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Accuracies of Calculated Variables

±dv	[g/m³]	Accuracies of absolute humidity							p [mbar]		1013
%RH	10	20	30	40	50	60	70	80	90	95	100
-40	0.004	0.004	0.005	0.005	0.005	0.006	0.006	0.006	0.007	0.007	0.007
-30	0.010	0.011	0.012	0.013	0.013	0.014	0.015	0.016	0.017	0.017	0.017
-20	0.024	0.026	0.027	0.029	0.031	0.033	0.035	0.036	0.038	0.039	0.039
-10	0.052	0.055	0.059	0.063	0.066	0.070	0.073	0.077	0.080	0.08	0.08
0	0.11	0.11	0.12	0.13	0.13	0.14	0.15	0.15	0.16	0.16	0.16
10	0.20	0.21	0.23	0.24	0.25	0.26	0.27	0.29	0.30	0.30	0.30
20	0.37	0.39	0.41	0.43	0.45	0.47	0.49	0.51	0.53	0.54	0.54
30	0.65	0.68	0.71	0.75	0.78	0.81	0.85	0.88	0.91	0.93	0.93
40	1.09	1.14	1.19	1.24	1.29	1.35	1.40	1.45	1.50	1.53	1.53
50	1.76	1.84	1.91	1.99	2.07	2.15	2.23	2.30	2.38	2.42	2.43
60	2.75	2.86	2.97	3.09	3.20	3.31	3.43	3.54	3.65	3.71	3.71
70	4.16	4.32	4.48	4.64	4.80	4.96	5.12	5.28	5.44	5.52	
80	6.12	6.34	6.56	6.78	7.00	7.22	7.44	7.66	7.88		
90	8.76	9.06	9.35	9.65	9.94	10.24	10.53	10.83			
100	12.25	12.64	13.03	13.42	13.81	14.20	14.59	14.98			
110	16.82	17.33	17.83	18.33	18.84	19.34	19.85				
120	22.67	23.31	23.95	24.59	25.23						
130	30.02	30.82	31.62								
140	39.12	40.10									
150	50.22	51.41									
160	63.60										

±e	[mbar]	Accuracies of water vapour pressure									
%RH	10	20	30	40	50	60	70	80	90	95	100
-40	0.004	0.005	0.005	0.006	0.006	0.006	0.007	0.007	0.008	0.008	0.01
-30	0.011	0.012	0.013	0.014	0.015	0.016	0.017	0.018	0.019	0.020	0.020
-20	0.028	0.030	0.032	0.035	0.037	0.039	0.041	0.043	0.046	0.047	0.046
-10	0.063	0.068	0.072	0.077	0.081	0.086	0.091	0.095	0.100	0.102	0.102
0	0.13	0.14	0.15	0.16	0.17	0.18	0.19	0.20	0.21	0.21	0.21
10	0.27	0.28	0.30	0.32	0.33	0.35	0.37	0.38	0.40	0.41	0.41
20	0.50	0.53	0.56	0.59	0.62	0.65	0.68	0.71	0.74	0.75	0.75
30	0.91	0.96	1.01	1.06	1.11	1.16	1.20	1.25	1.30	1.33	1.33
40	1.58	1.66	1.74	1.82	1.89	1.97	2.05	2.13	2.21	2.25	2.25
50	2.63	2.76	2.88	3.00	3.13	3.25	3.38	3.50	3.62	3.69	3.69
60	4.24	4.42	4.61	4.80	4.98	5.17	5.36	5.54	5.73	5.82	5.83
70	6.60	6.88	7.15	7.42	7.69	7.97	8.24	8.51	8.78	8.92	
80	10.00	10.39	10.77	11.16	11.55	11.93	12.32	12.71	13.09		
90	14.73	15.27	15.80	16.33	16.87	17.40	17.93	18.47			
100	21.16	21.88	22.61	23.33	24.06	24.79	25.51	26.24			
110	29.84	30.81	31.77	32.74	33.70	34.67	35.64				
120	41.26	42.52	43.78	45.05	46.31						
130	56.02	57.64	59.26								
140	74.80	76.85									
150	98.35	100.9									
160	127.5										

±Td	[degC]	Accuracies of dew point temperature									
%RH	10	20	30	40	50	60	70	80	90	95	100
-40	1.89	1.04	0.77	0.64	0.55	0.50	0.46	0.43	0.41	0.40	0.39
-30	2.04	1.12	0.83	0.68	0.59	0.53	0.49	0.46	0.43	0.42	0.41
-20	2.20	1.21	0.88	0.72	0.63	0.56	0.52	0.48	0.46	0.44	0.43
-10	2.37	1.29	0.94	0.77	0.66	0.60	0.55	0.51	0.48	0.47	0.46
0	2.53	1.38	1.01	0.82	0.70	0.63	0.58	0.53	0.50	0.49	0.48
10	2.71	1.47	1.07	0.87	0.75	0.66	0.61	0.56	0.53	0.51	0.50
20	2.89	1.57	1.14	0.92	0.79	0.70	0.64	0.59	0.55	0.54	0.53
30	3.07	1.66	1.20	0.97	0.83	0.74	0.67	0.62	0.58	0.57	0.55
40	3.25	1.76	1.27	1.03	0.88	0.78	0.71	0.65	0.61	0.59	0.58
50	3.44	1.86	1.35	1.08	0.93	0.82	0.74	0.69	0.64	0.62	0.60
60	3.63	1.97	1.42	1.14	0.97	0.86	0.78	0.72	0.67	0.65	0.64
70	3.83	2.07	1.49	1.20	1.03	0.91	0.82	0.76	0.71	0.69	
80	4.03	2.18	1.58	1.27	1.08	0.95	0.86	0.79	0.74		
90	4.23	2.30	1.66	1.33	1.14	1.00	0.91	0.83			
100	4.43	2.42	1.74	1.40	1.19	1.05	0.95	0.87			
110	4.65	2.54	1.83	1.47	1.25	1.10	0.99				
120	4.87	2.66	1.92	1.54	1.31						
130	5.09	2.78	2.01								
140	5.32	2.91									
150	5.55	3.04									
160	5.78										

±r	[g/kg]	Accuracies of mixing ratio								p [mbar]	1013
%RH	10	20	30	40	50	60	70	80	90	95	100
-40	0.003	0.003	0.003	0.003	0.004	0.004	0.004	0.004	0.005	0.005	0.005
-30	0.007	0.008	0.008	0.009	0.009	0.010	0.011	0.011	0.012	0.012	0.012
-20	0.017	0.019	0.020	0.021	0.023	0.024	0.025	0.027	0.028	0.029	0.029
-10	0.039	0.042	0.044	0.047	0.050	0.053	0.056	0.059	0.062	0.063	0.063
0	0.082	0.088	0.093	0.099	0.105	0.11	0.12	0.12	0.13	0.13	0.13
10	0.16	0.17	0.19	0.20	0.21	0.22	0.23	0.24	0.25	0.26	0.26
20	0.31	0.33	0.35	0.37	0.39	0.41	0.43	0.45	0.47	0.48	0.48
30	0.56	0.60	0.64	0.67	0.71	0.75	0.79	0.83	0.86	0.89	0.89
40	0.98	1.05	1.12	1.18	1.26	1.33	1.40	1.48	1.56	1.60	1.61
50	1.66	1.78	1.91	2.05	2.19	2.33	2.49	2.65	2.82	2.91	2.93
60	2.72	2.96	3.21	3.49	3.79	4.11	4.46	4.83	5.24	5.46	5.52
70	4.35	4.83	5.38	5.99	6.67	7.45	8.33	9.34	10.49	11.13	
80	6.83	7.86	9.08	10.54	12.30	14.46	17.13	20.47	24.74		
90	10.61	12.87	15.80	19.68	24.97	32.41	43.29	60.05			
100	16.42	21.58	29.28	41.43	62.14	101.6	190.8	466.4			
110	25.74	38.42	62.29	115.3	273.1	1209					
120	41.28	75.90	177.2	749.9							
130	69.19	185.3	1292								
140	125.4	784.3									
150	263.3	6494									
160	761.4										

±Tf	[degC]	Accuracies of frost point temperature									
%RH	10	20	30	40	50	60	70	80	90	95	100
-40	1.86	1.01	0.74	0.61	0.53	0.48					
-30	1.98	1.07	0.78	0.64	0.56	0.50	0.46				
-20	2.10	1.14	0.83	0.67	0.58	0.52	0.47	0.44			
-10	2.23	1.20	0.87	0.70	0.60	0.54	0.49	0.46	0.43		
0	2.35	1.26	0.91	0.74	0.63	0.56	0.51	0.47	0.44	0.43	0.42
10	2.48	1.32	0.95	0.77	0.66	0.66	0.61	0.56	0.53	0.51	0.50
20	2.60	1.39	1.14	0.92	0.79	0.70	0.64	0.59	0.55	0.54	0.53
30	2.73	1.66	1.20	0.97	0.83	0.74	0.67	0.62	0.58	0.57	0.55
40	3.17	1.76	1.27	1.03	0.88	0.78	0.71	0.65	0.61	0.59	0.58
50	3.44	1.86	1.35	1.08	0.93	0.82	0.74	0.69	0.64	0.62	0.60
60	3.63	1.97	1.42	1.14	0.97	0.86	0.78	0.72	0.67	0.65	0.64
70	3.83	2.07	1.49	1.20	1.03	0.91	0.82	0.76	0.71	0.69	
80	4.03	2.18	1.58	1.27	1.08	0.95	0.86	0.79	0.74		
90	4.23	2.30	1.66	1.33	1.14	1.00	0.91	0.83			
100	4.43	2.42	1.74	1.40	1.19	1.05	0.95	0.87			
110	4.65	2.54	1.83	1.47	1.25	1.10	0.99				
120	4.87	2.66	1.92	1.54	1.31						
130	5.09	2.78	2.01								
140	5.32	2.91									
150	5.55	3.04									
160	5.78										

±H	[kJ/kg]	Accuracies of specific enthalpy							p [mbar]	1013	
%RH	10	20	30	40	50	60	70	80	90	95	100
-40	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21	0.21
-30	0.22	0.22	0.22	0.22	0.22	0.23	0.23	0.23	0.23	0.23	0.23
-20	0.24	0.25	0.25	0.25	0.26	0.26	0.26	0.27	0.27	0.27	0.27
-10	0.30	0.30	0.31	0.32	0.33	0.33	0.34	0.35	0.35	0.36	0.36
0	0.41	0.42	0.43	0.45	0.46	0.48	0.49	0.50	0.52	0.52	0.52
10	0.61	0.64	0.66	0.69	0.72	0.74	0.77	0.80	0.82	0.83	0.83
20	0.98	1.03	1.08	1.12	1.17	1.22	1.26	1.31	1.36	1.38	1.38
30	1.62	1.70	1.78	1.86	1.95	2.03	2.12	2.20	2.29	2.33	2.33
40	2.67	2.81	2.95	3.09	3.24	3.39	3.53	3.68	3.83	3.91	3.91
50	4.35	4.59	4.83	5.08	5.33	5.59	5.85	6.11	6.38	6.52	6.54
60	6.95	7.36	7.78	8.21	8.65	9.11	9.58	10.06	10.56	10.82	10.86
70	10.86	11.57	12.32	13.09	13.91	14.76	15.65	16.58	17.55	18.06	
80	16.62	17.89	19.26	20.72	22.27	23.94	25.73	27.64	29.70		
90	24.94	27.29	29.88	32.73	35.88	39.36	43.23	47.54			
100	36.79	41.25	46.35	52.22	59.02	66.94	76.24	87.22			
110	53.90	62.57	73.09	86.02	102.1	122.4	140.8				
120	78.44	95.70	118.5	149.4	180.2						
130	114	149.3	202.1								
140	166.4	241.7									
150	246	367.1									
160	372.1										

±Tw	[degC]	Accuracies of wet bulb temperature									
%RH	10	20	30	40	50	60	70	80	90	95	100
10	0.34	0.35	0.35	0.35	0.36	0.36	0.36	0.36	0.36	0.36	0.36
20	0.46	0.45	0.45	0.44	0.44	0.44	0.43	0.43	0.42	0.42	0.42
30	0.62	0.60	0.58	0.56	0.54	0.52	0.51	0.49	0.48	0.48	0.47
40	0.85	0.78	0.72	0.68	0.64	0.61	0.58	0.56	0.54	0.53	0.52
50	1.13	0.98	0.88	0.80	0.73	0.68	0.65	0.61	0.58	0.57	0.56
60	1.46	1.20	1.03	0.91	0.82	0.76	0.71	0.67	0.63	0.62	0.60
70	1.84	1.42	1.18	1.02	0.91	0.83	0.76	0.72	0.68	0.66	
80	2.24	1.63	1.32	1.12	0.99	0.89	0.82	0.76	0.72		
90	2.64	1.84	1.45	1.22	1.06	0.95	0.87	0.81			
100	3.05	2.03	1.57	1.31	1.13	1.01	0.93	0.86			
110	3.45	2.22	1.69	1.40	1.21	1.08	0.99				
120	3.84	2.40	1.81	1.49	1.29						
130	4.21	2.57	1.93								
140	4.56	2.74									
150	4.90	2.92									
160	5.23										

Accuracies of the calculated variables are subject to the accuracy of the humidity and temperature - measurement.

The above accuracy values are valid for **±2%RH and ±0.2degC.**

High accuracy values can be reached by a special humidity/temperature calibration.