

Title (en)
REFRIGERATION DEVICE

Title (de)
KÜHLVORRICHTUNG

Title (fr)
DISPOSITIF DE RÉFRIGÉRATION

Publication
EP 3249316 A1 20171129 (EN)

Application
EP 15861606 A 20151112

Priority
• JP 2014233466 A 20141118
• JP 2015081840 W 20151112

Abstract (en)
The present invention provides a refrigeration apparatus that can prevent supercooling of the inside of a showcase, excessive formation of frost on an evaporator, and liquid floodback to a compressor, and reduce the number of times of the activation and stop of the compressor with relatively simple control over an expansion valve. The refrigeration apparatus includes low stage-side refrigerant circuits each having a low stage-side compressor, a low stage-side gas cooler, a low stage-side expansion valve, and a low stage-side evaporator. The refrigeration apparatus includes a controller that controls the low stage-side expansion valve. The controller calculates refrigerant superheat in the low stage-side evaporator from the refrigerant outlet temperature and refrigerant inlet temperature of the low stage-side evaporator. The controller selectively controls the degree of opening of the low stage-side expansion valve on the basis of the refrigerant superheat or an internal temperature of the showcase.

IPC 8 full level
F25B 1/00 (2006.01); **A47F 3/04** (2006.01); **F25B 5/02** (2006.01); **F25B 7/00** (2006.01); **F25D 11/00** (2006.01)

CPC (source: EP)
A47F 3/04 (2013.01); **F25B 5/00** (2013.01); **F25B 6/00** (2013.01); **F25B 7/00** (2013.01); **F25B 9/008** (2013.01); **F25B 49/02** (2013.01); **F25D 11/00** (2013.01); **F25B 2309/061** (2013.01); **F25B 2400/22** (2013.01); **F25B 2500/19** (2013.01); **F25B 2600/0253** (2013.01); **F25B 2600/2513** (2013.01); **F25B 2700/2104** (2013.01); **F25B 2700/2106** (2013.01); **F25B 2700/21174** (2013.01); **F25B 2700/21175** (2013.01)

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 3249316 A1 20171129; EP 3249316 A4 20180725; JP 2016099013 A 20160530; WO 2016080275 A1 20160526

DOCDB simple family (application)
EP 15861606 A 20151112; JP 2014233466 A 20141118; JP 2015081840 W 20151112