

Title (en)

METHOD FOR PRESSURE AND TEMPERATURE CONTROL OF A FLUID IN A SERIES OF CRYOGENIC COMPRESSORS

Title (de)

VERFAHREN ZUR DRUCK- UND TEMPERATURREGUNG EINES FLUIDS IN EINER SERIE VON KRYOGENEN VERDICHTERN

Title (fr)

PROCÉDÉ DE COMMANDE DE LA PRESSION ET LA TEMPÉRATURE D'UN FLUIDE DANS UNE SÉRIE DE COMPRESSEURS CRYOGENIQUES

Publication

**EP 3167197 B1 20181017 (DE)**

Application

**EP 15733630 A 20150702**

Priority

- DE 102014010102 A 20140708
- EP 2015001341 W 20150702

Abstract (en)

[origin: WO2016005037A1] Method for controlling the pressure and temperature of a fluid, in particular helium, in a series of cryogenic compressors, comprising the steps of: detecting an actual rotational speed for each compressor (V1, V2, V3, V4), detecting an actual inlet pressure (pist), and also an actual inlet temperature (Tist) at the entry of the furthest-upstream first compressor (V1) of the series, providing a maximum speed (ni, max) for each compressor (V1, V2, V3, V4) of the series, and also a setpoint inlet pressure (psoll) for the first compressor (V1) of the series, determining a speed index (Di) for each compressor (V1, V2, V3, V4) from the maximum speed (ni, max) and the actual speed (ni) of each compressor (V1, V2, V3, V4), determining a proportional value (prop) from the deviation of the actual inlet pressure from the setpoint inlet pressure (pist, psoll), determining a priority value (PW) from the smaller of the two values; proportional value (prop) and the smallest speed index (Di) of all the compressors (V1, V2, V3, V4) of the series, ascertaining a setpoint entry temperature (Tsoll) for the first compressor (V1) of the series and a setpoint speed (n1 soll, n2 soll, n3 soll, n4 soll) for each compressor (V1, V2, V3, V4) from the priority value, determining the actual inlet temperature (Tist) of the first compressor (V1), to the ascertained setpoint inlet temperature (Tsoll), determining the actual speed (ni) for each compressor (V1, V2, V3, V4) to the ascertained setpoint speed (n1 soll, n2 soll, n3 soll, n4 soll).

IPC 8 full level

**F04D 17/12** (2006.01); **F04D 19/02** (2006.01); **F04D 23/00** (2006.01); **F04D 25/00** (2006.01); **F04D 27/02** (2006.01); **F25B 1/10** (2006.01); **F25B 49/02** (2006.01); **F04D 27/00** (2006.01)

CPC (source: CN EP KR US)

**F04D 17/12** (2013.01 - CN EP KR US); **F04D 19/02** (2013.01 - CN EP KR US); **F04D 23/001** (2013.01 - CN EP KR US); **F04D 23/003** (2013.01 - US); **F04D 23/005** (2013.01 - US); **F04D 25/00** (2013.01 - CN EP US); **F04D 25/16** (2013.01 - KR); **F04D 27/001** (2013.01 - EP US); **F04D 27/004** (2013.01 - US); **F04D 27/006** (2013.01 - US); **F04D 27/0261** (2013.01 - CN EP KR US); **F04D 27/0276** (2013.01 - CN EP KR US); **F25B 1/10** (2013.01 - CN EP KR US); **F25B 9/002** (2013.01 - US); **F25B 49/022** (2013.01 - CN EP KR US); **F25B 2500/26** (2013.01 - US); **F25B 2500/27** (2013.01 - US); **F25B 2600/025** (2013.01 - CN EP KR US); **F25B 2600/0253** (2013.01 - US); **F25B 2700/171** (2013.01 - CN EP KR US); **F25B 2700/1933** (2013.01 - CN EP KR US); **F25B 2700/21151** (2013.01 - CN 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 2016005037 A1 20160114**; CN 106662112 A 20170510; CN 106662112 B 20190115; DE 102014010102 A1 20160114; EP 3167197 A1 20170517; EP 3167197 B1 20181017; JP 2017524101 A 20170824; JP 6654190 B2 20200226; KR 102437553 B1 20220826; KR 20170055470 A 20170519; US 10215183 B2 20190226; US 2017159666 A1 20170608

DOCDB simple family (application)

**EP 2015001341 W 20150702**; CN 201580036855 A 20150702; DE 102014010102 A 20140708; EP 15733630 A 20150702; JP 2017521291 A 20150702; KR 20177003202 A 20150702; US 201515323444 A 20150702