TECHNICAL REFERENCE DOCUMENT: SAFETY

Safety specifications

Flex Power Modules' DC/DC converters and DC/DC regulators are designed in accordance with the safety standards *IEC 62368-1, EN 62368-1* and *UL 62368-1 Audio/video, information and communication technology equipment - Part 1: Safety requirements*

IEC/EN/UL 62368-1 contains requirements to prevent injury or damage due to the following hazards:

- Electrical shock
- Electrically-caused fire
- Injury caused by hazardous substances
- Mechanically-caused injury
- Skin burn
- Radiation-caused injury

On-board DC/DC converters, Power Interface Modules and DC/DC regulators are defined as component power supplies. As components they cannot fully comply with the provisions of any safety requirements without "conditions of acceptability". Clearance between conductors and between conductive parts of the component power supply and conductors on the board in the final product must meet the applicable safety requirements. Certain conditions of acceptability apply for component power supplies with limited stand-off (please refer to *Technical Specification under Mechanical Information* for further information). It is the responsibility of the installer to ensure that the final product housing these components complies with the requirements of all applicable safety standards and regulations for the final product.

Component power supplies for general use shall comply with the requirements in *IEC/EN/UL 62368-1*. Product related standards, e.g. *IEEE 802.3af Power over Ethernet*, and *ETS-300132-2* Power *interface at the input to telecom equipment, operated by direct current (dc)* are based on *IEC/EN/UL 62368-1* with regards to safety.

All Flex Power Modules' DC/DC converters, Power Interface Modules and DC/DC regulators are recognized and certified in accordance with *IEC/EN/UL 62368-1*. The flammability rating for all construction parts of the products meet requirements for V-0 class material according to *IEC 62368-11-10 Fire hazard testing, test flames – 50 W horizontal and vertical flame test methods.*

Non-isolated DC/DC regulators

The DC/DC regulator output is ES1 energy source if the input source meets the requirements for ES1 according to *IEC/EN/UL 62368-1*.