


High quality, reliable and complete power unit  
 Compact design  
 Easy - start and maintenance possibility  
 Full engineered with a wide-range of options and accessories:  
 electrical, mechanical, soundproof canopy



### ENGINE

 Cummins, 4 stroke cycle, In-line, direct injection diesel engines.

**Type.** Turbocharged

**Construction.** Four valves per cylinder, forged steel crankshaft and connecting rods, cast iron block with replaceable wet liners.

**Starting.** 24 volt negative earth, battery charging 35 amp alternator. Fitted battery tray, battery leads and connecting lugs. Cranking current 1280 amps at 0°C.

**Fuel System.** 24 volt fail safe fuel actuator, dual spin-on paper element filters, Cummins fuel injection system with integral electronic governor. Dual flexible fuel lines and connectors.

**Filters.** Dry element air filters with restriction indicator and spin-on paper element full flow and by pass lube oil filters and corrosion resistor filter.

**Cooling.** 50°C radiator as standard. Oil cooler

### ALTERNATOR



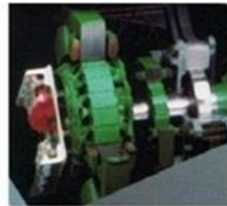
Brushless, single bearing, revolving field, 4-pole, 12wires, drip proof, screen protected. Class H insulation

Enclosed to IP21-23 (NEMA 1) standard IC 01 cooling system. Fully interconnected damper winding. AC exciter and rotating rectifier unit. Epoxy coated stator winding. Rotor and exciter impregnated with tropical grade insulating oil and acid resisting polyester resin. Dynamically balanced rotor. Sealed for life bearings. Layer wound mechanically wedged rotor.

### Exciter

Tripple dipped in moisture oil and acid resisting polyester varnish and coated with anti-tracking varnish. Sealed

solid state automatic voltage regulator self-exciting, self-exciting, self-regulating. Output windings with 2/3 pitch for improved harmonics and paralleling ability. Self-excited with SX460 Automatic Voltage Regulator.



### AUTOMATIC CONTROL SYSTEM



Monitor mains supply; Automatically start generator set; Indicates operational status/fault conditions

- NEMA 12 metal enclosure
- Micro-processor based design
- Fully PC or front panel configuration
- Automatic engine starting/stopping
- Automatic shutdown on fault condition
- Custom graphical icon type display
- Provides engine and generator instrumentation
- Provides engine alarm and status information
- LED & LCD alarm indication
- **Multiple alarm channels** are provided to monitor for the following conditions
  - Under/Overspeed
  - Charge alternator failure
  - Emergency stop
  - Low oil pressure
  - High engine temperature
  - Fail to start
  - Fail to come to rest
  - Loss of speed sensing signal
- **Instrumentation Displays**, (accessed via the SCROLL push-button):
  - Generator Volts L1-N, L2-N, L3-N
  - Generator Volts L1-L2, L2-L3, L3-L1
  - Generator Amps L1, L2, L3
  - Generator Frequency Hertz
  - Engine Speed RPM
  - Engine Oil Pressure (PSI & BAR)
  - Engine Temperature (°C & °F)
  - Plant Battery Volts
  - Engine Hours Run

## AUTOMATIC VOLTAGE REGULATOR



**The SX460 Voltage regulator** is an encapsulated electronic voltage regulator that controls the output of a brushless AC generator by regulating the current into the exciter field.

### Sensing & Power Input

190-240VAC,

### Burden

500VA

### Output Power-Continuous

73Vdc at 3.5Adc (255w)

### Output Power-Forcing

(240 VAC Input Power)

105Vdc at Adc (525w)

### Regulation

1.0%

### Remote Voltage Adjustment Range

± 10% with 2000 ohm rheostat

± 5% with 1000 ohm rheostat

### Frequency Compensation

Adjustable

### Roll off frequency

54-61 Hz for 60Hz

45-51 Hz for 50Hz

### Operation weight

6.5oz.

### Operation Temperature

-40°C to + 60°C

### Storage Temperature

-40°C to + 60°C

### Power Dissipation

8 watts maximum

### Voltage Buildup

Internal provision for automatic

### Voltage build up from generator

residual voltage as low as 10VAC

### EMI Supression

Internal Electromagnetic Interference

### Filter (EMI Filter)



POWER

GENERATOR

SET

## CHASSIS

The complete generator set is mounted as a whole on a heavy duty fabricated, steel base frame. Anti-vibration pads are fixed between the engine and alternator feet and the base frame.

## OPTIONAL ACCESSORIES

### Engine

- Heavy duty air cleaner
- Coolant heater and thermostat
- Sump drain pump
- Oil and water drain taps

### Cooling

- Remote radiator cooling
- Oil Temperature indication

### Alternator

- Anti-Condensation Heater
- Thermistors
- 105°C rise alternator

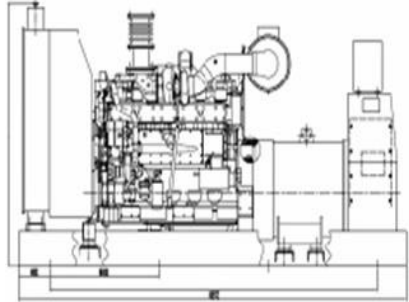
### Exhaust System

- Length of flexible exhaust & bellows
- Residential type silencer
- Critical silencer

## STANDARD ACCESSORIES

Each generator set is provided with starting battery and connecting wires, exhaust silencer, flexible pipe, exhaust elbow and flange, tools and operating manuals.

## DIMENSION AND WEIGHTS



| LENGTH | WIDTH | HEIGHT | WEIGHT  |
|--------|-------|--------|---------|
| 230cm  | 97cm  | 140cm  | 1100kg. |

## GENERATOR SET DATA

|                           |                     |
|---------------------------|---------------------|
| Genset Model              | POWERPLUS 40        |
| Standby Rating (kW/kVA)   | 40KW / 50KVA        |
| Voltage Output            | 220VAC              |
| Ampere Rating (Full Load) | 131A at 220VAC      |
| Phase/Frequency/Speed     | 3Phase/60Hz/1800RPM |

## DIESEL ENGINE SPECIFICATIONS

|                              |                  |
|------------------------------|------------------|
| Engine Make                  | CUMMINS DIESEL   |
| Engine Model                 | 4BT 3.9G2        |
| Number of Cylinders          | 4                |
| Engine Build                 | In-line          |
| Governor Type/Class          | Mechanical       |
| Aspiration and Cooling       | Turbocharged     |
| Starting System              | 24VDC            |
| Rated Speed                  | 1800RPM          |
| Fuel Consumption (Full Load) | 9liters per hour |
| Lubrication Oil Capacity     | 11liters         |

## ALTERNATOR SPECIFICATIONS

|                         |                        |
|-------------------------|------------------------|
| Alternator Make         | POWERPLUS AC Brushless |
| Output Voltage          | 220VAC                 |
| Phase and Frequency     | 3Phase/60Hz            |
| Standby Rating (kW/kVA) | 40KW / 50KVA           |
| Full Load Ampere Rating | 131A at 220VAC         |
| Voltage Regulation      | ± 1%                   |
| Insulation Class        | Class H                |
| AVR and Exciter         | Brushless, Self-Excite |
| Control Panel           | Digital                |