

Title (en)

IN-LINE FLUID HEATER

Title (de)

INLINE-FLÜSSIGKEITSERHITZER

Title (fr)

APPAREIL DE CHAUFFAGE DE FLUIDE EN LIGNE

Publication

**EP 3601898 A1 20200205 (EN)**

Application

**EP 18716350 A 20180321**

Priority

- US 201715467567 A 20170323
- IB 2018051897 W 20180321

Abstract (en)

[origin: US2018274817A1] An inline fluid heater is disclosed, comprising: an inlet operable to receive a fluid to be heated; a substrate defining at least one conduit fluidly coupled with the inlet to receive the fluid; a positive thermal coefficient heater thermally coupled with the substrate and operable to heat the substrate to provide a heated fluid by heating the fluid within the at least one conduit; and an outlet fluidly coupled with the at least one conduit and operable to provide the heated fluid. In this way, a compact, cost-effective and efficient heater is provided which avoids the need for safety devices or safety circuits, as the positive thermal co-efficient heaters are self-limiting.

IPC 8 full level

**F24H 1/12** (2006.01); **H05B 3/20** (2006.01)

CPC (source: EP GB KR US)

**F24H 1/101** (2013.01 - GB); **F24H 1/102** (2013.01 - GB); **F24H 1/103** (2013.01 - KR US); **F24H 1/105** (2013.01 - GB);  
**F24H 1/121** (2013.01 - EP KR US); **F24H 9/2028** (2013.01 - EP GB KR US); **H05B 3/0014** (2013.01 - GB); **H05B 3/20** (2013.01 - EP GB KR US);  
**F24H 2250/04** (2013.01 - EP KR US); **H05B 2203/02** (2013.01 - EP KR US); **H05B 2203/021** (2013.01 - EP KR US)

Citation (search report)

See references of WO 2018172954A1

Designated contracting state (EPC)

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Designated extension state (EPC)

BA ME

DOCDB simple family (publication)

**US 2018274817 A1 20180927**; CN 211552023 U 20200922; EP 3601898 A1 20200205; GB 201705946 D0 20170531; GB 2561016 A 20181003;  
KR 20190002838 U 20191113; TW 201901098 A 20190101; TW I762604 B 20220501; WO 2018172954 A1 20180927

DOCDB simple family (application)

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