



VERTEX
ENGINEERING & SERVICES



UK MANUFACTURED GENERATORS

PS9P –PS20P

PERKINS 400 SERIES TECHNICAL DATA SHEET

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STAMFORD



Sun. Water. Life.
LORENTZ





UK MANUFACTURED GENERATORS PS9P – PS20P

PERKINS 400 SERIES TECHNICAL DATA SHEET

Cost Effective Power:
Compact size and low noise level
Lower fuel consumption and oil use
500hrs service intervals



Vertex Generating Set Model	Perkins Engine Model	380-415 50hz		480v 60hz	
		KVA	KW	KVA	KW
PS9P (PRIME)	403C-11G	9	7.2	11.4	9.1
PS9P (STANDBY)	403C-11G	10	8	12.4	9.9
PS13P (PRIME)	403C-15G	13	10.4	16.1	12.9
PS13P (STANDBY)	403C-15G	14.5	11.6	17.5	14
PS20P (PRIME)	404C-22G	20	16	23.4	18.7
PS20P (STANDBY)	404C-22G	22	17.6	25.3	20.2

RATING DEFINITIONS

Prime Power

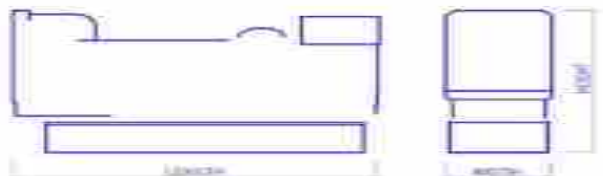
These ratings are applicable for supplying continuous electrical power (at variable load) in lieu of commercially purchased power. There is no limitation to the annual hours of operation and these models can supply 10% overload power for 1 hour in 12 hours.

Standby Power

These rating 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
PS9P	396KG	1160	570	1100
PS13P	480KG	1160	570	1190
PS20P	565KG	1330	570	1250





PERKINS ENGINE TECHNICAL DATA

Generating Set Model:	PS9P	PS13P	PS20P
Engine Manufacturer:	PERKINS	PERKINS	PERKINS
Model:	403C-11G	403C-15G	404C-22G
Number of Cylinder:	3 In line	3 In line	4 In line
Displacement:	1131cc	1131cc	1131cc
Cycle	4 stroke	4 stroke	4 stroke
Cooling System	Water cooled	Water cooled	Water cooled
Combustion System	Indirect Inj.	Indirect Inj.	Indirect Inj.
Bore/Stroke: (mm)	77 x 81	77 x 81	77 x 81
Aspiration:	Natural	Natural	Turbo charged
Direction of rotation	Anti-clockwise	Anti-clockwise	Anti-clockwise
Lube. Oil Capacity ltrs:	4.9	4.9	10.6
Coolant capacity ltrs:	5.21	5.21	6.98
Electrical equipment	12vDC	12vDC	12vDC
Compression Ratio:	23.3:1	22.5:1	23.3:1
		50 hz	
Engine Speed:	1500rpm	1500rpm	1500rpm
Maximum Continuous Power at Flywheel: kw	8.4	12	18.4
Maximum Standby Power at Flywheel: kw	9.3	13.3	20.3
Fuel Cons: L/hr			
110%	2.9	4.1	6.2
100%	2.6	3.7	5.4
75%	2	2.8	4
50%	1.5	2.1	2.9
		60hz	
Engine Speed:	1800rpm	1800rpm	1800rpm
Maximum Continuous Power at Flywheel: kw	10.3	14.4	21.6
Maximum Standby Power at Flywheel: kw	11.4	15.9	23.9
Fuel Cons: L/hr			
110%	3.8	4.8	7.3
100%	3.3	4.3	6.4
75%	2.4	3.3	4.8
50%	1.8	2.4	3.5

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)	ECO3-1LN	ECO3-2LN	ECO28-1LN
Newage Stamford	BCI164B	BCI164C	BCI184E
Leroy somer	LSA37 M6	LSA37 M7	LSA42.2 S5



STANDARD OPTION:

12/24volt axial starter motor
12/24v 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
Energized 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 dispatch and each unit is issued with a Test Certificate.
WARRANTY All Power Co equipment carries a full 12 month warranty in accordance with our conditions of sale. 24monthys 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
Bunded fuel tanks
Automatic fuel make-up system
Fuel level warnings
Unlimited other options are available

ALTERNATOR:

We use Cummins Generator technology (Newage Stamford), Leroy Somer of France and also Mecc Alte of the UK(up to 350kva) and Mecc Alte of Italy (360-3000kva)
Brushless revolving field
4 pole
Class H Temperature rise 125/40
Class H Insulation
Automatic voltage regulator
Single bearing
0.5% Voltage regulation (Leroy)
1.0% Voltage regulation 200kva and above (Mecc Alte)
1.5% Voltage regulation 0-180kva and above (Mecc Alte)
0.5% Frequency 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:

Power Co model 6110 microprocessor engine control module provides metering and alarm facilities via the LCD display as follows:
Emergency stop pushbutton
Generator volts line/line
Generator volts line/neutral
Generator amps 3 phase
Generator frequency Hz
Engine speed
Engine oil pressure
Engine coolant temperature
Engine battery/volts
Engine hours run

PROTECTIONS:

Generator over-volts – shutdown
Generator under-volts – shutdown
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 PROGRAMME PORT – standard printer cable connection

TIMERS:

Start delay
Stop delay
Crank/crank rest timer
Crank/crank rest timer
Engagement attempt and manual crank limit
Safety on delay timer
Warm up timer
Cooling timer
Energize to stop timer

CONTROL SYSTEM UPGRADES:

7210 auto-start unit gives the following extra's:-
Generator KVA
Generator KW
Generator COS

5510 auto-synchronizing unit gives you the following upgrades:-
Generator KVA L1, L2, L3, Total
Generator KW L1, L2, L3, Total
Generator PF L1, L2, L3, Average
Generator kVAr L1, L2, L3, Total
Generator kWh
Generator kVAh
Generator kVArh
Generator Phase Sequence
Full automatic synchronising
Automatic load sharing
Automatic load level demand (switches units on and off line depending on load levels)



Automatic transfer panel (ATS) 25 – 1000A Contactors

IP55 wall or freestanding sheet steel cubicle with hinged front access door and base entry gland plate. Finished in grey epoxy polyester powder-coat. AC1 Rating at 40oC

Fitted with;

1 x Pair of 4 pole mechanically and electrically interlocked contactors.
x Set of load links and terminals upto 125A.

1 x Set of copper bar load links above 125A. 800 -

1 x 3 ph + N mains detector.

1 x Mains available indicator.

1 x Mains on load indicator.

1 x Generator available indicator.

1 x Generator on load indicator.

1 x Set of control and monitoring MCB's.

1 x Earth stud.

1 x Set of interconnecting terminals.

1 x Hazard warning label

1 x Rating label.

Dimensions 4 pole ;

25A – 125A	H600mm x W400mm x D200mm
200A – 450A	H800mm x W600mm x D300mm
550A – 1000A	H1200mm x W800mm x D400mm

Automatic transfer panel (ATS) 800 – 6300A Circuit Breaker

Floor-standing cubicle with hinged front access door and removable side and rear covers for ease of installation. Top and base entry aluminium gland plate. Control compartment IP2X and segregated from load switching. Secondary screening over switchgear. Finished in grey polyester powder-coat RAL7035.

Fitted with;

1 x Pair of motorised mechanically and electrically interlocked fixed pattern circuit breakers (Non Auto).

1600A MCCB (MCS)

800 – 6300A ACB

1 x Set of load connection terminals.

Generator / Mains / Load.

1 x Mains available indicator.

1 x Mains on load indicator.

1 x Generator available indicator.

1 x Generator on load indicator.

1 x Set of control and monitoring MCB's.

1 x Earth bar.

1 x Set of interconnecting terminals.

1 x Hazard warning labels

1 x Rating label.

MCCB;

800 - 1600A H1800mm x W600mm x D800mm

ACB;

800A – 1600A H1800mm x W 600mm x D800mm

2000A H2000mm x W 800mm x D800mm

2500A – 3200A H2000mm x W1000mm x D800mm

4000A H2000mm x W2000mm x D800mm

5000A – 6300A H2000mm x W2400mm x D800mmDimensions;