

Title (en)

Method and apparatus for reducing the noise of electromagnetically operated devices

Title (de)

Verfahren und Vorrichtung zum Vermindern der Geräuschentwicklung bei elektromagnetisch betätigten Vorrichtungen

Title (fr)

Procédé et appareil de réduction du bruit des dispositifs à commande électro-magnétique

Publication

**EP 1014395 A3 20011114 (DE)**

Application

**EP 99123805 A 19991201**

Priority

DE 19860272 A 19981224

Abstract (en)

[origin: EP1014395A2] The noise prevention method has the gradient of the current characteristic of the operating current supplied to the electromagnet (3) controlled so that the current rises rapidly from a minimum value before the transition function and rises rapidly to a maximum value after the transition function, with a lower current gradient over the transition function. An Independent claim for an operating noise prevention device is also included.

IPC 1-7

**H01F 7/18**

IPC 8 full level

**F01L 9/04** (2006.01); **F01L 9/20** (2021.01); **H01F 7/18** (2006.01)

CPC (source: EP US)

**F01L 9/20** (2021.01 - EP US); **H01F 7/18** (2013.01 - EP US); **F01L 2201/00** (2013.01 - EP US); **H01F 2007/1894** (2013.01 - EP US)

Citation (search report)

- [Y] US 5645097 A 19970708 - ZECHMANN JUERGEN [DE], et al
- [DY] US 4641219 A 19870203 - AIBA MASAHICO [JP]
- [A] DE 19544207 A1 19970605 - UNIV DRESDEN TECH [DE]
- [A] EP 0662697 A1 19950712 - PEUGEOT [FR], et al
- [A] GB 1251165 A 19711027

Cited by

CN103153731A; US9043109B2; WO2007141294A1; WO2012052206A1

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