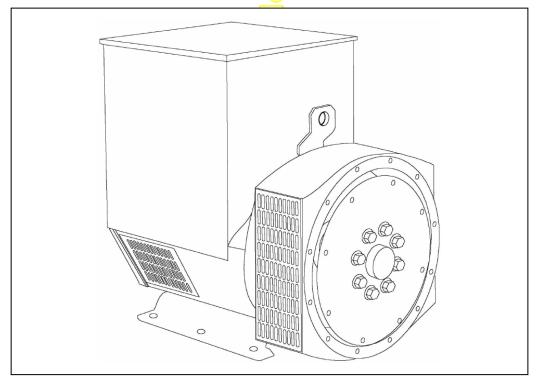


UCI274G - Winding 311

Technical Data Sheet



UCI274G SPECIFICATIONS & OPTIONS



STANDARDS

Stamford 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 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 threephase 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.

MX341 AVR

This sophisticated AVR is incorporated into the Stamford Permanent Magnet Generator (PMG) control system.

The PMG provides power via the AVR to the main exciter, giving a source of constant excitation power independent of generator output. The main exciter output is then fed to the main rotor, through a full wave bridge, protected by a surge suppressor. The AVR has in-built protection against sustained over-excitation, caused by internal or external faults. This deexcites the machine after a minimum of 5 seconds.

An engine relief load acceptance feature can enable full load to be applied to the generator in a single step.

If three-phase sensing is required with the PMG system the MX321 AVR must be used.

We recommend three-phase sensing for applications with greatly unbalanced or highly non-linear loads.

MX321 AVR

The most sophisticated of all our AVRs combines all the features of the MX341 with, additionally, three-phase rms sensing, for improved regulation and performance.

Over voltage protection is built-in and short circuit current level adjustments is an optional facility.

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.

TERMINALS & TERMINAL BOX

Standard generators are 3-phase reconnectable with 12 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 8 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.

Front cover drawing typical of product range.

UCI274G



WINDING 311

VOLTAGE PARALLEL STAR 190/110 200/115 208/120 220/127 208/120 220/127 230/133 240/1 VOLTAGE SERIES DELTA 220/110 230/115 240/120 254/127 240/120 254/127 266/133 277/1 KVA BASE RATING FOR REACTANCE 182 182 182 N/A 205 218 218 237 Xd DIR. AXIS SYNCHRONOUS 2.15 1.94 1.80 - 2.43 2.31 2.11 2.00 X'd DIR. AXIS TRANSIENT 0.19 0.17 0.16 - 0.21 0.20 0.18 0.11	CONTROL SYSTEM	SEPARATE	LY EXCITED	BY P.M.G.						
VOLTAGE REGULATION ± 0.5 % ± 1.0 % With 4% ENGINE GOVERNING SUSTAINED SHORT CIRCUIT REFER TO SHORT CIRCUIT DECREMENT CURVES (page 7)	A.V.R.	MX321	MX341							
SUSTAINED SHORT CIRCUIT REFER TO SHORT CIRCUIT DECREMENT CURVES (page 7) CONTROL SYSTEM SELF EXCITED A.V.R. SX460 AS440 VOLTAGE REGULATION ± 1.0 % with 4%. ENGINE GOVERNING SUSTAINED SHORT CIRCUIT SERIES 4 CONTROL DOES NOT SUSTAIN A SHORT CIRCUIT CURRENT INSULATION SYSTEM CLASS H PROTECTION IP23 RATED POWER FACTOR 0.8 STATOR WINDING DOUBLE LAYER CONCENTRIC WINDING PITCH TWO THIRDS WINDING RESISTANCE 0.0190 Onics PER PHASE AT 22°C SERIES STAR CONNECTED ROTOR WOG. RESISTANCE 0.0190 Onics PER PHASE AT 22°C EXCITER ROTOR RESISTANCE 0.0190 Onics PER PHASE AT 22°C EXCITER STATOR RESISTANCE 0.0100 Onics PER PHASE AT 22°C EXCITER ROTOR RESISTANCE 0.0100 Onics PER PHASE AT 22°C EXCITER ROTOR RESISTANCE 0.0100 Onics PER PHASE AT 22°C EXCITER NOTOR RESISTANCE 0.0100 Onics PER PHASE AT 22°C EXCITER NOTOR RESISTANCE 0.0100 Onics PER PHASE AT 22°C EXCITER NOTOR RESISTANCE 0.0100 Onics PER PHASE AT 22°C RF.I. SUPPRESSION BS EN 61000-6-2.4 & 65 N (SO)										
CONTROL SYSTEM SELF EXCITED A.V.R. SX460 AS440 VOLTAGE REGULATION ± 1.0 % ± 1.0 % With 4% ENGINE GOVERNING SUSTAINED SHORT CIRCUIT SERES 4 CONTROL DOES NOT SUSTAIN A SHORT CIRCUIT CURRENT INSULATION SYSTEM CLASS H PROTECTION IP23 RATED POWER FACTOR 0.8 STATOR WINDING IP23 STATOR WINDING DOUBLE LAYER CONCENTRIC TWO THIRDS IP23 IP23 WINDING LEADS DOUBLE LAYER CONCENTRIC IP30 IP30 IP30 STATOR WIDG, RESISTANCE 0.0199 Onis PER PHASE AT 22°C IP30 IP30 IP30 ROTOR WDG, RESISTANCE 0.0190 Onis PER PHASE AT 22°C IP30										
A.V.R. SX460 AS440 VOLTAGE REGULATION ± 1.0 % ± 1.0 % With 4% ENGINE GOVERNING SUSTAINED SHORT CIRCUIT SERIES 4 CONTROL DOES NOT SUSTAIN A SHORT CIRCUIT CURRENT INSULATION SYSTEM CLASS H PROTECTION IP23 RATED POWER FACTOR 0.8 STATOR WINDING DOUBLE LAYER CONCENTRIC WINDING PITCH TWO THIRDS WINDING LEADS 12 STATOR WIDG. RESISTANCE 0.0199 Dhms PER PHASE AT 22°C EXCITER RATOR RESISTANCE 0.090 Dhms at 22°C EXCITER ROTOR RESISTANCE 0.091 Ohms at 22°C WEIGHT WOUND STORTION NO LOAD < 15% NON-DISTORTING BALANCED LINEAR LOAD < 5.0%										
VOLTAGE REGULATION ± 1.0 % ± 1.0 % with 4% ENGINE GOVERNING SUSTAINED SHORT CIRCUIT SERIES 4 CONTROL DOES NOT SUSTAIN A SHORT CIRCUIT CURRENT INSULATION SYSTEM CLASS H PROTECTION IP23 RATED POWER FACTOR 0.8 STATOR WINDING DOUBLE LAYER CONCENTRIC WINDING IEADS 12 STATOR WDG. RESISTANCE 0.0199 Onto PER PHASE AT 22*C SERIES STAR CONNECTED ROTOR WDG. RESISTANCE 1.69 Ohms at 22*C EXCITER STATOR RESISTANCE 0.001 Ohms PER PHASE AT 22*C EXCITER ROTOR RESISTANCE 0.001 Ohms PER PHASE AT 22*C EXCITER ROTOR RESISTANCE 0.001 Ohms PER PHASE AT 22*C EXCITER ROTOR RESISTANCE 2250 Rev/Min BEARING DRIVE END BALL.	CONTROL SYSTEM	SELF EXCI	TED	I						
SUSTAINED SHORT CIRCUIT SERIES 4 CONTROL DOES NOT SUSTAIN A SHORT CIRCUIT CURRENT INSULATION SYSTEM CLASS H PROTECTION IP23 RATED POWER FACTOR 0.8 STATOR WINDING DOUBLE LAVER CONCENTRIC WINDING PITCH TWO THIRDS WINDING LEADS 12 STATOR WDG. RESISTANCE 0.0199 Ohms PER PHASE AT 22°C SERIES STAR CONNECTED ROTOR WDG. RESISTANCE 0.0010 Ohms at 22°C EXCITER STATOR RESISTANCE 0.0010 Ohms at 22°C EXCITER STATOR RESISTANCE 0.0010 Ohms at 22°C EXCITER ROTOR RESISTANCE 2.000100 ONTOR BEARING ON-DRIVE END	A.V.R.	SX460	AS440							
INSULATION SYSTEM CLASS H INSULATION SYSTEM CLASS H PROTECTION IP23 RATED POWER FACTOR 0.8 STATOR WINDING DOUBLE LAYER CONCENTRIC WINDING LEADS 12 STATOR WDG. RESISTANCE 0.0199 Ohns PER PHASE AT 22°C SERIES STAR CONNECTED ROTOR WDG. RESISTANCE 1.680 Ohns at 22°C EXCITER STATOR RESISTANCE 0.0191 Ohns at 22°C EXCITER ROTOR RESISTANCE 0.0010 Ohns at 22°C EXCITER ROTOR RESISTANCE 200 Ohns at 22°C EXCITER ROTOR RESISTANCE 0.0010 Ohns at 22°C EXCITER ROTOR RESISTANCE 220 Rev/Min BEARING DRIVE END BALL 6315-2RS (ISO) BEARING DRIVE END BALL 6316-2RS (ISO) WEIGHT WOUND STATOR 225 fg VEIGH	VOLTAGE REGULATION	± 1.0 % ± 1.0 % With 4% ENGINE GOVERNING								
PROTECTION IP23 RATED POWER FACTOR 0.8 STATOR WINDING DOUBLE LAYER CONCENTRIC WINDING PITCH TWO THIRDS WINDING LEADS 12 STATOR WDG. RESISTANCE 0.0199 Ohms PER PHASE AT 22°C SERIES STAR CONNECTED ROTOR WDG. RESISTANCE 0.0199 Ohms at 22°C EXCITER STATOR RESISTANCE 0.001 Ohms PER PHASE AT 22°C EXCITER ROTOR RESISTANCE 0.001 Ohms PER PHASE AT 22°C EXCITER ROTOR RESISTANCE 0.001 Ohms PER PHASE AT 22°C EXCITER ROTOR RESISTANCE 0.001 Ohms PER PHASE AT 22°C EXCITER ROTOR RESISTANCE 0.001 Ohms PER PHASE AT 22°C EXCITER ROTOR RESISTANCE 0.001 Ohms PER PHASE AT 22°C EXCITER ROTOR RESISTANCE 0.001 Ohms PER PHASE AT 22°C EXCITER ROTOR RESISTANCE 0.001 Ohms PER PHASE AT 22°C BALL, SUPPRESSION BS EN 61000-6-2 & 8 SE N 61000-6-4 .VDE 0375G, VDE 0875N. refer to factory for others WAVEFORM DISTORTION NO LOAD < 1380, NON-DISTORTING BALANCED LINEAR LOAD < 5.0%	SUSTAINED SHORT CIRCUIT	SERIES 4 C	ONTROL DO	DES NOT SU	STAIN A SH	ORT CIRCUI	T CURRENT			
RATED POWER FACTOR 0.8 STATOR WINDING DOUBLE LAYER CONCENTRIC WINDING LEADS 12 STATOR WDG. RESISTANCE 0.0199 Ohms PER PHASE AT 22°C SERIES STAR CONNECTED ROTOR WDG. RESISTANCE 0.0199 Ohms PER PHASE AT 22°C SERIES STAR CONNECTED EXCITER STATOR RESISTANCE 0.091 Ohms PER PHASE AT 22°C EXCITER ROTOR RESISTANCE EXCITER ROTOR RESISTANCE 0.091 Ohms PER PHASE AT 22°C EXCITER ROTOR RESISTANCE EXCITER ROTOR RESISTANCE 0.091 Ohms PER PHASE AT 22°C (SC) EXCITER ROTOR RESISTANCE 0.091 Ohms PER PHASE AT 22°C (SC) WAVEFORM DISTORTION BS EN 61000-6-2 & 8 6 N 61000-6-4. VDE 0875G, VDE 0875N. refer to factory for others WAVEFORM DISTORTION NO LOAD < 13% NON-DISTORTING BALANCED LINEAR LOAD < 5.0%	INSULATION SYSTEM				CLAS	S H				
STATOR DUBLE LAYER CONCENTRIC WINDING PITCH TWO THIRDS WINDING LEADS 12 STATOR WDG, RESISTANCE 0.0199 Ohms PER PHASE AT 22°C SERIES STAR CONNECTED ROTOR WDG, RESISTANCE 0.0199 Ohms PER PHASE AT 22°C EXCITER STATOR RESISTANCE 0.0190 Ohms at 22°C EXCITER STATOR RESISTANCE 0.0190 Ohms PER PHASE AT 22°C EXCITER ROTOR RESISTANCE 0.0190 Ohms PER PHASE AT 22°C EXCITER ROTOR RESISTANCE 0.0190 Ohms PER PHASE AT 22°C EXCITER ROTOR RESISTANCE 0.0190 Ohms PER PHASE AT 22°C EXCITER ROTOR RESISTANCE 0.0190 Ohms PER PHASE AT 22°C EXCITER ROTOR RESISTANCE 0.0100 Ohms PER PHASE AT 22°C EXCITER ROTOR RESISTANCE 0.0190 Ohms PER PHASE AT 22°C WAVEFORM DISTORTION NO LOAD < 1.896, NON-DISTORTING BALANCED LINEAR LOAD < 5.0%	PROTECTION				IP2	23				
WINDING PITCH TWO THIRDS WINDING LEADS 12 STATOR WDG. RESISTANCE 0.0199 Ohms PER PHASE AT 22°C SERIES STAR CONNECTED ROTOR WDG. RESISTANCE 1.69 Ohms at 22°C EXCITER STATOR RESISTANCE 0.091 Ohms PER PHASE AT 22°C EXCITER ROTOR RESISTANCE 0.091 Ohms PER PHASE AT 22°C EXCITER ROTOR RESISTANCE 0.091 Ohms PER PHASE AT 22°C R.F.I. SUPPRESSION BS EN 61000-6-2 & 8 SEN 61000-6-4.VDE 0875G, VDE 0875N. refer to factory for others WAVEFORM DISTORTION NO LOAD < 1.5% NON-DISTORTING BALANCED LINEAR LOAD < 5.0%	RATED POWER FACTOR	0.8								
VINDING LEADS 12 STATOR WDG. RESISTANCE 0.0199 Ohms PER PHASE AT 22°C SERIES STAR CONNECTED ROTOR WDG. RESISTANCE 1.69 Ohms at 22°C EXCITER STATOR RESISTANCE 0.091 Ohms PER PHASE AT 22°C EXCITER ROTOR RESISTANCE 0.091 Ohms PER PHASE AT 22°C EXCITER ROTOR RESISTANCE 0.091 Ohms PER PHASE AT 22°C R.F.I. SUPPRESSION BS EN 61000-6-2 & 8 S EN 61000-6-3, VDE 08750, VDE 0875N. refer to factory for others WAVEFORM DISTORTION NO LOAD < 1.396, NON-DISTORTING BALANCED LINEAR LOAD < 5.0%	STATOR WINDING									
VINDING LEADS 12 STATOR WDG, RESISTANCE 0.0199 Ohms PER PHASE AT 22°C SERIES STAR CONNECTED ROTOR WDG, RESISTANCE 1.69 Ohms at 22°C EXCITER STATOR RESISTANCE 0.091 Ohms PER PHASE AT 22°C EXCITER ROTOR RESISTANCE 0.091 Ohms PER PHASE AT 22°C EXCITER ROTOR RESISTANCE 0.091 Ohms PER PHASE AT 22°C R.F.I. SUPPRESSION BS EN 61000-6-2 & 8 SE N 61000-6-4, VDE 0875G, VDE 0875N, refer to factory for others WAVEFORM DISTORTION NO LOAD < 1.86, NON-DISTORTING BALANCED LINEAR LOAD < 5.0%	WINDING PITCH				TWO TI	HIRDS				
STATOR WDG. RESISTANCE 0.0199 Ohms PER PHASE AT 22°C SERIES STAR CONNECTED ROTOR WDG. RESISTANCE 1.69 Ohms at 22°C EXCITER STATOR RESISTANCE 20 Ohms at 22°C EXCITER ROTOR RESISTANCE 0.091 Ohms PER PHASE AT 22°C EXCITER ROTOR RESISTANCE 0.091 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 < 1.8%, NON-DISTORTING BALANCED LINEAR LOAD < 5.0%					1:	2				
ROTOR WDG. RESISTANCE 1.69 Ohms at 22°C EXCITER STATOR RESISTANCE 20 Ohms at 22°C EXCITER ROTOR RESISTANCE 0.091 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 < 1.8%, NON-DISTORTING BALANCED LINEAR LOAD < 5.0%			0.0199 (STAR CONN	ECTED		
EXCITER STATOR RESISTANCE 20 Ohms at 22°C EXCITER ROTOR RESISTANCE 0.091 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 < 1.8% NON-DISTORTING BALANCED LINEAR LOAD < 5.0%			5.0100 (D		
EXCITER ROTOR RESISTANCE 0.091 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 BALANCED LINEAR LOAD < 5.0%										
R.F.I. SUPPRESSION BS EN 61000-6-2 & 85 EN 61000-6-4, VDE 0875G, VDE 0875N. refer to factory for others WAVEFORM DISTORTION NO LOAD < 1.8% NON-DISTORTING BALANCED LINEAR LOAD < 5.0% MAXIMUM OVERSPEED 2250 Rev/Min BEARING DRIVE END BALL. 6315-2RS (ISO) BEARING NON-DRIVE END BALL. 6310-2RS (ISO) WEIGHT COMP. GENERATOR 580 kg 2255 kg WEIGHT WOUND STATOR 225 kg 225 kg WEIGHT WOUND ROTOR 210.35 kg 199.39 kg WR? INERTIA 1.7674 kgm² 1.7169 kgm² SHIPPING WEIGHTS in a crate 613 kg 60 Hz TELEPHONE INTERFERENCE THF<2% TIF<-50 COOLING AIR 0.514 m³/sec^*190 cfm 0.617 m³/sec 1308 cfm VOLTAGE SERIES STAR 380/220 400/231 415/240 440/254 416/240 440/254 460/266 480/2 VOLTAGE SERIES DELTA 220/110 230/115 240/120 254/127 266/133 277/1 VOLTAGE SERIES DELTA 220/110 230/115 240/120 254/127 266/133 277/1 VOLTAGE S							200			
WAVEFORM DISTORTION NO LOAD < 1.8% NON-DISTORTING BALANCED LINEAR LOAD < 5.0% MAXIMUM OVERSPEED 2250 Rev/Min BEARING DRIVE END BALL. 6315-2RS (ISO) BEARING NON-DRIVE END BALL. 6310-2RS (ISO) WEIGHT COMP. GENERATOR 580 kg VEIGHT WOUND STATOR 225 kg WEIGHT WOUND STATOR 225 kg WEIGHT WOUND ROTOR 210.35 kg VR? INERTIA 1.7674 kgm² SHIPPING WEIGHTS in a crate 613 kg 60 Hz 60 Hz TELEPHONE INTERFERENCE THF 2% COOLING AIR 0.514 m³/sec 1980 cfm VOLTAGE SERIES STAR 380/220 400/231 415/240 440/254 460/266 VOLTAGE SERIES DELTA 220/110 230/115 240/120 224/127 230/133 240/120 VOLTAGE SERIES DELTA 220/110 230/115 240/120 254/127 266/133 277/14 VALUES 182 182 182 N/A 205 218 218 23 VALAGES RATING FOR REACTANCE 182										
MAXIMUM OVERSPEED 2250 Rev/Min BEARING DRIVE END BALL. 6315-2RS (ISO) BEARING NON-DRIVE END BALL. 6310-2RS (ISO) WEIGHT COMP. GENERATOR BBALL. 6310-2RS (ISO) WEIGHT WOUND STATOR 225 kg WEIGHT WOUND STATOR 225 kg WEIGHT WOUND STATOR 225 kg WEIGHT WOUND STATOR 210.35 kg WR* INERTIA 1.7674 kgm² SHIPPING WEIGHTS in a crate 613 kg 630 kg 630 kg PACKING CRATE SIZE 123 x 67 x 103 (cm) TELEPHONE INTERFERENCE THF<2%		()								
BEARING DRIVE END BALL. 6315-2RS (ISO) BEARING NON-DRIVE END BALL. 6310-2RS (ISO) WEIGHT COMP. GENERATOR 580 kg WEIGHT WOUND STATOR 225 kg WEIGHT WOUND ROTOR 210.35 kg WR ² INERTIA 1.7674 kgm ² SHIPPING WEIGHTS in a crate 613 kg PACKING CRATE SIZE 123 x 67 x 103 (cm) TELEPHONE INTERFERENCE THF 42% VOLTAGE SERIES STAR 380/220 VOLTAGE SERIES DELTA 220/110 VOLTAGE SERIES DELTA 220/110 VOLTAGE SERIES DELTA 220/110 230/115 240/120 240/120 254/127 240/120 254/127 260/133 277/1 KVA BASE RATING FOR REACTANCE 182 VALUES 182 Xd DIR. AXIS SYNCHRONOUS 2.15 0.19 0.17 0.16 - 0.21 0.20 0.18 0.17	WAVEFORM DISTORTION									
BEARING NON-DRIVE END BALL. 6310-2RS (ISO) WEIGHT COMP. GENERATOR 1 BEARING 2 BEARING WEIGHT COMP. GENERATOR 580 kg 598 kg WEIGHT WOUND STATOR 225 kg 225 kg WEIGHT WOUND ROTOR 210.35 kg 199.39 kg WR ² INERTIA 1.7674 kgm ² 1.7169 kgm ² SHIPPING WEIGHTS in a crate 613 kg 630 kg PACKING CRATE SIZE 123 x 67 x 103 (cm) 123 x 67 x 103 (cm) TELEPHONE INTERFERENCE THF<2%	MAXIMUM OVERSPEED				2250 R	ev/Min				
IBEARING 2 BEARING WEIGHT COMP. GENERATOR 580 kg 598 kg WEIGHT WOUND STATOR 225 kg 225 kg WEIGHT WOUND ROTOR 210.35 kg 199.39 kg WR2 INERTIA 1.7674 kgm² 1.7169 kgm² SHIPPING WEIGHTS in a crate 613 kg 630 kg PACKING CRATE SIZE 123 x 67 x 103 (cm) 123 x 67 x 103 (cm) TELEPHONE INTERFERENCE THF<2%	BEARING DRIVE END									
WEIGHT COMP. GENERATOR 580 kg 598 kg WEIGHT WOUND STATOR 225 kg 225 kg WEIGHT WOUND ROTOR 210.35 kg 199.39 kg WR² INERTIA 1.7674 kgm² 1.7169 kgm² SHIPPING WEIGHTS in a crate 613 kg 630 kg PACKING CRATE SIZE 123 x 67 x 103 (cm) 123 x 67 x 103 (cm) TELEPHONE INTERFERENCE THF 2% TIF<50	BEARING NON-DRIVE END	BALL. 6310-2RS (ISO)								
WEIGHT WOUND STATOR 225 kg WEIGHT WOUND ROTOR 210.35 kg 199.39 kg WR2 INERTIA 1.7674 kgm² 1.7169 kgm² SHIPPING WEIGHTS in a crate 613 kg 630 kg PACKING CRATE SIZE 123 x 67 x 103 (cm) 123 x 67 x 103 (cm) TELEPHONE INTERFERENCE THF<2%			1 BE <i>F</i>	RING			2 BEA	RING		
WEIGHT WOUND ROTOR 210.35 kg 199.39 kg WR² INERTIA 1.7674 kgm² 1.7169 kgm² SHIPPING WEIGHTS in a crate 613 kg 630 kg PACKING CRATE SIZE 123 x 67 x 103 (cm) 123 x 67 x 103 (cm) PACKING CRATE SIZE 123 x 67 x 103 (cm) 123 x 67 x 103 (cm) TELEPHONE INTERFERENCE THF 2% 60 Hz COOLING AIR 0.514 m³/sec 1090 cfm 0.617 m³/sec 1308 cfm VOLTAGE SERIES STAR 380/220 400/231 415/240 440/254 460/266 480/2 VOLTAGE PARALLEL STAR 190/110 200/115 208/120 220/127 208/120 220/127 230/133 240/1 VOLTAGE SERIES DELTA 220/110 230/115 240/120 254/127 266/133 277/1 VA BASE RATING FOR REACTANCE 182 182 182 N/A 205 218 218 23' Xd DIR. AXIS SYNCHRONOUS 2.15 1.94 1.80 - 2.43 2.31 2.11 2.00 X'd DIR. AXIS TRANSIENT 0.19 0.17	WEIGHT COMP. GENERATOR	••••••••••••••••••••••••••••••••••••••								
WR² INERTIA 1.7674 kgm² 1.7169 kgm² SHIPPING WEIGHTS in a crate 613 kg 630 kg PACKING CRATE SIZE 123 x 67 x 103 (cm) 123 x 67 x 103 (cm) TELEPHONE INTERFERENCE THF<2%										
SHIPPING WEIGHTS in a crate 613 kg 630 kg PACKING CRATE SIZE 123 x 67 x 103 (cm) 123 x 67 x 103 (cm) 50 H2 60 Hz TELEPHONE INTERFERENCE THF 2% COOLING AIR 0.514 m³/sec 1090 cfm VOLTAGE SERIES STAR 380/220 400/231 415/240 440/254 460/266 VOLTAGE SERIES DELTA 190/110 200/115 208/120 220/127 208/120 220/127 240/120 VOLTAGE SERIES DELTA 190/110 200/115 208/120 220/127 240/120 254/127 240/120 254/127 266/133 277/1 KVA BASE RATING FOR REACTANCE 182 VALUES 182 Xd DIR. AXIS SYNCHRONOUS 2.15 2.15 1.94 1.80 - 2.43 2.31 2.11 2.00 X'd DIR. AXIS TRANSIENT 0.19 0.17 0.16 -										
PACKING CRATE SIZE 123 x 67 x 103 (cm) 123 x 67 x 103 (cm) 50 HZ 60 Hz TELEPHONE INTERFERENCE THF<2%										
50 Hz 60 Hz TELEPHONE INTERFERENCE THF 2% TIF<50 COOLING AIR 0.514 m³/sec 1090 cfm 0.617 m³/sec 1308 cfm VOLTAGE SERIES STAR 380/220 400/231 415/240 440/254 460/266 480/2 VOLTAGE PARALLEL STAR 190/110 200/115 208/120 220/127 208/120 220/127 230/133 240/1 VOLTAGE SERIES DELTA 220/110 230/115 240/120 254/127 240/120 254/127 266/133 277/1 VALUES N/A 205 218 218 23' Xd DIR. AXIS SYNCHRONOUS 2.15 1.94 1.80 - 2.43 2.31 2.11 2.00 X'd DIR. AXIS TRANSIENT 0.19 0.17 0.16 - 0.21 0.20 0.18 0.19										
TELEPHONE INTERFERENCE THF<2% TIF<50 COOLING AIR 0.514 m³/sec 1090 cfm 0.617 m³/sec 1308 cfm VOLTAGE SERIES STAR 380/220 400/231 415/240 440/254 460/266 480/2 VOLTAGE PARALLEL STAR 190/110 200/115 208/120 220/127 208/120 220/127 230/133 240/1 VOLTAGE SERIES DELTA 220/110 230/115 240/120 254/127 240/120 254/127 266/133 277/1 KVA BASE RATING FOR REACTANCE 182 182 182 N/A 205 218 218 23/2 Xd DIR. AXIS SYNCHRONOUS 2.15 1.94 1.80 - 2.43 2.31 2.11 2.00 X'd DIR. AXIS TRANSIENT 0.19 0.17 0.16 - 0.21 0.20 0.18 0.19	FACKING CRATE SIZE									
COOLING AIR 0.514 m³/sec 1090 cfm 0.617 m³/sec 1308 cfm VOLTAGE SERIES STAR 380/220 400/231 415/240 440/254 416/240 440/254 460/266 480/2 VOLTAGE PARALLEL STAR 190/110 200/115 208/120 220/127 208/120 220/127 230/133 240/1 VOLTAGE SERIES DELTA 220/110 230/115 240/120 254/127 240/120 254/127 266/133 277/1 kVA BASE RATING FOR REACTANCE 182 182 182 N/A 205 218 218 237/1 Xd DIR. AXIS SYNCHRONOUS 2.15 1.94 1.80 - 2.43 2.31 2.11 2.00/12/1	TELEPHONE INTERFERENCE									
VOLTAGE PARALLEL STAR 190/110 200/115 208/120 220/127 208/120 220/127 230/133 240/1 VOLTAGE SERIES DELTA 220/110 230/115 240/120 254/127 240/120 254/127 266/133 277/1 KVA BASE RATING FOR REACTANCE VALUES 182 182 182 N/A 205 218 218 237/1 Xd DIR. AXIS SYNCHRONOUS 2.15 1.94 1.80 - 2.43 2.31 2.11 2.00/11 X'd DIR. AXIS TRANSIENT 0.19 0.17 0.16 - 0.21 0.20 0.18 0.11	COOLING AIR									
VOLTAGE SERIES DELTA 220/110 230/115 240/120 254/127 240/120 254/127 266/133 277/1 KVA BASE RATING FOR REACTANCE VALUES 182 182 182 N/A 205 218 218 233 Xd DIR. AXIS SYNCHRONOUS 2.15 1.94 1.80 - 2.43 2.31 2.11 2.00 X'd DIR. AXIS TRANSIENT 0.19 0.17 0.16 - 0.21 0.20 0.18 0.19	VOLTAGE SERIES STAR	380/220	400/231	415/240	440/254	416/240	440/254	460/266	480/277	
kVA BASE RATING FOR REACTANCE VALUES 182 182 182 182 218 218 218 233 Xd DIR. AXIS SYNCHRONOUS 2.15 1.94 1.80 - 2.43 2.31 2.11 2.00 X'd DIR. AXIS TRANSIENT 0.19 0.17 0.16 - 0.21 0.20 0.18 0.19	VOLTAGE PARALLEL STAR	190/110	200/115	20 8 /120	220/127	208/120	220/127	230/133	240/138	
VALUES 182 182 182 182 N/A 205 218 218 233 Xd DIR. AXIS SYNCHRONOUS 2.15 1.94 1.80 - 2.43 2.31 2.11 2.00 X'd DIR. AXIS TRANSIENT 0.19 0.17 0.16 - 0.21 0.20 0.18 0.19		220/110	230/115	240/120	254/127	240/120	254/127	266/133	277/138	
Xd DIR. AXIS SYNCHRONOUS 2.15 1.94 1.80 - 2.43 2.31 2.11 2.00 X'd DIR. AXIS TRANSIENT 0.19 0.17 0.16 - 0.21 0.20 0.18 0.19		182	182	182	N/A	205	218	218	231	
		2.15	1.94	1.80	-	2.43	2.31	2.11	2.06	
X"d DIR AXIS SUBTRANSIENT 0.13 0.12 0.11 - 0.15 0.14 0.13 0.12	X'd DIR. AXIS TRANSIENT	0.19	0.17	0.16	-	0.21	0.20	0.18	0.18	
	X"d DIR. AXIS SUBTRANSIENT	0.13	0.12	0.11	-	0.15	0.14	0.13	0.12	
Xq QUAD. AXIS REACTANCE 1.29 1.16 1.08 - 1.47 1.40 1.28 1.24	Xq QUAD. AXIS REACTANCE	1.29	1.16	1.08	-	1.47	1.40	1.28	1.24	
X"q QUAD. AXIS SUBTRANSIENT 0.18 0.16 0.15 - 0.18 0.17 0.16 0.15	X"q QUAD. AXIS SUBTRANSIENT	0.18	0.16	0.15	-	0.18	0.17	0.16	0.15	
XL LEAKAGE REACTANCE 0.08 0.07 0.07 - 0.09 0.08 0.08 0.0	XL LEAKAGE REACTANCE	0.08	0.07	0.07	-	0.09	0.08	0.08	0.07	
X2 NEGATIVE SEQUENCE 0.13 0.12 0.11 - 0.16 0.15 0.13 0.13	X2 NEGATIVE SEQUENCE	0.13	0.12	0.11	-	0.16	0.15	0.13	0.13	
					-				0.08	
REACTANCES ARE SATURATED VALUES ARE PER UNIT AT RATING AND VOLTAGE INDICATED		ED	VA	ALUES ARE			ND VOLTAG	E INDICATE	D	
T'd TRANSIENT TIME CONST. 0.038 s		0.038 s 0.012 s								
T"d SUB-TRANSTIME CONST. 0.012 s T'do O.C. FIELD TIME CONST. 1 s										
Ta ARMATURE TIME CONST. 0.01 s										
SHORT CIRCUIT RATIO 1/Xd										

CALL US TODAY 1-888-POWER-58 3

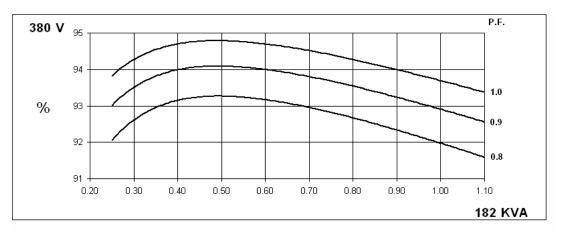
SHOP ONLINE www.genpowerusa.com

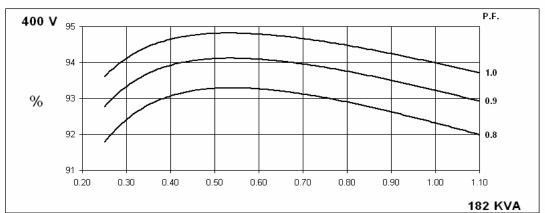


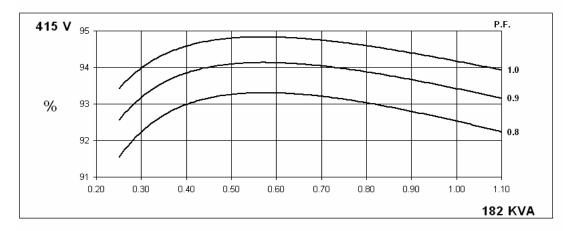
50 Hz

UCI274G Winding 311

THREE PHASE EFFICIENCY CURVES



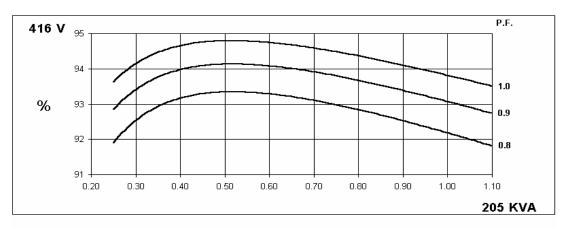


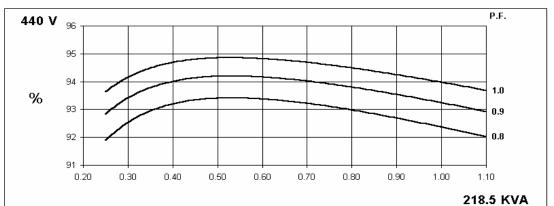


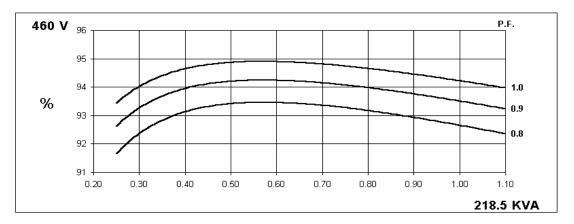


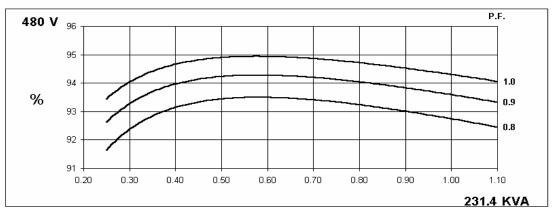
60 Hz UCI274G Winding 311

THREE PHASE EFFICIENCY CURVES





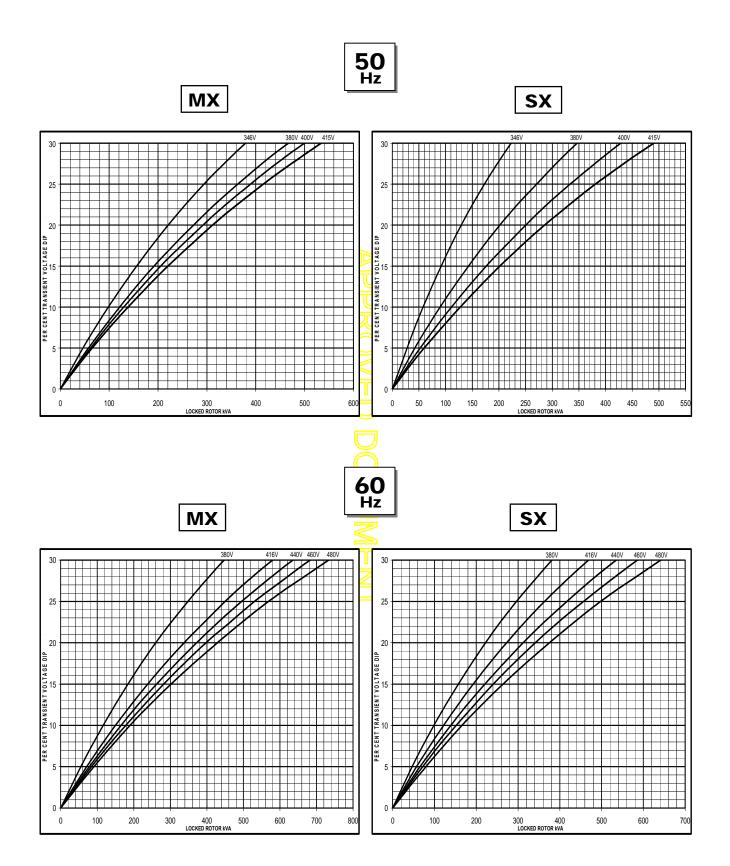




UCI274G

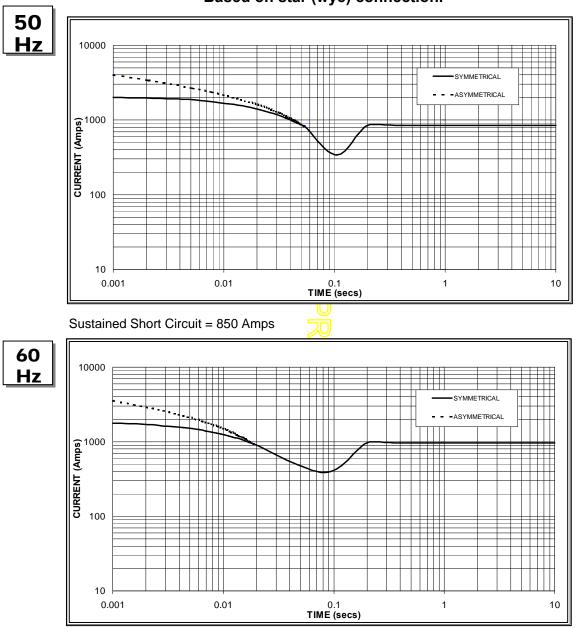
Winding 311

Locked Rotor Motor Starting Curve



6





Three-phase Short Circuit Decrement Curve. No-load Excitation at Rated Speed Based on star (wye) connection.

Sustained Short Circuit = 970 Amps

Note 1

The following multiplication factors should be used to adjust the values from curve between time 0.001 seconds and the minimum current point in respect of nominal operating voltage :

50	Hz	60Hz				
Voltage	Factor	Voltage	Factor			
380v	X 1.00	416v	X 1.00			
400v	X 1.07	440v	X 1.06			
415v	X 1.12	460v	X 1.12			
		480v	X 1.17			

The sustained current value is constant irrespective of voltage level

Note 2

The following multiplication factor should be used to convert the values calculated in accordance with NOTE 1 to those applicable to the various types of short circuit :

1.00 x 0 1.00 x 1	-	x 1.30					
100 x 1	<u>۵</u> ۵	1 2 20					
	.00	x 3.20					
1.00 x 1	.50 2	x 2.50					
Max. sustained duration 10 sec. 5 sec. 2 sec.							
		sec. 5 sec.					

All other times are unchanged

Note 3

Curves are drawn for Star (Wye) connected machines. For other connection the following multipliers should be applied to current values as shown :

Parallel Star = Curve current value X 2

Series Delta = Curve current value X 1.732

7

STAMFORD

UCI274G

Winding 311 / 0.8 Power Factor

RATINGS

	RATINGS																
	Class - Temp Rise	C	ont. F -	105/40	Ç	Co	ont. H -	125/40	°C	St	andby -	150/40	°C	St	andby -	163/27	°°C
50	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
Hz	Series Delta (V)	220	230	240	254	220	230	240	254	220	230	240	254	220	230	240	254
	kVA	164.6	164.6	164.6	N/A	182.0	182.0	182.0	N/A	187.0	187.0	187.0	N/A	200.0	200.0	200.0	N/A
	kW	131.7	131.7	131.7	N/A	145.6	145.6	145.6	N/A	149.6	149.6	149.6	N/A	160.0	160.0	160.0	N/A
	Efficiency (%)	92.3	92.6	92.8	N/A	92.0	92.3	92.5	N/A	91.9	92.2	92.5	N/A	91.6	92.0	92.2	N/A
	kW Input	142.7	142.2	141.9	N/A	158.3	157.7	157.4	N/A	162.8	162.2	161.8	N/A	174.7	173.9	173.5	N/A
							1										
60	Series Star (V)	416	440	460	480	416	440	460	480	416	440	460	480	416	440	460	480
Hz	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	192.8	199.0	199.0	212.2	205.0	218.5	218.5	231.4	213.0	228.8	228.8	250.0	218.5	234.0	234.0	253.3
	kW	154.2	159.2	159.2	169.8	164.0	174.8	174.8	185.1	170.4	183.0	183.0	200.0	174.8	187.2	187.2	202.6
	Efficiency (%)	92.4	92.7	92.9	93.0	92.2	92.4	92.7	92.7	92.0	92.2	92.5	92.5	91.9	92.1	92.4	92.5
	kW Input	166.9	171.7	171.4	182.5	177.9	189.2	/ 188.6	199.7	185.2	198.5	197.9	216.2	190.2	203.3	202.6	219.1
								J									

DIMENSIONS

126

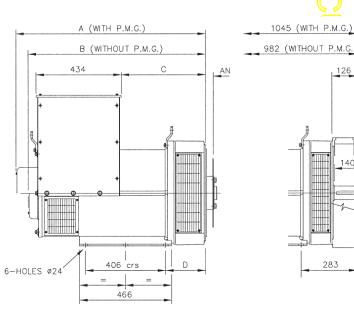
140

70,030 ø70,011

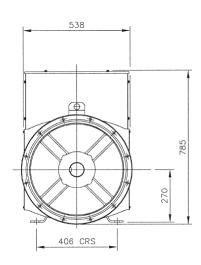
SHAFT EXTENSION

Ē

283



SING	LE BEARI	NG ADAP	TORS		COUPLING	DISCS
ADAPTOR	A	В	С	D	DISC	AN
SAE 1	978,3	915,3	439,3	216,3	SAE 10	53,98
SAE 2	964	901	425	202	SAE 11,5	39,68
SAE 3	964	901	425	202	SAE 14	25,40



8







Head Office Address: Barnack Road, Stamford Lincolnshire, PE9 2NB United Kingdom Tel: +44 (0) 1780 484000 Fax: +44 (0) 1780 484100

www.cumminsgeneratortechnologies.com

Copyright 2010, Cummins Generator Technologies Ltd, All Rights Reserved Stamford and AvK are registered trade marks of Cummins Generator Technologies Ltd Cummins and the Cummins logo are registered trade marks of Cummins Inc.

UC274G-311-TD-EN-SG-A