

Title (en)

TRANSCRITICAL THERMALLY ACTIVATED COOLING, HEATING AND REFRIGERATING SYSTEM

Title (de)

TRANSKRITISCHES WÄRMEAKTIVIERTES KÜHLUNGS-, ERHITZUNGS- UND EINFRIERSYSTEM

Title (fr)

SYSTÈME DE REFROIDISSEMENT, DE CHAUFFAGE ET DE RÉFRIGÉRATION À ACTIVATION THERMIQUE TRANSCRITIQUE

Publication

EP 2425189 A2 20120307 (EN)

Application

EP 10770249 A 20100428

Priority

- US 2010032726 W 20100428
- US 17377609 P 20090429

Abstract (en)

[origin: WO2010126980A2] A combined vapor compression and vapor expansion system uses a common refrigerant which enables a supercritical high pressure portion and a sub-critical low pressure portion of the vapor expansion circuit. Provision is made to combine the refrigerant flow from the vapor expander and from the compressor discharge. The outdoor heat exchanger is so sized and designed that the working fluid discharged therefrom is always in a liquid form so as to provide a liquid into the pump inlet. The pump and expander are so sized and designed that the high pressure portion of the vapor expansion circuit is always super-critical. A topping heat exchanger, liquid to suction heat exchanger, and various other design features are provided to further increase the thermodynamic efficiency of the system.

IPC 8 full level

F25B 27/00 (2006.01); **F02C 7/143** (2006.01); **F25B 29/00** (2006.01)

CPC (source: EP US)

F01K 17/02 (2013.01 - EP US); **F01K 17/04** (2013.01 - EP US); **F25B 9/008** (2013.01 - EP US); **F25B 27/02** (2013.01 - EP US); **F25B 13/00** (2013.01 - EP US); **F25B 2309/061** (2013.01 - EP US); **Y02A 30/274** (2017.12 - EP US)

Citation (search report)

See references of WO 2010126980A2

Designated contracting state (EPC)

AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO SE SI SK SM TR

DOCDB simple family (publication)

WO 2010126980 A2 20101104; **WO 2010126980 A3 20110303**; CN 102414522 A 20120411; CN 102414522 B 20140305; EP 2425189 A2 20120307; US 2012036854 A1 20120216

DOCDB simple family (application)

US 2010032726 W 20100428; CN 201080018924 A 20100428; EP 10770249 A 20100428; US 201013265405 A 20100428