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# **Ratings and Dimensions**

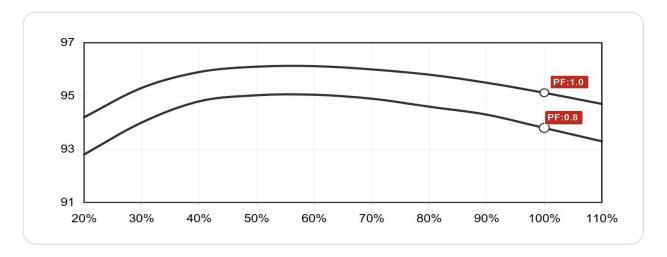
Frequency	50 Hz.							
Wire Connection	12 Wire Three Pheese							
Power Factor	0,8		0,8		0,8		0,8	
Winding No.	#1	25	#125		#125		#125	
Y Series Star	38	80		00	415		440	
YY Parallel Star	190		200		208		220	
$\Delta$ Series Delta	220		230		240		254	
	kVA	kW	kVA	kW	kVA	kW	kVA	kW
Cont. F 105/40°C	400.0	320.0	445.0	356.0	400.0	320.0	400.0	320.0
Cont. H 125/40°C	450.0	360.0	500.0	400.0	450.0	360.0	450.0	360.0
Stdby H 150/40°C	478.0	382.0	512.0	410.0	478.0	382.0	478.0	382.0
Stdby H 163/27°C	495.0	396.0	520.0	416.0	495.0	396.0	495.0	396.0

Frequency	50 Hz.								
Wire Connection		12 Wire Si	ngle Phase		4 Wire Single Phase				
Power Factor	0	,8	1		0,8		1		
Winding No.	#1	25			#4	#41		#41	
ΔΔ Double Delta	220-23	0-240V 220-230-		0-240V	220-230-240V		220-230-240V		
	kVA	kW	kVA	kW	kVA	kW	kVA	kW	
Cont. F 105/40°C	161	129	N/A	N/A	N/A	N/A	N/A	N/A	
Cont. H 125/40°C	180	144	N/A	N/A	N/A	N/A	N/A	N/A	
Stdby H 150/40°C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Stdby H 163/27°C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	

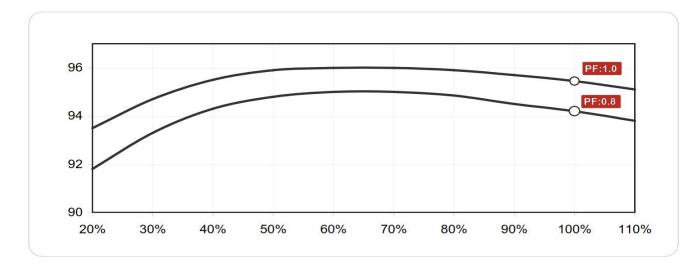
Frequency	60 Hz.								
Wire Connection	12 Wire Three Pheese								
Power Factor	0,8		0,8		0,8		0,8		
Winding No.	#1	#125		#125		#125		#125	
Y Series Star	41	16		40	460		480		
YY Parallel Star	20	208		220		230		240	
$\Delta$ Series Delta	24	40	254		266		277		
	kVA	kW	kVA	kW	kVA	kW	kVA	kW	
Cont. F 105/40°C	481.0	385.0	500.0	400.0	531.0	425.0	538.0	430.0	
Cont. H 125/40°C	525.0	420.0	550.0	440.0	581.0	465.0	594.0	475.0	
Stdby H 150/40°C	550.0	440.0	581.0	465.0	613.0	490.0	625.0	500.0	
Stdby H 163/27°C	569.0	455.0	600.0	480.0	631.0	505.0	644.0	515.0	

Frequency	60 Hz.							
Wire Connection		12 Wire Si	ngle Phase		4 Wire Single Phase			
Power Factor	0,8		1		0,8		1	
Winding No.	#1	25	#125		#42		#42	
ΔΔ Double Delta	24	0V	240V		240V		240V	
	kVA	kW	kVA	kW	kVA	kW	kVA	kW
Cont. F 105/40°C	186	149	N/A	N/A	N/A	N/A	N/A	N/A
Cont. H 125/40°C	210	168	N/A	N/A	N/A	N/A	N/A	N/A
Stdby H 150/40°C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Stdby H 163/27°C	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

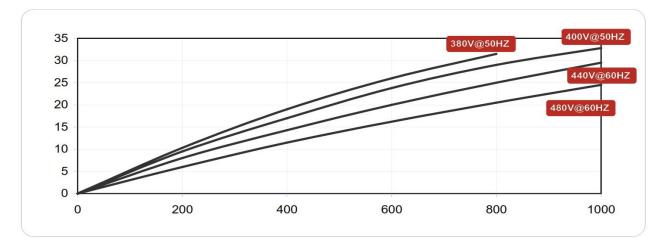
## Effiency Curve @ 50 Hz,400V



### Effiency Curves @ 60 Hz,480V



## Motor Starting Curves @ 50 Hz, 60 Hz Locked Rotor



# **Technical Data Sheet**

# STANDARD(S) OPTIONAL(O) INFORMATION (I)

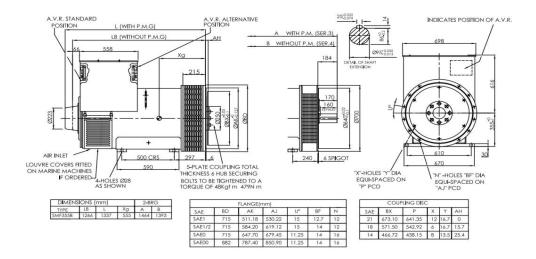
# SPECIFICATION

EXCITATION	SELF-EXCITED	S	SUSTAINED SHORT-CIRCUIT: NOT AVAILABLE
SYSTEM	ARAP		
STOTEM	PMG		
	SX460	S	REGULATION PRECISION : +/-1,0 %
AVR	SX440	0	REGULATION PRECISION : +/-1,0 %
AVIN	MX341		
	MX321		
WINDING	Н	S	
INSULATION	F		
WINDING PITCH	2/3	S	HIGHER FLEXIBILITY IN USE, BETTER MOTOR STARTING ABILITY
	5/6	0	COST-EFFECTIVE POWER SUPPLY SCHEME
	STANDARD	S	
WINDING	"ANTI-HARSH"	0	SPECIAL TREATMENT OF WINDING TO AGINST HASRH ENVIROMENT
PROTECTION	SPACE HEATER	0	TO HEAT UP AIR TO REMOVE THE HUMMINITY AROUND WINDING
	THERMAL SENSOR	0	TO DETECT THE WINDING TEMPERATURE OR BEARING'S
	CT100	0	
	CT200		
PARALLEL	CT400		
OPERATION	СТ600		
	CT1000		
	12	S	12 LEADS OF WINDING ENDS,
WINDING LEADS	6	0	6 LEADS OF WINDING ENGS
	IP23	S	STANDARD MACHINE PROTECTION
MACHINE	IP44	0	TO AGINST : 1mm OBJECT AND SPLASHING WATER
PROCTIION	IP54		
	1	0	
POWER FACTOR	0,8	S	
	SINGLE BEARING	S	
CONNECTION TO	DOUBLE BEARING	0	
ENGINE	BELT DRIVE	0	
	VERTICAL		
OVERSPEED		1	MAX ROTATING SPEED : 2250 RPM
	<=1000m		DERATING IS NO NEED
ATTITUDE	>1000m		DERATING NEEDED, REFERS TO RATING BOOK
	TDF/THC		NO LOAD < 1,5 %, NON DISTORATING BALANCED LINEAR LOAD< 5,0 %
ELECTIRICAL FEATRUES	TIF	 I	<50
	THF	 	<2%
	DRIVE -END		SZ/0 BALL 6317 - 2RS_DOUBLE BEARING CONF. ONLY
BEARING	NON DRIVE END	 	BALL 6317 - 2RS DOUBLE BEARING CONF. UNLY
	NET	 	
WEIGHT	GROSS	I	SINGLE BEARING 1065 KG DOUBLE BEARING : 1075KG
PACKING SIZE	01/035		SINGLE BEARING 1105 KG DOUBLE BEARING : 1117KG
PACKING SIZE			SINGLE B. : 1350x850x1060 mm DOUBLE B. : 1400x850x1060mm

# **Technical Data Sheet**

STANDARD(S) OPTIONAL(O) INFORMATION (I) **SPECIFICATION** 50 HZ 60 HZ SERIES STAR (V) 380 400 415 440 416 440 460 480 PARALLEL STAR (V) 190 200 208 220 208 220 230 240 220 230 240 254 240 254 277 SERIES DELTA (V) 266 2.95 2.74 2.44 3.94 3.57 Xd - Direct axis synchro. Reactance unsaturated 3.27 3.69 3.35 X'd - Direct axis transient reactance saturated. 0.18 0.16 0.15 0.13 0.18 0.17 0.16 0.15 X"d - Direct axis sub transient reactance saturated 0.13 0.12 0.11 0.10 0.13 0.12 0.12 0.112.40 Xq - Qadro. Axis synchro.reactance unsaturated. 2.66 2.23 1.98 3.12 2.92 2.82 2.65 0.34 0.32 0.29 X"q - Quadro. Axis sub transiet reactance saturated. 0.26 0.24 0.22 0.20 0.31 X2 - Negative sequence reactance unsturated 0.23 0.20 0.19 0.17 0.16 0.14 0.22 0.21 0.10 0.09 Xo -Zero sequence reactance unsaturated. 0.11 0.10 0.09 0.08 0.11 0.10 T'd- Short - Circuit transiet time constant 0.08s T"d - Sub Transiet time constant 0.012s T'do- Open circuit time constant 2s 0.017s Ta- Armature time constant 1/Xd Kcc - Short Circuit Ratio

# **Outline Drawing**



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 and BS5000 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 environment such as atmospheric contaminants or salty water spr