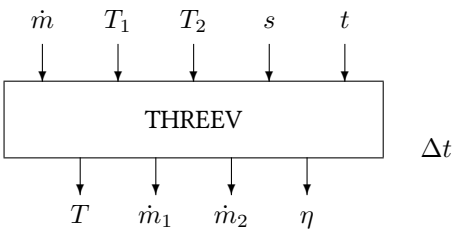


Block THREEV

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 /  $\text{kg s}^{-1}$
- 2 Temperature of source 1 /  $^{\circ}\text{C}$
- 3 Temperature of source 2 /  $^{\circ}\text{C}$
- 4 Control signal (0–100 %) (1...-1)
- 5 Time / s

Outputs

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

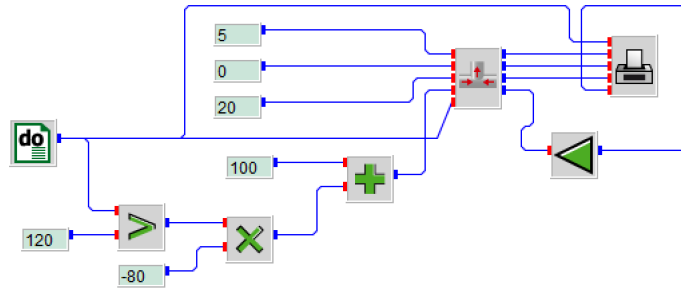
Parameters

- 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.

