

Features:

- Excitation system: self-excited
- 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
EP1750	1750kVA/1400kW	1925kVA/1540kW

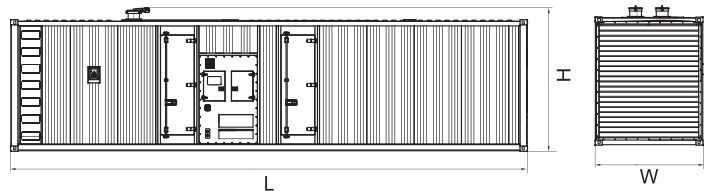
Ratings at 0.8 power factor.

Ratings and Performance Data

Engine Make & Model:		4016TAG
Alternator Model:		LSA51.2S55
Alternator Brand:		Leroy Somer
Control System:		PLC-7420
Noise Level@7m:		/
Circuit Breaker Type:		/
Frequency & Phase:		50Hz & 3PH
Engine Speed: RPM		1500
Structure Type:	EP1750	C
Fuel Tank Capacity: L	EP1750	2000
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)
EP1750	12192	2438	3150	20352	/
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: 4016TAG

Cooling system

Recommended coolant: 50% inhibited ethylene glycol or 50% inhibited propylene glycol and 50% clean fresh water. For combined heat and power systems and 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 in the cooling system. The inhibitor is available in bottles under Perkins Part No. OE 45350 (1 litre).

Nominal jacket water pressure in crankcase 1.7 bar

The following is a guide based on ambient air conditions of 52 °C on a Perkins supplied radiator

Total coolant capacity :

- Electronit (engine only) 95 litres
- Electropak (engine/radiator) 4016TAG 255 litres
- Electropak (engine/radiator) 4016TAG1/2 316 litres
- Pressure cap setting 0.69 bar
- Fan Incorporated in radiator
- Diameter 4016TAG 1524 mm (Pusher)
- Diameter 4016TAG1/2 1905 mm (Pusher)
- Ambient Cooling Clearance (Open Electropak Prime power) based on air temp at fan 3 °C above ambient.

- Coolant pump speed and method of drive 1.4 x engine rev/min Gear
- Maximum static pressure head on pump above engine crank centre line 7 m
- Maximum external permissible restriction to coolant pump flow 20 KPa
- Thermostat operating range 71-85 °C
- Shutdown switch setting 96 °C risin
- coolant immersion heater capacity 4 kW x 2

Fuel system

- Recommended fuel To conform to BS2869 1998 Class A1, A2
- Type of injection system Direct injection
- Fuel injection pump Combined Unit injector
- Fuel injector Combined Unit Injector
- Fuel injector opening pressure 234 bar
- Fuel lift pump Tuthill TCH 5
- Deliver /hour at 1500 rev/min 1380 litres
- Deliver /hour at 1800 rev/min N/A litres
- Heat retained in fuel to tank 4016TAG 11.0 kW
- Heat retained in fuel to tank 4016TAG1/2 12.0 kW
- Temperature of fuel at lift pump to be less than 58 °C
- Fuel lift pump pressure 3.0 bar
- Fuel lift pump maximum suction head 2.5 m
- Fuel lift pump maximum pressure head (see installation manual)
- Fuel filter spacing 8 microns
- Governor type Electronic
- Torque at the Governor output shaft 1.631 kNm
- Static injection timing See engine number plate
- Tolerance on Fuel consumption +5%

4016TAG

Fuel consumption gross				
Designation	g/kWh		Litres/hr	
	1500 rev/min	1800	1500	1800
At Standby Max power rating	207	-	402	-
At Prime Power rating	205	-	362	-
At Continuous Baseload rating	205	-	290	-
At 75% of Prime Power rating	205	-	272	-
At 50% of Prime Power rating	209	-	185	-
At 25% of Prime power rating	223	-	99	-

Jacket cooling water data	Units	1500 rev/min	1800 rev/min
Coolant flow 4016TAG	l/s	16.1	-
Coolant flow 4016TAG1/2	l/s	19.0	-
Coolant exit temperature (max)	°C	93	-
Coolant entrance temperature (min)	°C	70	-
Coolant entrance temperature (max)*	°C	85	-
Coolant entrance temperature (max)**	°C	80	-

*4016TAG **4016TAG1/2

Lubrication system

Recommended lubricating oil to conform with the specification of APICD or CCMCD4

Lubricating oil capacity :

- Sump maximum 214 litres
- Sump minimum 147 litres
- Lubricating oil temperature maximum to bearings 105 °C
- Lubricating oil pressure:
- at 80 °C temperature to bearing gallery (minimum) 0.34 MPa

*Typical after 250 hours

- Sump drain plug tapping size G1
- Oil pump speed and method of drive 1.4 x engine rev/min, gear
- Oil pump flow 1500 rev/min 6.70 litres/sec
- Shutdown switch setting 1.93 bar fallin
- Normal operating angles
- Fore and aft 5°
- Side tilt 10°

Induction System

Emissions data with combustion air temperature of 25 °C at continuous base load

Maximum air intake restriction of engine:

- Clean filter 127 mm H₂O
- Dirt filter 380 mm H₂O
- Air filter type 5000.00.00 MF&T

Exhaust system

Maximum back pressure for total system

Designation	Units	1500 rev/min	1800 rev/min
4016TAG1/2	mmH ₂ O	949	-

Exhaust outlet flange size 2 x 254 mm (Table 'D')
Recommended pipe sizes Refer to Installation Manual.

Electrical system

- Type Insulated return
- Alternator 24 volts with integral regulator
- Alternator output 40 amps at a stabilised output 28 volts at 20 °C ambient
- Starter motor 24 volts
- Starter motor power 16.4 kW
- Number of teeth on flywheel 156
- Number of teeth on starter motor 12
- Minimum cranking speed (0 °C) 120 rev/min
- Pull in current of each starter motor solenoid (2off) 30 amps at 24 volts
- Hold in current of each starter motor solenoid (9°off) 9 amps at 24 volts
- Engine stop solenoid 24 volts
- Pull in current of stop solenoid 60 amps at 24 volts
- Hold in current of stop solenoid 1.1 amps at 24 volts

Alternator model: LSA51.2S55

SPECIALLY ADAPTED FOR GENSET APPLICATIONS

The LSA 51.2 alternator is designed to be suitable for typical generator set applications, such as: backup, base production, cogeneration, marine applications, rental, telecommunications, etc.

COMPLIANT WITH INTERNATIONAL STANDARDS

The LSA 51.2 alternator conforms to the main international standards and regulations:

IEC 60034, NEMA MG 1.22, ISO 8528/3, CSA, UL 1446, UL 1004B on request, marine regulations, etc.

It can be integrated into a CE marked generator.

The LSA 51.2 is designed, manufactured and marketed in an ISO 9001 and ISO 14001 environment. ≤

TOP OF THE RANGE ELECTRICAL PERFORMANCE

- Class H insulation.
- Standard 6-wire winding, 2/3 pitch, type no. 6S.
- Voltage range 50 Hz : 380V - 400V - 415V - 440 V.
- Voltage range 60 Hz : 380V - 416V - 440V - 480V.
- Ability to reconnect : 50 Hz : 220V - 230V - 240V / 60 Hz : 220 V - 240 V : consult factory.
- Other voltages are possible with optional adapted windings :
 - 50 Hz : 440 V (no. 7S), 500 V (no. 9S), 600 V (no. 22S or 23S), 690 V (no. 10S or 52S)
 - 60 Hz : 380 V and 416 V (no. 8S), 600 V (no. 9S).
- High efficiency and motor starting capacity.
- Total harmonic content < 3,5 %.
- R 791 interference suppression conforming to standard EN 55011 group 1 class B standard for the European zone (CE marking).

EXCITATION AND REGULATION SYSTEM SUITED TO THE APPLICATION

The LSA 51.2 can be supplied with AREP or PMG excitation system, according to the alternator specification.

Standard excitation system is AREP with R 449 A.V.R.

Excitation system			Regulation options				
Volage regulator	AREP	PMG	C.T. Current transformer for paralleling	R 726 Mains paralleling	R 731 3 Phase sensing	R 734 3 Phase sensing for unbalanced mains paralleling	P Remote voltage potentiometer
R 449	Std	Option	√	√	√	√	√
D 510	Option	Option	√	included	included	consult factory	√

Voltage regulator accuracy ± 0.5%. - √ : adaptation possible

PROTECTION SYSTEM SUITED TO THE ENVIRONMENT

- The LSA 51.2 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 8%.
- Winding protections for harsh environments and relative humidity greater than 95%.
- Space heaters.
- Thermal RTD protection for winding.

REINFORCED MECHANICAL STRUCTURE USING FINITE ELEMENT MODELLING

- Compact and rigid assembly to better withstand genset or engine vibrations.
- Steel frame.
- Cast iron flanges and shields.
- Twin-bearing and single-bearing versions designed to be suitable for most engines on the market.
- Half-key balancing.
- Regreasable bearings.

ACCESSIBLE TERMINAL BOX PROPORTIONED FOR OPTIONAL EQUIPMENT

- Easy access to the voltage regulator and to the connections.
- Possible incorporation of accessories for paralleling, protection and measurement.

Control System

PLC-7420

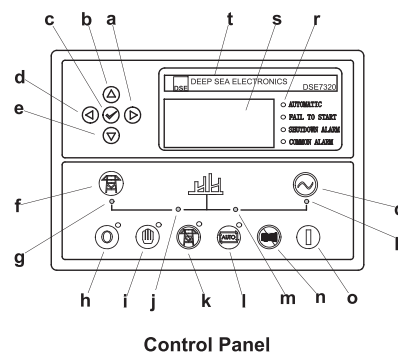
PLC-7420 is an advanced control module based on micro-processor, containing all necessary functions for protection of the genset and the breaker control. It can monitor the mains supply, breaker control and automatically start the engine when the mains is abnormal. Accurately measure various operational 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



- 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) | 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



Control Panel