






## Generator Specification

Service	PRP(1)	ESP(2)
Power (kVA)	30	33
Power (kW)	24	26
Rated speed (r.p.m)	1500	
Standard voltage (V)	400/230 V	
Rated at power factor (cos Phi)	0,8	

### (1) PRP (Prime Power):

According to ISO8528-1, prime power is the maximum power available during a variable power sequence, which may be run for an unlimited number of hours per year, between stated maintenance intervals. The permissible average power output during at 24 hours period shall not exceed 80% of the prime power. 10% overload available for governing purposes only.

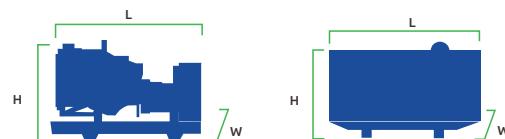
### (2) ESP (Standby Power):

According to ISO 8528-1, It is defined as the maximum power available, under the agreed operating conditions, for which the generating set is capable of delivering for up to 500 hours of operation per year (of which no more than 300 hours for continuative use) with the maintenance intervals and procedures being carried out as prescribed by the manufacturers. No overload capability is available.

Performance Data		
Model		DY33P-S1
Engine		Perkins
Engine model		1103A-33G
Speed control type		Mechanical
Phase		3
Control system		Digital
Starter motor voltage		12V
Frequency		50Hz
Engine speed (RPM)		1500
Fuel Consumption (L/H)	100% standby power	8.1
	100% prime power	7.2
	75% prime power	5.6
	50% prime power	4.06

### Standard reference Conditions

Note: Standard reference condition 25 °C[77° F] air inlet temp, 1000m(328ft) A.S.L 30% relative humidity. Fuel consumption dat with diesel fuel with specific gravity of 0.85 and conforming to BS 2869: 1998 Class A2



Power Voltage	ESP		PRP		Standby Amps
	KVA	KW	KVA	KW	
415/240	33	26	30	24	41.7
400/230	33	26	30	24	44.3
380/220	33	26	30	24	45.5

Dimension and Weight	
Dimension	Silent
Length (L)	2100 mm
Width (W)	850 mm
Height (H)	1150 mm
Net Weight	1170 KG
Fuel Tank (L)	100L

## ■ Engine Specification : 1103A-33G

Basic technical data	
No. of cylinders	3
Cylinder arrangement	In-line
Cycle	4 stroke
Induction system	Naturally aspirated
Compression ratio	19.25:1
Bore	105mm
Stroke	127mm
Displacement	3.3L
All ratings certified to within	± 5%
Estimated total weight	307kg

Lubrication system	
Maximum sump capacity	8.0L
Minimum sump capacity	7.0L
Total system	-
Maximum engine operating angles - front up, front down, right side or left side	35°C
Lubricating oil pressure - Relief valve opens	352-448 kPa
Normal oil temperature	125°C
oil flow at rated speed	129 litres/min.

Cooling system	
Total coolant capacity -with radiator	14.6L
-without radiator	3.6L
Maximum top tank temp	112°C
Thermostat operation range	82-95°C
Radiator face area	0.197m <sup>2</sup>
Pressure cap setting	90kPa

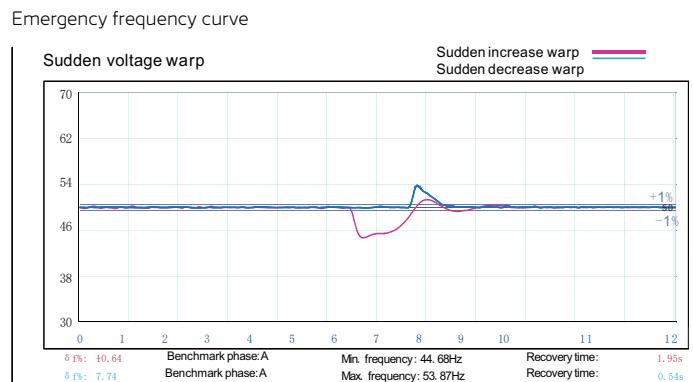
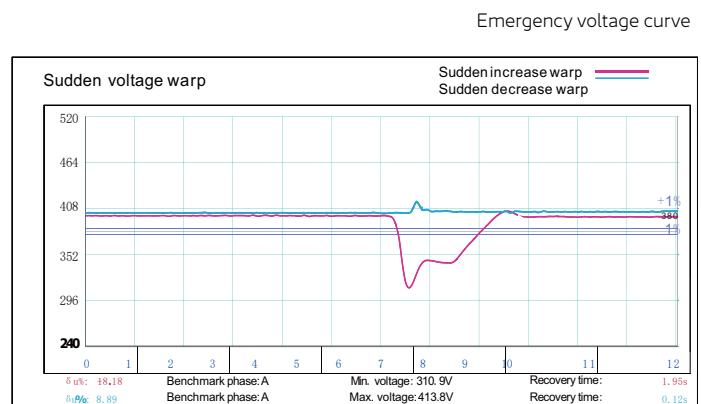
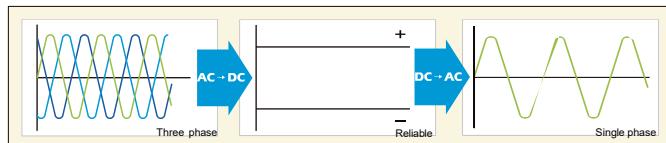
Electrical system Type	
Type	Negative ground
Alternator voltage	12 volts
Alternator output	15 amps
Starter motor voltage	12 volts
Starter motor power	3KW

Fuel system	
Injection system	Direct
Fuel injection pump	Cassette type
Fuel atomiser	Pintle nozzle
Nozzle opening pressure	14,7 MPa
Fuel lift pump type	Mechanical

Induction system	
Clean filter	3.0kpa
Dirty filter	6.5kpa
Air filter type	Dry

## ALTERNATOR SPECIFICATION : LEROY SOMER TAL-A42-C

Alternator	
Number of phase	3
Power factor (Cos Phi)	0.8
Poles	4
Winding Connections (standard)	Star-serie
Terminals	12
Insulation type	H class
Winding Pitch	2/3
IP rating	IP23
Excitation system	Self-excited
Bearing	Single bearing
Coating	Vacuum impregnation
Voltage regulator	A.V.R
Coupling	Flexible disc



## OPTIONS

Engine	Alternator	Generator Sets	Fuel System
<ul style="list-style-type: none"> <li>• Water Jacket Pre heater</li> <li>• Fuel heater</li> </ul>	<ul style="list-style-type: none"> <li>• Winding Temp measuring Instrument</li> <li>• Alternator Pre heater</li> <li>• PMG</li> <li>• Anti-damp and anti corrosion treatment</li> <li>• Anti-condensation heater</li> <li>• Winding and bearing RTD</li> </ul>	<ul style="list-style-type: none"> <li>• Tools with the machine</li> <li>• Extended range fuel tank</li> <li>• Bunded fuel tank</li> </ul>	<ul style="list-style-type: none"> <li>• Low fuel level alarm</li> <li>• Automatic fuel feeding system</li> <li>• Fuel T-valves</li> </ul>
Canopy	Lub Oil System	Cooling System	Control Panel
<ul style="list-style-type: none"> <li>• Rental type Canopy</li> <li>• Trailer</li> </ul>	<ul style="list-style-type: none"> <li>• Oil Pre-heater</li> <li>• Oil temp sensor</li> </ul>	<ul style="list-style-type: none"> <li>• Front heat protection</li> </ul>	<ul style="list-style-type: none"> <li>• Remote control panel</li> <li>• ATS</li> <li>• Synchronizing controller</li> <li>• Adjustable earth leakage relay</li> </ul>

## Control Panel: DEEPSEA 7320MKII

# 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
- IP66 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

830 mA at 12 V, 180 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)  
28 V to 718 V AC (Ph to Ph)

#### FREQUENCY RANGE

0.5 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

## Monitoring 3G/4G: DEEPSEA 890MKII (OPTIONAL)



### DSE890 MKII

#### DSEWebNet® / IoT 4G Gateway (GSM/Ethernet)

Remote Communications Interface

The DSE890 MKII 4G gateway is used in conjunction with supported DSE controllers to provide remote monitoring and communications data via DSEWebNet® or third party MQTT brokers.

The DSE890 MKII gateway communicates with up to five connected DSE controllers, monitoring instrumentation and operating states. When this data changes, data is logged internally and transmitted from the gateway device to the DSEWebNet® or MQTT broker (Amazon Web Services, Google, IBM etc.).

DSEWebNet® software is accessed using an Internet browser or the dedicated app. Users are able to perform multiple tasks including: monitoring equipment, clearing alarm conditions, starting/stopping equipment and monitoring fuel levels.

The IoT feature of the DSE890 MKII supports MQTT V 3.1.1 (ISO/IEC 20922:2016). This enables connection to a third party server that is running an MQTT broker, whilst simultaneously supporting connection to the DSEWebNet® server.

For additional information on DSEWebNet® software refer to data sheet 055-192.

**Note:** The DSE890 MKII also supports 2G & 3G connections.



#### SPECIFICATIONS

##### DC SUPPLY CONTINUOUS VOLTAGE RATING

8 V to 36 V continuous

##### CRANKING DROPOUTS

Able to survive 0 V for 100 mS, providing supply was at least 8 V before dropout and supply recovers to 8 V. This is achieved without the need for internal batteries

##### MAXIMUM OPERATING CURRENT

GSM	755 mA at 12 V
GSM & GPS	376 mA at 24 V
GSM	755 mA at 12 V
GSM & GPS	376 mA at 24 V

##### MAXIMUM STANDBY CURRENT

GSM	207 mA at 12 V
GSM & GPS	113 mA at 24 V
GSM	207 mA at 12 V
GSM & GPS	113 mA at 24 V

##### COMMUNICATIONS

USB (Single DSE Controller)  
CAN\* (Multiple DSE Controller)  
RS485 (Multiple DSE Controllers)  
Ethernet (Multiple DSE Controllers)

##### DIMENSIONS

85 mm x 149 mm x 51 mm

##### MOUNTING

DIN Rail  
Chassis Mount

\* Only active for third-party MQTT brokers.