

# Tables for RTD Pt100

Temperature interval

-200 °C to 0 °C

$$R_t = R_0 [1 + At + Bt^2 + C(t - 100)t^3]$$

Coefficients

$$A = 3,9083 \text{ E-3}$$

$$B = -5,775 \text{ E-7}$$

$$C = -4,183 \text{ E-12}$$

$$a = 3.85055 \text{ E-3}$$

$$\alpha = \frac{(R_{100} - R_0)}{100 \cdot R_0}$$

Temperature interval

0 °C to 850 °C

$$R_t = R_0 (1 + At + Bt^2)$$

Coefficients

$$A = 3,9083 \text{ E-3}$$

$$B = -5,775 \text{ E-7}$$

$$C = -4,183 \text{ E-12}$$

$$a = 3.85055 \text{ E-3}$$

$$\alpha = \frac{(R_{100} - R_0)}{100 \cdot R_0}$$

**TABLE: -200 - 850 °C for Pt100 as per IEC 60751 (2008)**

Temp °C	res ohm	DR/Dt ohm / °C	Temp °C	res ohm	DR/Dt ohm / °C	Temp °C	res ohm	DR/Dt ohm / °C	Temp °C	res ohm	DR/Dt ohm / °C
-200	18,520	0,432	100	138,506	0,379	400	247,092	0,345	700	345,284	0,310
-190	22,825	0,429	110	142,293	0,378	410	250,533	0,343	710	348,378	0,309
-180	27,096	0,425	120	146,068	0,377	420	253,962	0,342	720	351,460	0,308
-170	31,335	0,422	130	149,832	0,376	430	257,379	0,341	730	354,531	0,307
-160	35,543	0,419	140	153,584	0,375	440	260,785	0,340	740	357,590	0,305
-150	39,723	0,417	150	157,325	0,374	450	264,179	0,339	750	360,638	0,304
-140	43,876	0,414	160	161,054	0,372	460	267,562	0,338	760	363,674	0,303
-130	48,005	0,412	170	164,772	0,371	470	270,933	0,337	770	366,699	0,302
-120	52,110	0,409	180	168,478	0,370	480	274,293	0,335	780	369,712	0,301
-110	56,193	0,407	190	172,173	0,369	490	277,641	0,334	790	372,714	0,300
-100	60,256	0,405	200	175,856	0,368	500	280,978	0,333	800	375,704	0,298
-90	64,300	0,403	210	179,528	0,367	510	284,303	0,332	810	378,683	0,297
-80	68,325	0,402	220	183,188	0,365	520	287,616	0,331	820	381,650	0,296
-70	72,335	0,400	230	186,836	0,364	530	290,918	0,330	830	384,605	0,295
-60	76,328	0,399	240	190,473	0,363	540	294,208	0,328	840	387,549	0,294
-50	80,306	0,397	250	194,098	0,362	550	297,487	0,327	850	390,481	0,293
-40	84,271	0,396	260	197,712	0,361	560	300,754	0,326			
-30	88,222	0,394	270	201,314	0,360	570	304,010	0,325			
-20	92,160	0,393	280	204,905	0,358	580	307,254	0,324			
-10	96,086	0,392	290	208,484	0,357	590	310,487	0,323			
0	100,000	0,391	300	212,052	0,356	600	313,708	0,322			
10	103,903	0,390	310	215,608	0,355	610	316,918	0,320			
20	107,794	0,389	320	219,152	0,354	620	320,116	0,319			
30	111,673	0,387	330	222,685	0,353	630	323,302	0,318			
40	115,541	0,386	340	226,206	0,352	640	326,477	0,317			
50	119,397	0,385	350	229,716	0,350	650	329,640	0,316			
60	123,242	0,384	360	233,214	0,349	660	332,792	0,315			
70	127,075	0,383	370	236,701	0,348	670	335,932	0,313			
80	130,897	0,382	380	240,176	0,347	680	339,061	0,312			
90	134,707	0,380	390	243,640	0,346	690	342,178	0,311			

## Platinum RTDs with other nominal resistances than Pt100

The above table is valid for industrial Pt100s with resistance 100 ohms at 0 °C. Resistances for Pt1000s is obtained by multiplying the values of the table by the factor 1000/100 = 10.

Example: At 100 °C the resistance of a Pt1000 is 10 x 138,506 = 1385.06 ohms. In the analog way you find the resistance values of a Pt250, Pt500 etc.

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