



Diesel Generating Sets

60
Hz

Model: **KYP23.4**

INDUSTRIAL RANGE

Powered by Perkins



STAMFORD

power generation



Generating Rates

POWER RATING		STANDBY	PRIME
POWER	KVA	25.3	23.4
	KW	20.2	18.7
Rated Speed	R.P.M	1800	
Standard Voltage	V	480	
Available Voltages	V	480/277-440/254-220/127-208/120	
Rated at power factor	Cos Phi	0.8	

Ambient conditions of reference: 1000 mbar, 25°C, 30% relative humidity. Power according to ISO 3046 normative.

P.R.P. Prime Power - ISO 8528 : prime power is the maximum power available during a variable power sequence, which may be run for an unlimited number of hours per year, between stated maintenance intervals. The permissible average power output during a 24

Standby Power (ISO 3046 Fuel Stop power): power available for use at variable loads for limited annual time (500h), within the following limits of maximum operating time: 100% load 25h per year – 90% load 200h per year. No overload available. Applicable i



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Engine Specifications 1800 r.p.m.

ENGINE		STANDBY		PRIME
Rated Output	kW	20.2		18.7
Manufacturer		Perkins		
Model		404D-22G		
No. of Cylinders and Build		4 Cycle; In-line; 4 Cylinder Diesel		
Aspiration and Cooling		Natural Aspiration		
Bore/Stroke	mm	84X100		
Compress the ratio		23.3:1		
Cooling system		Water-cooled		
Engine Speed/Frequency	rpm/Hz	1800/60HZ		
Coolant Capacity	L	6.98		
Starting System		Electric 12 volt DC		
Displacement	L	1.496		
Lubricant system Capacity	L	10.6		
Battery Volatge / Capacity		12VDC		
Governing Type	Type	Mechanical		
Air Filter	Type	Dry		
Fuel Consumption	Load of prime power	100%	75%	50%
	L/h	6.4	4.8	3.5

ENGINE--Industrial 4 stroke cooled diesel engine complete with air,fuel and oil filters,electric starting and charging equipment,engine protection against low water level.

COOLING--Radiator and colling fan complete with protection guards,designed to cool engine at specified output in air temperatures upto 45 °C ,radiators suitable for higher temperatures are available.Low water level protection fitted as standard.

ELECTRICAL SYSTEM--12V upto.Axial type starter motor,battery charging alternator,high capacity lead acid battery,and battery tray mounted on the generator base frame,and heavy duty interconnecting cable with terminations.

EXHAUST SYSTEM--Heavy duty industrial exhaust silencer with flexible piping.



400 Series

Diesel engine - ElectropaK 404C-22G

20.3 kWm 1500 rev/min

23.9 kWm 1800 rev/min

33.4 kWm 3000 rev/min

The Perkins 400 Series provides compact power from a robust family of 2, 3 and 4 cylinder diesel engines, designed to meet today's uncompromising demands within the power generation industry.

The 404C-22G is a compact 4-cylinder naturally aspirated diesel engine. It's premium features provide economic and durable operation for standby duty, low gaseous emissions, overall performance and reliability.

Compact, Efficient power

A class-leading engine package coupled with an innovative, newly designed cooling pack provides optimum power density, making installation and transportation easier and cheaper. This package has been specially designed to hit the key power nodes required by the power generation industry.

Quiet, clean power

The 404C-22G has an exceptionally low noise signature making it the ideal choice for power generation in any environment. A high compression ratio also ensures clean rapid starting in all conditions. Design features ensure maximum cleanliness in terms of emissions throughout the engines operating life.

Reliable power

Developed and tested using the latest engineering techniques this engine reliably provides power when you need it. Operating and maintenance costs are reduced through excellent fuel and oil economy whilst whole-life costs are enhanced by a 500 hour service interval and a 2 year warranty. Excellent service access further improves maintenance and support is provided by a worldwide network of 4000 distributors and dealers.

Engine speed rev/min	Type of Operation	Typical generator output (net)		Engine Power			
				Gross		Net	
		kVA	kWe	kW	bhp	kW	bhp
1500	Prime Power	20.3	16.3	18.7	25.1	18.4	24.6
	Standby (maximum)	22.7	18.2	20.6	27.6	20.3	27.2
1800	Prime Power	23.4	18.7	22.0	29.5	21.6	28.9
	Standby (maximum)	25.3	20.2	24.3	32.6	23.9	32.1
3000	Prime Power	33.8	27.0	31.2	41.8	30.2	40.5
	Standby (maximum)	36.7	29.3	34.4	46.1	33.4	44.8

The above ratings represent the engine performance capabilities to conditions specified in ISO 8528/1, ISO 3046/1:1986, BS5514/1

Derating may be required for conditions outside these; consult Perkins Engines Company Limited

Generator powers are typical and are based on typical alternator efficiencies and a power factor (cos.θ) of 0.8

Fuel specification: BS 2869: Part 2 1998 Class A2 or ASTM D975 D2

Lubricating oil: To API CH4/ACEA E5

Rating Definitions

Prime Power: Power available at variable load in lieu of a main power network. Overload of 10% is permitted for 1 hour in every 12 hours' operation

Standby (maximum): Power available at variable load in the event of a main power network failure. No overload is permitted

400 Series 404C-22G

Standard Electropak Specification

Air Inlet

Mounted air filters

Fuel System

Mechanically governed cassette type fuel injection pump
Split element fuel filter

Lubrication System

Wet steel sump with filler and dipstick
Spin-on-full-flow lub. oil filter

Cooling System

Thermostatically-controlled system with belt driven circulating pump and pusher fan
Mounted radiator and piping

Electrical Equipment

12 Volt starter motor and 12 Volt 55 Amp alternator with DC output

Oil pressure and coolant temperature switches

12 Volt shut off solenoid energised to run

Glow plug cold start aid and heater/starter switch

Flywheel and Housing

1500/1800 rev/min

High inertia flywheel to SAE J620 Size 7½ Heavy

Flywheel housing SAE 4 Long

3000/3600 rev/min

High inertia flywheel to SAE J620 Size 7½ Light

Flywheel housing SAE 4 Short

Mountings

Front and rear mounting bracket

Literature

User's Handbook

Optional Equipment

Exhaust silencer

Workshop manual

Parts book



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All information in this leaflet is substantially correct at the time of printing but may be changed subsequently by the Company

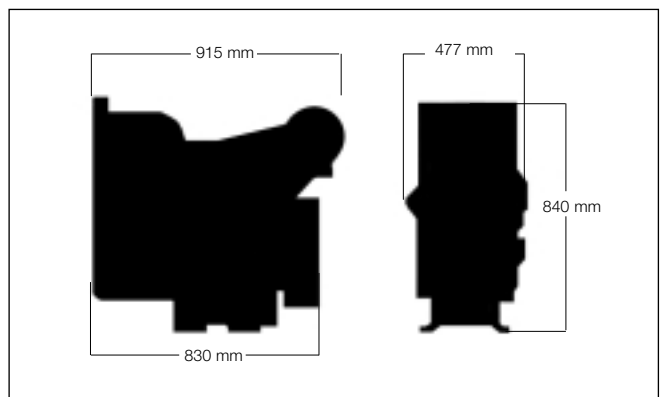


General Data

Number of cylinders	4
Cylinder Arrangement	Vertical in-line
Cycle	4 stroke
Induction System	Natural Aspiration
Combustion System	Indirect injection
Cooling System	Water-cooled
Bore & Stroke	84 x 100mm
Displacement	2216cc
Compression Ratio	23.3:1
Direction of Rotation	Anti-clockwise viewed on flywheel
Total Lubrication System Capacity	10.6 litres
Total Coolant Capacity	6.98 litres
Length	915mm
Width	477mm
Height	840mm
Dry Weight (Engine)	242 kg (1500/1800 rev/min) 218 kg (3000 rev/min)

Fuel Consumption

Engine speed	1500 rev/min		1800 rev/min		3000 rev/min	
	g/kWh	l/hr	g/kWh	l/hr	g/kWh	l/hr
At Standby Rating	254	6.2	252	7.3	254	10.4
At Prime Power	243	5.4	245	6.4	256	9.5
At 75% Prime Power	243	4.0	247	4.8	269	7.5
At 50% Prime Power	265	2.9	269	3.5	313	5.8



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Alternator Technical Specifications

ALTERNATOR BRAND		MECC ALTE	STAMFORD	LEROY SOMER
Model		ECP28-1L/4	BC1184E	TAL40F
Exciter System		Self-excited, brushless		
Poles	Num	4		
Cooling Fan		Cast alloy aluminum		
Bearing		Single, double shielded		
Windings		100% copper		
Connection Type		Reconnectable		
Insulation Type	Class	Class H		
Pitch		2/3		
Amortisseur Winding		Full		
Voltage Regulator		A.V.R. (Electronic)		
Steady Voltage Precision		± 1%		
Underspeed Protection		Standard		
Overexcitation Protection		IP23		
TIF (1960 Weightings)		<50		

ALTERNATOR--Brushless, self exciting, self regulation, screen protected, drip proof rated in accordance with IEC60034.Voltage regulation maintained within ±0.5% from no load to full load. between 0.8 lagging and unity. All standard voltages available



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Control Panel Technical Specifications



DSE Genset



DSE6110

AUTO START & AUTO MAINS FAILURE CONTROL MODULES

FEATURES

DSE6110



KEY FEATURES

- Back-lit text LCD display
- Front panel editing
- LED and LCD alarm indication
- Power Save mode
- CAN and Magnetic Pick-up/Alt. versions available (specify on ordering)
- PC and front panel configuration
- 6 Digital inputs
- 3 Analogue inputs
- 6 Outputs (4 configurable on Magnetic Pick-up/Alt., 6 configurable on CAN version)
- Configurable timers and alarms
- Alternative configuration
- Event Log(10)
- Remote Start input
- 3 Phase generator monitoring

- Current Monitoring and protection
- Battery voltage monitoring
- Engine pre-heat
- Hours counter
- Comprehensive shutdown or warning on fault condition

KEY BENEFITS

- Hours counter provides accurate information for monitoring and maintenance periods
- User-friendly set-up and button layout

- Multiple engine parameters are monitored simultaneously
- Module can be configured to suit individual applications
- Compatible with a wide range of CAN engines
- Tier 4 engine support
- Uses DSE Configuration Suite PC software for simplified configuration
- IP65 rating (with optional gasket) offers increased resistance to water ingress
- Licence-free PC software

SPECIFICATION

DC SUPPLY

CONTINUOUS VOLTAGE RATING
8 V to 35 V Continuous

CRANKING DROPOUTS

Able to survive 0 V for 50 mS, providing supply was at least 10 V before dropout and supply recovers to 5 V. This is achieved without the need for internal batteries. LEDs and backlight will not be maintained during cranking.

MAXIMUM OPERATING CURRENT

178 mA at 12 V, 95 mA at 24 V

MAXIMUM STANDBY CURRENT

88 mA at 12 V, 50 mA at 24 V

CHARGE FAIL/EXCITATION RANGE

0 V to 35 V

MAINS (UTILITY) DSE6120 ONLY

VOLTAGE RANGE
15 V - 333 V AC (L-N)

FREQUENCY RANGE

3.5 Hz to 75 Hz

OUTPUTS

OUTPUT A (FUEL)
2 A DC at supply voltage

OUTPUT B (START)
2 A DC at supply voltage

AUXILIARY OUTPUTS C, D, E & F
2 A DC at supply voltage

GENERATOR

VOLTAGE RANGE
15 V - 333 V AC (L-N)

FREQUENCY RANGE
3.5 Hz to 75 Hz

MAGNETIC PICK UP
VOLTAGE RANGE
+/- 0.5 V to 70 V

FREQUENCY RANGE
10,000 Hz (max)

DIMENSIONS

OVERALL
215 mm x 158 mm x 42 mm
8.5" x 6.2" x 1.6"

PANEL CUT-OUT
182 mm x 137 mm
7.2" x 5.4"

MAXIMUM PANEL THICKNESS
8 mm
0.3"

STORAGE TEMPERATURE RANGE

-40 °C to +85 °C



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Generating Sets Standard Features

Three phase four wire, output voltage 480V/277V,60HZ,between 0.8 lagging, protection capability according with the standard of NAME1 and IP23.

General Features:

- Composed of Perkins diesel engine and Stamford or Leroy Somer alternator
- Oil and fuel filter fitted, water separator
- Lube-oil drain valve fitted
- Electric Starter Charge motor 12
- V.D.C Water-cooled
- 8-hours operation base tank
- Auto start
- Optional soundproof and weatherproof canopy
- 3 pole MCCB Delixi breaker
- Operation & Maintenance manual
- Special Integrated Steel Base tank and sprayed overall in gloss enamel paint

Voltage Regulation:

- Voltage regulation maintained within $\pm 0.5\%$
- Between 0.8 and 1.0 lagging and unity
- From no load to full load
- At speed droop variation upto 4.5%

Frequency Adjustable Ratio:

Change load from 0-100%,within 1.0%(electric speed regulator),within 4.5%(mechanical speed regulator)

Frequency Undulation:

- load from 0-100%,frequency undulation within 0.25%
- No load wire volts max undulation ration\ within 1.8%
- Three Phrase balanced load in the order of 5%
- Effect factor of Telecom
- TIF better than 50
- THF to IEC60034 Part 40 better than 2%



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Soundproofed Version Features

Robust Corrosion Resistant Construction

Black finish stainless steel lock and hinges

Body made from steel components treated with polyester powder coating

Excellent Access for Maintenance

Two large doors on each

side Radiator fill access plate

lube oil and cooling water drains pipes to exterior of the enclosure

Security and Safety

Control panel viewing window in a lockable access door

Emergency stop push button (red) mounted on enclosure interior

Cooling fan and battery charging alternator fully guarded

Exhaust silencing system totally enclosed for operator safety





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Generating Sets other Features

Generating Sets Optional Features

- Low fuel level alarm shutdown
- Automatic Fuel Filling System
- Engine oil feeding and drain pump
- Auto Transfer Switch(ATS)
- Parallel control panels
- Circuit Breaker MCCB & ACB
- Remote Control Panel
- weatherproof/soundproof
- Canopy Trailer type Gensets

Quality Standards

- ISO9001:2000,ISO14000,ISO3046
- ISO8528 BS4999
- BS5514,AS1359,ICE34
- CE Compliance

Gensets Dimensions & Weight

Silence type: LxWxH (mm) - Weight (kg)

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