



**M220**

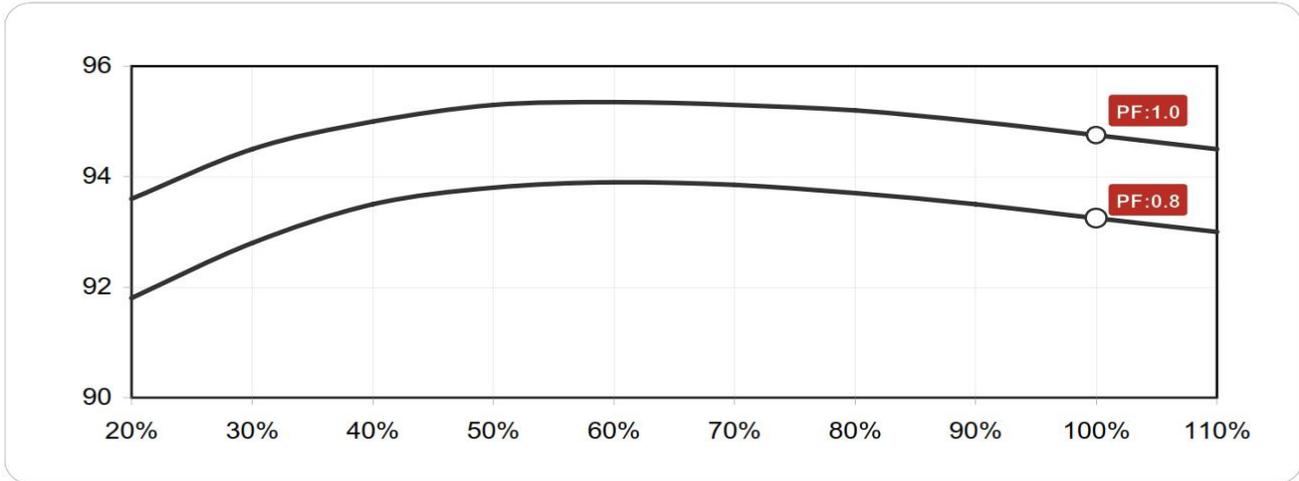
CONT 200 kVA



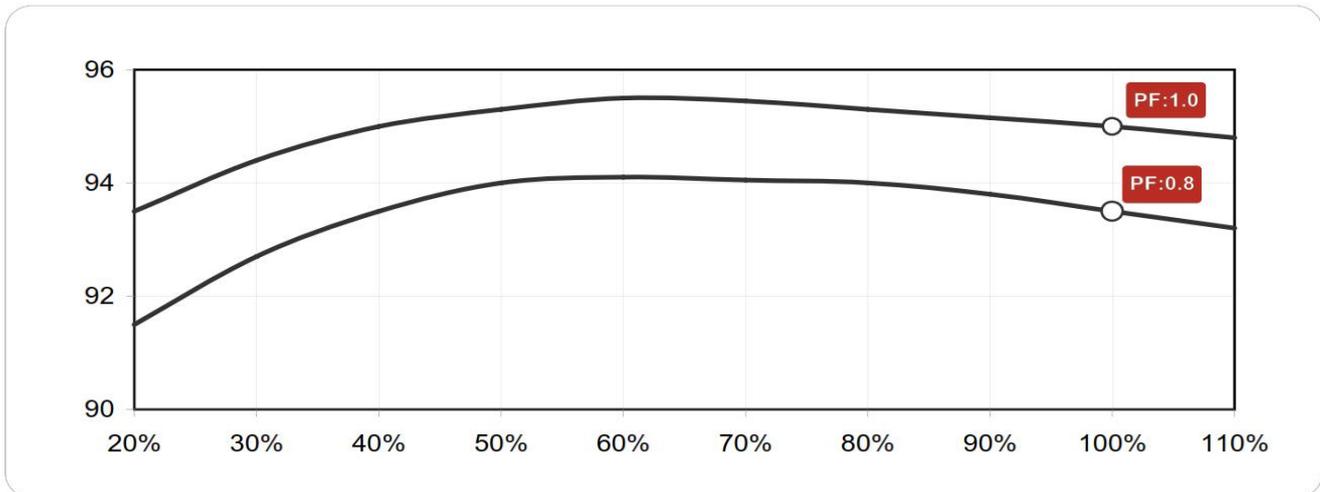


# Efficiency and Motor Starting

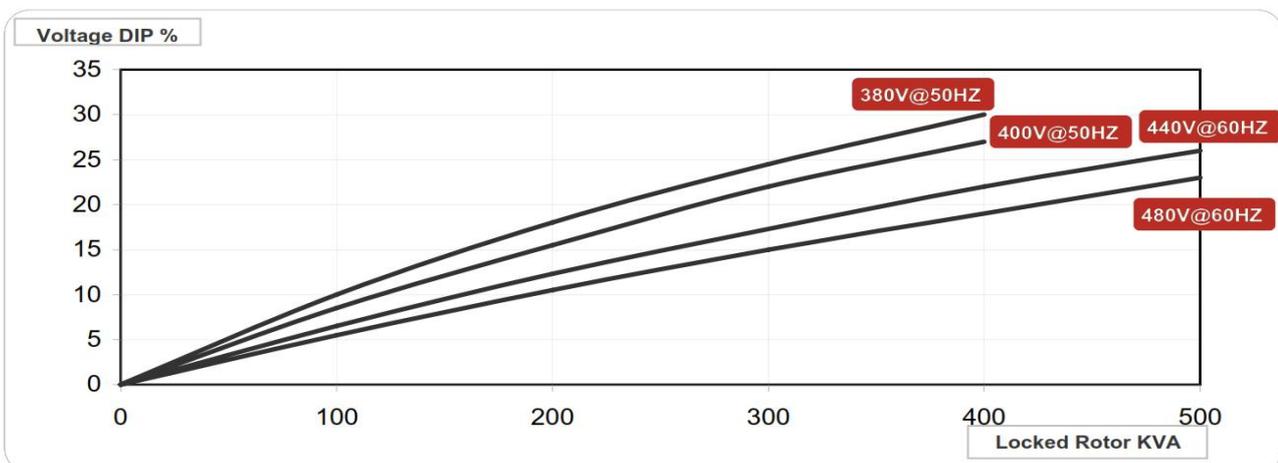
## Efficiency Curve @ 50 Hz, 400V



## Efficiency 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	<b>S</b>	SUSTAINED SHORT-CIRCUIT: NOT AVAILABLE
	ARAP		
	PMG		
AVR	SX460	<b>S</b>	REGULATION PRECISION : +/-1,0 %
	SX440	<b>O</b>	REGULATION PRECISION : +/-1,0 %
	MX341		
	MX321		
WINDING INSULATION	H	<b>S</b>	
	F		
WINDING PITCH	2/3	<b>S</b>	HIGHER FLEXIBILITY IN USE,BETTER MOTOR STARTING ABILITY
	5/6	<b>O</b>	COST-EFFECTIVE POWER SUPPLY SCHEME
WINDING PROTECTION	STANDARD	<b>S</b>	
	"ANTI-HARSH"	<b>O</b>	SPECIAL TREATMENT OF WINDING TO AGINST HASRH ENVIROMENT
	SPACE HEATER	<b>O</b>	TO HEAT UP AIR TO REMOVE THE HUMMINITY AROUND WINDING
	THERMAL SENSOR	<b>O</b>	TO DETECT THE WINDING TEMPERATURE OR BEARING'S
PARALLEL OPERATION	CT100	<b>O</b>	
	CT200		
	CT400		
	CT600		
	CT1000		
WINDING LEADS	12	<b>S</b>	12 LEADS OF WINDING ENDS,
	6	<b>O</b>	6 LEADS OF WINDING ENGS
MACHINE PROCTIION	IP23	<b>S</b>	STANDARD MACHINE PROTECTION
	IP44	<b>O</b>	TO AGINST : 1mm OBJECT AND SPLASHING WATER
	IP54		
POWER FACTOR	1	<b>O</b>	
	0,8	<b>S</b>	
CONNECTION TO ENGINE	SINGLE BEARING	<b>S</b>	
	DOUBLE BEARING	<b>O</b>	
	BELT DRIVE	<b>O</b>	
	VERTICAL		
OVERSPEED		<b>I</b>	MAX ROTATING SPEED : 2250 RPM
ATTITUDE	<=1000m	<b>I</b>	DERATING IS NO NEED
	>1000m	<b>I</b>	DERATING NEEDED, REFERS TO RATING BOOK
ELECTIRICAL FEATRUES	TDF/THC	<b>I</b>	NO LOAD < 1,5 %, NON DISTORATING BALANCED LINEAR LOAD< 5,0 %
	TIF	<b>I</b>	<50
	THF	<b>I</b>	<2%
BEARING	DRIVE -END	<b>I</b>	BALL 6309 - 2RS DOUBLE BEARING CONF. ONLY
	NON DRIVE END	<b>I</b>	BALL 6306 - 2RS
WEIGHT	NET	<b>I</b>	SINGLE BEARING 592 KG    DOUBLE BEARING : 620KG
	GROSS	<b>I</b>	SINGLE BEARING 627 KG    DOUBLE BEARING : 655KG
PACKING SIZE		<b>I</b>	SINGLE B. : 1100 x680x890 mm DOUBLE B. : 1100x680X890mm



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.

#### **Variable 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 bracket 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 dynamically 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