WHOLESALE DIESEL GENERATORS
A DIVISION OF NORTH STAR LOGISTICS LLC
661 Miller's Bluff RD, Surgoinsville, TN 37873
423-220-3500 Ext 2
sales@wholesale-generators.com
www.Wholesale-Generators.com

120KW Cummins Diesel Generator

Rental Type | Prime & Continuous Use | Trailers Available

For construction, rental yards, concerts, major events, emergency, & other mobile power needs

GENERAL INFORMATION & KEY FEATURES

- **Power:** 120kW / 125kVA | Prime & Continuous Use
- **Engine:** Cummins 6BTAA5.9-G2
- **Cylinder:** 6-cylinder, in-line
- **Cooling:** Water-cooled
- **Displacement:** 5.9 Liter
- **Aspiration:** Turbocharged & Charge air cooled
- **Bore x Stroke:** 102x120 mm
- **Voltage:** 3 voltage settings - 3ph 277/480V, 3ph 120/208V, 1ph 120/240V
- **Phase:** Single phase or 3-phase available
- **Operating Speed:** 1800 rpm
- **Noise Level:** 69 db @ 7m
- **Enclosure Type:** Silent IP-65, soundproof and weatherproof customizable enclosure
- **Connection Features:** 2x rows of Cam-Locks, 2x rows of Terminals, 2x Twist Lock Sockets, 2x Duplex 120V 15amp
- **Electrical:** Sockets provide 1ph power while the switch is on 3ph for main supply
- **Controller:** DSE 7320 MKII
- **Fuel Tank:** 90 or 225 gallons, extended fuel tank capacity options
- **Dimensions:** L*W*H - 126 x 44.5 x 79.1 (in.)
- **Weight:** 6713 lbs.
- **Certifications:** Certified ISO:9001, ISO:17025, ISO:8258, EPA Tier 3, UL2200

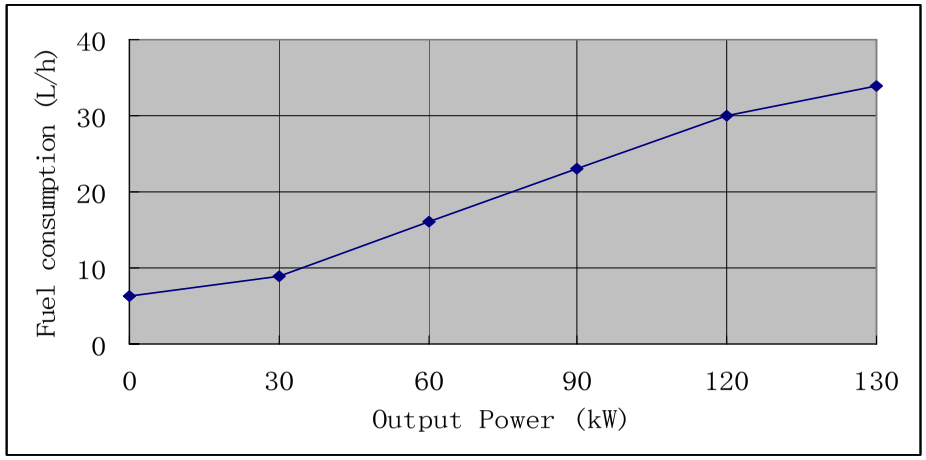
	DONGFENG CUMMINS ENGINE Co., Ltd. XiangFan HuBei P.R.CHINA ENGINE DATASHEET—for G-drive	ENGINE MODEL 6BTAA5.9-G2		FREFORMANCE CURVE FR 9266-03
		ENGINE FAMILY D40	CPL 8541	2005/12

Displacement	5.9 L	Air intake way	Air-air after-cooled, turbo-charged		
Cylinder bore	102 mm	Cylinder quantity	6	kW(BHP)	@RPM
Stroke	120 mm			120(161)	1500
Fuel system	PB pump _ GAC governor / BYC ASIMCO			Speed-droop	5%

Engine testing with fuel system, water pump and oil pump, without air compressor, alternator, fan, other options and driving accessory.
Testing condition： air intake resistance 250 mmHg, exhaust back pressure 50 mmHg.

Engine Speed-RPM	Standby Power		Base Output Power		Continuous Power	
	kW	HP	kW	HP	kW	HP
1500	130	174	120	161	96	129

Output Power			Fuel consumption	
%	kW	HP	g/kW.h	L/h
Standby Power				
100	130	174	215	34
Base Output Power				
100	120	161	208	30
75	90	121	212	23
50	60	80	219	16
25	30	40	245	9
Continuous Power				
N/A	96	129	206	24



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		ENGINE FAMILY D40	CPL 8541	2005/12

Typical engine data		
Net weight	kg	411
Rotate part instantaneous inertia _ without flywheel	kg.m2	0.25
Distance between gravity center and rear surface of cylinder block	mm	544
Distance between gravity center and center line above of crankshaft	mm	155
Engine installation		
Static bent torque permitted—rear surface of cylinder block	N.m	1356
Static bent torque permitted—front surface of cylinder block	N.m	435
Static bent torque permitted—flank surface of cylinder block	N.m	365
Exhaust system		
Max. back pressure	mmHg	76
Diameter of exhaust pipe recommended	mm	75
Air intake system		
Max. air intake resistance		
Dirty filter	mmH2O	635
Normal air cleaner and clean filter	mmH2O	254
Heavy duty cleaner and clean filter	mmH2O	381
Diameter of intake pipe recommended	mm	100
Lubrication system		
Normal oil pressure range		

Low idle	kPa	207
Rated speed	kPa	345
Max. oil temperature permitted in oil pan	℃	121
Oil pan capacity (Max _ Min)	L	14.2_12.3
Lubrication system Min. capacity (oil pan + oil filter)	L	16.4
Usage inclining degree permitted (any direction)	°	40
Fuel system		
Fuel injection pump model	PB pump _ GAC governor / BYC ASIMCO	
Max. fuel input resistance of transfer pump	mmHg	102
Max. overflow fuel resistance at overflow pipe of injector	mmHg	254
Total fuel overflow amount	L/h	30
Cooling system		
Coolant capacity-engine only	L	9.9
Max. coolant cycling resistance exterior engine	kPa	28
Thermostat adjusting temperature (range)	℃	82_95
Min. opening pressure of radiator cap	kPa	69
Max. coolant temperature permitted _ Standby Power/Base output Power	℃	104/100
Electric system		
Starter	12V	24V
Battery charging system	63A	40A
Max. starting circuit resistance	0.00075Ω	0.002Ω
Min. battery capacity_ -12℃ (CCA：Cold Cranking Ampere)	800CCA	400CCA
Technical data _ under standard fuel delivery rate FR 9266-03	**Base output Power**	**Standby Power**
Engine speed _ RPM	1500	1500
Output Power _ kW	120	130

Torque _ Nm	764	828
Low idle _ RPM	750-850	750-850
Friction energy output _ kW	12.7	12.7
Piston speed _ m/s	6.0	6.0
Engine coolant flow _ L/sec	2.0	2.0
Air intake flow _ L/sec	135	145
Exhaust flow _ L/sec	293	324
Exhaust temperature _ ℃	481	495
Environment energy output _ kW	N/A	N/A
Coolant energy output _ kW	45	50
Fuel energy output _ kW	N/A	N/A

All data's error within ±5%.

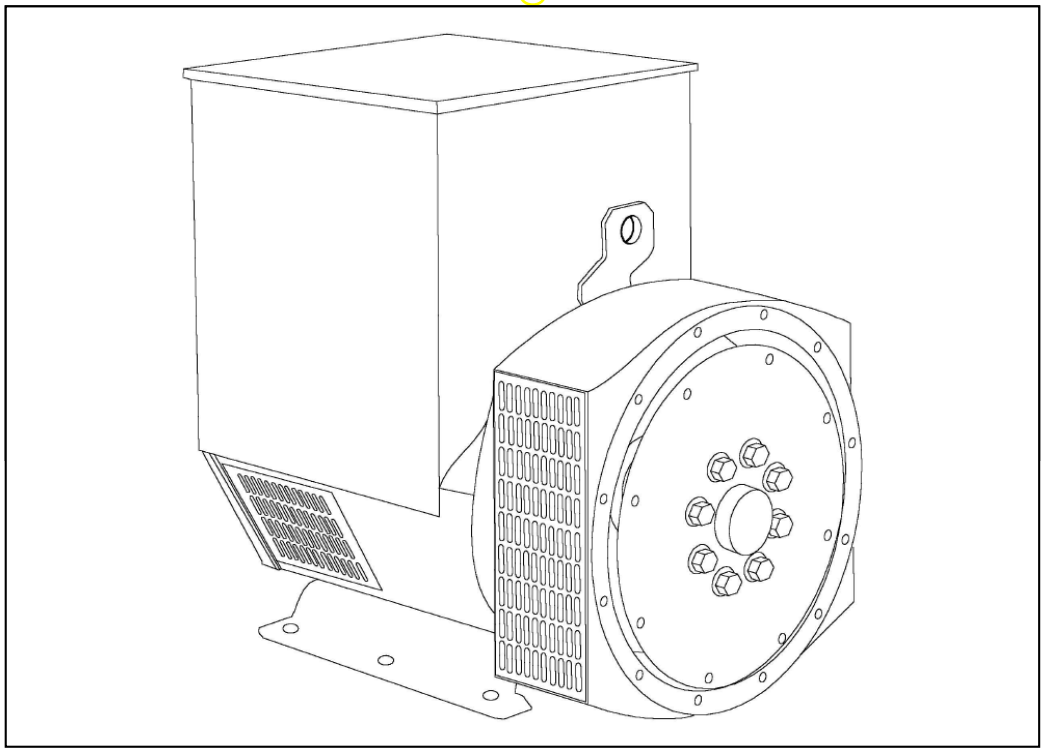
Excuse for none notice anymore in case of data changed

DONGFENG CUMMINS ENGINE Co., Ltd.

STAMFORD®

UCI274E - Winding 14

Technical Data Sheet



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 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.
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 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.

Front cover drawing typical of product range.

UCI274E

WINDING 14

CONTROL SYSTEM	SEPARATELY EXCITED BY P.M.G.		
A.V.R.	MX341	MX321	
VOLTAGE REGULATION	± 1%	± 0.5 %	With 4% ENGINE GOVERNING
SUSTAINED SHORT CIRCUIT	REFER TO SHORT CIRCUIT DECREMENT CURVES (page 6)		

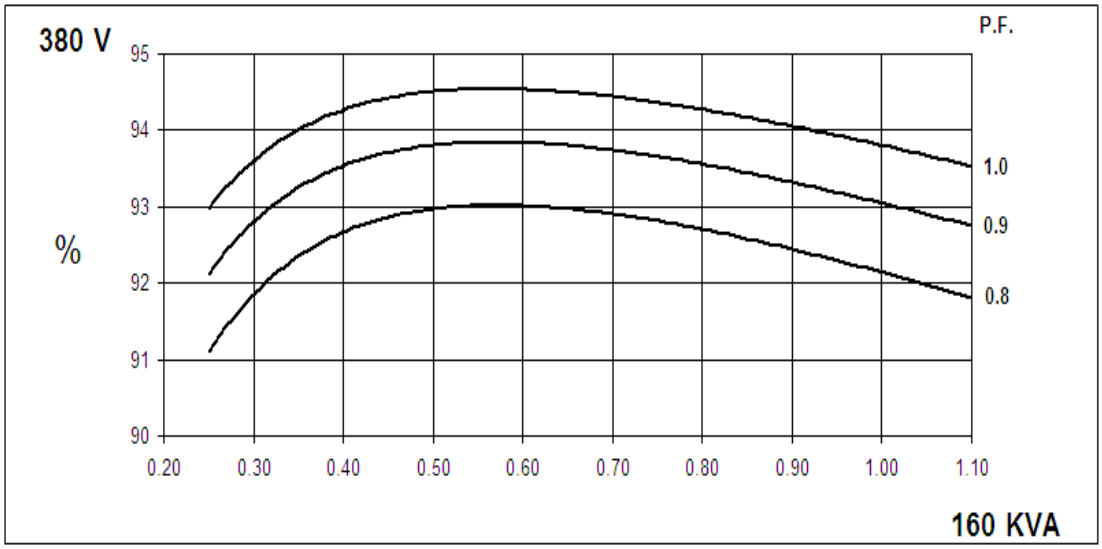
CONTROL SYSTEM	SELF EXCITED		
A.V.R.	SX460	AS440	
VOLTAGE REGULATION	± 1.5 %	± 1.0 %	With 4% ENGINE GOVERNING
SUSTAINED SHORT CIRCUIT	DOES NOT SUSTAIN A SHORT CIRCUIT CURRENT		

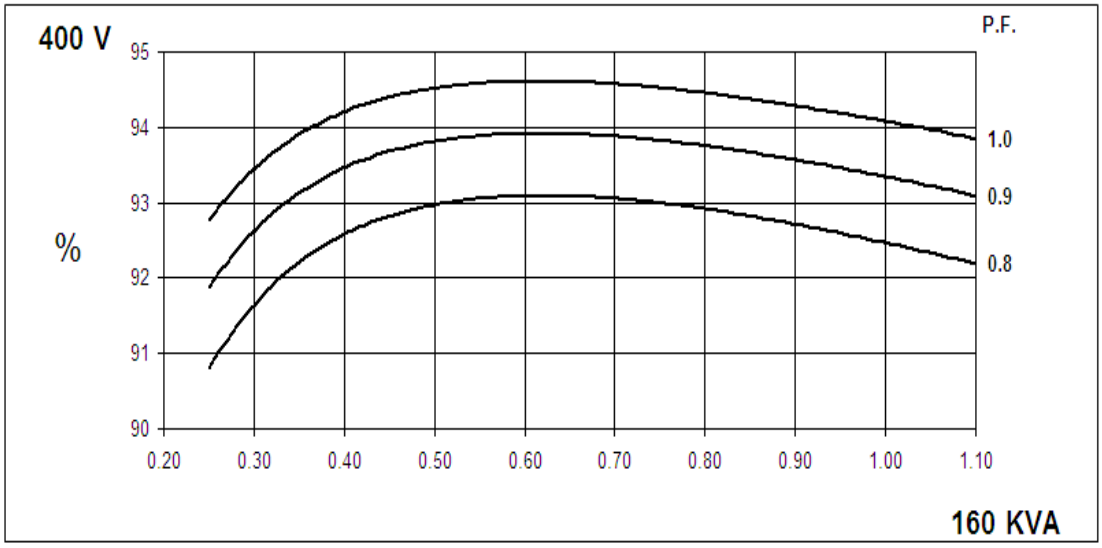
INSULATION SYSTEM	CLASS H	
PROTECTION	IP23	
RATED POWER FACTOR	0.8	
STATOR WINDING	DOUBLE LAYER LAP	
WINDING PITCH	TWO THIRDS	
WINDING LEADS	12	
MAIN STATOR RESISTANCE	0.022 Ohms PER PHASE AT 22°C STAR CONNECTED	
MAIN ROTOR RESISTANCE	1.34 Ohms at 22°C	
EXCITER STATOR RESISTANCE	20 Ohms at 22°C	
EXCITER 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 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)	
	1 BEARING	2 BEARING
WEIGHT COMP. GENERATOR	492 kg	511 kg
WEIGHT WOUND STATOR	180 kg	180 kg
WEIGHT WOUND ROTOR	167.51 kg	156.55 kg
WR² INERTIA	1.3271 kgm^2	1.2765 kgm^2
SHIPPING WEIGHTS in a crate	525 kg	539 kg
PACKING CRATE SIZE	123 x 67 x 103(cm)	123 x 67 x 103(cm)
TELEPHONE INTERFERENCE	THF<2%	TIF<50
COOLING AIR	0.617 m³/sec 1308 cfm	

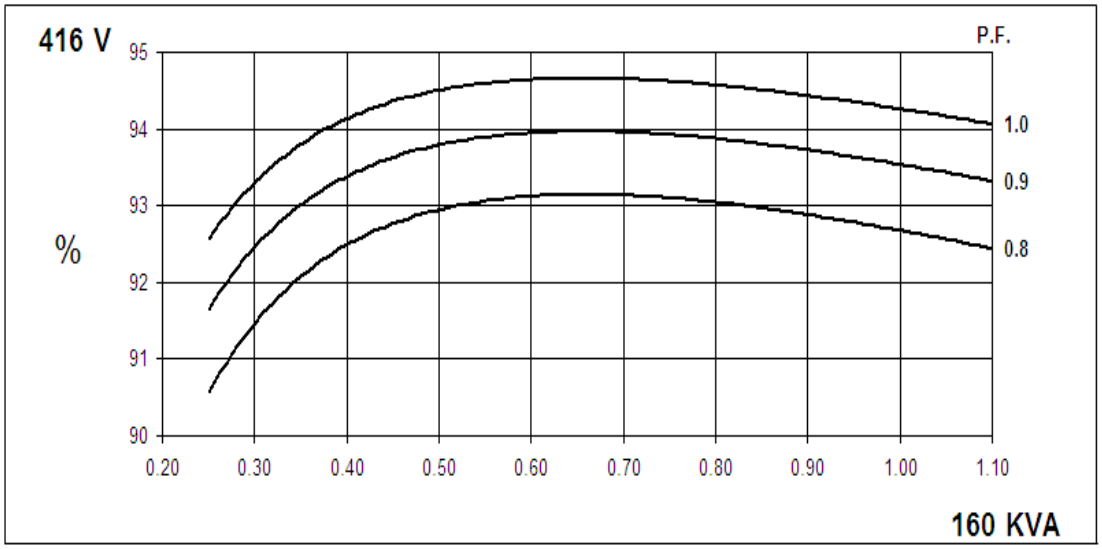
VOLTAGE STAR	380	400	416
kVA BASE RATING FOR REACTANCE VALUES	160	160	160
Xd DIR. AXIS SYNCHRONOUS	2.06	1.86	1.72
X'd DIR. AXIS TRANSIENT	0.19	0.17	0.16
X"d DIR. AXIS SUBTRANSIENT	0.13	0.12	0.11
Xq QUAD. AXIS REACTANCE	1.34	1.21	1.12
X"q QUAD. AXIS SUBTRANSIENT	0.17	0.15	0.14
X_L LEAKAGE REACTANCE	0.10	0.06	0.06
X_2 NEGATIVE SEQUENCE	0.14	0.13	0.12
X_0 ZERO SEQUENCE	0.09	0.08	0.07

REACTANCES ARE SATURATED	VALUES ARE PER UNIT AT RATING AND VOLTAGE INDICATED
T'd TRANSIENT TIME CONST.	0.032s
T"d SUB-TRANSTIME CONST.	0.01s
T'do O.C. FIELD TIME CONST.	0.85s
Ta ARMATURE TIME CONST.	0.007s
SHORT CIRCUIT RATIO	1/Xd

THREE PHASE EFFICIENCY CURVES





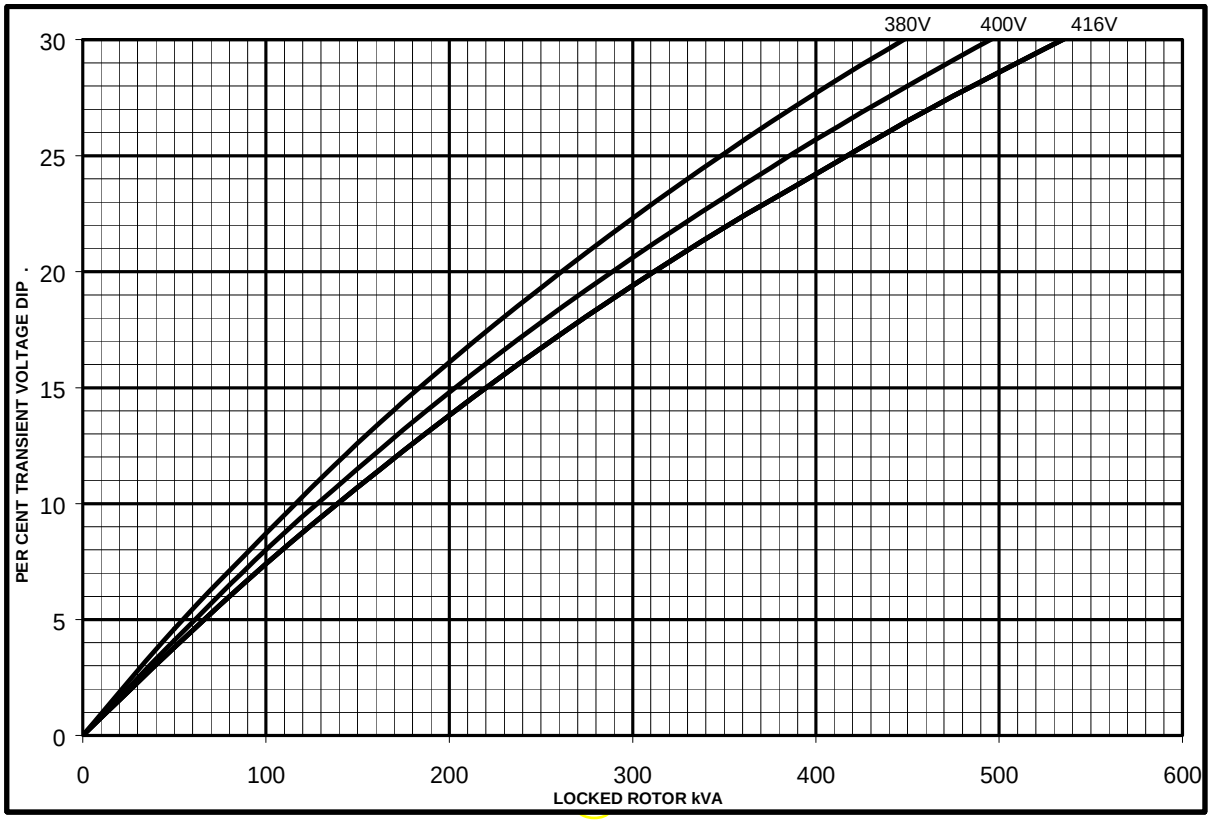


UCI274E

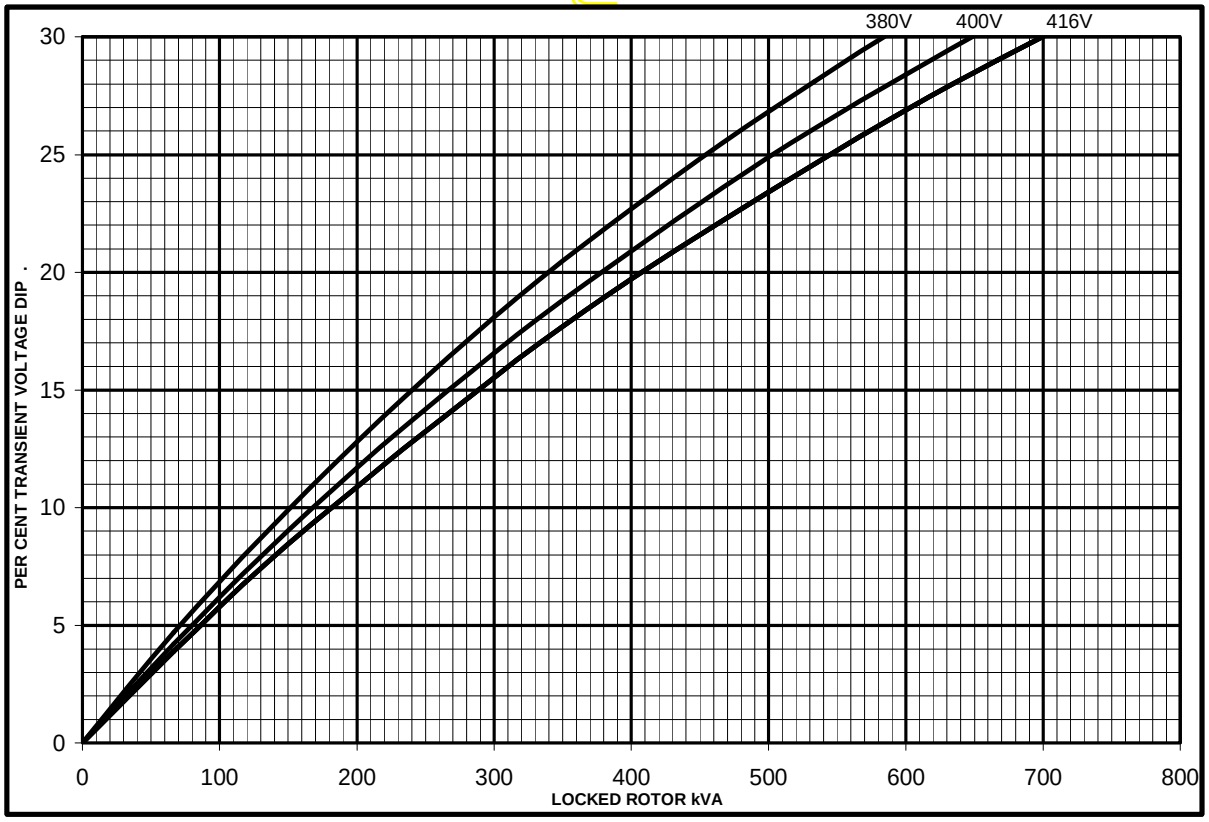
Winding 14

SX

Locked Rotor Motor Starting Curves

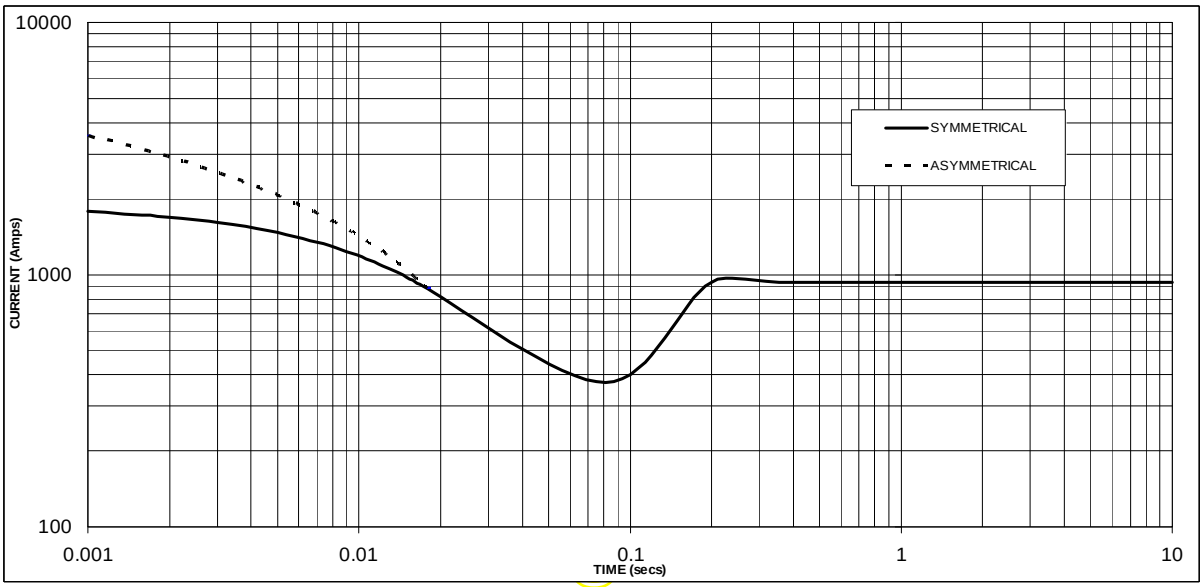


MX



STAMFORD

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



Sustained Short Circuit = 930 Amps

Note
The following multiplication factor should be used to convert the values from curve for the various types of short circuit :

	3-phase	2-phase L-L	1-phase L-N
Instantaneous	x 1.00	x 0.87	x 1.30
Minimum	x 1.00	x 1.80	x 3.20
Sustained	x 1.00	x 1.50	x 2.50
Max. sustained duration	10 sec.	5 sec.	2 sec.

All other times are unchanged

UCI274E

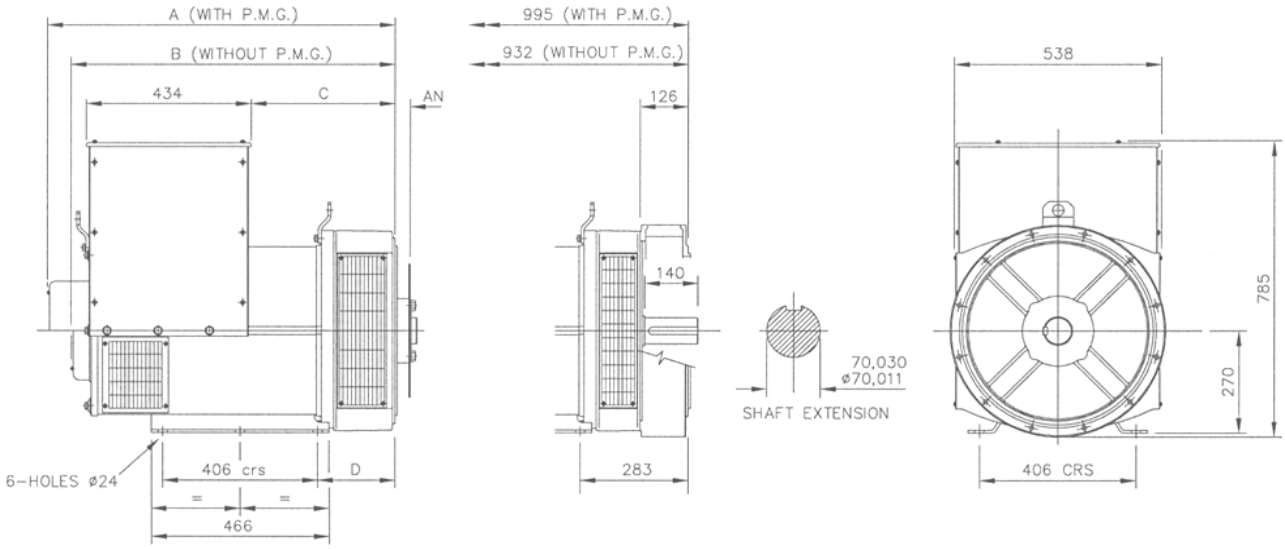
Winding 14 / 0.8 Power Factor

60Hz

RATINGS

Class - Temp Rise	Cont. F - 105/40°C			Cont. H - 125/40°C			Standby - 150/40°C			Standby - 163/27°C		
Series Star (V)	380	400	416	380	400	416	380	400	416	380	400	416
Parallel StarStar (V)	190	200	208	190	200	208	190	200	208	190	200	208
Series Delta (V)	220	230	240	220	230	240	220	230	240	220	230	240
kVA	140.0	140.0	140.0	160.0	160.0	160.0	170.0	170.0	170.0	175.0	175.0	175.0
kW	112.0	112.0	112.0	128.0	128.0	128.0	136.0	136.0	136.0	140.0	140.0	140.0
Efficiency (%)	92.5	92.8	92.9	92.1	92.5	92.7	91.9	92.3	92.5	91.8	92.2	92.5
kW Input	121.1	120.7	120.5	138.9	138.4	138.1	147.9	147.4	147.0	152.4	151.8	151.4

DIMENSIONS



SINGLE BEARING ADAPTORS				
ADAPTOR	A	B	C	D
SAE 1	928,3	865,3	389,3	216,3
SAE 2	914	851	375	202
SAE 3	914	851	375	202

COUPLING DISCS	
DISC	AN
SAE 10	53,98
SAE 11,5	39,68
SAE 14	25,40

DSEGenset®

DSE7310/20 MKII

AUTO START & AUTO MAINS FAILURE CONTROL MODULES

KEY FEATURES

- Configurable power-up mode
- MPU fail delay
- Enhanced graphical user interface
- Drag & drop advanced PLC editor
- MSC ID within PLC GenComm override
- 4-Line back-lit LCD text display
- Multiple Display Languages
- Five key menu navigation
- LCD alarm indication
- Heated display option available
- Customisable power-up text and images
- DSENet expansion compatibility
- Data logging facility
- Internal PLC editor
- Protections disable feature
- Fully configurable via PC using USB, RS232 & RS485 communication
- Front panel configuration with PIN protection
- Power save mode
- 3 phase generator sensing and protection
- 3 phase mains (utility) sensing and protection (DSE7320 MKII only)
- Automatic load transfer control (DSE7320 MKII only)
- Generator current and power monitoring (kW, kvar, kVA, pf)
- Mains current and power monitoring (kW, kvar, kVA, pf) (DSE7320 MKII only)
- kW and kvar overload and reverse power alarms
- Over current protection
- Unbalanced load protection
- Independent earth fault protection
- Breaker control via fascia buttons
- Fuel and start outputs configurable when using CAN
- 6 configurable DC outputs
- 2 configurable volt-free relay outputs
- 6 configurable analogue/digital inputs
- Support for 0 V to 10 V & 4 mA to 20 mA sensors
- 8 configurable digital inputs
- Configurable 5 stage dummy load and load shedding outputs
- CAN, MPU and alternator frequency speed sensing in one variant
- Real time clock
- Manual and automatic fuel pump control
- Engine pre-heat and post-heat functions
- Engine run-time scheduler
- Engine idle control for starting & stopping
- Fuel usage monitor and low fuel level alarms
- Simultaneous use of RS232 and RS485 communication ports
- True dual mutual standby using RS232 or RS485 for accurate engine hours balancing.
- MODBUS RTU support with configurable MODBUS pages.
- Advanced SMS messaging (additional external modem required)
- Start & stop capability via SMS messaging
- 3 configurable maintenance alarms
- Compatible with a wide range of CAN engines, including tier 4 engine support
- Uses DSE Configuration Suite PC Software for simplified configuration
- Licence-free PC software
- IP65 rating (with supplied gasket) offers increased resistance to water ingress
- Modules can be integrated into building management systems (BMS) using MODBUS RTU

KEY BENEFITS

- Automatically transfers between mains (utility) and generator (DSE7320 MKII only) for convenience.
- Hours counter provides accurate information for monitoring and maintenance periods
- User-friendly set-up and button layout for ease of use
- Multiple parameters are monitored & displayed simultaneously for full visibility
- The module can be configured to suit a wide range of applications for user flexibility
- PLC editor allows user configurable functions to meet user specific application requirements.

SPECIFICATIONS

DC SUPPLY

CONTINUOUS VOLTAGE RATING
8 V to 35 V Continuous
5 V for upto 1 minute

CRANKING DROPOUTS
Able to survive 0 V for 100 mS, providing supply was at least 10 V before dropout and supply recovers to 5 V. This is achieved without the need for internal batteries. LEDs and backlight will not be maintained during cranking.

MAXIMUM OPERATING CURRENT
510 mA at 12 V, 240 mA at 24 V

MAXIMUM STANDBY CURRENT
330 mA at 12 V, 160 mA at 24 V

CHARGE FAIL/EXCITATION RANGE
0 V to 35 V

GENERATOR & MAINS (UTILITY)

VOLTAGE RANGE
15 V to 415 V AC (Ph to N)
26 V to 719 V AC (Ph to Ph)

FREQUENCY RANGE
3.5 Hz to 75 Hz

MAGNETIC PICKUP

VOLTAGE RANGE
+/- 0.5 V to 70 V

FREQUENCY RANGE
10,000 Hz (max)

INPUTS

DIGITAL INPUTS A TO H
Negative switching

ANALOGUE INPUTS A & F
Configurable as:
Negative switching digital input
0 V to 10 V sensor
4 mA to 20 mA sensor
Resistive sensor

ANALOGUE INPUTS B, C, D & E
Configurable as:
Negative switching digital input
Resistive sensor

OUTPUTS

OUTPUT A & B (FUEL & START)
15 A DC at supply voltage

OUTPUTS C & D
8 A AC at 250 V AC (Volt-free)

AUXILIARY OUTPUTS E, F, G, H, I & J
2 A DC at supply voltage

DIMENSIONS

OVERALL
245 mm x 184 mm x 51 mm
9.6” x 7.2” x 2.0”

PANEL CUT-OUT
220 mm x 160 mm
8.7” x 6.3”

MAXIMUM PANEL THICKNESS
8 mm
0.3”

STORAGE TEMPERATURE RANGE
-40°C to +85°C
-40 °F to +185 °F

OPERATING TEMPERATURE RANGE
-30°C to +70°C
-22 °F to +158 °F

HEATED DISPLAY VARIANT
-40 °C to +70 °C
-40 °F to +158 °F

RELATED MATERIALS

TITLE	PART NO.
DSE7310 MKII & DSE7320 MKII Installation Instructions	053-181
DSE7310 MKII & DSE7320 MKII Operator Manual	057-253
DSE7310 MKII & DSE7320 MKII Configuration Suite PC Manual	057-243

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DSEGenset®

DSE7310/20 MKII

AUTO START & AUTO MAINS FAILURE CONTROL MODULES

The DSE7310 MKII is an Auto Start Control Module and the DSE7320 MKII is an Auto Mains (Utility) Failure Control Module suitable for a wide variety of single, diesel or gas, gen-set applications.

Monitoring an extensive number of engine parameters, the modules will display warnings, shutdown and engine status information on the back-lit LCD screen, illuminated LEDs, remote PC and via SMS text alerts (with external modem).

The DSE7320 MKII will also monitor the mains (utility) supply. The modules include USB, RS232 and RS485 ports as well as dedicated DSENet® terminals for system expansion.

Both modules are compatible with electronic (CAN) and non-electronic (magnetic pick-up/alternator sensing) engines and offer an extensive number of flexible inputs, outputs and extensive engine protections so the system can be easily adapted to meet the most demanding industry requirements.

The extensive list of features includes enhanced event and performance monitoring, remote communications & PLC functionality. Dual mutual standby is now available on both the DSE7310 MKII & DSE7320 MKII using RS232 or RS485 communications. This provides for a simpler and more convenient installation with more advanced features such as true engine hours balancing.

The modules can be easily configured using the DSE Configuration Suite PC software. Selected front panel editing is also available.

ENVIRONMENTAL TESTING STANDARDS

ELECTRO-MAGNETIC COMPATIBILITY
BS EN 61000-6-2
EMC Generic Immunity Standard for the Industrial Environment
BS EN 61000-6-4
EMC Generic Emission Standard for the Industrial Environment

ELECTRICAL SAFETY
BS EN 60950
Safety of Information Technology Equipment, including Electrical Business Equipment

TEMPERATURE
BS EN 60068-2-1
Ab/Ae Cold Test -30 °C
BS EN 60068-2-2
Bb/Be Dry Heat +70 °C

VIBRATION
BS EN 60068-2-6
Ten sweeps in each of three major axes
5 Hz to 8 Hz at +/-7.5 mm,
8 Hz to 500 Hz at 2 gn

HUMIDITY
BS EN 60068-2-30
Db Damp Heat Cyclic 20/55 °C
at 95% RH 48 Hours
BS EN 60068-2-78
Cab Damp Heat Static 40 °C
at 93% RH 48 Hours

SHOCK
BS EN 60068-2-27
Three shocks in each of three major axes
15 gn in 11 mS

DEGREES OF PROTECTION PROVIDED BY ENCLOSURES
BS EN 60529
IP65 - Front of module when installed into the control panel with the supplied sealing gasket.

COMPREHENSIVE FEATURE LIST TO SUIT A WIDE VARIETY OF GEN-SET APPLICATIONS