Title (en)

SEMICONDUCTOR-TYPE COMPACT THERMAL APPARATUS

Title (de)

H-THERMOKOMPAKTGERÄT

Title (fr)

APPAREIL THERMIQUE COMPACT DU TYPE A SEMI-CONDUCTEUR

Publication

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Application

EP 96927630 A 19960730

Priority

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- EP 9603346 W 19960730

Abstract (en)

[origin: WO9705432A1] The invention concerns semiconductor-type compact thermal apparatus, i.e. devices and systems for heating, cooling and dehumidifying rooms and media of all types, in particular media which present a risk of explosion. The semiconductor-type compact thermal apparatus can convert electrical energy in situ into thermal energy (heat and cold) without additional heating and cooling circuits. The apparatus are suitable for heating, cooling and dehumidifying all types of media (for example, appliances) and for recovering heat and cold with and without natural resources. The apparatus dispense with pollutant emissions and HFCs. The semiconductor-type compact thermal apparatus are based on the principle of the Peltier effect and comprise thermal element blocks (Peltier elements) (32, 138) which are mounted between two heat exchangers, heat exchangers and fluid bodies, between two fluid bodies or between two edge heat exchangers (103), or a media heat exchanger (101) and two fluid bodies (102). The fluid bodies can take different forms: feed and discharge ducts for the media are milled into the top or feed and discharge ducts are bored by deep-boring through the bodies. When fluid bodies are used, the medium can pass directly via the thermal element block surfaces. The efficiency of the thermal energy output is increased by controlling the ripple effect of the electrical energy source and by using specially designed seals. The semiconductor-type compact thermal apparatus are suitable for all types of rooms and ventilation systems, as heating and cooling ceilings, heating and cooling radiators and as cooling and heating appliances for all types of media, including media presenting a risk of explosion.

IPC 1-7

F24F 5/00; F25B 21/02

IPC 8 full level

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Cited by

EP2057928A2; EP2050381A2; DE102008026875B4; DE102007053381B3; US9951978B2; DE102007024038A1; DE102007050533A1; DE102008026875A1; US8307839B2

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