

Title (en)  
Refrigerating machine having refrigerant/water heat exchanger

Title (de)  
Kältemaschine mit Kältemittel-Wasser-Wärmetauscher

Title (fr)  
Machine frigorifique avec échangeur de chaleur frigorigène-eau

Publication  
**EP 1548377 B1 20131023 (EN)**

Application  
**EP 04030334 A 20041221**

Priority  
• JP 2003426871 A 20031224  
• JP 2003426872 A 20031224  
• JP 2003426873 A 20031224  
• JP 2003426874 A 20031224

Abstract (en)  
[origin: EP1548377A2] Plural plate type refrigerant/water heat exchangers 20a, 20b are connected in parallel to a cold/hot water circuit containing cold/hot water pipes 4a, 4b connected to a use-side heat exchanger 30, and also they are connected in series to a refrigerant circuit containing refrigerant pipes 3a, 3b connected to a heat source unit 1. Furthermore, there are provided a refrigerant heat exchanger 20c for heat-exchange refrigerant flowing at the upstream side of the refrigerant/water heat exchangers 20a, 20b with refrigerant flowing at the downstream side thereof, a first refrigerant temperature sensor for detecting the temperature of the refrigerant flowing at the upstream side and a second refrigerant temperature sensor for detecting the temperature of the refrigerant flowing at the downstream side, and the refrigerating machine is operated by selecting and using the temperature detected by the first or second refrigerant temperature sensor.

IPC 8 full level  
**F25B 5/04** (2006.01); **F25B 27/02** (2006.01); **F25B 25/00** (2006.01); **F25B 39/02** (2006.01); **F25B 27/00** (2006.01); **F25B 47/00** (2006.01)

CPC (source: EP KR)  
**F25B 5/04** (2013.01 - EP); **F25B 25/005** (2013.01 - EP); **F25B 27/02** (2013.01 - KR); **F25B 39/022** (2013.01 - EP); **F25B 27/00** (2013.01 - EP); **F25B 47/006** (2013.01 - EP); **F25B 2327/001** (2013.01 - EP); **F25B 2400/053** (2013.01 - EP); **F25B 2400/21** (2013.01 - EP); **F25B 2700/21151** (2013.01 - EP); **F25B 2700/21173** (2013.01 - EP); **F25B 2700/21174** (2013.01 - EP)

Cited by  
US2021231355A1; ITRM20100259A1; EP2629028A4; EP1959204A1; US2011308263A1; US9121624B2; US9494363B2; US11221166B2

Designated contracting state (EPC)  
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**EP 1548377 A2 20050629**; **EP 1548377 A3 20080702**; **EP 1548377 B1 20131023**; CN 1312451 C 20070425; CN 1637362 A 20050713; KR 100607011 B1 20060801; KR 20050065382 A 20050629

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**EP 04030334 A 20041221**; CN 200410102097 A 20041223; KR 20040111001 A 20041223