HAHF hybrid filters are available in the AAR/600, AAR/6 and AAR/138 detuned series.

Installation is similar to that of traditional power factor correction units, with the sole additional requirement of connecting the current transformer (CT) signals for two phases, L1(R) and L3(T).

The unit is supplied fully configured from the factory and therefore requires no adjustment by the installer.

The unit is designed according to the electrical measurements campaign.

By way of example, the standard configurations for the AAR/600-HAHF series are shown

TECHNICAL DATA COMMON TO ALL SERIES IN STANDARD CONFIGURATION

Enclosure	Made of steel sheet, protected against corrosion by phosphating and epoxy powder coating. Colour RAL 7035. Segregation: Form 1. External degree of protection: IP31 Internal degree of protection: panels with interlocked switch-disconnector IP20 live parts; IP 20 protection in additional modules Capacitor banks are assembled on drawers that can be pulled out from the front of the cabinet for quick maintenance Cabinets are equipped with eyebolts for lifting
Installation	Indoor installation, in a well ventilated position free from solar radiation. Pollution degree 1 Working temperature: -5 / +40 °C; Relative humidity RH50% @40°C (EN61435-1) Altitude: <1000 asl
Main Disconnector	Three-phase off-load disconnector with mechanical door interlock.
Wiring	Power connections are made with FS17-450/750V insulated, flame-retardant low smoke emission cables. On non-preinsulated cable lugs, the connection point is covered with a durable heat-shrink sleeve. Auxiliary circuits are appropriately identified in accordance with current standards.
Bank insertion	The banks are driven by three-phase contactors (Class AC6-b).
Fuses	The capacitive banks are protected by high breaking capacity fuses (100kA). The protection system for the power circuits uses NH-00 curve gG fuses; for the auxiliary circuits sectionable fuse holders and 10.3x38 fuses.
Auxiliary circuits	230 Vac Internal transformer
Capacitors	Single-phase capacitors made of self-healing (SH) metallised polypropylene (MKP) Over pressure safety device — Discharge resistor (75V within 3') PCB-free vegetable oil impregnation — Delta connection. Continuous service — Overvoltage: 1.1 x Un (8h / 24h) Current overload: 1.3 x In — Capacitance tollerance: -5% / +10% Dissipation losses: ≤0.4 W/kvar — Temperature category: -25 / D In the higher-performance series, **'Heavy Duty'** capacitors made of high film thickness and multiple elements in series are installed to reduce the effect of high currents on the element heads
Tuning reactors	Laminated iron core; aluminium windings Resin incapsulation Dissipation loss (average): 6W/kvar Over-temperature control probe
Active Filter AHF	• IGBT technology • Real time compensation of Harmonics up to 50° order and reactive power. Efficiency 97% • Connection: three-phase, 3 wire, Response time: 20ms
Controllers	• HPR+HMI 7" interconnected controllers with three-phase measurement • amperometric signals: by means of 2 current transformers with 5A secondary (not included) • Settable response time
Safety	• Automatic unit shut-down for high THD(I), THD(U),, over-temperature >50°C, under and overvoltage. • Step block for capacitance loss of the bank, reactor overtemperature • Dry contact NC for extreme internal temperature (>70°C)
Testing	100% of the equipment undergoes visual inspection, phase-to-phase and phase-to-ground insulation tests, bank efficiency and ventilation circuit checks. Capacitors are tested for capacitance, dissipation factor [tan(δ)], verification of insulation to earth and overvoltage resistance at three consecutive points of the production process: after winding, during ageing process and at final assembly
Standards	Capacitors: IEC/EN 60831-1 / 2 certified by IMQ (V1927) Equipment: IEC/EN 61439-1 / 2, IEC/EN 61921; 2014/35/EC Electromagnetic compatibility: 2014/30/EC.

AAR/600-HAHF



PERFORMANCE DATA

- Rated Voltage 400 Vac
- Rated Frequency 50 Hz
- Insulation voltage 800 Vac
- Voltage overload 1,1 Un (tensione ratede)
- Capacitors voltage Un=500V; Umax=550V
- Impulse withstand 8 kV

HARMONIC CONTENT

THD(I)max. = 100% in rete

THD(U)max. = 6% in rete

p = 7% (189 Hz)

The AAR/600-HAHF series of **hybrid active filtering** systems are particularly suitable for three-phase networks with **high harmonic current content**.
These units ensure accurate harmonic filtering, as well as precise compensation of reactive power, even in the presence of **impulsive and unbalanced loads**, thanks to intelligent logic that manages the AHF system and the classic multi-stage system.
The AAR/600-HAHF are capable of filtering even and odd harmonics up to the 50th order and compensating both inductive and capacitive distorted loads.

STANDARD CONFIGURATIONS

Code	Type	Qn (kvar)	AHF Current (A)	Cable entry	In (A)	Capacitors banks (kvar)	Disconnector (A)	Dimension (LxPxH) (mm)	Weight (kg)
8550100400HA0	G6E	100	100	↓	244	2x50	400	600x600x1660	200
8550125400HA0	G6E	125	100	↓	280	50+75	500	600x600x1660	220
8550150400HA0	G6E	150	100	↓	316	2x75	500	600x600x1660	240
8550225400HA0	G8E	225	100	↓	425	3x75	630	600x600x2070	270
8550300400HA0	G8E(II)	300	100	↑	535	4x75	800	1200x600x2070	370

Note
For dimensions, please refer to the mechanical drawings section, referring to the 'Type' column.
The cable entry (power supply) legend is as follows: ↑ from below, ↙ side up, ↓ from above,
Rated power is expressed at rated voltage (Un)