

Title (en)
ELECTROMECHANICAL ACTUATOR STRUCTURE

Title (de)
ELEKTROMECHANISCHE AKTUATORSTRUKTUR

Title (fr)
STRUCTURE D'ACTIONNEUR ÉLECTROMÉCANIQUE

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Application
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Abstract (en)
[origin: WO2011080532A1] An electromechanical actuator (100) comprising a ferromagnetic unit or a stator (10) which consists of opposite first (11) and a second (12) ferromagnetic elements that comprises ferromagnetic portions (16') and magnetic elements (15) that form together a open magnetic circuit. The electromechanical actuator (100) comprises also an electromagnetic unit (20) that is relatively movable with respect to the ferromagnetic unit (10), which comprises a first (21) and a second (22) winding integral to each other and arranged, with respect to the ferromagnetic unit (10), such that the respective open magnetic circuit are closed on the first (11) and the second (12) ferromagnetic elements. In particular, the first (21) and the second windings (22) comprise each a plurality of serially arranged elementary windings (23), which starts from an initial elementary winding (23i) up to a final elementary winding (23f), in particular the elementary windings have an increasing number of loops. The windings (21/22) are oppositely arranged with respect to each other and are respectively run through by opposite currents I_{ag} and I_{an} in such a way that opposite repulsive forces are generated. In particular, the forces are such that an agonist force (F_{ag}), which is generated on one of windings, for example (21), that is run through by current I_{ag} , opposes to an antagonist force (F_{an}), which is generated on the other winding (22), that is run through by current I_{an} , until a relative position of the electromagnetic unit (10) and of the ferromagnetic unit (20) is achieved in which the above described forces balance each other. The electromechanical actuator (100), comprises furthermore a means for independently controlling the intensity of the opposite currents I_{ag} and I_{an} that circulates within the first (21) and the second winding (22) in order to adjust the absolute value of the current intensity difference and therefore adjusting the relative position, where the forces balance each other.

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