GILLETTE GENERATORS

60 HZ MODEL

SPVD-3000

LIQUID COOLED DIESEL ENGINE GENERATOR SET

Model	HZ	STANDBY 120ºC RISE
SPVD-3000-60 HERTZ	60	300

All generator sets are USA prototype built and thoroughly tested. Production models are USA factory built and 100% load tested.

UL2200, UL1446, UL508, UL142, UL498

NFPA 110, 99, 70, 37
All generator sets meet NFPA-110 Level 1, when equipped with the necessary accessories and installed per NFPA standards.

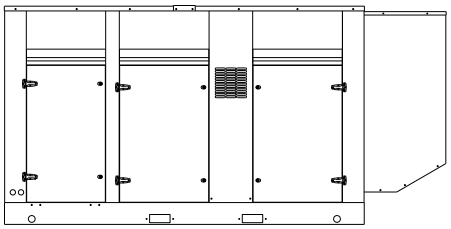
NEC 700, 701, 702, 708

NEMA ICS10, MG1, ICS6, AB1

ANSI C62.41, 27, 59, 32, 480, 40Q, 81U, 360-05

ASCE 7-22
All generator sets meet 200 MPH rating.

EPA 40CFR Part 60, 1048, 1054, 1065, 1068



"LEVEL 2" HOUSED GEN-SET
Full aluminum weather protection and superior sound attenuation for specific low noise applications. Critical grade muffler is standard.

GENERATOR RATINGS

GENERATOR MODEL	VOLTAGE		PH	HZ	120°C RISE STANDBY RATING		POWER LEAD CONNECTIONS
	L-N	L-L			KW/KVA	AMP	
SPVD-3000-3-2	120	208	3	60	300/375	1042	12 LEAD LOW WYE
SPVD-3000-3-3	120	240	3	60	300/375	903	12 LEAD HIGH DELTA
SPVD-3000-3-4	277	480	3	60	300/375	452	12 LEAD HIGH WYE
SPVD-3000-3-5	127	220	3	60	300/375	985	12 LEAD LOW WYE
SPVD-3000-3-16	346	600	3	60	300/375	361	4 LEAD DEDICATED 3 PH

RATINGS: All single phase gen-sets are dedicated 4 lead windings, rated at unity (1.0) power factor. All three phase gen-sets are 12 lead windings, rated at .8 power factor. 120° C "STANDBY RATINGS" are strictly for gen-sets that are used for back-up emergency power to a failed normal utility power source. This standby rating allows varying loads, with no overload capability, for the entire duration of utility power outage. All gen-set power ratings are based on temperature rise measured by resistance method as defined by MIL-STD 705C and IEEE STD 115, METHOD 6.4.4. All generators have class H (180°C) insulation system on both rotor and stator windings. All factory tests and KW/KVA charts shown above are based 120°C (standby) R/R winding temperature, within a maximum 40°C ambient condition. Generators operated at standby power ratings must not exceed the temperature rise limitation for class H insulation system, as specified in NEMA MG1-22.40. Specifications & ratings are subject to change without prior notice.

APPLICATION & ENGINEERING DATA FOR MODEL SPVD-3000-60 HZ

GENERATOR SPECIFICATIONS

Manufacturer..... Stamford Electric Generators
Model & Type.....S4L1D-E311, 4 Pole, 12 Lead, Three Phase
.....S4L1D-D311, 4 Pole, 12 Lead, 480V, Three Phase
.....HC1434D17 4 Pole, 4 Lead, 600V, Three Phase
Exciter..... Brushless, shunt excited
Voltage Regulator.....Solid State, HZ/Volts
Voltage Regulation ..... ½%, No load to full load
Frequency .....60 HZ
Frequency Regulation.....± ½% (1/2 cycle, no load to full load)
Unbalanced Load Capability .....100% of standby amps
One Step Load Acceptance.....100% of nameplate rating
Total Stator and Load Insulation ..... Class H, 180°C
Temperature Rise.....120°C R/R, standby rating @ 40°C amb.
3 Ø Motor Starting @ 30% Voltage Dip (208-240V) .... 720 kVA
3 Ø Motor Starting @ 30% Voltage Dip (480V)..... 780 kVA
3 Ø Motor Starting @ 30% Voltage Dip (600V)..... 850 kVA
Bearing.....1, Pre-lubed and sealed
Coupling ..... Direct flexible disc.
Total Harmonic Distortion.....Max 3 % (MIL-STD705B)
Telephone Interference Factor.....Max 50 (NEMA MG1-22)
Deviation Factor .....Max 5% (MIL-STD 405B)
Alternator..... Self ventilating and drip-proof
Ltd. Warranty Period .....24 Months from start-up date or
..... 1000 hours use, first to occur.

GENERATOR FEATURES

- World Renown Stamford Electric Generator having UL-1446 certification.
- Full generator protection with **Basler DGC-2020** controller, having UL-508 certification.
- Automatic voltage regulator with over-excitation, under-frequency compensation, under-speed protection, and EMI filtering. Entire solid-state board is encapsulated for moisture protection.
- Generator power ratings are based on temperature rise, measured by resistance method, as defined in MIL-STD 705C and IEEE STD 115, Method 6.4.4.
- Power ratings will not exceed temperature rise limitation for class H insulation as per NEMA MG1-22.40.
- Insulation resistance to ground, exceeds 1.5 meg-ohm.
- Stator receives 2000 V. hi-potential test on main windings, and rotor windings receive a 1500 V. hi-potential test, as per MIL-STD 705B.
- Full amortisseur windings with UL-1446 certification.
- Complete engine-generator torsional acceptance, confirmed during initial prototype testing.
- Full load testing on all engine-generator sets, before shipping.

ENGINE SPECIFICATIONS AND APPLICATIONS DATA

ENGINE

Manufacturer.....VOLVO-PENTA
Model and Type..... TAD1351GE, 4 cycle, liquid Cooled
Aspiration ..... Turbo After Cooler, Air to Air
Charged Air Cooled System …… Air to Air
Cylinder Arrangement .....6 Cylinders, In-Line
Displacement Cu. In. (Liters) ..... 780(12.8)
Bore & Stroke in (Cm) ..... 5.16 x 6.22 (13.1 x 15.8)
Compression Ratio.....18:1
Main Bearings.....Tin Overlay with Babbit Backing
Cylinder Head.....Cast Iron with overhead Cam
Pistons.....Aluminum Alloy with Graphite Coating
Crankshaft..... Induction Hardened, Heat Treated Forged
Valves .....Heat Treated and Hardened Exhaust Valve
Governor ..... Electronic, EMS 2.2
Frequency Regulation.....± 1/4%
Air Cleaner..... Dry, Replaceable Cartridge
Engine Speed .....1800 rpm
Max Power, bhp (kwm) Standby 456 (335)
BMEP: psi (MPa) Standby 254 (1.7)
Ltd. Warranty Period .....2 Year or 1000 hrs, first to occur

FUEL SYSTEM

Type .....Diesel Fuel Oil (ASTM No. 2-D)
Combustion System.....Direct Injection
Fuel Injection Pump..... Electronic, Delphi E3
24 VDC Coolant heaters.....Optional Equipment
Fuel Filter .....……..Yes with Water Separator

FUEL CONSUMPTION

GAL/HR (LITER/HR)	STANDBY
100% LOAD	21.8 (82.7)
75% LOAD	16.6 (62.7)
50% LOAD	11.5 (43.5)

OIL SYSTEM

Type .....Full Pressure
Oil Pan Capacity qt. (L)..... 31.6 (29.9)
Oil Pan Cap. W/ filter qt. (L) 38 (35.9)
Oil Filter..... 3, Replaceable Cartridge type

ELECTRICAL SYSTEM

Ignition System .....Electronic
Eng. Alternator/Starter: 24 VDC, negative ground, 80 amp/hr.

Recommended battery to -18°C (0° F): ...(2) 12 VDC, BCI# 27, Max. Dimensions: 12”lg x 6 3/4” wi x 9” hi, with standard round posts. Min output 700 CCA. Battery tray (max. dim. at 12”lg x 7”wi). This model has (2) battery trays, (2) hold down straps, (2) sets of battery cables, and (1) battery charger. Installation of (2) 12VDC starting batteries connected in series for 24VDC output is required, with possible higher AMP/HR rating, as described above, if the normal environment temperature averages -13° F (-25°C) or cooler.

CERTIFICATIONS

All engines are EPA emissions certified. All stationary diesel engines are Tier III compliant.

APPLICATION & ENGINEERING DATA FOR MODEL SPVD-3000-60 HZ

COOLING SYSTEM

Type of System.....Air to Air, Charged Air Cooler
Coolant Pump ..... Pre-lubricated, self-sealing
Cooling Fan Type .....Pusher (16)
Fan Diameter inches (cm) 35.1 (89)
Fan drive ratio..... 0.84:1
Ambient Capacity of Radiator °F (°C).....131 (55)
Engine Jacket Coolant Capacity gal. (L).....5.28 (20)
Radiator Coolant Capacity gal. (L) 11.6 (44)
Water Pump Capacity gpm (L/min) 87.0 (329)
Heat Reject Coolant: Btu/min .... ….8,872
Air to Air Heat Reject, BTU/min. .... ….4,663
Heat Radiated to Ambient, BTU/min..... ..... ….2,668
Low Radiator Coolant Level Shutdown……..Standard
Note: Coolant temp. shut-down switch setting at 228°F (109°C) with 50/50 (water/antifreeze) mix.

COOLING AIR REQUIREMENTS

Combustion Air cfm (m^3/min)..... .....908 (25.7)
Max Air Intake Restrictions:
Clean Air Cleaner, KPA (psi)..... .....5 (1.5)
Radiator Cooling Air, SCFM (m^3/min)…….....12,085 (342)

EXHAUST SYSTEM

Exhaust Outlet Size .....6"
Max. Back Pressure in KPA (in. H2O) 15 (60.2)
Exhaust Flow, at rated KW, CFM (m3/min).....2,129 (61)
Exhaust Temp, (Stack) °F (ºC)..... .....869 (465)

SOUND LEVELS MEASURED IN dB(A)

	Open Set	Level 2 Encl.
Level 2, Critical Silencer	87	75
Level 3, Hospital Silencer		70

Note: Open sets (no enclosure) have optional silencer system choices due to unknown job-site applications. Level 2 enclosure has installed critical silencer with upgrade to Level 3 hospital silencer. Sound tests are averaged from several test points and taken at 23 ft. (7 m) from source of noise at normal operation.

DERATE GENERATOR FOR ALTITUDE

3% per 1000 ft.(305 meters) above 3000 ft. (914 meters) from sea level.

DERATE GENERATOR FOR TEMPERATURE

2% per 10°F (12°C) above 104°F (40°C)

DIMENSIONS AND WEIGHTS

	Open Set	Level 2 Enclosure
Length in (cm)	132 (335)	162 (411)
Width in (cm)	52 (132)	52 (132)
Height in (cm)	65 (165)	80 (203)
Net Weight lbs (kg)	6327 (2870)	7597 (3446)
Ship Weight lbs (kg)	6602 (2995)	7962 (3612)

BASLER DGC-2020 DIGITAL MICROPROCESSOR CONTROLLER



BASLER DGC-2020

The "**2020**" controller is a highly advanced integrated gen-set control system for single gen-set applications. This controller includes a backlit LCD display which continuously displays the status of the engine and generator at all times.

Basler "**DGC-2020"** includes: Generator metering (including three phase) • Engine – Generator protections including IEEE-[27] under voltage, [32] power, [40] loss of excitation, [59] over voltage, [81] over and under frequency, Exercise timer • SAE J1939 engine ECU communications • Expansion capabilities for both inputs and outputs with expansion • Remote communications through RS-485 to Basler's RDP110 remote Display panel • (16) programmable contact inputs • (15) programmable contact outputs- (3) for up to 30AmpDC and (12) for up to 2 Amp DC • Illuminated Text Display • Front panel menu scroll buttons • Front panel operation mode buttons for STOP, RUN and AUTO • Alarm Silence and Lamp Test buttons

This controller includes expansion features including, RS485 (using MODBUS), direct USB connection with PC, expansion optioned using BESTCOMSPlus for remote annunciation and remote relay interfacing for a distance of up to 3300FT. The controller software is freely downloadable from the internet and allows monitoring with direct USB cable, LAN, or by internet via the built in web interface.



Further expansion is available by adding the optional RDP-110 remote display panel module. This featured device will allow Four programmable LEDs (2) alarms and (2) pre-alarms • (17) alarms and pre-alarms displayed from Basler controller • audible alarm horn • lamp test and alarm silence buttons • RD100 local power supply inputs of either 12vdc or 24vdc • connects through Basler controller through RS-485 communications protocol • conduit box included for (2) mounting configurations- either surface mount or semi-flush mounting.

STANDARD FEATURES FOR MODEL SPVD-3000-60 HZ

STANDARD FEATURES

CONTROL PANEL:

Basler DGC-2020 digital microprocessor with logic allows programming in the field. Controller has:

- STOP-MANUAL-AUTO modes and automatic engine shutdowns, signaled by full text LCD indicators:
- Low oil pressure
- High engine temp
- Low Radiator Level
- Three auxiliary alarms
- Battery fail alarm
- Engine fail to start
- Engine over speed
- Engine under speed
- Over & under voltage

Also included is tamper-proof engine hour meter

ENGINE:

Fuel filter • Full flow Oil filter • Air filter • Fuel pump • Oil pump • Solenoid type starter motor • Hi-temp radiator • Jacket water pump • Thermostat • Pusher fan and guard • Exhaust manifold • Electronic Governor • 24 VDC battery charging alternator • Flexible fuel and exhaust connectors • Vibration isolators • Open coolant recovery system with 50/50 water to anti-freeze mixture • flexible oil & radiator hose • Shut-down sensors for low oil pressure, high coolant temp., low coolant level, high ambient temp.

Design & specifications subject to change without prior notice. Dimensions shown are approximate. Contact Gillette for certified drawings.
DO NOT USE DIMENSIONS FOR INSTALLATION PURPOSES.

AC GENERATOR SYSTEM:

AC generator • Shunt excited • Brushless design • Circuit Breaker installed and wired to gen-set • Direct connection to engine with flex disc • Class H, 180°C insulation • Self ventilated • Drip proof construction • UL Certified

VOLTAGE REGULATOR:

1% Voltage regulation • EMI filter • Under-speed protection • Over-excitation protection • total encapsulation

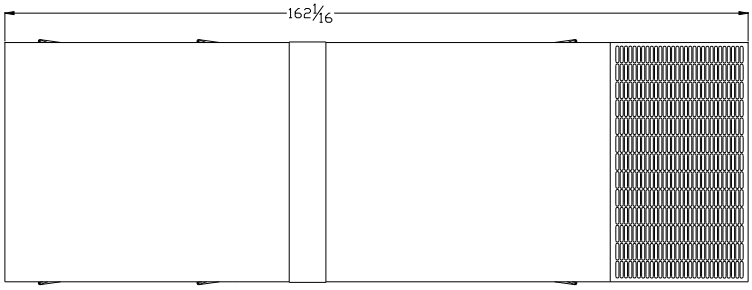
DC ELECTRICAL SYSTEM:

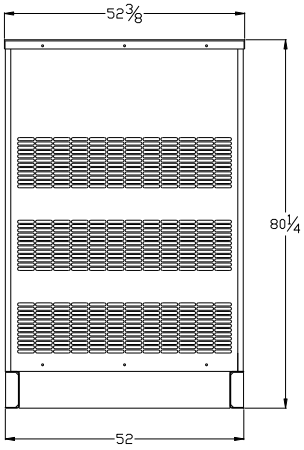
Battery trays • Battery cables • Battery hold down straps • 3-stage battery charger with float, absorption, & bulk automatic charge stages

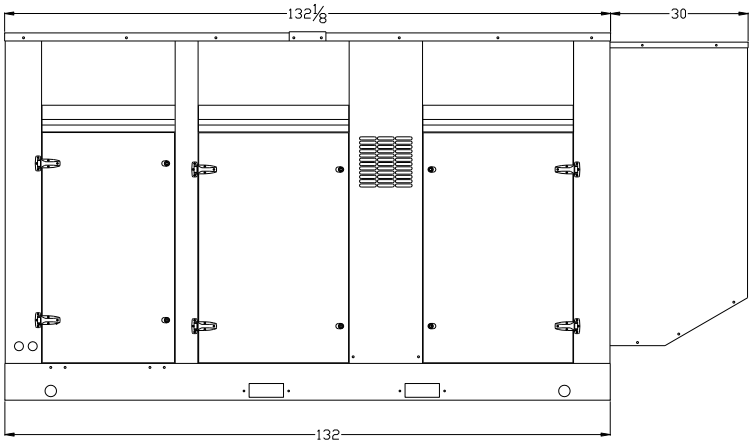
WEATHER / SOUNDPROOF ALUMINUM HOUSING:

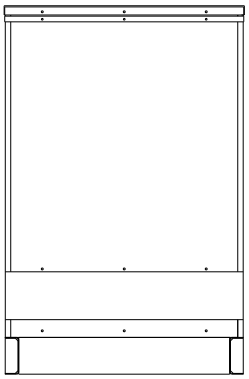
Corrosion Resistant Protection consisting of:

- (9) Heated and Agitated Wash Stages
- Zinc Phosphate Etching-Coating Stage
- Final Baked on Enamel Powder Coat
- 18/8 Stainless Steel Hardware









VOLVO PENTA GENSET ENGINE

TAD1351GE

313 kW (426 hp) at 1500 rpm, 335 kW (456 hp) at 1800 rpm

A powerful, reliable and economical Generating Set Diesel Engine built on the dependable Volvo in-line six concept.

Energy efficiency and Economy

Through careful management of the combustion process, involving precise control of air movement and injection spray Volvo Penta has been able to achieve higher levels of efficiency than ever before. This has resulted in improved fuel economy and reduced exhaust emission levels that comply with current requirements and which will enable the engines to satisfy future legislation.
Volvo Penta engines offer the highest kWh/Liter fuel, resulting in superior economy and performance.

Durability & low noise

Designed for easy, fast and economical installation. Field tested to ensure highest standard of durability and long life. Well-balanced to produce smooth and vibration-free operation with low noise level.
To maintain a controlled working temperature in cylinders and combustion chambers, the engine is equipped with piston cooling. The engine is also fitted with replaceable cylinder liners and valve seats/guides to ensure maximum durability and service life of the engine.

Low exhaust emission

The state of the art, high-tech injection and highly efficient charge air system with low internal losses contributes to excellent combustion and low fuel consumption. The engine is EPA/CARB Tier 3 & EU Stage 3A emission certified. These regulations are met by using V-ACT™ (Volvo Advanced Combustion technology). V-ACT includes a flexible high pressure fuel injection system, an air management system including an internal exhaust gas recirculation device and an enhanced electronic controller.

Easy service & maintenance

Easily accessible service and maintenance points contribute to the ease of service of the engine.



Features

- Volvo Penta Electronic management system
- Certified for US/EPA Tier 3 and EU Stage 3A
- High efficient cooling system
- Compact design
- Base engines as well as Gen Pac configurations
- Switchable between 1500/1800 rpm
- Excellent step load performance acc. to ISO 8528-5 G3 governing class
- Low operating cost

50 Hz/1500 rpm

Prime power			Standby			Generator efficiency
kWm	kWe	kVa	kWm	kWe	kVa	(%)
274	254	318	301	280	350	93%

60 Hz/1800 rpm

Prime power			Standby			Generator efficiency
kWm	kWe	kVa	kWm	kWe	kVa	(%)
294	273	341	323	300	375	93%

VOLVO PENTA

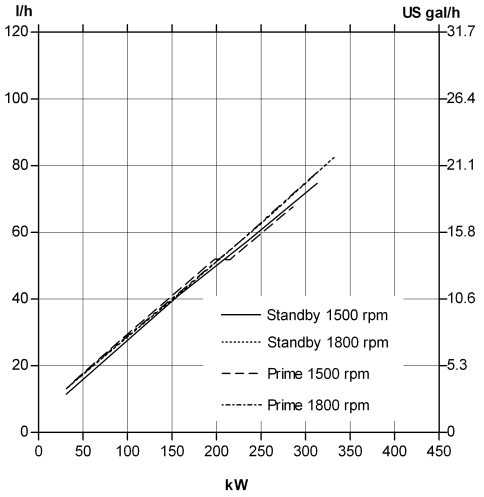
TAD1351GE

Technical Data

General

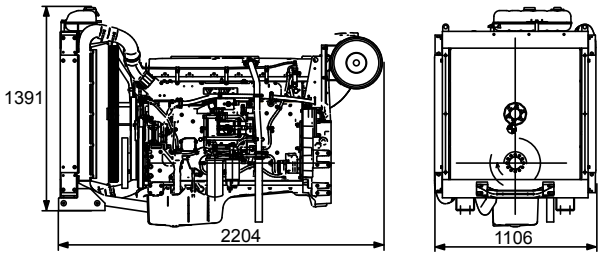
Engine designation	TAD1351GE
No. of cylinders and configuration	in-line 6
Method of operation	4-stroke
Bore, mm (in.)	131 (5.16)
Stroke, mm (in.)	158 (6.22)
Displacement, l (in³)	12.78 (780)
Compression ratio	18.1:1
Dry weight, engine only, kg (lb)	1295 (2855)
Dry weight with Gen Pac, kg (lb)	1715 (3781)

Performance	**1500 rpm**	**1800 rpm**
with fan, kW (hp) at:		
Prime Power	274 (373)	294 (400)
Max Standby Power	301 (409)	323 (439)
Fan power consumption, kW (hp)	6 (8)	12 (16)



Dimensions TAD1351GE

Not for installation



Technical description

Engine and block

- Cast iron cylinder block with optimum distribution of forces without the block being unnessarily heavy.
- Wet, replaceable cylinder liners
- Piston cooling for low piston temperature and reduced ring temperature
- Tapered connecting rods for increased piston lifetime
- Crankshaft induction hardened bearing surfaces and fillets with seven bearings for moderate load on main and high-end bearings
- Case hardened and Nitrocarburized transmission gears for heavy duty operation
- Keystone top compression rings for long service life
- Viscous type crankshaft vibration dampers to withstand single bearing alternator torsional vibrations
- Replaceable valve guides and valve seats
- Over head camshaft and 4 valves per cylinder

Lubrication system

- Full flow oil cooler
- Full flow disposable spin-on oil filter, for extra high filtration
- The lubricating oil level can be measured at start-up
- Gear type lubricating oil pump, gear driven by the transmission

Fuel system

- Electronic high pressure unit injectors
- Fuel prefilter with water separator and water-in-fuel indicator / alarm
- Gear driven low-pressure fuel pump
- Fine fuel filter with manual feed pump and fuel pressure switch

Cooling system

- Efficient cooling with accurate coolant control through a water distribution duct in the cylinder block. Reliable sleeve thermostat with minimum pressure drop
- Belt driven coolant pump with high degree of efficiency

Turbo charger

- Efficient and reliable turbo charger
- Electronically controlled Waste-gate
- Extra oil filter for the turbo charger

Electrical system

- Engine Management System 2 (EMS 2), an electronically controlled processing system which optimizes engine performance. It also includes advanced facilities for diagnostics and fault tracing
- The instruments and controls connect to the engine via the CAN SAE J1939 interface, either through the Control Interface Unit (CIU) or the Digital Control Unit (DCU). The CIU converts the digital CAN bus signal to an anolog signal, making it possible to connect a variety of instruments. The DCU is a control panel with display, engine control, monitoring, alarm, parameter setting and diagnostic functions. The DCU also presents error codes in clear text.
- Sensors for oil pressure, oil temp, boost pressure, boost temp, coolant temp, fuel temp, water in fuel, fuel pressure and two speed sensors.

Note! Not all models, standard equipment and accessories are available in all countries.
All specifications are subject to change without notice.
The engine illustrated may not be entirely identical to production standard engines.

Power Standards
The engine performance corresponds to ISO 3046, BS 5514 and DIN 6271. The technical data applies to an engine without cooling fan and operating on a fuel with calorific value of 42.7 MJ /kg (18360 BTU/lb) and a density of 0.84 kg/liter (7.01 lb/US gal), also where this involves a deviation from the standards. Power output guaranteed within 0 to +2% att rated ambient conditions at delivery. Ratings are based on ISO 8528. Engine speed governing in accordance with ISO 3046/IV, class A1 and ISO 8528-5 class G3

Exhaust emissions
The engine complies with US/EPA Tier 3 and EU stage 3 A emission legislation according to the Non Road Directive EU 97/68/EEC. The engine also complies with TA-luft -50% exhaust emission regulations.

Rating Guidelines
PRIME POWER rating corresponds to ISO Standard Power for continuous operation. It is applicable for supplying electrical power at variable load for an unlimited number of hours instead of commercially purchased power. A10 % overload capability for govering purpose is available for this rating.
STANDBY POWER rating corresponds to ISO Standard Fuel Stop Power. It is applicable for supplying standby electrical power at variable load in areas with well established electrical networks in the event of normal utility power failure. No overload capability is available for this rating.
1 hp = 1 kW x 1.36

Information
For more technical data and information, please look in the Generating Set Engines Sales Guide.

AB Volvo Penta
SE-405 08 Göteborg, Sweden
www.volvopenta.com

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STAMFORD

S4L1D-D41 Wdg.311 - Technical Data Sheet

Standards

Stamford industrial alternators meet the requirements of the relevant parts of the BS EN 60034 and the relevant section of other international standards such as BS5000, VDE 0530, NEMA MG1-32, IEC34, CSA C22.2-100 and As1359. Other standards and certifications can be considered on request.

Quality Assurance

Alternators are manufactured using production procedures having a quality assurance level to BS EN ISO 9001.



Excitation and Voltage Regulators

Excitation System					
AVR Type	AS440	MX341	MX321		
Voltage Regulation	± 1%	± 1%	± 0.5%		with 4% Engine Governing
Excitation Type	Self-Excited	PMG	PMG		

No Load Excitation Voltage (V)	12 - 9
No Load Excitation Current (A)	0.7 - 0.5
Full Load Excitation Voltage (V)	41 - 39
Full Load Excitation Current (A)	2.3 - 2.2
Exciter Time Constant (seconds)	0.105

STAMFORD

S4L1D-D41 Wdg.311

Electrical Data

Insulation System	Class H							
Stator Winding	Double Layer Lap							
Winding Pitch	Two Thirds							
Winding Leads	12							
Winding Number	311							
Number of Poles	4							
IP Rating	IP23							
RFI Suppression	BS EN 61000-6-2 & BS EN 61000-6-4,VDE 0875G, VDE 0875N. Refer to factory for others							
Waveform Distortion	NO LOAD < 1.5% NON-DISTORTING BALANCED LINEAR LOAD < 5.0%							
Short Circuit Ratio	1/Xd							
Steady State X/R Ratio	12.29							
	50 Hz				**60 Hz**			
Telephone Interference	THF<2%				TIF<50			
Cooling Air	0.83 m³/sec				0.99 m³/sec			
Voltage Star	380	400	415	440	416	440	460	480
kVA Base Rating (Class H) for Reactance Values	300	310	310	290	344	370	375	390
Saturated Values in Per Unit at Base Ratings and Voltages								
Xd Dir. Axis Synchronous	3.15	2.94	2.73	2.27	3.60	3.46	3.21	3.07
X'd Dir. Axis Transient	0.20	0.19	0.17	0.14	0.22	0.21	0.20	0.19
X"d Dir. Axis Subtransient	0.14	0.13	0.12	0.10	0.15	0.14	0.13	0.12
Xq Quad. Axis Reactance	2.66	2.48	2.30	1.92	3.09	2.97	2.75	2.63
X"q Quad. Axis Subtransient	0.40	0.37	0.34	0.29	0.40	0.39	0.36	0.34
XL Stator Leakage Reactance	0.07	0.06	0.06	0.05	0.09	0.08	0.08	0.07
X2 Negative Sequence Reactance	0.27	0.25	0.23	0.19	0.28	0.27	0.25	0.24
X0 Zero Sequence Reactance	0.10	0.09	0.09	0.07	0.10	0.09	0.09	0.08
Unsaturated Values in Per Unit at Base Ratings and Voltages								
Xd Dir. Axis Synchronous	3.78	3.53	3.28	2.73	4.32	4.16	3.85	3.68
X'd Dir. Axis Transient	0.23	0.21	0.20	0.17	0.25	0.24	0.23	0.22
X"d Dir. Axis Subtransient	0.17	0.16	0.15	0.12	0.17	0.16	0.15	0.15
Xq Quad. Axis Reactance	2.74	2.55	2.37	1.97	3.18	3.06	2.84	2.71
X"q Quad. Axis Subtransient	0.48	0.45	0.41	0.34	0.48	0.46	0.43	0.41
XL Stator Leakage Reactance	0.08	0.07	0.07	0.05	0.10	0.09	0.09	0.08
Xlr Rotor Leakage Reactance	0.12	0.11	0.10	0.09	0.14	0.13	0.12	0.12
X2 Negative Sequence Reactance	0.32	0.30	0.28	0.23	0.34	0.32	0.30	0.29
X0 Zero Sequence Reactance	0.12	0.11	0.10	0.08	0.11	0.11	0.10	0.10

STAMFORD

S4L1D-D41 Wdg.311

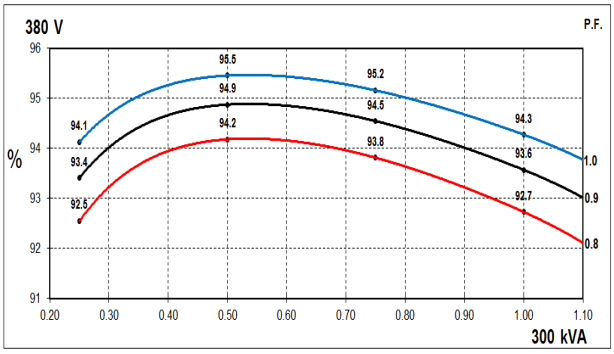
Time Constants (Seconds)		
T'd TRANSIENT TIME CONST.	0.08	
T''d SUB-TRANSTIME CONST.	0.019	
T'do O.C. FIELD TIME CONST.	1.7	
Ta ARMATURE TIME CONST.	0.018	
T''q SUB-TRANSTIME CONST.	0.0077	
Resistances in Ohms (Ω) at 22^{0}C		
Stator Winding Resistance (Ra), per phase for series connected	0.0124	
Rotor Winding Resistance (Rf)	1.05	
Exciter Stator Winding Resistance	18	
Exciter Rotor Winding Resistance per phase	0.068	
PMG Phase Resistance (Rpmg) per phase	1.9	
Positive Sequence Resistance (R1)	0.0155	
Negative Sequence Resistance (R2)	0.017856	
Zero Sequence Resistance (R0)	0.0155	
Saturation Factors	400V	480V
SG1.0	0.31	0.31
SG1.2	1.25	1.25
Mechanical Data		
Shaft and Keys	All alternator rotors are dynamically balanced to better than BS6861: Part 1 Grade 2.5 for minimum vibration in operation. Two bearing generators are balanced with a half key.	
	1 Bearing	2 Bearings
SAE Adaptor	SAE 0.5, 1	N/A
Moment of Inertia	4.0771 kgm2	N/A
Weight Wound Stator	415 kg	N/A
Weight Wound Rotor	361 kg	N/A
Weight Complete Alternator	940 kg	N/A
Shipping weight in a Crate	1010 kg	N/A
Packing Crate Size	155 x 87 x 107(cm)	N/A
Maximum Over Speed	2250 RPM for two minutes	
Bearing Drive End	N/A	N/A
Bearing Non-Drive End	Ball 6314	N/A

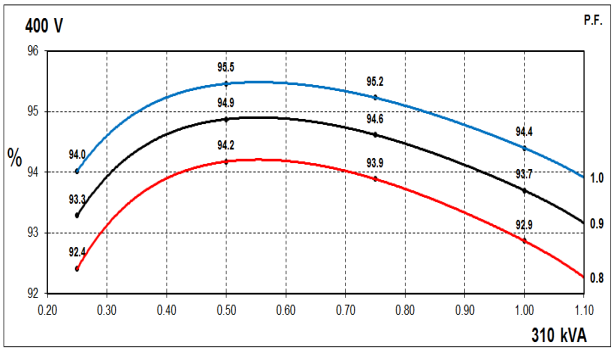
STAMFORD

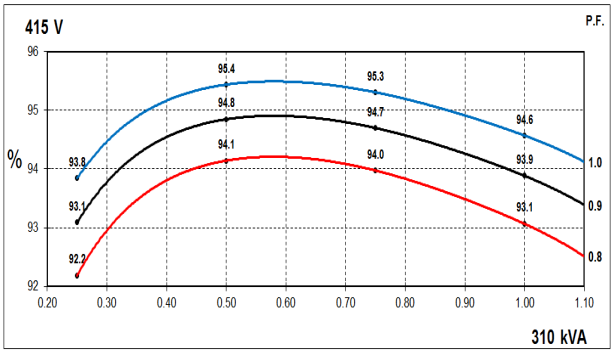
S4L1D-D41 Wdg.311

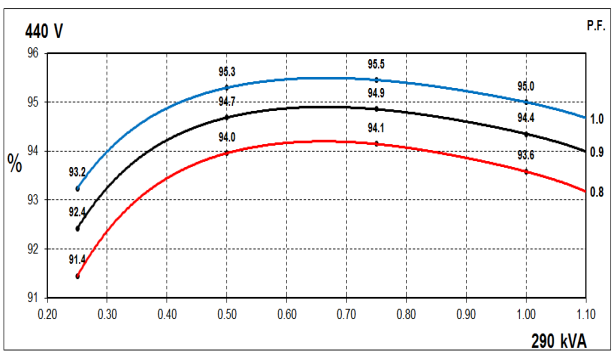
THREE PHASE EFFICIENCY CURVES

50Hz

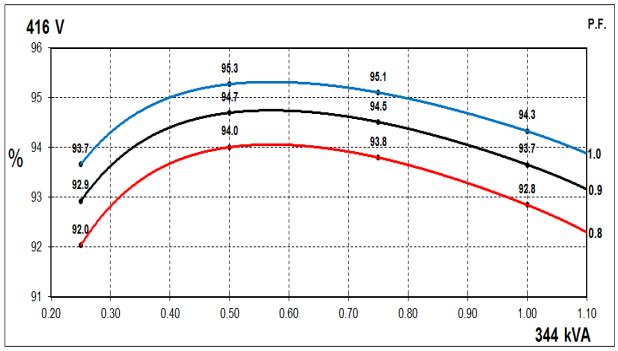


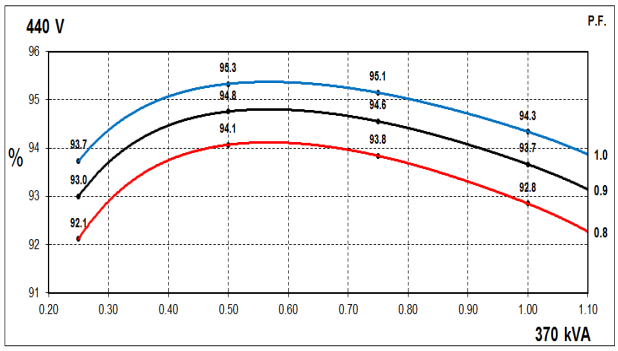


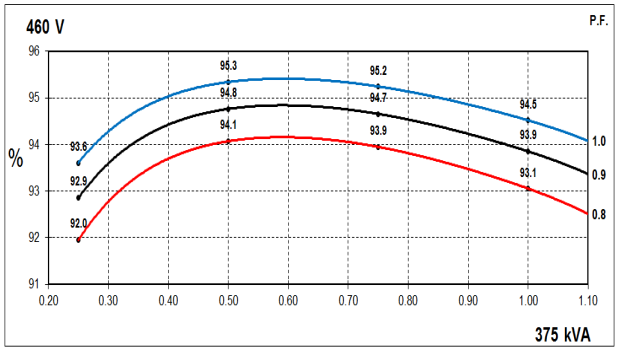


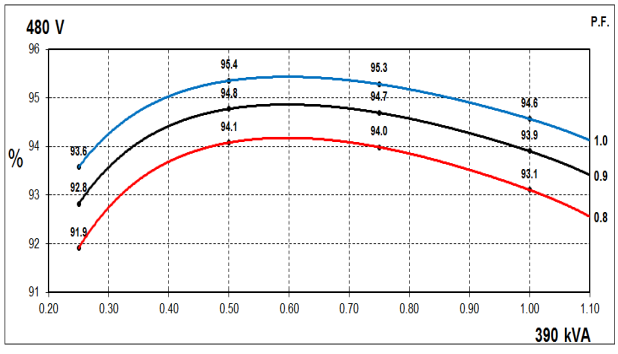


60Hz



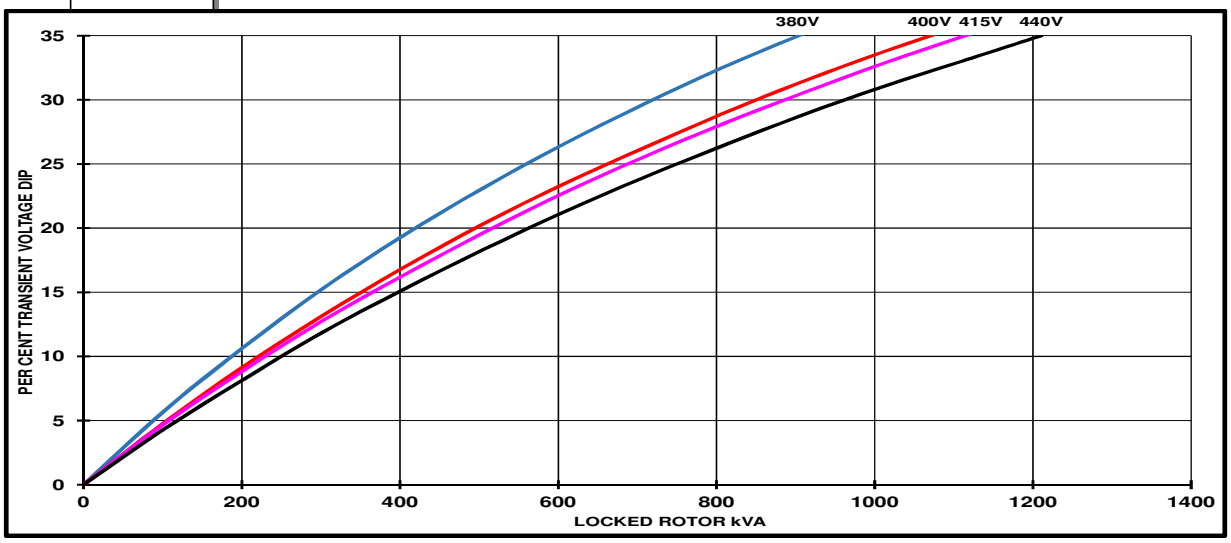




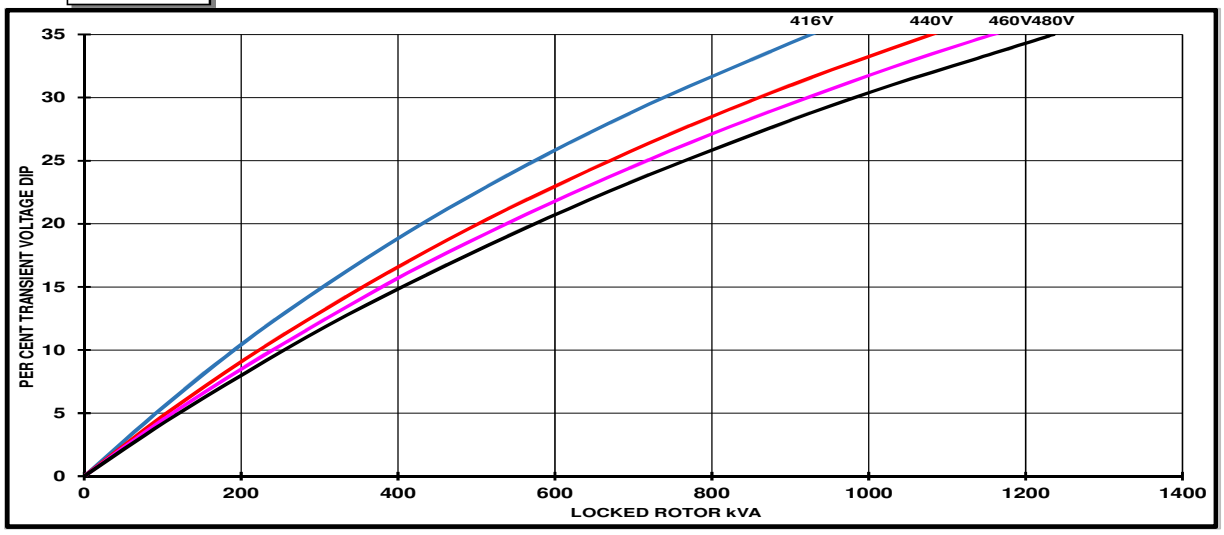


Locked Rotor Motor Starting Curves - Separately Excited

50Hz



60Hz



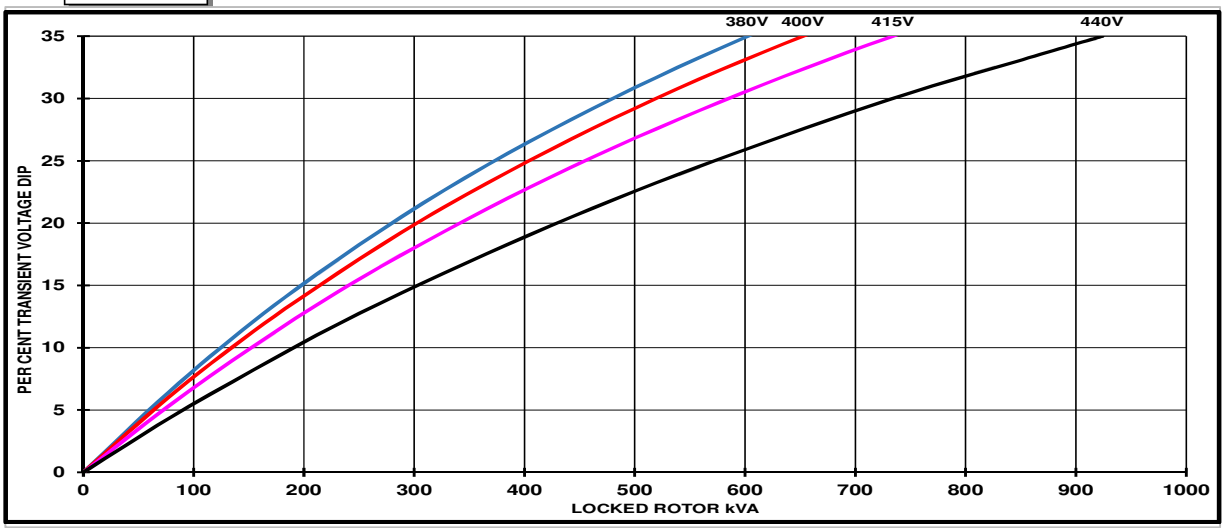
Transient Voltage Dip Scaling Factor		Transient Voltage Rise Scaling Factor
PF	Factor	For voltage rise multiply voltage dip by 1.25
< 0.5	1	
0.5	0.97	
0.6	0.93	
0.7	0.9	
0.8	0.85	
0.9	0.83	

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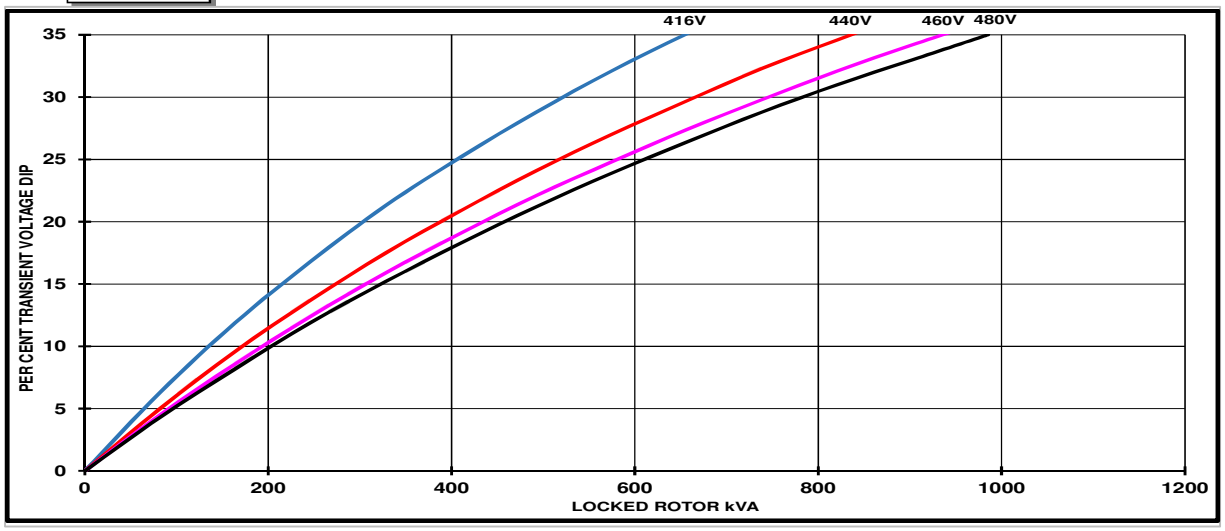
S4L1D-D41 Wdg.311

Locked Rotor Motor Starting Curves - Self Excited

50Hz



60Hz



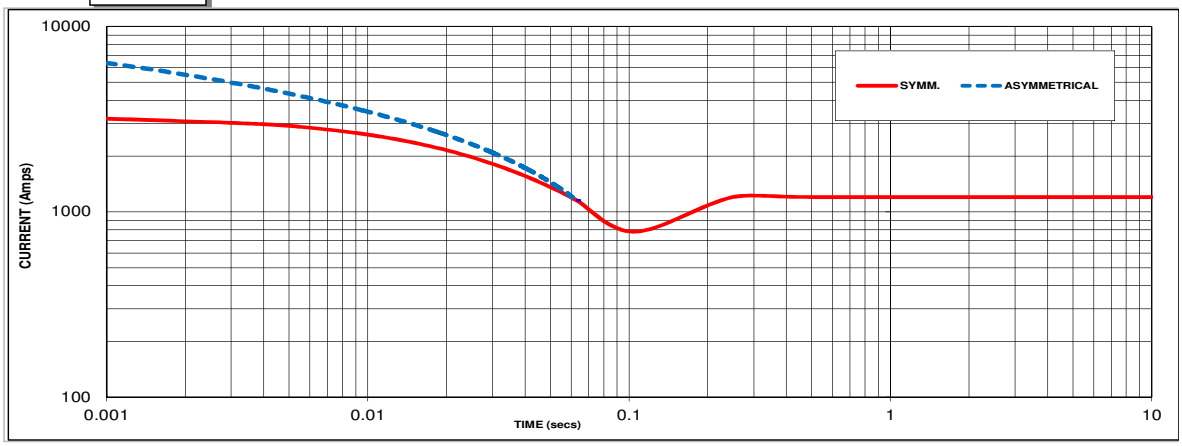
Transient Voltage Dip Scaling Factor		Transient Voltage Rise Scaling Factor
PF	Factor	For voltage rise multiply voltage dip by 1.25
< 0.5	1	
0.5	0.97	
0.6	0.93	
0.7	0.9	
0.8	0.85	
0.9	0.83	

STAMFORD

S4L1D-D41 Wdg.311

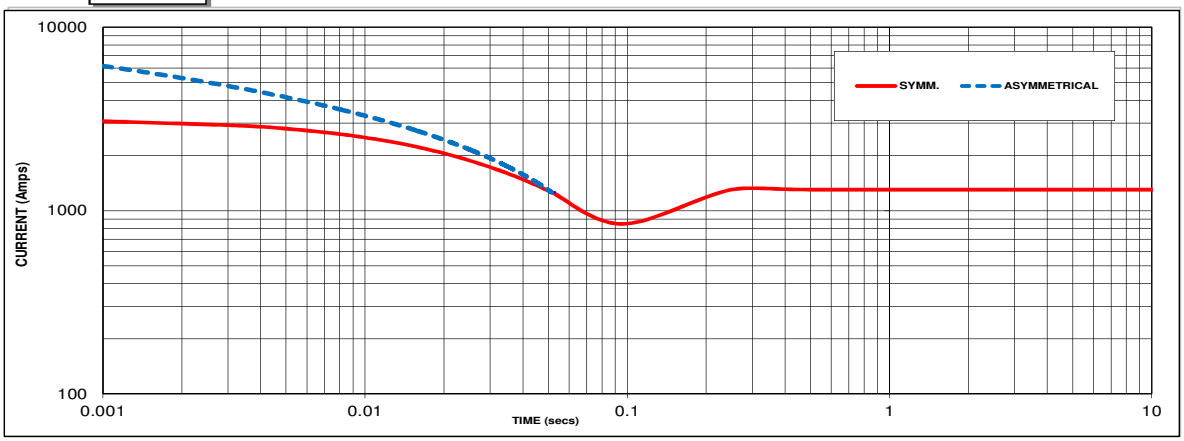
Three-phase Short Circuit Decrement Curve

50Hz



Sustained Short Circuit = 1200 Amps

60Hz



Sustained Short Circuit = 1300 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

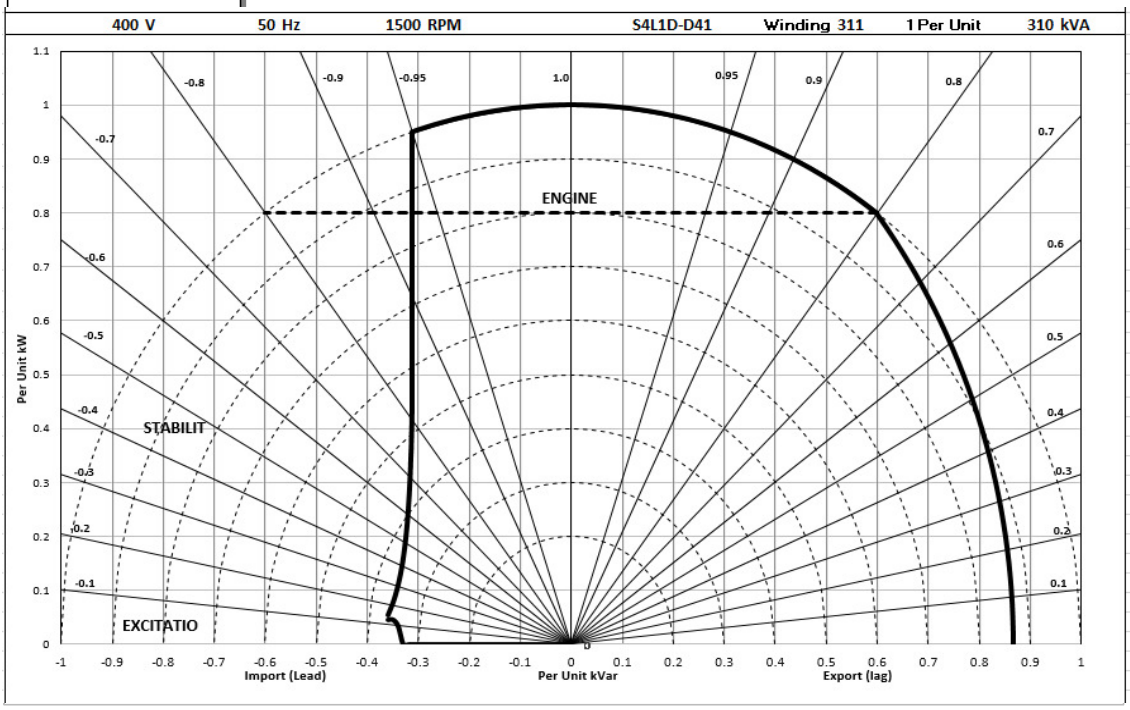
Note 3
Curves are drawn for Star connected machines under no-load excitation at rated speeds. For other connection the following multipliers should be applied to current values as shown :
Parallel Star = Curve current value X 2
Series Delta = Curve current value X 1.732

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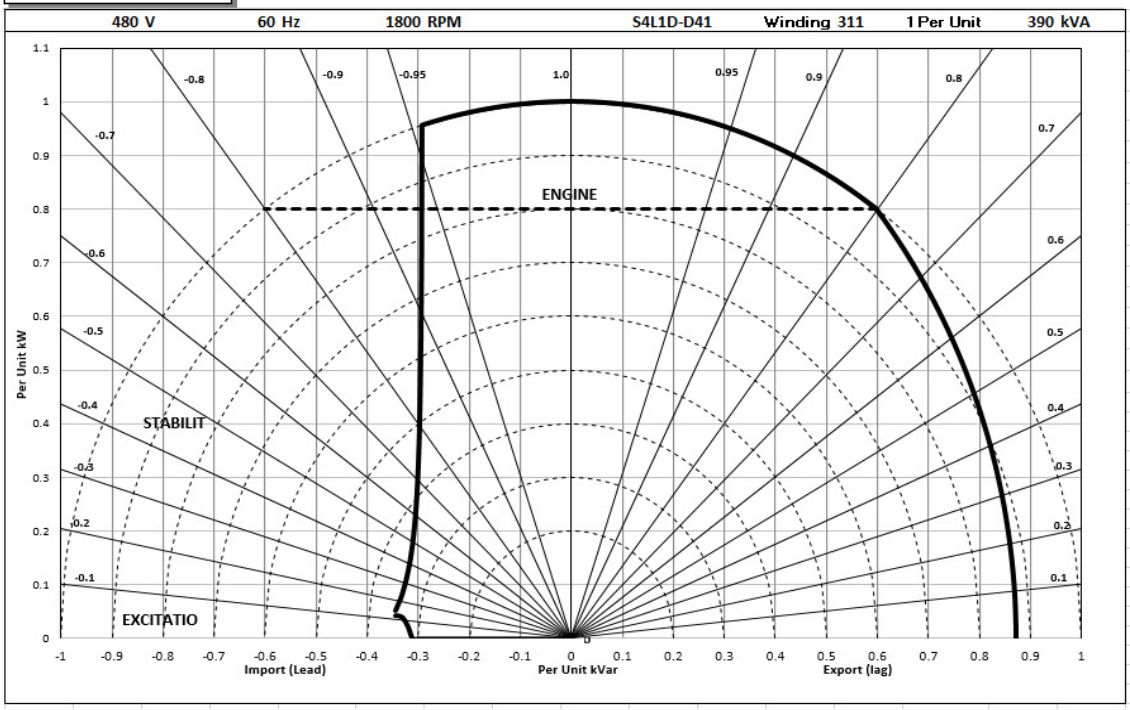
S4L1D-D41 Wdg.311

Typical Alternator Operating Charts

400V/50Hz



480V/60Hz



STAMFORD

S4L1D-D41 Wdg.311

RATINGS AT 0.8 POWER FACTOR

	Class - Temp Rise	Standby - 163/27°C				Standby - 150/40°C				Cont. H - 125/40°C				Cont. F - 105/40°C			
50 Hz	Series Star (V)	380	400	415	440	380	400	415	440	380	400	415	440	380	400	415	440
	kVA	330	340	340	320	320	330	330	310	300	310	310	290	280	285	285	270
	kW	264	272	272	256	256	264	264	248	240	248	248	232	224	228	228	216
	Efficiency (%)	92.1	92.3	92.6	93.2	92.3	92.5	92.7	93.3	92.7	92.9	93.1	93.6	93.1	93.3	93.4	93.8
	kW Input	287	295	294	275	277	285	285	266	259	267	266	248	241	244	244	230

60 Hz	Series Star (V)	416	440	460	480	416	440	460	480	416	440	460	480	416	440	460	480
	kVA	375	410	415	430	365	400	400	415	344	370	375	390	315	340	345	355
	kW	300	328	332	344	292	320	320	332	275	296	300	312	252	272	276	284
	Efficiency (%)	92.4	92.2	92.5	92.6	92.5	92.4	92.7	92.8	92.8	92.9	93.1	93.1	93.2	93.2	93.4	93.5
	kW Input	325	356	359	372	316	346	345	358	296	319	322	335	270	292	295	304

De-Rates

All values tabulated above are subject to the following reductions:

- 5% when air inlet filters are fitted
- 3% for every 500 meters by which the operating altitude exceeds 1000 meters above mean sea level
- 3% for every 5°C by which the operational ambient temperature exceeds 40°C
- For any other operating conditions impacting the cooling circuit please refer to applications

Note: Requirement for operating in an ambient exceeding 60°C and altitude exceeding 4000 meters must be referred to applications.

Dimensional and Torsional Drawing

For dimensional and torsional information please refer to the alternator General Arrangement and rotor drawings available on our website (http://stamford-avk.com/)

Note: Continuous development of our products means that the information contained in our data sheets can change without notice, and specifications should always be confirmed with Cummins Generator Technologies prior to purchase.

GILLETTE GENERATORS

S-8A PMG
MX341

MX341 Technical Specification

- **Sensing Input**
  - Voltage: 190 VAC to 264 VAC 1 phase, 2 wire
  - Frequency: 50 Hz to 60 Hz nominal
- **Power Input**
  - Voltage: 140 VAC to 220 VAC 3 phase, 3 wire
  - Current: 3 A per phase
  - Frequency: 100 Hz to 120 Hz nominal
- **Power Output**
  - Voltage: maximum 120 VDC
  - Current
    - continuous 2.7 A
    - transient 6 A for 10 seconds
  - Resistance: 15 Ω minimum
- **Regulation**
  - +/- 1.0% RMS[1]
- **Thermal Drift**
  - 0.03% per 1 °C change in AVR ambient temperature[2]
- **Typical Response**
  - AVR response in 10 ms
  - Field current to 90% in 80 ms
  - Machine Volts to 97% in 300 ms
- **External Voltage Adjustment**
  - +/-10% with 1 kΩ, 1 W trimmer[3]
- **Under-Frequency Protection**
  - Set point 95% Hz [4]
  - Slope 170% down to 30 Hz
- **Unit Power Dissipation**
  - 12 W maximum
- **Analogue Input**
  - Maximum input: +/- 5 VDC[5]
  - Sensitivity: 1V for 5% Alternator Volts (adjustable)
  - Input resistance 1 kΩ

- **Quadrature Droop Input**
  - 10 Ω burden
  - Maximum sensitivity: 0.07 A for 5% droop, zero power factor
  - Maximum input: 0.33 A
- **Over-Voltage Detection**
  - Set point: 75 VDC
  - Time delay: 10 s (fixed)
- **Environmental**
  - Vibration
    - 20 Hz to 100 Hz: 50 mm/sec
    - 100 Hz to 2 kHz: 3.3 g
  - Operating temperature: -40 °C to +70 °C
  - Relative Humidity 0 °C to 70 °C: 95%[6]
  - Storage temperature: -55 °C to +80 °C

[1] With 4% engine governing
[2] After 10 minutes
[3] Applies to Mod status D onwards. Alternator de-rate may apply. Check with factory
[4] Factory set, semi-sealed, jumper selectable.
[5] Any device connected to the analogue input must be fully floating (galvanically isolated from ground), with an insulation strength of 500 VAC
[6] Non condensing.

DGC-2020 Digital Genset Controller







A highly advanced integrated genset control system, this device provides genset control, transfer switch control, metering, protection, and programmable logic in a simple, easy-to-use, reliable, rugged, and cost effective package.

Features

- Generator metering (includes three-phase mains)
- Engine and generator protection: 27, 32R, 40Q, 59, 81O/U
- Optional enhanced generator protection: 47, 51, 78, and 81ROCOF
- Load sharing and generator sequencing (via LSM-2020 Load Share Module)
- Var sharing over Ethernet (via LSM-2020)
- BESTCOMS*Plus*® Software
  - Programming and setup
  - Intuitive and powerful
  - Remote control and monitoring
  - Programmable logic
  - USB communications
- Automatic transfer switch control
- Automatic synchronizer (optional)
- Exercise timer
- SAE J1939 engine ECU communications
- Automatic generator configuration detection
- Expandable functionality via add-on modules
  - LSM-2020 Load Share Module
  - CEM-2020 Contact Expansion Module
  - AEM-2020 Analog Expansion Module
- Multilingual capability
- Remote communications to Basler's RDP-110 (remote display panel)
- Sixteen programmable contact inputs
- Up to 15 contact outputs: 3 contacts rated for 30 Adc and up to 12 programmable contacts rated for 2 Adc

Visit www.basler.com for additional information.

Benefits

- Provides integrated engine-genset control, protection, and metering in a single package.
- The Offline Simulator, provided in BESTlogic™*Plus*, helps test and troubleshoot logic without the need for expensive hardware.
- Flexible programmable logic and programmable I/O make it easy to expand the DGC-2020's inputs and outputs with the CEM-2020 (Contact Expansion Module) and the AEM-2020 (Analog Expansion Module). This saves time and money by eliminating unnecessary external PLCs and control relaying.

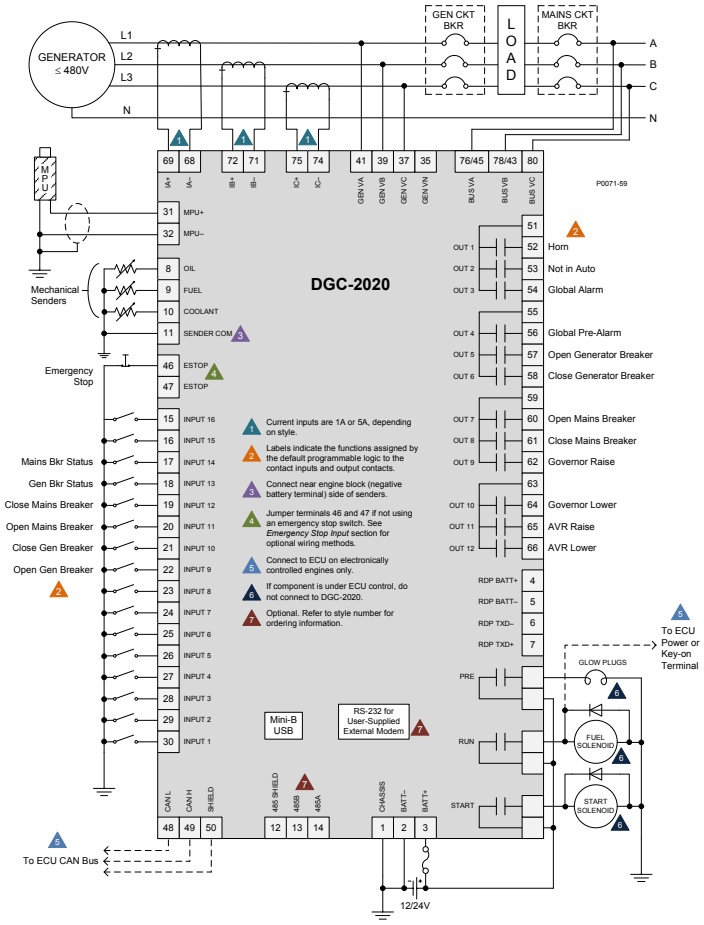


Figure 1 - DGC-2020 Connection Diagram for a Typical Application

DGC-2020 Digital Genset Controller

Specifications

Power Supply

Nominal:	12 or 24 Vdc
Range:	6 to 32 Vdc
Battery Ride Through:	Starting at 10 Vdc, withstands cranking ride-through down to 0 V for 50 ms

Power Consumption

Sleep Mode:	5 W
Normal Operational Mode:	7.9 W
Maximum:	14.2 W

Current Sensing

1 A Sensing:	0.02 to 1.0 Aac, continuous 2 Aac for 1 second
5 A Sensing:	0.1 to 5.0 Aac, continuous 10 Aac for 1 second
Burden:	1 VA

Voltage Sensing

Range:	12 to 576 Vrms L-L
Frequency Range:	10 to 72 Hz for 50/60 Hz style, 10 to 480 Hz for 400 Hz style
Burden:	1 VA
One-second Rating:	720 Vrms

Contact Sensing

Contact Inputs (16):	Accepts normally open (N.O.), Dry Contacts, programmable
Emergency Stop:	Normally closed (N.C.), Dry Contact

Engine Speed Sensing

Magnetic Pickup:	
Voltage Range:	6 to 70 Vpp
Frequency Range:	32 to 10,000 Hz
Generator Frequency:	
Generator Voltage Range:	12 to 576 Vrms
Via ECU over J1939	

Resistive Senders

Fuel Level Sender:	0 to 250 Ω nominal
Coolant Temp Sender:	10 to 2,750 Ω nominal
Oil Pressure Sender:	0 to 250 Ω nominal

Output Contacts

Fuel Solenoid, Engine Crank, Pre-Start Relays Rating:	30 Adc at 28 Vdc-make, break, and carry
Programmable Relays:	Up to 12
Rating:	2 Adc at 28 Vdc-make, break, and carry

Protection

Generator:	27, 32R, 40Q, 59, 81O/U (standard) 47, 51, 78, 81 ROCOF (optional)
Engine:	Oil pressure, coolant temperature, overcrank, ECU-specific elements, and diagnostic reporting.

Agency Approvals

CSA certified, NFPA compliant, CE compliant, UL recognized (Hazardous Location certification available upon request), EAC certified

Communication

USB Port:	USB 2.0, Mini-B jack
RS-485 (optional):	9600 baud, 8 data bits, no parity
RDP-110 (optional):	4,000 ft (1,219 m) max wire length, 20 AWG (0.52 mm²) min wire size
Modem (optional):	DB-9 connector (male)
CAN bus:	250 kb/s communication rate, 1.5 to 3 Vdc differential bus

Environmental

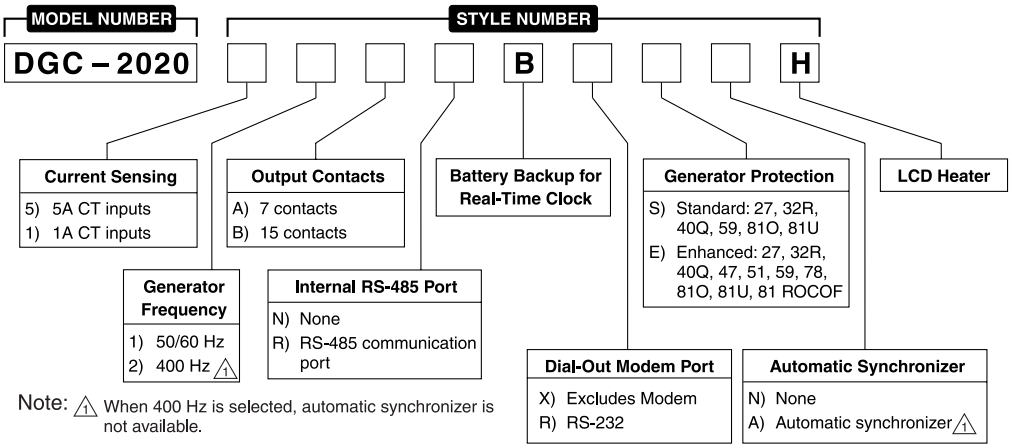
Operating Temp:	-40°C to 70°C (-40°F to 158°F)
Storage Temp:	-40°C to 85°C (-40°F to 185°F)
Humidity:	IEC 68-2-38
Salt Fog:	ASTM B 17-73, IEC 68-2-11
Ingress Protection:	IEC IP54 for front panel
Shock:	15 G in three perpendicular planes
Vibration:	
5 to 29 Hz:	1.5 G peak
29 to 52 Hz:	0.036″ (0.914 mm) double amplitude
52 to 500 Hz:	5 G peak

Physical

Weight:	4.4 lb (2 kg)
Dimensions (WxHxD):	11.77 x 8.27 x 2.69 inches (299 x 210 x 69 mm)

For complete specifications, download the instruction manual at www.basler.com.

Style Chart



Note: 1 When 400 Hz is selected, automatic synchronizer is not available.

Related Products

- BE1-11*g* Generator Protection System
  - A complete generator protection system.
- DECS-250 Digital Excitation Control System
  - Total control in a compact package provides precise voltage, var and power factor regulation, exceptional system response, and generator protection.

Accessories

- AEM-2020 Analog Expansion Module
  - Easily increases the functionality by seamlessly adding analog inputs and outputs.
- CEM-2020, CEM-2020H Contact Expansion Module
  - Each module adds 10 inputs and up to 24 outputs that are easily programmed through BESTCOMS*Plus*® for easy integration into the system.
- LSM-2020 Load Share Module
  - The simple-to-use LSM-2020 easily adds paralleling capabilities with little effort and expense.
- RDP-110 Remote Display Panel
  - Provides remote alarm and pre-alarm indication and annunciation of system status, easily meeting the annunciation requirements of NFPA-110 applications.

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e-mail: singaporeinfo@basler.com

Molded Case Circuit Breakers

Power Defense ™ UL Global Series

Part Number: PDG33G0600B2NJNNNNNN

Powering Business Worldwide

Datasheet creation date: 02/12/2019

PRODUCT VIEW *(Use Mouse to Rotate and Zoom)*

Eaton's Power Defense™ molded case circuit breakers, a globally rated platform designed to help keep your power system safe with latest protection technology. Engineered for the future: IoT and Industry 4.0 features such as built-in communications, advanced energy metering, and algorithms that signal breaker maintenance; zone selective interlock technology that clears faults quickly and locally; ArcFlash reduction options that help protect your people, and not to mention Eaton's best-inclass support and service.

Tech Data for Configured Product

Power Defense Catalog Number	PDG33G0600B2NJNNNNNN
Frame Size	Frame 3
Poles	3 Pole
Voltage	480V AC
Interruption or Breaking Capacity (Icu/Ics)	35kA
Continuous Current Rating (In)	600A
Trip Unit Type	PXR10
Trip Unit Options 1	LSI
Trip Unit Options 2	None
Indicating Accessories	None
Indicating Accessories Terminal	None
Tripping Accessories	None
Tripping Accessory Terminal	None
Tripping Accessory Voltage	None
Line Type Description	Option 1 - Standard Terminal
Line Conductor Options	(2) 2 - 500
Line Terminal Type	Aluminum
Load Type Description	Option 1 - Standard Terminal
Load Conductor Options	(2) 2 - 500
Load Terminal Type	Aluminum
Special Options - Type of Modification	None
Details	None
Additional Description	None

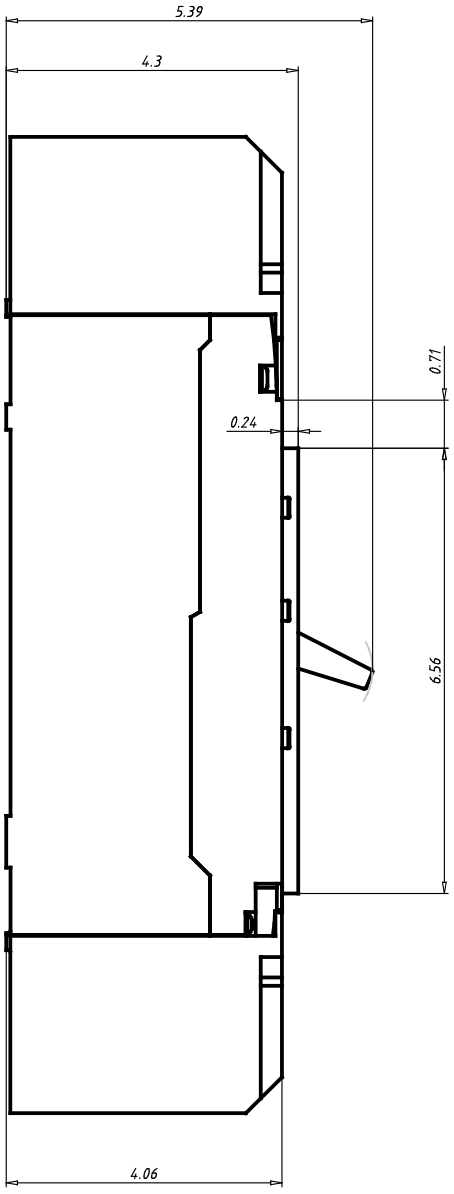
Molded Case Circuit Breakers

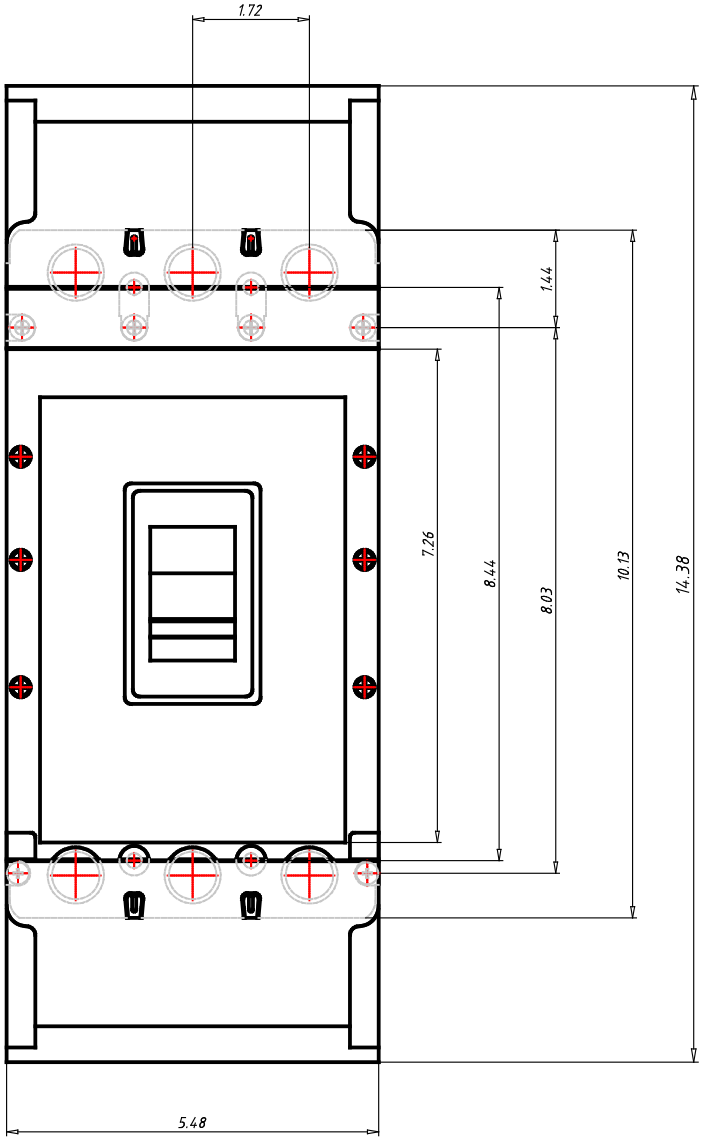
Power Defense ™ UL Global Series

Part Number: PDG33G0600B2NJNNNNNN

Datasheet creation date: 02/12/2019

Technical drawings





PDF Datasheet Powered by CADENAS PARTsolutions

Molded Case Circuit Breakers

Power Defense ™ UL Global Series

Part Number: PDG33G0600B2NJNNNNNN

Powering Business Worldwide

Datasheet creation date: 02/12/2019

General Technical Data

Frame Rating (In)	600A
Reference Standard	UL489, CSA 22.2, IEC 60947-2 & GB
Number of poles	3
Neutral rating	-
Interruption Rating Designator	F / G / K / M / N / P
UL Interruption Rating to UL 489 (240Vac)	35 / 65 / 85 / 100 / 150 / 200kA
UL Interruption Rating to UL 489 (480Vac)	25 / 35 / 50 / 65(a) / 85 / 100kA
UL Interruption Rating to UL 489 (600Vac)	14 / 18 / 25 / 35 / 50 / 65kA
UL Interruption Rating to UL 489 (125/250Vdc)	
UL Current Limiting	N / N / N / N / Y / Y
Rated breaking capacity to IEC 60947-2 (220-240 Vac Icu)	35 / 55 / 85 / 100 / 150 / 200kA
Rated breaking capacity to IEC 60947-2 (220-240 Vac Ics)	35 / 55 / 85 / 100 / 100 / 150kA
Rated breaking capacity to IEC 60947-2 (380-415 Vac Icu)	25 / 36 / 50 / 70 / 70 / 100kA
Rated breaking capacity to IEC 60947-2 (380-415 Vac Ics)	25 / 36 / 50 / 53 / 70 / 70kA
Rated breaking capacity to IEC 60947-2 (440 Vac Icu)	25 / 30 / 35 / 50 / 70 / 100kA
Rated breaking capacity to IEC 60947-2 (440 Vac Ics)	20 / 22.5 / 35 / 40 / 50 / 50kA
Rated breaking capacity to IEC 60947-2 (525 Vac Icu)	18 / 20 / 25 / 30 / 35 / 40kA
Rated breaking capacity to IEC 60947-2 (525 Vac Ics)	5 / 7.5 / 10 / 15 / 25 / 25kA
Rated breaking capacity to IEC 60947-2 (690 Vac Icu)	- / 8 / 10 / 15 / 20 / 20kA
Rated breaking capacity to IEC 60947-2 (690 Vac Ics)	- / 4 / 5 /7. 5 / 10 / 10kA
Rated breaking capacity to IEC 60947-2 (125V DC Icu)	
Rated breaking capacity to IEC 60947-2 (250V DC 2P in series Ics)	10 / 10 / 10 / 22 / 22 / 22kA
Frequency	50/60Hz
Trip Unit Type	PXR10
Continuous Current Range	250 - 600A
100% UL489 Rated	Yes
Instantaneous/Short Circuit Range	2 - 10 In
Magnetic/Instantaneous Override	7200A
Dimensions H x W x D (inches)	10.125 x 5.47 x 4.297
Pole to pole distance inches	1,719
Approx Weight lbs	16
RoHS Compliance	Yes
UL File Number	E7819
Ambient Temp Calibration	
Derating at 50C	
Derating at 60C	
Derating at 70C	

1. 480Vac corresponds to 277Vac for 1P
2. 600Vac corresponds to 347Vac for 1P

PDF Datasheet Powered by CADENAS PARTsolutions

GILLETTE GENERATORS

STANDARD BATTERY CHARGER 24V SYSTEM



Description:

2 bank, 10 amp, 12/24V DC output charger with wide input voltage range (100-240V AC), is microprocessor controlled and has a maintenance mode that will keep the battery fully charged. Meets the CEC (California Energy Commission), DOE, FCC, CE, is RoHS compliant and has UL and CSA listings (cULus).

Electrical Characteristics:

Battery size: Group 24 through 31 (up to 120 Amp-Hr)
Battery Type: 12V lead acid (FLOODED and AGM)
Maximum Recharger time: 12 hours

Input Voltage Range: 100 to 240V AC 50/60 HZ
Input Current rating: 2.5 Amps maximum

Height 5.5 inches 14.0 cm	Width 7.8 inches 19.7 cm	Depth 2.4 inches 6.2 cm

GILLETTE GENERATORS, INC. 2921 THORNE DRIVE ELKHART, IN 46514 USA TEL. (574) 264 - 9639
www.gillettegenerators.com

Additional Details

Soft Start - “Soft Start” slowly charges the battery with 14.25V (10% of rated current). As soon as the max Soft Start timer (starts immediately when entering “Soft Start”) of 6 hours is reached or when the battery reaches 10V for 30 seconds the charger switches to the “Bulk stage”.

Bulk - “Bulk” charges the battery with 14.3V (100% of rated current) until the battery reaches13.25V. As soon as the battery reaches 13.25V the Bulk timer will start counting after which it can charge the battery up to 12 hours until the voltage reaches 14.25V. As soon as the max Bulk timer

(starts when voltage level is above 13.25V while in “Bulk”) of 12 hours is reached or when the battery reaches 14.25V for 30 seconds the charger switches to the “Absorption stage”.

Absorption - “Absorption” charges the battery with 14.25V. As soon as the Absorption timer (starts immediately when entering “Absorption”) reaches 14 hours or when the charge current drops below 10% of the rated current for 30 seconds the charger switches to the “Float stage”.

Float - “Float” keeps the charger on a specific voltage level of 13.25V (100% of rated current) for a period and then will switch to the “Maintenance stage”

Maintenance - As soon as the re-cycle timer reaches 14 days (336 hours) or when thevoltage drops below 12.8V for 30 seconds the charger switches back to “Bulk stage”

GILLETTE GENERATORS

2250 WATT BLOCK HEATER S-13E



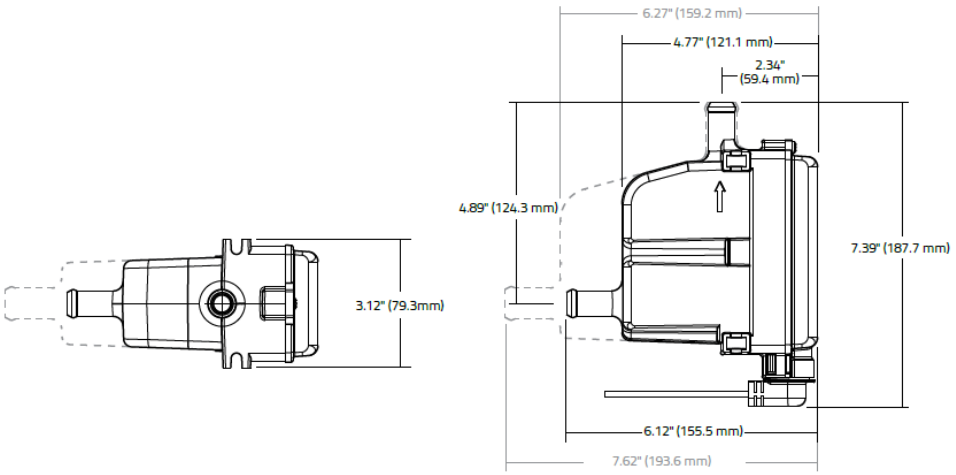
Description:

Provides engine warming for quick, clean starts Reduces time to reach operating temperature
Enhances immediate full-load acceptance
Durable aluminum housing is corrosion and impact resistant
Controls temperature by using a regulating thermostat
UL Listed, UL Recognized, CSA, and CE Certified
Thermostat on 80F, off 100F

Electrical Characteristics:

AC input: 240V, 2250 Watts, 9.3 Amps
Plug Type: NEMA 5-20
Inlet/Outlet Size: 3/4" (19mm)

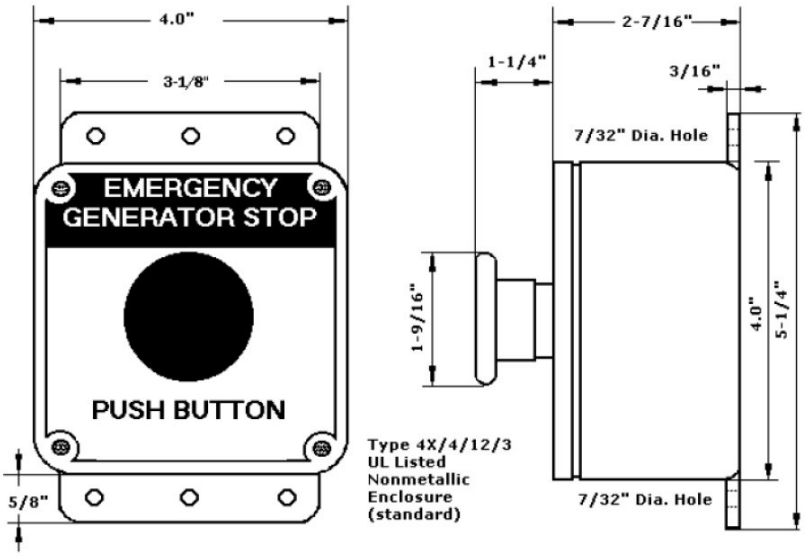
HEATER DIMENSIONS



GILLETTE GENERATORS, INC. 2921 THORNE DRIVE ELKHART, IN 46514 USA TEL. (574) 264 - 9639
www.gillettegenerators.com

GILLETTE GENERATORS

S-17BC EMERGENCY STOP SWITCH WITH CLEAR PLASTIC COVER





Description:

Yellow nonmetallic NEMA 4X enclosure. Accepts one to three contact blocks. Labeled EMERGENCY GENERATOR STOP and PUSH BUTTON. Red operator is labeled PULL TO RESET. Includes clear plastic cover installed.

Electrical Characteristics:

Contact blocks (normally closed)
Screw and captive clamp terminals. Min: 1 X 24 AWG Max: 2 X 16 AWG
600 Vac @ 1.2 Amp 250 Vdc at 0.27Amp 120 Vdc @ 0.55 Amp

Specification:

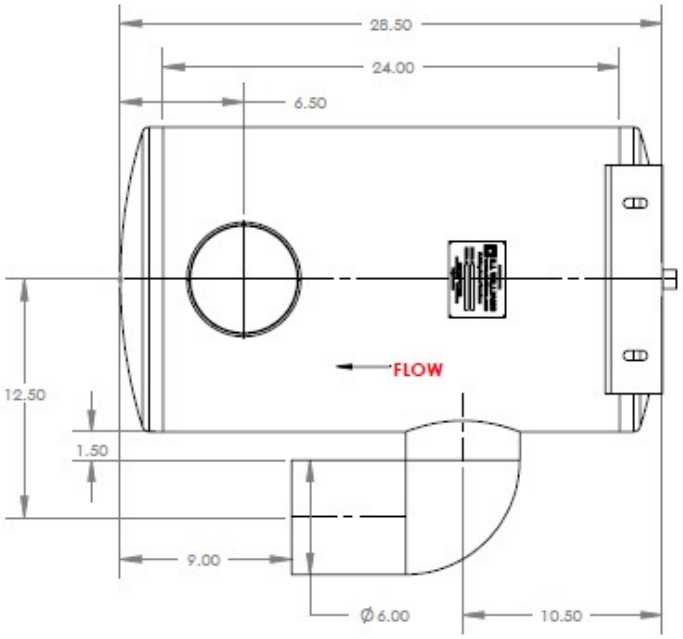
PUSH BUTTON EMERGENCY GENERATOR STOP P/N GS120 uses a single push button operating mode. Using a maintained (push-pull) red 40mm mushroom operator hot stamped PULL TO RESET on the mushroom face. The operating mode reverses the nominal state of the installed contact blocks such that type contact blocks remain open/closed when the operator is pressed or pulled to reset. Clear plastic cover is pad-lockable & installed to prevent accidental operation.

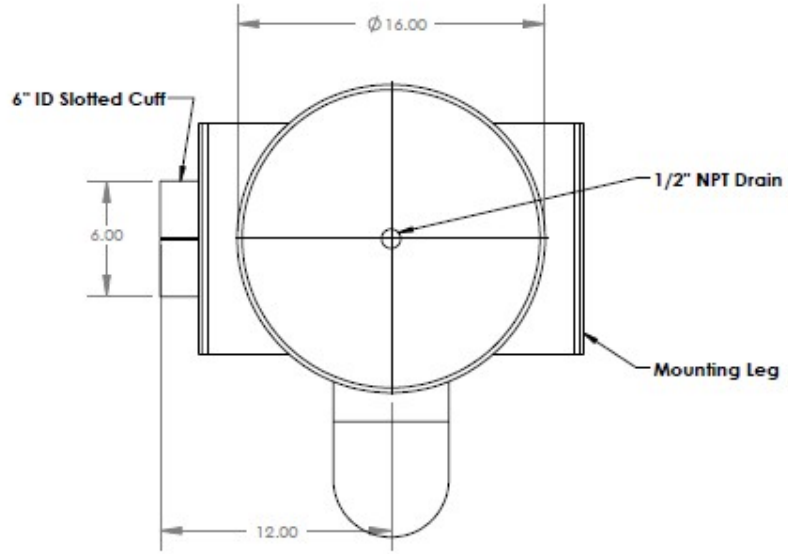
GILLETTE GENERATORS, INC. 2921 THORNE DRIVE ELKHART, IN 46514 USA TEL. (574) 264 - 9639
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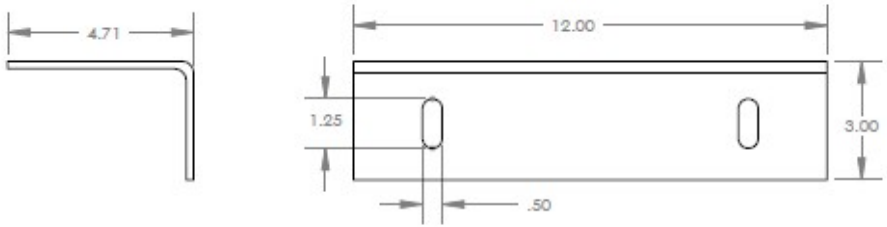
GILLETTE GENERATORS

Notes:
All Dimensions are in Inches
Silencer Type: Cylindrical Silencer
Silencer Grade: Critical Grade
Sound Attenuation: 30 - 35 dBA
Insulation: No

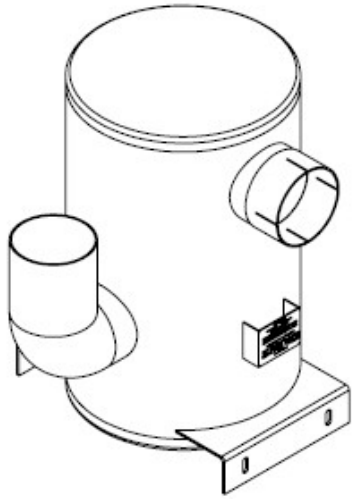
CRITICAL SILENCER
TXS-6
300-400 KW RANGE







Detail Mounting Leg (x2)

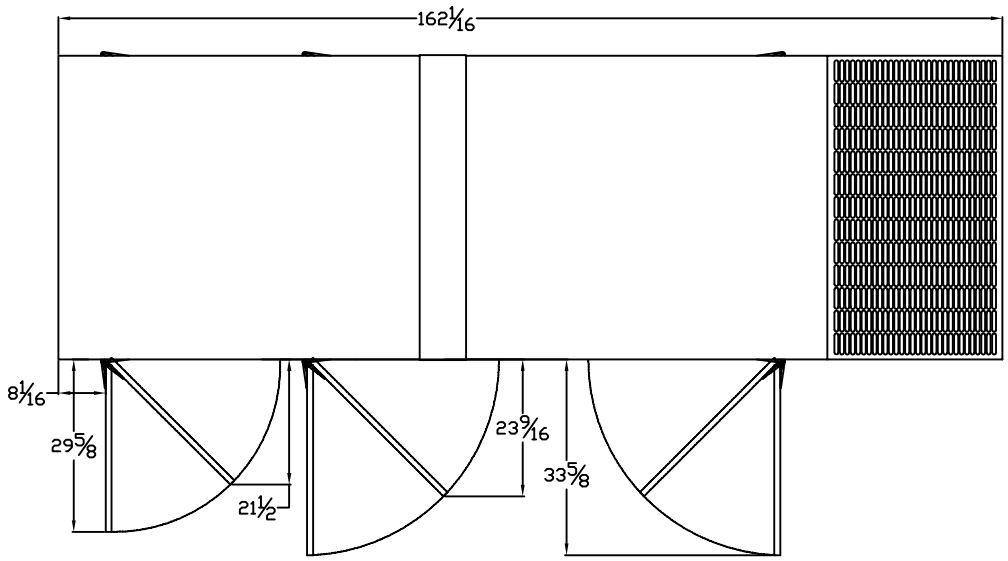


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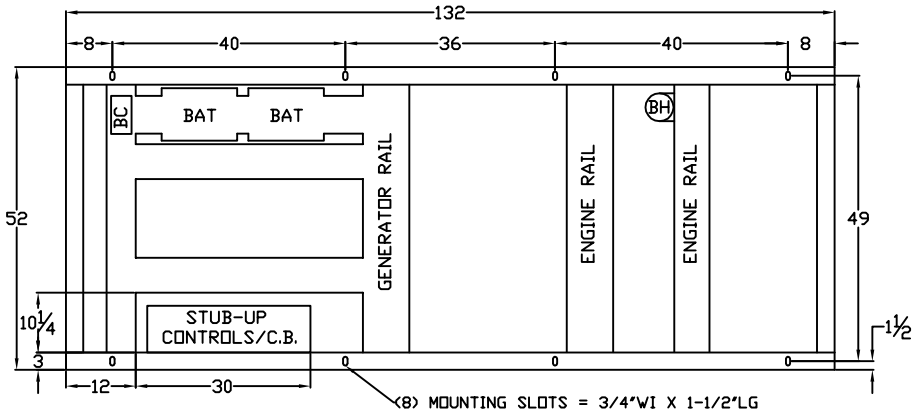
OUTLINE DIMENSIONS FOR SPVD 250 - 400 KW LEVEL 2 ENCLOSURE
(HINGED DOORS)

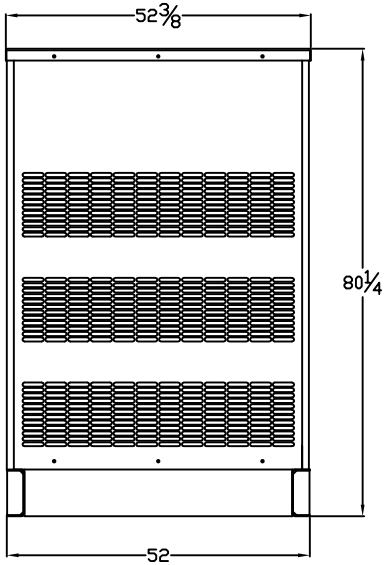
TOP VIEW

(GEN-SET HAS (6) DOORS, (3) SHOWN OPEN ARE TYPICAL FOR BOTH SIDES)

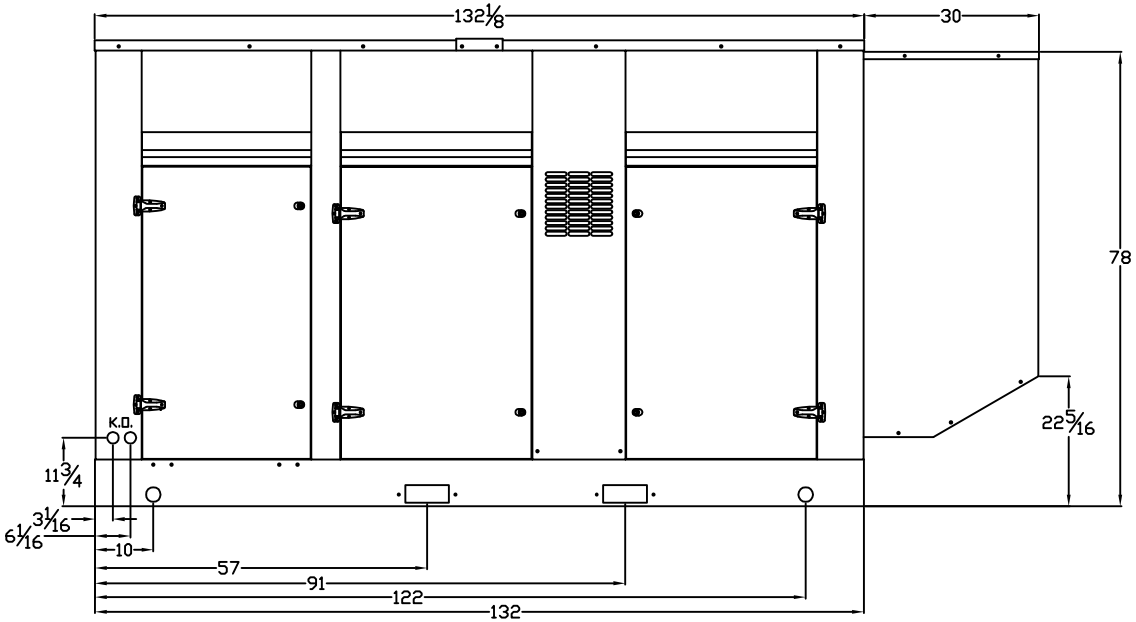


FRAME VIEW

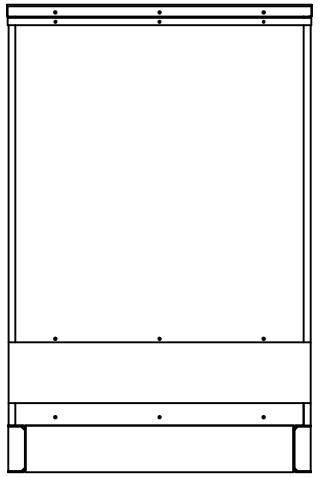




GENERATOR END VIEW



SIDE VIEW

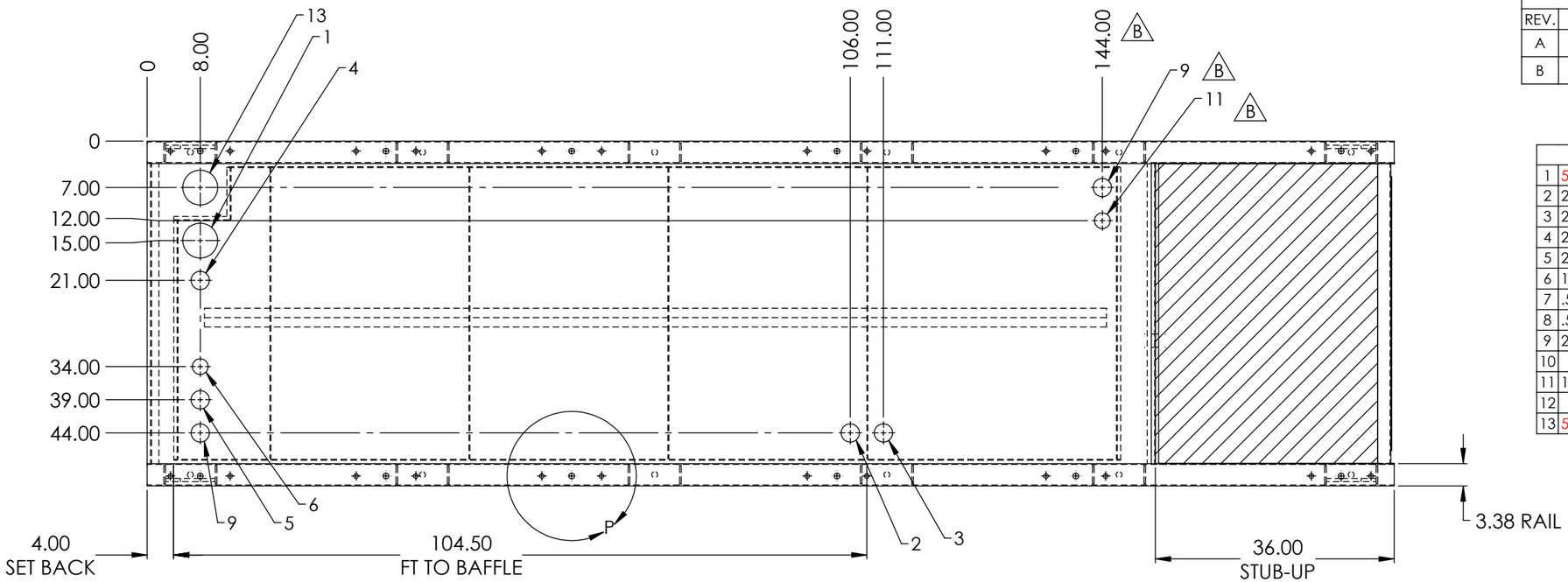


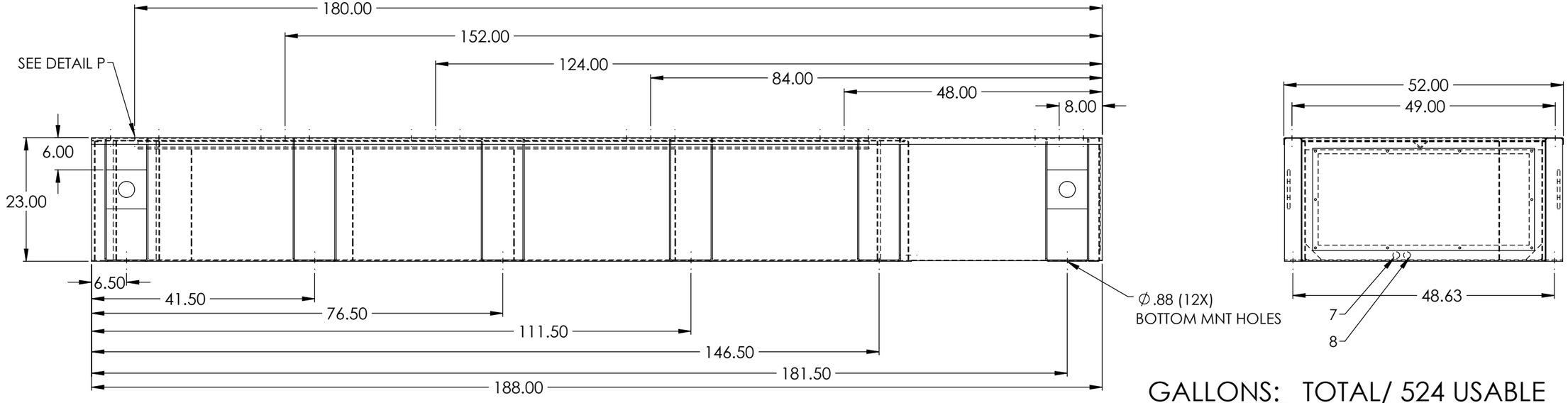
RADIATOR END VIEW

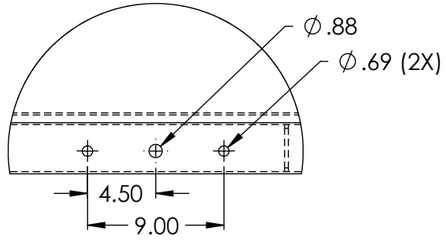
SPVD-2500-4000-L2-GENERATOR-SET-HINGES-OVERVIEW-20180224

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	MOVED PORTS 9 & 11 PER ANDREW M.	3/19/2024	JTG
B	MOVED PORTS 9 & 11 PER MATT F.	5/13/2024	JTG

PORT DESCRIPTIONS		QTY
1	5.00 NPT E-VENT (PRIMARY)	1
2	2.00 NPT x .50 NPT FUEL SUPPLY W/DIPTUBE	1
3	2.00 NPT x .50 NPT FUEL RETURN W/DIPTUBE	1
4	2.00 NPT NORMAL VENT W/10" PIPE	1
5	2.00 NPT FUEL FILL W/4" PIPE	1
6	1.50 NPT FUEL GAUGE	1
7	.50 NPT LEAK SWITCH (SIDE MOUNT)	1
8	.50 NPT DRAIN	1
9	2.00 NPT EXTRA	1
10		
11	1.50 NPT LOW FUEL SWITCH 30%	1
12		
13	5.00 NPT E-VENT (RB)	1







DETAIL P
SCALE 1 : 10
(12X)

APPROVED 5/13/2024

APPROVED
JTG
5/13/2024

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UNLESS OTHERWISE SPECIFIED:		NAME	DATE
DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± ANGULAR: MACH ± BEND ±1° TWO PLACE DECIMAL ±.12 THREE PLACE DECIMAL ±.062	DRAWN	JTG	2/17/23
	CHECKED		
	ENG APPR.		
	MFG APPR.		
INTERPRET GEOMETRIC TOLERANCING PER:	Z.B.M REV	--	--
MATERIAL: 10 GA OUTER	COMMENTS: INNER TANK DIMENSIONS: 142.75"L X 44.25"W X 22.23"H		
FINISH: BLACK			
WEIGHT: 2300 LBS			

ZBM ZIERKE BUILT MFG

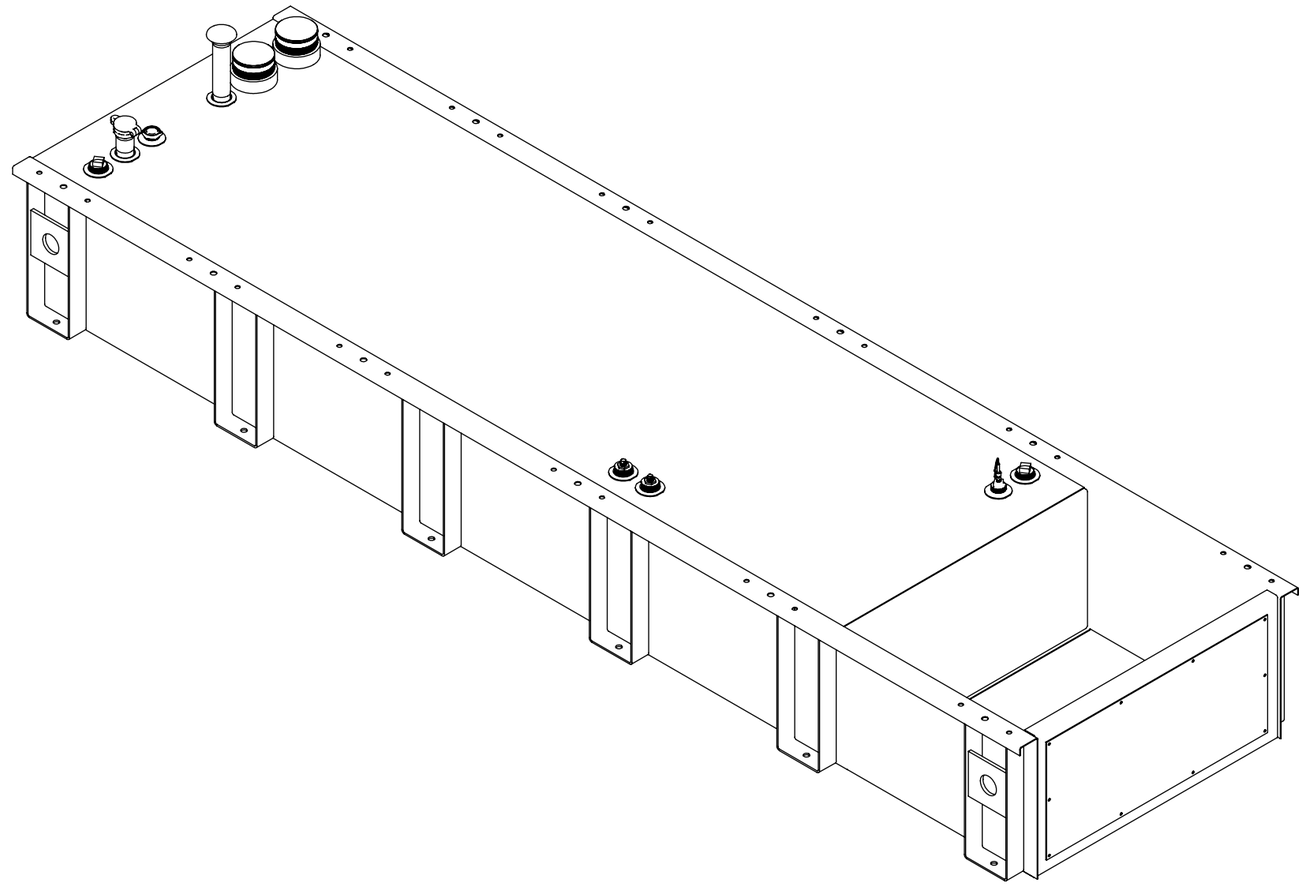
ZIERKE BUILT MANUFACTURING, INC
120 6th AVENUE S E
WINNEBAGO, MINNESOTA 56098

GALLONS: TOTAL/ 524 USABLE

TITLE: TANK ASSY (GIGE-S-524) SC DW UL 142
W/36.00 END STUB UP
188.00"L x 52.00"W x 23.00"H

SIZE	DWG. NO.	REV
B	TANK ASSY (GIGE-S-524)	B
SCALE: 1:24	DO NOT SCALE DRAWING	SHEET 1 OF 2

ITEM NO.	PART NUMBER	MaterialType	DATE	INIT	QTY.
1	RB BODY (GIGE-S-524)	10 Ga HRS	4/17/23	JTG	1
2	RB END (GIGE-S-524)	10 Ga HRS	4/17/23	JTG	1
3	RB END 2 (GIGE-S-524)	10 Ga HRS	4/17/23	JTG	1
4	RB END PANEL (GIGE-S-524)	10 Ga HRS	4/17/23	JTG	1
5	RB PANEL COVER (GIGE-S-524)	10 Ga HRS	4/17/23	JTG	1
6	SIDE SUPPORT (GIGE-S-524)	.25 Sheet	4/17/23	JTG	12
7	LIFTING PLATE	.50 HRS	5/6/24	JTG	4
8	FT BODY (GIGE-S-524)	10 Ga HRS	4/17/23	JTG	1
9	FT END (GIGE-S-524)	10 Ga HRS	4/17/23	JTG	1
10	STUB_UP PANEL (GIGE-S-524)	10ga	4/17/23	JTG	1
11	FT END 2 (GIGE-S-524)	10 Ga HRS	4/17/23	JTG	1
12	FT BAFFLE (GIGE-S-524)	10ga	4/17/23	JTG	4
13	FT TOP (GIGE-S-524)	10 Ga HRS	4/17/23	JTG	1
14	TOP SUPPORT (GIGE-S-524)	ANGLE, 2 X 2 X 3/16	4/17/23	JTG	1



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	420-3013	FLANGE - 1/2" PRESSED STEEL 0.134 THICKNESS	2
2	420-3006	FLANGE - 1 1/2" PRESSED STEEL	2
3	420-3009	FLANGE - 2" PRESSED STEEL	6
4	420-5002	BUSHING DOUBLE TAP 2 X 1/2	2
5	420-1005	PIPE NIPPLE 2" X 4" SCHED 40	1
6	420-4006	PIPE PLUG .50 SQUARE HEAD BLACK IRON	3
7	440-1005	FILL CAP 2" FNPT HINGED LOCKABLE	1
8	130-3014	SIDE MOUNT SWITCH SM-4100-PP	1
9	420-1003	PIPE NIPPLE 2" X 10"	1
10	420-4008	PIPE PLUG 2" BLACK IRON SCH. 40	2
11	450-2001	VENT CAP NORMAL 2" MUSHROOM	1
12	420-2013	COUPLING - 5" HALF	2
13	450-1007	VENT CAP EMERGENCY 5" UL	2
14	130-3005	FLOAT SWITCH 14"-16" 1-1/2" NPT NO	1
15	110-1006	FUEL GAUGE 20" - 1-1/2" NPT SPIRAL	1

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	NAME	DATE
DRAWN	JTG	2/17/23
CHECKED		
ENG APPR.		
MFG APPR.		
Q.A.		

COMMENTS:

ZIERKE BUILT MANUFACTURING, INC
120 6th AVENUE S E
WINNEBAGO, MINNESOTA 56098

TITLE:

TANK ASSY (GIGE-S-524)

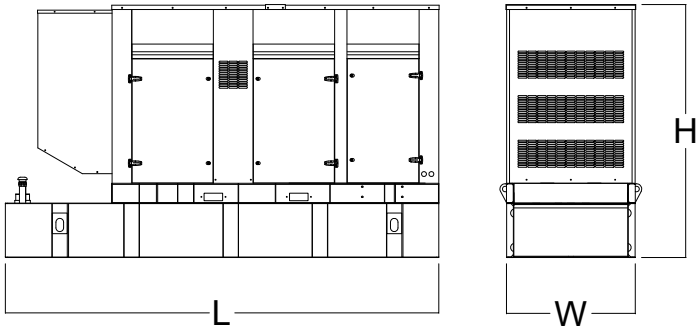
SIZE	DWG. NO.	REV
B	TANK ASSY (GIGE-S-524)	B

SCALE: 1:20 | DO NOT SCALE DRAWING | SHEET 2 OF 2

GILLETTE GENERATORS

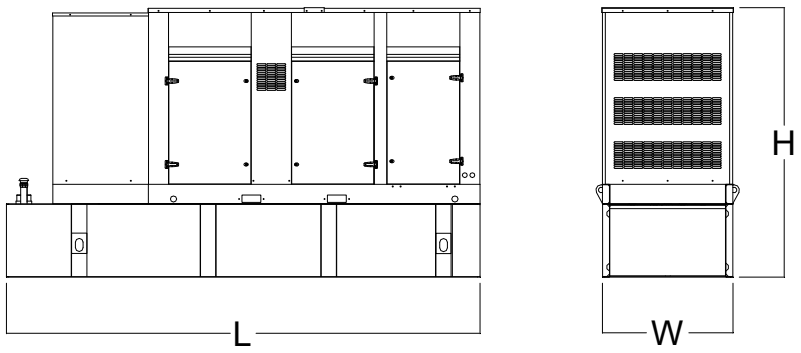
GEN-SET MOUNTED ON DOUBLE WALL SUB-BASE FUEL TANK

SPVD-3000 LEVEL 2 ENCLOSURE



RUN TIME HOURS	USABLE CAPACITY GAL.	LTR.	L	W	H	STUB UP	WT.
NO TANK	-	-	162	52	80	-	7962
24	524	1984	188	52	103	36	10414
62	1347	5099	265	52	116	36	12469
72	1570	5943	302	52	116	38	13011

SPVD-3000 LEVEL 3 ENCLOSURE



RUN TIME HOURS	USABLE CAPACITY GAL.	LTR.	L	W	H	STUB UP	WT.
NO TANK	-	-	172	52	80	-	8762
24	524	1984	188	52	103	36	11214
62	1347	5099	265	52	116	36	13269
72	1570	5943	302	52	116	38	13811