



Diesel



Watercooled



Model: ETPG440

INDUSTRIAL RANGE

Powered by Perkins



Generating Rates

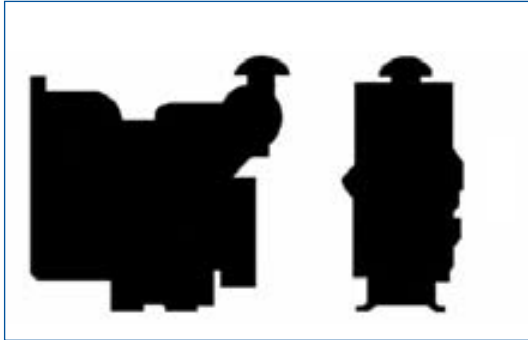
| POWER RATING | | PRIME | STANDBY |
|-----------------------|---------|---------------------------------|---------|
| POWER | kVA | 400 | 440 |
| | kW | 320 | 352 |
| Rated Speed | r.p.m | 1800 | |
| Standard Voltage | V | 480 | |
| Available Voltages | V | 480/277-440/254-220/127-208/120 | |
| Rated 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 hours period shall not exceed 80% of the prime power. 10% overload available for governing purposes only.

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 in case of failure of the main in areas of reliable electrical network.

Diesel Generating Sets



60
Hz

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Engine Specifications 1800 r.p.m.

| ENGINE | | PRP | | STANDBY | |
|----------------------------|--------|---------------------------------------|------|---------|------|
| Rated Output | kW | 349 | | 381 | |
| Manufacturer | | Perkins | | | |
| Model | | 2206C-E13TAG2 | | | |
| No. of Cylindirs and Build | | 4 Cycle; In-line;6 Cylinder Diesel | | | |
| Aspiration and Cooling | | Turbocharged air-to-air charge cooled | | | |
| Bore/Stroke | mm | 130X157 | | | |
| Compress the ratio | | 16.3:1 | | | |
| Cooling system | | Water-cooled | | | |
| Engine Speed/Frequency | rpm/Hz | 1800/60HZ | | | |
| Coolant Capacity | L | 51.4 | | | |
| Starting System | | Electric 24 volt DC | | | |
| Displacement | L | 12.5 | | | |
| Lubricant system Capacity | L | 40 | | | |
| Battery Volatge / Capacity | | 24VDC | | | |
| Governing Type | Type | ECM | | | |
| Air Filter | Type | Dry | | | |
| Fuel Consumption | Load | 100% | 75% | 50% | 25% |
| | L/h | 84.0 | 65.0 | 46.0 | 25.0 |

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--24V up to. 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.

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Alternator Technical Specifications

| ALTERNATOR BRAND | | LEROY SOMER | STAMFORD |
|---------------------------|-------|-------------------------|----------|
| Model | | LSA47.2VS2 | UCI444E |
| 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,sreen 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

Control Panel- SMARTGEN 6110/6120

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

- a) Instruments: Analogue Voltmeter, Hours Run Meter, Water pressure Meter.
- b) Controls: Emergency Stop Pushbutton, Voltmeter Phase Selector Switch.
- c) Control module: Standard collocation is smartgen Auto start with AMF.

Smartgen®

Main Features:

- Δ Automatic mains failure
- Δ Engine control, Generator protection
- Δ Built in alarms and warnings
- Δ Remote Start operation available
- Δ Fuel pump control
- Δ Mains simulation
- Δ Block heater control
- Δ Field adjustable parameters
- Δ Free MS-Windows Remote monitoring
- Δ LED displays
- Δ Configurable analogue inputs
- Δ I/O expansion capability



Protection Circuits

- WARNING
- Battery charge failure
- Low battery voltage
- SHUT DOWNS
- Fail to start
- Emergency stop
- Low oil pressure
- High engine temperature
- Over /Under speed
- Under/over generator frequency
- Failed to reach loading voltage
- Electrical trip
- Generator over current

Instruments

- ENGINE
- Engine speed
- Oil pressure
- Coolant temperature
- Run time
- Battery volts
- TOR
- Voltage (L-N)
- Current (L1-L2-L3)
- Frequency
- Mains
- Voltage (L-L, L-N)

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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:

- Δ Composed of Perkins diesel engine and Stamford or Leroy somer alternator
- Δ Oil and fuel filter fitted, water separator
- Δ Lube-oil drain valve fitted
- Δ Electric Starter Charge motor 24 V.D.C
- Δ Water-cooled
- Δ 8-hours operation base tank
- Δ Auto start
- Δ Optional soundproof and weatherproof canopy
- Δ 3 pole MCCB Delixi breaker
- Δ Operation & Maintenance manual
- Δ 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 Phase 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

- Δ Black finish stainless steel lock and hinges
- Δ Body made from steel components treated with polyester powder coating

Excellent Access for Maintenance

- Δ Two large doors on each side
- Δ Radiator fill access plate
- Δ Lube oil and cooling water drains pipes to exterior of the enclosure

Security and Safety

- Δ Control panel viewing window in a lockable access door
- Δ Emergency stop push button (red) mounted on enclosure interior
- Δ Cooling fan and battery charging alternator fully guarded
- Δ Exhaust silencing system totally enclosed for operator safety



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Generating Sets other Features

Generating Sets Optional Features

- ΔLow fuel level alarm shutdown
- ΔAutomatic Fuel Filling System
- ΔEngine oil feeding and drain pump
- ΔAuto Transfer Switch(ATS)
- ΔParallel control panels
- ΔCircuit Breaker MCCB & ACB
- ΔRemote Control Panel
- Δweatherproof/soundproof Canopy
- ΔTrailer type Gensets

Quality Standards

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

Gensets Dimensions & Weight

Open type:LxWxH (mm) Net Weight Kgs

350*1105*1960 /3385KGS

Silent type:LxWxH (mm) Net Weight Kgs

4930*1380*2280 /4895KGS

Authorized