

Title (en)
HEAT EXCHANGE UNIT

Title (de)
WÄRMETAUSCHEREINHEIT

Title (fr)
UNITÉ D'ÉCHANGE DE CHALEUR

Publication
EP 3859252 A4 20211117 (EN)

Application
EP 19867489 A 20190924

Priority
• JP 2018184827 A 20180928
• JP 2019037267 W 20190924

Abstract (en)
[origin: EP3859252A1] Provided is a heat exchange unit that uses a flammable refrigerant and is capable of highly reliable refrigerant leakage detection. A heat exchange unit exchanges heat between a liquid medium sent to utilization-side equipment and a flammable refrigerant, to perform at least one of cooling and heating of the liquid medium. The heat exchange unit includes a heat exchanger, a casing, a drain pan (80) arranged below the heat exchanger in a lower part of the casing, and a gas detection sensor (70). The heat exchanger exchanges heat between the refrigerant and the liquid medium. The casing accommodates the heat exchanger. The drain pan has a bottom plate (82) and a side wall (84) extending upward from the bottom plate. The first gas detection sensor detects the presence or absence of refrigerant gas in an internal space (Si) of the drain pan, the internal space being located above the bottom plate of the drain pan and below an upper end part of the side wall of the drain pan.

IPC 8 full level
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CPC (source: EP US)
F24F 1/0063 (2019.01 - US); **F24F 5/00** (2013.01 - EP); **F24F 11/36** (2017.12 - EP US); **F24F 13/20** (2013.01 - EP); **F24F 13/222** (2013.01 - EP); **F24F 13/20** (2013.01 - US); **F24F 13/222** (2013.01 - US); **F24F 2013/207** (2013.01 - US); **F24F 2013/227** (2013.01 - US); **F24F 2110/65** (2017.12 - US); **F25B 13/00** (2013.01 - EP); **F25B 25/005** (2013.01 - EP); **F25B 49/02** (2013.01 - EP)

Citation (search report)
• [YA] JP 2002115939 A 20020419 - HITACHI IND CO LTD
• [YA] JP 2017067390 A 20170406 - DAIKIN IND LTD
• [Y] JP 2017083083 A 20170518 - MITSUBISHI ELECTRIC CORP
• [Y] EP 2833079 A1 20150204 - DAIKIN IND LTD [JP]
• See references of WO 2020067010A1

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 3859252 A1 20210804; **EP 3859252 A4 20211117**; CN 112805513 A 20210514; JP 2020051732 A 20200402; US 2022003443 A1 20220106; WO 2020067010 A1 20200402

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