

Title (en)  
REFRIGERATION CYCLE DEVICE

Title (de)  
KÄLTEKREISLAUFVORRICHTUNG

Title (fr)  
DISPOSITIF À CYCLE DE RÉFRIGÉRATION

Publication  
**EP 4160108 A4 20231108 (EN)**

Application  
**EP 20938818 A 20201012**

Priority  
• JP 2020021799 W 20200602  
• JP 2020038476 W 20201012

Abstract (en)  
[origin: EP4160108A1] A refrigeration cycle device includes a compressor, an air heat exchanger, a utilization heat exchanger, a first refrigerant passage connecting the utilization heat exchanger to a discharge passage, a second refrigerant passage connecting the air heat exchanger to a suction passage, a receiver to store therein liquid refrigerant, a first expansion valve, a second expansion valve, a third refrigerant passage connecting the utilization heat exchanger to the first expansion valve, a fourth refrigerant passage connecting the first expansion valve to the receiver, a fifth refrigerant passage connecting the receiver to the second expansion valve, a sixth refrigerant passage connecting the second expansion valve to the air heat exchanger, a hot-gas bypass passage connecting the discharge passage to the sixth refrigerant passage, a hot-gas bypass valve, an internal heat exchanger to exchange heat between the liquid refrigerant inside the receiver and the refrigerant passing through the suction passage, or between refrigerant passing through the fourth refrigerant passage and refrigerant passing through the suction passage, a liquid bypass passage including an inlet portion connected to the fourth refrigerant passage, the fifth refrigerant passage, or a lower portion of the receiver, and an outlet portion connected to the suction passage upstream of the internal heat exchanger, and a liquid bypass valve.

IPC 8 full level  
**F25B 1/00** (2006.01); **F25B 13/00** (2006.01); **F25B 40/00** (2006.01); **F25B 47/02** (2006.01); **F25B 49/02** (2006.01)

CPC (source: EP US)  
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Citation (search report)  
• [Y] JP 2010164257 A 20100729 - MITSUBISHI ELECTRIC CORP  
• [Y] JP 2002098451 A 20020405 - DENSO CORP  
• [A] US 2017167762 A1 20170615 - KATO YOHEI [JP], et al  
• See also references of WO 2021245958A1

Designated contracting state (EPC)  
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