

# B35-ST

Automatic P.F.C. equipment with Static Insertion



The entire **B35-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 with a **medium-low harmonic distortion**.

## PERFORMANCE DATA

■ Rated voltage	415 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

## HARMONIC CONTENT (in the absence of resonance)

THD(I)max. = 25%	on the network
THD(Ic)max. = 70%	on the capacitors

## TECHNICAL DATA

<b>Enclosures</b>	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).
<b>Installation</b>	Indoor installation, in a well ventilated position away from heat sources.
<b>Ventilation</b>	Forced.
<b>Switch isolator</b>	Tri-polar under-load type with door lock.
<b>Wiring</b>	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.
<b>Insertion</b>	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.
<b>Fuses</b>	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).
<b>Capacitors</b>	Single-phase capacitors in self-healing metallized polypropylene (MKP), equipped with an anti-burst device and discharge resistance. They are impregnated in vegetable oil, PCB free. Delta connection. Type of continuous service. <ul style="list-style-type: none"><li>• rated voltage: 440 Vac (maximum voltage 500 Vac)</li><li>• overvoltage: 1.1 x A (8h / 24h)</li><li>• current overload: 1.3 x In</li><li>• capacity tolerance: -5% / + 10%</li><li>• losses due to dissipation: ≤0.4 W / kvar</li><li>• temperature category: -25 / D</li></ul>
<b>Controller</b>	<ul style="list-style-type: none"><li>• type of measurement: varmetric.</li><li>• amperometric signal: by means of an amperometric transformer with secondary 5A, class 1 - 5VA (by the user)</li><li>• amperometric signal sensitivity: 2.5% for BMR series, 0.3% for HPR series</li><li>• switching on / off times of the single capacitor bank: 1 "</li></ul>

### 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

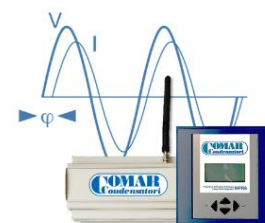
#### General notes

- 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 415 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](http://www.comarcond.com) or directly on request.



#### Table

THD(I)max. = 25%

THD(Ic)max. = 70%

Code	Type	Qn (kvar)	Cable entry	In (A)	Banks size (kvar)							Steps (n)	Switch isolator (A)	Controller (type)	CCS	Weight (kg)
8531413175300	G6E	175	↓	243	25	50	50	50				7	400	HPR6		165
8531413200300	G6E	200	↓	278	25	25	50	100				8	400	HPR6		180
8531413225300	G6E	225	↓	313	25	50	50	100				9	500	HPR6		200
8531413250300	G6E	250	↓	348	25	50	75	100				10	500	HPR6		220
8531413300300	G6E	300	↓	417	25	50	75	75	75			6	630	HPR6		270
8531413350300	G6E	350	↓	487	50	75	75	75	75			7	800	HPR6		280
8531413400300	G6E	400	↓	556	50	50	75	75	75	75		8	800	HPR6		290
8531413450300	G8E	450	↑	626	50	50	50	75	75	150		9	1000	HPR6		300
8531413500300	G8E	500	↑	696	50	75	75	75	75	150		10	1000	HPR6		310
8531413600300	G8E (II)	600	↑	836	75	75	75	75	75	75	75	22	1250	HPR12		480
8531413700300	G8E (III)	750	↑	1045	75	75	75	75	75	150	150	14	1600	HPR12		510
8531413800300	G8E (III)	825	↑	1149	75	75	75	75	75	150	150	16	800+1000	HPR12		550
8531413900300	G8E (III)	900	↑	1254	75	75	75	75	150	150	150	18	1000+1000	HPR12		580
8531414100300	G8E (III)	1050	↑	1462	75	75	150	150	150	150	150	20	1000+1000	HPR12		610

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