

Title (en)
OPTIMIZED MANAGEMENT METHOD OF AN ENVIRONMENTALLY FRIENDLY HEAT PUMP

Title (de)
OPTIMIERTES VERWALTUNGSVERFAHREN EINER UMWELTFREUNDLICHEN WÄRMEPUMPE

Title (fr)
PROCÉDÉ DE GESTION OPTIMISÉ D'UNE POMPE À CHALEUR ÉCOLOGIQUE

Publication
EP 4343233 A1 20240327 (EN)

Application
EP 23193672 A 20230828

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Abstract (en)
The object of the present invention is a method for the management and control of a thermodynamic machine (HP) based on a compression/expansion cycle of an operating fluid and comprising at least: a first heat exchanger (11; 12) in which said operating fluid absorbs thermal energy at constant pressure t from a cold well; a second heat exchanger (12; 11) in which said operating fluid yields part of the thermal energy thereof to a hot well, at constant pressure; an expansion valve (14) adapted to carry out constant enthalpy expansion and cooling of said operating fluid; a compressor (13; C) adapted to compress said operating fluid, said compressor (13; C) being able to suck and compress a wet operating fluid with a suitable percentage of liquid fraction; a plurality of temperature sensors for detecting at least the delivery temperatures Tm of said compressor, of an evaporation temperature SST in said first exchanger (11; 12), of a condensation temperature SDT in said second exchanger (12; 11). The difference in temperature between said lubricating oil in the compressor (13; C) and said operating fluid at the delivery of the compressor (13; C) is kept equal to or higher than a safety threshold OIL_SH such that there is no condensation of said operating fluid in said lubricating oil. The delivery temperature Tm of said compressor (13; C) is regulated as long as it does not substantially approximate and/or reach an optimised target delivery temperature Tm_target_opt that is a function of at least the rotation frequency of said compressor (13; C).

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Citation (search report)
• [A] JP 6594698 B2 20191023
• [A] JP 2001227822 A 20010824 - MITSUBISHI ELECTRIC CORP
• [A] US 2022146165 A1 20220512 - HIROSAKI YU [JP], et al

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