

## Features:

- Excitation system: self-excited (AREP and PMG are optional)
- ATS (automatic transfer switch) receptacle
- Lockable battery isolator switch
- Stainless galvanized zinc plates with strong corrosion resistance
- Vibration isolators between the engine/alternator and base frame
- Integrated wiring design
- Base fuel tank for at least 8 hours running
- Equipped with an industrial muffler
- Engine oil pump
- 50 C radiator
- Top lifting and steel base frame with forklift holes
- Drainage for fuel tank
- Complete protection functions and safety labels
- IP54 (soundproof sets), IP56 (control system)
- Water jacket preheater, oil heater and double air cleaner, etc. are available.



### Output Ratings

Generating Set Model	Prime	Standby
<b>EP137</b>	137kVA/110kW	151.3kVA/121kW

Ratings at 0.8 power factor.

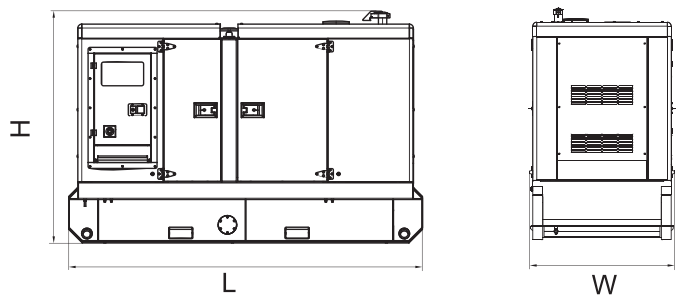
### Ratings and Performance Data

<b>Engine Make &amp; Model:</b>	1006TAG	
<b>Alternator Model:</b>	LSA44.2M95	
<b>Alternator Brand:</b>	Leroy Somer	
<b>Control System:</b>	PLC-7420	
<b>Noise Level@7m:</b>	/	
<b>Circuit Breaker Type:</b>	/	
<b>Frequency &amp; Phase:</b>	50Hz & 3PH	
<b>Engine Speed: RPM</b>	1500	
<b>Structure Type:</b>	<b>EP137</b>	R
<b>Fuel Tank Capacity: L</b>	<b>EP137</b>	420
<b>Fuel Consumption: l/hr (100% Load)</b>	<b>Prime</b>	/
	<b>Standby</b>	/

### Dimensions and Weights

Generating Set Model	Length (L) mm (in)	Width (W) mm (in)	Height (H) mm (in)	Dry kg (lb)	Wet kg (lb)
<b>EP137</b>	3340	1845	1260	2314	/

Dry = With Lube Oil      Wet = With Lube Oil and Coolant



Also available in the following voltages: 415/240V-380/220V-220/127V-200/115V;

ESP: Standby Power Standby duty, operation under variable load, without over load;

PRP: Prime Power-Continuous duty operation, under variable load 24/24h-10% over load permissible 1 hour/12 hours;

The data is only for your reference but not for use of sales.

M: Mechanical speed governor, E/ECU: Electronic speed governor;

NA: Naturally aspirated, TC: Turbocharged, TCA: Turbocharged and air-air aftercooled. TCW: Water-cooled Turbocharged;

The weights are approximate and without fuel.

## Engine model: 1006TAG

### Cooling system

#### Radiator

-face area ... 0,401 m<sup>2</sup> (4.3 ft<sup>2</sup>)  
 -rows and materials ... 3 rows, brass  
 -gills/inch and material ... 14, copper  
 -width of matrix ... 637 mm (25.1 in)  
 -height of matrix ... 630 mm (24.8 in)  
 -pressure cap setting ... 68,9 kPa (9.9 lbf/in<sup>2</sup>)  
 Maximum top tank temperature ... 103 °C (217 °F)  
 Estimated cooling air flow reserve (see 'caution' in General  
 Installation data table on page 1) ... 0,15 kPa (0.59 in H<sub>2</sub>O)

#### Charge cooler

-type ... fin and tube  
 -rows and materials ... 1 row / 62 mm (2.4 in) - Aluminium  
 -number of blades ... 10 - Aluminium

#### Fan

-diameter ... 635 mm (25 in)  
 -drive ratio ... 1.25 : 1  
 -number of blades ... 10  
 -material ... composite

#### Coolant

Maximum pressure head at pump ... 6,8 m (22.3 ft)  
 Coolant capacity  
 -with radiator ... 37,22 litres (65.5 UK pints)  
 -without radiator ... 12,7 litres (22.4 UK pints)  
 -drain down capacity ... 35,3 litres (62.2 UK pints)  
 Minimum temperature to engine ... 76 °C (169 °F)  
 Temperature rise across engine ... 8 °C (14 °F)  
 Max permissible external system resistance ... 35 kPa (5 lbf/in<sup>2</sup>)  
 Thermostat operation range ... 82-93 °C (180-199 °F)  
 Recommended coolant:

### Electrical system

-type ... Negative ground  
 -alternator ... 55A 12/24V options  
 -starter motor ... 12/24V options

#### Cold start recommendations

Minimum starting temperature °C	Grade of engine lubricating oil	Battery specifications			
		BS3911 Cold start amps	SAEJ537 Cold cranking amps	Number of batteries needed	Perkins Type
-10	10W	340	540	2	D (069)
-10	20W	340	540	2	D (069)
-15	10W	340	540	2	D (069)
-20	5W	340	540	2	D (069)

### Exhaust system

Maximum back pressure for total system ... TBA  
 Inside diameter of outlet flange ... 78 mm (3.1 in)  
**Note:** Changes to induction restriction, exhaust back pressure and fuel viscosity/temperature/specific gravity, can affect power output.  
 For further details contact Perkins Technical Service Department.

### Fuel system

Type of injection ... Direct  
 Fuel injection pump ... Rotary/Stanadyne DB4  
 Fuel atomiser ... Bosch/RSU/4 hole (0.35 mm diameter)  
 Injection pressure ... 24,7 MPa (243.8 atm)

#### Fuel lift pump

-delivery/hour ... 122,4 litres (215 UK pints)  
 -pressure ... 30 kPa (4.35 lbf/in<sup>2</sup>)  
 Maximum suction head ... 1,8 m (6.0 ft)  
 Maximum pressure head ... 3,0 m (9.8 ft)  
**Diesel Fuel** to conform to BS 2869 1983 class A2 ASTM D97566T Number 2D.  
**Governor type** ... Electronic / Mechanical

#### Fuel consumption litres/hour (UK gallons/hour)

Power rating %			
110	100	75	50
34,6 (7.61)	31,5 (6.93)	24,1 (5.3)	16,5 (3.52)

### Induction system

#### Maximum permissible air intake restriction at engine

-clean filter ... 3,0 kPa (12 in H<sub>2</sub>O)  
 -dirty filter ... 5,0 kPa (20 in H<sub>2</sub>O)  
 -air filter type ... dry element  
 Minimum dirt capacity ... 353 g/m<sup>3</sup>/min  
 Turbocharger type ... Garrett T04E/36/0,84-62-1

### Lubrication system

#### Capacities

-total ... 19 litres (33.5 UK pints)  
 -sump only ... 16 litres (28.2 UK pints)  
 Maximum operating angles  
 -front up, front down, right side ... 25°

#### Lubricating oil pressure

-relief valve opens ... 345 - 414 kPa (50 - 59 lbf/in<sup>2</sup>)  
 -at rated speed ... 300 - 340 kPa (43 - 49 lbf/in<sup>2</sup>)  
 -idle speed ... 62 - 90 kPa (9 - 13 lbf/in<sup>2</sup>)

#### Lubricating oil temperature

-at normal operation ... 105 °C (221 °F)  
 -maximum ... 125 °C (257 °F)  
 Lub. oil consumption as a % of fuel consumption ... 0.2% max

#### Recommended SAE viscosity

A Single of multigrade lubricating oil which conforms to API CD/SE or CCMC D4 must be used.

#### Mountings

Type ... 4 point rubber mounting  
 Maximum bending moment at rear face of block ... 1130 Nm (835 lbf ft)

## Alternator model: LSA44.2M95

### SPECIALLY ADAPTED FOR APPLICATIONS

The LSA 44.2 alternator is designed to be suitable for typical generator applications, such as: backup, standard production, cogeneration, marine applications, rental, telecommunications, etc.

### COMPLIANT WITH INTERNATIONAL STANDARDS

The LSA 44.2 alternator conforms to the main international standards and regulations:

IEC 60034, NEMA MG 1.22, ISO 8528, CSA/UL on request, marine regulations, etc.

It can be integrated into a CE marked generator.

The LSA 44.2 is designed, manufactured and marketed in an ISO 9001 environment.

### TOP OF THE RANGE ELECTRICAL PERFORMANCE

- Class H insulation.
- Standard 12-wire re-connectable winding, 2/3 pitch, type no. 6 .
- Voltage range: 220 V - 240 V and 380 V - 415 V (440 V) - 50 Hz / 208 V - 240 V and 380 V - 480 V - 60 Hz.
- High efficiency and motor starting capacity.
- Other voltages are possible with optional adapted windings:
  - 50 Hz: 440 V (no. 7), 500 V (no. 9), 600 V (no. 22 or 23), 690 V (no. 10 or 52)
  - 60 Hz: 380 V and 416 V (no. 8), 600 V (no. 9).
- Total harmonic distortion HDT < 2%.
- R 791 interference suppression conforming to standard EN 55011 group 1 class B standard for European zone (CE marking).

### EXCITATION AND REGULATION SYSTEM SUITED TO THE APPLICATION

Voltage regulator	Excitation system			Regulation options				
	SHUNT	AREP	PMG	T.I. Current transformer for paralleling	R 726 Mains paralleling	R 731 3-phase sensing	R 734 3-phase sensing on mains paralleling unbalanced	P Remote voltage potentiometer
R 250	Std	-	-	-	-	-	-	√
R 438	-	Std	Std	√	√	√	√	√
D 510	-	optional	optional	√	included	included	NA	√

Voltage regulator accuracy +/- 0.5% - ÷ : possible adaptation - NA : not possible.

### PROTECTION SYSTEM SUITED TO THE ENVIRONMENT

- The LSA 44. 2 is IP 23.
- Standard winding protection for clean environments with relative humidity ≤ 95 %, including indoor marine environments.

Options:

Filters on air inlet : derating 5%.

Filters on air inlet and air outlet (IP 44) : derating 10%.

Winding protections for harsh environments and relative humidity greater than 95%.

Space heaters.

Thermal protection for windings and shields.

### REINFORCED MECHANICAL STRUCTURE USING FINITE ELEMENT MODELLING

- Compact and rigid assembly to better withstand generator vibrations.
- Steel frame.
- Cast iron flanges and shields.
- Twin-bearing and single-bearing versions designed to be suitable for engines on the market.
- Half-key balancing.
- Greased for life bearings.
- Regreasable bearing option available on SHUNT and AREP versions, not available with PMG.

### ACCESSIBLE TERMINAL BOX PROPORTIONED FOR OPTIONAL EQUIPMENT

- Easy access to the voltage regulator and to the connections.
- Possible clusion of accessories for paralleling, protection and measurement.
- 8 way terminal block for reconnecting voltage reconnection.
- D 510 digital AVR adapted to the machine exterior

## Control System

**Digital, intelligent control system allows easier operation.**

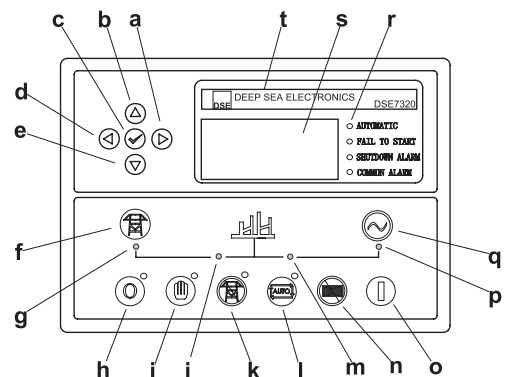
## PLC-7420

PLC-7420 is an advanced control module based on micro-processor, containing all necessary functions for protection of the genset and the breaker control. It can monitor the mains supply, breaker control and automatically start the engine when the mains is abnormal. Accurately measure various operational parameters and display all values and alarms information on the LCD. In addition, the control module can automatically shut down the engine and indicate the engine failure.



### FEATURES

- Microprocessor control, with high stability and credibility
- Monitoring and measuring operational parameters of the mains supply and genset
- Indicating operation status, fault conditions, all parameters and alarms
- Multiple protections; multiple parameters display, like pressure, temp. etc.
- Manual, automatic and remote work mode selectable
- Real time clock for time and date display, overall runtime display, 250 log entries
- Overall power output display
- Integral speed/frequency detecting, telling status of start, rated operation, overspeed etc.
- Communication with PC via RS485 OR RS232 interface, using MODBUS protocol



**Control Panel**

- a Button (next page)
- b Button (increase value / previous item)
- c Button (accept)
- d Button (previous page)
- e Button (decrease value / next item)
- f Button (transfer the load to the mains supply, when in Manual mode only)
- g Mains supply available LED
- h Stop / Reset button
- i Manual button (Manual control mode)
- j Mains supply on load LED
- k Test button (Test mode)
- l Auto button (Auto mode)
- m Genset on load LED
- n Mute/Lamp test button
- o Start button (Manual)
- p Genset available LED
- q Button (transfer the load to the genset, when in Manual mode only)
- r Alarm LED (4 alarm items)
- s LCD display
- t Control module name