

# LDS Technologies Ltd.

UK MANUFACTURED GENERATORS

LDS TECHNOLOGIES MODEL:  
**PCS9P - PCS20P**

PERKINS 400 SERIES TECHNICAL DATA SHEET

Cost Effective Power:

- Compact size and low noise level
- Lower fuel consumption and oil use
- 500hrs service intervals
- 2 year warranty (hours limitation applies)



LDS Technologies Generating Set Model	Perkins Engine Model	380-415 50hz		480v 60hz	
		KVA	KW	KVA	KW
LDS9P (PRIME)	403A-11G1	9	7.2	N/A	N/A
LDS9P (STANDBY)	403A-11G1	10	8	N/A	N/A
LDS13P (PRIME)	403A-15G1	13	10.4	N/A	N/A
LDS13P (STANDBY)	403A-15G1	14.3	11.4	N/A	N/A
LDS15P (PRIME)	403A-15G2	15	12	18	14.4
LDS15P (STANDBY)	403A-15G2	16	12.8	20	16
LDS20P (PRIME)	404A-22G1	20	16	N/A	N/A
LDS20P (STANDBY)	404A-22G1	21.5	17.2	N/A	N/A

## RATING DEFINITIONS

### Prime Power

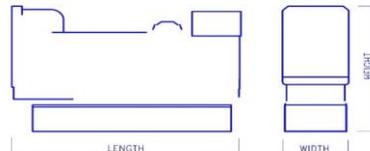
These ratings are applicable for supplying continuous electrical power (at variable load) in lieu of commercially purchased power. There is no limitation to the annual hours of operation and these models can supply 10% overload power for 1 hour in 12 hours.

### Standby Power

These ratings are applicable for supplying continuous electrical power (at variable load) in the event of a utility power failure. No overload is permitted on these ratings.

## DIMENSIONS AND WEIGHTS

Genset Models:	Net kg	Length mm	Width mm	Height mm
LDS9P	400	1250	710	1040
LDS13-15P	500	1260	710	1140
LDS20P	600	1360	710	1180



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## PERKINS ENGINE TECHNICAL DATA

Generating Set Model:	LDS9P	LDS13P	LDS15P	LDS20P
Engine Manufacturer:	PERKINS	PERKINS	PERKINS	PERKINS
Model:	403A-11G1	403A-15G1	403A-15G2	404A-22G1
Number of Cylinder:	3 In line	3 In line	3 In line	4 In line
Displacement:	1.1 Litre	1.5 Litre	1.5 Litre	2.2 Litre
Cycle	4 stroke	4 stroke	4 stroke	4 stroke
Cooling System	Water cooled	Water cooled	Water cooled	Water cooled
Combustion System	Indirect Injection	Indirect Injection	Indirect Injection	Indirect Injection
Bore/Stroke: (mm)	77 x 81	84 x 90	84 x 90	84 x 100
Aspiration:	Natural	Natural	Natural	Natural
Direction of rotation	Anti-clockwise	Anti-clockwise	Anti-clockwise	Anti-clockwise
Lub. Oil Capacity ltrs:	4.9	6	6	10.6
Coolant capacity ltrs:	5.2	6	6	7
Electrical equipment	12vDC	12vDC	12vDC	12vDC
Compression Ratio:	23:1	22.5:1	22.5:1	23.3:1
<b>50 hz</b>				
Engine Speed:	<b>1500rpm</b>	<b>1500rpm</b>	<b>1500rpm</b>	<b>1500rpm</b>
Maximum Continuous Power at Flywheel: kw	8.4	12	13	18.4
Maximum Standby Power at Flywheel: kw	9.2	13.2	15	20.3
Fuel Cons: L/hr				
110%	3.6	4.1	6	6.1
100%	3	3.7	5	5.3
75%	2.3	2.8	3.8	4
50%	1.7	2	2.5	2.9
<b>60hz</b>				
Engine Speed:	<b>1800rpm</b>	<b>1800rpm</b>	<b>1800rpm</b>	<b>1800rpm</b>
Maximum Continuous Power at Flywheel: kw	N/A	N/A	16	N/A
Maximum Standby Power at Flywheel: kw	N/A	N/A	18	N/A
Fuel Cons: L/hr				
110%	N/A	N/A	N/A	N/A
100%	N/A	N/A	N/A	N/A
75%	N/A	N/A	N/A	N/A
50%	N/A	N/A	N/A	N/A

**NOTE:** All engine performance data based on our maximum continuous rating at the standard reference conditions specified.

Fuel consumption data at full load with a diesel fuel with a specific gravity of 0.85 conforming to BS2869:1988, Class A2

In line with our policy of continuous product development, we reserve the right to change specifications without notice.

### ALTERNATOR MODELS

Mecc Alte (UK)	ECP28-2VS	ECP28-0S	ECP28-S	ECP28-M
Newage Stamford	P044D	P044F	P044G	P144D
Leroy Somer	LSA40VS1	LSA40S3	LSA40S3	LSA40M5

**STANDARD SUPPLY:**

12/24 volt axial starter motor  
 12/24 volt heavy duty batteries  
 Engine driven charging alternator  
 Engine starting motor  
 Set mounted heavy duty tropical radiator and pusher fan  
 Fuel oil filter  
 Lube oil filter  
 Air intake filter  
 Energised to run solenoid  
 Low oil pressure switch  
 High engine temperature switch  
 Industrial silencer with flexible section  
 Mechanical/electrical governor or ECM (check with sales)  
 8hr base fuel tank up to 800kva  
 Open Skid base above 800kva  
 Captive AVMs  
 One set operation manuals  
 One set engine and alternator maintenance books  
 One set electrical schematic drawings

**TESTING** All units are fully tested in our works prior to depatch

**WARRANTY** All PowerCo equipment carries a full 12 month warranty in accordance with our conditions of sale. 24 month warranties are available FOC for standby units running at limited hours (please check with sales for full details).

**AVAILABLE OPTIONS:**

55DBA-85DBA weatherproof acoustic canopies and containers  
 Residential silencers  
 Critical silencers  
 Full EEC trailers  
 Non EEC trailers  
 Free standing fuel tanks  
 Bundled fuel tanks  
 Automatic fuel make-up system  
 Fuel level warnings  
 CE certification  
 Unlimited other options are available (contact sales for details)

**ALTERNATOR:**

We use Cummins Generator Technology (Newage Stamford), Leroy Somer of France and also Mecc Alte of the UK.  
 Brushless revolving field  
 4 pole  
 Class H temperature rise 125/40  
 Class H Insulation  
 Automatic voltage regulator  
 Single bearing  
 0.5% - 1% voltage regulation  
 TIF 50/NEMA MGI-22-43  
 THF>3%  
 RFI to BS800  
 50HZ voltage range - 380/220 - 415/240v  
 60HZ voltage range - 220/127 - 480/277v

**SET MOUNTED DIGITAL CONTROL SYSTEM:**

Deep Sea Electronics model **7120** microprocessor engine controller provides metering and alarm facilities via the LCD display as follows:  
 Emergency stop push button  
 Generator volts line/line  
 Generator volts line/neutral  
 Generator amps 3 phase  
 Generator frequency Hz  
 Mains volts line/line  
 Mains volts line/neutral  
 Mains frequency Hz  
 Engine speed  
 Engine oil pressure  
 Engine coolant temperature  
 Engine battery/volts  
 Engine hours run

Event log

Additional engine parameter metering via CAN (engine permitting)

**PROTECTIONS:**

Generator over-volts - shutdown  
 Generator under-volts - shutdown  
 Mains out of limits  
 Mains under volts  
 Mains over volts  
 Mains under frequency  
 Mains over frequency  
 Over speed - shutdown  
 Under speed - shutdown  
 Over frequency Hz - shutdown  
 Under frequency Hz - shutdown  
 High current - alarm  
 Battery charge fail - alarm  
 Emergency stop  
 Low oil pressure - shutdown  
 High engine temperature - shutdown  
 Fail to start - alarm  
 High battery volts - alarm  
 Low battery volts - alarm  
 Fail to come to rest - alarm  
 Loss of speed sensing signal - alarm  
 LED indication indicates - alarm (amber) or shutdown (red flashing)  
 USB programming port - standard printer cable connection

**TIMERS:**

Start delay  
 Stop delay  
 Crank/crank rest timer  
 Engagement attempt manual crank limit  
 Safety on delay timer  
 Warm up timer  
 Cooling timer  
 Exercise scheduler  
 Energise to stop timer

**CONTROL SYSTEM UPGRADES:**

**7220** gives the following extras:  
 (Standard supply above 650kVA)  
 Generator power factor  
 Generator phase sequence  
 Generator kVA  
 Generator kVA/hr  
 Generator kVAr  
 Generator kVAr/hr  
 Generator kW  
 Generator kW/hr  
 Load shedding control  
 Dummy load control  
 Dual mutual  
 Remote SCADA monitoring (wired)

**7320** gives the following extras:-  
 (Standard supply above 1000kVA)  
 SMS messaging (modem required)  
 SMS start/stop (modem required)  
 Ethernet comms (additional module required)  
 I/O expansion  
 RS232 & RS484 comms

**8610** auto-synchronising unit gives you the following upgrades:-  
 Synchroscope display  
 Bus volts line/line  
 Bus volts line/neutral  
 Bus frequency Hz  
 Bus phase sequence  
 Full automatic synchronising  
 Automatic load sharing  
 Automatic load level demand (switches units on and off line depending on load levels)  
 Modbus RTU/TCIP