

# SECURE THAT

A new development wants to replace the fine-wire fuse – with higher safety and better sound.

**S**TEREO once discovered, as one of the first specialist magazines, that a device's fine-wire fuse is a sonic bottleneck. As a wafer-thin wire between two contact caps, it can impair the sound and even reduce the damping factor of an amplifier – which can be proven by measurements. In addition, it sometimes reacts much too sluggishly, even insecurely, to protect expensive electronics in the event of an overcurrent.

Creative engineers like from AHP, HiFi-Tuning, Padis or Phonosophie have thought about the sound-problem and provided us with fine-wire fuses that have copper and silver guides and caps, are gold- or rhodium-plated and have special extinguishing fillings as well as low-resonance ceramic bodies. They actually brought audible improvement, which hardly anyone would doubt nowadays, even being reflected in the default

equipment of some devices. In the event of a malfunction, it may take 0.2 seconds for the (inert) fine-wire fuse to blow at ten times the rated current according to **DIN**. At lower overcurrents even whole minutes may elapse – enough time to possibly cause permanent damage.

Now the company EFUSE GmbH from Solingen, already to be seen as an exhibitor at the 2018 High End, wants to conquer the HiFi and High End world by offering better protection as well as sound. In the simplest case, a small, practically resistance-free and highly conductive solid copper pin with a rhodium-plated surface replaces the fine-wire fuse in the device, while a corresponding cable with comparator and switch-off electronics ensures safety by disconnecting the device from the mains a lot faster in the event of a

fault. The maximum current to be drawn from the mains can be gradually pre-selected, and the EFUSE always switches off within about 0.1 seconds of exceeding this threshold value. It can then be reactivated at the push of a button, as the fuse doesn't blow.

We already had the opportunity to listen to a prototype and try it out in practice in spring 2018. Our impressions and suggestions found an open ear with the physically highly competent development team and were reflected in the current product. For example, an integrated inrush current limiter now prevents the fuse circuit from responding to an inrush pulse even in devices with large transformers and electrolytic capacitors, such as integrated and power amplifiers. Further, a clever combination of the milled plug geometry

**KEYWORD**

**DIN:** German industrial standard, a comparatively strict, national standardization and regulation.



▲ Rhodium-plated copper bolts replace the bottle neck fine-wire fuse.



▲ A modified device may only be operated with the special EFUSE cable, a modified molded part ensures this.



◀ Equipped with high-quality mains cable and plugs, EFUSE provides more energy during operation and extremely fast and safe shut-down in the event of a fault by eliminating the fine-wire fuse.

The EFUSE includes an inrush current limiter and a comparator circuit parallel to the mains for the permissible current that can be set via a jumper. It switches off extremely fast in the event of a fault. ▶



and a plastic insert in the modified device is intended to prevent the owner from operating a device without a fine-wire fuse using a cable other than the special EFUSE cable – like a lock-and-key principle. In fact, we really like the solution, because, contrary to our expectations, we did not find a mains cable in our extensive

stock that would have enabled an operation. It was not even possible to force it into the device equipped with the molded EFUSE part.

Charging from 1585 Euro (1785 Euro with inrush current limitation) for the external cable solution, from 1285 Euro for the integrated solution and respectively from 2885 for the power strip with inrush current limitation, the pleasure is certainly not a cheap one. However, depending on the treasure that comes after it, the considerably higher

protective effect can pay off immediately and the increased sound-quality guarantees lasting enjoyment over the long-term. While a STEREO engineer was particularly impressed with the trigger electronics, two testers could hear the increased image size and bass-thrust compared to an already tuned fine-wire fuse in the Audionet WATT integrated amplifier in our listening room. Definitely an interesting product, especially for the uncompromising High Ender!

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