

VGP series includes **164/184/224/274/314/354/404/454** total **8 frames**, from 5kW(6.25kVA) to 2240kw(2800kVA). The technical performance and mounting dimension of VGP series alternators are international IEC 34-1 and national GB755 standards compliant, the quality of product can reach current international standard.



DIY Power produces 8KVA-3250KVA diesel generator sets and low-voltage switchgear assemblies and full range of services including the unit installation, full-automatic distribution, generator room environmental engineering, unit maintenance, spare parts supply, etc.

The units produced by DIY Power all use international brand engines and generators with excellent quality. Through ten years of product development and technology accumulation, DIY Power's products gradually become more mature. In order to meet the different needs of customers worldwide, we will renovate continuously technologies and improve products.



## INTRODUCTION:

VGP Series three-phase (or single-phase) brushless synchronous, by introducing and developing on foreign advanced technology of well-known generators, are our newly developed products, all data updated synchronously with international well-known generators. VGP series generators can be manufactured in both double and single bearing versions with a range of easy coupling to internal and international engines. Its body is constructed by steel shell, stator core is made of whole disc and rotor core is made as whole salient pole type with full-damping, with brushless self-exciting method and AVR automatic control. It has following features: small-size, light-weight, good appearance, perfect performance, and easy access for installation and maintenance.

VGP series alternators meet the quality standard of international well-known generators, we guarantee the quality by strictly-controlled production design, manufacturing technology, tooling, selection of raw materials, production, testing equipment and quality control. Selection of raw materials includes cold rolled silicon sheet and magnet wire, which are purchased from the best of internal supplier, producing and test equipment such as coil winder can effectively control the magnet wire's pulling force while winding, tooling such as stator laminated tooling is very advanced and it can ensure the stator core's quality, manufacturing technology such as VPI and wet-winding technology can ensure that the windings have the high level of protection. All of quality control including field control is carried out according to ISO9001 standard.

## FEATURES:

1. Excellent compatibility with drive systems: standard mounting dimensions can be coupled to any diesel engines from would wide, many S.A.E flanges and S.A.E drive can be easily interchangeable.
2. Good environmentally-friendly protection system: the standard enclosure protection is IP23, insulation class is H, and VGP alternators made with advanced manufacturing technologies are suitable for harsh environments.
3. Reliable and powerful automatic voltage regulators can provide consistent excitation on all occasions, so the alternators can run reliably, and have high performance of magnet on exciter stator which can rapidly build voltage while starting; all AVR's have numerous features for voltage adjustment, stability adjustment, low frequency protection and exterior voltage adjustment.

Standard AVR: SX460;

Option AVR: AX440/SX440/KR440... (can be suitable for operation in parallel), MX341 is suited for auxiliary windings, thus providing the alternator with the best design for nonlinear load, performance on start and short-circuit.

4. VGP alternators are provide with a 2/3 winding pitch as standard, therefore are perfectly suitable for installations with distorting loads, and easy to be operated with other alternators in parallel; several types of windings are available in 50Hz and 60Hz versions to optimize performance according to voltage required on site and the demands of application (max. voltages available range up to 690V).
5. VGP alternators are provide with three phase as standard, it's easy to alter the voltage by reconnection for 12-leads on terminal plate, also the units can be run as single phase by changing the output connecting (except for VGP354/404/454 series), but single-phase's power is about 58% of the three-phase's; for single phase generator, it can be designed for special winding.
6. The damp winding on rotor and the surge suppressor on rectifier can provide the alternator with stability and reliability.
7. For balanced rotor with two sealed and quality ball bearing, VGP alternator have the features of little vibration and low noise.
8. Easy access for installation and maintenance, including: coupling to engines, connecting for lead wire, adjustment for AVR, connecting for rectifier, integrating with current transformers

## OPTION FEATURES:

1. Interchangeable S.A.E flanges and S.A.E drive discs
2. Convenient filters on air inlets and outlets

3. Protection for windings in harsh environments
4. Different AVR type
5. Different windings
6. Exterior potentiometer
7. Space heaters
8. Stator thermal protection
9. PMG or auxiliary windings
10. Droop current transformers (C.T.)

### ENVIRONMENT CONDITIONS:

In the following environments, the alternator could run continuously:

1. Altitude: do not exceed 1000m.
2. Cooling air temperature: 250~313K (-15°C~40°C).
3. Relative air humidity: do not exceed 90%.

Note: If environment conditions exceed the scope mentioned-above, please feel free to contact us.

### MAIN PERFORMANCE DATA:

1. The standard protection for VGP series generators is IP23;
2. Winding are insulated to class H;
3. Full-damping whole salient construction guarantees generator to be operated stably in any conditions, and enable it to run under 150% rated speed(2250 r/min) for 2 minutes;
4. VGP alternator are provided with a 2/3 winding pitch as standard, can effectively eliminated the third harmonic (3rd, 9th, 15th ...etc.), and are therefore perfectly suited to installations with distorting loads, and easy to operate with the other alternator in parallel;
5. Adjusting rate of stable voltage  $\leq 1\%$ , adjusting rate of instant voltage:  $-15\% \sim +20\%$  (60&In,  $\text{COS } \Phi \leq 0.4$  lagging), instant voltage recovery time  $\leq 1.5\text{s}$ ;
6. Wave aberration rate of voltage THD  $\leq 3\%$ , telephone harmony wave factor THF  $\leq 2\%$ , telephone effective factor of TIF  $\leq 50$ .

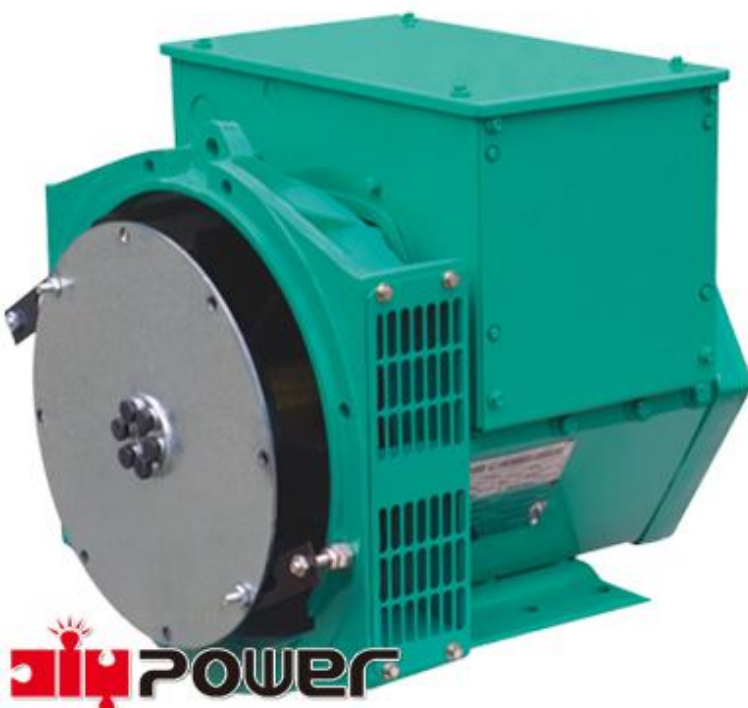
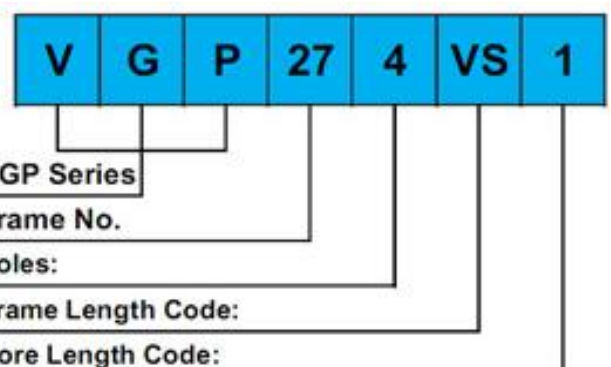
## DIYPOWER VGP ALTERNATOR

VGP~164 Series

6.25-22 KVA

Brushless Synchronous Alternator

THE DEFINITION PRODUCT MODEL



| Rated Date           |     | 50Hz - 1500 RPM   |       |       |       |               |       |       |       |
|----------------------|-----|-------------------|-------|-------|-------|---------------|-------|-------|-------|
| Rating               |     | kVA/ kW cos Φ=0.8 |       |       |       |               |       |       |       |
| Duty/Ambient T °     |     | Continuous/ 40°C  |       |       |       | Stand by/27°C |       |       |       |
| Ins. Class/ T ° Rise |     | H / 125 ° K       |       |       |       | H/163° K      |       |       |       |
| Phase                |     | 3 Phase           |       |       |       | 3 Phase       |       |       |       |
| Voltage              | Y   | 380V              | 400V  | 415V  | 440V  | 380V          | 400V  | 415V  | 440V  |
|                      | Δ   | 220V              | 230V  | 240V  |       | 220V          | 230V  | 240V  |       |
|                      | YY  |                   |       |       | 220V  |               |       |       | 220V  |
| VGP164VS1            | KVA | 6.25              | 6.25  | 6.25  | 6.25  | 7.875         | 7.875 | 7.875 | 7.875 |
|                      | kW  | 5                 | 5     | 5     | 5     | 6.3           | 6.3   | 6.3   | 6.3   |
| VGP164VS2            | KVA | 9.375             | 9.375 | 9.375 | 9.375 | 11.13         | 11.13 | 11.13 | 11.13 |
|                      | kW  | 7.5               | 7.5   | 7.5   | 7.5   | 8.9           | 8.9   | 8.9   | 8.9   |
| VGP164VS3            | KVA | 12.5              | 12.5  | 12.5  | 12.5  | 14.5          | 14.5  | 14.5  | 14.5  |
|                      | kW  | 10                | 10    | 10    | 10    | 11.6          | 11.6  | 11.6  | 11.6  |
| VGP164S4             | KVA | 15                | 15    | 15    | 15    | 17.5          | 17.5  | 17.5  | 17.5  |
|                      | kW  | 12                | 12    | 12    | 12    | 14            | 14    | 14    | 14    |

| Rated Date           |     | 60Hz - 1800 RPM   |      |       |       |               |       |       |       |
|----------------------|-----|-------------------|------|-------|-------|---------------|-------|-------|-------|
| Rating               |     | kVA/ kW cos Φ=0.8 |      |       |       |               |       |       |       |
| Duty/Ambient T °     |     | Continuous/ 40°C  |      |       |       | Stand by/27°C |       |       |       |
| Ins. Class/ T ° Rise |     | H / 125 ° K       |      |       |       | H/163° K      |       |       |       |
| Phase                |     | 3 Phase           |      |       |       | 3 Phase       |       |       |       |
| Voltage              | Y   | 380V              | 416V | 440V  | 480V  | 380V          | 416V  | 440V  | 480V  |
|                      | Δ   | 220V              | 240V |       |       | 220V          | 240V  | 220V  |       |
|                      | YY  |                   | 208v | 220V  | 240V  |               |       |       | 240V  |
| VGP164VS1            | KVA | 6.5               | 7.5  | 8.13  | 8.13  | 8             | 8.5   | 9.75  | 9.75  |
|                      | kW  | 5.2               | 6    | 6.5   | 6.5   | 6.4           | 6.8   | 7.8   | 7.8   |
| VGP164VS2            | KVA | 10                | 10.5 | 12    | 12    | 12            | 12.5  | 14.13 | 14.13 |
|                      | kW  | 8                 | 8.4  | 9.6   | 9.6   | 9.6           | 10    | 11.3  | 11.3  |
| VGP164VS3            | KVA | 12.5              | 14   | 15.63 | 15.63 | 15.5          | 17.25 | 18.5  | 18.5  |
|                      | kW  | 10                | 11.2 | 12.5  | 12.5  | 12.4          | 13.8  | 14.8  | 14.8  |
| VGP164S4             | KVA | 16.25             | 17.5 | 19    | 19    | 19.25         | 21.25 | 22    | 22    |
|                      | kW  | 13                | 14   | 15.2  | 15.2  | 15.4          | 17    | 17.6  | 17.6  |