Title (en)

METHOD AND SYSTEM FOR AUTOMATIC HYDRAULIC COMPENSATION OF CONSUMERS IN A HEATING AND/OR COOLING INSTALLATION

Title (de)

VERFAHREN UND SYSTEM ZUM AUTOMATISCHEN HYDRAULISCHEN ABGLEICH VON VERBRAUCHERN IN EINER HEIZUNGS- UND/ODER KÜHLANLAGE

Title (fr)

PROCÉDÉ ET SYSTÈME D'ÉQUILIBRAGE HYDRAULIQUE AUTOMATIQUE DE CONSOMMATEURS DANS UNE INSTALLATION DE CHAUFFAGE OU DE RÉFRIGÉRATION

Publication

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Application

EP 16202127 A 20161205

Priority

DE 102015121418 A 20151209

Abstract (en)

[origin: RU2683346C2] FIELD: machine building.SUBSTANCE: invention relates to a method for automatic hydraulic balancing of loads in a heating and/or cooling installation. In the method, a heat transfer medium flows through a heating and/or cooling installation, which is provided with a heat and/or cold generator, several consumers for heating and/or cooling rooms, wherein measured temperature values are recorded in the respective rooms, a computing unit and a circulating pump, as well as several control valves, wherein the cross-section of the flow is changed using a receiving-transmitting unit and a coordinated actuator, wherein using the transmitting device of the receiving-transmitting unit, information or data on the current cross section of the flow is transmitted to the computing unit, in which the calculated values are processed and converted into the preset values, which are transmitted to the receiving device of the receiving-transmitting unit, by means of which the flow cross section is adjusted, moreover, the preset values of the calculated values are adjusted depending on the nature of heating or cooling of individual rooms and/or further indicators in such a way that all consumers receive their own sufficient volume flow. Depending on the temperature difference between the actual temperature value and the calculated temperature value of the rooms, the temperature adjustment of the room is performed by changing the cross section of the flow of the flow adjustment block of the control valves, the pressure difference between the pressure areas in front of the flow adjustment block of the control valve and behind it is kept constant. Further, the nature of heating or cooling of individual rooms is determined by the computing unit by means of measured values of the room temperature and by simultaneously measuring time and comparing with the temperature-time profile stored for each room, wherein the fluid flow through individual consumers is changed by changing the cross section of the flow of the flow adjustment block of the control valves, while the recorded actual temperature value of individual rooms does not coincide with the calculated room temperature value stored in the time profile.EFFECT: this allows automatic hydraulic balancing of the heating and/or cooling installation, which, with varying consumption and correspondingly varying pressure, the system adapts automatically and permanently, largely without any delays and regardless of pressure drops.8 cl, 3 dwg

Abstract (de)

Verfahren zum automatischen hydraulischen Abgleich von Verbrauchern (4) in einer Heizungs- und/oder Kühlanlage (1) zum Zwecke der Vermeidung einer Unter- oder Überversorgung der Verbraucher (4) mit einer den hydraulischen Abgleich überlagernden Raumtemperaturregelung an den Verbrauchern (4) oder für die Verbraucher (4), wobei in den jeweiligen Räumen Raumtemperaturmesswerte aufgenommen werden, wobei eine Recheneinheit (9) vorgesehen wird und mindestens eine Umwälzpumpe (5) in das Rohrleitungssystem (3) eingebaut wird sowie mehrere Regelarmaturen (8) in das Rohrleitungssystem (3) zur Regelung des Flüssigkeitsstromes durch jeweils die einzelnen Verbraucher (4) eingebaut werden, wobei der Durchflussquerschnitt mittels einer elektrischen oder elektronischen Sende- und Empfangseinheit (19) verändert wird, mittels der Sendeeinrichtung der Sende- und Empfangseinheit (19) Daten über den aktuellen Durchflussquerschnitt an die Recheneinheit (9) gesendet, in dieser verarbeitet und in Sollwertvorgabewerte umgewandelt werden, die an die Empfangseinrichtung der Sende- und Empfangseinheit (19) gesendet werden, mittels derer der Durchflussquerschnitt eingestellt wird, wobei die Sollwertvorgabewerte in der Art erfolgen, dass alle Verbraucher (4) ihren bedarfsgerechten Volumenstrom erhalten und die Heizungs- oder Kühlanlage (1) automatisch hydraulisch abgeglichen wird.

IPC 8 full level

F24D 19/10 (2006.01); **G05D 23/19** (2006.01)

CPC (source: EP RU US)

F24F 11/84 (2017.12 - EP RU US); F24D 2220/0264 (2013.01 - EP)

Citation (applicant)

- EP 1936288 B1 20150722 - TECHEM ENERGY SERVICES GMBH [DE]
- DE 102014102275 A1 20150827 - EQ 3 HOLDING GMBH [DE]

Citation (search report)

- [YA] DE 102012002941 A1 20140430 - LE HUU-THOI [DE]
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DOCDB simple family (application)

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