KIRTLAND AIR FORCE BASE

20.11.41 NMAC Construction Permit Application

Emergency Generator

Project: SDA GEP - NEW MEXICO

AQUIS ID: 19194

377 MSG/CE Environmental

Kirtland AFB, New Mexico

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1. GENERAL INFORMATION

1.1 Executive Summary

This application is being submitted as a pursuant of the Construction Permit for the SDA GEP Program – New Mexico project located at Kirtland Air Force Base. This facility is located to the north of Tijeras Arroyo Golf Course and is accessed via Pennsylvania Avenue. A building number has not been assigned yet.

In accordance with 20.11.41.13.E NMAC, this application submittal includes all the requirements set forth by the department including:

1. Application form
2. Owner and Operator's Name and Mailing Address
3. Application date
4. Sufficient attachments: Calculations, potential Emission rate, Nature of All Regulated Contaminants, Actual Emissions
5. Operational and Maintenance Strategy
6. Facility Map
7. Aerial Photograph of proposed location
8. Complete description of all Sources of Regulated Air Contaminants and Process Flow Diagram
9. Full description of Air Pollutant Control Equipment
10. Description of Equipment or Method used for emission measurements
11. Maximum and Normal Operating Time Schedules of the Sources
12. Other Relevant Information
13. Applicant Signature
14. Accompanied by a Registration Fee
15. Proof of Public Notice Requirements

Equipment to be authorized at this facility after issuance of the Construction Permit is detailed below:

- One diesel-fired 250kW/312.5kVA (382 HP) Cummins QSL9-G7 NR3 generator. The requested emissions are based on 100 hours per year. These emissions are included in the department's application forms.

2. DESCRIPTION OF THE FACILITY AND EMISSIONS INFORMATION

The following section summarizes the source of emissions, process description, methodology,

and emission factors used to estimate air pollutant emissions for the facility.

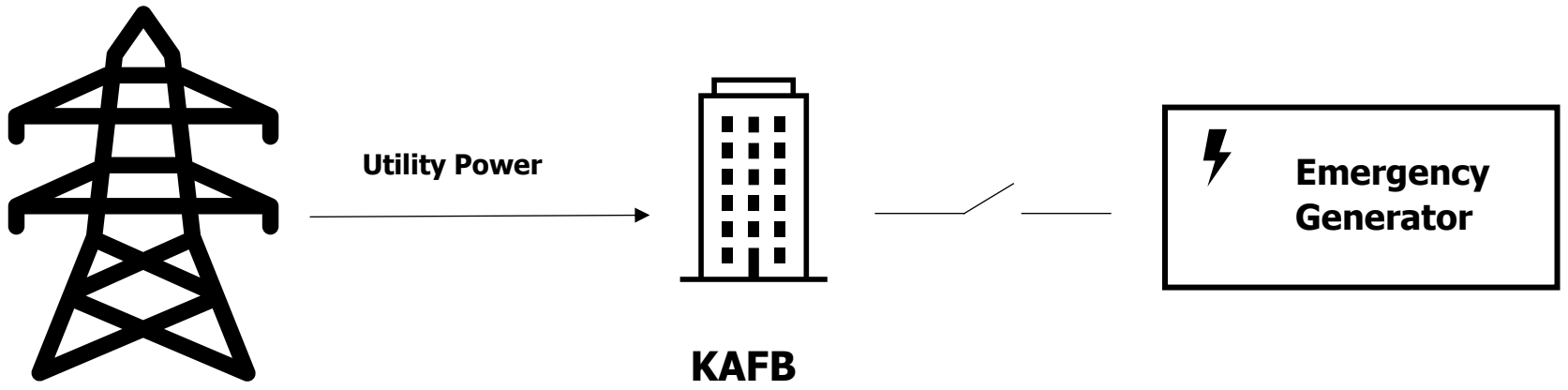
2.1 Description of the Facility

The backup generator's main function is to provide backup power to support operations in the event that primary power is interrupted. There are comparatively minor actual emissions from the infrequent and intermittent emergency backup operations inherent to operations at this facility.

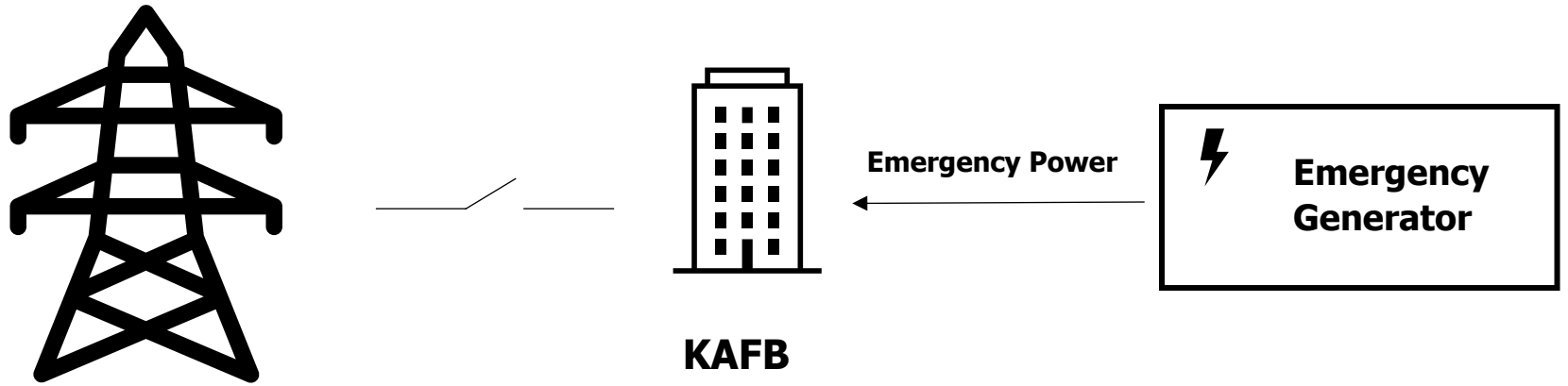
40 CFR 60 Subpart IIII is applicable to Stationary Compression Ignition Internal Combustion Engines constructed after July 11, 2005. Thus, this emergency generator will be subject to this regulation and will comply with regulation. Additionally, the unit is subject to 40 CFR 63 Subpart ZZZZ [National Emissions Standards for Hazardous Air Pollutants (NESHAP) for Stationary Reciprocating Internal Combustion Engines. The unit will comply with the requirements for RICE at existing area sources.

2.2 Process Flow Diagram

This project will utilize Kirtland AFB utility power for facility power. The generator will supply power in the event of a power outage. The simplified process flow diagram represents the normal operating and loss of utility power conditions.



Normal Operating Conditions



Loss of Utility Power

2.3 Air Pollution Emissions and Methodology

2.3.1 Emergency Diesel-Fired Generator

Emissions from the generators are a result of the combustion of diesel fuel. NOx + NMHC, CO, PM and SOx and HC combustion emissions are based on manufacturing specification. HAP emission factors are based on the values shown in AP-42 3.3.

To calculate lb/hr emissions for NOx, CO, HC, SO2 and PM, the emission factor (g/bhp-hr) was multiplied by the engine's standby rating and grams were converted to pounds.

For HAP emissions, the heat value of 137,000 Btu/gal (from AP-42 Appendix A) and the manufacturer-provided fuel usage of 19.59 gal/hr were used to calculate a maximum heat rate of 6.99 (MMBtu/hr) for the unit. This was then multiplied by the lb/MMBtu HAP emission factor from AP- 42 Table 3.3 to calculate all HAP lb/hr emissions. To calculate the uncontrolled emission rate in tons per year, the lb/hr rate was multiplied by 8760 hr/yr and converted to tons (1 ton = 2,000 lb). The controlled emission rate in ton per year, the lb/hr rate was multiplied by the assumption of 100 hours per year.

2.4 Emission Calculations:

SDA - GEP NEW MEXICO, KIRTLAND AFB

EMISSION CALCULATIONS

Engine Power	382	hp	Mfg spec
Fuel Comsumption	19.59	gal/hr	Mfg spec
Max hours	8760	hr/yr	
Requested hours	100	hr/yr	
Diesel HV	137000	Btu/gal	
Heat Input	6.99	MMBtu/hr	
Gram/lb Conversion	0.0022046	lb	

	CAPs EFs in g/bhp-hr							HAPs EFs in lb/MMBtu										
Emission Factors	**Nox**	**CO**	**NMHC**	**SO2**	**Nox+NMHC**	**PM10**	**PM2.5**	**Formaldehyde**	**Acetaldehyde**	**Acrolein**	**Benzene**	**E-Benzene**	**Toluene**	**Xylene**	**Propylene**	**1,3-Butadiene**	**Napthalene**	**Total HAPS**
	3.42	**0.77**	**0.046**	**0.115**	**3.466**	**0.04**	**0.04**	**0.00118**	**0.000767**	**0.0000925**	**0.000933**	**0**	**0.000409**	**0.000285**	**0.00258**	**0.0000391**	**0.0000848**	**HAP**
Hourly totals (lb/hr)	2.88	0.65	0.04	0.10	2.92	0.03	0.03	2.16025E-05	1.40416E-05	1.69342E-06	1.70807E-05	0	7.48766E-06	5.21756E-06	4.72327E-05	7.15813E-07	1.55245E-06	1.17E-04
Uncontrolled (tpy)	12.62	2.84	0.17	0.42	12.78	0.148	0.148	9.46191E-05	6.15024E-05	7.41718E-06	7.48133E-05	0	3.27959E-05	2.28529E-05	0.000206879	3.13526E-06	6.79975E-06	0.000511
Controlled (tpy)	0.14	0.03	0.002	0.005	0.29	0.002	0.002	1.08E-06	7.02E-07	8.47E-08	8.54E-07	0	3.74E-07	2.61E-07	2.36E-06	3.58E-08	7.76E-08	0.0000058

CAPs emissions lb/hr = EF (g/bhp-hr) * Engine Rating (hp) * (0.0020462 lb/1 g)
HAP lb/hr emisisons = EF (lb/MMBtu) * Heat Input (6.99 MMBtu/hr) * (1/382 HP)
Uncontrolled tpy emissions = (lb/hr) * (8,760 hr/yr) * (1 ton/2,000 lb)
Controlled tpy emissions = (lb/hr) * (100 hr/yr) * (1 ton/2,000 lb)

CAP Efs	g/hp-hr	g/kw-hr
Nox+NMHC	3.42	4.59
CO	0.77	1.03
PM	0.04	0.05

CAP EFs from PDF pg. 28 of 109, Exhaust Emission Data Sheet, Full Standby Mode.

2.5 BACT for Emergency Internal Combustion Engines

This project includes a 382 HP (250kW) diesel-fired emergency generator and this engine is a Tier-3 certified emergency engine. The emergency generator will be limited to 100 hours of non-emergency operation each year for maintenance and readiness testing. There is no limit on the use of the emergency engine during an actual emergency. This equipment is subject to BACT for NOX, CO, PM, PM10, PM2.5, and GHGs. A top-down BACT analysis has been performed and is summarized below. The engine is subject to 40 CFR 60 NSPS IIII and 40 CFR 63 NESHAP ZZZZ, and compliance with NSPS IIII satisfies NESHAP ZZZZ for new engines at area sources.

Step 1 – Identify All Control Technologies

The Cummins engines utilize industry-leading Tier 3 controls. The high-pressure injection system and electronic controls of the QSM ensure clean, powerful and efficient operation every time. The ECM continuously monitors data from strategically placed sensors within the engine, optimizing the fuel-to-air mixture for maximum combustion. This increases engine responsiveness, improves fuel efficiency and significantly reduces noise levels. Additionally, this Cummins engine will provide the following:

- In-cylinder solution that doesn't require complex add-ons.
- Full-Authority Electronic Controls - Provide seamless integration with other components to optimize engine operation.
- Stiffer Block and Head - For reduced noise and vibration. Fluid circuits are integrated, replacing hoses and eliminating potential leaks.
- High-Pressure Common-Rail Fuel Injection System - Allows multiple injection events for cleaner, quieter operation with consistent performance at every rpm. Also improves cold-weather starting.
- Wastegated Turbocharger - Delivers maximum power and torque.
- Mid-Stop Cylinder Liners - Reduce cavitation and improve rebuildability.
- Gear Housing Design and Front-End Support - The gear housing and accessories mount directly to the block for improved durability.
- Improved Piston Design - Symmetrical piston bowl combines with centered injectors to deliver optimal combustion.
- Heavy-Duty Lube System - Targeted piston cooling and increased lube flow to the power cylinder result in increased piston reliability and durability. Improved lube and bypass filtration system increase ring and bearing life by as much as 63%.
- Improved Crankcase Ventilation - Virtually eliminates oil carryover.
- Valve Cover and Gasket - Isolated design with perimeter bolting for better sealing and improved reliability.
- Two-Stage Dual Fuel Filtration - Provides a balanced level of particle separation to maximize fuel filter life and protect vital fuel system components.
- Auto-Tensioning Belt Drive - Self-adjusting for optimum tension, which increases fan, alternator and fan belt life.
- Heavy-Duty Roller Followers - Cam roller followers give the QSL superior durability and cam life.

The control options for NOX emissions from engines include SCR, NOX reducing catalyst, NOX adsorber, catalyzed diesel particulate filter, catalytic converter, and oxidation catalyst. A catalytic converter and oxidation catalyst are also control options for CO emissions. For PM, PM10, and PM2.5 emissions, a diesel particulate filter/trap can be added on.

Note: There are no post-combustion GHG controls currently available for this engine class

Step 2 – Eliminate Technically Infeasible Control Options

The practical feasibility in the selection of controls is more applicable than the technical feasibility, in the case of this engine. This is mainly due to the nature of the generator as emergency/standby use (not prime) and the low annual operation (100 hours).

Step 3 – Rank Remaining Control Technologies

The available control technologies are ranked according to control effectiveness in Table A below, as determined by reviewing other BACT determinations and the limits proposed by the Applicant, and a summary of recent BACT determinations is provided in Table B.

Unlike other combustion equipment (e.g., CTs and boilers), new diesel engines are required to be certified in compliance with EPA's NSPS requirements, including emission limits, upon purchase. Different types of engines have different emission requirements based on the type of engine being purchased (emergency engine, emergency fire pump engine, or non-emergency engine). Depending on the type of engine and the applicable NSPS emission limits, engine manufacturers may need to employ add-on control technologies to comply with such limits.

We considered the baseline to be the emission levels required by the NSPS standards for emergency generator engines, as applicable. Then we considered the use of available add-on controls for each pollutant – NOX, CO, and PM. In the case of the emergency generator engine, we evaluated the level of control that would be achieved by the application of the NOX and PM NSPS emission standards for non-emergency engines, which would entail the use of add-on controls. This option assumes the Applicant's purchase of a certified non-emergency engine rather than the addition of controls after purchase.

Table A - 250 kW Emergency Engine Control Technologies Ranked by Control Effectiveness

Engine Type	NMHC+NOX (g/kWh)	PM (g/kWh)	CO (g/kWh)
NSPS-Non-emergency (includes NOX and PM controls) + CO controls	0.29	0.04	0.35
NSPS-Non-emergency (includes NOX and PM controls)	0.29	0.04	0.77
NSPS-Emergency + CO Controls	12.78	0.148	0.35
NSPS-Emergency Engine	12.78	0.148	2.84

Table B – Tier-certified engines vs. add-on technologies

Feature	Tier-Certified Engines	Add-On Technologies (SCR, DPF, etc.)
Definition	Engines specifically designed and certified to meet emission standards (e.g., EPA Tier 4) at the point of manufacture.	Technologies added to existing engines to reduce emissions beyond their base Tier rating.
Emission Control	Integrated into the engine's design (e.g., engine management system, combustion chamber).	Post-combustion emission control (e.g., SCR, DPF).
Effectiveness	Inherently designed for efficiency, leading to lower initial emissions.	Can be effective in reducing specific pollutants (e.g., NOx or PM).
Cost	Higher initial cost due to advanced engine technology, but potentially lower long-term costs due to reduced maintenance needs.	Lower initial cost, but may involve ongoing maintenance.
Regulatory Compliance	Easier to comply with stringent regulations, as they meet standards from the start.	May require additional regulatory compliance documentation, depending on the add-on and specific emissions regulations.
Integration	Requires specialized knowledge and parts from engine manufacturers.	Can be retrofitted to existing equipment, but may require compatibility assessments.
Example	EPA Tier 3 Engines	SCR (Selective Catalytic Reduction) and DPF (Diesel Particulate Filter).

Table C – Summary of Recent BACT Limits for Emergency Engines

Facility	Location	NO_X	CO	$PM/PM_{10}/PM_{2.5}$	GHGs	Permit Issuance	Source
Cameron LNG Facility	Louisiana	NSPS	NSPS	NSPS	NSPS	2/17/2017	RBLC # LA-0316
Methanex – Geismar Methanol Plant	Louisiana	NSPS/NESHAP	NSPS/NESHAP	NSPS/NESHAP	NSPS/NESHAP	12/22/2016	RBLC # LA-0317
Entergy Louisana – St. Charles Power Station	Texas	27.34 lb/hr	14.81 lb/hr	0.86 lb/hr	--	8/31/2016	RBLC # LA-0313
Lake Charles Methanol Facility	Louisiana	NSPS	NSPS	NSPS	NSPS	6/30/2016	RBLC # LA-0305
Virginia Electric and Power Company – Greensville Power	Virginia	6.4 g/kW-hr	3.5 g/kW-hr	0.4 g/kW-hr	163.6 lb/MMBtu	6/17/2016	RBLC # VA-0325
Magnolia LNG Facility	Louisiana	NSPS	NSPS	NSPS	NSPS	3/21/2016	RBLC #LA-0307
PSEG Fossil, Sewaren Generating Station	New Jersey	42.3 lb/hr	3.5 lb/hr	0.26 lb/hr	--	3/10/2016	RBLC # NJ-0084
Florida Power & Light, Okeechobee Clean Energy Center	Florida	--	3.5 g/kW-hr	0.2 g/kW-hr	--	3/9/2016	RBLC # FL-0356
Cameron Interstate Pipeline LLC – Holbrook Compressor Station	Louisiana	14.16 lb/hr	--	0.44 lb/hr	77 tpy	1/22/2016	RBLC # LA-0292
Flopam Facility	Louisiana	NSPS	NSPS	NSPS	--	1/7/2016	RBLC # LA-0318
Benteler Steel Tube Facility	Louisiana	6.4 k/kW-hr	--	0.2 g/kW-hr	--	6/4/2015	RBLC # LA-0309

Step 4 – Economic, Energy and Environmental Impacts

Due to economic impacts, the Applicant eliminated add-on controls for the engines. As explained below, we agree that the top-ranked control technologies would be economically impractical in this case.

First, NOX controls required to meet the standards for non-emergency engines would likely not provide measurable reductions when the engines are usually operated, which is for readiness and maintenance testing. It takes time for the NOX controls to be operational and emergency engines typically only operate 30 minutes to an hour for readiness and maintenance testing.

Second, the EPA previously estimated that the cost effectiveness of adding NOX controls to stationary diesel engines in a report entitled "Alternative Control Techniques Document: Stationary Diesel Engines," dated March 5, 2010. In this analysis, we estimated that the cost of adding NOX controls to a Tier 2 engine rated above 750 hp, which is equivalent to the NSPS standards that the emergency generator must meet, would be $9,833/ton (2010 dollars), assuming 1000 hours of operation. EPA similarly estimated that adding CO controls would cost $9,837/ton, and adding PM controls to cost $99,724/ton. EPA estimated SCR at $9,837/ton NOx, and DPF at $99,724/ton PM (2010 dollars), which are not cost-effective for engines limited to <100 hours/year use of operation.

The limited use of the engines for this project is an important consideration in determining what is cost-effective. The generator's engines are expected to operate far less than typical equipment (such as CTs and boilers) and less than in the analysis EPA previously performed as described in the March 5, 2010 report (EPA's 2010 "Alternative Controls for Stationary Diesel Engines"). Refer to the Emissions Calculations for the potential to emit.

Considering the very limited use of this engine, and the estimated cost of add-on controls (including the use of NSPS certified non-emergency engines) we are eliminating the use of these controls as BACT for these engines since they are not cost-effective.

Step 5 – Select BACT

Based on the review of the available control technologies, we have concluded that BACT for this project's diesel emergency generator is EPA-certified NSPS emergency engines. This means that these engines will be certified to the applicable emission standards for NMHC+NOX, CO, and PM for the same size and model year provided in the applicable NSPS – 40 CFR part 60 subpart IIII, as shown below:

Maximum engine power	Emission standards for stationary pre-2007 model year engines with a displacement of <10 liters per cylinder and 2007-2010 model year engines >2,237 KW (3,000 HP) and with a displacement of <10 liters per cylinder in g/KW-hr (g/HP-hr)				
	NMHC + NO_X	HC	NO_X	CO	PM
(HP<11)					
8≤KW<19 (11≤HP<25)	9.5 (7.1)			6.6 (4.9)	0.80 (0.60)
19≤KW<37 (25≤HP<50)	9.5 (7.1)			5.5 (4.1)	0.80 (0.60)
37≤KW<56 (50≤HP<75)			9.2 (6.9)		
56≤KW<75 (75≤HP<100)			9.2 (6.9)		
75≤KW<130 (100≤HP<175)			9.2 (6.9)		
130≤KW<225 (175≤HP<300)		1.3 (1.0)	9.2 (6.9)	11.4 (8.5)	0.54 (0.40)
225≤KW<450 (300≤HP<600)		1.3 (1.0)	9.2 (6.9)	11.4 (8.5)	0.54 (0.40)
450≤KW≤560 (600≤HP≤750)		1.3 (1.0)	9.2 (6.9)	11.4 (8.5)	0.54 (0.40)
KW>560 (HP>750)		1.3 (1.0)	9.2 (6.9)	11.4 (8.5)	0.54 (0.40)

The NSPS for engines does not currently regulate GHG emissions, but a separate GHG limit is not being proposed. It is assumed that newly purchased engines would be the most energy efficient available and that operating in compliance with NSPS requirements will ensure that each engine is properly maintained and as efficient as possible. Given the limited use of these engines, regularly measuring the efficiency of the engines through a permit limit provides no practical benefit.

The Tier 3 engine with ULSD and NSPS Subpart IIII compliance is BACT, based on feasibility, cost-effectiveness, and national BACT precedent. This approach satisfies Clean Air Act Sections 111 and 112 as required.

Section 111 and 112 standards: The engines will be certified to the NSPS standards in 40 CFR part 60, subpart IIII. The engines are also subject to the standards in 40 CFR part 63, subpart ZZZZ, which only requires that the engines comply with the applicable requirement in 40 CFR part 60, subpart IIII. Therefore, our proposed BACT limits are at least as stringent as the applicable standards under sections 111 and 112 of the Act.

2.6 List of attached supporting documents:

- AP-42 Table Table 3.3-2: Speciated organic compound emission factors for uncontrolled Diesel Engines.
- Manufacturer Specification for Cummins QSL9-G7 NR3 generator.

Table 3.3-2. SPECIATED ORGANIC COMPOUND EMISSION FACTORS FOR UNCONTROLLED DIESEL ENGINES[a]

EMISSION FACTOR RATING: E

Pollutant	Emission Factor (Fuel Input) (lb/MMBtu)
Benzene[b]	9.33 E-04
Toluene[b]	4.09 E-04
Xylenes[b]	2.85 E-04
Propylene	2.58 E-03
1,3-Butadiene[b,c]	<3.91 E-05
Formaldehyde[b]	1.18 E-03
Acetaldehyde[b]	7.67 E-04
Acrolein[b]	<9.25 E-05
Polycyclic aromatic hydrocarbons (PAH)	
Naphthalene[b]	8.48 E-05
Acenaphthylene	<5.06 E-06
Acenaphthene	<1.42 E-06
Fluorene	2.92 E-05
Phenanthrene	2.94 E-05
Anthracene	1.87 E-06
Fluoranthene	7.61 E-06
Pyrene	4.78 E-06
Benzo(a)anthracene	1.68 E-06
Chrysene	3.53 E-07
Benzo(b)fluoranthene	<9.91 E-08
Benzo(k)fluoranthene	<1.55 E-07
Benzo(a)pyrene	<1.88 E-07
Indeno(1,2,3-cd)pyrene	<3.75 E-07
Dibenz(a,h)anthracene	<5.83 E-07
Benzo(g,h,l)perylene	<4.89 E-07
TOTAL PAH	1.68 E-04

[a] Based on the uncontrolled levels of 2 diesel engines from References 6-7. Source Classification Codes 2-02-001-02, 2-03-001-01. To convert from lb/MMBtu to ng/J, multiply by 430.
[b] Hazardous air pollutant listed in the *Clean Air Act*.
[c] Based on data from 1 engine.

SUBMITTAL PACKAGE

GEP New Mexico

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PLEASE COMPLETE THIS SECTION OR PROVIDE SIGNOFF TO PROCEED

☐ **Revise with corrections provided** **Date:**

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IMPORTANT: *The critical power solution information and specifications included in this pdf can be used by the site contractor(s) and/or engineer(s) to assist with planning for and accomplishing the overall power solution installation. Please forward this document to the appropriate personnel, as necessary.*

It is the obligation of the electrical contractor and reviewing engineer to determine that the item quantities and accuracy of this submittal is correct as required for the job. Any inaccuracies or deviations must be addressed with Cummins Inc. before release to manufacturing. Any releases of material to manufacturing by the above parties constitute an acceptance of the accuracy of the submittal. Any changes after release will be viewed as a change order, subject to pricing changes. Please take the time to review this package for accuracy to prevent any after-shipment problems that could cause delay in energization.

Cummins certifies that these drawings, material lists, specification and datasheets have been checked prior to submittal and they:

- *accurately depict the proposed equipment*
- *provide current information to the date of the submittal and*
- *present true and accurate equipment information.*

This Approval Drawing Package is submitted as our interpretation of the project requirements and/or the specifications for this job. Please note that issuance of these submittals shall not be deemed or interpreted as performance nor acceptance of your purchase order terms and conditions.

For questions or comments regarding this submittal, please contact the Cummins Project Manager listed on the title page.

Sales and Service

TABLE OF CONTENTS

Section 6 - Start-Up and Warranty

Pre-Start up checklist

Generator Warranty Statement

Transfer Switch Warranty Statement

SECTION 1
PROJECT INFORMATION

November 14, 2024

Bill of Material

Feature Code	Description	Qty
DQDAA	**DQDAA, Genset, Configurable Diesel**	**1**
Install-US-Stat	U.S. EPA, Stationary Emergency Application	
250DQDAA	250DQDAA, Diesel Genset, 60Hz, 250kW	
P178-2	Enclosure Color - Sandstone, Aluminum	
L090-2	Listing - UL 2200	
L228-2	Cert - Seismic, IBC2000, IBC2003, IBC2006, IBC2009, IBC2011	
C215-2	Alarm - High Fuel Fill	
A331-2	Duty Rating - Standby Power (ESP)	
L169-2	Emission Certification, EPA, Tier 3, NSPS CI Stationary Emergency	
B184-2	Exciter/Regulator - Permanent Magnet Generator, 3 Phase Sensor	
R002-2	Voltage - 277/480, 3 Phase, Wye, 4 Wire	
B246-2	Alternator - 60Hz, 12 Lead, Limited Range, 125/105C	
A292-2	Alternator Heater, 120 Volt AC	
F205-2	Aluminum Sound Attenuated Level 2 Enclosure, with Exhaust System	
F207-2	Wind Rating - 150 MPH, Aluminum Housing	
H657-2	Distribution Panel - Prewired AC Features	
K102-2	Service Receptacle - 120V, 20A, External GFCI, NEMA 5 - 20R	
C203-2	Fuel Tank - Sub Base, 500 Gallon, UL142 Compliant	
L163-2	Listing, ULC - S601 - 07	
C266-2	Fuel Tank - Dual Wall Sub - Base, 24 Hour Minimum Capacity	
C127-2	Fuel Water Separator	
H609-2	Control Mounting - Left Facing	
H703-2	PowerCommand 2.3 Controller	
H606-2	Analog Meters - AC Output	
H720-2	AmpSentryTM UL Listed Protective Relay	
K631-2	Relays - Genset Status, User Configured	
K796-2	Stop Switch - Emergency	
KA08-2	Alarm - Audible, Engine Shutdown	
KP74-2	Stop Switch - Emergency, Externally Mounted	
KS53-2	Signals - Auxiliary, 8 Inputs/8 Outputs	
H536-2	Control Display Language - English	
KU95-2	Circuit Breaker or Entrance Box or Terminal Box - Right And Left	
KC65-2	Circuit Breaker - 600A, Left Circuit Breaker on Right side, 3 - Pole, UL 600, IEC 690, 100%	
KC64-2	Circuit Breaker - 600A, Right Circuit Breaker on Right side, 3 - Pole, UL 600, IEC 690, 100%	
KB73-2	Bottom Entry, Left	
KB72-2	Bottom Entry, Right	
KM70-2	Auxiliary contacts/Trip Alarm - Dual Circuit Breakers	
KM74-2	Shunt Trip - 24 Volts DC, Dual Breakers	
A366-2	Engine Governor - Electronic, Isochronous	
A334-2	Engine Starter - 24 Volt DC Motor	
D041-2	Engine Air Cleaner - Normal Duty	
A333-2	Battery Charging Alternator	
E125-2	Engine Cooling - Radiator, High Ambient Air Temperature, Ship Fitted	
H389-2	Shutdown - Low Coolant Level	
H669-2	Engine Coolant - 50% Antifreeze, 50% Water Mixture	

H036-2	Coolant Heater - 120V, Single Phase	
H706-2	Engine Oil	
L010-2	Test Record - Strip Chart	
L023-2	Test Record - Safety Shutdowns	
L024-2	Test Record - Exhaust Temperature	
L025-2	Test Record - Ambient Temperature and Pressure	
L026-2	Cummins Certified Test Record	
L028-2	Genset Warranty - 2 Years Base	
L050-2	Literature - English	
A412-2	Packing - None, Base Mounted Housing	
A048G602	**Battery Charger-10Amp, 120/208/240VAC, 12/24V, 50/60Hz**	**1**
A062J030	**PowerCommand 500 Local Network no CE**	**1**
OTECSEC	**OTECSEC, OTEC Service Entrance Transfer Switch-Electronic Control: 600A**	**1**
Not Applicable		
OTECSEC_OTECSE600	OTECSE600, Service Entrance TransferSwitch, PowerCommand, 600 Amp	
OTECSEC_L214-7	Load Shed from Standby Source	
OTECSEC_L217-7	Auxiliary Contact Module-16	
OTECSEC_S043-7	Listing - UL 1008	
OTECSEC_A080-7	IBC Seismic Certification	
OTECSEC_A035-7	Application - Utility to Genset	
OTECSEC_B002-7	Cabinet - Type 3R	
OTECSEC_Z111-7	Manufactured/Assembled in U.S. NOTE: This option may have an extended lead time. Please see the lead time bulletin for details	
OTECSEC_A029-7	Poles - 4 (Switched Neutral)	
OTECSEC_A044-7	Frequency - 60 Hz	
OTECSEC_A042-7	System - 3 Phase, 3 or 4 Wire	
OTECSEC_M034-7	Genset Starting Battery - 24V DC	
OTECSEC_R026-7	Voltage - 480 Volts AC	
OTECSEC_C110-7	PC40 Control	
OTECSEC_L101-7	Auxiliary Relay - 24 Volts DC Coil	
OTECSEC_L102-7	Auxiliary Relay - Switch in Emergency Position - 24 Volts DC	
OTECSEC_L103-7	Auxiliary Relay - Switch In Normal Position - 24 Volts DC	
OTECSEC_M081-7	Interface - Communications Network, MODBUS RTU Module	
OTECSEC_M003-7	Terminal Block - 30 Points	
OTECSEC_G004-7	Transfer Switch Warranty - 2 Year Comprehensive	
Standard BOP	**Teknic Remote E-stop Kit**	**1**
Service - start up & testing	**Service - start up & testing**	**1**

NOTES:

Project Notes & Clarifications:

- Current Submittal Lead Time: **xx** weeks
- Current Production Lead Time (*after receipt of approved submittal and accepted PO*):
  - Transfer Switch(es): **xx-xx** weeks
  - Generator: **xx-xx** weeks
- Proposal based upon supplied **xxxx** documents dated **xx**/**xx**/**xxxx** only.

- Price quoted is F.O.B. factory with freight allowed to the first U.S. destination.
- Price does not include any applicable taxes unless listed above.
- All ship loose items installed by others.
- Unloading, installation, and fuel are not included and will be the responsibility of others.
- **Indoor Generator:**
    - All exhaust and fuel piping provided by others. All calculations for determining of sizing of exhaust and fuel piping sizes provided by others.
    - Providing **xx** grade muffler and stainless-steel flex connector(s) only. All other piping, accessories and installation are provided by others.
- **Natural Gas or LP Gas Generator:**
    - Main gas regulator, flex piping and stepdown regulator provided by others. Installation of main gas regulator not done by Cummins Personnel
    - Gas Pressure – For generators between 20kW-200kW 6-14 inches H2O to engine, for generators 250kW - 750kW 15-20 inches H2O to engine– Main gas supply should be 5 PSI+ feeding a step-down regulator located as close to the engine as possible. Line should be dedicated to the generator.
- **Warranty:**Cummins **x**-year warranty begins at the successful completion of startup and testing in lieu of acceptance or substantial completion.
- **Startup & Training:**
    - Providing Cummins standard startup and the specific testing listed above only. All other testing including NETA testing is provided by others.
    - Our proposal includes **xx** trips during normal business hours to complete the onsite services listed above. If additional trips or after-hours trips are required, additional cost will be incurred.
    - Training for maintenance personnel will be concurrent at time of startup unless otherwise noted.
    - No videotaping is included with this quotation. All taping is supplied by others.
- **PMA:**Generator Maintenance Agreement is not included and will be negotiated directly with the owner once equipment has been successfully started up and tested.
- *NOTICE: As a result of the outbreaks of the disease COVID-19 arising from the novel coronavirus, temporary delays in delivery, labor, or services from Cummins and its sub-suppliers or subcontractors may occur. Among other factors, Cummins' delivery is subject to correct and punctual supply from our sub-suppliers or subcontractors, and Cummins reserves the right to make partial deliveries or modify its labor or service. While Cummins shall make every commercially reasonable effort to meet the delivery, service, or completion described herein, such date(s) is(are) subject to change.*

SECTION 2
GENERATOR SPECIFICATIONS

Specification Sheet

Diesel Generator Set QSL9-G7 Series Engine

250 kW - 300 kW Standby

Description

Cummins® commercial generator sets are fully integrated power generation systems providing optimum performance, reliability and versatility for stationary Standby and Prime Power applications.

Features

Cummins heavy-duty engine - Rugged 4-cycle, industrial diesel delivers reliable power, low emissions and fast response to load changes.

Alternator - Several alternator sizes offer selectable motor starting capability with low reactance 2/3 pitch windings, low waveform distortion with non-linear loads and fault clearing short-circuit capability.

Control system - The PowerCommand® electronic control is standard equipment and provides total genset system integration including automatic remote starting/stopping, precise frequency and voltage regulation, alarm and status message display, AmpSentry™ protection, output metering, auto-shutdown at fault detection and NFPA 110 Level 1 compliance.

Cooling system - Standard cooling package provides reliable running at the rated power level.

Enclosures - Optional weather protective and sound attenuated enclosures are available.

Fuel tanks - Dual wall sub-base fuel tanks are also available.

NFPA - The genset accepts full rated load in a single step in accordance with NFPA 110 for Level 1 systems.

Warranty and service - Backed by a comprehensive warranty and worldwide distributor network.

	Standby rating		Prime rating		Continuous rating		Data sheets	
Model	60 Hz kW (kVA)	50 Hz kW (kVA)	60 Hz kW (kVA)	50 Hz kW (kVA)	60 Hz kW (kVA)	50 Hz kW (kVA)	60 Hz	50 Hz
DQDAA	250 (313)		225 (281)				D-3442	
DQDAB	275 (344)		250 (313)				D-3443	
DQDAC	300 (375)		270 (338)				D-3444	

Generator Set Specifications

Governor regulation class	ISO 8528 Part 1 Class G3
Voltage regulation, no load to full load	± 0.5%
Random voltage variation	± 0.5%
Frequency regulation	Isochronous
Random frequency variation	± 0.5%
Radio frequency emissions compliance	IEC 801.2 through IEC 801.5; MIL-STD-461C, Part 9

Engine Specifications

Bore	114.0 mm (4.49 in)
Stroke	145 mm (5.69 in)
Displacement	8.9 L (543 in^3)
Configuration	Cast iron, in-line 6 cylinder
Battery capacity	750 amps minimum at ambient temperature of -18 ℃ (-0.4 ℉) and above
Battery charging alternator	70 amps
Starting voltage	24 volt, negative ground
Fuel system	Direct injection: number 2 diesel fuel, fuel filter, automatic electric fuel shutoff
Fuel filter	Dual element with water separator
Air cleaner type	Normal duty
Lube oil filter type(s)	Single spin-on, combination full flow and bypass filters
Standard cooling system	High ambient radiator

Alternator Specifications

Design	Brushless, 4 pole, drip proof revolving field
Stator	2/3 pitch
Rotor	Single bearing, flexible discs
Insulation system	Class H
Standard temperature rise	125 ℃ Standby, 105 ºC Prime
Exciter type	Permanent Magnet Generator (PMG)
Phase rotation	A (U), B (V), C (W)
Alternator cooling	Direct drive centrifugal blower
AC waveform Total Harmonic Distortion (THDV)	< 5% no load to full linear load, < 3% for any single harmonic
Telephone Influence Factor (TIF)	< 50 per NEMA MG1-22.43
Telephone Harmonic Factor (THF)	< 3

Available Voltages

60 Hz 3-phase			**50 Hz** 3-phase	
Reconnectable		Non-Reconnectable	Reconnectable	Non-Reconnectable
• 110/90 • 139/240 • 240/416	• 120/208 • 120/240 • 254/440	• 277/480 • 347/600		

Note: Consult factory for other voltages.

Generator Set Options and Accessories

Engine

- 120/240 V 1500 W coolant heater
- 120/240 V 150 W lube oil heater
- Heavy duty air cleaner
- Engine oil temperature

Control panel

- 120/240 V 100 W control anti-condensation heater
- Exhaust pyrometer
- Ground fault indication
- Remote fault signal package
- Run relay package
- Paralleling configuration

Alternator

- 105 ℃ rise
- 125 ℃ rise
- 120/240 V 100 W anti-condensation heater
- PMG excitation
- Single phase

Exhaust system

- Genset mounted muffler
- Heavy duty exhaust elbow
- Slip on exhaust connection
- NPT exhaust connection

Fuel system

- 1022 L (270 gal) sub-base tank
- 1136 L (300 gal) sub-base tank
- 1514 L (400 gal) sub-base tank
- 1893 L (500 gal) sub-base tank
- 2271 L (600 gal) sub-base tank
- 2498 L (660 gal) sub-base tank
- 2725 L (720 gal) sub-base tank
- 5565 L (1470 gal) sub-base tank

Generator set

- AC entrance box
- Battery
- Battery charger
- Export box packaging
- UL 2200 Listed
- Main line circuit breaker
- PowerCommand network
- Communications Module (NCM)
- Remote annunciator panel
- Spring isolators
- Enclosure: aluminum, steel, weather protective or sound attenuated
- 2 year Standby power warranty
- 2 year Prime power warranty
- 5 year Basic power warranty
- 10 year major components warranty

Note: Some options may not be available on all models - consult factory for availability.

we don't need the remote annunciator panel

Control System PCC 2100

PowerCommand control is an integrated generator set control system providing governing, voltage regulation, engine protection and operator interface functions. Major features include:

- Integral AmpSentry™ protective relay providing a full range of alternator protection functions that are matched to the alternator provided.
- Battery monitoring and testing features and smart starting control system.
- Three phase sensing, full wave rectified voltage regulation system, with a PWM output for stable operation with all load types.
- Standard PCCNet™ and optional Echelon® LonWorks® network interface.
- Control suitable for operation in ambient temperatures from -40 °C to +70 °C (-40 °F to +158 °F) and altitudes to 5000 meters (13,000 feet).
- Prototype tested; UL, CSA, and CE compliant.
- InPower™ PC-based service tool available for detailed diagnostics.

Operator/display panel

- Off/manual/auto mode switch
- Manual run/stop switch
- Panel lamp test switch
- Emergency stop switch
- Alpha-numeric display with pushbutton access for viewing engine and alternator data and providing setup, controls and adjustments
- LED lamps indicating genset running, not in auto, common warning, common shutdown
- Configurable LED lamps (5)
- Configurable for local language

Engine protection

- Overspeed shut down
- Low oil pressure warning and shut down
- High coolant temperature warning and shut down
- High oil temperature warning (some models)
- Low coolant level warning or shut down
- Low coolant temperature warning
- High and low battery voltage warning
- Weak battery warning
- Dead battery shut down
- Fail to start (overcrank) shut down
- Fail to crank shut down
- Redundant -start disconnect
- Cranking lockout
- Sensor failure indication

Engine data

- DC voltage
- Lube oil pressure
- Coolant temperature
- Lube oil temperature (some models)
- Engine speed

AmpSentry AC protection

- Over current and short-circuit shut down
- Over current warning
- Single and three phase fault regulation
- Over and under voltage shut down
- Over and under frequency shut down
- Overload warning with alarm contact
- Reverse power and reverse Var shut down
- Excitation fault

Alternator data

- Line-to-Line and Line-to-Neutral AC volts
- Three phase AC current
- Frequency
- Total and individual phase power factor, kW and kVA

Other data

- Genset model data
- Start attempts, starts, running hours
- kW hours (total and since reset)
- Fault history
- Load profile (hours less than 30% and hours more than 90% load)
- System data display (optional with network and other PowerCommand gensets or transfer switches)

Governing

- Digital electronic isochronous governor
- Temperature dynamic governing
- Smart idle speed mode
- Glow plug control (some models)

Voltage regulation

- Digital PWM electronic voltage regulation
- Three phase Line-to-Neutral sensing
- Suitable for PMG or shunt excitation
- Single and three phase fault regulation
- Configurable torque matching

Control functions

- Data logging on faults
- Fault simulation (requires InPower)
- Time delay start and cooldown
- Cycle cranking
- PCCNet interface
- Configurable customer inputs (4)
- Configurable customer outputs (4)
- Configurable network inputs (8) and outputs (16) (with optional network)
- Remote emergency stop

Options

- LED bargraph AC data display
- Thermostatically controlled space heater
- Key-type mode switch
- Ground fault module
- Auxiliary relays (3)
- Echelon LONWORKS interface
- Modlon Gateway to convert to Modbus (loose)
- PowerCommand iWatch web server for remote monitoring and alarm notification (loose)
- Digital input and output module(s) (loose)
- Remote annunciator (loose)

For further detail see document S-1409.

Ratings Definitions

Emergency Standby Power (ESP):

Applicable for supplying power to varying electrical load for the duration of power interruption of a reliable utility source. Emergency Standby Power (ESP) is in accordance with ISO 8528. Fuel Stop power in accordance with ISO 3046, AS 2789, DIN 6271 and BS 5514.

Limited-Time Running Power (LTP):

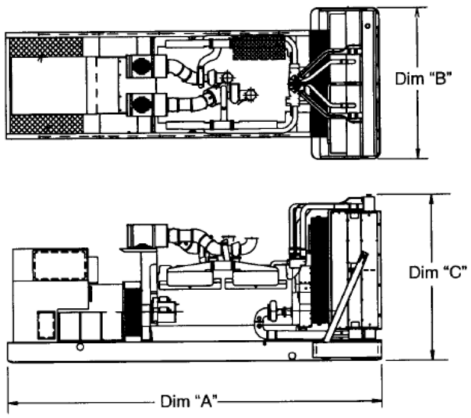
Applicable for supplying power to a constant electrical load for limited hours. Limited Time Running Power (LTP) is in accordance with ISO 8528.

Prime Power (PRP):

Applicable for supplying power to varying electrical load for unlimited hours. Prime Power (PRP) is in accordance with ISO 8528. Ten percent overload capability is available in accordance with ISO 3046, AS 2789, DIN 6271 and BS 5514.

Base Load (Continuous) Power (COP):

Applicable for supplying power continuously to a constant electrical load for unlimited hours. Continuous Power (COP) in accordance with ISO 8528, ISO 3046, AS 2789, DIN 6271 and BS 5514.



This outline drawing is for reference only. See respective model data sheet for specific model outline drawing number.

Do not use for installation design

Dimensions and weights with standard cooling system

Model	Dim "A" mm (in.)	Dim "B" mm (in.)	Dim "C" mm (in.)	Estimated set weight* dry kg (lbs)	Estimated set weight* wet kg (lbs)
DQDAA	3023 (119.0)	1270 (50.0)	1617 (64.0)	2184 (4814)	2234 (4926)
DQDAB	3023 (119.0)	1270 (50.0)	1617 (64.0)	2184 (4814)	2234 (4926)
DQDAC	3023 (119.0)	1270 (50.0)	1617 (64.0)	2319 (5113)	2370 (5225)

Dimensions and weights with optional cooling system with seismic feature codes L228-2 and/or L225-2

Model	Dim "A" mm (in.)	Dim "B" mm (in.)	Dim "C" mm (in.)	Estimated set weight* dry kg (lbs)	Estimated set weight* wet kg (lbs)
DQDAA	3023 (119.0)	1270 (50.0)	1676 (66.0)	2184 (4814)	2234 (4926)
DQDAB	3023 (119.0)	1270 (50.0)	1676 (66.0)	2184 (4814)	2234 (4926)
DQDAC	3023 (119.0)	1270 (50.0)	1676 (66.0)	2319 (5113)	2370 (5225)

*Note: Weights represent a set with standard features. See outline drawings for weights of other configurations.

Codes and Standards

Codes or standards compliance may not be available with all model configurations – consult factory for availability.

	This generator set is designed in facilities certified to ISO 9001 and manufactured in facilities certified to ISO 9001 or ISO 9002.		The PowerCommand control is Listed to UL 508 - Category NITW7 for U.S. and Canadian usage.
	The Prototype Test Support (PTS) program verifies the performance integrity of the generator set design. Cummins products bearing the PTS symbol meet the prototype test requirements of NFPA 110 for Level 1 systems.	**U.S. EPA**	Engine certified to Stationary Emergency U.S. EPA New Source Performance Standards,40 CFR 60 subpart IIII Tier 3 exhaust emission levels. U.S. applications must be applied per this EPA regulation.
	All low voltage models are CSA certified to product class 4215-01.	**International Building Code**	The generator set package is available certified for seismic application in accordance with the following International Building Code: IBC2000, IBC2003, IBC2006, IBC2009 and IBC2012.

Warning: Back feed to a utility system can cause electrocution and/or property damage. Do not connect to any building's electrical system except through an approved device or after building main switch is open.

For more information contact your local Cummins distributor or visit power.cummins.com

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S-1585 (8/18)

Generator set data sheet

Model:	**DQDAA**
Frequency:	**60 Hz**
Fuel type:	**Diesel**
kW rating:	**250 Standby** **225 Prime**
Emissions level:	**EPA NSPS Stationary Emergency Tier 3**

Exhaust emission data sheet:	**EDS-1073**
Exhaust emission compliance sheet:	**EPA-1101**
Sound performance data sheet:	**MSP-1026**
Cooling performance data sheet:	**MCP-163**
Prototype test summary data sheet:	**PTS-164**
Standard set-mounted radiator cooling outline:	**A048R355**
Optional set-mounted radiator cooling outline with seismic feature codes L228-2 (IBC) or L225-2 (OSHPD):	**A041F591**

Fuel consumption

	Standby				**Prime**				**Continuous**
	kW (kVA)				**kW (kVA)**				**kW (kVA)**
Ratings	250 (313)				225 (281)				
Load	**1/4**	**1/2**	**3/4**	**Full**	**1/4**	**1/2**	**3/4**	**Full**	**Full**
US gph	6.0	10.5	15.1	19.6	5.5	9.5	13.6	17.7	
L/hr	22.5	39.7	56.9	74.2	20.7	36.1	51.5	67.0	

Engine

	Standby rating	**Prime rating**	**Continuous rating**
Engine manufacturer	Cummins Inc.		
Engine model	QSL9-G7		
Configuration	Cast iron, in-line 6 cylinder		
Aspiration	Turbocharged and after-cooled		
Gross engine power output, kW_m (bhp)	346 (464)	312 (419)	
BMEP at set rated load, kPa (psi)	2606 (378)	2351 (341)	
Bore, mm (in.)	114.0 (4.49)		
Stroke, mm (in.)	145 (5.69)		
Rated speed, rpm	1800		
Piston speed, m/s (ft/min)	8.7 (1707.0)		
Compression ratio	16.1:1		
Lube oil capacity, L (qt)	30.0 (31.7)		
Overspeed limit, rpm	2070 ± 50		
Regenerative power, kW	35.00		

Fuel flow

Maximum fuel flow, L/hr (US gph)	138.1 (36.5)	
Maximum fuel inlet restriction, mm Hg (in Hg)	152.4 (6.0)	
Maximum return restriction, mm Hg (in Hg)	254.0 (10.0)	

Air	Standby rating	Prime rating	Continuous rating
Combustion air, m^3/min (scfm)	22.3 (787)	20.8 (733)	
Maximum air cleaner restriction, kPa (in H_2O)	6.2 (25.0)		
Alternator cooling air, m^3/min (cfm)	59.4 (2100.0)		

Exhaust

Exhaust flow at set rated load, m^3/min (cfm)	54.6 (1927)	50.8 (1796)	
Exhaust temperature, °C (°F)	525 (977)	495 (923)	
Maximum back pressure, kPa (in H_2O)	10.2 (41.0)		

Standard set-mounted radiator cooling (non-seismic)

Ambient design, °C (°F)	50 (122)		
Fan load, kW_m (HP)	26.09 (35)		
Coolant capacity (with radiator), L (US gal)	34.29 (9.06)		
Cooling system air flow, m^3/min (scfm)	427.58 (15100)		
Total heat rejection, MJ/min (Btu/min)	8.93 (8467.0)	8.55 (8104.0)	
Maximum cooling air flow static restriction, kPa (in H_2O)	0.12 (0.5)		

Optional set-mounted radiator cooling (with seismic feature codes L228-2 (IBC) and/or L225-2 (OSHPD)

Ambient design, °C (°F)	50 (122)		
Fan load, kW_m (HP)	27.8 (37.2)		
Coolant capacity (with radiator), L (US gal)	30.3 (8.0)		
Cooling system air flow, m^3/min (scfm)	568.1 (20075.0)		
Total heat rejection, MJ/min (Btu/min)	8.93 (8467.0)	8.55 (8104.0)	
Maximum cooling air flow static restriction, kPa (in H_2O)	0.12 (0.5)		

Optional heat exchanger cooling	Standby rating	Prime rating	Continuous rating
Set coolant capacity, L (US gal)			
Heat rejected, jacket water circuit, MJ/min (Btu/min)			
Heat rejected, aftercooler circuit, MJ/min (Btu/min)			
Heat rejected, fuel circuit, MJ/min (Btu/min)			
Total heat radiated to room, MJ/min (Btu/min)			
Maximum raw water pressure, jacket water circuit, kPa (psi)			
Maximum raw water pressure, aftercooler circuit, kPa (psi)			
Maximum raw water pressure, fuel circuit, kPa (psi)			
Maximum raw water flow, jacket water circuit, L/min (US gal/min)			
Maximum raw water flow, aftercooler circuit, L/min (US gal/min)			
Maximum raw water flow, fuel circuit, L/min (US gal/min)			
Minimum raw water flow at 27 °C (80 °F) inlet temp, jacket water circuit, L/min (US gal/min)			
Minimum raw water flow at 27 °C (80 °F) inlet temp, aftercooler circuit, L/min (US gal/min)			
Minimum raw water flow at 27 °C (80 °F) inlet temp, fuel circuit, L/min (US gal/min)			
Raw water delta P at min flow, jacket water circuit, kPa (psi)			
Raw water delta P at min flow, aftercooler circuit, kPa (psi)			
Raw water delta P at min flow, fuel circuit, kPa (psi)			
Maximum jacket water outlet temp, °C (°F)			
Maximum aftercooler inlet temp, °C (°F)			
Maximum aftercooler inlet temp at 25 °C (77 °F) ambient, °C (°F)			

Optional remote radiator cooling[1]

Set coolant capacity, L (US gal)			
Max flow rate at max friction head, jacket water circuit, L/min (US gal/min)			
Max flow rate at max friction head, aftercooler circuit, L/min (US gal/min)			
Heat rejected, jacket water circuit, MJ/min (Btu/min)			
Heat rejected, aftercooler circuit, MJ/min (Btu/min)			
Heat rejected, fuel circuit, MJ/min (Btu/min)			
Total heat radiated to room, MJ/min (Btu/min)			
Maximum friction head, jacket water circuit, kPa (psi)			
Maximum friction head, aftercooler circuit, kPa (psi)			
Maximum static head, jacket water circuit, m (ft)			
Maximum static head, aftercooler circuit, m (ft)			
Maximum jacket water outlet temp, °C (°F)			
Maximum aftercooler inlet temp at 25 °C (77 °F) ambient, °C (°F)			
Maximum aftercooler inlet temp, °C (°F)			
Maximum fuel flow, L/hr (US gph)			
Maximum fuel return line restriction, kPa (in Hg)			

Weights[2]

Unit dry weight kgs (lbs)	2184 (4814)
Unit wet weight kgs (lbs)	2234 (4926)

Notes:
[1] For non-standard remote installations contact your local Cummins representative.
[2] Weights represent a set with standard features. See outline drawing for weights of other configurations.

Derating factors

Standby	Engine power available up to 1494 m (4900 ft) at ambient temperature up to 40 °C (104 °F). Above these elevations, derate at 7% per 400m (1312 ft). Above 40 °C (104 °F) derate 5.5% per 10 °C (18 °F). Derates must be combined when both altitude of 1494 m (4900 ft) and temperature of 40 °C (104 °F) are exceeded.
Prime	Engine power available up to 1452 m (4764 ft) at ambient temperature up to 40 °C (104 °F). Above these elevations, derate at 7% per 400m (1312 ft). Above 40 °C (104 °F) derate 5.5% per 10 °C (18 °F). Derates must be combined when both altitude of 1452 m (4764 ft) and temperature of 40 °C (104 °F) are exceeded.
Continuous	

Ratings definitions

Emergency Standby Power (ESP):	**Limited-Time Running Power (LTP):**	**Prime Power (PRP):**	**Base Load (Continuous) Power (COP):**
Applicable for supplying power to varying electrical load for the duration of power interruption of a reliable utility source. Emergency Standby Power (ESP) is in accordance with ISO 8528. Fuel stop power in accordance with ISO 3046, AS 2789, DIN 6271 and BS 5514.	Applicable for supplying power to a constant electrical load for limited hours. Limited-Time Running Power (LTP) is in accordance with ISO 8528.	Applicable for supplying power to varying electrical load for unlimited hours. Prime Power (PRP) is in accordance with ISO 8528. Ten percent overload capability is available in accordance with ISO 3046, AS 2789, DIN 6271 and BS 5514.	Applicable for supplying power continuously to a constant electrical load for unlimited hours. Continuous Power (COP) is in accordance with ISO 8528, ISO 3046, AS 2789, DIN 6271 and BS 5514.

Alternator data

Three phase table[1]		**80 °C**	**80 °C**	**80 °C**	**80 °C**	**105 °C**	**105 °C**	**105 °C**	**125 °C**	**125 °C**	**125 °C**	**125 °C**	**125 °C**
Feature code		B260	B257	B251	B302	B259	B256	B301	B258	B252	B246	B247	B300
Alternator data sheet number		342	341	341	341	341	341	340	341	340	340	340	340
Voltage ranges		110/190 thru 139/240 220/380 thru 277/480	120/208 thru 139/240 240/416 thru 277/480	277/480	347/600	110/190 thru 139/240 220/380 thru 277/480	120/208 thru 139/240 240/416 thru 277/480	347/600	110/190 thru 139/240 220/380 thru 277/480	120/208 thru 139/240 240/416 thru 277/480	277/480	277/480	347/600
Surge kW		322	322	322	322	322	322	322	322	322	322	322	322
Motor starting kVA (at 90% sustained voltage)	Shunt												
	PMG	1372	1210	1210	1210	1210	1210	1028	1210	1028	1028	1028	1028

Full load current - amps at Standby rating	120/208 867	127/220 820	139/240 752	220/380 475	240/416 434	254/440 410	277/480 376	347/600 301

Note:
[1] Single phase power can be taken from a three phase generator set at up to 2/3 set rated 3-phase kW at 1.0 power factor. Also see Note 3 below

Formulas for calculating full load currents:

Three phase output

$$\frac{\text{kW} \times 1000}{\text{Voltage} \times 1.73 \times 0.8}$$

Single phase output

$$\frac{\text{kW} \times \text{SinglePhaseFactor} \times 1000}{\text{Voltage}}$$

Warning: Back feed to a utility system can cause electrocution and/or property damage. Do not connect to any building's electrical system except through an approved device or after building main switch is open.

For more information contact your local Cummins distributor or visit power.cummins.com

Our energy working for you.™

D-3442 (10/17)

Specification Sheet

PowerCommand®
2.3 Control System

Control System Description

The PowerCommand control system is a microprocessor-based generator set monitoring, metering and control system designed to meet the demands of today's engine driven generator sets. The integration of all control functions into a single control system provides enhanced reliability and performance, compared to conventional generator set control systems. These control systems have been designed and tested to meet the harsh environment in which gensets are typically applied.

Features

- 320 x 240 pixels graphic LED backlight LCD.
- Multiple language support.
- AmpSentry™ protective relay - true alternator overcurrent protection.
- Real time clock for fault and event time stamping.
- Exerciser clock and time of day start/stop.
- Digital voltage regulation. Three phase full wave FET type regulator compatible with either shunt or PMG systems.
- Generator set monitoring and protection.
- 12 and 24 VDC battery operation.
- Modbus® interface for interconnecting to customer equipment.
- Warranty and service. Backed by a comprehensive warranty and worldwide distributor service network.
- Certifications - suitable for use on generator sets that are designed, manufactured, tested and certified to relevant UL, NFPA, ISO, IEC, Mil Std., CE, UKCA and CSA standards.

PowerCommand Digital Genset Control PCC 2300

Description

The PowerCommand generator set control is suitable for use on a wide range of generator sets in non-paralleling applications. The PowerCommand control is compatible with shunt or PMG excitation style. It is suitable for use with reconnectable or non-reconnectable generators, and it can be configured for any frequency, voltage and power connection from 120-600 VAC Line-to-Line.

Power for this control system is derived from the generator set starting batteries. The control functions over a voltage range from 8 VDC to 30 VDC.

Features

- 12 and 24 VDC battery operation.
- Digital voltage regulation - Three phase full wave FET type regulator compatible with either shunt or PMG systems. Sensing is three phase.
- Full authority engine communications (where applicable) - Provides communication and control with the Engine
- due to thermal Control Module (ECM).
- AmpSentry" protection provides industry-leading alternator overcurrent protection:
  - Time-based generator protection applicable to both line-to-line and line-to-neutral, that can detect an unbalanced fault condition and swiftly react appropriately. Balanced faults can also be detected by AmpSentry and appropriate acted upon.
- Reduces the risk of Arc Flash overload or electrical faults by inverse time protection
- Common harnessing - with higher feature Cummins controls. Allows for easy field upgrades.
- Generator set monitoring - Monitors status of all critical engine and alternator functions.
- Digital genset metering (AC and DC).
- Genset battery monitoring system to sense and warn against a weak battery condition.
- Configurable for single or three phase AC metering.
- Engine starting - Includes relay drivers for starter, Fuel Shut Off (FSO), glow plug/spark ignition power and switch B+ applications.
- Generator set protection – Protects engine and alternator.
- Real time clock for fault and event time stamping.
- Exerciser clock and time of day start/stop.
- Advanced serviceability - using InPower™, a PC-based software service tool.
- Environmental protection - The control system is designed for reliable operation in harsh environments. The main control board is a fully encapsulated module that is protected from the elements.
- Modbus interface for interconnecting to customer equipment.
- Configurable inputs and outputs - Four discrete inputs and four dry contact relay outputs.
- Warranty and service - Backed by a comprehensive warranty and worldwide distributor service network.
- Certifications - Suitable for use on generator sets that are designed, manufactured, tested and certified to relevant UL, NFPA, ISO, IEC, Mil Std., CE and CSA standards.

Base Control Functions

HMI Capability

Operator adjustments - The HMI includes provisions for many set up and adjustment functions.

Generator set hardware data - Access to the control and software part number, generator set rating in kVA and generator set model number is provided from the HMI or InPower.

Data logs - Includes engine run time, controller on time, number of start attempts, total kWh, and load profile (control logs data indicating the operating hours at percent of rated kW load, in 5% increments. The data is presented on the operation panel based on total operating hours on the generator.)

Fault history - Provides a record of the most recent fault conditions with control date and time stamp. Up to 32 events are stored in the control non-volatile memory.

Alternator data

- Voltage (single or three phase Line-to-Line and Line-to-Neutral)
- Current (single or three phase)
- kW, kVar, power factor, kVA (three phase and total)
- Frequency

AmpSentry: 3x current regulation for downstream tripping/motor inrush management. Thermal damage curve (3-phase short) or fixed timer (2 sec for 1- Phase Short or 5 sec for 2-Phase short).

Engine data

- Starting battery voltage
- Engine speed
- Engine temperature
- Engine oil pressure
- Engine oil temperature
- Intake manifold temperature
- Comprehensive Full Authority Engine (FAE) data (where applicable)

Service adjustments - The HMI includes provisions for adjustment and calibration of generator set control functions. Adjustments are protected by a password. Functions include:

Service adjustments (continued)

- Engine speed governor adjustments
- Voltage regulation adjustments
- Cycle cranking
- Configurable fault set up
- Configurable output set up
- Meter calibration
- Display language and units of measurement

Engine Control

SAE-J1939 CAN interface to full authority ECMs (where applicable). Provides data swapping between genset and engine controller for control, metering and diagnostics.

12 VDC/24 VDC battery operations - PowerCommand will operate either on 12 VDC or 24 VDC batteries.

Temperature dependent governing dynamics (with electronic governing) - modifies the engine governing control parameters as a function of engine temperature. This allows the engine to be more responsive when warm and more stable when operating at lower temperature levels.

Isochronous governing - (where applicable) Capable of controlling engine speed within +/-0.25% for any steady state load from no load to full load. Frequency drift will not exceed +/-0.5% for a 33 °C (60 °F) change in ambient temperature over an 8 hour period.

Droop electronic speed governing - Control can be adjusted to droop from 0 to 10% from no load to full load.

Remote start mode - It accepts a ground signal from remote devices to automatically start the generator set and immediately accelerate to rated speed and voltage. The remote start signal will also wake up the control from sleep mode. The control can incorporate a time delay start and stop.

Remote and local emergency stop - The control accepts a ground signal from a local (genset mounted) or remote (facility mounted) emergency stop switch to cause the generator set to immediately shut down. The generator set is prevented from running or cranking with the switch engaged. If in sleep mode, activation of either emergency stop switch will wakeup the control.

Sleep mode - The control includes a configurable low current draw state to minimize starting battery current draw when the genset is not operating. The control can also be configured to go into a low current state while in auto for prime applications or applications without a battery charger.

Engine starting - The control system supports automatic engine starting. Primary and backup start disconnects are achieved by one of two methods: magnetic pickup or main alternator output frequency. The control also supports configurable glow plug control when applicable.

Cycle cranking - Is configurable for the number of starting cycles (1 to 7) and duration of crank and rest periods. Control includes starter protection algorithms to prevent the operator from specifying a starting sequence that might be damaging.

Time delay start and stop (cooldown) - Configurable for time delay of 0-300 seconds prior to starting after receiving a remote start signal and for time delay of 0-600 seconds prior to shut down after signal to stop in normal operation modes. Default for both time delay periods is 0 seconds.

Alternator Control

The control includes an integrated three phase Line-to-Line sensing voltage regulation system that is compatible with shunt or PMG excitation systems. The voltage regulation system is a three phase full wave rectified and has an FET output for good motor starting capability.

Major system features include:

Digital output voltage regulation - Capable of regulating output voltage to within +/-1.0% for any loads between no load and full load. Voltage drift will not exceed +/- 1.5% for a 40 ºC (104 ºF) change in temperature in an eight hour period. On engine starting or sudden load acceptance, voltage is controlled to a maximum of 5% overshoot over nominal level. The automatic voltage regulator feature can be disabled to allow the use of an external voltage regulator.

Droop voltage regulation - Control can be adjusted to droop from 0-10% from no load to full load.

Torque-matched V/Hz overload control - The voltage roll-off set point and rate of decay (i.e. the slope of the V/Hz curve) is adjustable in the control.

Fault current regulation - PowerCommand will regulate the output current on any phase to a maximum of three times rated current under fault conditions for both single phase and three phase faults. In conjunction with a permanent magnet generator, it will provide three times rated current on all phases for motor starting and short circuit coordination purpose.

Protective Functions

On operation of a protective function the control will indicate a fault by illuminating the appropriate status LED on the HMI, as well as display the fault code and fault description on the LCD. The nature of the fault and time of occurrence are logged in the control. The service manual and InPower service tool provide service keys and procedures based on the service codes provided.

Protective functions include:

Battle Short Mode

When enabled and the *battle short* switch is active, the control will allow some shutdown faults to be bypassed. If a bypassed shutdown fault occurs, the fault code and description will still be annunciated, but the genset will not shutdown. This will be followed by a *fail to shutdown* fault. Emergency stop shutdowns and others that are critical for proper operation are not bypassed. Please refer to the control application guide or manual for list of these faults.

Derate

The derate function reduces output power of the genset in response to a fault condition. If a derate command occurs while operating on an isolated bus, the control will issue commands to reduce the load on the genset via contact closures or modbus.

Configurable Alarm and Status Inputs

The control accepts up to four alarm or status inputs (configurable contact closed to ground or open) to indicate a configurable (customer-specified) condition.

The control is programmable for warning, shutdown or status indication and for labeling the input.

Emergency Stop

Annunciated whenever either emergency stop signal is received from external switch.

Full Authority Electronic Engine Protection

Engine fault detection is handled inside the engine ECM. Fault information is communicated via the SAE-J1939 data link for annunciation in the HMI.

General Engine Protection

Low and high battery voltage warning - Indicates status of battery charging system (failure) by continuously monitoring battery voltage.

Weak battery warning - The control system will test the battery each time the generator set is signaled to start and indicate a warning if the battery indicates impending failure.

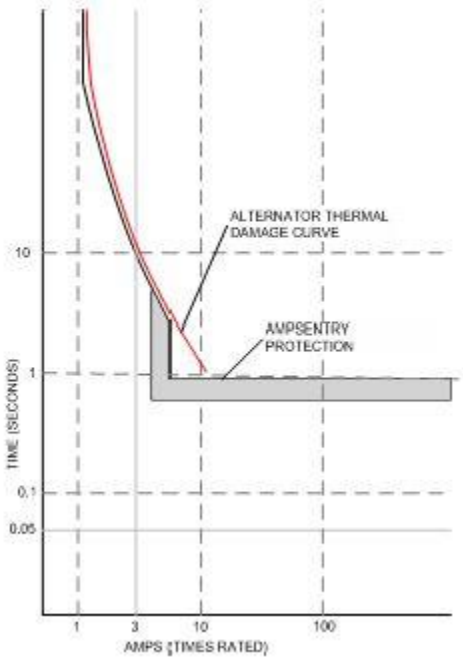
Fail to start (overcrank) shutdown - The control system will indicate a fault if the generator set fails to start by the completion of the engine crack sequence.

Fail to crank shutdown - Control has signaled starter to crank engine but engine does not rotate.

Cranking lockout - The control will not allow the starter to attempt to engage or to crank the engine when the engine is rotating.

Alternator Protection

AmpSentry protective relay - A comprehensive monitoring and control system integral to the PowerCommand Control System that guards the electrical integrity of the alternator and power system by providing protection against a wide array of fault conditions in the generator set or in the load. It also provides single and three phase fault current regulation so that downstream protective devices have the maximum current available to quickly clear fault conditions without subjecting the alternator to potentially catastrophic failure conditions. Thermal damage curve (3-Phase short) or fixed timer (2 sec for 1-Phase short, 5 sec for 2-Phase short). See document R1053 for a full-size time over current curve.



AmpSentry Maintenance Mode (AMM) - Instantaneous tripping, if AmpSentry Maintenance mode is active (50mS response to turn off AVR excitation/shutdown genset) for arc flash reduction when personnel are near genset.

High AC voltage shutdown (59) - Output voltage on any phase exceeds preset values. Time to trip is inversely proportional to amount above threshold. Values adjustable from 105-125% of nominal voltage, with time delay adjustable from 0.1-10 seconds. Default value is 110% for 10 seconds.

Low AC voltage shutdown (27) - Voltage on any phase has dropped below a preset value. Adjustable over a range of 50-95% of reference voltage, time delay 2-20 seconds. Default value is 85% for 10 seconds. Function tracks reference voltage. Control does not nuisance trip when voltage varies due to the control directing voltage to drop, such as during a V/Hz roll-off during synchronizing.

Under frequency shutdown (81 u) - Generator set output frequency cannot be maintained. Settings are adjustable from 2-10 Hz below reference governor set point, for a 5- 20 second time delay. Default: 6 Hz, 10 seconds.

Under frequency protection is disabled when excitation is switched off, such as when engine is operating in idle speed mode.

Over frequency shutdown/warning (81 o) - Generator set is operating at a potentially damaging frequency level. Settings are adjustable from 2-10 Hz above nominal governor set point for a 1-20 second time delay. Default: 6 Hz,
20 seconds, disabled.

Overcurrent warning/shutdown - Thresholds and time delays are configurable. Implementation of the thermal damage curve with instantaneous trip level calculated based on current transformer ratio and application power rating.

Loss of sensing voltage shutdown - Shutdown of generator set will occur on loss of voltage sensing inputs to the control.

Field overload shutdown - Monitors field voltage to shutdown generator set when a field overload condition occurs.

Over load (kW) warning - Provides a warning indication when engine is operating at a load level over a set point.

Adjustment range: 80-140% of application rated kW, 0-120 second delay. Defaults: 105%, 60 seconds.

Reverse power shutdown (32) - Adjustment range: 5-20% of standby kW rating, delay 1-15 seconds. Default: 10%, 3 seconds.

Reverse Var shutdown - Shutdown level is adjustable: 15-50% of rated Var output, delay 10-60 seconds. Default: 20%, 10 seconds.

Short circuit protection - Output current on any phase is more than 175% of rating and approaching the thermal damage point of the alternator. Control includes algorithms to protect alternator from repeated over current conditions over a short period of time.

Field Control Interface

Input signals to the PowerCommand control include:

- Coolant level (where applicable)
- Fuel level (where applicable)
- Remote emergency stop
- Remote fault reset
- Remote start
- Battleshort
- Rupture basin
- Start type signal
- Configurable inputs - Control includes (4) input signals from customer discrete devices that are configurable for warning, shutdown or status indication, as well as message displayed

Output signals from the PowerCommand control include:

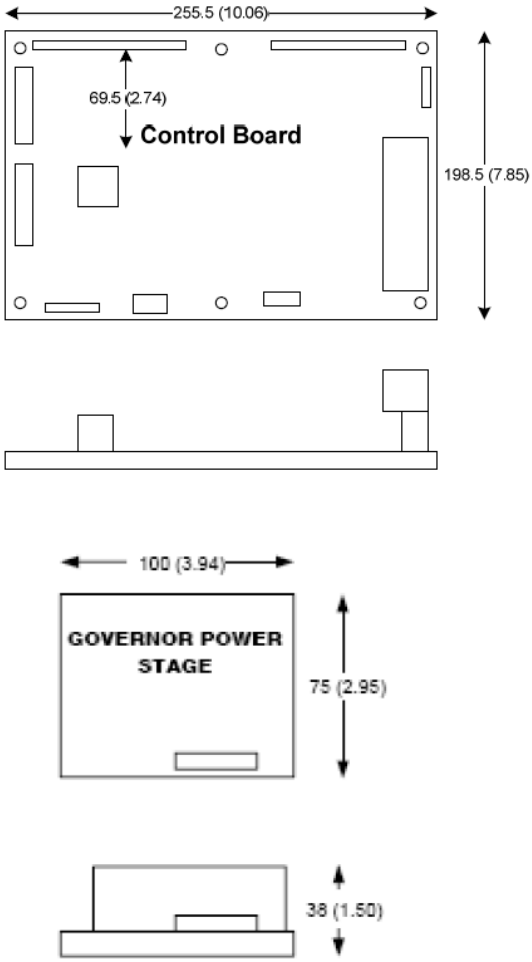
- Load dump signal: Operates when the generator set is in an overload condition.
- Delayed off signal: Time delay based output which will continue to remain active after the control has removed the run command. Adjustment range: 0 – 120 seconds. Default: 0 seconds.
- Configurable relay outputs: Control includes (4) relay output contacts (3 A, 30 VDC). These outputs can be configured to activate on any control warning or shutdown fault as well as ready to load, not in auto, common alarm, common warning and common shutdown.
- Ready to load (generator set running) signal: Operates when the generator set has reached 90% of rated speed and voltage and latches until generator set is switched to off or idle mode.

Communications Connections Include:

- PC tool interface: This RS-485 communication port allows the control to communicate with a personal computer running InPower software.
- Modbus RS-485 port: Allows the control to communicate with external devices such as PLCs using Modbus protocol.

  Note - An RS-232 or USB to RS-485 converter is required for communication between PC and control.
- Networking: This RS-485 communication port allows connection from the control to the other Cummins products.

Mechanical Drawings



PowerCommand Human Machine Interface HMI320

Description

This control system includes an intuitive operator interface panel that allows for complete genset control as well as system metering, fault annunciation, configuration and diagnostics. The interface includes five genset status LED lamps with both internationally accepted symbols and English text to comply with customer's needs. The interface also includes an LED backlit LCD display with tactile feel soft-switches for easy operation and screen navigation. It is configurable for units of measurement and has adjustable screen contrast and brightness.

The *run/off/auto* switch function is integrated into the interface panel.

All data on the control can be viewed by scrolling through screens with the navigation keys. The control displays the current active fault and a time-ordered history of the five previous faults.

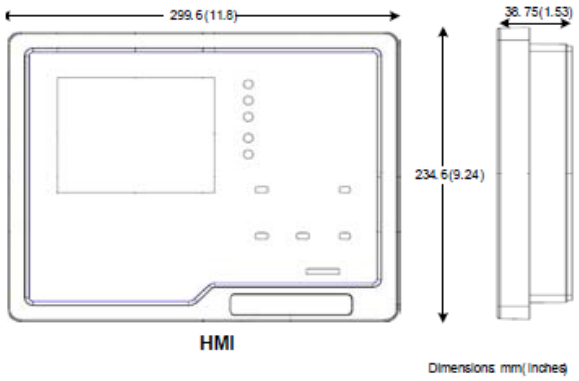
Features

- LED indicating lamps:
  - Genset running
  - Remote start
  - Not in auto
  - Shutdown
  - Warning
  - Auto
  - Manual and stop
- 320 x 240 pixels graphic LED backlight LCD.
- Four tactile feel membrane switches for LCD defined operation. The functions of these switches are defined dynamically on the LCD.
- Seven tactile feel membrane switches dedicated screen navigation buttons for up, down, left, right, ok, home and cancel.
- Six tactile feel membrane switches dedicated to control for auto, stop, manual, manual start, fault reset and lamp test/panel lamps.
- Two tactile feel membrane switches dedicated to control of circuit breaker (where applicable).
- Allows for complete genset control setup.
- Certifications: Suitable for use on generator sets that are designed, manufactured, tested and certified to relevant UL, NFPA, ISO, IEC, Mil Std., CE and CSA standards.
- LCD languages supported: English, Spanish, French, German, Italian, Greek, Dutch, Portuguese, Finnish, Norwegian, Danish, Russian and Chinese Characters.

Communications connections include:

- PC tool interface - This RS-485 communication port allows the HMI to communicate with a personal computer running InPower.
- This RS-485 communication port allows the HMI to communicate with the main control board.

Mechanical Drawing



Software

InPower (beyond 6.5 version) is a PC-based software service tool that is designed to directly communicate to PowerCommand generator sets and transfer switches, to facilitate service and monitoring of these products.

Environment

The control is designed for proper operation without recalibration in ambient temperatures from -40 ºC to +70º C (-40 ºF to 158 ºF) and for storage from -55 ºC to +80 ºC (-67 ºF to 176 ºF). Control will operate with humidity up to 95%, non-condensing.

The HMI is designed for proper operation in ambient temperatures from -20 ºC to +70 ºC (-4 ºF to 158 ºF) and for storage from -30 ºC to +80 ºC (-22 ºF to 176 ºF).

The control board is fully encapsulated to provide superior resistance to dust and moisture. Display panel has a single membrane surface, which is impervious to effects of dust, moisture, oil and exhaust fumes. This panel uses a sealed membrane to provide long reliable service life in harsh environments.

The control system is specifically designed and tested for resistance to RFI/EMI and to resist effects of vibration to provide a long reliable life when mounted on a generator set. The control includes transient voltage surge suppression to provide compliance to referenced standards.

Certifications

PowerCommand meets or exceeds the requirements of the following codes and standards:

- NFPA 110 for level 1 and 2 systems.
- ISO 8528-4: 1993 compliance, controls and switchgear.
- CE marking: The CE marking is only valid when equipment is used in a fixed installation application. Material compliance declaration is available upon request.
- UKCA marking: The UKCA marking is only valid when equipment is used in a fixed installation application. Material compliance declaration is available upon request.
- EN50081-1,2 residential/light industrial emissions or industrial emissions.
- EN50082-1,2 residential/light industrial or industrial susceptibility.
- ISO 7637-2, level 2; DC supply surge voltage test.
- Mil Std 202C, Method 101 and ASTM B117: Salt fog test.
- UL 6200 recognized and suitable for use on UL 2200 Listed generator sets.
- CSA C282-M1999 compliance
- CSA 22.2 No. 14 M91 industrial controls.
- PowerCommand control systems and generator sets are designed and manufactured in ISO 9001 certified facilities.

Warranty

All components and subsystems are covered by an express limited one year warranty. Other optional and extended factory warranties and local distributor maintenance agreements are available.

PCCNet COMPATIBLE

For more information contact your local Cummins distributor or visit power.cummins.com

Our energy working for you.™

PDS-1569 | PD00000157 | (02/22)

Exhaust emission data sheet 250DQDAA

60 Hz Diesel generator set
EPA NSPS Stationary emergency

Engine information:

Model:	Cummins Inc. QSL9-G7 NR3	Bore:	4.49 in. (114 mm)
Type:	4 cycle, in-line, 6 cylinder diesel	Stroke:	5.69 in. (145 mm)
Aspiration:	Turbocharged and CAC	Displacement:	543 cu. in. (8.9 liters)
Compression ratio:	16.1:1		
Emission control device:	Turbocharger and CAC		

Performance data	1/4 Standby	1/2 Standby	3/4 Standby	Full Standby	Full Prime
Engine HP @ Stated load (1800 RPM)	95.5	191	286.5	382	342
Fuel consumption (gal/Hr)	5.95	10.50	15.05	19.59	17.69
Exhaust gas flow (CFM)	968.7	1506.1	1906.3	2149.6	N/A
Exhaust gas temperature (°F)	634	758	844	940	700
Exhaust emission data					
HC (Total unburned hydrocarbons)	0.33	0.162	0.09	0.046	0.052
NOx (Oxides of nitrogen as NO2)	1.67	1.66	2.19	3.42	2.68
CO (Carbon monoxide)	3.18	3.18	1.85	0.77	N/A
PM (Particular Matter)	0.22	0.16	0.08	0.04	N/A
SO2 (Sulfur dioxide)	0.142	0.132	0.123	0.115	0.12
Smoke (Bosch)	0.53	0.438	0.382	0.238	0.292

All values are Grams per HP-Hour

Test conditions

Data was recorded during steady-state rated engine speed (± 25 RPM) with full load (±2%). Pressures, temperatures, and emission rates were stabilized.

Fuel specification:	46.5 Cetane Number, 0.035 Wt.% Sulfur; Reference ISO8178-5, 40 CFR86. 1313-98 Type 2-D and ASTM D975 No. 2-D.
Fuel temperature	99 ± 9 °F (at fuel pump inlet)
Intake air temperature:	77 ± 9 °F
Barometric pressure:	29.6 ± 1 in. Hg
Humidity:	NOx measurement corrected to 75 grains H2O/lb dry air
Reference standard:	ISO 8178

The NOx, HC, CO and PM emission data tabulated here were taken from a single engine under the test conditions shown above. Data for the other components are estimated. These data are subjected to instrumentation and engine-to-engine variability. Field emission test data are not guaranteed to these levels. Actual field test results may vary due to test site conditions, installation, fuel specification, test procedures and instrumentation. Engine operation with excessive air intake or exhaust restriction beyond published maximum limits, or with improper maintenance, may results in elevated emission levels.

2024 EPA Tier 3 Exhaust Emission Compliance Statement
250DQDAA
Stationary Emergency
60 Hz Diesel Generator Set

Compliance Information:

The engine used in this generator set complies with Tier 3 emissions limit of U.S. EPA New Source Performance Standards for stationary emergency engines under the provisions of 40 CFR 60 Subpart IIII.

Engine Manufacturer:	Cummins Inc.
EPA Certificate Number:	RCEXL0540AAB-009
Effective Date:	05/01/2023
Date Issued:	05/01/2023
EPA Engine Family (Cummins Emissions Family):	RCEXL0540AAB

Engine Information:

Model:	QSL/QSL9/QSL9-G7 NR3	Bore:	4.49 in. (114 mm)
Engine Nameplate HP:	464	Stroke:	5.69 in. (145 mm)
Type:	4 Cycle, In-line, 6 Cylinder Diesel	Displacement:	543 cu. in. (8.9 liters)
Aspiration:	Turbocharged and CAC	Compression ratio:	16.1:1
Emission Control Device:		Exhaust stack diameter:	6 in. (152 mm)

Diesel Fuel Emission Limits

D2 Cycle Exhaust Emissions

	Grams per BHP-hr			Grams per kWm-hr		
	NO_X + NMHC	CO	PM	NO_X + NMHC	CO	PM
EPA Emissions Limit	3.0	2.6	0.15	4.0	3.5	0.20

Test methods: EPA emissions recorded per 40 CFR Part 60, 89, 1039, 1065 and weighted at load points prescribed in the regulations for constant speed engines.

Diesel fuel specifications: Cetane number: 40-50, Reference: ASTM D975 No. 2-D, 300-500 ppm Sulfur

Reference conditions: Air Inlet Temperature: 25 °C (77 °F), Fuel Inlet Temperature: 40 °C (104 °F). Barometric Pressure: 100 kPa (29.53 in Hg), Humidity: 10.7 g/kg (75 grains H2O/lb) of dry air; required for NOx correction, Restrictions: Intake Restriction set to a maximum allowable limit for clean filter; Exhaust Back Pressure set to a maximum allowable limit..

Tests conducted using alternate test methods, instrumentation, fuel or reference conditions can yield different results. Engine operation with excessive air intake or exhaust restriction beyond published maximum limits, or with improper maintenance, may result in elevated emission levels.

Cooling System Data
DQDAA
QSL9-G7
EPA NSPS Stationary Emergency

High Ambient Air Temperature Radiator Cooling System with Seismic (L228-2 or L225-2)

	Fuel Type	Duty	Rating (kW)	Max cooling @ air flow static restriction, unhoused (inches water/mm water)					Housed in free air, no air discharge restriction		
				0.0/0.0	0.25/6.4	0.5/12.7	0.75/19.1	1.0/25.4	Weather	Sound Level 1	Sound Level 2
				Maximum allowable ambient temperature, degree C							
60 Hz	Diesel	Standby	250	55	54	53	52	51	47	N/A	N/A
		Prime	225	52	52	50	50	50	45	N/A	N/A

High Ambient Air Temperature Radiator Cooling System

	Fuel Type	Duty	Rating (kW)	Max cooling @ air flow static restriction, unhoused (inches water/mm water)					Housed in free air, no air discharge restriction		
				0.0/0.0	0.25/6.4	0.5/12.7	0.75/19.1	1.0/25.4	Weather	Sound Level 1	Sound Level 2
				Maximum allowable ambient temperature, degree C							
60 Hz	Diesel	Standby	250	55	55	55	55	55	55	N/A	N/A
		Prime	225	55	55	55	55	55	55	N/A	N/A

Notes:

1. Data shown are anticipated cooling performance for typical generator set.
2. Cooling data is based on 1000 ft (305 m) site test location.
3. Generator set power output may need to be reduced at high ambient conditions. Consult generator set data sheet for derate schedules.
4. Cooling performance may be reduced due to several factors including but not limited to: Incorrect installation, improper operation, fouling of the cooling system, and other site installation variables.

Exhaust emission data sheet
250DQDAA
60 Hz Diesel generator set
EPA NSPS Stationary emergency

Engine information:

Model:	Cummins Inc. QSL9-G7 NR3	Bore:	4.49 in. (114 mm)
Type:	4 cycle, in-line, 6 cylinder diesel	Stroke:	5.69 in. (145 mm)
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Compression ratio:	16.1:1		
Emission control device:	Turbocharger and CAC		

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All values are Grams per HP-Hour

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Fuel specification:	46.5 Cetane Number, 0.035 Wt.% Sulfur; Reference ISO8178-5, 40 CFR86. 1313-98 Type 2-D and ASTM D975 No. 2-D.
Fuel temperature	99 ± 9 °F (at fuel pump inlet)
Intake air temperature:	77 ± 9 °F
Barometric pressure:	29.6 ± 1 in. Hg
Humidity:	NOx measurement corrected to 75 grains H2O/lb dry air
Reference standard:	ISO 8178

The NOx, HC, CO and PM emission data tabulated here were taken from a single engine under the test conditions shown above. Data for the other components are estimated. These data are subjected to instrumentation and engine-to-engine variability. Field emission test data are not guaranteed to these levels. Actual field test results may vary due to test site conditions, installation, fuel specification, test procedures and instrumentation. Engine operation with excessive air intake or exhaust restriction beyond published maximum limits, or with improper maintenance, may results in elevated emission levels.

Alternator data sheet

Frame size: HCI434D

Characteristics		1-brg w/coupling adapter	
Weights:	Stator assembly:	926 lb	420 kg
	Rotor assembly:	818 lb	371 kg
	Complete assembly:	2097 lb	351 kg
Maximum speed:		2250 rpm	
Excitation current:	Full load:	2.00 Amps	
	No load:	0.50 Amps	
Insulation system:	Class H throughout		

3 Ø Ratings (0.8 power factor)		**60 Hz** (winding no)				**50 Hz** (winding no)			
(Based on specific temperature rise at 40° C ambient temperature)		110/190 220/380 (311)	120/208 240/416 (311)	139/240 277/480 (311)	347/600 (17)	110/190 220/380 (311)	115/200 230/400 (311)	120/208 240/415 (311)	127/220 254/440 (311)
150° C rise ratings	kW	264	292	320	320	256	256	256	248
	kVA	330	365	400	400	320	320	320	310
125° C rise ratings	kW	248	275	300	300	240	240	240	232
	kVA	310	344	375	375	300	300	300	290
105° C rise ratings	kW	230	252	276	276	224	224	224	216
	kVA	288	315	345	345	280	280	280	270
80° C rise ratings	kW	200	218.4	240	240	192	192	192	182.4
	kVA	250	273	300	300	240	240	240	228

Reactances (per unit ± 10%) (Based on full load at 125° C rise rating)	110/190 220/380 (311)	120/208 240/416 (311)	139/240 277/480 (311)	347/600 (07)	110/190 220/380 (311)	115/200 230/400 (311)	120/208 240/415 (311)	127/220 254/440 (311)
Synchronous	3.89	3.60	2.95	2.97	3.16	2.85	2..65	2.28
Transient	0.24	0.22	0.18	0.18	0.20	0.18	0.17	0.15
Subtransient	0.16	0.15	0.12	0.13	0.14	0.13	0.12	0.10
Negative sequence	0.30	0.28	0.23	0.23	0.26	0.24	0.22	0.19
Zero sequence	0.11	0.10	0.08	0.08	0.10	0.09	0.08	0.07

Motor starting	Broad Range	600	Broad Range
Maximum kVA (90% sustained voltage)	1028	1028	762

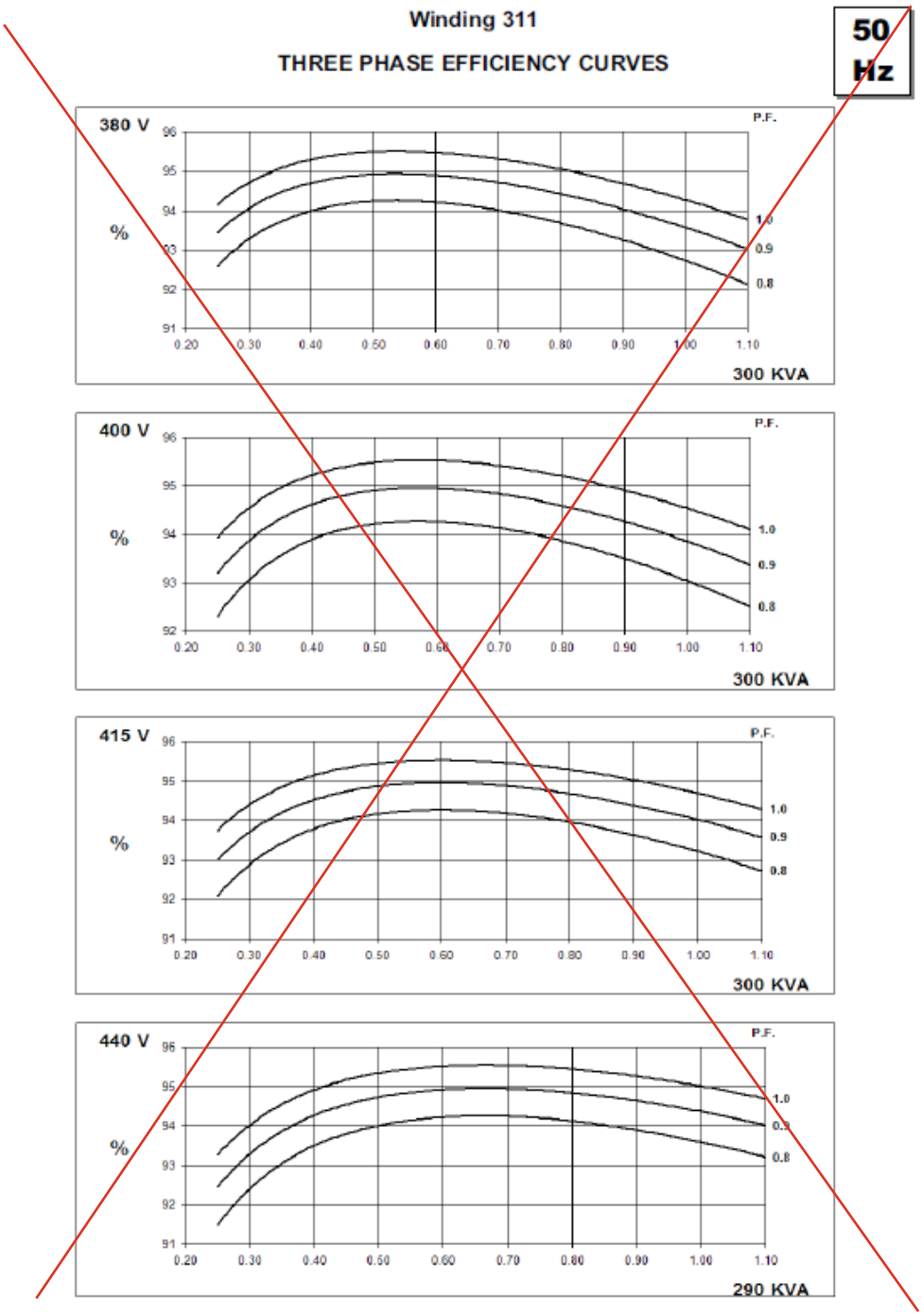
Time constants (sec)	Broad Range	600	Broad Range
Transient	0.080	0.080	0.080
Subtransient	0.019	0.019	0.019
Open circuit	1.700	1.700	1.700
DC	0.018	0.018	0.018

Alternator data sheet

Frame size: HCI434D

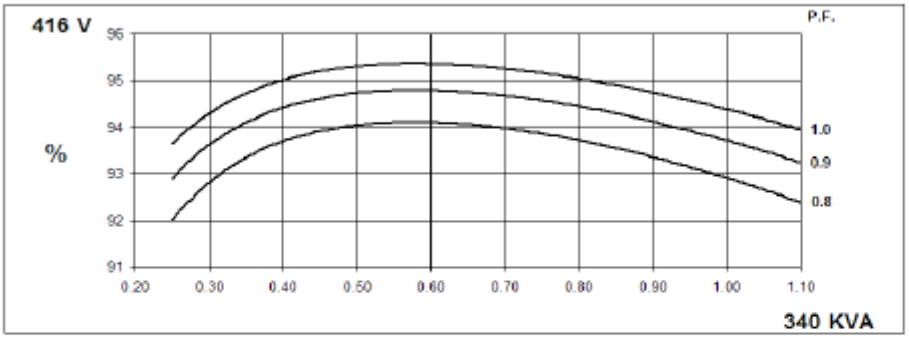
Windings	(@ 20° C)	Broad Range	600	Broad Range
Stator resistance	(Ohms per phase)	0.0272	0.0400	0.0272
Rotor resistance	(Ohms)	1.0400	1.0400	1.0400
Number of leads		12	6	12

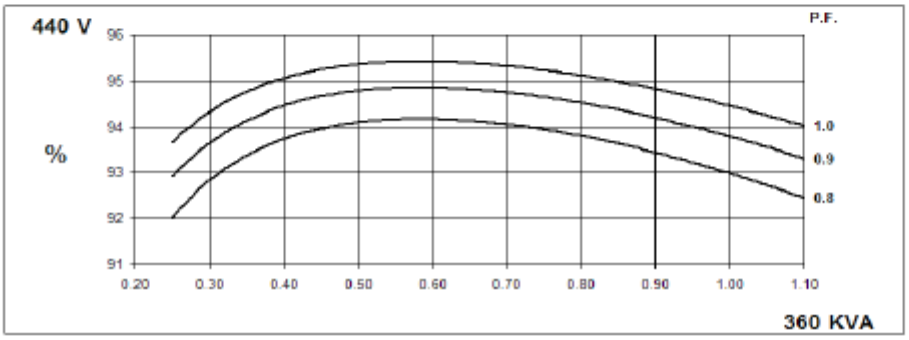
Single phase power can be taken up to 50% of 3 phase-ratings

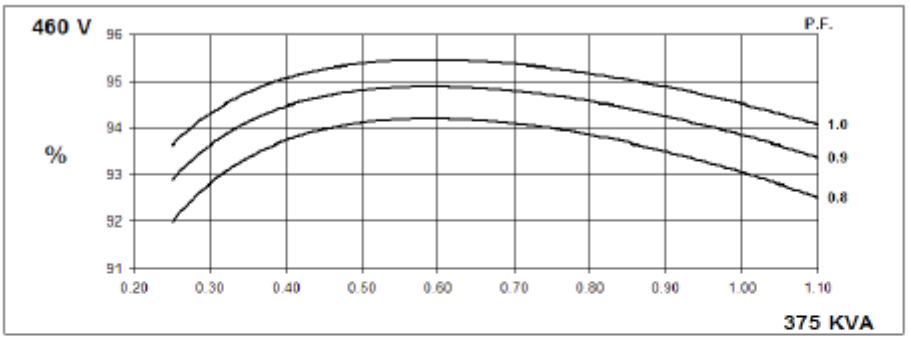


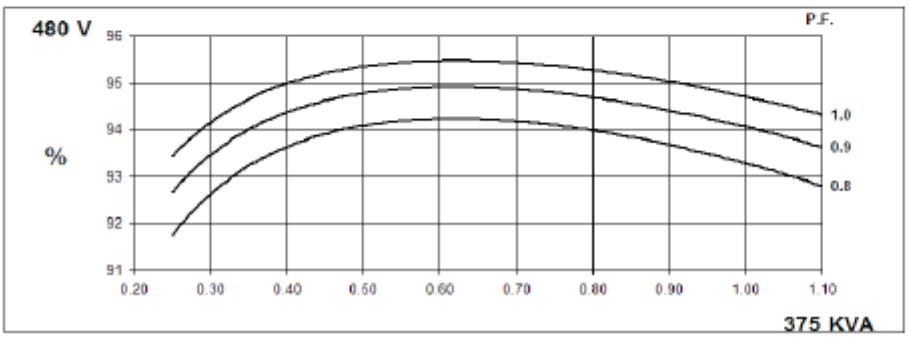
Winding 311
THREE PHASE EFFICIENCY CURVES

60 Hz





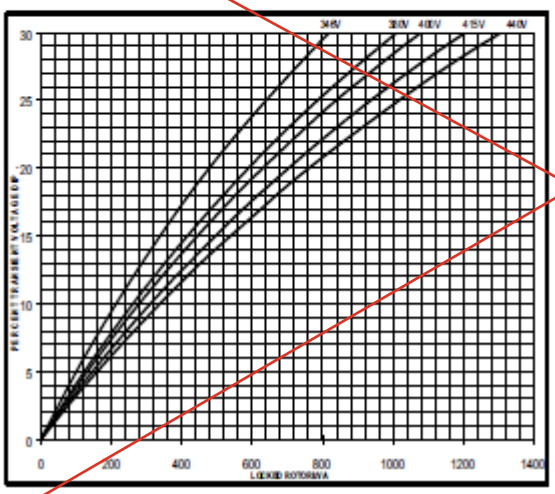




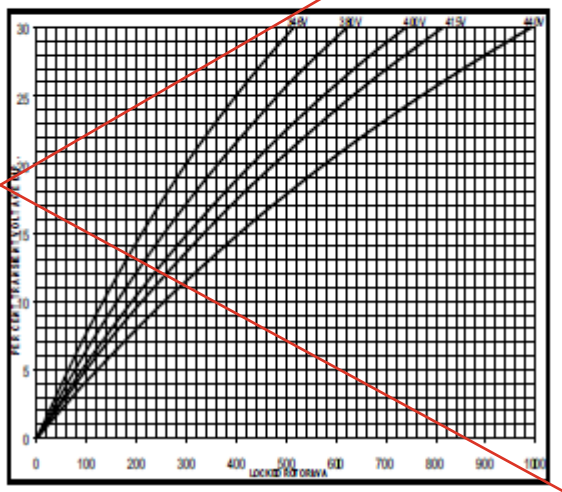
Winding 311
Locked Rotor Motor Starting Curve

50 Hz

MX

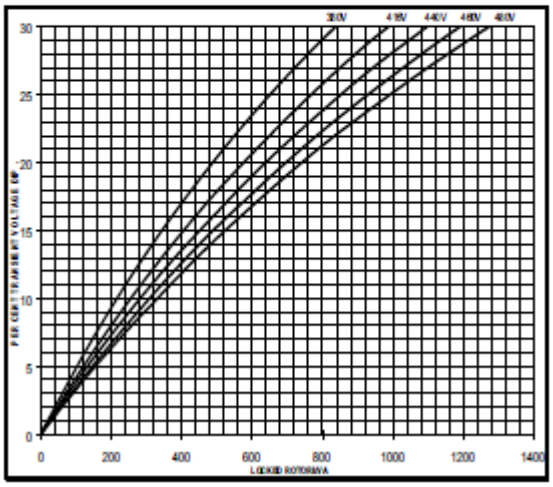


SX

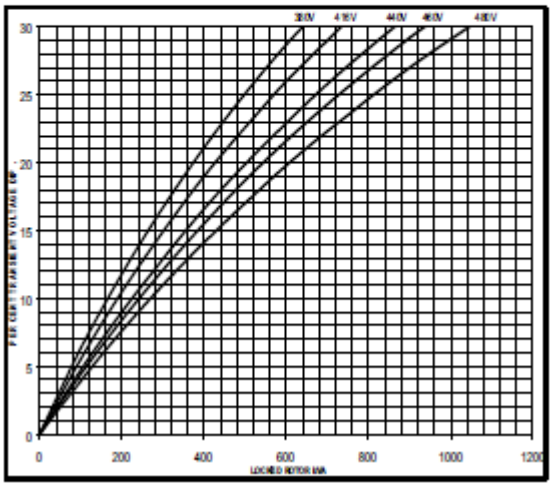


60 Hz

MX



SX

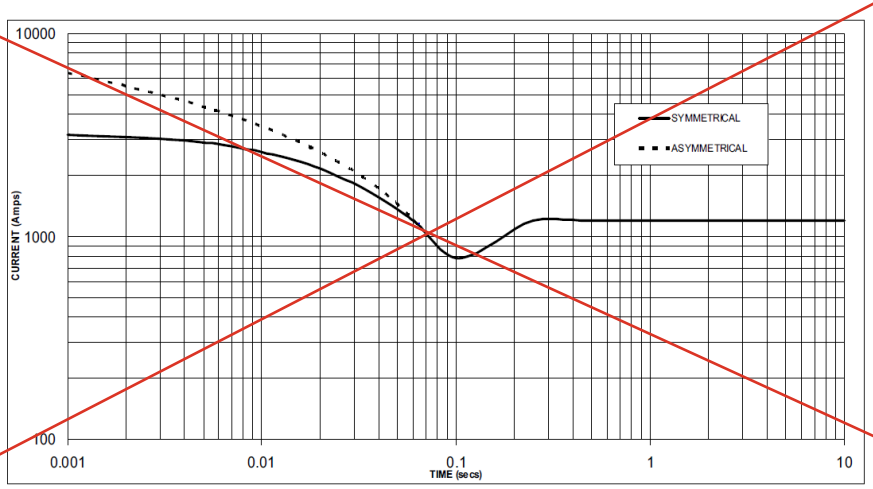


Alternator data sheet Frame size: HCI434D

Three-phase Short Circuit Decrement Curve. No-load Excitation at Rated Speed

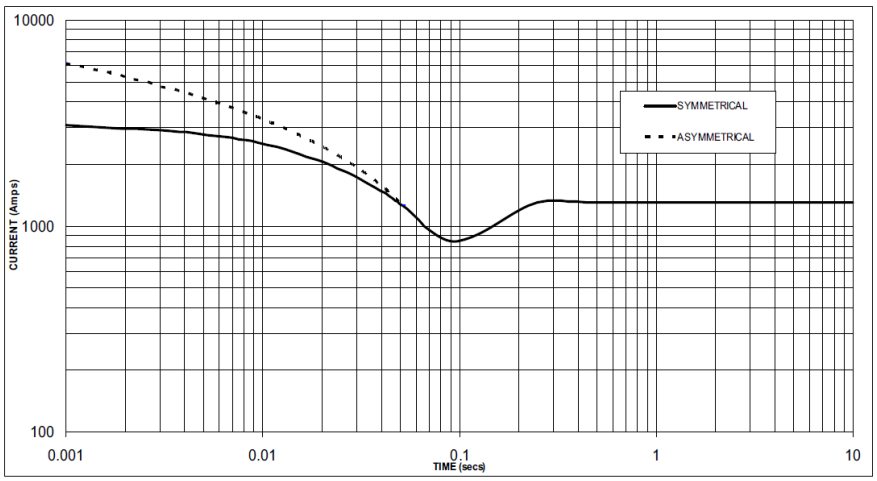
Based on star (wye) connection.

50 Hz



Sustained Short Circuit = 1.200 Amps

60 Hz



Sustained Short Circuit = 1,300 Amps

Note 1

The following multiplication factors should be used to adjust the values from curve between time 0.001 seconds and the minimum current point in respect of nominal operating voltage :

50Hz		60Hz	
Voltage	Factor	Voltage	Factor
380v	X 1.00	416v	X 1.00
400v	X 1.05	440v	X 1.06
415v	X 1.09	460v	X 1.10
440v	X 1.16	480v	X 1.15

The sustained current value is constant irrespective of voltage level

Note 2

The following multiplication factor should be used to convert the values calculated in accordance with NOTE 1 to those applicable to the various types of short circuit :

	3-phase	2-phase L-L	1-phase L-N
Instantaneous	x 1.00	x 0.87	x 1.30
Minimum	x 1.00	x 1.80	x 3.20
Sustained	x 1.00	x 1.50	x 2.50
Max. sustained duration	10 sec.	5 sec.	2 sec.

All other times are unchanged

Note 3

Curves are drawn for Star (Wye) connected machines. For other connection the following multipliers should be applied to current values as shown :

Parallel Star = Curve current value X 2

Series Delta = Curve current value X 1.732

Power Generation

Sound Data

250DQDAA 60Hz

Sound Pressure Level @ 7 meters, dB(A)

See Notes 1-8 listed below

Configuration		Measurement Location Number								Average
		1	2	3	4	5	6	7	8	
Standard - Unhoused	Infinite Exhaust	88.2	91.6	91.3	92.2	89.1	91.6	88.1	91.4	90.7
F200 –Weather	Mounted Muffler	85.5	90.8	90.8	90.6	87.4	91.9	90	91.8	90.3
F201 - Quiet Site II First Stage	Mounted Muffler	90.4	89.3	81	77.5	77.8	76.4	80.9	90.3	86.3
F202 - Quiet Site II Second Stage	Mounted Muffler	70.1	71.4	69.5	71	74.4	72	68.7	71.3	71.4

Sound Power Level, dB(A)

See Notes 2-6, 9, 10 listed below

Configuration		Octave Band Center Frequency (Hz)								Overall Sound Power Level
		63	125	250	500	1000	2000	4000	8000	
Standard - Unhoused	Infinite Exhaust	83.8	95	105.8	109.8	112	111.8	111.1	108.3	118.1
F200 –Weather	Mounted Muffler	89.4	98.1	106.6	109.3	112.7	111.6	109.3	105.3	117.8
F201 - Quiet Site II First Stage	Mounted Muffler	99.7	105.7	107	107.2	108.8	107.5	103.4	96.1	114.9
F202 - Quiet Site II Second Stage	Mounted Muffler	78.4	87.3	92.8	93	93.7	94	91.9	86.4	100.6

Exhaust Sound Pressure Level @ 1 meter, dB(A)

Open Exhaust (No Muffler Rated Load)	Octave Band Center Frequency (Hz)								Sound Pressure Level
	63	125	250	500	1000	2000	4000	8000	
	79.2	90.9	99.9	102.7	109.4	110.9	111	110	116.7

Note:

1. Position 1 faces the engine front. The positions proceed around the generator set in a counter-clockwise direction in 45° increments. All positions are at 7m (23 ft) from the surface of the generator set and 1.2m (48") from floor level.
2. Sound levels are subject to instrumentation, measurement, installation and manufacturing variability.
3. Sound data with remote-cooled generator sets are based on rated loads without cooling fan noise.
4. Sound levels for aluminum enclosures are approximately 2 dB(A)s higher than listed sound levels for steel enclosures.
5. Sound data for generator set with infinite exhaust do not include exhaust noise.
6. Data is based on full rated load with standard radiator-cooling fan package
7. Sound Pressure Levels are measured per ANSI S1.13 and ANSI S12.18, as applicable.
8. Reference sound pressure is 20 µPa.
9. Sound Power Levels per ISO 3744 and ISO 8528-10, as applicable.
10. Reference power = 1 pw (10^{-12} W)
11. Exhaust Sound Pressure Levels are per ISO 6798, as applicable.

Specification Sheet

Enclosures and Tanks

250-1000 kW Gensets

Enclosure Standard Features

- 14-gauge steel construction (panels)
- Stainless steel hardware
- Zinc phosphate pretreatment, e-coat primer and super durable powder topcoat paint minimize corrosion and color fade
- Package listed to UL 2200
- Designed to satisfy national electrical code installation requirements
- Fuel and electrical stub-up area within enclosure perimeter
- Fixed louvers
- Cambered roof prevents water accumulation
- Recessed, lockable doors in two sides
- Retainers hold doors open for easy access
- Enclosed exhaust silencer ensures safety and protects against rust
- Rain cap
- Exterior oil and coolant drains with interior valves for ease of service
- Rodent barriers on inlet
- Non-hydroscopic sound attenuating material
- Side mounted controls and circuit breakers
- Easy access lifting points for spreader bars
- Dual vibration isolation system (250-500 kW)
- Spring vibration isolation system (600-1000 kW)
- Enclosure mounts to lifting base or fuel tank (250-500 kW)
- Enclosure mounts to lifting base (600-1000 kW)
- Factory pre-assembled package
- Designed for outdoor use only
- Externally mounted emergency stop button for operator safety (optional on 250-500 kW)
- Horizontal air discharge to prevent leaf and snow accumulation (600-1000 kW)

Options

- Three levels of sound attenuation
- Motorized louvers to protect from ice and snow accumulation (available on air inlet for all models and on air outlet on level II, 250-500 kW enclosures only)
- Horizontal air discharge, sound level 2 only (250-500 kW)
- Aluminium construction with roll-coated polymer paint
- Wind rated to 150 mph
- Neutral sandstone paint color
- Factory mounted battery charger
- External 120 VAC service outlet
- Rain hoods for air inlet (250-500 kW)
- Lifting base in lieu of a sub-base tank (250-500 kW)
  - Pre-wired AC distribution package
  - 100 amp (250-500 kW) or 150 amp (600-1000 kW) main circuit breaker; connected to 120 VAC Line-Neutral and 208 or 240 VAC Line-Line, spare breaker positions and capacity for future upgrades (600-1000 kW)
  - GFCI protected internal 120 VAC service receptacle
  - GFCI protected weather proof external 120 volt service receptacle
  - All factory installed AC powered features pre-wired into load center
- Interior lights – 120 volt (600-1000 kW)
- Rain hoods for air inlet (250-500 kW)
- Seismic isolators available (600-1000 kW)

Fuel Tanks

Standard sub-base tank features

- UL 142 Listed
- ULC-S601-07 Listed
- NFPA37 compliant
- Dual walled, steel construction
- Emergency tank and rupture basin vents
- Tank mounted mechanical fuel gauge
- Fuel supply and return tubes
- Top mounted leak detection float switch
- Low and high level fuel switches
- Mounting brackets for optional pump and control (250-500 kW)
- Integral lifting points

Sub-base tank options

- Pre-wired fuel pump and control
- Fuel overfill alarm – internal or external
- Overflow and tank fill plugs
- Five gallon spill fill box – internal or external
- Fill pipe extender
- Local code approvals available

200-500 kW Dual Wall Sub-base Fuel Tanks – usable operating hours

Genset model (60 Hz)	Gallons /hour at full load	270 gallon tank	300 gallon tank	400 gallon tank	500 gallon tank	600 gallon tank	660 gallon tank	720 gallon tank	850 gallon tank	1420 gallon tank	1470 gallon tank	1700 gallon tank	2050 gallon tank	2525 gallon tank
250 DQDAA	20	14	15	20	25	30	33	36		72	74		104	
275 DQDAB	21	13	14	19	24	29	31	34		66	70		96	
300 DQDAC	23	12	13	17	22	26	29	31		61	64		88	
300 DQHAB	23	12	13	17	22	26	29		37			74		
450 DFEJ	30	9	10	13	17	20	22		28			57		84
500 DFEK	34	8	9	11	15	18	19		25			50		74

Operating hours are measured at 60 Hz, standby rating.

600-1000 kW Dual Wall Sub-base Fuel Tanks – usable operating hours

Genset model	Gallons /hour at full load	200 gallon tank	660 gallon tank	1000 gallon tank	1500 gallon tank	2000 gallon tank	2400 gallon tank
600 DQCA	42	5	16	24	36	48	57
600 DQPAA	45	4	15	22	33	44	53
650 DQPAB	50	4	13	20	30	40	48
750 DQCB	51	4	13	20	29	39	47
750 DQFAA	53	4	12	19	28	38	45
800 DQCC	53	4	12	19	28	38	45
800 DQFAB	56	4	12	18	27	36	43
900 DQFAC	64	3	10	16	23	31	38
1000 DQFAD	72	3	9	14	21	28	33

*3000 gallon tank offered as an accessory kit – refer to NAAC-5853 spec sheet.

- Operating hours are measured at 60 Hz, standby rating.
- Up to 90% fill alarm to comply with NFPA30, operating capacity is reduced by 10%.

Enclosure Package Sound Pressure Levels @ 7 meters dB(A)

Genset model	Weather protective enclosure (F200, F203)	QuietSite level 1 sound attenuated enclosure (F201, F204)	QuietSite level 2 sound attenuated enclosure (F202, F205)
250 DQDAA	90	88	72
275 DQDAB	90	88	73
300 DQDAC	90	88	73
300 DQHAB	89	88	76
450 DFEJ	88	85	74
500 DFEK	89	87	73
600 DQCA	90.6/86*	79.3/78*	74.1/73*
600 DQPAA	89.10	80.70	74.70
650 DQPAB	89.70	81.40	75
750 DQCB	91.1/87*	79.9/79*	75.3/74*
750 DQFAA	87.8	77.8	73.8
800 DQCC	91.3/87*	80.2/79*	75.7/74*
800 DQFAB	88.1	78.3	74
900 DQFAC	88.8	79.1	74.6
1000 DQFAD	89.6	80.1	75.3

- All data is 60 Hz, full load standby rating, steel enclosures only.
- Data is a measured average of 8 positions.
- Sound levels for aluminium enclosures are approximately 2 dB(A) higher than listed sound levels for steel enclosures.

* Sound data with seismic feature codes L228-2 (IBC) and/or L225-2 (OSHPD)

Package Dimensions of Enclosure, Exhaust System, and UL Tank

250-500 kW

Tank size (gal)	Weather protective package length (in)	QuietSite level I package length (in)	QuietSite level 2 package length (in)	Width (in)	Height (in)	Weather protective package weight (lbs)	QuietSite level 1 package weight (lbs)	QuietSite level 2 package weight (lbs)
270	188	188	222	82	106	4991	5471	6711
300	188	188	222	82	104	5648	6073	6991
400	188	188	222	82	106	5833	6258	7176
500	188	188	222	82	108	5956	6381	7299
600	188	188	222	82	111	6116	6541	7459
660	188	188	222	82	113	6235	6660	7578
720	188	188	222	82	114	6174	6599	7517
850	188	188	222	82	118	6529	6954	7872
1420	200	200	222	82	128	6863	7343	8583
1470	192	192	222	82	128	7253	7733	8973
1700	234	234	234	82	128	7982	8407	9325
2050	284	284	284	82	128	8383	8863	10103
2525	346	346	346	82	128	9391	9871	11111
Lifting base	188	188	222	82	100	4335	4760	5678

600-1000 kW

Tank size (gal)	Weather protective package length (in)	QuietSite level I package length (in)	QuietSite level 2 package length (in)	Width (in)	Height (in)	Weather protective package weight (lbs)	QuietSite level 1 package weight (lbs)	QuietSite level 2 package weight (lbs)
200	260	303	315	98	137	10194	13074	14954
660	260	303	315	98	137	9586	12466	14346
1000	260	303	315	98	141	10117	12997	14877
1500	260	303	315	98	146	10677	13557	15437
2000	292	327	327	98	143	11959	14839	16719
2400	338	338	338	98	143	12961	15841	17721

- This weight does not include the generator set. Consult your local Cummins distributor or the appropriate generator specification sheet.
- Width is 86” lifting eye to lifting eye (250-500 kW), 102” lifting eye to lifting eye (600-1000 kW).
- Height - Florida, Michigan, and Suffolk add 6.4” (250-500 kW) or 2” (600-1000 kW) for bottom space.
- Maximum length emergency vent removed.

	CSA - The generator set is CSA certified to product class 4215-01.
	UL - The generator set is available listed to UL 2200, stationary engine generator assemblies. The PowerCommand® control is listed to UL 508 - Category NITW7 for U.S. and Canadian usage.

For more information contact your local Cummins distributor or visit power.cummins.com

Our energy working for you.™

S-1443 (11/18)

Prototype Test Support (PTS)
60 Hz test summary

Generator set models

250DQDAA 275DQDAB
300DQDAC

Representative prototype

Model: 300DQDAC
Alternator: HC4F
Engine: QSL9-G5

The following summarizes prototype testing conducted on the designated representative prototype of the specified models. This testing is conducted to verify the complete generator set electrical and mechanical design integrity. Prototype testing is conducted only on generator sets not sold as new equipment.

Maximum surge power: 315 kW

The generator set was evaluated to determine the stated maximum surge power.

Maximum motor starting: 1372 kVA

The generator set was tested to simulate motor starting by applying the specified kVA load at low lagging power factor (0.4 or lower). With this load applied, the generator set recovered to a minimum of 90% rated voltage.

Torsional analysis and testing:

The generator set was tested to verify that the design is not subjected to harmful torsional stresses. A spectrum analysis of the transducer output was conducted over the speed range of 1350 to 1950 RPM.

Cooling system: 50 °C ambient
0.5 in. H2O restriction

The cooling system was tested to determine ambient temperature and static restriction capabilities. The test was performed at full rated load in elevated ambient temperature under static restriction conditions.

Durability:

The generator set was subjected to a minimum 500 hour endurance test operating at variable load up to the Standby rating based upon MIL-STD-705 to verify structural soundness and durability of the design.

Electrical and mechanical strength:

The generator set was tested to several single phase and three phase faults to verify that the generator can safely withstand the forces associated with short circuit conditions. The generator set was capable of producing full rated output at the conclusion of the testing.

Steady state performance:

The generator set was tested to verify steady state operating performance was within the specified maximum limits.

Voltage regulation:	± 0.50%
Random voltage variation:	± 0.50%
Frequency regulation:	Isochronous
Random frequency variation:	± 0.25%

Transient performance:

The generator set was tested with the standard alternator to verify single step loading capability as required by NFPA 110. Voltage and frequency response on load addition or rejection were evaluated. The following results were recorded:

Full load acceptance:

Voltage dip:	30.5%
Recovery time:	2.1 seconds
Frequency dip:	12.8%
Recovery time:	2.6 seconds

Full load rejection:

Voltage rise:	15.8%
Recovery time:	0.7 seconds
Frequency rise:	3.5%
Recovery time:	2.8 seconds

Harmonic analysis:

(per MIL-STD-705B, method 601.4)

	Line to Line		Line to Neutral	
Harmonic	No load	Full load	No load	Full load
3	0.09	0.035	0.16	0.054
5	0.62	1.95	0.66	2
7	0.58	0.73	0.6	0.72
9	0.028	0.029	0.058	0.098
11	0.7	0.37	0.7	0.36
13	0.13	0.32	0.33	0.36
15	0.05	0.016	0.08	0.076

VMC GROUP
THE POWER OF TOGETHER™

CERTIFICATE OF COMPLIANCE
SEISMIC DESIGN OF NONSTRUCTURAL COMPONENTS AND SYSTEMS

Certification No.

VMA-50957-01C (Revision 10)

Expiration Date: 6/30/2023

Certification Parameters:

The nonstructural products (mechanical and/or electrical components) listed on this certificate are CERTIFIED[1] FOR SEISMIC APPLICATIONS in accordance with the following building code[2] releases.

IBC 2015, 2012, 2009, 2006

The following model designations, options, and accessories are included in this certification. Reference report number VMA-50957-01 as issued by The VMC Group for a complete list of certified models, included accessories/options, and certified installation methods.

Cummins Power Generation, Inc.; Diesel Gensets

DSGAA-E, DSHAD, DQDAA-C, DQHAA-B, DFEJ-K; 100kW - 500kW

The above referenced equipment is **APPROVED** for seismic application when properly installed[3], used as intended, and contains a Seismic Certification Label referencing this Certificate of Compliance[4]. As limited by the tabulated values, below grade, grade, and roof-level installations, installations in essential facilities, for life safety applications, and/or of equipment containing hazardous contents are permitted and included in this certification with an Equipment Importance Factor assigned as I_p=1.5. The equipment is qualified by successful seismic shake table testing at the nationally recognized University of California Berkeley Pacific Earthquake Engineering Research Center under the review of the ISO Accredited Product Certification Agency, the VMC Group.

Certified Seismic Design Levels			
Certified **IBC**	**Importance $I_p \leq 1.5$** Soil Classes A-E Risk Categories I-IV Design Categories A-F	z/h ≤ 1.0	z/h = 0.0
		$S_{DS} \leq 0.647$ g	$S_{DS} \leq 1.940$ g

Certified Seismic Installation Methods[8]	
External Isolation Mounting From Unit Base To Fuel Tank	External Isolation Mounting From Unit Base To Rigid Structure
Rigid Mounting From Unit Base To Fuel Tank	Rigid Mounting From Unit Base To Rigid Structure

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Fax: 713.466.1355

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CERTIFICATE OF COMPLIANCE

SEISMIC DESIGN OF NONSTRUCTURAL COMPONENTS AND SYSTEMS

Certified Product Table:

Series	Model	Max Rating [kW]	Length [in]	Width [in]	Height [in]	S_{DS} @ z/h=0	S_{DS} @ z/h=1	Tank Range [gal]	Enclosure[1]	Mounting Configurations
DFEx (QSX15)	J, K	450, 500	366	86	128	1.94	0.64	270-2525	F183, F200-F205	Rigid Mounting From Unit Base To Rigid Structure / Fuel Tank External Isolation Mounting From Unit Base to Rigid Structure/ Fuel Tank
DQDAx (QSL9-G7)	A, B, C	250, 275, 300	266	90	134	2.48	2.00	270-2050		
DQHAx (QSM11)	A, B	275, 300	226	80	128	2.28	2.28	270-1700		
DSHAx (QSL9-G2)	D	230	143	42	110			282-1296	F172-173, F182, F216-217	
DSGAx (QSB7)	A, B, C, D, E	100, 125, 150, 175, 200	184	44	114	2.48	2.00	309-1140	F173, F182, F216-217, F232-233	Rigid Mounting From Unit Base To Rigid Structure / Fuel Tank

[1]Note: The F201, F202, F204, & F205 are certified in the tested mineral wool foam configuration, as well as the analyzed PU foam configuration highlighted in the FEA section of Certification Report VMA-50957-01

Group	Type	S_{DS} (z/h=0)	S_{DS} (z/h=1)	A_{Flex-H}	A_{Rig-H}	A_{Flex-V}	A_{Rig-V}	Rigid Mounting F_p/W_p	Isolated Mounting F_p/W_p
Seismic	AC156	1.940	0.647	1.94	0.776	1.293	0.518	0.466	1.455

This certification includes the open generator set and the enclosed generator set when installed with or without the sub-base tank. The generator set and included options shall be a catalogue design and factory supplied. The generator set and applicable options shall be installed and attached to the building structure per the manufacturer supplied seismic installation instructions. This certification excludes After Treatment Units (ATUs), all non-factory supplied accessories, including but not limited to mufflers, isolation/restraint devices, remote control panels, remote radiators, pumps and other electrical/mechanical components.

IBC CERTIFIED VMC GROUP

VMA-50957-01C (Revision 10)
Issue Date: Thursday, March 2, 2017
Revision Date: Monday, January 25, 2021
Expiration Date: Friday, June 30, 2023

VMC GROUP
THE POWER OF TOGETHER™

CERTIFICATE OF COMPLIANCE
SEISMIC DESIGN OF NONSTRUCTURAL COMPONENTS AND SYSTEMS

Notes & Comments:

1. All equipment listed herein successfully passed the seismic acceptance criteria for shake testing non-structural components and systems as set forth in the ICC AC-156. The Test Response Spectrum (TRS) enveloped the Required Response Spectrum (RRS) for all units tested. The tested units were representative sample(s) of a contingent of models and all remained captive and structurally sound after the seismic shake simulation. The units also remained functionally operational after the simulation testing as functional testing was completed by the equipment manufacturer before and after the seismic simulations. Although a seismic qualified unit inherently contains some wind resisting capacity, that capacity is undetermined and is excluded from this certification. Snow/Ice loads have been neglected and thus limit the unit to be installed both indoors (covered by an independent protective structure) and out of doors (exposed to accumulating snow/ice) for ground snow loads no greater than 30 psf for all applications.

2. The following building codes are addressed under this certification:
   IBC 2015 referencing ASCE7-10 and ICC-ES AC-156
   IBC 2012 referencing ASCE7-10 and ICC-ES AC-156
   IBC 2009 referencing ASCE7-05 and ICC-ES AC-156
   IBC 2006 referencing ASCE7-05 and ICC-ES AC-156

3. Refer to the manufacturer supplied installation drawings for anchor requirements and mounting considerations for seismic applications. Required anchor locations, size, style, and load capacities (tension and shear) may be specified on the installation drawings or specified by a 3rd party. Mounting requirement details such as anchor brand, type, embedment depth, edge spacing, anchor-to-anchor spacing, concrete strength, special inspection, wall design, and attachment to non-building structures must be outlined and approved by the Engineer of Record for the project or building. Structural walls, structural floors, and housekeeping pads must also be seismically designed and approved by the project or building Structural Engineer of Record to withstand the seismic anchor loads as defined on the installation drawings. The installing contractor is responsible for ensuring the proper installation of all anchors and mounting hardware.

4. For this certificate and certification to remain valid, this certificate must correspond to the "Seismic Certification Label" found affixed to the unit by the factory. The label ensures the manufacturer built the unit in conformance to the IBC seismic design criteria set forth by the Certified Seismic Qualification Agency, the VMC Group, and meets the seismic design levels claimed by this certificate.

5. Mechanical, Electrical, and Plumbing connections to the equipment must be flexibly attached as to not transfer load through the connection. The structural integrity of any conduit, cable trays, piping, ductwork and/or flexible connections is the responsibility of others. This certification does not guarantee the equipment will remain compliant to NEMA, IP, UL, or CSA standards after a seismic event.

6. This certificate applies to units manufactured at:
   Cummins Power Generation, Inc., 1400 73rd Ave NE, Minneapolis, MN 55432

7. This certification follows the VMC Group's ISO-17065 Scheme.

8. The certified seismic installation methods states are a summary for all series this certificate covers, for more detailed information on the certified seismic installation methods, see the certified product tables.

John P. Giuliano, PE
President, VMC Group

IAS ACCREDITED Product Certification Agency

VMA-50957-01C (Revision 10)
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IBC® CERTIFIED VMC GROUP

SECTION 3
GENERATOR ACCESSORIES

Data Sheet

Circuit Breakers

Description

This Data sheet provides circuit breaker manufacturer part numbers and specifications. The Circuit breaker box description is the rating of that breaker box installation on a Cummins Generator. Please refer to the website of the circuit breaker manufacturer for breaker specific ratings and technical information.

Applicable Models

Engine	Models					
Kubota	C10D6	C15D6	C20D6			
QSJ2.4	C20N6	C25N6	C30N6	C30N6H	C36N6	C36N6H
	C40N6	C40N6H	C50N6H	C60N6H		
B3.3	C25D6	C30D6	C35D6	C40D6	C50D6	C60D6
QSJ5.9G	C45N6	C50N6	C60N6	C70N6	C80N6	C100N6
QSJ8.9G	C125N6	C150N6	C175N6B	C200N6B		
QSB5	DSFAC	DSFAD	DSFAE	C50D6C	C60D6C	C80D6C
	C100D6C	C125D6C				
QSB7	DSGAA	DSGAB	DSGAC	DSGAD	DSGAE	
		C125D6D	C150D6D	C175D6D	C200D6D	
QSL9	DSHAD	DQDAA	DQDAB	DQDAC		
QSM11	DQHAB					
QSX15	DFEJ	DFEK				

Instructions

1. Locate the circuit breaker feature code or part number and use the charts below to find the corresponding manufacturer circuit breaker catalog number.

2. Use the first letter of the circuit breaker catalog number to determine the "frame" of the breaker. If the first letter is an “N”, use the second letter. Then follow the corresponding website link from the table below to find the breaker catalog number description.

Please refer to the catalog numbering systems page, which is given in the chart, to understand the nomenclature of the catalog number.

Frame	Catalog name*	Catalog number description page(s)
P	0612CT0101 http://www.schneider-electric.us/en/download/document/0612CT0101/	16-17
H, J, and L	0611CT1001 http://www.schneider-electric.us/en/download/document/0611CT1001/	8-9
Q	0734CT0201 http://www.schneider-electric.us/en/download/document/0734CT0201/	4

*The following link may also be used to search specifically by the breaker part number or for the catalog name listed above. http://products.schneider-electric.us/technical-library/

3. Search the catalog by using the first 3 letters of the breaker catalog number and the first 5 numbers to find information such as trip curves, accessories, and dimensional details regarding the circuit breaker.

*If the catalog number starts with “N”, skip the N and begin your search with the second letter.

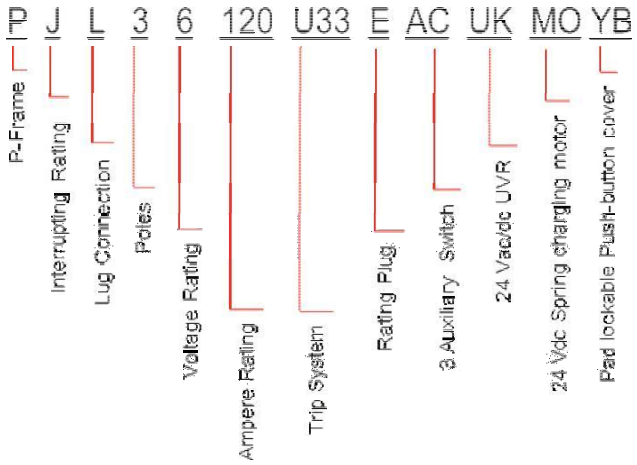
*If the first 3 letters are “PJP,” the search will not work. You will need to start with just “PJ” and use the description pages to obtain the information you are looking for on the “PJP.”

Example

After finding your circuit breaker catalog number to be "PJL36120U33EACUKMOYB," navigate to the P-frame catalog by using the link provided.

Look at pages 16-17 of the pdf catalog to find the nomenclature of the breaker.

Search the P-frame spec sheet using the search "PJL36120.”



Mechanically Operated Breakers						
Feature Code	**Breaker Box Description**	**Cummins Part #**	**Manufacturer**	**Breaker Catalog Number**	**Trip Unit**	**Plug Type**
KC60-2	Circuit Breaker-1200A,Right CB on Right side,3-Pole, UL 600,IEC 690, 100%	0320-2183	Schneider Electric	PJP36120U31E	MicroLogic 3.0 LI	E
KC61-2	Circuit Breaker-1200A,Left CB on Right side,3-Pole, UL 600,IEC 690, 100%	0320-2183	Schneider Electric	PJP36120U31E	MicroLogic 3.0 LI	E
KC62-2	Circuit Breaker-800A,Right CB on Right side,3-Pole,UL 600,IEC 690 100%	0320-2182	Schneider Electric	PJP36080U31F	MicroLogic 3.0 LI	F
KC63-2	Circuit Breaker-800A,Left CB on Right side,3-Pole, UL 600,IEC 690 100%	0320-2182	Schneider Electric	PJP36080U31F	MicroLogic 3.0 LI	F
KC64-2	Circuit Breaker-600A,Right CB on Right side,3-Pole, UL 600,IEC 690, 100%	A044T468	Schneider Electric	NLGL36600U33X-600A	MicroLogic 3.3S	N/A
KC65-2	Circuit Breaker-600A,Left CB on Right side,3-Pole, UL 600,IEC 690, 100%	A044T468	Schneider Electric	NLGL36600U33X-600A	MicroLogic 3.3S	N/A
KC66-2	Circuit Breaker-400A,Right CB on Right side,3-Pole,UL 600,IEC 690 100%	A045U083	Schneider Electric	NLGL36400U33XLY-400A	MicroLogic 3.3S	N/A
KC67-2	Circuit Breaker-400A,Left CB on Right side,3-Pole, UL 600,IEC 690 100%	A045U083	Schneider Electric	NLGL36400U33XLY-400A	MicroLogic 3.3S	N/A
KS80-2	CircuitBreaker-15A,Right,3P,600VAC,80%,UL	0320-2346-72	Schneider Electric	HGL36015	Thermal Magnetic	N/A
KS81-2	CircuitBreaker-15A,Left,3P,600VAC,80%,UL	0320-2346-72A	Schneider Electric	HGL36015	Thermal Magnetic	N/A
KS84-2	CircuitBreaker-20A,Right,3P,600VAC,80%,UL	0320-2346-71	Schneider Electric	HGL36020	Thermal Magnetic	N/A
KS85-2	CircuitBreaker-20A,Left,3P,600VAC,80%,UL	0320-2346-71A	Schneider Electric	HGL36020	Thermal Magnetic	N/A
KS88-2	CircuitBreaker-30A,Right,3P,600VAC,80%,UL	0320-2346-70	Schneider Electric	HGL36030	Thermal Magnetic	N/A
KS89-2	CircuitBreaker-30A,Left,3P,600VAC,80%,UL	0320-2346-70A	Schneider Electric	HGL36030	Thermal Magnetic	N/A
KS94-2	CircuitBreaker-40A,Right,3P,600VAC,80%,UL	0320-2346-69	Schneider Electric	HGL36040	Thermal Magnetic	N/A
KS95-2	CircuitBreaker-40A,Left,3P,600VAC,80%,UL	0320-2346-69A	Schneider Electric	HGL36040	Thermal Magnetic	N/A

Product data sheet

Specifications

Circuit breaker, PowerPact L, unit mount, Micrologic 3.3S, 600A, 3 pole, 18kA, 600VAC,

LGL36600U33X

Main

Range	PowerPact
Product name	PowerPact L
Device short name	L-Frame
Product or Component Type	Circuit breaker
Device application	Distribution

Complementary

Line Rated Current	600 A
Number of Poles	3P
Control type	Toggle
Breaking capacity code	G
Breaking capacity	65 kA 240 V AC 50/60 Hz UL 489 35 kA 480 V AC 50/60 Hz UL 489 18 kA 600 V AC 50/60 Hz UL 489 20 kA 250 V DC UL 489 20 kA 500 V DC UL 489
[Ue] rated operational voltage	600 V AC 50/60 Hz IEC 60947-3
Network Frequency	50/60 Hz
[Ics] rated service breaking capacity	65 kA 220/240 V AC 50/60 Hz IEC 60947-2 35 kA 380/440/415 V AC 50/60 Hz IEC 60947-2 18 kA 500/525 V AC 50/60 Hz IEC 60947-2 20 kA 250 V DC IEC 60947-2 20 kA 500 V DC IEC 60947-2
[Uimp] rated impulse withstand voltage	8 kV IEC 60947-2
Trip unit technology	Electronic, standard, Micrologic 3.3 S, LSI
[Ui] rated insulation voltage	750 V IEC 60947-2
Trip unit name	Micrologic 3.3 S
Protection technology	Current limiter
Suitability for isolation	Yes IEC 60947-2
Utilisation category	Category A
AWG gauge	**Please see CB outline drawing for lug and termination details**

Local signalling	Ready 1 LED green) Alarm 1 LED 90 % Ir orange) Alarm LED 105 % Ir red) Switched off (OFF) 1 trip indicator green)
Mounting mode	Unit mount lug)
Mounting Support	Lug
Electrical connection	Lugs line Lugs load
Terminal identifier	Please see CB outline drawing for lug and termination details
Long time pick-up adjustment range	0.25...1 x In
Tightening torque	442.54 lbf.in (50 N.m) 0.11…0.37 in² (70…240 mm²) (AWG 2/0...500 kcmil)
Number of slots	2 auxiliary switch OF plug-in) 1 alarm switch SD plug-in) 1 overcurrent trip switch SDE plug-in) 1 voltage release MN or MX plug-in)
Power wire stripping length	1.22 in (31 mm) 2.40 in (61 mm)
Color	Black
Height	13.39 in (340 mm)
Width	5.51 in (140 mm)
Depth	4.33 in (110 mm)
Net weight	13.67 lb(US) (6.2 kg)
Communication interface	Modbus Ethernet

Environment

Standards	UL CSA NEMA NOM-003-SCFI-2000 IEC 60947-2
Product certifications	UL CSA NOM
IP degree of protection	Front cover IP40
Pollution degree	3 IEC 60947-1
Ambient Air Temperature for Operation	28…158 °F (-2…70 °C)
Ambient Air Temperature for Storage	-58…185 °F (-50…85 °C)
Operating altitude	< 6561.68 ft (2000 m) without derating 5000 m with derating

Ordering and shipping details

Category	01116-L ELEC TRIP UNIT MOUNT BREAKER/SW
Discount Schedule	DE2
GTIN	785901638674
Nbr. of units in pkg.	1
Package weight(Lbs)	15.00 lb(US) (6.804 kg)
Returnability	Yes
Country of origin	US

Packing Units

Unit Type of Package 1	PCE
Package 1 Height	8.75 in (22.225 cm)
Package 1 width	10.75 in (27.305 cm)
Package 1 Length	19.50 in (49.53 cm)

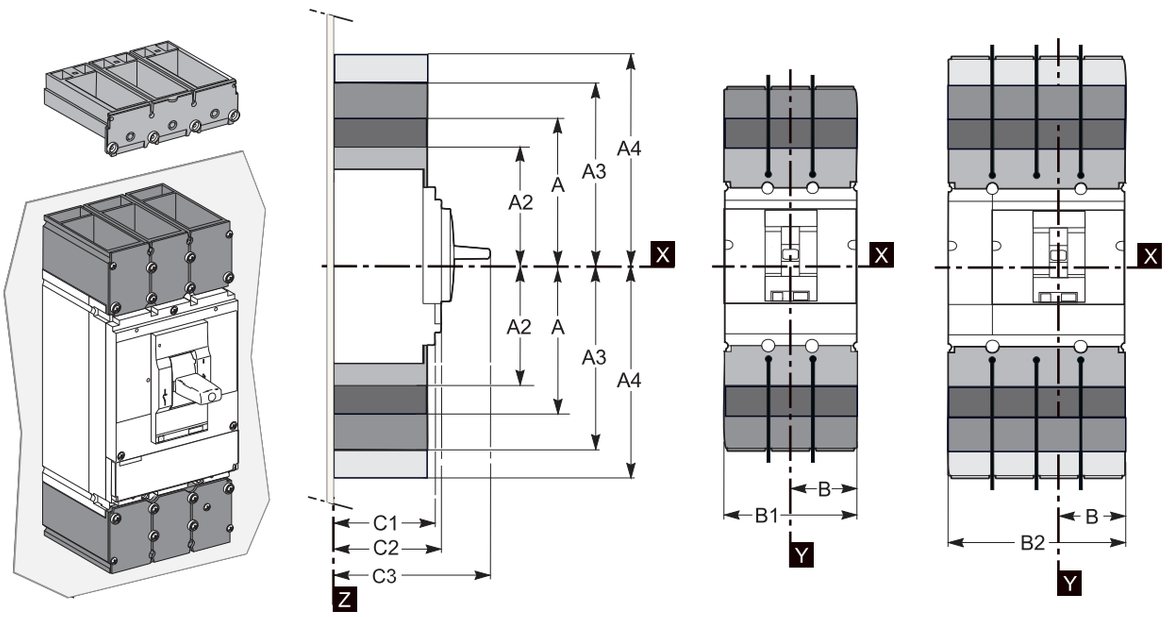
Offer Sustainability

Sustainable offer status	Green Premium product
California proposition 65	WARNING: This product can expose you to chemicals including: DINP, which is known to the State of California to cause cancer, and DIDP, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov
REACh Regulation	REACh Declaration
EU RoHS Directive	Compliant EU RoHS Declaration
Mercury free	Yes
RoHS exemption information	Yes
China RoHS Regulation	China RoHS declaration Product out of China RoHS scope. Substance declaration for your information.
Environmental Disclosure	Product Environmental Profile
Circularity Profile	End of Life Information
PVC free	Yes

Product data sheet LGL36600U33X

Technical Illustration

Dimensions



A2 = Short Lug Pack
AL400L61K3
CU400L61K3
AL600LF52K3
CU600LF5283

A = Medium Lug Pack
AL400L61K4
CU400L61K4
AL600LS52K3
AL600LS52K4
CU600LS52K3
CU600LS52K4

A3 = Long Lug Pack
Compression Lug Kits

A4 = 500 Vdc Lug Pack

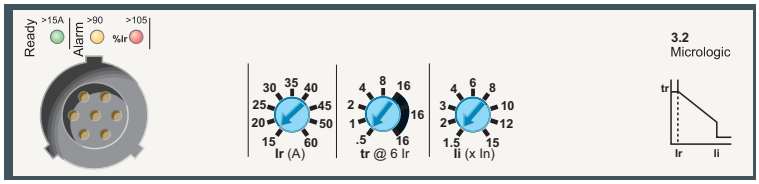
L-Frame

	A	A2	A3	A4	B	B1	B2	C1	C2	C3
inch	6.69	5.65	7.87	9.53	2.76	5.51	7.28	3.76	4.33	6.61
mm	170	143.5	200	242	70	140	185	105	110	168

Please see CB outline drawing for lug and termination details

Micrologic™ 3 Trip Units

Micrologic 3 trip units can be used on PowerPact H-, J-, and L-Frame circuit breakers with performance levels D/G/J/L.



They provide:

- standard protection of distribution cables
- indication of:
  - — overloads (using LEDs)
  - — overload tripping (using the SDx relay module).

Circuit breakers equipped with Micrologic 3 trip units can be used to protect distribution systems supplied by transformers.

Protection

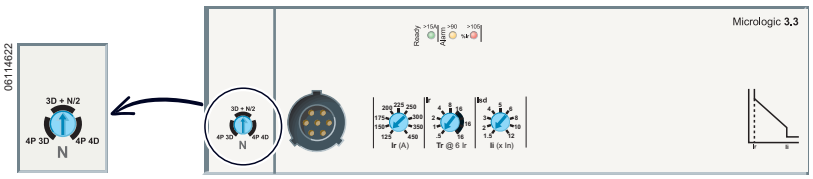
Settings are made using the adjustment rotary switches.

Overloads: Long time protection (I_r)

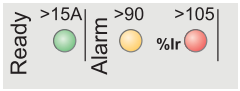
Inverse time protection against overloads with an adjustable current pick-up Ir set using a rotary switch and an adjustable time delay t_r.

Neutral protection

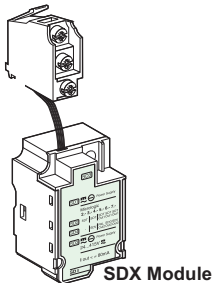
- On 3-pole L-frame circuit breakers, neutral protection is not possible.
- On four-pole L-frame circuit breakers, neutral protection may be set using a three-position switch:
  - — switch position 4P 3D: neutral unprotected
  - — switch position 4P 3D + N/2: neutral protection at half the value of the phase pick-up, (0.5 x Ir)
  - — switch position 4P 4D: neutral fully protected at I_r



Indicators



Front Indicators



SDX Module

Front indicators

- The green “Ready” LED blinks slowly when the electronic trip unit is ready to provide protection. It indicates the trip unit is operating correctly.
- Orange overload pre-alarm LED: steady on when I > 90% I_r
- Red overload LED: steady on when I > 105% I_r

Remote indicators

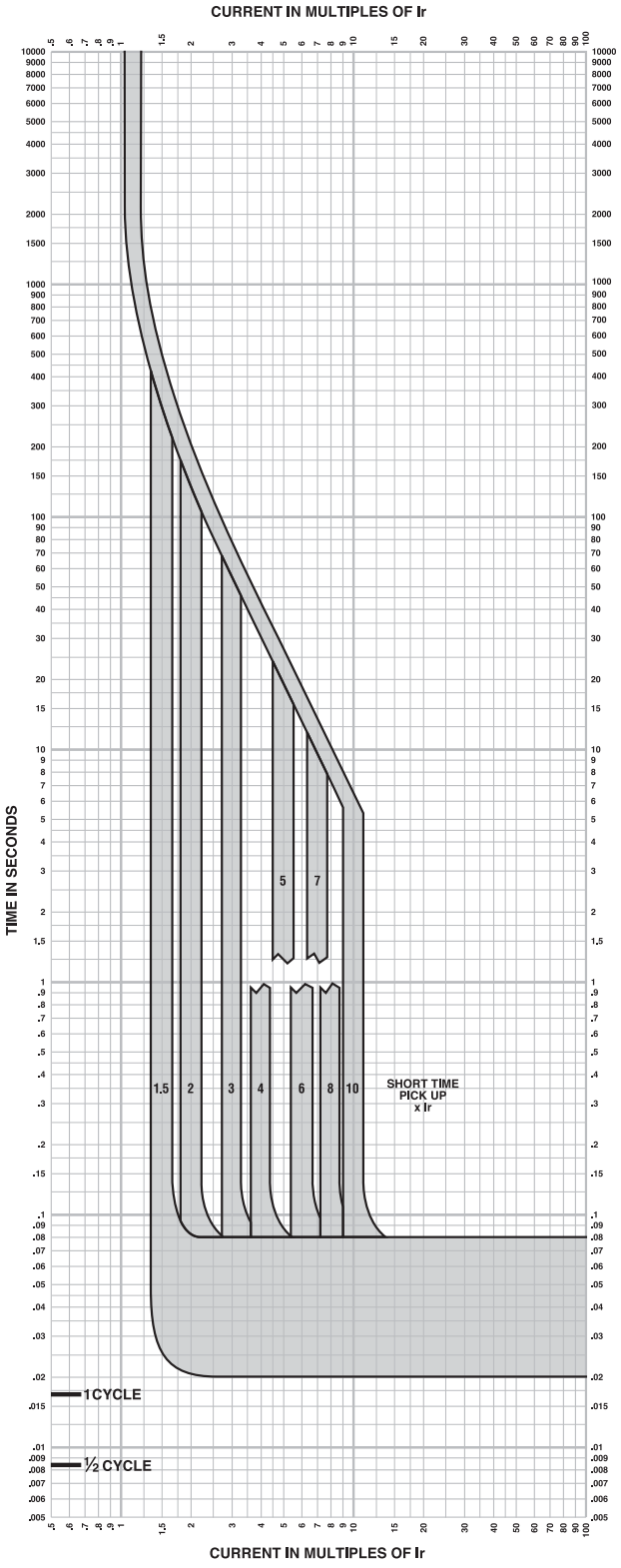
An overload trip signal can be remotely checked by installing an SDx relay module inside the circuit breaker. This module receives the signal from the Micrologic electronic trip unit through an optical link and makes it available on the terminal block. The signal is cleared when the circuit breaker is reclosed. See page 94.

Table 50: Micrologic™ 3 Trip Unit

Ratings	I_n at 104°F (40°C)[1]		60 A	100 A	150 A	250 A	400 A	600 A			
Circuit Breaker	H-frame		X	X	X						
	J-frame					X					
	L-frame					X	X	X			
Micrologic 3.2 / 3.3 trip units											
L Long-time protection											
Pick-Up (A) Tripping between 1.05 and 1.20 Ir	I_r		Value depending on sensor rating (I_n) and setting on rotary switch								
	I_n =60 A	I_r =	15	20	25	30	35	40	45	50	60
	I_n = 100 A	I_r =	35	40	45	50	60	70	80	90	100
	I_n = 150 A	I_r =	50	60	70	80	90	100	110	125	150
	I_n = 250 A	I_r =	70	80	100	125	150	175	200	225	250
	I_n = 400 A	I_r =	125	150	175	200	225	250	300	350	400
	I_n = 600 A	I_r =	200	225	250	300	350	400	450	500	600
Time Delay (s) Accuracy 0 to -20%	t_r		0.5	1	2	4	8	16			
		1.5 x I_r	15	25	50	100	200	400			
		6 x I_r	0.5	1	2	4	8	16			
		7.2 x I_r	0.35	0.7	1.4	2.8	5.5	11			
Thermal memory			20 minutes before and after tripping								
I Instantaneous											
Pick-up (A) accuracy ± 15%	I_i x	60 A	1.5	2	3	4	6	8	10	12	15
		100 A	1.5	2	3	4	6	8	10	12	15
		150 A	1.5	2	3	4	6	8	10	12	15
		250 A	1.5	2	3	4	5	6	8	10	12
		400 A	1.5	2	3	4	5	6	8	10	12
		600 A	1.5	2	3	4	5	6	8	10	11
	Non-tripping time Maximum break time		10 ms 50 ms for I > 1.5 Ii								
Micrologic 3.2S / 3.3S trip units											
L Long-time protection											
Pick-Up (A) Tripping between 1.05 and 1.20 Ir	I_r		Value depending on sensor rating (I_n) and setting on rotary switch								
	I_n =60 A	I_r =	15	20	25	30	35	40	45	50	60
	I_n = 100 A	I_r =	35	40	45	50	60	70	80	90	100
	I_n = 150 A	I_r =	50	60	70	80	90	100	110	125	150
	I_n = 250 A	I_r =	70	80	100	125	150	175	200	225	250
	I_n = 400 A	I_r =	125	150	175	200	225	250	300	350	400
	I_n = 600 A	I_r =	200	225	250	300	350	400	450	500	600
Time Delay (s) Accuracy 0 to -20%	t_r		non-adjustable								
		1.5 x I_r	400								
		6 x I_r	16								
		7.2 x I_r	11								
Thermal memory			20 minutes before and after tripping								
S Short-time protection											
Pick-up (A) accuracy ± 10%	I_{sd} - I_r x...		1.5	2	3	4	5	6	7	8	10
Time delay (ms)	t_{sd}		non-adjustable								
	Non-tripping time Maximum break time		20 80								
I Instantaneous											
Pick-up (A) accuracy ± 15%	I_i x I_n		1.5	2	3	4	6	8	10	12	15
	Non-tripping time Maximum break time		10 ms 50 ms for I > 1.5 Ii								

1 If the trip units are used in high-temperature environments, the Micrologic trip unit setting must take into account the thermal limitations of the circuit breaker. See the temperature derating information on page 126.

Figure 125: Micrologic 3.3S and 3.3S-W Electronic Trip Unit Long Time/Short Time Trip Curve



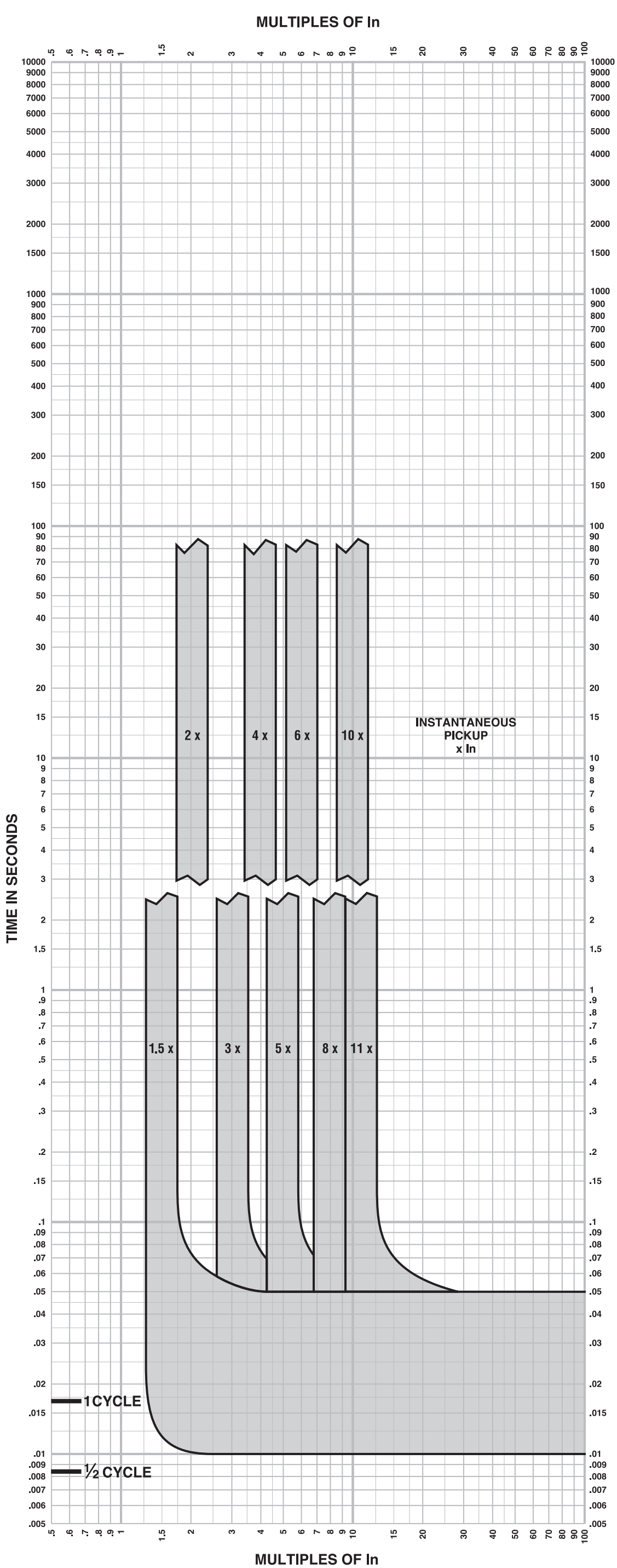
MICROLOGIC™ ELECTRONIC TRIP UNITS
Micrologic™ 3.3S and 3.3S-W
Long Time/Short Time Trip Curve
600A L-Frame

The time-current curve information is to be used for application and coordination purposes only.

Notes:

1. There is a thermal-imaging effect that can act to shorten the long-time delay. The thermal imaging effect comes into play if a current above the long-time delay pickup value exists for a time and then is cleared by the tripping of a downstream device or the circuit breaker itself. A subsequent overload will cause the circuit breaker to trip in a shorter time than normal. The amount of time delay reduction is inverse to the amount of time that has elapsed since the previous overload. Approximately 20 minutes is required between overloads to completely reset thermal-imaging.
2. Total clearing times shown include the response times of the trip unit, the circuit breaker opening, and the extinction of the current.

Curves apply from -35ºC to +70ºC (-31ºF to +158ºF) ambient temperature.



MICROLOGIC™ ELECTRONIC TRIP UNITS
Micrologic™ 3.3/3.3S/5.3A or E/6.3A or E
Instantaneous Trip Curve
600A L-Frame

The time-current curve information is to be used for application and coordination purposes only.

Notes:

1. There is a thermal-imaging effect that can act to shorten the long-time delay. The thermal imaging effect comes into play if a current above the long-time delay pickup value exists for a time and then is cleared by the tripping of a downstream device or the circuit breaker itself. A subsequent overload will cause the circuit breaker to trip in a shorter time than normal. The amount of time delay reduction is inverse to the amount of time that has elapsed since the previous overload. Approximately 20 minutes is required between overloads to completely reset thermal-imaging.
2. Total clearing times shown include the response times of the trip unit, the circuit breaker opening, and the extinction of the current.
3. In = Maximum dial setting of Ir.
   600A L-Frame: In = 600A = Max Ir setting

Curves apply from -35°C to +70°C (-31°F to +158°F) ambient temperature.

Schneider Electric

Drawing No. S1A8147600
March 2011

Specification Sheet

Battery Charger

A048G602 10 A 50/60 Hz
A051H785 20 A 50/60 Hz

Description

Cummins® fully automatic battery chargers are constant voltage/constant current chargers incorporating a 4-stage charging algorithm. Designed for use in applications where battery life and reliability are important; these chargers, complete with built-in equalize charge capability, are ideal for stationary or portable starting battery charging service.

To achieve optimum battery life, a 4-stage charging cycle is implemented. The four charging stages are constant current, high-rate taper charge, finishing charge, and maintaining charge. During the constant current cycle, the charger operates at maximum possible output in the fast charge mode. During the high-rate taper charge cycle the charger stays at fast charge voltage level until battery current acceptance falls to a portion of the chargers rated output. During the finishing charge cycle the charger operates at the float voltage and completes the battery charge. During the maintaining charge cycle the charger supplies only a few milliamps required by the battery to stay at peak capability.

An optional temperature sensor (A043D534) may be used to adjust charging voltage based on temperature of the battery. Use of a battery temperature sensor helps to increase battery life by preventing over or under charging. The battery temperature sensor also protects the battery from overheating. Temperature compensation sensor is required for all applications when battery charger and battery are located in different temperature or battery heater is being used.

Battery chargers are field-configurable for charging either 12 or 24 VDC battery systems at 50/60 Hz operation. Simple jumper selectors enable selection of output voltage and battery type.

Features

Protection – Surge protected to IEEE and EN standards. All models include single pole cartridge type fuses mounted on the printed circuit board to protect against input or output overcurrent.

Easy Installation – Clearly marked terminal blocks and panel knockouts provide convenient connections of input and output leads.

User Display – Output voltage and current, fault information and status are indicated on the front panel. Includes precision ammeter and voltmeter.

Monitoring – Status LED indicators are provided to show the condition of the charger. LED's on the right side of the monitor indicate operational functions for Temperature Compensation active (Green), AC on (Green), Float (Green) or Boost (Amber) mode, as well as Battery Fault (Red). LED's on the left side of the monitor illuminate (in Red) when Charger fail, High or Low VDC or AC fail occur.

Adjustable Float Voltage – Float voltage can be set, using easy to understand jumpers, for optimum battery performance and life.

Construction – NEMA-1 (IP20) corrosion resistant aluminium enclosure designed for wall mounting.

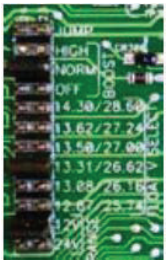
Faults – The charger senses and annunciates the following fault conditions: AC power loss, battery overvoltage, battery under voltage, battery fault conditions and charger failure. Includes an individual 30 volt/2-amp isolated contact for each alarm.

Vibration Resistant Design – complies with UL991 class B vibration resistance requirements.

Listed – C-UL listed to UL 1236 CSA standard 22.2 No 107.2-M89. Suited for flooded and AGM lead acid and NiCd batteries in generator set installations.

Warranty – 5 year CPG warranty.

Status and Fault LED



Field Selectable Jumper

Specifications

Performance and Physical Characteristics

Output:	Nominal voltage	12VDC* or 24VDC
	Float voltage – 12VDC batteries	12.87, 13.08, 13.31, 13.50*, 13.62, 14.30
	Float voltage – 24VDC batteries	25.74, 26.16, 26.62, 27.00*, 27.24, 28.60
	Equalize-voltage	6.5% above float voltage sensing
	Output voltage regulation	±0.5% (1/2%) line and load regulation
	Maximum output current	10 or 20 amps nominal
	Equalize charging	Battery interactive auto-boost
Input:	Voltage AC	120, 208, 240 ±10%
	Frequency	60/50 Hz +5%
Approximate net weight:		10A: 25 lbs. (11.36 Kg) 20A: 50 lbs. (22.68 Kg)
Approximate dimensions: height x width x depth-in		10A: 12.50" x 7.66" x 6.50"(318 x 195 x 165 mm) 20A: 13.06" x 13.95" x 6.83"(332 x 354 x1 73 mm)
Ambient temperature operation: At full rated output -		- 4 °F to 104 °F (-20 °C to 40 °C)

Note:

1. Battery charger comes with default settings of 12VDC and 13.50/27.00VDC float voltage and can be changed to the battery manufacture recommendations. Replacement printed circuit board and f uses are identified in the Owner's Manual (10A: A050S537 and 20A: A051X126) which resides in Quick Serve On-Line. Service parts can be purchased through the Memphis Distribution Center. The PC board replacement instruction sheet (10A: A052N073, 20A: A053W929) and service manual (A050D829) is also available.
2. Installation and application must comply with "section 4.5.3 batteries and battery charger" of application guide T-030 (Liquid Cooled Generator Set Application Manual A040S369).

Caution:

1. Higher input voltages (i.e. 480VAC or 600VAC) can be applied if a transformer with a 120VAC-240VAC output is installed. Higher input voltages (i.e. 480VAC or 600VAC) can be applied if a transformer with a 120VAC-240VAC output is installed. For voltages higher than 240 VAC, stepdown transformer must be used. Review the respective Owner/Installation manual A050S537 for 10Amp and A051X126 20A chargers for supplier recommended stepdown transformer requirements.
2. 10Amp battery charger is recommended for genset applications with 1 or 2 factory provided batteries. 20Amp battery charger is recommended for Cummins Genset applications with 3 or 4 factory provided batteries. Please consider the auxiliary DC loads connected to the genset batteries and size this charger as per the T-030 application guide to prevent misapplication issues.
3. Back feed to a utility system can cause electrocution and/or property damage. Do not connect generator sets to any building electrical system except through an approved device or after building main switch is open.
4. For professional use only. Must be installed by a qualified service technician. Improper installation presents hazards of electrical shock and improper operation, resulting in severe personal injury and/or property damage.
5. Use this charger for charging LEAD-ACID or LIQUID ELECTROLYTE NICKEL-CADMIUM batteries only. Do not use this battery charger for charging dry cells, alkaline, lithium, nickel-metal hydride, or sealed nickel-cadmium batteries that are commonly used with home appliances. These batteries may burst and cause injuries to persons and damage to property.
6. Do not parallel these battery chargers with any other charging system.

For more information contact your local Cummins distributor or visit power.cummins.com

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NAAC-5602-EN (06/21) PDA059Y464

Specification Sheet

PowerCommand® 500/550 Remote Monitoring System

Complete remote monitoring of your power system

Overview

The PowerCommand 500 series provides a convenient means of remotely monitoring generator sets, transfer switches, sensors and output controls. Users can access the remote monitoring device from any PC or Mac computer using a Microsoft Silverlight-enabled web browser; no additional software is required. Multiple users can monitor the power system equipment simultaneously.

PowerCommand 500 series users can monitor generator set data, such as annunciator, alternator and engine data, as well as transfer switch data, such as source, load and switch connection status. Expandable I/O modules can provide additional monitoring and controlling capabilities.

Product Highlights

- Real-time Site and Asset Monitoring
- Intuitive Graphical user interface with multi-language support
- Fault & Event Notification
- Remote Control Capability of Asset
- Secure Data Transmission utilizing 128-bit SSL encryption.
- Product Certification: cUL, FCC and ICES-003B

Product Features

- **Communication:** The PowerCommand 500/550 interfaces with Cummins® controls (generator sets, transfer switches and expandable I/O modules) via Modbus™. Legacy controls will require a LonWorks™ to Modbus converter (PowerCommand Lon Gateway).

- **Monitoring:** PowerCommand 550 monitors up to twelve devices in any combination of generator sets, transfer switches and up to three expandable I/O modules. PowerCommand 500 monitors up to two devices in any combination of generator sets, transfer switches or expandable I/O modules.

- **Asset Control:** User can remotely start and stop generator sets; remotely start and stop transfer switch tests; and remotely reset and acknowledge warning type faults on generator sets and transfer switches. User can also remotely activate and deactivate output controls.

- **Notification:** When an event becomes active, the user can choose to receive notifications via SMTP (email) and SNMP traps.

- **User Interface:** PowerCommand 500/550 employs a straightforward, icon-based graphical interface for monitoring data and controlling devices.

- **Data Logging:** PowerCommand 500/550 data logs contain detailed device data such as alternator, engine, source and load values. The user can extend data log memory with either an SD memory card or a USB flash drive. With the PowerCommand 550, a user can export data logs.

- **Event Storage:** PowerCommand 500/550 stores system and device events, which include faults and warnings triggered on generator sets, transfer switches, sensors and PowerCommand 500/550. With the PowerCommand 550, a user can export event logs.

- **Reports:** Users can create and view device reports containing selected parameters over a specified time duration. With the PowerCommand 550, a user can export these customized reports.

- **Diagnostics:** Users can remotely diagnose Modbus communication status, wireless status and system performance data.

- **Security:** PowerCommand 500/550 has enhanced security with 128-bit Secure Sockets Layer (SSL) encryption. The system is username and password protected. Users are assigned one of three access levels – Administrator, Operator, Read-Only – providing various operation and functionality at each access level.

Product Description:

PowerCommand 500/550 enables remote monitoring of Cummins and third-party equipment, including generator sets, transfer switches and sensors and output controls.

Connectivity and Notifications

The PowerCommand 500/550 communicates to controls using Modbus RTU communication protocol through two RS485 channels on the device. All Cummins generator set controls using Modbus can be directly connected, while Cummins generator set and transfer switch controls using PowerCommand LonWorks can communicate via a PowerCommand ModLon II Gateway LonWorks to Modbus converter. The PowerCommand 500/550 is connected to a TCP/IP network through the Ethernet connection. This allows the user to access the web-based user interface, login and view the overall status of the power system over the network. The user can receive notifications via SMTP (e-mail) and SNMP traps.

Home

Home Page allows the user to view the status of all configured devices in one glance.

The Home Page provides an overall system status of all configured devices. Within each configured generator set, there are icons which provide fault, run and communication status. Within each configured transfer switch, there are icons which provide fault, switch position, source availability and communication status. The Home Page also allows the user to create graphs for a particular device by selecting a parameter and a pre-configured duration.

The Menu Bar allows for intuitive and efficient navigation among devices, system event log, reports, diagnostics and setup. The Systems Status Bar continuously displays active events associated with the configured power system. The Menu and System Status bars are viewable on all pages as the user navigates throughout the user interface

Setup

Setup Page enables configuration of the device and the network through easy-to-use guided wizards.

The Setup Page has several tiles that allow the user to easily configure their power system for remote monitoring. Using simple wizards, the user can configure the network settings, devices, data log preferences, user profiles, notifications, date/time, and mail settings. Adding to this convenience is the ability to update the PowerCommand 500/550's software. Once the user has saved the updated software file to their personal computer, the software update process can be easily executed remotely through the user interface.

Generator Set Data

Clicking on the Home Page generator set icon navigates the user to the details page, providing a snapshot of the annunciator, alternator and engine data.

By selecting any configured generator set on the Home Page, the user can view all the commonly used parameters usually accessed through the human machine interface (HMI) or annunciator panel. The display data is shown on three different panels: Annunciator, Alternator and Engine. The annunciator panel displays extended annunciator parameters; whereas, the Alternator and Engine panels display electrical and engine parameters respectively.

Within this configured generator set detailed view, the user is also able to view event logs, data logs and gauges associated with that particular generator set. The generator set data page also allows the user to start or stop a generator set with the Start and Stop buttons. Additionally, the user can reset the warning type faults associated with that particular generator set with the Fault Reset button

Transfer Switch Data

Clicking on the Home Page transfer switch icon navigates the user to the details page, providing a snapshot of annunciator, load and source status data.

By selecting any configured transfer switch on the Home Page, the user can view all the commonly used parameters. The data is displayed using panels, such as Annunciator, Load and Source Status. Similar to the generator set data, the user can access specific event and data logs associated with that configured transfer switch. The transfer switch details page also displays the Source Status visually, while the Start and Stop buttons allow the user to remotely test the transfer switch. Additionally, the user can reset the warning type faults associated with that particular transfer switch with the Fault Reset button.

Sensors and Output Controls Data

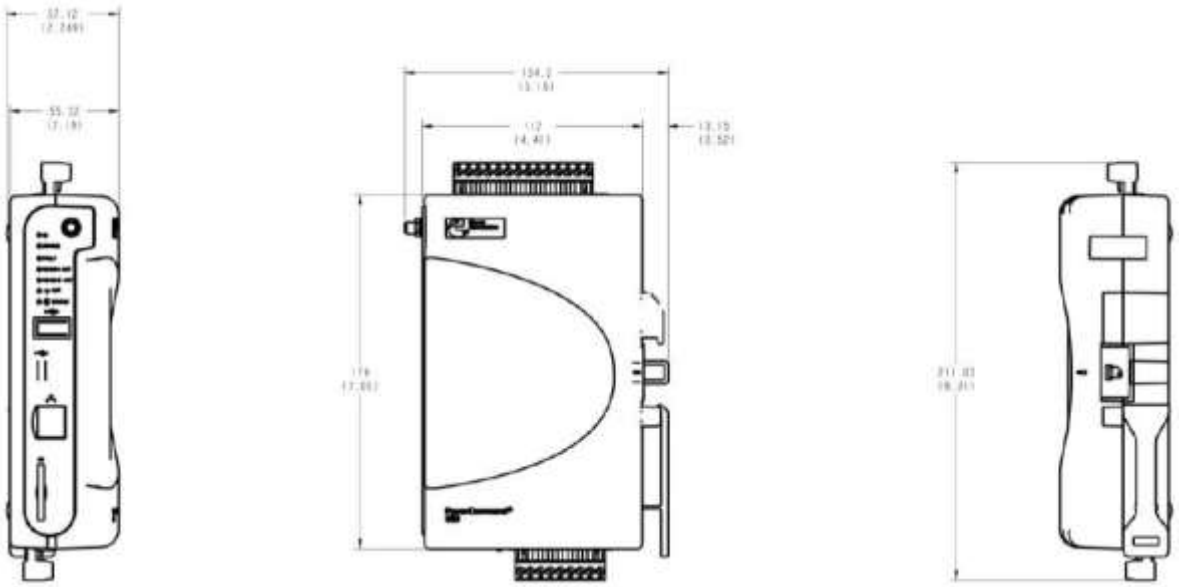
Clicking on the Home Page building icon navigates the user to the details page, providing a snapshot of all configured sensors or output controls.

By selecting the Building icon on the Home Page, the user can view all configured sensors and output controls. In addition to device specific I/Os, the user can add an AUX 101 (8-configurable inputs and 8-discrete outputs) and an AUX 102 (4-non-configurable discrete inputs and 8-discrete outputs) for additional remote monitoring and controlling capability. The Sensors and Output Controls Page displays configured sensors (states/values, low warnings and high warnings) and output controls (statuses and states). The user can remotely activate and deactivate output control states by clicking the off/on switch. Similar to the generator set and transfer switch data, the user can access specific event logs associated with all configured sensors.

Certification

ICES-003B

Dimensions



Dimensions are millimeters (inches)

System Requirements

- PC or Macintosh computer
- Browser: Internet Explorer, version 9.0 or later, Google Chrome, Firefox, Safari
- Operating System: Microsoft Windows®, Mac OS X or Linux
- HTML5 Support
- Windows Mobile Device Center
- Minimum screen resolution, 1024 x 768
- Network: 10/100-megabit Ethernet for the primary physical connection

Languages

The user interface is available in the following languages: English, Brazilian Portuguese, French and Spanish

Hardware Requirements

For installation and communication, the following additional hardware may be required:

- Secure Digital (SD) memory card
- USB 2.0 flash drive
- Modbus Cable
- PowerCommand Input/Output AUX 101 Module
- PowerCommand Input/Output AUX102 Expansion Module

Power Supply Requirements

The use of a power supply, with the following specification, is recommended. It is also recommended to connect the power supply and PowerCommand 500/550 to an uninterruptible power supply (UPS).

Voltage Range	12 to 24VDC
Current (12V typical)	250mA
Current (24V typical)	125mA
Power (typical)	3.0W
Power (Maximum)	5.0W

Environment

Operating Temperature	-20°C to 70°C (-4°F to 158°F)
Storage Temperature	-40°C to 85°C (-40°F to 185°F)
Humidity	85% RH, non-condensing

Mounting and Installation

PowerCommand 550/500 is DIN rail mountable and should be installed in a location suitable for telecommunications, information technology or networking equipment.

Communication Configuration

LonWorks Controls

Required hardware for LonWorks-based controls: PCC2100, 3100, 3200 and 3201 generator set controls and OTPC, BTPC, OHPC and CHPC transfer switch controls:

- PowerCommand ModLon II Gateway LonWorks to Modbus Converter
- PowerCommand Network Communications Module (NCM)
- ModLon Connection Cable

  Note: Additional hardware required for non-communicating OTEC, GTEC or third-party transfer switch controls and third-party generator set controls.
- PowerCommand ModLon II Gateway LonWorks to Modbus Converter
- PowerCommand Network Communication Module (CCM-G)
- PowerCommand Control Communication Module (CCM-T)
- PowerCommand Input/Output AUX 101 Module
- PowerCommand Input/Output AUX 102 Expansion Module

Modbus Controls

There is no additional hardware required for Modbus controls: PCC1301, 1302, 2300 and 3300.

Modbus Communications

A shielded twisted pair cable, Belden 9729 cable or equivalent, is recommended for Modbus communication between the PowerCommand 500/550 and any configured devices.

Standard Product Contents

- PowerCommand 500 or 550 LN
- USB On-The-Go (OTG) cable
- Ethernet cable
- Quick Start Guide
- Quick Troubleshooting Guide
- Warranty Statement
- USB containing Owner's Manual, Quick Start Guide, Quick Troubleshooting Guide and Warranty Statement in multiple languages

Accessories

- ☐ 0541-1291 PowerCommand Input/Output AUX 101 Module
- ☐ 0541-0772 PowerCommand Input/Output AUX 102 Expansion Module
- ☐ A054V134 Lon Gateway - LonWorks to Modbus Converter
- ☐ 0541-0770 Network Genset Communications Module (NCM) for PCC 2100
- ☐ 0541-0813 Network Genset Communications Module (GCM) for PCC 3100
- ☐ 0541-0809 Network Genset Communications Module (NCM) for PCC 3200/3201
- ☐ 0541-0810 Controls Communications Module, generator set (CCM-G)
- ☐ 0541-0811 Controls Communications Module, transfer switch (CCM-T)
- ☐ 0541-0868 Network Communications Module (NCM) for OTPC/BTPC, >1000 A
- ☐ A040T087 ModLon Connection Cable

Ordering Information

Part number	Description
A062J030	PC500 LN (up to 2 devices)
A062J029	PC550 LN (up to 12 devices)

For more information contact your local Cummins distributor or visit power.cummins.com

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S-1642-EN | PDA059Y505 (12/19)

SECTION 4
GENERATOR DRAWINGS AND INTERCONNECTS

PTC® Creo® Parametric

REL NO	LTR	NO	REVISION	DWN	CKD	APVD	DATE
ECO-179982	D	1	ADD C322 INFO TO ALL TABULATIONS	CJF	MW	L CASSENS	29AUG18
		2	ZONE D-4: ADD COLUMN DIM_J	CJF	MW	L CASSENS	29AUG18
		3	SEE SHEET 2	CJF	MW	L CASSENS	29AUG18
		4	SEE SHEET 3	CJF	MW	L CASSENS	29AUG18
		5	SEE SHEET 4	CJF	MW	L CASSENS	29AUG18
		6	ADD FLAG NOTE 12	CJF	MW	L CASSENS	29AUG18

TABULATION

FEATURE CODE		TANK CAPACITY	WEIGHTS KG [LBS]		DIM_D MM [IN]	DIM_E MM [IN]	DIM_F MM [IN]	DIM_H MM [IN]	DIM_J MM [IN]
			LIFT BASE	FUEL TANK DRY					
LIFT BASE	F214	---	576 [1270]	---	2029.7 [79.9]	87 [3.4]	203.2 [8]	351 [13.8]	4318 [170]
FUEL TANK	C201	300	---	954 [2103]	2131.3 [83.9]	182 [7.2]	304.8 [12]	452 [17.8]	4549 [179]
	C202	400	---	1019 [2246]	2182.1 [85.9]	233.6 [9.2]	355.6 [14]	502 [19.8]	4549 [179]
	C203	500	---	1097 [2419]	2240 [88.2]	295 [11.6]	413 [16.3]	561 [22.1]	4549 [179]
	C204	600	---	1161 [2559]	2309.1 [90.9]	360.6 [14.2]	482.6 [19]	630 [24.8]	4549 [179]
	C205	660	---	1198 [2641]	2353 [92.6]	409 [16.1]	527 [20.7]	674 [26.5]	4549 [179]
	C206	720	---	1243 [2741]	2398 [94.4]	454 [17.9]	572 [22.5]	719 [28.3]	4549 [179]
	C321	1420	---	1788 [3943]	2740.9 [107.9]	771 [30.4]	914.4 [36]	1062 [41.8]	4976 [196]
	C322	2050	---	2478 [5463]	2740.9 [107.9]	771 [30.4]	914.4 [36]	1062 [41.8]	7290 [287]
	C242	270	---	939 [2071]	2131.3 [83.9]	182 [7.2]	304.8 [12]	452 [17.8]	4549 [179]

TABULATION FOR CIRCUIT BREAKER HANDLE HEIGHT

TANK FEATURE CODE	DIM G		
	NSJ/NLG FRAME	3-P, 800A P FRAME	3-P, 1200A P FRAME
F214	1300 [51.2]	1182 [46.5]	1139 [44.8]
C201	1402 [55.2]	1284 [50.6]	1241 [48.9]
C202	1453 [57.2]	1335 [52.6]	1292 [50.9]
C203	1503 [59.2]	1385 [54.5]	1342 [52.8]
C204	1580 [62.2]	1462 [57.6]	1419 [55.9]
C205	1618 [63.7]	1500 [59.1]	1457 [57.4]
C206	1656 [65.2]	1538 [60.6]	1495 [58.9]
C321	2012 [79.2]	1894 [74.6]	1851 [72.9]
C322	2012 [79.2]	1894 [74.6]	1851 [72.9]
C242	1402 [55.2]	1284 [50.6]	1241 [48.9]

TABULATION

WEIGHT, BASE AND GENSET

FEATURE CODES	MODEL	ALT DATA SHEET	WEIGHT KG [LBS]	CG_DIM "A" MM [IN] 12	CG_DIM "B" MM [IN]	CG_DIM "C" MM [IN]
F214 W/F215	DQDAA, AB, AC	340	2726 [6010]	1758.7 [69.3]	1036.1 [40.8]	666.9 [26.3]
		341	2810 [6196]	1782.3 [70.2]	1036.2 [40.8]	672.1 [26.5]
		342	2946 [6495]	1817.9 [71.6]	1036.4 [40.8]	679.8 [26.8]

WEIGHT, DRY TANK AND WET GENSET

FEATURE CODES	MODEL	ALT DATA SHEET	WEIGHT KG [LBS]	CG_DIM "A" MM [IN]	CG_DIM "B" MM [IN]	CG_DIM "C" MM [IN]
C201 W/F215	DQDAA, AB, AC	340	3104 [6843]	1731.3 [68.2]	1054.7 [41.5]	550.6 [21.7]
		341	3188 [7029]	1751.9 [69.0]	1054.4 [41.5]	558.2 [22.0]
		342	3324 [7329]	1783.5 [70.2]	1053.8 [41.5]	569.5 [22.4]
C202 W/F215	DQDAA, AB, AC	340	3169 [6986]	1732.5 [68.2]	1054.1 [41.5]	530.6 [20.9]
		341	3253 [7172]	1752.7 [69.0]	1053.8 [41.5]	538.5 [21.2]
		342	3389 [7472]	1783.7 [70.2]	1053.3 [41.5]	550.4 [21.7]
C203 W/F215	DQDAA, AB, AC	340	3247 [7159]	1733 [68.2]	1052.8 [41.4]	510.8 [20.1]
		341	3332 [7345]	1752.8 [69.0]	1052.5 [41.4]	519 [20.4]
		342	3468 [7645]	1783.3 [70.2]	1052.1 [41.4]	531.5 [20.9]
C204 W/F215	DQDAA, AB, AC	340	3311 [7299]	1735.9 [68.3]	1052.2 [41.4]	479.9 [18.9]
		341	3395 [7485]	1755.2 [69.1]	1051.9 [41.4]	488.7 [19.2]
		342	3531 [7785]	1784.8 [70.3]	1051.5 [41.4]	502 [19.8]
C205 W/F215	DQDAA, AB, AC	340	3348 [7381]	1737.1 [68.4]	1051.7 [41.4]	464.5 [18.3]
		341	3432 [7567]	1756.1 [69.1]	1051.4 [41.4]	473.5 [18.6]
		342	3568 [7867]	1785.3 [70.3]	1051 [41.4]	487.2 [19.2]
C206 W/F215	DQDAA, AB, AC	340	3393 [7481]	1737.4 [68.4]	1051.9 [41.4]	449.9 [17.7]
		341	3478 [7667]	1756.2 [69.1]	1051.6 [41.4]	459.2 [18.1]
		342	3614 [7967]	1785.1 [70.3]	1051.2 [41.4]	473.2 [18.6]
C321 W/F215	DQDAA, AB, AC	340	3939 [8683]	1897.2 [74.7]	1049.6 [41.3]	293.4 [11.6]
		341	4022 [8869]	1910.3 [75.2]	1049.4 [41.3]	304.9 [12.0]
		342	4159 [9169]	1930.8 [76.0]	1049.2 [41.3]	322.5 [12.7]
C322 W/F215	DQDAA, AB, AC	340	4629 [10205]	3690.7 [145.3]	1048.5 [41.3]	198.2 [7.8]
		341	4712 [10388]	3711.4 [146.1]	1048.3 [41.3]	209.7 [8.3]
		342	4849 [10690]	3744.1 [147.4]	1048.2 [41.3]	227.5 [9.0]
C242 W/F215	DQDAA, AB, AC	340	3089 [6811]	1731.3 [68.2]	1054.7 [41.5]	550.6 [21.7]
		341	3174 [6997]	1751.9 [69.0]	1054.4 [41.5]	558.2 [22.0]
		342	3310 [7297]	1783.5 [70.2]	1053.8 [41.5]	569.5 [22.4]

***WEIGHT & CG'S ARE SHOWN WITH STANDARD FUEL TANK AND STANDARD WET GENSET. ADDITION OF OTHER FEATURES MAY CHANGE THE WEIGHT AND CG'S.

NOTES:

1. DIMENSIONS SHOWN IN [ ] ARE INCHES.
2. FOUNDATION REFERENCE POINT (—▷◁—). SEE FOUNDATION DRAWING FOR DETAILS.
3. FOR FEATURE CODE L116 AND L120 (FLORIDA AND MICHIGAN TANKS) ADD 162.05 [6.38] TO DIMS D, G, & H.
4. SEE SHEET 2 AND 3 FOR TANK VENT LOCATIONS.
5. SUBBASE FUEL TANK MOUNTING.
   EXCESSIVE TWISTING OF THE FUEL TANK, WHEN FASTENING IT TO A FOUNDATION, MAY RESULT IN STRUCTURAL FAILURE OF THE TANK. TO ENSURE THE INSTALLATION DOES NOT EXCESSIVELY TWIST THE FUEL TANK, THE FOLLOWING PROCEDURE MUST BE OBSERVED:
   5.1 REFER TO CUMMINS APPLICATION MANUAL T030 FOR GENERAL GENSET/TANK MOUNTING GUIDELINES.
   5.2 TIGHTEN TANK HOLD DOWN MOUNTING FASTENERS.
6. GENSET SUPPLIED WITH FLEXIBLE FUEL LINES THAT CAN BE CONNECTED TO GENERATOR SET INTERFACE POINTS.
   6.1 FUEL SUPPLY LINE: 1525 [60] LONG WITH 1/2-14NPT (MALE) TERMINATION.
   FUEL RETURN LINE: 1780 [70] LONG WITH 1/2-14NPT (MALE) TERMINATION.
7. TABULATED WEIGHT AND CG IS FOR GENERATOR SET WITH NO OPTIONS.
8. STUB UP AREAS.
   8.1 ELECTRICAL: REFER TO GENSET FOUNDATION OUTLINE DRAWINGS AND CIRCUIT BREAKER OUTLINE DRAWINGS (BREAKER SPECIFIC STUB UP) FOR ELECTRICAL STUB-UP AREAS.
   8.2 FUEL: REFER TO GENSET OUTLINE DRAWINGS FOR FUEL STUB-UP AREAS.
9. CONTROL INTERFACE CONNECTIONS SHOULD BE MADE WITH FLEXIBLE CONNECTIONS. NOT RIGID CONDUIT.
10. ENTRANCE BOX (SHOWN) OR OPTIONAL BREAKER BOX (NOT SHOWN) WILL BE MOUNTED ON THE RIGHT SIDE AS VIEWED FROM THE CONTROL.
11. EXHAUST CONNECTION LOCATING DIMENSIONS CAN BE FOUND ON A041F591.
12. DIM_A IS MEASURED TO FURTHEST LIFTING EYE BRACKET ON EACH RESPECTIVE TANK.

UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN MILLIMETERS
DIM: X ±3; .X ±0.8; .XX± 0.38
HOLE: 0.00- 4.99 +0.15/-0.08; 5.00- 9.99 +0.20/-0.10; 10.00-17.49 +0.25/-0.13; 17.50-24.99 +0.30/-0.13
ANG TOL: ± 1.0° SCALE: 1/16

SIM TO A046S028
DO NOT SCALE PRINT
- CONFIDENTIAL - PROPERTY OF CUMMINS POWER GENERATION GROUP

DWN G. THOMAS
CKD D. RESCH
APVD K. KISHORE
DATE 25JUL14
FOR INTERPRETATION OF DIMENSIONING AND TOLERANCING, SEE ASME Y14.5M-1994
FIRST USED ON DQDAA,AB,AC

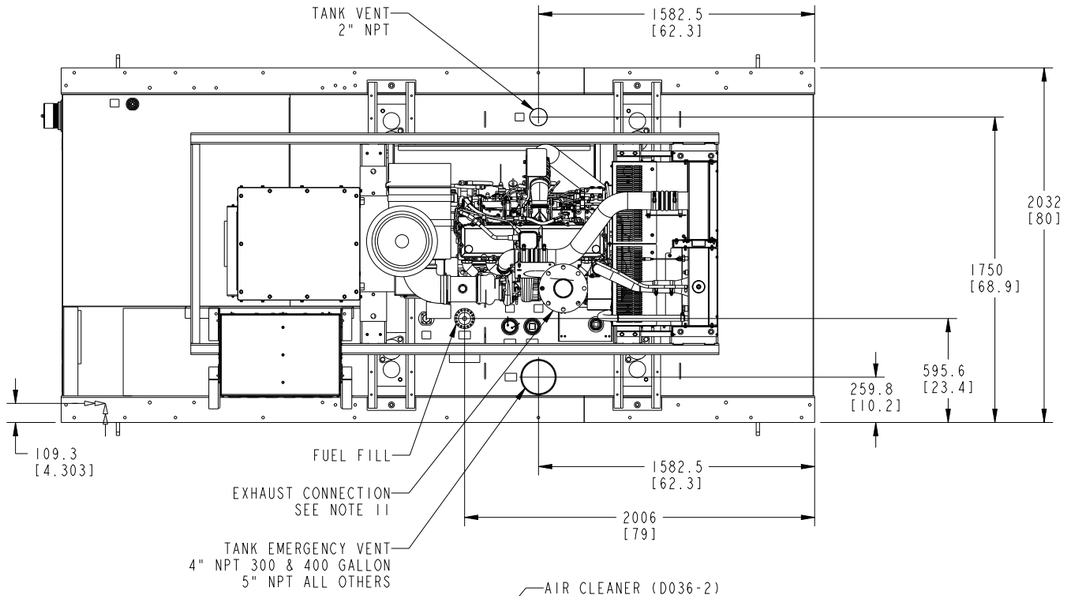
SITE CODE PGF

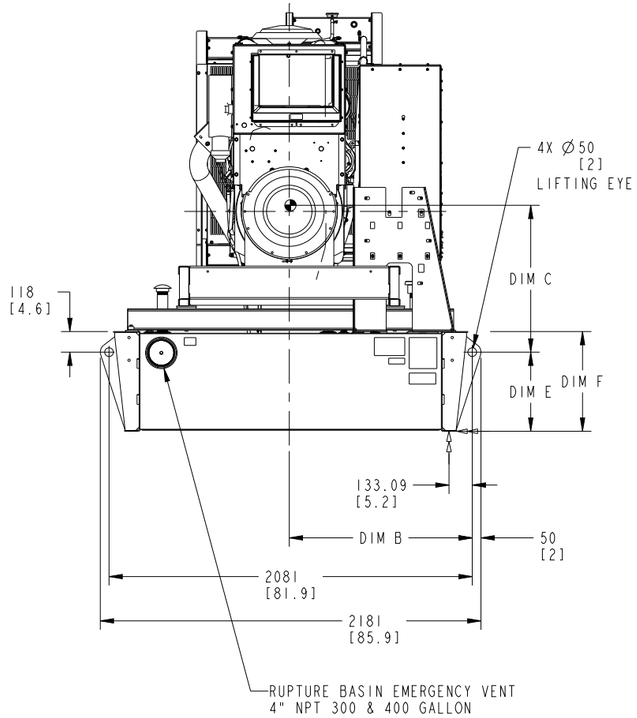
CUMMINS POWER GENERATION
OUTLINE,GENSET
DWG SIZE D | A050L795 | SHEET 1 of 5 | DWG REV D

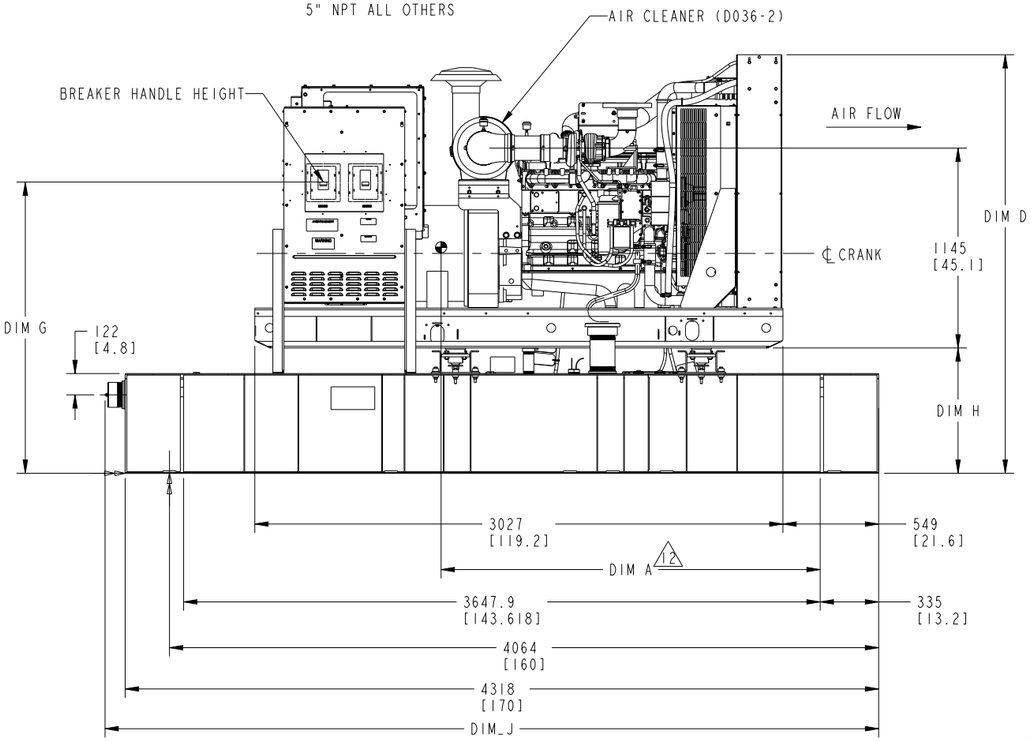
Drawing Name: A050L796 Revision: D
Part Name: A050L795 Revision: D
ECO-179982 Sheet 1 of 6

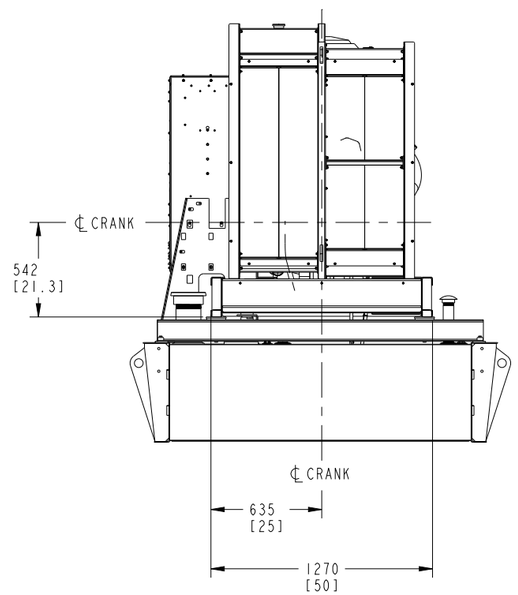
PTC® Creo® Parametric

REL NO	LTR	NO	REVISION	DWN	CKD	APVD	DATE
ECO-179982	D	3	ZONE A-3: DIM_J WAS 4433 [174.5]	CJF	MW	L CASSENS	29AUG18









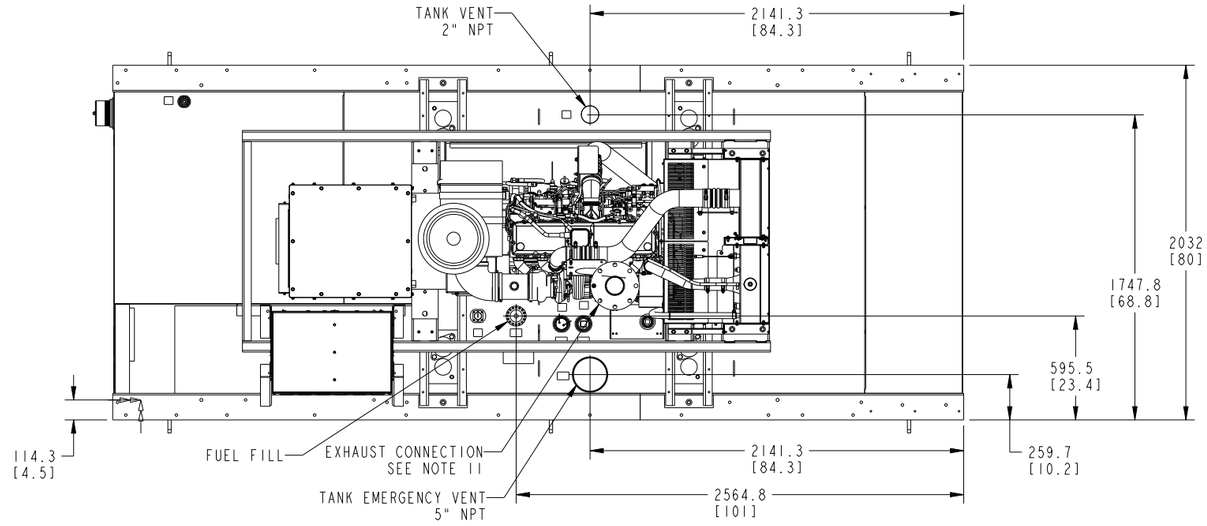
HOUSING READY SUBBASE F215 WITH FUEL TANK C201, C202, C203, C204, C205, C206, OR C242

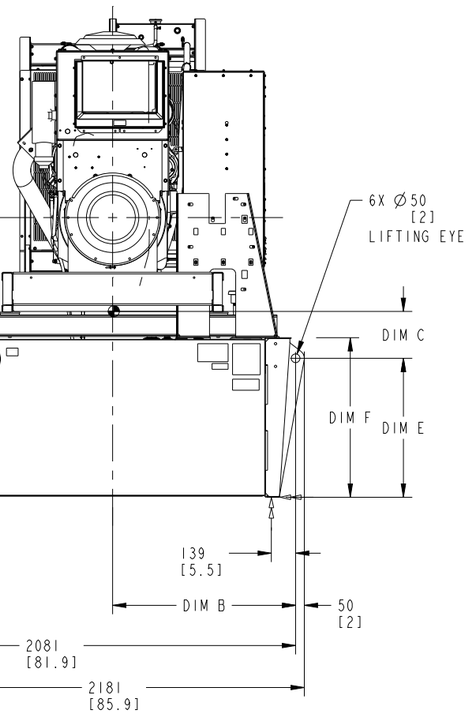
UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN MILLIMETERS				SIM TO A046S028	DWN G. THOMAS		CUMMINS POWER GENERATION
DIM	HOLE			DO NOT SCALE PRINT	CKD D. RESCH		
X ±3	0.00- 4.99	+0.15/-0.08			APVD K. KISHORE		OUTLINE, GENSET
.X ±0.8	5.00- 9.99	+0.20/-0.10			DATE 25JUL14		
.XX± 0.38	10.00-17.49	+0.25/-0.13		- CONFIDENTIAL - PROPERTY OF CUMMINS POWER GENERATION GROUP	FOR INTERPRETATION OF DIMENSIONING AND TOLERANCING, SEE ASME Y14.5M-1994	FIRST USED ON DQDAA, AB, AC	SITE CODE ·
	17.50-24.99	+0.30/-0.13					PGF
ANG TOL: ± 1.0°	SCALE: 1/16						DWG SIZE D A050L795 SHEET 2 of 5 DWG REV D

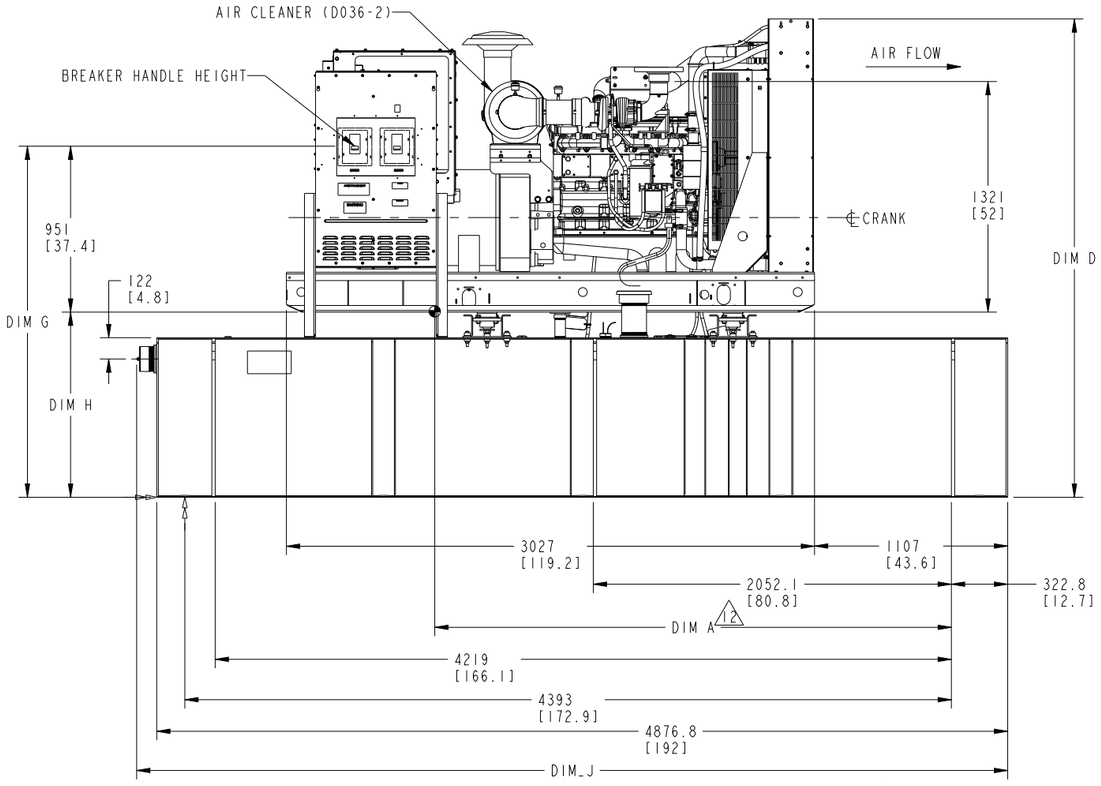
Drawing Name: A050L796 Revision: D
Part Name: A050L795 Revision: D
ECO-179982 Sheet 2 of 6

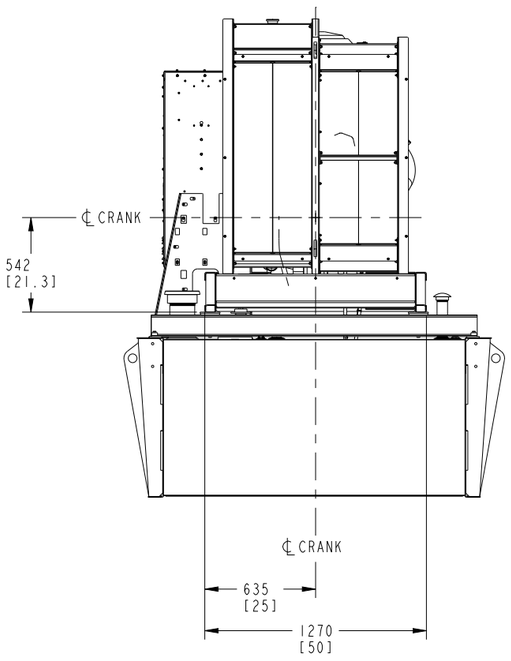
PTC® Creo® Parametric

REL NO	LTR	NO	REVISION	DWN	CKD	APVD	DATE
ECO-179982	D	4	ZONE A-3: DIM_J WAS 4991.8 [196.5]	CJF	MW	L CASSENS	29AUG18









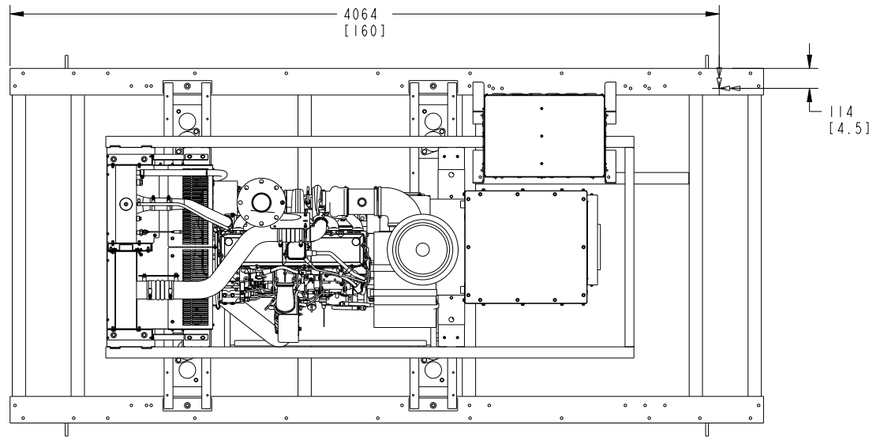
HOUSING READY SUBBASE F215 WITH FUEL TANK C321, C322

UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN MILLIMETERS	SIM TO A046S028	DWN G. THOMAS		CUMMINS POWER GENERATION	
DIM: X ±3; .X ±0.8; .XX± 0.38 — HOLE: 0.00- 4.99 +0.15/-0.08; 5.00- 9.99 +0.20/-0.10; 10.00-17.49 +0.25/-0.13; 17.50-24.99 +0.30/-0.13	DO NOT SCALE PRINT	CKD D. RESCH		OUTLINE, GENSET	
ANG TOL: ± 1.0° SCALE: 1/16	- CONFIDENTIAL - PROPERTY OF CUMMINS POWER GENERATION GROUP	APVD K. KISHORE		SITE CODE ·	
		DATE 25JUL14		PGF	SHEET 3 of 5
		FOR INTERPRETATION OF DIMENSIONING AND TOLERANCING, SEE ASME Y14.5M-1994	FIRST USED ON DQDAA, AB, AC	DWG SIZE D — A050L795	DWG REV D

Drawing Name: A050L796 Revision: D
Part Name: A050L795 Revision: D
ECO-179982 Sheet 3 of 6

PTC® Creo® Parametric

REL NO	LTR	NO	REVISION	DWN	CKD	APVD	DATE
ECO-179982	D	5	ZONE A-3: DIM_J WAS 4318 [170]	CJF	MW	L CASSENS	29AUG18

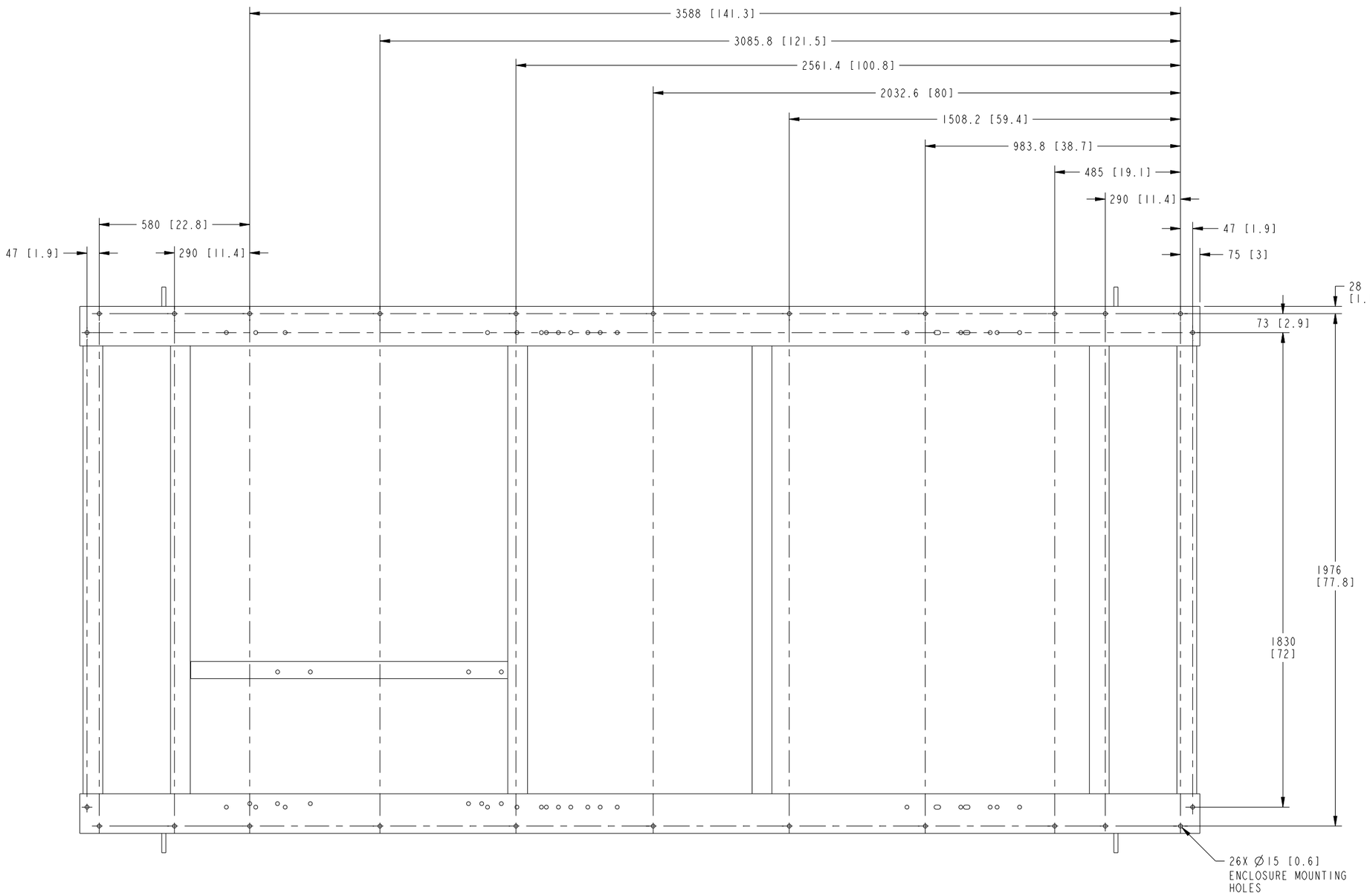


HOUSING READY SUBBASE F215 WITH LIFTING BASE F214 (W/O FUEL TANK)

UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN MILLIMETERS				SIM TO A046S028	DWN G. THOMAS		CUMMINS POWER GENERATION
DIM: X ±3; .X ±0.8; .XX± 0.38	HOLE: 0.00- 4.99 +0.15/-0.08; 5.00- 9.99 +0.20/-0.10; 10.00-17.49 +0.25/-0.13; 17.50-24.99 +0.30/-0.13			DO NOT SCALE PRINT	CKD D. RESCH		OUTLINE, GENSET
ANG TOL: ± 1.0°	SCALE: 1/16			• CONFIDENTIAL • PROPERTY OF CUMMINS POWER GENERATION GROUP	APVD K. KISHORE	SITE CODE .	
					DATE 25JUL14	PGF	DWG SIZE D A050L795 SHEET 4 OF 5 DWG REV D
					FOR INTERPRETATION OF DIMENSIONING AND TOLERANCING, SEE ASME Y14.5M-1994	FIRST USED ON DODAA, AB, AC	

PTC® Creo® Parametric

REL NO	LTR	NO	REVISION	DWN	CKD	APVD	DATE
ECO-179982	D	--	-----	CJF	MW	L CASSENS	29AUG18



ENCLOSURE MOUNTING PROVISIONS HOUSING READY FUEL TANK SUBBASE OR LIFTING BASE

UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN MILLIMETERS DIM: X ±3, .X ±0.8, .XX± 0.38 HOLE: 0.00-4.99 +0.15/-0.08; 5.00-9.99 +0.20/-0.10; 10.00-17.49 +0.25/-0.13; 17.50-24.99 +0.30/-0.13 ANG TOL: ± 1.0° SCALE: 13/160	SIM TO A046S028 DO NOT SCALE PRINT - CONFIDENTIAL - PROPERTY OF CUMMINS POWER GENERATION GROUP	DWN G. THOMAS CKD D. RESCH APVD K. KISHORE DATE 25JUL14 FOR INTERPRETATION OF DIMENSIONING AND TOLERANCING, SEE ASME Y14.5M-1994 FIRST USED ON DODAA,AB,AC	CUMMINS	CUMMINS POWER GENERATION OUTLINE,GENSET SITE CODE · PGF DWG SIZE D A050L795 SHEET 5 OF 5 DWG REV D

Drawing Name: A050L796 Revision: D
Part Name: A050L795 Revision: D
ECO-179982 Sheet 5 of 6

PTC® Creo® Parametric

REL NO	LTR	NO	REVISION	DRN	CKD	APVD	DATE
ECO-145369	A	1	PRODUCTION_RELEASE	AM	KK	K_KISHORE	05AUG14

TABULATION												
TANK/LIFT BASE FEATURE CODE	TANK CAPACITY	TANK WEIGHT DRY KG (LBS)	DIM_D	DIM_E	DIM_F	DIM_G DFEJ, DFEK	DIM_G DQHAB	DIM_G DQDAA, DQDAB, DQDAC	DIM_H	DIM_J	DIM_K	DIM_L
C242	270	939 (2071)	2643 (104)	183 (7.2)	305 (12)	1625.6 (64.0)	1447.6 (57.0)	1371.8 (54.0)	526 (20.7)	1126 (44.3)	1122 (44.2)	614.7 (24.2)
C201	300	954 (2103)	2643 (104)	183 (7.2)	305 (12)	1625.6 (64.0)	1447.6 (57.0)	1371.8 (54.0)	526 (20.7)	1126 (44.3)	1122 (44.2)	614.7 (24.2)
C202	400	1010 (2246)	2604 (106)	234 (9.2)	356 (14)	1676.6 (66.0)	1498.6 (59.0)	1422.8 (56.0)	577 (22.7)	1177 (46.3)	1173 (46.2)	665 (26.2)
C203	500	1097 (2419)	2749.6 (108.2)	291 (11.5)	413 (16.2)	1733.2 (68.2)	1555.2 (61.2)	1479.4 (58.2)	633.6 (24.9)	1234.6 (48.5)	1230.6 (48.4)	722.9 (28.4)
C204	600	1161 (2559)	2810 (111)	361 (14.2)	483 (19)	1803.6 (71.0)	1625.6 (64.0)	1549.8 (61.0)	704 (27.7)	1304 (51.3)	1300 (51.2)	792.5 (31.2)
C205	660	1198 (2641)	2864.3 (112.7)	405 (15.9)	527 (20.7)	1847.9 (72.7)	1669.9 (65.7)	1594.1 (62.7)	748.3 (29.4)	1349.3 (53.0)	1345.3 (52.9)	836.9 (32.9)
C206	720	1243 (2741)	2908.2 (114.5)	450 (17.7)	572 (22.5)	NA	NA	1639 (64.2)	793.2 (31.2)	1394.2 (54.8)	1390.2 (54.7)	881.9 (34.7)
C207	850	1332 (2936)	2997 (118)	538 (21.2)	660 (26)	1980.6 (78.0)	1802.6 (71.0)	NA	881 (34.7)	1481 (58.3)	1478 (58.2)	970.3 (38.2)
F214	NA	NA	2540 (100)	81 (3.2)	203 (8)	1523.6 (60.0)	1345.6 (53.0)	1371.8 (50.0)	424 (16.7)	1024 (40.3)	1021 (40.2)	513.1 (20.2)

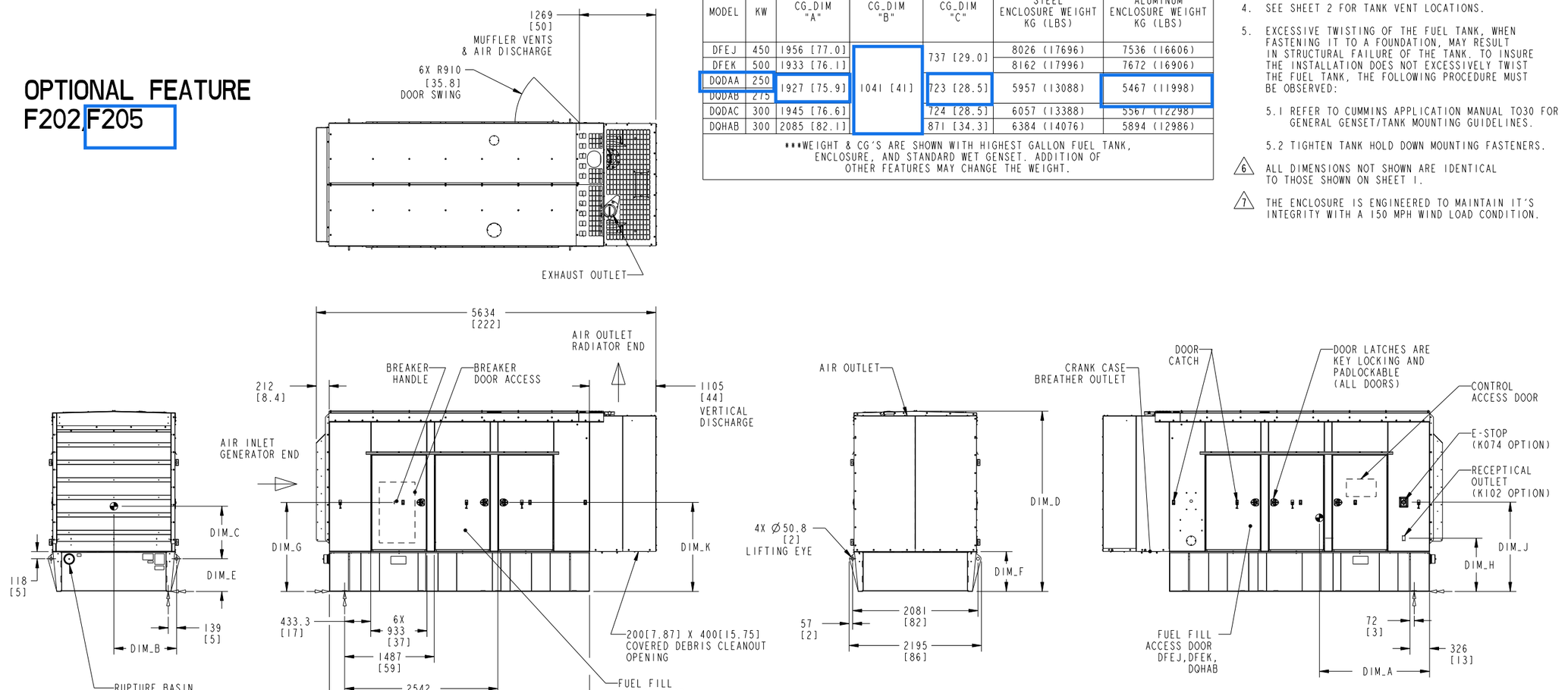
OPTIONAL FEATURE
F202,F205

TABULATION						
MODEL	KW	CG_DIM "A"	CG_DIM "B"	CG_DIM "C"	STEEL ENCLOSURE WEIGHT KG (LBS)	ALUMINUM ENCLOSURE WEIGHT KG (LBS)
DFEJ	450	1956 [77.0]	1041 [41]	737 [29.0]	8026 (17696)	7536 (16606)
DFEK	500	1933 [76.1]			8162 (17996)	7672 (16906)
DQDAA	250	1927 [75.9]		723 [28.5]	5957 (13088)	5467 (11998)
DQDAB	275					
DQDAC	300	1945 [76.6]		724 [28.5]	6057 (13388)	5567 (12298)
DQHAB	300	2085 [82.1]		871 [34.3]	6384 (14076)	5894 (12986)

***WEIGHT & CG'S ARE SHOWN WITH HIGHEST GALLON FUEL TANK, ENCLOSURE, AND STANDARD WET GENSET. ADDITION OF OTHER FEATURES MAY CHANGE THE WEIGHT.

NOTES:

1. DIMENSIONS SHOWN IN [ ] ARE INCHES.
2. FOUNDATION REFERENCE POINT (⟜). SEE FOUNDATION DRAWING FOR DETAILS.
3. FOR FEATURE CODE L116 (FLORIDA TANKS) AND L120 (MICHIGAN TANKS) ADD 162MM [6.4"] TO DIMS D-L
4. SEE SHEET 2 FOR TANK VENT LOCATIONS.
5. EXCESSIVE TWISTING OF THE FUEL TANK, WHEN FASTENING IT TO A FOUNDATION, MAY RESULT IN STRUCTURAL FAILURE OF THE TANK. TO INSURE THE INSTALLATION DOES NOT EXCESSIVELY TWIST THE FUEL TANK, THE FOLLOWING PROCEDURE MUST BE OBSERVED:
   - 5.1 REFER TO CUMMINS APPLICATION MANUAL T030 FOR GENERAL GENSET/TANK MOUNTING GUIDELINES.
   - 5.2 TIGHTEN TANK HOLD DOWN MOUNTING FASTENERS.
6. ALL DIMENSIONS NOT SHOWN ARE IDENTICAL TO THOSE SHOWN ON SHEET 1.
7. THE ENCLOSURE IS ENGINEERED TO MAINTAIN IT'S INTEGRITY WITH A 150 MPH WIND LOAD CONDITION.

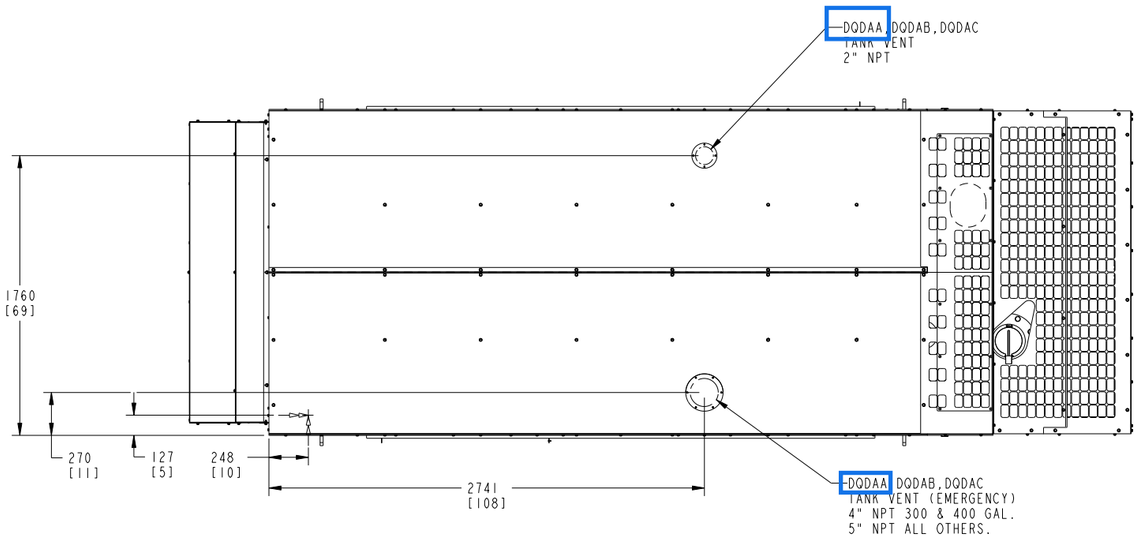


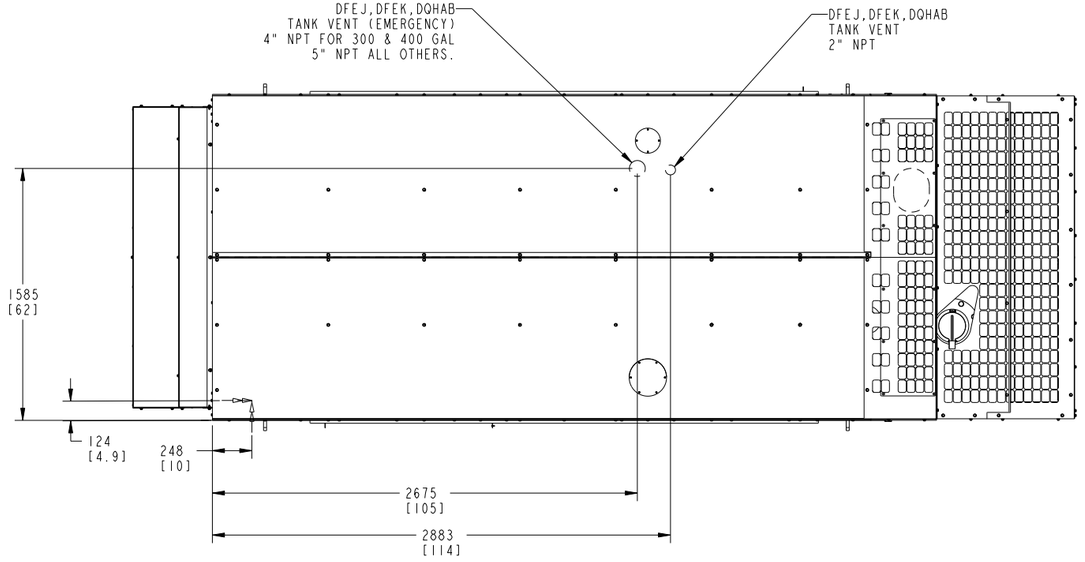
UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN MILLIMETERS	SIM TO A034J589	DRN A_MARBHAL	CUMMINS POWER GENERATION
DIM: X ±1, .X ±0.8, .XX± 0.38 — HOLE: 0.00-4.99 +0.15/-0.08; 5.00-9.99 +0.20/-0.10; 10.00-17.49 +0.25/-0.13; 17.50-24.99 +0.30/-0.13	DO NOT SCALE PRINT	CKD K_KISHORE	OUTLINE, ENCLOSURE (LEVEL 2)
ANG TOL: ± 1.0° — SCALE: 1/32	- CONFIDENTIAL - PROPERTY OF CUMMINS POWER GENERATION GROUP	APVD K_KISHORE	SITE CODE PGF
		DATE 05AUG14	SIZE D — A050L370 — SHEET 1 OF 4 — REV A
		FIRST USED ON DFEJ,K	FOR INTERPRETATION OF DIMENSIONING AND TOLERANCING, SEE ASME Y14.5M-1994

Drawing Name: A050L371 Revision: A
Part Name: A050L370 Revision: A
Sheet 1 of 5

PTC® Creo® Parametric

REL NO	LTR	NO	REVISION	DRN	CKD	APVD	DATE
ECO-145369	A	1	PRODUCTION_RELEASE	AM	KK	K_KISHORE	05AUG14





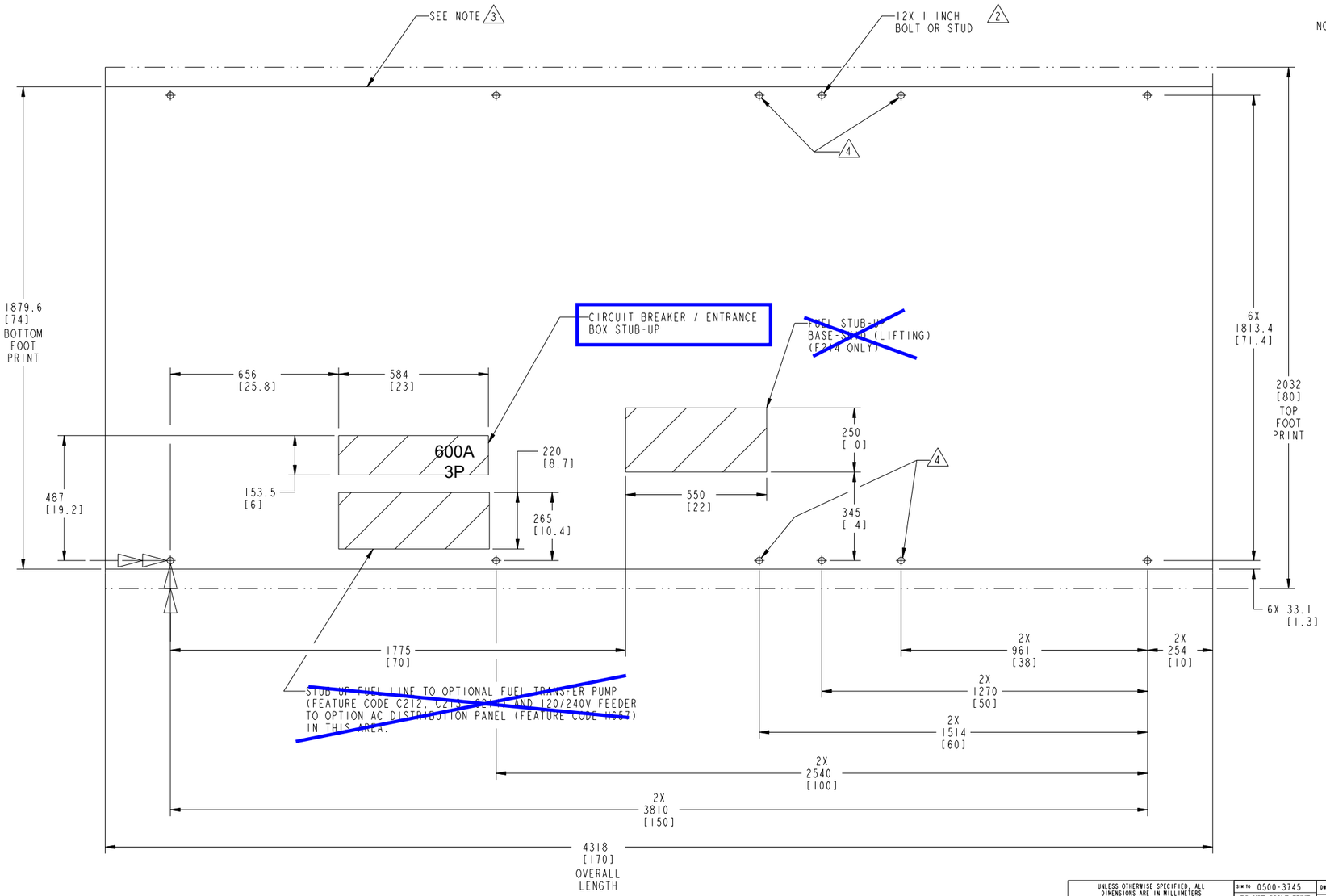
UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN MILLIMETERS	SIM TO A034J589	DRN A_MARBHAL		CUMMINS POWER GENERATION		
DIM: X ± 1, .X ± 0.8, .XX± 0.38 — HOLE: 0.00- 4.99 +0.15/-0.08; 5.00- 9.99 +0.20/-0.10; 10.00-17.49 +0.25/-0.13; 17.50-24.99 +0.30/-0.13	DO NOT SCALE PRINT	CKD K_KISHORE		OUTLINE,ENCLOSURE (LEVEL 2)		
	- CONFIDENTIAL - PROPERTY OF CUMMINS POWER GENERATION GROUP	APVD K_KISHORE				
ANG TOL: ± 1.0° — SCALE: 1/16	FOR INTERPRETATION OF DIMENSIONS AND TOLERANCING, SEE ASME Y14.5M-1994	DATE 05AUG14	FIRST USED ON DFEJ,K	SITE CODE PGF	DWG SIZE D — A050L370	SHEET 2 OF 4 — DWG REV A

Drawing Name: A050L371 Revision: A
Part Name: A050L370 Revision: A
Sheet 2 of 5

Pro/ENGINEER

REL NO	LTR	NO	REVISION	DRN	CKD	APVD	DATE
ECO-118385	C	1	6X 1813.4 WAS 1803.4, ZONE C2	WGM	BJD	K.KISHORE	27JUL11
		2	6X 33.1 WAS 38.1, ZONE B2	WGM	BJD	K.KISHORE	27JUL11
		9	345 WAS 340, ZONE B3	WGM	BJD	K.KISHORE	27JUL11
		10	265 WAS 260, ZONE B4	WGM	BJD	K.KISHORE	27JUL11
		11	487 WAS 482, ZONE B6	WGM	BJD	K.KISHORE	27JUL11

DQDAA, DQDAB, DQDAC
(C201-C207, C242, F214)



NOTE:

1. DIMENSIONS IN [ ] ARE IN INCHES.
2. SKID-BASE (LIFTING) AND FUEL TANK HAVE A FLANGE THICKNESS OF 4.76mm [.19 INCHES], (FLORIDA UNITS WITH FEATURE CODE L116) 8.76mm [.35 INCHES]. ALLOW EXTRA LENGTH ON HARDWARE FOR UNEVENESS OF MOUNTING SURFACE.
3. LIFTING BASE OR FUEL TANK PERIMETER IS SHOWN. FOUNDATION SHOULD BE EXTENDED BEYOND THIS PERIMETER. SEE (T030) APPLICATION MANUAL.
4. FEATURE OPTION F214-2 DOES NOT USE THIS BOLT.

UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN MILLIMETERS

DIM: X ±3; .X ±0.8; .XX± 0.38

HOLE: 0.00- 4.99 +0.15/-0.08; 5.00- 9.99 +0.20/-0.10; 10.00-17.49 +0.25/-0.13; 17.50-24.99 +0.30/-0.13

ANG TOL: ± 1.0° SCALE: ~1/8

SIM TO 0500-3745

DO NOT SCALE PRINT

- CONFIDENTIAL - PROPERTY OF CUMMINS POWER GENERATION GROUP

DRN	M_JOHNSON
CHD	Z_MOGES
APVD	Z_MOGES
DATE	10JAN11

FOR INTERPRETATION OF DIMENSIONING AND TOLERANCING, SEE ASME Y14.5M-1994 — FIRST USED ON DFEK

SITE CODE PGA

CUMMINS POWER GENERATION

OUTLINE, GENSET (FOUNDATION)

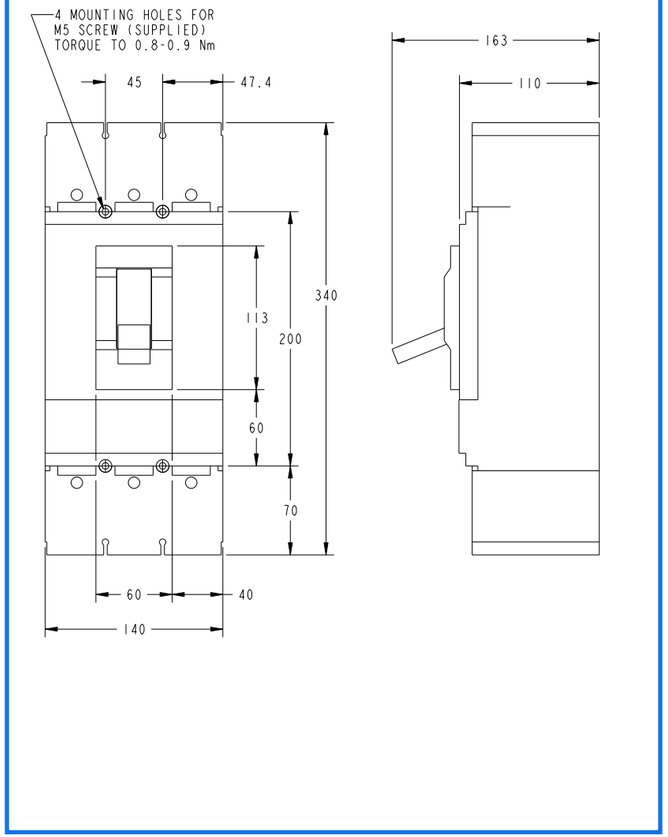
DWG SIZE D — A035F947 — SHEET 3 of 3 — DWG REV C

Drawing Name: A035F948 Revision: C
Part Name: A035F947 Revision: C
Sheet 3 of 4

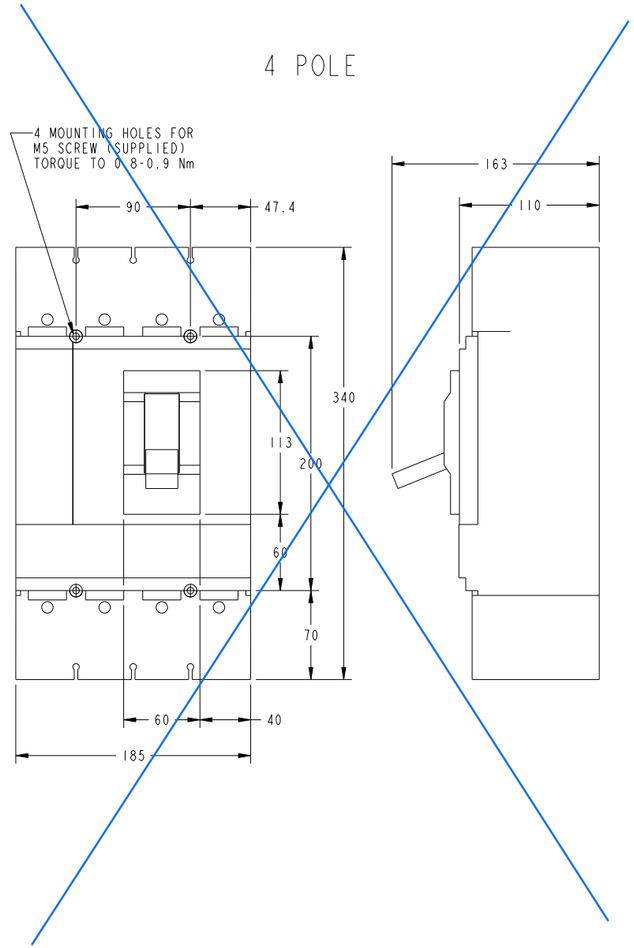
PTC® Creo® Parametric

REL NO	LTR	NO	REVISION	DRN	CKD	APVD	DATE
ECO-148659	D	1	A045U091 - UPDATE MEP (SEE ECO)	WGM	DJR	K.KISHORE	01JAN15

3 POLE



4 POLE



NOTES:

1. THIS PART IS MANUFACTURER SOURCE CONTROLLED.

2. PART SPECIFICATIONS:
   RMS ELECTRONIC TRIP
   TRIP UNIT: MICROLOGIC 3.3S UNIT

   LUGS INCLUDED ON ALL POLES
   UP TO 400A: 1 CABLE 2 AWG-600 KCMIL CU
   401-630A: 1 TO 2 CABLES 2/0 AWG TO 350 KCMIL CU

   EACH CB INCLUDES MOUNTING HARDWARE:
   M5 X 85 SCREWS, NUTS & LOCKWASHERS

   AGENCIES: 3-POLE: UL LISTED
   IEC
   4-POLE: IEC ONLY

TABULATION

PART NO.	CURRENT ECO	RATING (AMP)	POLE	VOLTS (UL/IEC)	DESCRIPTION	NOTES
A046P197	ECO-135274	600	3	600/690	LEFT HAND	
A046U528	ECO-135274	500	3	600/690	LEFT HAND	
A046U529	ECO-135274	450	3	600/690	LEFT HAND	
A046U530	ECO-135274	400	3	600/690	LEFT HAND	
A046U532	ECO-135274	350	3	600/690	LEFT HAND	
A046U534	ECO-135274	300	3	600/690	LEFT HAND	
A046U545	ECO-135274	630	4	690 (IEC ONLY)	LEFT HAND	
A046U546	ECO-135274	500	4	690 (IEC ONLY)	LEFT HAND	
A046U547	ECO-135274	400	4	690 (IEC ONLY)	LEFT HAND	
A046U552	ECO-135274	320	4	690 (IEC ONLY)	LEFT HAND	
A046U557	ECO-135274	250	3	600/690	LEFT HAND	
A046U558	ECO-135274	150	3	600/690	LEFT HAND	
A044T468	ECO-136325	600	3	600/690	RIGHT HAND	SEE NOTE 1
A045U081	ECO-136325	500	3	600/690	RIGHT HAND	SEE NOTE 1
A045U082	ECO-136325	450	3	600/690	RIGHT HAND	SEE NOTE 1
A045U083	ECO-136325	400	3	600/690	RIGHT HAND	SEE NOTE 1
A045U084	ECO-136325	350	3	600/690	RIGHT HAND	SEE NOTE 1
A045U085	ECO-136325	300	3	600/690	RIGHT HAND	SEE NOTE 1
A045U086	ECO-136325	630	4	690 (IEC ONLY)	RIGHT HAND	SEE NOTE 1
A045U087	ECO-136325	500	4	690 (IEC ONLY)	RIGHT HAND	SEE NOTE 1
A045U089	ECO-136325	400	4	690 (IEC ONLY)	RIGHT HAND	SEE NOTE 1
A045U090	ECO-136325	320	4	690 (IEC ONLY)	RIGHT HAND	SEE NOTE 1
A045U091	ECO-148659	250	3	600/690	RIGHT HAND	SEE NOTE 1
A045Z306	ECO-136325	150	3	600/690	RIGHT HAND	SEE NOTE 1
A045U164	ECO-130453	600	3	600/690	ACCESSORIES	
A045U165	ECO-130453	500	3	600/690	ACCESSORIES	
A045U168	ECO-130453	450	3	600/690	ACCESSORIES	
A045U169	ECO-130453	400	3	600/690	ACCESSORIES	
A045U170	ECO-130453	350	3	600/690	ACCESSORIES	
A045U171	ECO-130453	300	3	600/690	ACCESSORIES	
A045U172	ECO-130453	630	4	690 (IEC ONLY)	ACCESSORIES	
A045U173	ECO-130453	500	4	690 (IEC ONLY)	ACCESSORIES	
A045U175	ECO-130453	400	4	690 (IEC ONLY)	ACCESSORIES	
A045U176	ECO-130453	320	4	690 (IEC ONLY)	ACCESSORIES	
A045U177	ECO-130453	250	3	600/690	ACCESSORIES	
A045Z308	ECO-130453	150	3	600/690	ACCESSORIES	

-THIS IS A CONTROLLED ITEM-
PER CPG PROCEDURE FRE-1002

TO MAINTAIN COMPLIANCE WITH REQUIREMENTS OF THE CODES, STANDARDS, OR AGENCIES LISTED BELOW
☒ CSA ☒ UL ☐ CE ☐ RMIA ☐ ABYC
☐ IBC ☐ OTHER ☐ OTHER
CHANGES, DEVIATIONS, OR SUBSTITUTIONS OF MATERIAL, PROCESS, OR PERFORMANCE FOR THIS ITEM MUST BE APPROVED BY THE FOLLOWING CONTROLLED ITEM APPROVER
RESPONSIBLE C/A ROLE STATIONARY GENSET C/A
RESPONSIBLE C/A ROLE
RESPONSIBLE C/A ROLE

UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN MILLIMETERS
DIM: X ± 1; .X ± 0.8; .XX ± 0.38
HOLE: 0.00- 4.99 +0.15/-0.08; 5.00- 9.99 +0.20/-0.10; 10.00-17.49 +0.25/-0.13; 17.50-24.99 +0.30/-0.13
ANG TOL: ± 1.0° SCALE: 1/2

SIM TO: DO NOT SCALE PRINT

- CONFIDENTIAL -
PROPERTY OF CUMMINS POWER GENERATION GROUP

DRN S. CANFIELD
CKD M. SIMS
APVD V. GUPTA
DATE 29NOV12

FOR INTERPRETATION OF DIMENSIONING AND TOLERANCING, SEE ASME Y14.5M-1994
FIRST USED ON GENERAL

SITE CODE PGF

CUMMINS POWER GENERATION

BREAKER,CIRCUIT

DWG SIZE D | A044T469 | SHEET 1 of 1 | DWG REV D

Drawing Name: A044T469 Revision: D
Part Name: A046P197 Revision: A
Sheet 1 of 2

UNLESS OTHERWISE SPECIFIED,
ALL DIMENSIONS ARE IN INCHES

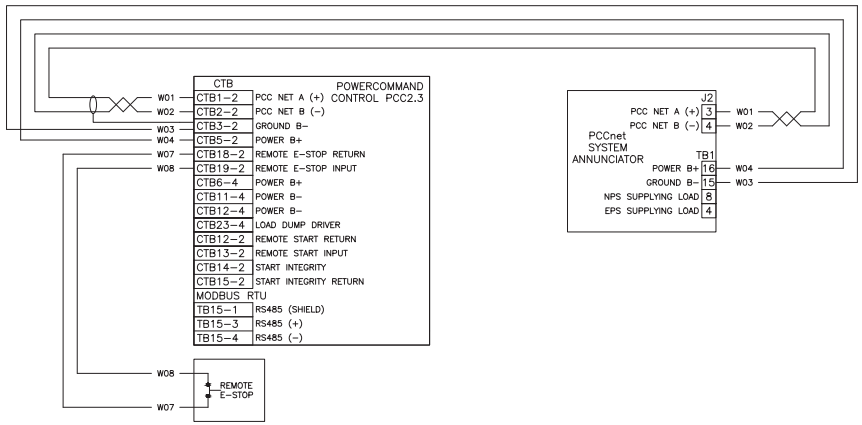
TOLERANCES:
FRACTIONAL: .06
.X: .03
.XX: .01
.XXX:
ANGLES: .5°

REFERENCES	
A065N7837	A054A430
A065N785	A065K034
A052P382	A065H780

	PREP. BY:	KDU
	CHKD BY:	–
	MODIFIED BY:	–
	–	–
FINISH: N/A		05/28/24

ENGINE FAMILY: PCC2300

OTEC ATS



- ALL INTERCONNECT WIRING AND DATA CABLING IS TO BE DONE WITH STRANDED WIRE PER NFPA 37.
- PCC NET CABLE: BELDEN 9729. (24 AWG, STRANDED, SHIELDED, TWISTED PAIR)
- OTEC PC40 MODBUS RS485 CABLE: BELDEN 9841. (22 AWG, STRANDED, SHIELDED, TWISTED PAIR)
- TOTAL NETWORK LENGTH NOT TO EXCEED 4000 FT.
- ATS LOAD SHED WIRING IS SHOWN FOR REF:-----

Cummins

CSSNA POWER GEN

SITE NAME: – –	CONTACT NAME: –	CUSTOMER PROJECT NO: –	TITLE: PCC2.3 CONTROL / OTEC ATS QSI9..QSX15..QSK23
CONTRACTOR NAME: –	CONTACT NO: –	CSSNA PROJECT NO: –	SIZE: B DWG NO: PCC2.3 INTERCONNECT REV 0
			SCALE: NONE DO NOT SCALE PRINT SHEET 1 OF 1

Specification Sheet

QuickFit™ – Filter Purge, Oil Evacuation & Refill System

Description

The QuickFit™ system transforms the way service is performed today. For most engines, a complete engine oil and filter change can be performed in under 10 minutes, with a full service change in 30-40 minutes. With the reduction in labor-hours, the system pays for itself in 1-2 services.

Filters are purged to eliminate hot oil spills and automatically filled with new, fully-filtered oil for complete contamination control. Productivity goes up and the risk of spills and contamination is virtually eliminated.

Benefits:

- 60-70% labor savings
- 80% reduction in safety hazards
- Zero Spill Oil Change
- Increased technician capacity
- Applicable to most engine arrangements

Operation

Three steps for safer, cleaner and faster oil changes:

Purge – Connect the purge tool to the compressed air source and to the QuickFit valve to purge dirty oil from lube filters into the sump. Remove old filters without any spills for easy, clean disposal. Install new filters empty.

Evacuate – Connect the suction line to the QuickFit valve to drain dirty oil from the sump directly into the waste container.

Refill - Connect the clean oil supply to the QuickFit valve to fill empty filters, removing any contamination from new oil and pre-lubricating the engine before starting.

Features

No leak solution – The QuickFit system uses dual check valves and metal reinforced hoses to negate any possibility of leakage from the engine.

Live dipstick read from ground – QuickFit process fully pressurizes engine as part of the fill process. The system delivers a "live" dipstick read without requiring the technician to climb up, start the machine, shut down the machine, then climb down to verify fluid levels.

Contamination and spill control – The QuickFit system pumps oil directly from the engine into a final waste container, which ensures that no oil touches the ground, the machine, or the PM tech. All quick disconnect fittings are flush face, drip-proof design. This eliminates environmental concerns and provides a safer work environment for the service techs. In addition, because the QuickFit system allows engine refill via the new filter(s), new oil is fully filtered for improved contamination control.

Ground accessibility – Statistics reveal that 30-35 percent of injuries on heavy equipment occur when people climb on or off machinery. Because QuickFit components are ground accessible, technicians spend far less time climbing on or under machines during routine maintenance.

Automatic engine lubrication – After the service, the QuickFit system ensures proper oil pressure and pre-lubricates the engine during the start, before the engine is allowed to crank.

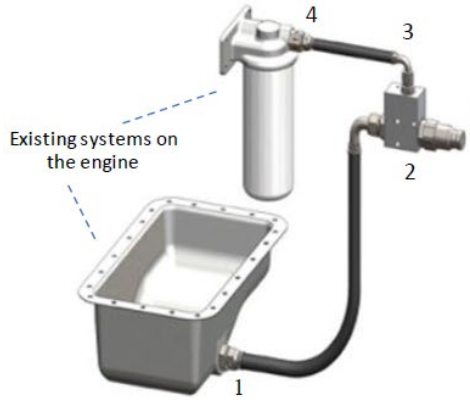
Warranty – This product has a five year or 5000 hours warranty, whichever comes first.

Specifications				
General technical data for valve assembly				
Vibration limits	**Valve body (2) Max. refill @ Evac temp**	**Materials & requirements if customer-supplied**		
		Hoses (1) & (3)	**Valve body(2)**	**Check valve (4)**
5G @ 10-55 Hz*	250psi @ 250°F 500psi @ 150°F 700psi @ 50°F	• (1) Vacuum rated • Rated for 250°F • (3) Rated for refill pump's pressure	• Body: 6061 Alum. • Valve: Polypropylene • Spring & support, coupler: Steel	• Steel, zinc-plated • 1 psi opening • .02 ml/m leakage • Rated for 500 psi

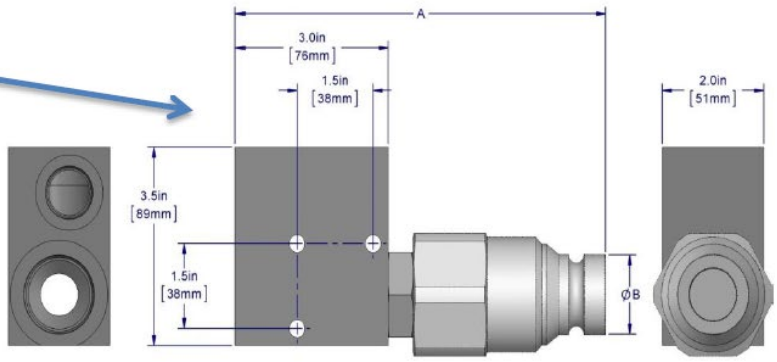
**For installations beyond the vibration limits, contact RPM Industries for assistance.*

Quick coupler (B)	Overall length (A)	Evac flow w/ 70°F* 15W-40	Evac flow w/ 200°F 15W-40	Weight	Coupling force (lbs)	Recommended hose (L x ID)
½" (ISO 12.5) Flat/flush face	7.5 inches	5.5 gpm	10 gpm	2.6 lbs	35 lbs	3' x 0.75"
1" (ISO 12.5) Flat/flush face	8.0 inches	11 gpm	25 gpm	4.1 lbs	65 lbs	3' x 1.0"
Pump used to evacuate/refill oil can be a limiting factor only if its capacity is lower than the QuickFit flow capacity as mentioned above. Any pump that is above QuickFit flow capacity will not create any restrictions.						

**Flow listed is with 1"ID, 3' long suction line to sump. Longer or smaller line will reduce flow. Flow will be higher & drain time reduced w/ warmer, thinner oil. Engine makers suggest running engine to warm & mix oil before drain.*



Typical QuickFit Valve Installation (to filter-head & sump)



Expanded QuickFit™ Valve Assembly

Cummins® part numbers matched to the engine platforms:

Engine platform	Cummins part number
4BT3.3	A054E036
QSB5	A054E034
QSB7	A054E033
QSL9	A054E035
QSM11	A054E005
QSM15	A054E004
QSK19	A054E128
QSK23	A054E127
QST30	A054E308
QSK50	A054E121
QSK60	A054E122
QSK60 MCRS	A054E122

Required tools to perform service with QuickFit™:

Required tools:			
Lube truck/shop conversion service tools with 1/2 inch port size (default for all QuickFit kits)			
Tool	**Image**	**Description**	**Part no.**
Service shop / lube truck: QuickFit™ conversion kit		Convert existing service shop or truck for machines installed with QuickFit™	**A054S255**
OR			
Lube truck/shop conversion service tools with 1 inch port size (specific order)			
Tool	**Image**	**Description**	**Part no.**
Service shop / lube truck: QuickFit™ conversion kit		Convert existing service shop or truck for machines installed with QuickFit™	**A054S257**

Notes:

1. By default, all the QuickFit™ kits come with 1/2 inch port size. The conversion kit and purge tool with 1/2 inch port size should be the default selection for a standard QuickFit™ kit.
2. The conversion kit and purge tool with 1 inch port size are only for specific orders. These would also require a special quick disconnect fitting in the QuickFit™ kit.
3. The fittings with 1 inch port size would be useful where the flow rate is expected to be around 20 - 25 gallons. Spec sheet can be referenced for more information on flow rates.

Service parts available for QuickFit™:

Service parts				
Part	**Image**	**Description**	**Part number**	**OEM**
QuickFit™ valve body		Includes QuickFit™ valve with internal parts and flat face quick disconnect.	**A054S490**	RPM
Small male flush face quick disconnect, #8 NPT (1/2 inch)		Used to couple to female 103991. Used on end of hoses whips 1/2" NPT. *(Use to adopt existing service system)*	**A054U229**	RPM
Small female flush face quick disconnect #8 NPT (1/2 inch)		Used to couple to male 103990. Used on hoses evac bracket, other tools 1/2" NPT. *(Can use to adopt existing service system)*	**A054U230**	RPM
Large female flush face quick disconnect #16 NPT (1 inch)		Used to couple to male 103488. Used on hoses evac bracket, other tools 1" NPT. *(Can use to adopt existing service system)*	**A054U433**	RPM
Large male flush face quick disconnect #16 NPT (1 inch)		Used to couple to female 103487. Used on end of hoses whips 1" NPT. *(Can use to adopt existing service system)*	**A054U434**	RPM
Standard oil filter purge tool (1/2 inch)		Used to purge oil filter with compressed air (65 psi, 446 kPa min.). *(Can be used to adopt existing truck or shop)*	**A054U439**	RPM
Large oil filter purge tool (1 inch)		Used to purge oil filter with compressed air (65 psi, 446 kPa min.). *(Can be used to adopt existing service system)*	**A054U444**	RPM

Suggested tools for oil evacuation/refill:

QuickFit evacuation/refill tools					
Tool	**Image**	**Description**	**Part number**	**Function**	**OEM**
Self-Contained Evacuation Tool (SCET): Dual 12/24 VDC with dedicated hose ends for evac (Extension harness & hose available as required).		Handheld pump used to evacuate oil on machines having QuickFit plumbing. Suitable for Engine displacement of 15L and below 2.0/2.5 gpm Flow w 75 ˚ F Oil 2.2/4.5 gpm Flow w 150 ˚ oil Continuous duty (<16A).	**A054V098**	Evacuation	RPM
Self-Contained Refill Tool (SCReT): Dual 12/24 VDC (Extension harness & hose available as required).		Handheld pump used to refill oil on machines having QuickFit plumbing. Suitable for engine displacement of 15L and below. 3.5 gpm flow w 95 ˚ F oil Continuous duty (<16A).	**A054V099**	Refill	RPM
AC Pump		115 V AC 60 HZ 3/4 HP 7.6 GPM Max flow rate 150 psi max pressure recommended for shop service.	**A054V100**	Evacuation / refill	RPM
DC Pump		12V/24V DC Flow at 70 °F 8 gpm/16 gpm 120 psi max pressure max run time cycle 10 minutes at recommended temperature of 70˚F.	**A054V102**	Evacuation / refill	RPM
AC Pump		208-240/ 415-480 V AC 5.0 HP (3 phase) 35 GPM max flow 100 psi max recommended for shop service.	**A042P998/ A054V103**	Evacuation	RPM

Tool	Image	Description	Part number	Function	OEM
DC Pump		12/24 V DC 15/30 gpm max flow 100 psi max pressure. Recommended for field service. Recommended oil temperature min 70˚F. One time run restriction - 15 minutes.	**A054W130**	Evacuation	RPM
Air piston pump (small)		450 psi/ 750 psi 3:1 / 5:1 pump ratio 2.6-4.1 / 2.0-4.8 gpm. Recommended for engine displacement up to 15 litres	**A054X047**	Refill	RPM
Air piston pump (large)		540 psi max 3:1 pump ratio 13.4 gpm	**A054X048**	Refill	RPM
Air-operated diaphragm pump		1" AODD size 20-67 SCFM max air draw 125 psi max pressure 20-30 gpm depending on oil temperature	**A054Y319**	Evacuation/ refill	RPM
AC pump (For preset meter)		115 V AC 1.0/2.0 HP 2.6/3.7 gpm max flow 550/650 psi max	**A054X050/ A054X051**	Refill	RPM

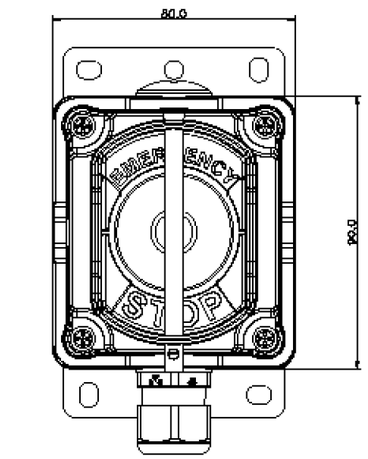
For more information contact your local Cummins distributor or visit power.cummins.com

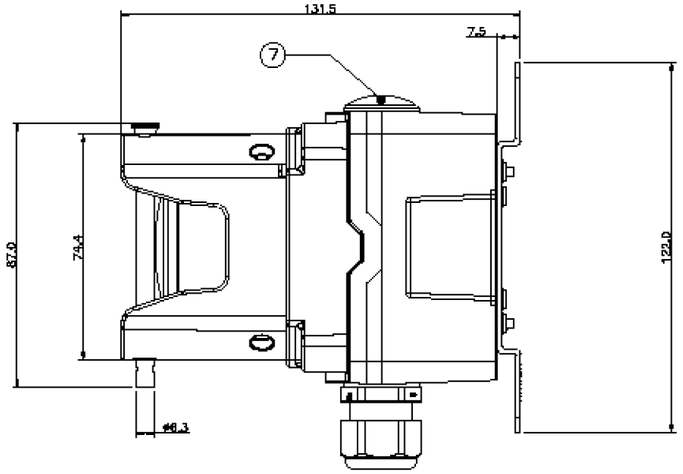
Our energy working for you.™

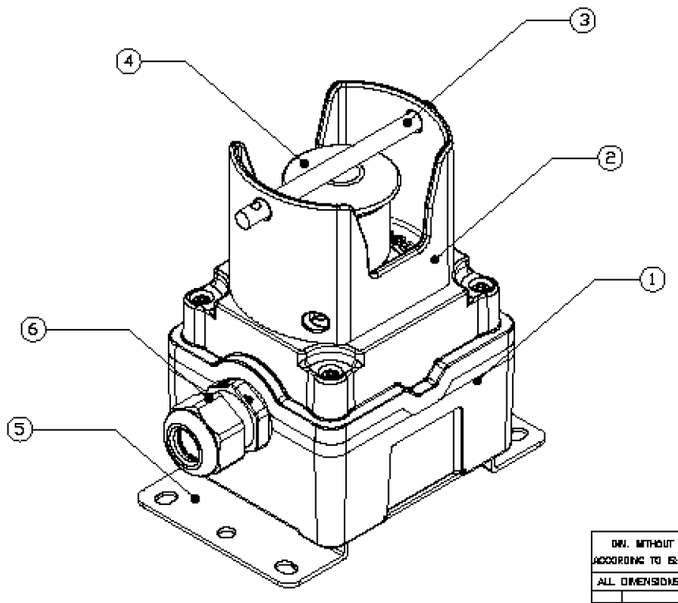
NAAC-6187-EN PDA059Y474 (03/22)

REV	REL NO	REVISION	DWN	CKD	APVD	DATE
0	2021-281	INITIAL RELEASE	DDG	CTB	CTB	30NOV21

NOTES:
MANUFACTURER: TEKNIC P/N: 44.924
ASSEMBLY SHALL HAVE NEMA 4X ENCLOSURE RATING
1 N/O CONTACT
1 N/C CONTACT
MEANS SHALL BE PROVIDED FOR LOCKOUT OF E-STOP SWITCH







Part	Qty	Description	Part No
7	1	½" NPT Plug	NPT1/2
6	1	½" NPT Cable Gland	53DB 921
5	1	Common Mounting Plate	1WUMBRK-B-04
4c	1	NC Contact Element	S2
4b	1	NO Contact Element	S1
4a	1	Mushroom Actuator	P2AMPPT4
4	1	Mushroom Push Button	P2PSWPPT411
3	1	Shaft	2ESS3S
2	1	Actuator Shroud	2ESS3-2-UL
1	1	1 WAY PDC Y/B	2005A1D

DIM. WITHOUT TOLERANCES ACCORDING TO IS: 2102—m(1993)
ALL DIMENSIONS ARE IN mm.

No.	ALTERATION	DATE	NAME

SUPERSEDES
SUPERSEDED BY

	DATE	NAME
2021		
Drawn	24.11.21	Pansawy
Checked		
Approved		

SCALE NTS
PAGE:1 OF:1
REV. NO. 01 02 04 05 07 08

MATERIAL –
SURFACE TREATMENT ———
TITLE 1 Way Enclosure Assembly Type 4
DRG. No. –
FILE NAME ———
TEKNIC

SUPPLIER DRAWING

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CUMMINS ENGINEERING STANDARD 10084

DIMENSIONS ARE IN: INCHES
[ ] ARE IN: ...
DRAWING TOLERANCES APPLY TO PRIMARY DIMENSIONS UNLESS OTHERWISE SPECIFIED
X: ± 1 IN OR 4 mm
X.X: ± .1 IN OR 2.7 mm
X.XX: ± .030 IN OR 0.25 mm
X.XXX: ± .010 IN OR 0.025 mm
ANGULAR TOLERANCE: ±1°
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CMI DATA CLASSIFICATION
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CKD C.T.BOECKMAN
APVD C.T.BOECKMAN
DATE 30NOV21
FOR INTERPRETATION OF DIMENSIONING AND TOLERANCING, SEE ASME Y14.5-2009

MUST CONFORM TO CES 10903

Cummins Inc.
ITEM NAME
SWITCH, EMERGENCY STOP
E-STOP BUTTON

DWG SIZE	CAD SHEET	ITEM NUMBER	REV
D	1 OF 1	A067X909	0

SECTION 5
ATS SPECIFICATIONS AND DRAWINGS

POWERCOMMAND® OTECSE TRANSFER SWITCH

POWERCOMMAND® 40-01 CONTROL | OPEN TRANSITION | 40 A-1000 A

AUTOMATIC TRANSFER SWITCH | SERVICE ENTRANCE RATED

DESCRIPTION

The OTECSE series transfer switch provides the basic features typically required for primary source and generator set monitoring, generator set starting and load transfer functions for emergency standby power applications. They are suitable for use in emergency, legally required, and optional standby circuits in commercial and light industrial applications. The OTECSE transfer switch features the new PowerCommand® 40 control with a comprehensive feature list to suit a wide variety of ATS applications.

FEATURES

PowerCommand® 40-01 control – A fully featured microprocessor-based control with LCD digital display and tactile-feel soft-switches for easy operation and screen navigation. Control highlights include Modbus communication, front panel PC software configuration. Advanced features include, three phase sensing on both sources, manual restore to S1, synch check, and event logging capability. Please see the S-6560 PowerCommand® 40-01 control specification sheet for the full description, benefits and features.

Overcurrent disconnect device – Square D UL Listed 489 molded case circuit breaker.

Programmed transition – Open transition timing can be adjusted to completely disconnect the load from both sources for a programmed time period, as recommended by NEMA MG-1 for transfer of inductive loads.

Advanced transfer switch mechanism – Unique bi-directional linear actuator provides virtually frictionless constant force, straight-line transfer switch action during automatic operation.

Positive interlocking – Mechanical and electrical interlocking prevent source-to-source connection through the power or control wiring.

Main contacts – Heavy-duty silver alloy contacts used with multi-leaf arc chutes are rated for motor loads or total system load transfer. They require no routine contact maintenance. Continuous load current not to exceed 80% of switch rating and tungsten loads not to exceed 30% of switch rating.

Ease of service and access – Single-plug harness connection and compatible terminal markings simplify servicing. Access space is ample. Door-mounted controls are field-programmable; no special tools are required.

Complete product line – Cummins is a single source supplier with a wide range of equipment, accessories and services to suit virtually any backup power application.

Warranty and service - Products are backed by a comprehensive warranty and a worldwide network of distributors with factory-trained service technicians.

TRANSFER SWITCH MECHANISM

- A bi-directional linear motor actuator powers the transfer switch. This design provides virtually friction-free, constant force, straight-line transfer switch action with no complex gears or linkages.
- Independent break-before-make action is used for both 3-pole and 4- pole/switched neutral switches. On 4-pole/switched neutral switches, this action prevents objectionable ground currents and nuisance ground fault tripping that can result from overlapping designs.
- A mechanical interlock prevents simultaneous closing of normal and emergency contacts.
- Electrical interlocks prevent simultaneous closing signals to normal and emergency contacts and interconnection of normal and emergency sources through the control wiring.
- High pressure silver alloy contacts resist burning and pitting. Separate arcing surfaces further protect the main contacts. Contacts are mechanically held in both normal and emergency positions for reliable, quiet operation.
- Contact wear is reduced by multiple leaf arc chutes that cool and quench the arcs. Barriers separate the phases to prevent interphase flashover. A transparent protective cover allows visual inspection while inhibiting inadvertent contact with energized components.

- Switch mechanism, including contact assemblies, is UL 1008 certified to verify suitability for applications requiring high endurance switching capability for the life of the transfer switch. Withstand and closing ratings are validated using the same set of contacts, further demonstrating the robust nature of the design.

SPECIFICATIONS	
Voltage rating	Up to 480 V AC, 50 or 60 Hz.
Arc interruption	Multiple leaf arc chutes provide dependable arc interruption.
Neutral bar	A full current-rated neutral bar with lugs is standard on enclosed 3-pole transfer switches.
Auxiliary contacts	Two isolated contacts (one for each source) indicating switch position are provided for customer use. Contacts are normally open, and close to indicate connection to the source. Wired to terminal block for easy access. Rated at 10 A Continuous and 250 V AC maximum.
Operating temperature	-13 ˚F (-25 ˚C) to 140 ˚F (60 ˚C)
Storage temperature	-40 ˚F (-40 ˚C) to 140 ˚F (60 ˚C)
Humidity	Up to 95 % relative, non-condensing
Altitude	Up to 10,000 ft (3,000 m) without derating
Surge withstand ratings	Control tested to withstand voltage surges per EN60947-6-1.
Total transfer time (source-to-source)	Will not exceed 6 cycles at 60 Hz with normal voltage applied to the actuator and without programmed transition enabled.
Manual operation*	Transfer switch mechanisms are equipped with means to manually transfer. All sources must be de-energized before manual operation is attempted.
Overcurrent disconnect device	Service entrance switches have a Square D UL 489 listed molded case circuit breaker. 1000 Amp switches also have a current transformer and integral residual ground fault protection

**See Operator Manual for further details.*

TRANSITION MODES

Open delayed transition – In this transition mode the time required for the transfer switch to transfer between sources is adjustable so that the load-generated voltages decay to a safe level before connecting to an energized source. Recommended by NEMA MG-1 to prevent nuisance tripping breakers and load damage. Adjustable 0.5 secs - 10 minutes, and default 0.5 seconds.

Open in-phase translation – Initiates open transition transfer when in-phase monitor senses both sources are in phase (voltage, phase and frequency). Operates in a break-before-make sequence. Includes ability to enable programmed transition as a backup. The module waits indefinitely for synchronization unless the 'Return to programmed transition' function is active in which case after 2 minutes it performs a programmed delayed transfer.

UL 1008 WITHSTAND AND CLOSING RATINGS (WCR)

Withstand and Closing Ratings (WCR) are stated in symmetrical RMS amperes.

Frame	Amperage	With specific MCCB (kA at 480V)	Square-D breaker part number	Cummins part number	Trip unit
A (3-pole only)	40	35	HGM36040	0320-2346-75	Standard Thermal Magnetic
	70		HGM36070	0320-2346-74	
	100		HGM36100	A035E003	
	125		HGM36125	0320-2346-73	
B	150, 200, 225, 250	65	LJM36250CU31X	A046F867	Micrologic 3.3 (LI)
C	300, 400, 600	65	PJM36060U31C	0320-2410-02	Micrologic 3.0 (LI)
D	800	65	RJF36080U31A	A058R115	Micrologic 3.0A (LI)
	1000	65	RJF36100U44A	0320-2563-01	Micrologic 6.0A (LSIG)

TRANSFER SWITCH LUG CAPACITIES

Frame	Amperage rating (A)	Emergency and load power cables		Emergency and load neutral cables		Service power cables		Service neutral	
		Cables per phase	Cable size	Number of Cables	Cable size	Cables per phase	Cable size	Number of Cables	Cable size
A	40, 70, 100, 125	1	#12 AWG-2/0 CU/AL Emerg #14 AWG-2/0 CU/AL Load	2	#14 AWG-2/0 CU/AL	1	#14 AWG-3/0 CU/AL	1	#14 AWG-2/0 CU/AL
B	150, 200, 225, 250	1	#6 AWG-400 MCM CU/AL	2	#6 AWG-400 MCM CU/AL	1	#2 OWG-600 MCM CU or #2 AWG-500 MCM AL	1	#6 AWG-400 MCM CU/AL
C	300, 400, 600	2	250-500 MCM CU/AL	4	250-500 MCM CU/AL	3	3/0-500 MCM CU/AL	2	250-500 MCM CU/AL
D	800, 1000	4	250-500 MCM CU/AL	8	250-500 MCM CU/AL	4	#2 AWG-600 MCM CU/AL	4	250-500 MCM CU/AL

**All lugs 90°C rated and accept copper or aluminum wire unless indicated otherwise.*
Refer to the latest NFPA 70 Article 310 - Conductors for general wiring for the ampacity calculations.

ENCLOSURE

The transfer switch and control are wall-mounted in a key-locking enclosure. Wire bend space complies with 2017 NEC.

OTECSE SERVICE ENTRANCE DIMENSIONS – TRANSFER SWITCH IN UL TYPE 1 ENCLOSURE

Frame	Amperage rating (A)	Height		Width		Depth		Weight	
		in	mm	in	mm	in	mm	lb	kg
A	40, 70, 100, 125, 3-pole	45.8	1164	32	814	16.3	413	300	136
B	150, 200, 225, 250	73.6	1869	32.3	820	19.7	499	500	227
C	300, 400, 600	74.5	1892	34.4	873	20.1	510.4	520	236
D	800, 1000	90	2286	39	991	26.3	667	920	417

OTECSE SERVICE ENTRANCE DIMENSIONS – TRANSFER SWITCH IN UL TYPE 3R, OR 12 ENCLOSURE

Frame	Amperage rating (A)	Height		Width		Depth		Weight	
		in	mm	in	mm	in	mm	lb	kg
A	40, 70, 100, 125, 3-pole	45.8	1164	32	814	16.3	413	340	154
B	150, 200, 225, 250	73.6	1869	32.3	820	19.7	499	580	263
C	300, 400, 600	74.5	1892	34.4	873	20.1	510.4	600	272
D	800, 1000	90	2286	39	991	26.3	667	920	417

ENCLOSURE ACCESS FOR CABLE INSTALLATION AND MAINTENANCE

All frames allow for top, side, and bottom cable entry. NEC Requires Minimum 36” Front Access. Additional front clearance is needed to remove the mechanism. Refer to the outline drawing.

OTECSE DRAWING PART NUMBERS

		Outline Drawing
Frame	Amperage rating (A)	Type 1, 3R, or 12
A	40, 70, 100, 125 (3-pole)	A065S433
B	150, 200, 225, 250	A065S434
C	300, 400, 600	A065S435
D	800, 1000	A065S436

WIRING DIAGRAM PART NUMBERS

		Wiring Diagram	
Frame	Amperage rating (A)	Utility to Genset (120 – 480 V)	Interconnection
A	40, 70, 100, 125 (3-pole)	A065K034	A065H780
B	150, 200, 225, 250	A065H781	
C	300, 400, 600		
D	800, 1000		

SUBMITTAL DETAIL

The Product codes below have been shortened for brevity. In long form, each four-letter product code will be preceded with a OTECSEX, where X = A, B, C, D or E. For example, OTECSEB_A045-7

Model

- 40, 70, 100, 125 A, (3-pole)
- 150, 200, 225, 250 A
- 300, 400, 600 A
- 800, 1000 A

Poles

- A028 Poles – 3 (solid neutral)
- A029 Poles – 4 (switched neutral) (not available for 40-125 A)

Application

- A035 Utility-to-genset

Frequency

- A044 60 Hz
- A045 50 Hz

Phase

- A041 single phase, 2-wire or 3-wire
- A042 three phase, 3-wire or 4-wire

Voltage ratings

- R020 120V
- R038 190V
- R021 208V
- R022 220V
- R023 240V
- R024 380V
- R025 416V
- R035 440 V
- R026 480 V

Enclosure

- B001 Type 1: Indoor use, provides some protection against dirt (similar to IEC type IP30)
- B002 Type 3R: Intended for outdoor use, provides some protection from dirt, rain and snow (similar to IEC type IP34)
- B010 Type 12: Indoor use, some protection from dust (similar to IEC type IP61).

Standards

- S043 Listing-UL 1008 certification
- A080 IBC seismic certification

Control voltage

- M033 12V, Genset starting voltage
- M034 24V, Genset starting voltage

Control options

- M032 Elevator signal relay
- M081 MODBUS RS485 Communication module

Auxiliary relays

Relays are UL Listed, and factory installed. All relays provide (2) normally closed isolated contacts rated 10A @ 600 VAC. Relay terminals accept (1) 18 gauge to (2) 12-gauge wires per terminal.

- L101 24 VDC coil - installed, not wired (for customer use).
- L102 24 VDC coil - emergency position – relay energized when switch is in source 2 (emergency) position.
- L103 24 VDC coil - normal position - relay energized when switch is in source 1 (normal) position
- L201 12 VDC coil installed, not wired (for customer use)
- L202 12 VDC coil - emergency position – relay energized when switch is in source 2 (emergency) position
- L203 12 VDC coil - normal position - relay energized when switch is in source 1 (normal) position

Warranty

- G004 2-years, comprehensive
- G007 5-years, comprehensive
- G014 3-years, comprehensive
- G015 10-years, comprehensive

Shipping

- A051 Packing - export box (800 – 1000 A)

Request for quotation (RFQ)

- Z555 Nonconfigurable spec [ETO]

Accessories

Refer to AC-170 Accessories specification sheet for more details.

- 0332-3302* Terminal block - 30 points (not wired).
- A065L320 Control panel cover guard, factory installed
- A065L321 Control panel cover guard, field installed

CODES AND STANDARDS

UL	All switches are UL 1008 Listed and labeled suitable only for use as service equipment – normal source only, with UL 50E Type Rated cabinets and UL Listed CU-AL terminals.
NEMA	All switches comply with NEMA ICS 10.
NFPA	All switches comply with NFPA 70, 99 and 110 (Level 1).
IEEE	All switches comply with IEEE 446 Recommended Practice for Emergency and Standby Power Systems.
NEC®	Suitable for use in emergency, legally required and Standby and Critical Operations Power Systems (COPS) applications per NEC 700, 701, 702 and 708.
ISO®	All switches are designed and manufactured in facilities certified to ISO 9001.
IBC®	All switches are certified to IBC 2018.
EMC	Display controllers meet the following Electromagnetic Compatibility (EMC) standards: ■ EN 61000-6-2 Generic Immunity Standard for the Industrial Environment. ■ EN 61000-6-4 Generic Emission Standard for the Industrial Environment.

For more information, please contact your local Cummins distributor or visit cummins.com
Our energy working for you.™

S-6557 PD00000753 Rev. 03/23

POWERCOMMAND® 40-01 TRANSFER SWITCH CONTROL

OTEC TRANSFER SWITCHES

DESCRIPTION

The PowerCommand® 40-01 Transfer Switch Control is a sophisticated microprocessor-based control with the basic features you need for primary source and generator set monitoring, generator set starting and load transfer functions for emergency standby power applications.

The control human machine interface (HMI) includes a LCD display with tactile-feel soft-switches for easy operation and screen navigation. All data on the control can be viewed by scrolling through screens with a display scroll button. The control displays the current active fault, fault occurrences and time-ordered history of the 10 previous faults with respect to Real Time Clock Stamp and Engine Running Time.

FEATURES

Digital display – The PowerCommand® 40-01 offers a clear back-lit LCD 4-line text display, showing system status, contextual icons and warnings. The display is also equipped with 9 red and green LEDs indicating operational status.

Modbus network communication – Modbus network communications capable. Optional Modbus RTU RS485 connection (1 serial port).

Diagnostics and reporting – Detailed event logging with enhanced fault codes, alert lists, power event history, and diagnostic capability during service events and provides the ability to meet any reporting requirements.

PC & Front Panel Configurations – The modules can be easily configured using the PC software. Selected front panel editing is also available.

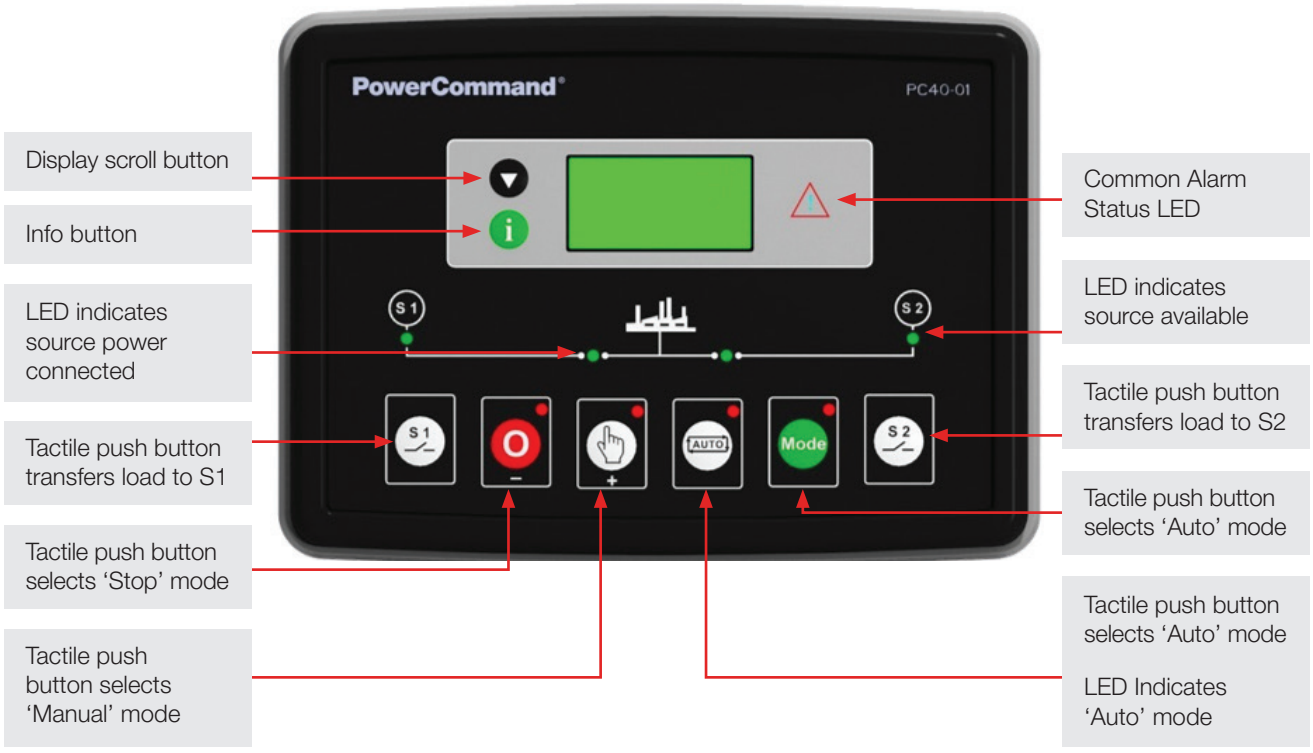
Ease of service and access – Built-in plug-and-play control with minimized point-to-point connections and compatible terminal markings simplify servicing.

Complete product line – Cummins is a single source supplier with full scope of power system solutions, integration and service capability, from parallelingto system level controls, switchgear and remote connectivity.

Warranty and service – Products are backed by a comprehensive warranty and a worldwide network of distributors with factory-trained service technicians.

Isometric (ISO) projection: front views

HUMAN MACHINE INTERFACE (HMI) CAPABILITIES



CONTROL FUNCTIONS

TRANSFER INHIBIT

When transfer inhibit external input is active, the control does not automatically transfer the transfer switch to a standby source even when the preferred source fails.

RETRANSFER INHIBIT

When retransfer inhibit external input is active, the control does not automatically retransfer the transfer switch to a preferred source even when the preferred source returns.

REAL TIME CLOCK

This feature is used by the control for fault and event time stamping and as a reference for exerciser schedules and exception schedules.

TEST – REMOTE

Test feature allows the user to automatically test the standby source and the transfer switch. The test command can be issued from the remote source.

The test has following types available:

- Remote Start On Load
- Remote Start Off Load

PREFERRED SOURCE SELECTION

Using this feature the user can swap the priority of the sources which are preferred and standby.

ELEVATOR SIGNAL

This optional feature allows an elevator connected to the system to come to a complete stop before the switch transfers.

EXERCISER SCHEDULER

The Scheduler allows the user to configure pre-set automatic starting and stopping of the Generator as well as stopping the ATS carrying out a transfer (when in Auto mode).

BANK 1 / BANK 2

Each Bank of the Exercise Scheduler is used to give up to 8 scheduled runs per bank, 16 in total. This run schedule is configurable to repeat every 7 days (weekly) or every 28 days (monthly). Do Not Transfer, Off Load and On Load. Each scheduler bank configured differently either to weekly or monthly based exercises.

SOURCE AVAILABILITY

This feature monitors the frequency and voltage sensors on the preferred and standby sources to determineand declare the availability status of the two sources, irrespective of which source is connected to the load. It declares the states as event codes. Preferred/Standby Available - active inactive.

VOLTAGE SENSING

3-phase sensing on Source 1 and Source 2 (up to 600 Vac with no need for additional PTs). Plant battery voltage monitoring.

ALPHANUMERIC DISPLAY

- S2 Voltage L1-N
- S2 Voltage L-L
- S2 Frequency
- S1 Voltage L1-N
- S1 Voltage L-L
- S1 Frequency
- Battery voltage
- Current alarms with icons
- Event log
- Scheduler
- About

TIME DELAYS

The following adjustable time delays are built into the transfer switch control. External modules to accomplish these delays are not required.

- **Start Delay** (Also known as Time Delay Engine Start, TDES adjustable from 0 to 10 hours)
- **Warming** (Also known as Time Delay Normal to Emergency, TDNE adjustable from 0 to 1 hour)
- **Elevator Delay** (Also known as Time Delay Elevator, TDEL adjustable from 0 to 5 minutes)
- **Non-sync Transfer Time** (Also known as Time Delay Programmed Transition, TDPT adjustable from 0.5 s to 10 minutes)
- **Return Delay** (Also known as Time Delay Emergency to Normal, TDEN adjustable from 0 to 5 hours)
- **Cooling** (Also known as Time Delay Engine Cool-down, TDEC adjustable from 0 to 1 hour)

LED INDICATOR LIGHTS

- Auto mode (RED)
- Auto with manual return to utility mode (RED)
- Test without load (RED)
- Test with load (RED)
- Source 1 available (GREEN)
- Source 2 available (GREEN)
- Source 1 connected to load (GREEN)
- Source 2 connected to load (GREEN)

EVENT LOG

The control displays information on up to 10 events displayed in chronological order, beginning with the most recent event, about either source. The event information shall include the following:

- Failure modes
- Warning
- Tests and exercises
- User-driven inputs (e.g., override, transfer inhibit)

SUPPORTED APPLICATIONS

APPLICATION TYPES

- Utility - Generator Set

COMMUNICATIONS

The PowerCommand® 40-01 Transfer Switch Control features an optional network communication module.

Features include:

- Optional Modbus® RTU RS485 communication module (1 isolated serial port)
- USB port for service tool interface

PROTECTION

PHASE ROTATION SENSING

- Source 1 and Source 2

UNDER-VOLTAGE SENSING

- 3-phase normal, 3-phase emergency
- Accuracy: ±2 % of full-scale phase to phase
- Phase to neutral voltage range 50Vac to 414Vac.
- Phase to phase voltage range 86Vac to 717Vac.

OVERVOLTAGE SENSING

- 3-phase normal, 3-phase emergency
- Accuracy: ±2 % of full-scale phase to phase
- Phase to neutral voltage range 52Vac to 416Vac.
- Phase to phase voltage range 90Vac to 720Vac.

OVER/UNDER FREQUENCY SENSING

- Normal and emergency
- Accuracy: ±0.2 Hz
- Frequency range 3.5 – 75 Hz

SYNC CHECK

- For in-phase transfer

ENVIRONMENT

Operating Temperature Range	Control operates over an ambient temperature range: -30 ºC to 70 ºC.
Storage Temperature Range	The control operates after being exposed to Storage Temperatures in the range of -40 ºC to 85ºC.
Ingress Protection	The front panel is to be IP65.

CODES AND STANDARDS

c UL us	The PC40-01 control is a UL Recognized Component Marked for United States and Canada.	NFPA	Capable of being used on systems compliant with NFPA 70, 99 and 110 (Level 1).
IEEE	The control is IEEE C37.90.2 certified. Capable of being used on IEEE 446 compliant systems; Recommended Practice for Emergency and Standby Power Systems.	NEMA	Control and display as installed in a transfer switch enclosure comply with NEMA 4X and IP65 at the transfer switch level - if the transfer switch enclosure is also NEMA 4X & IP65 compliant.
RoHS	The control is RoHS compliant.	**NEC®**	Capable of being used on systems suitable for use in emergency, legally required and Standby and Critical Operations Power Systems (COPS) applications per NEC 700, 701, 702 and 708.
CE	Fulfills the requirements of relevant European product directives.	**LVD**	The unit is designed to comply with European directive 72/23/EEC by complying with harmonized European safety standard BS EN 60950.
EMC	The control is tested to meet the following CE Electromagnetic Compatibility (EMC) standards for EN 61000 series (electromagnetic compatibility): EN 61000-6-2 Generic Immunity Standard EN 61000-6-4 Generic Emissions		

For more information, please contact your local Cummins distributor or visit cummins.com

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Columbus, IN 47202-3005
U.S.A.

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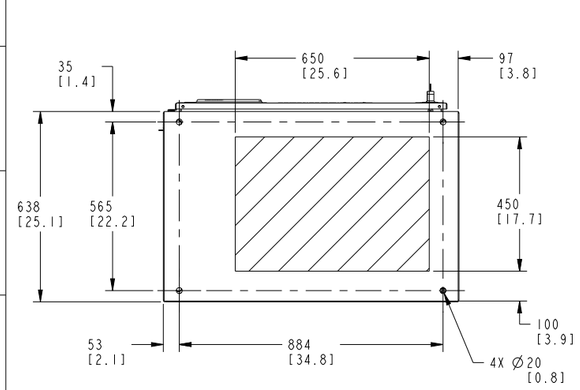
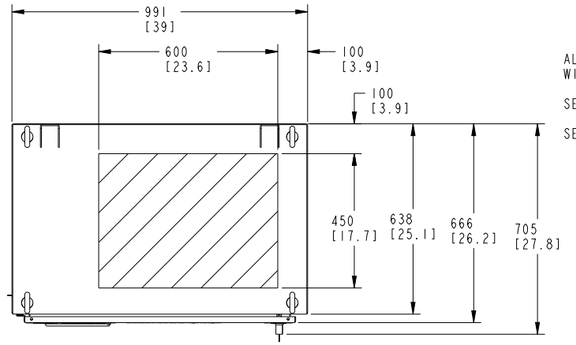
Bulletin **PD00000756** Produced in U.S.A. Rev. 10/21



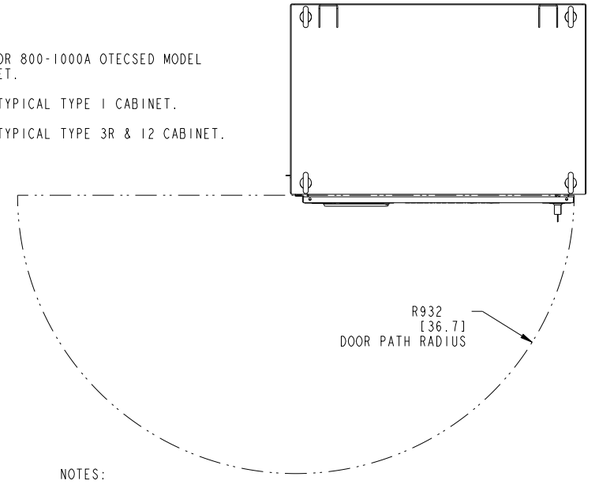
SECTION A-A

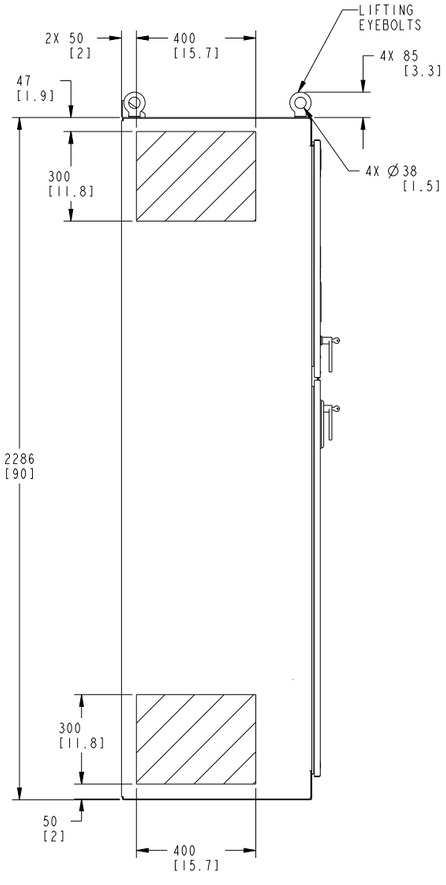


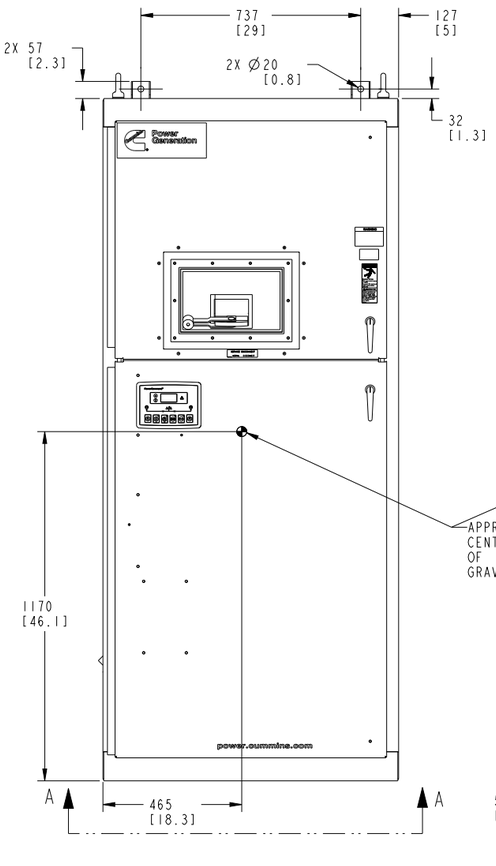
ALL DIMENSIONS ARE TYPICAL FOR 800-1000A OTECSED MODEL WITH TYPE 1, 3R AND 12 CABINET.

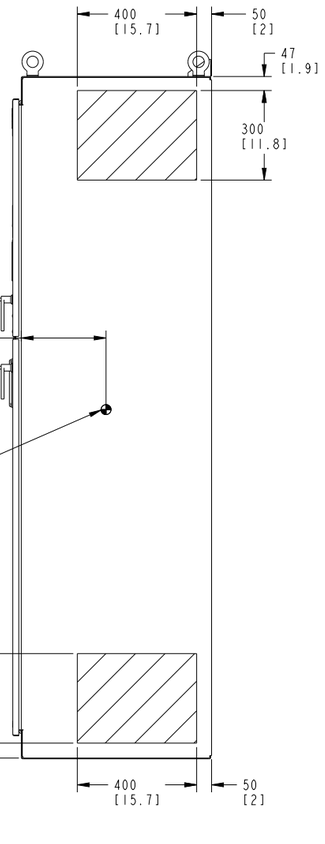
SEE SHEET 2 FOR MORE DETAIL TYPICAL TYPE 1 CABINET.

SEE SHEET 3 FOR MORE DETAIL TYPICAL TYPE 3R & 12 CABINET.









NOTES:

1. SUITABLE ONLY FOR USE AS SERVICE EQUIPMENT-NORMAL SOURCE ONLY. AN ADDITIONAL DISCONNECT MUST BE READILY AVAILABLE FOR THE ALTERNATE SOURCE, UNLESS THE ALTERNATE SOURCE IS AN ACCESSIBLE GENERATOR AND CAN BE READILY SHUT DOWN.
2. APPROX WEIGHT: TYPE 1; 417 KG [920 LBS]
   TYPE 3R, 12; 476 KG [1050 LBS]
3. ALL DIMENSIONS IN [ ] ARE IN INCHES
4. TYPE 1, 3R OR 12 FLOOR MOUNTED ENCLOSURE.
   TYPE 1 - WITHOUT SEAL GASKET ON THE DOOR AND DRAIN HOLES
   TYPE 3R - DUAL DOOR WITH SEAL GASKET OUTER DOOR AND DRAIN HOLES
   TYPE 12 - DUAL DOOR WITH SEAL GASKET OUTER DOOR AND WITHOUT DRAIN HOLES
5. LUG CAPACITY
   UTILITY CIRCUIT BREAKER - #2-600 MCM (4) CU/AL PER PHASE
   EMERGENCY, LOAD AND NEUTRAL - 250-500 MCM (4) CU/AL PER PHASE
   GROUND - #6-250 MCM (1) CU/AL
6. USE SEPARATE CONDUITS FOR CONTROL WIRING & POWER WIRING. DO NOT COMBINE.
7. SHADED AREA INDICATES WIRING & CABLE ENTRANCE AREA. DO NOT INSTALL OUTSIDE OF SHADED AREA.
8. WIRE BENDING SPACE CONFORMS TO NATIONAL ELECTRIC CODE (NFPA70)
9. MANUAL OPERATOR SHOULD ONLY BE USED WHEN THE POWER IS DISCONNECTED FROM UTILITY AND GENERATOR PRIOR TO MOVEMENT OF THE OPERATOR.
10. REFER TO NATIONAL ELECTRIC CODE FOR MINIMUM CLEAR SPACE IN FRONT OF THIS ENCLOSURE.
11. ALL DIMENSIONS ARE REFERENCE, UNLESS SPECIFICALLY TOLERANCED.
12. OTEC OUTLINE (800-1000A SERVICE ENTRANCE), SPEC B.

MODEL/PLATFORM: OTECSE 800-1000A		THIS PART IS SIMILAR TO: 0500-4608	
UNLESS OTHERWISE SPECIFIED THE FOLLOWING SHALL APPLY			ANG. TOL.: ± 2°
DIMENSIONAL TOLERANCES:	X ± 1.5	.X ± 0.76	.XX ± 0.38
HOLE SIZE 0.00-4.99 TOL. +0.15/-0.08	HOLE SIZE 5.00-9.99 TOL. +0.20/-0.10	HOLE SIZE 10.00-17.49 TOL. +0.25/-0.13	HOLE SIZE 17.50-24.99 TOL. +0.30/-0.13

Cummins Inc.			
DIMENSIONS ARE IN: MILLIMETERS [ ] ARE IN: -	SIZE: A1	SCALE:0.12	
DIMENSIONING AND TOLERANCING PER: ASME Y14.5-2009	THIRD ANGLE PROJECTION		CAD SYSTEM PTC® Creo® Parametric

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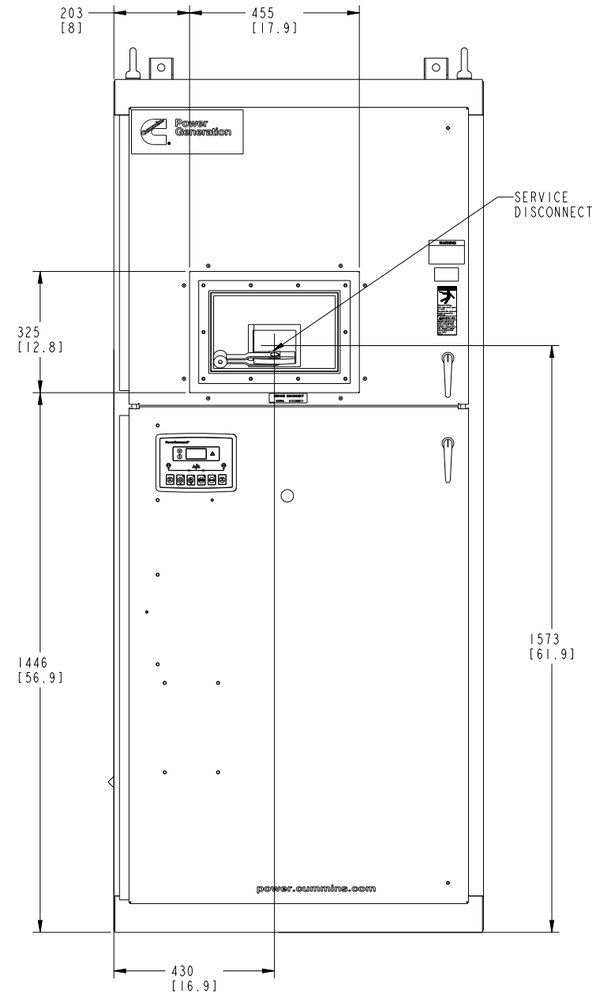
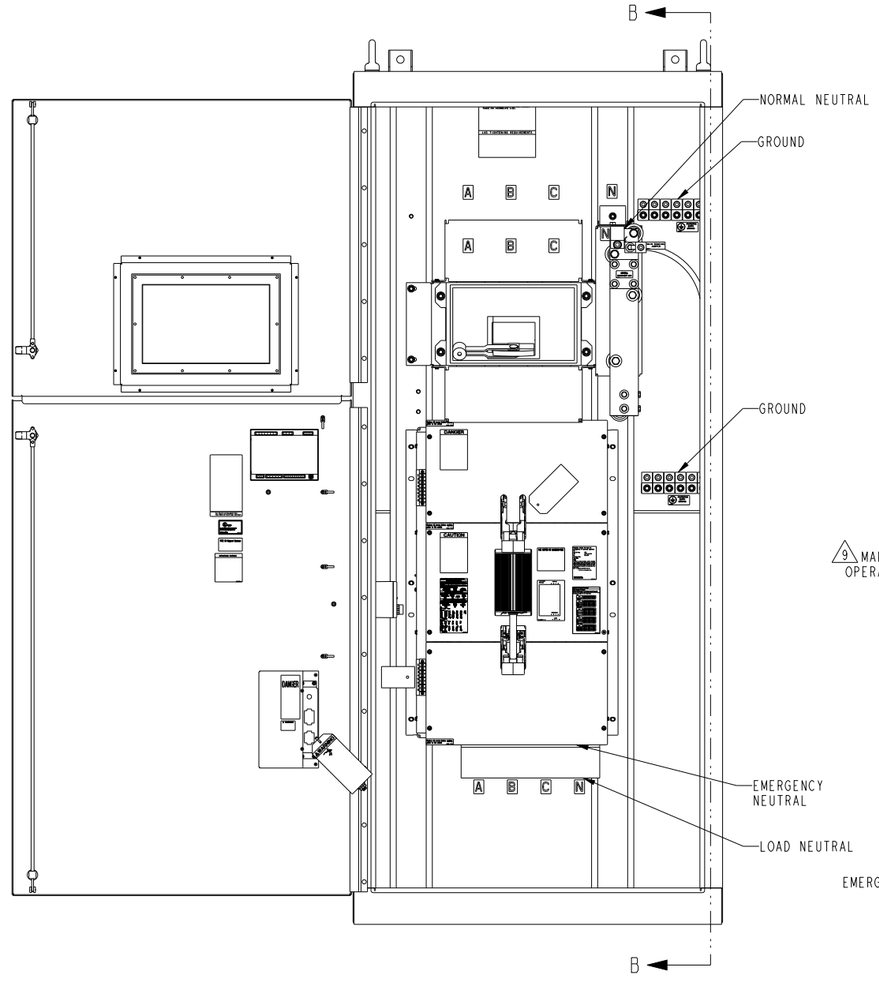
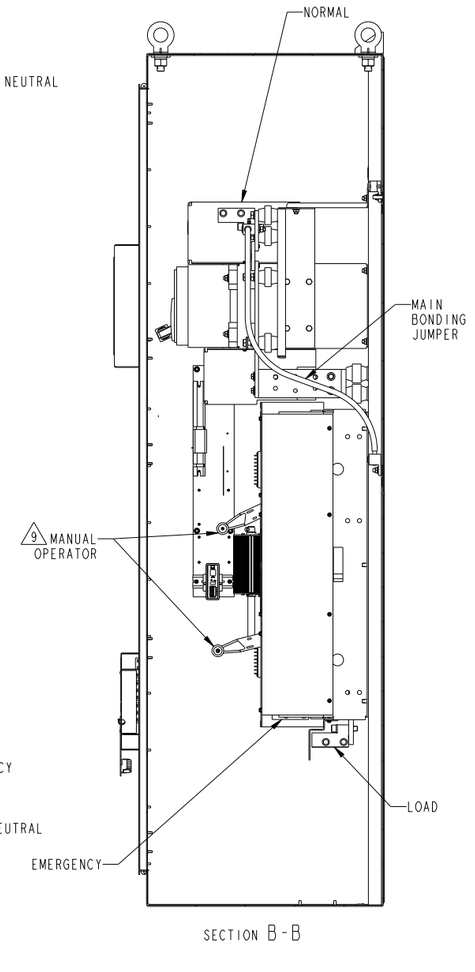
Part Number: **A065S436** Part Revision: **A**
Part Name: **OUTLINE,TRANSFER SWITCH**
Drawing Category: **Detail** State: **Released**







TYPICAL FOR TYPE 1 OTECSED MODELS
OTECSED 4 POLE MODEL SHOWN

Cummins Inc.		
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DIMENSIONING AND TOLERANCING PER: ASME Y14.5-2009	THIRD ANGLE PROJECTION	CAD SYSTEM PTC® Creo® Parametric

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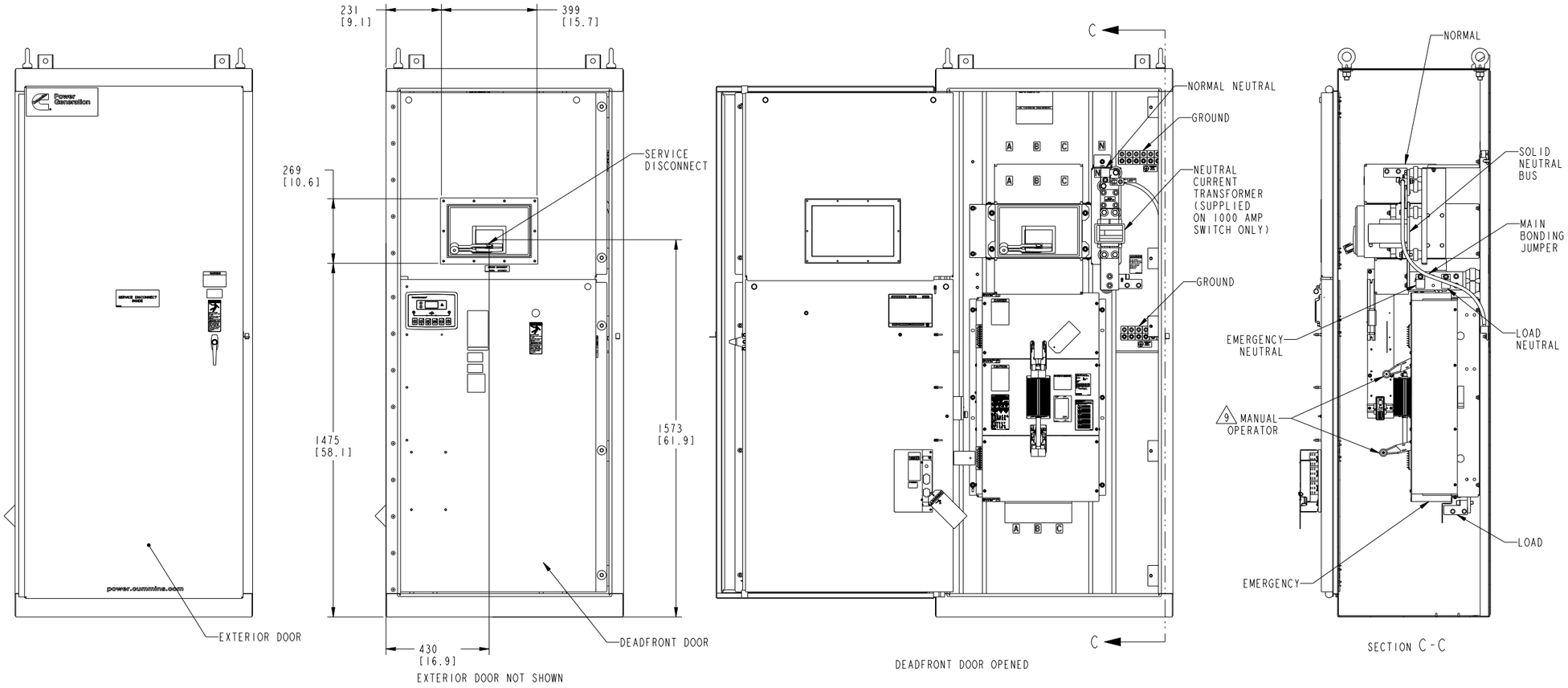
Drawing Category: **Detail** State: **Released**



TYPICAL FOR TYPE 3R & 12 OTECSED MODELS
OTECSED 3 POLE MODEL SHOWN

Cummins Inc.		
DIMENSIONS ARE IN: MILLIMETERS [ ] ARE IN: -	SIZE: A1	SCALE:0.12
DIMENSIONING AND TOLERANCING PER: ASME Y14.5-2009	THIRD ANGLE PROJECTION	CAD SYSTEM PTC® Creo® Parametric

Document Generated: **14SEP2020 14:27 GMT**

Part Number: **A065S436** Part Revision: **A**
Part Name: **OUTLINE,TRANSFER SWITCH**
Drawing Category: **Detail** State: **Released**

SECTION 6
START-UP AND WARRANTY

Cummins Sales and Service

Customer / Contractor Pre Commissioning Inspection Form

The intent of this form is for the contractor to prepare for equipment to be commissioned by a certified Cummins Field Service Power Generation Technician. Filling out this form is required and will minimize delays due to equipment failing to meet requirements. Completing this checklist in its entirety should minimize the need for additional billing beyond the previously provided commissioning quote.

The items listed are the responsibility of the contractor and not Cummins Sales and Service.

Project Name/End User: _____

Contractor: _____

Address: _____ **Contact:** _____

Business Phone: _____ **Cell Phone:**_____

Email: _____

ON SITE INFORMATION

On-Site Contact Information: _____

Address: _____

Time Requested Onsite: _____

Sub location of Generator (ie. Roof, basement, floor): _____

Does the facility have the following: Loading Dock ☐ Elevator ☐

Access (from truck and load bank parking to generator in feet): _____

Parking: Is parking available on-site for service truck: Yes ☐ No ☐

Permits: Have all necessary air quality and local permits been secured: Yes ☐ No ☐ N/A ☐

Fuel Tank Testing: Is fuel tank testing required: Yes ☐ No ☐

If yes when is the inspector scheduled for: _____

Cummins Sales and Service

ON SITE INFORMATION CONTINUED

YES	NA	NO	
☐	☐	☐	Is the facility occupied and is customer aware there will be power outages after generator is started?
☐	☐	☐	Will there be any site safety training needed for technician prior to beginning? On site contact for training: _____
☐	☐	☐	Will customer representative be on site for operator training? On site contact for operator training: _____

MECHANICAL LOCATION AND PLACEMENT OF THE GENERATOR SET

YES	NA	NO	
☐	☐	☐	Generator is properly secured to pad or vibration isolators
☐	☐	☐	Generator Enclosure and/or Room is free of all debris
☐	☐	☐	No airflow obstructions to the engine or generator are present for cooling combustion (See Cummins T-030 or Installation manual of generator set)
☐	☐	☐	Room is designed for adequate inlet and outlet airflow

GASEOUS FUEL Natural Gas/LP Vapor/LP Liquid

YES	NA	NO	
☐	☐	☐	Natural gas and/or LPG fuel supply is connected.
☐	☐	☐	Fuel piping is the appropriate size based on full-load CFH/BTU requirement. Pipe size after service regulator: _____
☐	☐	☐	Service regulator(s), (if supplied), fuel strainer(s), flexible fuel line(s) and manual shut off are installed
☐	☐	☐	Fuel pressure after service regulator is:_____inches of H2O

I have read and fully understand the fuel requirements for this equipment, I am verifying that the piping and fuel supply meets or exceeds those requirements. I also understand failure to meet the requirements will result in additional charges.

_____ _____

Contractor "requestor" Signature ***Date***

Cummins Sales and Service

DIESEL FUELED GENERATORS

YES	NA	NO	
☐	☐	☐	Flexible fuel connections, (supply and return) are connected to generator and piping.
☐	☐	☐	Day tank installed, wired and plumbed (lines free of obstruction) to genset and main fuel tank if applicable. Only black iron pipe for fuel lines, never use copper or galvanized pipe.
☐	☐	☐	All tanks filled with enough fuel to perform startup and testing.
☐	☐	☐	A return line from engine to day tank and day tank to main tank should be in place

EXHAUST SYSTEM

YES	NA	NO	
☐	☐	☐	Exhaust wrapped or isolated to prevent accidental activation of fire protection devices and sprinklers.
☐	☐	☐	Exhaust flex-pipe is installed at engine exhaust outlet (The silencer and flex-pipe are supplied with the generator set).
☐	☐	☐	Silencer is installed with appropriate supports (no weight should be placed on the exhaust outlet of the genset).
☐	☐	☐	Exhaust system has proper expansion joints and wall thimbles (Thimbles are required for wall or roof penetration).

GENERATOR ELECTRICAL CONNECTIONS

YES	NA	NO	
☐	☐	☐	Load conductors connected to breakers
☐	☐	☐	Flexible connections used on all conduit connections to the generator set output box
☐	☐	☐	Remote start interconnection **stranded** wiring is installed between the generator set and the automatic transfer switch(s) and annunciator.
☐	☐	☐	AC Power conductors in dedicated conduit separate from any DC control or network wiring
☐	☐	☐	Ground fault connected/functioning on generator, if supplied
☐	☐	☐	AC power wired to the coolant heaters (Do NOT energize)
☐	☐	☐	Check for AC oil pan heater, control heater or generator winding heater (Needing AC wiring)
☐	☐	☐	Generator is grounded in compliance with local codes
☐	☐	☐	If applicable, louver motors are operational and connected to generator controls

Sales and Service

GENERATOR ELECTRICAL CONNECTIONS CONTINUED

YES	NA	NO
☐	☐	☐
☐	☐	☐
☐	☐	☐

Where is annunciator located? _____

Are there additional ancillary devices/equipment that need to be integrated into the system? If yes, please define_____

Battery charger mounted (free of vibration, weather, accessible for an operator to observe easily) and connected to the appropriate AC and DC wiring to operate the charger.

TRANSFER SWITCH ELECTRICAL CONNECTIONS

YES	NA	NO
☐	☐	☐
☐	☐	☐
☐	☐	☐

Conductors connected for Utility, Load and Emergency

Remote start interconnection **stranded** wiring is installed between the generator set and the automatic transfer switch(s).

Four Pole Transfer Switch: Is generator neutral grounded? ☐

DAY OF STARTUP

YES	NA	NO
☐	☐	☐
☐	☐	☐
☐	☐	☐

Training of facility personnel will be done on the same day as start up. Additional trips for operational training will be an additional charge.

Can transfer switch be tested at time of generator startup? (There will be a power interruption) ***Note: After hours testing could result in additional charges.***

If the associated switchgear and/or ATS(s) are not provided by Cummins, will the manufacturer's representative be on site?

Exercise with or without load? ☐

If known, Transfer Time delay set recommendations Generator Set to exercise Day:_____ Time:_____

_____ _____

Contractor "requestor" Signature ***Printed Name***

Date: _____

Please complete this form and return to schedule start up, if not returned within 5 business days prior to scheduled startup it may be delayed. I understand that the start-up date may have to be rescheduled at my expense if the above items have not been completed properly.

Warranty Statement

Global Commercial Warranty Statement

Generator Set

English
Original Instructions

7-2017

A028U870 (Issue 5)

Our energy working for you.™

Cummins Power Generation

Limited Warranty

Commercial Generating Set

This limited warranty applies to all Cummins Power Generation® branded commercial generating sets and associated accessories (hereinafter referred to as "Product").

This warranty covers any failures of the Product, under normal use and service, which result from a defect in material or factory workmanship.

Warranty Period:

The warranty start date† is the date of initial start up, first rental, demonstration or 18 months after factory ship date, whichever is sooner. See table for details.

Continuous Power (COP) is defined as being the maximum power which the generating set is capable of delivering continuously whilst supplying a constant electrical load when operated for an unlimited number of hours per year. No overload capability is available for this rating.

Prime Power (PRP) is defined as being the maximum power which a generating set is capable of delivering continuously whilst supplying a variable electrical load when operated for an unlimited number of hours per year. The permissible average power output over 24 hours of operation shall not exceed 70% of the PRP. For applications requiring permissible average output higher than stated, a COP rating should be used.

Limited-Time Running Power (LTP) is defined as the maximum power available, under the agreed operating conditions, for which the generating set is capable of delivering for up to 500 hours of operation per year.

Emergency Standby Power (ESP) is defined as the maximum power available during a variable electrical power sequence, under the stated operating conditions, for which a generating set is capable of delivering in the event of a utility power outage or under test conditions for up to 500 hours of operation per year. The permissible average power output over 24 hours of operation shall not exceed 70% of the ESP.

Environmental Protection Agency – Stationary Emergency (EPA-SE) is defined as being the maximum power available during a variable electrical power sequence, under the stated operating conditions, for which a generator set is capable of delivering in the event of a utility power outage or under test conditions and used in strict accordance with the EPA NSPS for stationary engines, 40 CFR part 60, subparts IIII and JJJJ, where a reliable utility must be present. The permissible average power output over 24 hours of operation shall not exceed 70% of the EPA-SE.

Data Center Continuous (DCC) is defined as the maximum power which the generator is capable of delivering continuously to a constant or varying electrical load for unlimited hours in a data center application.

Base Warranty Coverage Duration (Whichever occurs first)

Rating	Months	Max. Hours
COP	12	Unlimited
PRP	12	Unlimited
LTP	12	500 hrs
ESP	24	1000 hrs
EPA-SE	24	Unlimited
DCC	24	Unlimited

† Warranty start date for designated rental and oil and gas model Products is determined to be date of receipt of Product by the end customer.

Cummins Power Generation® Responsibilities:

In the event of a failure of the Product during the warranty period due to defects in material or workmanship, Cummins Power Generation® will only be responsible for the following costs:

- All parts and labor required to repair the Product.
- Reasonable travel expenses to and from the Product site location.
- Maintenance items that are contaminated or damaged by a warrantable failure.

Owner Responsibilities:

The owner will be responsible for the following:

- Notifying Cummins Power Generation® distributor or dealer within 30 days of the discovery of failure.
- Installing, operating, commissioning and maintaining the Product in accordance with Cummins Power Generation®'s published policies and guidelines.
- Providing evidence for date of commissioning.
- Providing sufficient access to and reasonable ability to remove the Product from the installation in the event of a warrantable failure.
- Incremental costs and expenses associated with Product removal and reinstallation resulting from non-standard installations.
- Costs associated with rental of generating sets used to replace the Product being repaired.
- Costs associated with labor overtime and premium shipping requested by the owner.
- All downtime expenses, fines, all applicable taxes, and other losses resulting from a warrantable failure.

Limitations:

This limited warranty does not cover Product failures resulting from:

- Inappropriate use relative to designated power rating.
- Inappropriate use relative to application guidelines.
- Inappropriate use of an EPA-SE application generator set relative to EPA's standards.
- Normal wear and tear.
- Improper and/or unauthorized installation.
- Negligence, accidents or misuse.
- Lack of maintenance or unauthorized repair.
- Noncompliance with any Cummins Power Generation® published guideline or policy.
- Use of improper or contaminated fuels, coolants or lubricants.
- Improper storage before and after commissioning.
- Owner's delay in making Product available after notification of potential Product problem.
- Replacement parts and accessories not authorized by Cummins Power Generation®.
- Use of Battle Short Mode.
- Owner or operator abuse or neglect such as: operation without adequate coolant or lubricants; overfueling; overspeeding; lack of maintenance to lubricating, cooling or air intake systems; late servicing and maintenance; improper storage, starting, warm-up, run-in or shutdown practices, or for progressive damage resulting from a defective shutdown or warning device.
- Damage to parts, fixtures, housings, attachments and accessory items that are not part of the generating set.

This limited warranty does not cover costs resulting from:

- Difficulty in gaining access to the Product.
- Damage to customer property.

A "Data center" is defined as a dedicated facility that house computers and associated equipment for data storage and data handling.

Reliable utility is defined as utility power without routine or regularly scheduled black-outs.

Please contact your local Cummins Power Generation® Distributor for clarification concerning these limitations.

CUMMINS POWER GENERATION® RIGHT TO FAILED COMPONENTS:

Failed components claimed under warranty remain the property of Cummins Power Generation®. Cummins Power Generation® has the right to reclaim any failed component that has been replaced under warranty.

Extended Warranty:

Cummins Power Generation® offers several levels of Extended Warranty Coverage. Please contact your local Cummins Power Generation ® Distributor for details.
www.power.cummins.com

THE WARRANTIES SET FORTH HEREIN ARE THE SOLE WARRANTIES MADE BY CUMMINS POWER GENERATION ® IN REGARD TO THE PRODUCT. CUMMINS POWER GENERATION® MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED, OR OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

IN NO EVENT IS CUMMINS POWER GENERATION® LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES.

This limited warranty shall be enforced to the maximum extent permitted by applicable law. This limited warranty gives the owner specific rights that may vary from state to state or from jurisdiction to jurisdiction.

Product Model Number:_____
Product Serial Number:_____
Date in Service:_____

Warranty Statement

Transfer Switch Extended Warranty

English
Original Instructions
1-2017
1118-0003 (Issue 5)

Limited 2 Year Comprehensive Extended Warranty – G004

Transfer Switch and Paralleling Systems

When purchased, this limited extended warranty applies to all Cummins Power Generation® branded Transfer Switches, Paralleling Systems and associated accessories (hereinafter referred to as "Product").

This warranty covers any failures of the Product, under normal use and service, which result from a defect in material or factory workmanship.

Warranty Period:

The warranty start date is the date of initial start up, first rental, demonstration or 18 months after factory ship date, whichever is sooner. The coverage duration is 2 years from warranty start date.

Cummins Power Generation® Responsibilities:

In the event of a failure of the Product during the extended warranty period due to defects in material or workmanship, Cummins Power Generation® will only be responsible for the following costs:

- All parts and labor required to repair the Product.
- Reasonable travel expenses to and from the Product site location.
- Maintenance items that are contaminated or damaged by a warrantable failure.

Owner Responsibilities:

The owner will be responsible for the following:

- Notifying Cummins Power Generation® distributor or dealer within 30 days of the discovery of failure.
- Installing, operating, commissioning and maintaining the Product in accordance with Cummins Power Generation®'s published policies and guidelines.
- Providing evidence for date of commissioning.
- Providing sufficient access to and reasonable ability to remove the Product from the installation in the event of a warrantable failure.

In addition, the owner will be responsible for:

- Incremental costs and expenses associated with Product removal and reinstallation resulting from non-standard installations.
- Costs associated with rental of generating sets used to replace the Product being repaired.
- Costs associated with labor overtime and premium shipping requested by the owner.
- All downtime expenses, fines, all applicable taxes, and other losses resulting from a warrantable failure.

Limitations:

This limited extended warranty does not cover Product failures resulting from:

- Inappropriate use relative to designated power rating.
- Inappropriate use relative to application guidelines.
- Failures due to normal wear, corrosion, varnished fuel system parts, lack of reasonable and necessary maintenance, unauthorized modifications and/or repair, and use of add-on or modified parts.
- Improper and/or unauthorized installation.
- Owner's or operator's negligence, accidents or misuse.
- Noncompliance with any Cummins Power Generation® published guideline or policy.
- Improper storage before and after commissioning.
- Owner's delay in making Product available after notification of potential Product problem.

Limitations Continued:

- Replacement parts and accessories not authorized by Cummins Power Generation®.
- Use of Battle Short Mode
- Owner or operator abuse or neglect such as: operation without adequate coolant or

lubricants; overfueling; overspeeding; lack of maintenance to lubricating, cooling or air intake systems; late servicing and maintenance; improper storage, starting, warm-up, run-in or shutdown practices, or for progressive damage resulting from a defective shutdown or warning device.

- Damage to parts, fixtures, housings, attachments and accessory items that are not part of the generating set.

This limited extended warranty does not cover costs resulting from:

- Difficulty in gaining access to the Product.
- Damage to customer property.
- Repair of cosmetic damage to enclosures.

www.cumminspower.com

CUMMINS POWER GENERATION® RIGHT TO FAILED COMPONENTS:

Failed components claimed under warranty remain the property of Cummins Power Generation®. Cummins Power Generation® has the right to reclaim any failed component that has been replaced under warranty.

THE WARRANTIES SET FORTH HEREIN ARE THE SOLE WARRANTIES MADE BY CUMMINS POWER GENERATION ® IN REGARD TO THE PRODUCT. CUMMINS POWER GENERATION® MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED, OR OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

IN NO EVENT IS CUMMINS POWER GENERATION® LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES.

This limited extended warranty shall be enforced to the maximum extent permitted by applicable law. This limited extended warranty gives the owner specific rights that may vary from state to state or from jurisdiction to jurisdiction.

Product Model Number:_____

Product Serial Number:_____

Date in Service:_____

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
2024 MODEL YEAR
CERTIFICATE OF CONFORMITY
WITH THE CLEAN AIR ACT

OFFICE OF TRANSPORTATION AND AIR QUALITY
ANN ARBOR, MICHIGAN 48105

Certificate Issued To: **Cummins Inc.**
(U.S. Manufacturer or Importer)

Certificate Number: **RCEXL0540AAB**

Effective Date: **11/01/2023**

Expiration Date: **12/31/2024**

Byron J. Bunker, Division Director
Compliance Division

Issue Date: **11/01/2023**

Revision Date: **N/A**

Model Year: 2024
Manufacturer Type: Original Engine Manufacturer
Engine Family: RCEXL0540AAB

Mobile/Stationary Indicator: Stationary
Emissions Power Category: 250 kW
Fuel Type: Diesel
After Treatment Devices: No After Treatment Devices Installed
Non-after Treatment Devices: Electronic Control

Pursuant to Section 111 and Section 213 of the Clean Air Act (42 U.S.C. sections 7411 and 7547) and 40 CFR Part 60, and subject to the terms and conditions prescribed in those provisions, this certificate of conformity is hereby issued with respect to the test engines which have been found to conform to applicable requirements and which represent the following engines, by engine family, more fully described in the documentation required by 40 CFR Part 60 and produced in the stated model year.

This certificate of conformity covers only those new compression-ignition engines which conform in all material respects to the design specifications that applied to those engines described in the documentation required by 40 CFR Part 60 and which are produced during the model year stated on this certificate of the said manufacturer, as defined in 40 CFR Part 60.

It is a term of this certificate that the manufacturer shall consent to all inspections described in 40 CFR 1068 and authorized in a warrant or court order. Failure to comply with the requirements of such a warrant or court order may lead to revocation or suspension of this certificate for reasons specified in 40 CFR Part 60. It is also a term of this certificate that this certificate may be revoked or suspended or rendered void *ab initio* for other reasons specified in 40 CFR Part 60.

This certificate does not cover engines sold, offered for sale, or introduced, or delivered for introduction, into commerce in the U.S. prior to the effective date of the certificate.

SAFETY DATA SHEET

1. Identification

Product identifier **DIESEL FUELS**

Other means of identification

SDS number 102-GHS

Synonyms Diesel Fuels All Grades, Diesel Fuel No.2, Fuel Oil No.2, High Sulfur Diesel Fuel, Low Sulfur Diesel Fuel, Ultra Low Sulfur Diesel Fuel, CARB (California Air Resource Board) Diesel Fuel, Off-Road Diesel Fuel, Dyed Diesel Fuel, X Grade Diesel Fuel, X-1 Diesel Fuel, R5 ULSD, B5 ULS D See section 16 for complete information.

Recommended use Motor Fuel
Refinery feedstock.

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer/Supplier Valero Marketing & Supply Company and Affiliates
One Valero Way
San Antonio, TX 78269-6000

General Assistance 210-345-4593

E-Mail CorpHSE@valero.com

Contact Person Industrial Hygienist

Emergency Telephone 24 Hour Emergency 866-565-5220
1-800-424-9300 (CHEMTREC USA)

2. Hazard(s) identification

Physical hazards	Flammable liquids	Category 3
Health hazards	Acute toxicity, inhalation	Category 4
	Skin corrosion/irritation	Category 2
	Carcinogenicity	Category 2
	Reproductive toxicity	Category 2
	Specific target organ toxicity, repeated exposure	Category 2
	Aspiration hazard	Category 1
Environmental hazards	Hazardous to the aquatic environment, long-term hazard	Category 2

OSHA defined hazards Not classified.

Label elements

Signal word Danger

Hazard statement Flammable liquid and vapor. Harmful if inhaled. Causes skin irritation. Suspected of causing cancer. Suspected of damaging fertility or the unborn child. May cause damage to organs (blood, thymus, liver) through prolonged or repeated exposure. May be fatal if swallowed and enters airways.

Precautionary statement

Prevention Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharges. Do not breathe mist/vapors/spray. Wash thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection. Use only outdoors or in a well-ventilated area.

Response	If skin irritation occurs: Get medical advice/attention. If inhaled: Remove person to fresh air and keep comfortable for breathing. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If exposed or concerned: Get medical advice/attention. If swallowed: Immediately call a poison center/doctor. Take off contaminated clothing and wash before reuse. In case of fire: Use foam, carbon dioxide, dry powder or water fog for extinction.
Storage	Store locked up. Store in a well-ventilated place. Keep cool.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	None known.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Fuels, diesel, no. 2	68476-34-6	85 - 100
Biodiesel - Fatty acid methyl esters	67762-38-3	0 - 10
Fuels, diesel, C9-18-alkane branched and linear	1159170-26-9	0 - 5
n-Nonane	111-84-2	1 - 3
Octane (All isomers)	111-65-9	1 - 2
Hexane (Other isomers)	96-14-0	0 - 1
Naphthalene	91-20-3	0 - 1
n-Heptane	142-82-5	0 - 1
n-Hexane	110-54-3	0 - 1

4. First-aid measures

Inhalation	Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention.
Skin contact	Remove contaminated clothing and shoes. Wash off immediately with soap and plenty of water. Get medical attention if irritation develops or persists. Wash clothing separately before reuse. Destroy or thoroughly clean contaminated shoes. If high pressure injection under the skin occurs, always seek medical attention.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention.
Ingestion	Rinse mouth thoroughly. Do not induce vomiting without advice from poison control center. Do not give mouth-to-mouth resuscitation. If vomiting occurs, keep head low so that stomach content does not get into the lungs. Never give anything by mouth to a victim who is unconscious or is having convulsions. Get medical attention immediately.
Most important symptoms/effects, acute and delayed	Irritation of nose and throat. Irritation of eyes and mucous membranes. Skin irritation. Unconsciousness. Corneal damage. Narcosis. Decrease in motor functions. Behavioral changes. Edema. Liver enlargement. Jaundice. Conjunctivitis. Proteinuria. Defatting of the skin. Rash. The toxicological properties of this product have not been thoroughly investigated. Use appropriate precautions. Hydrogen sulfide, a highly toxic gas, may be present. Signs and symptoms of overexposure to hydrogen sulfide include respiratory and eye irritation, dizziness, nausea, coughing, a sensation of dryness and pain in the nose, and loss of consciousness. Odor does not provide a reliable indicator of the presence of hazardous levels in the atmosphere.
Indication of immediate medical attention and special treatment needed	In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation. Symptoms may be delayed. The toxicological properties of this material have not been fully investigated.
General information	If exposed or concerned: get medical attention/advice. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before re-use.

5. Fire-fighting measures

Suitable extinguishing media	Water spray. Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).

Unsuitable extinguishing media	Do not use a solid water stream as it may scatter and spread fire.
Specific hazards arising from the chemical	The product is flammable, and heating may generate vapors which may form explosive vapor/air mixtures. Thermal decomposition or combustion may liberate toxic gases or fumes.
Special protective equipment and precautions for firefighters	Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.
Fire-fighting equipment/instructions	Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask. Withdraw immediately in case of rising sound from venting safety devices or any discoloration of tanks due to fire. Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Move containers from fire area if you can do it without risk. In the event of fire, cool tanks with water spray. Cool containers exposed to flames with water until well after the fire is out. For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn. Water runoff can cause environmental damage. Use compatible foam to minimize vapor generation as needed.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Local authorities should be advised if significant spills cannot be contained. Keep upwind. Keep out of low areas. Ventilate closed spaces before entering. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. See Section 8 of the SDS for Personal Protective Equipment.
Methods and materials for containment and cleaning up	Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Local authorities should be advised if significant spillages cannot be contained. Stop leak if you can do so without risk. This material is a water pollutant and should be prevented from contaminating soil or from entering sewage and drainage systems and bodies of water. Dike the spilled material, where this is possible. Prevent entry into waterways, sewers, basements or confined areas. Use non-sparking tools and explosion-proof equipment. Small Spills: Absorb spill with vermiculite or other inert material, then place in a container for chemical waste. Clean surface thoroughly to remove residual contamination. This material and its container must be disposed of as hazardous waste. Large Spills: Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Prevent product from entering drains. Do not allow material to contaminate ground water system. Should not be released into the environment. Clean up in accordance with all applicable regulations.
Environmental precautions	If facility or operation has an "oil or hazardous substance contingency plan", activate its procedures. Stay upwind and away from spill. Wear appropriate protective equipment including respiratory protection as conditions warrant. Do not enter or stay in area unless monitoring indicates that it is safe to do so. Isolate hazard area and restrict entry to emergency crew. Flammable. Review Firefighting Measures, Section 5, before proceeding with clean up. Keep all sources of ignition (flames, smoking, flares, etc.) and hot surfaces away from release. Contain spill in smallest possible area. Recover as much product as possible (e.g. by vacuuming). Stop leak if it can be done without risk. Use water spray to disperse vapors. Use compatible foam to minimize vapor generation as needed. Spilled material may be absorbed by an appropriate absorbent, and then handled in accordance with environmental regulations. Prevent spilled material from entering sewers, storm drains, other unauthorized treatment or drainage systems and natural waterways. Contact fire authorities and appropriate federal, state and local agencies. If spill of any amount is made into or upon navigable waters, the contiguous zone, or adjoining shorelines, contact the National Response Center at 1-800-424-8802. For highway or railways spills, contact Chemtrec at 1-800-424-9300.

7. Handling and storage

Precautions for safe handling	Eliminate sources of ignition. Avoid spark promoters. Ground/bond container and equipment. These alone may be insufficient to remove static electricity. Wear personal protective equipment. Avoid breathing mist/vapors/spray. Avoid contact with eyes, skin, and clothing. Do not taste or swallow. Avoid prolonged exposure. Use only with adequate ventilation. Wash thoroughly after handling. The product is combustible, and heating may generate vapors which may form explosive vapor/air mixtures. DO NOT handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use non-sparking tools and explosion-proof equipment. When using, do not eat, drink or smoke. Avoid release to the environment.

Conditions for safe storage, including any incompatibilities	Flammable liquid storage. Do not handle or store near an open flame, heat or other sources of ignition. This material can accumulate static charge which may cause spark and become an ignition source. The pressure in sealed containers can increase under the influence of heat. Keep container tightly closed in a cool, well-ventilated place. Keep away from food, drink and animal feedingstuffs. Keep out of the reach of children.

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
Naphthalene (CAS 91-20-3)	PEL	50 mg/m3
		10 ppm
n-Heptane (CAS 142-82-5)	PEL	2000 mg/m3
		500 ppm
n-Hexane (CAS 110-54-3)	PEL	1800 mg/m3
		500 ppm
Octane (All isomers) (CAS 111-65-9)	PEL	2350 mg/m3
		500 ppm

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Fuels, diesel, no. 2 (CAS 68476-34-6)	TWA	100 mg/m3	Inhalable fraction and vapor.
Hexane (Other isomers) (CAS 96-14-0)	STEL	1000 ppm	
	TWA	500 ppm	
Naphthalene (CAS 91-20-3)	STEL	15 ppm	
	TWA	10 ppm	
n-Heptane (CAS 142-82-5)	STEL	500 ppm	
	TWA	400 ppm	
n-Hexane (CAS 110-54-3)	TWA	50 ppm	
n-Nonane (CAS 111-84-2)	TWA	200 ppm	
Octane (All isomers) (CAS 111-65-9)	TWA	300 ppm	

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Hexane (Other isomers) (CAS 96-14-0)	Ceiling	1800 mg/m3
		510 ppm
	TWA	350 mg/m3
		100 ppm
Naphthalene (CAS 91-20-3)	STEL	75 mg/m3
		15 ppm
	TWA	50 mg/m3
		10 ppm
n-Heptane (CAS 142-82-5)	Ceiling	1800 mg/m3
		440 ppm
	TWA	350 mg/m3
		85 ppm
n-Hexane (CAS 110-54-3)	TWA	180 mg/m3
		50 ppm
n-Nonane (CAS 111-84-2)	TWA	1050 mg/m3
		200 ppm
Octane (All isomers) (CAS 111-65-9)	Ceiling	1800 mg/m3
		385 ppm
	TWA	350 mg/m3
		75 ppm

Biological limit values

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
n-Hexane (CAS 110-54-3)	0.4 mg/l	2,5-Hexanedion, without hydrolysis	Urine	*
	0.4 mg/l	2,5-Hexanedi - on, without hydrolysis		*

* - For sampling details, please see the source document.

Exposure guidelines

US - California OELs: Skin designation

n-Hexane (CAS 110-54-3) Can be absorbed through the skin.

US ACGIH Threshold Limit Values: Skin designation

Fuels, diesel, no. 2 (CAS 68476-34-6) Can be absorbed through the skin.
Naphthalene (CAS 91-20-3) Can be absorbed through the skin.
n-Hexane (CAS 110-54-3) Can be absorbed through the skin.

Appropriate engineering controls Provide adequate general and local exhaust ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Use explosion-proof equipment.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses. If splash potential exists, wear full face shield or chemical goggles.

Skin protection

Hand protection Wear chemical-resistant, impervious gloves. Suitable gloves can be recommended by the glove supplier. Be aware that the liquid may penetrate the gloves. Frequent change is advisable.

Other Full body suit and boots are recommended when handling large volumes or in emergency situations. Flame retardant protective clothing is recommended.

Respiratory protection Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. If workplace exposure limits for product or components are exceeded, NIOSH approved equipment should be worn. Proper respirator selection should be determined by adequately trained personnel, based on the contaminants, the degree of potential exposure and published respiratory protection factors. This equipment should be available for nonroutine and emergency use.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations Consult supervisor for special handling instructions. Avoid contact with eyes. Avoid contact with skin. Keep away from food and drink. Wash hands before breaks and immediately after handling the product. Provide eyewash station and safety shower. Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Appearance Liquid (may be dyed red).

Physical state Liquid.

Form Liquid.

Color Clear. Straw.

Odor Kerosene (strong).

Odor threshold Not available.

pH Not available.

Melting point/freezing point -60.07 °F (-51.15 °C) Estimated

Initial boiling point and boiling range 325 - 700 °F (162.78 - 371.11 °C)

Flash point > 100.0 °F (> 37.8 °C) Closed Cup

Evaporation rate 0.02

Flammability (solid, gas) Not available.

Upper/lower flammability or explosive limits

Flammability limit - lower (%)	0.4 %
Flammability limit - upper (%)	8 %
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	< 1 mm Hg (20°C)
Vapor density	3 (Air = 1)
Relative density	0.82 - 0.87
Relative density temperature	60 °F (15.56 °C)
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	494.96 °F (257.2 °C)
Decomposition temperature	Not available.
Viscosity	2 - 4.5 mm²/s

10. Stability and reactivity

Reactivity	Stable at normal conditions.
Chemical stability	Stable under normal temperature conditions and recommended use.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	Heat, flames and sparks. Ignition sources. Contact with incompatible materials. Do not pressurize, cut, weld, braze, solder, drill, grind or expose empty containers to heat, flame, sparks, static electricity, or other sources of ignition; they may explode and cause injury or death.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Ingestion	May be fatal if swallowed and enters airways.
Inhalation	Harmful if inhaled. In high concentrations, vapors and spray mists are narcotic and may cause headache, fatigue, dizziness and nausea.
Skin contact	Causes skin irritation.
Eye contact	May cause eye irritation.
Symptoms related to the physical, chemical and toxicological characteristics	Irritation of nose and throat. Irritation of eyes and mucous membranes. Skin irritation. Unconsciousness. Corneal damage. Narcosis. Decrease in motor functions. Behavioral changes. Edema. Liver enlargement. Jaundice. Conjunctivitis. Proteinuria. Defatting of the skin. Rash. The toxicological properties of this product have not been thoroughly investigated. Use appropriate precautions.

Information on toxicological effects

Acute toxicity	Harmful if inhaled. Harmful: may cause lung damage if swallowed. The toxicological properties of this material have not been fully investigated.

Components	**Species**	**Test Results**
Fuels, diesel, no. 2 (CAS 68476-34-6)		
Acute		
Inhalation		
LC50	Rat	4.1 mg/l, 4 hours

Components	Species	Test Results
Naphthalene (CAS 91-20-3)		
Acute		
Dermal		
LD50	Rabbit	> 2 g/kg
Oral		
LD50	Rat	490 mg/kg
n-Heptane (CAS 142-82-5)		
Acute		
Inhalation		
LC50	Rat	103 mg/l, 4 Hours
n-Hexane (CAS 110-54-3)		
Acute		
Oral		
LD50	Rat	28710 mg/kg
n-Nonane (CAS 111-84-2)		
Acute		
Inhalation		
LC50	Rat	3200 mg/l, 4 Hours
Octane (All isomers) (CAS 111-65-9)		
Acute		
Inhalation		
LC50	Rat	118 mg/l, 4 Hours

Skin corrosion/irritation Causes skin irritation.

Serious eye damage/eye irritation Based on available data, the classification criteria are not met.

Respiratory or skin sensitization

Respiratory sensitization Based on available data, the classification criteria are not met.

Skin sensitization Based on available data, the classification criteria are not met.

Germ cell mutagenicity Based on available data, the classification criteria are not met.

Carcinogenicity Suspected of causing cancer.
International Agency for Research on Cancer (IARC): Whole diesel engine exhaust – IARC Group 1. Exposure may cause lung cancer and also noted a positive association with an increased risk of bladder cancer.
Diesel exhaust has been reported to be an occupational hazard due to NIOSH-reported potential carcinogenic properties.

IARC Monographs. Overall Evaluation of Carcinogenicity

Fuels, diesel, no. 2 (CAS 68476-34-6)	3 Not classifiable as to carcinogenicity to humans.
Naphthalene (CAS 91-20-3)	2B Possibly carcinogenic to humans.

NTP Report on Carcinogens

Naphthalene (CAS 91-20-3)	Reasonably Anticipated to be a Human Carcinogen.

Reproductive toxicity Suspected of damaging fertility or the unborn child.
Napthalene interferes with embryo development in experimental animals at dose levels that cause maternal toxicity. In humans, excessive exposure to this agent may cause hemolytic anemia in the mother and fetus.

Specific target organ toxicity - single exposure Based on available data, the classification criteria are not met.

Specific target organ toxicity - repeated exposure May cause damage to the following organs through prolonged or repeated exposure: Blood. Liver. Thymus.

Aspiration hazard May be fatal if swallowed and enters airways.

Chronic effects Contains organic solvents which in case of overexposure may depress the central nervous system causing dizziness and intoxication. Repeated exposure to naphthalene may cause cataracts, allergic skin rashes, destruction of red blood cells, and anemia, jaundice, kidney and liver damage. Danger of serious damage to health by prolonged exposure. Prolonged or repeated overexposure may cause central nervous system, kidney, liver, and lung damage.

Further information Symptoms may be delayed. Hydrogen sulfide, a highly toxic gas, may be present. Signs and symptoms of overexposure to hydrogen sulfide include respiratory and eye irritation, dizziness, nausea, coughing, a sensation of dryness and pain in the nose, and loss of consciousness. Odor does not provide a reliable indicator of the presence of hazardous levels in the atmosphere. Toxicological properties of this material have not been fully investigated.

12. Ecological information

Ecotoxicity Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Components		Species	Test Results
Fuels, diesel, no. 2 (CAS 68476-34-6)			
Aquatic			
Acute			
Crustacea	EL50	Daphnia magna	68 mg/l, 48 hours
Fish	LL50	Oncorhynchus mykiss	65 mg/l, 96 hours
Naphthalene (CAS 91-20-3)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	1.09 - 3.4 mg/l, 48 hours
Fish	LC50	Pink salmon (Oncorhynchus gorbuscha)	0.95 - 1.62 mg/l, 96 hours
n-Heptane (CAS 142-82-5)			
Aquatic			
Fish	LC50	Western mosquitofish (Gambusia affinis)	4924 mg/l, 96 hours
n-Hexane (CAS 110-54-3)			
Aquatic			
Fish	LC50	Fathead minnow (Pimephales promelas)	2.101 - 2.981 mg/l, 96 hours

Persistence and degradability Not available.

Bioaccumulative potential Not available.

Partition coefficient n-octanol / water (log Kow)

Hexane (Other isomers) (CAS 96-14-0)	3.6
Octane (All isomers) (CAS 111-65-9)	5.18
n-Heptane (CAS 142-82-5)	4.66
n-Hexane (CAS 110-54-3)	3.9
n-Nonane (CAS 111-84-2)	5.46

Mobility in soil Not available.

Other adverse effects Not available.

13. Disposal considerations

Disposal instructions Dispose in accordance with all applicable regulations. This material and its container must be disposed of as hazardous waste. Dispose of this material and its container to hazardous or special waste collection point. Incinerate the material under controlled conditions in an approved incinerator. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container.

Hazardous waste code D001: Waste Flammable material with a flash point <140 °F

US RCRA Hazardous Waste U List: Reference

Naphthalene (CAS 91-20-3)	U165

Waste from residues / unused products Dispose of in accordance with local regulations.

Contaminated packaging Offer rinsed packaging material to local recycling facilities.

14. Transport information

DOT

UN number UN1202

UN proper shipping name Diesel fuel

Transport hazard class(es)

Class Combustible Liquid

Subsidiary risk -

Packing group III

Environmental hazards

Marine pollutant	Yes
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Special provisions	144, B1, IB3, T2, TP1
Packaging exceptions	150
Packaging non bulk	203
Packaging bulk	242

IATA

UN number	UN1202
UN proper shipping name	Diesel fuel
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Label(s)	3
Packing group	III
Environmental hazards	Yes
ERG Code	3L
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN number	UN1202
UN proper shipping name	DIESEL FUEL
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Label(s)	3
Packing group	III
Environmental hazards	
Marine pollutant	Yes
EmS	F-E, S-E
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable. However, this product is a liquid and if transported in bulk covered under MARPOL 73/78, Annex I.

15. Regulatory information

US federal regulations

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

n-Nonane (CAS 111-84-2)	1.0 % One-Time Export Notification only.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)

Hexane (Other isomers) (CAS 96-14-0)	LISTED
Naphthalene (CAS 91-20-3)	LISTED
n-Heptane (CAS 142-82-5)	LISTED
n-Hexane (CAS 110-54-3)	LISTED
n-Nonane (CAS 111-84-2)	LISTED
Octane (All isomers) (CAS 111-65-9)	LISTED

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories	Immediate Hazard - No Delayed Hazard - No Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical	Yes

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Naphthalene	91-20-3	0 - 1

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Naphthalene (CAS 91-20-3)
n-Hexane (CAS 110-54-3)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

US state regulations WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

US. Massachusetts RTK - Substance List

Hexane (Other isomers) (CAS 96-14-0)
Naphthalene (CAS 91-20-3)
n-Heptane (CAS 142-82-5)
n-Hexane (CAS 110-54-3)
n-Nonane (CAS 111-84-2)
Octane (All isomers) (CAS 111-65-9)

US. New Jersey Worker and Community Right-to-Know Act

Fuels, diesel, no. 2 (CAS 68476-34-6)
Naphthalene (CAS 91-20-3)
n-Heptane (CAS 142-82-5)
n-Hexane (CAS 110-54-3)
n-Nonane (CAS 111-84-2)
Octane (All isomers) (CAS 111-65-9)

US. Pennsylvania Worker and Community Right-to-Know Law

Fuels, diesel, no. 2 (CAS 68476-34-6)
Hexane (Other isomers) (CAS 96-14-0)
Naphthalene (CAS 91-20-3)
n-Heptane (CAS 142-82-5)
n-Hexane (CAS 110-54-3)
n-Nonane (CAS 111-84-2)
Octane (All isomers) (CAS 111-65-9)

US. Rhode Island RTK

Naphthalene (CAS 91-20-3)
n-Hexane (CAS 110-54-3)

US. California Proposition 65

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance

Benzene (CAS 71-43-2)
Toluene (CAS 108-88-3)

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	No
Canada	Domestic Substances List (DSL)	No
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	No
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	No
New Zealand	New Zealand Inventory	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	No

Country(s) or region	Inventory name	On inventory (yes/no)*
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

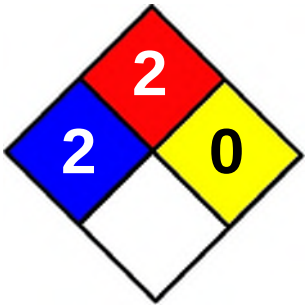
Issue date 13-May-2013

Revision date 23-May-2014

Version # 04

Further information HMIS® is a registered trade and service mark of the NPCA.

NFPA Ratings



Disclaimer This material Safety Data Sheet (SDS) was prepared in accordance with 29 CFR 1910.1200 by Valero Marketing & Supply Co., ("VALERO"). VALERO does not assume any liability arising out of product use by others. The information, recommendations, and suggestions presented in this SDS are based upon test results and data believed to be reliable. The end user of the product has the responsibility for evaluating the adequacy of the data under the conditions of use, determining the safety, toxicity and suitability of the product under these conditions, and obtaining additional or clarifying information where uncertainty exists. No guarantee expressed or implied is made as to the effects of such use , the results to be obtained, or the safety and toxicity of the product in any specific application. Furthermore, the information herein is not represented as absolutely complete, since it is not practicable to provide all the scientific and study information in the format of this document, plus additional information may be necessary under exceptional conditions of use, or because of applicable laws or government regulations.

3. OPERATIONAL PLAN – AIR EMISSIONS DURING SSM

The Building is owned and operated by the U.S. Government in conjunction with Kirtland Air Force Base. As soon as a malfunction occurs, the facility will shut down applicable equipment to ensure no excess emissions or non-permitted emissions are released. The facility will only startup again once it is identified that the malfunction is addressed, and the facility will operate as normal and permitted.

Additional details are provided in this section for each piece of equipment regarding specific steps that will be taken should any malfunction occur on site as well as details regarding safety procedures and processes to ensure protection of employees, the general public, and the environment.

3.1 Emergency Generator Operational Plan

3.1.1 Emergency Generator Startup Procedure

A startup event for a Reciprocating Internal Combustion Engine (RICE) occurs when the unit is initially operated after being off. KAFB carefully monitors the entire startup process to ensure safety and minimize airborne emissions.

The following actions included in the operational plan are critical for minimizing emissions during startup:

- Minimizing cold engine startups by ensuring achievement of good combustion.
- Monitoring the opacity and color of the exhaust gases and taking the unit offline for repairs upon the observation of abnormal soot coming out of the stacks.

3.1.2 Emergency Generator Shutdown Procedure

A shutdown event for a RICE occurs when the unit is shut down after a period of operation. The entire shutdown process will be monitored to ensure safety and minimize airborne emissions. The following actions included in the operational plan are critical for minimizing emissions during engine shutdown:

- Removing the full electrical load from the system and initiating a cool down cycle before the engine is stopped.
- Monitoring the opacity and color of the exhaust gases and taking the unit offline for repairs upon the observation of abnormal soot coming out of the stacks.

3.1.3 Emergency Generator Maintenance

KAFB will ensure the emergency generator RICE are appropriately maintained according to the manufacturer's recommendations. KAFB will carefully monitor the engines to ensure safety and minimize airborne emissions during regularly scheduled maintenance events.

The following actions included in the maintenance operational plan are critical for minimizing emissions during the event:

- Ensure the engine is achieving good combustion during the maintenance activity.
- Monitoring the opacity and color of the exhaust gases and taking the unit offline for repairs upon the observation of abnormal soot coming out of the stacks.

4. AIR DISPERSION MODELING ANALYSIS

N/A – No Modeling is required since the facility consists of an emergency generator.

A.1 Permit Application Checklist

City of Albuquerque
Environmental Health Department
Air Quality Program

Construction Permit (20.11.41 NMAC)
Application Checklist

This checklist must be returned with the application

Any person seeking a new air quality permit, a permit modification, or an emergency permit under 20.11.41 NMAC (Construction Permits) shall do so by filing a written application with the Albuquerque-Bernalillo County Joint Air Quality Program, which administers and enforces local air quality laws for the City of Albuquerque ("City") and Bernalillo County ("County"), on behalf of the City Environmental Health Department ("Department").

The Department will rule an application administratively incomplete if it is missing or has incorrect information. The Department may require additional information that is necessary to make a thorough review of an application, including but not limited to technical clarifications, emission calculations, emission factor usage, additional application review fees if any are required by 20.11.2 NMAC, and new or additional air dispersion modeling.

If the Department has ruled an application administratively incomplete three (3) times, the Department will deny the permit application. Any fees submitted for processing an application that has been denied will not be refunded. If the Department denies an application, a person may submit a new application and the fee required for a new application. The applicant has the burden of demonstrating that a permit should be issued.

The following are the minimum elements that shall be included in the permit application before the Department can determine whether an application is administratively complete and ready for technical review. It is not necessary to include an element if the Department has issued a written waiver regarding the element and the waiver accompanies the application. However, the Department shall not waive any federal requirements.

At all times before the Department has made a final decision regarding the application, an applicant has a duty to promptly supplement and correct information the applicant has submitted in an application to the Department. The applicant's duty to supplement and correct the application includes but is not limited to relevant information acquired after the applicant has submitted the application and additional information the applicant otherwise determines is relevant to the application and the Department's review and decision. While the Department is processing an application, regardless of whether the Department has determined the application is administratively complete, if the Department determines that additional information is necessary to evaluate or make a final decision regarding the application, the Department may request additional information and the applicant shall provide the requested additional information.

NOTICE REGARDING PERMIT APPEALS: A person who has applied for or has been issued an air quality permit by the Department shall be an obligatory party to a permit appeal filed pursuant to 20.11.81 NMAC.

NOTICE REGARDING SCOPE OF A PERMIT: The Department's issuance of an air quality permit only authorizes the use of the specified equipment pursuant to the air quality control laws, regulations and conditions. Permits relate to air quality control only and are issued for the sole purpose of regulating the emission of air contaminants from said equipment. Air quality permits are not a general authorization for the location, construction and/or operation of a facility, nor does a permit authorize any particular land use or other form of land entitlement. It is the applicant's/permittee's responsibility to obtain all other necessary permits from the appropriate agencies, such as the City Planning Department or County Department of Planning and Development Services, including but not limited to site plan approvals, building permits, fire department approvals and the like, as may be required by law for the location, construction and/or operation of a facility. For more information, please visit the City Planning Department website at https://www.cabq.gov/planning and the County Department of Planning and Development Services website at https://www.bernco.gov/planning.

The Applicant shall:

20.11.41.13(A) NMAC – Pre-Application Requirements:

Item	Completed	N/A[1]	Waived[2]
(1) Request a pre-application meeting with the Department using the pre-application meeting request form. Include a copy of the request form submitted to the Department.	☐	☐	☒
(2) Attend the pre-application meeting. Date of pre-application meeting:	☐	☒	☐
Pre-application meeting agenda and public notice sign checklists included with application?	☐	☒	☐

1. *Not Applicable*
2. *It is not necessary to include an element if the Department has issued a written waiver regarding the element and the waiver accompanies the application. However, the Department shall not waive any federal requirements.*

20.11.41.13(B) NMAC – Applicant's Public Notice Requirements:

Item	Included in Application	N/A[1]	Waived[2]
(1) Provide public notice in accordance with the regulation, including by certified mail or electronic copy to the designated representative(s) of the recognized neighborhood associations and recognized coalitions that are within one-half mile of the exterior boundaries of the property on which the source is or is proposed to be located.	☒	☐	☐
• Contact list of representative(s) of recognized neighborhood associations and recognized coalitions cannot be more than three months old from the application submittal date. • Include contact list provided by Department in application submittal.	☒	☐	☐
• Provide notice using the Notice of Intent to Construct form and Applicant Notice Cover Letter.	☒	☐	☐
(2) In accordance with the regulation, post and maintain in a visible location a weather proof sign provided by the Department. Include pictures in application.	☒	☐	☐
Documentary proof of all public notice requirements listed above and required by 20.11.41.13(E)(15) included with application?	☒	☐	☐

1. *Not Applicable; For emergency permits, the public notice requirements in 20.11.41.24 NMAC shall apply instead.*
2. *It is not necessary to include an element if the Department has issued a written waiver regarding the element and the waiver accompanies the application. However, the Department shall not waive any federal requirements.*

20.11.41.13(D) NMAC

Item	Included in Application
A person who is seeking a construction permit pursuant to 20.11.41 NMAC shall complete a permit application and file one complete original and one duplicate copy with the Department.	☒
• A high-quality electronic duplicate copy is required by the Department to speed up review and allow for the Department public notice to be posted online. The electronic copy must be an exact duplicate of the hardcopy original, including pages with signatures such as the application certification page. Note: Do not include financial information, such as a copy of a check, in the electronic PDF.	☒
The electronic submittal on thumb drive, unless alternate method is allowed by the Department, must also include modeling files, if applicable, and emission calculations file(s) in Microsoft Excel-compatible format.	☒

The Permit Application shall include:

20.11.41.13(E) NMAC – Application Contents

Item	Included in Application	N/A[1]	Waived[2]
(1) A complete permit application on the most recent form provided by the Department.	☒	☐	☐
(2) The application form includes:			
a. The applicant's name, street and post office address, and contact information;	☒	☐	☐
b. The facility owner/ operator's name, street address and mailing address, if different from the applicant;	☒	☐	☐
c. The consultant's name and contact information, if applicable;	☒	☐	☐
d. All information requested on the application form is included (*i.e.*, the form is complete).	☒	☐	☐
(3) The date the application was submitted to the Department.	☒	☐	☐
(4) Sufficient attachments for the following:			
a. Ambient impact analysis using an atmospheric dispersion model approved by the U.S. Environmental Protection Agency, and the Department to demonstrate compliance with the applicable National Ambient Air Quality Standards (NAAQS). *See* 20.11.1 NMAC. If you are modifying an existing source, the modeling must include the emissions of the entire source to demonstrate the impact the new or modified source(s) will have on existing plant emissions.	☐	☒	☐
b. The air dispersion model has been executed pursuant to a protocol that was approved in advance by the Department.	☐	☒	☐
c. Air dispersion modeling approved (or 2nd denied) protocol date:	☐	☒	☐
d. Basis or source for each emission rate (including manufacturer's specification sheets, AP-42 section sheets, test data, or corresponding supporting documentation for any other source used).	☒	☐	☐
e. All calculations used to estimate potential emission rates and controlled/proposed emissions.	☒	☐	☐
f. Basis for the estimated control efficiencies and sufficient engineering data for verification of the control equipment operation, including if necessary, design, drawing, test report and factors which affect the normal operation.	☒	☐	☐
g. Fuel data for each existing and/or proposed piece of fuel burning equipment.	☒	☐	☐
h. Anticipated maximum production capacity of the entire facility and the requested production capacity after construction and/or modification.	☒	☐	☐
i. Stack and exhaust gas parameters for all existing and proposed emission stacks.	☒	☐	☐
(5) An operational and maintenance strategy detailing:	☒	☐	☐
a. the steps the applicant will take if a malfunction occurs that may cause emission of a regulated air contaminant to exceed a limit that is included in the permit;	☒	☐	☐
b. the nature of emissions during routine startup or shutdown of the source and the source's air pollution control equipment; and	☒	☐	☐
c. the steps the applicant will take to minimize emissions during routine startup or shutdown.	☒	☐	☐
(6) A map, such as a 7.5'-topographic quadrangle map published by the U.S. Geological Survey or a map of equivalent or greater scale, detail, and precision, including a City or County zone atlas map that shows the proposed location of each process equipment unit involved in the proposed construction, modification, or operation of the source, as applicable.	☒	☐	☐

Item	Included in Application	N/A[1]	Waived[2]
(7) An aerial photograph showing the proposed location of each process equipment unit involved in the proposed construction, modification, relocation or technical revision of the source except for federal agencies or departments involved in national defense or national security as confirmed and agreed to by the Department in writing.	☒	☐	☐
(8) A complete description of all sources of regulated air contaminants and a process flow diagram depicting the process equipment unit or units at the facility, both existing and proposed, that are proposed to be involved in routine operations and from which regulated air contaminant emissions are expected to be emitted.	☒	☐	☐
(9) A full description of air pollution control equipment, including all calculations and the basis for all control efficiencies presented, manufacturer's specifications sheets, and site layout and assembly drawings; UTM (universal transverse mercator) coordinates shall be used to identify the location of each emission unit.	☒	☐	☐
(10) A description of the equipment or methods proposed by the applicant to be used for emission measurement.	☒	☐	☐
(11) The maximum and normal operating time schedules of the source after completion of construction or modification, as applicable.	☒	☐	☐
(12) Any other relevant information as the Department may reasonably require, including without limitation:	☒	☐	☐
a. Provide an applicability determination for all potentially applicable federal regulations.	☒	☐	☐
b. Applicants shall provide documentary proof that the proposed air quality permitted use of the facility's subject property is allowed by the zoning designation of the City or County zoning laws, as applicable. Sufficient documentation includes: (i) a zoning certification from the City Planning Department or County Department of Planning and Development Services, as applicable, if the property is subject to City or County zoning jurisdiction; or (ii) a zoning verification from both planning departments if the property is not subject to City or County zoning jurisdiction.[3] A zone atlas map shall not be sufficient.	☒	☐	☐
c. Compliance History Disclosure Form[4]	☒	☐	☐
d. BACT Analysis, if applicable, for new permit or permit modification applications.	☒	☐	☐
(13) The signature of the applicant, operator, owner or an authorized representative, certifying to the accuracy of all information as represented in the application and attachments, if any.	☒	☐	☐
(14) A check or money order for the appropriate application fee or fees required by 20.11.2 NMAC, *Fees*. (Online fee payments are now accepted as well. Application must be submitted first, then Department will provide invoice for online payment.)	☒	☐	☐

1. *Not Applicable*
2. *It is not necessary to include an element if the Department has issued a written waiver regarding the element and the waiver accompanies the application. However, the Department shall not waive any federal requirements.*
3. *Applicants are not required to submit documentation for the subject property's zoning designation when applying for a relocation of a portable stationary source, or a technical or administrative revision to an existing permit.*
4. *Required for applications filed pursuant to the following regulations: Construction Permits (20.11.41 NMAC); Operating Permits (20.11.42 NMAC); Nonattainment Areas (20.11.60 NMAC); Prevention of Significant Deterioration (20.11.61 NMAC); and Acid Rain (20.11.62 NMAC); except this Form shall not be required for asbestos notifications under 20.11.20.22 NMAC, and this Form shall only be required for administrative permit revision (20.11.41.28(A) NMAC) and administrative permit amendments (20.11.42.12(E)(1) NMAC) when the action requested is a transfer of ownership. Air Quality Program staff can answer basic questions about the Compliance History Disclosure Form but will not provide specific advice about which boxes to check or whether information must be disclosed. The decision about how to answer a question and whether there is information to disclose is the responsibility of applicants/permittees.*

From:	McKinstry, Michael W.
To:	MUNOZ-DYER, CARINA G CIV USAF AFGSC 377 MSG/CEIEC
Cc:	TAVAREZ, ISREAL L CIV USAF AFGSC 377 MSG/CEIE
Subject:	[Non-DoD Source] RE: General Waiver for Pre-application Meetings for Emergency Generators Air Quality Applications
Date:	Wednesday, October 16, 2024 2:39:48 PM
Attachments:	image001.png

Carina,

This email is to verify the AQP Permitting division agreement with Kirtland AFB that all further pre-application meetings for emergency generators will be waived in the future.

Regards,

MICHAEL W. MCKINSTRY
Environmental Health Manager | Environmental Health Department
o 505.768.1923
m 505.228-3441
cabq.gov/environmentalhealth/

From: MUNOZ-DYER, CARINA G CIV USAF AFGSC 377 MSG/CEIEC <carina.munoz-dyer@us.af.mil>
Sent: Friday, October 11, 2024 8:32 AM
To: McKinstry, Michael W. <mmckinstry@cabq.gov>
Cc: TAVAREZ, ISREAL L CIV USAF AFGSC 377 MSG/CEIE <isreal.tavarez@us.af.mil>
Subject: General Waiver for Pre-application Meetings for Emergency Generators Air Quality Applications

Good morning Michael.

I am respectfully requesting a waiver for pre-application meeting for all application for air quality construction permit specific to emergency generators only, at Kirltand AFB. We will continue to request a pre-application meeting to anything else other than an emergency generator.

A waiver will help both programs during the application process.

Please let me know if this is something the Albuquerque Environmental Health Department will be okay.

Respectfully,
Carina

Carina G. Munoz-Dyer
377 MSG/CEIEC, Air Quality Program Manager
2050 Wyoming Blvd SE, B20685, Room A-106
Kirtland AFB, NM 87117
Carina.munoz-dyer@us.af.mil
DSN 246-8781 – Office 505-846-8781
Telework Tuesdays and Fridays

City of Albuquerque
Environmental Health Department
Air Quality Program

Air Quality
Compliance History Disclosure Form

The Albuquerque-Bernalillo County Joint Air Quality Program ("Program") administers and enforces local air quality laws for the City of Albuquerque ("City") and Bernalillo County ("County") on behalf of the City Environmental Health Department, including the New Mexico Air Quality Control Act ("AQCA"), NMSA 1978, Sections 74-2-1 to -17. In accordance with Sections 74-2-7(P) and (S) of the AQCA, the Program may deny any permit application or revoke any permit issued pursuant to the AQCA if, within ten years immediately preceding the date of submission of the permit application, the applicant or permittee meets any one of the criteria outlined in the AQCA. The Program requires applicants to file this Compliance History Disclosure Form in order for the Program to deem an air permit application administratively complete, or issue an air permit for those permits without an initial administrative completeness determination process. Additionally, an existing permit holder (permits issued prior to the Effective Date of this Form) shall provide this Compliance History Disclosure Form to the Program upon the Program's request. Note: Program Staff can answer basic questions about this Compliance History Disclosure Form but cannot provide specific guidance or legal advice.

Instructions

1. Applications filed pursuant to the following regulations shall include this Compliance History Disclosure Form, in accordance with Section 74-2-7(S) of the AQCA: *Construction Permits* (20.11.41 NMAC); *Operating Permits* (20.11.42 NMAC); *Nonattainment Areas* (20.11.60 NMAC); *Prevention of Significant Deterioration* (20.11.61 NMAC); *Acid Rain* (20.11.62 NMAC); and *Fugitive Dust* (20.11.20 NMAC) except this Form shall not be required for asbestos notifications under 20.11.20.22 NMAC.
2. This Compliance History Disclosure Form is not site specific: responses shall be based on the applicant/permittee as an entity and not be limited to the application, site, facility or source.
3. The permittee identified on this Compliance History Disclosure Form shall match the permittee in the existing permit or new application. If the information in an existing permit needs to be changed, please contact the Program about revisions and ownership transfers.
4. Answer every question completely and truthfully, and do not leave any blank spaces. If there is nothing to disclose in answer to a particular question, check the box labeled "No" except for Question 5b. Failure to provide any of the information requested in this Compliance History Disclosure Form may constitute grounds for an incompleteness determination, application denial, or permit revocation.
5. Be especially careful not to leave out information in a way that might create an impression that you are trying to hide it. Omitting information, even unintentionally, may result in application denial or permit revocation.
6. For any required explanations, be sure to identify the question to which the explanation is responsive. If you submit any document in connection with your answer to any question, refer to it as, "Exhibit No.__", and attach it after the explanation(s) at the end of the Compliance History Disclosure Form, consecutively numbering each additional page at the top right corner.
7. The Program may require additional information to make a thorough review of an application. At all times before the Program has made a final decision regarding the application, an applicant has a duty to promptly supplement and correct information the applicant has submitted in an application to the Program. The applicant's duty to supplement and correct the application includes, but is not limited to, relevant information acquired after the applicant has submitted the application and additional information the applicant otherwise determines is relevant to the application and the Program's review and decision. While the Program is processing an application, regardless of whether the Program has determined the application is administratively complete, if the Program determines that additional information is necessary to evaluate or make a final decision regarding the application, the Program may request additional information and the applicant shall provide the requested additional information.
8. Supplementary information required by the Program may include responses to public comment received by the Program during the application review process.
9. Any fees submitted for processing an application that has been denied will not be refunded. If the Program denies an application, a person may submit a new application and the fee required for a new application. The applicant has the burden of demonstrating that a permit should be issued.

COMPLIANCE HISTORY		
A. Applicant/Permittee Name: U.S. Air Force - Kirtland Air Force Base		*Check Applicable Box*: ☐ Applicant ☒ Permittee
B. Time Period of Compliance Reporting (10 Years): June 3, 2015 to June 3, 2025 *Instructions: For applicants, answer the following questions with information from within the 10 years preceding the current application. For existing permit holders requested to submit this form by the Program outside of an application, answer the following questions with information from within the 10 years preceding the Program's issuance of each permit.*		
C. Questions		
1	Knowingly misrepresented a material fact in an application for a permit?	☐ Yes ☒ No
2	Refused to disclose information required by the provisions of the New Mexico Air Quality Control Act?	☐ Yes ☒ No
3	Been convicted in any court of any state or the United States of a felony related to environmental crime?	☐ Yes ☒ No
4	Been convicted in any court of any state or the United States of a crime defined by state or federal statute as involving or being in restraint of trade, price fixing, bribery, or fraud?	☐ Yes ☒ No
5a	Constructed or operated any facility for which a permit was sought, including the current application, without the required air quality permit(s) under 20.11.41 NMAC, 20.11.42 NMAC, 20.11.60 NMAC, 20.11.61 NMAC, or 20.11.62 NMAC?	☒ Yes ☐ No
5b	If "No" to question 5a, mark N/A and go to question 6. If "Yes" to question 5a, state whether each facility that was constructed or operated without the required air quality permit met at least one of the following exceptions: i. The unpermitted facility was discovered after acquisition during a timely environmental audit that was authorized by the Program or the New Mexico Environment Department; or ii. The operator of the facility, using good engineering practices and established approved calculation methodologies, estimated that the facility's emissions would not require an air permit, **and** the operator applied for an air permit within 30 calendar days of discovering that an air permit was required for the facility.	☐ Yes ☒ No ☐ N/A
6	Had any permit revoked or permanently suspended for cause under the environmental laws of any state or the United States?	☐ Yes ☒ No
7	For each "yes" answer, or "no" to 5b, please attach an explanation and supporting documentation.	

I, the undersigned, hereby certify under penalty of law that this Compliance History Disclosure Form (Form) and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. I have knowledge of the information in this Form and it is, to the best of my knowledge and belief, true, accurate, and complete. I understand that there are significant penalties for submitting false information, including denial of the application or revocation of a permit, as well as fines and imprisonment for knowing violations. If I filed an application, I covenant and agree to promptly supplement and correct information in this Form until the Program makes a final decision regarding the application. Further, I certify that I am qualified and authorized to file this Form, to certify to the truth and accuracy of the information herein, and bind the permittee and source.

Signed on July 16, 2025

JUSTIN D. SECREST, Colonel, USAF
Print Name

SECREST.JUSTIN.D.1078711082 Digitally signed by SECREST.JUSTIN.D.1078711082 Date: 2025.07.16 16:09:03 -06'00'
Signature

Commander, 377th Air Base Wing
Print Title

Kirtland Air Force Base
Company Name

Kirtland Air Force Base
Attachment A – Compliance History Form

Deviation Start Date	Deviation End date	Cause of Deviation	Correction Action Taken
14 Oct 2022	22 Mar 2023	A 20.11.41 NMAC Construction Permit was not obtained for one diesel-fired emergency. generator at Kirtland Air Force Base (KAFB). The generator was identified as a 10-kW diesel-fired emergency generator located at 377th Medical Group and was used infrequently to provide back-up power to the Dental Clinic. The generator installation date is unknown. On 16 February 2023, KAFB received a Post-Inspection Notification (PIN) over the alleged violation. The PIN required the unit to be either permitted or decommissioned.	KAFB self-reported the discovery of the emergency generator to AEHD on 20 December 2022. The signed PIN was submitted to AEHD via email on 1 March 2023. On 28 April 2023, KAFB received documentation from 377th Medical Group indicating that the generator was decommissioned and abandoned in place on 22 March 2023. KAFB notified AEHD via email on the status of the decommissioned unit on 23 May 2023.
Prior to 1994	8 Oct 2021	Construction Permit #1759 did not include an existing fuel storage tank. The fuel storage tank was identified during communications between KAFB Environmental Management and Starfire Optical Range (SOR), who operates the facility where the fuel storage tank is located. The unit was identified as one, 250-gallon above ground storage tank containing gasoline with an associated single nozzle fuel dispenser. The fuel storage tank is no longer in use and has been emptied and cleaned. The fuel tank was installed prior to 1994 but the actual date is unknown.	KAFB self-reported the discovery of this tank to AEHD on 29 July 2022 as part of the Annual Compliance Certification. The tank was inspected by Liquid Fuels Management and was deemed out-of-service on 8 October 2021.
7 Feb 2020	23 Jun 2021	A 20.11.41 NMAC Construction Permit was not obtained for one diesel fired generator at KAFB. The generator was identified during communications between the KAFB Civil Engineering Power Production shop and the National Assessment Group who operates the facility where the generator is located. The unit was identified as a 60-kW generator with 80.9 horsepower (hp) engine located at Manzano Complex, a remote and secure area. At the time of discovery, the generator was not in use, and the battery and electrical panel were not installed. It was estimated that the generator was installed in 2001 but had not been operated for at least the last four years. The National Assessment Group determined that the generator was not needed for continued operations.	KAFB self-reported the discovery of this generator to AEHD on 28 July 2021 as a part of the Annual Compliance Certification. KAFB and the National Assessment Group coordinated with the Defense Logistics Agency (DLA) to remove and dispose of the generator. The generator was transferred to the DLA disposal facility holding yard on 23 June 2021.
2006	Jul 2019	A 20.11.41 NMAC Construction Permit was not obtained for one diesel fired non-emergency generator at KAFB. The generator was identified during a base wide inventory conducted specifically to identify any nonpermitted emission units as specified in a letter submitted to AEHD by KAFB on 31 January 2017. The 71 kW generator with 95.2 hp engine was located in a remote training area	On 28 December 2017, KAFB self-reported the discovery of the generator to AEHD. KAFB submitted a construction permit application on 10 January 2019. AEHD issued Construction Permit #3366 on 22 July 2019. The generator was decommissioned and

Deviation Start Date	Deviation End date	Cause of Deviation	Correction Action Taken
		known as Bivouac Area 3. It was used to simulate a remote environment for training purposes. It was estimated that the generator was installed in early 2006. Onsite usage records and discussion with facility managers confirmed that the generator operated five to six times per year for three to four hours for training purposes.	removed from KAFB on 2 and 5 February 2022, respectively. Construction Permit #3366 was cancelled 31 October 2023.
1993	12 Dec 2016	A 20.11.41 NMAC Construction Permit was not obtained for two natural gas generators at KAFB. The two natural gas generators were identified by an Air Force Research Laboratory (AFRL) Unit Environmental Coordinator after being contacted by the building tenants. The two 100kW generators with 168 horsepower (hp) engines had provided emergency back-up power to AFRL buildings 30134 and 30136 and were installed in 1993. Onsite usage records confirmed that the generators had operated as emergency engines through 2016.	On 16 December 2016, KAFB self-reported the discovery of the two generators to AEHD. On 12 December 2016 KAFB met with the current tenant of buildings 30134 and 30136 to determine if the generators were still in use and connected to natural gas. After inspecting the generators and interviewing the tenant it was determined that the generators were still operational but not necessary for current operations. On 12 December 2016, Power Production shut down the generators, disconnected them from the natural gas lines, and disconnected the battery packs.

A.3 Permit Application Review Fees Form

City of Albuquerque
Environmental Health Department
Air Quality Program

Permit Application Review Fee Checklist Instructions

All source registration and construction permit applications for stationary or portable sources shall be charged an application review fee according to the fee schedule in 20.11.2 NMAC. These filing fees are required for both new construction, reconstruction, and permit modification/revision applications. Most air quality notification (AQN) applications shall be charged an application review fee according to 20.11.39 NMAC. Qualified small businesses as defined in 20.11.2 NMAC may be eligible to pay one-half of the application review fees and 100% of all applicable federal program review fees.

Please fill out the permit application review fee checklist completely and submit with a check or money order payable to the "City of Albuquerque Fund 242" and:

1. Deliver it in person to the Albuquerque Environmental Health Department, 3rd floor, Room 3023, Albuquerque-Bernalillo County Government Center, south building, One Civic Plaza NW, Albuquerque, NM 87102; or

2. Mail it to Albuquerque Environmental Health Department, Air Quality Program, Permitting Division, P.O. Box 1293, Albuquerque, NM 87103; or

3. Online fee payments are now accepted as well. Application must be submitted first, then Department will provide invoice for online payment. Fill out form completely and mark check box below fee amount due on last page to request an invoice to pay the fee online.

The Department will provide a receipt of payment to the applicant. The person delivering or filing a submittal shall attach a copy of the receipt of payment to the submittal as proof of payment. Application review fees shall not be refunded without the written approval of the manager. If a refund is requested, a reasonable professional service fee to cover the costs of staff time involved in processing such requests shall be assessed. Please refer to 20.11.2 NMAC (effective January 10, 2011) for more detail concerning the "Fees" regulation as this checklist does not relieve the applicant from any applicable requirement of the regulation.

City of Albuquerque
Environmental Health Department
Air Quality Program

Permit Application Review Fee Checklist Effective January 1, 2025 – December 31, 2025

Please completely fill out the information in each section. Incompleteness of this checklist may result in the Albuquerque Environmental Health Department not accepting the application review fees. If you have any questions concerning this checklist, please call (505) 768-1972.

I. COMPANY INFORMATION:

Company Name	U.S. Air Force - Kirtland Air Force Base (KAFB)		
Company Address	377 MSG/CEIEC, 2050 Wyoming Blvd SE, Suite A-112 Kirtland AFB, NM 87117-5270		
Facility Name	SDA GEP PROGRAM - NEW MEXICO		
Facility Address	North Access Rd, Kirtland AFB, NM 87117		
Contact Person	Isreal Tavarez, Chief, Environmental Management		
Contact Person Phone Number	(505) 846-8546	**Email**	isreal.tavarez@us.af.mil
Are these application review fees for an existing permitted source located within the City of Albuquerque or Bernalillo County?	**Yes** ☐	**No** ☒	
If yes, what is the current permit/registration/AQN number for this facility?	**Permit #**		
Is this application review fee for a Qualified Small Business as defined in 20.11.2 NMAC? (See Definition of Qualified Small Business on Page 4)	**Yes** ☐	**No** ☒	

II. STATIONARY SOURCE APPLICATION REVIEW FEES:

If the application is for a new stationary source facility, please check all that apply. If this application is for a modification to an existing permit please see Section III. For revisions or relocations please see Sections IV or V.

Check All That Apply	Stationary Sources	Review Fee	Program Element
	Air Quality Notifications		
☐	AQN New Application	$701.00	2801
☐	AQN Technical Amendment	$383.00	2802
☐	AQN Transfer of a Prior Authorization	$383.00	2803
☐	*Not Applicable*	*See Sections Below*	
	Stationary Source Review Fees (Not Based on Proposed Allowable Emission Rate)		
☐	Source Registration required by 20.11.40 NMAC	$715.00	2401
☒	A Stationary Source that requires a permit pursuant to 20.11.41 NMAC or other board regulations and are not subject to the below proposed allowable emission rates	$1,429.00	2301
☐	*Not Applicable*	*See Sections Below*	
	Stationary Source Review Fees (Based on the Proposed Allowable Emission Rate for the single highest fee pollutant)		
☐	Proposed Allowable Emission Rate equal to or greater than 1 tpy and less than 5 tpy	$1,072.00	2302
☐	Proposed Allowable Emission Rate equal to or greater than 5 tpy and less than 25 tpy	$2,144.00	2303
☐	Proposed Allowable Emission Rate equal to or greater than 25 tpy and less than 50 tpy	$4,288.00	2304
☐	Proposed Allowable Emission Rate equal to or greater than 50 tpy and less than 75 tpy	$6,432.00	2305
☐	Proposed Allowable Emission Rate equal to or greater than 75 tpy and less than 100 tpy	$8,577.00	2306
☐	Proposed Allowable Emission Rate equal to or greater than 100 tpy	$10,721.00	2307

☐	*Not Applicable*	*See Sections Below*	

Federal Program Review Fees for each subpart (In addition to the Stationary Source Application Review Fees above)			
☒	40 CFR 60 – "New Source Performance Standards" (NSPS)	$1,429.00	2308
☐	40 CFR 61 – "National Emission Standards for Hazardous Air Pollutants" (NESHAPs)	$1,429.00	2309
☒	40 CFR 63 – (NESHAPs) Promulgated Standards	$1,429.00	2310
☐	20.11.64 – (NESHAPs) Case-by-Case MACT Review (Major HAP sources)	$14,294.00	2311
☐	20.11.61 NMAC – Prevention of Significant Deterioration (PSD) Permit	$7,147.00	2312
☐	20.11.60 NMAC – Non-Attainment Area Permit	$7,147.00	2313
☐	*Not Applicable*	*Not Applicable*	

III. MODIFICATION TO EXISTING PERMIT APPLICATION REVIEW FEES:

If the application is for a modification to an existing permit, please check all that apply. If this application is for a new stationary source facility, please see Section II. For revisions or relocations please see Sections IV or V.

Check All That Apply	Modifications	Review Fee	Program Element
Modification Application Review Fees (Not Based on Proposed Allowable Emission Rate)			
☐	Proposed modification to an existing Source Registration required by 20.11.40 NMAC	$715	2401
☐	Proposed modification to an existing stationary source that requires a permit pursuant to 20.11.41 NMAC or other board regulations and are not subject to the below proposed allowable emission rates	$1,429	2321
☐	*Not Applicable*	*See Sections Below*	
Modification Application Review Fees (Based on the Proposed Allowable Emission Rate for the single highest fee pollutant)			
☐	Proposed Allowable Emission Rate equal to or greater than 1 tpy and less than 5 tpy	$1,072.00	2322
☐	Proposed Allowable Emission Rate equal to or greater than 5 tpy and less than 25 tpy	$2,144.00	2323
☐	Proposed Allowable Emission Rate equal to or greater than 25 tpy and less than 50 tpy	$4,288.00	2324
☐	Proposed Allowable Emission Rate equal to or greater than 50 tpy and less than 75 tpy	$6,432.00	2325
☐	Proposed Allowable Emission Rate equal to or greater than 75 tpy and less than 100 tpy	$8,577.00	2326
☐	Proposed Allowable Emission Rate equal to or greater than 100 tpy	$10,721.00	2327
☐	*Not Applicable*	*See Sections Below*	
Major Modifications Review Fees (In addition to the Modification Application Review Fees above)			
☐	20.11.60 NMAC – Permitting in Non-Attainment Areas	$7,147.00	2333
☐	20.11.61 NMAC – Prevention of Significant Deterioration	$7,147.00	2334
☐	*Not Applicable*	*Not Applicable*	
Federal Program Review Fees for each subpart (This section applies only if a Federal Program Review is triggered by the proposed modification) (These fees are in addition to the Modification and Major Modification Application Review Fees above)			
☐	40 CFR 60 – "New Source Performance Standards" (NSPS)	$1,429.00	2328
☐	40 CFR 61 – "National Emission Standards for Hazardous Air Pollutants" (NESHAPs)	$1,429.00	2329
☐	40 CFR 63 – (NESHAPs) Promulgated Standards	$1,429.00	2330
☐	20.11.64 – (NESHAPs) Case-by-Case MACT Review (Major HAP sources)	$14,294.00	2331
☐	20.11.61 NMAC – Prevention of Significant Deterioration (PSD) Permit	$7,147.00	2332
☐	20.11.60 NMAC – Non-Attainment Area Permit	$7,147.00	2333
☐	*Not Applicable*	*Not Applicable*	

IV. ADMINISTRATIVE AND TECHNICAL REVISION APPLICATION REVIEW FEES:

If the application is for an administrative or technical revision of an existing permit issued pursuant to 20.11.40 or 20.11.41 NMAC, please check one that applies.

Check One	Revision Type	Review Fee	Program Element
☐	Administrative Revisions	$250.00	2340
☐	Technical Revisions	$500.00	2341
☐	*Not Applicable*	*See Sections II, III or V*	

V. PORTABLE STATIONARY SOURCE RELOCATION FEES:

If the application is for a portable stationary source relocation of an existing permit, please check one that applies.

Check One	Portable Stationary Source Relocation Type	Review Fee	Program Element
☐	No New Air Dispersion Modeling Required	$500.00	2501
☐	New Air Dispersion Modeling Required	$750.00	2502
☐	*Not Applicable*	*See Sections II, III or IV*	

VI. Please submit payment in the amount shown for the total application review fee.

Section Totals	Review Fee Amount
Section II Total	$4,287.00
Section III Total	$
Section IV Total	$
Section V Total	$
Total Application Review Fee	**$4,287.00**

☒ **Check here if an invoice is requested so Application Review Fee can be paid online.**

I, the undersigned, a responsible officer of the applicant company, certify that to the best of my knowledge, the information stated on this checklist gives a true and complete representation of the permit application review fees which are being submitted. I also understand that an incorrect submittal of permit application reviews may cause an incompleteness determination of the submitted permit application and that the balance of the appropriate permit application review fees shall be paid in full prior to further processing of the application.

Signed this 16th day of July , 20 25

JUSTIN D. SECREST, Colonel, USAF
Print Name

Commander, 377th Air Base Wing
Print Title

SECREST.JUSTIN.D.1078711082
Digitally signed by SECREST.JUSTIN.D.1078711082
Date: 2025.07.16 16:08:31 -06'00'
Signature

Definition of Qualified Small Business as defined in 20.11.2 NMAC:
"Qualified small business" means a business that meets all of the following requirements:

(1) a business that has 100 or fewer employees;
(2) a small business concern as defined by the federal Small Business Act;
(3) a source that emits less than 50 tons per year of any individual regulated air pollutant, or less than 75 tons per year of all regulated air pollutants combined; and
(4) a source that is not a major source or major stationary source.

Note: Beginning January 1, 2011, and every January 1 thereafter, an increase based on the consumer price index shall be added to the application review fees. The application review fees established in Subsection A through D of 20.11.2.18 NMAC shall be adjusted by an amount equal to the increase in the consumer price index for the immediately-preceding year. Application review fee adjustments equal to or greater than fifty cents ($0.50) shall be rounded up to the next highest whole dollar. Application review fee adjustments totaling less than fifty cents ($0.50) shall be rounded down to the next lowest whole dollar. The department shall post the application review fees on the city of Albuquerque environmental health department air quality program website.

A.4 Permit Application Form

City of Albuquerque – Environmental Health Department
Air Quality Program

Please mail this application to **P.O. Box 1293, Albuquerque, NM 87103**
or hand deliver between 8:00 am – 5:00 pm Monday – Friday to:
3rd Floor, Suite 3023 – One Civic Plaza NW, Albuquerque, NM 87102
(505) 768-1972 aqd@cabq.gov

Application for Air Pollutant Sources in Bernalillo County
Source Registration (20.11.40 NMAC) and Construction Permits (20.11.41 NMAC)

Submittal Date:

Owner/Corporate Information ☐ **Check here and leave this section blank if information is exactly the same as Facility Information below.**

Company Name: **U.S. Air Force - Kirtland Air Force Base (KAFB)**			
Mailing Address: **377 MSG/CEIEC, 2050 Wyoming Blvd SE, Suite A- 112**	City: **Kirtland AFB**	State: **NM**	Zip: **87117-5270**
Company Phone: **(505) 846-8546**	Company Contact: **Isreal Tavarez**		
Company Contact Title: **Chief, Environmental Management**	Phone: **(505) 846-8546**	E-mail: **isreal.tavarez@us.af.mil**	

Stationary Source (Facility) Information: **Provide a plot plan (legal description/drawing of the facility property) with overlay sketch of facility processes, location of emission points, pollutant type, and distances to property boundaries.**

Facility Name: **SDA GEP PROGRAM - NEW MEXICO**			
Facility Physical Address: **North Access Rd**	City: **Kirtland AFB**	State: **NM**	Zip: **87117**
Facility Mailing Address (if different): **N/A**	City: **N/A**	State: **N/A**	Zip: **N/A**
Facility Contact: **Isreal Tavarez**	Title: **Chief, Environmental Management**		
Phone: **(505) 846-8546**	E-mail: **isreal.tavarez@us.af.mil**		
Authorized Representative Name[1]: **Isreal Tavarez**	Authorized Representative Title: **Chief, Environmental Management**		

Billing Information ☐ **Check here if same contact and mailing address as corporate** ☐ **Check here if same as facility**

Billing Company Name: **U.S. Air Force - Kirtland Air Force Base (KAFB)**			
Mailing Address: **377 MSG/CEIEC, 2050 Wyoming Blvd SE, Bldg 20685, Suite A-106**	City: **Kirtland AFB**	State: **NM**	Zip: **87117-5270**
Billing Contact: **Carina G. Munoz-Dyer**	Title: **Program Manager**		
Phone: **(505) 846-8781**	E-mail: **carina.munoz-dyer@us.af.mil**		

Preparer/Consultant(s) Information ☐ **Check here and leave section blank if no Consultant used or Preparer is same as Facility Contact.**

Name: **Matthew Buecker**	Title: **Project Executive, BRPH Construction Services**		
Mailing Address: **5700 N. Harbor City Blvd., Suite 400**	City: **Melbourne**	State: **FL**	Zip: **32940**
Phone: **(321) 503-5318**	Email: **mbuecker@brph.com**		

1. See 20.11.41.13(E)(13) NMAC.

Application for Air Pollutant Sources in Bernalillo County
Source Registration (20.11.40 NMAC) and Construction Permits (20.11.41 NMAC)

General Operation Information (if any question does not pertain to your facility, type N/A on the line or in the box)

Permitting action being requested (please refer to the definitions in 20.11.40 NMAC or 20.11.41 NMAC):			
☒ New Permit	☐ Permit Modification Current Permit #:	☐ Technical Permit Revision Current Permit #:	☐ Administrative Permit Revision Current Permit #:
☐ New Registration Certificate	☐ Modification Current Reg. #:	☐ Technical Revision Current Reg. #:	☐ Administrative Revision Current Reg. #:
UTM coordinates of facility (Zone 13, NAD 83): **361303m E and 3876780m N**			
Facility type (*i.e.*, a description of your facility operations): **Four 4.5M antennas / ground stations with support building**			
Standard Industrial Classification (SIC Code #): **9711**		North American Industry Classification System (NAICS Code #): **928110**	
Is this facility currently operating in Bernalillo County? **No**		If **YES**, list date of original construction: If **NO**, list date of planned startup: **02/19/26**	
Is the facility permanent? **Yes**		If **NO**, list dates for requested temporary operation: From Through	
Is the facility a portable stationary source? **No**		If **YES**, is the facility address listed above the main permitted location for this source?	
Is the application for a physical or operational change, expansion, or reconstruction (*e.g.*, altering process, or adding, or replacing process or control equipment, etc.) to an existing facility? **No**			
Provide a description of the requested changes: **N/A**			
What is the facility's operation? ☐ Continuous ☒ Intermittent ☐ Batch			

Estimated percent of production/operation:	Jan-Mar: **25**	Apr-Jun: **25**	Jul-Sep: **25**	Oct-Dec: **25**
Requested operating times of facility:	**0.5** hours/day	**1** days/week	**1** weeks/month	**12** months/year

Will there be special or seasonal operating times other than shown above? This includes monthly- or seasonally-varying hours. **No**
If **YES**, please explain: **N/A**
List raw materials processed: **N/A - Application is for construction of an emergency generator**
List saleable item(s) produced: **N/A - Application is for construction of an emergency generator**

USE INSTRUCTIONS: For the forms on the following pages, please do not alter or delete the existing footnotes or page breaks. If additional footnotes are needed then add them to the end of the existing footnote list for a given table. Only update the rows and cells within tables as necessary for your project. Unused rows can be deleted from tables. If multiple scenarios will be represented then the Uncontrolled and Controlled Emission Tables, and other tables as needed, can be duplicated and adjusted to indicate the different scenarios.

Regulated Emission Sources Table

(*E.g.*, Generator-Crusher-Screen-Conveyor-Boiler-Mixer-Spray Guns-Saws-Sander-Oven-Dryer-Furnace-Incinerator-Haul Road-Storage Pile, etc.) Match the Units listed on this Table to the same numbered line if also listed on Emissions Tables & Stack Table.

Unit Number and Description[1]		Manufacturer	Model #	Serial #	Manufacture Date	Installation Date	Modification Date[2]	Process Rate or Capacity (Hp, kW, Btu, ft^3, lbs, tons, yd^3, etc.)[3]	Fuel Type
Ex. 1.	Generator	Unigen	B-2500	A567321C	7/1996	7/1997	11/2020	250 Hp/HR	Diesel
Ex. 2.	Spray Gun	HVLP Systems	Spra-N-Stay 1100	K26-56-95	01/2017	11/2017	N/A	0.25 gal./HR	Electric Compressor
1	**Emergency Generator AQUIS ID 19194**	**Cummins**	**QSL9-G7 NR3**	**TBD**	**TBD**	**TBD**	**N/A**	**382 HP**	**Diesel**
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Unit Number and Description[1]		Manufacturer	Model #	Serial #	Manufacture Date	Installation Date	Modification Date[2]	Process Rate or Capacity (Hp, kW, Btu, ft^3, lbs, tons, yd^3, etc.)[3]	Fuel Type
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NOTE: To add extra rows in Word, click anywhere in the last row. A plus (+) sign should appear on the bottom right corner of the row. Click the plus (+) sign to add a row. Repeat as needed.

1. Unit numbers must correspond to unit numbers in the previous permit unless a complete cross reference table of all units in both permits is provided.
2. To determine whether a unit has been modified, evaluate if changes have been made to the unit that impact emissions or that trigger modification as defined in 20.11.41.7(U) NMAC. If not, put N/A.
3. Basis for Equipment Process Rate or Capacity (*e.g.*, Manufacturer's Data, Field Observation/Test, etc.) _____
   Submit information for each unit as an attachment.

Emissions Control Equipment Table

Control Equipment Units listed on this Table should either match up to the same Unit number as listed on the Regulated Emission Sources, Controlled Emissions and Stack Parameters Tables (if the control equipment is integrated with the emission unit) or should have a distinct Control Equipment Unit Number and that number should then also be listed on the Stack Parameters Table.

Control Equipment Unit Number and Description		Controlling Emissions for Unit Number(s)	Manufacturer	Model # | Serial #	Date Installed	Controlled Pollutant(s)	% Control Efficiency[1]	Method Used to Estimate Efficiency	Rated Process Rate or Capacity or Flow
Ex. 8b	Baghouse	3,4,5	Best Baghouses	C-12010 | A16925	11/12/2019	PM_{10}, $PM_{2.5}$	99%	Manufacturer's Data	1,500 ACFM
	N/A			|					
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NOTE: To add extra rows in Word, click anywhere in the last row. A plus (+) sign should appear on the bottom right corner of the row. Click the plus (+) sign to add a row. Repeat as needed.

1. Basis for Control Equipment % Efficiency (*e.g.*, Manufacturer's Data, Field Observation/Test, AP-42, etc.). _____
   Submit information for each unit as an attachment.

Exempted Sources and Exempted Activities Table

See 20.11.41 NMAC for exemptions.

Unit Number and Description		Manufacturer	Model #	Serial #	Manufacture Date	Installation Date	Modification Date[1]	Process Rate or Capacity (Hp, kW, Btu, ft^3, lbs, tons, yd^3, etc.)[2]	Fuel Type
Ex. 1.	Boiler	Unigen	B-2500	A567321C	7/1996	7/1997	11/2020	3.5 MMBtu/HR	Natural Gas
Ex. 2.	Hot Water Heater	HVLP Systems	6500A	K26-56-95	01/2017	11/2017	N/A	80 gal./HR	Natural Gas
	N/A							/	
								/	
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NOTE: To add extra rows in Word, click anywhere in the last row. A plus (+) sign should appear on the bottom right corner of the row. Click the plus (+) sign to add a row. Repeat as needed.

1. To determine whether a unit has been modified, evaluate if changes have been made to the unit that impact emissions or that trigger modification as defined in 20.11.41.7(U) NMAC. Also, consider if any changes that were made alter the status from exempt to non-exempt. If not, put N/A.
2. Basis for Equipment Process Rate or Capacity (*e.g.*, Manufacturer's Data, Field Observation/Test, etc.) _____
   Submit information for each unit as an attachment.

Uncontrolled Emissions Table

(Process potential under physical/operational limitations during a 24 hr/day and 365 day/year = 8760 hrs)

Regulated Emission Units listed on this Table should match up to the same numbered line and Unit as listed on the Regulated Emissions and Controlled Tables. List total HAP values per Emission Unit if overall HAP total for the facility ≥ 1 ton/yr.

Unit Number*	Nitrogen Oxides (NO_X)		Carbon Monoxide (CO)		Nonmethane Hydrocarbons/Volatile Organic Compounds (NMHC/VOCs)		Sulfur Dioxide (SO_2)		Particulate Matter ≤ 10 Microns (PM_{10})		Particulate Matter ≤ 2.5 Microns ($PM_{2.5}$)		Hazardous Air Pollutants (HAPs)		Method(s) used for Determination of Emissions (AP-42, Material Balance, Field Tests, etc.)
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	
Example 1.	27.7	121.3	9.1	39.9	1.3	5.7	0.5	2.2	2.0	8.8	0.2	0.4	0.2	0.4	AP-42 Section 3.3
Emergency Generator AQUIS ID 19194	**2.88**	**12.62**	**0.65**	**2.84**	**0.04**	**0.17**	**0.10**	**0.42**	**0.03**	**0.148**	**0.03**	**0.148**	**1.17E-04**	**0.000511**	**AP-42 Section 3.3 and Manufacturer's Specifications**

Unit Number*	Nitrogen Oxides (NO_X)		Carbon Monoxide (CO)		Nonmethane Hydrocarbons/Volatile Organic Compounds (NMHC/VOCs)		Sulfur Dioxide (SO_2)		Particulate Matter ≤ 10 Microns (PM_{10})		Particulate Matter ≤ 2.5 Microns ($PM_{2.5}$)		Hazardous Air Pollutants (HAPs)		Method(s) used for Determination of Emissions (AP-42, Material Balance, Field Tests, etc.)
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	
Totals of Uncontrolled Emissions	2.88	12.62	0.65	2.84	0.04	0.17	0.10	0.42	0.03	0.148	0.03	0.148	1.17E-04	0.0000511	

NOTE: To add extra rows in Word, click anywhere in the second-to-last row. A plus (+) sign should appear on the bottom right corner of the row. Click the plus (+) sign to add a row. Repeat as needed.

*A permit is required and this application along with the additional checklist information requested on the Permit Application checklist must be provided if:

(1) any one of these process units or combination of units, has an uncontrolled emission rate greater than or equal to (≥) 10 lbs/hr or 25 tons/yr for any of the above pollutants, excluding HAPs, based on 8,760 hours of operation; or

(2) any one of these process units or combination of units, has an uncontrolled emission rate ≥ 2 tons/yr for any single HAP or ≥ 5 tons/yr for any combination of HAPs based on 8,760 hours of operation; or

(3) any one of these process units or combination of units, has an uncontrolled emission rate ≥ 5 tons/yr for lead (Pb) or any combination of lead and its compounds based on 8,760 hours of operation; or

(4) any one of the process units or combination of units is subject to an Air Board or federal emission limit or standard.

* If all of these process units, individually and in combination, have an uncontrolled emission rate less than (<) 10 lbs/hr or 25 tons/yr for all of the above pollutants (based on 8,760 hours of operation), but > 1 ton/yr for any of the above pollutants, then a source registration is required. A Registration is required, at minimum, for any amount of HAP emissions. Please complete the remainder of this form.

Controlled Emissions Table

(Based on current operations with emission controls OR requested operations with emission controls)

Regulated Emission Units listed on this Table should match up to the same numbered line and Unit as listed on the Regulated Emissions and Uncontrolled Tables. List total HAP values per Emission Unit if overall HAP total for the facility is ≥ 1 ton/yr.

Unit Number	Nitrogen Oxides (NO_X)		Carbon Monoxide (CO)		Nonmethane Hydrocarbons/Volatile Organic Compounds (NMHC/VOCs)		Sulfur Dioxide (SO_2)		Particulate Matter ≤ 10 Microns (PM_{10})		Particulate Matter ≤ 2.5 Microns ($PM_{2.5}$)		Hazardous Air Pollutants (HAPs)		Control Method	% Efficiency[1]
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr		
Example 1.	27.7	55.4	9.1	18.2	1.3	2.6	0.5	1.0	2.0	4.0	0.2	0.088	0.2	0.088	Operating Hours	N/A
Emergency Generator AQUIS ID 19194	**2.88**	**0.14**	**0.65**	**0.03**	**0.04**	**0.002**	**0.10**	**0.005**	**0.03**	**0.002**	**0.03**	**0.002**	**1.17E-04**	**0.0000058**	**100**	**N/A**

Unit Number	Nitrogen Oxides (NO_X)		Carbon Monoxide (CO)		Nonmethane Hydrocarbons/Volatile Organic Compounds (NMHC/VOCs)		Sulfur Dioxide (SO_2)		Particulate Matter ≤ 10 Microns (PM_{10})		Particulate Matter ≤ 2.5 Microns ($PM_{2.5}$)		Hazardous Air Pollutants (HAPs)		Control Method	% Efficiency[1]
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr		
Totals of Controlled Emissions	2.88	0.14	0.65	0.03	0.04	0.002	0.10	0.005	0.3	0.002	0.03	0.002	1.17E-04	0.000058		

NOTE: To add extra rows in Word, click anywhere in the second-to-last row. A plus (+) sign should appear on the bottom right corner of the row. Click the plus (+) sign to add a row. Repeat as needed.

1. Basis for Control Method % Efficiency (*e.g.*, Manufacturer's Data, Field Observation/Test, AP-42, etc.). _____
   Submit information for each unit as an attachment.

Hazardous Air Pollutants (HAPs) Emissions Table

Report the Potential Emission Rate for each HAP from each source on the Regulated Emission Sources Table that emits a given HAP. Report individual HAPs with ≥ 1 ton/yr total emissions for the facility on this table. Otherwise, report total HAP emissions for each source that emits HAPs and report individual HAPs in the accompanying application package in association with emission calculations. If this application is for a Registration solely due to HAP emissions, report the largest HAP emissions on this table and the rest, if any, in the accompanying application package.

Unit Number	Total HAPs															
	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr	lb/hr	ton/yr
Example 1.	6.3	18.2	3.2	8.5	2.3	7.7	0.5	1.0	0.3	1.0	N/A	N/A	N/A	N/A	N/A	N/A
Emergency Generator AQUIS ID 19194	**1.17E-04**	**0.0000058**														
Totals of HAPs for all units:	1.17E-04	0.000058														

NOTE: To add extra rows in Word, click anywhere in the second-to-last row. A plus (+) sign should appear on the bottom right corner of the row. Click the plus (+) sign to add a row. Repeat as needed.

Use Instructions: Copy and paste the HAPs table here if need to list more individual HAPs.

Purchased Hazardous Air Pollutant Table*

Product Categories (Coatings, Solvents, Thinners, etc.)	Hazardous Air Pollutant (HAP), or Volatile Hazardous Air Pollutant (VHAP) Primary To The Representative As Purchased Product	Chemical Abstract Service (CAS) Number of HAP or VHAP from Representative As Purchased Product	HAP or VHAP Concentration of Representative As Purchased Product (pounds/gallon, or %)	Concentration Determination (CPDS, SDS, etc.)[1]	Total Product Purchases For Category	(-)	Quantity of Product Recovered & Disposed For Category	(=)	Total Product Usage For Category
Example 1. Surface Coatings	Xylene	1330207	4.0 lbs/gal	SDS	lb/yr 100 gal/yr	(-)	lb/yr 0 gal/yr	(=)	lb/yr 100 gal/yr
Example 2. Cleaning Solvents	Toluene	108883	70%	Product Label	lb/yr 200 gal/yr	(-)	lb/yr 50 gal/yr	(=)	lb/yr 150 gal/yr
1. N/A					lb/yr gal/yr	(-)	lb/yr gal/yr	(=)	lb/yr gal/yr
2.					lb/yr gal/yr	(-)	lb/yr gal/yr	(=)	lb/yr gal/yr
3.					lb/yr gal/yr	(-)	lb/yr gal/yr	(=)	lb/yr gal/yr
4.					lb/yr gal/yr	(-)	lb/yr gal/yr	(=)	lb/yr gal/yr
5.					lb/yr gal/yr	(-)	lb/yr gal/yr	(=)	lb/yr gal/yr
6.					lb/yr gal/yr	(-)	lb/yr gal/yr	(=)	lb/yr gal/yr
7.					lb/yr gal/yr	(-)	lb/yr gal/yr	(=)	lb/yr gal/yr
8.					lb/yr gal/yr	(-)	lb/yr gal/yr	(=)	lb/yr gal/yr
9.					lb/yr gal/yr	(-)	lb/yr gal/yr	(=)	lb/yr gal/yr
.					lb/yr gal/yr	(-)	lb/yr gal/yr	(=)	lb/yr gal/yr
TOTALS					lb/yr gal/yr	(-)	lb/yr gal/yr	(=)	lb/yr gal/yr

NOTE: To add extra rows in Word, click anywhere in the second-to-last row. A plus (+) sign should appear on the bottom right corner of the row. Click the plus (+) sign to add a row. Repeat as needed.

NOTE: Product purchases, recovery/disposal and usage should be converted to the units listed in this table. If units cannot be converted please contact the Air Quality Program prior to making changes to this table.

1. Submit, as an attachment, information on one (1) product from each Category listed above which best represents the average of all the products purchased in that Category. CPDS = Certified Product Data Sheet; SDS = Safety Data Sheet

*** A Registration is required, at minimum, for any amount of HAP or VHAP emission.**
Emissions from purchased HAP usage should be accounted for on previous tables as appropriate.
A permit may be required for these emissions if the source meets the requirements of 20.11.41 NMAC.

Material and Fuel Storage Table

(*E.g.*, Tanks, barrels, silos, stockpiles, etc.)

Storage Equipment		Product Stored	Capacity (bbls, tons, gals, acres, etc.)	Above or Below Ground	Construction (Welded, riveted) & Color	Installation Date	Loading Rate[1]	Offloading Rate[1]	True Vapor Pressure	Control Method	Seal Type	% Eff.[2]
Ex. 1.	Tank	Diesel Fuel	5,000 gal.	Below	Welded/Brown	3/1993	3,000 gal/hr	500 gal/hr	N/A	N/A	N/A	N/A
Ex. 2.	Barrels	Solvent	55 gal. drum	Above	Welded/Green	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Emergency Generator AQUIS ID 19194	**Double-walled Tank (UL142)**	**Diesel Fuel**	**500 gallon**	**Above**	**Welded, Black**	**TBD**	Tank Fueled Directly from a Truck	**19.59 gal/hr**	**27kPA/ 8.0inh20**	**N/A**	**N/A**	**N/A**

NOTE: To add extra rows in Word, click anywhere in the last row. A plus (+) sign should appear on the bottom right corner of the row. Click the plus (+) sign to add a row. Repeat as needed.

1. Basis for Loading/Offloading Rate (*e.g.*, Manufacturer's Data, Field Observation/Test, etc.). _____
   Submit information for each unit as an attachment.
2. Basis for Control Method % Efficiency (*e.g.*, Manufacturer's Data, Field Observation/Test, AP-42, etc.). _____
   Submit information for each unit as an attachment.

Stack Parameters Table

If any equipment from the Regulated Emission Sources Table is also listed in this Stack Table, use the same numbered line for the emission unit on both tables to show the association between the Process Equipment and its stack.

Unit Number and Description		Pollutant (CO, NOx, PM_{10}, etc.)	UTM Easting (m)	UTM Northing (m)	Stack Height (ft)	Stack Exit Temp. (°F)	Stack Velocity (fps)	Stack Flow Rate (acfm)	Stack Inside Diameter (ft)	Stack Type
Ex. 1.	Generator	CO, NOx, PM_{10}, $PM_{2.5}$, SO_2	349430.28	3884014.64	18	900 °F	150 fps	4524 acfm	0.8	Rain Cap
Ex. 2.	Spray Gun	PM_{10}, xylene, toluene	348540.1	3882928.5	9.2	Ambient	50 fps	589 acfm	0.5	Vertical
1	**Emergency Generator AQUIS ID 19194**	**CO, NOx, PM_{10}, $PM_{2.5}$, SO_2**	**361303m**	**3876780m**	**10'-3"**	**890°F**	**360.07 fps**	**7540 acfm**	**0.67**	**Rain Cap**
										Select
										Select
										Select
										Select

NOTE: To add extra rows in Word, click anywhere in the last row. A plus (+) sign should appear on the bottom right corner of the row. Click the plus (+) sign to add a row. Repeat as needed.

Certification

NOTICE REGARDING SCOPE OF A PERMIT: The Environmental Health Department's issuance of an air quality permit only authorizes the use of the specified equipment pursuant to the air quality control laws, regulations and conditions. Permits relate to air quality control only and are issued for the sole purpose of regulating the emission of air contaminants from said equipment. Air quality permits are not a general authorization for the location, construction and/or operation of a facility, nor does a permit authorize any particular land use or other form of land entitlement. It is the applicant's/permittee's responsibility to obtain all other necessary permits from the appropriate agencies, such as the City of Albuquerque Planning Department or Bernalillo County Department of Planning and Development Services, including but not limited to site plan approvals, building permits, fire department approvals and the like, as may be required by law for the location, construction and/or operation of a facility. For more information, please visit the City of Albuquerque Planning Department website at https://www.cabq.gov/planning and the Bernalillo County Department of Planning and Development Services website at https://www.bernco.gov/planning.

NOTICE REGARDING ACCURACY OF INFORMATION AND DATA SUBMITTED: Any misrepresentation of a material fact in this application and its attachments is cause for denial of a permit or revocation of part or all of the resulting registration or permit, and revocation of a permit for cause may limit the permitee's ability to obtain any subsequent air quality permit for ten (10) years. Any person who knowingly makes any false statement, representation, or certification in any application, record, report, plan or other document filed or required to be maintained under the Air Quality Control Act, NMSA 1978 §§ 74-2-1 to 74-2-17, is guilty of a misdemeanor and shall, upon conviction, be punished by a fine of not more than ten thousand dollars ($10,000) per day per violation or by imprisonment for not more than twelve months, or by both.

I, the undersigned, hereby certify that I have knowledge of the information and data represented and submitted in this application and that the same is true and accurate, including the information and date in any and all attachments, including without limitation associated forms, materials, drawings, specifications, and other data. I also certify that the information represented gives a true and complete portrayal of the existing, modified existing, or planned new stationary source with respect to air pollution sources and control equipment. I understand that there may be significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations. I also understand that the person who has applied for or has been issued an air quality permit by the Department is an obligatory party to a permit appeal filed pursuant to 20.11.81 NMAC. Further, I certify that I am qualified and authorized to file this application, to certify the truth and accuracy of the information herein, and bind the source. Moreover, I covenant and agree to comply with any requests by the Department for additional information necessary for the Department to evaluate or make a final decision regarding the application.

Signed this 16th day of July, 2025

JUSTIN D. SECREST, Colonel, USAF
Print Name

SECREST.JUSTIN.D.1078711082 Digitally signed by SECREST.JUSTIN.D.1078711082 Date: 2025.07.16 16:07:22 -06'00'
Signature

Commander, 377th Air Base Wing
Print Title

Role: ☉ Owner ☐ Operator

☐ Other Authorized Representative

A.5 Facility Location and Aerial Photograph


PROJECT AREA

A.6 Zoning Requirement

From:	MUNOZ-DYER, CARINA G CIV USAF AFGSC 377 MSG/CEIEC
Bcc:	m.ryankious@gmail.com; info@willsonstudio.com; brasher@aps.edu; dreikeja@comcast.net; eastgatewaycoalition@gmail.com; b.lisa.davis@gamil.com; admin@eastmountaincoalition.org; info@eastmountiancoalition.org; m.ryankious@gail.com; sp-wonderwoman@comcast.net; elderhomesteadna@gamil.com; mbfernandez1@gmail.com; csutimgallegos@yahoo.com; vicepresidenthva@gmail.com; janis.schubert@gamil.com; levigreen8914@gamil.com; 5058041113rw@gmail.com; lamesainternationaldistrict@gmail.com; phnacommunications@gmail.com; Jolsen1204@gmail.com; Franchini3@gmail.com; siesta2na.pres@gmail.com; notices@slananm.org; debsla@swcp.com; contact@slananm.org; Tmienterprises1@gmail.com; Sarah.khanlian@gamil.com; pmbdoc@yahoo.com; jpate@molzencorbin.com; hardy_bernadette@yahoo.com; j504rise@yahoo.com; landry54@msn.com; info@willsonstudio.com; altheatherton@gmail.com; victoryhills505@gmail.com; donaldlove08@comcast.net; klove726@gmail.com
Subject:	Public Notice of Proposed Air Quality Construction Application SDA GEP PROGRAM - NEW MEXICO
Date:	Wednesday, July 23, 2025 11:44:00 AM
Attachments:	SDA GEP NM_NOI.pdf

Dear Neighborhood Association/Coalition Representative(s),

Why did I receive this public notice?

You are receiving this notice in accordance with New Mexico Administrative Code (NMAC) 20.11.41.13.B(1) which requires any applicant seeking an Air Quality Construction Permit pursuant to 20.11.41 NMAC to provide public notice by certified mail or electronic mail to the designated representative(s) of the recognized neighborhood associations and recognized coalitions that are within one-half mile of the exterior boundaries of the property on which the source is or is proposed to be located.

What is the Air Quality Permit application review process?

The City of Albuquerque, Environmental Health Department, Air Quality Program (Program) is responsible for the review and issuance of Air Quality Permits for any stationary source of air contaminants within Bernalillo County. Once the application is received, the Program reviews each application and rules it either complete or incomplete. Complete applications will then go through a 30-day public comment period. Within 90 days after the Program has ruled the application complete, the Program shall issue the permit, issue the permit subject to conditions, or deny the requested permit or permit modification. The Program shall hold a Public Information Hearing pursuant to 20.11.41.15 NMAC if the Director determines there is significant public interest and a significant air quality issue is involved.

What do I need to know about this proposed application?

Applicant Name	U.S. Air Force – Kirtland Air Force Base (KAFB)
Site or Facility Name	SDA GEP PROGRAM – NEW MEXICO
Site or Facility Address	North Access Road, Kirtland AFB, NM 87117
New or Existing Source	New
Anticipated Date of Application Submittal	28 July 2025
Summary of Proposed Source to Be Permitted	The application is to construct a 382 horsepower, 250 kW / 312.5 kVA standby generator with an EPA Tier III emission certified with diesel-fired internal combustion engine. The application seeks to restrict the unit to 100 hours per year of operation. The purpose of the unit is to provide backup electrical power in the case of the unavoidable loss of

	commercial power.

What emission limits and operating schedule are being requested?
See attached Notice of Intent to Construct form for this information.

How do I get additional information regarding this proposed application?
For inquiries regarding the proposed source, contact:
- KAFB Public Affairs Office
- 377abw.pa@us.af.mil
- (505) 846-5991

For inquiries regarding the air quality permitting process, contact:
- City of Albuquerque Environmental Health Department Air Quality Program
- aqd@cabq.gov
- (505) 768-1972

Carina G. Munoz-Dyer
377 MSG/CEIEC, Air Quality Program Manager
2050 Wyoming Blvd SE, B20685, Room A-106
Kirtland AFB, NM 87117
Carina.munoz-dyer@us.af.mil
DSN 246-8781 – Office 505-846-8781

From:	MUNOZ-DYER, CARINA G CIV USAF AFGSC 377 MSG/CEIEC
Bcc:	b.lisa.davis@gmail.com; info@eastmountaincoalition.org; m.ryankious@gmail.com; elderhomesteadna@gmail.com; janis.schubert@gmail.com; levigreen8914@gmail.com; Sarah.khanlian@gmail.com
Subject:	Public Notice of Proposed Air Quality Construction Application SDA GEP PROGRAM - NEW MEXICO
Date:	Wednesday, July 23, 2025 12:59:00 PM
Attachments:	SDA GEP NM_NOI.pdf

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- 377abw.pa@us.af.mil
- (505) 846-5991

For inquiries regarding the air quality permitting process, contact:
- City of Albuquerque Environmental Health Department Air Quality Program
- aqd@cabq.gov
- (505) 768-1972

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Carina.munoz-dyer@us.af.mil
DSN 246-8781 – Office 505-846-8781

From:	MUNOZ-DYER, CARINA G CIV USAF AFGSC 377 MSG/CEIEC
Bcc:	m.ryankious@gmail.com; info@willsonstudio.com; brasher@aps.edu; dreikeja@comcast.net; eastgatewaycoalition@gmail.com; b.lisa.davis@gamil.com; admin@eastmountaincoalition.org; info@eastmountiancoalition.org; m.ryankious@gail.com; sp-wonderwoman@comcast.net; elderhomesteadna@gamil.com; mbfernandez1@gmail.com; csutimgallegos@yahoo.com; vicepresidenthva@gmail.com; janis.schubert@gamil.com; levigreen8914@gamil.com; 5058041113rw@gmail.com; lamesainternationaldistrict@gmail.com; phnacommunications@gmail.com; Jolsen1204@gmail.com; Franchini3@gmail.com; siesta2na.pres@gmail.com; notices@slananm.org; debsla@swcp.com; contact@slananm.org; Tmienterprises1@gmail.com; Sarah.khanlian@gamil.com; pmbdoc@yahoo.com; jpate@molzencorbin.com; hardy_bernadette@yahoo.com; j504rise@yahoo.com; landry54@msn.com; info@willsonstudio.com; altheatherton@gmail.com; victoryhills505@gmail.com; donaldlove08@comcast.net; klove726@gmail.com
Subject:	Public Notice of Proposed Air Quality Construction Application SDA GEP PROGRAM - NEW MEXICO
Date:	Wednesday, July 23, 2025 11:44:00 AM
Attachments:	SDA GEP NM_NOI.pdf

Dear Neighborhood Association/Coalition Representative(s),

Why did I receive this public notice?

You are receiving this notice in accordance with New Mexico Administrative Code (NMAC) 20.11.41.13.B(1) which requires any applicant seeking an Air Quality Construction Permit pursuant to 20.11.41 NMAC to provide public notice by certified mail or electronic mail to the designated representative(s) of the recognized neighborhood associations and recognized coalitions that are within one-half mile of the exterior boundaries of the property on which the source is or is proposed to be located.

What is the Air Quality Permit application review process?

The City of Albuquerque, Environmental Health Department, Air Quality Program (Program) is responsible for the review and issuance of Air Quality Permits for any stationary source of air contaminants within Bernalillo County. Once the application is received, the Program reviews each application and rules it either complete or incomplete. Complete applications will then go through a 30-day public comment period. Within 90 days after the Program has ruled the application complete, the Program shall issue the permit, issue the permit subject to conditions, or deny the requested permit or permit modification. The Program shall hold a Public Information Hearing pursuant to 20.11.41.15 NMAC if the Director determines there is significant public interest and a significant air quality issue is involved.

What do I need to know about this proposed application?

Applicant Name	U.S. Air Force – Kirtland Air Force Base (KAFB)
Site or Facility Name	SDA GEP PROGRAM – NEW MEXICO
Site or Facility Address	North Access Road, Kirtland AFB, NM 87117
New or Existing Source	New
Anticipated Date of Application Submittal	28 July 2025
Summary of Proposed Source to Be Permitted	The application is to construct a 382 horsepower, 250 kW / 312.5 kVA standby generator with an EPA Tier III emission certified with diesel-fired internal combustion engine. The application seeks to restrict the unit to 100 hours per year of operation. The purpose of the unit is to provide backup electrical power in the case of the unavoidable loss of

	commercial power.

What emission limits and operating schedule are being requested?
See attached Notice of Intent to Construct form for this information.

How do I get additional information regarding this proposed application?
For inquiries regarding the proposed source, contact:
- KAFB Public Affairs Office
- 377abw.pa@us.af.mil
- (505) 846-5991

For inquiries regarding the air quality permitting process, contact:
- City of Albuquerque Environmental Health Department Air Quality Program
- aqd@cabq.gov
- (505) 768-1972

Carina G. Munoz-Dyer
377 MSG/CEIEC, Air Quality Program Manager
2050 Wyoming Blvd SE, B20685, Room A-106
Kirtland AFB, NM 87117
Carina.munoz-dyer@us.af.mil
DSN 246-8781 – Office 505-846-8781

City of Albuquerque
Environmental Health Department
Air Quality Program

Construction Permit (20.11.41 NMAC)
Zoning Requirement Cover Letter

This Cover Letter Must Be Returned With The Application Along With All Required Attachments

The Albuquerque-Bernalillo County Joint Air Quality Program, which administers and enforces local air quality laws for the City of Albuquerque ("City") and Bernalillo County ("County"), on behalf of the City Environmental Health Department ("Department").

Any person seeking a new air quality permit or a permit modification under 20.11.41 NMAC (Construction Permits) shall provide documentary proof that the proposed air quality permitted use of the facility's subject property is allowed by the zoning designation of the City or County zoning laws, as applicable. Sufficient documentation may include (i) a zoning certification from the City Planning Department or County Department of Planning and Development Services, as applicable, if the applicant is subject to City or County zoning jurisdiction; or (ii) a zoning verification from both planning departments if the applicant is not subject to City or County zoning jurisdiction. A zone atlas map shall not be sufficient. At this time, applicants are not required to submit documentation for the subject property's zoning designation when applying for a relocation of a portable stationary source, or a technical or administrative revision to an existing permit.

The Department will rule an application administratively incomplete if it is missing or has incorrect information. If the Department has ruled an application administratively incomplete three (3) times, the Department will deny the permit application. Any fees submitted for processing an application that has been denied will not be refunded. If the Department denies an application, a person may submit a new application and the fee required for a new application. The applicant has the burden of demonstrating that a permit should be issued.

The Department may require additional information that is necessary to make a thorough review of an application. At all times before the Department has made a final decision regarding the application, an applicant has a duty to promptly supplement and correct information the applicant has submitted in an application to the Department. The applicant's duty to supplement and correct the application includes, but is not limited to, relevant information acquired after the applicant has submitted the application and additional information the applicant otherwise determines is relevant to the application and the Department's review and decision. While the Department is processing an application, regardless of whether the Department has determined the application is administratively complete, if the Department determines that additional information is necessary to evaluate or make a final decision regarding the application, the Department may request additional information and the applicant shall provide the requested additional information.

NOTICE REGARDING SCOPE OF A PERMIT: The Department's issuance of an air quality permit only authorizes the use of the specified equipment pursuant to the air quality control laws, regulations and conditions. Permits relate to air quality control only and are issued for the sole purpose of regulating the emission of air contaminants from said equipment. Air quality permits are not a general authorization for the location, construction and/or operation of a facility, nor does a permit authorize any particular land use or other form of land entitlement. It is the applicant's/permittee's responsibility to obtain all other necessary permits from the appropriate agencies, such as the City Planning Department or County Department of Planning and Development Services, including but not limited to site plan approvals, building permits, fire department approvals and the like, as may be required by law for the location, construction and/or operation of a facility. For more information, please visit the City Planning Department website at https://www.cabq.gov/planning and the County Department of Planning and Development Services website at https://www.bernco.gov/planning.

Corporate and Facility Information: This information shall match the information in the permit application**.**

Air Quality Permit Applicant Company Name: **U.S. Air Force – Kirtland Air Force Base (KAFB)**			
Facility Name: **Base Defense Operations Center (BDOC)**			
Facility Physical Address: **8500 Gibson Blvd SE, Kirtland AFB**	City: **Albuquerque**	State: **NM**	Zip: **87117**
Facility Legal Description: **(LAND ONLY) TR OF LAND WITHIN T10N R4E SEC31 CONT 565 AC +-**			

General Operation Information: This information shall match the information in the permit application.

Permitting action being requested (please refer to the definitions in 20.11.41 NMAC):
☒ New Permit ☐ Permit Modification, Current Permit #:

Attachment Information: The location information provided to the City Planning Department or County Department of Planning and Development Services, as applicable, and reflected in the zoning certification or verifications, as applicable, shall be the same as the Facility location information provided to the Department in the air quality construction permit application.

☐ Zoning Certification Provided by: Choose an item. *This is a use-specific certification.* **City Planning Form**: https://www.cabq.gov/planning/code-enforcement-zoning **County Planning Form**: https://www.bernco.gov/planning/planning-and-land-use/applications-forms/	☒ City Zoning Verification ☒ County Zoning Verification **City Planning Form**: https://www.cabq.gov/planning/code-enforcement-zoning **County Planning Form**: https://www.bernco.gov/planning/planning-and-land-use/applications-forms/

CITY OF ALBUQUERQUE

CODE ENFORCEMENT
Plaza Del Sol Building, Suite 500
600 2nd Street NW
Albuquerque, NM 87102
Tel: (505) 924-3850 Fax: (505) 924-3847

Date: March 15, 2024

VIA Email, Carina.munoz-dyer@us.af.mil
Carina G. Munoz-Dyer
2050 Wyoming Blvd SE, B20685, Room A-106
Kirtland AFB, NM 87117

RE: City of Albuquerque Zoning Regulations and Federally Owned Properties

To Whom It May Concern:

This letter shall certify that the City of Albuquerque zoning regulations are not applicable for properties owned by U.S. Federal Government, U.S. Federal Government entities, and properties within Kirtland Air Force Base.

If you have any questions regarding this matter, please feel free to contact Code Enforcement by email at codeenforcement@cabq.gov

Sincerely,

Angelo Metzgar
Code Compliance Manager
Planning Department
City of Albuquerque

Planning & Development Services Department
415 Silver Ave. SW, 2nd Floor
Albuquerque, New Mexico 87102
Office: (505) 314-0350
Fax: (505) 314-0480
www.bernco.gov

February 29, 2024

Carina G. Munoz-Dyer
377 MSG/CEIEC, Air Quality Program Manager
2050 Wyoming Blvd SE, B20685, Room A-106
Kirtland AFB, NM 87117

Re: Bernalillo County zoning regulations and federally owned parcels

To Whom It May Concern:

This letter shall certify that Bernalillo County zoning regulations are not applicable to U.S. Federal Government nor U.S. Federal Government entity owned properties. This includes properties located within the boundary of Kirtland Air Force Base. Bernalillo County is willing to assist federal entities with necessary permits, building permits for example, if approached by a federal entity.

This certification statement only references the applicability of the Zoning Ordinance as it applies to the aforementioned properties.

Do not hesitate to contact me if you have questions concerning this matter at 314-0499 or at mgould@bernco.gov.

Sincerely,

Maggie Gould
Zoning Administrator

CC: Carina.munoz-dyer@us.af.mil

A.7 Public Notice Application

Fill out the required highlighted information below. Then use the Subject as the Subject line of the required public notice email(s) sent to nearby neighborhood associations/neighborhood coalitions. Copy and paste the rest of the completed information on this page into the body of the email(s) and attach the completed NOI form. If providing notice by certified mail, use this page as the cover letter and attach the NOI form.

SUBJECT: Public Notice of Proposed Air Quality Construction Permit Application SDA GEP PROGRAM – NEW MEXICO

Dear Neighborhood Association/Coalition Representative(s),

Why did I receive this public notice?
You are receiving this notice in accordance with New Mexico Administrative Code (NMAC) 20.11.41.13.B(1) which requires any applicant seeking an Air Quality Construction Permit pursuant to 20.11.41 NMAC to provide public notice by certified mail or electronic mail to the designated representative(s) of the recognized neighborhood associations and recognized coalitions that are within one-half mile of the exterior boundaries of the property on which the source is or is proposed to be located.

What is the Air Quality Permit application review process?
The City of Albuquerque, Environmental Health Department, Air Quality Program (Program) is responsible for the review and issuance of Air Quality Permits for any stationary source of air contaminants within Bernalillo County. Once the application is received, the Program reviews each application and rules it either complete or incomplete. Complete applications will then go through a 30-day public comment period. Within 90 days after the Program has ruled the application complete, the Program shall issue the permit, issue the permit subject to conditions, or deny the requested permit or permit modification. The Program shall hold a Public Information Hearing pursuant to 20.11.41.15 NMAC if the Director determines there is significant public interest and a significant air quality issue is involved.

What do I need to know about this proposed application?

Applicant Name	U.S. Air Force – Kirtland Air Force Base (KAFB)
Site or Facility Name	SDA GEP PROGRAM – NEW MEXICO
Site or Facility Address	North Access Road, Kirtland AFB, NM 87117
New or Existing Source	New
Anticipated Date of Application Submittal	October 1, 2025
Summary of Proposed Source to Be Permitted	The application is to construct a 382 horsepower, 250 kW / 312.5 kVA standby generator with an EPA Tier III emission certified with diesel-fired internal combustion engine. The application seeks to restrict the unit to 100 hours per year of operation. The purpose of the unit is to provide backup electrical power in the case of the unavoidable loss of commercial power.

What emission limits and operating schedule are being requested?
See attached Notice of Intent to Construct form for this information.

How do I get additional information regarding this proposed application?
For inquiries regarding the proposed source, contact:
- KAFB Public Affairs Office
- 377abw.pa@us.af.mil
- (505) 846-5991

For inquiries regarding the air quality permitting process, contact:
- City of Albuquerque Environmental Health Department Air Quality Program
- aqd@cabq.gov
- (505) 768-1972

A.8 Notice of Intent

NOTICE FROM THE APPLICANT

Notice of Intent to Apply for Air Quality Construction Permit

You are receiving this notice because the New Mexico Air Quality Control Act (20.11.41.13B NMAC) requires any owner/operator proposing to construct or modify a facility subject to air quality regulations to provide public notice by certified mail or electronic mail to designated representatives of recognized neighborhood associations and coalitions within 0.5-mile of the property on which the source is or is proposed to be located.

This notice indicates that the owner/operator intends to apply for an Air Quality Construction Permit from the Albuquerque – Bernalillo County Joint Air Quality Program. Currently, no application for this proposed project has been submitted to the Air Quality Program. Applicants are required to include a copy of this form and documentation of mailed notices with their Air Quality Construction Permit Application.

Proposed Project Information

Applicant's name and address:
Nombre y domicilio del solicitante:
U.S. Air Force - Kirtland Air Force Base (AFB)
North Access Road, Kirtland AFB, NM 87123

Owner / operator's name and address:
Nombre y domicilio del propietario u operador:
Kirtland AFB
377 MSG/CEIEC, 2050 Wyoming Blvd SE, Suite A-112, Kirtland AFB, NM 87117

Contact for comments and inquires:
Datos actuales para comentarios y preguntas:

Name *(Nombre)*: Isreal Tavarez, Chief Environmental Management
Address *(Domicilio)*: 377 MSG/CEIEC, 2050 Wyoming Blvd SE, Suite A-112, Kirtland AFB, Albuquerque, NM 87117
Phone Number *(Número Telefónico)*: (505) 846-8546
E-mail Address *(Correo Electrónico)*: isreal.tavarez@us.af.mil

Actual or estimated date the application will be submitted to the department:
Fecha actual o estimada en que se entregará la solicitud al departamento:

Description of the source:
Descripción de la fuente: New generator set with emergency diesel engine and integral fuel tank

Exact location of the source or proposed source:
Ubicación exacta de la fuente o fuente propuesta: North Access Rd, Kirtland AFB, NM 87117 (northeast of the golf course)

Nature of business:
Tipo de negocio: National Security

Process or change for which the permit is requested:
Proceso o cambio para el cuál de solicita el permiso: Emergency backup power utilizing one 382 HP diesel generator

Maximum operating schedule:
Horario máximo de operaciones: 100 hours per year

Normal operating schedule:
Horario normal de operaciones: Intermittent use

Preliminary estimate of the maximum quantities of each regulated air contaminant the source will emit:
Estimación preliminar de las cantidades máximas de cada contaminante de aire regulado que la fuente va a emitir:

Air Contaminant *Contaminante de aire*	**Proposed Construction Permit** *Permiso de Construcción Propuesto*		**Net Changes (for permit modification or technical revision)** *Cambio Neto de Emisiones (para modificación de permiso o revisión técnica)*	
	pounds per hour *libras por hora*	tons per year *toneladas por año*	pounds per hour *libras por hora*	tons per year *toneladas por año*
NO_x	2.88	0.14	N/A	N/A
CO	0.65	0.03	N/A	N/A
VOC	0.04	0.002	N/A	N/A
SO_2	0.10	0.005	N/A	N/A
PM_{10}	0.03	0.002	N/A	N/A
$PM_{2.5}$	0.03	0.002	N/A	N/A
HAP	1.17 E-04	0.000 0058	N/A	N/A

NOTE: To add extra rows for H_2S or Pb in Word, click in a box in the last row. Click the plus (+) sign that appears on the right of the row to add a row.

Questions or comments regarding this Notice of Intent should be directed to the Applicant. Contact information is provided with the Proposed Project Information on the first page of this notice. To check the status of an Air Quality Construction Permit application, call 311 and provide the Applicant's information, or visit www.cabq.gov/airquality/air-quality-permits.

The Air Quality Program will issue a Public Notice announcing a 30-day public comment period on the permit application for the proposed project when the application is deemed complete. The Air Quality Program does not process or issue notices on applications that are deemed incomplete. More information about the air quality permitting process is attached to this notice.

Air Quality Construction Permitting Overview

This is the typical process to obtain an Air Quality Construction Permit for Synthetic Minor and Minor sources of air pollution from the Albuquerque – Bernalillo County Joint Air Quality Program.

Step 1: Pre-application Meeting: The Applicant and their consultant must request a meeting with the Air Quality Program to discuss the proposed action. If air dispersion modeling is required, Air Quality Program staff discuss the modeling protocol with the Applicant to ensure that all proposed emissions are considered.

> **Notice of Intent from the Applicant:** Before submitting their application, the Applicant is required to notify all nearby neighborhood associations and interested parties that they intend to apply for an air quality permit or modify an existing permit. The Applicant is also required to post a notice sign at the facility location.

Step 2: Administrative Completeness Review and Preliminary Technical Review: The Air Quality Program has 30 days from the day the permit is received to review the permit application to be sure that it is administratively complete. This means that all application forms must be signed and filled out properly, and that all relevant technical information needed to evaluate any proposed impacts is included. If the application is not complete, the permit reviewer will return the application and request more information from the Applicant. Applicants have three opportunities to submit an administratively complete application with all relevant technical information.

> **Public Notice from the Department:** When the application is deemed complete, the Department will issue a Public Notice announcing a 30-day public comment period on the permit application. This notice is distributed to the same nearby neighborhood associations and interested parties that the Applicant sent notices to, and published on the Air Quality Program's website.
>
> During this 30-day comment period, individuals have the opportunity to submit written comments expressing their concerns or support for the proposed project, and/or to request a Public Information Hearing. If approved by the Environmental Health Department Director, Public Information Hearings are held after the technical analysis is complete and the permit has been drafted.

Step 3: Technical Analysis and Draft Permit: Air Quality Program staff review all elements of the proposed operation related to air quality, and review outputs from advanced air dispersion modeling software that considers existing emission levels in the area surrounding the proposed project, emission levels from the proposed project, and meteorological data. The total calculated level of emissions is compared to state and federal air quality standards and informs the decision on whether to approve or deny the Applicant's permit.

Draft Permit: The permit will establish emission limits, standards, monitoring, recordkeeping, and reporting requirements. The draft permit undergoes an internal peer review process to determine if the emissions were properly evaluated, permit limits are appropriate and enforceable, and the permit is clear, concise, and consistent.

> **Public Notice from the Department:** When the technical analysis is complete and the permit has been drafted, the Department will issue a second Public Notice announcing a 30-day public comment period on the technical analysis and draft permit. This second Public Notice, along with the technical analysis documentation and draft permit, will be published on the Air Quality Program's website, and the public notice for availability of the technical analysis and draft permit will only be directly sent to those who requested further information during the first comment period.

During this second 30-day comment period, residents have another opportunity to submit written comments expressing their concerns or support for the proposed project, and/or to request a Public Information Hearing.

Possible Public Information Hearing: The Environmental Health Department Director may decide to hold a Public Information Hearing for a permit application if there is significant public interest and a significant air quality issue. If a Public Information Hearing is held, it will occur after the technical analysis is complete and the permit has been drafted.

Step 4: Public Comment Evaluation and Response: The Air Quality Program evaluates all public comments received during the two 30-day public comment periods and Public Information Hearing, if held, and updates the technical analysis and draft permit as appropriate. The Air Quality Program prepares a response document to address the public comments received, and when a final decision is made on the permit application, the comment response document is published on the Air Quality Program's website and distributed to the individuals who participated in the permit process. If no comments are received, a response document is not prepared.

Step 5: Final Decision on the Application: After public comments are addressed and the final technical review is completed, the Environmental Health Department makes a final decision on the application. If the permit application meets all applicable requirements set forth by the New Mexico Air Quality Control Act and the federal Clean Air Act, the permit is approved. If the permit application does not meet all applicable requirements, it is denied.

Notifications of the final decision on the permit application and the availability of the comment response document is published on the Air Quality Program's website and distributed to the individuals who participated in the permit process.

The Department must approve a permit application if the proposed action will meet all applicable requirements and if it demonstrates that it will not result in an exceedance of ambient air quality standards. Permit writers are very careful to ensure that estimated emissions have been appropriately identified or quantified and that the emission data used are acceptable.

The Department must deny a permit application if it is deemed incomplete three times, if the proposed action will not meet applicable requirements, if estimated emissions have not been appropriately identified or quantified, or if the emission data are not acceptable for technical reasons.

For more information about air quality permitting, visit www.cabq.gov/airquality/air-quality-permits

A.9 Pre-Permit Application Meeting Agenda Checklist & Public Notice Sign Guidelines Checklist

City of Albuquerque
Environmental Health Department
Air Quality Program

Construction Permit (20.11.41 NMAC)
Pre-Permit Application Meeting Agenda Checklist & Public Notice Sign Guidelines Checklist

This entire document, including both completed checklists, must be included as part of the application package.

Any person seeking a new permit, a permit modification, or an emergency permit under 20.11.41 NMAC (Construction Permits) shall do so by filing a written application with the Albuquerque-Bernalillo County Joint Air Quality Program, which administers and enforces local air quality laws for the City of Albuquerque ("City") and Bernalillo County ("County"), on behalf of the City Environmental Health Department ("Department").

Prior to submitting an application, per 20.11.41.13(A) NMAC, the applicant (or their consultant) shall contact the Department in writing and submit a Pre-Permit Application Meeting Request Form to request a pre-application meeting. The Pre-Permit Application Meeting Request Form is available at https://www.cabq.gov/airquality/air-quality-permits/air-quality-application-forms. The purpose of the pre-application meeting is for the Department to provide the applicant with information regarding the contents of the application and the application process.

This pre-application meeting agenda checklist is provided to aid the Department and applicant in ensuring that in the pre-permit application meeting all information regarding the contents of the application and the application process are communicated to the applicant. This is because applications that are ruled incomplete because of missing information will delay any determination or the issuance of the permit. The Department reserves the right to request additional relevant information prior to ruling the application complete in accordance with 20.11.41 NMAC.

Also included in this document is the Public Notice Sign Guidelines Checklist, which contains requirements for how the applicant must display the required weather-proof sign.

The applicant should fill out and have this agenda checklist available at the pre-application meeting to be sure all items are covered. Check the boxes to acknowledge that each item from the agenda was discussed and that requirements for the weather-proof sign were followed.

Pre-Permit Application Meeting Agenda Checklist

Applicant Company Name: **Kirtland Air Force Base**
Facility Name: **SDA GEP PROGRAM - NEW MEXICO**

☒ Fill out and submit a Pre-Permit Application Meeting Request form
Available online at https://www.cabq.gov/airquality/air-quality-permits/air-quality-application-forms/air-quality-application-forms

I. ☒ Discuss Project:
   a. Facility Location
   b. Facility Description
   c. Main Processes
   d. Equipment
   e. Proposed Schedule

II. ☒ Discuss the requirement for a zoning certification or verifications for new permits and permit modifications. The Zoning Requirement Cover Page form is a required component of this part of the submittal:
   a. For projects on property subject to City or County zoning laws (*i.e.*, **not** located on federal land, **not** located on State of New Mexico land, **not** located on Tribal land), a zoning certification from the appropriate planning department is required.
      i. City Planning Form: https://www.cabq.gov/planning/code-enforcement-zoning
      ii. County Planning Form: https://www.bernco.gov/planning/planning-and-land-use/applications-forms/
   b. If the project's property is not subject to City or County zoning jurisdiction, a zoning verification from both planning departments is required.
      i. City Planning Form: https://www.cabq.gov/planning/code-enforcement-zoning
      ii. County Planning Form: https://www.bernco.gov/planning/planning-and-land-use/applications-forms/
   c. The zoning certification or verifications **must** be obtained from the appropriate Planning Department, either City of Albuquerque or Bernalillo County. For more information, please visit the City's Planning Department website at https://www.cabq.gov/planning or Bernalillo County's Planning Department website at the https://www.bernco.gov/planning/.

III. ☒ Discuss the requirement for a Compliance History Disclosure Form as of Nov. 6, 2023 for permit application submittals except for Administrative Revisions that are not transfers of ownership.

IV. ☐ If permit modification or revision, review current permit:
   a. Review Process Equipment Table and Emissions Table and discuss changes
   b. Request information about the replacement or new equipment (for example, if it is an engine, we need to know if it is new, what year, fuel type, etc…) to give them an idea of the changes that will be needed
   c. Discuss possible changes in permit conditions

V. ☐ Air Dispersion modeling process, procedures and options:
   a. When modeling is required and possibility of waivers
   b. Protocol process, purpose, and time frame
   c. Preliminary review, purpose, and time frame
   d. Full review and time frame
   e. Peer reviews
   f. Assumptions in the modeling become permit conditions
   g. NED data should be used instead of DEM data for assigning elevations to receptors, sources, buildings, etc.

VI. ☒ Applicant's public notice requirements

a. During the same month application package will be submitted, ask Department for memo of neighborhood associations/coalitions within ½ mile of facility
b. Fill out and send Notice of Intent to Construct form as attachment, with Applicant Notice Cover Letter as email body, to neighborhood associations/coalitions listed in memo: https://www.cabq.gov/airquality/air-quality-permits/air-quality-application-forms
c. Post and maintain a weather-proof sign. Signs are available in the downtown Program office. The Public Notice Sign Guidelines Checklist can be found on the next page of this document.

VII. ☒ Regulatory timelines

a. 30 days to rule application complete
b. 90 days after ruled complete for permitting decision
c. 30-day public comment period after application deemed complete
d. If public interest in application:
    i. 30-day review of technical analysis
    ii. 90-day extension for permitting decision
e. Request for Public Information Hearing - 90-day extension for permitting decision
f. Complex technical issues in application - 90-day extension for permitting decision
g. If application ruled incomplete it stops timeline and restarts at beginning with updated submittal

VIII. ☒ Department Policies

a. One original hard copy must be submitted along with a duplicate copy. The duplicate copy should be a high-quality electronic duplicate submitted on thumb drive as one complete PDF with all application contents found in the hardcopy, including pages with signatures. However, do not include financial information, such as a copy of a check, in the electronic PDF. The electronic submittal should also include emission calculations Excel-compatible file(s) and modeling files, if applicable.
b. Applications will be ruled incomplete if any parts from Permit Application Checklist are missing
c. Review fees paid in full are part of the application package (Except as noted above)
d. Discuss payment format (by check, credit card or online)
e. Use the most recent Permit Application Checklist, found under Part 41 Implementation on this page: https://www.cabq.gov/airquality/air-quality-permits/air-quality-application-forms
f. After three tries, permit application denied and application must start over including repayment of fees

IX. ☐ Additional Questions?

City of Albuquerque
Environmental Health Department
Air Quality Program

Public Notice Sign Guidelines

Any person seeking a permit under 20.11.41 NMAC, Construction Permits, shall do so by filing a written application with the Department. *Prior to submitting an application, the applicant shall post and maintain a weather-proof sign provided by the department. The applicant shall keep the sign posted until the department takes final action on the permit application; if an applicant can establish to the department's satisfaction that the applicant is prohibited by law from posting, at either location required, the department may waive the posting requirement and may impose different notification requirements.* **A copy of this form must be submitted with your application.**

Applications that are ruled incomplete because of missing information will delay any determination or the issuance of the permit. The Department reserves the right to request additional relevant information prior to ruling the application complete in accordance with 20.11.41 NMAC.

Applicant Company Name: **Kirtland Air Force Base**
Facility Name: **SDA GEP PROGRAM - NEW MEXICO**

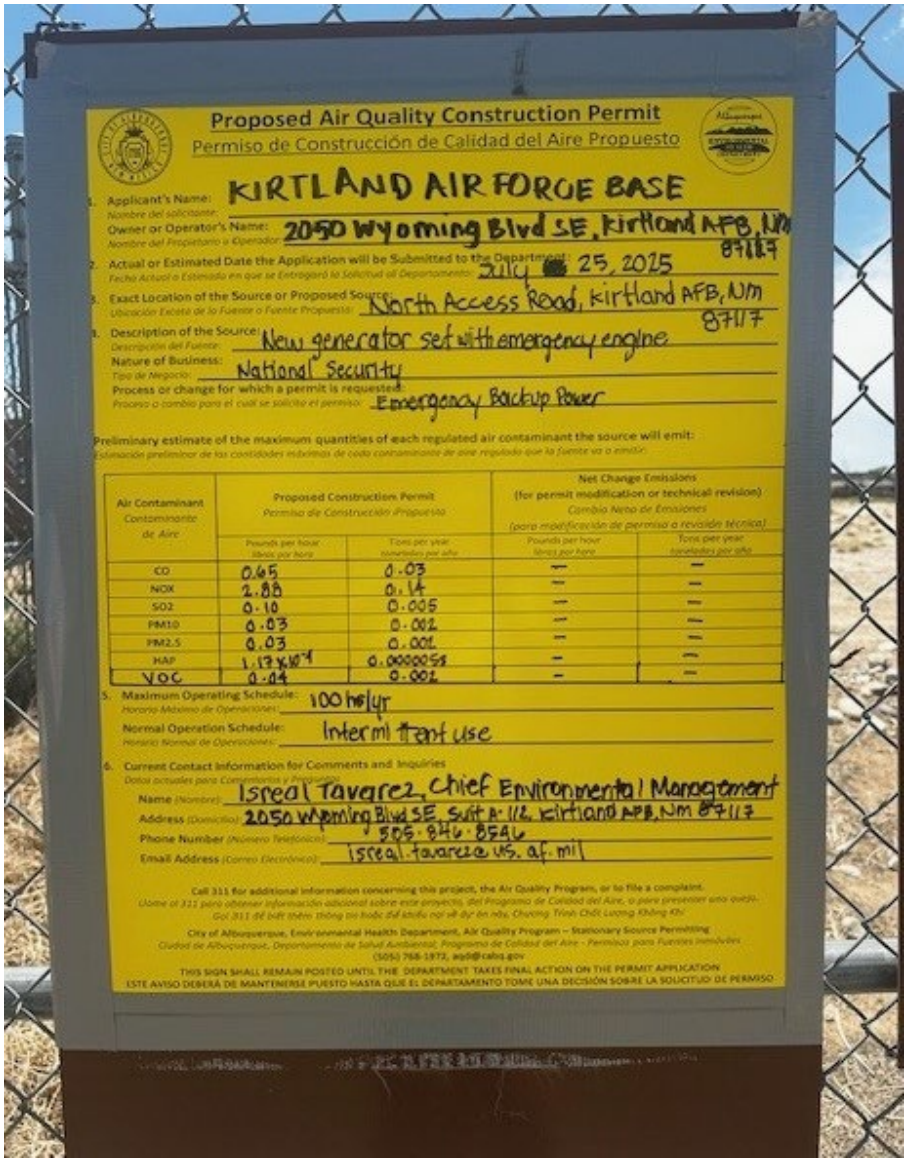
☒ The sign must be posted at the more visible of either the proposed or existing facility entrance (or, if approved in advance and in writing by the department, at another location on the property that is accessible to the public)

- ☒ The sign shall be installed and maintained in a condition such that members of the public can easily view, access, and read the sign at all times.
- ☒ The lower edge of the sign board should be mounted a minimum of 2 feet above the existing ground surface to facilitate ease of viewing

☒ Include at least two pictures of the completed, properly posted sign in the application package immediately following this document. One picture should show the location of the posted sign and the other should be close enough to the sign for the posted information to be legible in the picture.

☐ **Check here if the department has waived the sign posting requirement.**
Alternative public notice details:

SDA GEP NM Air Quality Construction Permit Application
Public Notice Requirements – Yellow Sign
Photos taken 16 JUL 2025



Proposed Air Quality Construction Permit
Permiso de Construcción de Calidad del Aire Propuesto

1. Applicant's Name: KIRTLAND AIR FORCE BASE
Owner or Operator's Name: 2050 Wyoming Blvd SE, Kirtland AFB, NM 87117
2. Actual or Estimated Date the Application will be Submitted to the Department: July 25, 2025
3. Exact Location of the Source or Proposed Source: North Access Road, Kirtland AFB, NM 87117
4. Description of the Source: New generator set with emergency engine
Nature of Business: National Security
Process or change for which a permit is requested: Emergency Backup Power

Preliminary estimate of the maximum quantities of each regulated air contaminant the source will emit:

Air Contaminant	Proposed Construction Permit		Net Change Emissions (for permit modification or technical revision)	
	Pounds per hour	Tons per year	Pounds per hour	Tons per year
CO	0.65	0.03	—	—
NOX	2.88	0.14	—	—
SO2	0.10	0.005	—	—
PM10	0.03	0.002	—	—
PM2.5	0.03	0.001	—	—
HAP	1.17×10^{-4}	0.000005	—	—
VOC	0.04	0.001	—	—

5. Maximum Operating Schedule: 100 hr/yr
Normal Operation Schedule: Intermittent use
6. Current Contact Information for Comments and Inquiries
Name: Isreal Tavarez, Chief Environmental Management
Address: 2050 Wyoming Blvd SE, Suite A-116, Kirtland AFB, NM 87117
Phone Number: 505-846-8546
Email Address: isreal.tavarez@us.af.mil

Call 311 for additional information concerning this project, the Air Quality Program, or to file a complaint.
City of Albuquerque, Environmental Health Department, Air Quality Program – Stationary Source Permitting
(505) 768-1972, aqd@cabq.gov
THIS SIGN SHALL REMAIN POSTED UNTIL THE DEPARTMENT TAKES FINAL ACTION ON THE PERMIT APPLICATION
ESTE AVISO DEBERÁ DE MANTENERSE PUESTO HASTA QUE EL DEPARTAMENTO TOME UNA DECISIÓN SOBRE LA SOLICITUD DE PERMISO