

## **In-Vehicle Power Socket Outlet**

In the light of vehicle electricity safety to protect users against electrical shock in particular for those voltage exceeding the safety extra low voltage (i.e. below 50 V in Alternative Current (AC) or 120 V in Direct Current(DC)), suitable and effective electricity safety protection features should be in place to ensure In-Vehicle Power Socket Outlet (IPSO)<sup>1</sup> supplying electricity from a vehicle with voltage exceeding the safety extra low voltage. Some basic acceptable protection features for power supply below 200W are listed below. For those higher power supply, the vehicle manufacturers shall require to provide more protection whereas appropriate.

- 1) The IPSO should be so constructed and designed suitable for those electrical products operating at supply voltage of 220V and supply frequency of 50Hz in Hong Kong;
- 2) The IPSO should be so constructed and designed to suit either 3-round pin 5A or 15A socket plugs to BS 546 or 3-rectangular pin 13A socket plugs to BS 1363;
- 3) The socket holes of the IPSO must be fitted with safety shutters;
- 4) The IPSO must **not** be fitted with irregular socket holes and must only allow one type of plug as listed in item 2 above; and
- 5) A declaration should be provided by the vehicle manufacturers to confirm that the IPSO and its circuit are safe with the appropriate safety features and protections, as substantiated by supporting document as follow:
  - a) description in details of protective devices, including but not limited to overload protection, over-current protection, leakage current protection, etc.
  - b) any protection mechanisms that will activate the voltage present at the IPSO only when the socket is plugged in.
  - c) any protection against fingers touching the live conductor when voltage is present
  - d) any information / warnings notices or label about the IPSO
  - e) any relevant instructions included in the owner's manual for the precaution / safe use of IPSO

Transport Department  
Vehicle Safety and Standards Division  
February 2023

---

<sup>1</sup> 'socket outlet' means a device, provided with female contacts in low voltage, which is intended to be installed with the fixed wiring, and intended to receive a plug.