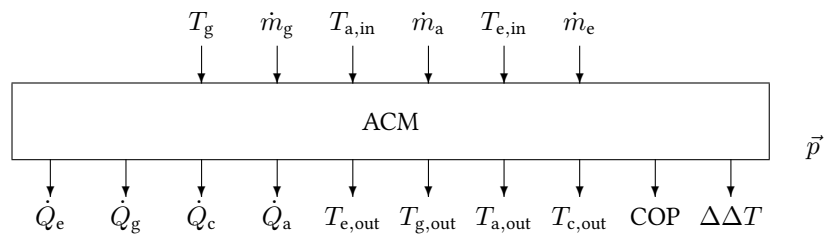


Block ACM

The ACM block simulates the absorption cycle process of a single- stage, indirectly heated absorption cooling machine with the refrigerant water and the solvent lithium bromide.



Name	ACM
Function	st0026
Inputs	6
Outputs	10
Parameters	15
Strings	0
Group	3

Inputs

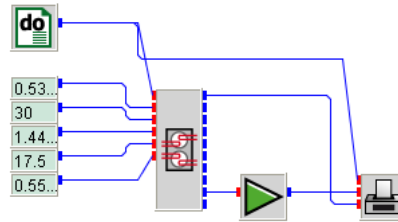
- 1 External generator inlet temperature $T_{g,in} / ^\circ\text{C}$
- 2 External massflow heating circuit $\dot{m}_{g,in} / \text{kg s}^{-1}$
- 3 External absorber inlet temperature $T_{a,in} / ^\circ\text{C}$
- 4 External massflow cooling circuit at absorber/condenser $\dot{m}_{a,in} / \text{kg s}^{-1}$
- 5 External evaporator inlet temperature $T_{e,in} / ^\circ\text{C}$
- 6 External massflow cooling circuit $\dot{m}_{e,in} / \text{kg s}^{-1}$

Outputs

- 1 Refrigerating capacity of the evaporator $\dot{Q}_e / \text{kW}$
- 2 Heating capacity of the generator $\dot{Q}_g / \text{kW}$
- 3 Cooling capacity of the condenser $\dot{Q}_c / \text{kW}$
- 4 Cooling capacity of the absorber $\dot{Q}_a / \text{kW}$
- 5 Outlet temperature cooling circuit $T_{e,out} / ^\circ\text{C}$
- 6 Outlet temperature heating circuit $T_{g,out} / ^\circ\text{C}$
- 7 Outlet temperature cooling circuit absorber $T_{a,out} / ^\circ\text{C}$
- 8 Outlet temperature cooling circuit condenser $T_{c,out} / ^\circ\text{C}$
- 9 Coefficient of performance COP

	10	Characteristic double temperature difference $\Delta\Delta T$ / K
Parameters		
	1	Initial internal generator mean temperature $T_{g,0}$ / °C
	2	Initial internal condenser mean temperature $T_{c,0}$ / °C
	3	Initial internal absorber mean temperature $T_{a,0}$ / °C
	4	Initial internal evaporator mean temperature $T_{e,0}$ / °C
	5	Characteristic number for the generator heat transfer $(UA)_g$ / kW K ⁻¹
	6	Characteristic number for the condenser heat transfer $(UA)_c$ / kW K ⁻¹
	7	Characteristic number for the absorber heat transfer $(UA)_a$ / kW K ⁻¹
	8	Characteristic number for the evaporator heat transfer $(UA)_e$ / kW K ⁻¹
	9	Rich solution mass flow $\dot{m}_r$ / kg s ⁻¹
	10	Solution heat exchanger efficiency η_s
	11	Heat capacity external heating fluid $c_{p,g}$ / kJ kg ⁻¹ K ⁻¹
	12	Heat capacity external cooling fluid $c_{p,a}$ / kJ kg ⁻¹ K ⁻¹
	13	Heat capacity external cooling circle fluid $c_{p,e}$ / kJ kg ⁻¹ K ⁻¹
	14	Dühring-Parameter B
	15	Cooling capacity under design conditions $\dot{Q}_n$ / kW
Strings		None

acm.vseit



A **DO** blocks varies the external generator inlet temperature of an absorption cooling machine between 56 and 96 °C in steps of 2 °C. All other inputs of the **ACM** block are set constant through five **CONST** blocks. The coefficient of performance of the ACM is multiplied by a factor 100, i. e., converted into percent by a **GAIN** block.

The COP together with the refrigeration capacity of the ACM is displayed by a **PLOT** block.

