Title (en)

HEAT PUMP AND DEHUMIDIFYING AIR-CONDITIONING APPARATUS

Title (de)

WÄRMEPUMPE UND ENTFEUCHTUNGS-KLIMAANLAGE

Title (fr)

POMPE A CHALEUR ET CLIMATISEUR DESHUMIDIFICATEUR

Publication

EP 1370809 A1 20031217 (EN)

Application

EP 02701662 A 20020301

Priority

- JP 0201897 W 20020301
- JP 2001059330 A 20010302

Abstract (en)

[origin: WO02070958A1] A dehumidifying air-conditioning apparatus comprises a pressurizer (4) for raising a pressure of a refrigerant, a condenser (5) for condensing the refrigerant to heat a high-temperature heat source fluid, and an evaporator (1) for evaporating the refrigerant to cool process air to a temperature lower than its dew point. The dehumidifying air-conditioning apparatus further comprises a refrigerant path branched into a plurality of branched refrigerant paths (42, 43, 44) between the condenser (5) and the evaporator (1). A first heat exchanging portion (21) is disposed in the branched refrigerant path for evaporating the refrigerant under an intermediate pressure between the condensing pressure of the condenser (5) and the evaporating pressure of the evaporator (1) to cool the process air by evaporation of the refrigerant under the intermediate pressure. A second heat exchanging portion (22) is disposed in the branched refrigerant path for condensing the refrigerant under an intermediate pressure between the condensing pressure of the condenser (5) and the evaporating pressure of the evaporator (1) to heat the process air by condensation of the refrigerant under the intermediate pressure. The first heat exchanging portion (21), the evaporator (1), the second heat exchanging portion (22) are connected in the order named by paths (30, 31, 32, 33, 34).
[origin: WO02070958A1] A dehumidifying air-conditioning apparatus comprises a pressurizer (4) for raising a pressure of a refrigerant, a condenser (5) for condensing the refrigerant to heat a high-temperature heat source fluid, and an evaporator (1) for evaporating the refrigerant to cool process air to a temperature lower than its dew point. The dehumidifying air-conditioning apparatus further comprises a refrigerant path branched into a plurality of branched refrigerant paths (42, 43, 44) between the condenser (5) and the evaporator (1). A first heat exchanging portion (21) is disposed in the branched refrigerant path for evaporating the refrigerant under an intermediate pressure between the condensing pressure of the condenser (5) and the evaporating pressure of the evaporator (1) to cool the process air by evaporation of the refrigerant under the intermediate pressure. A second heat exchanging portion (22) is disposed in the branched refrigerant path for condensing the refrigerant under an intermediate pressure between the condensing pressure of the condenser (5) and the evaporating pressure of the evaporator (1) to heat the process air by condensation of the refrigerant under the intermediate pressure. The first heat exchanging portion (21), the evaporator (1), the second heat exchanging portion (22) are connected in the order named by paths (30, 31, 32, 33, 34).

IPC 1-7

F24F 3/06; F24F 3/153; F25B 29/00

IPC 8 full level

F24F 3/06 (2006.01); **F24F 3/14** (2006.01); **F24F 3/153** (2006.01); **F25B 5/00** (2006.01); **F25B 29/00** (2006.01)

CPC (source: EP US)

F24F 3/1405 (2013.01 - EP US); **F24F 3/153** (2013.01 - EP US); **F25B 5/00** (2013.01 - EP US)

Designated contracting state (EPC)

AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE TR

DOCDB simple family (publication)

WO 02070958 A1 20020912; CN 1223804 C 20051019; CN 1503889 A 20040609; EP 1370809 A1 20031217; EP 1370809 A4 20061004; JP 2002257375 A 20020911; JP 3253021 B1 20020204; US 2004118133 A1 20040624

DOCDB simple family (application)

JP 0201897 W 20020301; CN 02808263 A 20020301; EP 02701662 A 20020301; JP 2001059330 A 20010302; US 46883203 A 20030923