TRADEWINDS® POWER CORP

MODEL: TZ40 UL

UL2200 GASEOUS GENERATOR SET

FUEL: GASEOUS

ENGINE: ZENITH

SPECIFICATION SHEET

Power Ratings	Standby		Prime	
Gaseous Fuel	kW	kVA	kW	kVA
Natural Gas (NG)	40.0	50.0	36.0	45.0
VPG	40.0	50.0	36.0	45.0
Ampage 0.8 PF 208V	139		125	
12-wire voltages: 1P = 120/240, 3P = 120/208, 120/240, 480/277				

Rating Definitions: Rated for 1800 rpm.

Standby ratings are applicable for the duration of any power outage. No overload is available at these ratings. Prime ratings are continuous per BS 5514, DIN 6271, ISO3046 & IEC 34-1. Overload capacity on prime-power ratings is 10% for one hour in each twelve hours of operation. All single phase ratings are based on a 1.0 power factor, three (3) phase ratings based on a 0.8 power factor. Ratings are established based on 85°F (29°C) and an elevation of 1,000 feet (305 meters).

STANDARD FEATURES:

Tradewinds Power Corp (TPC) Gaseous ZENITH generator packages complete with mounted auto control panel, gas connections, air cleaners, exhaust silencers, and other accessories mounted in a weather protective enclosure. All TPC systems and components are prototyped, assembled and tested within a purpose built packaging, manufacturing, and test facility.

Engine:

- ZENITH ZPP NA 428 gaseous engine
- Full ECU engine control with coil-on-plug variable timing ignition
- Integrated knock sensing and control
- Heavy duty rated for standby and continuous prime power operation
- Cooling system capable of operation at 120°F ambient
- ZENITH 4-cycle gaseous-fueled engine is constructed for long-life, and heavy-duty operation, is EPA certified, spark-ignited, and designed for maximum reliability and durability.
- Water-cooled and stoichiometric with replaceable dry cylinder liners
- Cast iron block and heads with overhead valve configuration
- Thermostatically controlled jacket water heater

Alternator:

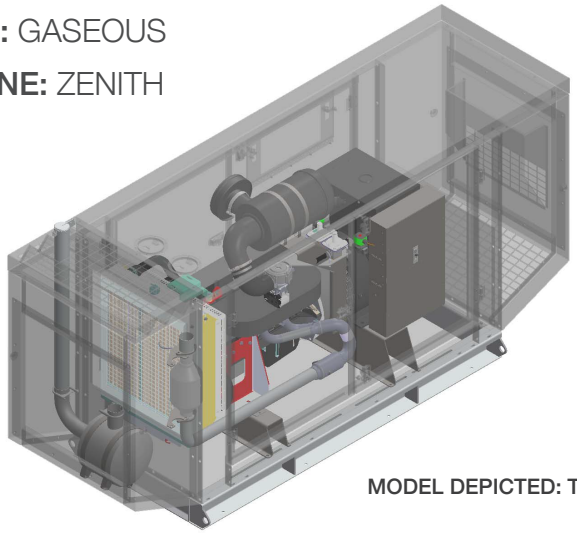
- Marathon 4-pole, 12-wire brushless generator, single bearing
- Alternators are oversized with volts per hertz tracking with PMG for enhanced motor starting for engineers to standard on one package
- Superior voltage waveform achieved by a 2/3 pitch and skewed rotor.
- Vacuum-impregnated windings with fungus-resistant epoxy for dependability and long-life
- Sustained short-circuit capability enabling down-line circuit breakers to trip without collapsing the generator field

Starting System:

- 12-VDC Starter
- Engine mounted Battery Charging Alternator
- Battery Cables and Rack along with Grounding Strap

Enclosure and Arrangement of Complete Assembly:

- Engine and generator close coupled mounted on vibration isolators
- Weather Protective Enclosure constructed of Marine Grade Aluminum 0.125 thickness, SS Hardware, white powder coat paint finish on both sides, sound Insulation resistant to high temperatures, fuel and oil, hinged / removable / keyed alike doors
- Residential rated interior mounted exhaust silencer kit
- Vertical radiator and exhaust discharge
- Oil & Coolant Drain Lines with Brass Ball Check Valves
- 175mph wind load rating



MODEL DEPICTED: TZ-40 UL

AUTOMATIC ENGINE CONTROLLER DGC2020:

- Automatic engine controller with analog display of all functions
- Microprocessor Based, Navigation key with large LCD display
- SAE J1939 CANBUS Communication
- Event Recording
- Transfer Switch Control (main failures)
- Alternator Protection: under/over voltage, under/over frequency
- Engine Protection: Low oil pressure, High coolant temperature,Over speed & over crank, Sender Unit failure, Fuel Failure sensor, Battery Charger Failure
- All protections are programmable as Alarms or Pre-alarms
- Metering (ample range): Volts, Current, Hz, Watts, VA, Pf, Oil Pressure, Coolant Temperature, RPM, DC Volts, Fuel pressure, Engine running time
- Engine Control with Timers
- External remote start input (on or off load)
- 16 programmable contact inputs - 7 Contact outputs

SCADA interface points:

- No fuel
- Low battery charging voltage
- Engine running
- Common engine alarm
- Switch in Emergency Position

DGC-2020 DIGITAL CONTROLLER

OPTIONAL EQUIPMENT:

- Low coolant level switch
- Water separator fuel filter
- Space heater
- Generator drip covers
- 17-light remote annunciator panel

WARRANTY:

- Engine covered under the original equipment manufacturer's warranty - consult Tradewinds Power Corp for details
- Complete package supplied with 2-year limited warranty

The manufacture reserves the right to change the design or specifications without notice and without any obligation or liability whatsoever.

TRADEWINDS® POWER CORP

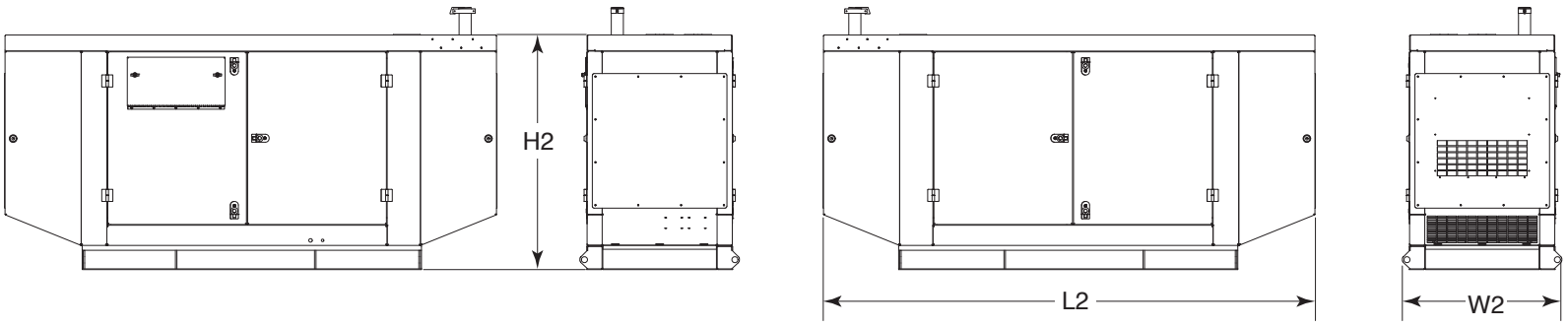
MODEL: TZ40 UL

Zenith UL2200 GASEOUS GENERATOR SET

ENGINE SPECIFICATION	
Manufacturer	ZENITH
Model	ZPP NA 428
Emissions	EPA Tier 3
Engine speed (rpm)	1800
Max. (Cont.) HP Power 1800 rpm	LPG 50.0 (79.6) NG 46.0 (75.1)
Cyclinder arrangement	In-line
Combustion system	Spark Ignition air-valve mixer
Aspiration	Natural
Engine type	Gaseous 4-stroke
Fuel	NG and LPG
Number of Cylinders	4
Displacement in³ (liters)	170.8 (2.8)
Bore and Stroke inches (mm)	3.874 X 3.583 (98.4 x 91.0)
Cooling	Water-cooled
Governor	Electronic- closed loop control
Starting aids	NA
Compression ratio	9.5 : 1
Air cleaner type	Medium duty dry type
Exhaust Silencer dBA	80dBA
Fuel switch	Fuel Cut-off Valve
COOLING SYSTEM FOR OPERATING AT 120° AMBIENT:	
Cooling System	Water-cooled
Engine Coolant Capacity quarts (Liters)	8.32 (7.8)
Fan	Belt driven pusher fan
Radiator	Engine mounted
Air flow - lb/hr NG (LPG)	311.0 (320.2)
LUBRICATING SYSTEM:	
Total lubricating capacity quarts (Liter)	4.0 (3.8)
Recommended lubricating oil grade	SAE 5W30
Oil Pressure – psi (bars)	70.0 (4.8)
Maximum Allowable Oil Temperature F (C)	250 (121)

ENGINE ELECTRICAL SYSTEM:	
Starting motor voltage	12 volt
Charger	65 A Alternator with DC output
Wet Cell Battery	Lead Acid
ALTERNATOR:	
Configuration	Brushless, 12-wire, 4-pole
Frequency	60 Hz
Voltage regulation	+ / - 1%, V/Hz, Electronic, EMI filtered
No load to full load voltage regulation	+/- 0.5%.
Coupling	SAE Adapter, Flexible Disc, Direct
Bearing	Single
Manufacturer	Marathon
Model	431-6206
Load acceptance	One Step, 100% per NFPA 110
Compliance	NEMA, IEEE & ANSI for temp. rise
Construction	Self ventilated drip-proof
FUEL CONSUMPTION: LB/HR NG (LPG) STANDBY RATING	
100%	107.0 (72.0)
75%	TBA
50%	TBA
25%	TBA
CONTROL PANEL SPECIFICATIONS:	
Model	DGC2020
Microprocessor based	Navigation key & large LCD display
Operating power	Nominal 12-24 VDC
Consumption	14.2W run mode
Remote communication capability	Optional
ENCLOSURE AND ARRANGEMENT OF COMPLETE ASSEMBLY:	
Coupling	Close coupled to flywheel flange
Enclosure	Aluminum for weather protection
Base arrangement	Rigid steel base frame with AVMs
Spill containment	For Oil and Coolant

DIMENSIONS & ARRANGEMENT DRAWING UL2200 MODEL: TZ40 UL



KEY DIMENSIONS AND WEIGHT BASIC OPEN SET, SOUND ENCLOSURE AND MOUNTED ON DOT TRAILER (* = Option Equipment)									
Description (inches)	Height		Width		Length		Dry weight lbs	Wet Weight lbs	Sound dBA
Open Set	H1	-	W1	-	L1	-	-	-	82
Enclosed Set *	H2	58.0	W2	36.0	L2	122.0	1330	1388	68