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(54) Title (EN): CONTROL A DUAL THREE-PHASE ELECTRICAL MACHINE

(54) Title (FR): COMMANDE D'UNE MACHINE ÉLECTRIQUE TRIPHASÉE DOUBLE

(57) Abstract:

(EN): It is described a method for controlling a dual three-phase machine with 30-degree phase shift between the two sets, for example a fractional slot concentrated winding electrical machine (14) having a first three-phase winding set (21) being connected to a first AC-DC converter (33) and having a second three-phase winding set (23) being connected to a second AC-DC converter (41), the method comprising: controlling the first (33) and the second AC-DC converter (41) such that first electric currents carried in the first three-phase winding set (21) are essentially 30° phase shifted relative to respective second electric currents carried in the second three-phase winding set (23). Owing to the feature of 30-degree phase shift between the two sets in the dual three-phase machine, the method allows overmodulation control of both converters, so as to have a higher fundamental voltage output from the converters than that controlled within the linear range only.

(FR): La présente invention concerne un procédé de commande d'une machine triphasée double ayant un déphasage de 30 degrés entre les deux ensembles, par exemple une machine électrique à enroulement concentré à fente fractionnaire (14) ayant un premier ensemble d'enroulements triphasés (21), connecté à un premier convertisseur CA-CC (33), et un second ensemble d'enroulements triphasés (23), connecté à un second convertisseur CA-CC (41), le procédé consistant : à commander les premier (33) et second (41) convertisseurs CA-CC de telle sorte que les premiers courants électriques circulant dans le premier ensemble d'enroulements triphasés (21) sont sensiblement déphasés de 30° par rapport aux seconds courants électriques respectifs circulant dans le second ensemble d'enroulements triphasés (23). Du fait de la caractéristique du déphasage de 30 degrés entre les deux ensembles dans la machine triphasée double, le procédé permet une commande de sur-modulation des deux convertisseurs, de manière à avoir une sortie de tension fondamentale des convertisseurs supérieure à celle qui est commandée uniquement dans les limites de la plage linéaire.

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