INSTITUT FÜR SOLARTECHNIK

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Comparison between python fit and Type977 predictions for heat pump SIN-8TU

Parametric Heat Pump calculation

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Table 1: Fitted coefficients for the heat pump.

Coefficient	Description	$[kW]$
P_{Q_1}	1^{st} *condenser polynomial coefficient*	7.0833e+00
P_{Q_2}	2^{st} *condenser polynomial coefficient*	7.6775e+01
P_{Q_3}	3^{st} *condenser polynomial coefficient*	2.3902e+01
P_{Q_4}	4^{st} *condenser polynomial coefficient*	-9.7041e+01
P_{Q_5}	5^{st} *condenser polynomial coefficient*	-1.5929e+01
P_{Q_6}	6^{st} *condenser polynomial coefficient*	-1.1814e+02
P_{COP_1}	1^{st} *COP polynomial coefficient*	6.8119e+00
P_{COP_2}	2^{st} *COP polynomial coefficient*	7.7473e+01
P_{COP_3}	3^{st} *COP polynomial coefficient*	-8.0631e+00
P_{COP_4}	4^{st} *COP polynomial coefficient*	-3.1931e+02
P_{COP_5}	5^{st} *COP polynomial coefficient*	-2.1597e+00
P_{COP_6}	6^{st} *COP polynomial coefficient*	-6.5328e+01
$\dot{m}_{cond}$	1400.00 $[kg/h]$	
$\dot{m}_{evap}$	4200.00 $[kg/h]$	
RMS_{COP}	$5.20e-02$	
$RMS_{Q_{cond}}$	$1.69e-02$	
$RMS_{W_{comp}}$	$2.62e-02$	
Fit model	Average Temperature	

Table 2: Differences between python fit and Trnsys predicitons. Number of anaylzed data points :19

Type	error-COP_{error} [-]	error-W_{comp} [W]	error-Q_{cond} [W]
Sum	0.0002	0.0440	0.2606
Avg	0.0000	0.0023	0.0137
Max	0.0000	0.0060	0.0221