Automatic Power Factor Correction equipment



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 forG3E, G4E, G4RM ¹ 230 Vac for G4RM ² , G6E, G8E
2	Overvoltage	1,1 Un (rated voltage)
2	Temperature range	-5 / +40 °C
	Impulse withstand	6 kV (G3E, G4E); 8 kV (G4RM, G6E, G8E)

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.

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(lc)max. = 80%	on the capacitors

TECHNICAL DATA

Enclosures	Made of sheet steel, protected against corrosion by phosphating and epoxy powder coating. RAL 7035 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 off-load disconnector.
Wiring	The internal connections are made with flame retardant cables with very low smoke 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. • rated voltage: 500 Vac (maximum voltage 550 Vac) • overvoltage: 1.1 x A (8h / 24h) • current overload: 1.3 x ln • capacity tolerance: -5% / + 10% • losses due to dissipation: ≤0.4 W / kvar • temperature category: -25 / D
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

• 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.



CONFIGURATION

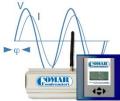
General notes

- 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)

<u>On request</u>, the CCS remote monitoring system can be integrated to display the data in real time. For any specific information, and to discover the advantages of the Cloud Control System service, we refer to the specific brochure available on the website www.comarcond.com or directly upon request.



Table

entry (kvar) (k) (kvar) (n) (A) (kyp) 0 6881412102350 G3E 10.2 / 14 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4				THD(I)	max. = 3	THD(Ic)max. = 80%											
B681412102350 G3E 10.2 ✓ 14 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.4 3.6 3.6 3.6 3.6 3.6 3.6	Code	Туре	Qn		In				Bank	s size				Steps		Controller	Weight
B681412159350 G3E 15.9 ✓ 22 3.4 6.25 5 40 BMR4 3 B681412221350 G3E 22.15 ✓ 31 3.4 6.25 12.5 7 80 BMR4 3 B681412210350 G3E 31,25 ✓ 43 6.25 12.5 5 80 BMR4 3 B681412300350 G3E 43,75 ✓ 61 6.25 12.5 25 7 12.5 BMR4 3 B68141260350 G3E 50 ✓ 70 12.5 12.5 25 5 12.5 BMR4 3 B68141260350 G3E 62.5 ✓ 87 12.5 25 25 5 12.5 BMR4 3 B681413100350 G4E 70 12.5 12.5 25 50 5 250 BMR4 3 B68141310355 G4RM 125 ✓ 174 25 50 50 5 7 400 BMR4 3 B681413103555 G4RM </th <th></th> <th></th> <th>(kvar)</th> <th></th> <th>(A)</th> <th></th> <th></th> <th></th> <th>(kv</th> <th>ar)</th> <th></th> <th></th> <th></th> <th>(n)</th> <th>(A)</th> <th>(type)</th> <th>(kg)</th>			(kvar)		(A)				(kv	ar)				(n)	(A)	(type)	(kg)
6681412221350 G3E 22,15 ✓ 31 3.4 6,25 12,5 7 80 BMR4 2 8681412210350 G3E 31,25 ✓ 43 6,25 12,5 12,5 5 80 BMR4 2 8681412435350 G3E 43,75 ✓ 61 6,25 12,5 2,5 7 12,5 BMR4 2 868141260350 G3E 62,5 ✓ 70 12,5 12,5 2,5 2,5 5 12,5 BMR4 2 868141260350 G3E 62,5 ✓ 70 12,5 12,5 2,5 2,5 5 12,5 BMR4 2 868141270350 G4E 75 ✓ 104 12,5 12,5 2,5 50 5 2,00 BMR4 2 868141310505 G4E 100 ✓ 139 12,5 12,5 5,0 5,0 5,0 5,0 8 2,00 BMR4 2 868141320355 G4RM 12,5 ✓ 13,4 2,5 <t< td=""><td>8681412102350</td><td>G3E</td><td>10,2</td><td>2</td><td>14</td><td>3,4</td><td>3,4</td><td>3,4</td><td></td><td></td><td></td><td></td><td></td><td>3</td><td>40</td><td>BMR4</td><td>14</td></t<>	8681412102350	G3E	10,2	2	14	3,4	3,4	3,4						3	40	BMR4	14
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B681412435350 G3E 43,75 ✓ 61 6.25 12,5 25 7 125 BMR4 2 B68141250350 G3E 50 ✓ 70 12,5 12,5 25 4 125 BMR4 2 B68141250350 G3E 62,5 ✓ 87 12,5 25 25 5 125 BMR4 2 B68141262330 G4E 75 ✓ 104 12,5 12,5 25 25 5 125 BMR4 2 B681412750350 G4E 700 ✓ 139 12,5 12,5 25 50 5 250 BMR4 26 B68141310355 G4RM 125 ✓ 174 25 50 50 5 250 BMR4 26 B68141310355 G4RM 175 ✓ 243 25 50 50 7 400 BMR4 26 B68141320355 G4RM 250 ✓ 218 25 50 100 9 500 BMR4 26 <td>8681412221350</td> <td>G3E</td> <td>22,15</td> <td>2</td> <td>31</td> <td>3,4</td> <td>6,25</td> <td>12,5</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>7</td> <td>80</td> <td>BMR4</td> <td>16</td>	8681412221350	G3E	22,15	2	31	3,4	6,25	12,5						7	80	BMR4	16
B681412500350 G3E S0 ✓ 70 12.5 12.5 25 4 125 BMR4 25 B681412625350 G3E 62.5 ✓ 87 12.5 25 25 5 125 BMR4 25 B681412750350 G4E 75 ✓ 104 12.5 12.5 25 5 6 160 BMR4 25 B681413100350 G4E 100 ✓ 139 12.5 12.5 25 50 8 200 BMR4 26 B68141310355 G4RM 125 ✓ 174 25 50 50 5 250 BMR4 26 B68141310355 G4RM 150 ✓ 209 25 25 50 50 7 400 BMR4 26 B681413200355 G4RM 175 ✓ 243 25 50 100 8 400 BMR4 26 B68141320355 G4RM 250 ✓ 313 25 50 100 9 500 BMR4<	8681412310350	G3E	31,25	2	43	6,25	12,5	12,5						5	80	BMR4	18
B681412625350 G3E 62,5 ✓ 87 12,5 25 25 5 125 BMR4 2 B681412750350 G4E 75 ✓ 104 12,5 12,5 25 25 6 160 BMR4 2 B681413100350 G4E 100 ✓ 139 12,5 12,5 25 50 8 200 BMR4 2 B681413100350 G4E 100 ✓ 139 12,5 12,5 25 50 5 250 BMR4 20 B681413105355 G4RM 150 ✓ 209 25 25 50 50 7 400 BMR4 4 B681413200355 G4RM 175 ✓ 243 25 50 50 50 7 400 BMR4 4 B681413200355 G4RM 200 ✓ 278 25 25 50 100 8 400 BMR4 4 B68141320355 G4RM 200 ✓ 278 25 50 100 <td>8681412435350</td> <td>G3E</td> <td>43,75</td> <td>2</td> <td>61</td> <td>6,25</td> <td>12,5</td> <td>25</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>7</td> <td>125</td> <td>BMR4</td> <td>22</td>	8681412435350	G3E	43,75	2	61	6,25	12,5	25						7	125	BMR4	22
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Best 1413125355 G4RM 125 ✓ 174 25 50 50 5 250 BMR4 42 8681413150355 G4RM 150 ✓ 209 25 25 50 50 6 315 BMR4 48 8681413150355 G4RM 175 ✓ 243 25 50 50 7 400 BMR4 48 8681413200355 G4RM 200 ✓ 278 25 25 50 100 8 400 BMR4 48 868141320355 G4RM 225 ✓ 313 25 50 50 100 9 500 BMR4 48 8681413200345 G6E 300 ↓ 417 25 50 75 75 10 10 500 BMR4 48 8681413300345 G6E 300 ↓ 417 25 50 75 75 75 12 630 HPR6 1 8681413300345 G6E 300 ↓ 487 50 75	8681412750350	G4E	75	2	104	12,5	12,5	25	25					6	160	BMR4	38
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8681413175355 G4RM 175 ✓ 243 25 50 50 50 7 400 BMR4 28 8681413200355 G4RM 200 ✓ 278 25 25 50 100 8 400 BMR4 28 868141320355 G4RM 225 ✓ 313 25 50 50 100 9 500 BMR4 28 868141320355 G4RM 250 ✓ 348 25 50 75 100 10 500 BMR4 19 868141320345 G6E 300 ↓ 417 25 50 75 75 75 12 630 HPR6 1 8681413300345 G6E 350 ↓ 487 50 75 75 75 12 630 HPR6 1 8681413400345 G6E 400 ↓ 556 50 50 75 75 75 14 800 HPR6 2 868141350345 G6E 450 ↓ 626	8681413125355	G4RM	125	2	174	25	50	50						5	250	BMR4	80
Rest Res Rest Rest	8681413150355	G4RM	150	2	209	25	25	50	50					6	315	BMR4	85
8681413225355 G4RM 225 ✓ 313 25 50 50 100 9 500 BMR4 9 8681413250355 G4RM 250 ✓ 348 25 50 75 100 10 500 BMR4 1 8681413200345 G6E 300 ↓ 417 25 50 75 75 75 12 630 HPR6 1 8681413300345 G6E 300 ↓ 487 50 75 75 75 9 800 HPR6 1 8681413400345 G6E 400 ↓ 556 50 75 75 75 75 14 800 HPR6 2 868141350345 G6E 400 ↓ 556 50 50 75 75 150 16 1000 HPR6 2 8681413500345 G6E 450 ↓ 626 50 75 75 75 150 13 1000 HPR6 2 8681413500345 G8E 525	8681413175355	G4RM	175	2	243	25	50	50	50					7	400	BMR4	87
8681413250355 G4RM 250 ✓ 348 25 50 75 100 10 500 BMR4 1 8681413300345 G6E 300 ↓ 417 25 50 75 75 75 12 630 HPR6 1 8681413350345 G6E 350 ↓ 487 50 75 75 75 75 9 800 HPR6 1 8681413400345 G6E 400 ↓ 556 50 50 75 75 75 14 800 HPR6 2 8681413450345 G6E 450 ↓ 626 50 50 75 75 150 16 1000 HPR6 2 8681413500345 G6E 450 ↓ 626 50 75 75 75 150 13 1000 HPR6 2 8681413500345 G6E 500 ↑ 75 75 75 75 75 75 75 75 75 75 75 75 75	8681413200355	G4RM	200	2	278	25	25	50	100					8	400	BMR4	89
8681413300345 G6E 300 ↓ 417 25 50 75 75 75 12 630 HPR6 1 8681413350345 G6E 350 ↓ 487 50 75 75 75 9 800 HPR6 1 8681413400345 G6E 400 ↓ 556 50 50 75 75 75 14 800 HPR6 1 8681413400345 G6E 400 ↓ 556 50 50 75 75 14 800 HPR6 2 8681413400345 G6E 450 ↓ 626 50 50 75 75 150 16 1000 HPR6 2 8681413500345 G6E 500 ↓ 696 50 75 75 75 150 13 1000 HPR6 2 8681413500345 G8E 525 ↑ 731 75 75 75 75 75 75 75 75 75 75 75 75 75	8681413225355	G4RM	225	2	313	25	50	50	100					9	500	BMR4	95
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8681413450345 G6E 450 ↓ 626 50 50 75 75 150 16 1000 HPR6 2 8681413500345 G6E 500 ↓ 696 50 75 75 75 150 13 1000 HPR6 2 8681413502345 G6E 500 ↓ 696 50 75 75 75 150 13 1000 HPR6 2 86814135225450 G8E 525 ↑ 731 75 75 75 75 75 7 1250 HPR12 3 8681413600450 G8E 600 ↑ 836 75 75 75 75 75 75 8 1250 HPR12 3 86814136075450 G8E 675 ↑ 940 75 75 75 75 75 150 9 1600 HPR12 3 8681413750450 G8E 750 ↑ 1045 75 75 75 75 150 10 1600 HPR12	8681413350345	G6E	350	\downarrow	487	50	75	75	75	75				9	800	HPR6	192
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8681413525450 G8E 525 ↑ 731 75 75 75 75 75 7 1250 HPR12 3 8681413600450 G8E 600 ↑ 836 75 75 75 75 75 75 75 8 1250 HPR12 3 86814136075450 G8E 675 ↑ 940 75 75 75 75 75 150 9 1600 HPR12 3 8681413675450 G8E 675 ↑ 940 75 75 75 75 150 9 1600 HPR12 3 8681413750450 G8E 750 ↑ 1045 75 75 75 75 150 10 1600 HPR12 3 8681413825450 G8E (II) 825 ↑ 1149 75 75 75 75 150 150 11 800+1000 HPR12 5	8681413450345	G6E	450	Ļ	626	50	50	50	75	75	150			16	1000	HPR6	240
8681413600450 G8E 600 ↑ 836 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75 75<	8681413500345	G6E	500	Ļ	696	50	75	75	75	75	150			13	1000	HPR6	255
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8681413750450 G8E 750 ↑ 1045 75 75 75 75 75 150 10 1600 HPR12 3 8681413825450 G8E (II) 825 ↑ 1149 75 75 75 75 150 150 11 800+1000 HPR12 5	8681413600450	G8E	600	1	836	75	75	75	75	75	75	75	75	8	1250	HPR12	330
8681413825450 G8E (II) 825 ↑ 1149 75 75 75 75 75 150 150 11 800+1000 HPR12 5	8681413675450	G8E	675	↑	940	75	75	75	75	75	75	75	150	9	1600	HPR12	350
	8681413750450	G8E	750	↑	1045	75	75	75	75	75	75	150	150	10	1600	HPR12	380
8681413900450 G8E(II) 900 ↑ 1254 75 75 75 75 150 150 150 12 1000+1000 HPR12 5	8681413825450	G8E (II)	825	1	1149	75	75	75	75	75	150	150	150	11	800+1000	HPR12	510
	8681413900450	G8E (II)	900	↑	1254	75	75	75	75	150	150	150	150	12	1000+1000	HPR12	530
8681413975450 G8E (II) 975 ↑ 1358 75 75 75 150 150 150 150 150 13 1000+1250 HPR12 5	8681413975450	G8E (II)	975	↑	1358	75	75	75	150	150	150	150	150	13	1000+1250	HPR12	550
8681414105450 G8E(II) 1050 ↑ 1462 75 75 150 150 150 150 150 150 14 1000+1250 HPR12 6	8681414105450	G8E (II)	1050	↑	1462	75	75	150	150	150	150	150	150	14	1000+1250	HPR12	650
8681414120450 G8E (II) 1200 ↑ 1671 75 75 150 150 150 150 150 300 16 1250+1250 HPR12 6	8681414120450	G8E (II)	1200	↑	1671	75	75	150	150	150	150	150	300	16	1250+1250	HPR12	690
8681414135450 G8E(II) 1350 ↑ 1880 75 75 150 150 150 150 300 300 18 1600+1250 HPR12 7	8681414135450	G8E (II)	1350	↑	1880	75	75	150	150	150	150	300	300	18	1600+1250	HPR12	730

Other solutions are available on request.

