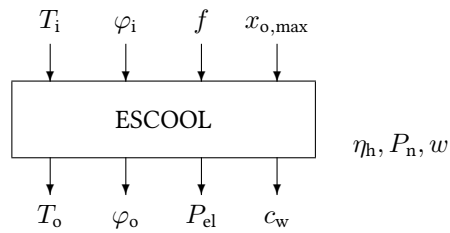


Block ESCOOL

The ESCOOL block simulates an evaporative spray humidifier.



Name	ESCOOL
Function	st0035
Inputs	4
Outputs	4
Parameters	3
Strings	0
Group	S

Inputs

- 1 Temperature T_i / °C
- 2 Relative humidity φ_i
- 3 Control input f (0...100 %)
- 4 Maximum absolute humidity $x_{o,max}$ / g kg⁻¹

Outputs

- 1 Outlet temperature T_o / °C
- 2 Relative outlet humidity φ_o
- 3 Electricity consumption P_{el}
- 4 Water consumption c_w / g kg⁻¹

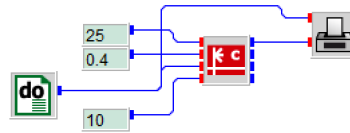
Parameters

- 1 Humidification maximum efficiency η_h
- 2 Nominal electricity consumption P_n / W
- 3 Water consumption factor w

Strings

None

escool.vseit



A continuously drivable spray humidifier with a humidification efficiency of 0.9 and a nominal electricity consumption of 10 W is simulated by the **ESCOOL** block. The water consumption factor is set to 1.

The control signal is varied by a **DO** block between 0 and 1 in steps of 0.1. The outlet temperature is plotted as a function of the control signal by a **PLOT** block.

The other inputs of the **ESCOOL** block are defined through **CONST** blocks to for an ambient temperature of 25 degrees Celsius at a relative humidity of the inlet air of 40 percent. The maximum absolute humidity is restricted to 10 kg water per kg air.

