

Title (en)  
TRANSFORMER ARRANGEMENT

Title (de)  
TRANSFORMATORANORDNUNG

Title (fr)  
AGENCEMENT DE TRANSFORMATEUR

Publication  
**EP 3503133 A1 20190626 (EN)**

Application  
**EP 18000967 A 20181213**

Priority  
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Abstract (en)  
Arrangement of a transformer with an output rectifier (30) comprising at least one primary winding (231) that consists of at least one segment made with several turns, wound at a suitable distance around the transformer axis (300), an iron core (236) electrically isolated from said primary winding, at least one secondary winding (233) electrically isolated from said primary winding and said iron core, comprising a first part (234) of said at least one secondary winding and a second part (235) of said at least one secondary winding, wherein both are wound at appropriate distances around the transformer axis (300), between which at least one primary winding coil is arranged, wherein said primary winding and said secondary winding overlap along the axis (500) in a part surrounded by an iron core and further, wherein the said primary winding and the said secondary winding in the part of the winding heads, which are not surrounded by the iron core, overlap only partially or do not overlap, which allows straight and short arrangement of the connections of an output rectifier in the direction of the axis (500). As a result of the proposed transformer arrangement improved electromagnetic properties of the welding system are obtained, which provides a more homogeneous distribution of magnetic field in the iron core and a homogeneous distribution of electric currents in conductive parts, which affects the reduction of transformer power loss and operation with the higher frequency of the supply voltage. The arrangement of the secondary winding according to the present invention at the same time enables a much simpler production of the cooling of the welding transformer with output rectifier by liquid coolant by making bores of the adequate dimensions.

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Citation (applicant)  
• US 2014321184 A1 20141030 - ARTELSMAIR BERNHARD [AT], et al  
• EP 2749373 A1 20140702 - KOYO GIKEN INC [JP]  
• US 7978040 B2 20110712 - SOLAR ANTON [SI], et al  
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Citation (search report)  
• [X] US 5160820 A 19921103 - TSUJII GEN [JP], et al  
• [XI] JP H0638223 U 19940520  
• [A] US 4571669 A 19860218 - TSUJII GEN [JP], et al

Citation (examination)  
ROBERT BREZOVNIK ET AL: "Impact of the Switching Frequency on the Welding Current of a Spot-Welding System", IEEE TRANSACTIONS ON INDUSTRIAL ELECTRONICS., vol. 64, no. 12, 1 December 2017 (2017-12-01), USA, pages 9291 - 9301, XP055711025, ISSN: 0278-0046, DOI: 10.1109/TIE.2017.2711549

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