



# Technical Information Data Bulletin

## Platinum 100 Ohms (Pt100)

$\alpha$  0.00385

### Temperature vs Resistance Table Resistance @ 32°F

**Temperature Range**

-320 to 1562°F

-200 to 850°C

**Accuracy:**

Grade A Tolerance =  $\pm[0.13 + 0.0017 * |t|]$  °C

Grade B tolerance =  $\pm[0.25 + 0.0042 * |t|]$  °C

**Recommended Applications:**

Where higher accuracy is needed in general purpose and industrial application.

Temp	0	-1	-2	-3	-4	-5	-6	-7	-8	-9
-320	20.438	20.199	19.959	19.720	19.480	19.240	19.000	18.760	18.520	
-310	22.826	22.587	22.349	22.110	21.872	21.633	21.394	21.155	20.916	20.677
-300	25.202	24.965	24.728	24.490	24.253	24.015	23.778	23.540	23.302	23.064
-290	27.569	27.333	27.096	26.860	26.624	26.387	26.150	25.913	25.677	25.440
-280	29.926	29.690	29.455	29.220	28.984	28.749	28.513	28.277	28.041	27.805
-270	32.273	32.039	31.804	31.570	31.335	31.100	30.866	30.631	30.396	30.161
-260	34.611	34.377	34.144	33.910	33.677	33.443	33.209	32.975	32.741	32.507
-250	36.940	36.707	36.475	36.242	36.009	35.776	35.543	35.310	35.077	34.844
-240	39.260	39.028	38.797	38.565	38.333	38.101	37.869	37.637	37.404	37.172
-230	41.572	41.341	41.111	40.880	40.648	40.417	40.186	39.955	39.723	39.492
-220	43.876	43.646	43.416	43.186	42.956	42.725	42.495	42.264	42.034	41.803
-210	46.173	45.944	45.714	45.485	45.255	45.026	44.796	44.566	44.336	44.106
-200	48.462	48.233	48.005	47.776	47.547	47.318	47.089	46.860	46.631	46.402
-190	50.744	50.516	50.288	50.060	49.832	49.604	49.376	49.147	48.919	48.691
-180	53.019	52.792	52.565	52.337	52.110	51.882	51.655	51.427	51.200	50.972
-170	55.287	55.061	54.834	54.608	54.381	54.154	53.927	53.700	53.473	53.246
-160	57.550	57.324	57.098	56.872	56.645	56.419	56.193	55.967	55.740	55.514
-150	59.805	59.580	59.355	59.129	58.904	58.678	58.453	58.227	58.001	57.775
-140	62.055	61.831	61.606	61.381	61.156	60.931	60.706	60.481	60.256	60.031
-130	64.300	64.075	63.851	63.627	63.403	63.178	62.954	62.729	62.505	62.280
-120	66.538	66.315	66.091	65.867	65.644	65.420	65.196	64.972	64.748	64.524
-110	68.772	68.549	68.325	68.102	67.879	67.656	67.432	67.209	66.985	66.762
-100	71.000	70.777	70.555	70.332	70.109	69.887	69.664	69.441	69.218	68.995
-90	73.223	73.001	72.779	72.557	72.335	72.112	71.890	71.668	71.445	71.223
-80	75.442	75.220	74.998	74.777	74.555	74.333	74.111	73.889	73.667	73.445
-70	77.656	77.434	77.213	76.992	76.771	76.549	76.328	76.106	75.885	75.663
-60	79.865	79.644	79.423	79.203	78.982	78.761	78.540	78.319	78.098	77.877
-50	82.070	81.850	81.629	81.409	81.188	80.968	80.747	80.527	80.306	80.086
-40	84.271	84.051	83.831	83.611	83.391	83.171	82.951	82.731	82.510	82.290
-30	86.467	86.248	86.028	85.809	85.589	85.370	85.150	84.930	84.710	84.491
-20	88.660	88.441	88.222	88.003	87.783	87.564	87.345	87.126	86.906	86.687
-10	90.849	90.630	90.411	90.192	89.974	89.755	89.536	89.317	89.098	88.879
0	93.033	92.815	92.597	92.378	92.160	91.941	91.723	91.504	91.286	91.067
Temp	0	1	2	3	4	5	6	7	8	9
0	93.033	93.252	93.470	93.688	93.906	94.124	94.343	94.561	94.779	94.997
10	95.215	95.432	95.650	95.868	96.086	96.304	96.521	96.739	96.957	97.174
20	97.392	97.609	97.827	98.044	98.262	98.479	98.697	98.914	99.131	99.349
30	99.566	99.783	100.000	100.217	100.434	100.651	100.868	101.085	101.302	101.519
40	101.736	101.953	102.169	102.386	102.603	102.820	103.036	103.253	103.469	103.686
50	103.903	104.119	104.335	104.552	104.768	104.985	105.201	105.417	105.633	105.849
60	106.066	106.282	106.498	106.714	106.930	107.146	107.362	107.578	107.794	108.009
70	108.225	108.441	108.657	108.872	109.088	109.304	109.519	109.735	109.950	110.166
80	110.381	110.596	110.812	111.027	111.242	111.458	111.673	111.888	112.103	112.318
90	112.533	112.748	112.963	113.178	113.393	113.608	113.823	114.038	114.253	114.468
100	114.682	114.897	115.112	115.326	115.541	115.755	115.970	116.184	116.399	116.613
110	116.828	117.042	117.256	117.470	117.685	117.899	118.113	118.327	118.541	118.755
120	118.969	119.183	119.397	119.611	119.825	120.039	120.253	120.466	120.680	120.894
130	121.107	121.321	121.535	121.748	121.962	122.175	122.389	122.602	122.815	123.029
140	123.242	123.455	123.668	123.882	124.095	124.308	124.521	124.734	124.947	125.160
150	125.373	125.586	125.799	126.011	126.224	126.437	126.650	126.862	127.075	127.288
160	127.500	127.713	127.925	128.138	128.350	128.563	128.775	128.987	129.200	129.412

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### Temperature vs Resistance Table Resistance @ 32°F

#### Temperature Range

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-200 to 850°C

#### Accuracy:

Grade A Tolerance =  $\pm[0.13 + 0.0017 * |t|]$  °C

Grade B tolerance =  $\pm[0.25 + 0.0042 * |t|]$  °C

#### Recommended Applications:

Where higher accuracy is needed in general purpose and industrial application.

Temp	0	1	2	3	4	5	6	7	8	9
170	129.624	129.836	130.049	130.261	130.473	130.685	130.897	131.109	131.321	131.533
180	131.744	131.956	132.168	132.380	132.592	132.803	133.015	133.227	133.438	133.650
190	133.861	134.073	134.284	134.496	134.707	134.918	135.130	135.341	135.552	135.763
200	135.974	136.186	136.397	136.608	136.819	137.030	137.241	137.451	137.662	137.873
210	138.084	138.295	138.505	138.716	138.927	139.137	139.348	139.559	139.769	139.980
220	140.190	140.400	140.611	140.821	141.031	141.242	141.452	141.662	141.872	142.082
230	142.293	142.503	142.713	142.923	143.133	143.342	143.552	143.762	143.972	144.182
240	144.391	144.601	144.811	145.020	145.230	145.440	145.649	145.859	146.068	146.277
250	146.487	146.696	146.905	147.115	147.324	147.533	147.742	147.951	148.160	148.370
260	148.579	148.788	148.996	149.205	149.414	149.623	149.832	150.041	150.249	150.458
270	150.667	150.875	151.084	151.293	151.501	151.710	151.918	152.126	152.335	152.543
280	152.751	152.960	153.168	153.376	153.584	153.792	154.001	154.209	154.417	154.625
290	154.833	155.040	155.248	155.456	155.664	155.872	156.079	156.287	156.495	156.702
300	156.910	157.118	157.325	157.533	157.740	157.947	158.155	158.362	158.569	158.777
310	158.984	159.191	159.398	159.605	159.813	160.020	160.227	160.434	160.641	160.848
320	161.054	161.261	161.468	161.675	161.882	162.088	162.295	162.502	162.708	162.915
330	163.121	163.328	163.534	163.741	163.947	164.153	164.360	164.566	164.772	164.978
340	165.184	165.391	165.597	165.803	166.009	166.215	166.421	166.627	166.833	167.038
350	167.244	167.450	167.656	167.861	168.067	168.273	168.478	168.684	168.889	169.095
360	169.300	169.506	169.711	169.916	170.122	170.327	170.532	170.737	170.943	171.148
370	171.353	171.558	171.763	171.968	172.173	172.378	172.583	172.788	172.992	173.197
380	173.402	173.607	173.811	174.016	174.221	174.425	174.630	174.834	175.039	175.243
390	175.447	175.652	175.856	176.060	176.265	176.469	176.673	176.877	177.081	177.285
400	177.489	177.693	177.897	178.101	178.305	178.509	178.713	178.916	179.120	179.324
410	179.528	179.731	179.935	180.138	180.342	180.545	180.749	180.952	181.156	181.359
420	181.562	181.766	181.969	182.172	182.375	182.578	182.781	182.984	183.188	183.390
430	183.593	183.796	183.999	184.202	184.405	184.608	184.810	185.013	185.216	185.418
440	185.621	185.824	186.026	186.229	186.431	186.634	186.836	187.038	187.241	187.443
450	187.645	187.847	188.049	188.252	188.454	188.656	188.858	189.060	189.262	189.464
460	189.666	189.867	190.069	190.271	190.473	190.675	190.876	191.078	191.279	191.481
470	191.683	191.884	192.085	192.287	192.488	192.690	192.891	193.092	193.293	193.495
480	193.696	193.897	194.098	194.299	194.500	194.701	194.902	195.103	195.304	195.505
490	195.706	195.906	196.107	196.308	196.509	196.709	196.910	197.110	197.311	197.511
500	197.712	197.912	198.113	198.313	198.513	198.714	198.914	199.114	199.314	199.514
510	199.715	199.915	200.115	200.315	200.515	200.715	200.914	201.114	201.314	201.514
520	201.714	201.913	202.113	202.313	202.512	202.712	202.911	203.111	203.310	203.510
530	203.709	203.909	204.108	204.307	204.506	204.706	204.905	205.104	205.303	205.502
540	205.701	205.900	206.099	206.298	206.497	206.696	206.895	207.093	207.292	207.491
550	207.690	207.888	208.087	208.285	208.484	208.682	208.881	209.079	209.278	209.476
560	209.674	209.873	210.071	210.269	210.467	210.665	210.864	211.062	211.260	211.458
570	211.656	211.854	212.052	212.249	212.447	212.645	212.843	213.040	213.238	213.436
580	213.633	213.831	214.028	214.226	214.423	214.621	214.818	215.016	215.213	215.410
590	215.608	215.805	216.002	216.199	216.396	216.593	216.790	216.987	217.184	217.381
600	217.578	217.775	217.972	218.169	218.365	218.562	218.759	218.955	219.152	219.349
610	219.545	219.742	219.938	220.135	220.331	220.527	220.724	220.920	221.116	221.312
620	221.509	221.705	221.901	222.097	222.293	222.489	222.685	222.881	223.077	223.273
630	223.468	223.664	223.860	224.056	224.251	224.447	224.643	224.838	225.034	225.229
640	225.425	225.620	225.816	226.011	226.206	226.402	226.597	226.792	226.987	227.182
650	227.378	227.573	227.768	227.963	228.158	228.353	228.547	228.742	228.937	229.132
660	229.327	229.521	229.716	229.911	230.105	230.300	230.495	230.689	230.884	231.078
670	231.272	231.467	231.661	231.855	232.050	232.244	232.438	232.632	232.826	233.020

TEMPERATURE & PROCESS INSTRUMENTS - CON



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#### Temperature Range

-320 to 1562°F

-200 to 850°C

#### Accuracy:

Grade A Tolerance =  $\pm[0.13 + 0.0017 * |t|]$  °C

Grade B tolerance =  $\pm[0.25 + 0.0042 * |t|]$  °C

#### Recommended Applications:

Where higher accuracy is needed in general purpose and industrial application.

Temp	0	1	2	3	4	5	6	7	8	9
680	233.214	233.408	233.602	233.796	233.990	234.184	234.378	234.572	234.765	234.959
690	235.153	235.347	235.540	235.734	235.927	236.121	236.314	236.508	236.701	236.894
700	237.088	237.281	237.474	237.668	237.861	238.054	238.247	238.440	238.633	238.826
710	239.019	239.212	239.405	239.598	239.791	239.984	240.176	240.369	240.562	240.754
720	240.947	241.140	241.332	241.525	241.717	241.910	242.102	242.294	242.487	242.679
730	242.871	243.063	243.256	243.448	243.640	243.832	244.024	244.216	244.408	244.600
740	244.792	244.984	245.176	245.367	245.559	245.751	245.943	246.134	246.326	246.517
750	246.709	246.901	247.092	247.283	247.475	247.666	247.858	248.049	248.240	248.431
760	248.623	248.814	249.005	249.196	249.387	249.578	249.769	249.960	250.151	250.342
770	250.533	250.723	250.914	251.105	251.296	251.486	251.677	251.867	252.058	252.248
780	252.439	252.629	252.820	253.010	253.201	253.391	253.581	253.771	253.962	254.152
790	254.342	254.532	254.722	254.912	255.102	255.292	255.482	255.672	255.861	256.051
800	256.241	256.431	256.620	256.810	257.000	257.189	257.379	257.568	257.758	257.947
810	258.137	258.326	258.515	258.705	258.894	259.083	259.273	259.462	259.651	259.840
820	260.029	260.218	260.407	260.596	260.785	260.974	261.163	261.351	261.540	261.729
830	261.918	262.106	262.295	262.483	262.672	262.860	263.049	263.237	263.426	263.614
840	263.803	263.991	264.179	264.367	264.556	264.744	264.932	265.120	265.308	265.496
850	265.684	265.872	266.060	266.248	266.436	266.623	266.811	266.999	267.187	267.374
860	267.562	267.749	267.937	268.125	268.312	268.500	268.687	268.874	269.062	269.249
870	269.436	269.623	269.811	269.998	270.185	270.372	270.559	270.746	270.933	271.120
880	271.307	271.494	271.681	271.868	272.054	272.241	272.428	272.614	272.801	272.988
890	273.174	273.361	273.547	273.734	273.920	274.106	274.293	274.479	274.665	274.852
900	275.038	275.224	275.410	275.596	275.782	275.968	276.154	276.340	276.526	276.712
910	276.898	277.084	277.269	277.455	277.641	277.827	278.012	278.198	278.383	278.569
920	278.754	278.940	279.125	279.311	279.496	279.681	279.867	280.052	280.237	280.422
930	280.607	280.792	280.978	281.163	281.348	281.532	281.717	281.902	282.087	282.272
940	282.457	282.641	282.826	283.011	283.195	283.380	283.565	283.749	283.934	284.118
950	284.303	284.487	284.671	284.856	285.040	285.224	285.408	285.592	285.777	285.961
960	286.145	286.329	286.513	286.697	286.881	287.065	287.248	287.432	287.616	287.800
970	287.983	288.167	288.351	288.534	288.718	288.901	289.085	289.268	289.452	289.635
980	289.819	290.002	290.185	290.368	290.552	290.735	290.918	291.101	291.284	291.467
990	291.650	291.833	292.016	292.199	292.382	292.565	292.747	292.930	293.113	293.295
1000	293.478	293.661	293.843	294.026	294.208	294.391	294.573	294.756	294.938	295.120
1010	295.303	295.485	295.667	295.849	296.031	296.213	296.395	296.577	296.759	296.941
1020	297.123	297.305	297.487	297.669	297.851	298.032	298.214	298.396	298.578	298.759
1030	298.941	299.122	299.304	299.485	299.667	299.848	300.029	300.211	300.392	300.573
1040	300.754	300.936	301.117	301.298	301.479	301.660	301.841	302.022	302.203	302.384
1050	302.565	302.745	302.926	303.107	303.288	303.468	303.649	303.830	304.010	304.191
1060	304.371	304.552	304.732	304.912	305.093	305.273	305.453	305.634	305.814	305.994
1070	306.174	306.354	306.534	306.714	306.894	307.074	307.254	307.434	307.614	307.794
1080	307.974	308.153	308.333	308.513	308.692	308.872	309.052	309.231	309.411	309.590
1090	309.770	309.949	310.128	310.308	310.487	310.666	310.845	311.025	311.204	311.383
1100	311.562	311.741	311.920	312.099	312.278	312.457	312.636	312.814	312.993	313.172
1110	313.351	313.529	313.708	313.887	314.065	314.244	314.422	314.601	314.779	314.958
1120	315.136	315.314	315.492	315.671	315.849	316.027	316.205	316.383	316.561	316.740
1130	316.918	317.095	317.273	317.451	317.629	317.807	317.985	318.163	318.340	318.518
1140	318.696	318.873	319.051	319.228	319.406	319.583	319.761	319.938	320.115	320.293
1150	320.470	320.647	320.825	321.002	321.179	321.356	321.533	321.710	321.887	322.064
1160	322.241	322.418	322.595	322.772	322.948	323.125	323.302	323.479	323.655	323.832
1170	324.008	324.185	324.362	324.538	324.714	324.891	325.067	325.243	325.420	325.596
1180	325.772	325.948	326.125	326.301	326.477	326.653	326.829	327.005	327.181	327.357



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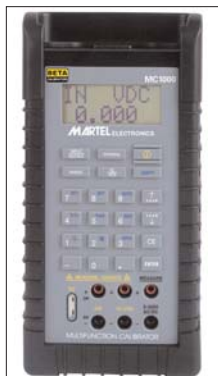
Grade B tolerance =  $\pm[0.25 + 0.0042 * |t|]$  °C

#### Recommended Applications:

Where higher accuracy is needed in general purpose and industrial application.

Temp	0	1	2	3	4	5	6	7	8	9
1190	327.533	327.708	327.884	328.060	328.236	328.411	328.587	328.763	328.938	329.114
1200	329.289	329.465	329.640	329.816	329.991	330.166	330.342	330.517	330.692	330.867
1210	331.042	331.217	331.393	331.568	331.743	331.918	332.093	332.267	332.442	332.617
1220	332.792	332.967	333.141	333.316	333.491	333.665	333.840	334.014	334.189	334.363
1230	334.538	334.712	334.887	335.061	335.235	335.410	335.584	335.758	335.932	336.106
1240	336.280	336.454	336.628	336.802	336.976	337.150	337.324	337.498	337.672	337.845
1250	338.019	338.193	338.367	338.540	338.714	338.887	339.061	339.234	339.408	339.581
1260	339.754	339.928	340.101	340.274	340.448	340.621	340.794	340.967	341.140	341.313
1270	341.486	341.659	341.832	342.005	342.178	342.351	342.524	342.696	342.869	343.042
1280	343.214	343.387	343.560	343.732	343.905	344.077	344.250	344.422	344.594	344.767
1290	344.939	345.111	345.284	345.456	345.628	345.800	345.972	346.144	346.316	346.488
1300	346.660	346.832	347.004	347.176	347.347	347.519	347.691	347.863	348.034	348.206
1310	348.378	348.549	348.721	348.892	349.064	349.235	349.406	349.578	349.749	349.920
1320	350.091	350.263	350.434	350.605	350.776	350.947	351.118	351.289	351.460	351.631
1330	351.802	351.973	352.143	352.314	352.485	352.656	352.826	352.997	353.167	353.338
1340	353.509	353.679	353.849	354.020	354.190	354.361	354.531	354.701	354.871	355.042
1350	355.212	355.382	355.552	355.722	355.892	356.062	356.232	356.402	356.572	356.742
1360	356.911	357.081	357.251	357.421	357.590	357.760	357.930	358.099	358.269	358.438
1370	358.608	358.777	358.946	359.116	359.285	359.454	359.623	359.793	359.962	360.131
1380	360.300	360.469	360.638	360.807	360.976	361.145	361.314	361.483	361.651	361.820
1390	361.989	362.158	362.326	362.495	362.664	362.832	363.001	363.169	363.338	363.506
1400	363.674	363.843	364.011	364.179	364.348	364.516	364.684	364.852	365.020	365.188
1410	365.356	365.524	365.692	365.860	366.028	366.196	366.364	366.531	366.699	366.867
1420	367.034	367.202	367.370	367.537	367.705	367.872	368.040	368.207	368.375	368.542
1430	368.709	368.876	369.044	369.211	369.378	369.545	369.712	369.879	370.046	370.213
1440	370.380	370.547	370.714	370.881	371.048	371.215	371.381	371.548	371.715	371.881
1450	372.048	372.214	372.381	372.547	372.714	372.880	373.047	373.213	373.379	373.546
1460	373.712	373.878	374.044	374.210	374.377	374.543	374.709	374.875	375.041	375.206
1470	375.372	375.538	375.704	375.870	376.036	376.201	376.367	376.533	376.698	376.864
1480	377.029	377.195	377.360	377.526	377.691	377.856	378.022	378.187	378.352	378.517
1490	378.683	378.848	379.013	379.178	379.343	379.508	379.673	379.838	380.003	380.167
1500	380.332	380.497	380.662	380.826	380.991	381.156	381.320	381.485	381.649	381.814
1510	381.978	382.143	382.307	382.472	382.636	382.800	382.964	383.129	383.293	383.457
1520	383.621	383.785	383.949	384.113	384.277	384.441	384.605	384.769	384.933	385.096
1530	385.260	385.424	385.588	385.751	385.915	386.078	386.242	386.405	386.569	386.732
1540	386.896	387.059	387.222	387.386	387.549	387.712	387.875	388.038	388.201	388.364
1550	388.528	388.691	388.853	389.016	389.179	389.342	389.505	389.668	389.830	389.993
1560	390.156	390.319	390.481							

TEMPERATURE & PROCESS INSTRUMENTS - INC



#### MC1000 High Accuracy Multifunction Process Calibrator Features

- Read and source modes
- Eight (8) RTD types (Pt100/200/500/1000, Cu10, and Ni120)
- Thermocouple, mV, V, mA, and Ohmsplus YSI 400 Thermistors
- Direct keyboard entry enables quick output changes
- Store up to nine (9) setpoints for each output function
- RTD function compatible with all pulsed transmitters
- RS-232 interface