

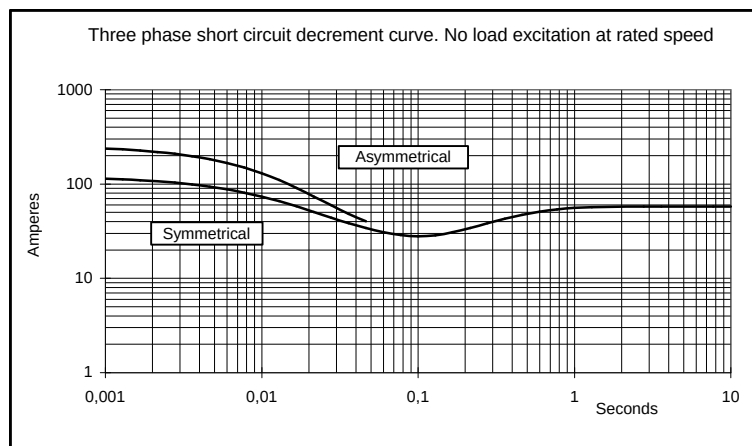
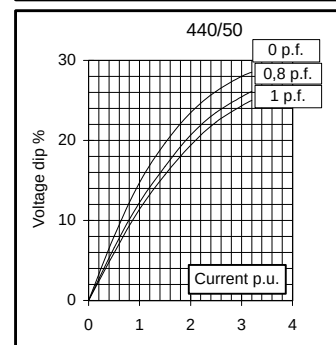
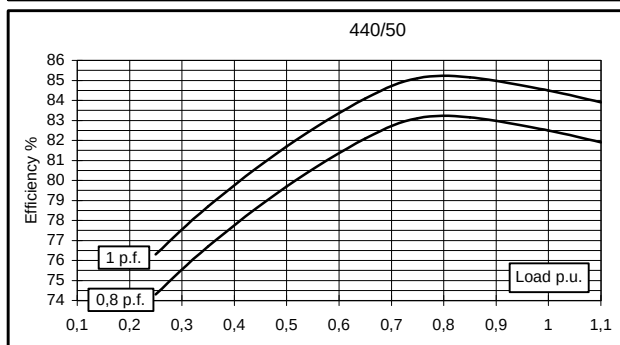
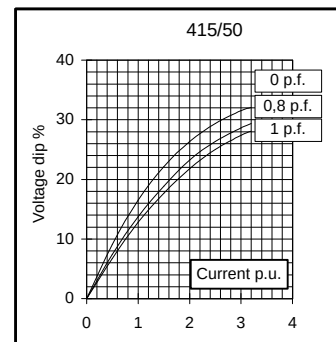
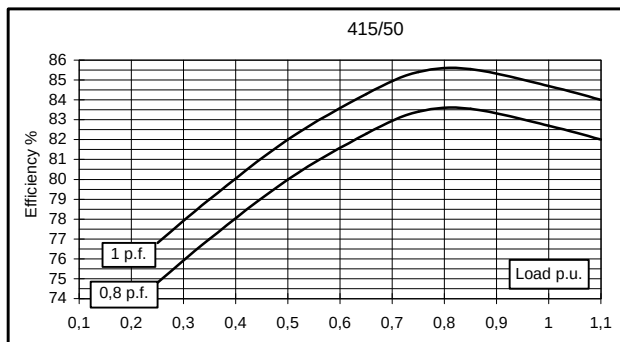
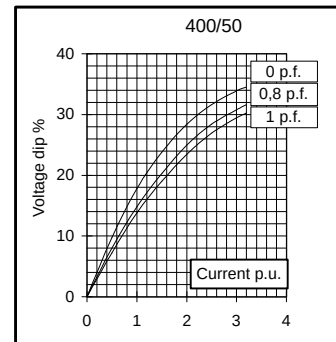
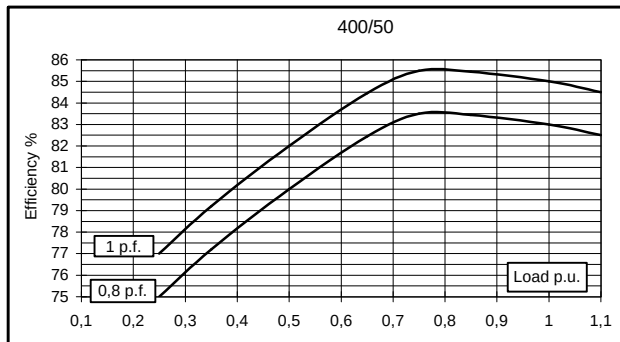
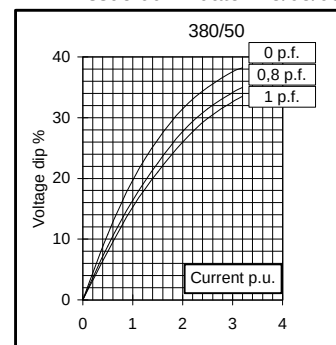
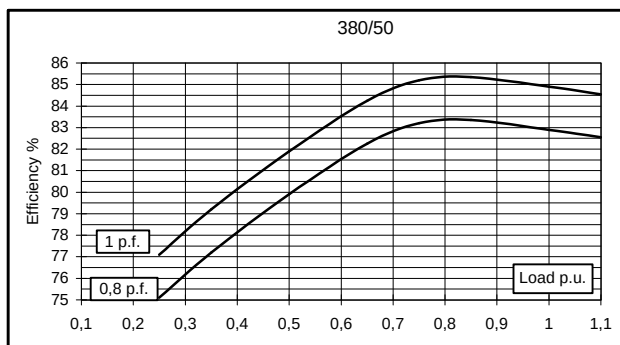
GENERATOR TYPE ECO 3-3S/2

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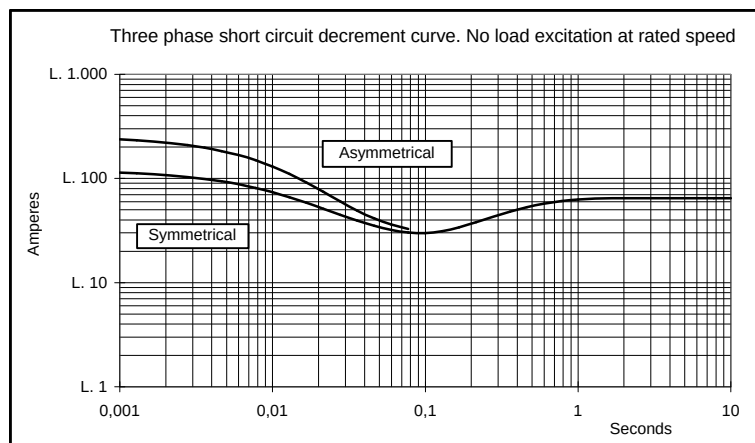
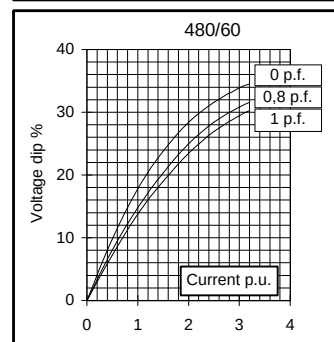
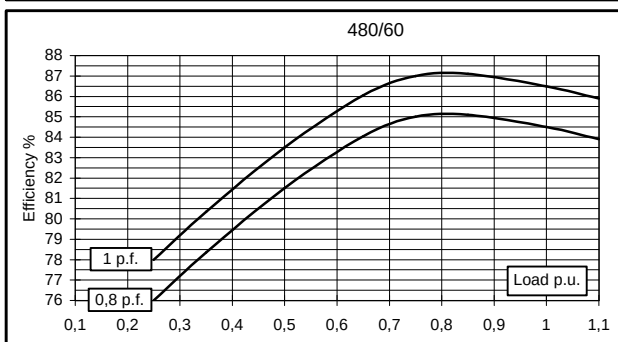
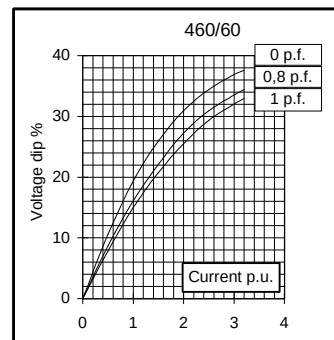
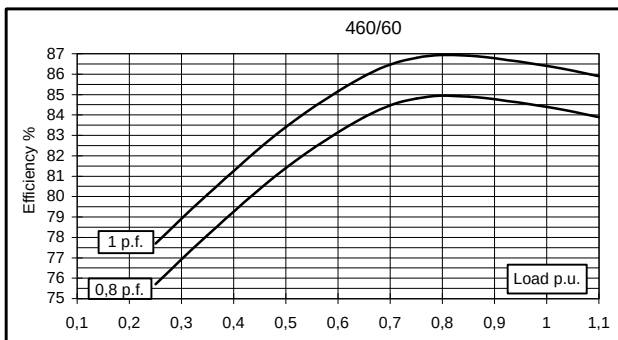
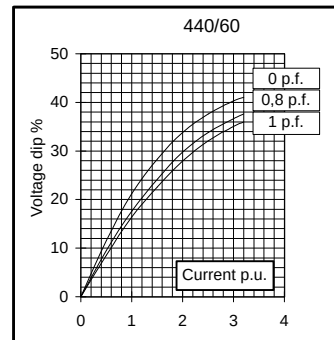
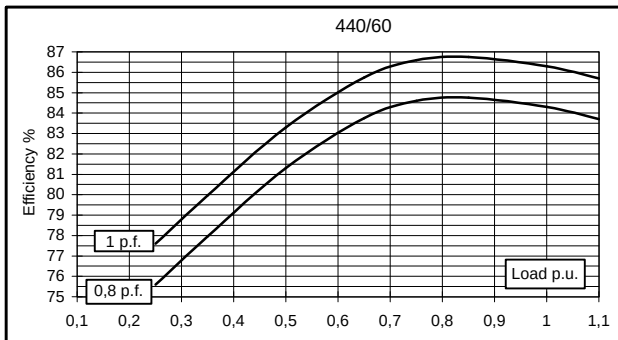
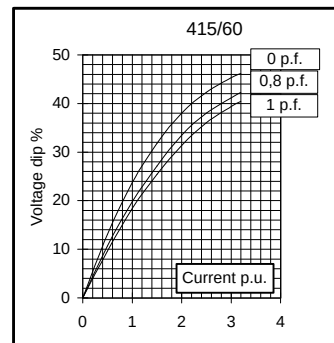
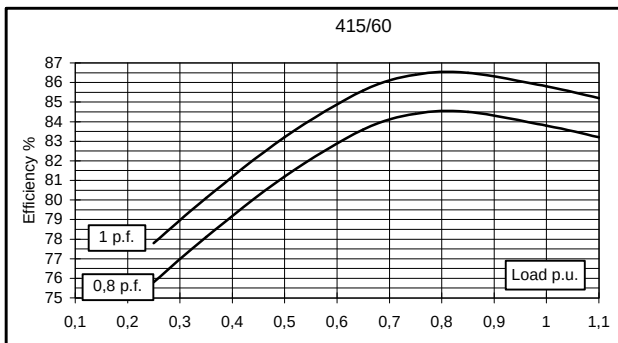
issue 002 date 15/05/2003

Electrical Characteristics										
Frequency		Hz	50				60			
Voltage (star)		V	380	400	415	440	415	440	460	480
Rated power class H		kVA	12,5	12,5	12,5	10,5	13	15	15	15
		kW	10	10	10	8,4	10,4	12	12	12
Rated power class F		kVA	11	11	11	9	10,5	12,3	13	13
		kW	8,8	8,8	8,8	7,2	8,4	9,8	10,4	10,4
Regulation with		SR7/2	±1,5 % with any power factor and speed variations between -5% +30%							
Insulation class			H							
Execution			Brushless							
Stator winding			6 ends							
Rotor			with damping cage							
Efficiencies class H	4/4	%	82,9	83	82,7	82,5	83,8	84,3	84,4	84,5
(see graph. for details)	3/4	%	83,2	83,5	83,4	83,1	84,4	84,6	84,8	85
	2/4	%	79,9	80	80	79,7	81,2	81,3	81,4	81,5
	1/4	%	75,1	75	74,8	74,3	75,8	75,6	75,7	76
Reactances (f. l.cl. F)	Xd	%	243,8	220	204,4	152,7	255,1	261,8	239,5	220
	Xd'	%	33,02	29,8	27,68	20,69	34,55	35,46	32,45	29,8
	Xd''	%	16,51	14,9	13,84	10,34	17,28	17,73	16,22	14,9
	Xq	%	108,6	98	91,0	68,0	113,6	116,6	106,7	98
	Xq'	%	108,6	98	91,0	68,0	113,6	116,6	106,7	98
	Xq''	%	37,3	33,7	31,3	23,4	39,1	40,1	36,7	33,7
	X ₂	%	17,73	16	14,86	11,11	18,55	19,04	17,42	16
	X ₀	%	7,09	6,4	5,95	4,44	7,42	7,62	6,97	6,4
Short Circuit Ratio	Kcc		0,39	0,51	0,72	1,34	0,26	0,34	0,39	0,51
Time Constants	Td'	sec.	0,043							
	Td''	sec.	0,01							
	Tdo'	sec.	0,65							
	Tα	sec.	0,009							
Short Circuit Current Capacity		%	>300				>320			
Excitation at no load	Amp.		0,3	0,32	0,35	0,4	0,2	0,24	0,26	0,3
Excitation at full load	Amp.		1,2	1,22	1,3	1,4	0,9	1	1,1	1,2
Overload (long-term)		%	1 hour in a 6 hours period 110% rated load							
Overload per 20 sec.		%	300							
Stator Winding Resistance (20°C)		Ω	0,678							
Rotor Winding Resistance (20°C)		Ω	8,238							
Exciter Resistance (20 °C)		Ω	Rotor : 1,453				Stator : 15,71			
Heat dissipation at f.l.cl.H	W		2063	2048	2092	1782	2011	2235	2218	2201
Telephone Interference			THF < 2 %				TIF < 45			
Radio interference			EN50081-1, EN50082-1, VDE0875K. For others standards apply to factory							
Waveform Distors.(THD) at f. load	LL/LN %		4,7 / 4,5							
Waveform Distors.(THD) at no load	LL/LN %		4 / 4							
Mechanical characteristics										
Protection			IP 23 (other protection on request)							
DE bearing			6308-2RS							
NDE bearing			6305-2RS							
Weight of wound stator assembly	kg		21,2							
Weight of wound rotor assembly	kg		11,5							
Weight of complete generator	kg		69							
Maximun overspeed	rpm		4500							
Unbalanced magnetic pull at f.l.cl.F	kN/mm		2,8							
Cooling air requirement	m³/min		6,2				7,8			
Inertia Constant (H)	sec.		0,254				0,305			
Noise level at 1m/7m	dB(A)		85 / 70				89 / 73			

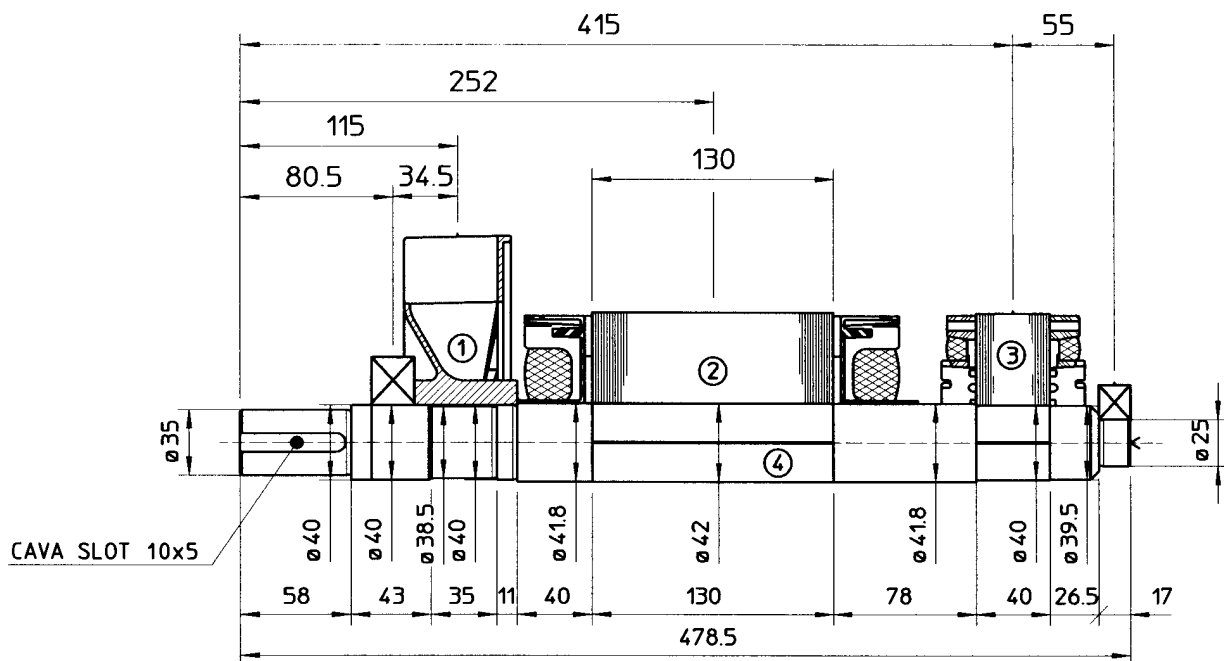
50 Hz



60 Hz

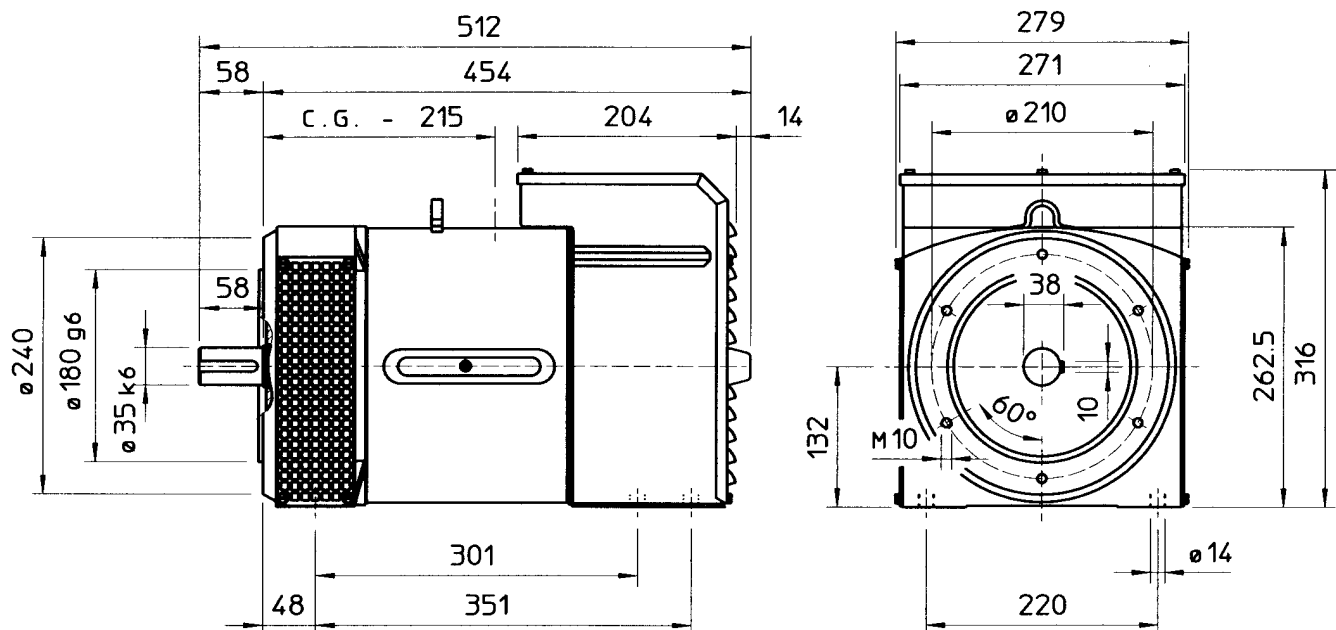


TWO BEARING MOMENTS OF INERTIA



COMPONENT	WEIGHT Kg	J Kg ^{m²}
1 FAN	0.93	0.0036
2 MAIN ROTOR	12.42	0.029
3 EX ROTOR	4.12	0.011
4 SHAFT	4.7	0.00097
6 TOTAL	22.17	0.04457

TWO BEARING DIMENSIONS



Technical drawing of a shaft assembly. The drawing shows a shaft with various components and dimensions. Key dimensions include:

- Overall length: 421.2
- Distance from left end to center of component 1: 258.2
- Distance from left end to center of component 2: 120.7
- Distance from left end to center of component 3: 130
- Distance from left end to center of component 4: 55
- Distance from left end to center of component 5: 15
- Distance from left end to center of component 6: 99.2
- Distance from left end to center of component 7: 43
- Distance from left end to center of component 8: 8
- Distance from left end to center of component 9: 43
- Distance from left end to center of component 10: 130
- Distance from left end to center of component 11: 78
- Distance from left end to center of component 12: 40
- Distance from left end to center of component 13: 26.5
- Distance from left end to center of component 14: 17
- Distance from left end to center of component 15: 499.7

Labels and components:

- SPACER**: Label for component 5.
- 1**, **2**, **3**, **4**, **5**, **6**, **7**, **8**, **9**, **10**, **11**, **12**, **13**, **14**, **15**: Component numbers.
- B**: Label for component 1.
- Ø 22**: Dimension for component 5.
- Ø 49.8**, **Ø 48.4**, **Ø 50**, **Ø 41.8**, **Ø 42**, **Ø 41.8**, **Ø 40**, **Ø 39.5**, **Ø 25**: Shaft diameters at various points.

SAE N.	5	SHAFT COUPLING FLEX PLATE	
	B (mm)	WEIGHT kg	J kgm ²
6 1/2	4	1.14	0.0067
7 1/2	4	1.42	0.0103
8	35.6	1.97	0.0171
10	27.6	2.59	0.0319
11 1/2	14	3.1	0.0461

[illegible][illegible]

GIUNTI A DISCO COUPLING DISC PLATEX DISQUE DE MONOPALIER SCHEIBENKUPPLUNG JUNTAS A DISCOS							
SAE N.	L	d	Q1	n. fori	S1	α_1	
6 1/2	30.2	215.9	200	6	9	60°	
7 1/2	30.2	241.3	222.25	8	9	45°	
8	62	263.52	244.47	6	11	60°	
10	53.8	314.32	295.27	8	11	45°	
11 1/2	39.6	352.42	333.37	8	11	45°	

C.G. = GRAVITY CENTER