maranello alternator

M2250

CONT 2100 kVA

www.maranellogenerators.com

Ratings and Dimensions

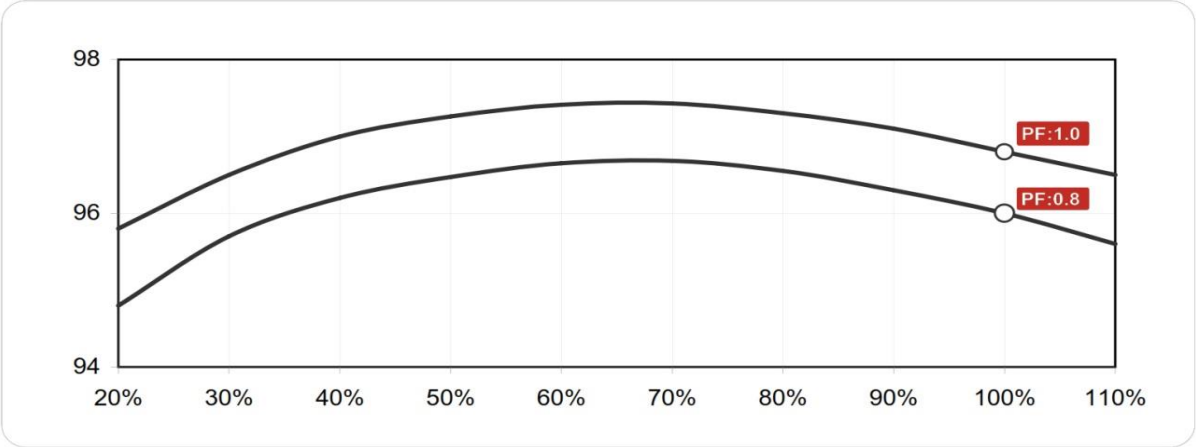
Frequency	50 Hz.							
Wire Connection	12 Wire Three Pheese							
Power Factor	0,8		0,8		0,8		0,8	
Winding No.	#125		#125		#125		#125	
Y Series Star	380		400		415		440	
YY Parallel Star	190		200		208		220	
Δ Series Delta	220		230		240		254	
	kVA	kW	kVA	kW	kVA	kW	kVA	kW
Cont. F 105/40°C	1890	1512	1940	1552	1940	1552	1910	1528
Cont. H 125/40°C	2030	1624	2100	1680	2100	1680	2050	1640
Stdby H 150/40°C	2105	1684	2200	1760	2200	1760	2150	1720
Stdby H 163/27°C	2175	1740	2260	1808	2260	1808	2190	1752

Frequency	50 Hz.							
Wire Connection	12 Wire Single Phase				4 Wire Single Phase			
Power Factor	0,8		1		0,8		1	
Winding No.	#125				#41		#41	
ΔΔ Double Delta	220-230-240V		220-230-240V		220-230-240V		220-230-240V	
	kVA	kW	kVA	kW	kVA	kW	kVA	kW
Cont. F 105/40°C	-	-	-	-	-	-	-	-
Cont. H 125/40°C	-	-	-	-	-	-	-	-
Stdby H 150/40°C	-	-	-	-	-	-	-	-
Stdby H 163/27°C	-	-	-	-	-	-	-	-

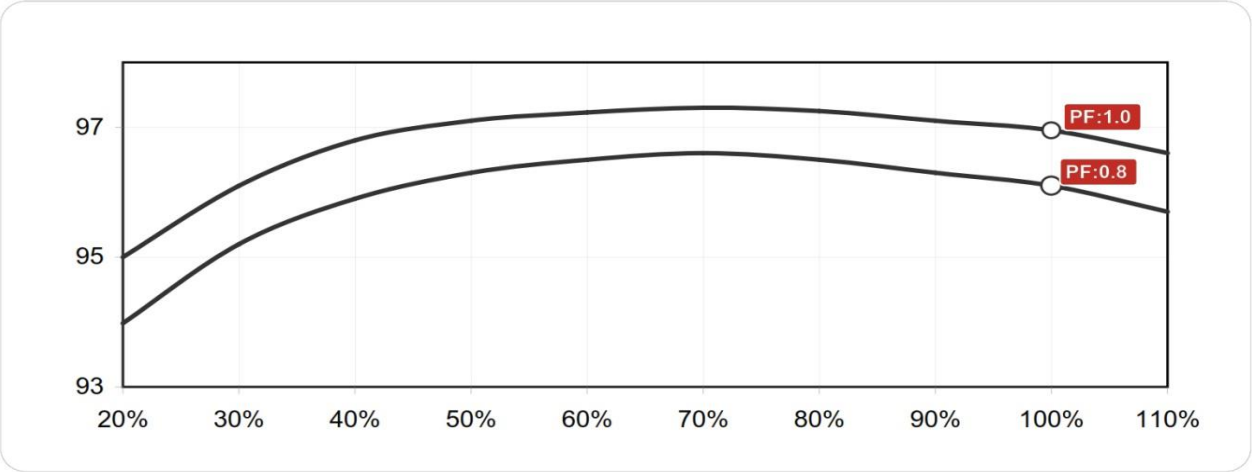
Frequency	60 Hz.							
Wire Connection	12 Wire Three Pheese							
Power Factor	0,8		0,8		0,8		0,8	
Winding No.	#125		#125		#125		#125	
Y Series Star	416		440		460		480	
YY Parallel Star	208		220		230		240	
Δ Series Delta	240		254		266		277	
	kVA	kW	kVA	kW	kVA	kW	kVA	kW
Cont. F 105/40°C	2200	1760	2350	1880	2400	1920	2450	1960
Cont. H 125/40°C	2359	1887	2510	2008	2580	2064	2650	2120
Stdby H 150/40°C	2450	1960	2600	2080	2680	2144	2735	2188
Stdby H 163/27°C	2515	2012	2682	2146	2745	2196	2793	2234

Frequency	60 Hz.							
Wire Connection	12 Wire Single Phase				4 Wire Single Phase			
Power Factor	0,8		1		0,8		1	
Winding No.	#125		#125		#42		#42	
ΔΔ Double Delta	240V		240V		240V		240V	
	kVA	kW	kVA	kW	kVA	kW	kVA	kW
Cont. F 105/40°C	-	-	-	-	-	-	-	-
Cont. H 125/40°C	-	-	-	-	-	-	-	-
Stdby H 150/40°C	-	-	-	-	-	-	-	-
Stdby H 163/27°C	-	-	-	-	-	-	-	-

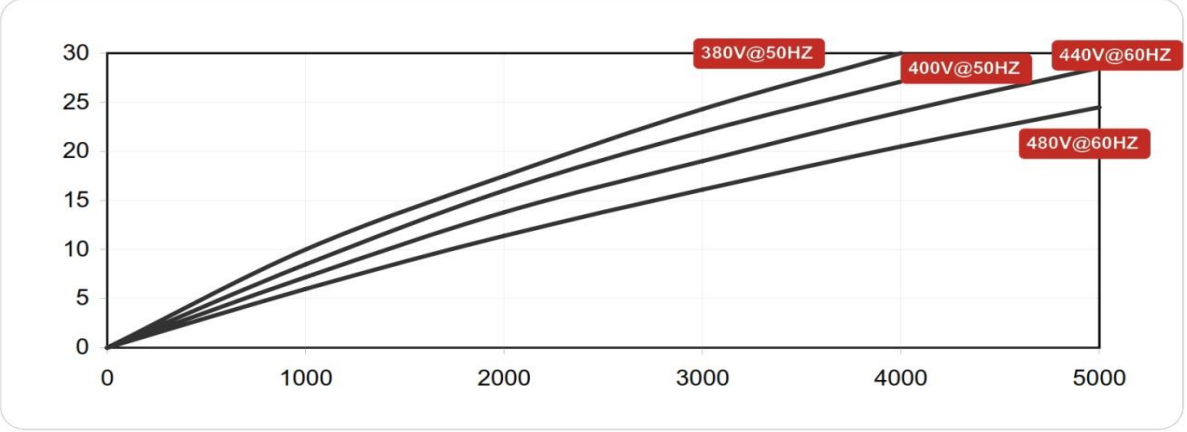
Effiency Curve @ 50 Hz,400V



Effiency Curves @ 60 Hz,480V



Motor Starting Curves @ 50 Hz, 60 Hz Locked Rotor



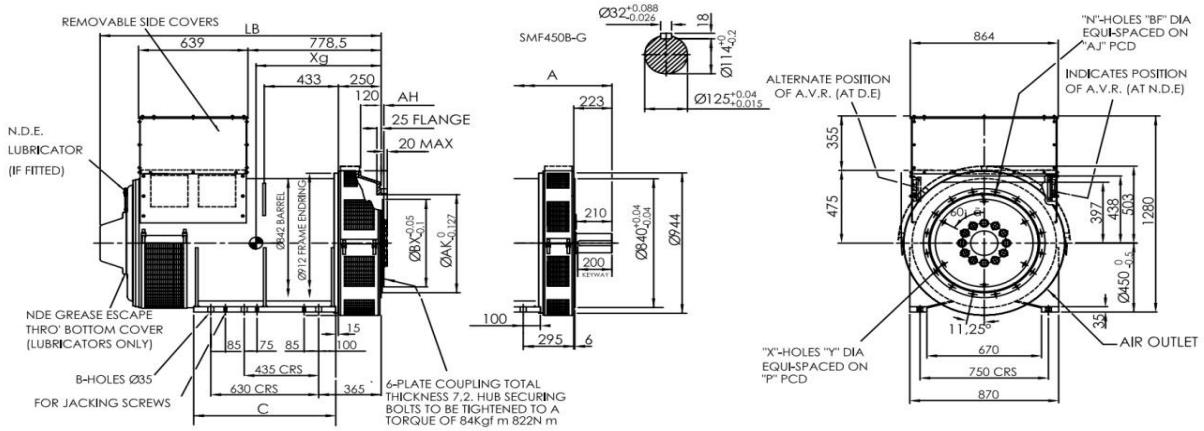
Technical Data Sheet

STANDARD **(S)** OPTIONAL **(O)** INFORMATION **(I)**			SPECIFICATION
EXCITATION SYSTEM	SELF-EXCITED	**S**	SUSTAINED SHORT-CIRCUIT: NOT AVAILABLE
	ARAP		
	PMG		
AVR	M-AVR 46	**S**	REGULATION PRECISION : +/-1,0 %
	M-AVR 44	**O**	REGULATION PRECISION : +/-1,0 %
	M-AVR 32		
	M-AVR 34		
WINDING INSULATION	H	**S**	
	F		
WINDING PITCH	2/3	**S**	HIGHER FLEXIBILITY IN USE,BETTER MOTOR STARTING ABILITY
	5/6	**O**	COST-EFFECTIVE POWER SUPPLY SCHEME
WINDING PROTECTION	STANDARD	**S**	
	"ANTI-HARSH"	**O**	SPECIAL TREATMENT OF WINDING TO AGINST HASRH ENVIROMENT
	SPACE HEATER	**O**	TO HEAT UP AIR TO REMOVE THE HUMMINITY AROUND WINDING
	THERMAL SENSOR	**O**	TO DETECT THE WINDING TEMPERATURE OR BEARING'S
PARALLEL OPERATION	CT100	**O**	
	CT200		
	CT400		
	CT600		
	CT1000		
WINDING LEADS	12	**S**	12 LEADS OF WINDING ENDS,
	6	**O**	6 LEADS OF WINDING ENGS
MACHINE PROCTIION	IP23	**S**	STANDARD MACHINE PROTECTION
	IP44	**O**	TO AGINST : 1mm OBJECT AND SPLASHING WATER
	IP54		
POWER FACTOR	1	**O**	
	0,8	**S**	
CONNECTION TO ENGINE	SINGLE BEARING	**S**	
	DOUBLE BEARING	**O**	
	BELT DRIVE	**O**	
	VERTICAL		
OVERSPEED		**I**	MAX ROTATING SPEED : 2250 RPM
ATTITUDE	<=1000m	**I**	DERATING IS NO NEED
	>1000m	**I**	DERATING NEEDED, REFERS TO RATING BOOK
ELECTIRICAL FEATRUES	TDF/THC	**I**	NO LOAD < 1,5 %, NON DISTORATING BALANCED LINEAR LOAD< 5,0 %
	TIF	**I**	<50
	THF	**I**	<2%
BEARING	DRIVE -END	**I**	BALL 6228 - 2RS DOUBLE BEARING CONF. ONLY
	NON DRIVE END	**I**	BALL 6319- 2RS
WEIGHT	NET	**I**	SINGLE BEARING 3840 KG DOUBLE BEARING :3865KG
	GROSS	**I**	SINGLE BEARING 3940KG DOUBLE BEARING : 3965KG
PACKING SIZE		**I**	SINGLE B. : 2000x1100x1550 mm DOUBLE B. : 2000x1100x1550 mm

Technical Data Sheet

STANDARD**(S)** OPTIONAL**(O)** INFORMATION **(I)**	SPECIFICATION							
	50 HZ				60 HZ			
SERİES STAR (V)	380	400	415	440	416	440	460	480
PARALLEL STAR (V)	190	200	208	220	208	220	230	240
SERIES DELTA (V)	220	230	240	254	240	254	266	277
Xd - Direct axis synchro. Reactance unsaturated	2.93	2.73	2.53	2.21	3.55	3.38	3.16	2.96
X'd - Direct axis transient reactance saturated.	0.18	0.17	0.15	0.13	0.21	0.20	0.19	0.18
X"d - Direct axis sub transient reactance saturated	0.13	0.12	0.11	0.10	0.16	0.15	0.14	0.13
Xq - Qadro. Axis synchro.reactance unsaturated.	1.89	1.75	1.63	1.42	2.28	2.18	2.03	1.90
X"q - Quadro. Axis sub transiet reactance saturated.	0.26	0.25	0.23	0.20	0.32	0.31	0.29	0.27
X2 - Negative sequence reactance unsturated	0.19	0.17	0.16	0.14	0.23	0.22	0.20	0.19
Xo -Zero sequence reactance unsaturated.	0.02	0.02	0.02	0.02	0.03	0.03	0.02	0.02
T'd- Short - Circuit transiet time constant	0.154s							
T"d - Sub Transiet time constant	0.02s							
T'do- Open circuit time constant	2.54s							
Ta- Armature time constant	0.02s							
Kcc - Short Circuit Ratio	1/Xd							

Outline Drawing



DIMENSIONS(mm)					2-BRG
TYPE	LB	Xg	C	B	A
SMF450G	1878	825	1000	8	2069

FLANGE(mm)						
SAE	BD	AK	AJ	U°	BF	N
SAE0	944	647.70	679.45	11.25	14	16
SAE00	944	787.40	850.90	11.25	14	16

COUPLING DISC					
SAE	BX	P	X	Y	AH
24	733.42	692.15	12	20.7	0
21	673.10	641.35	12	16.7	0
18	571.50	542.92	6	16.7	15.7

General Specification

Maranello designs, manufactures and markets the alternators which comply with the national and international standards. The alternator can be broadly used in the all-purposed application, such as backup, rental, telecom and marine, and also can be used in a.

Compliant with Standards
Other certifications can be considered on request.

Electrical Features

Automatic Voltage Regulator (AVR)
The high efficiency semiconductors of the AVR ensure positive build-up from initial low levels of residual voltage.

2/3 Winding Pitch
Effectively eliminates the effect of the third harmonics so as to avoid excessive neutral currents.
Varible Voltage Output
Standard voltage output can be achieved through the reconnectable 12 wire, and the beyond-the-standard voltage might be achieved by optional winding.

Overload Capability
Be capable of running at constant load limited to the insulation class with the possibility of overload up to 10% for 1 hour every 12 hours.(Continuous Duty -S1).

High Efficiency and Motor Starting Capacity
Optimizing design greatly improves the efficiency and motor starting capacity.

Mechanical Features

Bracket + Flexible Disc
The combination of casting braket and flexible disc makes product to be coupled with any brand of engine whose interface is international design

Terminal Box
Metal-made and accessed easily, it also can be customized on requests.

Shaft and Key
Rotors assembly is dymastically balanced under ISO8528 andBS5000 regulation, and double-bearing is balanced with half-key.

Bearing
Bearing is greased in the factory for life, and regreasable bearing is available on request.

Machine Protection
The standard protection is IP23, and IP44 is optional

Insulation and Impregnation

H-class Insulation
Materials used in the insulation system is classed "H", specially the copper wire applied is able to withstand 200°C

Vacuum Pressure Impregnation (VPI)
The advanced impregnation equipment is applied to ensure the electrical insulation and mechanical strength.

Winding Protection

Standard:
The winding is protected against relative humidity< 95%.

Optional:
The special-treated winding ("ANTI-HARSH") is recommended to apply for the environment humidity > 95%, or harsh