

B50

Automatic Power Factor Correction equipment



B50 series equipment are particularly suitable for three-phase networks with operating voltage equal to 400 Vac (+/- 10%) with medium harmonic distortion in current. These equipment guarantee an accurate P.F.C., thanks to a multi-step design that effectively divides the power. In addition, on the G6E and G8E cabinet, all the capacitors banks are assembled on racks, easily removable from the front of the panel, for simple management and maintenance.

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, with the exception of type G3E and G4E with IP30 (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	Natural for powers up to 200 kvar; Forced for powers over 200 kvar.
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.
3-pole contactors	Each battery is switched on / off by a three-pole contactor (Class AC6-b) to offer high reliability. The limitation of current peaks caused by the insertion of the capacitive batteries is guaranteed by pre-charging resistors.
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	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">• rated voltage: 500 Vac (maximum voltage 550 Vac)• overvoltage: 1.1 x A (8h / 24h)• current overload: 1.3 x In• capacity tolerance: -5% / + 10%• losses due to dissipation: ≤0.4 W / kvar• temperature category: -25 / D
Controller	<ul style="list-style-type: none">• 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• standard capacitors on / off times: 25 "÷ 30" (others on request)

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.

PERFORMANCE DATA

■ Rated voltage	415 Vac (others on request)
■ Rated frequency	50 Hz (60 Hz on request)
■ Insulation voltage	690 Vac
■ auxiliary voltage	400 Vac for G3E, G4E, G4RM ¹ 230 Vac for G4RM ² , G6E, G8E
■ Overvoltage	1,1 Un (rated voltage)
■ Temperature range	-5 / +40 °C
■ Impulse withstand	6 kV (G3E, G4E); 8 kV (G4RM, G6E, G8E)

¹up to 200 kvar. ²over 200 kvar. Auxiliary voltage is supplied by a proper transformer.

HARMONIC CONTENT (in the absence of resonance)

THD(I)max. = 35%	on the network
THD(Ic)max. = 80%	on the capacitors

CONFIGURATION

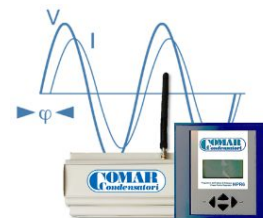
General notes

- 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 or directly on request.



Table

THD(I)max. = 35%

THD(Ic)max. = 80%

Code	Type	Qn (kvar)	Cable entry	In (A)	Banks size (kvar)				Steps (n)	Switch isolator (A)	Controller (type)	CCS	Weight (kg)				
8681412102350	G3E	10,2	✓	14	3,4	3,4	3,4		3	40	BMR4		14				
8681412159350	G3E	15,9	✓	22	3,4	6,25	6,25		5	40	BMR4		15				
8681412221350	G3E	22,15	✓	31	3,4	6,25	12,5		7	80	BMR4		16				
8681412310350	G3E	31,25	✓	43	6,25	12,5	12,5		5	80	BMR4		18				
8681412435350	G3E	43,75	✓	61	6,25	12,5	25		7	125	BMR4		22				
8681412500350	G3E	50	✓	70	12,5	12,5	25		4	125	BMR4		23				
8681412625350	G3E	62,5	✓	87	12,5	25	25		5	125	BMR4		26				
8681412750350	G4E	75	✓	104	12,5	12,5	25	25	6	160	BMR4		38				
8681413100350	G4E	100	✓	139	12,5	12,5	25	50	8	200	BMR4		43				
8681413125355	G4RM	125	✓	174	25	50	50		5	250	BMR4		80				
8681413150355	G4RM	150	✓	209	25	25	50	50	6	315	BMR4		85				
8681413175355	G4RM	175	✓	243	25	50	50	50	7	400	BMR4		87				
8681413200355	G4RM	200	✓	278	25	25	50	100	8	400	BMR4		89				
8681413225355	G4RM	225	✓	313	25	50	50	100	9	500	BMR4		95				
8681413250355	G4RM	250	✓	348	25	50	75	100	10	500	BMR4		102				
8681413300345	G6E	300	↓	417	25	50	75	75	75	12	630	HPR6		175			
8681413350345	G6E	350	↓	487	50	75	75	75	75	9	800	HPR6		192			
8681413400345	G6E	400	↓	556	50	50	75	75	75	75	14	800	HPR6		207		
8681413450345	G6E	450	↓	626	50	50	50	75	75	150	16	1000	HPR6		240		
8681413500345	G6E	500	↓	696	50	75	75	75	75	150	13	1000	HPR6		255		
8681413525450	G8E	525	↑	731	75	75	75	75	75	75	7	1250	HPR12		315		
8681413600450	G8E	600	↑	836	75	75	75	75	75	75	75	8	1250	HPR12		330	
8681413675450	G8E	675	↑	940	75	75	75	75	75	75	150	9	1250	HPR12		350	
8681413750450	G8E	750	↑	1045	75	75	75	75	75	75	150	150	10	1600	HPR12		380
8681413825450	G8E (II)	825	↑	1149	75	75	75	75	150	150	150	11	800+1000	HPR12		510	
8681413900450	G8E (II)	900	↑	1254	75	75	75	75	150	150	150	12	1000+1000	HPR12		530	
8681413975450	G8E (II)	975	↑	1358	75	75	75	150	150	150	150	13	1000+1000	HPR12		550	
8681414105450	G8E (II)	1050	↑	1462	75	75	150	150	150	150	150	14	1000+1000	HPR12		650	
8681414120450	G8E (II)	1200	↑	1671	75	75	150	150	150	150	300	16	1250+1250	HPR12		690	
8681414135450	G8E (II)	1350	↑	1880	75	75	150	150	150	150	300	300	18	1250+1250	HPR12		730

Other solutions are available on request.