

Cat® D300 GC DIESEL GENERATOR SETS



Standby: 60 Hz, 208V, 480V & 600V



Image shown might not reflect actual configuration

Engine Model	Cat® C9 In-line 6, 4-cycle diesel
Bore x Stroke	112mm x 149mm (4.4in x 5.9in)
Displacement	8.8 L (538 in ³)
Compression Ratio	16.3:1
Aspiration	Turbocharged Air-to-Air Aftercooled
Fuel Injection System	HEUI
Governor	Electronic ADEM™ A4

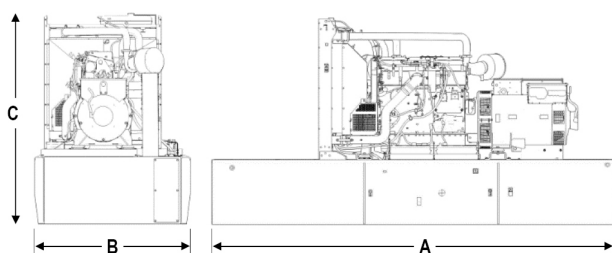
Standby	Performance Strategy
300 ekW, 375kVA	EPA Certified for Stationary Emergency Application

PACKAGE PERFORMANCE

Performance	Standby	
Frequency	60 Hz	
Genset Power Rating	375 kVA	
Gen set power rating with fan @ 0.8 power factor	300 ekW	
Emissions	EPA TIER 3	
Performance Number	DM8168	
Fuel Consumption		
100% load with fan	86.0 L/hr	22.7 gal/hr
75% load with fan	58.8 L/hr	15.5 gal/hr
50% load with fan	43.8 L/hr	11.6 gal/hr
25% load with fan	33.1 L/hr	8.7 gal/hr
Cooling System¹		
Radiator air flow restriction (system)	0.12 kPa	0.48 in. Water
Radiator air flow	497 m ³ /min	17551 cfm
Engine coolant capacity	14 L	3.69 gal
Radiator coolant capacity	25 L	6.6 gal
Total coolant capacity	45 L	11.88 gal
Inlet Air		
Combustion air inlet flow rate	24.6 m ³ /min	868.7 cfm
Max. Allowable Combustion Air Inlet Temp	49 °C	120 °F
Exhaust System		
Exhaust stack gas temperature	495 °C	923 °F
Exhaust gas flow rate	69.7 m ³ /min	2461 cfm
Exhaust system backpressure (maximum allowable)	10.0 kPa	40.0 in. water
Heat Rejection		
Heat rejection to jacket water	120 kW	6838 Btu/min
Heat rejection to exhaust (total)	320 kW	18223 Btu/min
Heat rejection to aftercooler	92 kW	5239 Btu/min
Heat rejection to atmosphere from engine	23 kW	1312 Btu/min
Heat rejection from alternator	22 kW	1245 Btu/min

Emissions (Nominal) ²	Standby		
NOx	2196.0 mg/Nm ³	4.00 g/hp-hr	
CO	115.5 mg/Nm ³	0.2 g/hp-hr	
HC	23.1 mg/Nm ³	0.06 g/hp-hr	
PM	12.7 mg/Nm ³	0.03 g/hp-hr	
Alternator ³			
Voltages	480V	208	600V
Motor Starting Capability @ 30% Voltage Dip	705	549	1117
Current	451	1041	361
Frame Size	M2774L4	M3115L4	M2774L4
Excitation	S.E	S.E	AREP
Temperature Rise	105°C	105°C	105°C

WEIGHTS & DIMENSIONS – OPEN SET



FUEL TANK CAPACITY

Tank Design	Total Capacity		Useable Capacity	
	Litre	Gallon	Litre	Gallon
Integral	2270	600	2059	544

Base	Dim "A" mm (in)	Dim "B" mm (in)	Dim "C" mm (in)	Generator Set Weight kg (lb)
Skid (Wide Base)	3950 (155.5)	1440 (56.7)	1706 (67.2)	2503 (5518.2)
Integral Tank Base	3950 (155.5)	1430 (56.3)	2202 (86.7)	3143 (6929.1)

DEFINITIONS AND CONDITIONS

¹ For ambient and altitude capabilities consult your Cat dealer. Air flow restriction (system) is added to existing restriction from factory.

² Emissions data measurement procedures are consistent with those described in EPA CFR 40 Part 89, Subpart D & E and ISO8178-1 for measuring HC, CO, PM, NOx. Data shown is based on steady state operating conditions of 77° F, 28.42 in HG and number 2 diesel fuel with 35° API and LHV of 18,390 BTU/lb. The nominal emissions data shown is subject to instrumentation, measurement, facility and engine to engine variations. Emissions data is based on 100% load and thus cannot be used to compare to EPA regulations which use values based on a weighted cycle.

³ UL 2200 Listed packages may have oversized generators with a different temperature rise and motor starting characteristics. Generator temperature rise is based on a 40° C ambient per NEMA MG-1-32.

APPLICABLE CODES AND STANDARDS:

AS1359, CSA C22.2 No100-04, UL142, UL489, UL869, UL2200, NFPA37, NFPA70, NFPA99, NFPA110, IBC, IEC60034-1, ISO3046, ISO8528, NEMA MG1-22, NEMA MG1-33, 2006/95/EC, 2006/42/EC, 2004/108/EC.

Note: Codes may not be available in all model configurations. Please consult your local Cat Dealer representative for availability.

STANDBY: Output available with varying load for the duration of the interruption of the normal source power. Average power output is 70% of the standby power rating. Typical operation is 200 hours per year, with maximum expected usage of 500 hours per year.

RATINGS: Ratings are based on SAE J1349 standard conditions. These ratings also apply at ISO3046 standard conditions.

Fuel Rates are based on fuel oil of 35° API [16° C (60° F)] gravity having an LHV of 42 780 kJ/kg (18,390 Btu/lb) when used at 29° C (85° F) and weighing 838.9 g/litre (7.001 lbs/U.S. gal.). Additional ratings may be available for specific customer requirements, contact your Caterpillar representative for details. For information regarding Low Sulfur fuel and Biodiesel capability, please consult your Cat dealer.

LEHE2024-03 (02-21)

www.Cat.com/electricpower

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GENERATOR DATA**(AT400240)-ENGINE (BAA126422A)-CEM****Selected Model**

Engine: C9 **Generator Frame:** M3115L4 **Genset Rating (kW):** 300.0 **Line Voltage:** 208
Fuel: Diesel **Generator Arrangement:** 5655480 **Genset Rating (kVA):** 375.0 **Phase Voltage:** 120
Frequency: 60 **Excitation Type:** Permanent Magnet **Pwr. Factor:** 0.8 **Rated Current:** 1040.9
Duty: STANDBY **Connection:** PARALLEL STAR **Application:** EPG **Status:** Current

Version: 42423 /43607 /43655 /8542

Spec Information

Generator Specification			Generator Efficiency		
Frame: M3115L4	Type: SR500	No. of Bearings: 1	Per Unit Load	kW	Efficiency %
Winding Type: RANDOM WOUND	Flywheel: 14.0		0.25	75.0	92.3
Connection: PARALLEL STAR	Housing: 1		0.5	150.0	94.0
Phases: 3	No. of Leads: 12		0.75	225.0	94.2
Poles: 4	Wires per Lead: 0		1.0	300.0	93.7
Sync Speed: 1800	Generator Pitch: 0.6667				

Reactances	Per Unit	Ohms
SUBTRANSIENT - DIRECT AXIS X'_d	0.1543	0.0178
SUBTRANSIENT - QUADRATURE AXIS X''_q	0.1690	0.0195
TRANSIENT - SATURATED X'_d	0.2202	0.0254
SYNCHRONOUS - DIRECT AXIS X_d	3.5226	0.4064
SYNCHRONOUS - QUADRATURE AXIS X_q	1.7968	0.2073
NEGATIVE SEQUENCE X_2	0.1612	0.0186
ZERO SEQUENCE X_0	0.0095	0.0011

Time Constants	Seconds
OPEN CIRCUIT TRANSIENT - DIRECT AXIS T'_{d0}	1.6017
SHORT CIRCUIT TRANSIENT - DIRECT AXIS T'_d	0.1000
OPEN CIRCUIT SUBTRANSIENT - DIRECT AXIS T''_{d0}	0.0142
SHORT CIRCUIT SUBTRANSIENT - DIRECT AXIS T''_d	0.0100
OPEN CIRCUIT SUBTRANSIENT - QUADRATURE AXIS T''_{q0}	0.1062
SHORT CIRCUIT SUBTRANSIENT - QUADRATURE AXIS T''_q	0.0100
EXCITER TIME CONSTANT T_e	0.0170
ARMATURE SHORT CIRCUIT T_a	0.0150

Short Circuit Ratio: 0.29

Stator Resistance = 0.004 Ohms

Field Resistance = 0.4554 Ohms

Voltage Regulation		Generator Excitation		
Voltage level adjustment: +/-	5.0%	No Load	Full Load, (rated) pf	
Voltage regulation, steady state: +/-	1.0%		Series	Parallel
Voltage regulation with 3% speed change: +/-	1.0%	Excitation voltage:	8.51 Volts	44.03 Volts Volts
Waveform deviation line - line, no load: less than	2.0%	Excitation current	0.8 Amps	3.4 Amps Amps
Telephone influence factor: less than	50			

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Generator Mechanical Information

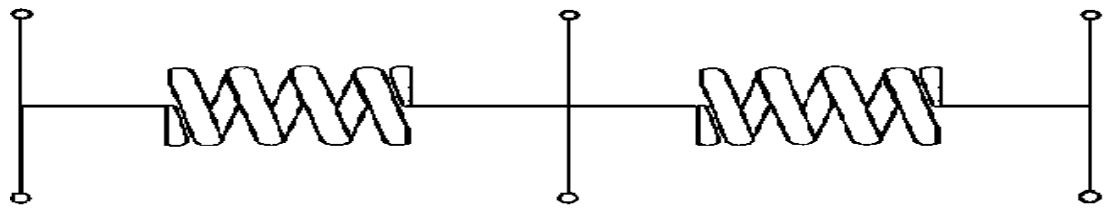
Center of Gravity		
Dimension X	-437.0 mm	-17.2 IN.
Dimension Y	0.0 mm	0.0 IN.
Dimension Z	0.0 mm	0.0 IN.

- "X" is measured from driven end of generator and parallel to rotor. Towards engine fan is positive. See General Information for details
- "Y" is measured vertically from rotor center line. Up is positive.
- "Z" is measured to left and right of rotor center line. To the right is positive.

Generator WT = 976 kg	* Rotor WT = 390 kg	* Stator WT = 586 kg
2,152 LB	860 LB	1,292 LB

Rotor Balance = 0.0 mm deflection PTP
 Overspeed Capacity = 125% of synchronous speed

Generator Torsional Data



TOTAL J = J1 + J2 + J3

K1 = Shaft Stiffness between J1 + J2 (Diameter 1)			K2 = Shaft Stiffness between J2 + J3 (Diameter 2)			
J1	K1	Min Shaft Dia 1	J2	K2	Min Shaft Dia 2	J3
17.5 LB IN. s ²	58.3 MLB IN./rad	4.2 IN.	34.9 LB IN. s ²	40.1 MLB IN./rad	4.5 IN.	1.9 LB IN. s ²
1.976 N m s ²	6.58293 MN m/rad	106.0 mm	3.94 N m s ²	4.53 MN m/rad	115.0 mm	0.21 N m s ²
			Total J			
			54.2 LB IN. s ²			
			6.126 N m s ²			

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Generator Cooling Requirements - Temperature - Insulation Data	
Cooling Requirements:	Temperature Data: (Ambient 40 °C)
Heat Dissipated: 20.2 kW	Stator Rise: 105.0 °C
Air Flow: 66.0 m ³ /min	Rotor Rise: 105.0 °C
Insulation Class: H	
Insulation Reg. as shipped: 100.0 MΩ minimum at 40 °C	
Thermal Limits of Generator	
Frequency:	60 Hz
Line to Line Voltage:	208 Volts
B BR 80/40	384.0 kVA
F BR -105/40	436.8 kVA
H BR - 125/40	480.0 kVA
F PR - 130/40	480.0 kVA
H PR - 150/40	508.8 kVA
H PR27 - 163/27	528.0 kVA

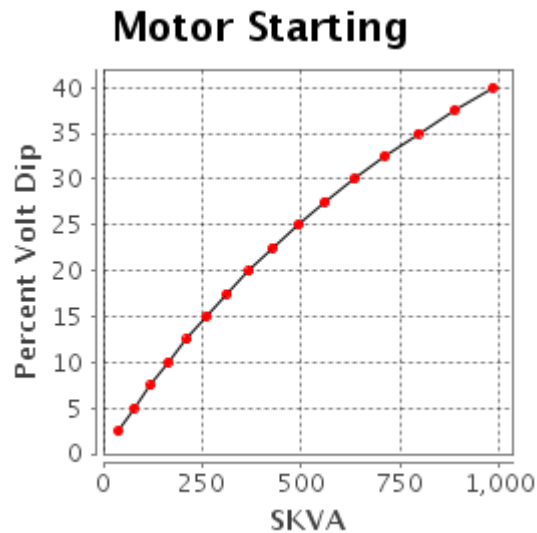
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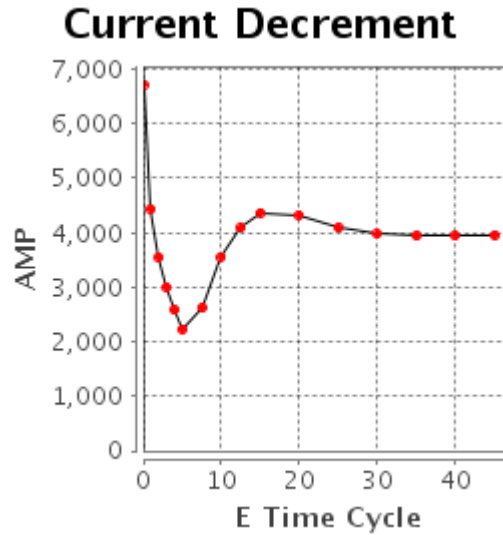
**Starting Capability & Current Decrement
Motor Starting Capability (0.6 pf)**

SKVA	Percent Volt Dip
38	2.5
78	5.0
120	7.5
164	10.0
211	12.5
261	15.0
313	17.5
369	20.0
429	22.5
492	25.0
560	27.5
633	30.0
711	32.5
796	35.0
886	37.5
985	40.0



Current Decrement Data

E Time Cycle	AMP
0.0	6,720
1.0	4,436
2.0	3,550
3.0	3,005
4.0	2,582
5.0	2,231
7.5	2,622
10.0	3,563
12.5	4,082
15.0	4,368
20.0	4,319
25.0	4,087
30.0	3,972
35.0	3,940
40.0	3,944
45.0	3,957



Instantaneous 3 Phase Fault Current: 6720 Amps

Instantaneous Line - Line Fault Current: 5680 Amps

Instantaneous Line - Neutral Fault Current: 9562 Amps

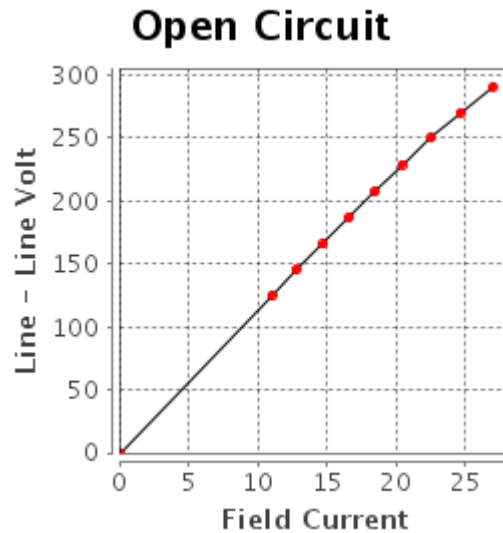
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**Generator Output Characteristic Curves
Open Circuit Curve**

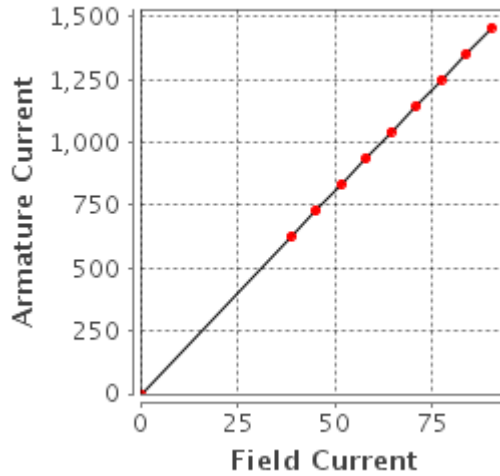
Field Current	Line - Line Volt
0.0	0
11.0	125
12.8	146
14.7	166
16.6	187
18.5	208
20.4	229
22.5	250
24.6	270
27.0	291



Short Circuit Curve

Short Circuit

Field Current	Armature Current
0.0	0
38.6	625
45.0	729
51.5	833
57.9	937
64.3	1,041
70.8	1,145
77.2	1,249
83.6	1,353
90.1	1,457



Selected Model

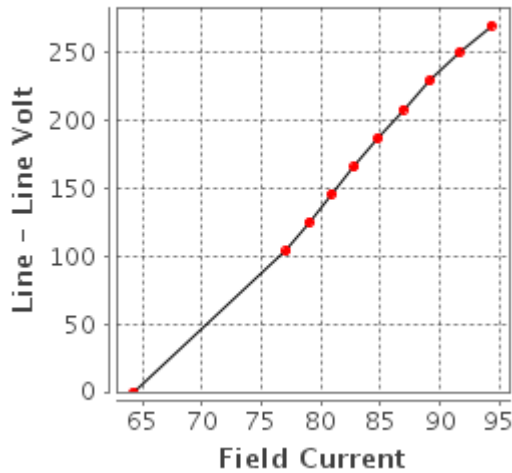
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Generator Output Characteristic Curves
Zero Power Factor Curve

Zero Power

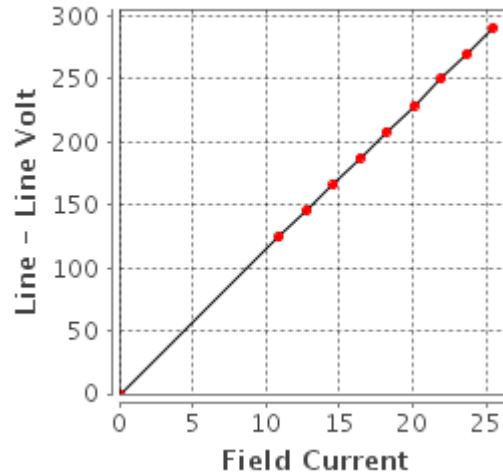
Field Current	Line - Line Volt
64.3	0
77.1	104
79.0	125
80.9	146
82.8	166
84.8	187
86.9	208
89.1	229
91.6	250
94.3	270



Air Gap Curve

Air Gap

Field Current	Line - Line Volt
0.0	0
10.9	125
12.8	146
14.6	166
16.4	187
18.2	208
20.1	229
21.9	250
23.7	270
25.5	291

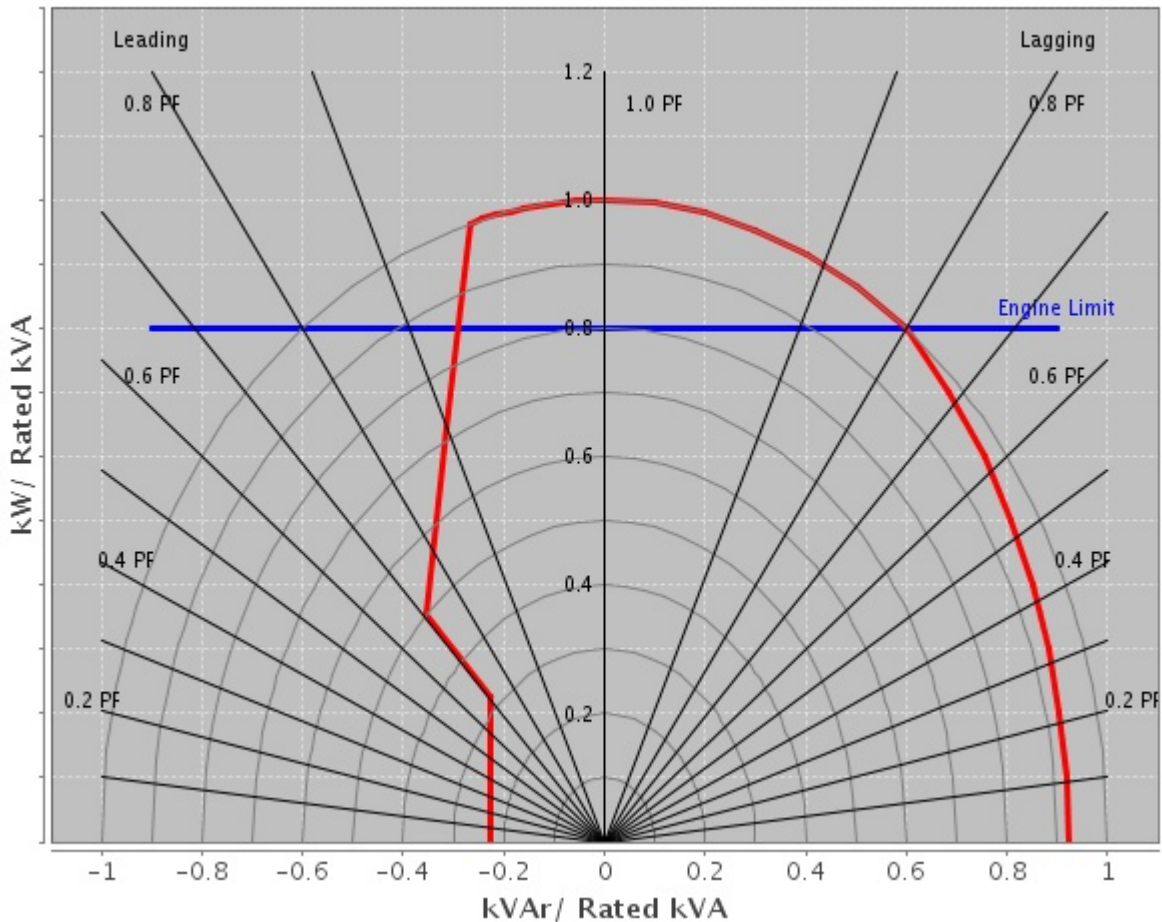


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Reactive Capability Curve Operating Chart



General Information

GENERATOR INFORMATION (DM7900)

1. Motor Starting

Motor starting curves are obtained in accordance with IEC60034, and are displayed at 0.6 power factor.

2. Voltage Dip

Prediction of the generator synchronous voltage dip can be made by consulting the plot for the voltage dip value that corresponds to the desired motor starting kVA value.

3. Definitions

A) Generator Keys

Frame: abbreviation of generator frame size

Freq: frequency in hertz.

PP/SB: prime/standby duty respectively

Volts: line - line terminal voltage

kW: rating in electrical kilo watts

Model: engine sales model

B) Generator Temperature Rise

The indicated temperature rises are the IEC/NEMA limits for standby or prime power applications. The quoted rise figures are maximum limits only and are not necessarily indicative of the actual temperature rise of a given machine winding.

C) Centre of Gravity

The specified centre of gravity is for the generator only. For single bearing, and two bearing close coupled generators, the center of gravity is measured from the generator/engine flywheel-housing interface and from the centreline of the rotor Shaft.

For two bearing, standalone generators, the center of gravity is measured from the end of the rotor shaft and from the centerline of the rotor shaft.

D) Generator Current Decrement Curves

The generator current decrement curve indicates the generator armature current arising from a symmetrical three-phase fault at the generator terminals. Generators equipped with AREP or PMG excitation systems will sustain 300% of rated armature current for 10 seconds.

E) Generator Efficiency Curves

The efficiency curve is displayed for the generator only under the given conditions of rating, voltage, frequency and power factor. This is not the overall generating set efficiency curve.

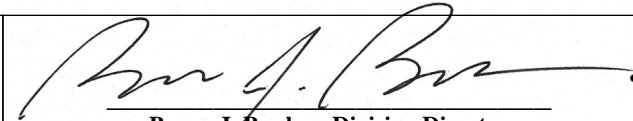


**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
2021 MODEL YEAR
CERTIFICATE OF CONFORMITY
WITH THE CLEAN AIR ACT**

**OFFICE OF TRANSPORTATION
AND AIR QUALITY
ANN ARBOR, MICHIGAN 48105**

Certificate Issued To: Caterpillar Inc.
(U.S. Manufacturer or Importer)
Certificate Number: MCPXL08.8NZS-001

Effective Date:
05/07/2020
Expiration Date:
12/31/2021


Byron J. Bunker, Division Director
Compliance Division

Issue Date:
05/07/2020
Revision Date:
N/A

Model Year: 2021
Manufacturer Type: Original Engine Manufacturer
Engine Family: MCPXL08.8NZS

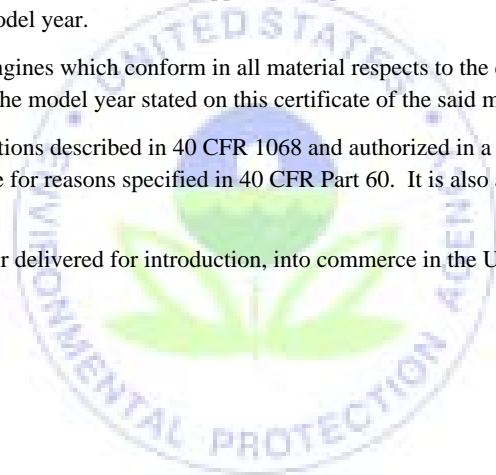
Mobile/Stationary Indicator: Stationary
Emissions Power Category: 225<=kW<450
Fuel Type: Diesel
After Treatment Devices: No After Treatment Devices Installed
Non-after Treatment Devices: Electronic Control, Engine Design Modification

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.



ADEM™ A4 Engine Controller

The ADEM™ A4 is the main Electronic Control Module (ECM) used on select diesel engines. The ADEM A4 provides a higher degree of control over a large number of combustion variables. The ADEM A4 is designed to control/ interface Electronic Unit Injector (EUI) equipped engines. The ADEM A4 engine system is composed of the ADEM A4 ECM, control software, sensors, actuators, fuel injectors, and interface to the generator system. The prime benefit of an ADEM A4 engine system is to better control and maintain the particulate emissions, both steady state and transient, while improving engine performance



FEATURES

RELIABLE, DURABLE

All ADEM A4 controllers are designed to survive the harshest environments.

- Environmentally sealed, die-cast aluminum housing isolates and protects electronic components from moisture and dirt contamination.
- Rigorous vibration testing ensures product reliability and durability.
- Accuracy maintained from -40°C to 85°C
- Electrical noise immunity to 100 volts/meter
- Internal circuits are designed to withstand shorts to +battery and -battery.

SIMPLE SERVICING

Each ADEM A4 system works in combination with the Cat® ET service tool software to keep the engine operating at peak performance.

- Displays measured parameters
- Retrieves active and logged event code documenting abnormal system operation
- Performs calibrations and diagnostic tests
- Supports flash programming of new software into the ADEM A4 ECM

SELF DIAGNOSTICS

Each ADEM A4 ECM has a full compliment of diagnostics. The ECM can detect faults in the electrical system and report those faults to the service technician for quick repair.

- Self-diagnostic capability pinpoints operational problems in need of attention.

ADVANCED FEATURES

- Enhanced performance from fuel injection timing and limiting
- Adjustable monitoring of vital engine parameters
- Programmable speed acceleration ramp rate
- Data link interfaces

DESCRIPTION

The ECM is housed in an environmentally sealed casting. All wiring connections to the ECM are made using two sealed connectors: a single seventy-pin connector and a single one hundred twenty-pin connector.

ENGINE SPEED GOVERNING

Desired engine speed is calculated by the ECM and held within ± 0.2 Hz for isochronous and droop mode. The ECM accounts for droop that is requested. The proper amount of fuel is sent to the injectors due to these calculations. The ECM also employs cooldown/shutdown strategies, acceleration delays on startup, acceleration ramp times and speed reference.

FUEL LIMITING

Warm and cold fuel-air ratio control limits are controlled by the ECM. Electronic monitoring system derates, torque limit, and cranking limit, programmable torque scaling, and cold cylinder cutout mode are standard features.

FUEL INJECTION TIMING

Master timing for injection is controlled by the ECM control. Temperature dependencies are accounted for in the fuel injection calculations.

ELECTRONIC MONITORING

Electronic monitoring of vital engine parameters can be programmed. Warning, derate, and shutdown event conditions may be customized by the user.

INFORMATION MANAGEMENT

The ECM stores information to assist with electronic troubleshooting. Active and logged diagnostic codes, active events, logged events, fuel consumption, engine hours, and instantaneous totals aid service technicians when diagnosing electronic faults and scheduling preventive maintenance.

CALIBRATIONS

Engine performance is optimized through injection timing. Auto/manual sensor calibrations are standard features.

ON-BOARD SYSTEM TESTS

System tests are available to assist in electronic troubleshooting. These tests include: injector activation, injector cutout, and override of control outputs.

DATA LINK INTERFACES

The ADEM A4 communicates with the EMCP via a dedicated communication network.

ELECTRONIC SENSING

The following sensing is available on the ADEM A4: oil pressure, fuel pressure, fuel temperature, atmospheric pressure, air inlet temperature, turbo outlet pressure, engine coolant temperature, engine speed, throttle position, exhaust temperature, oil filter pressure differential, fuel filter pressure differential, air filter pressure differential and crankcase pressure.

ENGINE CONTROLLER



SPECIFICATIONS

Impervious to:

salt spray, fuel, oil and oil additives, coolant, spray cleaners, chlorinated solvents, hydrogen sulfide and methane gas, and dust

Input and output protection

all inputs and outputs are protected against short circuits to + battery and -battery

Input voltage range (24 VDC nominal)

18 to 32 VDC

Mounting

engine mounted

Reverse polarity protected

Shock, withstands 20 g

Temperature range

Operating: -40°C to 85°C (-40°F to 185°F)
Storage: -50°C to 120°C (-58°F to 248°F)

Vibration

withstands 8.0 g @ 24 to 2 kHz



Jacket Water Heater (WHHH01/WHHH03)

Appropriate when the generator set is to be sited in a low ambient environment, the heater maintains the engine coolant at a temperature [typically 38°C (100°F)] which facilitates rapid starting and load acceptance. The heater assembly uses UL compliant components (to UL1030) and has CSA certification which is to both CSA and UL Standards.

The heater itself is powered by a 240V for 60 Hz AC auxiliary supply. A thermostatic controller is included to regulate the output temperature to within safe limits. When the generator set is not running the heater is automatically connected to the AC supply through a power relay mounted in the control panel.

Upon receiving a start signal the AC supply is automatically disconnected by the power relay and automatically reconnected when the start signal is removed, and the engine has stopped.

Features

- Uniform heat distribution
- Reduces wear from cold spots
- Improves startability
- Thermostatically controlled and protected
- 6' (1.8m) cord length (577-1758)
- 16.4' (5.0m) cord length (578-9355).
- Ensures generator is at optimal starting temperature and ready to accept load
- Durable pump with non-magnetic impeller that does not attract metal debris
- Robust die cast aluminum housing improves sealing of the hoses, eliminates leaking and breakage
- Corrosion resistant steel brackets for superior strength and durability
- Reduces thermal stress on coolant hoses
- Element designed for long life with maximum heat transfer
- IP44 Ingress Protection Rating
- No evaporation of coolant from hoses
- Reduces low coolant level alarms because coolant does not boil

Part No	Outlet Location	Watts	Volts	Amps	Regulating Thermostat	Safety Thermostat
577-1758/578-9355	Right	2700	240	11.25	On 90°F (32°C) Off 115°F (46°C)	210°F (98°C)

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C9GC , C13GC , C15GC , C18GC Circuit Breakers

Manually Operated Circuit Breakers

Current (A)	Frame	Number of Poles	Interrupting Ratings (kA rms)			Trip Units	(Lugs) Cable Size Range / Phase	Auxiliary Options
			240V	480V	600V			
100	XT2	3	65	25	18	Electronic LS/I or LSI	14-1/0AWG	1 Form C + 1 Bell Alarm Shunt Trip 24 VDC
250	XT4	3	65	25	18	Electronic LS/I or LSI	14-1/0AWG	1 Form C + 1 Bell Alarm Shunt Trip 24 VDC
400	T5N	3	65	25	18	Electronic LS/I (S or I) or LSI	(2) 3/0 – 250 kcmil	1 Form C + 1 Bell Alarm 250VAC/VDC Shunt Trip 24VDC
600	T6N	3	65	35	20		(3) 2/0 – 400 kcmil	
800	T6N	3	65	35	20		(3) 2/0 – 400 kcmil	1 Form C + 1 Bell Alarm 400VAC / 250VDC Shunt Trip 24VDC
1200	T7S	3	65	50	25		(4) 2/0 – 500 kcmil	

T7 1000/1200 - PR232/P L-S-I Functions

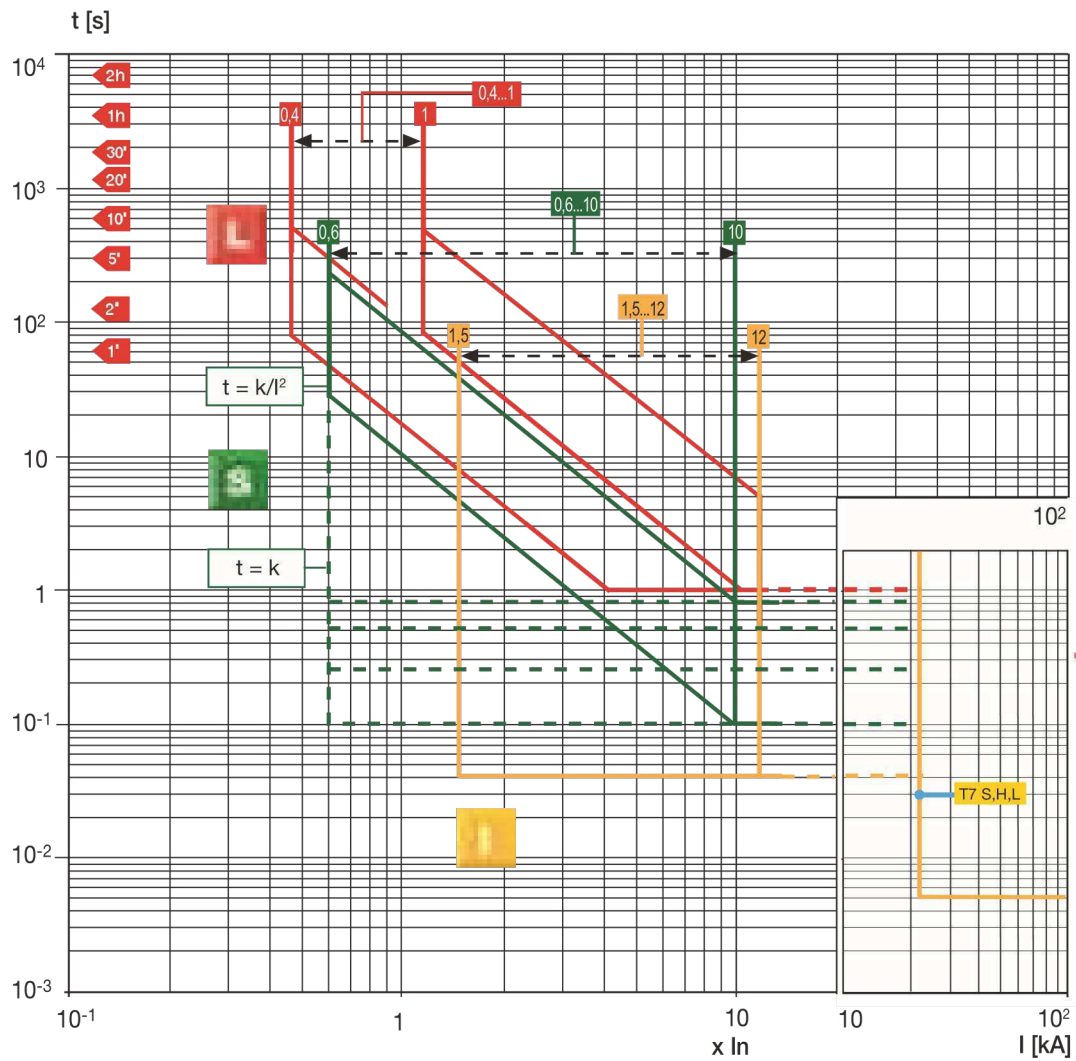


Figure 6

T7 1000/1200 - PR332/P L-S-I Functions

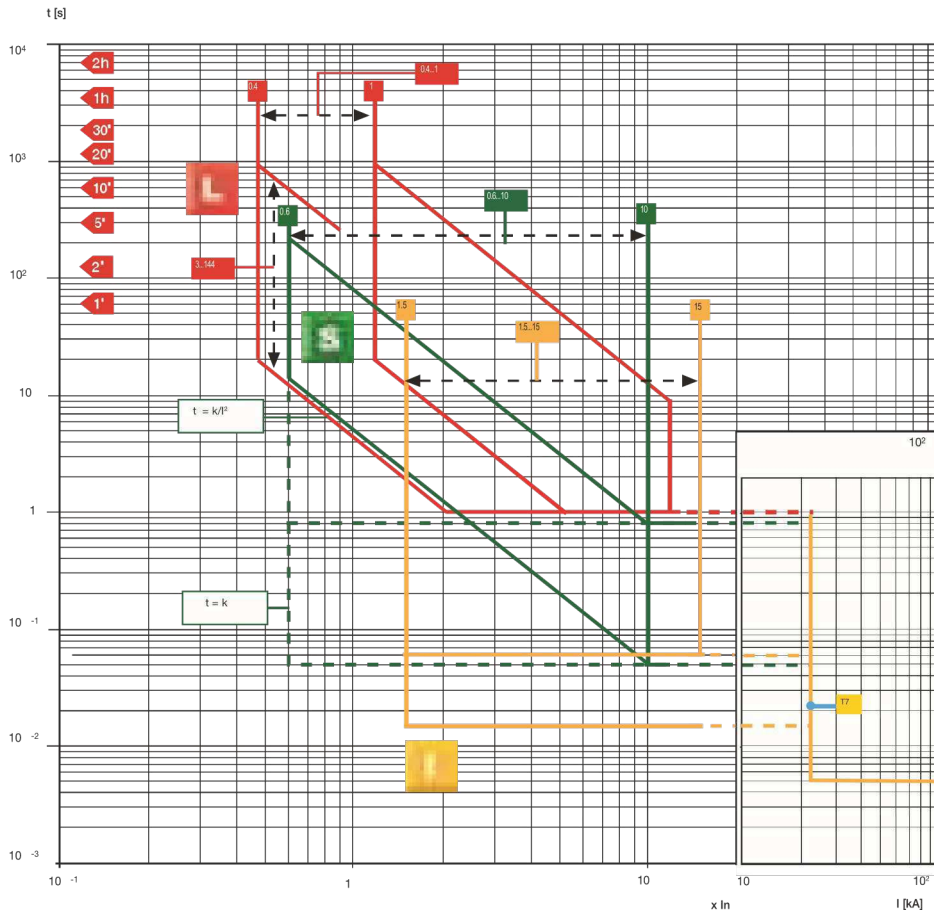
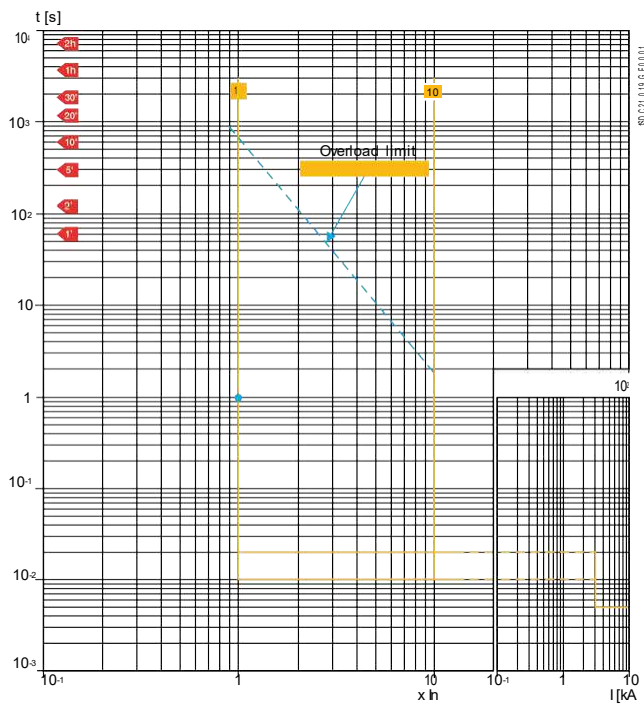


Figure 7

XT4 Ekip LS/I I function



XT4 Ekip L-S-I functions

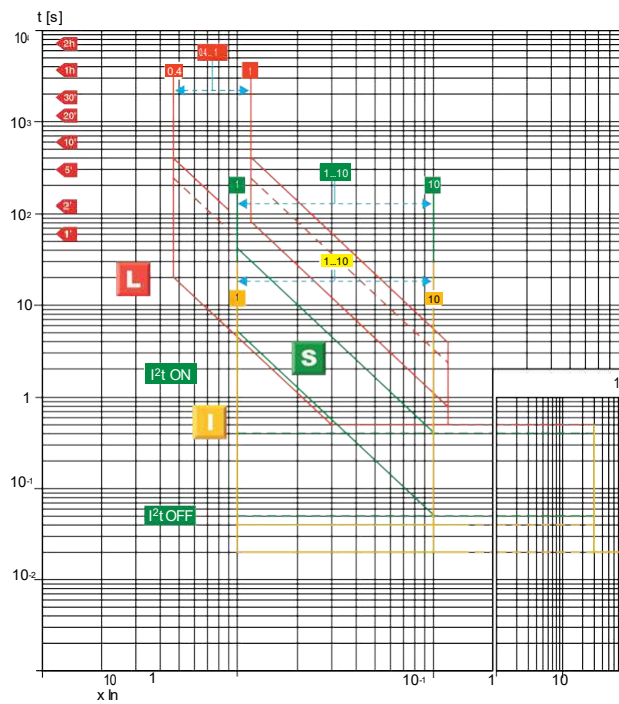


Figure - 10

LEHE2459-00 (02-20)

Full Load Current Table for the Circuit Breakers

Three Phase – 60 Hz

Power		Voltage		
kW	KVA	600 V	480 V	208 V
		FLC	FLC	FLC
250.0	312.5	300.7	375.9	867.4
300.0	375.0	360.9	451.1	1040.9
350.0	437.5	421.0	526.2	NA
400.0	500.0	481.1	601.4	NA
450.0	562.5	541.3	676.6	NA
500.0	625.0	601.4	751.8	NA
550.0	687.5	661.6	827.0	NA
600.0	750.0	721.7	902.1	NA



Image shown might not reflect actual configuration

GCCP 1.2 - Control Panel

GCCP 1.2 is an auto Start Control Module suitable for a wide variety of diesel generator applications. Monitoring an extensive number of engine parameters, the modules will display warnings, shutdown and engine status information on the backlit LCD screen, illuminated LEDs and remote PC.

FEATURES

- 4-line back-lit LCD text display
- Multiple display languages
- Five-key menu navigation
- LCD alarm indication
- Customisable power-up text and images
- Data logging facility
- Internal PLC editor
- Protections disable feature
- Fully configurable via PC using USB & RS485 communication
- Front panel configuration with PIN protection
- Power save mode
- 3-phase generator sensing and protection
- Generator current and power monitoring (kW, kvar, kVA, pf)
- kW and kvar overload and reverse power alarms
- Over current protection
- Unbalanced load protection
- Breaker control via fascia buttons
- Fuel and start outputs configurable when using CAN
- Support for 0V to 10 V & 4 mA to 20 mA sensors
- 8 configurable digital inputs (3 available for Customer use)
- 8 configurable digital outputs (5 available for Customer use)
- 4 configurable analogue outputs (3 available for Customer Use)
- CAN, MPU and alternator frequency speed sensing in one variant
- Real time clock
- Engine pre-heat and post-heat functions
- Engine run-time scheduler
- Engine idle control for starting & stopping
- Fuel usage monitor and low fuel level alarms
- 3 configurable maintenance alarms

BENEFITS

- Hours counter provides accurate information for monitoring and maintenance periods
- User-friendly set-up and button layout for ease of use
- Multiple parameters are monitored & displayed simultaneously for full visibility
- The module can be configured to suit a wide range of applications for user flexibility
- PLC editor allows user configurable functions to meet user specific application requirements.
- RS485 Communication port can be used for the Remote Monitoring Communication (Compatible with Cat PLG)

SPECIFICATION

DC SUPPLY

CONTINUOUS VOLTAGE RATING

8 V to 35 V Continuous
5 V for upto 1 minute

CRANKING DROPOUTS

Able to survive 0 V for 100 ms, providing supply was at least 10 V before dropout and supply recovers to 5 V. This is achieved without the need for internal batteries.

LEDs and backlight will not be maintained during cranking.

MAXIMUM OPERATING CURRENT

260 mA at 12 V, 150 mA at 24 V

MAXIMUM STANDBY CURRENT

145 mA at 12 V, 85 mA at 24 V

CHARGE FAIL/EXCITATION RANGE

0 V to 35 V

GENERATOR & MAINS (UTILITY) VOLTAGE RANGE

15 V to 415 V AC (Ph to N)
26 V to 719 V AC (Ph to Ph)

FREQUENCY RANGE

3.5 Hz to 75 Hz

MAGNETIC PICKUP VOLTAGE RANGE

+/- 0.5 V to 70 V

FREQUENCY RANGE

10,000 Hz (max)

INPUTS

DIGITAL INPUTS A TO H

Negative switching

ANALOGUE INPUTS A & D

Configurable as:
Negative switching digital input 0 V to 10 V sensor
4 mA to 20 mA sensor Resistive sensor

ANALOGUE INPUTS B & C

Configurable as:
Negative switching digital input Resistive sensor

OUTPUTS

OUTPUT A & B (FUEL & START)

15 A DC at supply voltage

AUXILIARY OUTPUTS C, D, E, F, G & H

2 A DC at supply voltage

DIMENSIONS OVERALL

216 mm x 158 mm x 43 mm
8.5" x 6.2" x 1.5"

PANEL CUT-OUT

184 mm x 137 mm
7.2" x 5.3"

MAXIMUM PANEL THICKNESS

8 mm
0.3"

STORAGE TEMPERATURE RANGE

-40°C to +85°C
-40 °F to +185 °F

OPERATING TEMPERATURE RANGE

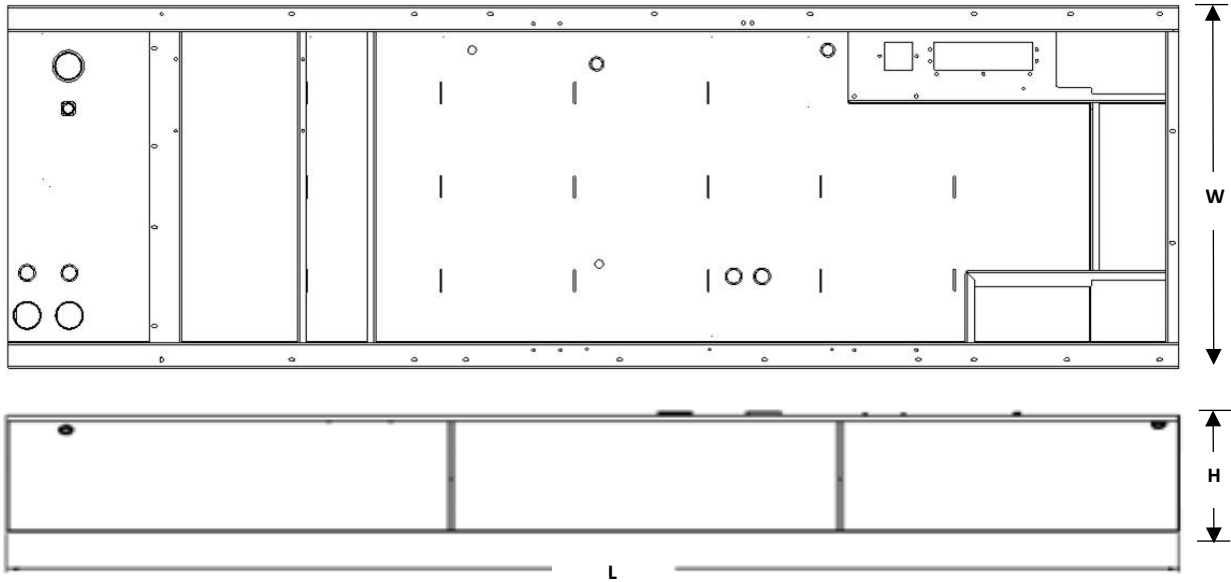
-30°C to +70°C
-22 °F to +158 °F

LEHE2017-00 (08-19)

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Fuel Tank Base Useable Capacities with Fuel Tank Dimensions & Weights



The heights listed above do not include lumber used during manufacturing and shipping

A. Open Set & Sound Attenuated Enclosure

Tank Design	Feature Code	Total Capacity		Useable Capacity		Tank Only								Overall Package Height with Tank			
		Litre	Gallon	Litre	Gallon	Dry Weight		Height 'H'		Length 'L'		Width 'W'		Open		Enclosure	
						kg	lb	mm	in	mm	in	mm	in	mm	in	mm	in
Extended Tank	FTDW039	2341	618.4	2060	538.9	1075	2370	639	25.1	4608	181.4	1430	56.3	2095	82.4	2385	93.9
	FTDW040	2862	756	2540	671	1294	2852	586	23	5252	206.7	1620	63.8	2503	98.5	2563	100.9
	FTDW041	3633	959.7	3286	868.1	1506	3302	635	25	5910	228.7	1620	63.8	2291	90.1	2479	97.6
	FTDW042	4271	1128.2	3878	1024	1944	4285	585	23	6759	266.1	1865	73.4	2345	92.3	1957	77.0

B. Estimated Run Time (Hours)

Tank Design	Feature Code	Standby Ratings (kVA)						
		ekW	100%		75%		50%	
			Hrs	L/hr	Hrs	L/hr	Hrs	L/hr
Tank	FTDW039	250	28.1	73.3	35	35.0	47	47.0
		300	24	86	30.8	30.8	40	40.0
	FTDW040	350	26.9	94.3	31.2	81.9	42.4	60.2
		400	24.0	105.8	28.1	90.7	38.6	66.2
	FTDW041	450	25.0	131.7	31.3	106.1	42.0	79.1
		500	24.0	137	30.1	110.5	46.6	71.3
	FTDW042	550	25.7	151.1	32.9	118.1	45.2	86.1
		600	24.1	161.6	30.0	129.6	42.4	91.7

Tanks with full electrical stub-up area include removable end channel. Tanks with RH stub-up include stubup area directly below the circuit breaker or power terminal strips.

Fuel tanks and applicable options facilitate compliance with the following United States NFPA Code and Standards:

NFPA 30: Flammable and Combustible Liquids Code

NFPA 37: Standard for the Installation and Use of Stationary Combustion Engines and Gas Turbines

NFPA 110: Standard for Emergency and Standby Power Systems

Fuel tanks and applicable options facilitate compliance with the following Canadian Standard and Code:

CSA C282 – Emergency Electrical Power Supply for Buildings

CSA B139-09 – Installation Code for Oil-Burning Equipment

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LEHE2624-01 (07-20)

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Extended Tanks

D250GC / D300GC Extended Fuel Tank FTDW039				D350GC / D400GC Extended Fuel Tank FTDW040			
Inches of Fuel on Dipstick	Measured Gallons	Inches of Fuel on Dipstick	Measured Gallons	Inches of Fuel on Dipstick	Measured Gallons	Inches of Fuel on Dipstick	Measured Gallons
0.5	15.2	14.5	440.8	0.5	20.8	14.5	603.2
1.0	30.4	15.0	456.0	1.0	41.6	15.0	624.0
1.5	45.6	15.5	471.2	1.5	62.4	15.5	644.8
2.0	60.8	16.0	486.4	2.0	83.2	16.0	665.6
2.5	76.0	16.5	501.6	2.5	104.0	16.5	686.4
3.0	91.2	17.0	516.8	3.0	124.8	17.0	707.2
3.5	106.4	17.5	532.0	3.5	145.6	17.5	728.0
4.0	121.6	18.0	547.2	4.0	166.4	18.0	748.8
4.5	136.8	18.5	562.4	4.5	187.2	18.2	756.1
5.0	152.0	19.0	577.6	5.0	208.0		665.0
5.5	167.2	19.5	592.8	5.5	228.8		682.5
6.0	182.4	20.0	608.0	6.0	249.6		700.0
6.5	197.6	20.4	618.5	6.5	270.4		717.5
7.0	212.8			7.0	291.2		735.0
7.5	228.0			7.5	312.0		748.5
8.0	243.2			8.0	332.8		
8.5	258.4			8.5	353.6		
9.0	273.6			9.0	374.4		
9.5	288.8			9.5	395.2		
10.0	304.0			10.0	416.0		
10.5	319.2			10.5	436.8		
11.0	334.4			11.0	457.6		
11.5	349.6			11.5	478.4		
12.0	364.8			12.0	499.2		
12.5	380.0			12.5	520.0		
13.0	395.2			13.0	540.8		
13.5	410.4			13.5	561.6		
14.0	425.6			14.0	582.4		

SOUND ATTENUATED LEVEL 2

ENCLOSURES

D250GC – D600GC

60 Hz



Image shown might not reflect actual configuration

FEATURES

Robust / Highly Corrosion Resistant Construction

- Factory installed on skid base or tanks base
- Environmentally friendly, polyester powder baked paint
- Enclosure constructed with 18-gauge steel
- Interior zinc plated fasteners
- Internally mounted exhaust silencing system
- Comply with ASCE/SEI 7 for Wind loads up to 100mph
- Designed and tested to comply with UL 2200 Listed generator set package

Excellent Access

- Large cable entry area for installation ease.
- Accommodates side mounted single or multiple breakers.
- Two doors on both sides.
- Vertically hinged allow 180° opening rotation
- Radiator fill cover.

Security and Safety

- Lockable access doors which give full access to control panel and breaker.
- Cooling fan and battery charging alternator fully guarded.
- Fuel fill, oil fill and battery can only be reached via lockable access.
- Externally mounted emergency stop button (Optional).
- Designed for spreader bar lifting to ensure safety.
- Stub-up area is rodent proof.

Sound Attenuated Level 2

- Caterpillar white paint
- UL Listed integral fuel tank with 24 hours running time capacity (Optional).
- DC lighting package (Optional)

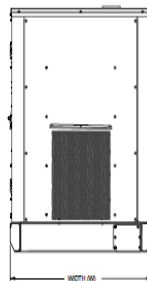
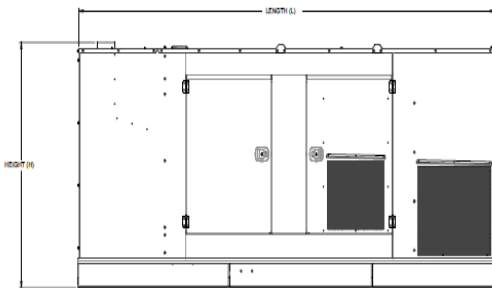
Enclosure Package Operating Characteristics

Enclosure Type	Standby ekW	Cooling Air Flow Rate		Ambient Capability*		Sound Pressure Levels (dBA) at 7m (23 ft)
		m ³ /s	cfm	°C	°F	100% Load
Level 2 Sound Attenuated Enclosure (Steel)	250	6.4	13561	57	135	74
	300	6.4	13561	51	125	74
	350	7.4	15680	57	134	71
	400	7.4	15680	53	127	71
	450	8.4	17692	54	130	73
	500	8.4	17692	50	122	73
	550	11.2	23731	56	133	73
	600	11.2	23731	53	127	73

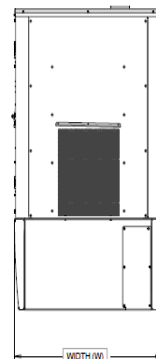
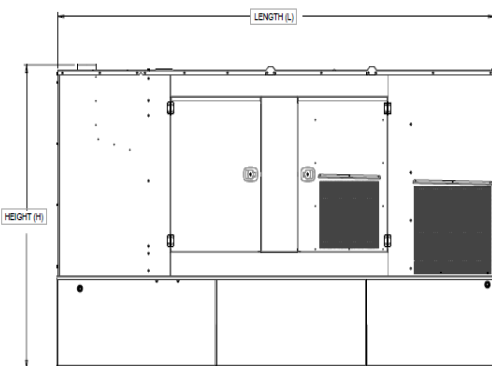
*Cooling system performance at sea level. Consult your Cat® dealer for site specific ambient and altitude capabilities.

Note: Sound level measurements are subject to instrumentation, installation and manufacturing variability, as well as ambient site conditions.

DIMENSIONS



Sound Attenuated Enclosure on Skid Base



Sound Attenuated Enclosure on a UL Listed Integral Fuel Tank Base

Image shown might not reflect actual configuration

WEIGHTS & DIMENSIONS

Enclosure Type	Standby Ratings, ekW	Length, L		Width, W		Height, H		Package Weights	
		mm	in	mm	in	mm	in	kg	lb
Sound Attenuated Enclosure on Skid Base	250	3958	155.8	1440	56.7	1991	78.4	2857	6298.6
	300							2945	6492.6
	350	4633	182.4	1630	64.2	2227	87.7	3983	8781.0
	400							4017	8856.0
	450	4823	189.8	1630	64.2	2227	87.7	4408	9718.0
	500							4457	9826.0
	550	4980	196.1	1865	73.4	2172	85.5	4754	10480.8
	600							4837	10663.8
Sound Attenuated Enclosure on UL Listed Integral Fuel Tank Base	250	3958	155.8	1440	56.7	2487	97.9	3497	7709.6
	300							3585	7903.6
	350	4633	182.4	1630	64.2	2644	104.1	4765	10505.0
	400							4799	10580.0
	450	4823	189.8	1630	64.2	2777	109.3	5345	11783.7
	500							5394	11891.7
	550	4980	196.1	1865	73.4	2723	107.2	5973	13168.2
	600							6056	13351.2
Sound Attenuated Enclosure on UL Listed Extended Integral Fuel Tank Base	250							3590	7914.6
	300	4608	181.4	1430	56.3	2379	93.7	3678	8108.6
	350	5251	203.7	1620	63.8	2561	100.8	4876	10749.7
	400							4910	10824.7
	450	5909	232.6	1620	63.8	2612	102.8	5497	12118.8
	500							5546	12226.8
	550	6759	266.1	1865	73.4	2487	97.9	6237	13750.2
600	6320							13933.2	

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SPECIFICATION

AC SUPPLY

VOLTAGE RANGE 90 V to 305 V (L-N)

FREQUENCY RANGE

48 Hz to 64 Hz (L-N)

DC OUTPUT RATING

10 A DC at 24 V DC

RIPPLE AND NOISE

<1%

EFFICIENCY

>86%

REGULATION LINE

<0.5%

LOAD

2%

TEMPERATURE SENSOR INPUT

PT1000

PROTECTIONS

Short Circuit
DC Over Voltage
DC Over Current
Reverse Polarity
Over Temperature
AC Under & Over Voltage

CHARGE FAILURE RELAY

3 A at 30 V DC volt free relay

DIMENSIONS OVERALL

70 mm x 200 mm x 130 mm
2.7" x 7.9" x 5.1"

WEIGHT

0.75 kg

OPERATING TEMPERATURE RANGE

-30 °C to +80 °C
-22 °F to +176 °F

STORAGE TEMPERATURE RANGE

-40 °C to +70 °C
-22 °F to +158 °F

BATTERY CHARGER

The intelligent battery charger has been developed with safety, usability, optimised battery performance and maximum battery lifetimes in mind.

A comprehensive range of input and output protections ensures a continued safe charging environment also enabling the use of the charger as a power supply.

FEATURES

- Intelligent two, three and four stage charging profiles
- Configurable to suit most battery types (12V/24V)
- Adjustable current limit
- Can be used as a battery charger, power supply or both at the same time
- Automatic or Manual boost and storage charge functions to help maintain battery condition
- Digital Microprocessor Technology
- Temperature compensation for battery charging
- Low Output Ripple and superb line regulation
- Three LED Indicators
- AC input Under voltage
- AC input Over voltage
- Battery charger output Over voltage
- Battery charger output Over current
- Optional battery temperature compensation with over temperature protection
- Output short circuit and Inversion polarity with auto recovery
- Configurable charge termination

Automatic Boost Mode

- Boosts and equalises cell charge improving battery performance and life

Power Save Mode

- Once the battery is fully charged the chargers switch to Eco-Power to save energy

Communication

- Can be integrated into external systems through MODBUS RTU using RS485
- Fully configurable via PC Software
- External remote LCD option

BENEFITS

- Fully flexible to maximise the life of the battery
- Suitable for a wide range of battery types
- Switched mode design
- Minimum 86% efficiency throughout full operating range
- No external intervention for boost mode
- Multiple chargers can be linked together to provide larger current output
- Can be permanently connected to battery and mains (utility) supply. No need to disconnect through high load conditions.

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Batteries

Premium High Output Batteries



- Vibration Resistance . . . 5-times the industry Standard.
- 4D & 8D Maintenance Free Batteries — World's Highest Cold Cranking Amps.
- Exclusive "Flat Top" 4D & 8D Maintenance Free Batteries — No leaking or lost caps.
- Provide three or more times the life of the best known battery brands.

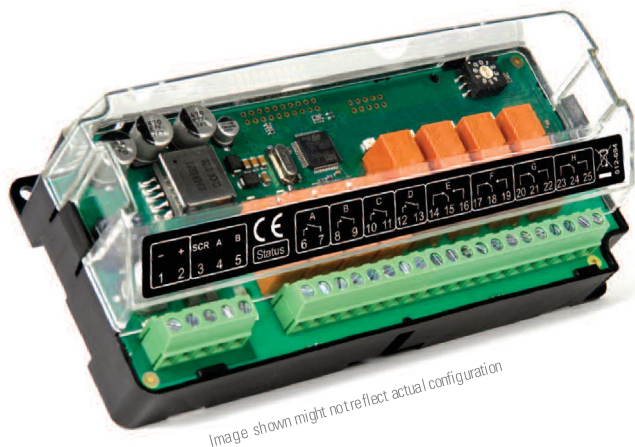
BCI Group Size	Part Number	Cold Cranking Amps*	Reserve Capacity Minutes**	Volts	Amp Hr. Capacity @ 20 Hrs.	Construction
8D	153-5720	1,500	465	12	210	Maintenance Free — Calcium Design
8D	101-4000	1,400	400	12	190	Hybrid Design (Dry Only)
4D	153-5710	1,400	425	12	200	Maintenance Free — Calcium Design
4D	153-5700	1,125	305	12	145	Maintenance Free — Calcium Design
4D	9X-9730	1,300	400	12	190	Hybrid Design (Dry Only)
4D	9X-9720	1,000	275	12	140	Hybrid Design (Dry Only)
31	175-4390	1,000	180	12	90	Maintenance Free — Calcium Design, Stud Terminals — Starting
31	175-4370	825	190	12	100	Maintenance Free — Calcium Design, Stud Terminals, Start/Deep Cycle
31	175-4360	710	185	12	100	Maintenance Free — Calcium Design, Stud Terminals, Deep Cycle/Start
31	115-2422	1,000	170	12	90	Maintenance Free — Calcium Design — Accessible Cover
31	115-2421	950	170	12	90	Maintenance Free — Calcium Design — Accessible Cover
31	9X-3404	950	165	12	100	Maintenance Free — Calcium Design
31	3T-5760	750	165	12	100	Maintenance Free — Silver/Calcium Design
24	153-5656	650	110	12	52	Maintenance Free — Silver/Calcium Design
74	153-5660	650	110	12	52	Maintenance Free — Silver/Calcium Design, Side Terminals
58	175-4280	500	70	12	35	Maintenance Free — Silver/Calcium Design
2	153-5690	765	210	6	90	Hybrid Design (Dry Only)
31	250-0480	710	185	12	100	Maintenance Free — Calcium Design, Dual Terminal Stud and SAE-Marine Deep Cycle/Starting
65	230-6368	880	140	12	80	Maintenance Free — Silver/Calcium Design

Batteries and Electrical Parts

All batteries have taper post design and are shipped dry except as noted.

* For 30 seconds at 0° F

** 25 Amp output at 80° F



OUTPUT EXPANSION MODULE

Output relay expansion module for use with compatible control modules. The Output Expansion module has been designed to extend a host module's output capabilities.

A maximum of 10 Output Expansion modules can be connected to an individual module at any one time. All outputs are configurable via the host controller.

The module will work up to 1 KM (0.6miles) from the host control module

FEATURES

- Power On/Link Lost LED ID SWITCH
- 10 expansion modules can be connected to 1 host controller at a time
- 8 configurable relay contacts with LED indicators:
- 4 Normally Open (N/O)
- 4 Change Over (C/O)
- Terminal strip connection for quick and easy set-up

ENVIRONMENTAL TESTING STANDARDS

ELECTRO-MAGNETIC COMPATIBILITY

BS EN 61000-6-2
EMC Generic Immunity Standard for the Industrial Environment
BS EN 61000-6-4
EMC Generic Emission Standard for the Industrial Environment

ELECTRICAL SAFETY

BS EN 60950
Safety of Information Technology Equipment, including Electrical Business Equipment

TEMPERATURE

BS EN 60068-2-1
Ab/Ae Cold Test -30 °C BS EN 60068-2-2
Bb/Be Dry Heat +70°C

VIBRATION

BS EN 60068-2-6
Ten sweeps in each of three major axes
5 Hz to 8 Hz @ +/-7.5 mm, 8 Hz to 500 Hz @ 2 gn

SHOCK

BS EN 60068-2-27
Three shocks in each of three major axes 15 gn in 11 Ms

HUMIDITY

BS EN 60068-2-30
Db Damp Heat Cyclic 20/55 °C @ 95% RH 48 Hours
BS EN 60068-2-78
Cab Damp Heat Static 40 °C @ 93% RH 48 Hours

SPECIFICATION

CONTINUOUS VOLTAGE RATING

8 V to 35 V Continuous

CRANKING DROPOUTS

Able to survive 0 V for 50 mS, providing supply was at least 10 V before dropout and supply recovers to 5 V. This is achieved without the need for internal batteries. LEDs and backlight will not be maintained during cranking.

MAXIMUM OPERATING CURRENT

325 mA at 12 V, 152 mA at 24 V

MAXIMUM STANDBY CURRENT

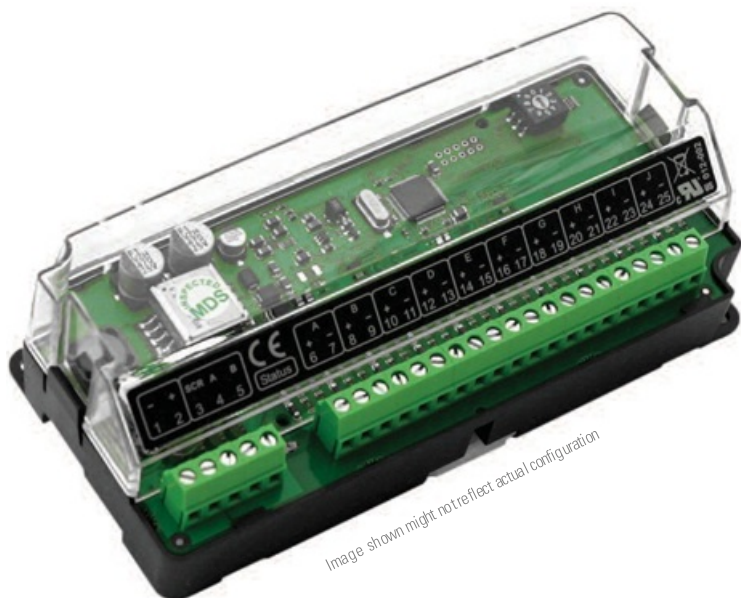
70 mA at 12 V, 32 mA at 24 V

AUXILIARY RELAY CONTACTS

2 Amp DC rated voltage free

DIMENSIONS OVERALL

165 mm x 76 mm x 49 mm
6.5" x 3" x 1.9"



Input Expansion Module

The Ratiometric Input Expansion module is used in conjunction with supported controllers to provide additional, flexible, input functionality. The module's ID switch is configurable from the module and the 10 inputs can be configured from within the 'host controller'.

The ratiometric inputs can be configured in a number of ways to connect to digital switches, resistive sensors, 0-10V DC signals or 4-20 mA signals.

LED indication is provided for 'Power On' and 'Link Lost'

FEATURES

- Power On/Link Lost LED
- 10 inputs configurable for digital/resistive 4-20 mA and 0-10 V DC
- A maximum of 4 modules can be connected to 1 host control module to provide up to 40 additional configurable inputs
- Works up to 1.2 km (0.75 miles) from the host controller
- Terminal strip connection for quick and easy set-up

ENVIRONMENTAL TESTING STANDARDS

ELECTRO-MAGNETIC COMPATIBILITY

BS EN 61000-6-2
EMC Generic Immunity Standard for the Industrial Environment
BS EN 61000-6-4
EMC Generic Emission Standard for the Industrial Environment

ELECTRICAL SAFETY

BS EN 60950
Safety of Information Technology Equipment, including Electrical Business Equipment

TEMPERATURE

BS EN 60068-2-1
Ab/Ae Cold Test -30 °C BS EN 60068-2-2
Bb/Be Dry Heat +70°C

VIBRATION

BS EN 60068-2-6
Ten sweeps in each of three major axes
5 Hz to 8 Hz @ +/-7.5 mm, 8 Hz to 500 Hz @ 2 gn

SHOCK

BS EN 60068-2-27
Three shocks in each of three major axes 15 gn in 11 Ms

HUMIDITY

BS EN 60068-2-30
Db Damp Heat Cyclic 20/55 °C @ 95% RH 48 Hours
BS EN 60068-2-78
Cab Damp Heat Static 40 °C @ 93% RH 48 Hours

DEGREES OF PROTECTION PROVIDED BY ENCLOSURES BS EN

60529
IP21

SPECIFICATION

CONTINUOUS VOLTAGE RATING

8 V to 35 V Continuous

CRANKING DROPOUTS

Able to survive 0 V for 50 mS, providing supply was at least 10 V before dropout and supply recovers to 5 V. This is achieved without the need for internal batteries. LEDs light will not be maintained during cranking.

MAXIMUM OPERATING CURRENT

292 mA at 12 V, 167 mA at 24 V mA at 24 V

MAXIMUM STANDBY CURRENT

101 mA at 12 V, 167 mA at 24 V

INPUTS

10 inputs configurable for digital/resistive (3k ohms) 4-20 mA and 0-10 V DC

DIMENSIONS OVERALL

165 mm x 76 mm x 49 mm
6.5" x 3" x 1.9"

STORAGE TEMPERATURE RANGE

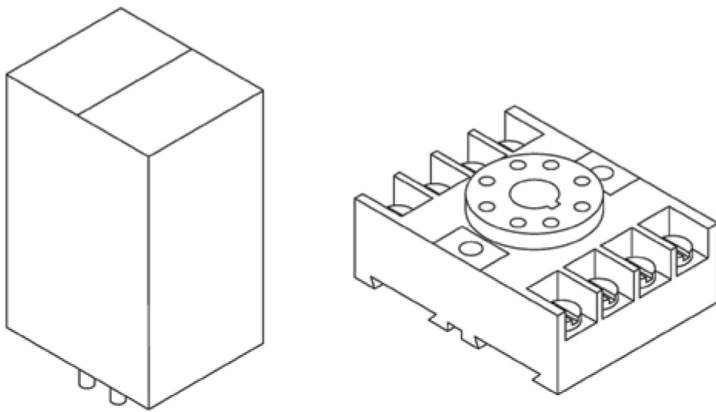
-40°C TO +85°C

LEHE2019-00 (08-19)

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Engine-Run Relay



- 10 Amp contact rating
- 12 or 24 Volt DC input
- Contact open or closure on engine run

SPECIFICATIONS

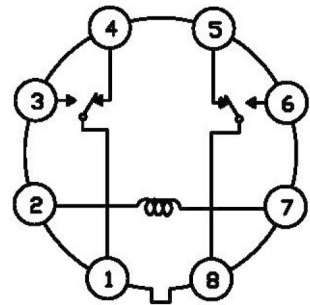
CONTACTS

- Type: DPDT
- Material: Silver
- Rating: UL
 - 10A @ 240VAC
 - 10A @ 30VDC

COILS

- Input Voltage: 24VDC
- Resistance: 400 Ohms
- Nominal Power: 1.5 W

PIN DETAIL



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LEHE1652-00 (2-18)





Image shown may not reflect actual configuration.

20A Tamper-Resistant, Weather-Resistant GFCI Receptacles

Features and Benefits

- Automatically tests the GFCI every time the reset button is pushed in. The GFCI will not reset if the GFCI circuit is not functioning properly.
- By blocking reset of the GFCI if protection has been compromised, SmartLockPRO reduces the possibility of end-users incorrectly assuming that a reset GFCI outlet is providing ground fault protection when it actually is not.
- A line-load reversal diagnostic feature is provided which prevents the GFCI from being reset and stops power from being fed to the GFCI receptacle face or through to downstream devices. A green LED indicator on the GFCI's face also illuminates to alert the installer to the line-load wiring reversal.

Weather-Resistant GFCIs

- Meet UL 498 requirements for weather-resistant receptacles.

Tamper-Resistant GFCIs

- Shutter mechanism inside the receptacle blocks access to the contacts unless a two-prong plug is inserted, helping ensure foreign objects will be locked out.

Product Features

- Grounding: GFCI ground fault
- Feature: Weather and tamper-resistant
- Amperage: 20 Amp
- Voltage: 125 Volt
- NEMA: 5-20R
- Trip Level: Class A, 5mA plus or minus 1mA
- Pole: 2
- Wire: 3
- Color: White

Standards and Certifications

- NEMA: WD-6
- ANSI: C-73
- UL498: File E13399
- CSA C22.2 No. 42: File LR-57811
- NOM: 057
- UL 943: File E48380

Receptacles contained in a weather resistant box and in-use cover.



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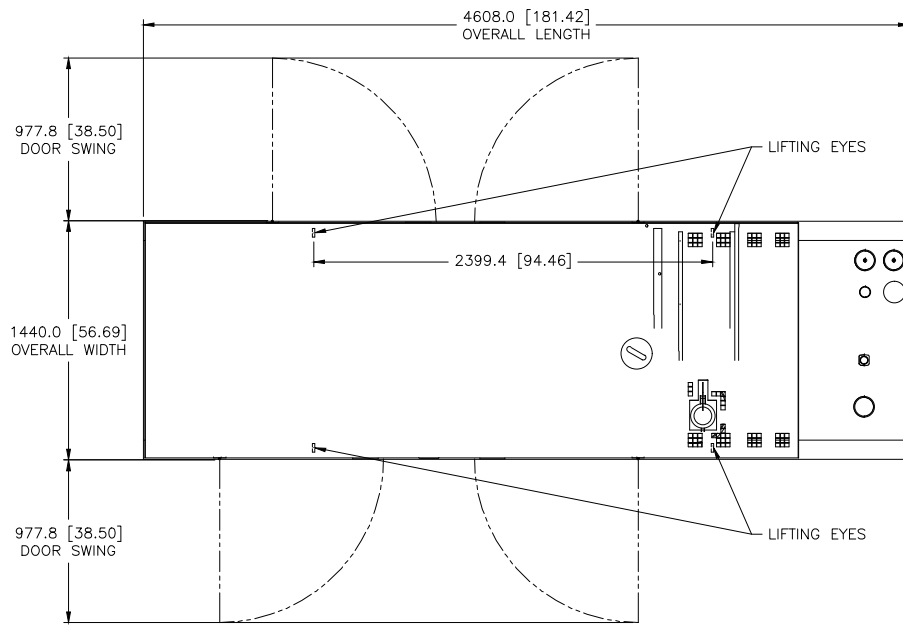
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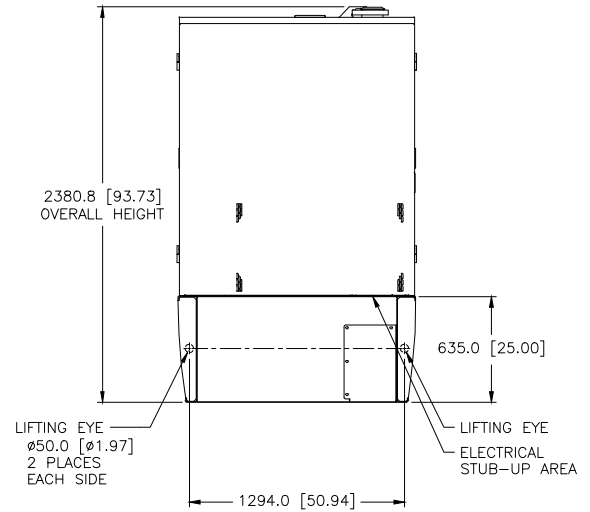
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QTY	ENGINE CONNECTIONS	SIZE	SHEET
1	COOLANT DRAIN	ø24.7 [ø0.97] I.D.	2, 3
1	EXHAUST	ø127.0 [ø5.00] O.D.	2
1	OIL DRAIN	ø15.9 [ø0.63] I.D.	2, 3

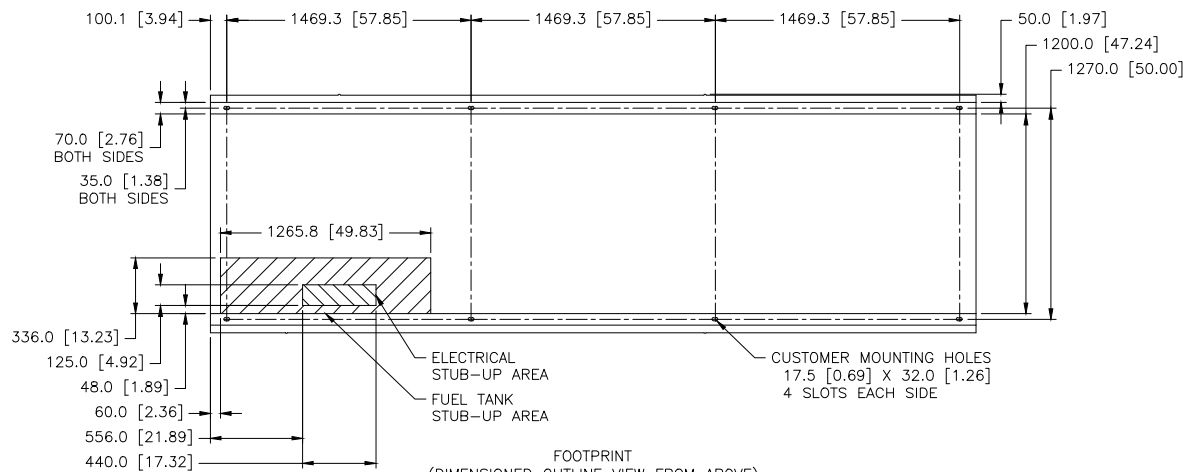
QTY	POSSIBLE TANK CONNECTIONS	SIZE	SHEET
1	BASIN TANK EMERGENCY VENT	4" NPT THD	3
1	FUEL INLET	4" NPT THD	3
1	MAIN TANK EMERGENCY VENT	4" NPT THD	3
1	NORMAL VENT	2-11 1/2 NPTF	3
1	SPARE PORT	2-11 1/2 NPTF	3



TOP VIEW
[RIGHT SIDE ORIENTATION]



REAR VIEW



FOOTPRINT
(DIMENSIONED OUTLINE VIEW FROM ABOVE)
(RIGHT SIDE ORIENTATION)

PACKAGE LIFTED IN 4 PLACES

PACKAGE SHOWN WITH MORE
DETAIL ON SHEETS 2 & 3

MODEL	TYPE	PRICING AR	FUEL TANK	ENCLOSURE
C9	Y	LS-3971 CHG 00 LS-3972 CHG 00	LS-4049 CHG 00	LS-3857 CHG 00

1E2966H IDENT

1E2733 DRAWING-AUTOCAD

1E0198B BRAND MARKINGS

1E0012A IDENTIFICATION

1E0012A INTERPRETATION

1E0011H INPR & TOL

DATE: 09/01/00

DESIGNER: J. O. SCHADLE

DRAWN BY: J. SWIFT

APP'N: E. MOUNTJOY

CHECKED BY: J. SWIFT

RECORDS: X

SCALE: 1:10

DATE: 09/01/00

CATERPILLAR INC.

INSTALLATION - COMPOSITE

605-5798

