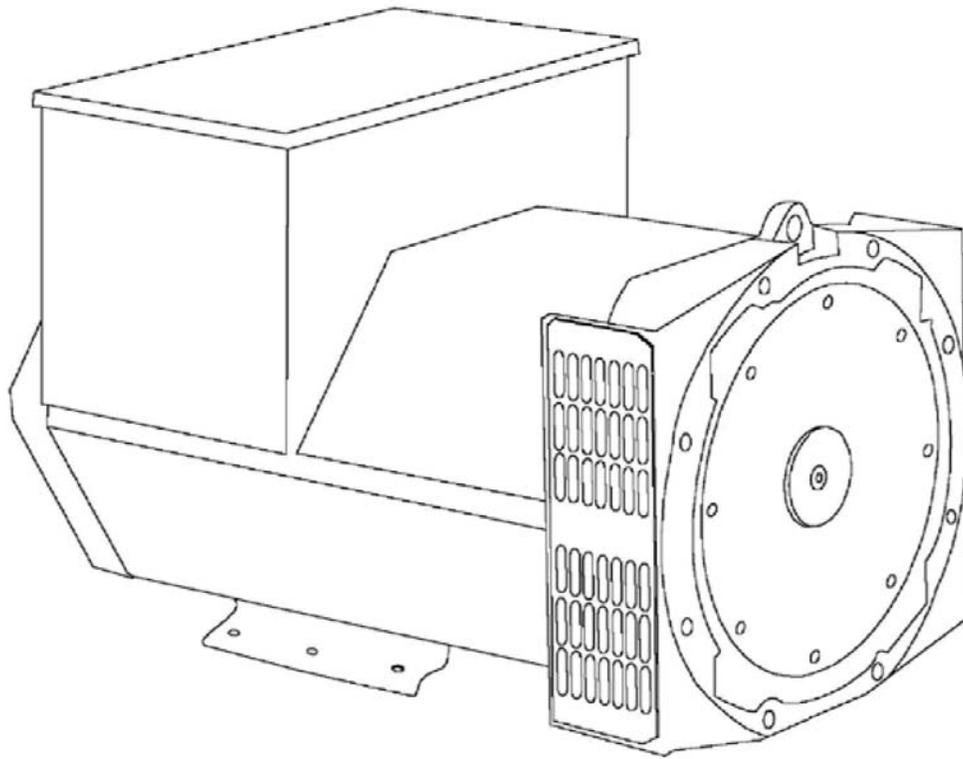


DG184G - Technical Data Sheet Winding 06



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DG184G SPECIFICATIONS & OPTIONS

STANDARDS

Dingol industrial generators meet the requirements of BS EN 60034 and the relevant section of other international standards such as BS5000, VDE 0530, NEMA MG1-32, IEC34, CSA C22.2-100, AS1359. Other standards and certifications can be considered on request.

VOLTAGE REGULATORS SX460 AVR - STANDARD

With this self excited control system the main stator supplies power via the Automatic Voltage Regulator (AVR) to the exciter stator. The high efficiency semiconductors of the AVR ensure positive build-up from initial low levels of residual voltage.

The exciter rotor output is fed to the main rotor through a three phase full wave bridge rectifier. This rectifier is protected by a surge suppressor against surges caused, for example, by short circuit.

AS440 AVR

With this self-excited system the main stator provides power via the AVR to the exciter stator. The high efficiency semi-conductors of the AVR ensure positive build-up from initial low levels of residual voltage.

The exciter rotor output is fed to the main rotor through a three-phase full-wave bridge rectifier. The rectifier is protected by a surge suppressor against surges caused, for example, by short circuit or out-of-phase paralleling. The AS440 will support a range of electronic accessories, including a 'droop' Current Transformer (CT) to permit parallel operation with other ac generators.

WINDINGS & ELECTRICAL PERFORMANCE

All generator stators are wound to 2/3 pitch. This eliminates triplen (3rd, 9th, 15th ...) harmonics on the voltage waveform and is found to be the optimum design for trouble free supply of non-linear loads. The 2/3 pitch design avoids excessive neutral currents sometimes seen with higher winding pitches, when in parallel with the mains. A fully connected damper winding reduces oscillations during paralleling. This winding, with the 2/3 pitch and carefully selected pole and tooth designs, ensures very low waveform distortion.

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TERMINALS & TERMINAL BOX

Dedicated Single Phase generators have 4 ends brought out to the terminals, which are mounted on a cover at the non-drive end of the generator. A sheet steel terminal box contains the AVR and provides ample space for the customers' wiring and gland arrangements. It has removable panels for easy access.

SHAFT & KEYS

All generator rotors are dynamically balanced to better than BS6861:Part 1 Grade 2.5 for minimum vibration in operation. Two bearing generators are balanced with a half key.

INSULATION/IMPREGNATION

The insulation system is class 'H'.

All wound components are impregnated with materials and processes designed specifically to provide the high build required for static windings and the high mechanical strength required for rotating components.

QUALITY ASSURANCE

Generators are manufactured using production procedures having a quality assurance level to BS EN ISO 9001. The stated voltage regulation may not be maintained in the presence of certain radio transmitted signals. Any change in performance will fall within the limits of Criteria 'B' of EN 61000-6-2:2001. At no time will the steady-state voltage regulation exceed 2%.

DE RATES

All values tabulated on page 7 are subject to the following reductions

5% when air inlet filters are fitted.

3% for every 500 metres by which the operating altitude exceeds 1000 metres above mean sea level.

3% for every 5°C by which the operational ambient temperature exceeds 40°C.

Note: Requirement for operating in an ambient exceeding 60°C must be referred to the factory.

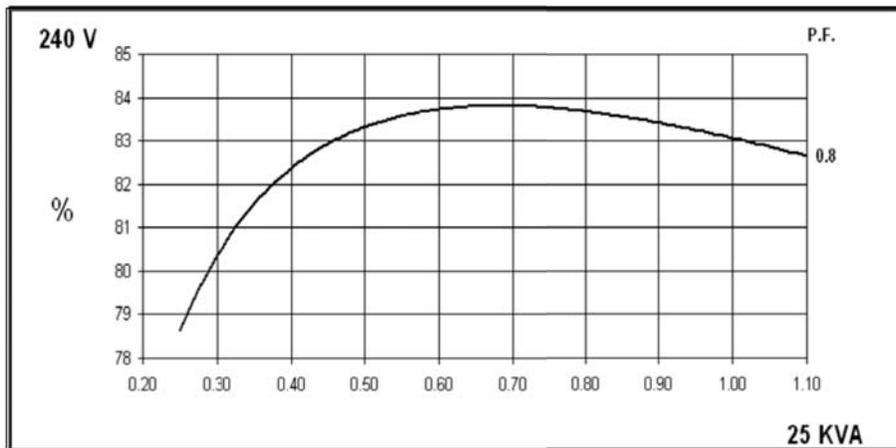
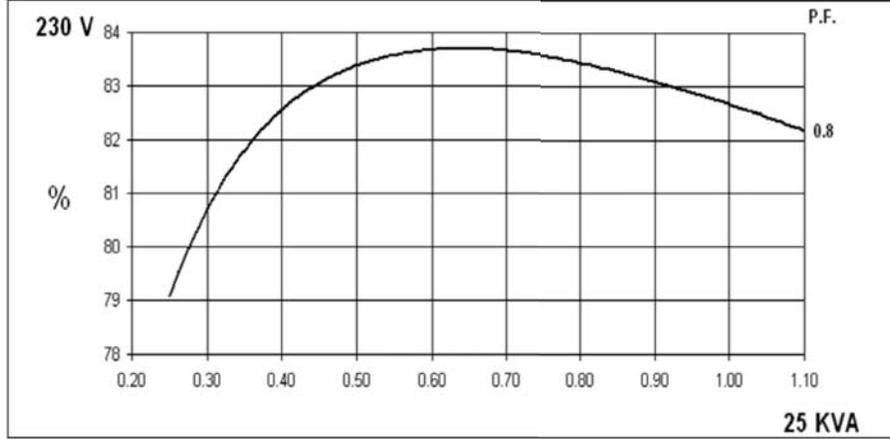
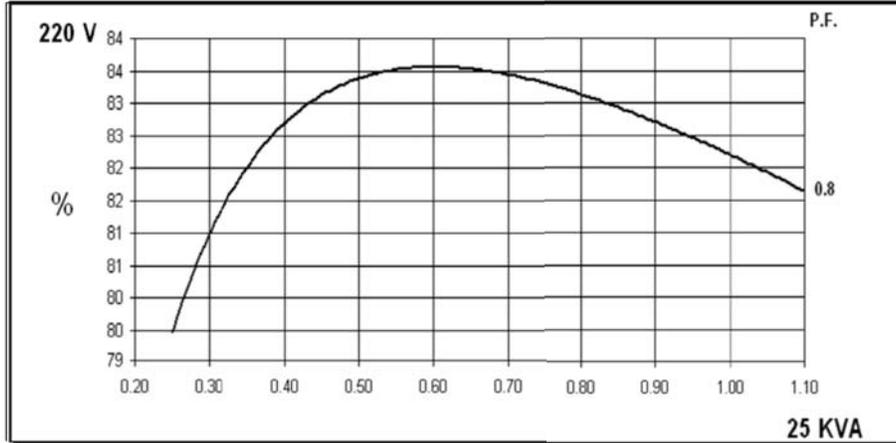
NB Continuous development of our products entitles us to change specification details without notice, therefore they must not be regarded as binding.

DG184G WINDING 06

CONTROL SYSTEM	SELF EXCITED					
A.V.R.	STANDARD SX460		OPTIONAL AS440			
VOLTAGE REGULATION	± 1.0 %		± 1.0 %			
SUSTAINED SHORT CIRCUIT	SELF EXCITED MACHINES DO NOT SUSTAIN A SHORT CIRCUIT CURRENT					
INSULATION SYSTEM	CLASS H					
PROTECTION	IP23					
RATED POWER FACTOR	0.8					
STATOR WINDING	SINGLE LAYER CONCENTRIC					
WINDING PITCH	TWO THIRDS					
WINDING LEADS	4					
MAIN STATOR RESISTANCE	0.07 Ohms AT 22°C SERIES CONNECTED					
MAIN ROTOR RESISTANCE	0.83 Ohms at 22°C					
EXCITER STATOR RESISTANCE	22 Ohms at 22°C					
EXCITER ROTOR RESISTANCE	0.115 Ohms PER PHASE AT 22°C					
R.F.I. SUPPRESSION	BS EN 61000-6-2 & BS EN 61000-6-4, VDE 0875G, VDE 0875N. refer to factory for others					
WAVEFORM DISTORTION	NO LOAD < 1.5% NON-DISTORTING LINEAR LOAD < 5.0%					
MAXIMUM OVERSPEED	2250 Rev/Min					
BEARING DRIVE END	BALL. 6309-2RS (ISO)					
BEARING NON-DRIVE END	BALL. 6306-2RS (ISO)					
	1 BEARING			2 BEARING		
WEIGHT COMP. GENERATOR	167 kg			170 kg		
WEIGHT WOUND STATOR	64.3 kg			64.3 kg		
WEIGHT WOUND ROTOR	55.98 kg			56.76 kg		
WR INERTIA	0.22 kgm ²			0.22 kgm ²		
SHIPPING WEIGHTS in a crate	177 kg			180 kg		
PACKING CRATE SIZE	84 x 59 x 75(cm)			84 x 59 x 75(cm)		
TELEPHONE INTERFERENCE	THF < 2%			TIF < 50		
COOLING AIR	0.119 m ³ /sec 250 cfm					
VOLTAGE SERIES	220		230		240	
VOLTAGE PARALLEL	110		115		120	
POWER FACTOR	0.8	1.0	0.8	1.0	0.8	1.0
KVA BASE RATING FOR REACTANCE VALUES	25	30	25	30.8	25	33
X _d DIR. AXIS SYNCHRONOUS	1.450	1.740	1.327	1.635	1.219	1.609
X' _d DIR. AXIS TRANSIENT	0.149	0.179	0.136	0.168	0.125	0.165
X'' _d DIR. AXIS SUBTRANSIENT	0.093	0.112	0.085	0.105	0.078	0.103
X _q QUAD. AXIS REACTANCE	0.715	0.858	0.655	0.807	0.601	0.793
X'' _q QUAD. AXIS SUBTRANSIENT	0.158	0.190	0.144	0.177	0.132	0.174
X _L LEAKAGE REACTANCE	0.058	0.070	0.053	0.065	0.049	0.065
X ₂ NEGATIVE SEQUENCE	0.139	0.167	0.128	0.158	0.117	0.154
X ₀ ZERO SEQUENCE	0.062	0.074	0.057	0.070	0.052	0.069
REACTANCES ARE SATURATED			VALUES ARE PER UNIT AT RATING AND VOLTAGE INDICATED			
T' _d TRANSIENT TIME CONST.	0.024s					
T'' _d SUB-TRANSTIME CONST.	0.006s					
T' _{do} O.C. FIELD TIME CONST.	0.55s					
T _a ARMATURE TIME CONST.	0.007s					
SHORT CIRCUIT RATIO	1/X _d					

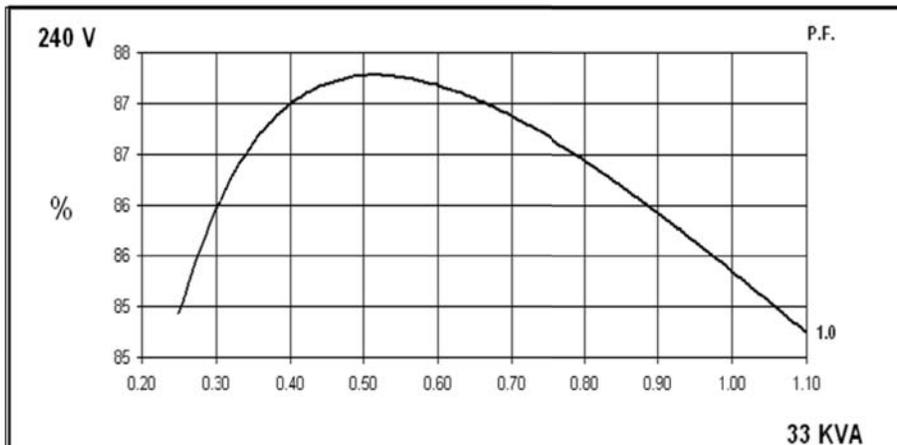
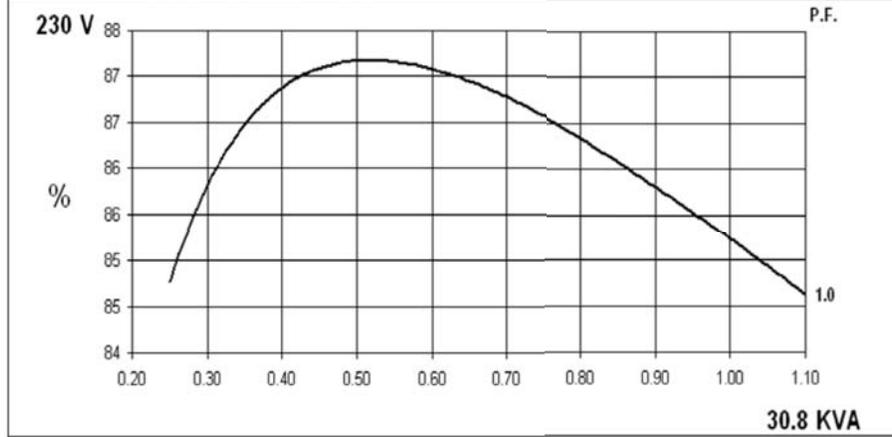
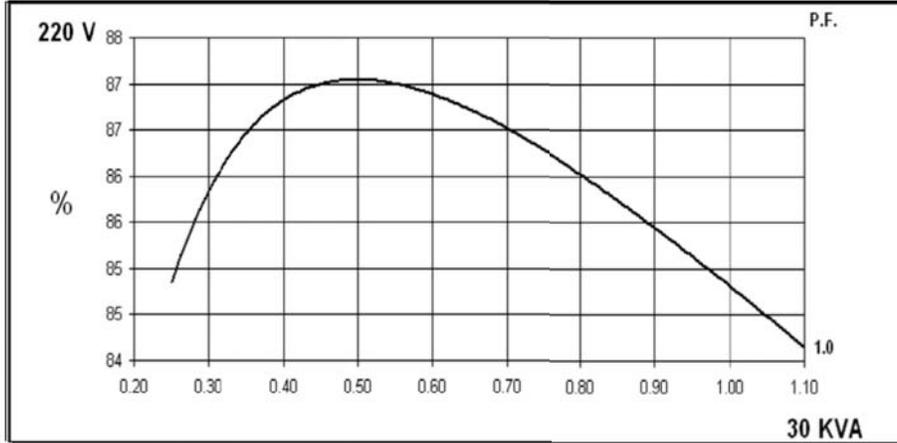
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DG184G
Winding 06 / 0.8pf
SINGLE PHASE EFFICIENCY CURVES



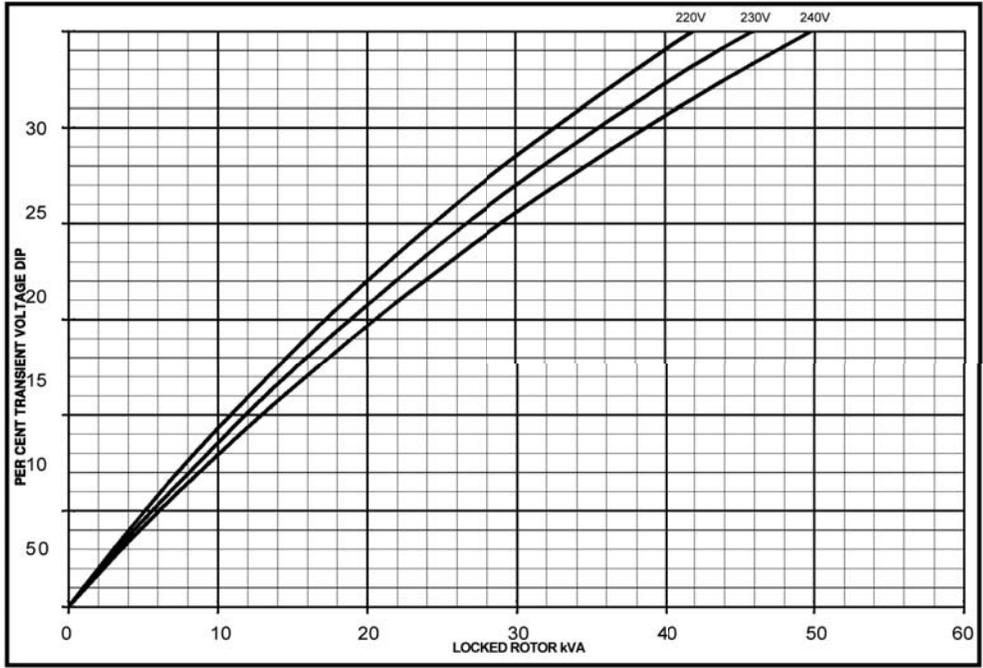
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DG184G
 Winding 06 / 1.0pf
 SINGLE PHASE EFFICIENCY CURVES



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DG184G
Winding 06
Locked Rotor Motor Starting Curve



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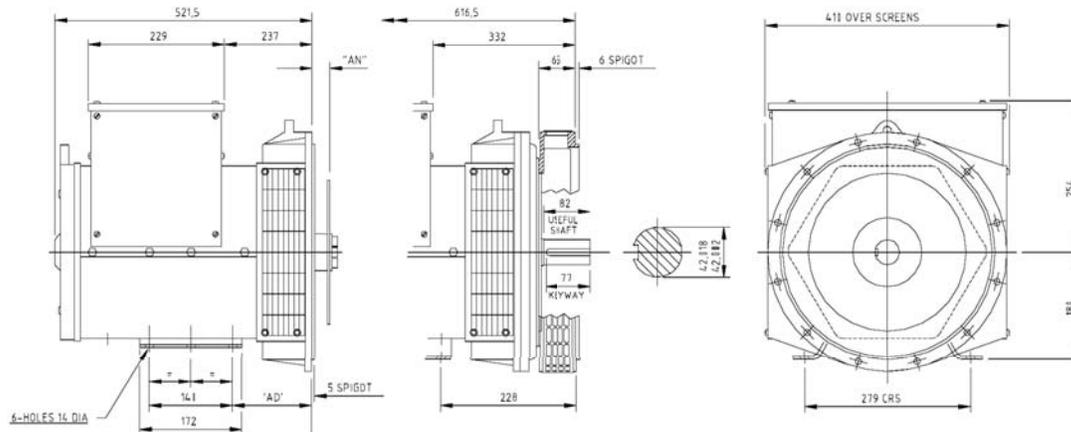
DG184G
Winding 06

60Hz

RATINGS

Class - Temp Rise	Cont. F - 105/40°C			Cont. H - 125/40°C			Cont. F - 105/40°C			Cont. H - 125/40°C		
	0.8pf			0.8pf			1.0pf			1.0pf		
Series (V)	220	230	240	220	230	240	220	230	240	220	230	240
Parallel (V)	110	115	120	110	115	120	110	115	120	110	115	120
kVA	23.0	23.0	23.0	25.0	25.0	25.0	27.0	27.5	30.0	30.0	30.8	33.0
kW	18.4	18.4	18.4	20.0	20.0	20.0	27.0	27.5	30.0	30.0	30.8	33.0
Efficiency (%)	82.6	83.0	83.3	82.2	82.7	83.1	85.4	85.8	85.9	84.8	85.2	85.3
kW Input	22.3	22.2	22.1	24.3	24.2	24.1	31.6	32.1	34.9	35.4	36.2	38.7

DIMENSIONS



COUPLING DISC	"AN"	ADAPTOR	"AD"
SAE 7.5	31.16	SAE 2	172
SAE 8	61.9	SAE 3	145
SAE 11	53.98	SAE 4	193
		SAE 5	193
		SAE 6	164.7

8 HOLES SPACED AS 12

ACHIEVED WITH SPACER PLATE 31,7mm THICK

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