



Diesel Generating Sets

60
Hz

Model: **KYP1250**

INDUSTRIAL RANGE

Powered by Perkins



Generating Rates

| POWER RATING | | STANDBY | PRIME |
|-----------------------|---------|---------------------------------|-------|
| POWER | KVA | 1375 | 1250 |
| | KW | 1100 | 1000 |
| 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 | 1100 | | 1000 |
| Manufacturer | | Perkins | | |
| Model | | 40012TWG2 | | |
| No. of Cylinders and Build | | 4 Cycle; In-line; 12 Cylinder Diesel | | |
| Aspiration and Cooling | | Natural Aspiration | | |
| Bore/Stroke | mm | 160 X 190 | | |
| Compression ratio | | 13.6:1 | | |
| Cooling system | | Water-cooled | | |
| Engine Speed/Frequency | rpm/Hz | 1800/60HZ | | |
| Coolant Capacity | L | 225/240 | | |
| Starting System | | Electric 12 volt DC | | |
| Displacement | L | 45.842 | | |
| Lubricant system Capacity | L | 177.6 | | |
| Battery Voltage / Capacity | | 24VDC | | |
| Governing Type | Type | Mechanical | | |
| Air Filter | Type | Dry | | |
| Fuel Consumption | Load of prime power | 100% | 75% | 50% |
| | L/h | 260 | TBC | TBC |

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 cooling fan complete with protection guards, designed to cool engine at specified output in air temperatures up to 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.

4000 Series 4012-46TWG2A Diesel Engine – Electropak

Non-Emissions compliant

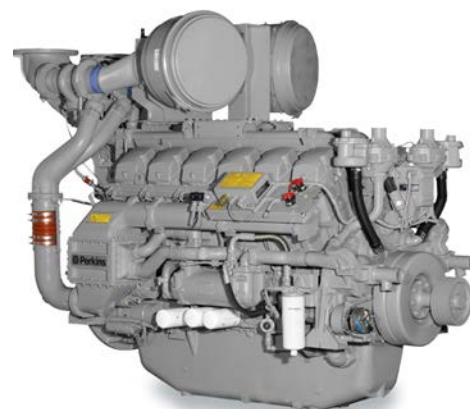
1166 kWm 1500 rpm

1166 kWm 1800 rpm

The new 4012-46TWG engine has been developed using the latest engineering techniques and builds on the strengths of the already very successful 4012 Series family and addresses today's uncompromising demands within the power generation industry. Developed from a proven heavy-duty industrial base these products offer superior performance and reliability.

The 4012-46TWG2A is a turbocharged and air-to-water charge-cooled, 12 cylinder diesel engine which offers a choice of temperate or tropical cooling. Its premium features provide exceptional power-to-weight ratio resulting in exceptional fuel consumption.

The overall performance and reliability characteristics makes this one of the prime choices for today's power generation industry.



Economic power

- Individual 4 valve per cylinder give optimised gas flows, while unit fuel injectors ensure ultra fine fuel atomisation and hence controlled rapid combustion for efficiency and economy
- Commonality of components with other engines in the 4000 Series family allows reduced parts stocking levels for the end users

Reliable power

- Developed and tested using latest engineering techniques
- Piston temperatures are controlled by an advanced gallery jet cooling system
- All engines are tolerant of a wide range of temperatures without derate
- Service is provided through the extensive Perkins network of distributors and dealers worldwide

Clean, efficient power

- Exceptional power to weight ratio and compact size for easier transportation and installation
- Designed to provide excellent service access for ease of maintenance

- Engines designed to comply with major international standards
- Low gaseous emissions for cleaner operation

Product support

- Perkins actively pursues product support excellence by ensuring our distribution network invest in their territory – strengthening relationships and providing more value to you, our customer
- Through an experienced global network of distributors and dealers, fully trained engine experts deliver total service support around the clock, 365 days a year. They have a comprehensive suite of web based tools at their fingertips covering technical information, parts identification and ordering systems, all dedicated to maximising the productivity of your engine
- Throughout the entire life of a Perkins engine, we provide access to genuine OE specification parts and service. We give 100% reassurance that you receive the very best in terms of quality for lowest possible cost .. wherever your Perkins powered machine is operating in the world

This engine does not comply with harmonized international regulated emissions limits.

| Engine Speed (rev/min) | Type of Operation | Typical Generator Output (Net) | | Engine Power | | | |
|---------------------------|----------------------|-----------------------------------|------|--------------|------|------|------|
| | | kVA | kWe | Gross | | Net | |
| | | | | kWm | bhp | kWm | bhp |
| 1500 | Baseload Power | 989 | 791 | 891 | 1194 | 833 | 1117 |
| | Prime Power | 1250 | 1000 | 1113 | 1492 | 1055 | 1414 |
| | Standby (maximum) | 1385 | 1108 | 1224 | 1641 | 1166 | 1563 |
| 1800 | Baseload Power | 989 | 791 | 891 | 1194 | 833 | 1117 |
| | Prime Power | 1250 | 1000 | 1113 | 1492 | 1055 | 1414 |
| | Standby (maximum) | 1375 | 1100 | 1224 | 1641 | 1166 | 1563 |

The above ratings represent the engine performance capabilities guaranteed within plus or minus 3% at the reference conditions equivalent to those specified in ISO 8528/1, ISO 3046/1, BS 5514/1.

Rating conditions: 25°C air inlet temperature, barometric pressure 100 kPa, relative humidity 30%. Please consult your distributor or the factory for ratings in other ambient conditions. *Note: For full ratings please refer to Perkins Engines Company Limited. All electrical ratings are based on an average alternator efficiency and a power factor of 0.8. Fuel specification: BS2869: Class A2.*

Rating Definitions

Baseload Power: Power available for continuous full load operation. No overload is permitted. **Prime Power:** Power available for variable load with an average load factor not exceeding 80% of the prime power rating in any 24 hour period. Overload of 10% 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 up to a maximum of 500 hours per year. No overload is permitted.

Photographs are for illustrative purposes only and may not reflect final specification.

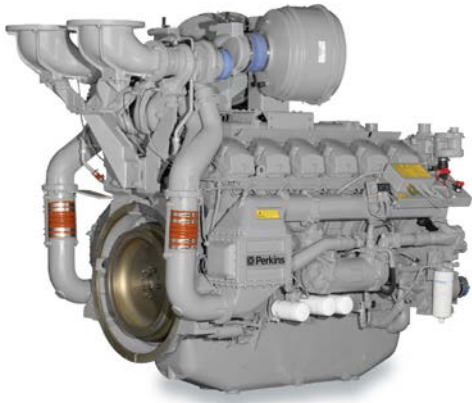
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 **Perkins®**

THE HEART OF EVERY GREAT MACHINE

4000 Series 4012-46TWG2A Diesel Engine – Electropak Non-Emissions compliant

1166 kWm 1500 rpm
1166 kWm 1800 rpm



Standard Electropak specification

Air inlet

- Mounted air filters and turbochargers

Fuel system

- Direct fuel injection system with fuel lift pump
- Governing to ISO 8528-5 class G3 with isochronous capability
- Full-flow spin-on fuel oil filters

Lubrication system

- Wet sump with filler and dipstick
- Full-flow spin-on oil filters
- Engine jacket water/lub oil temperature stabiliser

Cooling system

- Two twin thermostats
- System designed for ambients up to 50°C
- Powder coated radiator comprising: water radiator; fuel oil cooling (optional); all pipes, hoses and clips; fan; pulleys; fan belts and safety guards

Electrical equipment

- 24 volt starter motor and 24 volt alternator with integral regulator and DC output
- Overspeed switch and magnetic pickup
- Turbine inlet temperature shutdown switch
- Twin high coolant temperature shutdown switches
- Twin low oil pressure shutdown switches

Flywheel and housing

- Flywheel to SAE J620 size 18
- SAE 00 flywheel housing

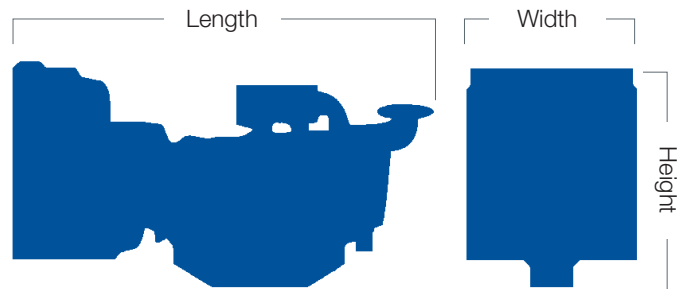
Optional equipment

Choice of temperate or tropical radiators available dependant on operational cooling requirements

Fuel oil cooler integral to the radiator assembly

Immersion heater with thermostat

Note: This list is not exhaustive, further options will be available at the product's introduction



See 'General data – Dimensions' below

| Engine Speed | Fuel Consumption | | | |
|---------------------|------------------|------|--------------|------|
| | 1500 rev/min | | 1800 rev/min | |
| | g/kWh | l/hr | g/kWh | l/hr |
| Standby | 213 | 288 | 220 | 298 |
| Prime Power | 212 | 259 | 217 | 266 |
| Continuous Baseload | 214 | 207 | 216 | 209 |
| 75% of Prime Power | 216 | 196 | tbc | tbc |
| 50% of Prime Power | 233 | 143 | tbc | tbc |

General data

| | | |
|--|--|-----------------|
| Number of cylinders | 12 | |
| Cylinder arrangement | 60° Vee form | |
| Bore and stroke..... | 160 x 190 mm | |
| Displacement | 45.842 litres | |
| Induction system | Turbocharged and air to water charge cooled | |
| Cycle..... | 4 stroke | |
| Combustion system..... | Direct injection | |
| Compression ratio | 13.6:1 | |
| Rotation..... | Anti-clockwise, viewed from flywheel end | |
| Cooling system..... | Water-cooled | |
| Firing order | 1A, 6B, 5A, 2B, 3A, 4B, 6A, 1B, 2A, 5B, 4A, 3B | |
| Total lubrication system capacity..... | 177 litres | |
| | Temperate | Tropical |
| Total coolant capacity | 196 litres | 201 litres |
| Total weight (dry)..... | 5220 kg | 5283 kg |
| Dimensions – Length | 3714 mm | 3714 mm |
| Width | 1780 mm | 1978 mm |
| Height | 2255 mm | 2255 mm |

Final weight and dimensions will depend on completed specification

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Alternator Technical Specifications

| ALTERNATOR BRAND | | LEROY SOMER |
|---------------------------|-------|-------------------------|
| Model | | LSA50.2M6 |
| 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 $\pm 0.5\%$ from no load to full load. between 0.8 lagging and unity. All standard voltages available



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Control Panel Technical Specifications



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
- VD.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

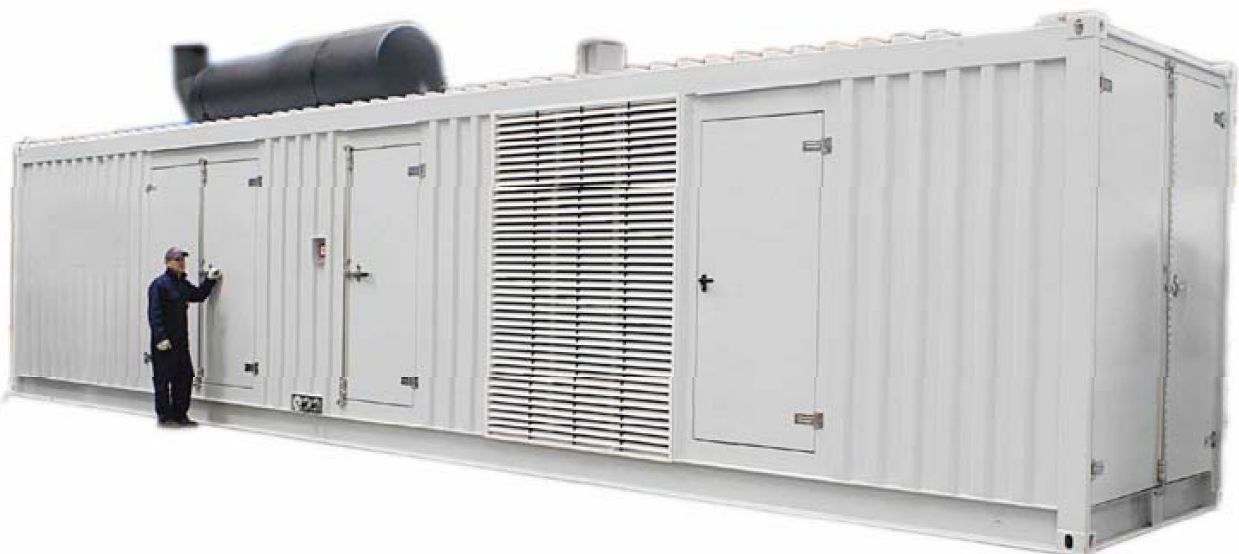
Security and Safety

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

Open type:LxWxH (mm) Net Weight Kgs

5220*2130*2600 /9440KGS

Silent type:LxWxH (mm) Net Weight Kgs

40'standard container /17280KGS

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