

Title (en)  
HEAT EXCHANGER FOR FLAMMABLE REFRIGERANTS

Title (de)  
WÄRMEÜBERTRAGER FÜR BRENNBARE KÄLTEMITTEL

Title (fr)  
ÉCHANGEUR DE CHALEUR POUR FLUIDE DE REFROIDISSEMENT COMBUSTIBLE

Publication  
**EP 3911906 A1 20211124 (DE)**

Application  
**EP 20711035 A 20200127**

Priority  
• DE 202019100529 U 20190129  
• DE 2020100049 W 20200127

Abstract (en)  
[origin: CA3123988A1] The invention relates to a heat exchanger for flammable refrigerants, preferably for a rail vehicle, the heat exchanger having a hollow cuboid housing in the interior of which refrigerant lines are situated, which are designed as a tube-and-fin pack or as a tube-in-tube and fin pack. The hollow cuboid housing is provided with fins on the inside of a closed side face, and at least a portion of the outside of said closed side face can be brought into operative connection with the passenger compartment. The problem addressed by the invention is that of creating a heat exchanger of this type with which the existing safety risks of previous heat exchangers are avoided so that secondary circuits can be omitted and a direct system can be implemented instead. This problem is solved in that the hollow cuboid housing is designed as a module which can be partitioned off from the passenger compartment in a gas-tight manner, wherein only permanently sealed sections of the refrigerant lines are situated in the interior of the hollow cuboid housing, the connection points of which refrigerant lines are each situated completely outside the hollow cuboid housing, and the hollow cuboid housing is provided with at least one sealing frame and/or with at least two sealing plates such that, when the heat exchanger is fixed in the installation position, the connections of the refrigerant lines are situated in a region which is sealed off from the passenger compartment and is ventilated outwards to the surroundings.

IPC 8 full level  
**F28D 1/047** (2006.01)

CPC (source: EP IL KR US)  
**F28D 1/0475** (2013.01 - EP IL KR US); **F28F 9/001** (2013.01 - EP IL KR US); **F28F 9/013** (2013.01 - EP IL KR US);  
**F28D 2021/0085** (2013.01 - EP IL KR US); **F28F 2215/00** (2013.01 - US); **F28F 2230/00** (2013.01 - EP IL KR US);  
**F28F 2265/16** (2013.01 - EP IL KR US); **Y02T 30/00** (2013.01 - EP)

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)  
**DE 202020100401 U1 20200207**; AU 2020214096 A1 20210715; AU 2020214096 B2 20220922; BR 112021012046 A2 20210921;  
CA 3123988 A1 20200806; CA 3123988 C 20231031; CN 113366276 A 20210907; CN 113366276 B 20231219; DE 112020000570 A5 20211223;  
EA 202191921 A1 20211013; EP 3911906 A1 20211124; IL 284676 A 20210831; JP 2022518350 A 20220315; KR 102598605 B1 20231106;  
KR 20210126560 A 20211020; US 2022082330 A1 20220317; WO 2020156615 A1 20200806

DOCDB simple family (application)  
**DE 202020100401 U 20200127**; AU 2020214096 A 20200127; BR 112021012046 A 20200127; CA 3123988 A 20200127;  
CN 202080011373 A 20200127; DE 112020000570 T 20200127; DE 2020100049 W 20200127; EA 202191921 A 20200127;  
EP 20711035 A 20200127; IL 28467621 A 20210707; JP 2021534626 A 20200127; KR 20217022879 A 20200127;  
US 202017419696 A 20200127