

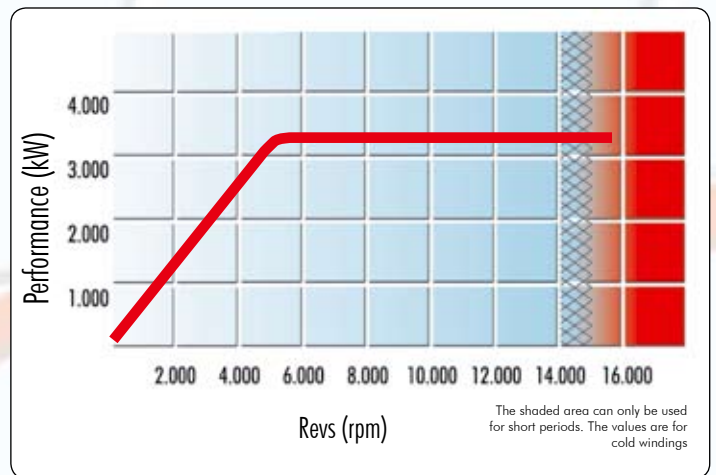
HTG Alternators

Extremely compact, light and efficient.

The 3-phase Panda HTG 4000 alternator is designed to operate in conjunction with a HTL charging converter and supply power with a performance which until recently would not have been thought possible. Compactly designed - it is suitable for installing in even the most confined spaces.

The HTG is highly efficient (exceeding 80%) and supplies a primary 3-phase voltage of 230-400 V to the HTL charging converter. The HTG is connected by means of a thin cable (4 x 25 mm²) to the HTL which then regulates the battery charge by means of an optimum "CCLM" (characteristic curve). Efficient recharging, ensures the batteries are protected from the damage caused by deep discharging. Regular recharging with shorter intervals can also help prolong the batteries life span. The HTL must be placed as close as possible to the batteries to ensure an optimal charging voltage.

- ☑ Performance 3.2 kW
- ☑ Primary voltage: 240 Volt 3-phase (300-1000Hz)
- ☑ Max. current each phase 7.7 A
- ☑ Max. output 3.2 kW at 6000 rpm (40°C)
- ☑ Max. constant charging rate 240/110 A DC (12/24V)
- ☑ Max. rev. speed: 14000 short time 16000 r.p.m.
- ☑ Rotational left and right
- ☑ Isolated version. Negative 2-poles
- ☑ Air-cooled
- ☑ Pulley disc
- ☑ Maintenance-free



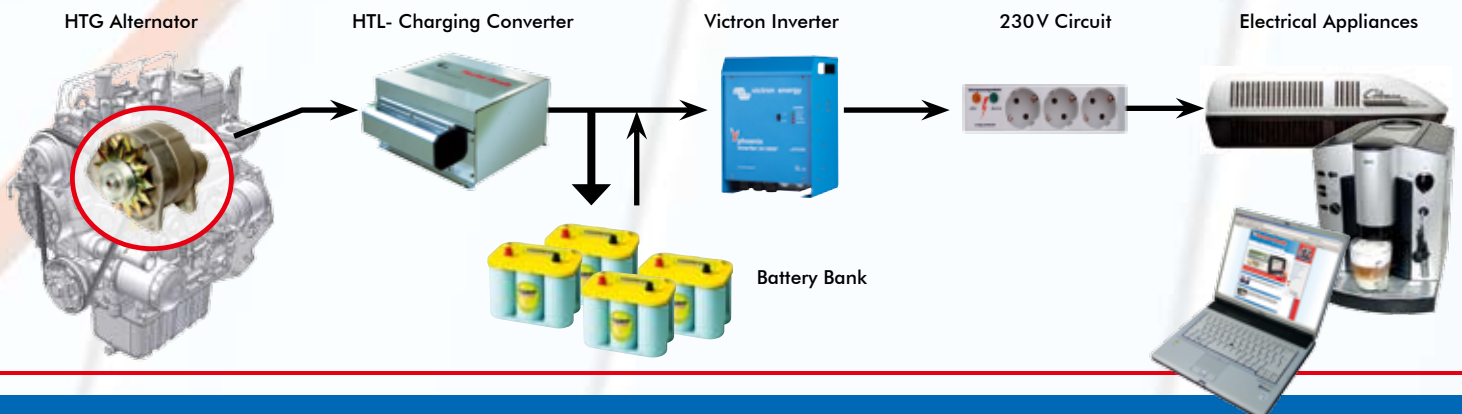
Professional Power Supply for Vehicles

When the HTG 4000 alternator is used in conjunction with an inverter (i.e. Victron Phoenix 12/3000) it can produce up to 3kW continuously and form a complete power system. If only low performance is required the inverter supplies energy directly from the battery.

The Panda System is suitable as a backup system for all mobile requirements, such as yachts, motor-homes, trucks etc

especially if there is no room for a standard Panda generator. Vehicle air-conditioning units (such as Coleman Mach III or Electrolux) can be run stationary or while travelling.

If the nominal performance is required for periods when the vehicle is stationary such as when the engine idles, the ability to match the required speed can be achieved by increasing the idling speed.



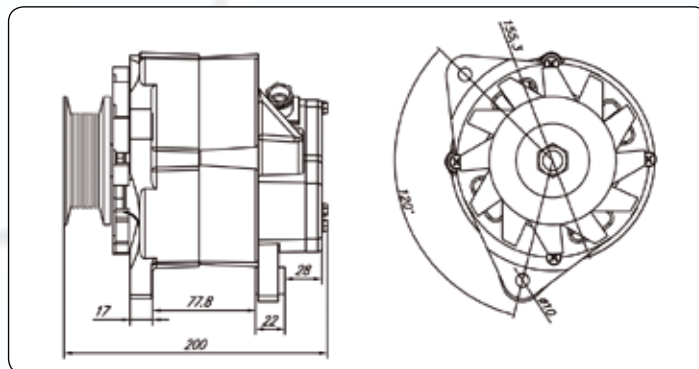
Panda HTG 4.000 3.2 kW - "High Power" - 3 Phase Generator

The HTG alternator is mounted onto the engine and driven by a Poly-V belt. The alternator must not be the main engine. It can also be driven by a ship's propeller shaft or a secondary combustion engine.

When used with an inverter, a constant 230V for the onboard power system can be supplied using the battery bank if a low engine speed, e.g. during idling, causes the performance to drop below the required level. If a second alternator cannot be mounted to the engine due to space limitations, the normal vehicle alternator may be replaced with a HTG alternator.



| | | |
|------------------------------------|-------|-----------|
| Model | | HTG-4.000 |
| Performance | [kW] | 3,2 kW |
| Nominal performance at rev. speed | [rpm] | 6.000 |
| Max. short time rev. speed | [rpm] | 16.000 |
| Max. constant rev. speed | [rpm] | 14.000 |
| Diameter external casing | [mm] | 155 |
| Generator casing total length | [mm] | 200 |
| No. of poles | | 12 |
| Current per phase on the generator | [A] | 7.7 |
| Frequency at 3000 rpm. | [Hz] | 300 |
| Frequency at 10.000 rpm. | [Hz] | 750 |
| Approx. weight | [kg] | 7,5 |



The HTG generator, itself, is suitable for any battery charging voltage. An HTL charging device (charge converter) with suitable ship voltage must be ordered.

HTL 4.000 Charger Converter

The **HTL charging converter** transforms the primary voltage of the HTG alternator (approx. 240 volts - 300 to 1000 Hz) into a clean **regulated** voltage of 14.1 or 28.2 volts DC. The charge voltage is primarily regulated by the field voltage of the alternator. The charge voltage can be adjusted to suit the most common types of batteries in currently in use. This can be regulated according to the "CCLM" characteristic curve using a 3-stage charging curve with temperature compensation.



| Type | | HTL 4.000-12 | HTL 4.000-24 |
|-------------------------|------|---|--|
| Primary Voltage (Input) | [V] | 240 V AC ¹ | 240 V AC ¹⁾ |
| Dimensions L x W x H | [mm] | 340 x 280 x 190 | 340 x 280 x 190 |
| Weight | [kg] | 22.2 kg | 22.2 kg |
| Max. Current (input) | | 7.7 A | 7.7 A |
| Max. Charging Rate DC | [A] | 220 A (14.1 V regulated) ^{2, 1} | 110 A (28.2 V regulated) ^{2,3} |

¹⁾ The HTG Alternator supplies with a voltage of 240V 400Hz which the HTL converter uses to produce the desired battery charging current

²⁾ Regulation of the characteristic curve according to the „CCLM“ mode (optimised charging management with temperature compensation)

³⁾ The final charge voltage can be set individually according to battery type using software.



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