

Title (en)
WATER COOLED DEHUMIDIFICATION SYSTEM

Title (de)
WASSERGEKÜHLTES ENTFEUCHTUNGSSYSTEM

Title (fr)
SYSTÈME DE DÉSHUMIDIFICATION REFROIDI PAR EAU

Publication
EP 4056909 A1 20220914 (EN)

Application
EP 22154554 A 20220201

Priority
US 202117197479 A 20210310

Abstract (en)
A dehumidification system (100; 200; 300; 1500; 1600) includes a compressor (360; 660; 1516; 1612), a primary evaporator (310; 610; 910; 1010; 1508; 1604), a primary condenser (330; 630; 1510; 1606), a secondary evaporator (340; 640; 1040; 1140; 1512; 1608), a secondary condenser (320, 514, 620, 1020, 1120, 1514, 1610), and a water pump (1536; 1648). The secondary evaporator (340; 640; 1040; 1140; 1512; 1608) receives an inlet airflow (101; 601; 901; 1526; 1628) and outputs a first airflow (345; 645; 1532; 1634) to the primary evaporator (310; 610; 910; 1010; 1508; 1604). The primary evaporator (310; 610; 910; 1010; 1508; 1604) receives the first airflow (345; 645; 1532; 1634) and outputs a second airflow (315; 615; 1530; 1632) to the secondary condenser (320, 514, 620, 1020, 1120, 1514, 1610). The secondary condenser (320, 514, 620, 1020, 1120, 1514, 1610) receives the second airflow (315; 615; 1530; 1632) and outputs a dehumidified airflow (106; 325; 625; 1528; 1630). The compressor (360; 660; 1516; 1612) receives a flow of refrigerant (305; 605; 905; 1005; 1524; 1626) from the primary evaporator (310; 610; 910; 1010; 1508; 1604) and provides the flow of refrigerant to the primary condenser (330; 630; 1510; 1606). The primary condenser (330; 630; 1510; 1606) receives the flow of refrigerant (305; 605; 905; 1005; 1524; 1626) and outputs the flow of refrigerant (305; 605; 905; 1005; 1524; 1626) at a lower temperature through heat transfer with a flow of fluid. The flow of fluid is directed, by the water pump (1536; 1648), to a heat exchanger (1504, 1654) or an external source (1506, 1652), where heat is rejected from the flow of fluid.

IPC 8 full level
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Citation (search report)
• [Y] EP 3673966 A1 20200701 - THERMA STOR LLC [US]
• [Y] US 2006032244 A1 20060216 - TOMLINSON JOHN J [US]
• [Y] US 6658874 B1 20031209 - TRENT RICHARD W [US]
• [Y] EP 2767773 A1 20140820 - DAIKIN IND LTD [JP]

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Designated extension state (EPC)
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