Jan 2007

WHAT LEGISLATION APPLIES TO COMPONENT POWER SUPPLIES?

There are many directives that could affect the end equipment into which component power supplies are fitted, and of course some affect the power supplies themselves. Here Bob Taylor, Safety Engineering Manager for Lambda UK, highlights some of the most important details from the various Directives.

The first directive that designers and specifiers must be aware of is 73/23/EEC - the Low Voltage Directive (LVD). This directive states that products shall be safe and not cause harm to persons, domestic animals or property. It covers all electrical and electronic products with an input or output voltage between 50VAC and 1000VAC or between 75VDC and 1500VDC. It applies to both component and stand alone power supplies.

This Directive is unique in that as soon as an EN safety standard covering a product under the LVD is published it can be used immediately - it does not have to be listed in the OJ (Official Journal). However, you must check that existing or older standards are still current in the OJ for CE marking to the LVD. This directive requires that a technical file be created and kept within the European Community by the manufacturer (if within the EC), the manufacturer's European representative or the importer, in that order.

The Technical File must consist of: Circuit diagrams; manufacturing drawings and component layouts; A general description of the equipment and its operation; a list of standards used in full or in part and a description of the solutions used to meet the requirements of this directive when the standards have not been used; the results of design calculations; test reports; a declaration of conformity

The whole point of the technical file is to be able to ascertain if the product was assessed correctly and to answer the question 'is it safe?' The authorities will have the product tested by a reputable Safety Agency e.g. BSI in the UK. The Technical File is also needed for the authorities to be able to assess the product independently. The contents of the Technical file must be kept on record for 10 years after

the last apparatus has been manufactured. The declaration of conformity should be signed by the manufacturer (even if outside the EC), or the manufacturer's European representative. This is because only the manufacturer or his authorized representative within the EC sufficient knowledge of the product.

However, where the manufacturer is outside the EC and he has no EC Representative then the importer must take responsibility for the Technical File and must ensure that the Manufacturer has signed a declaration of conformity. Lambda UK is the European Representative for all the Lambda Group Companies and it signs and holds declarations of conformity and technical files for them and for Third Party Manufacturers where the products carry the Lambda name. Where Lambda UK acts as the European Representative, Lambda UK will always review the Technical File before signing the declaration of consent.

Directive 89/336/EEC or as it is more commonly known the EMC Directive covers all apparatus liable to cause electromagnetic disturbance or the performance of which is liable to be affected by such disturbance. The main objective of the EMC Directive is the protection of radio communications, telecommunications and the public electricity distribution networks and devices, equipment and systems connected to them from interference. This Directive affects stand-alone power supplies and component power supplies considered equivalent to apparatus. Stand alone power supplies are complete end products like Laboratory Power Supplies. Component power supplies considered equivalent to apparatus are those which will not be professionally installed such that EMC Testing will not be carried out by the installer e.g. din rail power supplies intended for process control which can be assembled into cabinets by electricians and computer power supplies where the installer can be a member of the public.

This Directive, where applicable, requires testing to a product standard or a generic standard or a suitable national standard in the absence of the other two. Where testing is not carried out to the full standard, or where there is a whole range of products and the worst case products must be selected for testing, then a Competent Body must be involved to underwrite the Technical Construction File. For

product standards or generic standards then standards may only be used that are listed in the OJ as being current.

The Technical Construction File must consist of the following: A general description of the product; Design and manufacturing drawings together with layout diagrams covering components, sub-assemblies, circuits, etc; Descriptions and explanations needed in order to understand the above mentioned; Drawings and diagrams as well as the operational aspects of the product; List of standards applied in whole or in part and a description of the solutions adopted in order to comply with the protection requirements of the Directive in cases where the standards have not been applied; Design calculation results arising from the EMC tests; The technical report or the certificate issued by the competent body, as discussed above; A copy of the EC declaration of conformity (this is not a requirement of the EMC Directive but as both it and the technical construction file have to be kept at the disposal of the competent authorities it seems sensible to do so); A copy of the instructions for use (see Annex III of the Directive).

This Directive will be replaced on the 20th July 2007 by a new Directive, 2004/108/EC which was published in the OJ December 2004 (L390/24). The new Directive does the following: Removes the mandatory use of Competent Bodies and provides for optional use of Notified Bodies and instead puts more onus on the manufacturer to ensure compliance; Clarifies the scope of the Directive; Makes the essential requirements more precise; Simplifies the assessment procedures; Specifies the role of Notified Bodies; Specifies market surveillance and special measures; Provides new rules for fixed installations.

The two directives discussed above are of most relevance but readers must also be aware of the machinery directive, the medical devices directive, the in-vitro diagnostic devices directive, the product liability directive and the ATEX directive.

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product safety. He is a member of a number of International Safety Committees, notably IEC SC62A (the committee responsible for IEC 60601-1, the Safety Standard for Medical Devices) and has been involved in Safety Standardization for 11 years.

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