PowerWorld® Diesel Generator

GensetModel:PY-15

POWER BY YANMAR

110V-440V 3P4W

Standard Features and Characteristics

● **QUALITY STANDARDS**

- ○ The POWERWORLDgenerator set compliance with all main standards, such as ISO8528 (GB/T2820-97), GB755, BS5000, VDE0530, ISO3046, IEC34-1, CSA22-2, AS1359, ISO14001.
- ○ Diesel engine and alternatorfromtheexclusivemanufacturerinchina and their quality assurance.
- ○ Other standards and certifications can be considered on request.

● **ASSEMBLY**

- ○ The engine and alternator are close coupled by means of an SAE flange . A full torsional analysis has been carried out to guarantee no harmful vibration will occur。
- ○ Anti-vibration pads are affixed between engine alternator feet and the base frame. Thus ensuring complete vibration isolation of the rotating assemblies and enabling the machine to be placed on an uneven surface without any detrimental effects.
- ○ For durability and corrosion resistance, all iron and steel surfaces of canopy fabrications have been treated for coating by grit blast cleaning. Then covered by special three layers painting which provides an excellent corrosion resistant surface.

Rating Range

		RPM1500 50Hz
Standby:	kW	12.8
	kVA	16
Prime:	kW	11.6
	kVA	14.5

● **CONTROL SYSTEM AND PROTECTION**

- ○ Controllers are available for all applications. The controller system is used to start and stop the engine , indicate electric date and protect the generator set. See controller features inside.
- ○ The revolving parts are covered by safety net , and the place which easy to scald and got an electric shock all to have been put on obvious warning slogan .

● **WARRANTY**

- ○ Each POWERWORLD generating set has been got through 2 hours load test for running 0%,25%,50%,75%,100% and 110% load, all protective devices and control function are simulated and checked before despatch.
- ○ POWERWORLD Company provides one-source responsibility for the generator set and accessories.
- ○ Engine and Alternator are guaranteed for a period of 12months from the date of commissioning or 18 months from shipping, whichever occurs first.
- ○ Convenience for operation and maintenance, backed by CUMMINS and STAMFORD global service

RATINGS: All three-phase units are rated at 0.8 power factor. **Standby ratings :** Standby ratings apply to installations served by a reliable utility source. The standby rating is for this rating. Ratings are in according with ISO-3046/1,BS 5514 ,AS 2789 , and DIN 6271. **Prime Power Ratings:** Prime power ratings apply to installations where utility power is unavailable or unreliable. At varying load, the number of generator set operating hours is unlimited. A 10% overload capacity is available for one hour in twelve. Ratings are in accordance with IS0-8528/1, overload capacity in accordance with ISO-3046/1,BS 5514, AS 2789, and DIN 6271. For limited running time and base load ratings, consult the factory. The generator set manufacturer reserves the right to change the design or specifications without notice and without any obligation or liability whatsoever. **GENERAL GUIDELINES FOR DERATION: Altitude:** Derate 2.0% per 300m(984 ft.) elevation above 1000m(3279 ft.) up to a maximum elevation of 2450m(8000 ft.).More than 2450m(8000ft), please contacts with us or our dealer seek the help. **Temperature:** Derate 6.0% per 11 ℃ (20°F) temperature above 40℃ (104°F).

GENERATOR SET RATINGS

Alternator Model	STAMFORD	MARATHON
Frequency and Speed	50Hz 1500rpm	50Hz 1500rpm

Prime Power Data

Class-TEMP Rise(℃)	Cont.H -125K/40℃				Cont.H -125K/40℃			
Voltage series star	380	400	415	440	380	400	415	440
Voltage parallel star	190	200	208	220	190	200	208	220
Voltage series delta	220	230	240	254	220	230	240	N/A
Rating capacity(kVA)	16.0	16.0	16.0	13.5	17.5	17.5	17.5	11.0
Rating power(kW)	12.8	12.8	12.8	10.8	14.0	14.0	14.0	8.8
Power efficiency(%)	81.0	81.7	82.1	82.6	87.6	87.6	87.6	87.6
Input power(kW)	15.8	15.7	15.6	15.5	16.0	16.0	16.0	10.1

Standby Power Data

Class-TEMP Rise(℃)	Standby.H -150K/40℃				Standby.H -150K/40℃			
Voltage series star	380	400	415	440	380	400	415	440
Voltage parallel star	190	200	208	220	190	200	208	220
Voltage series delta	220	230	240	254	220	230	240	N/A
Rating capacity(kVA)	N/A				20.0	20.0	20.0	12.0
Rating power(kW)					16.0	16.0	16.0	9.6
Power efficiency(%)					87.2	87.2	87.2	87.2
Input power(kW)					18.4	18.4	18.4	11.1

ALTERNATOR

Specification	1500RPM 50Hz
Type	4-Pole, Rotating Field
Exciter type	Brushless, Self excited
Voltage regulator	Solid State, Volts/Hz
Voltage regulation	≤1.5%
Insulation	Class H
Protection	IP23
Rated power factor	0.8
Stator winding	Double layer concentric
Winding pitch	Two thirds
Winding leads	12
Maximum overspeed	2250 Rev/min
Sustained short circuit	Self excited machines do not sustain a short circuit current
Waveform distortion	No load < 1.5%
	Non-distorting balanced linear load < 5.0%
Altitude	≤1000 m

- Alternators meet the requirement of BS EN 60034 and the relevant section of other international standards such as BS5000, VDE 0530, NEMA MG1-32, IEC34, CSAC22.2-100, As1359, and other standards and certifications can be considered on request.
- The 2/3 pitch design avoids excessive neutral currents. With the 2/3 pitch and carefully selected pole and tooth designs, ensuresvery low waveform distortion.
- Brushless alternator with brushless pilot exciter for excellent load response.
- The insulation system is class H, easy paralleling with mains or other generators, standard 2/3 pitch stator windings avoid excessive neutral currents.
- Backed by worldwide service network

DIESEL ENGINE

- 3TNV84T diesel engines are manufactured by YANMAR CO.,LTD

Application Data

EngineSpecifications	1500RPM 50Hz
Manufacturer	YANMAR
Number of cylinders	3
Cylinder arrangement	Vertical in-line
Cycle	Four stroke
Induction system	Turbocharger
Compression ratio	19.0:1
Bore	84mm
Stroke	90mm
Cubic capacity	1.496 Liters
Direction of rotation	Clockwise viewed from front
Firing order	1,3,2
Max.Power at rated rpm	15.8 kW
Estimated total weight(dry)	161kg
Frequency regulation steady state	±0.5%
Frequency	Fixed

Lubrication

Lubrication system	1500RPM 50Hz
System	Forced feed
Max/Min	6.7/2.8 Litres
Oil pressure	3.4kgf/cm²
Oil pump	Trochoid feed

Engine Electrical

Engine Electrical System	1500RPM 50Hz
Battery charging alternator:	
Ground(negative/positive)	Negative
Volts(DC)	12V
Ampere rating	40A
Starter motor rated voltage(DC)	12V
Starter motor rated Capability	1.2KW
Battery voltage	12V

Fuel

Fuel System	1500RPM 50Hz
Type of injection	Distributor type
Fuel injection pump	YPD-MP2
Fuel injector	Hole type
Fuel filter	Paper element

Fuel consumption

Consumption	1500RPM 50Hz
Specific fuel consumption	245 g/kWh

Cooling System

Radiator	1500RPM 50Hz
Heat exchanger	None
Pressure cap setting	0.9kgf/cm
Fan number of blades	6
Fan diameter	360
Coolant capacity	2.0 Liter

Application Data

Cooling System

Cooling System	1500RPM 50HZ
Total system capacity	
Engine Only	30 litres
Radiator	71litres
Fan gas flow	29950m³/hr
Thermostat operation range	82 - 95℃
Maximum water temperature	100 ℃ (212°F)
Minimum Pressure of radiator cap	69kPa
Max. coolant temp. permitted	
for Standby Power	104 ℃ (220°F)
for Prime Power	100 ℃ (212°F)

NOTE:

All data is based on:

1. Engine operating with fuel system, water pump, lubricating oil pump, air cleaner and exhaust silencer; not included are battery charging alternator, fan, and optional driven components.
2. Engine operating with fuel corresponding to grade No. 2-D per ASTM D975.
3. ISO 3046, Part 1, Standard Reference Conditions of:
   Barometric Pressure : 100 kPa (29.53 in Hg)
   Air Temperature : 25 ℃ (77°F)
   Altitude : 110 m (361 ft)
   Relative Humidity : 30%
   Air Intake Restriction : 254 mm H2O (10 in H2O)
   Exhaust Restriction : 51 mm Hg (2 in Hg)

TBA: To Be Determined

CONTROLLERS

GTR-168 MANUAL CONTROLLER

The Model GTR-168is a Manual Engine Control Module designed to control the engine via a key switch and pushbuttons on the front panel. The module is used to start and stop the engine and indicate fault conditions, automatically shutting down the engine and indicating the engine failure by LED, giving true, first up fault annunciation.

Panel introduction:

- Indicator type frequency, voltmeter and ampere meter demonstration unit's electrical parameter.
- The voltage change-over switch and the rheotrope uses for to choose the different phase voltage and current to display.
- The big red button uses for the operator to stop the genset peremptorily
- The oil pressure gauge, coolant temperature gauge and the battery voltage gauge.
- The controller. And an integral anti-tamper LCD hours run counter is also provided.
- If the customer needs to use the preheating function, we will be able to increase the preheating button.

Protection:

Low Oil Pressure
High Engine Temperature
Auxiliary Shutdown
Over speed

DC Supply: 8 to 35 V Continuous.

PLC5110 CONTROLLER

Panel introduction:

- Indicator type frequency, voltmeter and ampere meter demonstration unit's electrical parameter.
- The voltage change-over switch and the rheotrope uses for to choose the different phase voltage and current to display.
- The oil pressure gauge, coolant temperature gauge and the battery voltage gauge.
- The controller.
- Preheating button.

Protection:

Over Speed Shutdown.
Low Oil Pressure Shutdown.
High Engine Temp Shutdown.
Charger failure alarm.
Mains failure alarm.
Optional Under speed Protection.

DC Supply: 8 to 35 V Continuous.

PLC5220 INTELIGENT CONTROL SYSTEM

The AMF25 is an Automatic Mains Failure module with generator monitoring, protection and start facilities. The controller has a large LCD screen, display the generator's each parameter, running and alarm information. The off/replacement button, mode switch button , start/stop button and the LED indicator light, makes the user easy to operate and maintain the generator.

Panel introduction:

- Indicator or digital type frequency, voltmeter and ampere meter demonstration unit's electrical parameter.
- The big red button uses for the operator to stop the genset peremptorily
- The controller.

Function:

- Communication: RS232 connection, uses the industry rank MODBUS protocol can easily communicate with others intelligence control system.
- Display function: LCD screen can display the generator's parameter and the control system's running information.
- Set up parameter: Engineer can set up the controller parameter from the control panel or through the PC, 6 programmable fan-out may satisfy the user each kind of demand.
- Protection: The control system can protect the generator set , manage each kind of electrical failure.
- Control Function of ATS.

DC Supply: 8 to 35 V Continuous.

Standard Features and Accessories

Paralleling System

- ❑ Reactive Droop Compensator
- ❑ Voltage Adjust Control
- ❑ Voltage Regulator Relocation Kit

Controller System

- ❑ Common Failure Relay Kit
- ❑ Customer Connection Kit(Except Open Style)
- ❑ Communications Products and PC Software
- ❑ Engine Pre-alarm Sender Kit
- ❑ Remote Annunciator Panel
- ❑ Remote Audiovisual Alarm Panel
- ❑ Remote Emergency Stop Kit
- ❑ PCRC series control system, with RS232 or RS485 communication connection and communication agreement.

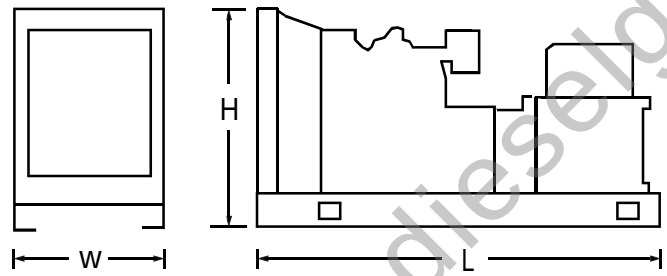
Miscellaneous Accessories

- ❑ _____
- ❑ _____
- ❑ _____
- ❑ _____
- ❑ _____

Dimensions and Weights

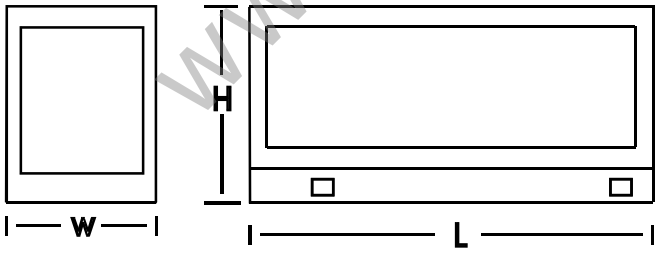
Open Style

Overall Size, L*W*H(mm)	1320*604*1280
Weight(radiator model),net,Kg	395Kg



Soundproof Style

Overall Size, L*W*H(mm)	1475*750*1050
Weight(radiator model),net,Kg	693Kg



NOTE: This drawing is provided for reference only and should not be used for planning installation. Contact your local distributor for more detailed information.

DISTRIBUTED BY:

Standard Features

- Battery, Battery Rack and Battery Cables
- Integral Vibration Isolation
- Oil Drain Extension
- Air cleaner ,Heavy Duty
- 3 Pole Circuit Breaker
- Heavy duty industrial type exhaust silencer with flexible pipe(supplied loose).

Maintenance and Literature

- General Maintenance Literature Kit
- Test Certificate and design paper
- Quality certificate and Maintenance card

Accessories

Enclosed Unit

- ❑ Sound Enclosure
- ❑ Weather Enclosure (with enclosed critical silencer)
- ❑ Weather Housing (with roof-mounted critical silencer)
- ❑ Trailer(Causes the genset easily to move)

Open Unit

- ❑ Exhaust Silencer, Critical kit
- ❑ Flexible Exhaust Connector, Stainless Steel

Cooling System

- ❑ Block Heater (recommended for ambient temperatures below 0°C)
- ❑ Radiator Duct Flange
- ❑ Remote Radiator Cooling

Fuel System

- ❑ Auxiliary Fuel Pump
- ❑ Flexible Fuel Lines
- ❑ Mechanical dipstick or fuel level sensor
- ❑ Subbase Fuel Tank with Day Tank
- ❑ Fuel fill cap with breather
- ❑ 10 hours running tank
- ❑ Automatic fuel--providing device
- ❑ Hand primer pump

Electrical System

- ❑ Battery Charger, Equalize/Float Type

Engine and Alternator

- ❑ 3 or 4 Pole Circuit Breaker with Shunt Trip
- ❑ Fuel/Water Separator
- ❑ Oil Preheater
- ❑ Air Preheater
- ❑ Alternator Strip Heater

Maintenance and Literature

- ❑ Maintenance Kit (includes air, oil, and fuel filters)
- ❑ Overhaul Literature Kit