

Title (en)  
THREE-PHASE TRANSFORMER

Title (de)  
DREIPHASENTRANSFORMATOR

Title (fr)  
TRANSFORMATEUR TRIPHASÉ

Publication  
**EP 4102522 A1 20221214 (EN)**

Application  
**EP 21884125 A 20210721**

Priority  
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• UA 2021000065 W 20210721

Abstract (en)  
Application area: The invention relates to the field of electrical engineering, in particular to the design of transformers and can be used in all industries whose production processes are associated with the production, operation and repair of transformers. The essence of the invention: A three-phase transformer contains of the main primary and secondary windings, a spatial magnetic system composed of plates of electrical steel, the magnetic system is formed by six regular trihedral prisms, made up of analogous plates, and interconnected by a common rib, forming a hexagonal prism with a six-beam star in cross section, the adjacent edges of the star are the rods of the magnetic conductor, and the autonomous edges are the hexagonal yoke, the vertical density of the plates of the magnetic conductor is provided by central and lateral fastening, the turns of the main and additional windings divided in half are placed in phase on the rods with a spatial angle of  $60^\circ$ , the magnetic system is made with the ratio of the width of the rod and the yoke equal to two and the height of the prism to the width of the beam greater than five. A three-phase transformer according to claim 1 characterised in that the main and additional windings are placed jointly on the rods with a spatial angle of  $120^\circ$ . A three-phase transformer according to paragraph 1 characterised in that the spatial magnetic conductor is made of amorphous electrical steel with a thickness of 10 to 30 microns. Technical effect consists in unifying the design of the spatial magnetic system, reducing its weight and size characteristics, combining in a transformer the functions of a higher harmonic filter, a balancing device and a voltage stabilizer.

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