



POWER SYSTEMS

20 Platinum Ct, Medford NY 11763 Phone: (631) 654-4454 Fax: (631) 654-4480

BILL OF MATERIAL

Features and Accessories for This Unit Includes:

1) Caterpillar C9 (C9PGABR)

300KW Standby Rating
277/480V, 3 Phase, 60 Hz
Level 1 Sound Attenuated Aluminum Enclosure w/ Cold Weather Bundle
660 Gallon Base Fuel Tank
UL2200 listed
NFPA110 Compliant
IBC Seismic Cert of Compliance

ENGINE PACKAGE DESCRIPTION

Diesel Fueled
8.8L, Turbocharged
1,800 RPM Operation
ADEM-A4 electronic engine control
Tier 3 US EPA Approved Emissions Certified
EPA certified for stationary use only during defined emergency conditions
Cartridge-Type Air Cleaner

AIR INLET SYSTEM

- Aftercooler core.
- Turbocharger.

VOLTAGE REGULATOR

The D350 Voltage Regulator is designed to provide robust, precise closed-loop control of the generator voltage, optimized transient performance and industry leading feature specification.

STARTING & CHARGING SYSTEM

Electrical system, 24 VDC
Electric Starter
24V, 45 amp charging alternator
BAT2454 STANDARD WET BATTERY

Standard wet batteries come pre-installed with the Genset.
Technical: 1000 CCA batteries, Wet, 90 amp/hr.

BTC1028 BATTERY CHARGER 10 AMP

This 10 Amp battery charger offers accurate, automatic charging of lead-acid and nickel cadmium batteries. The output voltage automatically adjusts to changing input, load, battery and ambient conditions. This prevents battery over-charging and consequent loss of battery electrolyte.



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GCCP 1.2 CONTROL PANEL (Left Hand Mounted)

- GCCP1.2 Controller Features:
 - 4-line back-lit LCD text display
 - Multiple display languages
 - Five-key menu navigation
 - LCD alarm indication
 - Customizable power-up text and images
 - Data logging facility
 - Internal PLC editor
 - Protections disable feature
 - Fully configurable via PC using USB & RS485 communication
 - Front panel configuration with PIN protection
 - Power save mode
 - 3-phase generator sensing and protection
 - Generator current and power monitoring (kW, kvar, kVA, pf)
 - kW and kvar overload and reverse power alarms
 - Over current protection
 - Unbalanced load protection
 - Breaker control via fascia buttons
 - Fuel and start outputs configurable when using CAN
 - 6 configurable DC outputs
 - Support for 0 V to 10 V & 4 mA to 20 mA sensors
 - 8 configurable digital inputs
 - 4 configurable analogue/digital inputs
 - CAN, MPU and alternator frequency speed sensing in one variant
 - Real time clock
 - Manual and automatic fuel pump control
 - Engine pre-heat and post-heat functions
 - Engine run-time scheduler
 - Engine idle control for starting & stopping
 - Fuel usage monitor and low fuel level alarms
 - MODBUS RTU support with configurable MODBUS pages.
 - 3 configurable maintenance alarms

CONTROL PANEL OPTIONS PROVIDED:

- EMCLAM1 LOCAL ANNUNCIATOR NFPA99-110/CSA282
- EMCSD20 INPUT EXPANSION MODULE
- EXPMD01 OUTPUT EXPANSION MODULE
- ANNRO10- REMOTE ANNUNCIATOR
 - 16 point annunciator, ***shipped loose, installation by others***
 - Flush Mounting
 - RS485 communication with the Control panel
 - DC power sourced from the Control panel



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- EMGSTP1 REMOTE E-STOP BUTTON- *shipped loose, installation by others*
- PL444 PRODUCT LINK 4G LTE TELEMATICS
 - Cat PL444 is a factory installed 4G LTE, Telematics hardware used with Cat Remote Asset Monitoring (RAM) to remotely monitor several Genset parameters like fault codes, Alerts and notifications, remote start/stop, geofencing and more.
- EMCCAS3 GEN RUNNING & FAULT RELAY

GENERATOR

- Brushless, self-excited 2/3 pitch, random wound.
 - IP23 Protection.
 - Insulation Class H and temperature rise
 - Power center, IP22 bottom cable entry
 - Segregated low voltage wiring panel
 - OGNSEU4 LC6114B SE ALT U4
 - Gen. Frame LC6114B- Self Excited (SE)
 - LC Generator frame
 - Gen. Arrangement: 418-3863
- These compact & rigid alternators provide superior thermal life with H class insulation, high efficiency and improved motor starting capacity.
Temp rise of 105 Deg C (221 DegF)

ALTERNATOR OPTIONS PROVIDED:

PMEXCI3 PERMANENT MAGNET GENERATOR

Permanent magnet generator provides improved source of excitation to alternators.

SHK0012 SPACE HEATER 12

Space heaters protect generator windings from abnormally high humidity conditions when the generator is idle. The heater maintains the air around the windings at a suitable temperature to prevent winding corrosion due to condensation.

Voltage: 120V/230V, Power: 150V/250W

Requires customer supplied auxiliary supply voltage 208-240 VAC.

CIRCUIT BREAKERS

Qty (3) Output Circuit Breaker- Factory Installed in Right Hand Mounted- Power Center

100% Rated, 3-pole

NEMA 1 steel enclosure

Electrical stub-up area below circuit breaker

Solid Neutral Bar

CBK0708 1200A LSI MULT MANUAL 1ST CB. T7S-Frame

1200 Ampere

Auxiliary Contacts

Lug size (4) 2/0 – 500 kcmil per phase



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CBK0717 250A LSI MULTI MANUAL 2ND CB. J-Frame
250 Ampere
Auxiliary Contacts
Lug size (2) 3/0 – 250 kcmil per phase

CBK0732 100A LSI MULT MAN CB3 AUX BOX. H-Frame
100 Ampere
Auxiliary Contacts
Lug size (1) 8-3/0 AWG per phase

LUBE SYSTEM

- Oil cooler.
- Lubricating oil.
- Oil filter and dipstick.
- Oil drain lines with valve; piped to edge of base.
- Fumes disposal; piped to front of radiator.

PROTECTION SYSTEM

Safety shutoffs for:

- High water temperature.
- Overspeed.
- Low oil pressure.

COOLING SYSTEM

- Coolant drain line with valve; terminated on edge of base.
- Fan and belt guards.
- Coolant Level Sensor
- Thermostats and housing, full open temperature 92 deg C (198 deg F).
- Coolant level sight gauge.
- Jacket water pump, gear driven, centrifugal.
- Caterpillar Extended Life Coolant.

ENCLOSURE

ENCAL07 ALUMINUM SA L1 -WHITE COLD WEATHER

Sound Attenuated white enclosure constructed with 12-gauge aluminium (5052 grade).
CAT White Paint Finish

ELACDC1 ENCLOSURE LIGHTS

Installed LED lighting provide adequate illumination inside enclosures.



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COLDWB1 COLD WEATHER BUNDLE

The Factory installed Cold Weather Package enables the generator set to start easier during cold temperatures, increasing reliability under harsh, wintery conditions. It includes Door inlet and air inlet actuators for damper control, pump style jacket water heater, space heaters, Battery charger and a load center.

WHHH03 JACKET WATER HTR PUMP STYLE 03

The UL listed Single Phase 2500 Watts Pump style jacket water heater is a complete coolant preheater. It features an integrated pump that combines the benefits of forced circulation with a compact design that can mount to a variety of small engine applications.

Forced circulation of the coolant delivers uniform heating throughout the entire engine, extends element life and offers a significant reduction in electrical consumption. Installation is provided with shut-off valves

CASH001 ENCLOSURE SPACE HEATER

Space Heaters are designed to maintain the temperature of an enclosure. Used for elimination of water vapor found inside the enclosures and also provide frost protection by keeping the internal temperature of electrical enclosures above freezing temperature. It prevents condensation through convection.

Voltage:208/240V Power: 3.7/5.0kW.

SHK0012 SPACE HEATER 12

Space heaters protect generator windings from abnormally high humidity conditions when the generator is idle. The heater maintains the air around the windings at a suitable temperature to prevent winding corrosion due to condensation.

Voltage: 120V/230V, Power: 150V/250W

Requires customer supplied auxiliary supply voltage 208-240 VAC.

LDC125A 125A LOAD CENTER

EXHAUST SYSTEM

- Exhaust manifold; dry.
- MUFGA42 SA LEVEL 2 MUFFLER

FUEL SYSTEM

- Primary fuel filter w/integral water separator & secondary filter, spin on.
- Fuel cooler.
- Fuel priming pump.
- Flexible fuel lines.
- Engine fuel transfer pump



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FUEL SYSTEM OPTIONS PROVIDED:

FTDW008 660 GALLONS SUB TANK BASE:

The sub-base fuel tank mounts below the generator set wide base.

Robust & durable, the sub base tanks, provide features like tank leakage detection, Fuel level indicators and many more

FSCO5G 5 GALLON SPILL CONTAINMENT

The 5 gallon spill containment box is designed for containment of small spills during filling of an above ground storage tank

GENERATOR SET

Complete system designed and built at ISO 9001:2000 certified facilities

Factory tested to design specifications at full load conditions and all protective devices and control functions simulated and checked.

TESTING

Factory load test at 0.8PF

Test Report provided

EQUIPMENT FINISH

All electroplated hardware or stainless steel

Anticorrosive paint protection

High gloss polyurethane paint for durability and scuff resistance

GENERAL

- Paint, Caterpillar Yellow.

- Vibration damper.

- Parts book.

- Operation and maintenance manual pack and OMM Storage Compartment

Wiring diagrams included

WARRANTY

5 Year Caterpillar ESC Platinum Extended Warranty on all Cat supplied equipment.

NAMEPLATE

A. KVA/KW rating

B. Output voltage

C. Output amperes

D. Specifies the power factor

E. Specifies the number of phases being provided

F. Manufacturer

G. Serial number



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2) Caterpillar ATS

Qty 1 260A,4P, Open transition, NEMA 1, CS, EATS-LL

Furnished with:

Automatic Transfer Switch, CSA0026PS1S11CRXXX

CS OT 260A 3PH SWT NEU N1

Business and Industrial Critical Automatic Transfer Switch

260 A, Open Transition, 4 Pole

440-480V 3 Ph System Voltage

Switched Neutral

Nema 1 Enclosure

Mechanical lugs

(3) #8-1/0 AWG Ground Bar

M91 Meter

Modbus RTU Communications

Sources On Bottom

UL 1008 listed up To 480VAC at 50/60Hz

Seismic certified To IEEE-693-2005 at HIGH level With 2.5 amplification factor

Seismic certified To IBC-2015 at $I_p=1.5$ For z/h less than Or equal To 1

Microprocessor activated Maintained test switch

Programmable exerciser daily, 7-14-28-365 days user- selectable, with or without load

Event log of last 250 events

LED for Source 1 & Source -2 - Position indication

LED for Source 1 and Source 2 - Source availability indication

Engine start timer -adjustable up to 60sec

Phase rotation sensing of Source 1 & Source 2

Under/Over voltage sensing 3-phase Source 1 & Source 2

Adjustable over/under frequency sensor-Source 2-and Source 1

Frequency Indication - on the controller

In Phase Monitor between Source 1 and Source 2 to allow transfer-with enable/disable

Microprocessor activated Commit/no commit on transferring to Source 2-with enable/disable

Adjustable time delay on transfer to Source 2

Adjustable time delay on retransfer to Source 1

Engine stop/cool adjustable cool down timer

Voltage imbalance between phases-applies to 3-phase only

Bypass transfer timer function-soft switch in controller

Package C-Controls

2 NO and 2 NC S1 position aux contacts

2 NO and 2 NC S2 position aux contacts

6 digital inputs, preprogrammed: remote test on load/peak shave input, remote inhibit transfer to non-priority input, remote manual retransfer input, load shed ATS input, remote inhibit ATS input, remote bypass time delays input

4 digital outputs, preprogrammed: S1 available output, S2 available output, elevator pre-transfer output, motor pre-transfer output

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1 digital output, reserved: if 'Transfer Alarm' option not included these are free for user
5 Year ESC Extended Warranty

Qty 1 1000A, 4P, Open transition, NEMA 1, CS, SATS-LL

Furnished with:

Automatic Transfer Switch, CSAO100PS1S41CRXXX

CS OT 1000A 3PH SWT NEU N1

Business and Industrial Critical Automatic Transfer Switch

1000 A, Open Transition, 4 Pole

440-480V 3 Ph System Voltage

Switched Neutral

Nema 1 Enclosure

Mechanical lugs

(12) #6-250 MCM Ground Bar

M91 Meter

Modbus RTU Communications

Sources On Bottom

UL 1008 listed up To 480VAC at 50/60Hz

Seismic certified To IEEE-693-2005 at HIGH level With 2.5 amplification factor

Seismic certified To IBC-2015 at Ip=1.5 For z/h less than Or equal To 1

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4 digital outputs, preprogrammed: S1 available output, S2 available output, elevator pre-transfer output, motor pre-transfer output

1 digital output, reserved: if 'Transfer Alarm' option not included these are free for user

5 Year ESC Extended Warranty

3) H. O. Penn

HO Penn will provide the following:

- Project management & support services
- Factory test reports from Caterpillar
- **LTL Common Carrier freight to jobsite/rigger * Offloading, rigging, and setting to be provided by others.**
- **Factory Startup and Testing Services**
 - To be scheduled after installation checklist is 100% complete (see section 3).
 - Startup services including one business day of startup of Genset and testing
 - Startup and testing services to be provided during normal business hours, Monday-Friday
- **On-Site Two (2) Hour load bank test at 1.0 Power Factor**
 - HO Penn to provide 300KW of temporary load banks
 - **Loading/Unloading/staging/connection/breakdown and safe storage by others.**
 - **Load bank cable routing and handling by others.**
 - Test includes one full day during normal business hours, with the following load steps:
 - 100% for 4 continuous hours
- (3) sets of Operation and Maintenance Manuals
- Warranty Registration with Caterpillar
- Set of spare parts, including:
 - Control Fuses
 - Oil Filter elements
 - Fuel filter elements
 - Air filter elements
- Hands-on training session on site
- First year maintenance, including (3) Minor and (3) Major Service Visits during regular business hours.

If it is anticipated that the generator set is not going to be placed into operation for greater than six months, precautions should be taken to protect your engine from damage. Please contact H. O. Penn for storage procedures.



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Exceptions and clarifications:

- **Offloading, rigging, and setting to be provided by others.** 26B
- Verification of local codes by others. Technical information & assistance will be provided.
- Infrared scanning by others (if applicable).
- **Installation of all ship-loose items by others** 26B
- **Anchoring is by others** 26B
- **Concrete pad is by others**
- Any required emissions testing is by others
- NETA /thermographic testing by others
- Protective relay testing, setting by others 26B
- **Circuit breaker testing, setting, adjusting, or coordination study by others.** 26B
- Vibration Analysis/adjustments by others
- **Any required onsite sound testing by others**
- **H. O. Penn does not provide fuel for startup, testing, or otherwise.** 26B

Generator spec:

Based on specifications 263213.13 dated July 21, 2023 and one-line diagram E4.01.

1.07,A: Indicator lamps are non-replaceable LED. Special tools are not required for General Maintenance.

2.01A, 2.08,L: Alternator rated 105C rise, SKVA per TMI Data sheets in this submittal.

2.09,J: Interior lighting is DC only

2.10,A: Factory installs internal vibration isolators to comply with IBC Certification.

3.05,B: NETA and insulation tests are by others. Engine is EPA certified, any emissions test is by others. Noise level test is by others. Infrared scanning by others.

ATS Spec:

Based on specifications received 11/6/2023 (Section 26 36 00, pages 1-10), and one-line diagram E4.01.

General exception is taken to any other specifications and drawings not available at time of quotation.

Equipment supplied will be limited to that described in this submittal.

1.02 Offered Switches are rated for 480Vac maximum.

1.03 - 1.05 Delivery, Storage and Handling are to be performed by others.

Installation and coordination to be performed by others.

1.06 Beyond our scope.

2.01.K Standard Manufacturers wiring to be provided.

2.02.G Controller stays connected regardless of switch operation. Automatic features de-activate when Manual mode is engaged.

2.02.J.7.a&b Nameplates are not engraved. Labeling is printed into the faceplate of the controller as part of the mimic bus display.

2.03.K.3 We have not offered Delayed transition as we do not see any large motor loads.

2.03 We are offering Manufacturers standard meter. Offered Switch is not CSA certified.

2.04.B Standard Testing Procedure to be followed.

PART 3 -EXECUTION - To be performed by others.



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*Please keep in mind that HO Penn cannot guarantee delivery times. Due to the nature of production and trucking, there may be delays from shortage of labor, materials, mechanical breakdowns, traffic, weather, fires, floods, accidents, riots, government interference, strikes, transportation etc. "Permitted/Oversize loads" are under the mercy of each state and county with which they are passing through, as they are subject to being stopped and waiting for permission to move, from the local jurisdiction. Once the unit is on the road the driver will be in touch with us and periodic updates will be provided. Just keep in mind that these deliveries can get delayed for any of the aforementioned reasons. We understand that there is a tight schedule to get this on site and we will do our best to keep to a tight and accurate schedule for you. We strongly recommend that you ship to a rigger's yard. We will not accept any back charges for anything associated with production, shipping & delivery delays.