



Data Sheet Automatic Power Factor Correction Systems

TECHNICAL DATA COMMON TO ALL SERIES IN STANDARD CONFIGURATION

Enclosure	<p>Made of steel sheet, protected against corrosion by phosphating and epoxy powder coating. Colour RAL 7035.</p> <p>External degree of protection: panel type G3E, G4E IP30; G4RM IP40; G6E, G8E, G9E IP31</p> <p>Internal degree of protection: panels with interlocked switch-disconnector IP20 live parts; IP 20 protection in additional modules</p> <p>In the G6, G8 and G9 cabinets, capacitor banks are assembled on drawers that can be pulled out from the front of the cabinet for quick maintenance</p> <p>G6, G8, G9 cabinets are equipped with eyebolts for lifting</p>
Installation	<p>Indoor installation, in a well ventilated position free from solar radiation.</p> <p>Pollution degree 1</p> <p>Working temperature: -5 / +40 °C; Relative humidity RH50% @40°C (EN61435-1)</p> <p>Altitude: <1000 asl</p>
Main Disconnector	Three-phase off-load disconnector with door interlock.
Wiring	<p>Internal 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.</p> <p>Auxiliary circuits are appropriately identified in accordance with current standards.</p>
Bank insertion	<p>The banks are driven by three-phase contactors (Class AC6-b).</p> <p>Series without tuning reactor have contactors with a pre-insertion resistor to limit peak inrush current</p> <p>Static insertion series are fitted with thyristor insertion modules controlled by microprocessor such that switching on/off occurs when the potential difference between the mains and the capacitors is zero. (zero crossing). The switching time for the insertion of the capacitor banks is approximately 200 ms.</p>
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	<p>400 Vac for G3E, G4E, G4RM</p> <p>230 Vac for G6E, G8E, G9E Internal transformer</p>
Impulse withstand	6 kV for type G3E, G4E; 8 kV for G4RM, G6E, G8E, G9E
Capacitors	<p>Single-phase capacitors made of self-healing metallised polypropylene (MKP), equipped with over-pressure device and discharge resistance. Impregnated with PCBs-free vegetable oil. Delta connection. Continuous duty type.</p> <ul style="list-style-type: none"> - overvoltage: $1.1 \times U_n$ (8h / 24h) - current overload: $1.3 \times I_n$ - capacitance tolerance: -5% / +10%. - Dielectric losses: ≤ 0.2 W/kvar; total dissipation losses: ≤ 0.4 W/kvar - temperature category: -25 / D <p>In the higher-performance series, 'Heavy Duty' capacitors made of high thickness film and multiple elements in series are installed to reduce the effect of high currents on the element heads</p>
Tuning reactor (where present)	<p>Iron core with oriented crystals; aluminium windings</p> <p>Resin impregnation</p> <p>Dissipation loss (average): 6W/kvar</p> <p>Over-temperature control probe</p>
Controller	<p>Electronic, measurement type: varmetric on 4 quadrants.</p> <p>Current signal: via current transformer (user-supplied) with 5A secondary, class 1</p> <p>Current signal sensitivity: 2.5% for BMR series, 0.3% for HPR series</p>
Ventilation	<p>Natural for series without de-tuning chokes with power below 200 kvar.</p> <p>Forced by high-efficiency fans with top expulsion for others</p>
CCS	<p>remote monitoring system for real time data display, emailing of alarms, historical data storage. Included on DMP-FTV, AAR/6, AAR/D20 series; on request on other series</p> <p>The symbol  indicates that the equipment is equipped with CCS</p> <p>The symbol  indicates that the CCS system is installable on the equipment</p>
Safety	<p>Automatic equipment shut-down in case of high THDI, over-temperature >50°C, under and overvoltage.</p> <p>bank shut down for reactor overtemperature (where fitted)</p> <p>Dry contact NC for extreme internal temperature (>70°C)</p> <p>In addition on HPR controller: auto shut-down for high THDu, loss of capacitance of the bank</p>
Testing	<p>100% of the equipment undergoes visual inspection, phase-to-phase and phase-to-ground insulation tests, bank efficiency and ventilation circuit checks.</p> <p>Capacitors are tested for capacitance, dissipation factor [$\tan(\delta)$], 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</p>
Regulation	<p>Capacitors: IEC/EN 60831-1 / 2 certified by IMQ (V1927)</p> <p>Equipment: IEC/EN 61439-1 / 2, IEC/EN 61921; 2014/35/EC</p> <p>Electromagnetic compatibility: 2014/30/EC.</p>

DMP-FTV

Automatic power factor correction



The DMP-FTV series are suitable for three-phase networks with an operating voltage of **400 Vac** and **medium to high harmonic current content**. They are suitable for small generation systems (FTV or other) and continuous duty cycles. The use of **Heavy Duty** double-element capacitors increases capacitor life even in harsh situations

PERFORMANCE DATA

- **Rated voltage** 415 Vac (others on request)
- **Rated frequency** 50 Hz (60 Hz on request)
- **Insulation voltage** 690 Vac
- **Voltage overload** 1.1 Un (rated voltage)
- **Capacitors** Un=550; Umax 600

HARMONIC CONTENT RESONANCE NOT ADMITTED

- THD(I)max. = 40 % in the grid
- THD(Ic)max. = 90 % on capacitors

STANDARD CONFIGURATIONS

Code	Type	Qn (kvar)	Cable entry	In (A)	bank power (kvar)	Steps (n)	Disconnecter (A)	Controller (type)	CCS	Weight (kg)
8881412250500	G3E	25	✓	35	2x6,25+12,5	4	80	BMR6		15
8881412310500	G3E	31,25	✓	43	6,25+2x12,5	5	80	BMR6		18
8881412435500	G3E	43,75	✓	61	6,25+12,5+25	7	100	BMR6		22
8881412500500	G3E	50	✓	70	2x12,5+25	4	100	BMR6		23
8881412625500	G3E	62,5	✓	87	12,5+2x25	5	160	BMR6		26
8881412750500	G4E	75	✓	104	2x12,5+2x25	6	200	BMR6		38
8881413100500	G4E	100	✓	139	2x12,5+25+50	8	200	BMR6		46
8881413125500	G4RM	125	✓	174	2x12,5+2x50	5	250	BMR6		83
8881413150500	G4RM	150	✓	209	2x25+2x50	6	315	BMR6		84
8881413175500	G4RM	175	✓	243	25+3x50	7	400	BMR6		87
8881413200500	G4RM	200	✓	278	2x25+50+100	8	400	BMR6		89
8881413225500	G4RM	225	✓	313	25+2x50+100	9	500	BMR6		95
8881413250500	G4RM	250	✓	348	25+50+75+100	10	500	BMR6		102
888141000045R	G6E	300	↓	417	25+50+3x75	12	630	HPR6	☒	175
888141005045R	G6E	350	↓	487	50+4x75	7	800	HPR6	☒	192
888141340045R	G6E	400	↓	556	2x50+4x75	8	800	HPR6	☒	207
888141345045R	G6E	450	↓	626	3x50+2x75+150	9	1000	HPR6	☒	240
888141350045R	G6E	500	↓	696	50+4x75+150	10	1000	HPR6	☒	255
888141360050R	G8E	600	↑	836	8x75	8	1250	HPR12	☒	330
888141365050R	G8E	650	↑	904	50+6x75+150	11	1600	HPR12	☒	345
888141375050R	G8E	750	↑	1045	6x75+2x150	10	1600	HPR12	☒	380
888141382550R	G8E (II)	825	↑	1149	5x75+3x150	11	800+1000	HPR12	☒	510
888141390050R	G8E (II)	900	↑	1254	4x75+4x150	12	1000+1000	HPR12	☒	530

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)
- ☒ indicates that the equipment is equipped with CCS
- ☒ indicates that the CCS system is installable on the equipment