



*Energy
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Ready for DoE 2016?

We are.



Frequently asked questions:

Higher requirements on power supplies stated in the US American directive DOE 2016

Q: *“DOE2016” What does it mean?*

A: DOE is the abbreviation for Department of Energy (of the USA). The DOE has adopted a law which stipulates stricter limits of efficiency and standby losses of external power supplies. The aim is to reduce energy consumption in private households.

Q: *When will the DOE 2016 come into force?*

A: This directive will become mandatory in February 2016 for the US market. This means that it will no longer be allowed to bring into the market external power supplies which do not fulfill these new requirements. According to the new directive the external power supplies have to conform from import date Feb. 10th, 2016 onwards.

Q: *What requirements will become stricter?*

A: According to the new requirements, power supplies need to have a higher efficiency rate and lower no-load loss.

Q: *What is efficiency and no-load power loss?*

A: Efficiency is calculated as the ratio of output to input power. The higher this ratio is, the more efficient the unit works. No-load power loss is the power a unit consumes if no load is applied, i.e. the power supply is switched on, but not connected to an electrical consumer. Older units transpose no-load power loss into heat, which can be easily felt. The no-load power loss of more modern units can be measured with special measuring equipment which show power consumption.

Q: *How is efficiency calculated?*

A: In order to determine the efficiency of a power supply, three reference units have to be measured. First all three units go through a warming-up phase of 30 minutes. After warming-up, the efficiency is measured at four different load situations: 25 %, 50 %, 75 %, and 100 % load. These 4 measured values are used to calculate an average value or so-called efficiency value which has to be below the new limits of DOE2016.

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Q: What efficiency and no-load power losses have to be met in order to comply with DOE2016?

A: The efficiency value is determined depending on the unit's power. The directive states a formula how to calculate the efficiency of a power supply. Concerning no-load power loss, there are fixed values stated in the directive. This means that for power supplies up to 49Watts the no-load consumption has to be ≤ 0.1 Watts and for power supplies higher than 49Watts it has to be ≤ 0.21 Watts.

Q: What do the new requirements mean for current power supplies?

A: Due to these new requirements, a number of power supplies have to be re-developed, because older technological concepts do not reach the demanded efficiency values or exceed the no-load power consumption limit by far. FRIWO currently revises all standard models, so we can offer our customers alternative units already now.

Q: Are there any units concerned by the DOE2016 which have not yet been subject to any kind of energy efficiency regulation?

A: Yes. This directive also affects power supplies with more than 250 Watts and/or multiple outputs, class A power supplies, and LED drivers.

Q: Is there any exception from this directive?

A: Yes. Exempted from this directive are power supplies for medical applications, life-saving and safety installations, units with an output power of < 3 Watts and ≥ 1000 mA, as well as power supplies charging batteries of applications which are mainly or completely run by a motor (i.e. e-bikes or power tools).

Q: Are similar guidelines envisaged for Europe?

A: Most likely, the so-called DOE 2016 directive will serve as a basis for the revision of the European Community's ECDesign directive. This means that also in Europe these higher requirements on power supplies will become binding. The European Commission has assessed year 2017 to be a probable validity date.



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