

Title (en)

SYSTEM FOR CRYOGENIC COOLING FOR CONSUMER COOLING WITH TEMPORALLY VARIABLE LOAD

Title (de)

TIEFKÜHLSYSTEM ZUR KÜHLUNG EINES VERBRAUCHERS MIT ZEITLICHER WECHSELENDER LAST

Title (fr)

SYSTEME CRYOGENIQUE POUR LE REFROIDISSEMENT D'UN CONSOMMATEUR PRESENTANT UNE CHARGE THERMIQUE VARIABLE DANS LE TEMPS

Publication

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Application

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Abstract (en)

[origin: WO2010109091A1] The invention relates to a cryogenic system for cooling a consumer having a time-variable heat load, such as a superconducting magnet, including: a cold box in thermal contact with the consumer, supplied with heat transfer gas compressed by a feed line, and connected to a delivery line for discharging said gas at a lower pressure; and an assembly for adjusting the pressures in the feed and delivery lines, comprising a plurality of controlled valves (CV1, CV2, CV3) and a controller (MC) for controlling the opening of said valves. The invention is characterized in that the controller is a multivariable controller for generating signals (SCS 1, SCS 2, SCS 3) for controlling the opening of said valves according to measured values (PHP, PBP) and set values (P0 HP, P0 BP) for the pressures in the feed and delivery lines on the basis of a mathematical model of the system that factors in a coupling between the pressure values in the feed and delivery lines by means of the above-mentioned cold box.

IPC 8 full level

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