AAR/100-ST

Automatic P.F.C. equipment with Static Insertion

PERFORMANCE DATA

Rated voltage	**400 Vac** (others on request)
Rated frequency	**50 Hz** (60 Hz on request)
Insulation voltage	690 Vac
auxiliary voltage	230 Vac (110 Vac on request)
Overvoltage	1,1 Un (rated voltage)
Temperature range	-5 / +40 °C
Impulse withstand	8 kV

The entire **AAR/100-ST** series is equipped with "zero-crossing" static relays (thyristors), and it has been designed to improve the performance of traditional equipment, such as: increasing the life of the capacitors banks, decreasing the time response of the equipment to follow rapid changes in loads. Suitable for applications with **high harmonic distortion** such as automotive, harbours, mechanical workshops, ...

HARMONIC CONTENT

THD(I)max. = 100%	on the network
THD(U)max. = 3%	on the network
p = 7%	

TECHNICAL DATA

Enclosures	Made of sheet steel, protected against corrosion by phosphating and epoxy powder coating. RAL 7032 colour (others on request). Degree of protection: external panel IP 31 (others on request); internal panel IP 20 at the input of power cables (IP 20 with open doors on request).
Installation	Indoor installation, in a well ventilated position away from heat sources.
Ventilation	Forced.
Switch isolator	Tri-polar under-load type with door lock.
Wiring	The internal connection cables are FS17-450 / 750V type, flame retardant and with very low fumes emission (other types of cables on request). On the non-pre-insulated terminals the connection point is covered with a long-life heat-shrinking sheath. The auxiliary voltage are appropriately identified in compliance with current regulations.
Insertion	Static, based on the use of thyristors, controlled by a microprocessor such that the switching on of the electronic components occurs when the potential difference between the network and the capacitors is zero. In this way dangerous transients are avoided, with negative effects on the network, even when the capacitors are partially charged. The disconnection takes place at zero current (that is, shutdown occurs at the natural zero current passage of the static power factor correction) The microprocessor control ensures for the static system a maximum delay for the insertion of the capacitor banks of 200 ms.
Fuses	Each capacitors bank is protected by fuses. The protection system of both the power circuits (NH-00 curve gG fuses) and the auxiliary ones (isolable fuse holders and 10.3x38 fuses) foresees the use of high breaking power fuses (100kA).
Capacitors	Condensatori monofase in polipropilene metallizzato autorigenerabile (MKP), dotati di dispositivo antiscoppio e resistenza di scarica. Sono impregnati in olio vegetale, esente da PCB. Collegamento a triangolo. Tipo di servizio continuativo. • tensione nominale: 500 Vac (tensione massima 550 Vac) • sovratensione: 1,1 x Un (8h / 24h) • sovraccarico di corrente: 1,3 x In • tolleranza sulla capacità: -5% / +10% • perdite per dissipazione: ≤0,4 W/kvar • categoria temperatura: -25 / D
Detuning reactors	Tuning frequency: 189 Hz (p = 7%) Power losses: 5 W / kvar (AVG) Max. Harmonic distortion of the voltage allowed on the networks is: THDU = 3% (189 Hz). On request: AAR / 6 (THDU = 10%).
Controller	• type of measurement: varmetric. • amperometric signal: by means of an amperometric transformer with secondary 5A, class 1 - 5VA (by the user) • amperometric signal sensitivity: 2.5% for BMR series, 0.3% for HPR series • switching on / off times of the single capacitor bank: 1 "

AAR/100-ST

Automatic P.F.C. equipment with Static Insertion

QUALITY AND TESTING

Regulations	Capacitors: IEC/EN 60831-1 / 2 certified by IMQ (V1927); Equipment: IEC/EN 61439-1 / 2, IEC/EN 61921.
European directives	Low voltage: 2014/35/CE; Electromagnetic compatibility: 2014/30/CE.
Testing	100% of the automatic equipment is subject to visual inspection, insulation test: phase-phase and phase-earth, battery efficiency and ventilation circuit control: the report is included in the documentation. The capacitors are tested in three consecutive stages of the production process: after winding, regeneration and before labeling.

CONFIGURATION

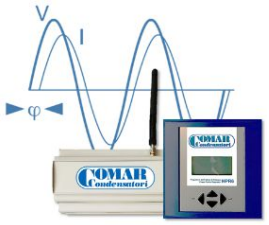
General notes

- For dimensions, please consult the cabinet drawings, referring to the "Type" column.
- The indication for cable entry (power supply) is as follows: ↑ from the bottom, ↙ side up, ↓ from the top
- The rated power is expressed at 400 V - 50 Hz.

The choice of supply cables depends on the installation conditions, the length of the same and the ambient temperature. For a correct sizing, refer to the IEC 60364-5, CEI 64-8 and the UNEL 35024/01 standards.

Cloud Control System (CCS)

The symbol indicates that CCS, the remote monitoring system, is pre-installed on the P.F.C. equipment. For any specific information, and to find out the advantages of the Cloud Control System service, refer to the appropriate brochure available on www.comarcond.com or directly on request.



Table

THD(I)max. = 100% THD(U)max. = 3% P = 7%

Code	Type	Qn	Cable entry	In	Banks size								Steps	Switch isolator	Controller	CCS	Weight
		(kvar)		(A)	(kvar)								(n)	(A)	(type)		(kg)
8611402750700	G6E	75	↓	108	12,5	12,5	50						3	160	HPR6		160
8611403100700	G6E	100	↓	144	25	25	50						4	200	HPR6		180
8611403125700	G6E	125	↓	180	25	50	50						5	315	HPR6		200
8611403150700	G6E	150	↓	216	25	50	75						6	400	HPR6		220
8611403175700	G6E	175	↓	252	25	50	50	50					7	400	HPR6		250
8611403200709	G9E	200	↑	288	25	50	50	75					8	500	HPR6		300
8611403225709	G9E	225	↑	324	25	50	75	75					9	500	HPR6		330
8611403250709	G9E	250	↑	360	25	25	50	75	75				10	630	HPR6		350
8611403300709	G9E	300	↑	432	25	50	75	75	75				12	800	HPR6		390
8611403350709	G9E	350	↑	504	50	75	75	75	75				9	800	HPR6		410
8611403400709	G9E (II)	400	↑	576	50	50	75	75	75	75			14	1000	HPR6		570
8611403450709	G9E (II)	450	↑	648	25	50	75	75	75	75	75		18	1000	HPR12		620
8611403500709	G9E (II)	500	↑	720	50	75	75	75	75	75	75		13	1250	HPR12		670
8611403550709	G9E (II)	550	↑	792	50	50	75	75	75	75	75	75	19	1250	HPR12		720
8611403600709	G9E (II)	600	↑	864	75	75	75	75	75	75	75	75	8	1250	HPR12		770
8611403650709	G9E (II)	650	↑	936	50	75	75	75	75	75	75	150	16	800+630	HPR12		820
8611403750709	G9E (II)	750	↑	1080	75	75	75	75	75	75	150	150	10	800+800	HPR12		870
8611403825709	G9E (III)	825	↑	1191	75	75	75	75	75	150	150	150	11	800+1000	HPR12		1030
8611403900709	G9E (III)	900	↑	1299	75	75	75	75	150	150	150	150	12	800+1250	HPR12		1080
8611403975709	G9E (III)	975	↑	1407	75	75	75	150	150	150	150	150	13	800+1250	HPR12		1130
8611404105709	G9E (III)	1050	↑	1516	75	75	150	150	150	150	150	150	14	800+1600	HPR12		1180

All automatic P.F.C.series, with ot without blocking reactors, can be realized with static insertion.
Other solutions are available on request