Title (en)
TRANS-CRITICAL VAPOR CYCLE SYSTEM WITH IMPROVED HEAT REJECTION

Title (de)
TRANSKRITISCHES DAMPFZYKLUSSYSTEM MIT VERBESSERTER WÄRMEABWEISUNG

Title (fr)
SYSTÈME À CYCLE DE VAPEUR TRANS-CRITIQUE PRÉSENTANT UN MEILLEUR REJET DE CHALEUR

Publication
EP 3048388 A1 20160727 (EN)

Application
EP 15197427 A 20151202

Priority
US 201462097333 P 20141229

Abstract (en)
A cooling system (700, 900) for an aircraft includes an air intake (28), an expansion device (708, 914), and an evaporator (710, 916). A first heat exchanger (704, 906, 910) receives air (26) passing into the air intake (28) when the aircraft is operating at elevation, and receives the refrigerant from a first compressor (702, 902, 908) at a first pressure (802, 804, 806). A second compressor (702, 902, 908) receives the refrigerant from the first heat exchanger (704, 906, 910) and compresses the refrigerant to a second pressure (802, 804, 806) that is greater than the first pressure (802, 804, 806). A second heat exchanger (704, 906, 910) receives the refrigerant from the second compressor (702, 902, 908). The first and second compressors (702, 902, 908) are configured to operate at pressures that avoid temperature differences between the refrigerant and the air within each of the first and second heat exchangers (704, 906, 910) below a set restriction.

IPC 8 full level
F25B 40/00 (2006.01); F25B 1/10 (2006.01); F25B 9/00 (2006.01)

CPC (source: EP)
F25B 1/10 (2013.01); F25B 9/008 (2013.01); F25B 40/00 (2013.01); F25B 2309/06 (2013.01); F25B 2309/061 (2013.01); F25B 2400/14 (2013.01)

Citation (search report)
- [X] US 2014260340 A1 20140918 - VAISMAN IGOR [US], et al
- [X] WO 2014143194 A1 20140918 - ROLLS ROYCE CORP [US], et al
- [X] US 2014260341 A1 20140918 - VAISMAN IGOR [US], et al

Designated contracting state (EPC)
AL 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 RS SE SI SK SM TR

Designated extension state (EPC)
BA ME

DOCDB simple family (publication)
EP 3048388 A1 20160727

DOCDB simple family (application)
EP 15197427 A 20151202