



TA160-10N2

THREE-PHASE SYNCHRONOUS ALTERNATOR

CONT 13.5 kVA

50 Hz / 60 Hz

Rated output at 400 V / 50 Hz, Class H (125/40 °C) continuous

THREE-PHASE SYNCHRONOUS GENERATOR

Datasheet for 4 poles -50Hz @ 1500rpm/ 60Hz @ 1800rpm

Ambient Temperature	40°C	Method of Cooling		Air cooling	
Temperature Rise	125°C	Direction of Rotation		Clockwise	
Insulation Class	H	Maximum Over-speed		2250r/min	
Power Factor	0.8	Degree of Protection / Enclosure		IP23	
Excitation	Brushless	Altitude		1000m	
Winding Pitch	2/3	Stator winding		DLL	
Pole	4	Number of Terminal		12	
Duty	S1- Continuous	Rotor		With damping cage	
Waveform	TIF<50		THF<2%		
Waveform distortion	BS EN 61000-6-2&BS EN 61000-6-4,VDE 0875G,VDE0874N				
Radio interference	Noload<1.5%,Non-distorting balanced linear load<5%				
AVR MODEL AVR	Standard	Selection		PMG	
	SX460	AS440	KRS440		
Voltage Regulation - in steady state condition	±1.0	±1.0	±1.0		
Short Circuit Current Capacity	Control does not sustain a short circuit current				

Electrical Characteristic

Frequency	Hz	50				60			
Voltage (series star) Y	V	380/220	400/231	415/240	440/254	416/240	440/254	460/266	480/277
Voltage (parallel star) YY	V	190/110	200/115	208/120	220/127	208/120	220/127	230/133	240/138
Voltage (series delta) Δ	V	220	230	240	254	240	254	266	277
Rated power at Class H (125° C) temperature rise	kVA	13.5	13.5	13.5	11	16	16.9	16.9	16.9
	kW	10.8	10.8	10.8	8.8	12.8	13.5	13.5	13.5
Efficiency at Class H (P.F.=0.8)	4/4%	80	80.8	81	81.6	80.1	80.2	81	81.5
	3/4%	83	83.2	83.5	83.7	83	83	83.5	83.9
	2/4%	84.1	84.1	84.1	84	84.1	84.1	84.2	84.2
Efficiency at Class H (P.F.=1.0)	4/4%	84	84.7	85	85.6	84	84.1	84.9	85.2
	3/4%	86.5	87	87	87.1	86.4	86.7	87	87.2
	2/4%	87.8	87.8	87.8	87.5	87.5	87.6	87.7	87.6

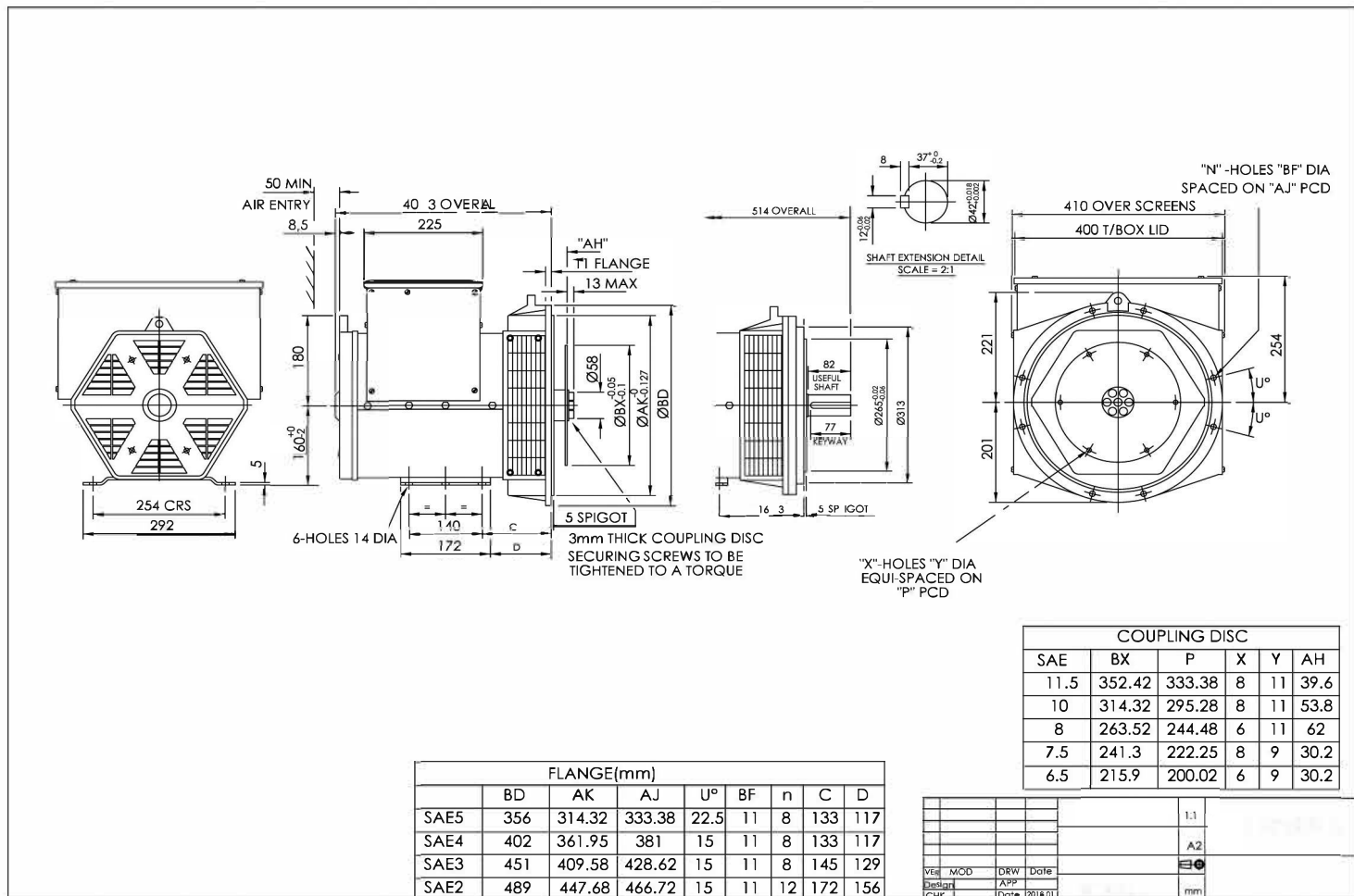
Reactances (%) at Class H

Direct axis synchronous reactance unsaturated	Xd	1.943	1.754	1.629	1.78	2.303	2.174	1.989	1.827
Direct axis transient reactance saturated	X'd	0.198	0.179	0.166	0.182	0.236	0.223	0.204	0.187
Direct axis subtransient reactance saturated	X''d	0.124	0.112	0.104	0.114	0.147	0.139	0.127	0.117
Quadrature axis synchronous reactance unsaturated	Xq	0.966	0.872	0.81	0.885	1.144	1.081	0.989	0.908
Quadrature axis subtransient reactance saturated	X''q	0.223	0.201	0.187	0.204	0.263	0.249	0.228	0.209
Leakage reactance	Xl	0.078	0.07	0.065	0.071	0.092	0.087	0.079	0.073
Negative sequence reactance saturated	X2	0.186	0.168	0.156	0.171	0.221	0.208	0.191	0.175
Zero sequence reactance unsaturated	X0	0.084	0.076	0.071	0.077	0.1	0.094	0.086	0.079
Short-circuit ratio	Kcc	0.5147	0.5701	0.6139	0.5618	0.4342	0.4600	0.5028	0.5473

Short-circuit transient time constant (sec.)	T'd	0.016							
Subtransient time constant (sec.)	T''d	0.004							
Open circuit time constant (sec.)	T'do	0.3							
Armature time constant (sec.)	Ta	0.005							
Stator Winding Resistance (20 °C)	ohm	0.785							
Rotor Winding Resistance (20 °C)	ohm	0.52							
Exciter Stator Resistance (20 °C)	ohm	19							
Exciter Rotor Phase resistance	ohm	0.13							
No load excitation current	io (A)	0.56	0.62	0.64	0.62	0.55	0.57	0.62	0.65
Full load excitation current	ic(A)	1.95	1.9	1.95	1.9	1.88	1.9	1.92	1.92
Cooling air requirement	m ³ /sec	0.071m3/s 150cfm				0.09m3/s 191cfm			

Mechanical Characteristic

Configuration	Single Bearing			Double Bearing		
Type of Construction	B2-SAE			IM B34		
Total Weight - kgs	98			108		
Weight wound stator - kgs	29.5			29.5		
Weight wound rotor - kgs	31.4			32.18		
Inertia (J) [kgm2]	0.117kgm2			0.1171kgm3		
Drive end bearing / Lubrication				BALL.6309-2RS(ISO)		
Non-drive end bearing / Lubrication	BALL.6306-2RS(ISO)			BALL.6306-3RS(ISO)		
Packing crate size (cm)	49X45X58			58X45X57		

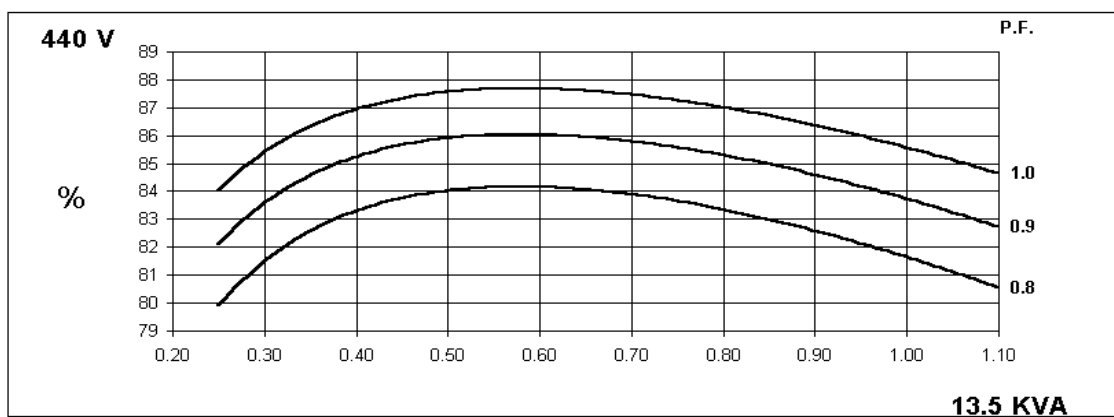
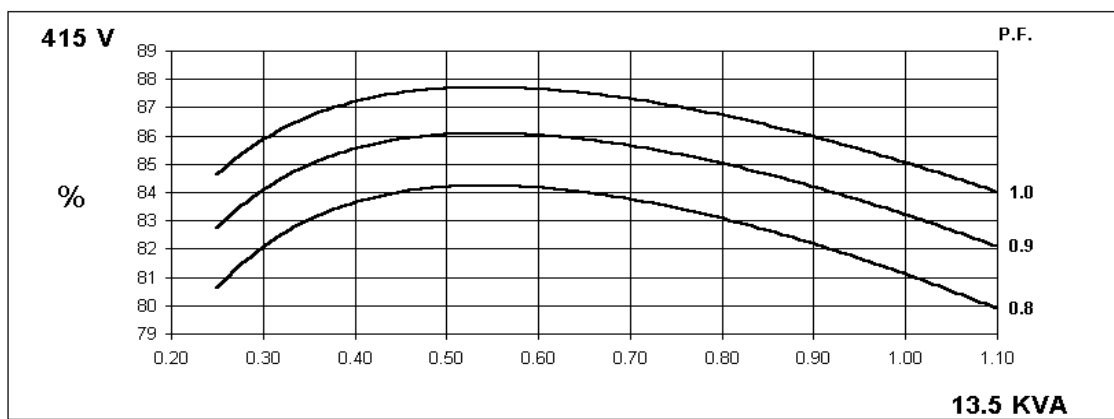
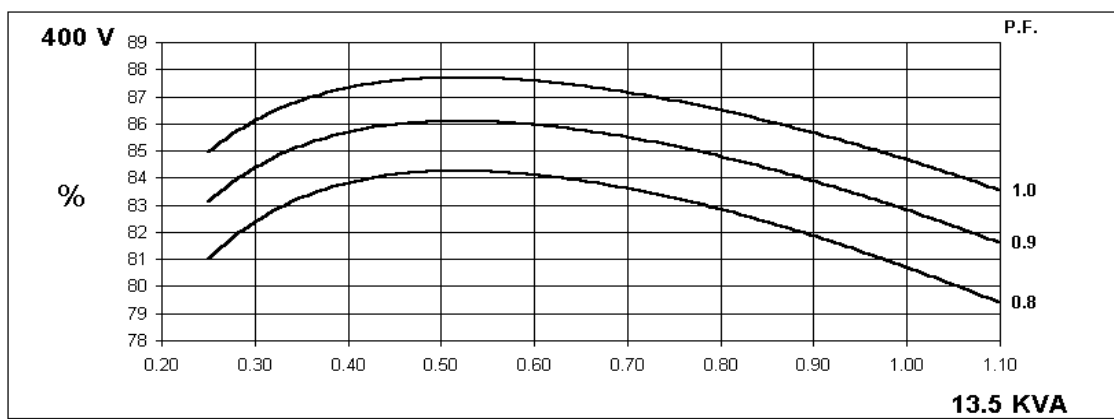
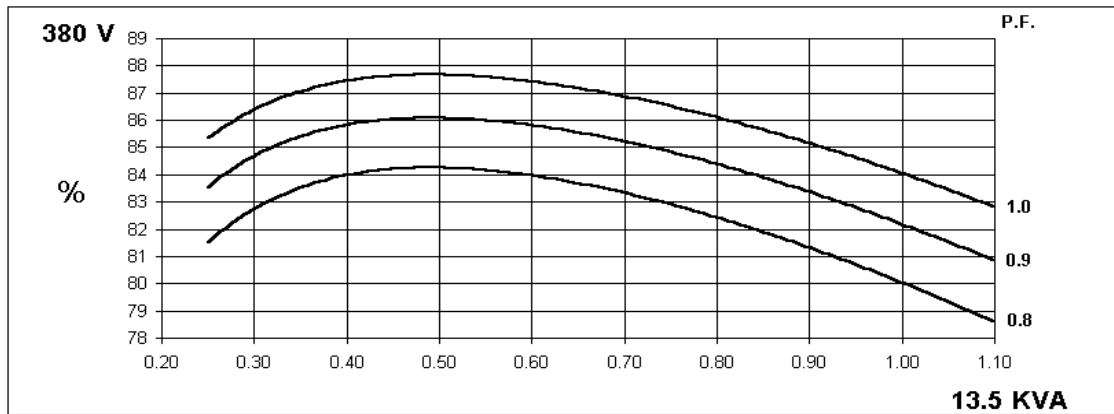


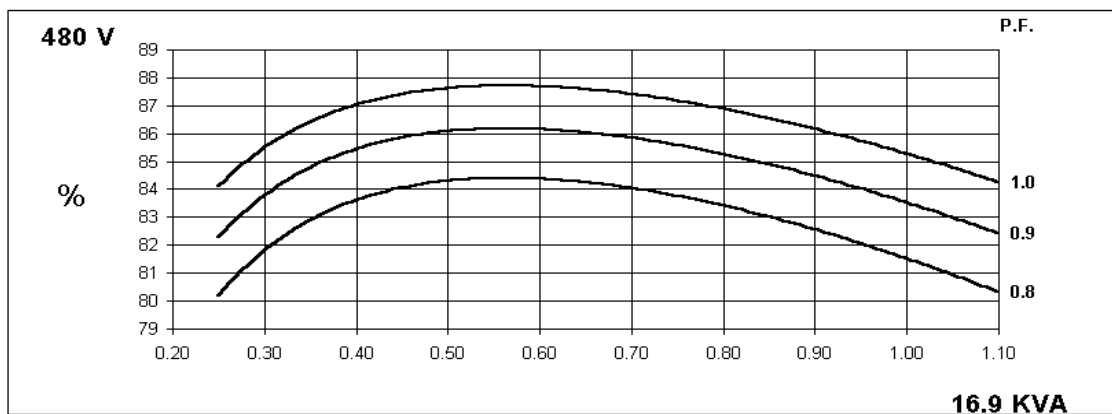
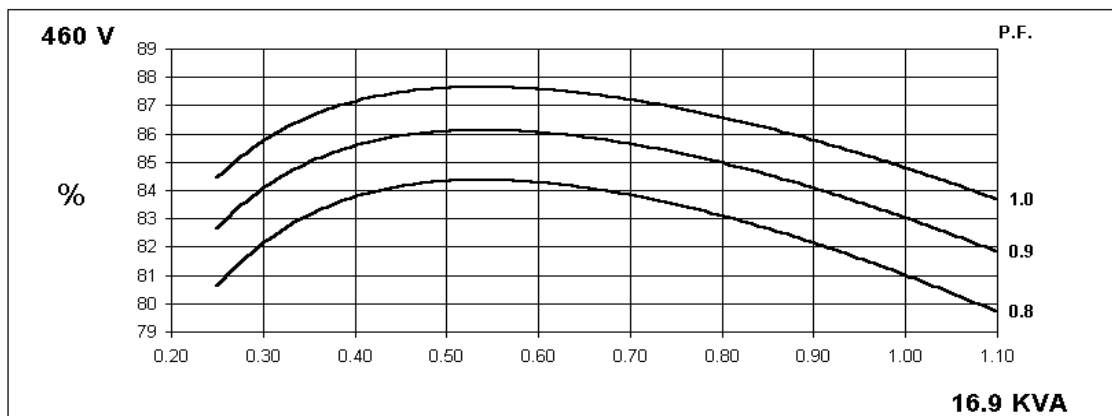
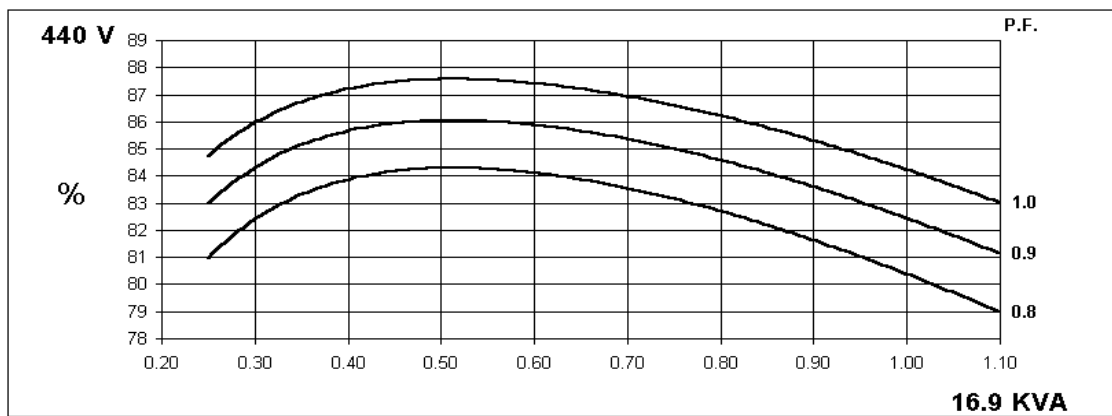
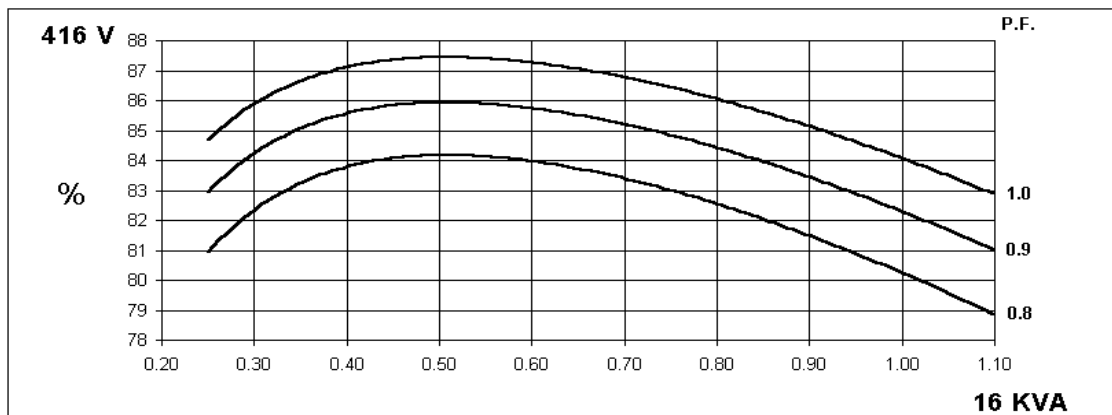
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Hz**

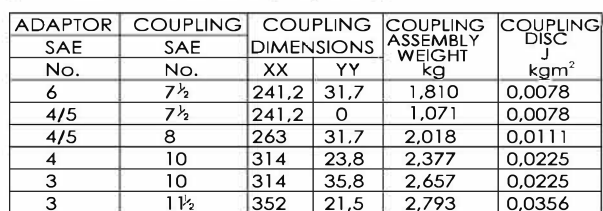
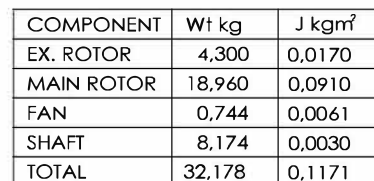
Winding 311

THREE PHASE EFFICIENCY

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TEREX
DIESEL

TEREX ALTERNATOR | TA160-10N2 | CONT 13.5 kVA (400 V / 50 Hz, Class H)

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