

Practical thermal management

Case related tool

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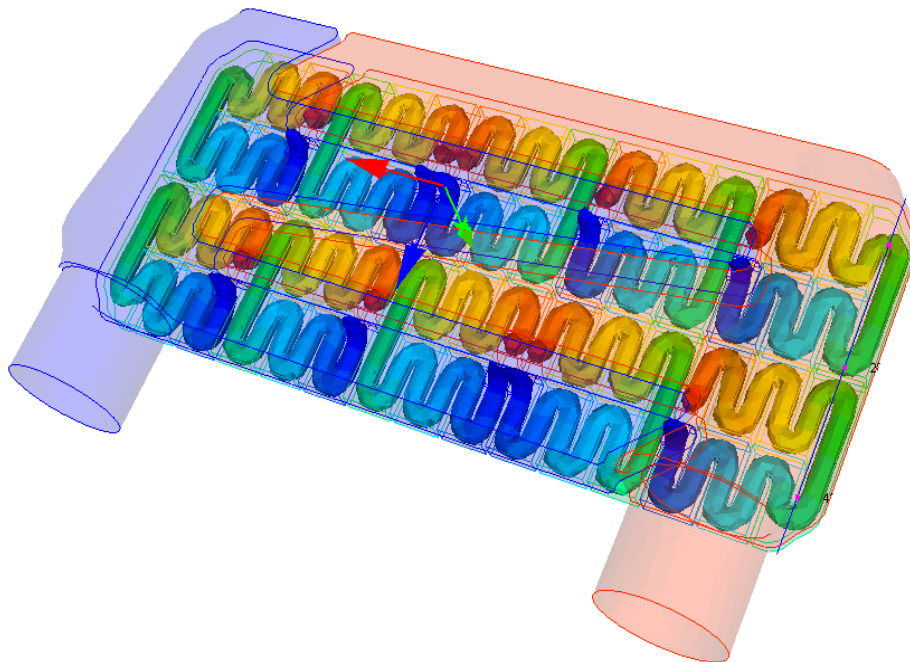
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	Pressure drop calculation – excel file	
	ppviewer.exe	
	Readme.txt	

1. Abstract

The purpose of this report is to follow up on SPM-124: “Thermal management of mechatronics – Handbook of cooling methods” (Danish title: “Termisk design af mekatroniske apparater – Håndbog i kølemetoder”). After the issue of SPM-124 in 1995 we have seen numerous examples of designers needing practical examples in order to employ the methods of the report in their practical thermal management. This report is a case related tool describing 6 cases of thermal design, which is intended to fill this gap.

The 6 cases are based on thermal management of real products to be developed and used in the field. The cases cover a broad range of products, applications and thermal management issues:

1. Heat conduction – High Power Unit (HPU) (1 kW), Glunz & Jensen A/S
2. Heat conduction - Circulation pump, Grundfos A/S
3. Forced convection - 19” Encoder, Scientific-Atlanta Denmark A/S
4. Fan noise, DELTA and Danfoss Drives A/S
5. Radiation - Cryosat Star Tracker, Terma A/S
6. Liquid cooling - ShowerPowerTM cooling concept, Danfoss Drives A/S

This report comes with a CD containing spreadsheets used for the calculations as well as acoustic noise measurements thus allowing the readers to perform calculations on their own thermal issues.