation, primary current to be defined / secondary 5 A, Class 1-10 VA (Supply on request).

4. Installation instructions

External environment for the cubicle:

- Dry and dust free
- Non-corrosive atmosphere
- Maximum temperature: +40°C
- Average over 24 hours: +35°C
- Annual average: +25°C

A minimum clearance distance of 200 mm must be respected against any obstacle (wall, distribution board) to insure good ventilation.

For more details on the commissioning and maintenance, refer to installation instructions.