

QYI184H

THREE-PHASE SYNCHRONOUS GENERATOR WINDING QY311 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				IP22			
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			
	KR620	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	37.5	37.5	37.5	32.5	44.3	46.9	46.9	46.9
	kW	30.0	30.0	30.0	26.0	35.4	37.5	37.5	37.5
Efficiency at Class H (P.F.=0.8)	4/4%	86.1	86.6	87	87.1	86.1	86.2	86.8	87
	3/4%	88	88.1	88.1	88.1	87.9	88	88	88.1
	2/4%	88.2	88.2	88.1	88	88	88.1	88	88
Efficiency at Class H (P.F.=1.0)	4/4%	89	89.4	89.9	90	89	89	89.3	89.9
	3/4%	90.5	90.8	90.9	91	90.1	90.4	90.7	90.8
	2/4%	91	90.9	90.9	90.8	90.5	90.7	90.7	90.5
Reactances (%) at Class H									
Direct axis synchronous reactance unsaturated	X _d	2.216	2	1.858	1.907	2.515	2.38	2.178	2
Direct axis transient reactance saturated	X' _d	0.168	0.152	0.141	0.145	0.191	0.181	0.166	0.152
Direct axis subtransient reactance saturated	X'' _d	0.092	0.083	0.077	0.08	0.104	0.099	0.09	0.083
Quadrature axis synchronous reactance unsaturated	X _q	1.071	0.967	0.898	0.922	1.216	1.151	1.053	0.967
Quadrature axis subtransient reactance saturated	X'' _q	0.187	0.169	0.157	0.162	0.213	0.201	0.184	0.169
Leakage reactance	X _l	0.069	0.062	0.058	0.059	0.078	0.074	0.068	0.062
Negative sequence reactance saturated	X ₂	0.141	0.127	0.118	0.121	0.16	0.151	0.138	0.127
Zero sequence reactance unsaturated	X ₀	0.033	0.03	0.028	0.029	0.038	0.036	0.033	0.03
Short-circuit ratio	K _{cc}	0.4513	0.5000	0.5382	0.5244	0.3976	0.4202	0.4591	0.5000
Short-circuit transient time constant (sec.)	T' _d					0.24			
Subtransient time constant (sec.)	T'' _d					0.015			
Open circuit time constant (sec.)	T' _{do}					0.57			
Armature time constant (sec.)	T _a					0.01			
Stator Winding Resistance (20℃)	ohm					0.171			
Rotor Winding Resistance (20℃)	ohm					0.87			
Exciter Stator Resistance (20℃)	ohm					24			
Exciter Rotor Phase resistance	ohm					0.12			
No load excitation current	i _o (A)	0.6	0.62	0.64	0.62	0.55	0.57	0.63	0.65
Full load excitation current	i _c (A)	2	2.2	2.3	2	2	2.2	2.3	2.3
Cooling air requirement	m ³ /sec	0.095m3/s 200cfm				0.119m3/s 250cfm			
Mechanical Characteristic									
Configuration	Single Bearing				Double Bearing				
Type of Construction	B2-SAE				IM B34				
Total Weight - kgs	188				192				
Weight wound stator - kgs	70				70				
Weight wound rotor - kgs	72.33				69.12				
Inertia (J) [kgm2]	0.2763kgm2				0.2706kgm3				
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)	70X49X70				80X50X70				

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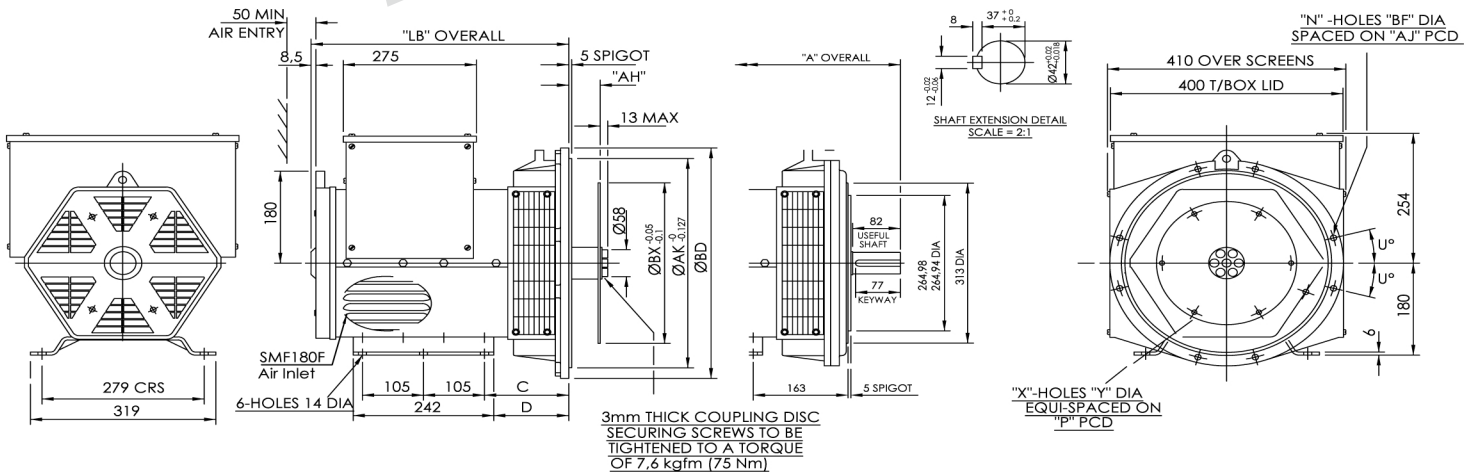
Winding 311 / 0.8 Power Factor

RATINGS

Class - Temp Rise		Cont. F - 105/40°C				Cont. H - 125/40°C				Standby - 150/40°C				Standby - 163/27°C			
50 Hz	Series Star (V)	380	400	415	440	380	400	415	440	380	400	415	440	380	400	415	440
	Parallel Star (V)	190	200	208	220	190	200	208	220	190	200	208	220	190	200	208	220
	Series Delta (V)	220	230	240	254	220	230	240	254	220	230	240	254	220	230	240	254
	kVA	34.4	34.4	34.4	29.8	37.5	37.5	37.5	32.5	N/A				N/A			
kW	27.5	27.5	27.5	23.8	30.0	30.0	30.0	26.0									
Efficiency (%)	86.9	87.2	87.4	87.7	86.2	86.6	86.9	87.2									
kW Input	31.7	31.6	31.5	31.4	34.8	34.6	34.5	34.4									

60 Hz	Series Star (V)	416	440	460	480	416	440	460	480	416	440	460	480	416	440	460	480
	Parallel Star (V)	208	220	230	240	208	220	230	240	208	220	230	240	208	220	230	240
	Series Delta (V)	240	254	266	277	240	254	266	277	240	254	266	277	240	254	266	277
	kVA	40.7	43.0	43.0	43.0	44.3	46.9	46.9	46.9	N/A				N/A			
kW	32.6	34.4	34.4	34.4	35.4	37.5	37.5	37.5									
Efficiency (%)	86.8	86.9	87.3	87.5	86.2	86.3	86.7	87.0									
kW Input	37.5	39.6	39.4	39.3	41.1	43.5	43.3	43.1									

DIMENSIONS



DIMENSIONS(mm)			WEIGHE	
SAE	TYPE	LB	KG	
SAE 4/5	QYI 184ES	431	114	
	QYI 184E	431	130	
	QYI 184F	521	147	
	QYI 184G	521	169	
	QYI 184H	581	183	
	QYI 184J	581	194	

COUPLING DISC					
SAE	BX	P	X	Y	AH
11.5	352.42	333.38	8	11	39.6
10	314.32	295.28	8	11	53.8
8	263.52	244.48	6	11	62
7.5	241.3	222.25	8	9	30.2
6.5	215.9	200.02	6	9	30.2

DIMENSIONS(mm)			WEIGHE		2-BRG
SAE	TYPE	LB	kg	A	
SAE 2	QYI 184H	620.5	183	703.5	
	QYI 184J	620.5	194	703.5	
SAE 3	QYI 184H	593	185		
	QYI 184J	593	195		

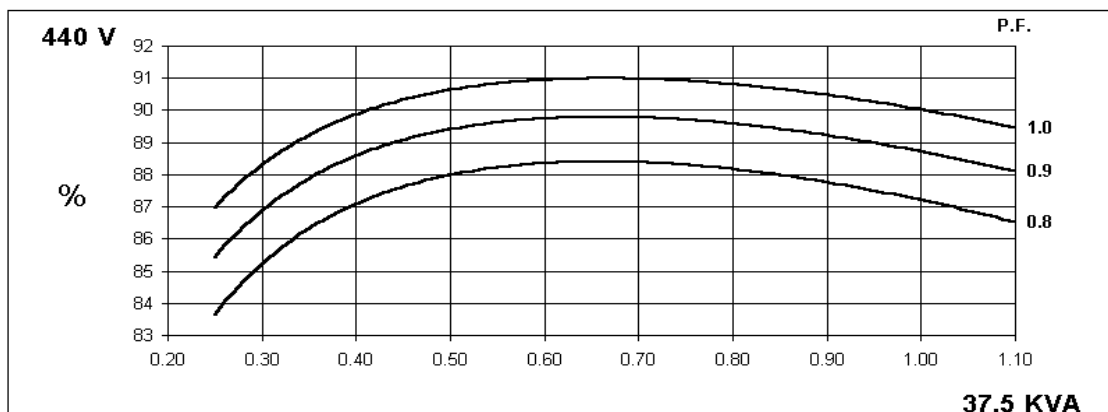
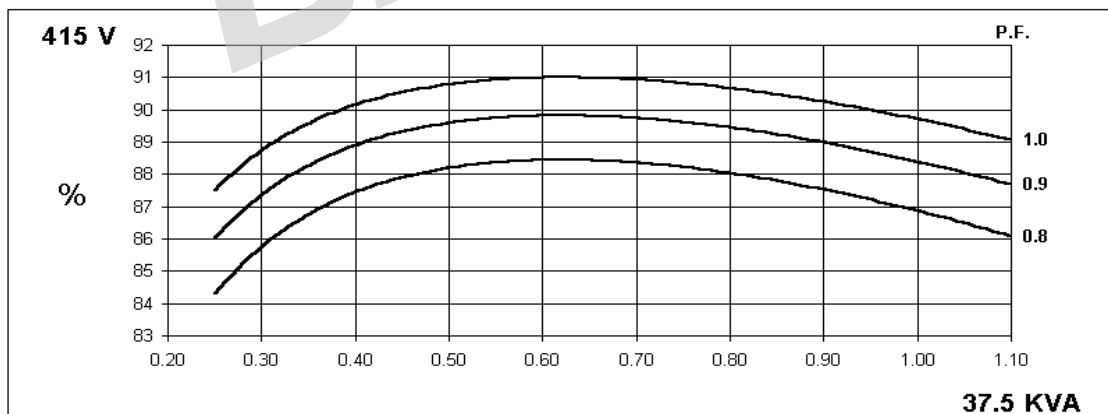
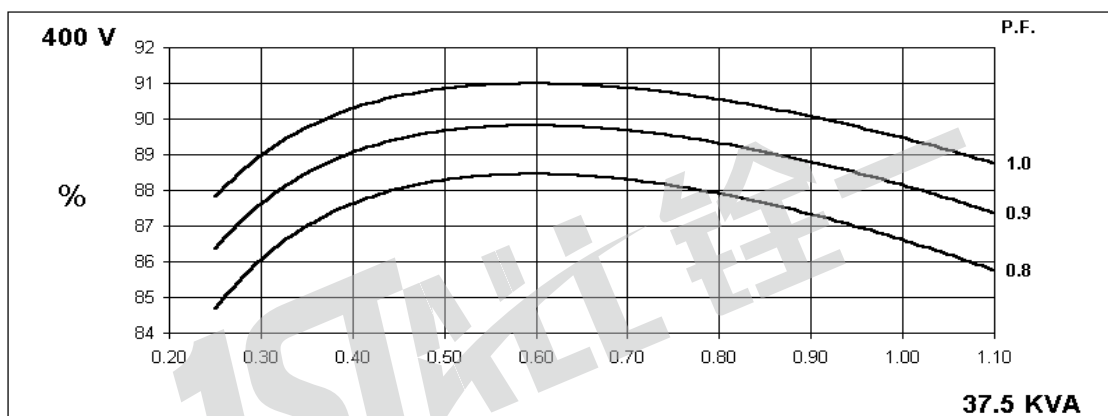
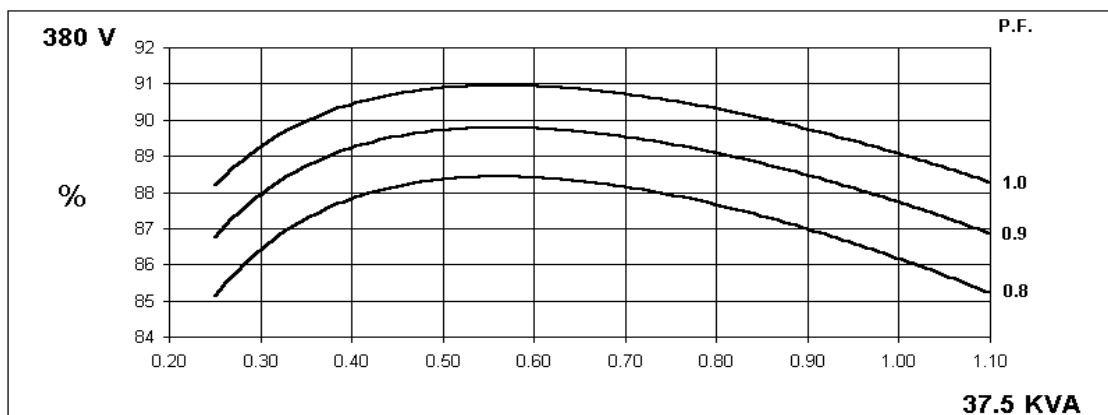
FLANGE(mm)								
	BD	AK	AJ	U°	BF	n	C	D
SAE5	356	314.32	333.38	22.5	11	8	133	117
SAE4	402	361.95	381	15	11	8	133	117
SAE3	451	409.58	428.62	15	11	8	145	129
SAE2	489	447.68	466.72	15	11	12	172	156

				QYI 184HJ	1:1	QT002Z031
					A2	
VER	MOD	DRW	Date			
Design		APP	Date			
			2018.01	G8/T1804-m	mm	

**50
Hz**

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Winding 311

THREE PHASE EFFICIENCY CURVES



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**60
Hz**

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