Mansour House, 188 Bath Road
Slough SL1 3GA, Berkshire, UK

1.1 CATERPILLAR PACKAGE GENSET TYPE:C13-400KVA Prime

1.1.1 Engine Technical Data:

Maker:	Caterpillar Inc.
Type Of Engine:	Four-Stroke, Diesel Fuel
Application:	Power Generation, Prime Power.
Cylinders Arrangement:	Inline-Type
No. Of Cylinders:	6 Cylinder
No. Of Strokes:	four Strokes
Bore:	130.00 mm
Stroke:	157.00mm
Displacement:	12.50 L
Aspiration:	Air-to-Air After-cooled
Compression Ratio:	16.3: 1
Genset Output:	400KVA - 320eKW
Revolutions Per Minute:	1500 RPM

1.1.2 Air Inlet System:

- Air cleaner; light duty with disposable paper filter.
- (Not for Outdoor Use. Requires protection for outdoor storage)
- Aftercooler core.
- Turbocharger

Mansour House, 188 Bath Road
Slough SL1 3GA, Berkshire, UK

1.1.3 Exhaust System

- Dry exhaust manifold
- ***Industrial silencer***

1.1.4 Fuel System

- Primary fuel filter w/integral water separator & secondary filter
- Fuel coolersteel with single wall integral 8-hour fuel tank
- Fuel priming pump
- Flexible fuel lines
- Engine fuel transfer pump

1.1.5 Starting System :

- Battery with rack & cables
- Battery Charger 5 Amp

1.1.6 Cooling System:

- Radiator and cooling fan with guard
- Coolant drain line with valve
- Fan drive, battery charging alternator drive
- Caterpillar Extended Life Coolant

1.1.7 Lubrication System:

- Lubricating oil
- Oil drain valves.

1.1.8 Governing System:

- Cat Electronic Governor (ADEM IV).

1.1.9 Mounting System:

- Captive linear vibration isolators between base and engine-generator
- Includes lifting provisions and termination points for coolant and lube oil drain lines.

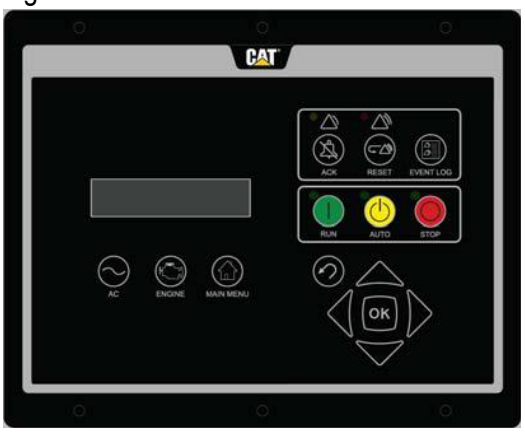
Mansour House, 188 Bath Road
Slough SL1 3GA, Berkshire, UK

1.1.10 Generator Technical Data:

Rating:	400kVA , 320eKw @ 0.8 P.F.
Voltage:	400 Volts
Frequency:	50 Hz
Speed:	1500 RPM
Insulation:	Class "H"
No. of Bearing:	Single Bearing
Excitation:	Self-Excited
Over Speed Capability:	150% of Synchronous speed
Wave Form:	Less than 2% deviation
Voltage Regulator:	Integrated Voltage Regulator
Voltage Regulation:	Less than ± 1.0% (steady state)
Circuit breaker:	800 amp, 3 pole

1.1.11 Control Panel:

Generator - mounted, EMCP4.2 The Cat® EMCP 4.2 offers fully featured power metering, protective relaying and engine and generator control and monitoring. Engine and generator controls, diagnostics, and operating information are accessible via the control panel keypads (Electronic Modular Control Panel 4.2) includes the followings:



1.1.1.1 CONTROLS:

- Run / Auto / Stop control
- Speed and voltage adjust
- Emergency stop
- Remote start/stop
- Cycle crank

1.1.1.2 MONITORING:

- Coolant temperature
- Oil pressure
- Engine speed (RPM)
- Battery voltage
- Run hours
- Crank attempt and successful start counter
- Voltage (L-L, L-N)

- Current (Phase)
- Average Volt, Amp, Frequency
- kW, kVAr, kVA (Average, Phase, %)
- Power Factor (Average, Phase)
- kW-hr, kVAr-hr (total

1.1.1.3 WARNING/SHUTDOWN INDICATION:

- Control switch not in auto (alarm)
- High coolant temp (alarm and shutdown)
- Low coolant temp (alarm)
- Low coolant level (alarm)
- Low Oil Pressure (alarm and shutdown)
- High engine oil temp (alarm and shutdown)
- Low, high and weak battery voltage
- Over speed shutdown
- Over crank

1.1.1.4 INPUTS & OUTPUTS:

- Two dedicated digital inputs
- Six programmable digital inputs
- Six programmable form A dry contacts
- Two programmable form C dry contacts
- Two digital outputs

1.1.1.5 PROTECTIVE RELAYING:

- Generator phase sequence
- Over/Under voltage (27/59)
- Over/Under frequency (81 O/U)
- Reverse Power (kW) (32)
- Reverse Reactive Power (kVAr) (32RV)
- Overcurrent (50/51)

1.1.1.6 COMMUNICATION

- Primary and accessory CAN data links
- RS-485 annunciator data link
- Modbus RTU (RS-485 Half duplex