Title (en)

CASCADED HEAT PUMP SYSTEM WITH LOW GWP REFRIGERANT

Title (de)

KASKADIERTES WÄRMEPUMPENSYSTEM MIT KÄLTEMITTEL MIT NIEDRIGEM GWP-WERT

Title (fr)

SYSTÈME DE POMPE À CHALEUR EN CASCADE À REFRIGÉRANT À FAIBLE EFFET DE SERRE

Publication

EP 4063762 A1 20220928 (EN)

Application

EP 21165289 A 20210326

Priority

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Abstract (en)

The invention relates to a system (1) for heating or cooling a space and for providing hot water, with a first refrigerant circuit (2) for heating or cooling a space using a first heat transfer fluid, comprising a compressor device (C1), a first heat exchanger device (H1), a second heat exchanger device (H2), and an expansion device, where the first heat exchanger device (H1) is configured for transferring heat to or from the space which is to be heated or cooled, respectively, via the first heat transfer fluid, and the second heat exchanger device (H2) is configured for transferring heat from the first heat transfer fluid to a second heat transfer fluid; and with a second refrigerant circuit (5) for providing hot water using the second heat transfer fluid, comprising a compressor device (C2), the second heat exchanger device (H2), a third heat exchanger device (H3), and an expansion device, where the third heat exchanger device (H3) is configured for transferring heat from the second heat transfer fluid to water which is to be provided as hot water; wherein at least the first heat transfer fluid has a net global warming potential for 100 years, GWP100, which is below 500, and first and second heat transfer fluid are chosen such that respective values of at least one characteristic of first and second heat transfer fluid make the second heat transfer fluid more suitable for higher working temperatures than the first heat transfer fluid so as to maximize the coefficient of performance, COP.

IPC 8 full level

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CPC (source: EP)

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