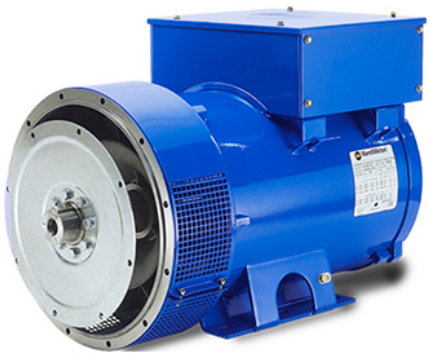
MarelliMotori
Inspired solutions

MJB



	ODP generators
Model	MJB
Power	Up to 6.500 kVA
Voltages	Up to 1.000 V
Frame	160 ± 900
Pole	4, 6, 8, 10 and 12 (over contact MM)
Cooling	IC 01
IP	IP 23. Available up to IP 44 with filters.
Main Applications	Power generation, auxiliary generators, emergency

Poles (kVA 60 Hz)

4	5.000
6	5.000
8	6.500
10	6.000
12	5.400

Certificates and testing

Applicable standards	Generators are designed in compliance with: IEC EN 60034 - 1 BS 4999 - 5000 VDE 0530 NF 51 - 100 NF 51 - 111 OVE M - 10 NEMA MG 1.22 Generators conform to EU rules. UL/CSA certifications available on request. Adherence to ISO 8528 group G preformance classes.

Main components

Housing	Rigid frame, rugged welded steel fabrication (EN 10025 - S235 JR). Frame is provided with side ribs to increase the strength. Marelli Generators for continuous duty operation are designed to meet vibration levels per IEC 60034-14, ISO 10816-1 and BS 5000-3.
Shield	Made of spheroidal graphite cast-iron (EN 1563) or grey cast-iron (EN 1561) up to 630 frame size. Made of structural steel (EN 10025 – S235 JR) above.
Shaft	**General data** Made in carbon steel and obtained by lamination (EN 10083 – 2 C40 – TN). Shaft is obtained by forging from 290 mm diameter and above. The shaft is tested at the manufacturer in order to check it is defect-free. **Shaft design** Double bearing generator: cylindrical shaft with key.
Main terminal box	Mounted on top up to 630 frame size. Mounted on side from 710 frame size. Made of formable steels EN 10130.
Fan	Made of aluminum alloy (EN 1706) or structural steel (EN 10025–S235 JR) depending on application requirements.

Construction

Enclosure	ODP - Open Drip Proof
Cooling System	IC 01 as per IEC60034-6
Degree of protection	IP 23 as per IEC60034-5. Available up to IP 44 with filters.
Mounting	Horizontal - IM 1001 or IM 1101 as per IEC 60034-7. Other mounting available on request.

Technical data

Stator/Rotor core	Laminated and enamel-insulated on both sides to minimise eddy-current losses.
Rotor	Salient pole type. Made by copper flat wire. H class insulated with enamel coating. Winding retaining by pass-through bars of high quality steel. Rotating rectifier: Graetz diode bridge with 6 diodes. Rotors are dynamically balanced with a half key applied to the shaft extension in accordance with IEC 60034-14 to vibration grade normal. A. Special vibration level construction are available.
Bearing	**General data** Single or double antifriction bearing grease lubricated (ball or roller type) or oil lubricated sleeve bearing. The theoretical lifetime of bearings, L10h according to ISO 281/1 standard, of standard horizontal construction generators, without external forces (radial and / or axial) is in excess of 50.000 hours. On request, the lifetime of bearings, L10h can be in excess of 100.000 hours. Locating bearings are on the D end side and floating bearings on the ND end side. **Bearing selection** Antifriction bearings up to 800 frame size included. Sleeve bearings from 900 frame size included (available for smaller frame sizes). **Regreasing system:** Up to 250 frame size: • D-end bearing is prelubricated with inner bearing cap and without grease nipple • ND-end bearing is with shield (2Z) without regreasing system 315 - 355 frame size: • D-end bearing is prelubricated with inner bearing cap and without grease nipple • ND-end bearing is with shield (2Z) without regreasing system 400 frame size: • D-end bearing is fitted with inner bearing cap and with gerase nipple • ND-end bearing is prelubricated with inner bearing cap and without grease nipple 450 frame size and above: both bearings are fitted with grease nipple. **Bearing insulation** ND end bearing can be insulated to prevent any harmful circulating current from passing through the bearing surfaces. Insulated antifriction bearings in standard configuration: • 4, 6 poles: insulated ND end bearing from 630 frame size • 8 poles: insulated bearing from 400 frame size • 10 poles: insulated bearing from 500 frame size All ND end sleeve bearings are insulated as standard.
Impregnation system	Stator and rotor are VPI treated with an unsaturated polyester amide resin which is polymerised in an oven.
Insulation system	Stator: H class insulated with a synthetic enamel (class F available on request) Rotor: H class insulated with a synthetic enamel (class F available on request)
Protective treatments	Specific Oil&gas treatment. Epoxivinilic and polyacrylic. Total minimum thickness 120 micromillimeters. Epoxivinilic: Epoxy two component products, with vinyl change Polyacrylic: Two components polyurethane product formulated with unmodified hydroxyl acrylic resin.

Operating conditions

Overloads	During continuous duty (S1), the following overloads are allowed: 10% for 1 hour 15% for 10 minutes 30% for 4 minutes 50% for 2 minutes These overloads must be occasional and followed by one hour of running at normal load or less.
Parallel operations	All generators are provided with a amply sized damper cage and are suitable for parallel operations with other generators, when equipped with the paralleling unit. A power factor regulator (to work in parallel with the main) is available on request.
Transient performance	All generators can be designed to meet specific reactance values (x'd and x"d). Values can be confirmed by contacting Marelli Motori.
Three pahse short circuit current	All generators equipped with overboosting device ensure a three phase short circuit current (Icc) higher than 3 times the rated current (In): Icc > 300% In
Radio interference	All generators are equipped with Class B Group 1 radio interference filters as defined by EN 55011.
THD (Total Harmonic Distortion)	The no-load voltage wave form is sinusoidal with THD content less than 2%.
Vibrations	Vibration level is in accordance with ISO 10816. Measurement, evaluation and limits of vibration severity are in accordance with IEC 60034-14.

Auxiliary device

AVR	Automatic voltage regulator mounted on board. Size: 160 - 250 — Type: MARK V analog Size: 315 - 450 — Type: MEC 20 analog/digital Size: 500 - 560 — Type: M40FA610A analog Size: 630 - 710 — Type: M63FA310A analog Size: 800 - 900 — Type: MEC 100 digital Digital AVR available for all sizes on request.
Overboosting device	Low Voltage Low voltage — Size: 160 - 450 (4 poles) — Type: Auxiliary winding Size: 160 - 450 (>4 poles) — Type: Varicomp

	500 - 710 (all polarities)	Varicomp
	800 - 900	PMG
	PMG available for all sizes on request.	

Space heaters	Heaters installed at ND end side.	
	Size	Power(W)
	400 - 560	400
	630 - 710	600
	800 - 900	800

RTD-PT100	RTD devices in standard configuration: • 1+1 RTD on each phase of stator winding • 1 RTD on each bearing Terminals in auxiliary terminal box. Other configurations available: • DUPLEX type • RTD for inlet / outlet air

Optional features

- Flanged shaft for direct coupling with engine flywheel (in case of single bearing solution)
- neutral point terminals in separate terminal box
- dedicated current transformer installed on neutral point (differential protection and measurement)
- increase protection degree up to IP 44 with filters
- dedicated lubrication unit for sleeve bearing solution
- lifted feet to couple the generator with engine on existing baseframe
- redundant rotating rectifier with 12 diodes
- insulated bearing and earthing brush
- AVR supplied loose
- automatic power factor control (analog type or included into digital regulation)
- digital AVR MEC100 for frame 250 – 710 (supplied loose)
- digital AVR MEC100D with diode failure monitoring
- other digital AVR available on request
- redundant AVR system
- excitation/overboosting PMG mounted on generator
- arrangement for earthing rotor fault protection 64R
- other options available on request.