DNV GL and how this applies to power supplies

Like UL (Underwriter's Laboratories), DNV GL's heritage stems from insurance. DNV and GL were originally formed in 1860s to evaluate the quality of ships. That has since been expanded to include the vast array of electronics systems now used in maritime on/offshore applications.

This white paper is intended for electronics engineers and designers working with power systems for the industrial environment, and explains DNV GL and how it applies to power supplies.

References

www.uk.tdk-lambda.com/drf

www.uk.tdk-lambda.com/din

DNV GL and how this applies to power supplies

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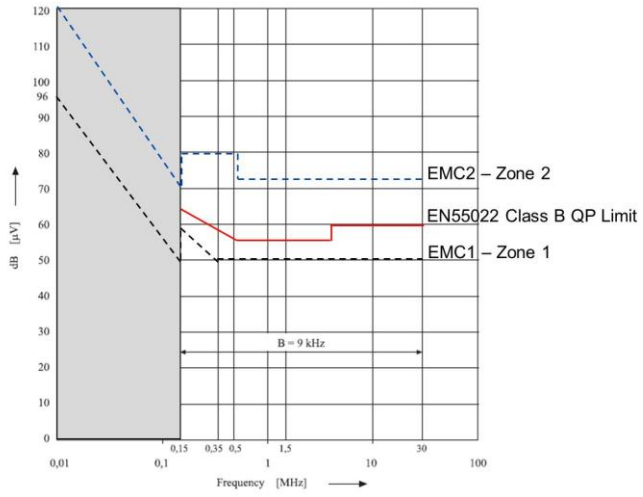
Power supplies are used extensively to provide regulated voltages to drive motors, relays and power those electronic systems. Most manufacturers of power supplies are already familiar with getting IEC 60950-1 certification for use in information technology equipment. DNV GL certification, or Type Approval as it is referred to, has some differences:

- An audit is carried out at the manufacturer's factory, similar to that for ISO9001, which is valid for five years. Follow up visits are made after that.

- Product assessment is made to the test standard "Guidelines for the Performance of Type Approvals – Test Requirements for Electrical / Electronic Equipment and Systems (VI-7-2)". This report format is similar to that of an IEC 60950-1 CB report, and includes conducted and radiated EMC results.



- Two levels of approval are possible which determines the type of application the power supply can be used in: Zone 1 - Bridge and open deck and Zone 2 - General power distribution. The limits on radiated emissions and conducted emissions are different to EN 55022, with Zone 1 more stringent.

- Immunity tests are performed using IEC 61000-4 as a basis.

- Products also are defined to environmental categories A through H which states operating conditions like temperature, humidity and vibration.

Upon successful completion of the tests, the power supply can then be labelled with the GL Mark.

A power supply like TDK-Lambda's DRF/HL series of 120W to 480W DIN Rail power supplies which is approved to Environmental Category C, Zone 2, could be used in a Zone 1 application provided it is mounted in a minimum IP54 rated enclosure with an additional input filter. Coated printed circuit boards in the DRF/HL provide additional protection against moisture.

The DRF/HL series is also ATEX and IEC Ex certified for explosive atmospheres, certified to IEC 60950-1 and is backed by a five-year warranty.

For more information and to access our world-leading power supply experience and comprehensive product range, please visit:

www.uk.tdk-lambda.com/drf

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