



Image shown may not reflect actual package

STANDBY 2000 kW PRIME 1825 kW POWER MODULE 50/60 Hz

Frequency	Voltage	Standby kW (kVA)	Prime kW (kVA)
60	480/277V	2000 (2500)	1825 (2281)
50	400V	1440 (1800)	1310 (1638)

FEATURES

EPA TIER 2 and CARB certified for non-road mobile applications. Factory designed, certified prototype tested with torsional analysis. Production tested and delivered in a package that is ready to be connected to your fuel and power lines. Supported 100% by your Caterpillar® dealer with warranty on parts and labor. Extended warranty available in some areas. The generator set is designed and manufactured in an ISO 9001:2000 compliant facility. Generator set and components meet or exceed the following specifications: AS1359, AS2789, ABGSM TM3, BS4999, DIN6271, DIN6280, EGSA101P, JEM1359, IEC 34/1, ISO3046/1, ISO8528, NEMA MG1-22

CATERPILLAR SR4B GENERATOR

Single bearing, wye-connected, static regulated, brushless permanent magnet excited generator designed to match the performance and output characteristics of the Caterpillar diesel engine driving it.

RELIABLE, FUEL EFFICIENT DIESEL ENGINE

The compact, four-stroke-cycle diesel engine combines durability with minimum weight while providing dependability and economy. The fuel system operates on a variety of fuels.

CATERPILLAR COOLING SYSTEM

Sized compatible to rating with energy efficient fan and core.

CATERPILLAR SWITCHGEAR

Provides single unit and/or multi-unit/utility paralleling components. Standby, load sense/load demand, import, export, and base load modes. Comes standard with Basler Utility Multi-function Relay IPS-100.

EXCLUSIVE CATERPILLAR DIGITAL VOLTAGE REGULATOR (CDVR)

Three-phase sensing and adjustable Volts-per-Hertz regulation give precise control, excellent block loading, and constant voltage in the normal operating range.

ENVIRONMENTALLY FRIENDLY

110% spill containment of onboard engine fluids.

SOUND ATTENUATED CONTAINER

For ease of transportation and protection. Meets 75 dB(A) at 50 ft or below per SAE J1074 measurement procedure at 110% prime load.

FACTORY INSTALLED STANDARD EQUIPMENT

SYSTEM	STANDARD EQUIPMENT
Engine	<p>EPA approved Tier 2 3516C Caterpillar engine Heavy duty air cleaner with service indicator 60-Amp charging alternator Fuel filters – primary and duplex secondary with integral water separator and change-over valve Lubricating oil system with spin-on, full flow oil filters and water cooled oil cooler Oil drain lines routed to engine rail Jacket water heater Fuel cooler and priming pump Electronic ADEM™ A3 controls 24V electric starting motors with battery rack and cables</p>
Generator	<p>SR-4B brushless, permanent magnet excited, three-phase with Caterpillar digital voltage regulator (CDVR), space heater, 6-lead design, Class H insulation operating at Class F temperature for extended life, winding temperature detectors and anti-condensation space heaters (120/240V 1.2 kW)</p>
Containerized Module	<p>40' ISO high cube container, CSC certified 3-axle, 40' ISO container chassis Seven (7) sound attenuated air intake louvers and 4 lockable personnel doors with panic release Side bus bar access door, external access load connection bus bars Shore power connection via distribution block connections for jacket water heater, battery charger, space heaters, and generator condensate heaters Standard lighting 3 AC/4 DC, one (1) single duplex service receptacle, 2 external break-glass emergency stop push buttons 1,250 gal fuel tank, UL listed, double wall, 9 hr runtime @ prime rating Sound attenuated 75 dB(A) @ 50 ft Spill containment 110% of all engine fluids Four (4) oversized maintenance-free batteries, battery rack and 20-Amp battery charger Hospital grade, internally insulated, rectangular exhaust silencer with vertical discharge Vibration isolators, corrosion resistant hardware and hinges External drain access to standard fluids Fire extinguishers (Qty 2) Standard Cat rental decals and painted standard Cat power module white Interior walls and ceilings insulated with 100 mm of acoustic paneling Floor of container insulated with acoustic glass and covered with galvanized steel</p>
Cooling	<p>Standard cooling provides 43° C ambient capability (60 Hz) at prime +10% rating Vertically mounted, separate ATAAC and JW cores with vertical air discharge</p>
Generator Paralleling Control	<p>Custom switchgear control with EMCP 3.3 genset mounted controller and wall mounted paralleling controls Automatic start/stop with cool down timer Protections: 25, 27/59, 40, 32, 81 O/U Utility multi-function relay protections: 25,27/59, 32, 47, 50/51, 62, 67, 81 O/U UMR is IEEE1547-2003 compliant in most applications Reverse compatibility module provided for interface to legacy power modules Touch screen controls with event log Multi-mode operation (island, multi-island and utility parallel), load sharing (multi-unit only) Import & export control (utility parallel only), manual and automatic paralleling capability Touch screen display (status and alarms) Metering display: voltage, current, frequency, power factor, kW, WHM, kVAR, and synchroscope</p>
Quality	<p>Standard genset and package factory tested UL, NEMA, ISO and IEEE standards O&M manuals</p>

SPECIFICATIONS

CAT SR4B GENERATOR

Frame Size 825
 Pitch 0.6667
 No. of poles 4
 Excitation Static regulated brushless PM excited
 Constructions Single bearing, close coupled
 Insulation Class H
 Enclosure Drip proof IP22
 Alignment Pilot shaft
 Overspeed capability – % of rated 125% of rated
 Voltage regulator 3 phase sensing with Volts-per-Hertz
 Voltage regulation Less than $\pm 1/2\%$ voltage gain
 Adjustable to compensate for engine speed droop and line loss
 Wave form deviation Less than 5% deviation
 Telephone Influence Factor (TIF) Less than 50
 Harmonic Distortion (THD) Less than 5%

CAT 3516C DIESEL ENGINE

3516C, 4-Stroke diesel
 Bore – mm (in) 170 (6.7)
 Stroke – mm (in) 190 (7.5)
 Displacement – L (cu in) 69 (4,210)
 Compression ratio 15:1
 Aspiration ATAAC
 Fuel system EUI
 Governor type Caterpillar ADEM™ A3 Control System

TECHNICAL DATA

Materials and specifications are subject to change without notice.

Generator Set Technical Data		50 Hz		60 Hz	
	Units	Prime	Standby	Prime	Standby
Performance Specification		DM8754		DM8264	
Power Rating	kW (kVA)	1310 (1637)	1440 (1800)	1825 (2281)	2000 (2500)
Lubricating System					
Oil pan capacity	L (gal)	401.3 (106)		401.3 (106)	
Fuel System					
Fuel Consumption					
100% load	L (gal)	350.1 (92.5)	372.9 (98.5)	483.2 (127.6)	525.7 (138.9)
75% load	L (gal)	281.9 (74.5)	302.8 (80)	380 (100.4)	408.2 (107.8)
50% load	L (gal)	205.5 (54.3)	350.1 (92.4)	270.5 (71.5)	294.2 (77.7)
Fuel tank capacity	L (gal)	4731 (1,250)		4731 (1,250)	
Running time @ 75% rating	Hours	16.7	15.6	12.5	11.5
Cooling System					
Radiator coolant capacity including engine	L (gal)	630 (166)		630 (166)	
Air Requirements					
Combustion air flow	m ³ /min (cfm)	114.8 (4052)	118.1 (4173)	174.7 (6169)	180.3 (6367)
Maximum air cleaner restriction	kPa (in H ₂ O)	6.2 (24.9)		6.2 (24.9)	
Generator cooling air	m ³ /min (cfm)	140 (5,933)		168 (4,995)	
Exhaust System					
Exhaust flow at rated kW	m ³ /min (cfm)	311.3 (10,993)	320.8 (11,335)	404 (14,260)	428.6 (15,137)
Exhaust stack temperature at rated kW – dry exhaust	°C (°F)	502.1 (935.8)	513.1 (955.6)	387 (728)	405 (762)
Noise Rating (with enclosure)					
@ 7 meters (23 feet)	dB(A)	77	78	78	79
@ 15 meters (50 feet)	dB(A)	73	74	74	75

Model	Length mm (in)	Width mm (in)	Height mm (in)	Weight	
				With Lube Oil and Coolant kg (lb)	With Fuel, Lube Oil and Coolant kg (lb)
XQ2000 w/o Chassis	12 192 (480)	2438 (96)	2896 (114)	34 019 (75,000)	38 102 (84,000)
XQ2000 w/Chassis	12 192 (480)	2438 (96)	4267 (168)	38 102 (84,000)	42 184 (93,000)

RATING DEFINITIONS

Standby – Applicable for supplying continuous electrical power (at variable load) in the event of a utility power failure. No overload is permitted on these ratings. The generator on the generator set is peak prime rated (as defined in ISO8528-3) at 30° C (86° F).

Prime – Applicable for supplying continuous electrical power (at variable load) in lieu of commercially purchased power. There is no limitation to the annual hours of operation and the generator set can supply 10% overload power for 1 hour in 12 hours.

STANDARD FEATURES

GENERATOR SET EMCP 3.3 LOCAL CONTROL PANEL

- Generator mounted EMCP 3.3 provides power metering, protective relaying and engine and generator control and monitoring.
- Provides MODBUS datalink to paralleling control for monitoring of engine parameters.
- Convenient service access for Caterpillar service tools (not included).
- Integration with the CDVR provides enhanced system monitoring.
- Ability to view and reset diagnostics of all controls networked on J1939 datalink.
- Network modules via the control panel removes the need for a separate service tool for troubleshooting.
- Real-time clock allows for date and time stamping of diagnostics and events.

EMCP 3.3 ENGINE OPERATOR INTERFACE

- Graphical display with positive image, transfective LCD, adjustable white backlight/contrast.
- Two LED status indicators (1 red, 1 amber).
- Three engine control keys and status indicators (Run/Auto/Stop).
- Lamp test key.
- Alarm acknowledgement key.
- Display navigation keys.
- Two shortcut keys: Engine Operating Parameters and Generator Operating Parameters.
- Fuel level monitoring and control.

CIRCUIT BREAKER

- 3000A fixed type, 3 poles, genset mounted, electrically operated, insulated case circuit breaker.
- Solid state trip unit for overload (time overcurrent) and fault (instantaneous) overcurrent protection.
- Includes DC shunt trip coil activated on any monitored engine or electrical fault, 100 KA-interrupting capacity at 480 VAC.

VOLTAGE REGULATION AND POWER FACTOR CONTROL CIRCUITRY

- Generator mounted automatic voltage regulator, microprocessor based.
- Manual raise/lower voltage adjust capability and VAR/power factor control circuitry for maintaining constant generator power factor while paralleled with the utility.
- Includes RFI suppression, exciter limiter and exciter diode monitoring.
- Voltage and power factor adjustments are performed on the setting screen of the HMI touch screen.

FUEL TANK

- UL Listed 1250 gallon double walled.
- Fuel transfer system

CURRENT TRANSFORMERS

- CT's rated 3000:5 with secondaries wired to shorting terminal strips.

POTENTIAL TRANSFORMERS

- 4:1 ratio with primary and secondary fuse protection.

BUS BARS

- Three phase, plus full rated neutral, bus bars are tin-plated copper with NEMA standard hole pattern for connection of customer load cables and generator cables.
- Bus bars are sized for full load capacity of the generator set at 0.8 power factor.
- Includes ground bus, tin-plated copper, for connection to the generator frame ground and field ground cable.

AC DISTRIBUTION

- Provides 240 VAC for all module accessories.
- Includes controls to de-energize jacket water heaters and generator space heater when the engine is running.

SHORE POWER TWO (2)

- One (1) shore power connection distribution block for jacket water heaters.
- One (1) for generator space, battery charger, and fuel pump.

INTERNAL LIGHTING

- Four (4) internal DC lights with one (1) timer and two switches installed at each side of the container door.
- Three (3) internal AC lights.
- One (1) single duplex service receptacle.

BATTERY CHARGER AND BATTERIES

- 24 VDC/20A battery charger with float/equalize modes and charging ammeter.
- Maintenance free batteries.

EMERGENCY STOP PUSHBUTTON

- Two external ESPs located near each access door.

MODES OF OPERATION

Caterpillar utility paralleling controls are intended for automatic or manual paralleling with a utility power source as a load management system, with provisions for standby operation feeding an isolated load network. Load management operation involves microprocessor-based automatic loading controls with soft loading, base load, Import/Export control and soft unloading. For Standby operation, the generator operates as an isochronous machine isolated from the utility supply. The controls allow for automatic operation, initiated locally or remotely by the customer's SCADA system. Detailed modes of operation are listed below:

SINGLE UNIT ISLAND AND MULTI-UNIT ISLAND OPERATION

1. Utility Standby Mode (Normal)
 - a. The utility is providing power for the plant loads.
 - b. The Power Module Generator breaker is open.
 - c. The pm is in automatic standby mode to respond to a utility failure.
2. Emergency Mode (Emergency)
 - a. Utility Failure
 - 1) The customer protective relaying senses a utility abnormal condition.
 - 2) A run request is sent to the Power Module Generator plant.
 - 3) The first Power Module Generator reach rated to voltage and frequency is closed to the bus.
 - 4) In Multi-Unit Island Mode, the remaining Power Module Generators are paralleled to the bus as they reach rated voltage and frequency. This function is performed via the ModBus Plus data link connected between the Power Modules.
 - 5) Plant load is transferred to the Power Modules, which share load equally via ModBus Plus data link.
 - 6) The system is now in Emergency Mode.

GENERATOR DEMAND PRIORITY CONTROL

The System Controls include a Generator Demand Priority Control function to automatically match the on-line Power Module Generator capacity to the loads in order to avoid unnecessary operation of all the Power Module Generators when the plant loads are low.

The following controls are provided for each Power Module Generator:

- a. User-settable Generator Priority Selector
- b. Status indicator for the Generator Priority selected
- c. Status indicator for Power Module Generator on-line or off-line
- d. Generator Demand Priority Control Switch (On/Off)
- e. User-settable Generator Remove Level (% as a function of single generator capacity)
- f. User-settable Generator Remove Time Delay
- g. User-settable Generator Add Level (% as a function of single generator capacity)
- h. User-settable Generator Add Time Delay

Upon entrance into Emergency Mode, all generators will be started and paralleled to the bus. After the Remove Time Delay, Power Module Generators will be removed from the bus as a function of the generator percentage loading. Generators will be removed from the bus in descending priority order.

Should the generator percentage loading increase to the user-selected Generator Add Level after the user-selected Generator Add Time Delay, the next priority generator will be started, synchronized and paralleled to the bus. Should the Power Module Generator plant ever reach 100% loading, the next priority generator will be started and added to the bus, bypassing the Generator Add Time Delay.

MODES OF OPERATION (continued)

SINGLE UNIT IMPORT, EXPORT OR BASE LOAD OPERATION

During periods of peak demand the system may be placed in operation using the operator interface panel on the front of the switchgear.

1. Entry – Local

- a. The operator places the System Control Switch into Load Management.
- b. The operator selects Import, Export or Base Load Operation.
- c. The Load Management Setpoint is the amount of power Imported, Exported or Base-Loaded. A 4-12-20mA signal is provided by the customer and is linearly proportional to the utility load, with 12mA equaling 0 kW. The 4-12-20mA utility load signal is wired to one and only one Power Module. If the Power Module selected for Load Management is not available, the 4-12-20mA signal will be routed to a different Power Module.
- d. The operator sets the Load Management Setpoint and Power Factor Setpoint.
- e. A Run request signal is received by the Single Unit Power Module.
- f. The Power Module Generator is started and will run for a predetermined warm-up time before it is synchronized and paralleled to the utility.

- g. When the generator is on the bus, it is soft-ramp-loaded until the generator output reaches the Load Management Setpoint.
- h. The generator output is dynamically adjusted to maintain the Load Management Setpoint.
- i. Should the utility fail during Load Management Operation, the Protective Relay will cause the Paralleling Circuit Breaker 52G to open and be locked out until the Lockout Relay is manually reset by an operator on site. The generator is allowed to run for the duration of the cooldown time.

2. Exit – Local

- a. The Run Request signal is removed from the power module.
- b. The generator is soft-ramp-unloaded until the plant load is fully supported by the utility.
- c. The Paralleling Circuit Breaker 52G is opened.
- d. The generator is allowed to run for the duration of the cooldown time.

STANDARD PARALLELING CONTROL

GENERATOR PARALLELING CONTROLS

The switchgear includes:

- Single unit island mode.
- Multiple unit island mode.
 - Includes Load Sense/Load Demand control.
 - Load sharing capability is provided via network communication.
- Single unit utility parallel mode.
 - Selectable for Import/Export control.
 - If import or export control is selected a 4-12-20mA signal is required (provided by others) scalable to the utility contribution.
- 6 inch black and white HMI touch screen.
- Reverse compatibility module provided for interface to legacy designed Power Module Switchgear. Includes PLC, load share and voltage droop.

Incoming Utility Breaker Status Circuit – Circuit to accept customers contact from remote utility disconnect device. Customer to provide a normally open form 'a' contact to indicate when the local load network is connected to the utility grid.

Utility Transfer Trip Circuit – Circuit accepts input (normally open dry contact) from customer's system protective relay(s) or other controlling device. Operation of contacts causes tripping of the generator circuit breaker via the generator (software) 86 lock-out function and places the engine in cooldown mode. Circuit is disabled when operating in single unit or multiple unit island.

GENERATOR PARALLELING CONTROLS OPERATOR INTERFACE

Graphical mimic one line diagram that shows generator with its respective circuit breaker in a one-line representation of the system. The graphics utilize black and white indicators and bar graphs while actively displaying the following information:

- Utility CB Open/Closed. Input contacts provided by others.
- Utility kW 4-12-20mA signal required and provided by customer that is scalable to the utility contribution.
- Generator CB Open/Closed/Tripped.
- Generator Volts/Amps/kW/Frequency.
- Engine Stopped/Running/Cooldown/Pre-Alarm/Shutdown.
- Engine ECS Position Stop/Auto/Run.
- Utility Output kW.
- System Summary Alarm.

Event logging is also included with up to 500 stored events.

GENERATOR METERING AND PROTECTION

Generator metering that will graphically display 3Ø Voltage, 3Ø Current, Frequency, Power Factor, kW, kVAR and a Synchroscope Display of EMCP 3.3 faults, CDVR or ADEM 3 will be provided via Modbus RTU interface to EMCP 3.3.

Generator/Intertie Protective Relaying including:

- Device 27/59 – Under/Over Voltage.
- Device 81O/U – Under/Over Frequency.
- Device 40 – Loss of Excitation.
- Device 32 – Reverse Power.
- Device 25 – Synchronizing Check.
- Device 15 – Auto Synchronizer.
- Device 65 – Governor Load Sharing, Soft Loading Control.
- Device 90 – VAR/PF and Cross Current Compensation Controller.

PROGRAMMING AND DIAGNOSTICS

Includes field programmable set points for engine control and monitoring variables and self-diagnosis of the EMCP 3.3 system component and wiring failures.

ENGINE CONTROL SWITCH

Keypad selectable, four (4) positions – Off, Auto, Man, Cool:

- Off for engine shutdown and resetting faults.
- Auto for local or remote automatic operation when initiated by switch operation or contact closure.
- Man for local starting and manual paralleling.
- Cool for normal engine shutdown with timed cool-down cycle.

CIRCUIT BREAKER CONTROL SWITCH

Heavy duty, three- (3) position spring return to center with momentary trip and close position and slip contacts for automatic closing. Includes circuit breaker position indicating lamps.

EMERGENCY STOP PUSHBUTTON

- Mushroom head, twist to reset, causes engine shutdown and tripping of the generator circuit breaker. Prevents engine starting when depressed.

STANDARD PARALLELING CONTROL (continued)

ELECTRONIC LOAD SHARING GOVERNOR

- Includes speed adjustment, and auto load share capability when in parallel with legacy power modules.

ALARM MODULE

- Dedicates annunciator screens for warning and shutdown faults. Includes external mounted horn and acknowledge push-button.

AUTOMATIC/MANUAL PARALLELING

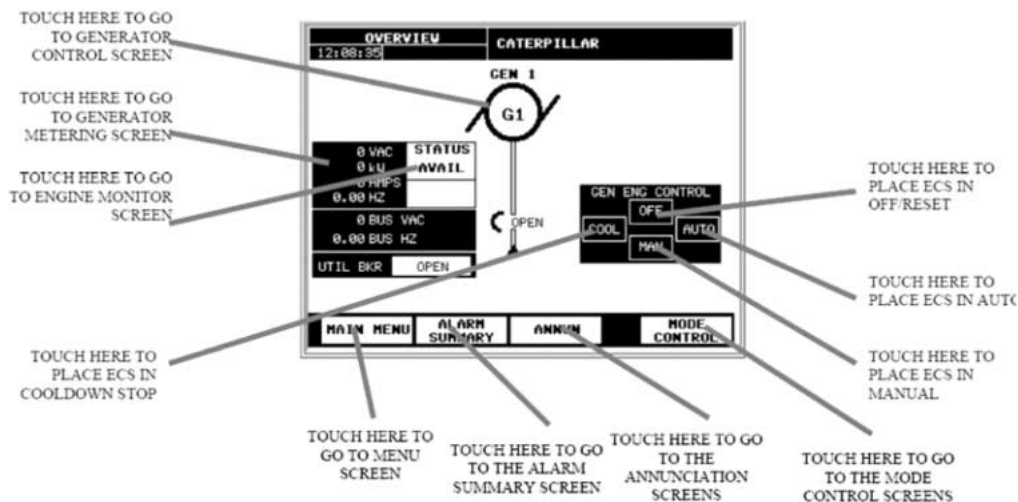
- Automatically synchronizes and parallels the generator with another power source.
- Includes provisions for manual permissive paralleling.

HUMAN MACHINE INTERFACE (HMI) HIGHLIGHTS

- Engine/Generator function is performed thru the 6" HMI touch screen interface.

Overview Screen (Typical)

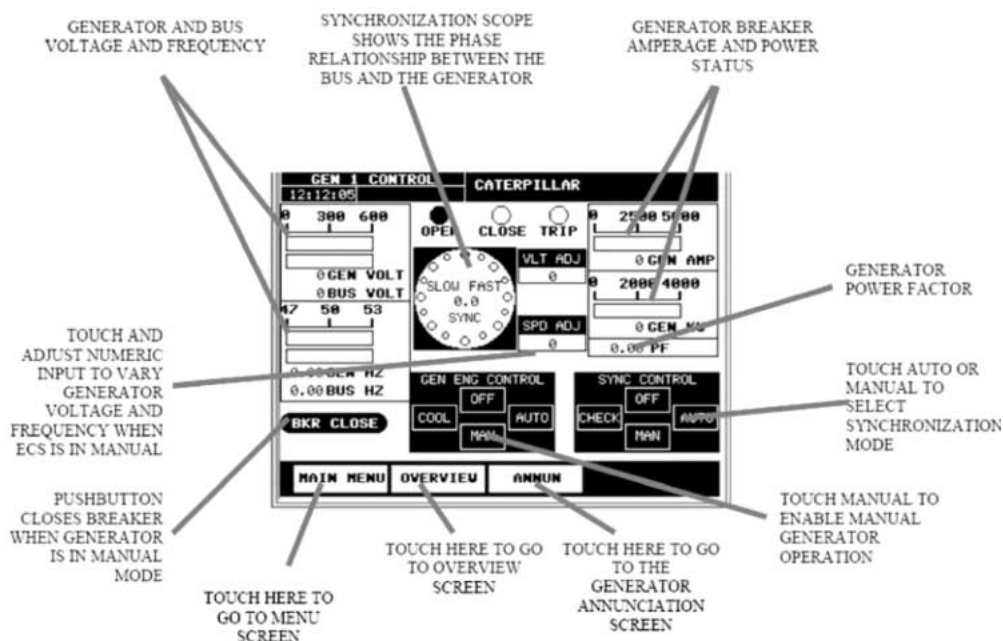
Shows the generator status, generator metering data, bus metering data, ECS position, and generator/utility breaker status.



STANDARD PARALLELING CONTROL (continued)

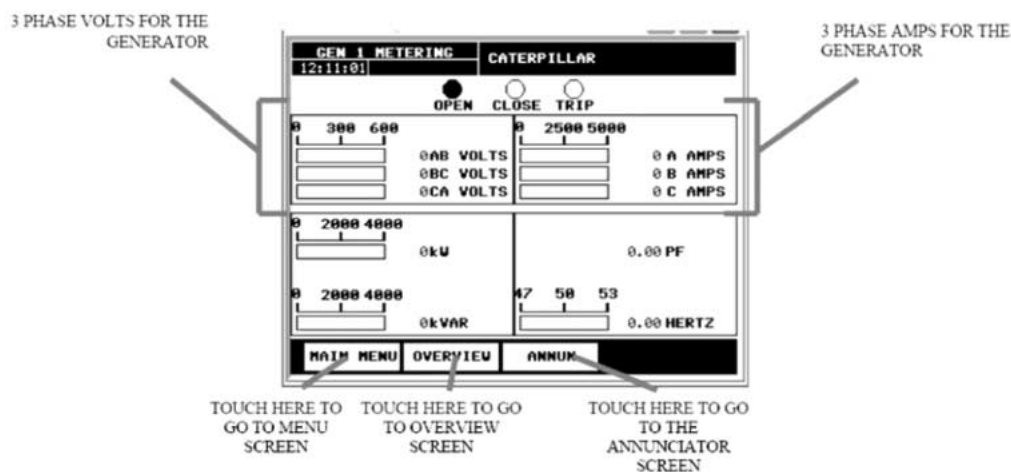
Generator Control Screen (Typical)

It allows the operator to observe the automatic synchronization and transfer of the load to and from the generator. Engine control allows the operator to run the engine in manual, or switch to automatic modes. Voltage and frequency offset adjustment allows the operator to control generator frequency and voltage.



Generator Metering Screen (Typical)

Allows the operator to view three phases of voltage and amperage for the bus and the generator.

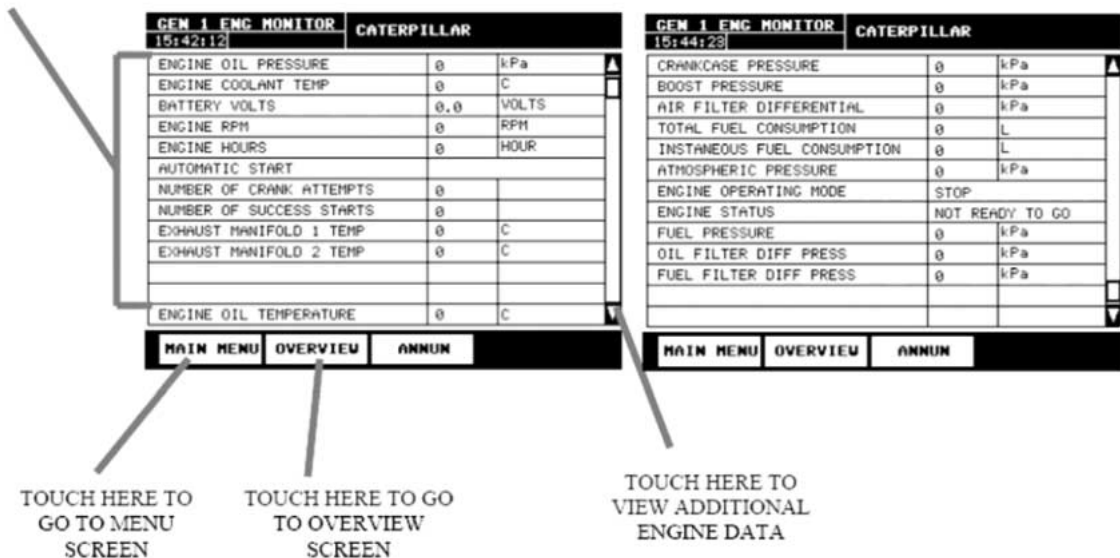


STANDARD PARALLELING CONTROL (continued)

Engine Monitoring Screen (Typical)

Engine status is obtained directly from the EMCP 3. Engine starts and total hours can be used by the operator to determine when regular preventive maintenance is required. Other metering includes engine battery and oil filter health.

EMCP 3.3 ENGINE DATA



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Discretion is recommended when distributing.

Materials and specifications are subject to change without notice.

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XQ2000 SOUND ATTENUATED POWER MODULE

60 Hz

FEATURES



EMISSIONS

EPA and CARB Emissions Certified for non-road mobile applications.



CAT® DIESEL GENERATOR SETS

Factory designed, certified prototype tested with torsional analysis. Production tested and delivered to you in a package that is ready to be connected to your fuel and power lines. Electric Power Design Pro computer sizing available. Supported 100% by your Caterpillar dealer with warranty on parts and labor. Extended warranty available in some areas. The generator set was designed and manufactured in an ISO 9001 compliant facility. Generator set and components meet or exceed the following specifications: AS1359, AS2789, ABGSM TM3, BS4999, DIN6271, DIN6280, EGSA101P, JEM1359, IEC 34/1, ISO3046/1, ISO8528, NEMA MG1-22.



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Single bearing, wye connected, static regulated, brushless permanent magnet excited generator designed to match the performance and output characteristics of the Caterpillar diesel engine that drives it.



RELIABLE, FUEL EFFICIENT DIESEL

The compact, four-stroke-cycle diesel engine combines durability with minimum weight while providing dependability and economy. The fuel system operates on a variety of fuels.

CATERPILLAR® COOLING SYSTEM

Sized compatible to rating with energy efficient fan and core.

CATERPILLAR® SWITCHGEAR

Single unit or optional paralleling components. Circuit breakers, bus bars, and connection panel ready to connect.

EXCLUSIVE CATERPILLAR® VOLTAGE REGULATOR

Three-phase sensing and adjustable Volts-per-Hertz regulation give precise control, excellent block loading, and constant voltage in the normal operating range.

SOUND ATTENUATED ISO CONTAINER

For ease of transportation and protection. Meets 74 dBA at 50 ft or below per SAE J1074 measurement procedure.

FACTORY INSTALLED STANDARD & OPTIONAL EQUIPMENT

System	Standard	Optional
Engine	Air cleaner, with service indicator Batteries Filters; fuel, LH with service indicators; lubricating oil Insulated muffler Jacket water heater Pump, fuel priming — LH Radiator Service meter Standard eight-gauge instrument panel Sump pump Governor Electronic ADEM II	
Generator	SR4B brushless, 480 volt, PM excited three-phase with digital voltage regulator, space heater	
Containerized Module	Air intake louvers Bus bar access door Fuel tank — 4730 L (1250 Gal) UL listed Fuel/water separator 110 VAC/24 VDC lighting Sound attenuated (74 dBA @ 50 ft) ISO hi cube container Lockable doors Stainless steel hardware and hinges Vertical radiator and exhaust discharge plenum	
Cooling	Standard cooling provides 110° ambient at prime rating	
Switchgear	Floorstanding switchgear with EMCP II components Automatic start/stop with cooldown timer Battery charger, heavy duty 20A Protection: 32, 59 Circuit breaker, electrically operated Connection terminals, 3-phase and neutral Automatic paralleling Auxiliary power connections for jacket water heater, battery charger, space heaters	Meters: power factor, KW, PF, W/WHM, synchroscope, KVAR Protection: 27, 40, 810, 81U CIM, CCM, remote annunciation Plug and peak shave utility conversion panel

SPECIFICATIONS

CAT SR4B GENERATOR

Type	Static regulated brushless PM excited
Construction	Single bearing, close coupled
Three-phase	Wye connected — 6 lead
Insulation	Class H — 2 extra dips and bakes on random wound units
Enclosure	Drip proof
Alignment	Pilot shaft
Overspeed capability	130%
Voltage regulator	3-phase sensing with Volts-per-Hertz
Voltage regulation	Less than $\pm 0.5\%$
Voltage gain	Adjustable to compensate for engine speed droop and line loss
Wave form	Less than 5% deviation
TIF	Less than 50
THD	Less than 3%



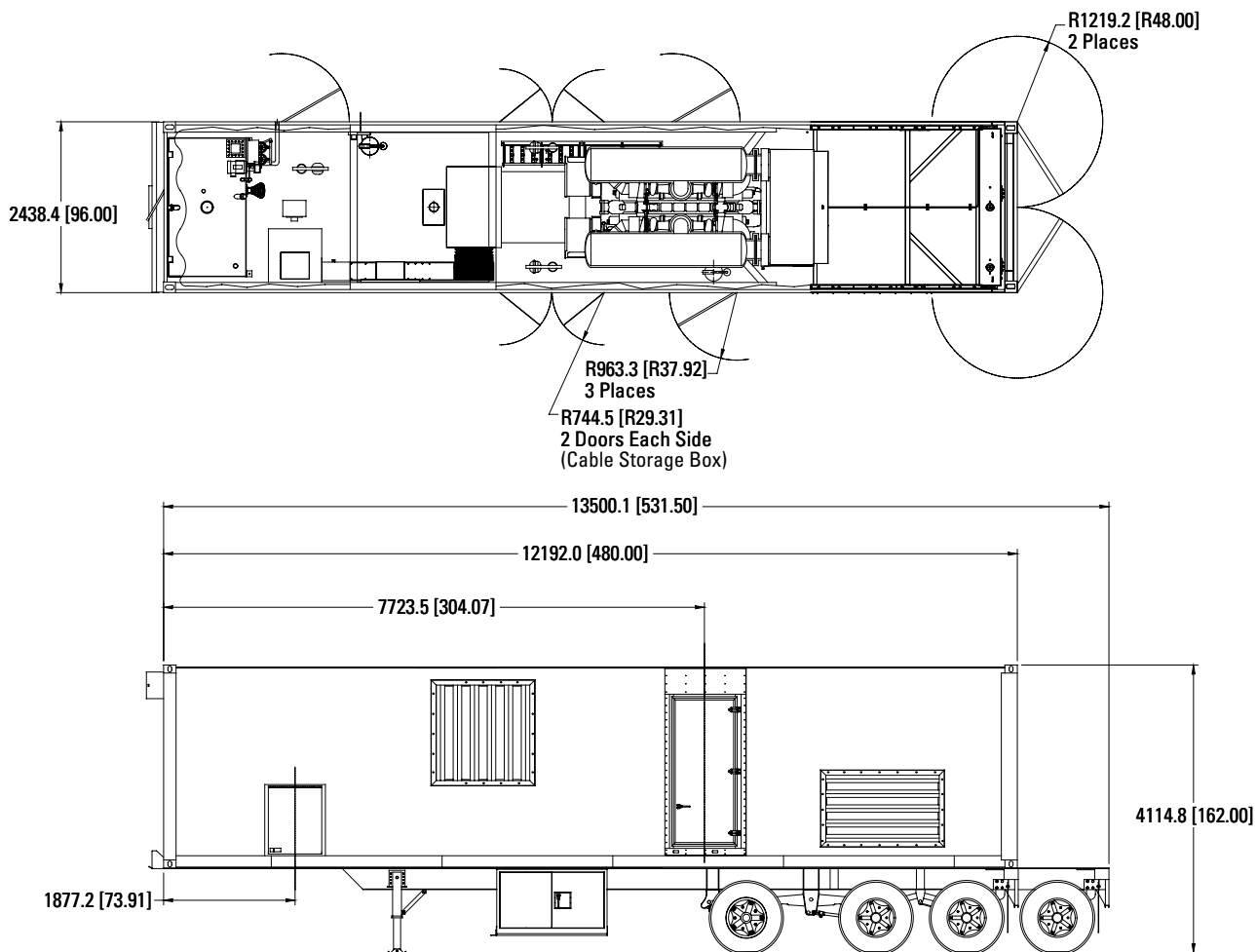
CAT® 3516B ENGINE

V-16, 4-stroke-cycle diesel	
Bore — mm (in)	170 (6.7)
Stroke — mm (in)	190 (7.5)
Displacement — L (cu in)	69.0 (4210)
Aspiration	Turbocharged-Aftercooled
Heatrte (LHV)	8701 Btu/kWh

TECHNICAL DATA

Power Rating 60 Hz		Standby 2000	Prime 1825
ekW			
Engine and Container Information			
Engine Model		3516B	
Container size		12 (40)	
Container dimensions		see below	
Fuel Capacity Hours of Operation at 100% Load Factor			
4732 L (1250 Gal) Standard 12 m (40 ft)		9	10
hours			
Approximate Weight (Dry) — Container with Generator Set and Switchgear			
Including Container		29 091 (64,000)	
With Undercarriage		33 636 (74,000)	
kg (lb)			
kg (lb)			

Container Dimensions



The power module must have support under the center when set on the ground.

Dimensions		
Length	13500.1 mm	531.50 in
Width	2438.4 mm	96.00 in
Height	4114.8 mm	162.00 in

STANDARD CONTROLS

12 m (40 ft) CONTAINERS

480V/60 Hz

Floorstanding switchgear includes the following functions and features:

ELECTRONIC MODULAR CONTROL PANEL (EMCP II) COMPONENTS

GENERATOR SET CONTROL (GSC)

Monitoring

Sequentially rotating, backlit LCD display of engine hours, engine rpm, DC battery voltage, oil pressure, and water temperature. Includes pushbutton to hold display on any single parameter.

Protection

Shutdowns:

Overspeed, overcrank, high water temperature, low oil pressure, and emergency stop. With LED indicator for each condition.

Alarms:

Low coolant level

AC Metering

Three-phase volts (L-L), amperes and frequency with phase select pushbutton, on backlit LCD. Metering accuracy is 0.5%.

Control

Automatic starting with field adjustable cycle crank, failure to start (overcrank), and cooldown timer.

Programming and Diagnostics

Includes field programmable set-points for engine control and monitoring variables and self diagnosis of EMCP II system component and wiring failures.

ALARM MODULE

Flashing LED warnings for: low coolant temperature, high coolant temperature (pre-alarm), low oil pressure (pre-alarm), engine control switch not in automatic, and low DC voltage. Includes alarm horn and acknowledge pushbutton.

ENGINE CONTROL SWITCH

Snap action rotary switch, four-position — off/reset, automatic, manual, stop/cooldown. Off/reset for engine shutdown and resetting faults, automatic for remote starting by customer contact closure, manual for local starting and manual paralleling, stop/cooldown for manual operation cooldown.

ALARM ACKNOWLEDGE/LAMP TEST SWITCH

Three-position, spring return to center switch for alarm acknowledge and lamp test of all discrete indicating lamps. Lamp test shall also sound the alarm horn.

ANNUNCIATION CIRCUITS

Upon receipt of an alarm or shutdown condition, the horn shall sound and an LED shall flash. Upon acknowledgement from alarm acknowledge/lamp test switch, the horn shall be silenced and the lamp steadied. LED shall be extinguished when ECS is placed in the off/reset position if the alarm condition has been corrected. Circuits are recurring such that the LED shall flash and the horn sound, should another fault occur even prior to correction of the initial fault.

STANDARD CONTROLS (Continued)

EMERGENCY STOP PUSHBUTTON

Mushroom head, twist to reset, causes engine shutdown and tripping of the generator circuit breaker. Prevents engine starting when depressed.

MANUAL PARALLELING

Controls consisting of reverse power relay, synchronizing lights, and switch. Reverse power condition causes tripping of the generator circuit breaker, immediate engine shutdown, flashing of indicating lamp, and sounding of alarm horn.

CIRCUIT BREAKER

Fixed mounted, three-pole, manually operated, molded case circuit breaker with solid state trip unit for overload (time overcurrent) and fault (instantaneous) protection. Includes DC shunt trip coil activated on any generator set monitored fault. Circuit breaker is sized for full load capacity of the generator set at 0.8 power factor.

LOAD SHARE GOVERNOR

Electronic load sharing governor with speed adjust potentiometer, idle/rated switch, and isochronous/droop switch.

VOLTAGE REGULATOR

Standard Caterpillar generator-mounted digital voltage regulator with voltage adjust rheostat mounted in the floorstanding switchgear.

CURRENT TRANSFORMERS (3)

Five-ampere secondary with shorting terminal strips

POTENTIAL TRANSFORMERS (3)

120 VAC secondary with primary and secondary fuse protection, two connected to the generator side of the circuit breaker, one connected to the load side of the circuit breaker.

BUS BARS

Three-phase plus fully rated neutral bus bars with NEMA standard hole pattern for connection of customer load cables and generator cables. Bus bars are sized for full load capacity of the generator set at 0.8 power factor. Also includes ground bus, connected to the generator frame ground and container frame with holes for connection of field ground cable. Bus bars are accessible from outside of the power module via hinged, lockable cable access door.

ACCESSORY POWER

3500 Power Modules

Three 230 VAC (50 Hz units) or 120 VAC (60 Hz units) shore power connections for jacket water heaters, generator space heater, and battery charger.

BATTERY CHARGER

24 VDC/20A battery charger with float/ equalize modes and charging ammeter.

R E N T A L

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Materials and specifications are subject to change without notice.
The International System of Units (SI) is used in this publication.