

Mains Supply Voltage without mains

Sine Inverters - 230 Volts alternating voltage like out of the socket

When being on the road with a vehicle, nobody wants to renounce comforts. Electric appliances not only improve the comfort in the leisure vehicle, but are also decisive for the equipment of ambulance cars or fire-fighting vehicles. These electric appliances might be sensitive medical equipment, notebooks, electrical tools or the preferred espresso machine. All these units require 230V supply voltage, which is placed at disposal by a an inverter out of the board battery. The size of the inverter is determined by the case of application. So, a coffee machine requires a more powerful unit than a razor. Consequently, the current requirement is not determined by the size of the inverter, but by the size of the connected consumer. More powerful inverters require more current and consequently larger batteries. Usually, this fact is not considered when purchasing an inverter.

The VOTRONIC Inverters supply a steady, pure sinusoidal alternating voltage of 230 V/50 Hz. They are suitable for all commercial 230 V consumers, regardless if sensitive medical appliances or robust electrical tools. Many electrical appliances in the household, in the workshop or of the multimedia field are equipped with a sensitive electronic system. Thus, they need a pure sinusoidal alternating voltage. Simple and cheap inverters with square-wave alternating voltage or modified sinusoidal voltage are not suitable for such units.

As special feature, all VOTRONIC inverters are also available with integrated mains priority control. The automatic mains priority control (NVS) of the unit ensures the availability of 230 V supply voltage and 230 V alternating voltage of the inverter at all 230 V sockets in the vehicle. An integrated safety relay avoids collision of the two operating modes. As soon as the country current is connected to the vehicle, the country current will be supplied automatically the internal 230 V sockets and the inverter will be switched off. If the vehicle is separated from the country current, the inverter will be again connected automatically to the 230 V board mains supply. The high quality of the VOTRONIC Inverters becomes remarkable by an unproblematic operation of sensitive consumers, as well as by the amply dimensioned power electronics providing high peak power for appliances with high starting current rates. To avoid unnecessary load of the board battery, all VOTRONIC inverters are equipped with an intelligent low-energy function with automatic reduction of the current consumption or timely disconnection of the inverter.

The user-friendly control panel of the unit informs of the instantaneous capacity and of the operating mode of the unit. Depending on the fitting position, it can be rotated or it can be installed at any desired position in the vehicle to act as remote control. With a suitable mounting frame, the control panel can be added to the VOTRONIC modular system.

PRODUCT FEATURES

- Output voltage in quality of mains voltage (pure sine)
- Trouble-free operation of all mains operated appliances
- The control panel can be rotated by 360 °, and it can be used as remote control
- Switch mode technology
- Compact and lightweight, but robust and reliable
- Short-time excess current is admissible
- Low current consumption and high efficiency
- Automatic disconnection in case of overvoltage/low voltage of the battery, overload, overheating etc.
- Comfort cooling fan with power control, temperature control and continuous speed control
- Integrated mains priority control with overload protection (series NVS)
- Outstanding radio interference suppression
- High peak power for demanding consumers



Optional: Mounting Frame S



REAL
SINUS

Continuous
Power
300 W or
600 W

MobilPOWER Inverter 300 W and 600 W

Sine Inverters with fixed battery connection cable

The MobilPOWER Inverters SMI 300 and 600 convert the battery voltage into pure sinusoidal alternating voltage 230 V and are equipped with battery connection cables of the corresponding cross-section. They are designed in advanced switch mode technology for continuous operation and they excel by their light weight and very high efficiency.

The capacity of these units is sufficiently dimensioned for TV and satellite receivers, multimedia equipment, computers and office equipment, battery chargers, radio systems and medical equipment. They are also ideally suitable for small consumers, such as chargers for mobile phones, notebooks etc.



The units offer all features of all other VOTRONIC inverters. Even the small Sine Inverter 300 W is available with mains priority control, which is unique in this class.



All units with technical data are listed on page 56/57.

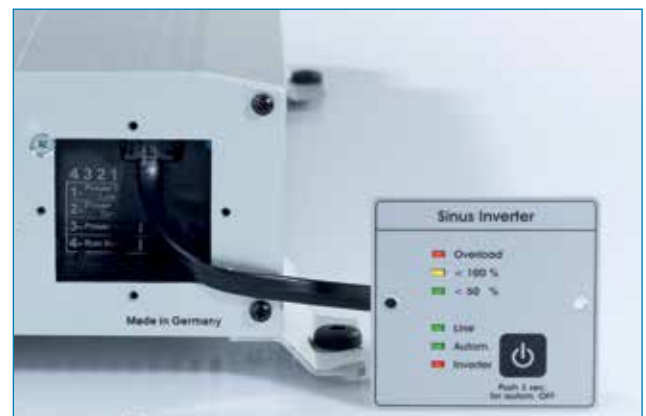
MobilPOWER Inverter 1200 W and 1700 W

Sine Inverter with battery terminals

Also the efficient MobilPOWER Inverters SMI 1200 and 1700 convert the battery voltage into pure sinusoidal alternating voltage 230 V. Owing to very high peak power rates, they are also applicable for demanding consumers with high starting current rates, such as air-conditioning systems or vacuum cleaners.

Due to their efficiency, they are equipped with solid battery terminals for the corresponding high-current cables with a cross-section of up to 50 mm². Of course, they are also designed in advanced switch mode technology for continuous operation. Since their efficiency exceeds 93 %, the inverters' operation is very efficient with very low own consumption at the same time.

Numerous integrated protective circuits, robust power electronics and an intelligent microprocessor control ensure a very high operating safety in the long run, even in case of unfavourable operating conditions.



REAL
SINUS

Continuous
Power 1200 W
or 1700 W





An intelligent power saving control with automatic disconnection allows uninterrupted operation of powerful 230 V consumers, as well as of small, sensitive appliances with minimum battery consumption.

Also the "big" units offer all product features of all other VOTRONIC inverters. They have a compact design and a very low weight. Thanks to the removable remote control, an ins-

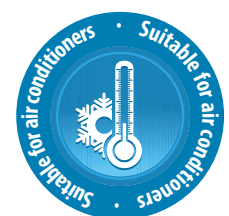
tallation near the board batteries is possible. Plug-in battery cables, as well as the required high-current fuse are available as accessories.

» All units with technical data are listed on page 46/47.

Our recommendation: suitable inverters for air-conditioners

For air-conditioners mostly the generated cooling capacity is indicated, whereas the required electrical capacity is lower. The choice of a suitable inverter must be based on the increased starting current. We recommend the following inverter for operation of air-conditioners:

- Air-conditioners till 1700 W cooling capacity: **MobilPOWER Inverter SMI 1200 ST (-NVS) Sinus**
- Air-conditioners till 2300 W cooling capacity: **MobilPOWER Inverter SMI 1700 ST (-NVS) Sinus**



Sine Inverter MobilPOWER 300-600 W



Unit Type	SMI 300-NVS	SMI 600	SMI 600-NVS
Order No.	3156	3157	3158
Output Capacity Continuous/Short-time/Peak	300/420/600 W	600/840/1200 W	600/840/1200 W
Own Consumption Off/Stand-By/Mains approx	0 / 3 / 0 W	0 / 5 / - W	0 / 5 / 0 W
Connection Cable Battery **	2x1.2 m	2x1.2 m	2x1.2 m
Length/Cross Section/Cable Lug	4 mm ² / M8	10 mm ² / M6	10 mm ² / M6
Dimensions* (WxDxH)	160x305x71 mm	160x305x71 mm	160x305x71 mm
Weight	1800 g	2000 g	2300 g

* Dimensions incl. mounting flanges, without connections

** Cable included in the delivery, already installed at the unit

Mark of Conformity: CE, E Test (EMV/automotive regulations)

Delivery Scope: Battery connection cable of suitable cross-section,
5 m connection cable for removable control panel/
remote control, mains cable (only "-NVS"), manual

General Technical Specifications Sine Inverter

Input Voltage (DC)	12 V (10.5 V - 15 V)
Output Voltage (AC)	230 V Pure Sine
Output Frequency	50 Hz crystal stabilized
Efficiency	> 93 %
CosPhi of the Consumers	≤ 1 no restriction
Overvoltage Battery max.	16.0 V
Low Voltage Battery min.	10.5 V (load-dependent, dynam.)
Overtemperature Protection	●
Overload Protection	●
Fan with Continuous Temp. Control	●
Power Saving Mode	●
Remote Control	●
Autom. Commutation to Mains (only "-NVS")	Rating max. 2300 W
Input Country Current 230 V/AC (only "-NVS")	Socket for Cold Appliances
System of Protection/Protection Classes	IP21 / I, II
Temperature Range	- 20 to + 45 °C
Ambient Conditions, Humidity of Air	max. 95 % RH, no condensation
Safety Regulations	EN 60950

For current consumption 12 V DC, the following rough formula is applied:

The current consumption of the inverter is almost exclusively depending on the used consumer 230 V and can be determined roughly. The capacity of the consumer 230 V divided by 10 results in the approximate current value being taken from the battery, for instance 300 W / 10 = up to 30 A.

Battery dimensioning 12 V:

For your guidance regarding the battery size, we recommend the following battery capacity rates: At 300 W of >60 (40) Ah, at 600 W of >120 (80) Ah and from 1200-1700 W of >200-300 (140-180) Ah. The values in () are valid for short-time operation.

The power consumption (Watts) can be drawn from the technical data or the nameplate of the 230 V consumer. Here some examples at a glance:

Razor	10 W	TV	80 W	Hairdryer	1000-1500 W	Storage Battery Charger	50 W
Coffee Maker	1200 W	DVD Player	30 W	Drill	400-800 W	Mobile Phone Charger	5 W
Power Pack Laptop	75-140 W	Sat Receiver	20 W	Coffee Dispenser	1500 W	Vacuum Cleaner	1000-1500 W
Microwave	1000-1500 W	E-Bike-Charger	250 W	Energy-saving Lamp	10-20 W	Fluorescent Lamp	40-100 W

Please observe that the indicated values are always nominal values. The momentary power consumption might be three or five times higher than the indicated value due to e. g. starting current.

Sinus Inverter
MobilPOWER 1000-1500 W



Unit Type	SMI 1200 ST	SMI 1200 ST-NVS	SMI 1700 ST	SMI 1700 ST-NVS
Order No.	3177	3178	3183	3184
Output Capacity Continuous/Short-time/Peak	1200/1400/2000 W	1200/1400/2000 W	1700/2100/3000 W	1700/2100/3000 W
Own Consumption Off/ Stand-by/Mains approx.	0 / 8 / - W	0 / 8 / 0 W	0 / 10 / - W	0 / 10 / 0 W
Battery Connection Cross Section	Terminals 2x 50 mm ²	Terminals 2x 50 mm ²	Terminals 2x 50 mm ²	Terminals 2x 50 mm ²
Dimensions* (WxDxH)	265x305x90 mm	265x305x90 mm	265x440x90 mm	265x440x90 mm
Weight	3800 g	4000 g	4900 g	5200 g

Required Accessories

Battery Connection Cable

For SMI 1200 ST (-NVS):

- Order No. 2268** High-current cable set red/black 25 mm² of 1 m length
- Order No. 2272** High-current cable set red/black 25 mm² of 2 m length
- Order No. 2262** High-current cable red 25 mm², 40 cm length

For SMI 1700 ST (-NVS):

- Order No. 2269** High-current cable set red/black 35 mm² of 1 m length
- Order No. 2273** High-current cable set red/black 35 mm² of 2 m length
- Order No. 2263** High-current cable red, 35 mm², 40 cm length



More information you will find on page 104.

* Dimensions incl. mounting flanges, without connections

Mark of Conformity: CE, E Test (EMV/automotive regulations)

Delivery Scope: Unit connection terminals for battery connection cable of suitable cross-section, 5 m connection cable for removable control panel/remote control, mains cable (only "-NVS"), manual

Sine Inverter
Accessories



Unit Type	Mounting Frame S (for Remote Control)	Additional Remote Control (Extension set with 2nd Remote Control)	Control Unit (autom. On/Off control unit)	Fuse Holder (for Strip Fuses)	Strip Fuse	Power Fuse Holder with Lid	Power Fuse
Order No.	2016	2067	2065	2242	see list	2251	see list
Suitable for							
SMI 300 (-NVS)	●	●	●	●	2244 (40 A)	–	–
SMI 600 (-NVS)	●	●	●	●	2247 (80 A)	–	–
SMI 1200 ST (-NVS)	●	●	●	–	–	●	2256 (175 A)
SMI 1700 ST (-NVS)	●	●	●	–	–	●	2258 (225 A)

More information you will find on pages 100-104.

» More technical specifications and informations you will get at our website www.votronic.de