

DECISION SHEET

Standard(s)- (year and edition): IEC 60601-1:1988 Ed.2 Am1+Am2	Sub clause(s): 16, 20, 19.2	Sheet n°: DSH-410
Subject: Use of dc supply	Key words: dc supply, enclosure	Confirmed by CTL at its 39th meeting, in Cologne

Question:

Some EQUIPMENT is designed for use in ambulances and operated from the vehicle d.c. supply. with the negative side of the supply connected to the enclosure. Is this acceptable?

Decision:

Connection of the negative side of the d.c. mains to the ENCLOSURE should not be permitted. The insulation between all poles of the supply and the ENCLOSURE must comply with 20.1 A-a₁ and A-a₂.

Note: Vehicle chassis is considered to be protective earth.

Explanatory notes:

It could be argued that since a vehicle d.c. supply's negative pole is commonly connected to the vehicle chassis, that this pole cannot become LIVE. However the possibility remains of the MAINS PLUG or MAINS CONNECTOR being incorrectly wired or connected, which would cause the EQUIPMENT ENCLOSURE to assume the full voltage of the SUPPLY MAINS. There is also the possibility of interruption of the negative pole of the supply, which would result in excessive ENCLOSURE LEAKAGE CURRENT. Although this could be prevented by a PROTECTIVE EARTH CONDUCTOR, which would then have to carry the continuous full load current, this would be not desirable.