

Title (en)

CURRENT TRANSFORMER CORE, METHOD FOR MANUFACTURING SAME, AND DEVICE EQUIPPED WITH SAID CORE

Title (de)

STROMWANDLERKERN, VERFAHREN ZUR HERSTELLUNG DAVON UND MIT BESAGTEM KERN AUSGESTATTETE VORRICHTUNG

Title (fr)

NOYAU DE TRANSFORMATEUR DE COURANT, SON PROCÉDÉ DE FABRICATION, ET DISPOSITIF ÉQUIPÉ DUDIT NOYAU

Publication

EP 3176797 A4 20180321 (EN)

Application

EP 15827190 A 20150727

Priority

- JP 2014152849 A 20140728
- JP 2015071243 W 20150727

Abstract (en)

[origin: EP3176797A1] A manufacturing method of a current transformer core includes: the step of providing a core element formed by winding or layering a Fe-based amorphous alloy ribbon whose thickness is not more than 15 μm and which can be converted into nanocrystals; a longitudinal-field heat treatment step which includes performing a heat treatment on the core element in the presence of a magnetic field of not less than 100 A/m applied in a magnetic path direction of the core element, thereby forming a core; and a transverse-field heat treatment step which includes, after the longitudinal-field heat treatment step, performing a heat treatment on the core in the presence of a magnetic field applied in a direction perpendicular to the magnetic path direction of the core, thereby forming a core. $\mu_r(25)$ is adjusted by the transverse-field heat treatment step to a value between $0.4 \times \mu_r(\text{max})(25)$ and $0.9 \times \mu_r(\text{max})(25)$ where $\mu_r(\text{max})(T)$ is $\mu_r(T)$ achieved by the longitudinal-field heat treatment step, and $\mu_r(T)$ is an amplitude magnetic permeability of the core measured at a temperature T ($^{\circ}\text{C}$) in the presence of an AC magnetic field of frequency $f=50$ Hz and amplitude $H=1.0$ A/m.

IPC 8 full level

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Citation (search report)

- [I] US 2006077030 A1 20060413 - HERZER GISELHER [DE], et al
- [I] JP 2859286 B2 19990217
- [A] WO 0223560 A1 20020321 - VACUUMSCHMELZE GMBH & CO KG [DE], et al
- [T] US 5252148 A 19931012 - SHIGETA MASAO [JP], et al
- See references of WO 2016017578A1

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CN109298066A

Designated contracting state (EPC)

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EP 3176797 A1 20170607; **EP 3176797 A4 20180321**; **EP 3176797 B1 20200902**; CN 106575567 A 20170419; CN 106575567 B 20200512; ES 2833413 T3 20210615; JP 6491666 B2 20190327; JP WO2016017578 A1 20170615; WO 2016017578 A1 20160204

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