INSTITUT FÜR SOLARTECHNIK

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Comparison between python fit and Type977 predictions for heat pump $\mathbf{LA}_1 2TU$

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*	1.7610e+01
P_{Q_2}	2^{st} *condenser polynomial coefficient*	1.8878e+02
P_{Q_3}	3^{st} *condenser polynomial coefficient*	-1.1246e+02
P_{Q_4}	4^{st} *condenser polynomial coefficient*	-3.8031e+02
P_{Q_5}	5^{st} *condenser polynomial coefficient*	-7.6874e+02
P_{Q_6}	6^{st} *condenser polynomial coefficient*	3.4764e+02
P_{COP_1}	1^{st} *COP polynomial coefficient*	-2.8874e+00
P_{COP_2}	2^{st} *COP polynomial coefficient*	5.0360e+01
P_{COP_3}	3^{st} *COP polynomial coefficient*	1.1045e+02
P_{COP_4}	4^{st} *COP polynomial coefficient*	-1.0530e+02
P_{COP_5}	5^{st} *COP polynomial coefficient*	-1.3776e+02
P_{COP_6}	6^{st} *COP polynomial coefficient*	-4.6494e+02
$\dot{m}_{cond}$	1820.00 $[kg/h]$	
$\dot{m}_{evap}$	5300.89 $[kg/h]$	
COP_{nom} (A0W35)	3.31	
$Q_{cond,nom}$ (A0W35)	7.77 $[kW]$	
$Q_{evap,nom}$ (A0W35)	5.43 $[kW]$	
$W_{comp,nom}$ (A0W35)	2.35 $[kW]$	
RMS_{COP}	$8.22e-02$	
$RMS_{Q_{cond}}$	$4.94e-01$	
$RMS_{W_{comp}}$	$1.62e-01$	
Fit model	Average Temperature	

Table 2: Differences between python fit and Trnsys predicitons. Number of anaylzed data points :15

Type	error-COP_{error} [-]	error-W_{comp} [W]	error-Q_{cond} [W]
Sum	2.1093	567.6698	6919.0170
Avg	0.1406	37.8447	461.2678
Max	0.1915	68.7223	652.1746