

# Power Supplies Benefit From Multiple Safety Certifications

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## Introduction

At a time when the investment costs to develop new power supplies are soaring, and as manufacturers adopt new technologies like digital control to meet new green energy requirements, a new trend is emerging in safety certifications with benefits for both the manufacturer and user alike.

## Body

Previously “Medical” power supplies were solely certified to IEC 60601-1 and users were limited to just a few specialized product lines. Recently though, the trend has been to also obtain certifications to the (ITE) IEC 60950-1 standards in addition to the medical certifications, which greatly broadens the markets in which these power supplies can be used.

IEC (International Electrotechnical Commission) is a non governmental organization that prepares and publishes a vast range of standards covering many industries and applications.

These IEC standards are then adopted by the certification bodies like UL, CSA and TUV, who will test and certify to UL 60950-1, CSA 22.2 No 60950-1 and EN 60950-1.

## Multiple certifications benefit customers in several ways:

- The primary benefit is that a product series now has a much wider range of applications, and hence higher manufacturing volumes which drive down costs. The Return-On-Investment (ROI) for the manufacturer is also improved, leading to more product development investments.
- Distributors do not have to stock two versions (one for Medical and the others for Commercial/Industrial apps), and can allocate inventory accordingly, stocking higher quantities, leading to better availability of power products.
- Having the product designed for multiple applications often leads to additional features being designed into the product series, allowing Engineers to enhance their system feature-set.
- Because medical applications require lower earth leakage currents, now referred to as “Touch Current” and “Protective Conductor Current”, non-medical customers also reap this benefit.

- Since medical power supplies have reinforced insulation, with input to output isolation of up to 4,000VAC compared to 3,000VAC, industrial users can enjoy a greater design margin. This is also true of output to ground isolation where a “BF” rated medical supply can have 1500VAC isolation.
- The temperature range of an industrial power supply is often much greater than that of a medical application, again giving a greater design margin.
- Many medical supplies have two input fuses, one for the Line and one for the Neutral. Industrial users can benefit from this when connecting across phase to phase with a 208VAC input.

## Examples of dual certification power supplies from TDK-Lambda

### SWS1000L

Low cost 1000W power supplies featuring IEC 60601-1 and IEC 60950-1 certifications. This series is available with output voltages from 3.3V to 60V.

The series has many features including remote on/off, current share for paralleling, DC Good and fan fail signals, a 12V auxiliary output and variable speed fans for lower acoustic noise. An additional programming pin is available allowing the output voltage to be varied from 20% up to 110% of the nominal output voltage.

As the SWS1000L is designed for multiple applications, the series also has a very wide temperature range from  $-40^{\circ}\text{C}$  to  $+74^{\circ}\text{C}$ .



## EFE300M

This 300W rated series with a 400W peak power capability uses digital control with an internal micro controller to enhance reliability and reduce losses. Efficiency is typically 90%.

The units are very compact, being only 3 x 6 inch in size, and has UL, CSA & EN certifications to ITE 60950-1 and Medical 60601-1. In addition to remote on/off, a standby voltage and DC Good signal, the series features an internal ORing FET for redundant/fault-tolerant applications.

The EFE is available in an open frame, U channel or enclosed with an internal temperature-controlled fan.



<http://www.element-14.com/community/groups/tdk-lambda>

Other (box format)

Start a discussion or share ideas on the power supply group page on element14  
<http://www.element-14.com/community/groups/ac-dc-power-supplies-dc-dc-converters>

Watch a techcast video on the EFE300M at [www.newark.com](http://www.newark.com)