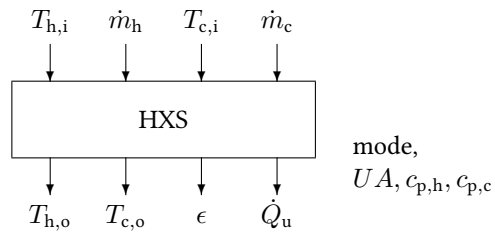


Block HXS

The HXS block simulates a simple sensible heat exchanger.



Name	HXS
Function	st0015
Inputs	4
Outputs	4
Parameters	4
Strings	0
Group	S

Inputs

- 1 Temperature $T_{h,i} / ^\circ\text{C}$
- 2 Mass flow $\dot{m}_1 / \text{kg s}^{-1}$
- 3 Temperature $T_{c,i} / ^\circ\text{C}$
- 4 Mass flow $\dot{m}_2 / \text{kg s}^{-1}$

Outputs

- 1 Temperature $T_{h,o} / ^\circ\text{C}$
- 2 Temperature $T_{c,o} / ^\circ\text{C}$
- 3 Effectiveness ϵ
- 4 Transferred heat $\dot{Q}_u / \text{W}$

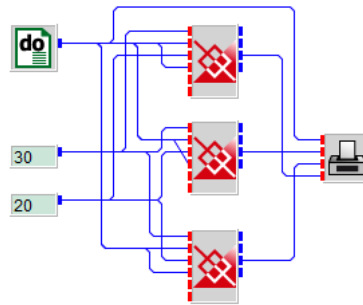
Parameters

- 1 Mode
 - 0 Parallel flow
 - 1 Counter flow
 - 2 Cross flow
- 2 Overall heat transfer coefficient $UA / \text{W K}^{-1}$
- 3 Specific heat of side 1 fluid $c_{p,h} / \text{J kg}^{-1} \text{K}^{-1}$
- 4 Specific heat of side 2 fluid $c_{p,c} / \text{J kg}^{-1} \text{K}^{-1}$

Strings

None

hxs.vseit



All three types of a simple heat exchangers are simulated: (i) parallel flow – upper one, (ii) counter flow – middle one, and (iii) cross flow – lower one. In all three cases the overall heat transfer coefficient is 5000 W K^{-1} , and both specific heat values of the fluid are set to $1007 \text{ J kg}^{-1} \text{ K}^{-1}$ (air).

The inlet temperatures are set to 20 and 30 °C, respectively, defined by two **CONST** blocks.

A **DO** block varies the mass flow between 0.01 and 10 kg/s and a **PLOT** block is used to display the three different effectivenesses of the heat exchangers.

