

EP Series **WPS200B / WPS200BS**

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

Ratings and Performance Data

- 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.

		AND MULTIPHASE	
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	- PP		
		2	

Output Ratings		
Generating Set Model	Prime	Standby
WPS200B/S	200kVA/160kW	220kVA/176kW

Ratings at 0.8 power factor.

Dimensions and Weights									
Generating Set Model	Length (L) mm (in)	Width (W) mm (in)	Height (H) mm (in)	Dry kg (lb)	Wet kg (lb)				
WPS200B	2785	986	1759	2044	/				
WPS200BS	3468	1263	1843	2740	/				
Dry = With Lu	be Oil	Wet = With Lub	e Oil and Coola	nt					











Engine Make & Model: 1106A-70TAG4 Alternator Model: LSA46.2M5 **Alternator Brand:** Leroy Somer **Control System:** PLC-920 / PLC-7420 Noise Level@7m: / **Circuit Breaker Type:** / Frequency & Phase: 50Hz & 3PH **Engine Speed: RPM** 1500 WPS200B R Structure Type: WPS200BS R WPS200B 350 Fuel Tank Capacity: L WPS200BS 420 Prime

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.

Fuel Consumption: I/hr

(100% Load)

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.

Standby

1

1



Engine model: 1106A-70TAG4

Cooling system

Cooling pack

-overall weight (wet)	70 kg
-overall face area)0 mm²
-width	24 mm
-height 10	90 mm

Radiator

Charge cooler

Face area	173,600 mm²
Number of rows and materials	2 rows, Aluminium
Matrix density and material	10 fins per inch, Aluminium
Width of matrix	220 mm
Height of matrix	789 mm

Fan

610 mm (23.7 in)
1,2:1
7
Nylon
Pusher
282 m³/min
5 kW

Coolant

Total system capacity
System drawdown capacity
Engine capacity
Maximum top tank temperature
Temperature rise across engine
(Max. rating dependent) 6°C - 12°C (42.8°F)
Max. permissible external system resistance 35 kPa (5.1 lbf/in²)
Thermostat operation range 82°C to 93°C (179.6°F to 199.4°F)
Shutdown switch setting
Coolant pump method of drive Gear
Recommended coolant immersion heater
rating (Min.) 0,75 kW
Recommended coolant
BS6580 - 1992, ASTM D3306 and ELC coolants to 1E1966

Fuel system

Injection components

| Injector |
 | I | Me | cha | nical |
|-----------|------|------|------|------|------|------|------|------|---|----|-----|-------|
| Fuel pump |
 | | | DP2 | 10G |

Fuel priming

Priming pump type	Manual
Maximum priming time	

Fuel feed

Maximum fuel flow	35 l/min
Maximum suction head at engine fuel pump inlet	10 kPA
Maximum static pressure head	10 kPa
Fuel temperature at engine fuel pump inlet 46°C (14.8°F)
Tolerance on fuel consumption	<u>+</u> 5%

Electrical system

Alternator
Alternator voltage 12 volts
Alternator output
Starter AZF
Starter motor voltage
Starter motor power 4.2 kW
Number of teeth on the flywheel 126
Pull-in current of starter motor solenoid
@ -25°C Max. ⁽¹⁾ pulse signal 12 volts (68 amps)
Hold-in current of starter motor solenoid
@ 0°C Max. ⁽¹⁾ pulse signal 12 volts (20 amps)
Engine stop method Solenoid
1 All leads to rated at 10 amps minimum

Cold start recommendations

	5 to -10°C -10 to -20°C		-20 to -25°C			
Oil	15W40	10W40	5W40			
Starter	AZF					
Battery	2x 900CCA					
Max. breakaway current	1020 amps					
Cranking current	960					
Aids	None	Glowplugs				
Minimum mean cranking speed	100 rev/min	110 rev/min	120 rev/min			

- Battery capacity is defined by the 20 hour rate
- If a change to a low viscosity oil is made, the cranking torque necessary at low ambient temperatures is much reduced. The starting equipment has been selected to take advantage of this. It is important to change to the appropriate multigrade oil in anticipation of operating in low ambient temperatures
- Breakaway current is dependent on battery capacity available. Cables should be capable of handling the transient current which may be up to double the steady cranking current.

Exhaust system

Maximum back pressure

-1500 rev/min .		 	 15,0	kPa (4.43 in Hg)
Exhaust outlet.	internal diameter	 	 	72 mm (2.83 in)

Lubrication system

Maximum total system oil capacity 16.5 litres (22.0 U	K pints)
Minimum oil capacity in sump 12.4 litres (26.4 Ul	K pints)
Maximum oil capacity in sump 14.9 litres (32.8 Ul	K pints)
Maximum engine operating angles - front up,	
front down, right side, left side	25°
Sump drain plug tapping size	16 UNF
Shutdown switch setting (where fitted)	
-no Temp. switch	TBC°C
-oil pressure)-13 Psi



EP Series WPS200B / WPS200BS

Alternator model: LSA46.2M5

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	-	-	-	-	-	-	\checkmark
R 450	optional	Std	Std	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark
D 510	optional	optional	optional	\checkmark	included	included	contact factory	\checkmark

Voltage regulator accuracy +/- 0.5%.

 $\sqrt{1}$: 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.



WPS200B / WPS200BS

Control System PLC-920 (Optional)

Multiphase Power PLC-920 generator controllers integrating digital, intelligent and network techniques are used as the automatic control systems for diesel generators. It can carry out functions including pre-alarm, warning & electrical trip, fail monitoring and controls etc.

FEATURES

- Parameter configuration via RS-232 serial communication;
- Log last 50 events & alarm information with measured values;
- Statistics records;
- Remote start/stop;
- Speed sensing from alternator voltage or magnetic pickup;
- Configurable 3 inputs and 6 outputs;
- ECU powers, ECU stop, STOP or fuel solenoid selection;
- Automatic transfer switching control and engine control;
- Adjustable start, load and stop timers.

SPECIFICATION

- Dimensions: 111mm*81mm*61mm
- Protection: IP65 at front panel
- Operating temperature: -20 $^\circ\!\mathrm{C}$ to 70 $^\circ\!\mathrm{C}$
- Max. Operating current is 360mA
- Sender measurement: 0 to 1300 ohm

FUNCTION

- Pre-Alarm
- Engine temperature
- Oil pressure
- Over/under voltage
- Over/under frequency
- Over/under speed
- Warning & Electrical trip
- Over current
- Short circuit
- Frror
- Over/under speed
- Speed loss
- Battery low
- Battery high
- Maintenance
- Over current
- Short circuit
- Engine stop
- Can bus
- Charge alternator



- Panel cut-out: 81mm*70mm
- Weight: approximately 0.3kg
- DC battery supply voltage: 8 to 32Vdc
- CT secondary: 5A
- Accuracy: 1%FS, resolution: 1 ohm
- Fail monitoring
- Emergency stop
- Multiple engage fail
- Failed to start
- Low oil pressure
- High temperature
- Speed failure
- Voltage
- Charging fail
- Shutdown Warning
- Controls
- Fuel and stop solenoid ECU power and stop
- Starter motor
- Automatic generator start
- Preheat
- External alarm horn
- Engine cooling
- Idle mode

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Fail	to start LED	•	•
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	Per PhasekW, kWr	•	•
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	Output Power	×	•
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ma	Overcurrent	٠	٠
Alta	Earth Leakage	0	0
	Reverse Power	×	×
	Reverse kWr	×	X
Lov	/ Oil Pressure	٠	٠
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Control System function list



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) | 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



Optional

Engine	Alternator	Generator Set	Fuel System	Canopy
 Water Jacket Preheater Oil Preheater 	 Winding Temperature Measuring Instrument Alternator Preheater PMG Anti-damp and anti-corrosion treatment Anti-condensation heater 	Tools with the machine	 Low fuel level alarm Automatic fuel feeding system Fuel T-valves 	• Trailer
Lubricating				

System	Exhaust System	Cooling System	Control Panel	Voltages
• Oil with the machine	 Protection board from hotness 	 Front heat protection Coolant (-30°C) 	 Remote control panel PLC-920 PLC-7420 ATS 	 415/240V 400/230V 380/220V 220/127V 200-115V



www.multiphase-power.com

Multiphase Power reserves the right to make changes in model, technical sepcification, color, configuration and accessories without prior notice. Please contact the salesman before ordering.

EP Series / May.2017