

Title (en)
FLOW THROUGH HEATERS

Title (de)
DURCHLAUFERHITZER

Title (fr)
CHAUFFAGES À ÉCOULEMENT TRAVERSANT

Publication
EP 3886534 A1 20210929 (EN)

Application
EP 21161979 A 20210311

Priority
GB 202004273 A 20200324

Abstract (en)
A flow-through heater comprises a thick film heating element and a channel plate attached to the thick film heating element to form a fluid channel therebetween. The fluid channel may have a rectangular or square, planar spiral form. A PCB may be connected to the heating element by one or more connectors, each having a first end connected directly to the PCB, and a second end comprising a spring making electrical contact with the thick film heating element. An electronic device or component for switching or controlling the supply of current to the heating element may be mounted adjacent an inlet of the fluid channel, for cooling. An electronic device or component may be mounted directly on the thick film heating element. A terminal suitable for an earth connection may be integrally formed with the channel plate and may be bent out of the plane of the channel plate, or may be integrally formed with the thick film heating element.

IPC 8 full level
F24H 1/10 (2006.01); **H05B 3/22** (2006.01)

CPC (source: EP GB)
F24H 1/102 (2013.01 - GB); **F24H 1/105** (2013.01 - EP); **H05B 3/20** (2013.01 - GB); **H05B 3/22** (2013.01 - EP); **F24H 2250/02** (2013.01 - EP); **F24H 2250/04** (2013.01 - EP); **H05B 2203/013** (2013.01 - EP); **H05B 2203/021** (2013.01 - EP)

Citation (applicant)
• GB 2481265 A 20111221 - OTTER CONTROLS LTD [GB]
• EP 1828068 A1 20070905 - FERRO TECHNIEK HOLDING BV [NL]
• WO 2008150171 A1 20081211 - OTTER CONTROLS LTD [GB], et al

Citation (search report)
• [XY] GB 2305233 A 19970402 - WELWYN COMPONENTS LTD [GB]
• [X] DE 19732414 A1 19990204 - SUHL ELEKTRO & HAUSGERAETEWERK [DE]
• [X] CN 201779861 U 20110330 - CHANGJUN YING
• [IDY] GB 2481265 A 20111221 - OTTER CONTROLS LTD [GB]
• [Y] GB 2315925 A 19980211 - STRIX LTD [GB]
• [A] WO 0156440 A2 20010809 - STRIX LTD [GB], et al

Citation (third parties)
Third party : Anonymous
KR 20120132374 A 20121205

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

Designated extension state (EPC)
BA ME

DOCDB simple family (publication)
EP 3886534 A1 20210929; CN 215372923 U 20211231; CN 215383237 U 20220104; CN 215412491 U 20220104; GB 202004273 D0 20200506; GB 2595630 A 20211208; GB 2595630 B 20220615

DOCDB simple family (application)
EP 21161979 A 20210311; CN 202120594487 U 20210323; CN 202120602292 U 20210323; CN 202120602377 U 20210323; GB 202004273 A 20200324