Documentation

Matlab Codes

HexSeries.mat

1. Function name:

HexSeries.mat

2. Model description:

HexSeries.mat is a matlab function developed to evaluate the effective heat transfer in two heat exchangers in series (based on the supply conditions only).

3. Model inputs:

The model inputs are the following ones:

- fluid_h: name of the hot fluid
- P_h_su (Pa), inlet pressure of the hot fluid
- in_h_su (K or J/kg), inlet temperature or enthalpy of the hot fluid
- m_dot_h (kg/s), mass flow rate of the hot fluid
- fluid_c, name of the cold fluid
- P_c_su (Pa), inlet pressure of the cold fluid
- in_c_su (K or J/kg), inlet temperature or enthalpy of the cold fluid
- m_dot_c (kg/s), mass flow rate of the cold fluid
- in_hex_1: structure variable containing the model parameters for HEX1
- in_hex_2: structure variable containing the model parameters for HEX2

It is really important to note that the model can handle both types of inlet conditions: either a supply enthalpy or a supply temperature. By default, it is assumed that the fluid is incompressible if the temperature is provided as input (liquid phase only). It is highly recommended to provide the enthalpy as input for improving the simulation speed.

4. Model parameters:

The parameters required to run the heat exchanger models are all provided through the variable 'in_hex_1' and 'in_hex_2'. Please refer to the documentation of 'HexModel.mat' for further information.

5. Model outputs:

The outputs are summarized in a single structure variable, namely *out*, which contains all the results of the two HEX models. Please refer to the documentation of 'HexModel.mat' for further information.

6. External function requirements:

The user must install CoolProp (http://www.coolprop.org/) to run HexSeries.mat.

7. Matlab version:

This code has been developed under Matlab R2015a

8. Contact:

For any further information, please contact one of the main developers of ORCmKit:

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