TECHNICAL DATASHEET

THREE-PHASE SYNCHRONOUS GENERATOR

Our Reference	-	Date	23/05/2025
Customer	-	Rev.	-

GENERATORE TIPO - GENERATOR TYPE		MXB-E 225 MA4
CLASSE DI SOVRATEMPERATURA - TEMPERATURE RISE CLASS		H
CLASSE DI ISOLAMENTO – INSULATION CLASS		H
FORMA COSTRUTTIVA – MOUNTING		B2
TEMPERATURA AMBIENTE – AMBIENT TEMPERATURE	°C	40
ALTITUDINE MASSIMA - MAX. ALTITUDE	m	1000
GRADO DI PROTEZIONE - PROTECTION DEGREE	IP	23
SISTEMA DI RAFFREDDAMENTO - COOLING SYSTEM	IC	01
FATTORE DI POTENZA - POWER FACTOR		0.8
NUMERO DI POLI - NUMBER OF POLES		4
VELOCITA' NOMINALE - RATED SPEED	rpm	1500
SOVRAVELOCITA' - OVERSPEED	rpm	2250
NUMERO DI TERMINALI - NUMBER OF TERMINALS		12
PASSO DI AVVOLGIMENTO - WINDING PITCH / TIPOLOGIA - WINDING TYPE		2/3 - Random Wound
RESISTENZA STATORICA @ 20°C - STATOR RESISTANCE @ 20°C	mΩ	52
PESO - WEIGHT	kg	Approx 377
MOMENTO D'INERZIA- INERTIA	kgm^2	Approx 1.07
TEMPERATURA ACQUA RAFFREDDAMENTO – COOLING WATER TEMPERATURE	°C	not applicable
PORTATA D'ACQUA – WATER FLOW RATE	m^3/h	not applicable
CADUTA DI PRESSIONE – PRESSURE DROP	kPa	not applicable
AUMENTO TEMPERATURA ACQUA – WATER TEMPERATURE INCREASE	°C	not applicable
TA DI CENTRO STELLA - NEUTRAL POINT CURRENT TRANSFORMER		-
CUSCINETTI - BEARINGS		ANTIFRICTION

FREQUENZA - FREQUENCY	Hz	50
TENSIONE - VOLTAGE	V	400
CORRENTE NOMINALE - RATED CURRENT	A	173.2
POTENZA - RATING	kVA	120

PERCENTUALE DI CARICO - PARTIAL LOAD DATA		%	100	75	50	25
RENDIMENTO - EFFICIENCY	P.F. = 1	%	93.3	94.3	95.1	94.5
	P.F.= 0.8	%	91.0	92.3	93.3	92.6

Rapporto di corto circuito - Short circuit ratio		SCR	0.38	
			UNS	SAT
Reattanza - Reactance (%)	sincrona diretta - synchronous direct axis	Xd	369	295
	sincrona in quadratura - synchr. quadrature axis	Xq	154	123
	transitoria diretta - transient direct axis	X'd	27.6	22.0
	transitoria in quadratura - transient quadrature axis	X'q	154	123
	subtransitoria diretta - subtransient direct axis	X"d	15.2	12.1
	subtransitoria in quad. - subtransient quadr. Axis	X"q	16.7	13.3
	di sequenza negativa - negative sequence	X2	15.9	12.7
	di sequenza zero - zero sequence	Xo	7.5	6.0
Costanti di tempo - Time constants (s)	a vuoto - open circuit	T'do	1.101	
	transitoria - transient	T'd	0.103	
	subtransitoria - subtransient	T"d	0.010	
	unidirezionale - armature	Ta = Tdc	0.011	
Coppia di corto circuito bifase - Phase to Phase short circuit torque		kNm	9.5	
Coppia di corto circuito trifase - Three phase short circuit torque		kNm	6.3	

PRELIMINARY

Standard/Tolerances: IEC 60034-1

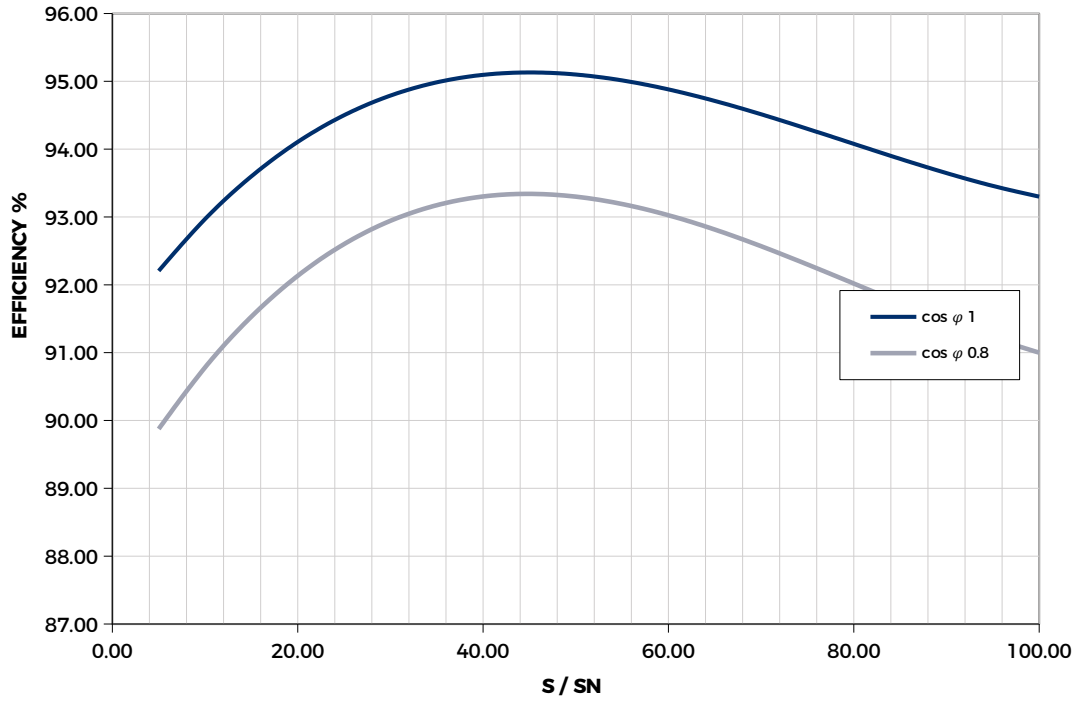
MarelliMotori
Powering the future®

TECHNICAL DATASHEET

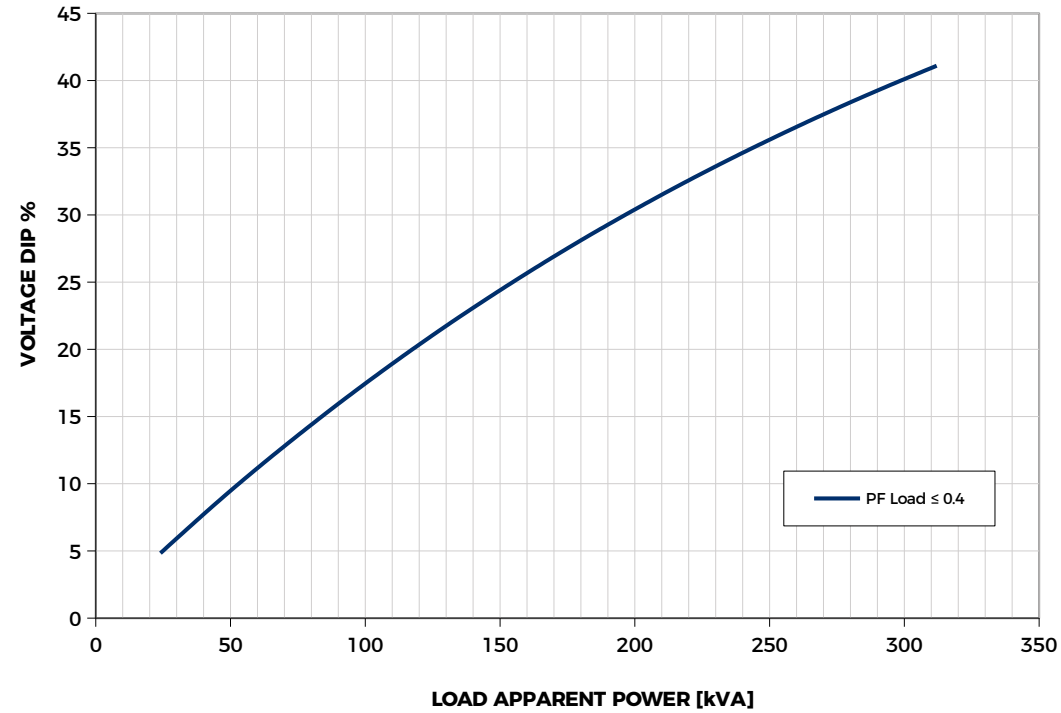
THREE-PHASE SYNCHRONOUS GENERATOR

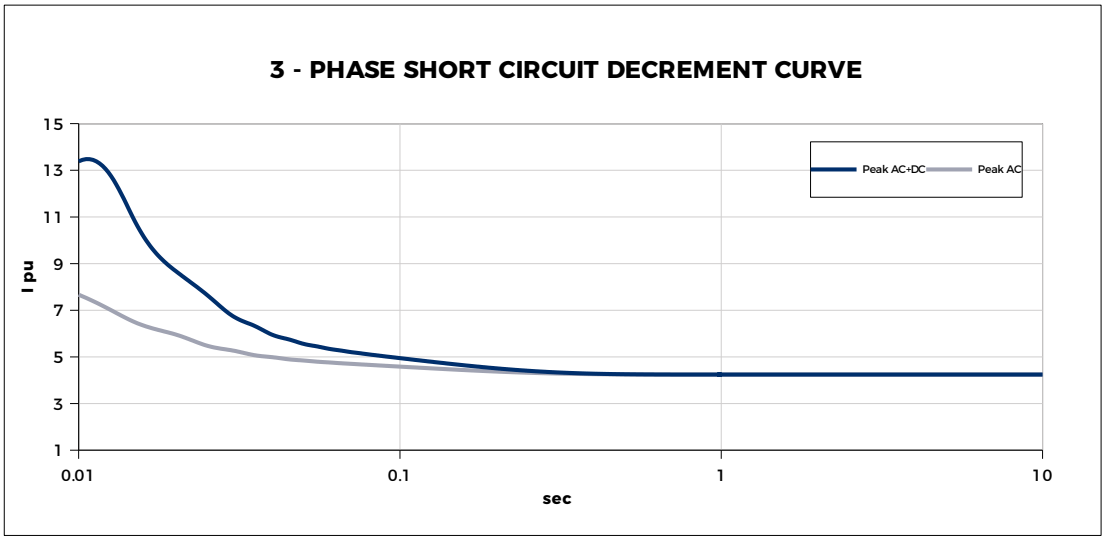
Our Reference	-	Date	23/05/2025
Customer	-	Rev.	-

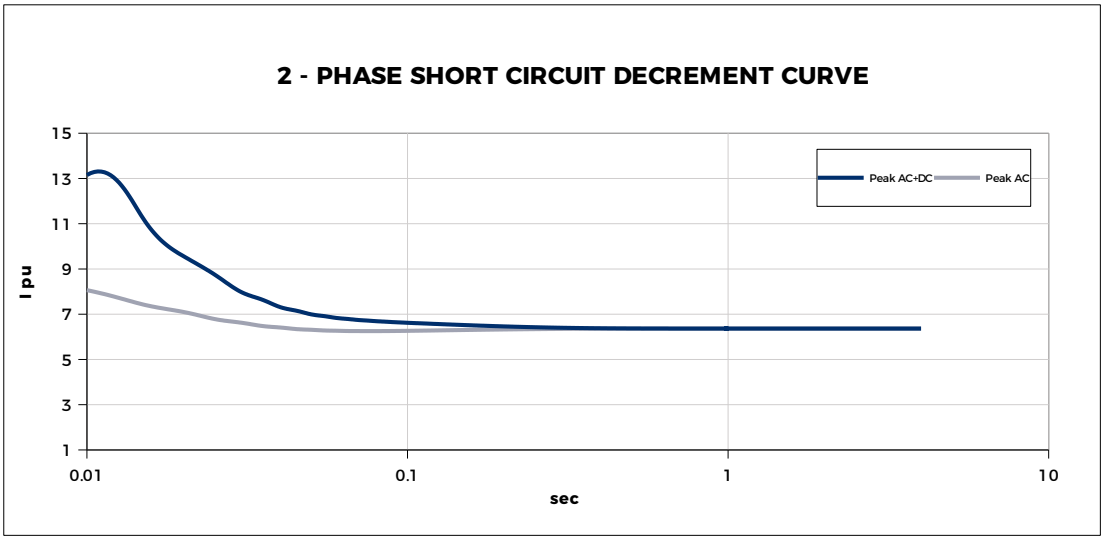
CURVA DI RENDIMENTO - EFFICIENCY CURVE

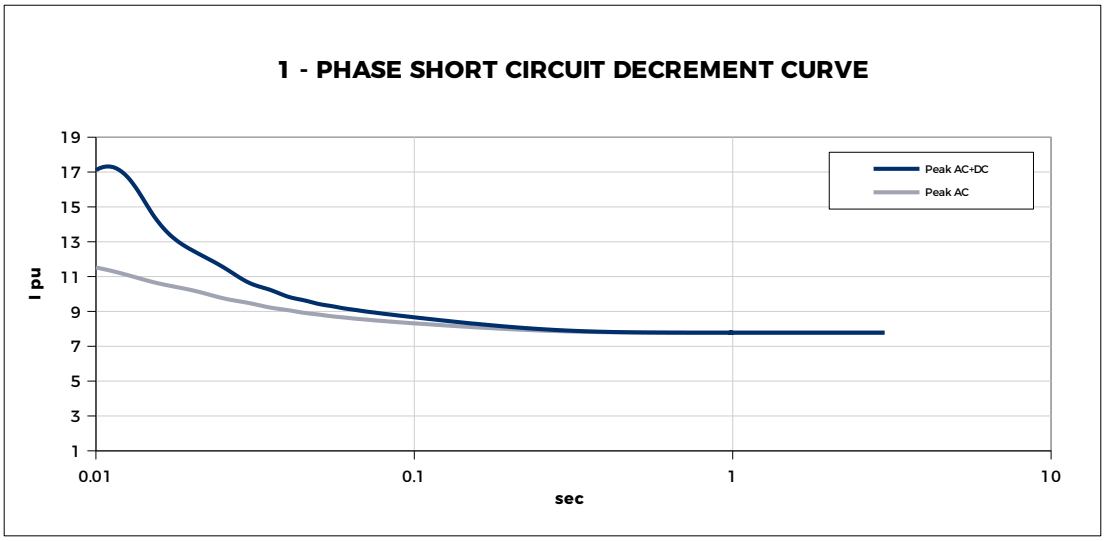


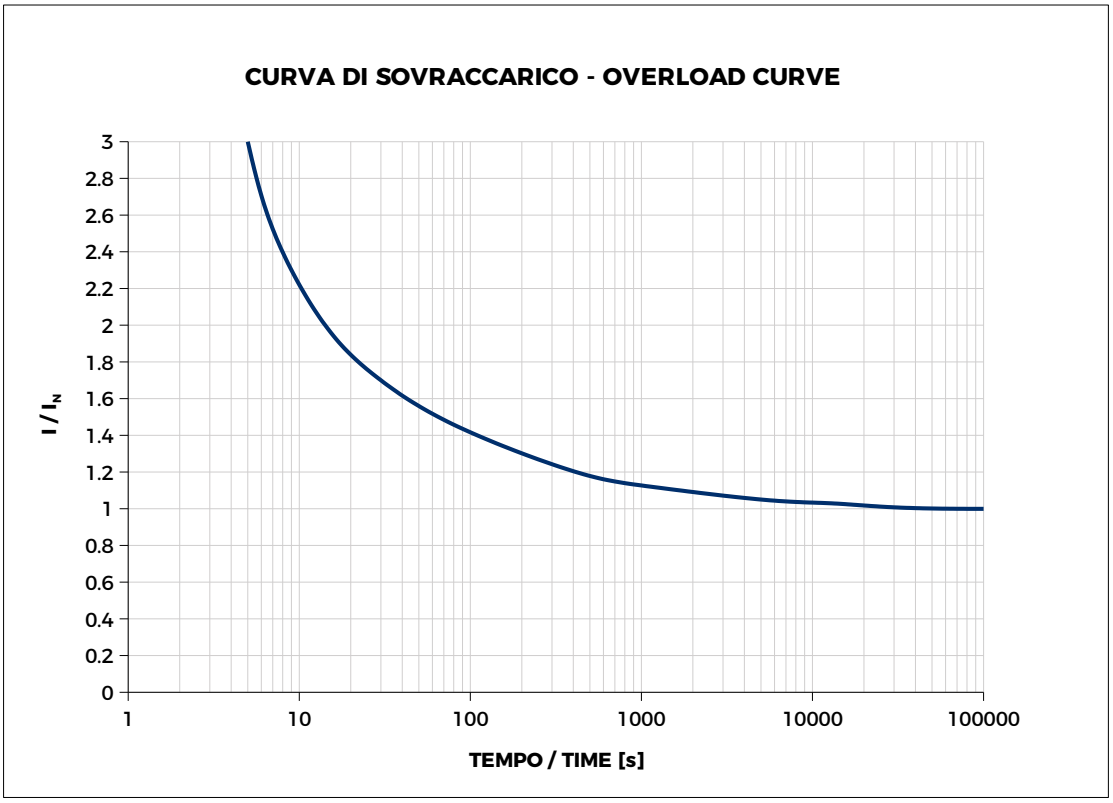
CADUTA DI TENSIONE - VOLTAGE DIP

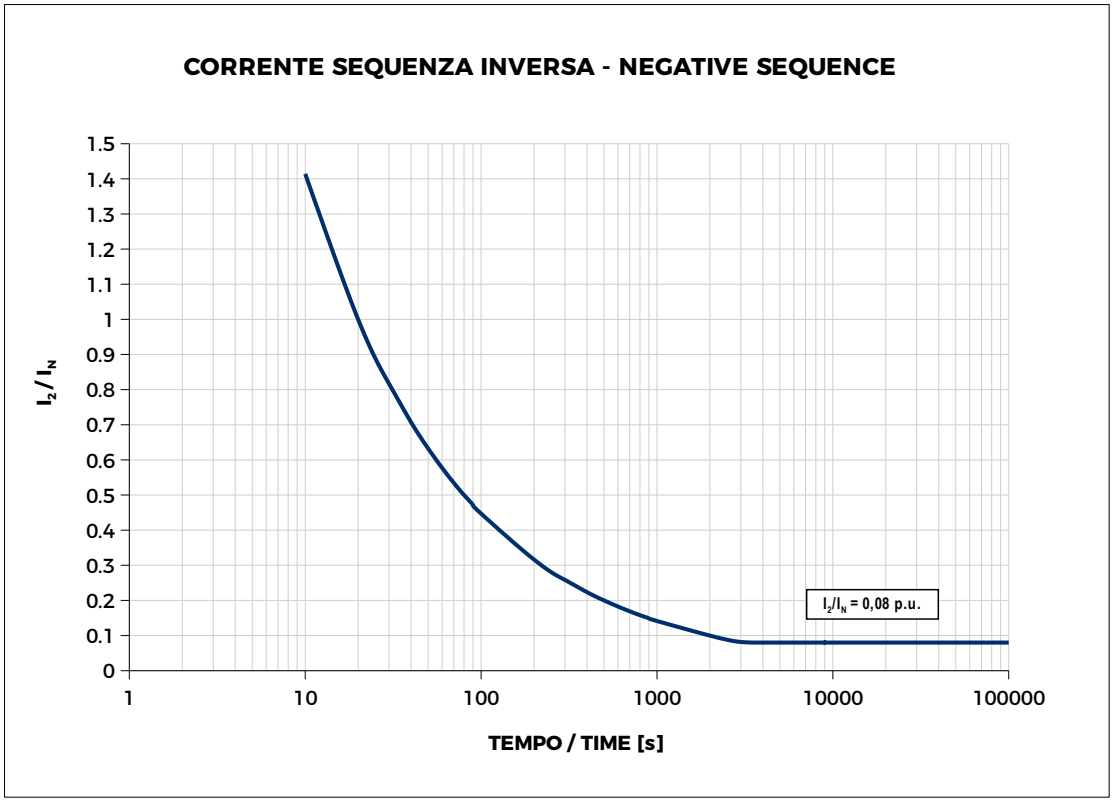



3 - PHASE SHORT CIRCUIT DECREMENT CURVE
I pu
15
13
11
9
7
5
3
1
0.01
0.1
1
10
sec
Peak AC+DC
Peak AC


2 - PHASE SHORT CIRCUIT DECREMENT CURVE
I pu
15
13
11
9
7
5
3
1
0.01
0.1
1
10
sec
Peak AC+DC
Peak AC


1 - PHASE SHORT CIRCUIT DECREMENT CURVE
I pu
19
17
15
13
11
9
7
5
3
1
0.01
0.1
1
10
sec
Peak AC+DC
Peak AC


CURVA DI SOVRACCARICO - OVERLOAD CURVE
I / I_N
3
2.8
2.6
2.4
2.2
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
1
10
100
1000
10000
100000
TEMPO / TIME [s]

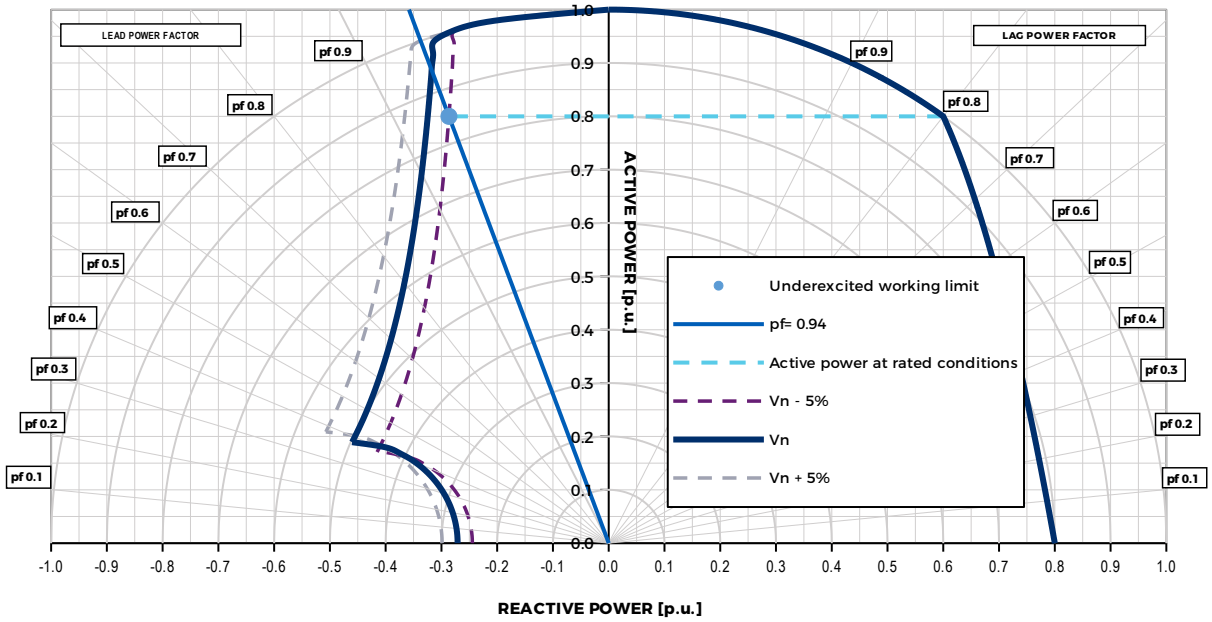

CORRENTE SEQUENZA INVERSA - NEGATIVE SEQUENCE
I_2 / I_N
1.5
1.4
1.3
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
1
10
100
1000
10000
100000
TEMPO / TIME [s]
I_2/I_N = 0,08 p.u.

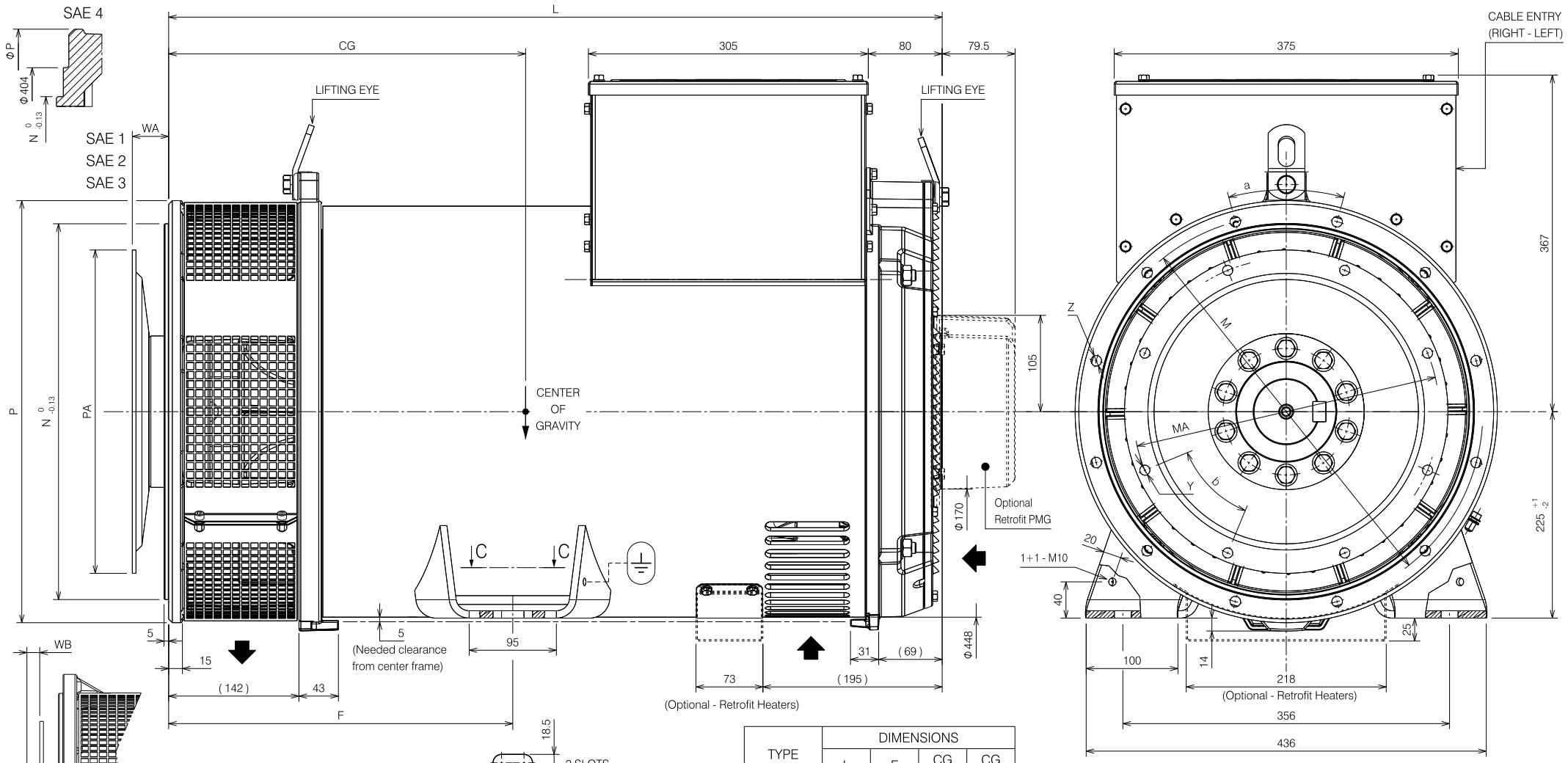
TECHNICAL DATASHEET

THREE-PHASE SYNCHRONOUS GENERATOR

Our Reference	-	Date	23/05/2025
Customer	-	Rev.	-

CURVA DI CAPABILITY - CAPABILITY CURVE





TYPE	DIMENSIONS			
	L	F	CG SAE4-SAE3	CG SAE2-SAE1
XA 4	708	325	325	312
XB 4			329	317
SB 4			352	348
MA 4	778	375	344	331
MB 4			386	372
LA 4	843		389	377
LB 4			436	423

SUPPORT BEARINGS	PROTECTION DEGREE	TYPE OF CONSTRUCTION IM	DIMENSIONS
ROLLING	IP23	B2	mm

DIMENSIONS														
FLANGE							COUPLING							
SAE J617	N	P	M	Z No	Z DIA	a	SAE J620	PA	MA	Y No	Y DIA	b	WA	WB
4	361.95	460	381.00	12	11.5	30°	10	314.32	295.28	8	11	45°	53.8	/
3	409.58	460	428.62	12	11.5	30°	11 1/2	352.42	333.38	8	11	45°	39.6	/
2	447.68	495	466.72	12	11.5	30°	14	466.72	438.15	8	14	45°	25.4	14
1	511.18	552.5	530.22	12	11.5	30°								

CONNECTINGS				
COUPLING	FLANGE			
SAE J620	SAE J 617			
	4	3	2	1
10	X	X		
11 1/2		O	X	X
14				X
MOST COMMON				O

REV	DESCRIPTION	PREP'D	CHK'D	APPR'D	DATE
C	ADDED INDICATION DIMENSION Z (COORD. C6)	S.Aquino	G.Peruzzi	I.Graizzaro	02/03/2022
B	CORRECTED DIMENSIONS FLANGE Z DIA	S.Aquino	G.Peruzzi	I.Graizzaro	09/12/2021
A	CORRECTED DIMENSION b	P.Kumar	G.Peruzzi	I.Graizzaro	02/08/2021

ECO: | COMPONENT SUPPLIED IN ACCORDING TO: | MAT: | IND. ENG. CHK'D: S.Fanton

JOB: | SURFACE TREATMENT: HEAT TREATMENT: | RAW MAT.CODE: | 02/03/2022

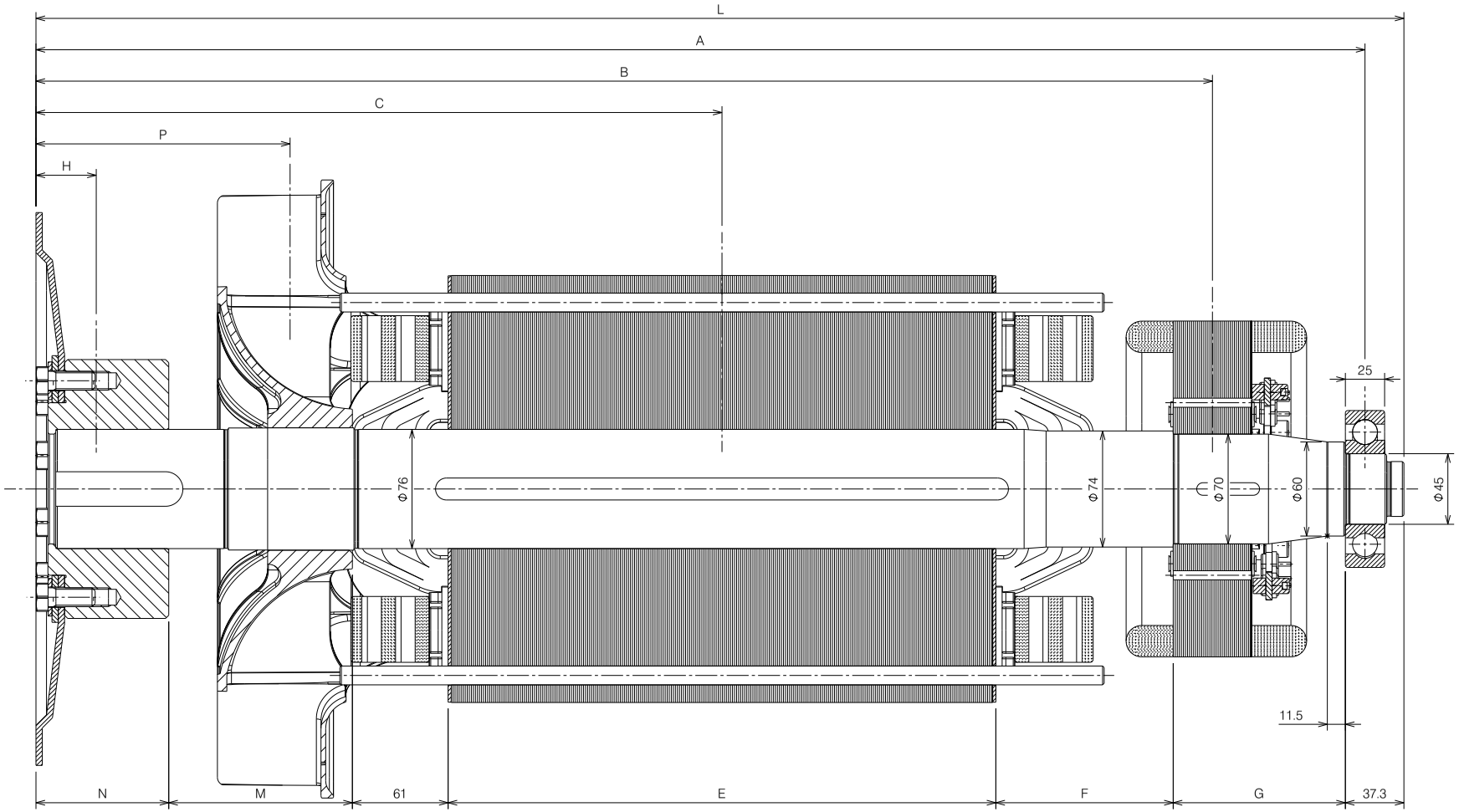
MarelliMotori | TOLERANCES UNLESS OTHERWISE STATED IN ACCORDING TO: n/a | A2 | DIMENSION: mm | SCALE: 1:3 | WEIGHT (kg): n/a | ATEX APPR'D:

OVERALL DIMENSIONS MXB-E 225

SYNCHRONOUS GENERATOR

M22AD210C | C Rev | SHEET: 1 | OF: 1

This document is the property of Marelli Motori S.r.l. No part of this document may be copied or reproduced in any way. This information is subject to constant review. Measurements on printed drawing are not allowed, any missed dimension or information on the drawing must be pointed out to MarelliMotori.



SIZE	DIMENSIONS mm															FAN		SHAFT		MAIN CORE		EXCITER CORE		TOTAL	
	A			B			C			E	F	G	L			m [kg]	J [kgm^2]	m [kg]	J [kgm^2]	m [kg]	J [kgm^2]	m [kg]	J [kgm^2]	m [kg]	J [kgm^2]
	SAE 14	SAE 11 1/2	SAE 10	SAE 14	SAE 11 1/2	SAE 10	SAE 14	SAE 11 1/2	SAE 10				SAE 14	SAE 11 1/2	SAE 10										
XA	681.8	696	710.2	600.4	614.6	628.8	322.9	337.1	351.3	149	178	19.7	722.4	736.6	750.8	3.1	0.047	23.7	0.016	83	0.568	12.5	0.082	122.3	0.713
XB							332.9	347.1	361.3	169	158									90	0.632			129.3	0.777
SB							355.4	369.6	383.8	214	113									106	0.778			145.3	0.923
MA	781.8	796	810.2	670.4	684.6	698.8	375.4	389.6	403.8	254	143		792.4	806.6	820.8			26.2	0.018	123	0.920			164.8	1.067
MB							390.4	404.6	418.8	284	113									134	1.018			175.8	1.165
LA	832.6	846.8	861	735.4	749.6	763.8	412.9	417.1	431.3	309	153		857.4	871.6	885.8			28	0.02	144.4	1.098			188	1.247
LB							422.9	437.1	451.3	349	113									158.5	1.224			202.1	1.796

COUPLING	H	M	N	P	m [kg]	J [kgm^2]
SAE 10	52.3	117	98.8	176.1	12.1	0.045
SAE 11 1/2	38.4	117	84.6	161.9	12.5	0.052
SAE 14	22.3	117	70.4	147.7	14.7	0.098

REV	DESCRIPTION	PREP'D	CHK'D	APPR'D	DATE
A	UPDATED XA AND XB DATA	D.Pegoraro	F.Saggin	I.Graizzaro	24/10/2019
=	FIRST ISSUE	D.Pegoraro	F.Saggin	I.Graizzaro	19/09/2019

ECO: | HEAT TREATMENT: | MAT: | IND. ENG. CHK'D:

JOB: | SURFACE TREATMENT: | RAW MAT.CODE:

MarelliMotori
Inspired solutions

DIMENSIONS WITHOUT TOLERANCES
PRECISION DEGREE: (TN F 3661)

A2

DIMENSION: mm
SCALE: 1:2

WEIGHT (kg): n/a

ATEX APPR'D:

TORSIONAL ANALYSIS DATA

MXB-E 225 SYNCHRONOUS GENERATORS

M22AV003C

A Rev

SHEET: 1
OF: 1

This document is the property of Marelli Motori S.p.A. No part of this document may be copied or reproduced in any way. This information is subject to constant review.
Measurements on printed drawing are not allowed, any missed dimension or information on the drawing must be pointed out to MarelliMotori.