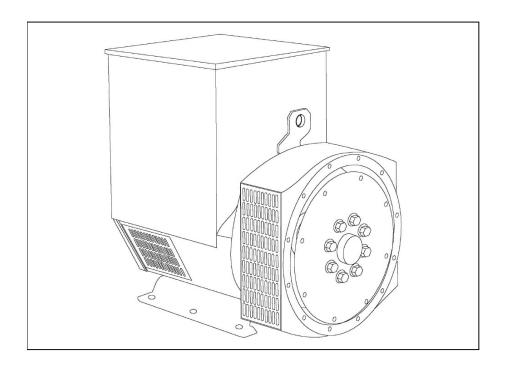
# **STAMFORD®**

# UCI274G - Winding 311 Single PhaseTechnical Data Sheet



### **UCI274G**

### **STAMFORD**

### **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 - OBSOLETE**

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 - STANDARD**

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.

### 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 de-excites 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.

### MX321 AVR

The most sophisticated of all our AVRs combines all the features of the MX341 with, additionally, over voltage protection built-in and short circuit current level adjustments as 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 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  $40^{\circ}\text{C}.$ 

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.

# **STAMFORD**

# **UCI274G**

# WINDING 311 Single Phase

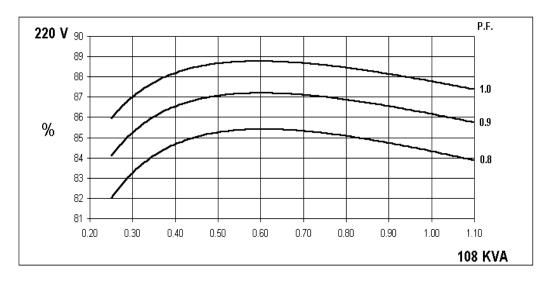
A.V.R. MX321 MX341  VOLTAGE REGULATION ± 0.5 % ± 1.0 % With 4% ENGINE GOVERNING  SUSTAINED SHORT CIRCUIT  REFER TO SHORT CIRCUIT DECREMENT CURVES (page 7)  CONTROL SYSTEM  SELF EXCITED  A.V.R. SX460 AS440  VOLTAGE REGULATION ± 1.0 % ± 1.0 % With 4% ENGINE GOVERNING  SUSTAINED SHORT CIRCUIT  SERIES 4 CONTROL DOES NOT SUSTAINA SHORT CIRCUIT CURRENT  INSULATION SYSTEM  CLASS H  PROTECTION  SP22  ATTOR WINDING  DOUBLE LAYER CONCENTRIC  WINDING FICH  TWO THIRDS  WINDING FICH  TWO THIRDS  THO THIRDS  THO THIRDS  TATOR WINDING  DOUBLE LAYER CONCENTRIC  WINDING FICH  TWO THIRDS  TO OWNER FACTOR  STATOR WINDING  DOUBLE LAYER CONCENTRIC  WINDING FICH  TWO THIRDS  TO OWNER STATOR WINDING  TO OWNER STATOR WINDING  STATOR WINDING RESISTANCE  0.013 Ohms AT 22"C DOUBLE DELTA CONNECTED  ROTOR WID. RESISTANCE  EXCITER ROTOR RESISTANCE  BE ARING ONNO DISTORTION  NO LOAD < 1.5% NON-DISTORTING LINEAR LOAD < 5.0%  MAXIMUM OVERSPEED  BEARING DRIVE END  BEARING DRIVE END  BEARING ONNO PROVE END  BEARING DRIVE END  BEARING ONNO PROVE END  BEAR ONNO PROVE END  BEAR ONNO PROVE END  BEAR ONNO PROVE END  BEAR OND PROVE END  BEAR ONNO PROVE END  BEAR OND PROVE END  BEAR ON TO PROVE END  BEAR OND PROV	CONTROL SYSTEM	SEPARATELY I	EXCITED BY P.	M.G.							
SUSTAINED SHORT CIRCUIT   REFER TO SHORT CIRCUIT DECREMENT CURVES (page 7)	A.V.R.										
SUSTAINED SHORT CIRCUIT   REFER TO SHORT CIRCUIT DECREMENT CURVES (page 7)	VOLTAGE REGULATION										
CONTROL SYSTEM											
A.V.R. \$X460 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					( 9)						
VOLTAGE REGULATION	CONTROL SYSTEM	SELF EXCITED									
SUSTAINED SHORT CIRCUIT   SERIES 4 CONTROL DOES NOT SUSTAIN A SHORT CIRCUIT CURRENT	A.V.R.	SX460 AS440									
NSULATION SYSTEM	VOLTAGE REGULATION	± 1.0 % With 4% ENGINE GOVERNING									
PROTECTION RATED POWER FACTOR 0.8  STATOR WINDING DOUBLE LAYER CONCENTRIC WINDING PITCH TWO THIRDS WINDING LEADS 12  STATOR WDG, RESISTANCE 0.013 Ohms AT 22°C DOUBLE DELTA CONNECTED ROTOR WDG, RESISTANCE 20 Ohms at 22°C  EXCITER RATOR RESISTANCE 20 Ohms at 22°C  EXCITER RATOR RESISTANCE 20 Ohms at 22°C  EXCITER ROTOR RESISTANCE 8 DISTANCE 20 Ohms at 22°C  EXCITER ROTOR RESISTANCE 8 DISTANCE 8	SUSTAINED SHORT CIRCUIT	SERIES 4 CONTROL DOES NOT SUSTAIN A SHORT CIRCUIT CURRENT									
RATED POWER FACTOR   0.8	INSULATION SYSTEM	CLASS H									
STATOR WINDING	PROTECTION	IP23									
WINDING PITCH         TWO THIRDS           WINDING LEADS         12           STATOR WOG. RESISTANCE         0.013 Ohms AT 22°C DOUBLE DELTA CONNECTED           ROTOR WOG. 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           WAVEFORM DISTORTION         NO LOAD < 1.5% NON-DISTORTING LINEAR LOAD < 5.0%	RATED POWER FACTOR			C	0.8						
WINDING PITCH         TWO THIRDS           WINDING LEADS         12           STATOR WDG. RESISTANCE         0.013 Ohms AT 22°C DOUBLE DELTA CONNECTED           ROTOR WDG. RESISTANCE         1.99 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 < 1.5% NON-DISTORTING LINEAR LOAD < 5.0%	STATOR WINDING			DOUBLE LAYE	R CONCENTRIC	;					
WINDING LEADS   12				TWO T	THIRDS						
STATOR WDG. RESISTANCE  ROTOR WDG. RESISTANCE  ROTOR RO											
ROTOR WDG. RESISTANCE			0.013 Ob			NNECTED					
EXCITER STATOR RESISTANCE  EXCITER ROTOR RESISTANCE  EXCITER ROTOR RESISTANCE  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-DISTORTIIG LINEAR LOAD < 5.0%  MAXIMUM OVERSPEED  BEARING DRIVE END  BEARING DRIVE END  BEARING ORIVE END  BEARING ON-DRIVE END  BEALL 8250			0.013 01			MINECIED					
EXCITER ROTOR RESISTANCE  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  BEARING NON-DRIVE END  BEARING ON-DRIVE END  BEARING ON-DRIVE END  BEARING ON-DRIVE END  BEARING ON-DRIVE END  BEARING 2 BEARING  WEIGHT WOUND STATOR 225 kg 225 kg  WEIGHT WOUND ROTOR 210.36 kg 199.39 kg  WR* INERTIA 1.7674 kgm² 1.7169 kgm²  SHIPPING WEIGHTS in a crate 613 kg 630 kg  PACKING GRATE SIZE 123 x 67 x 103(cm) 123 x 67 x 103(cm)  TELEPHONE INTERFERENCE THF-2% TIF-50  COOLING AIR 0.514 m*/sec 1990 cfm 0.617 m*/sec 1308 cfm  VOLTAGE DOUBLE DELTA 220/110 230/115 240/120 220/110 230/115 240/120  VOLTAGE PARALLEL DELTA 110 115 120 110 115 120  VOLTAGE PARALLEL DELTA 110 115 120 110 115 120  VOLTAGE PARALLEL DELTA 110 115 120 110 115 120  VOLTAGE PARALLEL DELTA 110 115 120 110 115 120  VOLTAGE PARALLEL DELTA 110 115 120 110 115 120  VOLTAGE PARALLEL DELTA 108 108 108 110.5 115.7 123.4  VAD DIR AXIS SYNCHRONOUS 1.90 1.74 1.559 2.33 2.23 2.18  VAD DIR AXIS SYNCHRONOUS 1.90 1.74 1.59 2.33 2.23 2.18  VAD DIR AXIS SYNCHRONOUS 1.90 1.74 1.59 2.33 2.23 2.18  VAD DIR AXIS SUBTRANSIENT 0.11 0.10 0.10 0.14 0.13 0.13  VAQ DIR AXIS SUBTRANSIENT 0.16 0.14 0.13 0.17 0.17 0.16  VALEAR AS AS TABLES ON 0.09 0.09 0.09 0.09  REACTANCE SARE SATURATED VALUES ARE PER UNITAL TRAING AND VOLTAGE INDICATED  TIT TRANSIENT TIME CONST. 0.018											
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. 6315-2RS (ISO) BEARING NON-DRIVE END BEARING NON-DRIVE END BEARING ON-DRIVE END BEARING ON-DRIV											
WAVEFORM DISTORTION         NO LOAD < 1.5% NON-DISTORTING LINEAR LOAD < 5.0%           MAXIMUM OVERSPEED         2250 Rev/Min           BEARING DRIVE END         BALL. 6315-2RS (ISO)           BEARING NON-DRIVE END         BALL. 6310-2RS (ISO)           BEARING NON-DRIVE END         BALL. 6310-2RS (ISO)           WEIGHT COMP. GENERATOR         580 kg         598 kg           WEIGHT WOUND STATOR         225 kg         225 kg           WEIGHT WOUND ROTOR         210.35 kg         199.39 kg           WHE'N WIRETIA         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-62%         THF-52%           COOLING AIR         0.514 m²/sec 1090 cfm         0.617 m²/sec 1308 cfm           VOLTAGE DOUBLE DELTA         220/110         230/115         240/120         220/110         230/115         240/120           VOLTAGE DOUBLE DELTA         220/110         230/115         240/120         220/110         230/115         240/120           VOLTAGE PARALLEL DELTA         110         115         120         110         115.7         123.4           KAVA BASE RATING FOR	EXCITER ROTOR RESISTANCE			0.091 Ohms PEF	R PHASE AT 22°	C					
MAXIMUM OVERSPEED 2250 Rev/Min  BEARING DRIVE END BALL. 6315-2RS (ISO)  BEARING NON-DRIVE END BALL. 6310-2RS (ISO)  BEARING NON-DRIVE END BALL. 6310-2RS (ISO)  ### BEARING NON-DRIVE END BALL. 6310-2RS (ISO)  ### BEARING NON-DRIVE END BALL. 6310-2RS (ISO)  ### BEARING NON-DRIVE END 588 kg  ### WEIGHT COMP. GENERATOR 580 kg  ### WEIGHT WOUND STATOR 225 kg 225 kg  ### WEIGHT WOUND ROTOR 210.35 kg 199.39 kg  ### WIERTIA 1.7674 kgm² 1.7169 kgm²  ### BACKING CRATE SIZE 123 x 67 x 103(cm) 123 x 67 x 103(cm)  ### BACKING CRATE SIZE 123 x 67 x 103(cm) 123 x 67 x 103(cm)  ### BACKING CRATE SIZE 123 x 67 x 103(cm) 123 x 67 x 103(cm)  ### BACKING CRATE SIZE 123 x 67 x 103(cm) 123 x 67 x 103(cm)  ### BACKING CRATE SIZE 123 x 67 x 103(cm) 123 x 67 x 103(cm)  ### BACKING CRATE SIZE 124 x 67 x 103(cm) 123 x 67 x 103(cm)  ### BACKING CRATE SIZE 125 x 67 x 103(cm) 123 x 67 x 103(cm)  ### BACKING CRATE SIZE 125 x 67 x 103(cm) 123 x 67 x 103(cm)  ### BACKING CRATE SIZE 125 x 67 x 103(cm) 123 x 67 x 103(cm)  ### BACKING CRATE SIZE 125 x 67 x 103(cm) 123 x 67 x 103(cm)  ### BACKING CRATE SIZE 125 x 67 x 103(cm) 123 x 67 x 103(cm)  ### BACKING CRATE SIZE 125 x 67 x 103(cm) 123 x 67 x 103(cm)  ### BACKING CRATE SIZE 125 x 67 x 103(cm) 123 x 67 x 103(cm)  ### BACKING CRATE SIZE 125 x 67 x 103(cm) 123 x 67 x 103(cm)  ### BACKING CRATE SIZE 125 x 67 x 103(cm) 123 x 67 x 103(cm)  ### BACKING CRATE SIZE 125 x 67 x 103(cm) 123 x 67 x 103(cm) 125 x 1	R.F.I. SUPPRESSION	BS EN 61000-6-2 & BS EN 61000-6-4,VDE 0875G, VDE 0875N. refer to factory for others									
BEARING DRIVE END BEARING NON-DRIVE END BEARING NON-DRIVE END BEARING BEBARING BER BEBRING BEBARING BERER BEBARING BEBARING BEBARING BEBARING BEBARING BEBARING BEBARI	WAVEFORM DISTORTION	NO LOAD < 1.5% NON-DISTORTING LINEAR LOAD < 5.0%									
BEARING NON-DRIVE END   BALL. 6310-2RS (ISO)	MAXIMUM OVERSPEED	2250 Rev/Min									
1 BEARING   2 BEARING	BEARING DRIVE END	BALL. 6315-2RS (ISO)									
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 NON-DRIVE END	BALL. 6310-2RS (ISO)									
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)           FOR THE COLOR TO THE COLOR TO THE COLOR TO TO THE COLOR TO TH		1 BEARING 2 BEARING									
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<20	WEIGHT COMP. GENERATOR		580 kg			598 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%	WEIGHT WOUND STATOR	<u> </u>									
SHIPPING WEIGHTS in a crate											
PACKING CRATE SIZE  123 x 67 x 103(cm)  50 Hz  60 Hz  THF<2%  TIF<50  COOLING AIR  0.514 m³/sec 1090 cfm  0.617 m³/sec 1308 cfm  VOLTAGE DOUBLE DELTA  220/110  230/115  240/120  220/110  230/115  240/120  220/110  230/115  240/120  VOLTAGE PARALLEL DELTA  110  115  120  110  115  120  110  115  120  110  11											
TELEPHONE INTERFERENCE  THF<2%  TIF<50  COOLING AIR  0.514 m³/sec 1090 cfm  0.617 m³/sec 1308 cfm  VOLTAGE DOUBLE DELTA  220/110  230/115  240/120  220/110  230/115  240/120  220/110  230/115  240/120  VOLTAGE PARALLEL DELTA  110  115  120  110  115  120  110  115  120  IN0  IN0  IN15  IN0  IN10  IN15  IN10  IN15  IN10  IN15  IN10  IN15  IN10  IN10  IN15  IN10  IN						•	-1				
TELEPHONE INTERFERENCE  COOLING AIR  0.514 m³/sec 1090 cfm  0.617 m³/sec 1308 cfm  VOLTAGE DOUBLE DELTA  220/110  230/115  240/120  220/110  230/115  240/120  VOLTAGE PARALLEL DELTA  110  115  120  110  115  120  kVA BASE RATING FOR REACTANCE VALUES  108  108  108  108  110.5  115.7  123.4  Xd DIR. AXIS SYNCHRONOUS  1.90  1.74  1.59  2.33  2.23  2.18  X'd DIR. AXIS TRANSIENT  0.17  0.15  0.14  0.20  0.19  0.19  X'd DIR. AXIS SUBTRANSIENT  0.11  0.10  0.10  0.14  0.13  0.13  Xq QUAD. AXIS REACTANCE  1.14  1.04  0.96  1.41  1.35  1.32  X'q QUAD. AXIS SUBTRANSIENT  0.16  0.14  0.13  0.17  0.17  0.16  XL LEAKAGE REACTANCE  0.07  0.07  0.07  0.06  0.08  0.08  0.08  X2 NEGATIVE SEQUENCE  0.11  0.10  0.10  0.15  0.14  0.14  0.14  Xo ZERO SEQUENCE  0.07  0.07  0.07  0.06  0.09  0.09  REACTANCES ARE SATURATED  VALUES ARE PER UNIT AT RATING AND VOLTAGE INDICATED  T'd SUB-TRANSTIME CONST.  T'd SUB-TRANSTIME CONST.  1 s  Ta ARMATURE TIME CONST.  0.01 s	PACKING CRATE SIZE										
COOLING AIR  0.514 m³/sec 1090 cfm  0.617 m³/sec 1308 cfm  VOLTAGE DOUBLE DELTA  220/110  230/115  240/120  220/110  230/115  240/120  VOLTAGE PARALLEL DELTA  110  115  120  110  115  120  kVA BASE RATING FOR REACTANCE VALUES  108  108  108  108  110.5  115.7  123.4  124 DIR. AXIS SYNCHRONOUS  1.90  1.74  1.59  2.33  2.23  2.18  X'd DIR. AXIS TRANSIENT  0.17  0.15  0.14  0.20  0.19  0.19  X''d DIR. AXIS SUBTRANSIENT  0.11  0.10  0.10  0.14  0.13  0.13  Xq QUAD. AXIS REACTANCE  1.14  1.04  0.96  1.41  1.35  1.32  X''q QUAD. AXIS SUBTRANSIENT  0.16  0.14  0.13  0.17  0.17  0.16  XL LEAKAGE REACTANCE  0.07  0.07  0.06  0.08  0.08  0.08  X2 NEGATIVE SEQUENCE  0.11  0.10  0.10  0.10  0.15  0.14  0.14  X0ZERO SEQUENCE  0.07  0.07  0.06  0.09  0.09  0.09  0.09  TEACTANCES ARE SATURATED  VALUES ARE PER UNIT AT RATING AND VOLTAGE INDICATED  T'd TRANSIENT TIME CONST.  1 s  T'd O.C. FIELD TIME CONST.  1 s  Ta ARMATURE TIME CONST.  0.01 s	TELEBHONE INTEREREDENCE										
VOLTAGE DOUBLE DELTA         220/110         230/115         240/120         220/110         230/115         240/120           VOLTAGE PARALLEL DELTA         110         115         120         110         115         120           kVA BASE RATING FOR REACTANCE VALUES         108         108         108         110.5         115.7         123.4           Xd DIR. AXIS SYNCHRONOUS         1.90         1.74         1.59         2.33         2.23         2.18           X'd DIR. AXIS TRANSIENT         0.17         0.15         0.14         0.20         0.19         0.19           X"d DIR. AXIS SUBTRANSIENT         0.11         0.10         0.10         0.14         0.13         0.13           X'q QUAD. AXIS SUBTRANSIENT         0.11         1.04         0.96         1.41         1.35         1.32           X"q QUAD. AXIS SUBTRANSIENT         0.16         0.14         0.13         0.17         0.17         0.16           XL LEAKAGE REACTANCE         0.07         0.07         0.06         0.08         0.08         0.08           X2 NEGATIVE SEQUENCE         0.11         0.10         0.10         0.15         0.14         0.14           X0 ZERO SEQUENCE         0.07         0.07 <t< td=""><td></td><td>0.5</td><td></td><td>) cfm</td><td>0.6</td><td></td><td>cfm</td></t<>		0.5		) cfm	0.6		cfm				
VOLTAGE PARALLEL DELTA         110         115         120         110         115         120           kVA BASE RATING FOR REACTANCE VALUES         108         108         108         110.5         115.7         123.4           Xd DIR. AXIS SYNCHRONOUS         1.90         1.74         1.59         2.33         2.23         2.18           X'd DIR. AXIS TRANSIENT         0.17         0.15         0.14         0.20         0.19         0.19           X"d DIR. AXIS SUBTRANSIENT         0.11         0.10         0.10         0.14         0.13         0.13           X"q QUAD. AXIS REACTANCE         1.14         1.04         0.96         1.41         1.35         1.32           X"q QUAD. AXIS SUBTRANSIENT         0.16         0.14         0.13         0.17         0.17         0.16           XL LEAKAGE REACTANCE         0.07         0.07         0.06         0.08         0.08         0.08           X2 NEGATIVE SEQUENCE         0.11         0.10         0.10         0.15         0.14         0.14           X0 ZERO SEQUENCE         0.07         0.07         0.06         0.09         0.09         0.09           T'd TRANSIENT TIME CONST.         0.012 s         0.012 s         1 s					<del> </del>						
REACTANCE VALUES       108       108       108       110.5       115.7       123.4         Xd DIR. AXIS SYNCHRONOUS       1.90       1.74       1.59       2.33       2.23       2.18         X'd DIR. AXIS TRANSIENT       0.17       0.15       0.14       0.20       0.19       0.19         X"d DIR. AXIS SUBTRANSIENT       0.11       0.10       0.10       0.14       0.13       0.13         Xq QUAD. AXIS REACTANCE       1.14       1.04       0.96       1.41       1.35       1.32         X"q QUAD. AXIS SUBTRANSIENT       0.16       0.14       0.13       0.17       0.17       0.16         XL LEAKAGE REACTANCE       0.07       0.07       0.06       0.08       0.08       0.08         X2 NEGATIVE SEQUENCE       0.11       0.10       0.10       0.15       0.14       0.14         Xo ZERO SEQUENCE       0.07       0.07       0.06       0.09       0.09       0.09         REACTANCES ARE SATURATED       VALUES ARE PER UNIT AT RATING AND VOLTAGE INDICATED         T'd SUB-TRANSTIME CONST.       0.012 s         T'do O.C. FIELD TIME CONST.       1 s         Ta ARMATURE TIME CONST.       0.01 s											
Xd DIR. AXIS SYNCHRONOUS       1.90       1.74       1.59       2.33       2.23       2.18         X'd DIR. AXIS TRANSIENT       0.17       0.15       0.14       0.20       0.19       0.19         X"d DIR. AXIS SUBTRANSIENT       0.11       0.10       0.10       0.14       0.13       0.13         Xq QUAD. AXIS REACTANCE       1.14       1.04       0.96       1.41       1.35       1.32         X"q QUAD. AXIS SUBTRANSIENT       0.16       0.14       0.13       0.17       0.17       0.16         XL LEAKAGE REACTANCE       0.07       0.07       0.06       0.08       0.08       0.08         X2 NEGATIVE SEQUENCE       0.11       0.10       0.10       0.15       0.14       0.14         X0 ZERO SEQUENCE       0.07       0.07       0.06       0.09       0.09       0.09         REACTANCES ARE SATURATED       VALUES ARE PER UNIT AT RATING AND VOLTAGE INDICATED         T'd SUB-TRANSTIME CONST.       0.038 s         T'd SUB-TRANSTIME CONST.       1 s         T'do O.C. FIELD TIME CONST.       1 s         Ta ARMATURE TIME CONST.       0.01 s		108	108	108	110.5	115.7	123.4				
X'd DIR. AXIS TRANSIENT       0.17       0.15       0.14       0.20       0.19       0.19         X"d DIR. AXIS SUBTRANSIENT       0.11       0.10       0.10       0.14       0.13       0.13         Xq QUAD. AXIS REACTANCE       1.14       1.04       0.96       1.41       1.35       1.32         X"q QUAD. AXIS SUBTRANSIENT       0.16       0.14       0.13       0.17       0.17       0.16         XL LEAKAGE REACTANCE       0.07       0.07       0.06       0.08       0.08       0.08         X2 NEGATIVE SEQUENCE       0.11       0.10       0.10       0.15       0.14       0.14         X0 ZERO SEQUENCE       0.07       0.07       0.06       0.09       0.09       0.09         REACTANCES ARE SATURATED       VALUES ARE PER UNIT AT RATING AND VOLTAGE INDICATED         T"d TRANSIENT TIME CONST.       0.038 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		1.90	1.74	1.59	2.33	2.23	2.18				
Xq QUAD. AXIS REACTANCE       1.14       1.04       0.96       1.41       1.35       1.32         X"q QUAD. AXIS SUBTRANSIENT       0.16       0.14       0.13       0.17       0.17       0.16         XL LEAKAGE REACTANCE       0.07       0.07       0.06       0.08       0.08       0.08         X2 NEGATIVE SEQUENCE       0.11       0.10       0.10       0.15       0.14       0.14         X0 ZERO SEQUENCE       0.07       0.07       0.06       0.09       0.09       0.09         REACTANCES ARE SATURATED         T'd TRANSIENT TIME CONST.       0.038 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		0.17	0.15	0.14	0.20	0.19	0.19				
X"q QUAD. AXIS SUBTRANSIENT       0.16       0.14       0.13       0.17       0.17       0.16         XL LEAKAGE REACTANCE       0.07       0.07       0.06       0.08       0.08       0.08         X2 NEGATIVE SEQUENCE       0.11       0.10       0.10       0.15       0.14       0.14         X0 ZERO SEQUENCE       0.07       0.07       0.06       0.09       0.09       0.09         REACTANCES ARE SATURATED       VALUES ARE PER UNIT AT RATING AND VOLTAGE INDICATED         T'd TRANSIENT TIME CONST.       0.038 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	X"d DIR. AXIS SUBTRANSIENT	0.11	0.10	0.10	0.14	0.13	0.13				
XL LEAKAGE REACTANCE       0.07       0.07       0.06       0.08       0.08       0.08         X2 NEGATIVE SEQUENCE       0.11       0.10       0.10       0.15       0.14       0.14         X0 ZERO SEQUENCE       0.07       0.07       0.06       0.09       0.09       0.09         REACTANCES ARE SATURATED         VALUES ARE PER UNIT AT RATING AND VOLTAGE INDICATED         T'd TRANSIENT TIME CONST.       0.038 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	Xq QUAD. AXIS REACTANCE	1.14	1.04	0.96	1.41	1.35	1.32				
X2 NEGATIVE SEQUENCE       0.11       0.10       0.10       0.15       0.14       0.14         X0 ZERO SEQUENCE       0.07       0.07       0.06       0.09       0.09       0.09         REACTANCES ARE SATURATED         VALUES ARE PER UNIT AT RATING AND VOLTAGE INDICATED         T'd TRANSIENT TIME CONST.       0.038 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	X"q QUAD. AXIS SUBTRANSIENT	0.16	0.14	0.13	0.17	0.17	0.16				
X0 ZERO SEQUENCE         0.07         0.07         0.06         0.09         0.09         0.09           REACTANCES ARE SATURATED         VALUES ARE PER UNIT AT RATING AND VOLTAGE INDICATED           T'd TRANSIENT TIME CONST.         0.038 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	XL LEAKAGE REACTANCE	0.07	0.07	0.06	0.08	0.08	0.08				
REACTANCES ARE SATURATED VALUES ARE PER UNIT AT RATING AND VOLTAGE INDICATED  T'd TRANSIENT TIME CONST. 0.038 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	X2 NEGATIVE SEQUENCE	0.11	0.10	0.10	0.15	0.14	0.14				
T'd TRANSIENT TIME CONST.       0.038 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	X <sub>0</sub> ZERO SEQUENCE	0.07 0.07 0.06 0.09 0.09 0.09									
T"d SUB-TRANSTIME CONST.         0.012 s           T'do O.C. FIELD TIME CONST.         1 s           Ta ARMATURE TIME CONST.         0.01 s	REACTANCES ARE SATUR	TURATED VALUES ARE PER UNIT AT RATING AND VOLTAGE INDICATED									
T'do O.C. FIELD TIME CONST. 1 s Ta ARMATURE TIME CONST. 0.01 s											
Ta ARMATURE TIME CONST. 0.01 s											
	SHORT CIRCUIT RATIO										

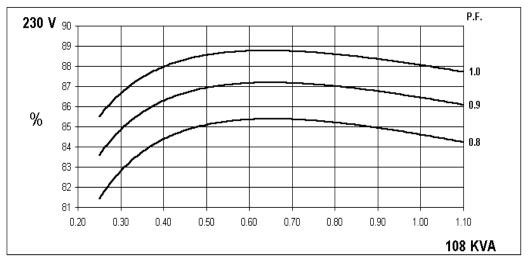


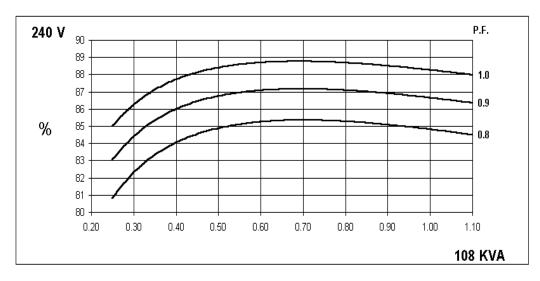


# **UCI274G**Winding 311 Single Phase

## SINGLE PHASE EFFICIENCY CURVES







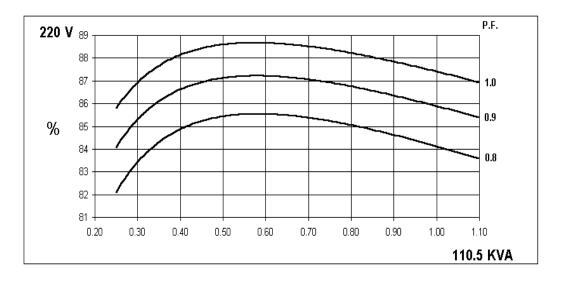


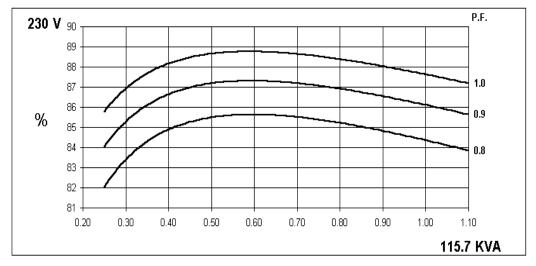


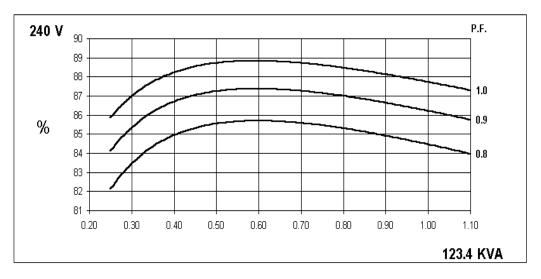
60 Hz

# Winding 311 Single Phase

## SINGLE PHASE EFFICIENCY CURVES





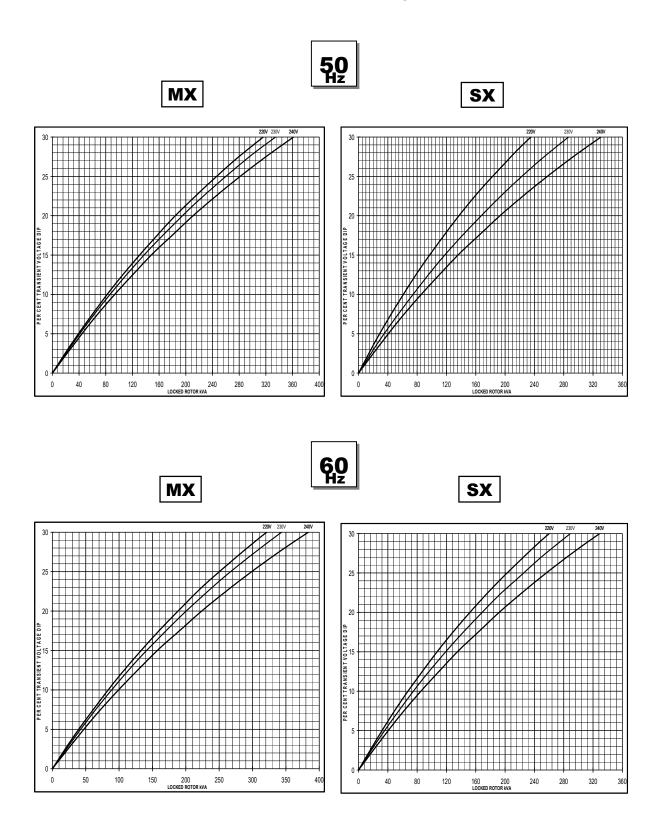


# **STAMFORD**

# **UCI274G**

# Winding 311 Single Phase

# **Locked Rotor Motor Starting Curve**

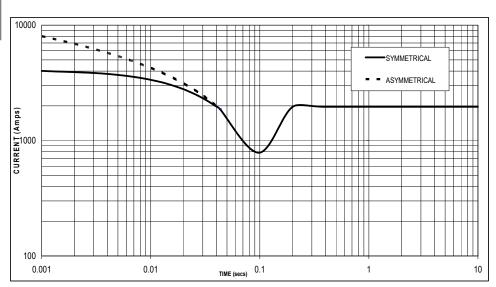


## Winding 311 Single Phase

Single Phase Short Circuit Decrement Curve. No-load Excitation at Rated Speed

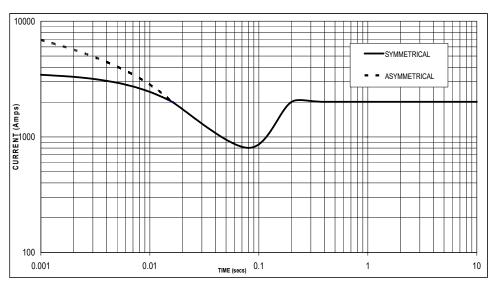
Based on Double Delta connection.





Sustained Short Circuit = 1960 Amps





Sustained Short Circuit = 2010 Amps

### Note

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 :

Voltage	Factor
220V	X 1.00
230V	X 1.05
240V	X 1.09

The sustained current value is constant irrespective of voltage level



# **UCI274G**

# Winding 311 Single Phase

# **RATINGS**

Class - Temp Rise		Cont. F - 105/40°C			Cont. H - 125/40°C			Cont. F - 105/40°C			Cont. H - 125/40°C		
	Class - Tellip Nise	0.8pf			0.8pf			1.0pf			1.0pf		
50	Double Delta (V)	220	230	240	220	230	240	220	230	240	220	230	240
Hz	Parallel Delta (V)	110	115	120	110	115	120	110	115	120	110	115	120
	kVA	98.7	98.7	98.7	108.0	108.0	108.0	98.7	98.7	98.7	108.0	108.0	108.0
	kW	79.0	79.0	79.0	86.4	86.4	86.4	98.7	98.7	98.7	108.0	108.0	108.0
	Efficiency (%)	84.4	84.7	84.9	84.0	84.4	84.6	87.9	88.1	88.3	87.5	87.8	88.1
	kW Input	93.6	93.3	93.1	102.9	102.4	102.1	112.3	112.0	111.8	123.4	123.0	122.6

Class Tamm Diag		Cont. F - 105/40°C			Cont. H - 125/40°C			Cont. F - 105/40°C			Cont. H - 125/40°C		
	Class - Temp Rise 0.8pf			0.8pf			1.0pf			1.0pf			
60	Double Delta (V)	220	230	240	220	230	240	220	230	240	220	230	240
Hz	Parallel Delta (V)	110	115	120	110	115	120	110	115	120	110	115	120
	kVA	102.8	109.0	115.7	110.5	115.7	123.4	102.8	109.0	115.7	110.5	115.7	123.4
	kW	82.2	87.2	92.6	88.4	92.6	98.7	102.8	109.0	115.7	110.5	115.7	123.4
	Efficiency (%)	84.1	84.3	84.4	83.7	84.0	84.1	87.4	87.5	87.7	87.0	87.3	87.4
	kW Input	97.7	103.4	109.7	105.6	110.2	117.4	117.6	124.6	131.9	127.0	132.5	141.2

## Dimensional and Torsional Drawing

For dimensional and torsional information please refer to the alternator General Arrangement and rotor drawings available on our website (http://stamford-avk.com/)

# **STAMFORD**

www.stamford-avk.com

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