

# POWERVERTER Pro

## 12/24VDC USB CHARGERS

### FOR MOBILES AND TABLETS – THE SAFE ALTERNATIVE FOR ON BOARD POWER

The widespread use of smartphones and computer tablets has created an increasing need for user accessible, on the move charging systems. The PowerVerter USB Chargers can be easily installed onto any vehicle and allow both drivers and passengers to readily access power to charge any device connected via a USB lead.

This type of system has the distinct advantage of largely negating the need for mains electricity on vehicles. The 5Volt DC power is much safer than mains, so installation is quick and simple. Passengers can access the charging facility directly and power their equipment simply through the USB charging lead which is supplied with all such products.

All versions in the range can be connected directly to both 12Vdc and 24Vdc systems without adjustment. The advanced electronic design will detect the charge status of the device and alter the charging process accordingly. This ensures that whatever device is connected, be it Apple, Android, iPad, phone or tablet, it will always be charged as fully as time and capacity allow.



Protective pod for under seat or retrofit installation. Can be supplied with charger, pod & wiring ready assembled.

- 12Vdc and 24Vdc systems
- Up to 2.1A output (single) 3.0A (double) max 1.5A per socket
- Apple and Android compatible
- Dashboard, slim-line seat back or underseat pod configurations
- LED output indicator
- CE and E Marked



PowerVerter USB PVPro-S and PVPro-D single and double outputs



Slim design can be installed with as little as 20mm rear space available.



PVPro-DFf, front fitting version can be screwed in place from the front, then covered with attractive ring to avoid tampering.



PV-USB2: Charger only, no interface. For under-dash use.

### THE RANGE

The PowerVerter USB range has been completely re-designed for 2016 to include a standard design that can be used in regular as well as slim-line installations. Aesthetically the design has been improved with a dark grey body and contrasting light grey ring as well as an attractive and more obvious LED indicator. This helps to draw attention to the unit and encourages use. Part numbers are: PVPro-S for a single output and PVPro-D for a double output.

The front fitting system has also been improved with a round bezel with tamperproof covering ring to hide the screws, yet will still allow the unit to be replaced quickly and easily should this be required. Part numbers are: PVPro-SFf (single output) and PVPro-DFf (double output).

Electronically, the design now includes automatic short circuit detection, so in the event of tampering or compromise, the unit will automatically shut down, then re-start again once the fault has been removed.

A charger only version is also available for permanent, behind the scenes installations without customer interface. Part number is: PV-USB2. The range is completed with our 'Pod'. This is ideal for retrofit installations and is designed to fit underneath the seat in front. This

system can also be bought as a complete assembly including; PVPro USB charger, pod and 1.2m of fused cable. Please order part numbers; PVPro-S-Assy (single) and PVPro-D-Assy (double).

### COMMERCIAL INSTALLATIONS

The PowerVerter USB chargers offer an advanced design that effectively counteracts the voltage drop common when output currents vary as different devices charge at different rates. This avoids the common problem of the phone or tablet indicating it is charging when in fact very little current is being supplied. They also have an exceptionally low quiescent current of less than 2mA meaning that multiple devices can safely be installed throughout buses and coaches without materially discharging the battery.

They have been designed to meet the rigorous standards required for on board commercial vehicle applications including BS EN50498 and ISO 7637-2 and are both CE and E marked. The casings are made from V0 rated (self-extinguishing) high impact polycarbonate and the electronic assembly is predominantly by computer controlled SMT for maximum reliability.

All versions have a subtle blue LED light to highlight their location on the vehicle.

### WARRANTY

Like all products, the USB chargers are manufactured using rugged components to provide years of service in demanding commercial environments. Due to the limitations of public use, the guarantee on these products is limited to three years.

# CHOOSE YOUR USB Pro PRODUCT

Part Number	Description	Dimensions (mm)	Weight
PVPro-S	Single output 12/24-5V USB Charger 2.1A	Ø37 x 33; Hole Ø30	20g
PVPro-D	Double output 12/24-5V USB Charger 3.0A (1.5A per socket)	Ø37 x 33; Hole Ø30	24g
PVPro-SFf	Single output 12/24-5V USB 2.1A Front fitting	Ø47 x 33; Hole Ø30	23g
PVPro-DFf	Double output 12/24-5V USB Charger 3.0A Front fitting	Ø47 x 33; Hole Ø30	27g
PV-USB2	Single output charger only 12/24-5V USB 2.1A	113 x 24 x 15	17g
PV-USB-POD	Mounting pod for USB Chargers	Width 60; Height 52; Depth 80	55g
PV-USB-H1	Standard 1.2m wiring with in-line 2A fuse	1 x Red 1.2m, 1 x Black 1.2m	50g

For Railway Approved Versions , please see PowerVerter Pro Railway

## TECHNICAL DATA

Input voltage range	9-32Vdc
Output voltage	5Vdc +/- 0.2V
Output Power	2.1A (single) 3.0A (double) - max 1.5A per socket
Application	Charges all USB devices including Apple and Android
Transient voltage protection	Meets ISO7637-2 International standard for 12/24V vehicles
Output noise	<50mV pk-pk
Off load current (quiescent current)	<1.7mA
Power conversion efficiency	90%
Operating temperature	-25°C to +55°C to meet this specification table
Storage temperature	-25°C to +100°C
Operating humidity	95% max., non-condensing
Casework	Black polycarbonate body
Connections	Input: 6.3mm push-in flat blade connectors Output: USB type A single socket/double socket - tested to 10000 mating cycles
Output indicator	Blue LED output indication
Mounting method	30mm diameter hole with or without bezel. USB2 for non through fitting applications.
Safe area protection:	Over Current Limited by current sensing circuit Over heat Limited by temperature sensing circuit Overvoltage and Undervoltage Limited by sensing circuit Reverse Polarity Limited by sensing circuit Transients Protected by filters and rugged component selection Catastrophic protection Internal fuse
Approvals	2014/30/EU The general EMC directive Regulation 10 The automotive directive 93/68/EEC The CE marking directive AES5, ECE R118 and UL 94: V-0
Designed to	EN50498, EN61373 and ISO 7637-2 To meet railway approval to EN50155, EN45542-2 & EN50121-3-2 the PVPro is to be used in conjunction with a PV6i-R, PV12i-R or PV24i-R
Markings	CE and E (automotive) marked
IP Rating:	IP30