

Title (en)
Heat pumps.

Title (de)
Wärmepumpen.

Title (fr)
Perfectionnements aux pompes à chaleur.

Publication
EP 0041911 A2 19811216 (FR)

Application
EP 81420089 A 19810604

Priority
FR 8013026 A 19800606

Abstract (en)
1. Heat pump comprising : - two motor-compressor groups (1a, 1b) for liquefiable heat-transfer fluid, capable of being operated independently of each other ; - two evaporators (15a, 15b) respectively associated individually with the compressor (2a, 2b) of each group (1a, 1b) to form the cold source of a corresponding elementary heat pump ; - a channel (16) in which these two evaporators (15a, 15b) are arranged in series so as to be able to be traversed in heat exchange by a same current of an external reheating fluid such as air, capable of containing moisture ; - a motor-driven fan (17, 18) interposed in said channel to ensure the circulation therein of the reheating fluid ; - two condensers (7a, 7b) respectively associated individually with the compressor (2a, 2b) of each group (1a, 1b) to form the warm source of the corresponding elementary heat pump ; - heat exchange means for cooling these two condensers (7a, 7b) with the help of an external fluid so that heat may be taken up by the latter, characterized by the combination of the following features : - the motor-driven fan (17) is reversible ; - means (22a, 22b) are provided for detecting individually the icing-up of one or other of the two evaporators (15a, 15b) ; - command means (24, 4a, 4b) are also provided placed under the control of the icing up detecting means (22a, 22b) and which act in such a way that in normal running the two motor-compressor groups (1a, 1b) function simultaneously, but that when icing-up has been detected on the evaporator which is at that time situated downstream in the current of reheating fluid, they stop the corresponding motor-compressor group (1a, 1b), reverse the motor-driven fan (17, 18) and then, when the evaporator of the group thus stopped has been freed of ice, set this group in operation again without stopping the other and without reversing again the motor-driven fan (17, 18).

Abstract (fr)
La pompe comprend deux pompes élémentaires avec moto-compresseur (1a, 1b), condenseur (7a, 7b) disposé dans la chambre à eau (11) à chauffer (source chaude) et évaporateur (15a, 15b) situé dans le courant d'air extérieur d'un ventilateur réversible commun (17-18) formant source froide. Aux évaporateurs sont associés des détecteurs de givrage (22a, 22b) qui informent un micro-processeur (24). Quand l'évaporateur (15b) en aval sur le courant d'air (27) givre, (24) intervient, inverse (17-18) (sens de courant d'air 28) et arrête (1b) de façon que (15b) soit dégivré par l'air extérieur. Cela fait (1b) est remis en marche, et ainsi de suite quand (15a) givre à son tour. Si (15a) et (15b) givrent ensemble, (24) arrête (1a) et (1b) et alerte ou met en marche des moyens de dégivrage auxiliaires.

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