

P400E1



Output Ratings	
Generating Set Model	P400E1 Standby*
380-415V, 50 Hz	400 kVA 320 kW
480V, 60 Hz	438 kVA 350 kW

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

Technical Data	
Engine Make & Model	Perkins 2306C-E14TAG2
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, P400E1: l/hr (US Gal/hr)	85.5 (22.6) 91.3 (24.1)



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Engine Technical Data

Physical Data		Air System		50 Hz	60 Hz
Manufacturer:	Perkins	Air Filter Type:	Replaceable Element		
Model:	2306C-E14TAG2	Combustion Air Flow:			
No. of Cylinders/Alignment:	6 in-line	m ³ /min (cfm) -Standby:	32.2 (1137)	35.8 (1264)	
Cycle:	4 Stroke	Max. Combustion Air Intake			
Induction:	Turbocharged, AA Charge Cooled	Restriction: kPa (in H ₂ O)	6.2 (25)	6.2 (25)	
Cooling Method:	Water	Radiator Cooling			
Governing Type:	Electronic	Airflow: m ³ /min (cfm)	438 (15468)	530 (18717)	
Class:	ISO 8528 G3	External Restriction to			
Compression Ratio:	15.9:1	Cooling Airflow: Pa (in Wg)	196 (0.79)	196 (0.79)	
Displacement: L (cu.in)	14.6 (891)	Cooling System		50 Hz	60 Hz
Bore/Stroke: mm (in)	137 (5.4) / 165 (6.5)	Cooling System			
Moment of Inertia: kg m ² (lb/in ²)	1.65 (5633)	Capacity: L (US Gal)	47 (12.4)	47 (12.4)	
Engine Electrical System:		Water Pump Type:	Centrifugal		
-Voltage/Ground	24/Negative	Heat Rejected to Water &			
-Battery Charger Amps	70	Lube Oil: kW (Btu/min)			
Weight: kg (lbs) -Dry	1690 (3726)	-Standby:	135 (7679)	146 (8304)	
-Wet	1792 (3951)	Heat Radiation to Room:			
Performance	50Hz	60Hz	kW (Btu/min) -Standby:	39 (2218)	42 (2389)
Engine Speed: rpm	1500	1800	Radiator Fan Load: kW (h/p)	9 (12.1)	17 (22.8)
Gross Engine Power: kW (hp)					
-Standby:	353 (473)	393 (527)			
BMEP: kPa (psi)					
-Standby:	1930 (280)	1790 (260)			
Regenerative Power: kW	TBA	TBA	Lubrication System		
Fuel System			Oil Filter Type:	Spin on, Full Flow	
Fuel Filter Type:	Replaceable Element		Total Oil Capacity L (US Gal):	68 (18.0)	
Recommended Fuel:	Class 2 Diesel		Oil Pan L (US Gal):	60 (15.9)	
Fuel Consumption: L/hr (US Gal/hr)			Oil Type:	API CG4	
	100% Load	75% Load	Cooling Method:	Water	
P400E1			Exhaust System	50 Hz	60 Hz
50 Hz	85.5 (22.6)	64.1 (16.9)	Silencer Type:	Level 1	
60 Hz	91.3 (24.1)	70.4 (18.6)	Silencer Model & Qty:	SD150 (1)	
			Pressure Drop Across		
			Silencer System: kPa (in Hg)	0.12 (0.04)	0.55 (0.16)
			Silencer Noise Reduction		
			Level: dB	19	17
			Max. Allowable Back		
			Pressure: kPa (in Hg)	6.77 (1.99)	6.77 (1.99)
			Exhaust Gas Flow: m ³ /min (cfm)		
			-Standby:	79.1 (2793)	84.2 (2973)
			Exhaust Gas Temperature:		
			°C (°F) -Standby:	461 (862)	430 (806)
(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	4.89	4.09	3.65	4.42
X'_d	0.14	0.15	0.17	0.12	0.14	0.22	0.18	0.16	0.20
X''_d	0.111	0.120	0.132	0.099	0.109	0.174	0.145	0.130	0.157

Reactances shown are applicable to standby 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: P400E1 Standby		Voltage	Model: P400E1 Standby	
	kVA	kW		kVA	kW
415/240	400	320	480/277	438	350
400/230	400	320	440/254	438	350
380/220	400	320	380/220	438	349.6
230/115	400	320	240/139	438	350
220/127	400	320	240/120	438	350
220/110	400	320	230/115	438	350
200/115	400	320	220/127	438	350
			220/110	438	349.6
			208/120	438	350

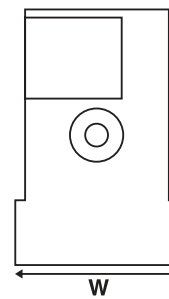
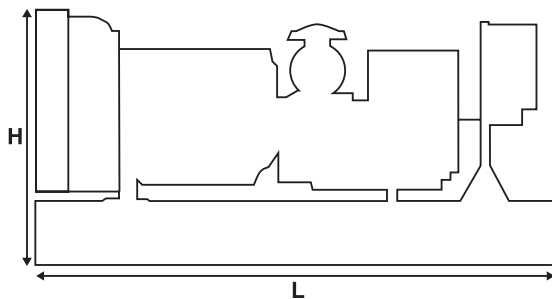
Definitions

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).

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	4039 (8906)	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