

APPLICATION NOTE - AN006 USB WALL POD ADVICE ON THE USE OF ALFATRONIX USB CHARGERS ON BUSES

FOR INSTALLATION INTO VEHICLES

We have noticed that in many vehicle designs, the space between the inner and outer walls of the vehicle is not sealed to outside elements and there is often a strong flow of air through these spaces. This air can and does carry dirt and moisture, both of which is partially conductive. Due to the disparity of pressure between the inside of the bus and the circulation of air between the inner and outer skin of the wall, the USB charger can start to act as a vent. As the USB connector, by way of the standard, compatible design, allows air to travel through it, dirt and moisture can be sucked through the USB charger and into the vehicle. This process results in deposits of moisture and dirt on the PCB, which in time can cause electrical failure.

We have also noticed wall mounted installations using the under-seat pod. This has the advantage of avoiding positioning the USB charger through the vehicle wall, but in some cases, the charger itself is orientated upwards – see illustration.

USB chargers offer direct use access to the general public and there is always a risk of vandalism in one form or another. Orientated in this way carries the risk of bored passengers pouring the remains of drinks etc into the unit. There is also the risk of cleaning liquids penetrating the unit or even rain, if perhaps windows are left open.

While the circuit itself will automatically turn off under these circumstances, the power input to the unit remains turned on. This can cause electrolysis between the terminals causing corrosion on the PCB and ultimately failure of the unit.

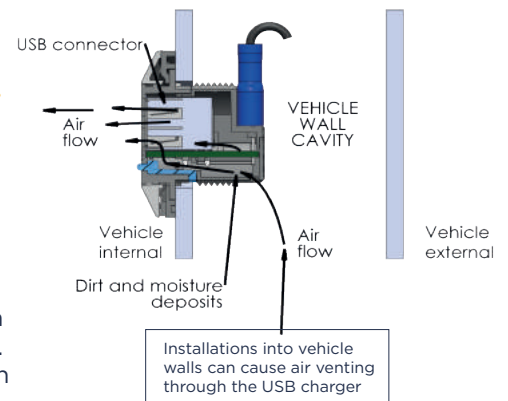
THE SOLUTION - VERTICAL WALL MOUNTED POD P/N: USB-WPOD

The Alfatronix vertically mounted wall pod is an ideal solution to both of these problems. This allows USB chargers to be fitted unobtrusively on the face of the vehicle wall. The pod accepts our standard PVPro USB chargers, either single or double output, and the unit is then installed onto the face of the wall. This avoids the need to insert the USB charger through the vehicle wall and also ensures that orientation is always facing outwards and not upwards.

Wiring can be routed through the wall or by conduit inside the vehicle. The hole pitch is the same as for the under seat mounting pod, so installations using the under seat pod can easily be removed and replaced with this better system. For units that have been installed through the vehicle wall, a plug is available.

A suitable inline fuse should always be used for these installations (e.g. Alfatronix P/N: USB-FUSE2A) and there is space inside the pod to accommodate this. The kit comes complete with installation screws and tamperproof screw covers. Installed in this way, the whole USB charger is located inside the vehicle and is not subject to the dirt and moisture present within the vehicle walls. This method offers a simple and attractive solution and installed in this way Alfatronix USB chargers will offer many years of trouble free service.

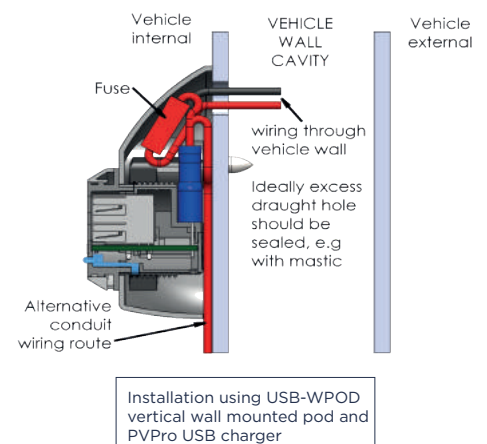
The installation of USB chargers on public vehicles is a relatively new concept and the direct passenger user access creates a challenging environment. As a manufacturer we do not have control over exactly how or where these items are installed, but following these simple guidelines will help to ensure that this equipment offers reliable long-term performance.



Do not install USB chargers facing upwards



PVPro USB with P/N: USB-WPOD vertical mounting pod



Installation using USB-WPOD vertical wall mounted pod and PVPro USB charger