

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
EP15	15kVA/12kW	17kVA/13kW

Ratings at 0.8 power factor.

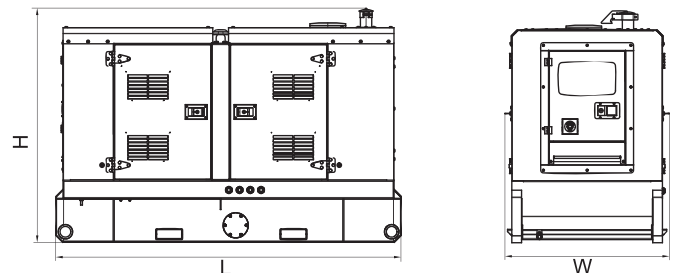
Ratings and Performance Data

Engine Make & Model:	403A-15G2	
Alternator Model:	ECP28-S/4	
Alternator Brand:	MECC	
Control System:	PLC-7420	
Noise Level@7m:	/	
Circuit Breaker Type:	/	
Frequency & Phase:	50Hz & 3PH	
Engine Speed: RPM	1500	
Structure Type:	EP15	RS
Fuel Tank Capacity: L	EP15	100
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)
EP15	1932	927	1308	725	/

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: 403A-15G2

Cooling system

Radiator

-face area 0.167 m²
 -rows and materials..... 2 rows, Aluminium
 -matrix density and material 4.5 fins per inch, Aluminium
 -width of matrix 334.2 mm
 -height of matrix..... 500.0 mm
 -pressure cap setting 90 kPa
 Estimated cooling air flow reserve 0.125 kPa

Fan

-diameter 320 mm
 -drive ratio 1.25:1
 -number of blades 6
 -material Plastic
 -type Pusher

Coolant

Total system capacity
 -with radiator 6.0 litres
 -without radiator..... 2.6 litres
 Maximum top tank temperature 112°C
 Max static pressure head on pump 30.4 kPa
 Temperature rise across engine 5.1°C
 Max permissible external system resistance..... TBA kPa
 Thermostat operation range. 82 - 95°C
 Recommended coolant:
 Recommended coolant: 50% anti freeze / 50% water. For complete details of recommended coolant specifications, refer to the Operation and Maintenance Manual for this engine model

Duct allowance

Maximum additional restriction (duct allowance) to cooling airflow and resultant minimum airflow		
Ambient clearance 50% Glycol	Duct allowance Pa	m ³ /sec
53°C	45	41.4
46°C	83	41.4

Electrical System

-alternator 15 amps, 12 V
 -starter motor..... 2 kW, 12 V
 Minimum cranking speed 150 rev/min

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	Commercial ref number
0	20W	420	590	1	072
-15	10W	420	590	1	072
-20	5W	540	740	1	647

Note: Additional information for battery and cable limits can be found in Chapter 6 of the 400 Series Engine Sales Manual.

Exhaust system

Maximum back pressure 10.2 kPa
 Exhaust outlet size..... 42 mm

Fuel system

Type of injection Indirect injection
 Fuel injection pump..... Cassette type
 Fuel injector Pintle nozzle
 Nozzle opening pressure 14.7 MPa
 Max particle size 25 microns

Fuel lift pump

-type mechanical (camshaft driven)
 -flow/hour..... 63 litres/hr
 -pressure 10 kPa
 Maximum suction head 0.8 m
 Maximum static pressure head 3.0 m
 Max. fuel temperature at lift pump inlet. 40°C
 Max. fuel filter service interval 1000 hrs
 Governor type Mechanical
 Speed control conforms to G2

Fuel specification

USA Fed Off Highway - EPA2D 89.330-96
Europe Off Highway - CEC RF-06-99

Note: For further information on fuelspecifications and restrictions, refer to the OMM Fuels section for this engine model.

Fuel consumption

Power rating%				
g/kWh (litres/hr)				
110	100	75	50	25
270 (4.90)	250 (4.10)	TBA	TBA	TBA

Induction system

Maximum air intake restriction

-clean filter. 3.0 kPa
 -dirty filter 6.4 kPa
 -air filter type..... dry element type

Lubrication system

Lubricating oil capacity

Maximum sump capacity..... 6.0 litres
 Minimum sump capacity 4.5 litres
 Maximum engine operating angles
 -front up, front down, right side or left side 35° continuous

Lubricating oil pressure

-relief valve opens 262 - 359 kPa
 Minimum oil pressure 120 kPa
 -at maximum no-load speed..... TBA
 Max. oil temperature - continuous operation..... 125°C
 Max. oil temperature - intermittent operation 135°C
 Oil flow at rated speed 10.9 litres /min

Alternator model: ECP28-S/4

Electrical Characteristics										
Frequency	Hz	50					60			
Voltage (series star)	V	380	400	415	440	415	440	460	480	
Rated power class H	kVA	17	17	17	15,5	17,5	18,6	20,4	20,4	
	kW	13,6	13,6	13,6	12,4	14	14,9	16,3	16,3	
Rated power class F	kVA	16	16	16	14,5	16,5	17,5	19	19	
	kW	12,8	12,8	12,8	11,6	13,2	14	15,2	15,2	
Regulation with	DSR	±1 % with any power factor and speed variations between -5% +30%								
Insulation class		H								
Execution		Brushless								
Stator winding		12 ends								
Rotor		without damping cage								
Efficiencies class H	4/4	%	87,1	87,2	86,9	86,7	88	88,5	88,6	88,7
(see graph. for details)	3/4	%	87,1	87,4	87,3	87	88	88,2	88,4	88,6
	2/4	%	85,3	85,4	85,4	85,1	85,9	86	86,1	86,2
	1/4	%	83,2	83,1	82,9	82,4	83,3	83,1	83,2	83,5
Reactances (f. l.cl. F)	Xd		217,2	196	182,1	147,7	224,9	212,7	213,4	196
	Xd'		18,73	16,9	15,70	12,73	19,39	18,34	18,40	16,9
	Xd''		12,74	11,5	10,68	8,67	13,20	12,48	12,52	11,5
	Xq		79,8	72	66,9	54,3	82,6	78,1	78,4	72
	Xq'		79,8	72	66,9	54,3	82,6	78,1	78,4	72
	Xq''		26,6	24	22,3	18,1	27,5	26,0	26,1	24
	Σ		18,84	17	15,79	12,81	19,51	18,45	18,51	17
	X ₀		3,99	3,6	3,34	2,71	4,13	3,91	3,92	3,6
Short Circuit Ratio	Kcc		0,55	0,67	0,88	1,50	0,42	0,50	0,55	0,67
Time Constants	Td'		0,051							
	Td''		0,018							
	Tdo'		0,90							
	α		0,016							
Short Circuit Current Capacity	%		>300				>320			
Excitation at no load	Amp.		0,4	0,5	0,6	0,9	0,25	0,32	0,35	0,4
Excitation at full load	Amp.		1,7	1,7	1,9	2,1	1,3	1,5	1,6	1,7
Overload (long-term)	%		1 hour in a 6 hours period 110% rated load							
Overload per 20 sec.	%		300							
Stator Winding Resistance (20°C)	Ω		0,283							
Rotor Winding Resistance (20°C)	Ω		1,260							
Exciter Resistance (20 °C)	Ω		Rotor : 0,417				Stator : 10,60			
Heat dissipation at f.l.cl.H	W		2014	1996	2050	1902	1909	1934	2100	2079
Telephone Interference			THF < 2 %				TIF < 45			
Radio interference			EN61000-6-3 EN61000-6-1. For others standards apply to factory							
Waveform Distors.(THD) at f. load	LL/LN %		2 / 2							
Waveform Distors.(THD) at no load	LL/LN %		3,7 / 3,7							

Mechanical characteristics										
Protection		IP 23 (other protection on request)								
DE bearing		6309-2RS								
NDE bearing		6207-2RS								
Weight of wound stator assembly	kg	33,2								
Weight of wound rotor assembly	kg	18,7								
Weight of complete generator	kg	107								
Maximun overspeed	rpm	2250								
Unbalanced magnetic pull at f.l.cl.F	kN/mm	3								

Control System

Digital, intelligent control system allows easier operation.

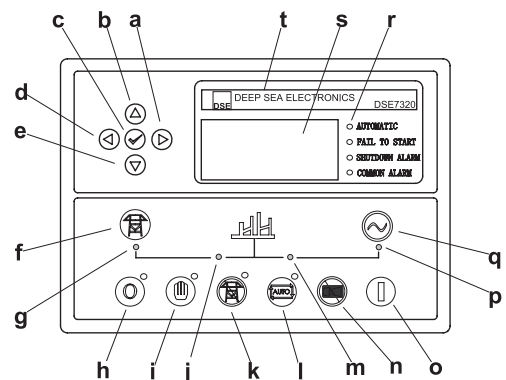
PLC-7420

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