



Generator Specification

Service	PRP(1)	ESP(2)
Power (KVA)	100	110
Power (KW)	8	88
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):

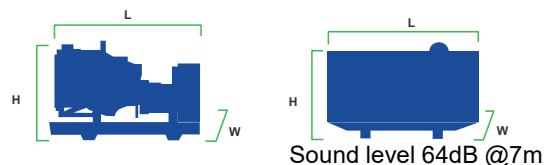
According to ISO 8528-1, It is defined as the maximum power available, under the agreed operating conditions, for which the generating set is capable of delivering for up to 500 hours of operation per year (of which no more than 300 hours for continuative use) with the maintenance intervals and procedures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

Power Voltage	ESP		PRP		Standby Amps
	KVA	KW	KVA	KW	
415/240	110	88	100	80	153.0
400/230	110	88	100	80	158.8
380/220	110	88	100	80	167.1

Performance Data		
Model	DY110P	
Engine	Perkins	
Engine model	1104C-44TAG2	
Speed control type	Mechanical	
Phase	3	
Control sytem	Digital	
Starter motor voltage	12V	
Frequency	50Hz	
Engine speed (RPM)	1500	
Fuel Consumption (L/H)	100% standby power	24.9
	100% prime power	22.6
	75% prime power	17.1
	50% prime power	11.2

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



Dimension and Weight

Dimension	Silent
Length (L)	2277 mm
Width (W)	1080 mm
Height (H)	1400 mm
Net Weight	1574 KG
Fuel Tank (L)	180 L

Engine Specification : 1104C-44TAG2

Basic technical data	
No. of cylinders	4
Cylinder arrangement	In-line
Cycle	4 stroke
Induction system	Naturally aspirated
Compression ratio	18.23:1
Bore	105mm
Stroke	127mm
Displacement	4.4L
All ratings certified to within	± 3%
Speed variation at constant load	± 0.25%

Cooling system	
Total coolant capacity -with radiator	12.6L
-without radiator	7.0L
Maximum top tank temp	110°C
Thermostat operation range	82-93°C
Radiator face area	0.276m ²
Rows and material	38 aluminium
Pressure cap setting	100kPa
Fan diameter	559 mm
Drive ratio	1:1
Number of blades	10

Fuel system	
Injection system	Direct
Fuel injection pump	Rotary
Fuel atomiser	Multi-hole
Nozzel opening pressure	29.0 MPa
Fuel lift pump type	Electronic
- flow/hour	120-150 l / h
- pressure	30-75 kPa
Maximum suction head: -1500 rev/min	10 kPa

Induction system	
Clean filter	5kpa
Dirty filter	8kpa
Air filter type	2 stage cyclic/paper element

Lubrication system	
Maximum sump capacity	7.0L
Minimum sump capacity	5.5L
Total system	8.0L
Maximum engine operating angles - front up, front down, right side or left side	30°C
Lubricating oil pressure - Relief valve opens	415-470 kPa
Lubricating oil pressure - Relief valve opens	276-414 kPa
Oil consumption at full load as a % of fuel consumption	0.15%.

Electrical system Type	
Type	Negative ground
Alternator voltage	12 volts
Alternator output	TBD
Starter motor voltage	12 volts
Starter motor power	TBD

General installation	Prime power
Gross engine power	93.6kW
Brake mean effective pressure	1702kPa
Combustion air flow	6.01m ³ /min
Exhaust gas temperature outlet	514 °C
Energy to coolant	46.1kW
Energy to exhaust	71.7kW

ALTERNATOR SPECIFICATION : LEROY SOMER TAL-A44D

The best of performance

The Leroy-Somer™ TAL 044 alternator has been designed to offer you the best power generation performances. With its meticulous design and optimized architecture, the TAL 044 strikes the perfect balance between compactness, reliability, performance and longevity. Whatever your application, the Leroy-Somer™ TAL 044 alternator will meet your needs and will adapt to all situations.

Standards

The Leroy-Somer™ TAL 044 alternator meets all key international standards and regulations, including IEC 60034, NEMA MG 1.32-33, ISO 8528-3, CSA C22.2 n°100-14 and UL 1446 (UL 1004 on request). Also compliant with IEC 61000-6-2, IEC 61000-6-3, IEC 61000-6-4, VDE 0875G, VDE 0875N and EN 55011, group 1 class A for European zone. The Leroy-Somer™ TAL 044 alternator can be integrated in EC marked generator set, and bears EC, UKCA and CMIM markings. It is designed, manufactured and marketed in an ISO 9001 and ISO 14001 quality assurance environment.

Electrical characteristics and performances

- Class H insulation
- Shunt excitation
- Low voltage winding:
 - Three-phase 50 Hz: 220V - 240V and 380V - 415V (440V) 60 Hz: 208V - 240V and 380V - 480V
 - Single-phase 50 Hz: 230V 60 Hz: 240V
- 4-terminal plates in 6-wire version
- Optimized performance

Excitation and regulation system

	Excitation system				Regulation options		
	AVR	SHUNT	AREP+ (option)	PMG (option)	ULC/us	Remote voltage potentiometer	C.T. Current transformer for paralleling
Three-phase 6-wire	R120	Standard					
	R150	Option				√	
	R180		Standard	Standard		√	√
	D350	Option	Option	Option	√	√	√*
Three-phase 12-wire	R120	Standard					
	R250	Option			√	√	
	R180		Standard	Standard		√	√
	D350	Option	Option	Option	√	√	√*
Single-phase	R121	Standard				√	
	R251	Option			√	√	

*: only with AREP+ or PMG

Protection system and options

- Degree of protection: IP 23
- Complete winding protection for non-harsh environment with relative humidity ≤ 95%
- Options:
 - Three-phase 12-wire with 8-terminal plates
 - AREP+ or PMG excitation
 - ULC/us
 - Customized painting (unpainted machine as standard)
 - Space heater
 - Flying leads
 - Droop kit for alternator paralleling
 - Dedicated single-phase
 - Stator sensors
 - Winding 8 optimized for three-phase 380V / 416V - 60Hz
 - Reinforced winding protection for harsh environments and relative humidity greater than 95% (system 2 - 4): for TAL 044 K apply a derating coefficient of 0.97

Mechanical construction

- Compact and rugged assembly to withstand engine vibrations
- Steel frame
- Aluminum flanges and shields
- Single-bearing design compatible with most diesel engines
- Greased for life bearings
- Direction of rotation: clockwise and counterclockwise without derating

Terminal box design

- Easy access to AVR and terminals
- Possibility of current transformer for parallel operation



ALTERNATOR SPECIFICATION : LEROY SOMER TAL-A44D

General characteristics

Insulation class	H	Excitation system 6-wire	SHUNT	AREP+ / PMG
Winding pitch	2/3 (wind.6S - 6-wire / wind.6 - 12-wire)	AVR type	R120	R180
Number of wires	6 (12 option)	Excitation system 12-wire (option)	SHUNT	AREP+ / PMG
Protection	IP 23	AVR type	R120	R180
Altitude	≤ 1000 m	Voltage regulation (**)	± 1 %	± 0.5 %
Overspeed	2250 R.P.M.	Total Harmonic Distortion THD (***) in no-load	< 2 %	
Air flow 50 Hz	0.29 m³/s	Total Harmonic Distortion THD (***) in linear load	< 5 %	
Air flow 60 Hz	0.34 m³/s	Waveform: NEMA = TIF (***)	< 50	
AREP+/PMG Short-circuit current = 2.7 In : 5 seconds (*)		Waveform: I.E.C. = FHT (***)	< 2%	

(*) D350: 10 seconds (**) Steady state (***) Total harmonic distortion between phases, no-load or on-load (non-distorting)

Ratings 50 Hz - 1500 R.P.M.

kVA / kW - P.F. = 0.8																									
Duty / T° C		Continuous / 40 °C					Continuous / 40 °C					Stand-by / 40 °C					Stand-by / 27 °C								
Class / T° K		H / 125° K					F / 105° K					H / 150° K					H / 163° K								
Phase		3 ph.			1 ph.	3 ph.			1 ph.	3 ph.			1 ph.	3 ph.			1 ph.								
Y		380V	400V	415V	440V		380V	400V	415V	440V		380V	400V	415V	440V		380V	400V	415V	440V					
Δ		220V	230V	240V		230V	220V	230V	240V		230V	220V	230V	240V		230V	220V	230V	240V		230V				
YY (*)		200V			220V		200V			220V		200V			220V		200V			220V					
ΔΔ (*)						230V					230V					230V					230V				
TAL 044 A		kVA	70	70	70	63	42		64	64	64	57	38		74	74	74	67	45		77	77	77	69	46
		kW	56	56	56	50	33.5		51	51	51	46	30.5		59	59	59	54	36		62	62	62	55	37
TAL 044 B		kVA	80	80	80	72	48		73	73	73	66	44		85	85	85	76	51		88	88	88	79	53
		kW	64	64	64	58	38.5		58	58	58	53	35		68	68	68	61	41		70	70	70	63	42
TAL 044 C		kVA	90	90	90	81	54		82	82	82	74	49		95	95	95	86	57		100	100	100	89	59
		kW	72	72	72	65	43		66	66	66	59	39		76	76	76	69	46		80	80	80	71	47
TAL 044 D		kVA	100	100	100	90	60		91	91	91	82	55		106	106	106	95	64		110	110	110	99	66
		kW	80	80	80	72	48		73	73	73	66	44		85	85	85	76	51		88	88	88	79	53
TAL 044 E		kVA	125	125	125	113	67		114	114	114	103	61		133	133	133	120	71		138	138	138	124	74
		kW	100	100	100	90	54		91	91	91	82	49		106	106	106	96	57		110	110	110	99	59
TAL 044 H		kVA	135	135	135	122	73		123	123	123	111	66		143	143	143	129	77		150	150	150	134	80
		kW	108	108	108	98	58		98	98	98	89	53		114	114	114	103	62		120	120	120	107	64
TAL 044 J		kVA	150	150	150	135	80		137	137	137	123	73		159	159	159	143	85		165	165	165	149	88
		kW	120	120	120	108	64		110	110	110	98	58		127	127	127	114	68		132	132	132	119	70
TAL 044 K		kVA	165	165	165	138	88		150	150	150	126	80		175	175	175	150	93		182	182	182	157	97
		kW	132	132	132	110	70		120	120	120	101	64		140	140	140	120	74		146	146	146	126	78
TAL 044 L		kVA	180	180	180	171	90		164	164	164	156	82		191	191	191	181	95		200	200	200	188	99
		kW	144	144	144	137	72		131	131	131	125	66		153	153	153	145	76		160	160	160	150	79
TAL 044 M		kVA	192	200	200	192	100		175	182	182	175	91		204	212	212	204	106		211	220	220	211	110
		kW	154	160	160	154	80		140	146	146	140	73		163	170	170	163	85		169	176	176	169	88



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
- 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

5.5 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)



MONITORING

Discover Dynamis Webnet

A remote generator management and control solution.

DYNAMIS WEBNET allows you to receive detailed reports including recommendations for corrective and preventive maintenance.

It also enables you to connect and access real-time data across a range of generator operating parameters.

The solution offers you real-time control of your generator.

- DSE890 MKII 4G gateway used with DSE controllers for remote monitoring and communication via DSEWebNet® or third-party MQTT brokers.
- Communicates with up to five connected DSE controllers to monitor instruments and operating states.

- Internally records data changes and transmits them to DSEWebNet® or to an MQTT broker (Amazon Web Services, Google, IBM, etc.).

- DSEWebNet® software is accessible via a web browser or a dedicated app.

- Supports multiple operations: equipment monitoring, alarm clearing, equipment start/stop, and fuel level monitoring.
- The IoT functionality of the DSE890 MKII supports MQTT V 3.1.1 (ISO/IEC 20922:2016).

- Connection to a third-party server running an MQTT broker is possible, while maintaining a connection to DSEWebNet®.

- For more information on DSEWebNet® software, refer to datasheet 055-192.

- The DSE890 MKII also supports 2G and 3G connectivity.



Extended tanks– 200-500-600-1000l



22kVA 1000l



33kVA 1000l antitheft



55kVA 600l