Title (en)

VAPOUR-COMPRESSION HEAT PUMP SYSTEM AND METHOD FOR OPERATING A VAPOUR-COMPRESSION HEAT PUMP SYSTEM

Title (de)

DAMPFKOMPRESSIONSWÄRMEPUMPENSYSTEM UND VERFAHREN ZUM BETREIBEN EINES DAMPFKOMPRESSIONSWÄRMEPUMPENSYSTEMS

Title (fr)

SYSTÈME DE POMPE À CHALEUR À COMPRESSION DE VAPEUR ET PROCÉDÉ DE FONCTIONNEMENT D'UN SYSTÈME DE POMPE À CHALEUR À COMPRESSION DE VAPEUR

Publication

EP 3961123 A1 20220302 (EN)

Application

EP 20193703 A 20200831

Priority

EP 20193703 A 20200831

Abstract (en)

A vapour-compression heat pump system and a method for operating a vapour-compression heat pump system is presented. The inventive system and method makes use of a thermal energy storage device which comprises a phase change material to receive and store heat from a superheated refrigerant vapour stream leaving the first compression stage, thereby also cooling the refrigerant close to its saturated vapour temperature, as desired. The system and method have the advantage that they allow a stable operation of the heat pump system. Furthermore, unlike prior art systems and methods, comfort conditions by cooling the indoor space during defrosting of the evaporator are not compromised and heat from the superheated refrigerant vapour exiting the first compression stage does not have to be rejected to an external fluid stream or recovered elsewhere within the cycle, i.e. the COP of the cycle is not limited and costs and complexity of the system and method are low.

IPC 8 full level

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CPC (source: EP)

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