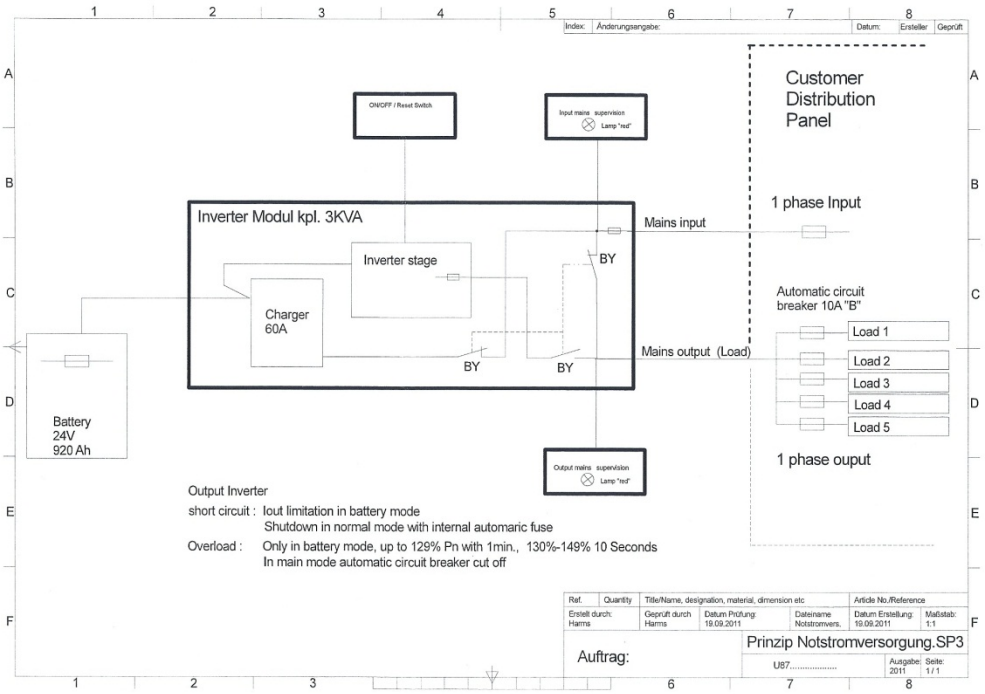
في حالة غياب الوطنية

سيتم ترجمة هذا النظام الى اللغه العربيه بعد إضافة بعض التغييرات التقنية عليه خلال الأيام القليلة القادمة إنشاءالله



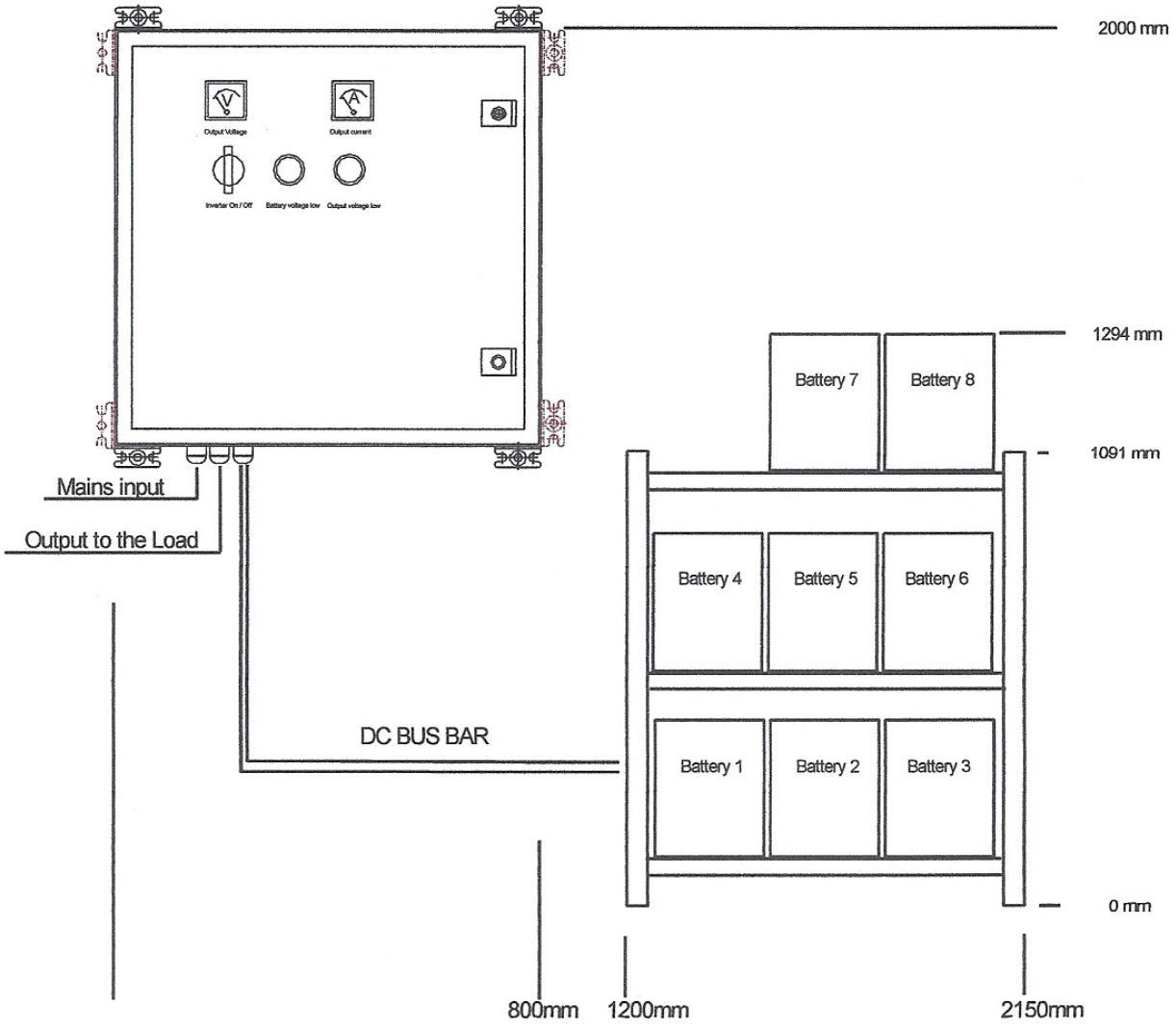
GERTECH GERMAN TECHNOLOGY

GerTechno Industrieprodukte GmbH
Dorfstrasse 46 – 48
D – 86441 Zusmarshausen - Steinekirch

Tel.: +49-8291-85993-0
Fax: +49-8291-85993-19

info@gertechno.de
www.gertechno.de

Invertersystem 6h 6 hours



Dimension drawing for installation

Guarantee time: 12 Month after commissioning

Packaging: The arrangement is wrapped in plastic foil and is packed in a wood transport box. The transport box has feet, so that an elevating platform truck can transport it. These are a total of 2 wooden boxes. A box for battery and battery cable and a box for the device and the battery rack.

Datasheet Inverter SWR 3000

This type of inverter is available for 12V and 24V Battery. For a better performance we use here the 24V Version.

The SWR3000 inverter is not only is an inverter but also contains a powerful smart charger.
Actually it contains three modules in a single unit: inverter, charger and switch.

The inverter is a heavy-duty, continuous working module generating a sinusoidal wave from a 12V/24V - battery bank, which can supply energy to various loads such as resistive load (heater),inductive load (air conditioners, refrigerator),motors (vacuum cleaners), and rectifier load (computer). This inverter are designed to work in heavy load condition. De-rating is not necessary. It provides a rapid and complete charging process.

The smart charger can be set with different charging profiles and battery capacities to match in various battery types and sizes. The switch module automatically diverts the energy transfer path between inverter and utility source. When the utility source is lower than the transfer level, the path switches to the inverter. Otherwise the load is conducted to the utility source. The transfer time is 1/4~1/2 of the total cycle time. The high power charger (60A) can charge a 12V/1000 AH battery bank in 12 hours.

SL series is an extremely good choice for utility back up power. However, it also can be used as a UPS for computers

An inverter, charger and switching box can be replaced with a single Inverter unit SWR3000.

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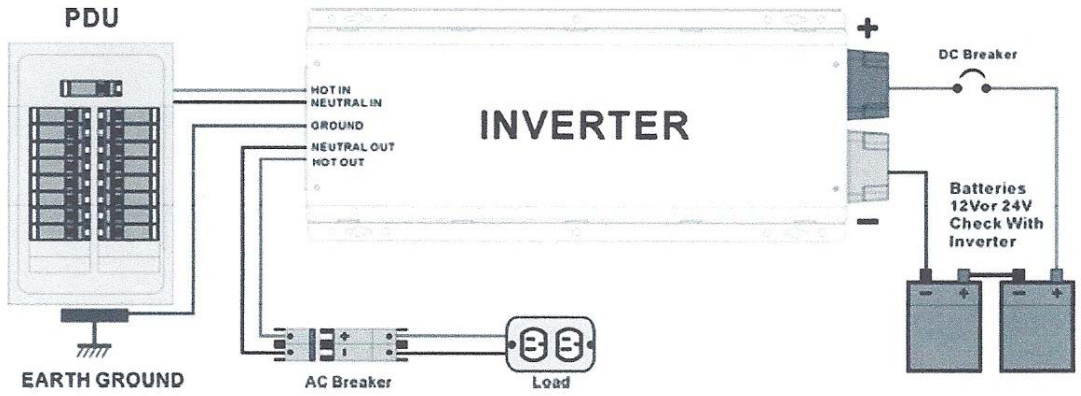
A typical Installation drawing



Settings

The Battery Charger

Inverter to Charger Transition The internal battery charger and automatic transfer relay allow the unit to operate as either a battery charger or inverter, but not at the same time. An external source of AC power (e.g., shore power or generator) must be supplied to the INVERTER's AC input in order to allow it to operate as a battery charger. When the unit is operating as a charger, AC loads are powered by the external source (i.e., generator or public power).

Transfer switching speed Bypass

The transfer time is 1/4 ~ 1/2 cycle

The Battery

Battery Size

Batteries are the INVERTER's fuel tank. The larger the batteries the longer the INVERTER can operate before recharging is necessary. An undersized battery bank results in reduced battery life and disappointing system performance.

Batteries should not be regularly discharged to the limit of more than 50% of their capacity. Under extreme conditions, such as a severe storm or a long utility outage, cycling to a discharge level of 80% is acceptable. Totally discharging a battery may result in permanent damage and reduced life.

For stand-applications, battery size should provide between 3 and 5 days of storage before needing to be recharged. The power contribution from other charging sources is not included in this calculation to duplicate the conditions present during a cloudy or windless period. This is often referred to as the "number of days of autonomy." If the system is a hybrid system with daily generator runs periods then the battery size may be smaller. During cloudy periods the generator would be expected to run longer. Utilities back up applications often have very small batteries. The minimum recommended battery capacity is 200 amp-hours@12vdc and 100 amp-hours@24vdc.

Estimating Batteries Requirement

In order to determine the proper battery bank size, it is necessary to compute the number of amp hours that will be used during charging cycles. When the required amp hours are known, the expected amp hour usage ensures to be twice as this amount. Doubling the expected amp hour usage ensures that the batteries will not be overly discharged and extends battery life. To compute total amp hours usage, the amp hour requirements of each appliance that is to be used is determined and then added together.

You can compute your battery requirements using the nameplate rating of your appliances. The critical formula is WATTS=VOLTS X AMPS. Divide the wattage of your load by the battery voltage to determine the amperage the load will draw from the batteries.

If the AC current is known, then the battery amperage will be as follows: AC Current x AC Voltage / Battery Voltage = DC amps.

Multiplying the amperage by the number of hours that the load will operate, and you have a reasonable estimate of amp hours.

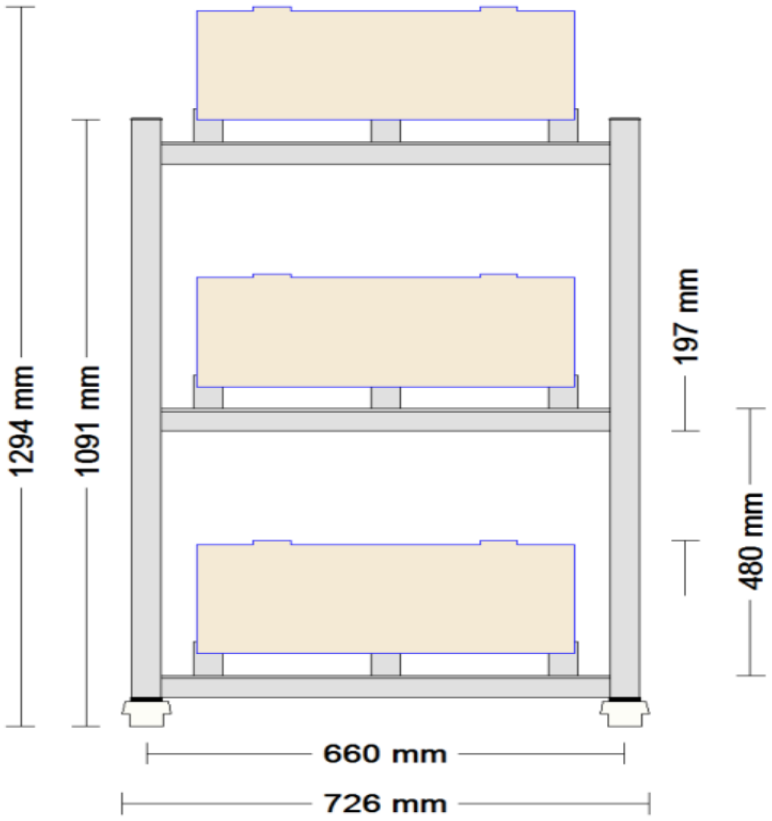
Motors are normally marked with their running current rather than their starting current. Starting current may be three to six times running current. Manufacturer's literature may provide more accurate information than the motor nameplate. For larger motors, increasing the battery size indicates that the high demand for start-ups should be required.

Following this procedure for each item, you want to use with the INVERTER. Add the resulting amp hour requirements for each load to arrive at a total requirement. The minimum properly sized battery bank will be approximately double this amount. This will allow the battery to be cycled only 50% on a regular basis.

Battery Configuration

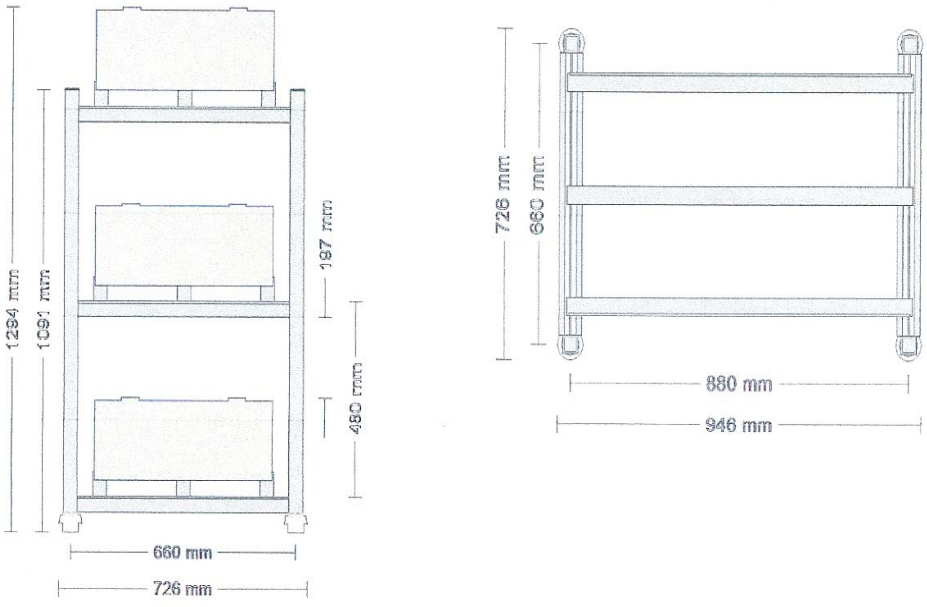
In this system we use 8 pc. Batteries 12V 230Ah. Two pc. in Series and this group four times in parallel. So we get an capacity of 920Ah at 24V.

Battery Rack
Side view



<u>The weight total is 686kg inculde the Batteries.</u>

Top view



Technical data of the SWR Inverter Series

Specification	**Inverter SWR3000 24V**
Continuous Power	3000W
Efficiency	87%
Output Waveform	Sine wave
DC Current at Rated Power	180A
DC current at Short Circuit	540A
Nominal input voltage DC	24V
DC Input Voltage Range	20 - 30V dc
Low Battery Protection (Heavy light load)	20,0 / 22,0 Vdc
DC mode output voltage Regulation	+-10%
Power factor allowed Output	0,8 to 1
Frequency Regulation	+/- 1Hz
Standart Output voltage	230V AC
Loading sensing (Power saving)	150W - 220W
Transfer time Bypass	12ms Max.
Forced air cooling	Variable speed
Transfer Relais Bypass	30A
Adjustable charging current	6 - 60A
Number of charge profiles	2
Resistive Load	100%