Title (en)

AVOIDANCE OF TORSIONAL EXCITATIONS IN CONVERTER-CONTROLLED COMPRESSOR RUNS

Title (de)

VERMEIDUNG VON TORSIONSANREGUNGEN IN UMRICHTERGEFÜHRTEN VERDICHTERSTRÄNGEN

Title (fr)

ÉVITEMENT DE LA PRODUCTION DE TORSION DANS DES TRAINS DE COMPRESSEURS COMMANDÉS PAR CONVERTISSEURS

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Application

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Abstract (en)

[origin: WO2011117183A2] The invention relates to a machine (M) having a converter-controlled drive (VFD), having a processing machine (WM), wherein the machine (M) has at least one rotor (R), having a frequency converter (VFG), which converts an input frequency to an output frequency, wherein the converter is designed such that, on a Campbell diagram with respect to the machine (WM) intersections of the natural torsional frequency, which can be excited by the drive (VFD), of the rotor (R) with V-shaped symmetrical straight lines of the inter-harmonic exciter frequency result for output frequencies F1, F2, F3,..., Fi. In order to improve the running quality of machines such as these, the invention proposes that F1,..., Fi be grouped into concentration ranges G1,..., Gi,..., Gz, related to the machine rotation speed, while nearby Fi are combined in Gi with respect to one another, such that, together with one another, they each have a common starting point on abscissa, wherein the upper and lower limits of the concentration range G1,..., Gi,...Gz, are defined by the intersection point of the lowest natural torsional frequency of the rotor with the two straight lines of the ray pair of the interharmonics of the first order of the respective concentration range G1,..., Gi,...Gz, wherein each concentration range G1,..., Gi,...Gz defines a blocking range (FA), wherein the machine has an operating rotation speed range (OR) which is outside the blocking ranges (FA).

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