

Title (en)

Apparatus for the sensing of refrigerant temperature for the control of an evaporator valve.

Title (de)

Vorrichtung zur Erfassung der Kältemitteltemperatur zur Steuerung eines Verdampferventils.

Title (fr)

Dispositif pour le palpage de la température de réfrigérant pour le contrôle d'une soupape d'un évaporateur.

Publication

EP 0354037 B1 19931020 (EN)

Application

EP 89307902 A 19890803

Priority

US 22903888 A 19880804

Abstract (en)

[origin: EP0354037A2] A new method and apparatus are provided for sensing refrigerant temperatures in refrigerator systems, and for the control of refrigerant loading in a plurality of refrigerator evaporator circuit coils (34a,34b) connected in parallel. Such evaporator coils are supplied with refrigerant through a thermostatically controlled flow control valve (30), which is controlled by a sensor (50) to restrict the flow of the liquid refrigerant and ensure a predetermined amount of superheat. The usual minimum superheat is about 5.5 DEG C (10 DEG F) and it is often found that the evaporator coil clearly is underloaded, and in the case of a multi circuit coil evaporator, that many of the circuit coils are underloaded. To avoid this the refrigerant is rendered thoroughly turbulent and mixed, and in the multi-coil evaporator the flows issuing from all of the circuit coils are similarly thoroughly turbulated and mixed, by a turbulating and/or mixing device (48) that intercepts the entire refrigerant flow just before the sensing of the superheat, thus ensuring that the temperature is accurately measured. In the multi-circuit coil system the device averages the temperatures of all the flows, any liquid from circuits with lower heat transfer being broken, mixed with and evaporated by superheated vapour from circuits with higher heat transfer. Different turbulator/mixer devices are described and two or more such devices may be used in flow series. The amount of superheat can now safely be reduced to about 2 DEG C (4 DEG F), the efficiency of the entire system is increased, and close matching between valve size and coil loading is no longer required.

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CPC (source: EP)

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Cited by

CN109186282A; EP3789693A1; DE102011107538A1; FR2836211A1; US8584484B2; US11498686B2; US8769976B2; WO2008151629A1; WO03071202A1; WO2020076333A1; WO9108427A1; WO9108428A1; US10753657B2

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DOCDB simple family (application)

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