

P400P1/P440E1



Output Ratings		
Generating Set Model	P400P1 Prime*	P440E1 Standby*
380-415V, 50 Hz	400 kVA	440 kVA
	320 kW	352 kW
480V, 60 Hz	438 kVA	482 kVA
	350 kW	386 kW

* Refer to ratings definitions on page 4.
Ratings at 0.8 pf

Technical Data		
Engine Make & Model	Perkins 2306C-E14TAG3	
Alternator Model	LL6014D	
Base Frame Type	Heavy Duty Fabricated Steel	
Circuit Breaker Type/Rating	3 Pole MCCB	
Frequency	50 Hz	60Hz
Engine Speed	1500	1800
Fuel Tank Capacity: Litres (US Gal)	782 (207)	
Fuel Consump, P400P1: l/hr (US Gal/hr)	85.2 (22.5)	93.6 (24.7)
Fuel Consump, P440E1: l/hr (US Gal/hr)	94.2 (24.9)	100.7 (26.6)



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Engine Technical Data

Physical Data		Air System		50 Hz	60 Hz
Manufacturer:	Perkins	Air Filter Type:	Replaceable Element		
Model:	2306C-E14TAG3	Combustion Air Flow:			
No. of Cylinders/Alignment:	6 in-line	m ³ /min (cfm) -Standby:	34.6 (1222)	37.6 (1328)	
Cycle:	4 Stroke	-Prime:	32.4 (1144)	36.0 (1271)	
Induction:	Turbocharged, AA Charge Cooled	Max. Combustion Air Intake			
Cooling Method:	Water	Restriction: kPa (in H ₂ O)	6.23 (25)	6.23 (25)	
Governing Type:	Electronic	Radiator Cooling			
Class:	ISO 8528 G3	Airflow: m ³ /min (cfm)	438 (15468)	530 (18717)	
Compression Ratio:	15.9:1	External Restriction to			
Displacement: L (cu.in)	14.6 (891)	Cooling Airflow: Pa (in Wg)	196 (0.79)	196 (0.79)	
Bore/Stroke: mm (in)	137 (5.4) / 165 (6.5)	Cooling System		50 Hz	60 Hz
Moment of Inertia: kg m ² (lb/in ²)	1.65 (5633)	Cooling System			
Engine Electrical System:		Capacity: L (US Gal)	47 (12.4)	47 (12.4)	
-Voltage/Ground	24/Negative	Water Pump Type:	Centrifugal		
-Battery Charger Amps	70	Heat Rejected to Water & Lube Oil: kW (Btu/min)			
Weight: kg (lbs) -Dry	1690 (3726)	-Standby:	148 (8418)	163 (9271)	
-Wet	1792 (3951)	-Prime:	135 (7679)	146 (8304)	
Performance	50Hz	60Hz	Heat Radiation to Room:		
Engine Speed: rpm	1500	1800	kW (Btu/min) -Standby:	40 (2275)	43 (2446)
Gross Engine Power: kW (hp)			-Prime:	38 (2161)	41 (2332)
-Standby:	396 (531)	447 (599)	Radiator Fan Load: kW (hp)	9 (12.0)	17 (22.8)
-Prime:	353 (473)	393 (527)			
BMEP: kPa (psi)			Lubrication System		
-Standby:	2170 (315)	2030 (294)	Oil Filter Type:	Spin On, Full Flow	
-Prime:	1930 (280)	1790 (260)	Total Oil Capacity L (US Gal):	68 (18.0)	
Regenerative Power: kW	TBA	TBA	Oil Pan L (US Gal):	60 (15.9)	
			Oil Type:	API CG4	
			Cooling Method:	Water	
Fuel System	Exhaust System				
Fuel Filter Type:	Replaceable Element				
Recommended Fuel:	Class 2 Diesel				
Fuel Consumption: L/hr (US Gal/hr)			Silencer Type:	Level 1	
	110% Load	100% Load	Silencer Model & Qty:	SD150 (1)	
P400P1			Pressure Drop Across		
50 Hz	94.2 (24.9)	85.2 (22.5)	Silencer System: kPa (in Hg)	0.12 (0.4)	0.55 (0.16)
60 Hz	100.7 (26.6)	93.6 (24.7)	Silencer Noise Reduction		
			Level: dB	19	17
P440E1			Max. Allowable Back		
50 Hz		94.2 (24.9)	Pressure: kPa (in Hg)	6.77 (1.99)	6.77 (1.99)
60 Hz		100.7 (26.6)	Exhaust Gas Flow: m ³ /min (cfm)		
			-Standby:	86.6 (3058)	91.6 (3235)
			-Prime:	79.7 (2815)	83.9 (2963)
			Exhaust Gas Temperature:		
			°C (°F) -Standby:	474 (885)	453 (847)
			- Prime:	462 (864)	429 (804)
(based on diesel fuel with a specific gravity of 0.85 and conforming to BS2869, class 2)					

Alternator Performance Data

Data Item	50 Hz				60 Hz				
	415/240	400/230 230/115 200/115	380/220 220/110	220/127	480/277 240/139	380/220 220/110	240/120 208/120	440/254 220/127	230/115
Motor Starting Capability* kVA	882	827	755	976	969	641	754	833	703
Short Circuit Capacity** %	300	300	300	300	300	300	300	300	300
Reactances: Per Unit									
X_d	3.13	3.37	3.73	2.78	3.07	4.64	4.09	3.65	4.38
X'_d	0.14	0.15	0.17	0.12	0.14	0.21	0.18	0.16	0.19
X''_d	0.111	0.120	0.132	0.099	0.109	0.165	0.145	0.130	0.156

Reactances shown are applicable to prime ratings

* Based on 30% voltage dip. Improved motor starting capability is available with optional Permanent Magnet generator or AREP excitation

** With optional Permanent Magnet generator or AREP excitation.

Alternator Technical Data

Physical Data		Operating Data	
Manufacturer:	FG Wilson	Overspeed: RPM	2250
Model:	LL6014D	Voltage Regulation (steady state)	+/-0.5%
No. of Bearings:	1	Wave Form NEMA =TIF	<50
Insulation Class:	H	Wave Form IEC=THF	<2%
Winding Pitch Code:	2/3 - (No.6)	Total Harmonic Content LL/LN	<4%
Wires:	12	Radio Interference	Suppression is in line with Standard EN61000-6
Ingress Protection Rating:	IP23	Radiant Heat: kW (Btu/min)	
Excitation System:	SHUNT	-50 Hz	21 (1194)
AVR Model:	R448	-60 Hz	22 (1251)

Technical Data

3 Phase Ratings and Performance at 50 Hz, 1500 RPM

3 Phase Ratings and Performance at 60 Hz, 1800 RPM

Voltage	Model: P400P1 Prime		Model: P440E1 Standby		Voltage	Model: P400P1 Prime		Model: P440E1 Standby	
	kVA	kW	kVA	kW		kVA	kW	kVA	kW
415/240	400	320	440	352	480/277	438	350.4	482	385.6
400/230	400	320	440	352	440/254	438	350.4	482	385.6
380/220	400	320	440	352	380/220	415	332	457	365.6
230/115	400	320	440	352	240/139	438	350.4	482	385.6
220/127	400	320	440	352	240/120	438	350.4	482	385.6
220/110	400	320	440	352	230/115	434	347.2	477	381.6
200/115	400	320	440	352	220/127	438	350.4	482	385.6
					220/110	415	332	457	365.6
					208/120	438	350.4	482	385.6

Definitions

Standby Rating

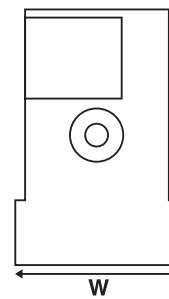
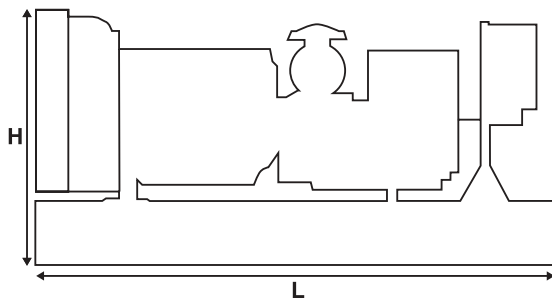
These ratings are applicable for supplying continuous electrical power (at variable load) in the event of a utility power failure. No overload is permitted on these ratings. The alternator on this model is peak continuous rated (as defined in ISO8528-3).

Prime Rating

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.

Standard Reference Conditions

Note: Standard reference conditions 27°C (80°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.



Weights & Dimensions

Weights: kg (lbs)		Dimensions: mm (in)	
Net (+ lube oil)	3300 (7275)	Length	3601 (142)
Wet (+ lube oil & coolant)	3350 (7385)	Width	1110 (43.7)
Fuel, lube oil & coolant		Height	2065 (81.3)

General Data

Documents

A full set of operation and maintenance manuals, circuit wiring diagrams, and commissioning/fault finding instruction leaflets.

Generating Set Standards

The equipment meets the following standards: BS5000, ISO 8528, ISO 3406, IEC 60034, VDE 0530, NEMA MG-1.22.

FG Wilson is a fully accredited ISO9001 company.

Warranty

All equipment carries full manufacturer's warranty. Extended warranty terms available. For details on warranty cover please contact your local dealer, or visit our website, www.FGWilson.com