

Title (en)

METHOD FOR LEARNING THE PATTERN OF HOT WATER WITHDRAWALS IN A STORAGE WATER HEATER

Title (de)

VERFAHREN ZUM LERNEN DES PROFILS VON HEISSWASSERZAPFUNGEN IN EINEM WARMWASSERSPEICHER

Title (fr)

PROCÉDÉ D'APPRENTISSAGE DE PROFIL DE PRÉLÈVEMENTS D'EAU DANS UN CHAUFFE-EAU À ACCUMULATION

Publication

**EP 3662210 B1 20210915 (EN)**

Application

**EP 18766325 A 20180724**

Priority

- IT 201700088388 A 20170801
- IB 2018000777 W 20180724

Abstract (en)

[origin: WO2019025850A1] Object of the present invention is a method for learning, value and timing of the physical and thermal characteristics of the hot water drawings profile in a storage water heater, where said profile repeats cyclically at given time intervals and where there are sensors of temperature (S.loc.i) which read local temperatures (T.loc.i) whence it is possible to devise an average local temperature T.loc approximating the average storage temperature (T.acc) only in the absence of turbulence in the storage tank (S). According to the invention, the amount of each water withdrawal or cluster of withdrawals is considered represented by the reduction (AT.tap) of the storage temperature (T.acc) caused by the water withdrawal and is calculated a posteriori, once the withdrawal is terminated at a time t3 during or at the end of a subsequent heating phase triggered by the reduction of the local temperature (T.loc) caused by the withdrawal and is considered equal to the difference between storage temperature (T.acc) a time before the start of withdrawal and the storage temperature (T.acc) at time t3 plus the increase ( $\Delta T$ ) of storage temperature (T.acc) caused by the heating itself. The main advantage of the method of the invention is that the determination of the extent of the withdrawals is not affected by the fact that said local temperatures (T.loc.i), the only ones that can be measured directly, are not generally representative of the temperature (T.acc) average of water in the storage tank.

IPC 8 full level

**F24H 9/20** (2006.01); **F24D 19/10** (2006.01)

CPC (source: EP US)

**F24D 19/1063** (2013.01 - EP US); **F24H 9/2007** (2013.01 - EP US); **F24H 9/2021** (2013.01 - EP US); **F24H 15/148** (2022.01 - EP US); **F24H 15/156** (2022.01 - EP US); **F24H 15/215** (2022.01 - EP US); **F24H 15/269** (2022.01 - EP US); **F24H 15/355** (2022.01 - EP US); **F24H 15/414** (2022.01 - EP US); **F24H 15/395** (2022.01 - EP US)

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

DOCDB simple family (publication)

**WO 2019025850 A1 20190207**; EP 3662210 A1 20200610; EP 3662210 B1 20210915; ES 2901106 T3 20220321; IT 201700088388 A1 20190201; PL 3662210 T3 20220131

DOCDB simple family (application)

**IB 2018000777 W 20180724**; EP 18766325 A 20180724; ES 18766325 T 20180724; IT 201700088388 A 20170801; PL 18766325 T 20180724