

**PT100 RTD Sensor Temperature Probe****PT100 Temperature Sensor****PT100 Temperature Sensor specifications****PT100-2W series Temperature Probe TECHNICAL INDEX**

Item	Component Type	RTD Sensor PT100-2W	Component Size	2.0mmx2.3mmx1.0mm\1.6mmx2.0mmx1.0mm
1	Lead specification	Length 10mm, Diameter	Lead material	Platinum Nickel Wire (Silver Palladium/Pure Platinum/Pure
2	Lead Tensile Strength	≥9N	Insulation resistance	>100MΩ at 20℃, >2MΩ at 500℃
3	Temperature Coefficient	3850ppm/℃	Operating Current	0.3~1mA (consider self-heating)
4	Long-term Stability	Resistance drift of R (0℃) ≤0.04% after 1000h at 500℃		
5	Response Time	Water flow (v=0.4m/s) τ0.5=0.05s τ0.9=0.15s Air flow (v=2m/s) τ0.5=3s τ0.9=10s		
6	Natural Coefficient	0℃ 0.4℃/mW	Vibration Resistance	Acceleration ≥40g with frequency 10 to 2000Hz
7	Shock Resistance	Acceleration ≥100g with	PT100 Temperature	Vacuum plastic packaging (other packaging forms available
8	Others	Substrate size, base resistance, lead specifications (available upon request)		

**RTD Sensor Pt100-2W Model Number**

Item	Model number	Operate temperature range	Operate temperature range	Grade	R0 (Ω)	Temperature range	Accuracy
1	Pt100-2W	-70~+500℃	-70~+500℃	1/10B	100±0.01	0~+100℃	±(0.03+0.0005 T )
2				1/3B	100±0.04	0~+150℃	±(0.1+0.0017 T )
3				A	100±0.06	-50~+300℃	±(0.15+0.002 T )
4				B	100±0.12	-70~+500℃	±(0.3+0.005 T )
5				2B	100±0.24	-70~+500℃	±(0.6+0.01 T )
6	Pt100-2W -H650	-70~+650℃	-70~+650℃	B	100±0.12	-70~+650℃	±(0.3+0.005 T )
7				2B	100±0.24	-70~+650℃	±(0.6+0.01 T )
8	Pt100-2W -L200	-200~+150℃	-200~+150℃	B	100±0.12	-200~+150	±(0.3+0.0005 T )
9				2B	100±0.24	-200~+150	±(0.6+0.01 T )

Note \* : The grades and temperature measurement accuracy are all referred to IEC60751 standards, and are the temperature measurement accuracy within the corresponding specified temperature range, and do not represent the temperature

**PT100 temperature sensor table****Pt100 resistance-temperature comparison table****Temperature Probe Resistance value according to IEC60751 standard**

t ≥ 0	t < 0
$R(t) = R_0(1 + A \cdot t + B \cdot t^2)$	$R(t) = R_0(1 + A \cdot t + B \cdot t^2 + C \cdot (t - 100)^3)$
A = 3.9083*10 <sup>-3</sup> °C <sup>-1</sup> B = -5.775*10 <sup>-7</sup> °C <sup>-2</sup>	A = 3.9083*10 <sup>-3</sup> °C <sup>-1</sup> B = -5.775*10 <sup>-7</sup> °C <sup>-2</sup> C = -4.183*10 <sup>-12</sup> °C <sup>-3</sup>

RTD Sensor Nominal Resistance value: 100 Ω

T℃	0	1	2	3	4	5	6	7	8	9
-200	18.52	18.95	19.38	19.82	20.25	20.68	21.11	21.54	21.97	22.4
-190	22.83	23.25	23.68	24.11	24.54	24.97	25.39	25.82	26.24	26.67
-180	27.1	27.52	27.95	28.37	28.8	29.22	29.64	30.07	30.49	30.91
-170	31.34	31.76	32.18	32.6	33.02	33.44	33.86	34.28	34.7	35.12
-160	35.54	35.96	36.38	36.8	37.22	37.64	38.05	38.47	38.89	39.31
-150	39.72	40.14	40.56	40.97	41.39	41.8	42.22	42.63	43.05	43.46
-140	43.88	44.29	44.7	45.12	45.53	45.94	46.36	46.77	47.18	47.59
-130	48	48.42	48.83	49.24	49.65	50.06	50.47	50.88	51.29	51.7
-120	52.11	52.52	52.93	53.34	53.75	54.15	54.56	54.97	55.38	55.79
-110	56.19	56.6	57.01	57.41	57.82	58.23	58.63	59.04	59.44	59.85
-100	60.26	60.66	61.07	61.47	61.88	62.28	62.68	63.09	63.49	63.9
-90	64.3	64.7	65.11	65.51	65.91	66.31	66.72	67.12	67.52	67.92
-80	68.33	68.73	69.13	69.53	69.93	70.33	70.73	71.13	71.53	71.93
-70	72.33	72.73	73.13	73.53	73.93	74.33	74.73	75.13	75.53	75.93
-60	76.33	76.73	77.12	77.52	77.92	78.32	78.72	79.11	79.51	79.91

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-50	80.31	80.7	81.1	81.5	81.89	82.29	82.69	83.08	83.48	83.87
-40	84.27	84.67	85.06	85.46	85.85	86.25	86.64	87.04	87.43	87.83
-30	88.22	88.62	89.01	89.4	89.8	90.19	90.59	90.98	91.37	91.77
-20	92.16	92.55	92.95	93.34	93.73	94.12	94.52	94.91	95.3	95.69
-10	96.09	96.48	96.87	97.26	97.65	98.04	98.44	98.83	99.22	99.61
0	100	100.39	100.78	101.17	101.56	101.95	102.34	102.73	103.12	103.51
10	103.9	104.29	104.68	105.07	105.46	105.85	106.24	106.63	107.02	107.4
20	107.79	108.18	108.57	108.96	109.35	109.73	110.12	110.51	110.9	111.29
30	111.67	112.06	112.45	112.83	113.22	113.61	114	114.38	114.77	115.15
40	115.54	115.93	116.31	116.7	117.08	117.47	117.86	118.24	118.63	119.01
50	119.4	119.78	120.17	120.55	120.94	121.32	121.71	122.09	122.47	122.86
60	123.24	123.63	124.01	124.39	124.78	125.16	125.54	125.93	126.31	126.69
70	127.08	127.46	127.84	128.22	128.61	128.99	129.37	129.75	130.13	130.52
80	130.9	131.28	131.66	132.04	132.42	132.8	133.18	133.57	133.95	134.33
90	134.71	135.09	135.47	135.85	136.23	136.61	136.99	137.37	137.75	138.13
100	138.51	138.88	139.26	139.64	140.02	140.4	140.78	141.16	141.54	141.91
110	142.29	142.67	143.05	143.43	143.8	144.18	144.56	144.94	145.31	145.69
120	146.07	146.44	146.82	147.2	147.57	147.95	148.33	148.7	149.08	149.46
130	149.83	150.21	150.58	150.96	151.33	151.71	152.08	152.46	152.83	153.21
140	153.58	153.96	154.33	154.71	155.08	155.46	155.83	156.2	156.58	156.95
150	157.33	157.7	158.07	158.45	158.82	159.19	159.56	159.94	160.31	160.68
160	161.05	161.43	161.8	162.17	162.54	162.91	163.29	163.66	164.03	164.4
170	164.77	165.14	165.51	165.89	166.26	166.63	167	167.37	167.74	168.11
180	168.48	168.85	169.22	169.59	169.96	170.33	170.7	171.07	171.43	171.8
190	172.17	172.54	172.91	173.28	173.65	174.02	174.38	174.75	175.12	175.49
200	175.86	176.22	176.59	176.96	177.33	177.69	178.06	178.43	178.79	179.16
210	179.53	179.89	180.26	180.63	180.99	181.36	181.72	182.09	182.46	182.82
220	183.19	183.55	183.92	184.28	184.65	185.01	185.38	185.74	186.11	186.47
230	186.84	187.2	187.56	187.93	188.29	188.66	189.02	189.38	189.75	190.11
240	190.47	190.84	191.2	191.56	191.92	192.29	192.65	193.01	193.37	193.74
250	194.1	194.46	194.82	195.18	195.55	195.91	196.27	196.63	196.99	197.35
260	197.71	198.07	198.43	198.79	199.15	199.51	199.87	200.23	200.59	200.95
270	201.31	201.67	202.03	202.39	202.75	203.11	203.47	203.83	204.19	204.55
280	204.9	205.26	205.62	205.98	206.34	206.7	207.05	207.41	207.77	208.13
290	208.48	208.84	209.2	209.56	209.91	210.27	210.63	210.98	211.34	211.7
300	212.05	212.41	212.76	213.12	213.48	213.83	214.19	214.54	214.9	215.25
310	215.61	215.96	216.32	216.67	217.03	217.38	217.74	218.09	218.44	218.8
320	219.15	219.51	219.86	220.21	220.57	220.92	221.27	221.63	221.98	222.33
330	222.68	223.04	223.39	223.74	224.09	224.45	224.8	225.15	225.5	225.85
340	226.21	226.56	226.91	227.26	227.61	227.96	228.31	228.66	229.02	229.37
350	229.72	230.07	230.42	230.77	231.12	231.47	231.82	232.17	232.52	232.87
360	233.21	233.56	233.91	234.26	234.61	234.96	235.31	235.66	236	236.35
370	236.7	237.05	237.4	237.74	238.09	238.44	238.79	239.13	239.48	239.83
380	240.18	240.52	240.87	241.22	241.56	241.91	242.26	242.6	242.95	243.29
390	243.64	243.99	244.33	244.68	245.02	245.37	245.71	246.06	246.4	246.75
400	247.09	247.44	247.78	248.13	248.47	248.81	249.16	249.5	249.85	250.19
410	250.53	250.88	251.22	251.56	251.91	252.25	252.59	252.93	253.28	253.62
420	253.96	254.3	254.65	254.99	255.33	255.67	256.01	256.35	256.7	257.04
430	257.38	257.72	258.06	258.4	258.74	259.08	259.42	259.76	260.1	260.44
440	260.78	261.12	261.46	261.8	262.14	262.48	262.82	263.16	263.5	263.84
450	264.18	264.52	264.86	265.2	265.53	265.87	266.21	266.55	266.89	267.22
460	267.56	267.9	268.24	268.57	268.91	269.25	269.59	269.92	270.26	270.6
470	270.93	271.27	271.61	271.94	272.28	272.61	272.95	273.29	273.62	273.96
480	274.29	274.63	274.96	275.3	275.63	275.97	276.3	276.64	276.97	277.31

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490	277.64	277.98	278.31	278.64	278.98	279.31	279.64	279.98	280.31	280.64
500	280.98	281.31	281.64	281.98	282.31	282.64	282.97	283.31	283.64	283.97
510	284.3	284.63	284.97	285.3	285.63	285.96	286.29	286.62	286.95	287.29
520	287.62	287.95	288.28	288.61	288.94	289.27	289.6	289.93	290.26	290.59
530	290.92	291.25	291.58	291.91	292.24	292.56	292.89	293.22	293.55	293.88
450	264.18	264.52	264.86	265.2	265.53	265.87	266.21	266.55	266.89	267.22
460	267.56	267.9	268.24	268.57	268.91	269.25	269.59	269.92	270.26	270.6
470	270.93	271.27	271.61	271.94	272.28	272.61	272.95	273.29	273.62	273.96
480	274.29	274.63	274.96	275.3	275.63	275.97	276.3	276.64	276.97	277.31
490	277.64	277.98	278.31	278.64	278.98	279.31	279.64	279.98	280.31	280.64
500	280.98	281.31	281.64	281.98	282.31	282.64	282.97	283.31	283.64	283.97
510	284.3	284.63	284.97	285.3	285.63	285.96	286.29	286.62	286.95	287.29
520	287.62	287.95	288.28	288.61	288.94	289.27	289.6	289.93	290.26	290.59
530	290.92	291.25	291.58	291.91	292.24	292.56	292.89	293.22	293.55	293.88
540	294.21	294.54	294.86	295.19	295.52	295.85	296.18	296.5	296.83	297.16
550	297.49	297.81	298.14	298.47	298.8	299.12	299.45	299.78	300.1	300.43
560	300.75	301.08	301.41	301.73	302.06	302.38	302.71	303.03	303.36	303.69
570	304.01	304.34	304.66	304.98	305.31	305.63	305.96	306.28	306.61	306.93
580	307.25	307.58	307.9	308.23	308.55	308.87	309.2	309.52	309.84	310.16
590	310.49	310.81	311.13	311.45	311.78	312.1	312.42	312.74	313.06	313.39
600	313.71	314.03	314.35	314.67	314.99	315.31	315.64	315.96	316.28	316.6
610	316.92	317.24	317.56	317.88	318.2	318.52	318.84	319.16	319.48	319.8
620	320.12	320.43	320.75	321.07	321.39	321.71	322.03	322.35	322.67	322.98
630	323.3	323.62	323.94	324.26	324.57	324.89	325.21	325.53	325.84	326.16
640	326.48	326.79	327.11	327.43	327.74	328.06	328.38	328.69	329.01	329.32
650	329.64	329.96	330.27	330.59	330.9	331.22	331.53	331.85	332.16	332.48
660	332.79	333.11	333.42	333.74	334.05	334.36	334.68	334.99	335.31	335.62
670	335.93	336.25	336.56	336.87	337.18	337.5	337.81	338.12	338.44	338.75
680	339.06	339.37	339.69	340	340.31	340.62	340.93	341.24	341.56	341.87
690	342.18	342.49	342.8	343.11	343.42	343.73	344.04	344.35	344.66	344.97
700	345.28	345.59	345.9	346.21	346.52	346.83	347.14	347.45	347.76	348.07
710	348.38	348.69	348.99	349.3	349.61	349.92	350.23	350.54	350.84	351.15
720	351.46	351.77	352.08	352.38	352.69	353	353.3	353.61	353.92	354.22
730	354.53	354.84	355.14	355.45	355.76	356.06	356.37	356.67	356.98	357.28
740	357.59	357.9	358.2	358.51	358.81	359.12	359.42	359.72	360.03	360.33
750	360.64	360.94	361.25	361.55	361.85	362.16	362.46	362.76	363.07	363.37
760	363.67	363.98	364.28	364.58	364.89	365.19	365.49	365.79	366.1	366.4
770	366.7	367	367.3	367.6	367.91	368.21	368.51	368.81	369.11	369.41
780	369.71	370.01	370.31	370.61	370.91	371.21	371.51	371.81	372.11	372.41
790	372.71	373.01	373.31	373.61	373.91	374.21	374.51	374.81	375.11	375.41
800	375.7	376	376.3	376.6	376.9	377.19	377.49	377.79	378.09	378.39
810	378.68	378.98	379.28	379.57	379.87	380.17	380.46	380.76	381.06	381.35
820	381.65	381.95	382.24	382.54	382.83	383.13	383.42	383.72	384.01	384.31
830	384.6	384.9	385.19	385.49	385.78	386.08	386.37	386.67	386.96	387.25
840	387.55	387.84	388.14	388.43	388.72	389.02	389.31	389.6	389.9	390.19
850	390.48	390.77	391.07	391.36	391.65	391.94	392.23	392.53	392.82	393.11

The above pt100 temperature sensor resistance table values are polynomials calculated to IEC60751 using Microsoft excel.