

350KW Cummins Diesel Generator

Prime | 1800RPM | 60 Hz | Cummins Engine

General

Model	WDG-350-CMS
Fuel Type	Diesel
Prime Rating	350 KW / 438 KVA
Frequency	60 Hz
Voltage	Any voltage can be customized
Phase	Single Phase or Three Phase
Enclosure Type	Silent, Weatherproof
Engine Brand	Cummins
Alternator Brand	Stamford
Controller Model	Deep Sea DSE 7310/7320



Engine Data

Engine Model	Cummins KTA19-G3 (Prime)
Configuration	6 cylinder
Aspiration	Turbocharged, Air Cooled
Bore x Stroke (in.)	6.25 x 6.25 (in.)
Rated Speed (RPM)	1800
Displacement (L)	19 L
Compression Ratio	14.5:1
Cooling Method	Radiator Cooled
Governor	Electronic

Alternator Data

Alternator Model	Stamford HCI434E/444E
Type	Self-excited, Brushless
Power Factor	0.8
Voltage Regulation	AVR
Insulation System	Class H
Protection Level	IP23

Size & Dimensions

Dimensions (L x W x H)	157 x 66.9 x 78.7 (in.)
Net Weight (lbs.)	6000



CHONGQING CUMMINS ENGINE COMPANY LTD. ENGINE PERFORMANCE CURVE

CONFIGURATION
D193056DX02

ENGINE MODEL: KTA19-G2

CURVE NUMBER: FR4126

CPL No.: 0886

DATE: 2023/1/16

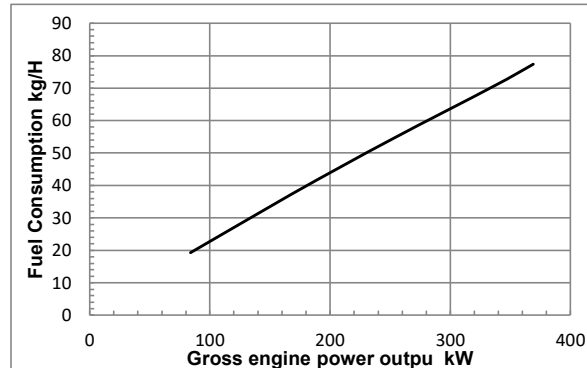
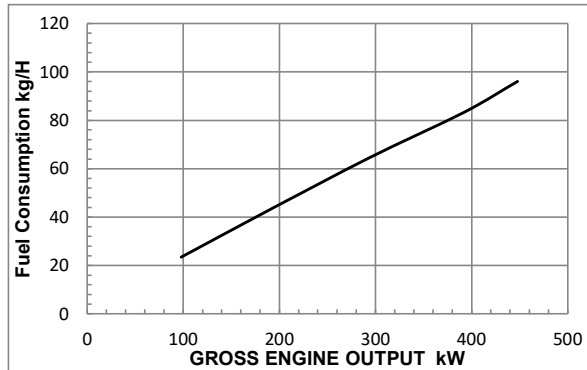
Displacement: 19L (1150) Aspiration: Turbocharged, Aftercooled RATING
 BoreXStroke: 159X159mm (6.25X6.25 in.) Fuel System: Cummins PT 60Hz Standby: 448 kW(600 BHP)@1800 r/min
 Compress Ratio: 14.5:1 No. of Cylinder: 6 50Hz Standby: 369 kW(495 BHP)@1500 r/min

All data is based on the engine operating with fuel system, water pump, and 20 in. H₂O(4.98kPa) inlet air restriction with 5.8 in.(147mm) inner diameter, and with 2 in. Hg(7kPa) exhaust restriction with 8 in.(203mm) inner diameter; not included are alternator, fan, optional equipment and driven components. Coolant flows and heat rejection data based on coolant as 50% ethylene glycol/50% water. All data is subject to change without notice.

GROSS ENGINE POWER OUTPUT

SPEED rpm	STANDBY POWER		PRIME POWER		CONTINUOUS POWER	
	BHP	kW	BHP	kW	BHP	kW
1800	600	448	525	392	450	336
1500	495	369	450	336	440	328

FUEL CONSUMPTION



	OUTPUT POWER		CONSUMPTION		BFSC		
	%	BHP	kW	Lb/h	kg/h	g/kW.h	Lb/BHP.h
1800RPM							
STANDBY							
100	600	448	212	96	214	0.353	
PRIME							
100	525	392	184	83	213	0.350	
75	394	294	142	65	220	0.361	
50	263	196	98	44	226	0.371	
25	131	98	52	23	239	0.394	
CONTINUOUS							
100	450	336	159	72	215	0.354	
1500RPM							
STANDBY							
100	495	369	171	77	210	0.345	
PRIME							
100	450	336	156	71	210	0.345	
75	338	252	120	54	216	0.355	
50	225	168	82	37	222	0.365	
25	113	84	43	19	230	0.377	
CONTINUOUS							
100	440	328	153	70	212	0.349	

Curves shown above represent gross engine performance capabilities obtained and corrected in accordance with SAE J1995 conditions of 29.61 in. Hg(100kPa) barometric pressure [300ft.(91m) altitude] 77deg F (25 deg C) inlet temperature, and 0.30 in. Hg(1kPa) water vapor pressure with No. 2 diesel fuel or a fuel corresponding to ASTM D2.

TECHNICAL DATA DEPT.

CERTIFIED WITHIN 5%
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CHIEF ENGINEER



CHONGQING CUMMINS ENGINE COMPANY LTD. ENGINE DATA SHEET

ENGINE MODEL(S): KTA19-G2

STAND_BY: 448 kW(600 BHP)@1800 r/min
369 kW(495 BHP)@1500 r/min

PRIME: 392 kW(525 BHP)@1800 r/min
336 kW(450 BHP)@1500 r/min

REFERENCE INFORMATION:

CONFIGURATION..... D193056DX02
CPL NUMBER 0886
DATA SHEET..... FR4126
DATE..... 2023/1/16

GENERAL ENGINE DATA

Type.....	4 Cycle , In-line , 6 Cylinder	
Aspiration.....	Turbocharged,Aftercooled	
Bore—in.(mm)×stroke—in.(mm).....	6.25×6.25	(159×159)
Displacement—in ³ (L).....	1150	(19)
Compression Ratio.....	14.5:1	
Dry Weight		
Fan Hub to Flywheel Engine —lb(kg).....	3725	(1690)
Wet Weight		
Fan Hub to Flywheel Engine —lb(kg).....	3880	(1760)
Moment of Inertia of Rotating Components (Excluding Flywheel) —lb _m .ft ² (kg•m ²).....	43.2	(1.82)
·With FW 4001 Flywheel —lb _m .ft ² (kg•m ²).....	170.0	(7.16)
·With FW 4006 Flywheel —lb _m .ft ² (kg•m ²).....	199.0	(8.39)
C.G. Distance From Rear Face of Flywheel Housing (FH4018)—in.(mm).....	28.4	(721)
C.G. Distance Above Crank Centerline—in.(mm).....	9.0	(229)
Maximum Allowable Atatic Load of Rear Main Bearing —lb(kg).....	2000	(907)
Firing Order.....	1-5-3-6-2-4	

ENGINE MOUNTING

Maximum Allowable Bending Moment at Rear Face of Block —lb.ft(N•m).....	1000	(1356)
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EXHAUST SYSTEM

Maximum Allowable Back Pressure —in.Hg(kPa).....	3	(10)
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AIR INDUCTION SYSTEM

Maximum Allowable Intake Air Restriction With Heavy Duty Air Cleaner		
Dirty Element —in.H ₂ O(kPa).....	25	(6.23)
Clean Element —in.H ₂ O(kPa).....	15	(3.73)

COOLING SYSTEM

Coolant Capacity		
Engine Only —U.S.Gal(L).....	8.0	(30.3)
Minimum Allowable Pressure Cap @ sea level— PSI(kPa).....	7	(48)
Maximum Coolant Friction Heat External to Engine @1800 rpm —PSI(kPa).....	10.0	(68.9)
@1500 rpm —PSI(kPa).....	8.0	(55.2)
Maximum Allowable Top Tank Temperature (Stand_by/Prime) —°F(°C).....	220/212	(104/100)
Standard Thermostat (modulating) Range— °F(°C).....	180-200	(82-93)
Maximum Coolant Pressure (Exclusive of Pressure Cap) —PSI(kPa).....	15	(103)
Minimum Coolant Makeup Capacity —U.S.Gal(L).....	1.6	(6.1)
Minimum Allowable Fill Rate —U.S.GPM(L/min).....	5	(18.9)
Minimum Allowable Coolant Expansion Space —% of System Capacity.....	5	
Maximum Allowable Deaeration Time —min.....	25	

LUBRICATION SYSTEM

Oil Pressure		
@ Idle —PSI(kPa).....	20	(138)
@ Rated Speed —PSI(kPa).....	50-70	(345-483)
Oil Flow at Rated Speed —U.S.GPM(L/min).....	40	(151.4)
Maximum Allowable Oil Temperature —°F(°C).....	250	(121.0)



CHONGQING CUMMINS ENGINE COMPANY LTD. ENGINE DATA SHEET

By-Pass Filter Capacity	
Spin-on Cartridge Type —U.S.Gal(L).....	0.7 (2.6)
Oil Pan Capacity (Option OP4019)	
High —U.S.Gal(L).....	10.0 (37.9)
Low —U.S.Gal(L).....	8.5 (32.2)
Total System Capacity (Including By-Pass Filter) —U.S.Gal(L).....	13.2 (50.0)
Angularity of Standard Oil Pan (Option OP4019)	
Front Down.....	30°
Front Up.....	30°

FUEL SYSTEM

Fuel Injection System.....	Cummins PT
Maximum allowable Restriction to PT Fuel Pump	
With Clean Fuel Filter —in.Hg(kPa).....	4 (13.55)
With Dirty Fuel Filter —in.Hg(kPa).....	8 (27.09)
Maximum Allowable Injector Return Line Restriction	
With Check Valves —in.Hg(kPa).....	6.5 (22.0)
Less Check Valves —in.Hg(kPa).....	2.5 (8.5)

ELECTRICAL SYSTEM AND START SYSTEM

Starter (Heavy, Anode)—Volt.....	24
Battery Recharge System,Negative ground—A.....	35
Maximum Allowable Resistance of Starting Circuit—Ω.....	0.002
Minimum Recommended Battery Capacity	
·Cold Soak at 50°F(10°C) or Above—0°F CCA.....	600
·Cold Soak at 32~50°F(0~10°C) or Above—0°F CCA.....	640
·Cold Soak at 0~32°F(-18~0°C) or Above—0°F CCA.....	900

PERFORMANCE DATA

Stability at Any Invariablenes Load —%..... ±0.25

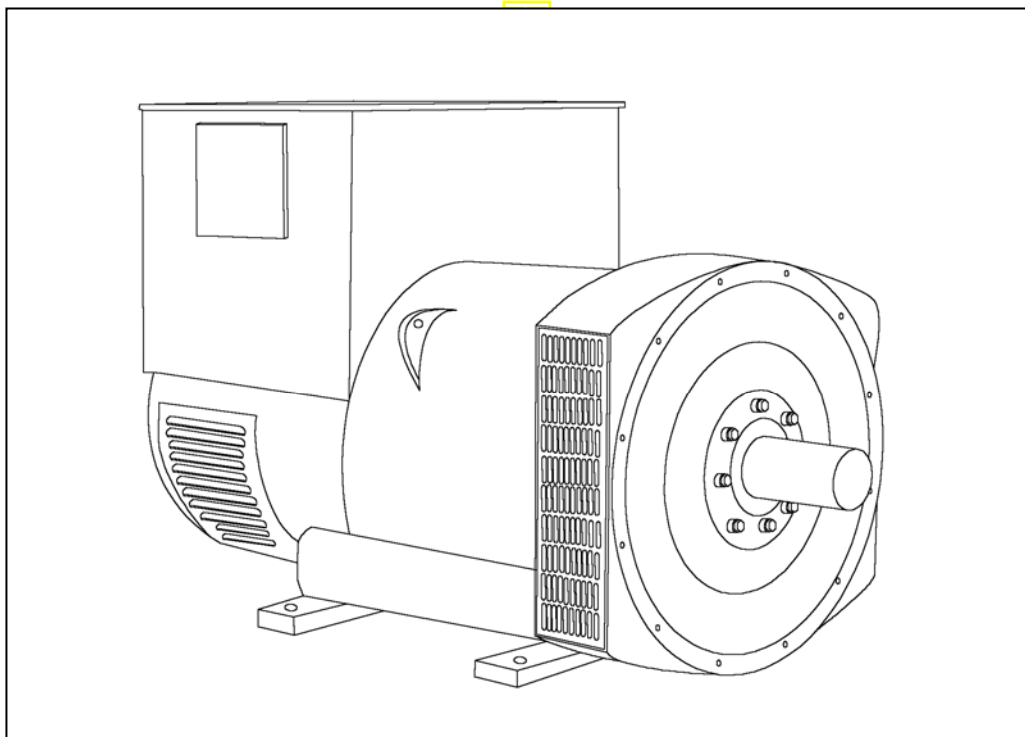
All data is based on the engine operating with fuel system, water pump, lubricating oil pump, air cleaner, and muffler, not included are alternator, compressor, fan, optional equipment and driven components. Data represents gross engine performance capabilities obtained and corrected in accordance with SAE J1349 conditions fo 29.61 in Hg(100 kPa) barometric pressure[300ft. (90 m) altitude], 77°F (25°C) inlet air temperature, and 0.30 in. Hg (1kPa) water vapor pressure with No. 2 diesel fuel or a fuel corresponding to ASTM D2. All data is subject to change without notice.

	STAND_BY		PRIME	
	60 Hz	50 Hz	60 Hz	50 Hz
Engine Speed r/min.....	1800	1500	1800	1500
Idle Speed r/min.....	575-775	575-775	575-775	575-775
Gross Power Output BHP(kW).....	600 (448)	495 (369)	525 (392)	450 (336)
Brake Mean Effective Pressure PSI(kPa).....	228 (1574)	226 (1556)	200 (1377)	206 (1417)
Piston Speed ft/min(m/s).....	1870 (9.5)	1555 (7.9)	1870 (9.5)	1555 (7.9)
Friction Horsepower BHP(kW).....	83 (62)	54 (40)	83 (62)	54 (40)
Intake Air FlowCFM(L/s).....	1320 (623)	945 (446)	1231 (581)	915 (432)
Exhaust Gas Flow CFM(L/s).....	3600 (1699)	2630 (1241)	3269 (1543)	2530 (1194)
Exhaust Gas Temperature °F(°C).....	955 (513)	984 (529)	919 (493)	975 (524)
Heat Rejection to Ambient BTU/min(kW).....	3867 (68)	3128 (55)	3355 (59)	2843 (50)
Heat Rejection to Coolant BTU/min(kW).....	15582 (274)	12852 (226)	13648 (240)	11715 (206)
Engine Water Flow L/s(U.S.GPM) @ 3psi.....	197 (12.4)	162 (10.2)	197 (12.4)	162 (10.2)

STAMFORD®

HCI 434E/444E - Winding 311

Technical Data Sheet



HCI434E/444E

SPECIFICATIONS & OPTIONS

STAMFORD

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

AS440 AVR - STANDARD

With this self-excited system the main stator provides power via the Automatic Voltage Regulator (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 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.

HCI434E/444E

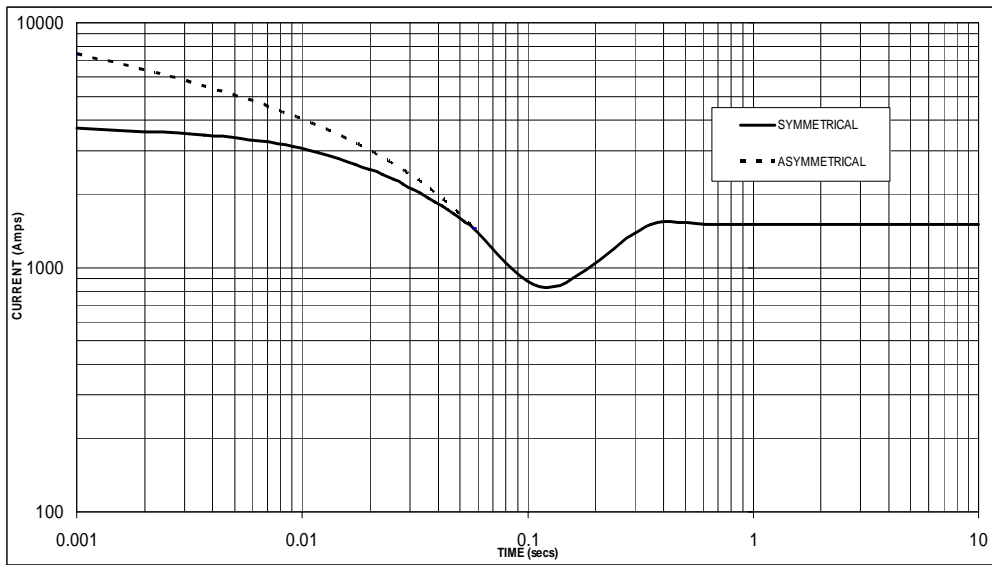


WINDING 311

CONTROL SYSTEM	SEPARATELY EXCITED BY P.M.G.							
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.	AS440							
VOLTAGE REGULATION	± 1.0 %	With 4% ENGINE GOVERNING						
SUSTAINED SHORT CIRCUIT	WILL NOT SUSTAIN A SHORT CIRCUIT							
INSULATION SYSTEM	CLASS H							
PROTECTION	IP23							
RATED POWER FACTOR	0.8							
STATOR WINDING	DOUBLE LAYER LAP							
WINDING PITCH	TWO THIRDS							
WINDING LEADS	12							
STATOR WDG. RESISTANCE	0.009 Ohms PER PHASE AT 22°C SERIES STAR CONNECTED							
ROTOR WDG. RESISTANCE	1.19 Ohms at 22°C							
EXCITER STATOR RESISTANCE	18 Ohms at 22°C							
EXCITER ROTOR RESISTANCE	0.068 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. 6317 (ISO)							
BEARING NON-DRIVE END	BALL. 6314 (ISO)							
	1 BEARING				2 BEARING			
WEIGHT COMP. GENERATOR	1024 kg				1030 kg			
WEIGHT WOUND STATOR	470 kg				470 kg			
WEIGHT WOUND ROTOR	400 kg				377 kg			
WR ² INERTIA	4.6331 kgm ²				4.4343 kgm ²			
SHIPPING WEIGHTS in a crate	1095 kg				1100 kg			
PACKING CRATE SIZE	155 x 87 x 107(cm)				155 x 87 x 107(cm)			
	50 Hz				60 Hz			
TELEPHONE INTERFERENCE	THF<2%				TIF<50			
COOLING AIR	0.8 m ³ /sec 1700 cfm				0.99 m ³ /sec 2100 cfm			
VOLTAGE SERIES STAR	380/220	400/231	415/240	440/254	416/240	440/254	460/266	480/277
VOLTAGE PARALLEL STAR	190/110	200/115	208/120	220/127	208/120	220/127	230/133	240/138
VOLTAGE SERIES DELTA	220/110	230/115	240/120	254/127	240/120	254/127	266/133	277/138
KVA BASE RATING FOR REACTANCE VALUES	350	350	350	350	400	420	440	440
X _d DIR. AXIS SYNCHRONOUS	3.01	2.71	2.52	2.24	3.47	3.26	3.12	2.87
X' _d DIR. AXIS TRANSIENT	0.20	0.18	0.17	0.15	0.21	0.20	0.19	0.17
X'' _d DIR. AXIS SUBTRANSIENT	0.14	0.13	0.12	0.11	0.15	0.14	0.13	0.12
X _q QUAD. AXIS REACTANCE	2.58	2.33	2.16	1.92	2.92	2.74	2.63	2.41
X'' _q QUAD. AXIS SUBTRANSIENT	0.36	0.32	0.30	0.27	0.41	0.38	0.37	0.34
X _L LEAKAGE REACTANCE	0.07	0.06	0.06	0.05	0.08	0.08	0.07	0.07
X ₂ NEGATIVE SEQUENCE	0.24	0.22	0.20	0.18	0.28	0.26	0.25	0.23
X ₀ ZERO SEQUENCE	0.10	0.09	0.08	0.07	0.10	0.09	0.09	0.08
REACTANCES ARE SATURATED				VALUES ARE PER UNIT AT RATING AND VOLTAGE INDICATED				
T' _d TRANSIENT TIME CONST.	0.08s							
T'' _d SUB-TRANSTIME CONST.	0.019s							
T' _{do} O.C. FIELD TIME CONST.	1.7s							
T _a ARMATURE TIME CONST.	0.018s							
SHORT CIRCUIT RATIO	1/X _d							

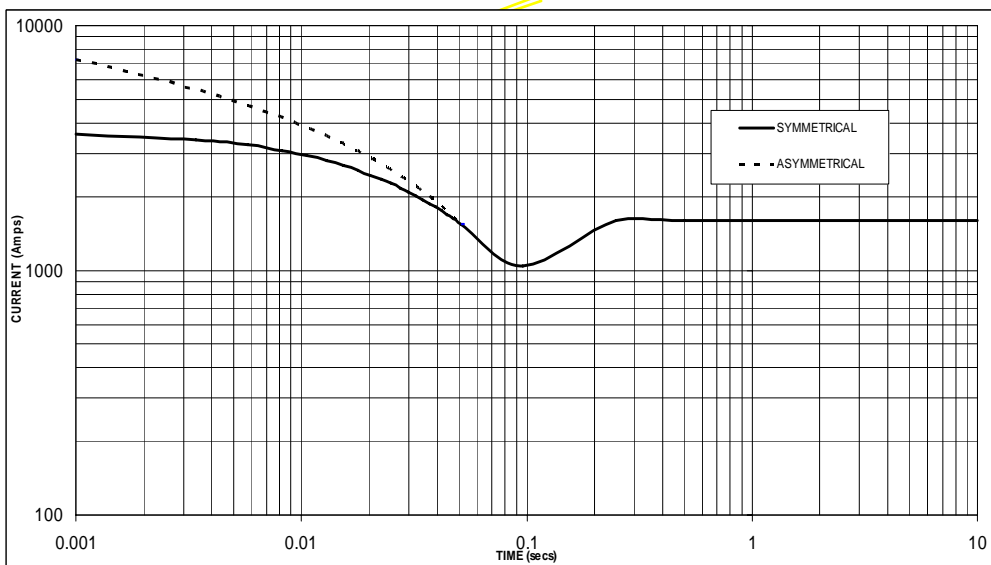
**Three-phase Short Circuit Decrement Curve. No-load Excitation at Rated Speed
Based on star (wye) connection.**

**50
Hz**



Sustained Short Circuit = 1,500 Amps

**60
Hz**



Sustained Short Circuit = 1,600 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 :

50Hz		60Hz	
Voltage	Factor	Voltage	Factor
380v	X 1.00	416v	X 1.00
400v	X 1.05	440v	X 1.06
415v	X 1.10	460v	X 1.10
440v	X 1.16	480v	X 1.15

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 :

	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

Note 3

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

HCI434E/444E

Winding 311 / 0.8 Power Factor

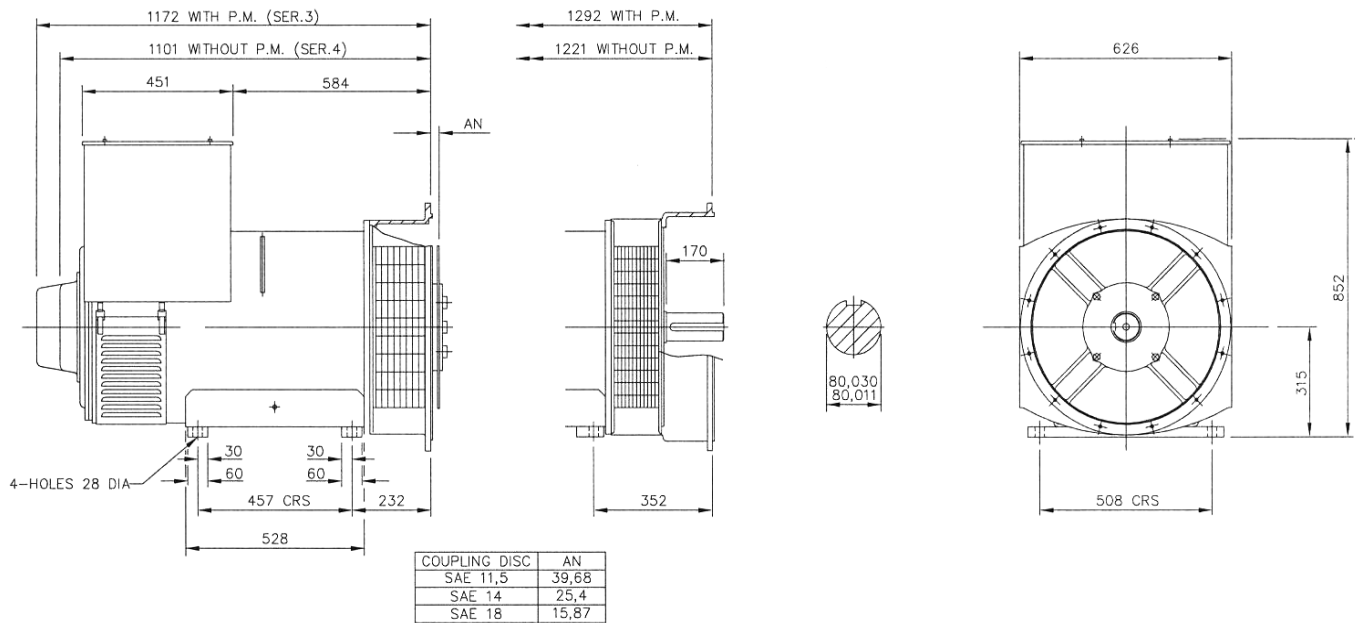
STAMFORD

RATINGS

Class - Temp Rise	Cont. F - 105/40°C				Cont. H - 125/40°C				Standby - 150/40°C				Standby - 163/27°C				
50 Hz	Series Star (V)	380	400	415	440	380	400	415	440	380	400	415	440	380	400	415	440
	Parallel Star (V)	190	200	208	220	190	200	208	220	190	200	208	220	190	200	208	220
	Series Delta (V)	220	230	240	254	220	230	240	254	220	230	240	254	220	230	240	254
kVA	320	320	320	320	350	350	350	350	370	370	370	370	380	400	380	380	
kW	256	256	256	256	280	280	280	280	296	296	296	296	304	320	304	304	
Efficiency (%)	93.6	93.8	94.0	94.1	93.2	93.5	93.6	93.8	92.9	93.2	93.4	93.6	92.7	92.7	93.2	93.5	
kW Input	274	273	272	272	300	299	299	299	319	318	317	316	328	345	326	325	

60 Hz	Series Star (V)	416	440	460	480	416	440	460	480	416	440	460	480	416	440	460	480
	Parallel Star (V)	208	220	230	240	208	220	230	240	208	220	230	240	208	220	230	240
	Series Delta (V)	240	254	266	277	240	254	266	277	240	254	266	277	240	254	266	277
kVA	365	385	400	400	400	420	440	440	420	445	460	460	435	455	475	475	
kW	292	308	320	320	320	336	352	352	336	356	368	368	348	364	380	380	
Efficiency (%)	93.8	93.8	93.9	94.0	93.4	93.5	93.5	93.7	93.1	93.2	93.2	93.5	92.9	93.0	93.1	93.3	
kW Input	311	328	341	340	343	359	376	376	361	382	395	394	375	391	408	407	

DIMENSIONS



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

DSE7310 MKII & DSE7320 MKII Installation Instructions
DSE7310 MKII & DSE7320 MKII Operator Manual
DSE7310 MKII & DSE7320 MKII Configuration Suite PC Manual

PART NO.

053-181
057-253
057-243

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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

