

Title (en)
Expansion valve for refrigerating cycle

Title (de)
Entspannungsventil für Kühlkreislauf

Title (fr)
Robinet d'expansion pour un circuit frigorifique

Publication
EP 1691149 A3 20071010 (EN)

Application
EP 06000619 A 20060112

Priority
• JP 2005006344 A 20050113
• JP 2005329466 A 20051114

Abstract (en)
[origin: EP1691149A2] An expansion valve for a refrigerating cycle, in which the body dimensions and the weight of the whole valve can be reduced and a reduction in cost can be achieved. An expansion valve of the invention comprising a temperature-sensing portion arranged in a refrigerant passage leading to an evaporator from a gas cooler or an internal heat exchanger in a vapor compression type refrigerating cycle and varied in internal pressure according to a refrigerant temperature at an outlet side of the gas cooler or on an outlet side of the internal heat exchanger, a valve member that mechanically interlocks with a change in internal pressure of the temperature-sensing portion to adjust an opening degree of a valve port, and a body that accommodates therein the valve member, and wherein the body is provided with a flow passage, through which a refrigerant reduced in pressure by the valve member is led to the evaporator while a refrigerant temperature at the outlet side of the gas cooler or on the outlet side of the internal heat exchanger is transmitted to the temperature-sensing portion. Also, that density, at which a refrigerant is charged in a temperature-sensing body, is set in the range of about 200 kg/m³ to about 600 kg/m³. Further, a ratio of a temperature-sensing cylinder corresponding portion to the temperature-sensing body is made at least 60 %.

IPC 8 full level
F25B 41/06 (2006.01)

CPC (source: EP US)
F25B 41/335 (2021.01 - EP US); **F25B 2309/061** (2013.01 - EP US); **F25B 2341/063** (2013.01 - EP US); **F25B 2341/0683** (2013.01 - EP US)

Citation (search report)
• [X] EP 1059495 A2 20001213 - MITSUBISHI HEAVY IND LTD [JP]
• [X] JP 2001324245 A 20011122 - SAGINOMIYA SEISAKUSHO INC
• [X] JP H10170105 A 19980626 - TGK CO LTD
• [DX] EP 0786632 A2 19970730 - DENSO CORP [JP], et al
• [DX] EP 1343064 A1 20030910 - FUJIKOKI CORP [JP], et al

Cited by
EP1785681A1; US7536872B2

Designated contracting state (EPC)
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC NL PL PT RO SE SI SK TR

Designated extension state (EPC)
AL BA HR MK YU

DOCDB simple family (publication)
EP 1691149 A2 20060816; EP 1691149 A3 20071010; JP 2006220407 A 20060824; US 2006150650 A1 20060713

DOCDB simple family (application)
EP 06000619 A 20060112; JP 2005329466 A 20051114; US 33094106 A 20060112