

200 KVA DIESEL GENERATOR

FEATURES & BENEFITS

- Maximum 220 kVA, 380V, 1500 RPM
- Constant voltage AVR (Automatic Voltage Regulator)
- 24 Volt Electric Starter
- 310 Litre Fuel Tank, 9 Hours @ 75% load
- Silent Version (± 78 dBa)
- 6 cylinder, in-line, water cooled Diesel Engine
- Three Phase Output
- DeepSea DSE6120 Digital Control Panel
- Low oil pressure system
- Low water cut out engine protection



GENERAL DATA	
Model:	BPD200S3-C
Prime Power (P.R.P):	200 kVA
Stand-by Power (L.T.P):	220 kVA
Amps:	334 A
Power Factor / COS:	0.8
Frequency:	50 Hz
Voltage:	380 V
Phases:	Three Phase
Engine Speed:	1500 RPM
Length:	3500 mm
Width:	1080 mm
Height:	2120 mm
Weight:	2460 kg's
Tank Capacity:	310 l

ADDITIONAL	
Running Time:	9 Hours @ 75% load
Structure Type:	Silent
Noise Level (7m):	78 dBA
Auto Voltage Regulator:	Constant voltage AVR
ISO9001 Certified:	Yes
CE Certified:	Yes
Fuel Cons. @ 100% Load:	45
Fuel Cons. @ 75% Load:	34
Fuel Cons. @ 50% Load:	23

ENGINE DATA	
Brand:	Cummins
Model:	6CTAA8.3-G2
Type:	6 cylinder, in-line, water cooled Diesel Engine
Starting System:	24 Volt Electric Starter
Auto-Decompression:	Yes
Cubic Capacity (l):	8.3
Compression Ratio:	18:1
Rated Power (kW/RPM):	183 / 1500
Fuel Type:	Diesel
Lube Oil:	15W40
Low Pressure Alert:	Yes
Low Fuel Cut Out:	Yes

CONTROL PANEL	
Model:	DeepSea DSE6120
Type:	Digital Control Panel
Analogue Inputs:	2
Mains Phase Voltage:	Yes
Mains Line Voltage:	Yes

ALTERNATOR	
Model:	274G160
Pole Number:	4
Excitation Mode:	Self Excitation

Johannesburg
011 397 7373

Pietermaritzburg
033 007 0812

Nelspruit
013 007 1753

Bloemfontein
051 001 1429



Generator Engine Performance Data

DONGFENG CUMMINS ENGINE Co.,LTD

Xiangfan, Hubei Province, China
<http://www.dcec.com.cn>

Basic Engine Model:

6CTAA8.3-G2

FR93271

FR93271 @ 1500 RPM &1800RPM

Configuration

D413058GX03

CPL Code

CPL: 1783

Revision

2012/10/26

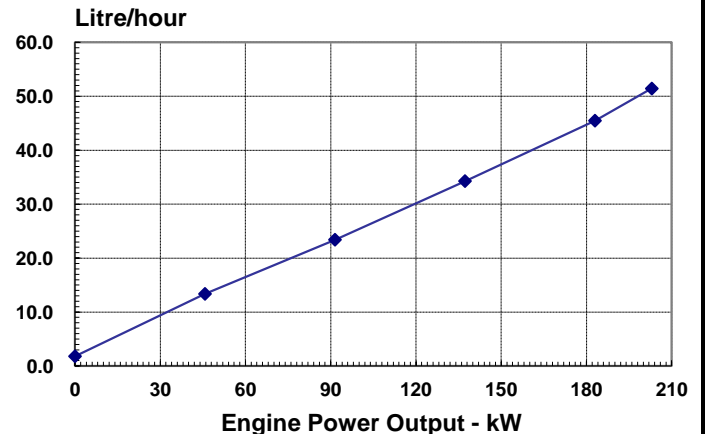
Compression Ratio:	18.0:1	Aspiration:	Turbocharged and Charge Air Cooled
Bore:	114 mm	Displacement:	8.3 L
Stroke:	135 mm	No. of Cylinders:	6
Emission Certification:	MEP STAGE I	Fuel System:	BYC P7100/Electronic Governor
Governor Regulation:	≤3%		

All data is based on the engine operating with fuel system, water pump, and 15.2 in H₂O (3.7 kPa) inlet air restriction with 5.98 in (152mm) inner diameter, and with 3 in Hg (10 kPa) exhaust restriction with 4.02 in (102 mm) inner diameter; not included are alternator, fan, optional equipment and driven components. Coolant flows and heat rejection data based on coolants as 50% ethylene glycol/50% water. All data is subject to change without notice.

Engine Speed	Standby Power		Prime Power		Continuous Power	
	RPM	kW	HP	kW	HP	kW
1500	203	272	183	245	149	200
1800	210	281	190	255	TBD	TBD

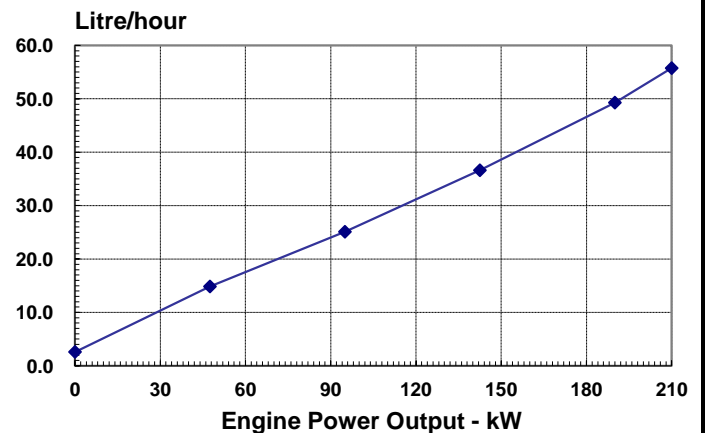
Engine Performance Data @ 1500 RPM

OUTPUT POWER			FUEL CONSUMPTION	
%	kW	HP	g/kW.h	L/h
STANDBY POWER				
100	203	272	209	51
PRIME POWER				
100	183	245	205	45
75	137	184	206	34
50	92	123	211	23
25	46	61	241	13
CONTINUOUS POWER				
100	149	241	205	37



Engine Performance Data @ 1800 RPM

OUTPUT POWER			FUEL CONSUMPTION	
%	kW	HP	g/kW.h	L/h
STANDBY POWER				
100	210	281	219	56
PRIME POWER				
100	190	255	214	49
75	143	191	212	37
50	95	127	218	25
25	48	64	258	15
CONTINUOUS POWER				
TBD	TBD	TBD	TBD	TBD



Curves shown above represent gross engine performance capabilities obtained and corrected in accordance with GB/T18297 conditions of 100kPa (29.61 in. Hg) barometric pressure, 25°C (77°F) inlet air temperature, and 1 kPa (0.30 in. Hg) water vapor pressure with No.0 diesel fuel. The engine may be operated without changing the fuel setting up to 2200 m (7218ft.) altitude.

GENERAL ENGINE DATA

Approximate Engine Weight (wet).....	-kg	684
Mass Moment of Inertia of Rotating Components (No Flywheel).....	-kg·m ²	0.37
Center of Gravity from Rear Face of Block.....	-mm	541
Center of Gravity above Crankshaft Centerline.....	-mm	163
Engine Idle Speed.....	-RPM	700-900
Fire Order.....		1-5-3-6-2-4

ENGINE MOUNTING

Maximum (Static) Bending Moment at Rear Face of Block.....	-N.m	1356
--	------	------

EXHAUST SYSTEM

Maximum Back Pressure.....	-kPa	10.1
----------------------------	------	------

AIR INTAKE SYSTEM

Maximum Intake Air Restriction with Heavy Duty Air Cleaner		
— Dirty Element.....	-kPa	6.2
— Clean Element.....	-kPa	3.7

CHARGE AIR COOLING SYSTEM

Maximum Temp. Rise Between Engine Air Intake and Intake Manifold	-°C	25
Maximum Air Pressure Drop from Turbo Air outlet to Intake Manifold		
— 1500RPM.....	-kPa	13
— 1800RPM.....	-kPa	13
Maximum Intake Manifold Temperature Differential (Ambient to IMT) (IMTD).....	-°C	50
Maximum Intake Manifold Temperature for engine protection (Warning Threshold).....	-°C	58

LUBRICATION SYSTEM

Minimum Engine Oil Pressure for Engine Protection Devices:		
— Idle Speed.....	-kPa	103
— Governed Speed.....	-kPa	276-414
Maximum Oil Temperature.....	-°C	121
Minimum Required Lube System Capacity - Sump plus Filters.....	-litre	23.8

FUEL SYSTEM

Type Injection System.....		BYC P7100 Direct Injection
Maximum Restriction at Lift Pump.....	-kPa	20.3
Maximum Fuel Flow on the Supply Side of the Fuel Pump.....	-litre/hr	83
Maximum Fuel Inlet Temperature.....	-°C	70
Total Drain Flow (constant for all loads).....	-litre/hr	30

COOLING SYSTEM

Coolant Capacity - Engine Only.....	-litre	12.3
Maximum Coolant Friction Head External to Engine... -1800 rpm.....	-kPa	35
— -1500 rpm.....	-kPa	28
Maximum Static Head of Coolant Above Engine Crank Centerline.....	-m	18.3
Standard Thermostat (Modulating) Range.....	-°C	82 - 93
Minimum Pressure Cap.....	-kPa	103
Maximum Top Tank Temperature for Standby / Prime Power.....	-°C	110 / 104

ELECTRICAL SYSTEM

Cranking Motor (Heavy Duty, Positive Engagement).....	-volt	12V	24V
Battery Charging System, Negative Ground.....	-ampere	63	40
Maximum Allowable Resistance of Cranking Circuit.....	-ohm	0.00075	0.002
Minimum Recommended Battery Capacity			
—Cold Soak @ 0 to 32-F (-18 to 0-C).....	-0°F CCA	TBD	TBD

EMISSIONS

Gaseous Emissions per GB 20891-2007, at 1500rpm:

—Weight-Specific NOx.....	g/kW.h	9.2
—Weight-Specific HC.....	g/kW.h	1.3
—Weight-Specific CO.....	g/kW.h	5.0
—Weight-Specific Particulates.....	g/kW.h	0.5

Gaseous Emissions per GB 20891-2007, at 1800rpm:

—Weight-Specific NOx.....	g/kW.h	9.2
—Weight-Specific HC.....	g/kW.h	1.3
—Weight-Specific CO.....	g/kW.h	5.0
—Weight-Specific Particulates.....	g/kW.h	0.5

Fuel Rating Option used for these Data: **FR93271**

	STANDBY POWER		PRIME POWER		
	1800	1500	1800	1500	
Governed Engine Speed.....	-rpm	700 - 900	700 - 900	700 - 900	
Engine Idle Speed.....	-rpm	700 - 900	700 - 900	700 - 900	
Gross Engine Power Output.....	-kW	210	203	190	183
Piston Speed.....	-m/s	8.1	6.8	8.1	6.8
Friction Horsepower.....	-kW	22	17	22	17
Engine Water Flow to Engine:.....	-litre/sec.	4	3.3	4	3.3
Intake Air Flow.....	-litre/sec.	262	191	254	183
Exhaust Gas Flow.....	-litre/sec.	755	547	675	480
Exhaust Gas Temperature.....	-°C	585	580	520	510
Air to Fuel Ratio.....	-air:fuel	26.5 : 1	21.0 : 1	29.0 : 1	22.7 : 1
Radiated Heat to Ambient.....	-kW	33	26	29	24
Heat Rejection to Coolant.....	-kW	117	95	107	83
Heat Rejection to Fuel.....	-kW	180	139	157	123

ALL DATA CERTIFIED WITHIN 5%

TBD = To Be Decided

N/A = Not Applicable

N.A. = Not Available

All data is subject to change without notice, sorry for inform.

Dongfeng Cummins Engine Co., Ltd.

DSE6110/20 MKII

AUTO START & AUTO MAINS FAILURE CONTROL MODULES

DSE6110 MKII

DSE6120 MKII

KEY FEATURES

- Large back-lit text display
- Multiple display languages
- Heated display option available
- DSENet® expansion compatible
- Data logging facility
- Fully configurable via PC using USB communication
- Front panel configuration
- Efficient power save mode
- 3 phase generator sensing
- 3 phase mains (utility) sensing (DSE6120 MKII only)
- Generator/load power monitoring (kW, kV A, kV Ar, pf)
- Accumulated power monitoring (kW h, kVA h, kVAR h)
- Generator/load current monitoring and protection
- Generator overload protection (kW)
- Breaker control via fascia buttons
- Fuel and start outputs, configurable when using CAN
- 4 configurable DC outputs
- 4 configurable analogue/digital inputs
- Support for 0 to 10 V &

- 4 to 20 mA oil pressure sensors
- 6 configurable digital inputs
- Configurable staged loading outputs
- CAN, MPU and alternator speed sensing in one variant
- 3 engine maintenance alarms
- Engine speed protection
- Engine hours counter
- Engine pre-heat
- Engine run-time scheduler
- Engine idle control for starting & stopping
- Fuel pump control
- Real time clock
- Battery voltage monitoring
- Start on low battery voltage
- Configurable remote start input
- 1 alternative configuration
- Comprehensive warning, electrical trip or shutdown protection upon fault condition
- LCD and LED alarm indication
- Customisable information screens
- Configurable event log (100)
- Tier 4 ECO engine support including exhaust fluids & filters

- J1939-75 instrumentation output, configurable CAN instrumentation and alarms
- Start on low battery
- Enhanced alarm functionality
- Low load alarm

KEY BENEFITS

- Automatically transfers between mains (utility) and generator (DSE6120 MKII only)
- Increased input and output expansion capability via DSENet®
- User-friendly set-up and button layout for ease of use
- Multiple parameters are monitored simultaneously which are clearly displayed on a large back-lit text display via multiple languages
- The module can be configured to suit a wide range of applications
- Uses DSE Configuration Suite PC Software for simplified configuration
- Licence-free PC software
- IP65 rating (with optional gasket) offers increased resistance to water ingress

SPECIFICATIONS
DC SUPPLY
CONTINUOUS VOLTAGE RATING
8 V to 35 V Continuous

CRANKING DROPOUTS

Able to survive 0 V for 50 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
100 mA at 12 V, 105 mA at 24 V

MAXIMUM STANDBY CURRENT
60 mA at 12 V, 55 mA at 24 V

MAXIMUM SLEEP CURRENT
40 mA at 12 V, 35 mA at 24 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

INPUTS
DIGITAL INPUTS A to F
Negative switching

ANALOGUE INPUT A

Configurable as:
Negative switching digital input
0 V to 10 V
4 mA to 20 mA
0 Ω to 240 Ω

ANALOGUE INPUTS B TO D

Configurable as:
Negative switching digital input
0 Ω to 480 Ω

OUTPUTS
OUTPUT A (FUEL)

10 A short term, 5 A continuous, at supply voltage

OUTPUT B (START)

10 A short term, 5 A continuous, at supply voltage

AUXILIARY OUTPUTS C, D, E & F

2 A DC at supply voltage

DIMENSIONS
OVERALL
216 mm x 158 mm x 43 mm
8.5" x 6.2" x 1.5"

PANEL CUT-OUT

184 mm x 137 mm
7.2" x 5.3"

MAXIMUM PANEL THICKNESS

8 mm
0.3"

STORAGE TEMPERATURE RANGE

-40 °C to +85 °C
-40 °F to +185 °F

OPERATING TEMPERATURE RANGE
NON HEATED DISPLAY VARIANT
-30°C to +70°C
-22 °F to +158 °F

HEATED DISPLAY VARIANT

-40 °C to +70 °C
-40 °F to +158 °F

OPTIONAL PARTS

PART	PART NUMBER
IP65 Gasket	020-521

RELATED MATERIALS
TITLE

DSE6110/20 MKII Installation Instructions
DSE6110/20 MKII Operator Manual
DSE6110/20 MKII Configuration Suite PC Manual

PART NO.

053-173
057-226
057-224

DEEP SEA ELECTRONICS PLC UK

Highfield House, Hunmanby Industrial Estate, Hunmanby YO14 0PH
TELEPHONE +44 (0) 1723 890099 **FACSIMILE** +44 (0) 1723 893303
EMAIL sales@deepseapl.com **WEBSITE** www.deepseapl.com

DEEP SEA ELECTRONICS INC USA

3230 Williams Avenue, Rockford, IL 61101-2668 USA
TELEPHONE +1 (815) 316 8706 **FACSIMILE** +1 (815) 316 8708
EMAIL sales@deepseausa.com **WEBSITE** www.deepseausa.com

DSE6110/20 MKII

AUTO START & AUTO MAINS FAILURE CONTROL MODULES

The DSE6110 MKII Auto Start Control Module and the DSE6120 MKII Auto Mains (Utility) Failure Control Module are suitable for a wide variety of single gen-set applications.

Monitoring engine speed, oil pressure, coolant temperature, frequency, voltage, current, power and fuel level, the modules give comprehensive engine and alternator protection. This is indicated on a large back-lit LCD text display via an array of warning, electrical trip and shutdown alarms in multiple languages.

Electronic J1939 (CAN) and non-electronic MPU and alternator sensing engine support for diesel, gas and petrol engines all in one variant. With a number of flexible inputs, outputs and protections, the modules can be easily adapted to suit a wide range of applications.

Through USB Communication both modules can be configured using the DSE Configuration Suite PC Software or through the module's front panel editor.

Using the DSE Configuration Suite PC Software the controller is easy to use and configure which allows alteration of operating parameters, sequences, timers and alarms.

AVAILABLE VARIANTS

- 6110-03 Auto Start with real time clock
- 6120-03 Auto Mains Failure with real time clock

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 optional sealing gasket.

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

