# GVP SERIES

## GVP 94

64 dB(A) @ 7mt

GENPOWER GENERATOR

231/400V - 50Hz

### Features and Benefits

- Half Century Experience in Generator Manufacturing
- Diesel Engines with Advanced Technology and Quality
- Alternators with Advanced Technology and Quality
- Control Panel Suitable for Flexible Application
- High Quality and Reliable Technology
- Patented Compact Designed and Soundproof Canopy
- Suitable for Heavy-Duty
- Durability
- Wide Range of Affordable Spare Parts
- Low Noise Level
- Low Exhaust Emission
- Low Operating Cost
- Low Fuel Consumption
- Low Oil Consumption
- Tropical 50°C Radiator
- Fuel Filter with Water and Particle Separator
- First Class Product Support
- Global Technical Service and Maintenance Support

### Generator General Information

| Generator | Frequency | Voltage | Power Factor | Speed | Diesel Engine | | Alternator | | | Type of | Generator Output | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Model | Hz | V | CosQ | rpm | Brand | Model | Brand | Model | Series | Operation | kVA | kW | A |
| GVP 94 | 50 | 231/400 | 0,8 | 1500 | VOLVO PENTA | TAD 530 GE | GENPOWER | GNP | GNP 225 M2 | Stand By | 94,0 | 75,2 | 135,8 |
| | | | | | | | | | | Prime | 85,5 | 68,4 | 123,5 |
| | | | | | | | | | | Continuous | 59,8 | 47,9 | 86,4 |

### VOLVO PENTA Diesel Engine Technical Parameters and Matching Parameters

#### Diesel Engine Main Technical Parameters

| General | | |
|---|---|---|
| Number of Cylinders | | 4 |
| Configuration | | Vertical, in line |
| Aspiration | | Turbo Charged |
| Combustion System | | Direct injection |
| Compression Ratio | | 18:1 |
| Bore | mm | 108 |
| Stroke | mm | 130 |
| Displacement | L | 4,76 |
| Governing Type | | Mechanic |
| Governing Class | | G2 |
| Rotation | | Counterclockwise |
| Firing Order | | 1-3-4-2 |
| Emission | | EU Stage 2 |
| **Filters** | | |
| Air Filter | | Dry Type, replaceable |
| Fuel Filter | | Element type, replaceable |
| Oil Filter | | Element type, particulate trap |
| **Electrical System** | | |
| Voltage | V | 12 |
| Starter | kW | 3,1 |
| Alternator Output Ampers | A | 55 |
| Alternator Output Voltage | V | 14 |
| Batteries Capacity | Ah | 85 |
| **Fan** | | |
| Diameter | mm | 516 |
| Drive Ratio | | 1.73:1 |
| Number of Blades | | 7 |
| Material | | Metal |
| Type | | Blowing |

| Cooling System | | |
|---|---|---|
| Radiator Type | 50ºC | Tropical |
| Total Coolant Capacity | L | 19,7 |
| Max. Perm. Coolant Outlet Temperature | ºC | 105 |
| Max. Perm. Flow Resis. (Cool. System And Piping) | bar | 0,1 |
| Max.Temperature of Coolant Warning | ºC | 95 |
| Max. Temperature of Coolant Shutdown | ºC | 98 |
| Thermostat Operation Temperature - Initial Open | ºC | 83 |
| Thermostat Operation Temperature - Full Open | ºC | 95 |
| Delivery of Coolant Pump | m ³/ h | 2,71 |
| Min. Pressure Before Coolant Pump | bar | 0,3 |
| Radiator Face Area | m² | 0,29 |
| Rows | Row | 2 |
| Matrix Density | Per / Inch | 12 |
| Material | | Aluminum |
| Width of Matrix | mm | 454 |
| Height of Matrix | mm | 636 |
| Pressure Cap Setting | kPa | 90 |
| Estimated Cooling Air Flow Reserve | kPa | 0,125 |
| Engine Pre Heater Tube (with Circulation Pump) | W | 1500 |
| **Lubrication System** | | |
| Total System | L | 13 |
| Minimum Oil Level | L | 9 |
| Nominal Motor Operating Temperature | ºC | 49 |
| Lubricating Oil Pressure (Rated Speed) | bar | 4,8 |
| Relief Valve Opens | kPa | 300 |
| Oil / Fuel Consumption Ratio | % | 0,08 |
| Normal Oil Temperature | ºC | 110 |

#### Diesel Engine Matching Parameters

| 50 Hz @ 1500 r/min | | Stand By |
|---|---|---|
| Gross Engine Power | kW | 89,0 |
| Net Engine Power | kW | 83,0 |
| Fan Power Consumption (Belt Pulley Driven) | kW | 5,9 |
| Other Power Loss | kW | - |
| Mean Effective Pressure | MPa | 1500,00 |
| Intake Air Flow | m ³ / min | 5,54 |
| Exhaust Temperature Limit | ºC | 540 |
| Exhaust Flow | m ³ / min | 16,30 |
| Boost Pressure Ratio | | 9,00 |
| Mean Piston Speed | m / s | 6,5 |
| Cooling Fan Air Flow | m ³ / min | 72,0 |
| Typical Generator Output Power | kVA | 93 |

| Heat Rejection | | Stand By |
|---|---|---|
| Energy In Fuel (Heat Of Combustion) | kW | 231,0 |
| Gross Heat To Power | kW | 89,0 |
| Energy To Coolant And Lubricating Oil | kW | 48,0 |
| Energy To Exhaust | kW | 75,0 |
| Heat To Radiation | kW | 9,0 |

Genpower reserves the right to change the catalogues, products, models and technical specifications

# GVP SERIES

# GVP 94

GENPOWER GENERATOR

231/400V - 50Hz

## GENPOWER Alternator Technical Parameters and Specifications

### Alternator Technical Parameters

| | | | | | |
|---|---|---|---|---|---|
| Insulation Class | | H | Field Control System | | Self excited |
| Winding Pitch | | 2/3 - (N° 6) | A.V.R. Model | Standard | SX460 |
| Wires | | 12 | Voltage Regulation | % | ± 1 |
| Protection | | IP 23 | Sustained Short-Circuit Current | 10 sec | 300% (3 IN) |
| Altitude | m | 1000 | Total Harmonic (*) TGH / THC | % | < 5 |
| Overspeed | rpm | 2250 | Wave Form :NEMA = TIF - (*) | | < 50 |
| Air Flow | $m^3$/sec | 0.216 | Wave Form :I.E.C. = THF - (*) | % | < 2 |
| Bearing Drive | N/A | - | Bearing Non - Drive | Bearing | 6309-2RZ |
| Rotor Winding | 100% | Copper | Stator Winding | 100% | Copper |

*(*) Total harmonic content line to line, at no load or full rated linear and balanced load*

*Genpower sychron alternators are produced according to TSE 60034-1; IEC 60034-22; GB755; BS4999-5000; NEMA MG 1.22 standards*

### Alternator Specifications

**50 Hz - 231/400V - Cos Q 0,8 - 1500 rpm**

| Standard Using Alternator | | | | Optional Using Alternator | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Brand/Model** | **Genpower** | **225M2** | | **Leroy Somer** | **TAL044C** | **Stamford** | **UC274C** | | |
| Duty | | Continuous | | | | Stand By | | | |
| Ambient | C° | 40°C | | | | 27°C | | | |
| Class/Temp. Rise | C° | H / 125° K | | | | H / 163° K | | | |
| Series Star (V) | V | 380/220 | 400/231 | 415/240 | 1 Phase | 380/220 | 400/231 | 415/240 | 1 Phase |
| Parallel Star (V) | V | 190/110 | 200/115 | 208/120 | 220 | 190/110 | 200/115 | 208/120 | 220 |
| Series Delta (V) | V | 220 | 230 | 240 | 230 | 220 | 230 | 240 | 230 |
| Output Power | kVA | **91,0** | **91,0** | **94,0** | **-** | **100,0** | **100,0** | **103,0** | **-** |
| Output Power | kW | **73,0** | **73,0** | **75,0** | **-** | **80,0** | **80,0** | **82,0** | **-** |

**Control Panel Specifications**

| | | | |
|---|---|---|---|
| Powder Painted Steel Pannel with Lockable Door | Battery Charger | Control Relays | System Protection MCBs |
| ATS (Automatic Transfer Panel) - Optional | Emergency Stop Button | Terminal Blocks | Circuit Breaker - Optional |
| Control Module | Backlit, 128x64 Pixels | Load Output Terminal | LCD Screen |

**Control Module Technical Parameters**

| | | | |
|---|---|---|---|
| Brand | GENPOWER | Model | Trans-MIDIAMF.232.GP |
| Dimensions | 120mm x 94mm | Protection Class | IP65 From the Front |
| Weight | 260 gr. | Environmental Conditions | 2000 Meters Above Sea Level |
| Ambient Humidity | 90% max. | Ambient Temperature | -20 ° C to + 70 ° C |
| DC Battery Supply Voltage | 8 - 32 V | Battery Voltage Measurement | 8 - 32 V |
| Network Frequency | 5 - 99,9 Hz | Mains Voltage Measurement | 3 - 300 V Phase-Neutral, 5 - 99.9 Hz |
| Generator Voltage Measurement | 3 - 300 V | Generator Frequency | 5 - 99.9 Hz |
| Current Transformer Secondary | 5A | Working Period | Continuous |
| Charge Alternator Voltage Measurement | 8 - 32 V | Charge Alternator Excitation | 210mA & 12V, 105mA & 24V Nominal 2.5W |
| Communication Interface | RS-232 | Analog Sender Measurement | 0 - 1300ohm |
| Generator Contactor Relay Output | 5A & 250V | Mains Contactor Relay Output | 5A & 250V |
| Solenoid Transistor Outputs | 1A with DC Supply | Start Transistor Outputs | 1A with DC Supply |
| Configurable-3 Transistor Outputs | 1A with DC Supply | Configurable-4 Transistor Outputs | 1A with DC Supply |

**Control Module Functions**

| | | | | |
|---|---|---|---|---|
| Mains Voltage Level Control | Generator Voltage Level Control | 3 phase Generator Protections | 3 phase AMF Function | Alarm Horn |
| Network Frequency Level Control | Generator Frequency Level Control | - High / Low Voltage | - High / Low Frequency | Heater Tube Thermostat Control |
| Engine Operating Option Control | Generator Current Level Control | - High / Low Frequency | - High / Low Voltage | Modbus and SNMP |
| Engine Stop Option Control | Generator Power Level Control | - Current / Voltage Asymmetry | - High / Low Water Temperature | Working Hour |
| Engine Speed (RPM) Level Control | Generator Work Schedule and Timing Control | - Overcurrent / Overload | - High / Low Load | Ground Leakage |
| Battery Voltage Options Control | Oil Pressure Controllers Control | Overheat Control | Mains, Generator ATS control | Analog Modem |
| Check Engine Maintenance Times | Configurable Analog Inputs and Outputs | 1 Phase or 3 Phase, Phase Selection | Network, Voltage, Frequency Display | Ethernet, USB, RS232, RS485 |
| Communication Interfaces GPRS, GSM | Keeping Error Records of Past Events | Parameter Setting via Control Module | Parameter Setting via Computer | Selectable Protection Alarm / Shutdown |
| Engine Speed | Configurable Programmable Digital Inputs and Outputs | Water Temperature | Hours of Operation | Battery Voltage |
| Voltage | Current and Frequency | Phase Sequence | Earting | Oil Pressure |

**Control Module Alerts**

| | | | | |
|---|---|---|---|---|
| Emergency Stop Malfunction | Low Generator Voltage | Low Water Temperature | Charge Alternator Error | High Oil Temperature (Optional) |
| High Generator Voltage | High Generator Frequency | Heat Sensor Broken | Unbalanced Load | Low Fuel Level (Optional) |
| Low Generator Frequency | Phase Sequence Error | Reverse Power | Maintenance Time Alarm | High Battery Voltage |
| Low Load | Overload | Start Error | Low Speed | Low Battery Voltage |
| Over Current | Low Water Level (Optional) | Stop Error | High Speed | High Water Temperature |
| Unbalanced Current | Low Oil Pressure | Magnetic Pickup Error | Broken Oil Sensor Cable | Electronic Canbus Errors (ECU) |

**Sound Proof Canopy and Base Frame (Chassis) Specifications**

| | | | | |
|---|---|---|---|---|
| Special, Registered GENPOWER Design and Color | Robotic Painting with Electrostatic Powder Paint | Temperature Tests | Fuel Inlet and Return Records | Lifting and Carrying Equipments |
| A1 Quality DKP / HRU /Galvanized Steel | Drying and Stabilizing on 200°C Ovens | Rustproof Accessories | Impermeability Test for Fuel Tank | Internal Exhaust Mufflers (Silencers) |
| Sensitive Twist on Automatic Press Brake | 1500 Hour Salt Test | Cable Exit Connectors and Glands | Vacummed Rubber Mounted | External Exhaust Mufflers (Silencers) |
| Delicate Cut on Automatic Punch and Laser Bench | Glasswool Isolation, A1 Class Material -50/+500ºC | Emergency Stop Button | High Quality Weatherstrips | Radiator Water Filling Cap |
| Sensitive Welding on Robotic Welding Bench | Special Covering Over Glass Wool | Fuel Level Gauge | High Quality Shock Absorbers | Daily Fuel Tank |
| Chemical Cleaning Nano Technology Before Painting | Best Sound Level (in dBA) | Fuel Drain Cap | Fuel Filling Cap (with ventilation) | External Fuel Tank |

**Special Products / Non - Standardized**

| | | | | |
|---|---|---|---|---|
| Synchronised Systems | Generators - with Trailer | DC Generators | High Frequency Generators | Marine Generators |
| Scada Systems | Medium Voltage - MV | High Voltage - HV | Variable Speed Generators | Dual Generators |
| Mobile Systems | IP44-IP54 Class Generators | Power Plants | Super Silent Canopy | Automatic Voltage Stabilizers |
| Light Towers | Welding Machines | Trigeneration Systems | Cogeneration Systems | Electrical and Diesel Forklift |
| Ground Power Unit Generators | Natural Gas Generator | Biogas Generator | LPG Generator | HFO Generator |

**Quality Documents & Certificates**

| | | | | |
|---|---|---|---|---|
| Trademark Registration Certificate | Industrial Registry Certificate | TSE 8528 - 4 Certificate | TS EN ISO 2409 Certificate | EN ISO 8528-13,2016 Certificate |
| Capacity Report (32400 Units / Year) | Certificate of Manufacturing Competence | TSE 8528 - 5 Certificate | TS EN ISO 4628-3 Certificate | EN ISO 12100:2010 Certificate |
| Made in Turkey Certificate- For Generator/1-5000 kVA | TSE- Service Adequacy Certificate | TSE 8528 - 8 Certificate | TS EN ISO 4628-4 Certificate | EN ISO 13857:2008 Certificate |
| Made in Turkey Certificate-For Alternator/1-5000kVA | ISO 9001 - 2015 Certificate | AB-0547-T Certificate | TS EN ISO 4628-5 Certificate | EN ISO 14120:2015 Certificate |
| Made in Turkey Certificate- For Engine/1-5000 kW | ISO 14001 - 2015 Certificate | EAC - GOST Certificate/ Diesel Generator | TS EN ISO 4628-8 Certificate | EN 349:1993+A1:2008 Certificate |
| Certificate of Competency for After Sales Services | OHSAS 18001 - 2007 Certificate | EAC - GOST Certificate/ Gasoline Generator | TS EN ISO 9227 Certificate | EN 60204-1,2018 Certificate |
| 2014/30/EU Electromagnetic Compatibility Directive | 2006/42/EC Machinery Directive | CE Certificate - EN ISO 17050-1,2004 | TS 9620 EN ISO 4628-2 Certificate | EN 61000-6-2,2019 Certificate |
| CE Certificate - 2000/14/AT - 2000/14 EC (CE 2195) | Coatchem- Türkak 1500 Hours Corrosion Durability Test Certificate | | TS EN 60034 - 1 Certificate | EN 61000-6-4,2007/A1:2011 Certificate |

Genpower reserves the right to change the catalogues, products, models and technical specifications

# GVP SERIES

# GVP 94

GENPOWER GENERATOR

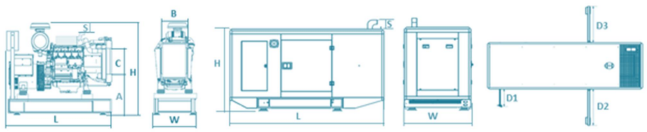
231/400V - 50Hz

## Generator Dimensions

| Values | | Open Type Generator | Canopy Type Generator |
|---|---|---|---|
| Width | mm | 800 | 1000 |
| Length | mm | 2036 | 2600 |
| Height | mm | 1677 | 1510 |
| Weight (Empty) | Kg | 1020 | 1247 |
| Fuel Tank Capacity | L | 190 | 205 |

## Generator Technical Drawings

| SYMBOL | OPEN TYPE | CANOPY TYPE |
|---|---|---|
| L | 2036 | 2600 |
| W | 800 | 1000 |
| H | 1677 | 1510 |
| B | 132 | 150 |
| A | 625 | 0 |
| B | 454 | 0 |
| C | 636 | 0 |
| D1 | 0 | 750 |
| D2 | 0 | 750 |
| D3 | 0 | 520 |
| D4 | 0 | 0 |
| D5 | 0 | 0 |




## Diesel Engine and Genset Rating Classifications

*The below ratings represent the engine performance capabilities to conditions specified in TS ISO 8528/1, 8528-4, 8528-5, 8528-8, BS5000, ISO 3046/1:1986, NEMA MG-1.22.1, BS 5514/1.*

### STAND BY POWER RATING (ESP):

ESP is applicable for supplying emergency power for the duration of the utility power outage. No overload capability is available for this rating. Under no condition is an engine allowed to operate in parallel with the public utility at the Stand By Power rating. This rating should be applied where reliable utility power is available. A Stand By rated engine should be sized for a maximum of an 70% average load factor and 200 hours of operation per year. This includes less than 25 hours per year at the Stand By Power rating. Stand By ratings should never be applied except in true emergency power outages. Negotiated power outages contracted with a utility company are not considered an emergency.

### PRIME POWER RATING (PRP):

Applicable for supplying electric power in lieu of commercially purchased power. Prime Power applications must be in the form of one of the following two categories:

### UNLIMITED TIME RUNNING PRIME POWER (ULTP):

PRP (Prime Power) is available for an unlimited number of hours per year in a variable load application. Variable load should not exceed a 70% average of the Prime Power rating during any operating period of 250 hours. The total operating time at 100% Prime Power shall not exceed 500 hours per year. A 10% overload capability is available for a period of 1 hour within a 12-hour period of operation. Total operating time at the 10% overload power shall not exceed 25 hours per year.

### LIMITED TIME RUNNING PRIME POWER (LTP):

LTP (Limited Time Prime Power) is available for a limited number of hours in a nonvariable load application. It is intended for use in situations where power outages are contracted, such as in utility power curtailment. Engines may be operated in parallel to the public utility up to 750 hours per year at power levels never to exceed the Prime Power rating. The customer should be aware, however, that the life of any engine will be reduced by this constant high load operation. Any operation exceeding 750 hours per year at the Prime Power rating should use the Continuous Power rating.

### CONTINUOUS POWER RATING (COP):

COP is the power that the engine can continue to use under the prescribed speed and the specified environment condition in the normal maintenance period stipulated in the manufacturing plant. And Continuous Power is applicable for supplying utility power at a constant 100% load for an unlimited number of hours per year. No overload capability is available for this rating.

## PAY ATTENTION to the points below in picking and using the generator

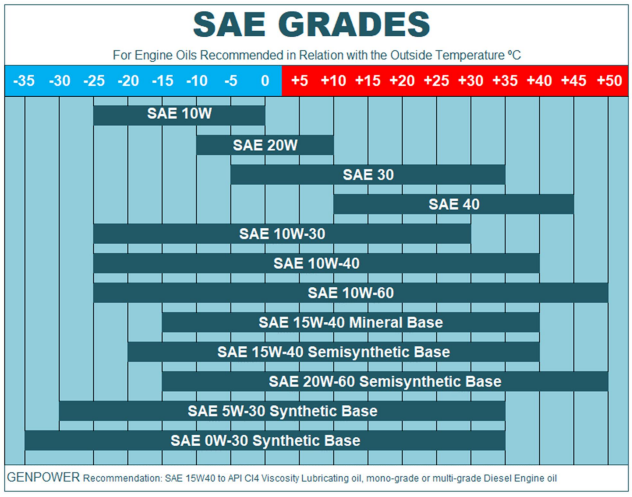
* Generators can work on Continuous Power at 70% of Prime power value if only all maintenances are done on time with original spare parts and high quality oils that manufacturer advice.
* Generators should not operate below 50% of Prime Power value. In such a case, the engine will burn excessive oil and eventually have irreparable damage.
* If your need is 1000 kVA or above, you should prefer Synchronic Systems with 2-3 generators with failure back up and simultaneous aging.
* These points will provide advantage for you with purchasing and operating the generator.

## Fuel Consumption - Oil Recommendation and Oil Grades

| Fuel Consumption | |
|---|---|
| Percent of Prime power | 50Hz - 1500 rpm |
| | l/hr |
| 110% | 22,6 |
| 100% | 20,4 |
| 75% | 15,5 |
| 50% | 10,9 |

*Note: At calorific value 42700 kJ/kg + 5 %, density 0.860 kg/dm3, temperature 280 K.*

*Fuel specification: BS 2869: Part 2 1998 Class A2 or (DIN EN 590) ASTM D975 D2 Diesel. The fuel must be clean and without water)*




## Why You Should Buy GENPOWER?

## Only because it is the biggest generator factory in the World? NO!

* It is one of the most trustworthy and distinguished generator manufacturers in the world with its almost half century experience in the field.
* It has interiorized the strategy of **unconditional customer satisfaction** and has been working with this work ethic together with its whole crew.
* Customers and end users get their moneys' worth and more with every penny.
* It has become a big family with customers and users who receive durable, long-lasting and high quality products.
* It has been appreciated many times by customers and suppliers about the investments that have been made for quality enhancement.
* Both its suppliers and customers always know GENPOWER is and will always be there for them. GENPOWER on their side in bad and good days.
* In order not to harm brand reputation and recognition, each day, they work harder than the day before.
* It continues its business only with the suppliers, customers, dealers and technical services that also embrace the same mind set and work ethics.
* It proves its loyalty for quality and customer satisfaction with its mottos "**Your power is the core of our business**" and "**nothing will be left unfinished**"
* The specifications and/or modifications you can receive with extra costs by other manufacturers are included in standard production in GENPOWER
* When you purchase GENPOWER products, you are not a customer or a buyer but GENPOWER perceives and accepts you as a valuable member of its continuously growing family.

## These are why you should buy from GENPOWER

English 01-2021©2021 GVP Series Generator

GENPOWER GENERATOR

**Factory Address**
ASO II. Industrial Zone
2010 Street No: 18
06909 Temelli-Sincan/Ankara, Turkey
Tel/ Fax: +90(312) 641 32 22 - 641 32 23
genpower@genpower.com.tr
www.genpower.com.tr

Genpower reserves the right to change the catalogues, products, models and technical specifications