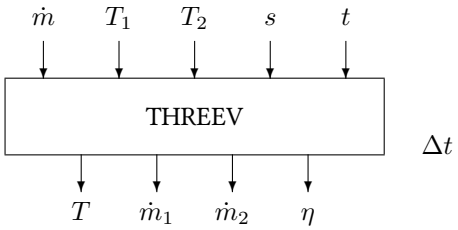
Block THREEV

The THREEV block simulates a three way mixing valve including the valve dynamics.





Name	THREEV
Function	st0041
Inputs	5
Outputs	4
Parameters	1
Strings	0
Group	S

Inputs

1	Total mass flow rate / kg s^{-1}
2	Temperature of source 1 / °C
3	Temperature of source 2 / °C
4	Control signal (0–100 %) (1...-1)
5	Time / s

Outputs

1	Mixed temperature / °C
2	Mass flow medium 1 / kg s^{-1}
3	Mass flow medium 2 / kg s^{-1}
4	Valve position / %

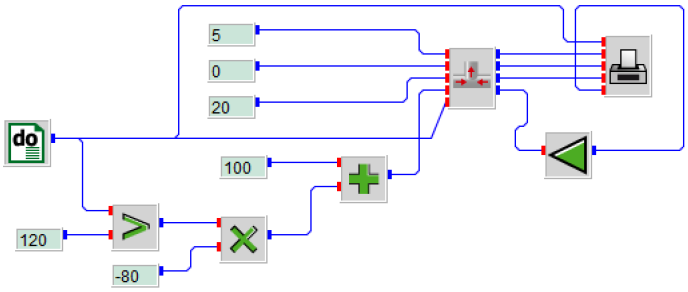
Parameters

1	Time to fully open valve (0–100%) / s

Strings

None

threev.vseit



A three-way valve is supplied with media at temperatures of zero and twenty degrees. A total massflow of 5 kg/s shall be achieved. The dynamic opening time of the valve is set to 120 seconds, i. e., two minutes.

A DO block provides the time (240 seconds). At the beginning the valve gets a control signal of 100 percent. After two minutes this signal is restricted to 20 percent through the logics of the GT block.

A PLOT block is used to show what happens. The magenta curve shows the normalized control signal. The red signal is the achieved mix temperature.

