



# MXB generator series

10 - 150 kVA

Type	Continuous duty rating (kVA)			Stand by kVA		Single Phase	Efficiency P.F. 0,8 4/4 LOAD %	Weight Kg
	125/40 ΔT Cl. H	105/40 ΔT Cl. F	80/40 ΔT Cl. B	163/27	150/40	Derating factor Zig-zag		
<b>4 POLES / 1500 rpm</b>			<b>50 Hz - 400 V</b>		<b>230 V</b>			
MXB 160 SA4	10,0	9,2	8,0	11,0	10,5	0,66	83,0	80
MXB 160 SB4	12,5	11,5	10,0	13,8	13,1	0,66	84,4	90
MXB 160 MA4	15,0	13,7	12,0	16,5	15,8	0,66	85,1	105
MXB 160 MB4	17,5	16,0	14,0	19,3	18,4	0,66	86,2	120
MXB 160 LA4	20,0	18,3	16,0	22,0	21,0	0,66	86,9	135
<b>4 POLES / 1800 rpm</b>			<b>60 Hz - 480 V</b>		<b>277 V</b>			
MXB 160 SA4	12,5	11,5	10,0	13,8	13,1	0,66	83,0	80
MXB 160 SB4	15,6	14,3	12,5	17,2	16,4	0,66	84,4	90
MXB 160 MA4	18,8	17,2	15,0	20,6	19,7	0,66	85,1	105
MXB 160 MB4	21,9	20,0	17,5	24,1	23,0	0,66	86,2	120
MXB 160 LA4	25,0	22,9	20,0	27,5	26,3	0,66	88,1	135
<b>4 POLES / 1500 rpm</b>			<b>50 Hz - 400 V</b>		<b>230 V</b>			
MXB 180 XA4	20,0	18,3	16,0	22,0	21,2	0,66	84,7	115
MXB 180 SA4	25,0	22,9	20,0	27,5	26,5	0,66	87,6	140
MXB 180 SB4	30,0	27,5	24,0	33,0	31,8	0,66	88,4	150
MXB 180 SC4	34,0	31,2	27,2	37,4	36,0	0,66	89,5	160
MXB 180 MA4	40,0	36,7	32,0	44,0	42,4	0,66	89,8	185
MXB 180 MC4	45,0	41,2	36,0	49,5	47,7	0,62	90,3	195
MXB 180 LA4	50,0	45,8	40,0	55,0	53,0	0,55	89,2	210
MXB 180 LB4	63,0	57,7	50,4	69,3	66,8	0,55	89,6	240
<b>4 POLES / 1800 rpm</b>			<b>60 Hz - 480 V</b>		<b>277 V</b>			
MXB 180 XA4	25,0	22,9	20,0	27,5	26,5	0,66	85,7	115
MXB 180 SA4	31,3	28,7	25,0	34,4	33,2	0,66	88,6	140
MXB 180 SB4	37,5	34,4	30,0	41,3	39,8	0,66	89,9	150
MXB 180 SC4	42,5	39,0	34,0	46,8	45,1	0,66	90,0	160
MXB 180 MA4	50,0	45,8	40,0	55,0	53,0	0,66	90,6	185
MXB 180 MC4	56,3	51,6	45,0	61,9	59,7	0,62	91,0	195
MXB 180 LA4	62,5	57,3	50,0	68,8	66,3	0,55	90,4	210
MXB 180 LB4	78,8	72,2	63,0	86,7	83,5	0,55	90,7	240
<b>4 POLES / 1500 rpm</b>			<b>50 Hz - 400 V</b>		<b>230 V</b>			
MXB 225 SA4	75,0	68,7	60,0	82,5	78,8	0,60	89,6	316
MXB 225 SB4	85,0	77,9	68,0	93,5	89,3	0,60	90,3	344
MXB 225 MA4	100,0	91,7	80,0	110,0	105,0	0,60	91,4	399
MXB 225 MB4	120,0	110,0	96,0	132,0	126,0	0,60	91,7	415
MXB 225 LA4	135,0	123,7	108,0	148,5	141,8	0,55	91,6	468
MXB 225 LB4	150,0	137,5	120,0	165,0	157,5	0,55	92,3	502
<b>4 POLES / 1800 rpm</b>			<b>60 Hz - 480 V</b>		<b>277 V</b>			
MXB 225 SA4	94,0	86,0	75,0	103,0	98,0	0,60	90,4	316
MXB 225 SB4	106,0	97,4	85,0	117,0	112,0	0,60	91,1	344
MXB 225 MA4	125,0	114,6	100,0	137,5	131,0	0,60	92,1	399
MXB 225 MB4	150,0	137,5	120,0	165,0	157,5	0,60	92,4	415
MXB 225 LA4	169,0	154,7	135,0	185,6	177,0	0,55	92,2	468
MXB 225 LB4	187,5	171,8	150,0	206,0	197,0	0,55	92,8	502

# Our new generator's key features

## Flexibility and stock optimisation



Customer can buy options separately and mount them according to their requirements:

- ✓ PMG
- ✓ Inlet filter\*
- ✓ Inlet and outlet filter up to IP 44\*
- ✓ Heater
- ✓ Bearing PT100

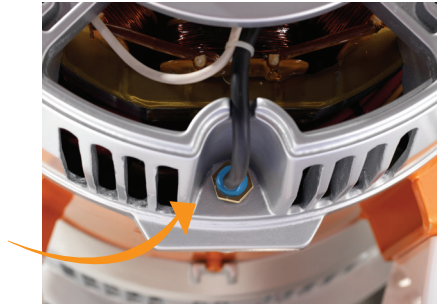
## A new AVR concept

- ✓ Safe and accessible: AVR can be regulated without opening the terminal box
- ✓ Positioned on one side leaving the other three sides free for cable entry

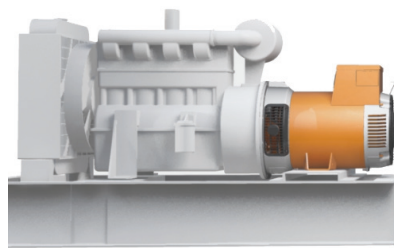


## Retrofitting

- ✓ Options required after installation can be mounted according to actual needs: bearing PT100, inlet filter, outlet filter, heater, PMG



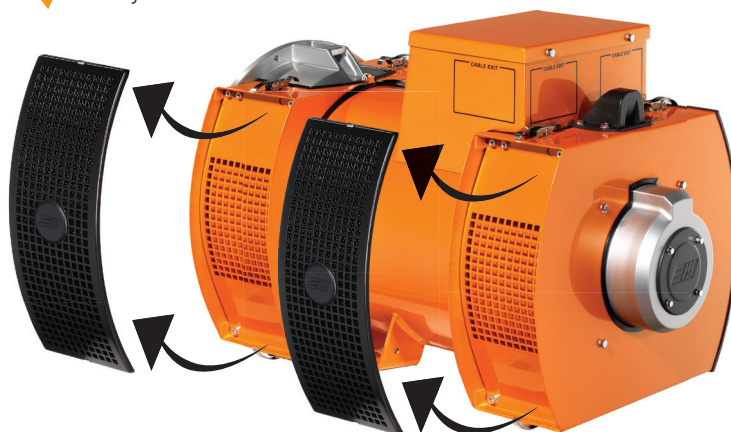
## Premium performance



- ✓ Compactness
- ✓ Top class ratio length / kVA
- ✓ Optimized management cost
- ✓ Minimized cost of ownership

## Easy maintenance

- ✓ Spare parts easy to replace
- ✓ Easily removable filters



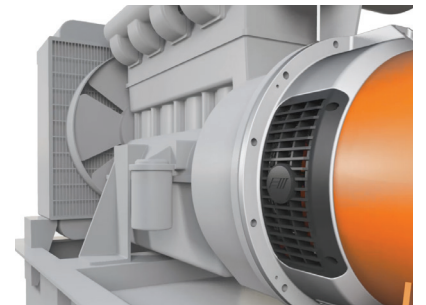
## Easy assembly and accessibility

- ✓ Large entry openings allow fast and safe coupling procedures
- ✓ Feet configuration allows easy and simple operations for fixing the generator to the skid



## Safety

- ✓ No sharp edges
- ✓ SAE adaptor made through large openings which allow safe operation



\* 180 and 225 frame size.  
Images shown above are Indicative only.

# Standard configuration

Main components	160	180	225
Magnetic steel	Low losses. Insulated on both sides		
Housing	Fabricated steel (EN 10025 - S235JR)		
Shield	Aluminium alloy 46100S T6		
Shaft	Carbon steel - hot rolled (EN10025 - S355 JR)		
Fan	PA 6.6 up to MXB 180 SC4 included - Aluminum alloy above		
Terminal board	PF2736 Bakelite		
	7-pins		9-pins
Construction	160	180	225
Enclosure	Open Drip Proof		
Cooling system	IC01 as per IEC 60034-6		
Degree of protection	IP23 as per IEC 60034-5	IP23 as per IEC 60034-5 (up to IP 44)	
Mounting	Horizontal single bearing - IM 2105 (double bearing available on request)		
Technical data	160	180	225
Insulation system	Class H for stator and rotor		
Protective treatments	Standard impregnation with epoxy resin through high quality process. CW1081 on request		
Winding pitch	2/3		
Bearing data	160	180	225
Bearing type	Permanently greased		
	6207 2RS C3		6309 2RS C3
Bearing lifetime	≥ 20.000 hours		
Operation at reduced speed	All regulators work to reduce the excitation current in order to protect the excitation system when the generator is used at reduced speed		
Excitation system	160	180	225
Excitation type	Brushless with rotating rectifier (Graetz 6-Diode bridge) as standard.		
PMG	Optional		
Auxiliary winding	Optional		Standard
Applicable standards	160	180	225
Standards	IEC 60034-1; CEI 2-3; BS 4999-5000; VDE 0530; NF 51-100,111; OVE M-10, NEMA MG 1.32. UL on request.		
AVR	160	180	225
AVR model	AVR model M00FA122A - MARK VX. Dedicated AVR for optional PMG.		
AVR position	On right side viewed from D-end		Front mounted
AVR supply	Mains as standard		Auxiliary winding
Voltage sensing	Single phase		
Accuracy	± 0,5% (@ rated load, balanced and not deforming, P.F. 0,8)		
EMI filter	Included		
Limiters	U/F Under Frequency		
Three phase short circuit current	Generators with auxiliary windings or PMG ensure a three phase short-circuit current (I <sub>cc</sub> ) higher than 3 times the rated current (I <sub>n</sub> ): I <sub>cc</sub> > 3 I <sub>n</sub> for 10 seconds**		
Operating conditions	160	180	225
Overload during S1 continuous duty	10% for 1 hour / 15% for 10 minutes / 30% for 4 minutes / 50% for 2 minutes		
Air inlet	Axial and radial		
Damper cage	Rotor is provided with large sized damper cage as standard		
Radio interference	Class B Group 1 as EN 55011		
THD / THF	Less than 2% at no load / THF < 2%		
Parallel operations	All generators are provided with an amply sized damper cage and are suitable for parallel operations with other generators, when equipped with the paralleling unit (available on 180 and 225 frame size)		
Transient ratings	The voltage drop due to the application of full load at 0,8 power factor inductive varies between 20% and 25% of the rated voltage: the output voltage recovers to within 3% of the rated value in less than 0,3 seconds		

\*\* MXB 180 MB, MXB 180 LB and MXB 225 MB with MEC 20 AVR

## Altitude

The rated outputs refer to installation up to 1.000 m a.s.l. Above this level the following derating factors must be applied.

Altitude (m asl)	< 1.000	< 1.500	< 2.000	< 2.500	< 3.000
K factor	1,00	0,96	0,93	0,90	0,86

## Ambient temperature

The rated outputs given in this catalogue are based on a maximum ambient temperature of 40°C.

When operating at different ambient temperatures the output rating can be obtained by applying the factors as in the following table.

Ambient temperature (°C)	30	35	40	45	50	55
K factor	1,04	1,00	1,00	0,96	0,93	0,9

## Power factor

The nominal power factor is 0,8 lagging. For different power factor values the following derating factors must be applied.

Power factor	1,0	0,8	0,7	0,6	0,5	0,3	0
K factor	1,00	1,00	0,93	0,88	0,84	0,82	0,80

## Voltage and frequency

Generators can operate at 50 Hz and 60 Hz with below voltage values. Other voltages are possible with optional adapted windings.

Connection	Voltage (V)	
	50 Hz	60 Hz
Series star	380 - 440	380 - 480
Parallel star	190 - 220	190 - 240
Series delta	220 - 254	220 - 277

## Options available

160

180

225

### Operating conditions

Auxiliary Winding	o	o	s
Special voltage including 380 V, R3, R6 (LV only)	o	o	o
Provision for parallel operation with similar generators with AVR	n/a	o*	o
IP55 terminal box	o	o	o
Large terminal box	n/a	o	n/a

### Heatings

Anti-condensation heaters (V=220 V)	o	o	o
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### Temperature sensors

N. 3 PTC thermistors	o	o	o
N. 3 PT100 resistance temperature detectors in stator winding	n/a	o	o
N. 3 PT100 on bearings	o	o	o

### Protection degree

Inlet filter	n/a	o	o
Inlet + outlet filter (IP43)	n/a	o	o
Inlet + outlet filter (IP44)	n/a	o	o

### AVR

Single-phase sensing AVR (Mark VX), front mounted	n/a	o*	s
Three-phase sensing AVR (MEC-20), side mounted	n/a	o*	o
Three-phase sensing AVR (MEC-20), front mounted	n/a	o*	n/a

### Painting

Non standard colour (MM ref. F96831)	o	o	o
Special painting cycle (MM ref. F96819)	o	o	o
Special painting cycle (MM ref. F96826)	o	o	o

### Environmental solutions

Tropicalization (CW1081)	o	o	o
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### Excitation system

PMG with single-phase AVR (Mark XX) side mounted	o	o	o
PMG with single-phase AVR (Mark XX) front mounted	n/a	o*	o
PMG with three-phase AVR (MEC-20) side mounted	n/a	o*	o
PMG with three-phase AVR (MEC-20) front mounted	n/a	o*	n/a
Remote voltage control trimmer (loose supplied)	o	o	o
Manual excitation device including trimmer (loose supplied)	o	o	o
Manual/Automatic operation switch (loose supplied)	o	o	o
Regulation panel with APFC (loose supplied)	o	o	o

\* Available only with option large terminal box

o: optional

n/a: not available

s: standard

## Coupling

160

180

225

Adaptor SAE J620	5	4	3	5 <sup>(*)</sup>	4	3	2	4	3	2	1
6 1/2	●			●							
7 1/2	●	○		●	●						
8	●	●	●	●	●	●	●				
10		●	●		●	●	●	●	●		
11 1/2			●			○	●		○	●	●
14											●

● Available

○ Most common

<sup>(\*)</sup> Not available for frame size MA4, MC4, LA4 and LB4

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