

1.1 CATERPILLAR PACKAGE GENSET TYPE: C15 ATAAC



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: | 137.2 mm |
| Stroke: | 171.4mm |
| Displacement: | 15.20 L |
| Aspiration: | Air-to-Air After-cooled |
| Compression Ratio: | 16.1: 1 |
| Genset Output: | 500 KVA - 400eKW |
| Revolutions Per Minute: | 1500 RPM |

1.1.2 Air Inlet System:

- Air Cleaner; dual element type

1.1.3 Exhaust System:

- Dry exhaust manifold
- Exhaust silencer

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1.1.4 Fuel System:

- Primary fuel filter w/integral water separator & secondary filter.
- Fuel cooler.
- Fuel priming pump.
- Engine Fuel Transfer Pump
- Flexible fuel lines.
- Base, formed steel with integral 8 hour fuel tank

1.1.5 Starting System

- 12v Battery with rack & cables
- Battery Charger

1.1.6 Cooling System:

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

1.1.7 Lubrication System:

- Oil drain lines with valve
- Oil Cooler.

1.1.8 Governing System:

- Cat Electronic Governor (ADEM 4).

1.1.9 Mounting System:

- Linear vibration isolators between base and engine generator

1.1.10 Generator Technical Data:

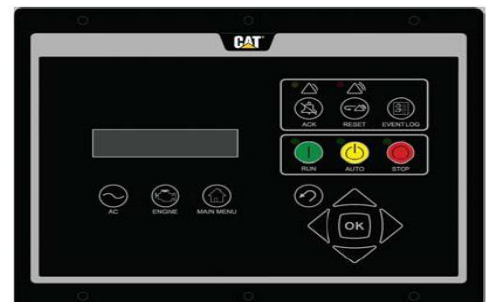
| | |
|------------------------|--|
| Rating: | 500 kVA , 400 eKw @ 0.8 P.F. |
| Voltage: | 400 Volts |
| Frequency: | 50 Hz |
| Speed: | 1500 RPM |
| Insulation: | Class "H" |
| No. of Bearing: | Single Bearing |
| Excitation: | Self-Excited |
| Over Speed Capability: | 150% of Synchronous speed |
| Wave Form: | Less than 2% deviation |
| Voltage Regulator: | Integrated voltage regulator |
| Voltage Regulation: | ± 1.0% (steady state) ± 1.0% (w/ 3% speed change) |
| Circuit breaker: | 800 amp, 3 pole |

1.1.11 Control Panel:

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

1.1.1.1 CONTROLS:

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



1.1.1.2 DIGITAL (LCD) INDICATION:

1.1.1.2.1 Generator Monitoring

- 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)

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1.1.1.2 Engine Monitoring

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

1.1.1.3 WARNING/SHUTDOWN INDICATION:

1.1.1.3.1 Generator Protection

- 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)

1.1.1.3.2 Engine Protection

- 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 COMMUNICATION:

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