

Perkins Powered Generating Sets



YOUR PARTNER IN POWER

OUTPUT RATINGS													
Generator Set Model(3Phase)	P12.5P2 P13.5E2		P16.5P2 P18E2		P20P2 P22E2		PH22E2		PH30E2		PH35E2		
Ratings at 0.8PF	KVA	KW	KVA	KW	KVA	KW	KVA	KW	KVA	KW	KVA	KW	
380-415V, 50Hz	12.5	10	16.5	13.2	20	16	NA	NA	NA	NA	NA	NA	
	13.8	11	18	14.4	22	17.6	22	17.6	30	24	35	28	
220/127V, 60Hz	15	12	19.4	15.5	22.5	18	NA	NA	NA	NA	NA	NA	
	16.2	13	21.3	17	25	20	NA	NA	NA	NA	NA	NA	
Generator Set Model(1Phase)	P10P2S P11E2S		P13P2S P14E2S		P15P2S P16.5E2S		PH17.5E2S		PH24E2S		PH28E2S		
Ratings at 1.0PF	KVA	KW	KVA	KW	KVA	KW	KVA	KW	KVA	KW	KVA	KW	
220 - 240V, 50Hz	10	10	13	13	15	15	NA	NA	NA	NA	NA	NA	
	11	11	14	14	16.5	16.5	17.5	17.5	24	24	28	28	
240V, 60Hz	12	12	15.5	15.5	18	18	NA	NA	NA	NA	NA	NA	
	13	13	17	17	20	20	NA	NA	NA	NA	NA	NA	
Ratings Definitions													
Prime Power(Continuous) – Model P with suffix (P2)													
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 this model can supply 10% overload power for 1 hour in 12 hours.													
Standby Power – Model P with suffix (E2)													
These ratings are applicable for supplying continuous electrical power (at variable load) in event of a utility power failure.No overload is permitted on these ratings. The alternator on this model is peak continuous rated (as defined in ISO8528-3) at 27*													
TECHNICAL DATA													
Perkins Engine Model:	403C-15		404C-22G1		404C-22G2		403C-15 HS		404C-22G1 HS		404C-22G2 HS		
Alternator Model(3Ph):	LL1014H		LL1014L		LL1014N		LL1012J		LL1012N		LL1012P		
Alternator Model(1Ph):	LLB1014H		LLB1014L		LLB1014N		LLB1012J		LLB1012N		LLB1012P		
Number of Cylinders:	3 / In Line		4 / In Line		4 / In Line		3 / In Line		4 / In Line		4 / In Line		
Cubic Capacity:	Litres (cu.in)		1.5(91.3)		2.2(135.2)		2.2(135.2)		1.5(91.3)		2.2(135.2)		
Bore/Stroke:	mm		84/90		84/100		84/100		84/100		84/100		
	in		3.3/3.5		3.3/3.9		3.3/3.9		3.3/3.9		3.3/3.9		
Compression ratio:	22.5:1		23.3:1		23.3:1		22.5:1		23.3:1		23.3:1		
Aspiration:	Natural												
Note: The Data below is for 3 Phase only.													
Frequency:	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	
Engine Speed:	RPM	1500	1800	1500	1800	1500	1800	3000	3000	na	3000	na	
Gross Engine Power:	kW	13.5	16.2	18	21.5	20.6	24.3	23.9	na	31.9	na	34.4	
	hp	18	22	24	29	28	33	32	na	43	na	46	
BMEP:	kPa	722	722	649	647	743	731	1278	na	1151	na	1242	
	psi	104.7	104.7	94.2	93.8	107.8	106	185.3	na	167	na	180.1	
Piston Speed:	m/sec	4.5	5.4	5	6	5	6	9	na	10	na	10	
	ft/sec	14.8	17.7	16.4	19.7	16.4	19.7	29.5	na	32.8	na	32.8	
Total Oil Capacity	Litres	6.0	6.0	10.6	10.6	10.6	10.6	6.0	na	10.6	na	10.6	
	US Gal	1.6	1.6	2.8	2.8	2.8	2.8	1.6	na	2.8	na	2.8	
Fuel Tank Capacity:	Litres	45	45	45	45	45	45	45	na	45	na	45	
	US Gal	11.9	11.9	11.9	11.9	11.9	11.9	11.9	na	11.9	na	11.9	
Fuel Consump, Prime:	l/hr	3.7	4.3	4.5	5.4	5.4	6.1	na	na	na	na	na	
	USgal/hr	1	1.1	1.2	1.4	1.4	1.6	na	na	na	na	na	
Fuel Consump, Standby:	l/hr	4.1	4.7	4.9	6	6.1	6.9	7.1	na	8.9	na	10.1	
	USgal/hr	1.1	1.2	1.3	1.6	1.6	1.8	1.9	na	2.4	na	2.7	
Heat Rejection to Exhaust System:	kW	10	12.3	13.5	16.5	16.2	18.5	17.3	na	24.2	na	27.6	
	Btu/min	569	699	768	938	921	1052	984	na	1376	na	1570	
Heat Rejection to Cooling System:	kW	12.8	15.4	15.9	19.7	19.4	22.2	23.6	na	29.3	na	33.5	
	Btu/min	728	876	904	1120	1103	1262	1342	na	1666	na	1905	
Total Radiated Heat:	kW	5.8	6.9	5.5	7.6	6.7	7.9	10.6	na	11.9	na	13.2	
	Btu/min	330	392	313	432	381	449	603	na	677	na	751	
Exhaust Temperature:	°C	491	504	505	510	505	510	575	na	475	na	570	
	°F	916	938	941	950	941	950	1067	na	887	na	1058	
Radiator Cooling Air Flow:	m³/min	26	35	30	39	30	39	70	na	71	na	71	
	cfm	918	1236	1059	1377	1059	1377	2472	na	2507	na	2507	
Combustion Air Flow:	m³/min	1.1	1.3	1.1	1.5	1.4	1.7	2	na	2.4	na	2.9	
	cfm	39	46	39	53	49	60	71	na	85	na	102	
Exhaust Gas Flow:	m³/min	2.8	3.5	3.9	4.8	3.9	4.8	5.9	na	7.6	na	8.5	
	cfm	99	124	139	168	139	168	209	na	268	na	300	
<small>Note: Standard reference conditions 25°C (77°F) Air Inlet Temp, 152.4m (500ft) A.S.L. 60% relative humidity. All engine performance data based on the above mentioned maximum continuous ratings.Fuel consumption data at full load with diesel fuel with specific gravity of 0.85 and conforming to BS2869: 1998, Class A2.</small>													
DIMENSIONS AND WEIGHTS													
Length:	mm(in)	1320(52)		1320(52)		1320(52)		1320(52)		1320(52)		1320(52)	
Width:	mm(in)	552(21.7)		552(21.7)		552(21.7)		552(21.7)		552(21.7)		552(21.7)	
Height:	mm(in)	1258(49.5)		1258(49.5)		1258(49.5)		1258(49.5)		1258(49.5)		1258(49.5)	
Net Weight*:	kg(lb)	396(873)		456(1005)		469(1034)		374(825)		439(968)		461(1016)	

P12.5P2 - PH35E2
&
P10P2S - PH28E2S

* Weight Including Lube Oil Only Without Coolant.

STANDARD SPECIFICATIONS: P12.5P2 - PH35E2 & P10P2S - PH28E2S

▶ **OUTPUT RATINGS:**

The generating set is normally supplied connected for 380/220 or 415/240 Volt, 50Hz & alternative voltages / frequencies are available as options.

▶ **ENGINE:**

Perkins four stroke heavy duty industrial diesel engine.

* **Governing Type:**

Mechanical compliant with ISO 8528-5 Class G2.

* **Electrical System:**

12Volt DC energised to run shutdown solenoid, oil pressure & engine temperature switches.

▶ **COOLING SYSTEM:**

* Radiator, fan & fan drive designed to cool the engine at ambient temperature up to 50°C(122°F).

* Fan & fan drive are fully guarded.

▶ **ENGINE FILTERATION SYSTEM:**

Dry replaceable element air filter, cartridge type fuel filter & spin-on,full flow lube oil filter.

▶ **EXHAUST SYSTEM:**

Heavy duty industrial capacity exhaust silencer,supplied loose.

▶ **ELECTRICAL SYSTEM:**

12 Volt system with battery charging alternator, starter motor & combustion air preheater which operate during engine cranking. High capacity maintenance free lead acid starting battery. Battery rack incorporated in the generating set baseframe, and heavy duty interconnecting cables with terminations.

▶ **ALTERNATOR:**

Screen protected and drip-proof, self exciting, self regulating brushless alternator. Insulation system, class H & Ingress protection IP23.

▶ **MOUNTING ARRANGEMENT:**

The complete generating set is mounted, as a whole, on a heavy duty fabricated steel base frame constructed from folded sections. The baseframe incorporates a facility for handling by forklift truck.

▶ **FUEL SYSTEM:**

Baseframe design incorporates metal fuel tank with a capacity of approximately 45 litres (11.9 US Gal) or 8 hours.The fuel tank is shrouded by a steel surround to protect it from accidental damage.

▶ **CONTROL SYSTEM:**

* **LCP1 Control Panel**

The base mounted LCP1 control panel in a vibration isolated sheet steel enclosure. The control panel is equipped as follows:

a) Instruments:
Analogue Voltmeter.
Hours Run Meter.
Battery Condition Voltmeter.

b) Controls:
Off/Run/Crank Keyswitch.
Emergency Stop Pushbutton.
Voltmeter Phase Selector Switch.

c) Shutdown Protection Devices with Indicator for:
High Engine Temperature.
Low Oil Pressure.

* **Circuit Breaker**

3-pole miniature circuit breaker(MCB).

It is mounted within the control section of the vibration isolated panel with adequate access for outgoing cables through the panel outlet section.

▶ **AUTOMATIC VOLTAGE REGULATOR:**

AVR model is R230. The voltage regulation is +/- 0.5% at steady state from no load to full load.also it provides fast recovery from transient load changes.

▶ **OPTIONAL SPECIFICATIONS:**

Enclosures:

a) CAE Sound Attenuated Canopy with LCP1 control panel.

b) CAL Sound Attenuated Vision Canopy with PowerWizard 1.0 auto start Panel for High Ambient Range.

Controls:

a)For an open set: LCP0 & LCP2 are options.

b) For CAE:LCP2 & Access4000 are options.

c) For CAL: Only PowerWizard 1.0 Panel. (No options)

▶ **EQUIPMENT FINISH:**

High gloss polyurethane paint for durability and scuff resistance.

▶ **QUALITY STANDARDS:**

BS4999, BS5000, BS5514, IEC60034, VDE00530, NEMA MG-1.22.

▶ **DOCUMENTATION:**

- Operation and maintenance manuals provided.

- Wiring diagrams included.

▶ **WARRANTY:**

One year against manufacturing defects.

TEL./FAX.: 0044 2893 355674

Website:www.marapco.com

N. Ireland - UK

