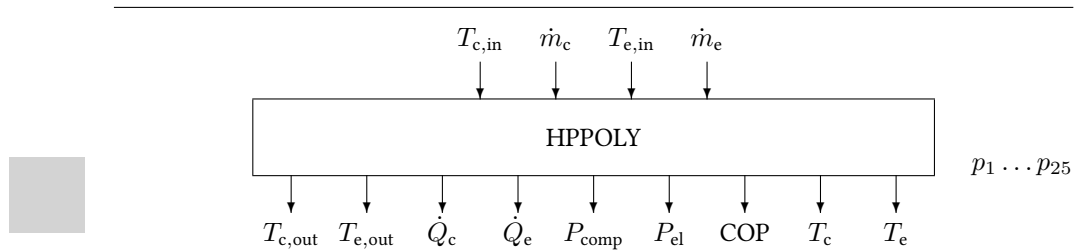


Block HPPOLY

The HPPOLY block simulates a compression heat pump by using the polynomial functions that describe the compressor performance according to EN12900.



Name	HPPOLY
Function	se0035
Inputs	4
Outputs	9
Parameters	25
Strings	0
Group	S

Inputs

- 1 Fluid inlet temperature at condenser side $T_{c,in} / ^\circ\text{C}$
- 2 Fluid mass flow rate in the condenser $\dot{m}_c / \text{kg s}^{-1}$
- 3 Fluid inlet temperature at evaporator side $T_{e,in} / ^\circ\text{C}$
- 4 Fluid mass flow rate in the evaporator $\dot{m}_e / \text{kg s}^{-1}$

Parameters

- 1 Number of compressors N_c
- 2 Specific heat capacity of fluid at evaporator side $c_{p,e} / \text{kJ kg}^{-1} \text{K}^{-1}$
- 3 Specific heat capacity of fluid at condenser side $c_{p,c} / \text{kJ kg}^{-1} \text{K}^{-1}$
- 4 UA value of HX at evaporator side $UA_e / \text{kW K}^{-1}$
- 5 UA value of HX at condenser side $UA_c / \text{kW K}^{-1}$
- 6 Polynomial coefficient for cooling capacity c_1
- 7 Polynomial coefficient for cooling capacity c_2
- 8 Polynomial coefficient for cooling capacity c_3
- 9 Polynomial coefficient for cooling capacity c_4
- 10 Polynomial coefficient for cooling capacity c_5
- 11 Polynomial coefficient for cooling capacity c_6
- 12 Polynomial coefficient for cooling capacity c_7

	13	Polynomial coefficient for cooling capacity c_8
	14	Polynomial coefficient for cooling capacity c_9
	15	Polynomial coefficient for cooling capacity c_{10}
	16	Polynomial coefficient for electricity consumption d_1
	17	Polynomial coefficient for electricity consumption d_2
	18	Polynomial coefficient for electricity consumption d_3
	19	Polynomial coefficient for electricity consumption d_4
	20	Polynomial coefficient for electricity consumption d_5
	21	Polynomial coefficient for electricity consumption d_6
	22	Polynomial coefficient for electricity consumption d_7
	23	Polynomial coefficient for electricity consumption d_8
	24	Polynomial coefficient for electricity consumption d_9
	25	Polynomial coefficient for electricity consumption d_{10}
Outputs		
	1	Outlet fluid temperature at condenser side $T_{c,out} / ^\circ\text{C}$
	2	Outlet fluid temperature at evaporator side $T_{e,out} / ^\circ\text{C}$
	3	Power dissipated at condenser $\dot{Q}_c / \text{kW}$
	4	Power absorbed at evaporator $\dot{Q}_e / \text{kW}$
	5	Electrical power consumed by the compressor P_{el} / kW
	6	COP of the heat pump in heating mode COP_h
	7	COP of the heat pump in cooling mode COP_h
	8	Condenser temperature $T_c / ^\circ\text{C}$
	9	Evaporator temperature $T_e / ^\circ\text{C}$
Strings		
		None
Description	hppoly.des	