EP Series

EP225

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℃ 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
EP225	225kVA/180kW	247.5kVA/198kW

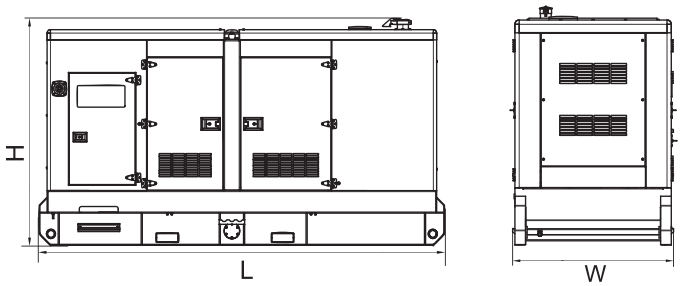
Ratings at 0.8 power factor.

Ratings and Performance Data

Engine Make & Model:		1306C-E87TAG4
Alternator Model:		LSA46.2L6
Alternator Brand:		Leroy Somer
Control System:		PLC-7420
Noise Level@7m:		/
Circuit Breaker Type:		/
Frequency & Phase:		50Hz & 3PH
Engine Speed: RPM		1500
Structure Type:	**EP225**	R
Fuel Tank Capacity: L	**EP225**	470
Fuel Consumption: l/hr (100% Load)	**Prime**	/
	Standby	/

Dimensions and Weights

Generating Set Model	Length (L) mm (in)	Width (W) mm (in)	Height (H) mm (in)	Dry kg (lb)	Wet kg (lb)
EP225	3662	1365	2015	3094	/
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.

EURO POWER®

EP Series

EP225

Engine model: 1306C-E87TAG4

Cooling system

Radiator

Radiator face area.. ... ... 0.39 m²
Number of rows and material . ... 5, aluminium
Fins per inch and material.. 10
Pressure cap setting (min) . ...110 kPa

Charge Cooler

Face area ... ... 0.26 m²
Number of rows and material . ... 2, aluminium
Fins per inch and material.. 10

Width and Height of Matrix

Height. ... ... 890.0 mm
Width .. .. 625.4 mm
Weight of cooling pack (dry)... ... ... 60.7 kg

Coolant pump

Speed
-at 1500 rev/min 2730
-at 1800 rev/min 3276
Method of drive .. .. Belt driven

Fan type/details

Diameter. ... ... .28 in (711.2 mm)
Drive ratio... ... ... 1.3
Material .. .. Plastic
Number of blades... 7
Pusher/Puller.. ... ... .Pusher
Cooling fan air flow
-at 1500 rev/min . ...440 m³/min
-at 1800 rev/min . ...495 m³/min

Coolant system

Recommended coolant: 50% inhibited ethylene glycol or 50% inhibited propylene glycol and 50% clean fresh water. Where there is no likelihood of ambient temperature below 10 °C, then clean soft water may be used, treated with 1% by volume of Perkins inhibitor.
Coolant capacity. ... ... 24.2 litres
Maximum pressure in engine cooling circuit .. ..110 kPa
Maximum top tank temperature ... ... 107 °C
Maximum static pressure head on pump ... ...127 kPa
Maximum permissible restriction to coolant pump flow . ... . .35 kPa
Thermostat operating range .. ..87 °C - 96 °C
Coolant flow against 30 kPa restriction,
-at 1500 rev/min ... ... 236 l/min
-at 1800 rev/min ... ... 285 l/min
Maximum temperature rise across the engine .. .. 10 °C

Induction system

Maximum air intake restriction

-clean filter.. ... ... 2.5 kPa
-dirty filter ... ...6.22 kPa
-air filter type .. ..dry paper element

Exhaust system

Maximum back pressure ... ...10,7 kPa
Exhaust outlet size (internal).. ... see GA drawings for dimensions

Cold start recommendations

Minimum starting temperature		Grade of engine lubricating oil	Battery specifications			
°C	°F		BS3911 Cold start amps	SAEJ537 Cold cranking amps	Number of batteries needed	Perkins type
-15	5	10W	440	660	2	A
-20	4	5W	440	660	2	A

Notes:

- Battery capacity is defined by the 20 hour rate
- The oil specification should be for the minimum ambient temperature as the oil will not be warmed by the immersion heater
- Breakaway current is dependent on the battery capacity available. Cables should be capable of handling transient current twice that of cranking current

-15 °C

Oil (SAE grade) 10W
Battery 2
Max breakaway current ... ...amps
Cranking current.. ... ...amps
Aids (automatically controlled by the engine ECM) . ... type
Minimum mean cranking speed... ... ... 130 rev/min

-20 °C

Oil (SAE grade) 5W
Battery 2
Max breakaway current ... ...amps
Cranking current.. ... ...amps
Aids (automatically controlled by the engine ECM) . ... type
Minimum mean cranking speed... ... ... 130 rev/min

Maximum additional restriction (duct allowance) to cooling airflow and resultant minimum airflow

Ambient clearance: air temp to filters
52ºC at 0 kPa restriction resultant Min. airflow = 440 m³/min
40ºC at 0.125 kPa restriction resultant Min. airflow = 424 m³/min

Electrical system

Type (grounding) . ... Negative ground
Alternator type . ... Delco Remy 13SI 24V
Alternator voltage 24V
Alternator output.. ... ... .50 amps
Starter type.. ... ...Delco Remy 38MT 24V
Starter motor voltage 24V
Starter motor power. ... ...6 kW
Number of teeth on flywheel ... ... .138
Number of teeth on starter pinion 12
Minimum cranking speed. ... ... 130 rev/min
Starter solenoid maximum pull-in current at -25 °C ... ...200 amps
Starter solenoid maximum hold-in current at -25 °C ... . 15 amps

Fuel system

Injection system... ... ...Direct
Injector type. ... ... HEUI
Governor type.. ... .Electronic (isochronous or droop capability)

EURO POWER®

EP Series

EP225

Alternator model: LSA46.2L6

SPECIALLY ADAPTED FOR APPLICATIONS

The LSA 46.2 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 46.2 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 46.2 is designed, manufactured and marketed in an ISO 9001 and ISO 14001 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. 23), 690 V (no. 10 or 52)
  - 60 Hz: 380 V and 416 V (no. 8), 600 V (no. 9).
- THD Total harmonic distortion < 2,5% (full load).
- 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

Excitation system				Regulation options				
Voltage regulator	**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 450	**optional**	**Std**	**Std**	√	√	√	√	√
D 510	**optional**	**optional**	**optional**	√	**included**	**included**	**contact factory**	√

Voltage regulator accuracy +/- 0.5%.

√ : possible mounting

PROTECTION SYSTEM SUITED TO THE ENVIRONMENT

- The LSA 46. 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 bearings optional).

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.
- 12 way terminal block for reconnecting voltage reconnection.

EURO POWER®

EP Series

EP225

Control System

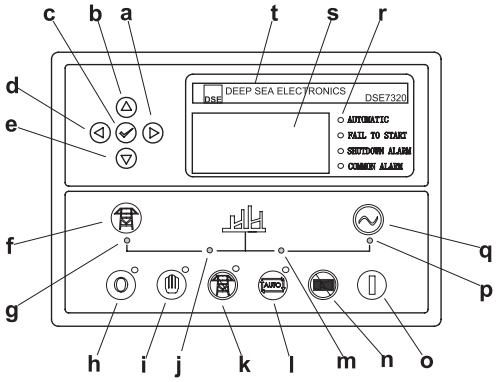
Digital, intelligent control system allows easier operation.

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 automaticallyshut 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