# Technaxx® * User Manual

# Car Power Inverter with 2 USB Ports TE21

**Do not use electric charge that need higher watts than maximum 200W continuously !**
**This device is only suitable for vehicle with 12V electrical systems!**

The Declaration of Conformity for this device is under the Internet link: **www.technaxx.de/** (in bottom bar “Konformitätserklärung”). Before using the device the first time, please read the user manual carefully. Service phone No. for technical support: 01805 012643 (14 cent/minute from German fixed-line and 42 cent/minute from mobile networks). Free Email: **support@technaxx.de**

Keep this user manual for future reference or product sharing carefully. Do the same with the original accessories for this product. In case of warranty, please contact the dealer or the store where you bought this product.

**Warranty 2 years**

## Features

- Charges various electronic devices in a car (12V Car Adapter)
- 2x USB port USB-A 1x USD-C max. 5,4A
- 1x Schuko Socket
- Converts 12V DC battery power into standard 230V AC (household) power, to run a variety of electronics, e.g. tablets, smartphones, laptop computers, game systems, small TVs, DVD/MP3 players, camping accessories, GPS units and much more
- Output power 200W (max. continuous) and 400W (peak)
- Automatic safety shutdown to secure the car battery (Alarm LED at ~10.5V)
- High/Low voltage & overload protection
- Overheating protection (built-in ventilation fan)

## Technical specifications

| | |
|---|---|
| Input voltage (DC) | 12V (Car Adapter) (10.2-15,8V) |
| Permanent current | 15A |
| Input current Max | 18A |
| Output power | 200W (maximum, continuously), 400W (peak) |
| Output voltage USB (DC) | 5V, on USB A and up to 12V on USB C |
| Output voltage Schuko (AC) / AC frequency | 230V / 50Hz nominal |
| Output Waveform | MSW ➢ The power inverter's MSW [Modified Sine Wave] is especially suitable for light and heat with max. 200W.<br>MSW output can produce "humming" when connected to audio equipment and is generally unsuitable for sensitive electronics. |
| Nominal load efficiency | 85% |
| Low battery voltage shutdown and alarm | at ~10.2V |
| USB output ports (DC) | 5,4A (share) |
| AC output | 1x Schuko port |
| Circuit protection (DC overload) | 25A internal car fuse (replaceable; suggested by technical) |
| Weight / Dimensions | 0,33kg / (L) 17,9 x (W) 6.4 x (H) 5,2cm |
| Package Contents | Car Power Inverter with 2 USB Ports TE21, , User Manual |

## Normal use

The power inverter is intended to convert 12 V direct current voltage to

- alternating current voltage 230 V/50 Hz and/or
- USB A, 5 V
- USB C, 5-12V

→This device is not intended for use by children or persons with limited mental capacity or lacking experience and/or lacking expertise. Children should be supervised to ensure they do not play with the device.

→This device is not intended for commercial use.

→Any other use or modification of the device is considered improper and involves significant risks. The manufacturer assumes no liability for damages due to improper use.

## Intended sites

The power inverter is intended for installation in

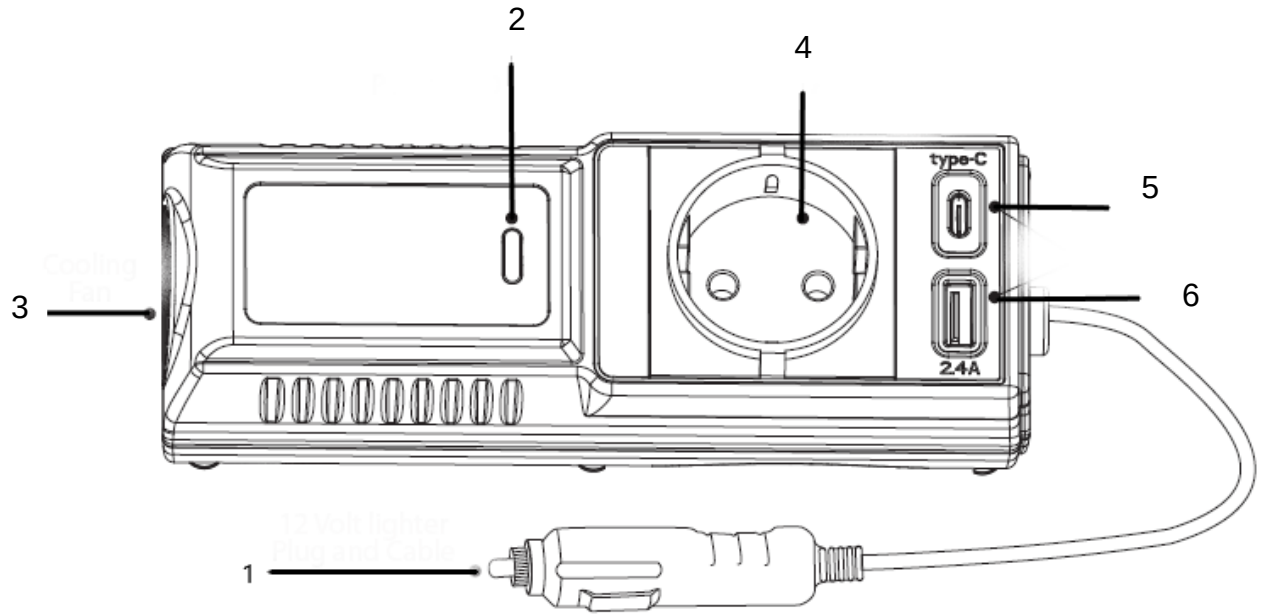
- Automobiles (and lorries)
- Caravans
- Boats

with 12V Socket / batteries.

Do not place the power inverter:

- near heat sources (radiators, direct sunlight), flammable materials, battery compartment or starter battery,
- moist locations or locations exposed to dripping or splashing water,
- in environments with explosion hazards

## Product Overview




| | | | |
|---|---|---|---|
| 1 | Car Adapter 12V | 4 | Schuko port |
| 2 | Power LED | 5 | USB-C port |
| 3 | Fan | 6 | USB port |

(2) Red Power LED
(3) High speed cooling fan. When the temperature inside the inverter exceeds a preset limit, the cooling fan automatically turns on to cool the inverter. When the temperature reduces, the fan turns off.
(5) USB C Port max 12V or max. 3A
(6) USB max. 5V/ 2,4A

## Determine Battery Capacity

Battery type and battery size strongly affect the performance. Therefore, you need to identify the type of loads your inverter will be powering and how much you will be using them between charges. Once you know how much power you will be using, you can determine how much battery capacity you need. Technaxx recommends that you purchase as much battery capacity as possible.

**CAUTION**: Risk of inverter damage.
● The inverter must only be connected to a car that has a nominal output of 12V. ● **Not operate** if connected to a 6/24V battery

## Voltage converter installation

● in sturdy and even locations,
● on clean, dry and non-flammable surfaces,
● in well ventilated areas.
Please be sure not to cover the vents.

## Connecting the inverter

Plug the Car Adapter into your 12V Source

## Operation

***Before using the power inverter determine your equipment's total watts!***

● Do not connect more watt than the Output Power (maximum continuous watt) of the device (➔ see technical specifications).
● **Determine Total Wattage Required**, Watt ratings are usually listed in equipment manuals or on nameplates. If your equipment is rated in Amp, multiply that number times AC utility voltage to determine watts.

(mathematic example: a drill requires 1.5A → 0.5A x 230Volt = 115Watt. → No problem to use the drill.)

- Remember the vehicle‘s battery will be discharged when the vehicle is not running.
- To **Determine DC Battery Amps Required**, divide the total wattage required (from above) by the nominal battery voltage to determine the DC amps required. 115Watt / 12V = 9.58A DC
- To **Estimate Battery Amp-Hours Required** Multiply the DC amps required (from above) by the number of hours you estimate you will operate your equipment exclusively from battery power before you have to recharge your batteries with utility- or generator-supplied AC power. Compensate for inefficiency by multiplying this number by 1.2. This will give you a rough estimate of how many amp-hours of battery power (from one or several batteries) you should connect to your Inverter/Charger.

9.58A DC x 0.5h runtime x 1.2 inefficiency rating = 5.75 amp-hours

- To **Estimate Battery Recharge Required**, Given Your Application You must allow your batteries to recharge long enough to replace the charge lost during inverter operation or else you will eventually run down your batteries. To estimate the minimum amount of time you need to recharge your batteries given your application, divide your required battery amp-hours (from above) by your Inverter/Charger’s rated charging amps (depending on the ON/OFF settings).

9.58 amp-hours / 40A inverter/charger rating = 0.24h recharge

## Operation

Plug in the inverter. The RED LED indicator light will light verifying the inverter is receiving power

**Turn OFF the inverter:** plug-off the inverter

When you have confirmed that the appliance to be operated is turned off, plug an appliance cord into one of the 230V AC outlets on the front panel of the inverter

- plug-in
- Turn the appliance ON.

To disconnect, reverse the above procedure

**Note:** If you are going to operate several loads from the inverter, turn them on separately after you have turned the inverter on. This will ensure that the

inverter does not have to deliver the starting current for all the loads at once.

### Using the Inverter to Operate a TV or Audio Device

The inverter is shielded and filtered to minimize signal interference. Despite this, some interference may occur with your television picture, especially with weak signals. Below are some suggestions to try and improve reception.

Make sure the television antenna produces a clear signal under normal operating conditions (i.e. at home plugged into a standard 230 volt AC wall outlet). Also, ensure that the antenna cable is adequately shielded and of good quality.

Try altering the position of the inverter, antenna cables, and television power cord. Add an extension cord from the inverter to the TV so as to isolate its power cord and antenna cables from the 12 volt power source.

Try coiling the television power cord and the input cables running from the 12 volt power source to the inverter.

## Protective Features

**Low Voltage Alarm (Red LED on Inverter)** – This state is not harmful to the Inverter, but could damage the power source. The Inverter shuts off when the input voltage drops to 10.2 volts and LED will turn to red colour at the same time. When ample power is supplied, the Inverter may then be turned back on.

**Over-Voltage Protection (Red LED on Inverter)** - The Inverter will automatically shut down when the input voltage exceeds 15.8±0.3V volts DC

**Overload Protection (Red LED on Inverter)** The Inverter will automatically shut down if the continuous draw exceeds its maximum wattage rating, disconnect the device(s) to bring the Inverter output down to an acceptable level. If you continue to use the Inverter at or near the maximum output, it will eventually overheat and shut down. If you exceed the maximum Inverter output, the Inverter will automatically shut down. The red fault indicator will light.

### Temperature Protection

The Inverter is equipped with a cooling fan.The cooling fan will turn on and off as required to cool the Inverter if needed. If the temperature reaches approximately 80°C the Inverter will shut down automatically. Turn off the Inverter and allow it to cool for a minimum of 15 minutes. Before starting up again, verify the total wattage of the devices being powered.

### To Reset the Inverter

1. Unplug the Inverter
2. Unplug all devices.
3. Turn the Inverter back on by plug into 12V Socket.
4. Before devices are reconnected, verify the total wattage of the devices to ensure they are less than the rating of the Inverter.

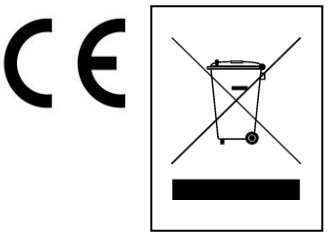
## TROUBLESHOOTING

| Problem | Situation | Action |
|---|---|---|
| No power on | Battery voltage below 10 Voltage | Recharge or replace battery |
| | Equipment being operated draws too much power | Allow Inverter to cool down. Ensure there's adequate ventilation around the Inverter. Ensure that load is no more than it's maximum rating for continuous operation |
| Low Voltage alarm turns on immediately | The input voltage at input of the Inverter needs to be raised | Recharge/Replace battery or add additional batteries. Run the vehicle engine when using a 12V DC plug |
| Low voltage alarm is on all the time | Power battery condition with voltage drops<br>Replace battery | |
| Low power output | Battery condition may be poor<br>Recharge or replace a battery | |
| Inverter does not work after | The internal protection has disabled the inverter | Contact vendor company for help |

### Warnings & Caution

● Use of the device in life support applications where failure of the device can reasonably be expected to cause the failure of the life support equipment or to significantly affect its

safety or effectiveness is not recommended. ● Do not use the device in the presence of a flammable anesthetic mixture with air, oxygen or nitrous oxide, and also not near flammable materials, fumes or gases. ● Since the device requires adequate ventilation during operation, do not block fan or cooling vents and do not cover the device. Do not operate near car heating vents or in direct sunlight. ● Keep the device dry at all times and disconnect when not in use. ● Turn OFF connected equipment before (!) starting your engine. DO NOT plug a surge protector, line conditioner or UPS system into the device. If you attach AC extension cords, use the heaviest practical gauge. ● Before connecting a battery charger or adapter, check its manual to make sure that the technical specifications of the device (including output waveform) fall within the recommendations of the external battery charger or adapter.



**Hints for Environment Protection:** Packages materials are raw materials and can be recycled. Do not disposal old devices or batteries into the domestic waste. **Cleaning:** Protect the device from contamination and pollution (use a clean drapery). Avoid using rough, coarse-grained materials or solvents/aggressive cleaner. Wipe the cleaned device accurately. **Distributor:** Technaxx Deutschland GmbH & Co.KG, Kruppstr. 105, 60388 Frankfurt a.M., Germany