

APS1000 PRELIMINARY SPECIFICATION

RENTAL POWER MODULE

Frequency	Voltage	Standby kW (kVA)	Prime kW (kVA)
60 Hz	480 V	1000 (1250)	910 (1137)
60 Hz	240 V	1000 (1250)	910 (1137)
60 Hz	208 V	854 (1067)	768 (960)
50 Hz	400 V	880 (1100)	768 (960)

FEATURES:

SINGLE-SOURCE SUPPLIER:

- *Altorfer Power Systems* designed and tested

CAT C32 ATAAC ENGINE:

- EPA Tier 2 Flex
- Reliable, rugged, durable design
- Four-stroke diesel engine
- Electronic ADEM™ III engine control
- Heavy duty air cleaner with service indicator
- 65 Amp charging alternator
- Fuel Filters – Duplex primary with integral water separator and change-over valve, engine mounted secondary filter
- Fuel cooler with priming pump
- Lubricating oil system including pump, cooler, filter, filtered crankcase breather system and exterior drains with internal shut-off valve
- 6 KW heavy duty Jacket Water Heater
- 24V electric starting motors

CAT SR4B GENERATOR:

- Three-phase, brushless, 0.6667 pitch, permanent magnet excited, 12-lead design, 4-pole, dual bearing close coupled
- Drip proof IP22 enclosure
- Pilot shaft alignment
- 125% over speed of rated capability
- 240V 600W Anti-condensation heaters
- Designed to match performance and output characteristics of CAT engines
- Single point access to accessory connections
- UL 1446 Recognized Class H insulation
- Class F temperature rating

CAT EMCP 4.4 CONTROL PANEL:

- Simple user friendly interface and navigation
- Integrated, automatic genset paralleling facilitates multi-unit systems meeting a wide range of customer applications
- Integrated Control System and Communications Gateway
- Genset mounted
- Auto start/stop with cool down timer

- Generator protection features: 32, 46, 50/51, 27/59, 81 O/U, and phase sequence
- Optional Basler utility multi-function relay with protection features: 25, 27/59, 32, 47, 40Z, 51, 51N, 81O, 81U
- Reverse compatible for interface with legacy power modules (units compatible with Woodward 3 volt DC load share signal and/or lead unit select control logic)
- 3000A electrically operated generator circuit breaker
- Multi mode operation – island, multi-unit island up to eight units, and utility parallel (individual unit base load)
- Manual and automatic paralleling capability, with load sharing (multi-unit only)
- Metering display: voltage, current, frequency, power factor, kW, WHM, kVAR, and synchroscope
- UL508 recognized
- Fuel level monitoring and control
- RJ45 Ethernet communications port (can be configured for MGDL paralleling functions)

CAT DIGITAL VOLTAGE REGULATOR (CDVR):

- Three-phase sensing
- Adjustable volts-per-hertz regulation
- Provides precise control, excellent block loading, and constant voltage in the normal operating range
- VAR/PF control
- Less than $\pm 1/2\%$ voltage gain
- Adjustable to compensate for engine speed droop and line loss

CONTAINERIZED MODULE:

- 30' ISO high cube container
- , sound pressure amplitude based on a 10 position average around module
- 2-axle ISO container chassis with pneumatic brakes and air-ride suspension
- 3 pad-lockable personnel doors with interior release

- Side bus bar access door, external access load connections with electric safety deadbolt
- 100 amp 240 volt shore power connection via distribution block for jacket water heater, battery charger, generator condensate heaters and Fuel transfer system
- (3) DC lights with 0-60 minute timer, (1) 120v service receptacle from generator power, (2) external emergency stop push buttons
- 1250 gal fuel tank, UL listed, double wall. ULC + CGSB43-146 certification (UN31A)
- Spill containment for fuel, oil and coolant
- Fuel transfer system and controls with automatic switchover from shore to generator power
- Oversized maintenance free batteries (?????) with 20 Amp battery charger
- Hospital grade, internally insulated exhaust silencer with discharge into vertical radiator discharge diverter
- Vibration isolation dampers
- () sound attenuated intake louvers
- Radiator service access
- Pad-lockable ladder storage boxes (2 ladders and handrails)
- Stabilizer jacks with internal storage
- External drains for spill containment, oil and coolant

- (2) 10lb fire extinguishers
- APS1000 brand decals and painted power module white

COOLING SYSTEM:

- Standard cooling provides target °F ambient capability at standby
- Vertical air discharge from the container
- Coolant drain with internal and external valves
- Coolant sight gauge with level switch and shutdown alarm
- 50/50 Ethylene Extended Life Glycol

CSA & CSC approval pending
In the spirit of innovation, specifications and features are subject to change without notice. (8-14)

TECHNICAL DATA:

Performance Specification	Units	Prime (DM????)	Standby (DM????)
Power Rating	kW (kVA)	910 (1137)	1000 (1250)
Oil pan capacity	Gal	??	??
Fuel Consumption (est.)			
100% load	Gal	?	?
75% load	Gal		
50% load	Gal		
Fuel tank capacity	Gal		
Run time @ 75% rating	Hours		
Radiator coolant capacity	Gal	?	?
Noise Rating @ 50 feet	dB(A)	??	??
Estimated dimensions w/o chassis	in	360L x 96W x 114H ?? lbs w/ oil/coolant	360L x 96W x 114H ?? lbs w/ oil/coolant
Estimated dimensions w/ chassis	in	360L x 96W x 168H ?? lbs w/ oil/coolant	360L x 96W x 168H ?? lbs w/ oil/coolant

Modes of Operation

1. Single Unit Stand Alone operation

- a. **Manual Operation:** unit is started via manual start push button on EMCP controller face. Once the unit is at proper frequency and voltage the operator closes the main breaker via the circuit breaker control switch on the control panel face.
- b. **Automatic Operation:** The Power Module (PM) Individual Start terminals are connected to the customer run request volt free contact. The PM is placed into automatic mode via the Auto pushbutton on the EMCP controller face. Once the customer run request becomes active the PM starts and the main breaker closes automatically. Once the customer run request becomes inactive the main breaker automatically opens and the PM enters the programmed cool down period and stops. The PM is available once again for customer run request.

2. Island Mode Paralleling and Load Sharing

- a. **Manual Parallel Operation:** Units are connected via paralleling interconnect cable for like units or with customer provided wiring to the KW load share terminals on the customer connection terminal strip for "legacy" mode compatibility. Units are started individually via manual start pushbutton on the EMCP controller face, and the synch mode switch is then placed in the manual position. The operator then closes the main breaker via the breaker control switch on the control panel face. Each successive unit is added to the bus in the same manner. The main breaker opens if the operator places the breaker control switch in the open position or the stop pushbutton is pressed on the EMCP controller.
- b. **Automatic Parallel Operation - Like Units:** Units are connected via paralleling interconnect cable. All units will have the lead unit select jumper installed. One or more units Group Start terminals on the customer connection terminal strip can be connected one or more customer run request volt free contact (s). All units are placed in automatic via the auto mode pushbutton on the EMCP controller face. When the customer run request becomes active all units will start and the first unit to reach rated frequency and voltage will close the main breaker to the dead bus. All remaining units will synchronize and the main breakers will close. KW and kVAR sharing will commence between

all connected units. Once the customer run request becomes inactive then the main breakers will open and all units will enter cool down mode.

- c. **Automatic Parallel Operation - Legacy Units:** Units are connected via paralleling interconnect cable with legacy harness adaptors (automatically selects legacy mode in control panel) or customer provided wiring to the Load Share, Group Start and the First Up Logic terminals on the customer connection terminal strip for legacy compatibility (Operator must place controls in legacy mode via internal control panel switch). Only the designated first unit will have the lead unit select jumper installed. One or more units Group Start terminals on the customer connection terminal strip can be connected to the customer run request volt free contact. All units are placed in automatic via the auto mode pushbutton on the EMCP controller face. When the customer run request becomes active all units will start and the designated primary unit will attempt to close the main breaker to the dead bus. If the 1st unit fails to close then the next successive unit will attempt to close its main breaker, etc. All other units will then synchronize to the bus. KW sharing will commence with regulator voltage droop. Once the customer run request becomes inactive the main breakers will open and all units will enter cool down mode.

3. Individual unit-to-utility paralleling for base load control.

Each unit is connected to utility via customer provided isolation device. Paralleling interconnects or load sharing lines are not connected and the lead unit select jumper is not installed. The utility isolation device "a" contact is wired to PM utility breaker status terminals. The PM Individual Start terminals are connected to the customer run request volt free contact. The PM is placed into automatic mode via the Auto pushbutton on the EMCP controller face. Once the customer run request becomes active the PM starts, and the EMCP and UMR perform synch check to permit the main breaker to close automatically. The PM then ramps to programmed base load setting. A utility transfer / trip input is available for a customer provided volt free contact, utility failure signal, to remove the PM from base load operation. Once the customer run request becomes inactive the PM soft unloads to the programmed setting, the main breaker opens and the PM enters cool down mode.