

# SPECIFICATION SHEET

| Fuel                                                           | Rating       | kW           | kVA  |
|----------------------------------------------------------------|--------------|--------------|------|
| DIESEL                                                         | Intermittent | 20.0         | 25.0 |
|                                                                | Continuous   | 18.0         | 22.5 |
| Amperage                                                       | 208 volt     | 70 (Standby) |      |
| 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 Total PACs are UL2200 approved self contained standby generators packages complete with mounted transfer switch, base fuel tanks, utility and service outlet distribution panels. All our systems and components are prototyped, assembled and tested within a purpose built packaging, manufacturing, and test facility.

### Engine:

- Perkins 404D-22G ELECTROPAK diesel engine
- Heavy duty rated for continuous prime power operation
- Cooling system capable of operation at 120°F ambient
- The 404D utilizes the latest diesel mechanical governed cassette type fuel injection pump. This allows the 404D-22G to deliver high power density and excellent fuel economy with low exhaust emissions and minimum heat rejection
- The 404D range of Electropaks has been designed to fully comply with stringent EU and EPA emissions regulations, providing an emissions compliant power solution for the future
- Mounted air filter
- Wet cast iron sump with filler and dipstick
- 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

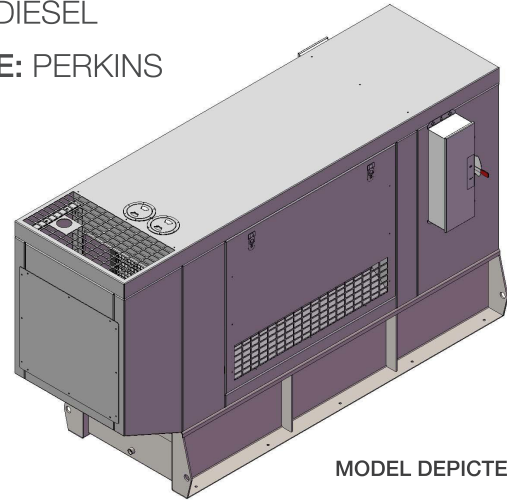
### Enclosure and Arrangement of Complete Assembly:

- 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
- UL 142 Fuel Tank, sub base mounted, double wall, Carbon steel constructed, with normal and emergency vents; Fuel sender, fuel filler neck with manual gauge.
- 175mph wind load rating

## TOTAL-PAC UL2200 STANDBY SYSTEMS

FUEL: DIESEL

ENGINE: PERKINS



MODEL DEPICTED: TP20TP

## 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 Leak / Fuel sender Failure, 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 Level, 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:

- Load fuel
- Low battery charging voltage
- Engine running
- Common engine alarm
- Switch in Emergency Position



DGC-2020 DIGITAL CONTROLLER

## OPTIONAL EQUIPMENT:

- NEMA 4X disconnect boxes
- Low coolant level switch
- Water separator fuel filter
- Space heater
- Generator drip covers
- 17-light remote annunciator panel

## WARRANTY:

- Complete package supplied with 2-year unlimited warranty
- TPC gives customers the facility to service non-propriety equipment directly, even within the warranty period with a TPC approval #

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

## TOTAL-PAC UL2000 STANDBY GENERATORS

| ENGINE SPECIFICATION:                           |                                  |
|-------------------------------------------------|----------------------------------|
| Manufacturer                                    | Perkins                          |
| Model                                           | 404D-22G                         |
| Emissions                                       | EPA Tier 4 interim               |
| Engine speed (rpm)                              | 1800                             |
| Nominal Engine hp 1800rpm                       | 32.6                             |
| Cylinder arrangement                            | Vertical, in-line                |
| Combustion system                               | Indirect Injection               |
| Aspiration                                      | Naturally aspirated              |
| Engine type                                     | Diesel                           |
| Diesel Fuel Grade                               | ASTM D975 D2                     |
| Number of Cylinders                             | 4                                |
| Displacement in³ (liters)                       | 135 (2.216)                      |
| Bore and Stroke inches (mm)                     | 3.30 x 3.93 (84 X 100)           |
| Cooling                                         | Water-cooled                     |
| Governor                                        | Mechanical                       |
| Starting aids                                   | Glow Plugs                       |
| Compression ratio                               | 23.3:1                           |
| Air cleaner type                                | Medium duty dry type             |
| Exhaust Silencer dBA (No attenuation)           | 79dBA                            |
| Fuel Filter                                     | Full flow with water separator   |
| COOLING SYSTEM FOR OPERATING AT 120°F AMBIENT:  |                                  |
| Cooling System                                  | Water-cooled                     |
| Engine Coolant Capacity gals (Liters)           | 1.86 (7.0)                       |
| Fan                                             | Belt driven pusher fan           |
| Radiator                                        | Engine mounted                   |
| Coolant grade                                   | TBA                              |
| LUBRICATING SYSTEM:                             |                                  |
| Total lubricating capacity gals (Liter)         | 2.8 (10.6)                       |
| Recommended lubricating oil grade               | SAE 15W40                        |
| Oil consumption at full load                    | < 0.1% of fuel consumption       |
| Maximum Allowable Oil Temperature F (C)         | 250 (121)                        |
| 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 |
| Fuel Tank with full spill containment (Option)  | UL double wall base mounted      |

| 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                                                                                                                                                                                                                                                                                                                                                                             | +/- 2%.                                  |
| Coupling                                                                                                                                                                                                                                                                                                                                                                                                            | SAE Adapter, Flexible Disc, Direct       |
| Bearing                                                                                                                                                                                                                                                                                                                                                                                                             | Single                                   |
| Manufacturer                                                                                                                                                                                                                                                                                                                                                                                                        | Marathon                                 |
| Model                                                                                                                                                                                                                                                                                                                                                                                                               | TBA                                      |
| Load acceptance                                                                                                                                                                                                                                                                                                                                                                                                     | One Step, 100% per NFPA 110              |
| Compliance                                                                                                                                                                                                                                                                                                                                                                                                          | NEMA, IEEE & ANSI for temp. rise         |
| Construction                                                                                                                                                                                                                                                                                                                                                                                                        | Self ventilated drip-proof               |
| FUEL CONSUMPTION: Gals/Hour (Liters/hour)                                                                                                                                                                                                                                                                                                                                                                           |                                          |
| Standby                                                                                                                                                                                                                                                                                                                                                                                                             | 1.84 (6.9)                               |
| Prime Power                                                                                                                                                                                                                                                                                                                                                                                                         | 1.65 (6.2)                               |
| 75%                                                                                                                                                                                                                                                                                                                                                                                                                 | 1.28 (4.8)                               |
| 50%                                                                                                                                                                                                                                                                                                                                                                                                                 | 0.93 (3.5)                               |
| 25%                                                                                                                                                                                                                                                                                                                                                                                                                 | TBA                                      |
| TRANSFER SWITCH:                                                                                                                                                                                                                                                                                                                                                                                                    |                                          |
| Amperage                                                                                                                                                                                                                                                                                                                                                                                                            | 70A                                      |
| Integrated Automatic Transfer switch, UL1008, rear side mounted; ATC300 digital controller; Double throw, mechanically interlocked transfer mechanism. Auxiliary relay contacts; Switch position indication contacts; Under/ Over Voltage & Frequency; 3Ph rotation protection, voltage unbalance/loss; Pre transfer signal contact; Seven field programmable time delays; Plant exerciser; System test push button |                                          |
| 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                                 |
| UTILITY AND LOAD CONNECTION PANELS: (One per side standard, or one side option)                                                                                                                                                                                                                                                                                                                                     |                                          |
| Load Service Disconnect                                                                                                                                                                                                                                                                                                                                                                                             | UL rated Nema3R box                      |
| Utility Service Disconnect                                                                                                                                                                                                                                                                                                                                                                                          | UL rated Nema3R box                      |

### DIMENSIONS & ARRANGEMENT DRAWING MODEL: TP20TP

| KEY DIMENSIONS AND WEIGHT |     |             |
|---------------------------|-----|-------------|
| Description               | Key | Inches      |
| Height                    | H   | 62.00       |
| Length                    | L   | 109.50      |
| Width                     | W   | 43.34       |
| Dry Weight lbs (Kg)       |     | 2272 (1032) |

