

EUROPEAN POWER SUPPLY MANUFACTURERS ASSOCIATION www.epsma.org

Guideline for the Safety Requirements of AC / DC Power Supplies

Part 1: Safety Approval of DIN RAIL Power Supplies

20th June 2007

This Guideline gives an extensive overview of design issues, definitions and useable standards currently used in AC/DC Power supplies for DIN rail mounting. It should give a common understanding what safety rules and certifications should be used depending on the final application of the standard.

Furthermore gives this paper a general interpretation how different standard - requirements are in practice realized in power supplies.

This paper does NOT intend to be a standard

Paper prepared by the EPSMA Technical Committee and Innova. Special thanks and acknowledgements to Johann Humer (Siemens), for his contribution to this document.

The European Power Supply Manufacturers Association was established in 1995, to represent the European power supply industry.

Page 1 of 34

June 2007

Disclaimer: No responsibility or liability can be accepted by the EPSMA or any of its officers or members for the content of this guidance document, and the information contained herein should not be used as a substitute for taking appropriate advice.

Contents

1.0 Relevant Standards	3
1.1 Overview of mains:	
2.0 Creepage and Clearance requirements:	6
2.1 Definition of the parameters: 2.2 Example: Working voltage measurement: 2.3 Spacing for Single phase equipment: 2.4 Creepage and Clearance for Three Phase Systems: 2.5 Spacing requirements for DC Systems. 2.5.1 Rectified Single Phase mains. 2.5.2 Rectified Three Phase mains	6 8 10 14 14
3.0 Components	15
4.0 Temperature measurements	15
5.0 Some comments on the Marking	16
6.0 UL508 and CSA22.2-107-1	16
7.0 Recommended Certifications	17
Appendix A: Explanation of the tables for spacing	18
Appendix B : UL508: Requirements for "UL – Listed"	28